

 **CHALLENGE** ®

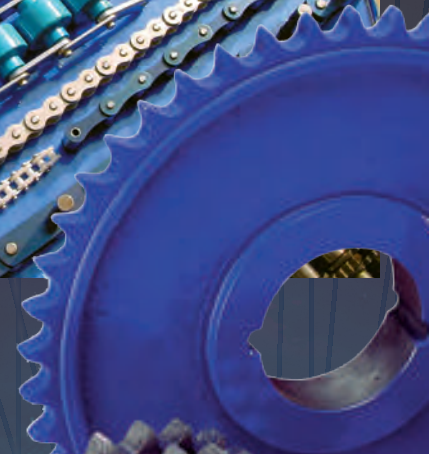
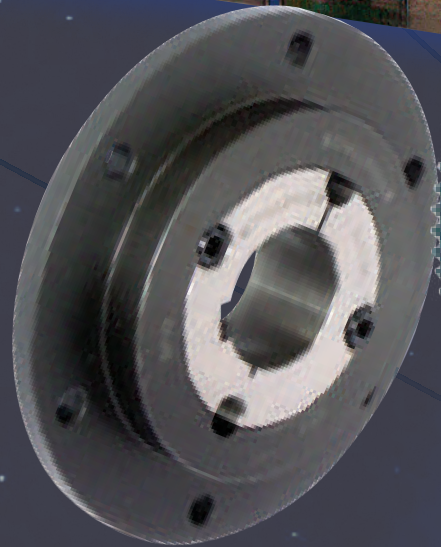
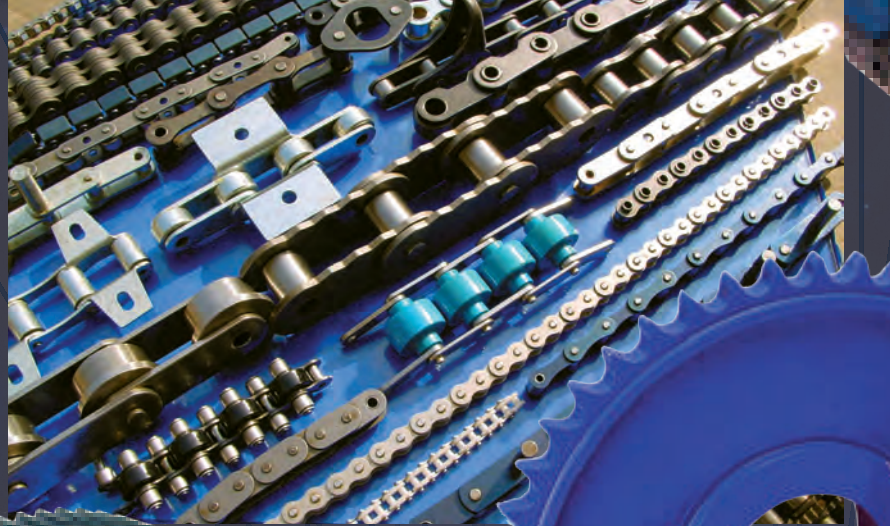
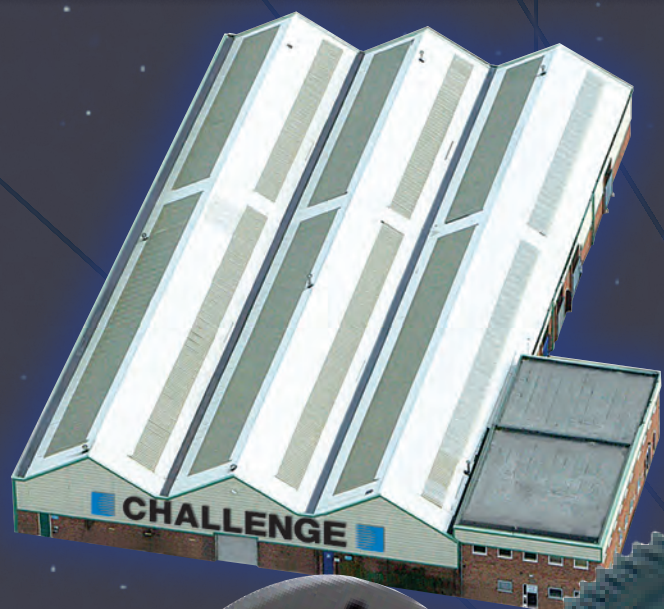
POWER TRANSMISSION

Technical Catalogue

**ENGLISH
ISSUE 6**

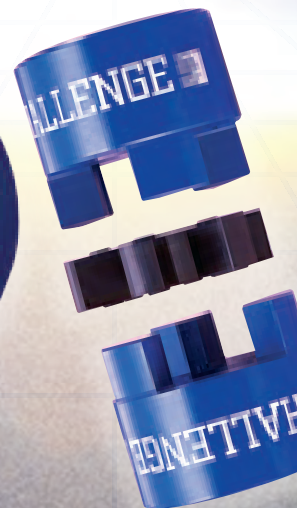
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Never a problem, always a...

CHALLENGE®



Never a problem always a ...





Technical Catalogue

CHALLENGE PRODUCTS

PRECISION ROLLER CHAIN, IN STEEL, STAINLESS STEEL & ZINC/NICKEL PLATED
LEAF CHAIN
HEAVY DUTY DRIVE CHAIN
WELDED STEEL CHAIN (DRAG AND MILL CHAIN)
FOOD INDUSTRY CHAIN
AGRICULTURAL CHAIN
SPECIAL CHAIN AND ATTACHMENT CHAIN
CONVEYOR CHAIN
BLOCK CHAIN
ENGINEERED BUSH CHAIN
PALM OIL CHAIN
DROP FORGED CHAIN
SUGAR CHAIN
TAPER BORE & PILOT BORE V-PULLEYS
SYNCHRONOUS PULLEYS
POLY V PULLEYS
TAPER BUSHES
MI-LOCK PULLEYS AND BUSHES
WEDGE AND CLASSICAL V-BELTS
TAPER BORED SPROCKETS
PILOT BORED & PLATEWHEEL SPROCKETS
FINISH BORED SPROCKETS
WELD-ON-HUBS AND BOLT-ON-HUBS
HRC COUPLINGS
FFX TYRE COUPLINGS
JAW COUPLINGS
NPX COUPLINGS
RPX COUPLINGS
CHAIN COUPLINGS
TORQUE LIMITERS
CLAMPING ELEMENTS
MOTOR MOUNTS
ELECTRIC MOTORS
WORM GEARS
SHAFT MOUNTED SPEED REDUCERS (SMSR + TXT)
SELF LUBE BEARING UNITS
PLUMMER BLOCKS
BEARINGS

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Technical Information

Engineering Units

SI units

The table below shows units corresponding to the International system of units, more commonly called SI (Système International d'Unités) From these, all other units can be derived.

quantity	unit	metric symbol	imperial symbol
mass	kilogram	kg	pound (lb)
length	metre	m	inch (in)
time	second	s	s
temperature	Kelvin	K	Fahrenheit (F)
electric current	Ampere	A	A

Some common units in general use appertaining to Power Transmission

quantity	unit	metric symbol	imperial symbol
force	Newton	N	pound force (lbf)
	kilogram force	kgf	
torque	Newton metre	Nm	pound inch (lbf.in)
	kilogram metre	kgf.m	pound foot (lbf.ft)
power	Watt or kilowatt	W kW	horsepower hp
	pressure	Pascal	Pa
bar		bar	psi
temperature	degree Celsius	°C	°F
frequency	Hertz	Hz	cycles/second (c/s)
speed – linear	metres/second	m/s	feet/min
speed – angular	revolutions per minute (rpm)	rev/min	rev/min
inertia	MR ²	kg.m ²	lb.in ²
			lb.ft ²
electrical potential	Volt	V	
electrical resistance	Ohm	Ω	
electrical capacity	Farad	F	

Common multiples and sub-multiples

prefix	symbol	factor
micro	μ	÷ 1,000,000
milli	m	÷ 1,000
kilo	k	× 1,000
mega	M	× 1,000,000
tera	T	× 1,000,000,000,000

Common conversion factors

The factors given below are typical of those used in Power Transmission engineering :-

Metric to Imperial are on the left and the converse on the right

Length

millimetres (mm) x 0.0394 = inches (ins) inches x 25.4 = mm
 metres (m) x 39.37 = inches inches x 0.0254 = metres (m)
 metres x 3.281 = feet (ft) feet x 0.305 = metres
 kilometres x 0.6213 = miles miles x 1.61 = kilometres

Force

Newtons x 0.225 = pound force (lbf) lbf x 4.45 = Newtons (N)
 kilogram force (kgf) x 2.205 = lbf lbf x 0.454 = kgf
 kgf x 9.81 = Newtons
 N x 0.102 = kgf

Torque

Newton metre (Nm) x 0.735 = pounds feet (lbf.ft)
 Newton metre (Nm) x 8.85 = pounds inches (lbf.ins)
 kilogram force metre (kgf.m) x 9.81 = Newton metre

Power

kilowatt (kW) x 1.34 = horse power (hp) hp x 0.746 = kW

Note – the French Cheval-Vapeur (CV) and the German Pferdestärke (PS) are virtually the same value of horse power.
 To be exact, hp x 0.98 = CV or PS

Inertia

kg.m² x 23.73 = lb.ft²

Temperature

°C = $\frac{5}{9} \times (°F - 32)$ °F = $\frac{9}{5} \times °C + 32$

Pi (π)

The ratio between the circumference and diameter of a circle is π
 diameter x π = circumference

π = 3.1416

so diameter x 3.1416 = circumference

Common formulae useful in Power Transmission

Torque, Power and Speed

$$\text{Power (kW)} = \frac{\text{Torque (Nm)} \times \text{rev/min}}{9550}$$

$$\text{Torque (Nm)} = \frac{\text{Power (kW)} \times 9550}{\text{rev/min}}$$

'V' - Drive shaft/bearing loads

The following simple formulae give a good indication as to the static and dynamic loads imposed on shafts/bearings by 'V'- Belts

It is useful formulae being based on the actual setting force used to tension the drive

$$\begin{aligned} T_s &= \text{static tension} \\ T_c &= \text{centrifugal tension} \\ T_d &= \text{dynamic tension} \\ T_s &= 16 \times 2 \times P \times B = N \\ T_c &= M \times S^2 \times 2 \times B = N \\ T_d &= T_s - T_c = N \end{aligned}$$

where :-

$$\begin{aligned} 16 &= \text{a constant} \\ 2 &= \text{the tight and slack sides of the belt} \\ P &= 80\% \text{ of the higher tensioning force figure (1.3 x column) - kgf} \\ &\quad \text{(from page 168 in the CHALLENGE technical catalogue)} \\ B &= \text{the number of belts on the drive} \\ M &= \text{belt mass per unit length - kilogram per metre - kg/m} \\ &\quad \text{(from page 152 in the CHALLENGE technical catalogue)} \\ S &= \text{belt speed in metres per second (m/s)} \\ S &= \frac{d \times n}{19100} \text{ m/s} \end{aligned}$$

whereby :-

$$\begin{aligned} d &= \text{small pulley pitch diameter - mm} \\ n &= \text{rotational speed of small pulley - rev/min} \end{aligned}$$

Example

Calculate the dynamic tension from the following drive.

90kW 1440 rev/min direct start electric motor to a Belt Conveyor running at 400 rev/min for 12 hours/day carrying copper ore and absorbing 81 kW.

Motor shaft is 75 mm, conveyor shaft 105 mm. 1200 mm drive centres

The drive chosen is :-

Motor Pulley: 280 x 5 SPB with a 3535 / 75 mm bore taper bush

Conveyor pulley: 1000 x 5 SPB with a 4545 / 105 mm bore taper bush

Belts: 5 off SPB 4500 Wedge Belts giving 1191 mm drive centres

Calculating the Dynamic Tension

$$\begin{aligned} T_s &= 16 \times 2 \times P \times B \\ &= 16 \times 2 \times (8.2 \times 9.81 \times 0.80) \times 5 = 10297 \text{ N} \end{aligned}$$

$$T_c = M \times S^2 \times 2 \times B$$

whereby :-

$$\begin{aligned} M &= 0.19 \text{ kg/m} \\ S &= \frac{d \times n}{19100} = \frac{280 \times 1440}{19100} = 21.11 \text{ m/s} \end{aligned}$$

$$T_c = 0.19 \times 21.11^2 \times 2 \times 5 = 847 \text{ N}$$

$$T_d = T_s - T_c$$

$$T_d = 10297 - 847$$

$$= 9450 \text{ N}$$

The calculation of weights

Weight is mass measured vertically and simple empirical formulae can be used to calculate the weight of round and rectangular objects:

Round objects

diameter (mm) squared x length (m) x factor = weight (kgf)

$$\text{factor for mild steel} = 0.00617$$

$$\text{factor for stainless steel} = 0.00636$$

$$\text{factor for cast iron} = 0.00598$$

Example

calculate the weight of a 25mm diameter rod of mild steel with a length 500 mm.

$$25^2 \times 0.5 \times 0.00617 = 1.928 \text{ kgf}$$

Rectangular objects

depth (mm) x height (mm) x length (m) x factor = weight (kgf)

$$\text{factor for mild steel} = 0.00785$$

$$\text{factor for stainless steel} = 0.00809$$


$$\text{factor for cast iron} = 0.00761$$

Example


calculate the weight of a rectangular mild steel bar 25 mm x 35 mm with length 600 mm


$$25 \times 35 \times 0.6 \times 0.00785 = 4.121 \text{ kgf}$$


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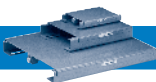
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Bearings

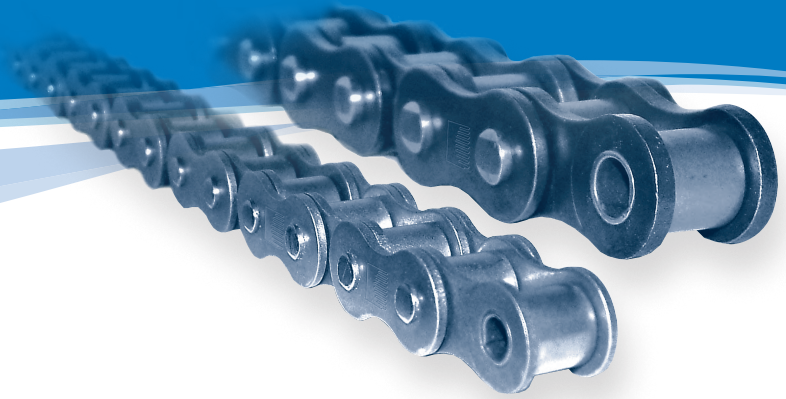
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Roller Chain





Features

Challenge offer a large range of various types of chain including – Transmission, Conveyor, Agricultural, Leaf and many types of special chains

Challenge Transmission Roller chain

Challenge roller chain is supplied in five meter boxes including one connecting link. Some sizes are available on reels or in 10ft boxes.

The range includes – ISO, BS, ANSI and many bespoke chains.

ISO roller chain – standard, straight side plate, extended pin, hollow pin, stainless steel, nickel plated, zinc plated, double pitch and specials.

ANSI roller chain – standard, heavy duty, cottered, cottered heavy duty, straight side plate, extended pin, stainless steel, nickel plated, zinc plated, double pitch (including extended pin, hollow pin) and specials.

Roller chain attachments – cover a large range for both ISO and ANSI chain, Timber, Agricultural and Conveyor chain.

Challenge transmission chains have a longer life because:

- **Pins** – manufactured from case hardened chrome manganese molybdenum steel. This increases wear resistance with more shock absorption ability.
- **Pre-stretched** – “fit and forget”.
- **Ball swaged holes** – combats fatigue failure.
- **Shot peened rollers and side plates** – reduces fatigue failure.
- **Deep waisted side plates** – increases breaking load and reduces stress.
- **Solid rollers** – prolongs wear life.

HERE'S A CHALLENGE ...

Who's got the Perfect Spin to bowl your customers over?

CHALLENGE X Series Spin Riveted Transmission Chain

Never a
problem
always a ...



**Spin Riveted For
Added Strength**



Lock in to:

Secure source of supply • Superior service
Product quality and reliability • Manufacturers prices
Securing more than just your profits

Never a problem always a ...

CHALLENGE®

www.challengept.com



Roller Chain

The Benefits...

CHALLENGE X Series Transmission Chain

- **Spin Riveted Case Hardened Pins in Alloy Steel**
- For optimum life
- **Pre-stretched** - Fit and forget
- **Ball swaged holes** - Combats fatigue
- **Shot peened**
- Produces strong surface and reduced fatigue
- **Deep waisted side plates** - Reduces stress
- **Rollers from seamless tube**
- For strength and long life



The X Series Range...

British standard		American standard	
20B-1X	32B-2X	100-1X	180-1X
20B-1GLX	32B-3X	100-2X	180-2X
20B-2X	40B-1X	100-3X	180-3X
20B-2GLX	40B-1GLX	120-1X	200-1X
20B-3X	40B-2X	120-1X	200-2X
20B-3GLX	40B-3X	120-1X	200-3X
24B-1X	48B-1X	140-1X	240-1X
24B-1GLX	48B-1GLX	140-2X	240-2X
24B-2X	48B-2X	140-3X	240-3X
24B-3X	48B-3X	160-1X	
28B-1X	56B-1X	160-2X	
28B-1GLX	56B-2X	160-2X	
28B-2X	56B-3X		
28B-3X	64B-1X		
32B-1X	64B-2X		
32B-1GLX	64B-3X		

Also in the Roller Chain range

Roller Chain

- British Standard Roller Chain
- ANSI Standard Roller Chain
- ANSI Heavy Duty Roller Chain
- ANSI Cottered Series Roller Chain
- ANSI Cottered Heavy Duty Series Roller Chain
- ANSI Straight Side Plate Roller Chain
- British Standard Straight Side Plate Roller Chain
- Chain Breakers
- Timing Chain
- Bush Chain
- Bicycle Chain
- Bicycle Chain/Connecting Links
- Roller Chain with Extended Pins
- Special Transmission Roller Chain
- Hollow Pin Roller Chain
- Special Chain with "U" Elements
- Special Chain with "U" and Rubber Elements
- Transport Chain
- Special Chain with Driver
- Stainless Steel Transmission Roller Chain
- Side Bow Chain
- Nickel & Zinc Plated Transmission Roller Chain
- Roller Chain Attachments

Double Pitch Chain

- Double Pitch Transmission Chain
- Double Pitch Conveyor Chain
- Double Pitch Attachments
- Double Pitch Special Chain
- Double Pitch Extended Pin Chain
- Double Pitch Hollow Pin Chain

Leaf Chain

- LH / BL Series Leaf Chain
- LL Series Leaf Chain
- AL Series Leaf Chain
- FL Series Leaf Chain
- Clevis Pins
- Special Leaf Chain with Hollow Pin

Timber Chain

- Welded Steel Chain
- Welded Steel Chain Attachments (offset sidebar)
- Welded Steel Chain (offset side bar)
- Offset Sidebar Roller Chain
- Straight Sidebar Roller Chain
- Welded Steel Drag Chain
- Drag Chain Attachments

Agricultural Chain

- Steel Agricultural Chain
- Agricultural Chain Attachments

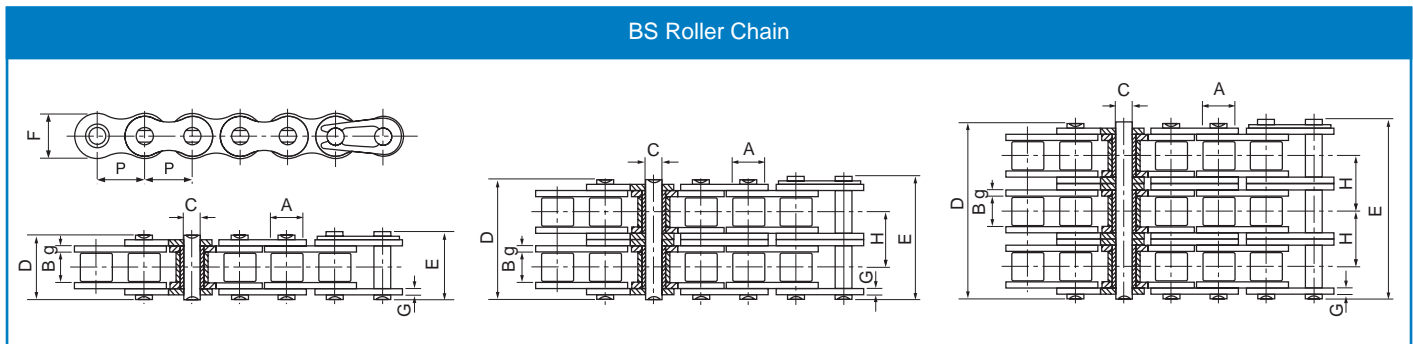
Conveyor Chain

- BS Z Series with Solid Pin Chain
- BS ZC Series with Hollow Pin Chain
- BS Z/ZC Series Attachments Chain
- BS ZE Series Deep Link Chain
- M Series Metric Solid Pin Chain
- M Series Chain Attachments
- MC Series Hollow Pin Chain
- MT/ME Series Deep Link Chain
- FV/C Series Metric Solid Pin Chain
- FV/C Series Metric Hollow Pin Chain
- FV/C Series Chain Attachments
- FVT/CE Series Metric Deep Link Chain
- FV/CR Series Metric Scraper Chain
- Special Conveyor Chain
- Special Conveyor Chain
- Conveyor Chain Attachment Chain Designations

Roller Chain

British Standard Roller Chain

BS228, ISO R606, DIN 8187



ISO Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Inner plate height	Plate thickness g/G	Transverse pitch	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
	P	A	B	C	D	E						
SIMPLEX												
04B-1	6.000	4.00	2.80	1.85	6.80	7.80	5.00	0.60	-	3.00	3.20	0.11
05B-1	8.000	5.00	3.00	2.31	8.20	8.90	7.10	0.80	-	5.00	5.90	0.20
06B-1 SSP	9.525	6.35	5.72	3.28	13.15	14.10	8.20	1.30	-	9.00	10.40	0.41
08B-1	12.700	8.51	7.75	4.45	16.70	18.20	11.80	1.60	-	18.00	19.40	0.69
10B-1	15.875	10.16	9.65	5.08	19.50	20.90	14.70	1.70	-	22.40	27.50	0.93
12B-1	19.050	12.07	11.68	5.72	22.50	24.20	16.00	1.85	-	29.00	32.20	1.15
16B-1	25.400	15.88	17.02	8.28	36.10	37.40	21.00	4.15/3.1	-	60.00	72.80	2.71
20B-1X	31.750	19.05	19.56	10.19	41.30	45.00	26.40	4.5/3.5	-	95.00	106.70	3.70
24B-1X	38.100	25.40	25.40	14.63	53.40	57.80	33.20	6.0/4.8	-	160.00	178.00	7.10
28B-1X	44.450	27.94	30.99	15.90	65.10	69.50	36.70	7.5/6.0	-	200.00	222.00	8.50
32B-1X	50.800	29.21	30.99	17.81	66.00	71.00	42.00	7.0/6.0	-	250.00	277.50	10.25
40B-1X	63.500	39.37	38.10	22.89	82.20	89.20	52.96	8.5/8.0	-	355.00	394.00	16.35
48B-1X	76.200	48.26	45.72	29.24	99.10	107.00	63.80	12.0/10.0	-	560.00	621.60	25.00
56B-1X	88.900	53.98	53.34	34.32	114.60	123.00	77.80	13.5/12.0	-	850.00	940.00	35.88
64B-1X	101.600	63.50	60.96	39.40	130.00	138.50	90.17	15.0/13.0	-	1120.00	1240.00	46.50
DUPLEX												
04B-2	6.000	4.00	2.80	1.85	12.00	13.00	5.00	0.60	-	4.68	5.50	0.18
05B-2	8.000	5.00	3.00	2.31	13.90	14.50	7.10	0.80	5.64	7.80	10.20	0.33
06B-2 SSP	9.525	6.35	5.72	3.28	23.40	24.40	8.20	1.30	10.24	16.90	18.70	0.77
08B-2	12.700	8.51	7.75	4.45	31.20	32.20	11.80	1.60	13.92	32.00	38.70	1.34
10B-2	15.875	10.16	9.65	5.08	36.10	37.50	14.70	1.70	16.59	44.50	56.20	1.84
12B-2	19.050	12.07	11.68	5.72	42.00	43.60	16.00	1.85	19.46	57.80	66.10	2.31
16B-2	25.400	15.88	17.02	8.28	68.00	69.30	21.00	4.15/3.1	31.88	106.00	133.00	5.42
20B-2X	31.750	19.05	19.56	10.19	77.80	81.50	26.40	4.5/3.5	36.45	170.00	211.20	7.20
24B-2X	38.100	25.40	25.40	14.63	101.70	106.20	33.20	6.0/4.8	48.36	280.00	319.20	13.40
28B-2X	44.450	27.94	30.99	15.90	124.60	129.10	36.70	7.5/6.0	59.56	360.00	406.80	16.60
32B-2X	50.800	29.21	30.99	17.81	124.60	129.60	42.00	7.0/6.0	58.55	450.00	508.50	21.00
40B-2X	63.500	39.37	38.10	22.89	154.50	161.50	52.96	8.5/8.0	72.29	630.00	711.90	32.00
48B-2X	76.200	48.26	45.72	29.24	190.40	198.20	63.80	12.0/10.0	91.21	1000.00	1130.00	50.00
56B-2X	88.900	53.98	53.34	34.32	221.20	229.60	77.80	13.5/12.0	106.60	1600.00	1760.00	71.76
64B-2X	101.600	63.50	60.96	39.40	249.90	258.40	90.17	15.0/13.0	119.89	2000.00	2200.00	93.00
TRIPLEX												
05B-3	8.000	5.00	3.00	2.31	19.50	20.20	7.10	0.80	5.64	11.10	13.80	0.48
06B-3 SSP	9.525	6.35	5.72	3.28	33.50	34.60	8.20	1.30	10.24	24.90	30.10	1.16
08B-3	12.700	8.51	7.75	4.45	45.10	46.10	11.80	1.60	13.92	47.50	57.80	2.03
10B-3	15.875	10.16	9.65	5.08	52.70	54.10	14.70	1.70	16.59	66.70	84.50	2.77
12B-3	19.050	12.07	11.68	5.72	61.50	63.10	16.00	1.85	19.46	86.70	101.80	3.46
16B-3	25.400	15.88	17.02	8.28	99.80	101.20	21.00	4.15/3.1	31.88	160.00	203.70	8.13
20B-3X	31.750	19.05	19.56	10.19	114.20	117.90	26.40	4.5/3.5	36.45	250.00	290.00	10.82
24B-3X	38.100	25.40	25.40	14.63	150.10	154.60	33.20	6.0/4.8	48.36	425.00	493.00	20.10
28B-3X	44.450	27.94	30.99	15.90	184.20	188.70	36.70	7.5/6.0	59.56	530.00	609.50	24.92
32B-3X	50.800	29.21	30.99	17.81	183.20	188.20	42.00	7.0/6.0	58.55	670.00	770.50	31.56
40B-3X	63.500	39.37	38.10	22.89	226.80	233.80	52.96	8.5/8.0	72.29	950.00	1092.50	48.10
48B-3X	76.200	48.26	45.72	29.24	281.60	289.40	63.80	12.0/10.0	91.21	1500.00	1710.00	75.00
56B-3X	88.900	53.98	53.34	34.32	327.80	336.20	77.80	13.5/12.0	106.60	2240.00	2240.00	107.64
64B-3X	101.600	63.50	60.96	39.40	369.80	378.30	90.17	15.0/13.0	119.89	3000.00	3300.00	139.50

* SSP =Straight Side Plate Chain

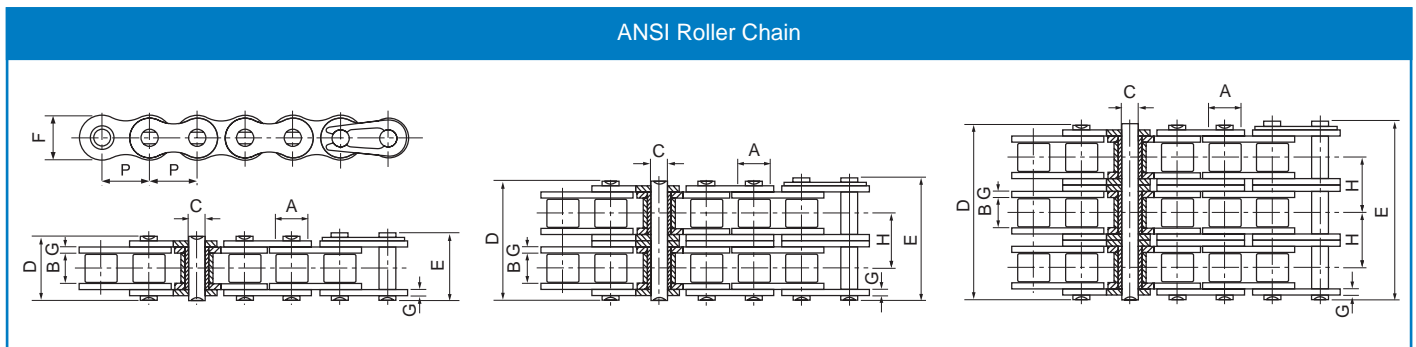
Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

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Roller Chain

ANSI Standard Roller Chain

ANSI B29.1, ISO R606, DIN 8188



ANSI Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Inner plate height	Plate thickness	Transverse pitch	Minimum tensile strength	Average tensile strength	Weight
	P	A	B	C	D	E	F	g/G	H	kN	kN	kg/m
SIMPLEX												
*15-1R	4.763	2.48	2.38	1.62	6.10	6.90	4.30	0.60	-	1.8	2.0	0.08
*25-1R	6.350	3.30	3.18	2.31	7.90	8.40	6.00	0.80	-	3.5	4.6	0.15
*35-1R	9.525	5.08	4.77	3.58	12.40	13.17	9.00	1.30	-	7.9	10.8	0.33
41-1R	12.700	7.77	6.25	3.58	13.75	15.00	9.91	1.30	-	6.7	12.6	0.41
40-1R	12.700	7.95	7.85	3.96	16.60	17.80	12.00	1.50	-	14.1	17.5	0.62
50-1R	15.875	10.16	9.40	5.08	20.70	22.20	15.09	2.03	-	22.2	29.4	1.02
60-1R	19.050	11.91	12.57	5.94	25.90	27.70	18.00	2.42	-	31.8	41.5	1.50
80-1R	25.400	15.88	15.75	7.92	32.70	35.00	24.00	3.25	-	56.7	69.4	2.60
100-1XR	31.750	19.05	18.90	9.53	40.40	44.70	30.00	4.00	-	88.5	109.2	3.91
120-1XR	38.100	22.23	25.22	11.10	50.30	54.30	35.70	4.80	-	127.0	156.3	5.62
140-1XR	44.450	25.40	25.22	12.70	54.40	59.00	41.00	5.60	-	172.4	212.0	7.50
160-1XR	50.800	28.58	31.55	14.27	64.80	69.60	47.80	6.40	-	226.8	278.9	10.10
180-1XR	57.150	35.71	35.48	17.46	72.80	78.60	53.60	7.20	-	280.2	341.8	13.45
200-1XR	63.500	39.68	37.85	19.85	80.30	87.20	60.00	8.00	-	353.8	431.6	16.15
240-1XR	76.200	47.63	47.35	23.81	95.50	103.00	72.39	9.50	-	510.3	622.5	23.20
DUPLEX												
*25-2R	6.350	3.30	3.18	2.31	14.50	15.00	6.00	0.80	6.40	7.0	8.6	0.28
*35-2R	9.525	5.08	4.77	3.58	22.50	23.30	9.00	1.30	10.13	15.8	19.7	0.63
41-2R	12.700	7.77	6.25	3.58	25.70	26.90	9.91	1.30	11.95	13.3	16.9	0.81
40-2R	12.700	7.95	7.85	3.96	31.00	32.20	12.00	1.50	14.38	28.2	35.9	1.12
50-2R	15.875	10.16	9.40	5.08	38.90	40.40	15.09	2.03	18.11	44.4	58.1	2.00
60-2R	19.050	11.91	12.57	5.94	48.80	50.50	18.00	2.42	22.78	63.6	82.1	2.92
80-2R	25.400	15.88	15.75	7.92	62.70	64.30	24.00	3.25	29.29	113.4	141.8	5.15
100-2XR	31.750	19.05	18.90	9.53	76.40	80.50	30.00	4.00	35.76	177.0	219.4	7.80
120-2XR	38.100	22.23	25.22	11.10	95.80	99.70	35.70	4.80	45.44	254.0	314.9	11.70
140-2XR	44.450	25.40	25.22	12.70	103.30	107.90	41.00	5.60	48.87	344.8	427.5	15.14
160-2XR	50.800	28.58	31.55	14.27	123.30	128.10	47.80	6.40	58.55	453.6	562.4	20.14
180-2XR	57.150	35.71	35.48	17.46	138.60	144.40	53.60	7.20	65.84	560.5	695.0	29.22
200-2XR	63.500	39.68	37.85	19.85	151.90	158.80	60.00	8.00	71.55	707.6	877.4	32.24
240-2XR	76.200	47.63	47.35	23.81	183.40	190.80	72.39	9.50	87.83	1020.6	1255.3	45.23
TRIPLEX												
*25-3R	6.350	3.30	3.18	2.31	21.00	21.50	6.00	0.80	6.40	10.5	12.6	0.44
*35-3R	9.525	5.08	4.77	3.58	32.70	33.50	9.00	1.30	10.13	23.7	28.6	1.05
40-3R	12.700	7.95	7.85	3.96	45.40	46.60	12.00	1.50	14.38	42.3	50.0	1.90
50-3R	15.875	10.16	9.40	5.08	57.00	58.50	15.09	2.03	18.11	66.6	77.8	3.09
60-3R	19.050	11.91	12.57	5.94	71.50	73.30	18.00	2.42	22.78	95.4	111.1	4.54
80-3R	25.400	15.88	15.75	7.92	91.70	93.60	24.00	3.25	29.29	170.1	198.4	7.89
100-3XR	31.750	19.05	18.90	9.53	112.20	116.30	30.00	4.00	35.76	265.5	309.6	11.77
120-3XR	38.100	22.23	25.22	11.10	141.40	145.20	35.70	4.80	45.44	381.0	437.2	17.53
140-3XR	44.450	25.40	25.22	12.70	152.20	156.80	41.00	5.60	48.87	517.2	593.3	22.20
160-3XR	50.800	28.58	31.55	14.27	181.80	186.60	47.80	6.40	58.55	680.4	780.6	30.02
180-3XR	57.150	35.71	35.48	17.46	204.40	210.20	53.60	7.20	65.84	840.7	983.6	38.22
200-3XR	63.500	39.68	37.85	19.85	223.50	230.40	60.00	8.00	71.55	1061.4	1217.8	49.03
240-3XR	76.200	47.63	47.35	23.81	271.30	278.60	72.39	9.50	87.83	1530.9	1756.5	71.60

* Bush chain: A in the table indicates the external diameter of the bush

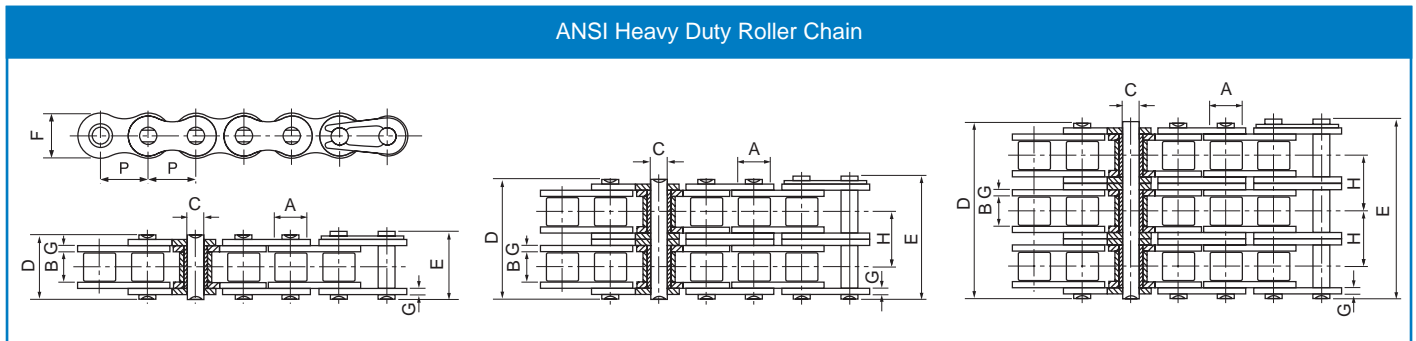
Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

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Roller Chain

ANSI Heavy Duty Roller Chain

ANSI B29.1, ISO R606, DIN 8188



ANSI Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Inner plate height	Plate thickness	Transverse pitch	Minimum tensile strength	Average tensile strength	Weight
	P	A	B	C	D	E	F	G	H	kN	kN	kg/m
SIMPLEX												
40H-1R	12.700	7.95	7.85	3.96	18.80	19.90	12.00	2.03	-	14.10	19.10	0.82
50H-1R	15.875	10.16	9.40	5.08	22.10	23.40	15.09	2.42	-	22.20	30.20	1.25
60H-1R	19.050	11.91	12.57	5.94	29.20	31.00	18.00	3.25	-	31.80	42.70	1.87
80H-1R	25.400	15.88	15.75	7.92	36.20	37.70	24.00	4.00	-	56.70	71.40	3.10
100H-1XR	31.750	19.05	18.90	9.53	43.60	46.90	30.00	4.80	-	88.50	112.40	4.52
120H-1XR	38.100	22.23	25.22	11.10	53.50	57.50	35.70	5.60	-	127.00	160.90	6.60
140H-1XR	44.450	25.40	25.22	12.70	57.60	62.20	41.00	6.40	-	172.40	217.30	8.30
160H-1XR	50.800	28.58	31.55	14.27	68.20	73.00	47.80	7.20	-	226.80	285.80	10.30
200H-1XR	63.500	39.68	37.85	19.85	86.60	93.50	60.00	9.50	-	353.80	444.50	19.16
DUPLEX												
60H-2R	19.050	11.91	12.57	5.94	55.30	57.10	18.00	3.25	26.11	63.60	84.50	3.71
80H-2R	25.400	15.88	15.75	7.92	68.80	70.30	24.00	4.00	32.59	113.40	145.30	6.15
100H-2R	31.750	19.05	18.90	9.53	82.70	86.00	30.00	4.80	39.09	177.00	225.90	9.03
120H-2XR	38.100	22.23	25.22	11.10	102.40	106.40	35.70	5.60	48.87	254.00	322.70	13.13
140H-2XR	44.450	25.40	25.22	12.70	109.80	114.40	41.00	6.40	52.20	344.80	437.70	16.60
160H-2XR	50.800	28.58	31.55	14.27	130.10	134.90	47.80	7.20	61.90	453.60	571.60	20.20
200H-2XR	63.500	39.68	37.85	19.85	164.90	171.80	60.00	9.50	78.31	707.60	894.90	38.11
TRIPLEX												
60H-3R	19.050	11.91	12.57	5.94	81.40	83.20	18.00	3.25	26.11	95.40	113.90	5.54
80H-3R	25.400	15.88	15.75	7.92	101.40	102.90	24.00	4.00	32.59	170.10	203.50	9.42
100H-3XR	31.750	19.05	18.90	9.53	121.80	125.10	30.00	4.80	39.09	265.50	314.80	12.96
120H-3XR	38.100	22.23	25.22	11.10	151.20	155.20	35.70	5.60	48.87	381.00	444.70	19.64
140H-3XR	44.450	25.40	25.22	12.70	162.00	166.60	41.00	6.40	52.20	517.20	598.40	24.90
160H-3XR	50.800	28.58	31.55	14.27	192.00	196.80	47.80	7.20	61.90	680.40	787.30	30.10
200H-3XR	63.500	39.68	37.85	19.85	243.20	250.10	60.00	9.50	78.31	1061.40	1228.20	57.06

Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

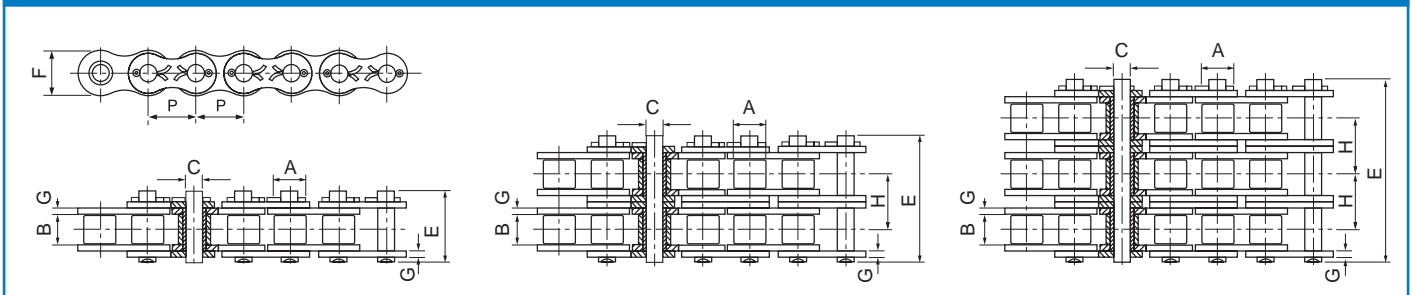
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Roller Chain

ANSI Cottered Series Roller Chain

ANSI B29.1, ISO R606, DIN 8188

ANSI Cottered A Series Roller Chain



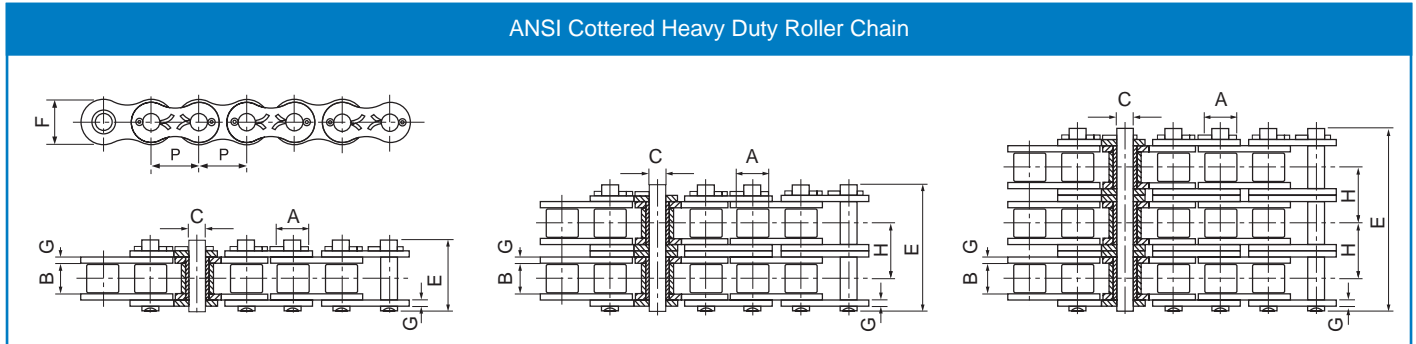
ANSI Chain number	Pitch P	Roller diameter A	Width between inner plates B	Pin diameter C	Pin length E	Inner plate height F	Plate thickness G	Transverse pitch H	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
SIMPLEX											
50-1C	15.875	10.16	9.40	5.08	23.00	15.09	2.03	-	22.20	29.40	1.02
60-1C	19.050	11.91	12.57	5.94	28.30	18.00	2.42	-	31.80	41.50	1.50
80-1C	25.400	15.88	15.75	7.92	36.50	24.00	3.25	-	56.70	69.40	2.60
100-1C	31.750	19.05	18.90	9.53	44.70	30.00	4.00	-	88.50	109.20	3.91
120-1C	38.100	22.23	25.22	11.10	54.30	35.70	4.80	-	127.00	156.30	5.62
140-1C	44.450	25.40	25.22	12.70	59.00	41.00	5.60	-	172.40	212.00	7.50
160-1C	50.800	28.58	31.55	14.27	69.60	47.80	6.40	-	226.80	278.90	10.10
180-1C	57.150	35.71	35.48	17.46	78.60	53.60	7.20	-	280.20	341.80	13.45
200-1C	63.500	39.68	37.85	19.85	87.20	60.00	8.00	-	353.80	431.60	16.15
240-1C	76.200	47.63	47.35	23.81	103.00	72.39	9.50	-	510.30	622.50	23.20
DUPLEX											
50-2C	15.875	10.16	9.40	5.08	41.20	15.09	2.03	18.11	44.40	58.10	2.00
60-2C	19.050	11.91	12.57	5.94	51.10	18.00	2.42	22.78	63.60	82.10	2.92
80-2C	25.400	15.88	15.75	7.92	65.80	24.00	3.25	29.29	113.40	141.80	5.15
100-2C	31.750	19.05	18.90	9.53	80.50	30.00	4.00	35.76	177.00	219.40	7.80
120-2C	38.100	22.23	25.22	11.10	99.70	35.70	4.80	45.44	254.00	314.90	11.70
140-2C	44.450	25.40	25.22	12.70	107.90	41.00	5.60	48.87	344.80	427.50	15.14
160-2C	50.800	28.58	31.55	14.27	128.10	47.80	6.40	58.55	453.60	562.40	20.14
180-2C	57.150	35.71	35.48	17.46	144.40	53.60	7.20	65.84	560.50	695.00	29.22
200-2C	63.500	39.68	37.85	19.85	158.80	60.00	8.00	71.55	707.60	877.40	32.24
240-2C	76.200	47.63	47.35	23.81	190.80	72.39	9.50	87.83	1020.60	1255.30	45.23
TRIPLEX											
50-3C	15.875	10.16	9.40	5.08	59.30	15.09	2.03	18.11	66.60	77.80	3.09
60-3C	19.050	11.91	12.57	5.94	73.90	18.00	2.42	22.78	95.40	111.10	4.54
80-3C	25.400	15.88	15.75	7.92	93.60	24.00	3.25	29.29	170.10	198.40	7.89
100-3C	31.750	19.05	18.90	9.53	116.30	30.00	4.00	35.76	265.50	309.60	11.77
120-3C	38.100	22.23	25.22	11.10	145.20	35.70	4.80	45.44	381.00	437.20	17.53
140-3C	44.450	25.40	25.22	12.70	156.80	41.00	5.60	48.87	517.20	593.30	22.20
160-3C	50.800	28.58	31.55	14.27	186.60	47.80	6.40	58.55	680.40	780.60	30.02
180-3C	57.150	35.71	35.48	17.46	210.20	53.60	7.20	65.84	840.70	983.60	38.22
200-3C	63.500	39.68	37.85	19.85	230.40	60.00	8.00	71.55	1061.40	1217.80	49.03
240-3C	76.200	47.63	47.35	23.81	278.60	72.39	9.50	87.83	1530.90	1756.50	71.60

Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

Roller Chain

ANSI Cottered Heavy Duty Roller Chain

ANSI B29.1, ISO R606, DIN 8188

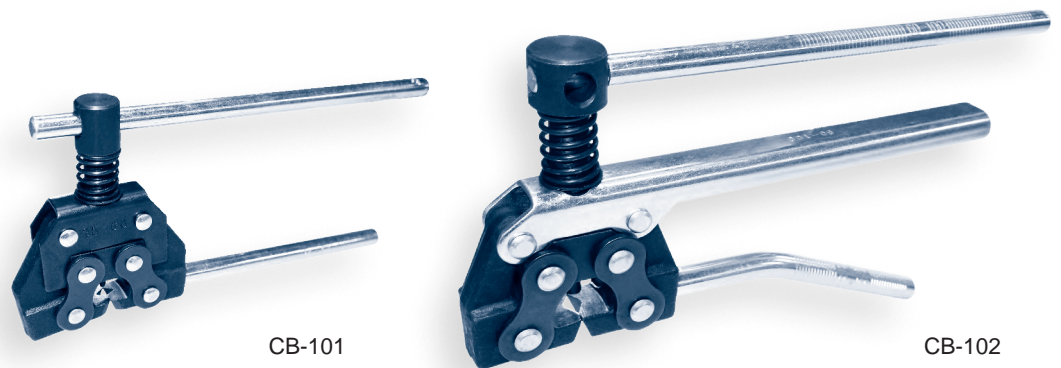


ANSI Chain number	Pitch P	Roller diameter A	Width between inner plates B	Pin diameter C	Pin length E	Inner plate height F	Plate thickness G	Transverse pitch H	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
SIMPLEX											
50H-1C	15.875	10.16	9.40	5.08	24.40	15.09	2.42	-	22.20	30.20	1.25
60H-1C	19.050	11.91	12.57	5.94	31.60	18.00	3.25	-	31.80	42.70	1.87
80H-1C	25.400	15.88	15.75	7.92	39.40	24.00	4.00	-	56.70	71.40	3.10
100H-1C	31.750	19.05	18.90	9.53	46.90	30.00	4.80	-	88.50	112.40	4.52
120H-1C	38.100	22.23	25.22	11.10	57.50	35.70	5.60	-	127.00	160.90	6.60
140H-1C	44.450	25.40	25.22	12.70	62.20	41.00	6.40	-	172.40	217.30	8.30
160H-1C	50.800	28.58	31.55	14.27	73.00	47.80	7.20	-	226.80	285.80	10.30
200H-1C	63.500	39.68	37.85	19.85	93.50	60.00	9.50	-	353.80	444.50	19.16
DUPLEX											
60H-2C	19.050	11.91	12.57	5.94	57.70	18.00	3.25	26.11	63.60	84.50	3.71
80H-2C	25.400	15.88	15.75	7.92	72.00	24.00	4.00	32.59	113.40	145.30	6.15
100H-2C	31.750	19.05	18.90	9.53	86.00	30.00	4.80	39.09	177.00	225.90	9.03
120H-2C	38.100	22.23	25.22	11.10	106.40	35.70	5.60	48.87	254.00	322.70	13.13
140H-2C	44.450	25.40	25.22	12.70	114.40	41.00	6.40	52.20	344.80	437.70	16.60
160H-2C	50.800	28.58	31.55	14.27	134.90	47.80	7.20	61.90	453.60	571.60	20.20
200H-2C	63.500	39.68	37.85	19.85	171.80	60.00	9.50	78.31	707.60	894.90	31.11
TRIPLEX											
60H-3C	19.050	11.91	12.57	5.94	83.80	18.00	3.25	26.11	95.40	113.90	5.54
80H-3C	25.400	15.88	15.75	7.92	104.60	24.00	4.00	32.59	170.10	203.50	9.42
100H-3C	31.750	19.05	18.90	9.53	125.10	30.00	4.80	39.09	265.50	314.80	12.96
120H-3C	38.100	22.23	25.22	11.10	155.20	35.70	5.60	48.87	381.00	444.70	19.64
140H-3C	44.450	25.40	25.22	12.70	166.60	41.00	6.40	52.20	517.20	598.40	24.90
160H-3C	50.800	28.58	31.55	14.27	196.80	47.80	7.20	61.90	680.40	787.30	30.10
200H-3C	63.500	39.68	37.85	19.85	250.10	60.00	9.50	78.31	1061.40	1228.20	57.06

Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

Chain Breakers

Model	Range	
	From inch	To inch
CB-101 (Small)	3/8"	3/4"
CB-102 (Large)	3/4"	1.1/4"



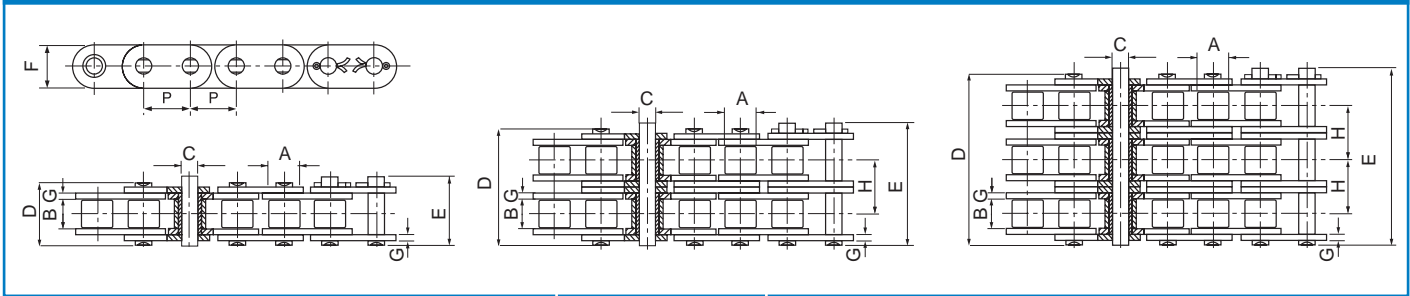
All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Roller Chain

ANSI Straight Side Plate Roller Chain

ANSI B29.1, ISO R606, DIN 8188

ANSI Straight Side Plate Roller Chain



ANSI Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Inner plate height	Plate thickness	Transverse pitch	Minimum tensile strength	Average tensile strength	Weight
	P	A	B	C	D	E	F	G	H	kN	kN	kg/m
SIMPLEX												
C40-1R	12.700	7.95	7.85	3.96	16.60	18.80	12.00	1.50	-	14.10	17.50	0.73
C50-1R	15.875	10.16	9.40	5.08	20.70	23.30	15.09	2.03	-	22.20	29.40	1.23
C60-1R	19.050	11.91	12.57	5.94	25.90	28.30	18.0/18.2	2.42	-	31.80	41.50	1.81/1.83
C80-1R	25.400	15.88	15.75	7.92	32.70	36.50	24.00	3.25	-	56.70	69.40	3.09
C100-1XR	31.750	19.05	18.90	9.53	40.40	44.70	30.00	4.00	-	88.50	109.20	4.56
C120-1XR	38.100	22.23	25.22	11.10	50.30	54.30	35.70	4.80	-	127.00	156.30	6.86
C140-1XR	44.450	25.40	25.22	12.70	54.40	59.00	41.00	5.60	-	172.40	212.00	8.49
C160-1XR	50.800	28.58	31.55	14.27	64.80	69.60	47.80	6.40	-	226.80	278.90	11.50
DUPLEX												
C40-2R	12.700	7.95	7.85	3.96	31.00	33.20	12.00	1.50	14.38	28.20	35.90	1.43
C50-2R	15.875	10.16	9.40	5.08	38.90	41.40	15.09	2.03	18.11	44.40	58.10	2.42
C60-2R	19.050	11.91	12.57	5.94	48.80	51.10	18.0/18.2	2.42	22.78	63.60	82.10	3.58/3.62
C80-2R	25.400	15.88	15.75	7.92	62.70	65.80	24.00	3.25	29.29	113.40	141.80	6.12
C100-2XR	31.750	19.05	18.90	9.53	76.40	80.50	30.00	4.00	35.76	177.00	219.40	9.08
C120-2XR	38.100	22.23	25.22	11.10	95.80	99.70	35.70	4.80	45.44	254.00	314.90	13.60
C140-2XR	44.450	25.40	25.22	12.70	103.30	107.90	41.00	5.60	48.87	344.80	427.50	16.86
C160-2XR	50.800	28.58	31.55	14.27	123.30	128.10	47.80	6.40	58.55	453.60	562.40	22.90
TRIPLEX												
C40-3R	12.700	7.95	7.85	3.96	45.40	47.60	12.00	1.50	14.38	42.30	50.00	2.14
C50-3R	15.875	10.16	9.40	5.08	57.00	59.50	15.09	2.03	18.11	66.60	77.80	3.62
C60-3R	19.050	11.91	12.57	5.94	71.50	73.90	18.0/18.2	2.42	22.78	95.40	111.10	5.36/5.41
C80-3R	25.400	15.88	15.75	7.92	91.70	95.10	24.00	3.25	29.29	170.10	198.40	9.10
C100-3XR	31.750	19.05	18.90	9.53	112.20	116.30	30.00	4.00	35.76	265.50	309.60	13.60
C120-3XR	38.100	22.23	25.22	11.10	141.40	145.20	35.70	4.80	45.44	381.00	437.20	20.43
C140-3XR	44.450	25.40	25.22	12.70	152.20	156.80	41.00	5.60	48.87	517.20	593.30	25.23
C160-3XR	50.800	28.58	31.55	14.27	181.80	186.60	47.80	6.40	58.55	680.40	780.60	34.19

Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

Chain Pullers

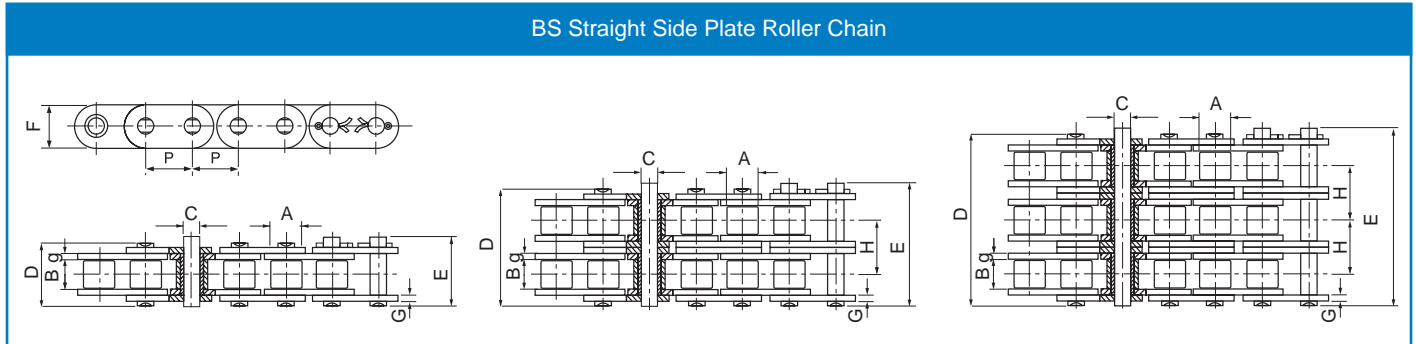
Model	Range	
	From inch	To inch
CB-105 (Small)	1/4"	3/4"
CB-106 (Large)	3/4"	1.1/4"



Roller Chain

BS Straight Side Plate Roller Chain

ANSI B29.1, ISO R606, DIN 8187



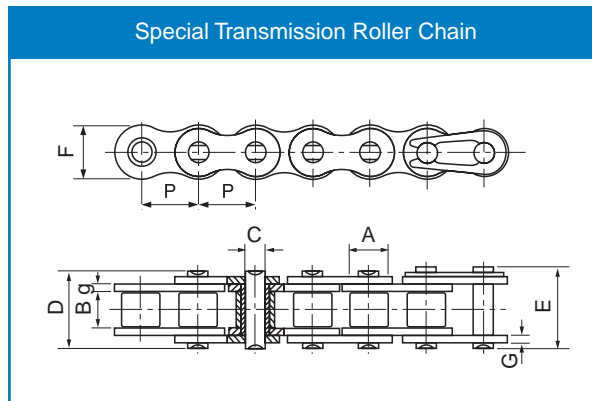
ISO Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Inner plate height	Plate thickness	Transverse pitch	Minimum tensile strength	Average tensile strength	Weight
	P	A	B	C	D	E	F	g/G	H	kN	kN	kg/m
SIMPLEX												
08B-1 GL	12.700	8.51	7.75	4.45	16.70	18.20	11.80	1.60	-	18.00	19.50	0.80
10B-1 GL	15.875	10.16	9.65	5.08	19.50	20.90	14.70	1.70	-	22.40	27.90	1.06
12B-1 GL	19.050	12.07	11.68	5.72	22.50	25.20	16.00	1.85	-	29.00	32.20	1.32
16B-1 GL	25.400	15.88	17.02	8.28	36.10	39.10	21.0/24.0	4.15/3.1	-	60.00	72.80	3.08/3.49
20B-1 GLX	31.750	19.05	19.56	10.19	41.30	45.00	26.40	4.5/3.5	-	95.00	106.70	4.16
24B-1 GLX	38.100	25.40	25.40	14.63	53.40	57.80	33.20	6.0/4.8	-	160.00	178.00	7.47
28B-1 GLX	44.450	27.94	30.99	15.90	65.10	69.50	36.70	7.5/6.0	-	200.00	222.00	9.90
32B-1 GLX	50.800	29.21	30.99	17.81	66.00	71.00	42.00	7.0/6.0	-	250.00	277.50	10.45
DUPLEX												
08B-2 GL	12.700	8.51	7.75	4.45	31.20	32.20	11.80	1.60	13.92	32.00	38.70	1.45
10B-2 GL	15.875	10.16	9.65	5.08	36.10	37.50	14.70	1.70	16.59	44.50	57.80	2.00
12B-2 GL	19.050	12.07	11.68	5.72	42.00	44.70	16.00	1.85	19.46	57.80	66.10	2.62
16B-2 GL	25.400	15.88	17.02	8.28	68.00	71.00	21.0/24.0	4.15/3.1	31.88	106.00	133.00	6.10/6.92
20B-2 GLX	31.750	19.05	19.56	10.19	77.80	81.50	26.40	4.5/3.5	36.45	170.00	211.20	8.23
24B-2 GLX	38.100	25.40	25.40	14.63	101.70	106.20	33.20	6.0/4.8	48.36	280.00	319.20	14.77
28B-2 GLX	44.450	27.94	30.99	15.90	124.60	129.10	36.70	7.5/6.0	59.56	360.00	406.80	19.82
32B-2 GLX	50.800	29.21	30.99	17.81	124.60	129.60	42.00	7.0/6.0	58.55	450.00	508.50	20.94
TRIPLEX												
08B-3 GL	12.700	8.51	7.75	4.45	45.10	46.10	11.80	1.60	13.92	47.50	57.80	2.10
10B-3 GL	15.875	10.16	9.65	5.08	52.70	54.10	14.70	1.70	16.59	66.70	84.50	2.87
12B-3 GL	19.050	12.07	11.68	5.72	61.50	64.20	16.00	1.85	19.46	86.70	101.80	3.89
16B-3 GL	25.400	15.88	17.02	8.28	99.80	102.90	21.0/24.0	4.15/3.1	31.88	160.00	203.70	9.12/10.34
20B-3 GLX	31.750	19.05	19.56	10.19	114.20	117.90	26.40	4.5/3.5	36.45	250.00	290.00	11.34
24B-3 GLX	38.100	25.40	25.40	14.63	150.10	154.60	33.20	6.0/4.8	48.36	425.00	493.00	22.10
28B-3 GLX	44.450	27.94	30.99	15.90	184.20	188.70	36.70	7.5/6.0	59.56	530.00	609.50	29.64
32B-3 GLX	50.800	29.21	30.99	17.81	183.20	188.20	42.00	7.0/6.0	58.55	670.00	770.50	31.27

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Roller Chain

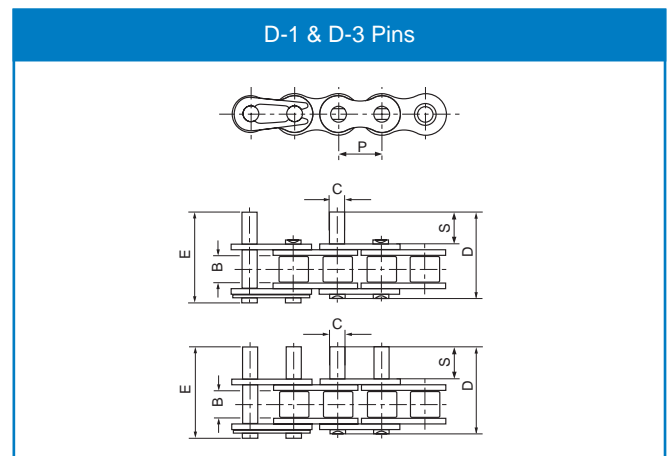
Special Transmission Roller Chain



ISO Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Inner plate height F	Plate thickness g/G	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
	P	A	B	C	D	E					
04BH	6.00	4.00	2.80	1.85	8.40	9.40	5.00	0.90	5.00	5.30	0.14
081	12.70	7.75	3.30	3.66	9.30	12.30	9.90	1.00	8.00	9.40	0.28
084	12.70	7.75	4.88	4.09	14.60	17.60	11.50	1.80	15.60	15.70	0.51
415	12.70	7.77	4.76	3.60	11.00	12.40	9.70	1.00	6.86	7.60	0.32
415H	12.70	7.77	4.76	3.96	13.10	14.50	12.00	1.50	14.40	16.10	0.55
415B/083	12.70	7.75	4.88	4.09	12.90	14.40	10.30	1.30	12.00	14.20	0.44
415BF1	12.70	7.75	4.88	4.09	11.50	13.00	10.30	1.00	9.00	10.60	0.38
423	12.70	8.51	6.40	4.45	15.60	17.10	12.40	1.70	19.60	21.90	0.71
478	12.70	7.80	4.80	4.00	11.60	13.65	10.46	1.25	9.80	12.80	0.39
08BF	12.70	8.51	5.55	4.45	14.60	16.10	11.80	1.60	17.80	19.20	0.66
12BH	19.05	12.07	11.68	5.94	25.20	26.80	16.00	2.42	40.00	44.40	1.45
12BHF1	19.05	12.07	11.68	6.10	25.00	27.20	16.50	2.50	44.00	48.80	1.46
16BF1	25.40	15.88	12.20	8.28	31.40	32.70	21.00	4.15/3.1	60.00	71.40	2.60
16BF2	25.40	15.88	17.02	8.28	38.60	39.80	21.00	4.15	60.00	71.40	3.08
16BF5	25.40	15.88	12.70	8.28	30.80	32.10	20.00	3.5/3.0	50.00	57.50	2.37
16BH	25.40	15.88	17.02	8.90	35.70	38.90	24.10	4.0/3.1	80.00	94.20	3.11
24BH	38.10	25.40	25.40	14.63	58.60	63.40	36.20	7.5/6.0	225.00	250.30	9.00

Extended Pin Chain

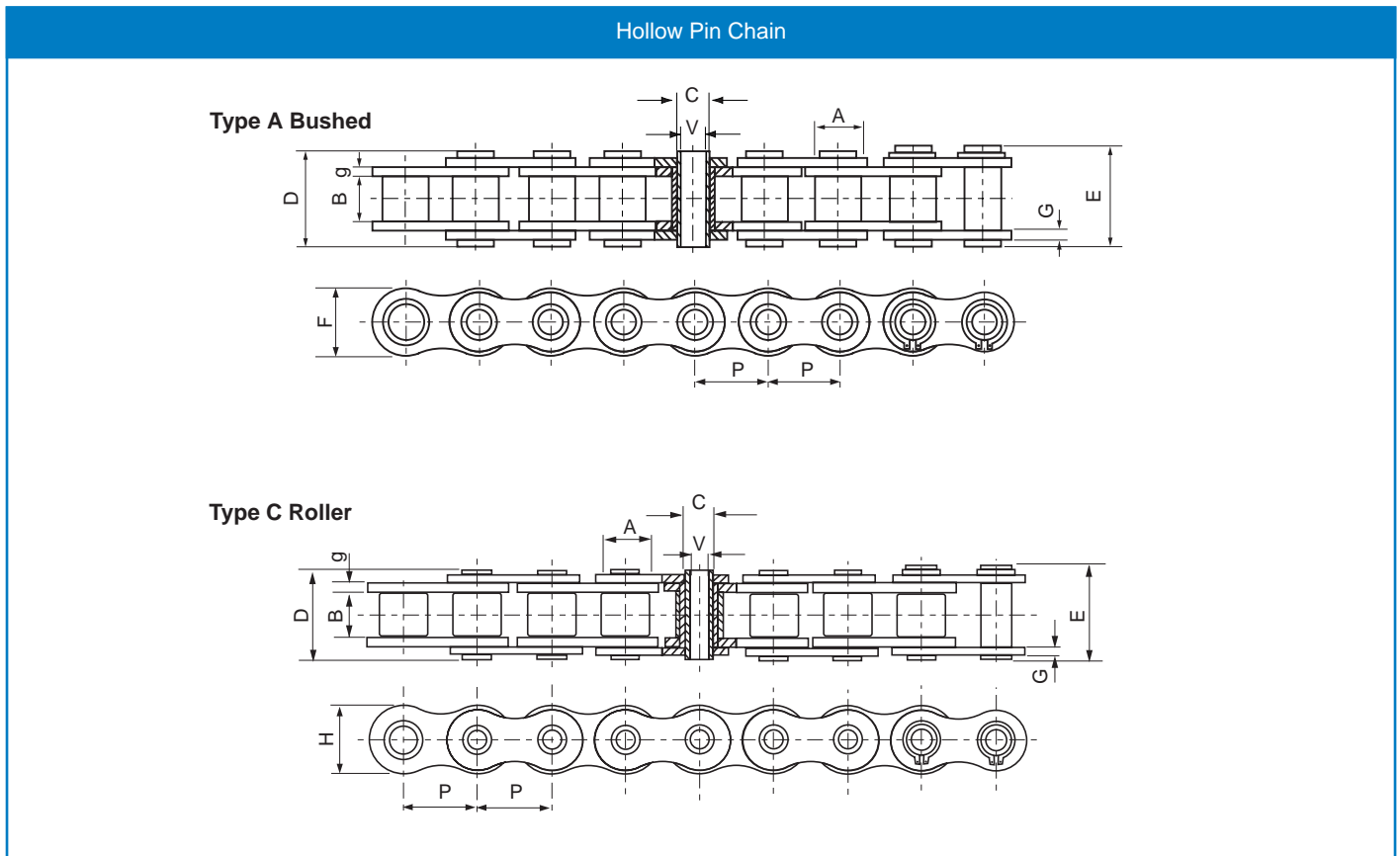
ISO Chain No.	ANSI Chain No.	P	B	C	S	D	E
	35	9.525	4.77	3.58	9.50	20.80	21.60
	40	12.700	7.85	3.96	9.50	25.10	26.20
	50	15.875	9.40	5.08	11.90	31.30	33.10
	60	19.050	12.57	5.94	14.30	38.60	40.60
	80	25.400	15.75	7.92	19.10	50.30	53.30
	100	31.750	18.90	9.53	23.80	61.80	66.10
	120	38.100	25.22	11.10	28.60	76.40	80.40
	140	44.450	25.22	12.70	33.30	84.80	89.40
	160	50.800	31.55	14.27	38.10	99.60	104.40
08B		12.700	7.75	4.45	9.50	25.10	26.60
10B		15.875	9.65	5.08	11.90	30.10	31.50
12B		19.050	11.68	5.72	14.30	35.40	37.10
16B		25.400	17.02	8.28	19.10	53.00	54.30



Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

Roller Chain

Hollow Pin Chain



Chain number	Pitch	Roller/Bush diameter	Width between inner plates	Pin diameter		Pin length		Inner plate height	Plate thickness	Minimum tensile strength	Average tensile strength	Weight	Type form
	P	A	B	C	V	D	E	F	g/G	kN	kN	kg/m	
08BHP(4.0)	12.700	8.51	7.75	6.55	4.00	16.4	17.6	11.80	1.6/1.3	11.10	12.1	0.60	A
08BHP(4.5)	12.700	8.51	7.75	6.55	4.50	16.4	17.6	11.80	1.6/1.3	11.10	12.1	0.56	A
10BHP	15.875	10.16	9.65	5.94	4.04	19.3	20.6	14.70	1.70	17.00	20.8	0.86	C
12BHP	19.050	12.07	11.68	6.50	4.00	21.6	22.8	15.90	1.85	23.60	25.9	1.09	C
40HP	12.700	7.95	7.85	5.63	4.00	16.5	17.6	12.00	1.50	11.00	12.2	0.54	A
50HP	15.875	10.16	9.40	7.03	5.13	20.7	21.9	15.09	2.03	20.00	22.6	0.91	A
60HP	19.050	11.91	12.70	8.31	6.00	25.8	26.8	18.00	2.42	24.00	26.9	1.29	A
60HPF1	19.050	11.91	12.70	8.31	5.01	25.5	26.8	18.00	2.42	28.00	30.9	1.37	A
60HB	19.050	11.91	12.70	7.00	5.01	25.5	26.6	18.00	2.42	20.00	22.4	1.35	C
80HP	25.400	15.88	15.75	11.40	8.05	32.5	33.8	24.00	3.25	50.00	58.3	2.26	A

Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

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Roller Chain

Special Chain - Challenge produce many special chains. The following pages are examples of a few. Contact Challenge for a quote on any special chains or attachments that aren't shown in our catalogue.

Special Chain with "U" Attachments

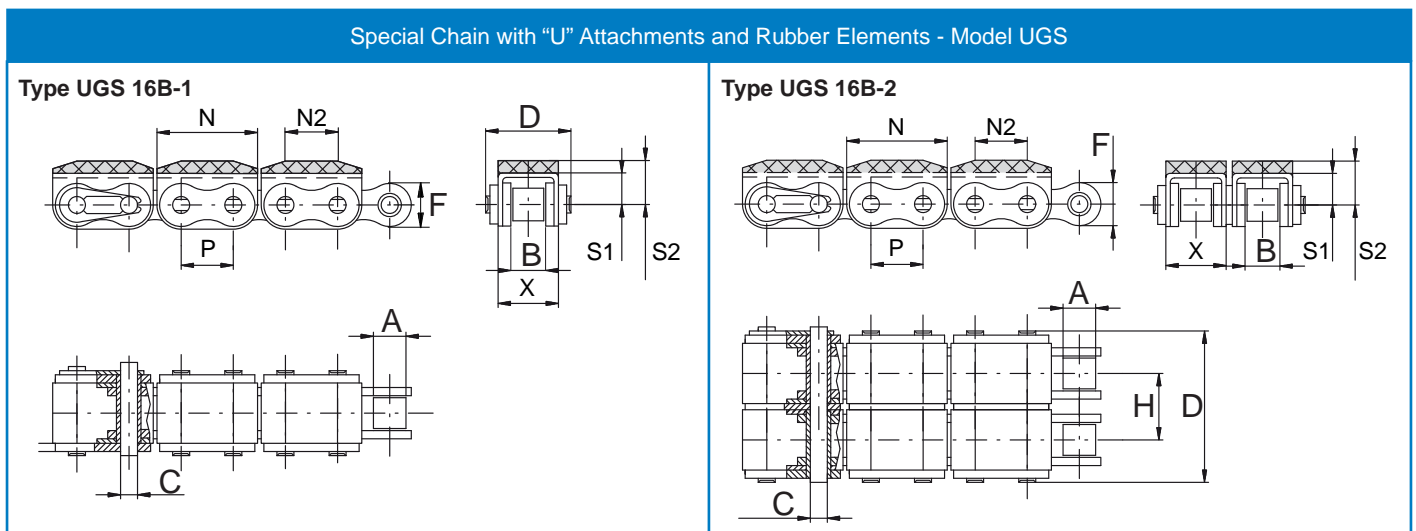
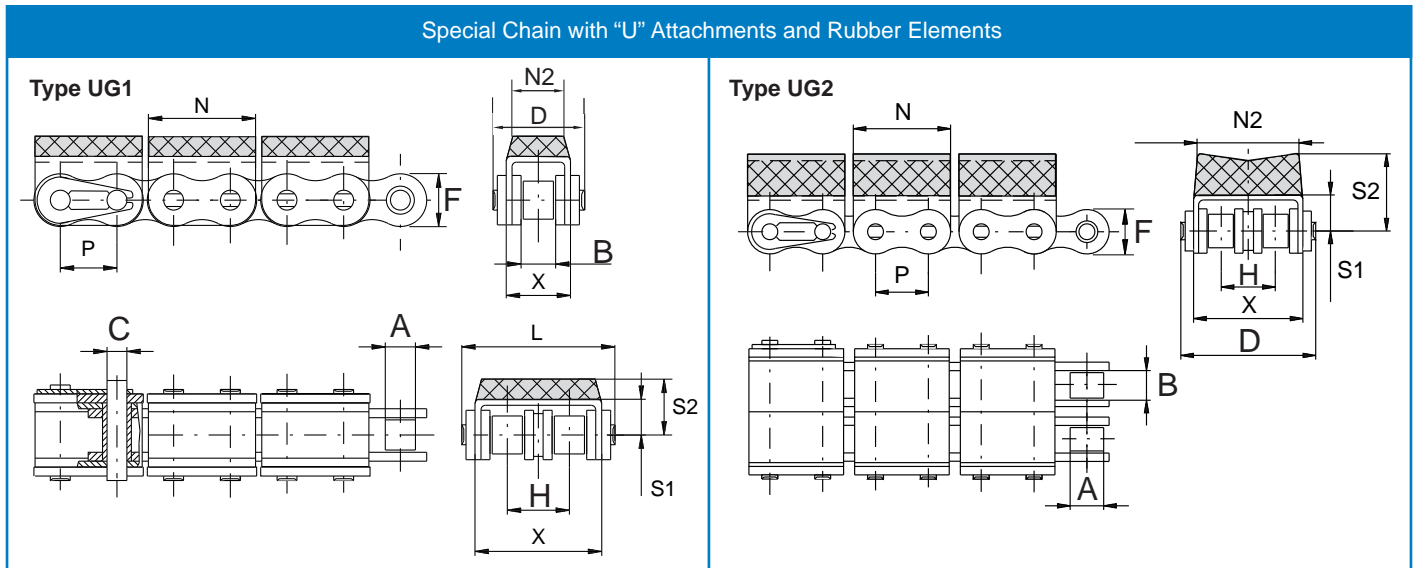
Chain number	Chain Pitch	Roller diameter	Width between inner plates	Pin diameter	Side Plate Height	Pin length	Hole diameter	Hole pitch				Tensile strength kN
	P	A	B	C	F	D	O	P ₁	X	N	S ₁	
08B-1/U1	12.700	8.51	7.75	4.45	11.8	20.4	-	-	14.4	24.0	8.5	14.60
08B-1/U2	12.700	8.51	7.75	4.45	11.8	20.4	5	-	14.4	24.0	8.5	14.60
08B-1/U3	12.700	8.51	7.75	4.45	11.8	20.4	5	12.7	14.4	24.0	8.5	14.60
08B-2/U1	12.700	8.51	7.75	4.45	11.8	34.4	-	-	28.4	24.0	8.1	28.60
08B-2/U2	12.700	8.51	7.75	4.45	11.8	34.4	4	14.0	28.4	24.0	8.1	28.60
08B-2/U3	12.700	8.51	7.75	4.45	11.8	34.4	4	12.7	28.4	24.0	8.1	28.60
10B-1/U1	15.875	10.16	9.65	5.08	14.7	22.8	-	-	16.4	30.0	10.6	18.20
10B-1/U2	15.875	10.16	9.65	5.08	14.7	22.8	5	-	16.4	30.0	10.6	18.20
10B-1/U3	15.875	10.16	9.65	5.08	14.7	22.8	5	15.8	16.4	30.0	10.6	18.20
10B-2/U1	15.875	10.16	9.65	5.08	14.7	39.0	-	-	33.3	30.0	10.6	36.30
10B-2/U2	15.875	10.16	9.65	5.08	14.7	39.0	5	16.6	33.3	30.0	10.6	36.30
10B-2/U3	15.875	10.16	9.65	5.08	14.7	39.0	5	15.8	33.3	30.0	10.6	36.30
12B-1/U1	19.050	12.07	11.68	5.72	16.0	26.5	-	-	19.4	35.0	13.0	23.60
12B-1/U2	19.050	12.07	11.68	5.72	16.0	26.5	5	-	19.4	35.0	13.0	23.60
12B-1/U3	19.050	12.07	11.68	5.72	16.0	26.5	5	19.0	19.4	35.0	13.0	23.60
12B-2/U1	19.050	12.07	11.68	5.72	16.0	46.5	-	-	39.4	35.0	12.0	46.60
12B-2/U2	19.050	12.07	11.68	5.72	16.0	46.5	5	19.5	39.4	35.0	12.0	46.60
12B-2/U3	19.050	12.07	11.68	5.72	16.0	46.5	5	19.0	39.4	35.0	12.0	46.60
16B-1/U1	25.400	15.88	17.02	8.28	21.0	39.2	-	-	29.4	49.0	15.4	58.00
16B-1/U2	25.400	15.88	17.02	8.28	21.0	39.2	5	-	29.4	49.0	15.4	58.00
16B-1/U3	25.400	15.88	17.02	8.28	21.0	39.2	5	25.4	29.4	49.0	15.4	58.00
16B-2/U1	25.400	15.88	17.02	8.28	21.0	73.0	-	-	29.4	49.0	15.4	98.00
16B-2/U2	25.400	15.88	17.02	8.28	21.0	73.0	5	-	29.4	49.0	15.4	98.00
16B-2/U3	25.400	15.88	17.02	8.28	21.0	73.0	5	25.4	29.4	49.0	15.4	98.00

Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

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Roller Chain

Special Chain with "U" Attachments and Rubber Elements



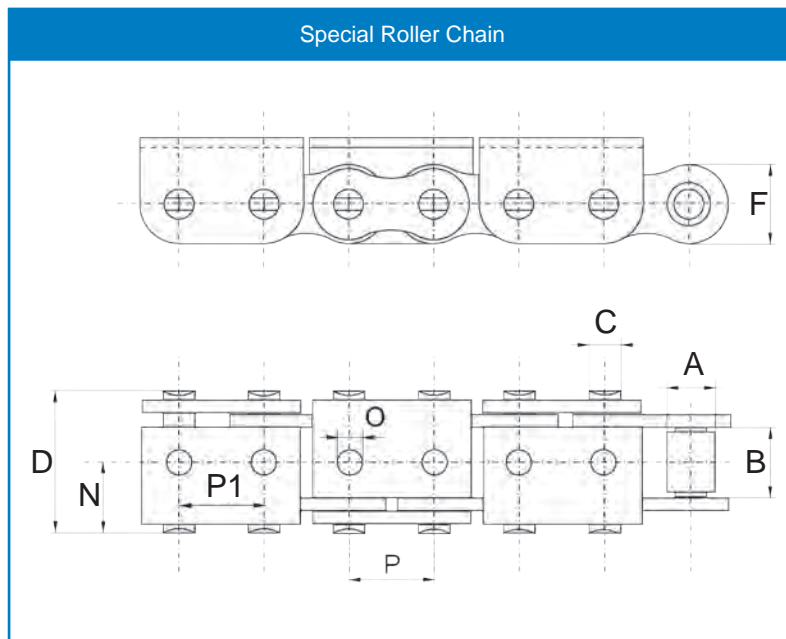
Chain Number	Chain Pitch	Roller diameter	Width between inner plates	Pin diameter	Side Plate Height	Pin length	"U" profile	"U" profile	"U" profile	"U" Profile height	"U" Profile height	Transverse pitch	Min. Tensile strength
	P	A	B	C	F	D	X	N	N2	S1	S2	H	kN
08B-1/UG1	12.700	8.51	7.75	4.45	11.80	20.40	14.4	24	10.0	8.50	13.00	-	14.60
08B-2/UG1	12.700	8.51	7.75	4.45	11.80	34.40	28.4	24	20.0	8.10	12.50	13.92	28.60
10B-1/UG1	15.875	10.16	9.65	5.08	14.70	22.80	16.4	30	13.5	10.60	17.00	-	18.20
10B-2/UG1	15.875	10.16	9.65	5.08	14.70	39.00	33.3	30	30.0	10.60	15.50	16.59	36.30
12B-1/UG1	19.050	12.07	11.68	5.72	16.00	26.50	19.4	35	12.0	13.00	21.00	-	23.60
12B-2/UG1	19.050	12.07	11.68	5.72	16.00	46.50	39.4	35	36.0	12.00	20.00	19.46	46.60
16B-1/UG1	25.400	15.88	17.02	8.28	21.00	39.20	29.4	49	22.0	15.40	21.40	-	58.00
16B-2/UG1	25.400	15.88	17.02	8.28	21.00	73.00	29.4	49	22.0	15.40	21.40	31.88	98.00
12B-1/UG2	19.050	12.07	11.68	5.72	16.00	26.50	19.4	35	13.5	13.00	21.00	-	23.60
12B-2/UG2	19.050	12.07	11.68	5.72	16.00	46.50	39.4	35	36.0	12.00	28.00	19.46	46.60
16B-1/UGS	25.400	15.88	17.02	8.28	21.00	39.20	29.4	49	25.4	15.40	21.40	-	58.00
16B-2/UGS	25.400	17.02	15.88	8.28	21.00	73.00	29.4	49	25.4	15.40	21.40	31.88	98.00

Standard boxed lengths are 5 metres or 10 feet.
Each box contains one CL. Special lengths available.

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Roller Chain

Special Roller Chain

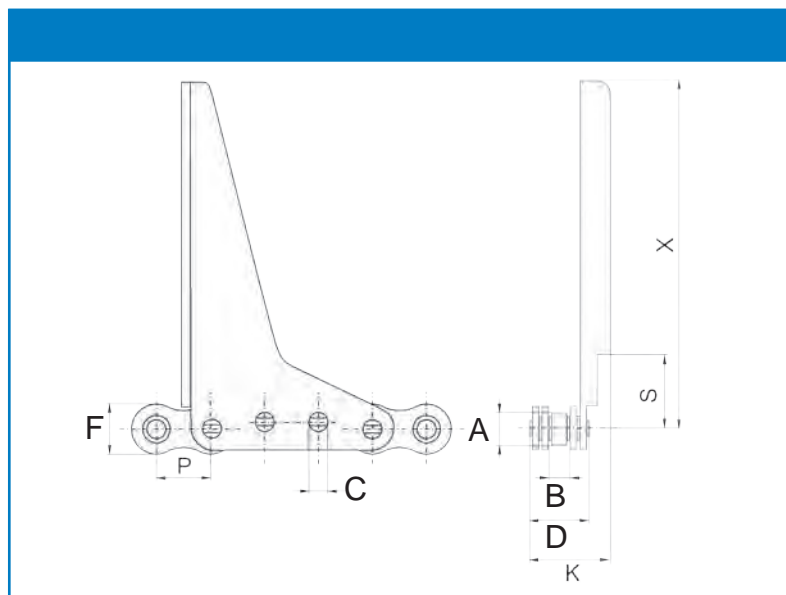


Chain number	Pitch	Width between inner plates	Roller diameter	Pin diameter	Pin length	Side plate height	Hole diameter	Hole pitch	Tensile strength	
	P	B	A	C	D	F	O	P1	N	
16B-1/P	25.4	17.02	15.88	8.28	36.1	21.0	6.5	25.4	15.9	58

Special Chain with Driver

Note: Various configurations of this chain are available.

Please provide dimensions when enquiring.



Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length	Side plate height	Attachment width	Attachment height	Tensile strength	
	P	A	B	C	L	F	K	X	S	
08 X3/Z1	12.70	7.75	4.88	4.09	13.00	9.90	16.00	85.00	17.50	82.60

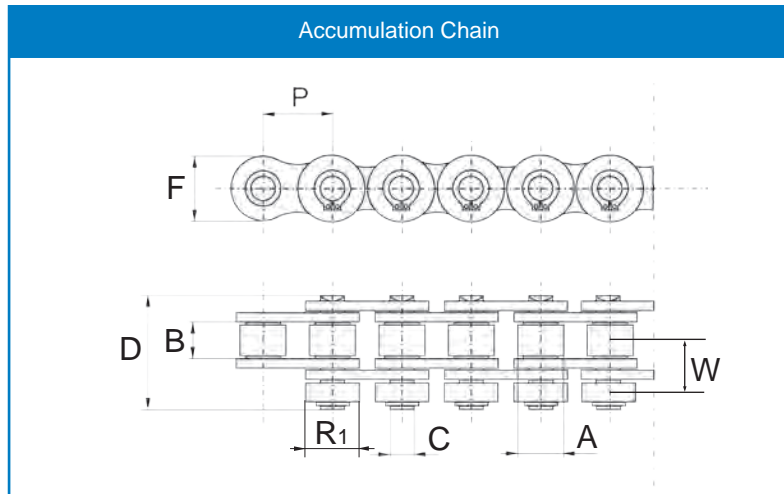
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Roller Chain

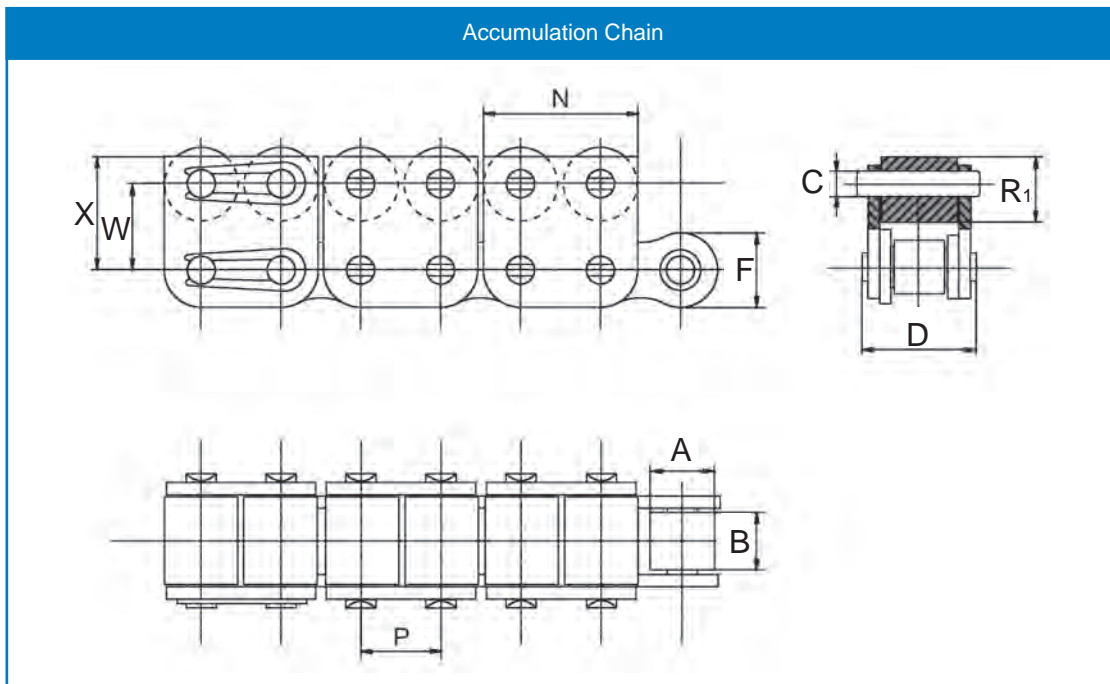
Accumulation Chain

Note: all accumulation chain is available with various roller dimensions as well as different pitches to those quoted below.

To avoid confusion please always supply the chain and accumulation roller dimensions.



Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length	Roller diameter	Roller pitch	Tensile strength
	P	A	B	C	D	R_1	W	kN
10B-1/R	15.875	10.16	9.65	5.08	25.4	14.2	15.1	22.7

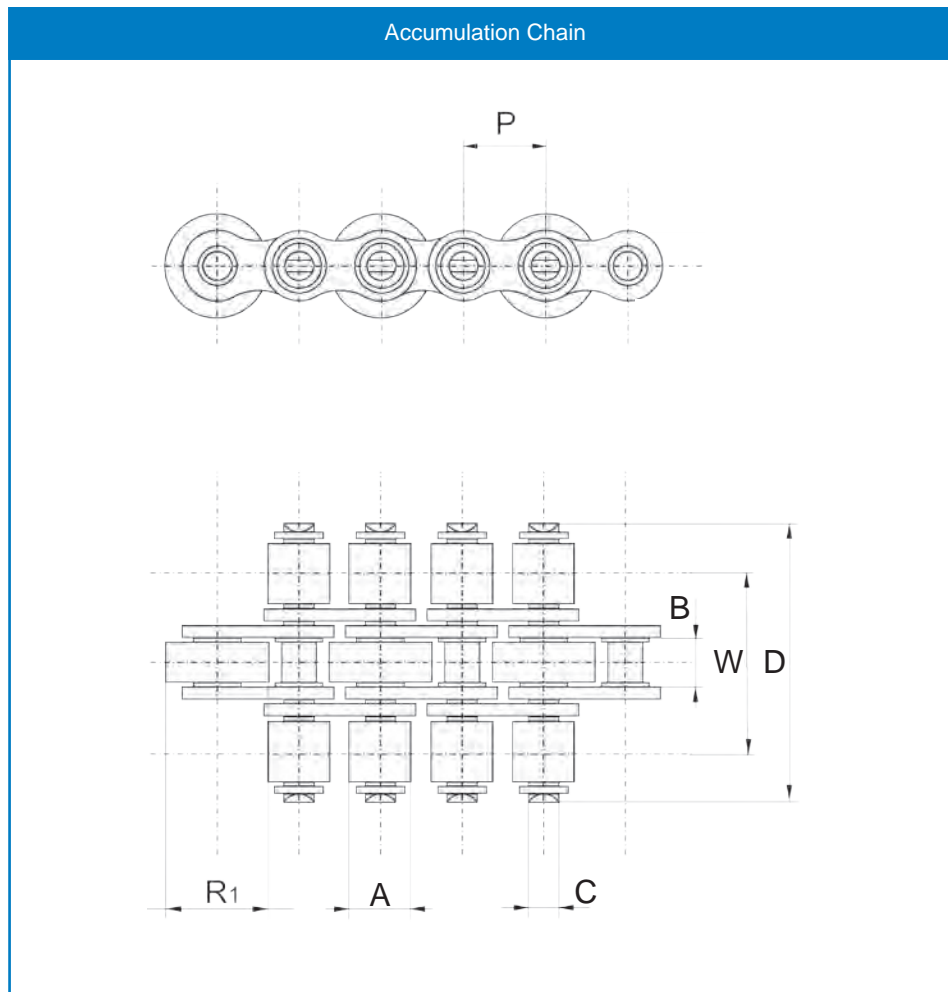


Chain number	Pitch	Roller diameter	Width between inner plates	Roller diameter	Pin diameter	Pin length	Inner plate height	Tensile strength			
	P	A	B	R_1	C	D	F	W	X	N	kN
10B/R1	15.875	10.16	10.16	13.0	5.08	19.6	14.2	15.8	20.6	28.4	22.7

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Roller Chain

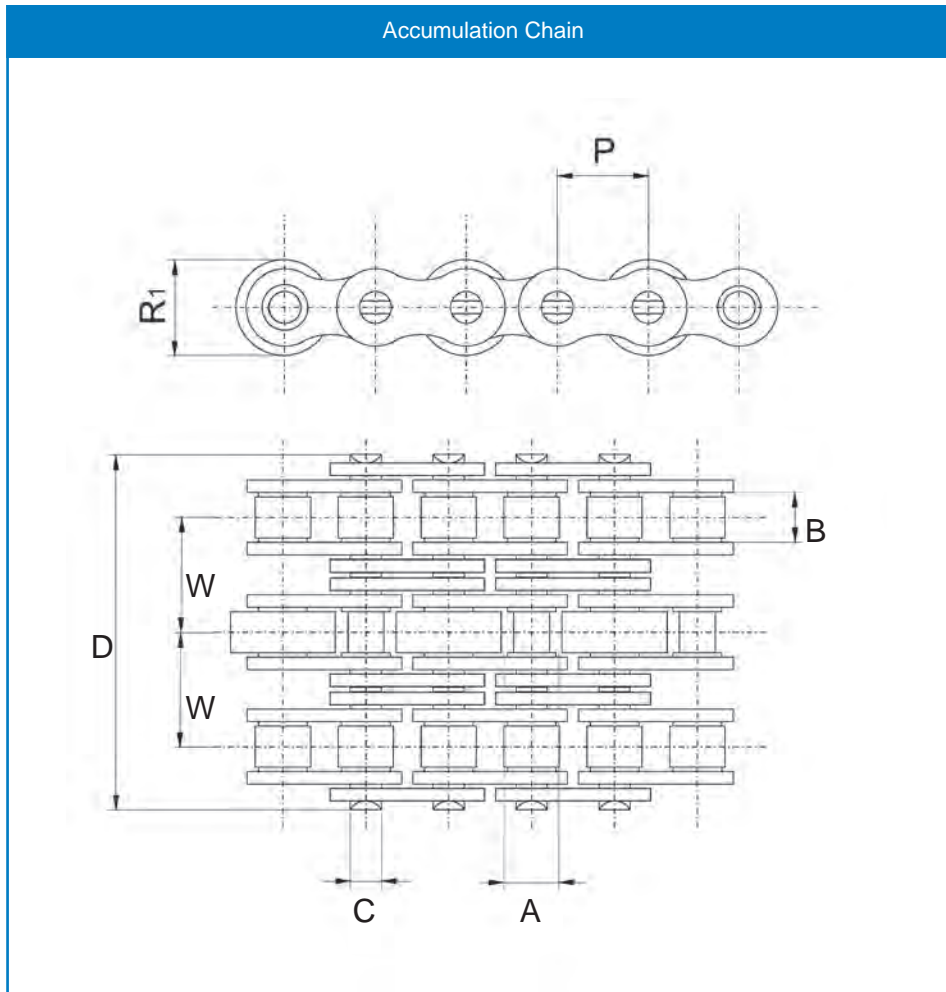
Accumulation Chain



Chain number	Pitch P	Roller diameter. A	Width between inner plates B	Pin diameter C	Pin length D	Roller diameter R1	Roller pitch W	Tensile strength kN	Weight kg/m
08B-1/S6	12.70	8.51	7.75	4.47	27	16.0	19.1	18.2	1.17
08B-1/S7	12.70	8.51	7.75	4.47	33	16.0	22.0	18.2	1.38
12B-1/S1	19.05	12.07	11.68	5.72	48	26.0	31.5	29.5	3.50
12B-1/S2	19.05	12.07	11.68	5.72	43	26.0	29.2	29.5	3.20
12B-1/S2a	19.05	12.07	11.68	5.72	43	24.0	29.2	29.5	2.80
12B-1/S3	19.05	12.07	11.68	5.72	40	28.0	27.0	29.5	3.40
16B-1/S5	25.40	15.88	17.02	8.28	65	38.5	44.9	58.0	7.00

Roller Chain

Accumulation Chain

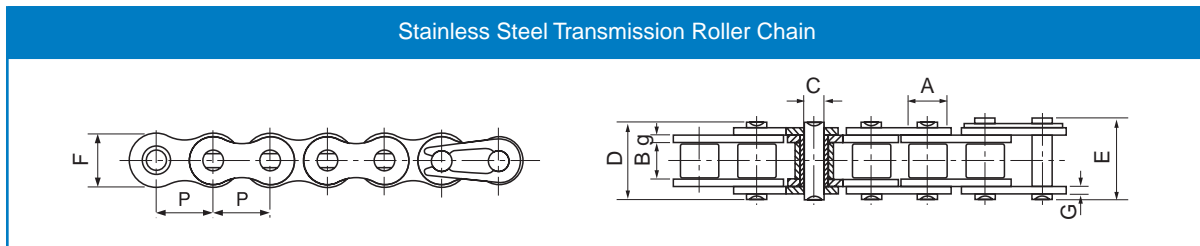


Chain number	Pitch	Roller diameter	Width between inner plate	Pin diameter	Pin length	Roller diameter	Roller pitch	Tensile strength
	P	A	B	C	D	R ₁	W	kN
12B-3/S2a	19.05	12.07	11.68	5.72	61.7	24.0	19.46	88.5
12B-3/S2	19.05	12.07	11.68	5.72	61.7	26.0	19.46	88.5

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Roller Chain

Stainless Steel Transmission Roller Chain (Grade 304)



ISO Chain number	ANSI Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Inner plate height F	Plate thickness g/G	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
		P	A	B	C	D	E					
	*35SS	9.525	5.08	4.77	3.58	12.40	13.17	9.00	1.30	5.50	6.60	0.33
	40SS	12.700	7.95	7.85	3.96	16.60	17.80	12.00	1.50	9.60	10.80	0.63
	50SS	15.875	10.16	9.40	5.08	20.70	22.20	15.09	2.03	15.20	17.20	1.03
	60SS	19.050	11.91	12.57	5.94	25.90	27.70	18.00	2.42	21.70	26.40	1.51
	80SS	25.400	15.88	15.75	7.92	32.70	35.00	24.00	3.25	38.90	46.60	2.62
	100SS	31.750	19.05	18.90	9.53	40.40	44.70	30.00	4.00	60.00	70.20	3.94
04BSS		6.000	4.00	2.80	1.85	6.80	7.80	5.00	0.60	2.00	2.40	0.11
05BSS		8.000	5.00	3.00	2.31	8.20	8.90	7.10	0.80	3.50	4.10	0.20
#06BSS		9.525	6.35	5.72	3.28	13.15	14.10	8.20	1.30	6.20	6.80	0.41
08BSS		12.700	8.51	7.75	4.45	16.70	18.20	11.80	1.60	12.00	14.30	0.70
10BSS		15.875	10.16	9.65	5.08	19.50	20.90	14.70	1.70	14.50	17.20	0.94
12BSS		19.050	12.07	11.68	5.72	22.50	24.20	16.00	1.85	18.50	20.90	1.16
16BSS		25.400	15.88	17.02	8.28	36.10	37.40	21.00	4.15/3.1	40.00	47.60	2.73
20BSS		31.750	19.05	19.56	10.19	41.30	45.00	26.40	4.5/3.5	59.00	69.60	3.73

* Bush chain: **A** in the table indicates the external diameter of the bush

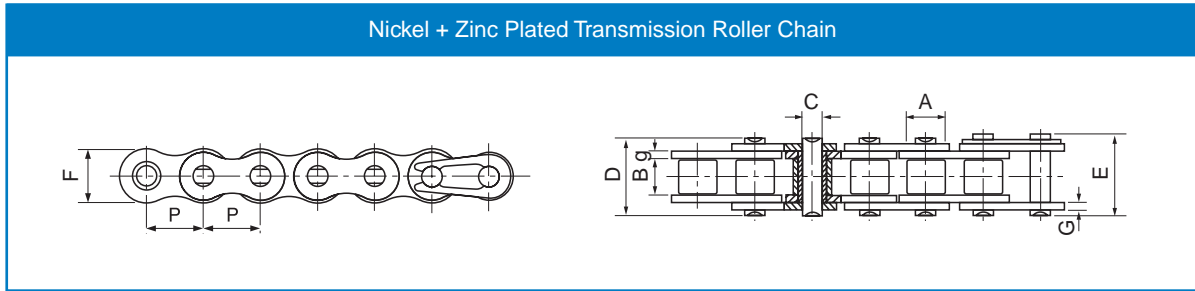
Straight side plate chain

Duplex and Triplex chains are also available.

Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

Roller Chain

Nickel Plated Transmission Roller Chain



ISO Chain number	ANSI Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Inner plate height F	Plate thickness g/G	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
		P	A	B	C	D	E					
	*25NP	6.350	3.30	3.18	2.31	7.90	8.40	6.00	0.80	3.50	4.60	0.15
	*35NP	9.525	5.08	4.77	3.58	12.40	13.17	9.00	1.30	7.90	10.80	0.33
	41NP	12.700	7.77	6.25	3.58	13.75	15.00	9.91	1.30	6.67	12.60	0.41
	40NP	12.700	7.95	7.85	3.96	16.60	17.80	12.00	1.50	14.10	17.50	0.62
	50NP	15.875	10.16	9.40	5.08	20.70	22.20	15.09	2.03	22.20	29.40	1.02
	60NP	19.050	11.91	12.57	5.94	25.90	27.70	18.00	2.42	31.80	41.50	1.50
	80NP	25.400	15.88	15.75	7.92	32.70	35.00	24.00	3.25	56.70	69.40	2.60
	100NP	31.750	19.05	18.90	9.53	40.40	44.70	30.00	4.00	88.50	109.20	3.91
04BNP		6.000	4.00	2.80	1.85	6.80	7.80	5.00	0.60	3.00	3.20	0.11
05BNP		8.000	5.00	3.00	2.31	8.20	8.90	7.10	0.80	5.00	5.90	0.20
#06BNP		9.525	6.35	5.72	3.28	13.15	14.10	8.20	1.30	9.00	10.40	0.41
08BNP		12.700	8.51	7.75	4.45	16.70	18.20	11.80	1.60	18.00	19.40	0.69
10BNP		15.875	10.16	9.65	5.08	19.50	20.90	14.70	1.70	22.40	27.50	0.93
12BNP		19.050	12.07	11.68	5.72	22.50	24.20	16.00	1.85	29.00	32.20	1.15
16BNP		25.400	15.88	17.02	8.28	36.10	37.40	21.00	4.15/3.1	60.00	72.80	2.71
20BNP		31.750	19.05	19.56	10.19	41.30	45.00	26.40	4.5/3.5	95.00	106.70	3.70

Duplex and Triplex chains are also available.

Zinc Plated Transmission Roller Chain

ISO Chain number	ANSI Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Inner plate height F	Plate thickness g/G	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
		P	A	B	C	D	E					
	*25ZP	6.350	3.30	3.18	2.31	7.90	8.40	6.00	0.80	3.50	4.60	0.14
	*35ZP	9.525	5.08	4.77	3.58	12.40	13.17	9.00	1.30	7.90	10.80	0.33
	41ZP	12.700	7.77	6.25	3.58	13.75	15.00	9.91	1.30	6.67	12.60	0.41
	40ZP	12.700	7.95	7.85	3.96	16.60	17.80	12.00	1.50	14.10	17.50	0.62
	50ZP	15.875	10.16	9.40	5.08	20.70	22.20	15.09	2.03	22.20	29.40	1.02
	60ZP	19.050	11.91	12.57	5.94	25.90	27.70	18.00	2.42	31.80	41.50	1.50
	80ZP	25.400	15.88	15.75	7.92	32.70	35.00	24.00	3.25	56.70	69.40	2.60
	100ZP	31.750	19.05	18.90	9.53	40.40	44.70	30.00	4.00	88.50	109.20	3.91
04BZP		6.000	4.00	2.80	1.85	6.80	7.80	5.00	0.60	3.00	3.20	0.11
05BZP		8.000	5.00	3.00	2.31	8.20	8.90	7.10	0.80	5.00	5.90	0.20
#06BZP		9.525	6.35	5.72	3.28	13.15	14.10	8.20	1.30	9.00	10.40	0.41
08BZP		12.700	8.51	7.75	4.45	16.70	18.20	11.80	1.60	18.00	19.40	0.69
10BZP		15.875	10.16	9.65	5.08	19.50	20.90	14.70	1.70	22.40	27.50	0.93
12BZP		19.050	12.07	11.68	5.72	22.50	24.20	16.00	1.85	29.00	32.20	1.15
16BZP		25.400	15.88	17.02	8.28	36.10	37.40	21.00	4.15/3.1	60.00	72.80	2.71
20BZP		31.750	19.05	19.56	10.19	41.30	45.00	26.40	4.5/3.5	95.00	106.70	3.70

* Bush chain: A in the table indicates the external diameter of the bush

Straight side plate chain

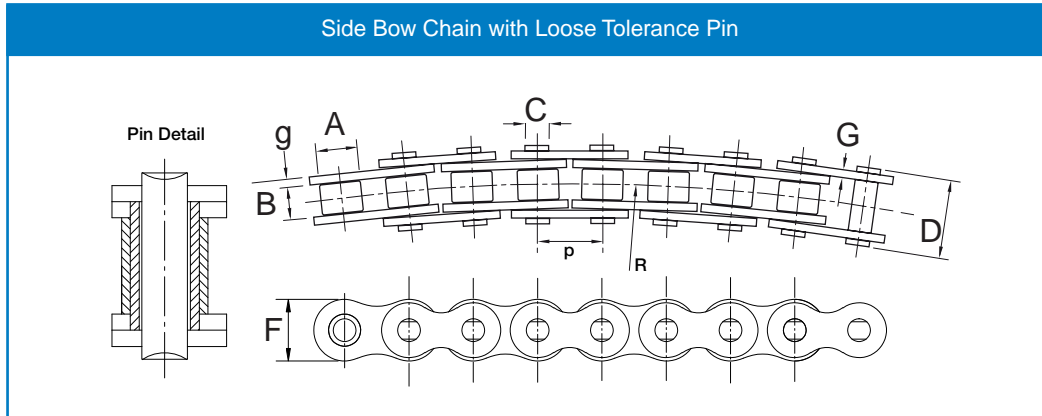
Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

Duplex and Triplex chains are also available.

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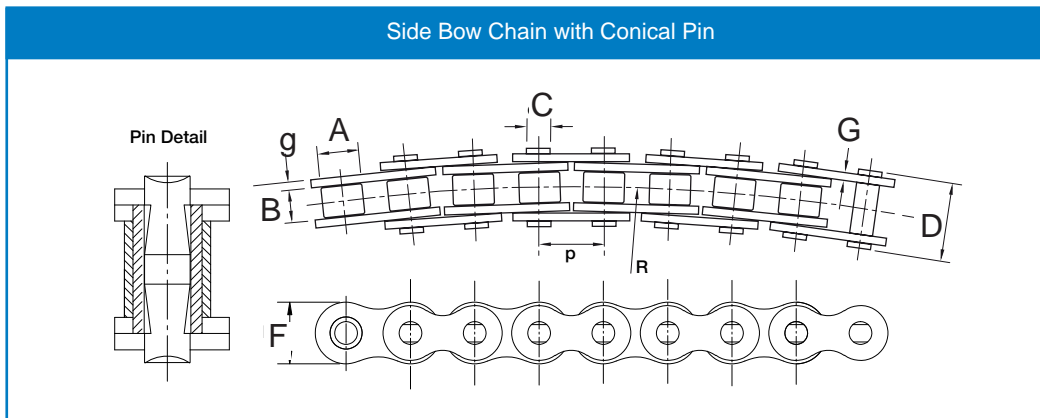
Roller Chain

Side Bow Chain with Loose Tolerance Pin



Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length	Inner plate height	Plate thickness	Min. side bow radius	Average tensile strength	Weight
	P	A	B	C	D	F	g/G	R	kN	kg/m
40SB	12.700	7.95	7.85	3.45	16.9	11.7	1.50	350	11.00	0.80
50SB	15.875	10.16	9.40	4.37	20.7	14.9	2.03	400	20.00	1.09
60SB	19.050	11.91	12.57	5.34	26.6	18.0	2.42	500	28.00	1.54
63SB	19.050	11.91	12.68	5.08	28.8	17.2	2.42 / 2.03	350	25.00	1.40
80SB	25.400	15.88	15.75	7.19	34.0	24.0	3.25	715	39.00	2.60
08BSB	12.700	8.51	7.75	3.97	17.4	11.8	1.50	400	11.20	0.70
08BSBF1	12.700	8.51	7.75	3.97	16.3	11.8	1.60 / 1.20	400	11.00	0.65
10BSB	15.875	10.16	9.65	4.50	20.1	14.7	1.70	400	18.70	0.93
12BSB	19.050	12.07	11.68	5.12	23.1	16.0	1.85	500	21.00	1.16
16BSB	25.400	15.88	17.22	7.90	36.5	21.0	3.70 - 3.00	500	53.50	2.53

Side Bow Chain with Conical Pin



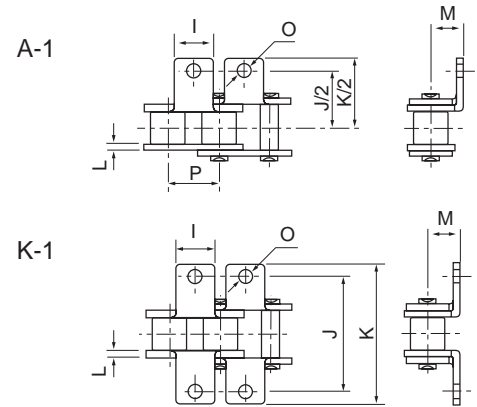
Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length	Inner plate height	Plate thickness	Min. side bow radius	Average tensile strength	Weight
	P	A	B	C	D	F	g/G	R	kN	kg/m
40SB	12.700	7.95	7.85	3.98	16.9	11.7	1.50	350	11.00	0.80
50SB	15.875	10.16	9.40	5.08	20.7	14.9	2.03	400	20.00	1.09
60SB	19.050	11.91	12.57	5.94	26.6	18.0	2.42	500	28.00	1.54
80SB	25.400	15.88	15.75	7.92	34.0	24.0	3.25	711	39.00	2.60
08BSB	12.700	8.51	7.75	4.45	17.4	11.8	1.50	400	11.20	0.70
08BSBF1	12.700	8.51	7.75	4.45	16.3	11.8	1.60 - 1.20	400	11.00	0.65
10BSB	15.875	10.16	9.65	5.08	20.1	14.7	1.70	400	18.70	0.93
12BSB	19.050	12.07	11.68	5.72	23.1	16.0	1.85	500	21.00	1.16
16BSB	25.400	15.88	17.22	8.28	36.5	21.0	3.70 - 3.00	500	53.50	2.53
C2050SB	31.750	10.16	9.40	5.08	21.3	15.0	2.03	800	20.50	0.84

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Roller Chain Attachments

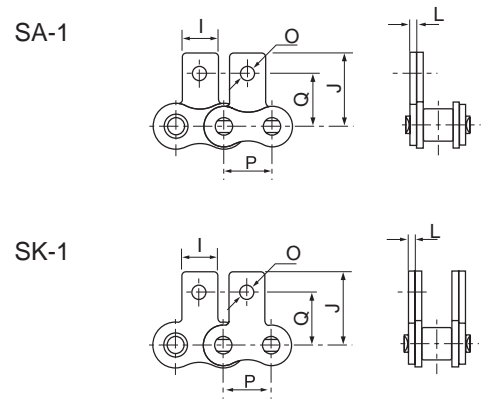
A-1 & K-1 Attachments

ISO No.	ANSI No.	P	I	J	K	L	M	O
	40	12.700	9.50	25.40	35.20	1.50	7.90	3.40
	50	15.875	12.70	31.75	46.20	2.03	10.30	5.50
	60	19.050	15.90	38.10	55.60	2.42	11.90	5.50
	80	25.400	19.10	50.80	64.80	3.25	15.90	6.80
	100	31.750	25.40	63.50	87.30	4.00	19.80	9.20
	120	38.100	28.60	76.20	108.50	4.80	23.00	9.80
	140	44.450	34.90	88.90	123.00	5.60	28.60	11.40
	160	50.800	38.10	101.60	142.80	6.40	31.80	13.10
*06B		9.525	8.00	19.04	27.00	1.30	6.50	3.50
08B		12.700	9.50	25.40	36.40	1.60	8.90	4.50
10B		15.875	14.30	31.75	44.60	1.70	10.31	5.30
12B		19.050	16.00	38.10	52.40	1.85	13.46	6.40
16B		25.400	19.10	50.80	72.60	3.10	15.88	6.40



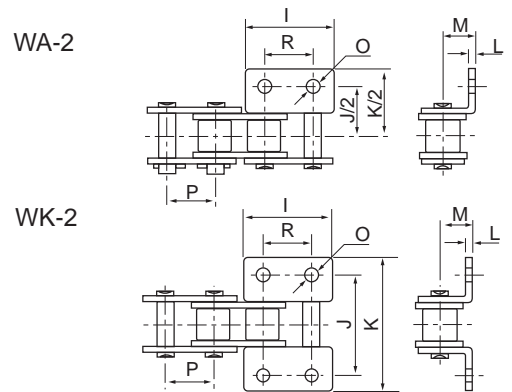
SA-1 & SK-1 Attachments

ISO No.	ANSI No.	P	I	J	Q	L	O
	40	12.700	9.50	19.05	12.70	1.50	3.40
	50	15.875	12.70	25.25	15.90	2.03	5.50
	60	19.050	15.90	29.33	18.30	2.42	5.50
	80	25.400	19.10	34.70	24.60	3.25	6.80
	100	31.750	25.40	43.30	31.80	4.00	9.20
	120	38.100	28.60	51.60	36.50	4.80	9.80
	140	44.450	34.90	62.00	44.50	5.60	11.40
	160	50.800	38.10	69.85	50.80	6.40	13.10
*06B		9.525	8.00	13.50	9.52	1.30	3.50
08B		12.700	9.50	18.90	13.35	1.60	4.30
10B		15.875	14.30	22.95	16.50	1.70	5.30
12B		19.050	16.00	28.60	21.45	1.85	6.40
16B		25.400	19.10	34.00	23.15	3.10	6.40



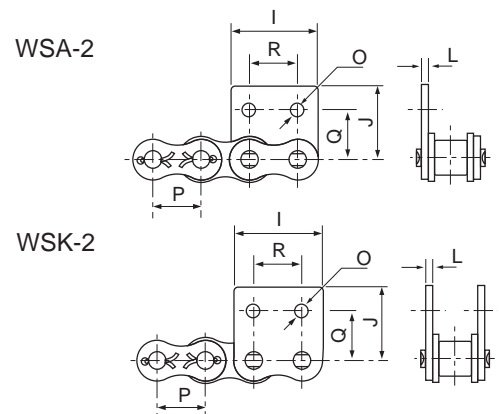
WA-2 & WK-2 Attachments

ISO No.	ANSI No.	P	I	R	J	K	L	M	O
	40	12.700	23.00	12.70	25.40	35.60	1.50	7.90	3.40
	50	15.875	28.80	15.88	31.80	46.80	2.03	10.30	5.50
	60	19.050	34.65	19.05	38.10	56.40	2.42	11.90	5.50
	80	25.400	45.90	25.40	50.80	73.20	3.25	15.90	6.80
	100	31.750	57.65	31.75	63.50	89.80	4.00	19.80	9.20
08B		12.700	24.00	12.70	25.40	36.40	1.60	8.90	4.30
10B		15.875	29.58	15.88	31.80	44.60	1.70	10.31	5.30
12B		19.050	34.05	19.05	38.10	52.40	1.85	13.46	6.40
16B		25.400	46.40	25.40	50.80	72.60	3.10	15.88	6.40



WSA-2 & WSK-2 Attachments

ISO No.	ANSI No.	P	I	R	J	Q	L	O
	40	12.700	23.00	12.70	17.40	12.70	1.50	3.40
	50	15.875	28.80	15.88	23.05	15.90	2.03	5.50
	60	19.050	34.65	19.05	26.86	18.30	2.42	5.50
	80	25.400	45.90	25.40	35.45	24.60	3.25	6.80
	100	31.750	57.65	31.75	44.00	31.80	4.00	9.20
08B		12.700	23.30	12.70	18.90	13.35	1.60	4.30
10B		15.875	29.58	15.88	22.95	16.50	1.70	5.30
12B		19.050	34.05	19.05	28.60	21.45	1.85	6.40
16B		25.400	46.40	25.40	34.00	23.15	3.10	6.40

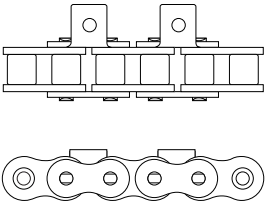


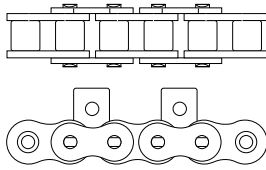
* Straight side plates

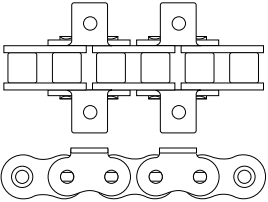
All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

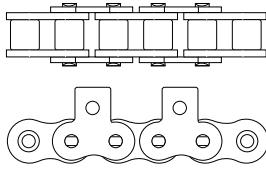
Roller Chain Attachments

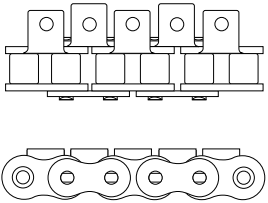
Attachment Chain Designation

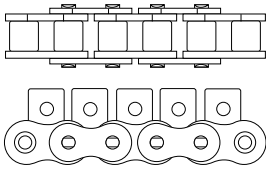
1. Standard Chains with bent attachment A1 - one hole - one side - every outer	
	Chain Reference
	06BA-2
	08BA-2
	10BA-2
	12BA-2
16BA-2	

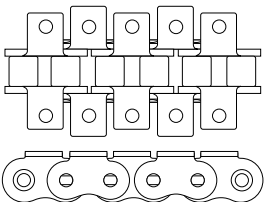
7. Standard Chains with straight attachment SA1 - one hole - one side - every outer	
	Chain Reference
	06BSA-2
	08BSA-2
	10BSA-2
	12BSA-2
16BSA-2	

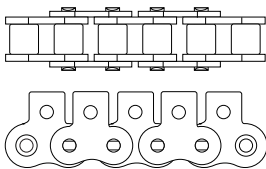
2. Standard Chains with bent attachment K1 - one hole - both sides - every outer	
	Chain Reference
	06BK-2
	08BK-2
	10BK-2
	12BK-2
16BK-2	

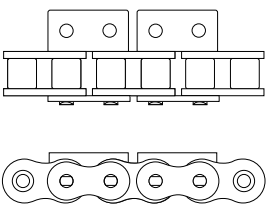
8. Standard Chains with straight attachment SK1 - one hole - both sides - every outer	
	Chain Reference
	06BSK-2
	08BSK-2
	10BSK-2
	12BSK-2
16BSK-2	

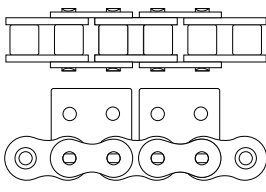
3. Standard Chains with bent attachment A1 - one hole - one side - every outer and inner	
	Chain Reference
	06BA-1
	08BA-1
	10BA-1
	12BA-1
16BA-1	

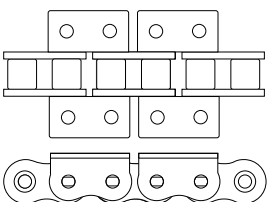
9. Standard Chains with straight attachment SA1 - one hole - one side - every outer and inner	
	Chain Reference
	06BSA-1
	08BSA-1
	10BSA-1
	12BSA-1
16BSA-1	

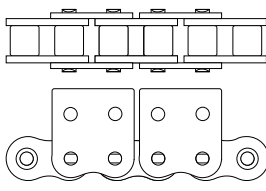
4. Standard Chains with bent attachment K1 - one hole - both sides - every outer and inner	
	Chain Reference
	06BK-1
	08BK-1
	10BK-1
	12BK-1
16BK-1	

10. Standard Chains with straight attachment SK1 - one hole - both sides - every outer and inner	
	Chain Reference
	06BSK-1
	08BSK-1
	10BSK-1
	12BSK-1
16BSK-1	

5. Standard Chains with bent attachment WA2 - two holes - one side - every outer	
	Chain Reference
	06BWA-2
	08BWA-2
	10BWA-2
	12BWA-2
16BWA-2	

11. Standard Chains with straight attachment WSA2 - two holes - one side - every outer	
	Chain Reference
	06BWSA-2
	08BWSA-2
	10BWSA-2
	12BWSA-2
16BWSA-2	

6. Standard Chains with bent attachment WK2 - two holes - both sides - every outer	
	Chain Reference
	06BWK-2
	08BWK-2
	10BWK-2
	12BWK-2
16BWK-2	

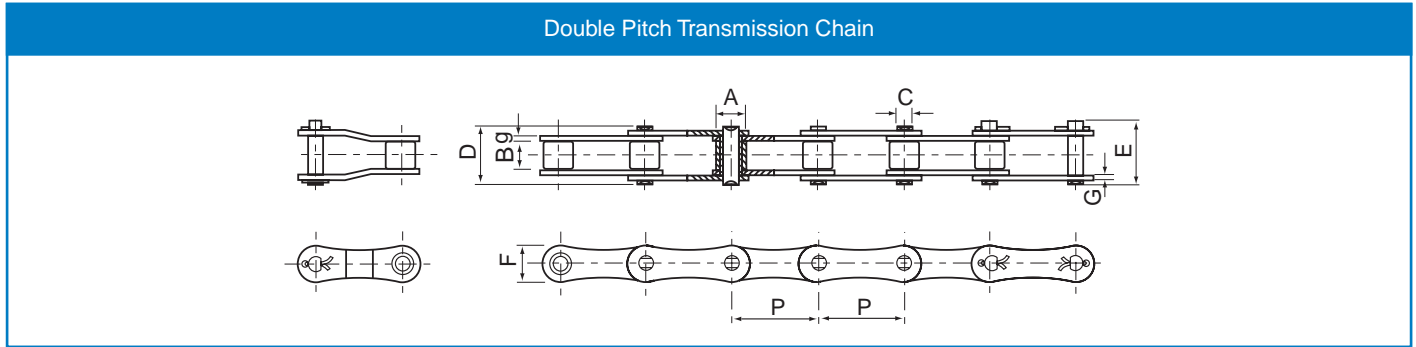
12. Standard Chains with straight attachment WSK2 - two holes - both sides - every outer	
	Chain Reference
	06BSK-2
	08BSK-2
	10BSK-2
	12BSK-2
16BSK-1	

Standard boxed lengths are 5 metres or 10 feet.
Special lengths available.

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Double Pitch Chain

Double Pitch Transmission Chain

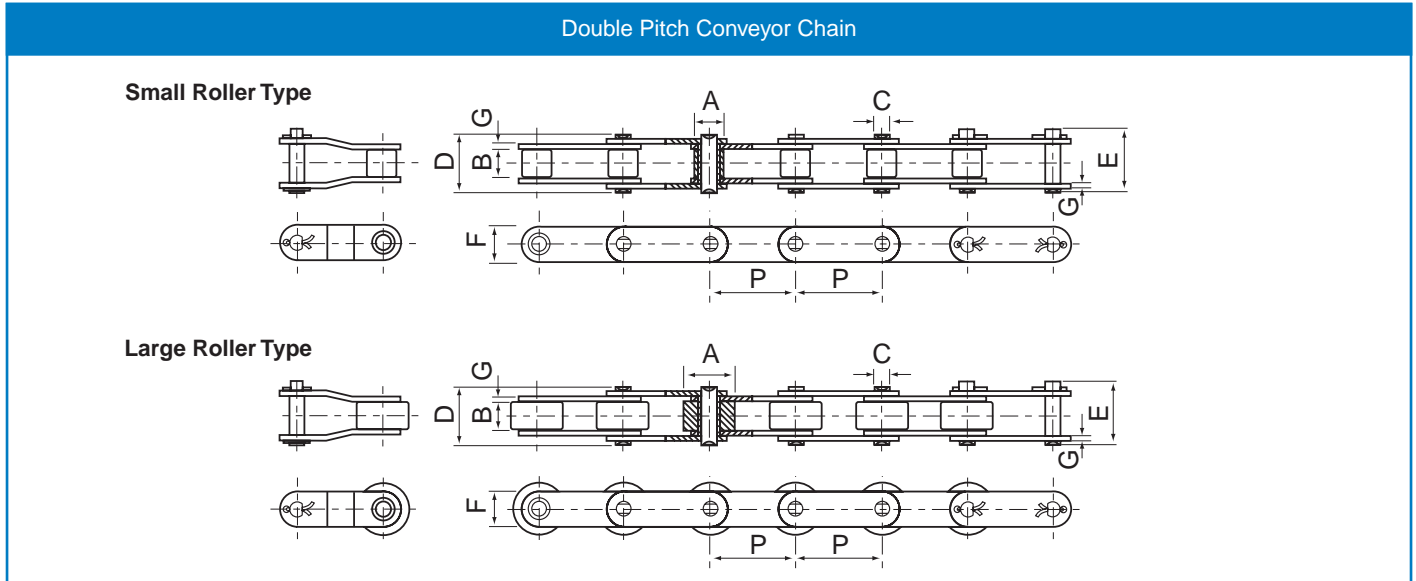


ISO Chain number	ANSI Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Inner plate height	Plate thickness g/G	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
		P	A	B	C	D	E	F				
	A2040	25.40	7.95	7.85	3.96	16.60	17.80	12.00	1.50	14.10	16.70	0.42
208B		25.40	8.51	7.75	4.45	16.70	18.20	11.80	1.60	18.00	19.40	0.45
	A2050	31.75	10.16	9.40	5.08	20.70	22.20	15.00	2.03	22.20	28.10	0.73
210B		31.75	10.16	9.65	5.08	19.50	20.90	14.70	1.70	22.40	27.50	0.65
	A2060	38.10	11.91	12.57	5.94	25.90	27.70	18.00	2.42	31.80	36.80	1.02
212B		38.10	12.07	11.68	5.72	22.50	25.20	16.00	1.85	29.00	32.20	0.76
	A2080	50.80	15.88	15.75	7.92	32.70	36.50	24.00	3.25	56.70	65.70	1.70
216AH		50.80	15.88	15.75	7.92	36.20	39.40	24.00	4.00	56.70	70.00	2.17
216B		50.80	15.88	17.02	8.28	36.10	39.10	21.00	4.15/3.1	60.00	72.80	1.75
	A2100	63.50	19.05	18.90	9.53	40.40	44.70	30.00	4.00	88.50	102.60	2.55
220B		63.50	19.05	19.56	10.19	41.30	45.00	26.40	4.5/3.5	95.00	106.70	2.62
	A2120	76.20	22.23	25.22	11.10	50.30	54.30	35.70	4.80	127.00	147.30	4.06
224B		76.20	25.40	25.40	14.63	53.40	57.80	33.20	6.0/4.8	160.00	178.00	4.70
228B		88.90	27.94	30.99	15.90	65.10	69.50	36.70	7.5/6.0	200.00	222.00	6.23
232B		101.60	29.21	30.99	17.81	66.00	71.00	42.00	7.0/6.0	250.00	277.50	6.72

Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

Double Pitch Chain

Double Pitch Conveyor Chain



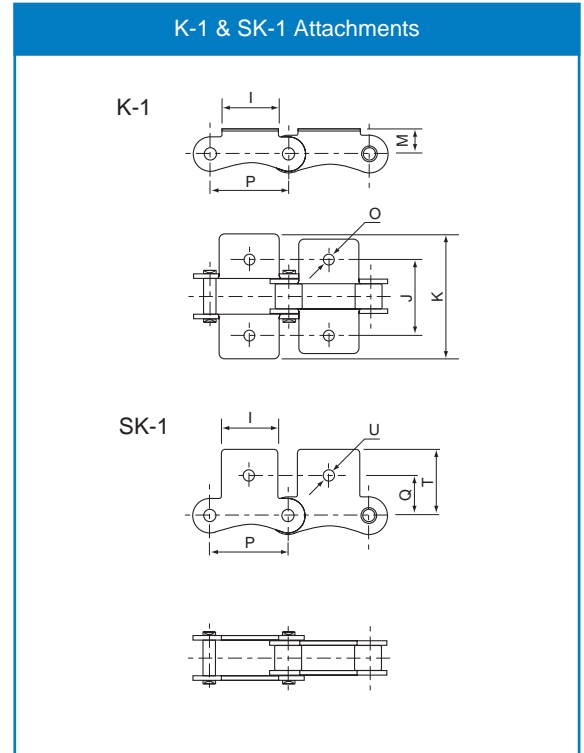
ISO Chain number	ANSI Chain number	Pitch P	Roller diameter A	Width between inner plates		Pin length		Side plate height F	Plate thickness G	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
				B	C	D	E					
	C2040	25.40	7.95	7.85	3.96	16.60	17.80	12.00	1.50	14.10	16.70	0.50
	C2042		15.88									
C208B C208BL	C2040H	25.40	7.95	7.85	3.96	18.80	19.90	12.00	2.03	14.10	17.20	0.65
			8.51									
			15.88									0.89
	C2050	31.75	10.16	9.40	5.08	20.70	22.20	15.00	2.03	22.20	28.10	0.78
	C2052		19.05									1.27
	C2060	38.10	11.91	12.57	5.94	25.90	27.70	18.00	2.42	31.80	36.80	1.12
	C2062		22.23									
	C2060H	38.10	11.91	12.57	5.94	29.20	31.60	18.00	3.25	31.80	41.60	1.44
	C2062H		22.23									
	C2080	50.80	15.88	15.75	7.92	32.70	36.50	24.00	3.25	56.70	65.70	2.08
	C2082		28.58									
	C2080H	50.80	15.88	15.75	7.92	36.20	39.40	24.40	4.00	56.70	70.00	2.54
	C2082H		28.58									
	C2100	63.50	19.05	18.90	9.53	40.40	44.70	30.00	4.00	88.50	102.60	3.01
	C2102		39.67									
	C2100H	63.50	19.05	18.90	9.53	43.60	46.90	30.00	4.80	88.50	112.40	3.56
	C2102H		39.67									
	C2120	76.20	22.23	25.22	11.10	50.30	54.30	35.70	4.80	127.00	147.30	4.66
	C2122		44.45									
	C2120H	76.20	22.23	25.22	11.10	53.50	57.50	35.70	5.60	127.00	160.90	5.26
	C2122H		44.45									
	C2160	101.60	28.58	31.75	14.27	64.80	69.60	47.80	6.40	226.80	278.90	8.23
	C2162		57.15									
	C2160H	101.60	28.58	31.75	14.27	68.20	73.00	47.80	7.20	226.80	285.80	9.06
	C2162H		57.15									

Standard boxed lengths are 5 metres or 10 feet. Each box contains one CL. Special lengths available.

Double Pitch Attachments

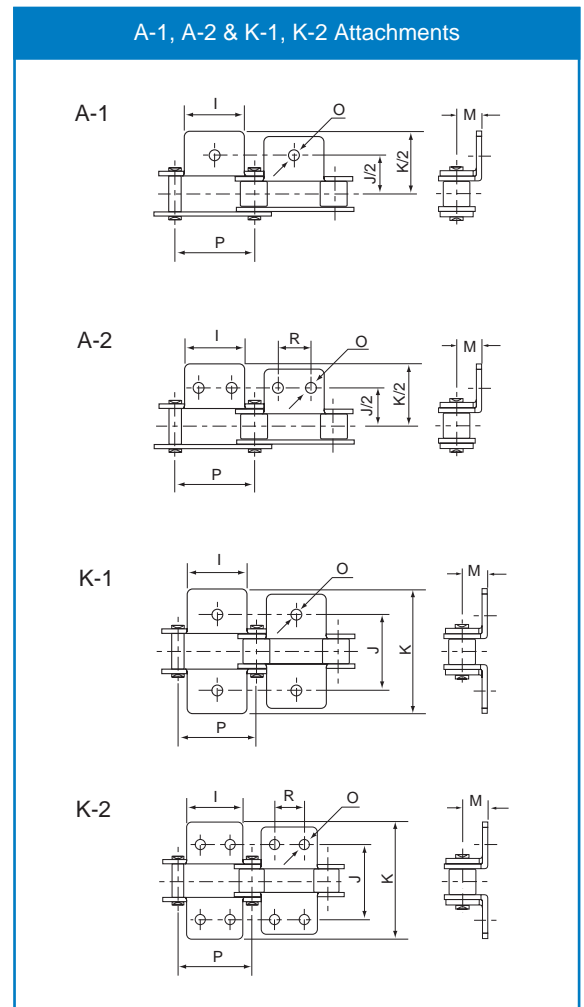
K-1 & SK-1 Attachments

ANSI Chain number	P	I	J	K	M	O	Q	T	U
A2040	25.40	19.1	25.4	39.6	9.1	3.4	11.1	20.5	5.5
A2050	31.75	23.8	31.8	49.0	11.1	5.5	14.3	25.0	6.6
A2060	38.10	28.6	42.9	67.8	14.7	5.5	17.5	32.9	9.2
A2080	50.80	38.1	55.6	87.8	19.1	6.8	22.2	43.5	11.0
A2100	63.50	47.6	66.6	107.5	23.4	9.2	28.6	50.4	13.0
A2120	76.20	57.2	79.3	127.5	27.8	11.0			



A-1, A-2 & K-1, K-2 Attachments

ISO Chain number	ANSI Chain number	P	I	R	J	K	M	O
	C2040 C2042	25.40	19.10	9.50	25.40	39.60	9.10	3.40
C208B C208BL		25.40	23.20	12.70	25.40	39.60	9.10	4.50
	C2050 C2052	31.75	23.80	11.90	31.80	49.00	11.10	5.50
	C2060 C2062	38.10	28.60	14.30	42.90	67.80	14.70	5.50
	C2060H C2062H	38.10	28.60	14.30	42.90	67.80	14.70	5.50
	C2080 C2082	50.80	38.10	19.10	55.60	87.80	19.10	6.80
	C2080H C2082H	50.80	38.10	19.10	55.60	87.80	19.10	6.80
	C2100 C2102	63.50	47.60	23.80	66.60	107.50	23.40	9.20
	C2100H C2102H	63.50	47.60	23.80	66.60	107.50	23.40	9.20
	C2120 C2122	76.20	57.20	28.60	79.30	121.40	27.80	11.00
	C2120H C2122H	76.20	57.20	28.60	79.30	121.40	27.80	11.00
	C2160 C2162	101.60	76.20	38.10	104.70	151.60	36.50	13.10
	C2160H C2162H	101.60	76.20	38.10	104.70	151.60	36.50	13.10

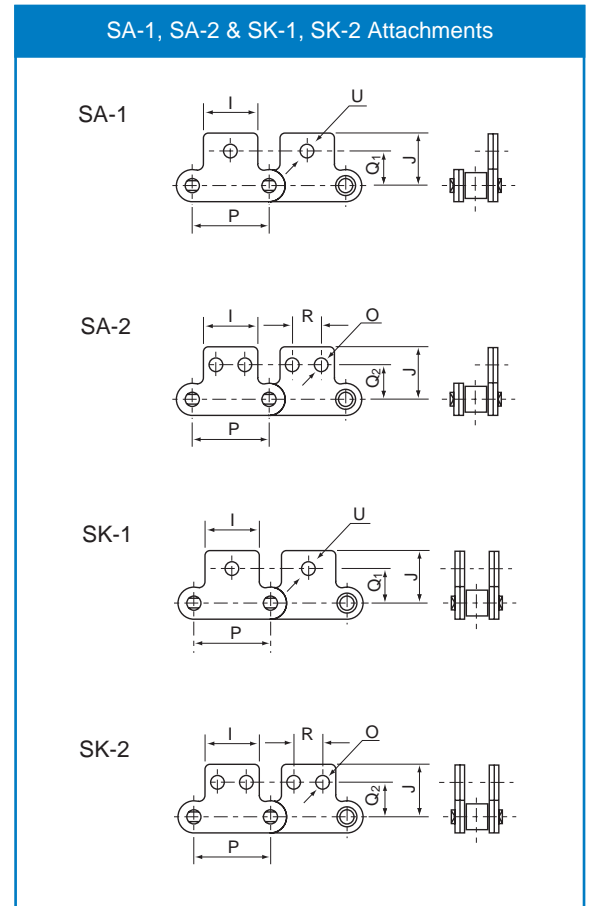


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Double Pitch Attachments

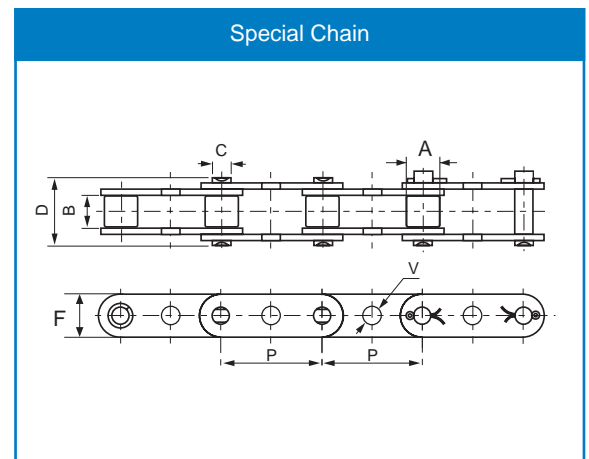
SA-1, SA-2 & SK-1, SK-2 Attachments

ISO Chain number	ANSI Chain number	P	I	R	Q ₁	Q ₂	J	O	U
	C2040 C2042	25.40	19.10	9.50	11.10	13.50	20.50	3.40	5.50
C208B C208BL		25.40	23.20	12.70	11.10	13.50	20.50	4.50	5.50
	C2050 C2052	31.75	23.80	11.90	14.30	15.90	25.00	5.50	6.60
	C2060 C2062	38.10	28.60	14.30	17.50	19.10	32.90	5.50	9.20
	C2060H C2062H	38.10	28.60	14.30	17.50	19.10	32.90	5.50	9.20
	C2080 C2082	50.80	38.10	19.10	22.20	25.40	43.50	6.60	11.00
	C2080H C2082H	50.80	38.10	19.10	22.20	25.40	43.50	6.60	11.00
	C2100 C2102	63.50	47.60	23.80	28.60	31.80	50.40	8.40	13.00
	C2100H C2102H	63.50	47.60	23.80	28.60	31.80	50.40	8.40	13.00



Special Chain (Attachment Holes in Side Plate)

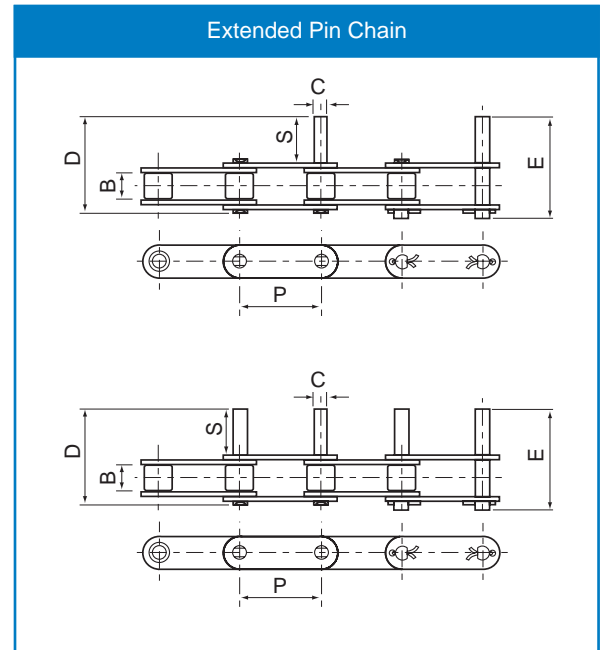
ANSI Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length	Side plate height	Side plate hole diameter
	P	A	B	C	D	F	V
C2040 C2042	25.40	7.95 15.88	7.85	3.96	16.60	12.00	4.10
C2050 C2052	31.75	10.16 19.05	9.40	5.08	20.70	15.00	5.10
C2060 C2062	38.10	11.91 22.23	12.57	5.94	25.90	18.00	6.10
C2060H C2062H	38.10	11.91 22.23	12.57	5.94	29.20	18.00	6.10
C2080 C2082	50.80	15.88 28.58	15.75	7.92	32.70	24.00	8.10
C2080H C2082H	50.80	15.88 28.58	15.75	7.92	36.20	24.00	8.10
C2100 C2102	63.50	19.05 39.67	18.90	9.53	40.40	30.00	10.10
C2100H C2102H	63.50	19.05 39.67	18.90	9.53	43.60	30.00	10.10



Double Pitch Chain

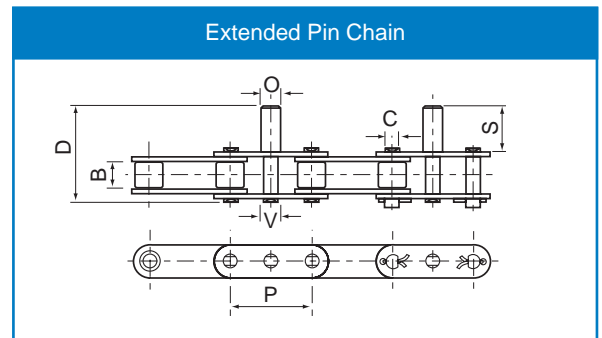
Extended Pin Chain

ANSI Chain number	Pitch					
	P	B	C	S	D	E
C2040 C2042	25.40	7.85	3.96	9.50	25.10	26.20
C2050 C2052	31.75	9.40	5.08	11.90	31.30	33.10
C2060 C2062	38.10	12.57	5.94	14.30	38.60	40.60
C2060H C2062H	38.10	12.57	5.94	14.30	42.00	43.80
C2080 C2082	50.80	15.75	7.92	19.10	50.30	53.30
C2080H C2082H	50.80	15.75	7.92	19.10	53.50	55.00
C2100 C2102	63.50	18.90	9.53	23.80	61.80	66.10
C2100H C2102H	63.50	18.90	9.53	23.80	65.00	68.30
C2120H C2122H	76.20	25.22	11.10	28.60	79.60	83.60
C2160H C2162H	101.60	31.75	14.27	38.10	103.00	107.80



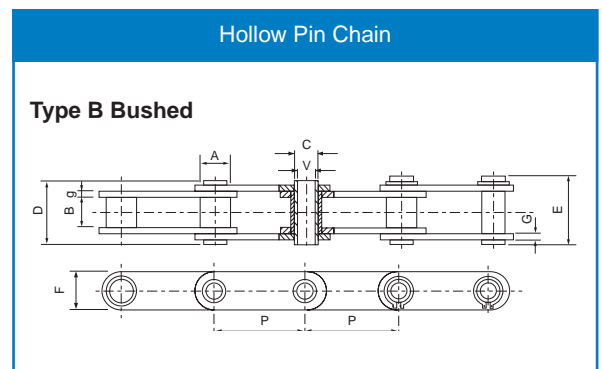
Extended Pin Chain

Chain number	Pitch						
	P	B	C	V	O	S	D
C2060H	38.10	12.57	5.94	5.94	8.00	25.00	53.00
C2060H	38.10	12.57	5.94	8.08	10.00	35.00	63.00
C2060H	38.10	12.57	5.94	5.94	12.70	41.20	69.20
C2060H	38.10	12.57	5.94	5.94	14.28	41.20	69.20

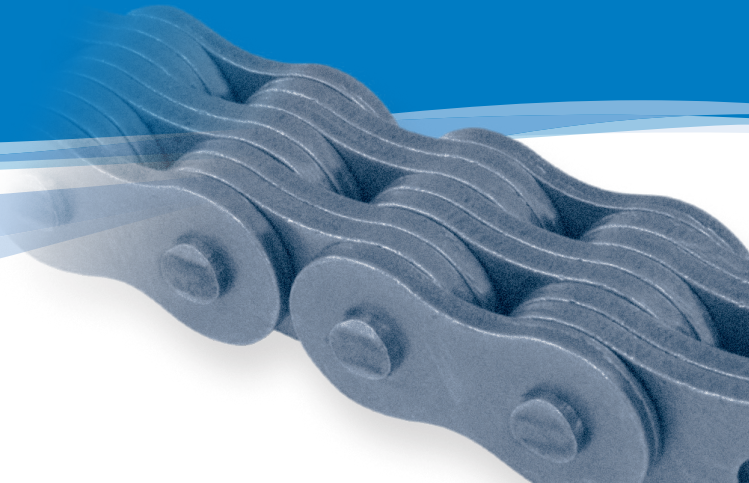


Hollow Pin Chain - Bushed Type (No Roller)

Chain number	Pitch P	Roller diameter A	Width between inner plates B		Pin diameter C		Pin length D		Side plate height F	Plate thickness g/G	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m	Type
C2040HP	25.400	7.95	7.85	5.63	4.00	16.5	17.6	12.00	1.50	11.00	12.6	0.46	B	
C2050HP	31.750	10.16	9.40	7.22	5.12	20.5	21.8	15.00	2.03	20.40	22.8	0.76	B	
02060HP	38.100	11.91	12.70	8.31	6.00	25.8	26.8	17.00	2.42	24.00	27.1	1.02	B	
C2080HP	50.800	15.88	15.75	11.40	8.05	32.5	33.8	24.00	3.25	50.00	55.2	1.81	B	



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Challenge Leaf Chain

Applications:

Leaf chain is used in lifting applications such as Fork Lifts, Pneumatic and Hydraulic Jack fittings, etc. all of which move at slow speeds

Challenge offer Leaf Chain complying with ANSI standards in types BL (heavy duty), AL (light duty), EL and FLC

Where applicable, ISO equivalents are also given

Construction:

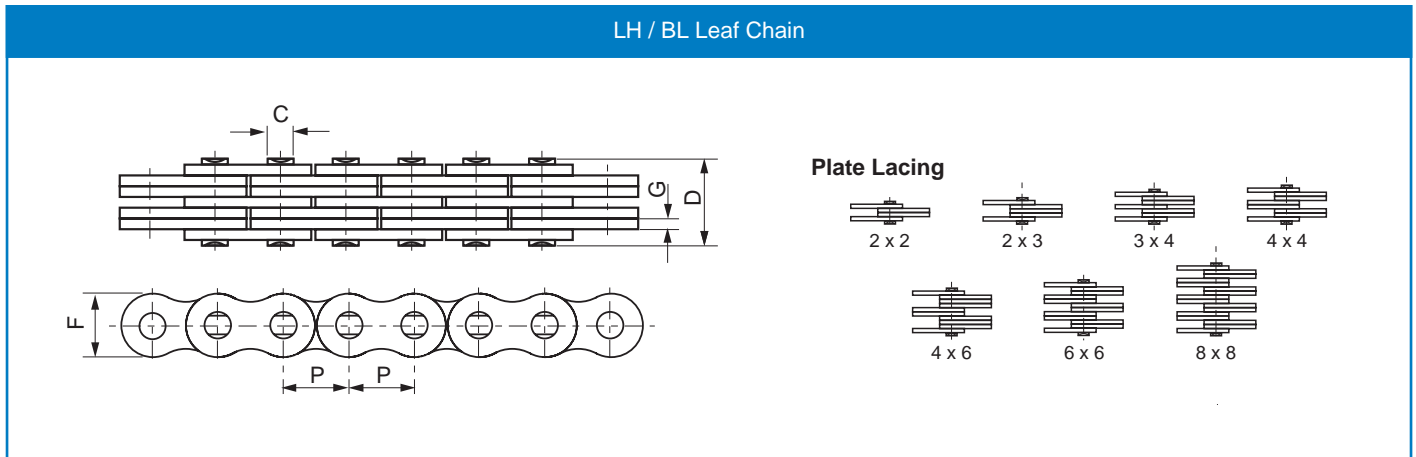
Link plates - produced from alloy steel, especially selected to withstand sudden shock loads. Heat treated to assure maximum breaking loads and wear resistance

Bearing pins - produced from heat treated alloy steel giving excellent resistance to bending

Leaf Chain

LH / BL Series Leaf Chain

ANSI B29.8, ISO 4347, DIN 8152



ISO Chain number	ANSI Chain number	Pitch P	Chain lacing	Plate height F	Plate thickness G	Pin diameter C	Pin length D	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
LH0822	BL422	12.700	2x2	12.07	2.08	5.09	11.05	22.20	27.60	0.64
LH0823	BL423		2x3				13.16	22.20	27.60	0.80
LH0834	BL434		3x4				17.40	33.40	41.40	1.12
LH0844	BL444		4x4				19.51	44.50	56.00	1.28
LH0846	BL446		4x6				23.75	44.50	56.00	1.60
LH0866	BL466		6x6				27.99	66.70	81.70	1.92
LH0888	BL488		8x8				36.45	89.00	109.40	2.56
LH1022	BL522	15.875	2x2	15.09	2.44	5.96	12.90	33.40	43.10	0.88
LH1023	BL523		2x3				15.37	33.40	43.10	1.10
LH1034	BL534		3x4				20.32	48.90	65.60	1.50
LH1044	BL544		4x4				22.78	66.70	84.50	1.80
LH1046	BL546		4x6				27.74	66.70	84.50	2.20
LH1066	BL566		6x6				32.69	100.10	125.10	2.65
LH1088	BL588		8x8				42.57	133.40	169.50	3.50
LH1222	BL622	19.050	2x2	18.11	3.30	7.94	17.37	48.90	63.60	1.45
LH1223	BL623		2x3				20.73	48.90	63.60	1.80
LH1234	BL634		3x4				27.43	75.60	102.80	2.50
LH1244	BL644		4x4				30.78	97.90	120.90	2.90
LH1246	BL646		4x6				37.49	97.90	120.90	3.60
LH1266	BL666		6x6				44.20	146.80	190.80	4.30
LH1288	BL688		8x8				57.61	195.70	238.80	5.80
LH1622	BL822	25.400	2x2	24.13	4.09	9.54	21.34	84.50	108.20	2.20
LH1623	BL823		2x3				25.48	84.50	108.20	2.70
LH1634	BL834		3x4				33.76	129.00	170.00	3.80
LH1644	BL844		4x4				37.90	169.00	214.60	4.30
LH1646	BL846		4x6				46.18	169.00	214.60	5.40
LH1666	BL866		6x6				54.46	253.60	324.50	6.50
LH1688	BL888		8x8				71.02	338.10	432.70	8.60

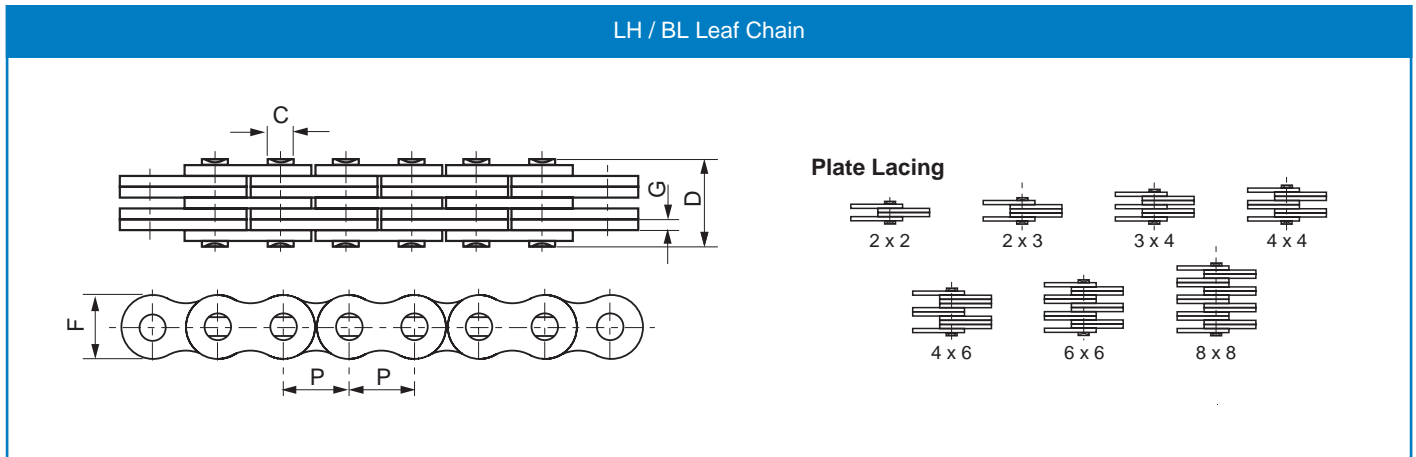
Available on reels.

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Leaf Chain

LH / BL Series Leaf Chain (cont)

ANSI B29.8, ISO 4347, DIN 8152



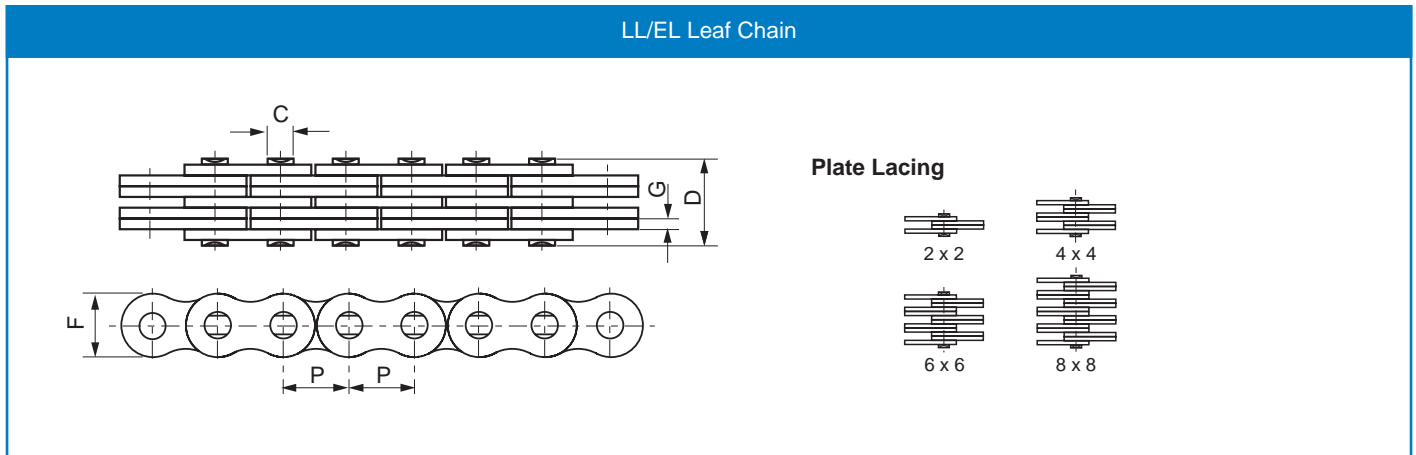
ISO Chain number	ANSI Chain number	Pitch P	Chain lacing	Plate height F	Plate thickness G	Pin diameter C	Pin length D	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
LH2022	BL1022	31.750	2x2	30.18	4.90	11.11	25.37	115.60	150.80	3.40
LH2023	BL1023		2x3				30.33	115.60	150.80	4.30
LH2034	BL1034		3x4				40.23	182.40	231.60	6.00
LH2044	BL1044		4x4				45.19	231.30	291.40	6.90
LH2046	BL1046		4x6				55.09	231.30	291.40	8.60
LH2066	BL1066		6x6				65.00	347.00	430.30	10.30
LH2088	BL1088	8x8	84.81	462.60	555.10	13.80				
LH2422	BL1222	38.100	2x2	36.20	5.77	12.71	29.62	151.20	192.00	4.60
LH2423	BL1223		2x3				35.43	151.20	192.00	5.80
LH2434	BL1234		3x4				47.07	244.60	315.90	8.10
LH2444	BL1244		4x4				52.88	302.50	381.10	9.30
LH2446	BL1246		4x6				64.52	302.50	381.10	11.60
LH2466	BL1266		6x6				76.15	453.70	543.60	13.90
LH2488	BL1288	8x8	99.42	605.00	726.00	18.60				
LH2822	BL1422	44.450	2x2	42.24	6.55	14.29	33.55	191.30	225.70	6.10
LH2823	BL1423		2x3				40.16	191.30	225.70	7.60
LH2834	BL1434		3x4				53.37	315.80	372.60	10.60
LH2844	BL1444		4x4				59.97	382.60	451.20	12.20
LH2846	BL1446		4x6				73.18	382.60	451.20	15.20
LH2866	BL1466		6x6				86.39	578.30	682.40	18.20
LH2888	BL1488	8x8	112.80	765.10	902.80	24.30				
LH3222	BL1622	50.800	2x2	48.26	7.52	17.46	39.01	289.10	341.10	8.00
LH3223	BL1623		2x3				46.58	289.10	341.10	10.00
LH3234	BL1634		3x4				61.72	440.40	519.60	14.00
LH3244	BL1644		4x4				69.29	578.30	680.40	16.00
LH3246	BL1646		4x6				84.43	578.30	680.40	20.00
LH3266	BL1666		6x6				99.57	857.40	1000.70	24.00
LH3288	BL1688	8x8	129.84	1156.50	1364.60	32.00				
LH4022	BL2022	63.500	2x2	60.33	9.91	23.81	51.74	433.70	511.70	15.80
LH4023	BL2023		2x3				61.70	433.70	511.70	19.80
LH4034	BL2034		3x4				81.61	649.40	766.20	27.70
LH4044	BL2044		4x4				91.57	867.40	1023.50	31.60
LH4046	BL2046		4x6				111.48	867.40	1023.50	39.50
LH4066	BL2066		6x6				131.39	1301.10	1535.20	47.40
LH4088	BL2088	8x8	171.22	1734.80	2046.50	63.20				

Available on reels.

Leaf Chain

LL/EL Series Leaf Chain

ANSI B29.8-1958, ISO 4347



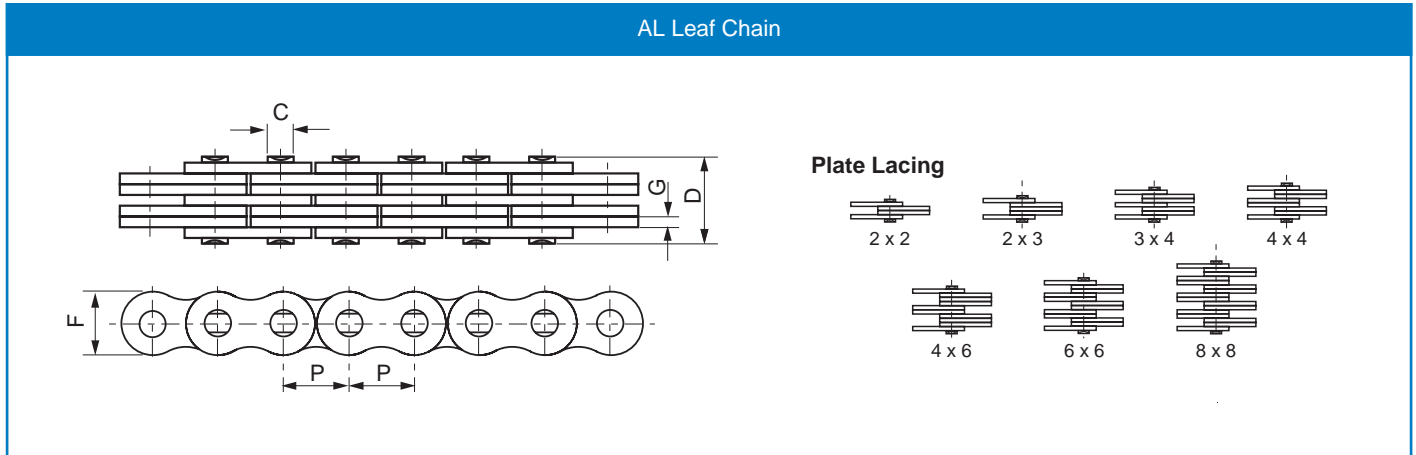
ISO Chain number	ANSI Chain number	Pitch P	Chain lacing	Plate height F	Plate thickness G	Pin diameter C	Pin length D	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
LL0822	EL0422	12.700	2x2	10.60	1.30	4.45	7.60	17.80	20.40	0.35
LL0844	EL0444		4x4				13.00	31.10	35.70	0.69
LL0866	EL0466		6x6				18.20	44.50	50.90	1.00
LL0888	EL0488		8x8				23.50	62.20	71.20	1.33
LL1022	EL0522	15.875	2x2	13.70	1.60	5.08	9.20	22.30	25.50	0.54
LL1044	EL0544		4x4				15.80	44.50	51.00	1.06
LL1066	EL0566		6x6				22.10	66.70	76.30	1.57
LL1088	EL0588		8x8				28.80	89.00	101.90	2.10
LL1222	EL0622	19.050	2x2	16.00	1.85	5.72	10.40	28.90	33.20	0.73
LL1244	EL0644		4x4				17.90	57.80	66.40	1.44
LL1266	EL0666		6x6				25.40	86.70	99.70	2.15
LL1288	EL0688		8x8				32.90	115.60	132.90	2.84
LL1622	EL0822	25.400	2x2	21.00	3.10	8.28	17.20	58.00	66.70	1.52
LL1644	EL0844		4x4				29.60	144.00	164.60	2.90
LL1666	EL0866		6x6				42.40	200.00	230.00	4.30
LL1688	EL0888		8x8				55.40	288.00	331.20	5.71
LL2022	EL1022	31.750	2x2	26.40	3.70	10.19	20.10	95.00	109.20	2.33
LL2044	EL1044		4x4				33.80	190.00	218.50	4.40
LL2066	EL1066		6x6				50.10	285.00	324.60	6.79
LL2088	EL1088		8x8				65.40	380.00	435.10	8.75
LL2422	EL1222	38.100	2x2	33.40	5.00	14.63	28.40	170.00	195.50	4.47
LL2444	EL1244		4x4				46.30	340.00	380.80	8.22
LL2466	EL1266		6x6				66.40	510.00	571.20	12.22
LL2488	EL1288		8x8				86.60	680.00	775.20	16.30
LL2822	EL1422	44.450	2x2	37.08	6.00	15.90	32.20	200.00	224.00	5.10
LL2844	EL1444		4x4				56.40	400.00	448.00	9.90
LL2866	EL1466		6x6				80.60	600.00	672.00	14.60
LL2888	EL1488		8x8				105.20	800.00	896.00	19.40
LL3222	EL1622	50.800	2x2	42.00	6.00	17.81	33.20	260.00	291.20	5.80
LL3244	EL1644		4x4				57.40	520.00	582.40	11.40
LL3266	EL1666		6x6				81.60	780.00	873.60	16.90
LL3288	EL1688		8x8				105.00	1050.00	1176.00	24.00
LL4022	EL2022	63.500	2x2	52.76	8.25	22.89	44.70	360.00	403.20	10.30
LL4044	EL2044		4x4				77.90	780.00	873.60	20.00
LL4066	EL2066		6x6				111.10	1080.00	1209.60	29.50
LL4088	EL2088		8x8				145.50	1560.00	1747.20	39.10
LL4822	EL2422	76.200	2x2	63.88	10.30	29.24	56.10	560.00	627.20	18.50
LL4844	EL2444		4x4				97.40	1120.00	1554.40	35.70
LL4866	EL2466		6x6				138.90	1168.00	1308.10	53.00
LL4888	EL2488		8x8				182.40	2240.00	2508.80	70.40

Available on reels.

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Leaf Chain

AL Series Leaf Chain

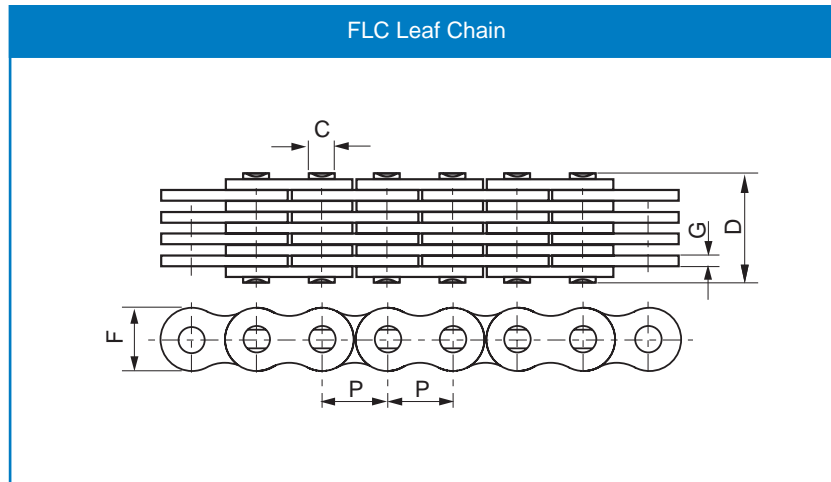


ANSI Chain number	Pitch P	Chain lacing	Plate height F	Plate thickness G	Pin diameter C	Pin length D	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
AL322	9.525	2x2	7.70	1.30	3.58	6.80	9.00	10.20	0.23
AL422		2x2				7.90	14.10	16.90	0.39
AL444	12.700	4x4	10.40	1.50	3.96	14.40	28.20	35.20	0.74
AL466		6x6				20.50	42.30	52.70	1.10
AL522		2x2				10.30	22.00	27.50	0.61
AL534	15.875	3x4	12.80	2.03	5.08	17.00	33.00	46.00	1.10
AL544		4x4				18.90	44.00	55.00	1.19
AL566		6x6				26.90	66.00	82.50	1.79
AL622		2x2				12.40	37.00	44.40	0.86
AL644	19.050	4x4	15.60	2.42	5.94	22.70	64.00	78.80	1.69
AL666		6x6				32.40	101.00	118.60	2.52
AL822		2x2				16.00	56.70	68.60	1.54
AL844	25.400	4x4	20.50	3.25	7.92	29.40	113.40	135.60	3.00
AL866		6x6				42.50	170.00	202.30	4.46
AL1022		2x2				19.60	88.50	107.10	2.37
AL1044	31.750	4x4	25.60	4.00	9.53	35.90	177.00	203.60	4.68
AL1066		6x6				52.30	265.00	315.30	7.00
AL1222		2x2				24.30	127.00	151.10	3.65
AL1244	38.100	4x4	30.50	4.80	11.10	43.80	254.00	299.70	7.05
AL1266		6x6				63.00	381.00	426.30	10.44
AL1444		4x4				51.30	372.70	413.60	10.34
AL1466	44.450	6x6	36.40	5.60	12.64	74.56	559.00	620.40	15.16
AL1644		4x4				58.06	471.00	522.80	12.98
AL1666	50.800	6x6	41.60	6.40	14.21	84.46	706.00	783.60	19.41

Available on reels.

Leaf Chain

FLC Series Leaf Chain

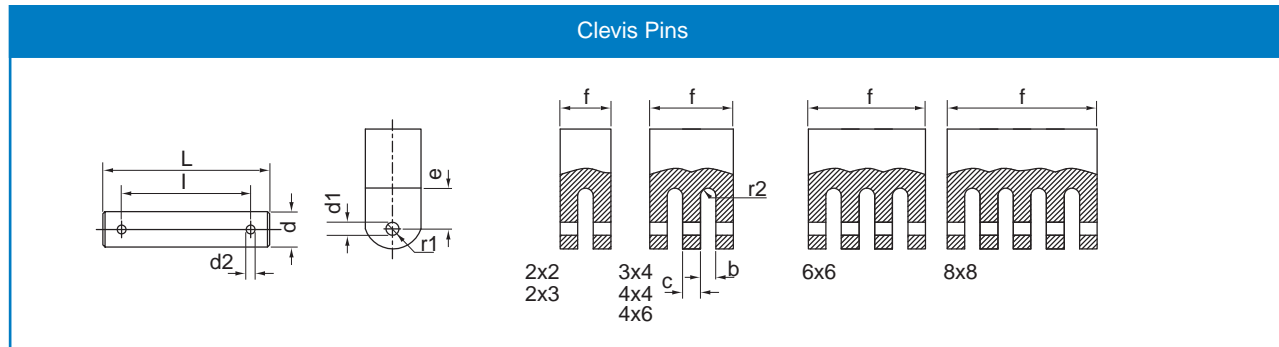


Chain number	Pitch P	Chain lacing	Plate height F	Plate thickness G	Pin diameter C	Pin length D	Minimum tensile strength kN	Average tensile strength kN	Weight kg/m
FL644	19.050	4x4	4.70	0.60	1.85	6.60	6.50	7.80	0.13
FL666	19.050	6x6	4.70	0.60	1.85	9.30	9.75	11.80	0.20
FL688	19.050	8x8	4.70	0.60	1.85	12.00	13.00	15.60	0.25
FL844	25.400	4x4	6.90	0.73	2.31	7.90	10.00	12.10	0.25
FL944	9.525	4x4	8.70	1.04	3.28	10.40	21.00	24.70	0.43
FL966	9.525	6x6	8.70	1.00	3.28	14.90	31.00	36.80	0.65
F1222	38.100	2x2	8.20	1.00	3.58	7.00	11.43	13.60	0.19
F1223	38.100	2x3	10.20	2.03	4.45	12.80	20.00	23.80	0.61
F1244	38.100	4x4	10.20	1.70	4.45	16.70	44.00	52.30	0.83

Available on reels.

Leaf Chain

Clevis Pins

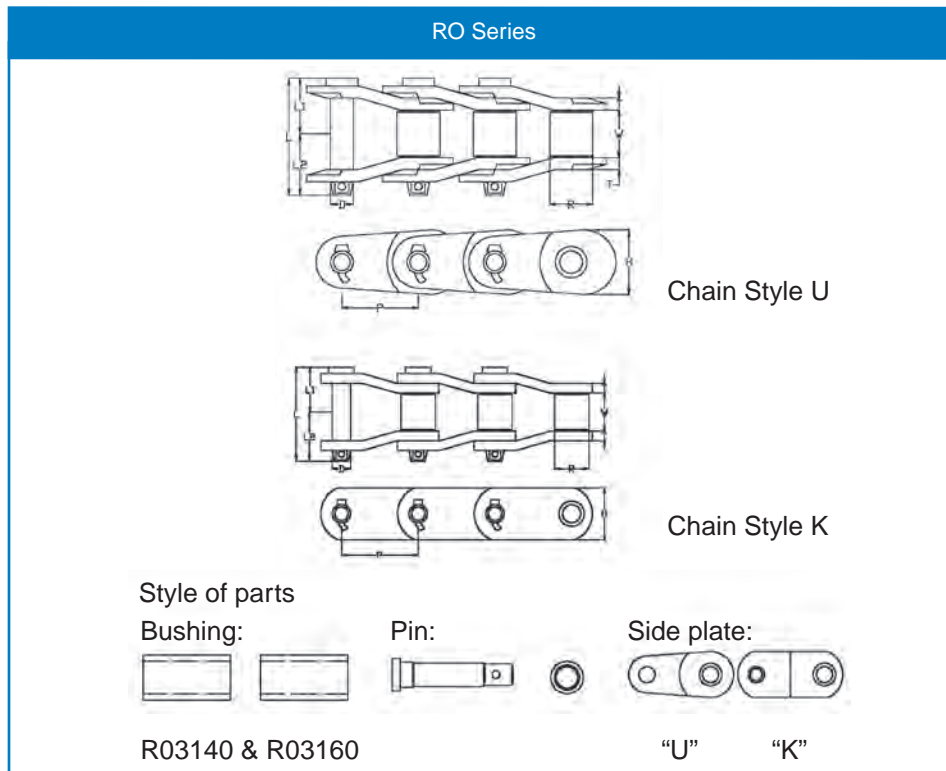


Type	l min.	L max	d max	d2	f max	b min	c max	d1	e min	r1 max	r2 max
BL422/AL522	10.8	17.0			10.7	4.2	-				2
BL423	12.7	18.9			12.6	6.4	-				3
BL434	17.0	23.2	5.80	1.6	16.9	4.2	2.0	5.15	9.0	6.5	2
BL444/AL544	19.0	25.2			18.9	4.2	4.0				2
BL446	23.0	29.2			22.9	6.4	4.0				3
BL466/AL566	27.0	33.3			26.9	4.2	4.0				2
BL488/AL588	35.5	41.8			35.4	4.2	4.0				2
BL522	12.8	19.4			12.7	5.0	-				2
BL523	15.0	21.6			14.9	7.5	-				3
BL534	20.0	26.6			19.9	5.0	2.4				2
BL544/AL644	22.5	29.1	5.95	2.0	22.4	5.0	4.8	6.00	11.0	8.0	2
BL546	27.0	33.7			26.9	7.5	4.8				3
BL566/AL666	32.0	38.7			31.9	5.0	4.8				2
BL588/AL688	42.5	49.3			42.4	5.0	4.8				2
BL623	20.0	30.7			19.9	10.3	-				5
BL634	27.0	37.7			26.9	6.8	3.2				3
BL644/AL844	30.0	40.7	7.93	3.2	29.9	6.8	6.4	8.00	14.0	9.5	3
BL646	37.0	47.7			36.9	10.3	6.4				5
BL666/AL866	43.0	53.7			42.9	6.8	6.4				3
BL688	56.5	67.2			56.4	6.8	6.4				3
BL823	25.0	35.7			24.9	12.8	-				6
BL834	33.0	43.7			32.9	8.5	4.0				4
BL844/AL1044	37.0	47.7	9.52	3.2	36.9	8.5	8.0	9.60	18.0	12.5	4
BL846	46.0	56.7			45.9	12.8	8.0				6
BL866/AL1066	53.0	63.7			52.9	8.5	8.0				4
BL888/AL1088	69.5	80.3			69.4	8.5	8.0				4
BL1023	30.0	42.4			29.8	15.1	-				7
BL1034	39.2	51.6			39.0	10.0	4.7				5
BL1044/AL1244	44.2	56.6	11.09	4.0	44.0	10.0	9.4	11.20	22.0	15.0	5
BL1046	54.2	66.6			54.0	15.1	9.4				7
BL1066/AL1266	63.2	75.6			63.0	10.0	9.4				5
BL1088/AL1288	79.9	92.4			79.7	10.0	9.4				5
BL1223	34.5	46.9			34.3	17.7	-				8
BL1234	46.2	58.6			46.0	11.8	5.5				5
BL1244/AL1444	50.0	64.4	12.70	4.0	49.0	11.8	11.0	12.80	26.0	19.0	5
BL1246	63.5	76.0			63.3	17.7	11.0				8
BL1266/AL1466	75.3	87.8			75.1	11.8	11.0				5
BL1288/AL1488	98.6	111.1			98.4	11.8	11.0				5
BL1423	38.7	51.1			38.5	20.1	-				10
BL1434	52.2	64.6			52.0	13.4	6.3				6
BL1444	58.6	71.1	14.27	4.0	58.4	13.4	12.6	14.35	31.0	22.0	10
BL1446	71.7	84.2			71.5	20.1	12.6				10
BL1466	85.1	97.7			84.9	13.4	12.6				10
BL1623	43.1	60.6			42.8	22.5	-				10
BL1634	58.0	75.5			57.7	15.0	7.1				7
BL1644	65.7	82.9	17.46	5.0	65.4	15.0	14.2	17.50	34.0	25.0	7
BL1646	79.9	97.4			79.6	22.5	14.2				10
BL1666	94.6	112.2			94.3	15.0	14.2				7
BL1688	124.0	141.6			123.7	15.0	14.2				7

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Heavy Duty Drive Chain

RO Series



Challenge Chain number	Chain Style	Pitch Inches P	Pitch mm P	Roller diameter R	Width		Bearing Pin Diameter D	Pin Length		Side plate height H	Plate Thickness s T	Tensile strength kgf	Approx Weight kg/m
					between inner plates W	Bearing Pin Diameter D		L	L1 L2				
RO3140	U	1.75	44.45	25.4	25.4	12.15	62.6	28.55	34.05	43.2	5.6	24000	7.7
RO3160	U	2.00	50.80	28.58	31.75	13.73	72.3	33.40	38.90	49.2	6.4	30600	10.0
RO1613AK	U	2.00	50.80	28.58	31.5	15.06	78.0	36.20	41.80	42.9	8.1	31750	11.3
RO3180	U	2.25	57.15	35.72	36.4	17.46	81.0	37.30	43.70	54	7.2	36300	14.3
RO25H ■	K	2.50	63.50	31.75	38.1	15.88	92.5	43.05	49.45	41.5	9.5	39700	13.7
RO1625	U	2.50	63.50	39.69	38.9	19.8	89.7	41.40	48.30	60.3	8	43000	16.3
RO588	K	2.61	66.27	22.23	28.6	11.11	67.0	32.00	35.00	28.6	6.4	14700	5.4
RO568 ■	K	3.07	77.90	41.28	40.1	19.05	97.0	45.05	51.95	54	9.5	52400	17.7
RO568-T	K	3.07	77.90	41.28	40.1	19.05	97.0	45.05	51.95	54	9.5	50000	17.7
RO3	K	3.08	78.11	31.75	38.1	15.88	86.5	40.05	46.45	38	8	27700	10.5
RO3H △	K	3.08	78.11	31.75	38.1	15.88	92.5	43.05	49.45	41.5	9.5	39700	12.4
RO3125 △	K	3.13	79.38	41.28	41.2	20.32	99.5	45.90	53.60	54	9.5	52000	18.8
RO1616 ■	K	3.50	88.90	44.45	38.6	22.23	111.7	51.60	60.10	54	12.7	63500	23.9
RO3924T	K	3.91	99.21	57.15	38.4	30.16	121.0	56.85	64.10	82.6	14.3	118000	45.0
RO5	K	4.06	103.20	44.45	38.6	22.23	111.7	51.60	60.10	54	12.7	63500	19.9
RO4	K	4.06	103.20	44.45	49.1	22.23	122.2	56.85	65.35	54	12.7	63500	21.0
RO4HF △	K	4.06	103.20	44.45	49.2	22.23	135.7	63.60	72.10	59	16	80300	23.2
RO4HF-T	K	4.06	103.20	44.45	49.2	22.23	135.7	63.60	72.10	59	16	69000	23.2
RO1245 ■	K	4.07	103.45	45.24	49.2	23.8	130.0	60.25	69.75	60	14.5	84600	27.2
RO1245T	K	4.07	103.45	45.24	49.2	23.8	130.0	60.25	69.75	60	14.5	77000	27.2
RO1343	K	4.09	103.89	47.63	49.2	25.4	132.0	62.25	69.75	70	14.5	105000	31.9
RO1343T	K	4.09	103.89	47.63	49.2	25.4	132.0	62.25	69.75	70	14.5	86500	32.9
RO1345	K	4.09	103.89	50.8	49.2	25.4	132.0	62.25	69.75	70	14.5	105000	32.9
RO41345T	K	4.09	103.89	50.8	49.2	25.4	132.0	62.25	69.75	70	14.5	86500	32.9
RO635 ■	K	4.00	114.30	57.15	52.4	27.9	135.5	64.25	71.25	76	14.5	113000	38.3
RO11634A	K	5.00	127.00	63.5	58.7	28.63	141.5	67.40	74.10	76	14.5	109000	39.8
RO1602AA ■	K	5.00	127.00	63.5	70.0	31.75	161.2	77.05	84.15	90	16	156000	52.3
RO6042 ■	K	6.00	152.40	76.2	76.3	38.1	184.0	86.70	97.30	101.6	19	207000	71.3

Note: RO3140 and RO3160 are specially designed for use where the chains on equipment are subject to heavy twisting and side bow caused by operating misalignment.

■ conforms to American National Standard Institute (ANSI) △ Conforms to American Petroleum Institute (API)

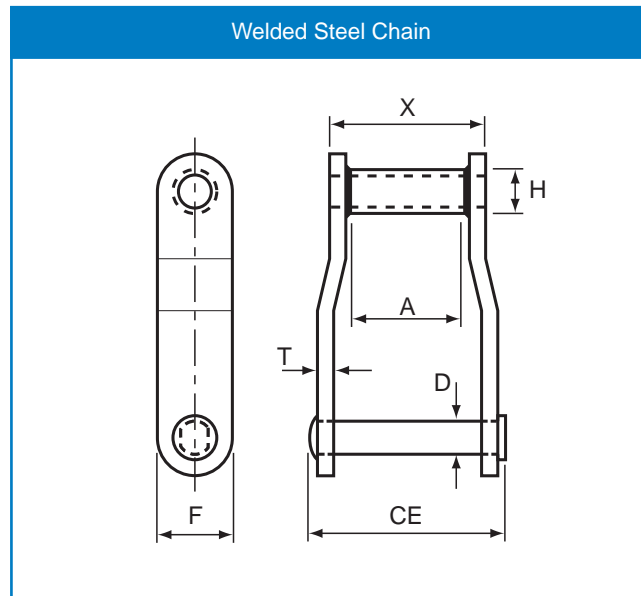
Special heat treating processes are applied to improve material characteristics.

Chains with a "T" mark have through hardened & Induction hardened pins to ensure wear resistance.

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Timber Chain

Welded Steel Mill Chain



Chain number	Pitch		Average Ultimate Strength lbf	Max. Working Load lbf	Links Per Foot	Average Weight lb/ft	Dimensions						
	mm	Inches					CE	X	D	T	F	H	A
WR78	66.27	2.609	20000	3000	46	4.0	76.20	50.80	12.70	6.35	28.58	22.23	28.58
WH78	66.27	2.609	30000	3500	46	4.0	76.20	50.80	12.70	6.35	28.58	22.23	28.58
WR82	78.11	3.075	25000	3800	39	4.8	82.55	57.15	14.29	6.35	31.75	26.99	9.00
WH82	78.11	3.075	36000	4400	39	4.8	82.55	57.15	14.29	6.35	31.75	26.99	8.50
WR124	101.60	4.000	45500	6200	30	8.3	107.95	69.85	19.05	9.53	38.1	34.93	38.10
WH124	101.60	4.000	67000	7200	30	8.3	107.95	69.85	19.05	9.53	38.1	34.93	38.10
WH124HD Spc	103.20	4.063	119000	10500	30	14.7	120.65	76.20	25.40	12.7	50.8	44.45	41.28
WR111PLUS	120.90	4.760	52000	7500	26	9.5	123.83	85.73	19.05	9.53	44.45	34.93	60.33
WH111PLUS	120.90	4.760	77000	8850	26	9.5	123.83	85.73	19.05	9.53	44.45	34.93	60.33
WR110	152.40	6.000	45500	6750	20	7.2	117.48	76.20	19.05	9.53	38.1	34.93	47.63
WH110	152.40	6.000	67000	7875	20	7.2	117.48	76.20	19.05	9.53	38.1	34.93	47.63
WR106	152.40	6.000	45500	6200	20	7.0	107.95	69.85	19.05	9.53	38.1	34.93	41.28
WH106	152.40	6.000	67000	7200	20	7.0	107.95	69.85	19.05	9.53	38.1	34.93	41.28
WR132	153.67	6.050	78000	13000	20	14.2	158.75	111.13	25.40	12.7	50.8	44.45	73.03
WH132	153.67	6.050	111000	15300	20	14.2	158.75	111.13	25.40	12.7	50.8	44.45	73.03
WH132D	153.67	6.050	139500	16700	20	16.4	171.45	117.48	25.40	15.88	50.8	44.45	73.03
WR150	153.67	6.050	78000	13000	20	16.8	158.75	111.13	25.40	12.7	63.5	44.45	73.03
WH150	153.67	6.050	112000	15300	20	16.8	158.75	111.13	25.40	12.7	63.5	44.45	73.03
WH150XHD	153.67	6.050	151000	18200	20	19.7	171.45	117.48	28.58	15.88	63.5	44.45	73.03
WH155	153.67	6.050	145000	17750	20	20.0	168.28	114.30	28.58	14.29	63.5	44.45	73.03
WH159	155.58	6.125	230000	20250	20	26.5	168.28	117.48	31.75	15.88	76.2	50.8	73.03

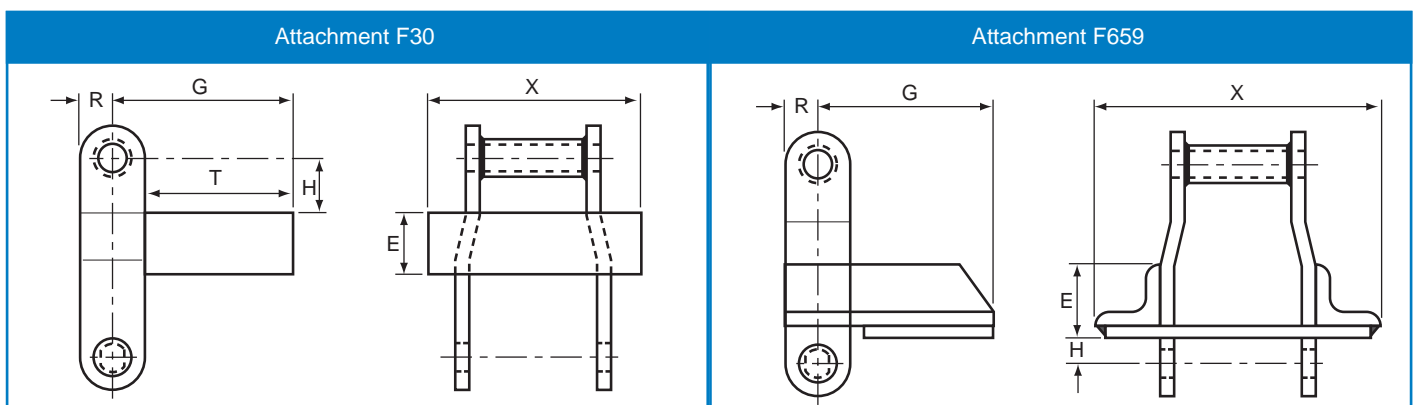
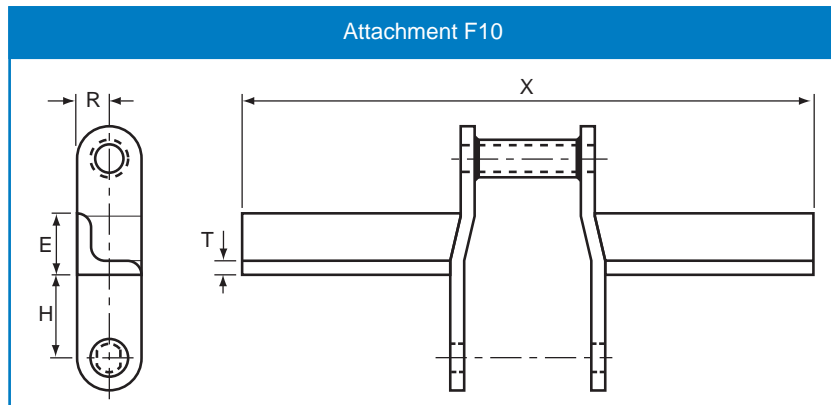
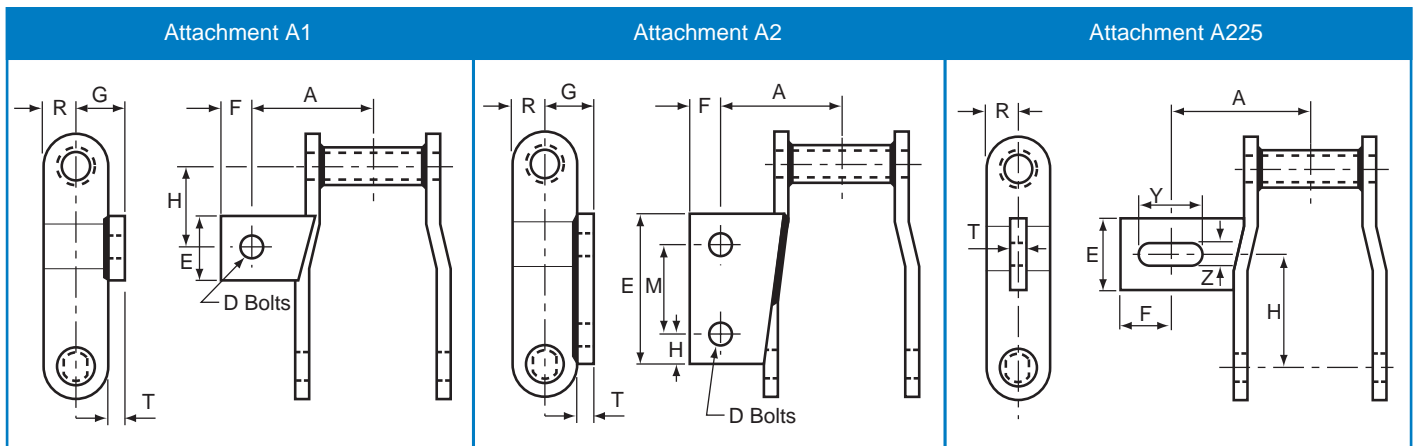
WR - Welded steel chain - through hardened pins and case hardened bushes

WH - Weld steel chain - all components fully heat treated

Timber Chain

Welded Steel Chain Attachments (Offset Side Bar)

Attachment number	Chain number	Weight lb/ft	Dimensions												
			A	D	E	F	G	H	K	M	R	T	X	Y	Z
A1	WR/WH78	4.97	50.80	9.58	31.75	12.70	20.57	31.75	-	-	14.27	6.35	-	-	-
A1	WR/WH82	6.50	54.10	9.58	44.45	15.88	23.88	38.10	-	-	15.88	6.35	-	-	-
A1	WR/WH124	8.40	66.68	15.88	50.80	15.88	28.70	45.97	-	-	19.05	9.53	-	-	-
A2	WR/WH78	4.50	50.80	9.58	54.10	12.70	19.81	10.41	-	28.70	14.27	6.35	-	-	-
A2	WR/WH82	6.00	54.10	9.53	57.15	15.80	23.88	12.70	-	31.75	15.88	7.92	-	-	-
A2	WR/WH124	10.00	66.68	9.58	76.20	22.23	28.70	22.23	-	49.28	19.05	9.53	-	-	-
A2	WR/WH132	17.00	95.25	12.70	101.60	19.05	38.10	41.28	-	69.85	25.40	12.70	-	-	-
A225	WR/WH124	8.90	101.60	-	50.80	49.28	-	50.80	-	-	19.05	12.70	-	57.15	22.23
F10	WR/WH82	4.80	-	-	31.75	-	-	23.80	-	-	15.88	6.35	260.35	-	-
F30	WR/WH78	9.90	-	-	25.40	-	-	68.33	-	-	14.27	54.10	76.20	-	-
F659	WR/WH124	13.10	-	-	44.45	-	-	120.65	-	-	19.05	-	167.39	-	-

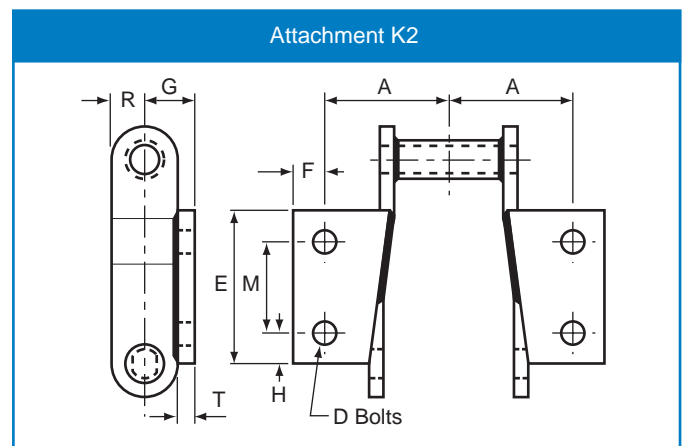
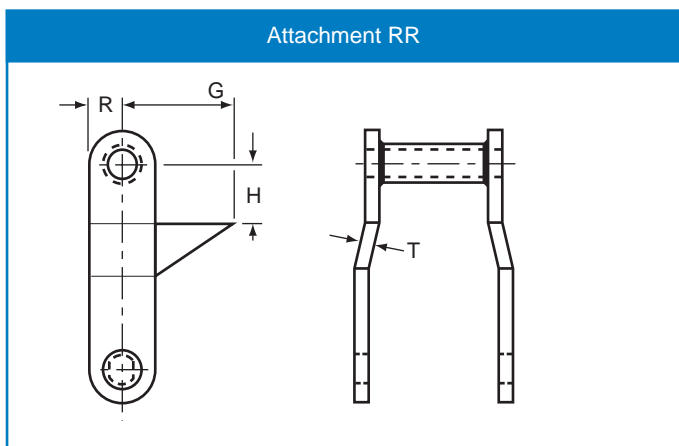
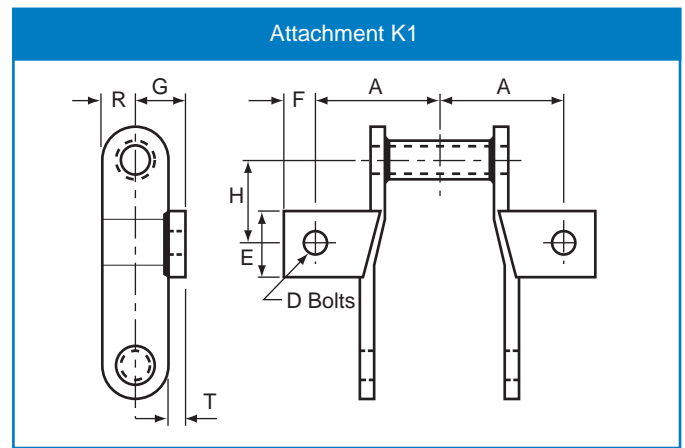
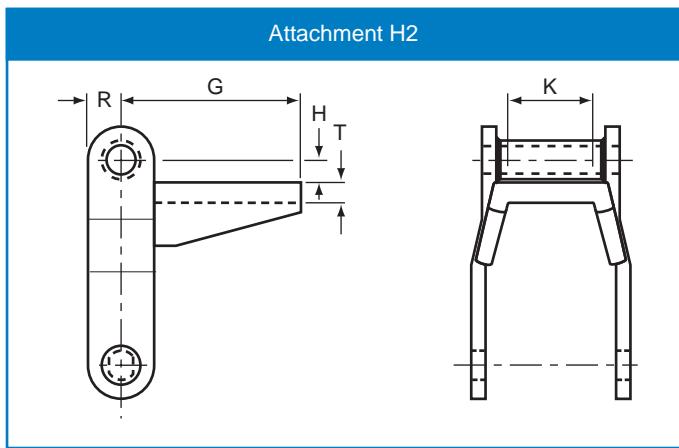


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Timber Chain

Welded Steel Chain Attachments (Offset Side Bar)

Attachment number	Chain number	Weight lb/ft	Dimensions												
			A	D	E	F	G	H	K	M	R	T	X	Y	Z
H2	WR/WH78	4.75	-	-	-	-	90.42	7.87	25.40	-	14.22	6.35	-	-	-
H2	WR/WH82	9.00	-	-	-	-	91.95	15.75	28.70	-	15.75	4.83	-	-	-
K1	WR/WH78	4.97	50.80	9.65	31.75	12.70	20.57	31.75	-	-	14.22	6.35	-	-	-
K1	WR/WH82	6.50	54.10	9.65	44.45	15.75	23.88	38.10	-	-	15.75	6.35	-	-	-
K1	WR/WH124	11.70	66.55	15.75	50.80	15.75	28.70	45.97	-	-	19.05	9.65	-	-	-
K2	WR/WH78	5.00	50.80	9.65	54.10	12.70	19.81	10.41	-	28.70	14.22	6.35	-	-	-
K2	WR/WH82	8.00	54.10	9.65	57.15	15.75	23.88	12.70	-	31.75	15.75	7.87	-	-	-
K2	WR/WH124	12.00	66.55	9.65	76.20	22.35	28.70	22.35	-	49.28	19.05	9.65	-	-	-
K2	WR/WH132	19.00	95.25	12.70	101.60	19.05	38.10	41.15	-	69.85	25.40	12.70	-	-	-
RR	WR/WH78	4.70	-	-	-	-	38.10	19.05	-	-	14.22	6.35	-	-	-
RR	WR/WH82	7.00	-	-	-	-	44.45	20.57	-	-	15.75	6.35	-	-	-
RR	WR/WH124	10.00	-	-	-	-	47.75	38.10	-	-	19.05	9.65	-	-	-



Timber Chain

Offset Side Bar Roller Chain

Offset Side Bar Roller Chain

Material Spec.				
	Side Bar	Pin	Bushing	Roller
S0-578	CH	CH	CC	CC
M0-88	C	CH	CC	CC
LXS-882	CH	AH	AC	CH
M0H-578	CH	CH	CC	CH

Chain number	Pitch		Average Ultimate Strength lbf	Max. Working Load lbf	Links Per Foot	Average Weight lb/ft	Dimensions						
	inch	mm					A	B	C	D	F	G	K
S0-578	2.609	66.269	19,000	2,200	4.6	2.7	22.23	26.99	9.53	52.78	25.40	3.97	36.51
M0-88	2.609	66.269	20,000	2,400	4.6	3.8	22.23	26.99	11.11	59.53	28.58	6.35	41.28
LXS-882	2.609	66.269	29,000	2,800	4.6	3.9	22.23	28.58	11.11	59.53	28.58	6.35	42.86
M0H-578	2.609	66.269	19,000	2,200	4.6	2.7	22.23	26.99	9.53	52.78	25.40	5.56	36.12

Straight Side Bar Roller Chain

Straight Side Bar Roller Chain

Material Spec.				
	Side Bar	Pin	Bushing	Roller
MS-88	C	CH	CC	CC
81-X	CH	AC	AC	CH
81-XH	CH	AC	AC	CH
81-XHS	CH	AC	AC	CH
SS-188	CH	AC	CC	CC

Chain number	Pitch		Average Ultimate Strength lbf	Max. Working Load lbf	Links Per Foot	Average Weight lb/ft	Dimensions							Side Plate Thickness (G)	
	inch	mm					A	B	C	D	F	K	Chain	Conn	
MS-88	2.609	66.269	26,000	2,500	4.6	3.8	22.23	26.99	11.11	59.53	28.58	41.28	6.35	6.35	
81-X	2.609	66.269	22,000	2,200	4.6	2.6	23.02	26.99	11.11	47.23	28.58	34.93	3.97	3.97	
81-XH	2.609	66.269	41,800	5,000	4.6	3.9	23.02	26.99	11.11	59.18	31.75	42.86	7.94	5.56	
81-XHS	2.609	66.269	41,800	5,000	4.6	4.2	23.02	26.99	11.11	63.50	32.94	42.86	7.94	7.94	
SS-188	2.609	66.269	26,000	2,500	4.6	3.8	22.23	26.99	11.11	59.53	28.58	41.28	6.35	6.35	

C: Carbon Steel
CC: Carbon Steel Case Hardened

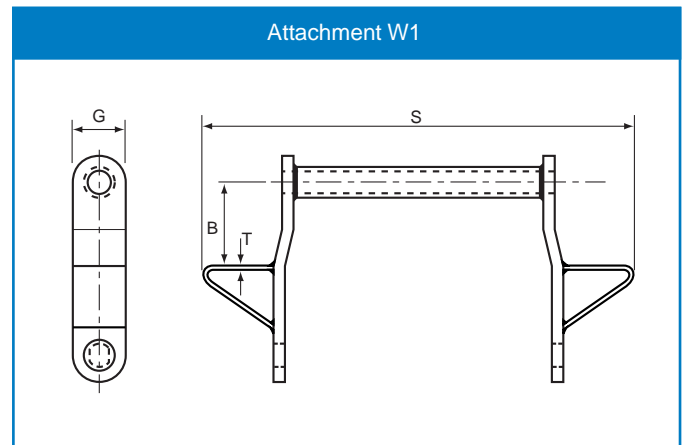
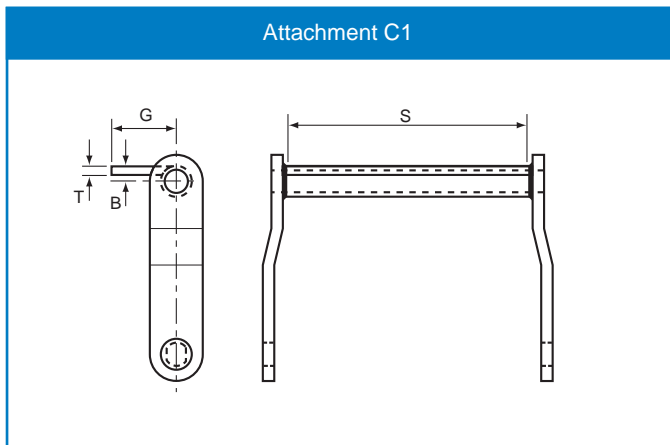
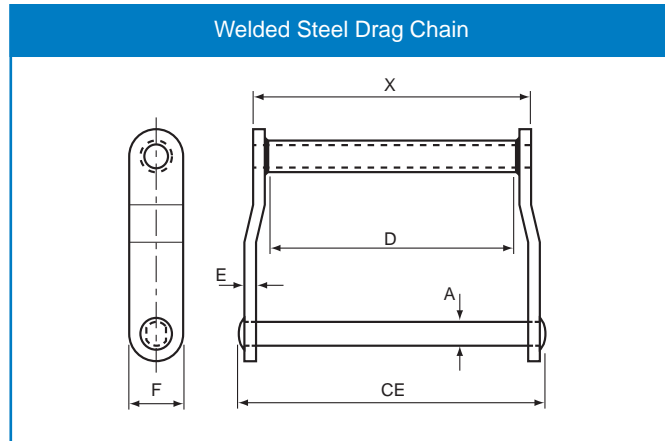
AC: Alloy Steel Case Hardened
CH: Carbon Steel Heat Treated

AH: Alloy Steel Heat Treated

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Timber Chain

Welded Steel Drag Chain



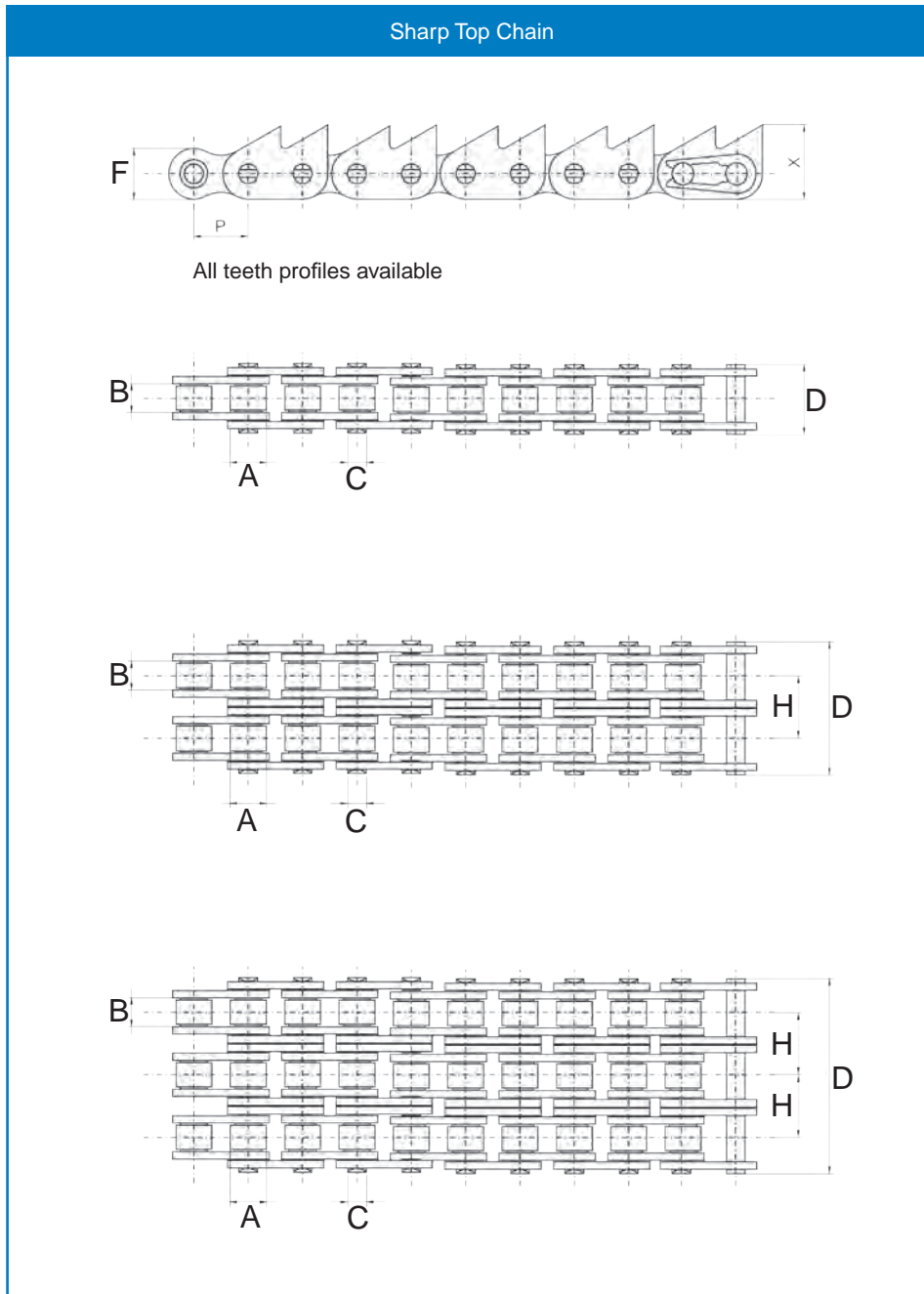
Chain number	Pitch		Average Ultimate Strength lbf	Max. Working Load lbf	Links Per Foot	Average Weight lb/ft	Dimensions						
	mm	Inches					CE	X	D	T	F	H	A
WDH102	127.00	5.000	60000	10000	24	11.8	234.95	196.85	19.05	9.53	38.1	/	161.93
WDH104	152.40	6.000	60000	10000	20	8.7	174.63	136.53	19.05	9.53	38.1	/	104.78
WD110	152.40	6.000	51000	8500	20	12.0	301.63	263.53	19.05	9.53	38.1	/	228.60
WDH110	152.40	6.000	60000	10000	20	12.0	301.63	263.53	19.05	9.53	38.1	/	228.60
WD113	152.40	6.000	55000	9200	20	15.0	317.50	269.88	22.23	12.7	38.1	/	228.60
WDH113	152.40	6.000	70000	11700	20	15.0	317.50	269.88	22.23	12.7	38.1	/	228.60
WD120	152.40	6.000	70000	11700	20	19.4	304.80	257.18	22.23	12.7	50.8	/	215.90
WDH120	152.40	6.000	90000	15000	20	19.4	304.80	257.18	22.23	12.7	50.8	/	215.90
WD112	203.20	8.000	51000	8500	15	9.8	301.63	263.53	19.05	9.53	38.1	/	228.60
WDH112	203.20	8.000	60000	10000	15	9.8	301.63	263.53	19.05	9.53	38.1	/	228.60
WD116	203.20	8.000	55000	9200	15	14.5	390.53	358.78	19.05	9.53	44.45	/	323.85
WDH116	203.20	8.000	69000	11500	15	14.5	390.53	358.78	19.05	9.53	44.45	/	323.85
WD118	203.20	8.000	70000	11700	15	19.8	425.45	377.83	22.23	12.7	50.8	/	336.55
WDH118	203.20	8.000	90000	15000	15	19.8	425.45	377.83	22.23	12.7	50.8	/	336.55
WD122	203.20	8.000	70000	11700	15	16.0	304.80	257.18	22.23	12.7	50.8	/	215.90
WDH122	203.20	8.000	90000	15000	15	16.0	304.80	257.18	22.23	12.7	50.8	/	215.90
WD480	203.20	8.000	70000	11700	15	18.1	371.48	323.85	22.23	12.7	50.8	/	279.40
WDH480	203.20	8.000	90000	15000	15	18.1	371.48	323.85	22.23	12.7	50.8	/	279.40
WDH580	203.20	8.000	123000	20500	15	19.4	371.48	323.85	25.40	12.7	50.8	/	279.40
WDH680	203.20	8.000	134000	22300	15	21.4	384.18	330.20	25.40	15.88	50.8	/	279.40

WD - Welded steel chain with through-hardened pins and case hardened bushes

WDH - Welded steel chain - all components fully heat treated

Timber Chain

Sharp Top Chain

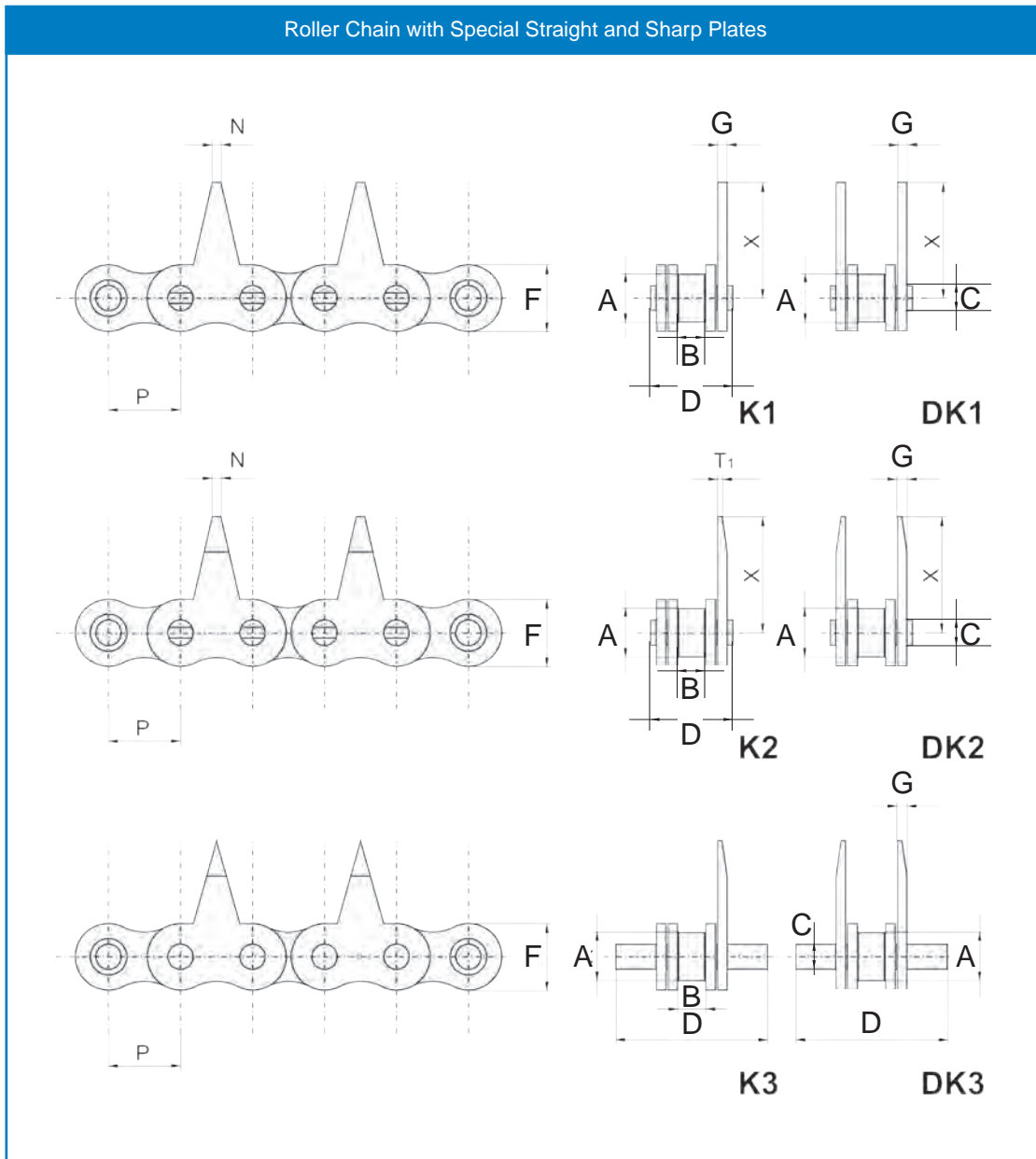


Chain number	Pitch P	Roller diameter A	With between inner plates B	Pin diameter C	Pin length D	Side Plate Height F	Transverse pitch H	Tooth height X	Tensile strength kN
16B-1Z	25.4	15.88	17.02	8.28	36.1	21.0	-	28	58
16B-2Z	25.4	15.88	17.02	8.28	68.0	21.0	31.88	28	110
16B-3Z	25.4	15.88	17.02	8.28	99.9	21.0	31.88	28	165

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Timber Chain

Sharp Top Chain



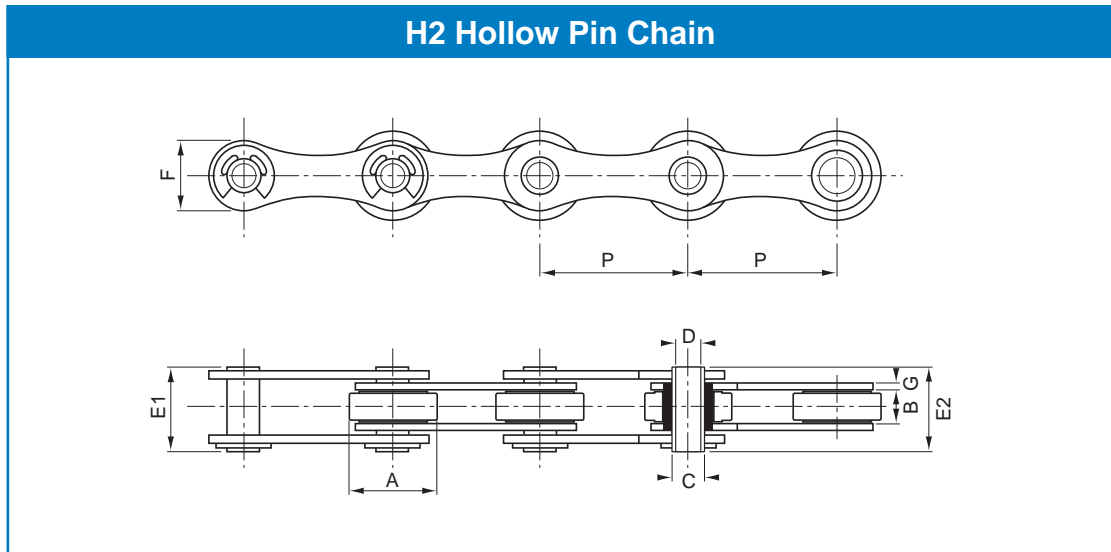
Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Side plate height	Plate thickness	Pin length	Attachment height	Tensile strength		
	P	A	B	C	F	G	L	T1	X	N	kN
08 B/K1	12.70	8.51	7.75	4.45	10.80	1.60	16.70	-	14.5	1.2	18.2
08 B/K2	12.70	8.51	7.75	4.45	10.80	1.60	16.70	0.3	14.5	1.2	18.2
12 B/K3	19.05	12.07	11.68	5.71	16.13	1.85	29.35	-	14.5	-	29.5

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Notes

Food Industry Chain

H2 Series



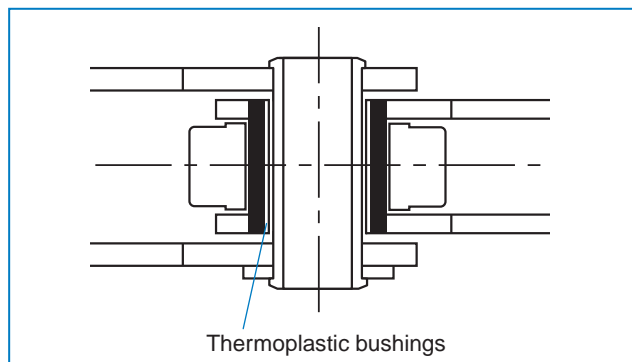
Challenge chain number	FK chain number	Pitch	Pitch	Roller	Width	Pin	Pin	Pin Length		Side	Plate	Tensile	Weight
		inches	mm	diameter	between inner plates	outside diameter	inside diameter	E1	E2	plate height	thickness	strength	(Type C3)
		P	P	A	B	C	D			F	G	kN	kg/m
Steel													
CH2-HP	FK1650HP	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	55	2.15
CH2-HP-D	FK1650HP-D	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	55	1.55
Zinc Plated													
CH2-HP-ZP	FK1650HPZP	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	55	2.15
CH2-HP-ZP-D	FK1650HPZP-D	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	55	1.55
Zinc Plated and Stainless													
CH2-HP-ZPSS	FK1650HPZS400	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	55	2.15
CH2-HP-ZPSS-D	FK1650HPZS400-D	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	55	1.55
Stainless													
CH2-HP-SS	FK1650HPSS	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	32	2.15
CH2-HP-SS-D	FK1650HPSS-D	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	32	1.55
CH2-HP-SS400	FK1650HPSS400	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	42	2.15
CH2-HP-SS400-D	FK1650HPSS400-D	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	42	1.55
Low Maintenance													
CH2-HP-ZP-TPB	FK1650HPZPK	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	55	2.15
CH2-HP-ZP-TPB-D	FK1650HPZPK-D	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	55	1.55
CH2-HP-SS-TPB	FK1650HPSSK	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	32	2.15
CH2-HP-SS-TPB-D	FK1650HPSSK-D	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	32	1.55
CH2-HP-SS400-TPB	FK1650HPSSK400	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	42	2.15
CH2-HP-SS400-TPB-D	FK1650HPSSK400-D	2.0	50.8	30	10.5	11.4	8.2	27.5	28.8	26	3.1	42	1.55

Food Industry Chain

H2 Hollow pin chains are widely used in many conveyor applications such as agriculture, food and packaging. H2 chain is manufactured to the highest standard for maximum performance. The chain-lengths are matched (paired) and clearly labeled.



Low maintenance CH2 Series
with Thermoplastic bushings



Versions:

- Steel
- Zinc
- Stainless
- Stainless 400
- PA6 roller
- Low maintenance

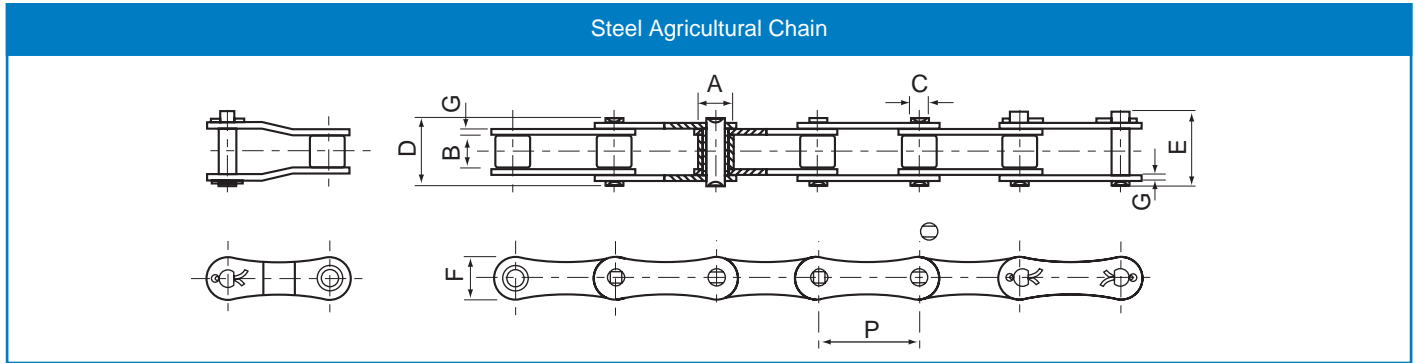
Challenge chain number	Description	Material Requirement				
		Hollow pin	Bush	Liner bush	Roller	Plate
Steel CH2-HP CH2-HP-D	Steel steel roller Steel plastic roller	ST-CH ST-CH	ST-CH ST-CH		ST-CH PA6	ST-HT ST-HT
Zinc Plated CH2-HP-ZP CH2-HP-ZP-D	Steel steel roller Zinc Plated Steel plastic roller Zinc Plated	ST-CH-ZP ST-CH-ZP	ST-CH-ZP ST-CH-ZP		ST-CH-ZP PA6	ST-HT-ZP ST-HT-ZP
Zinc Plated and SS CH2-HP-ZPSS CH2-HP-ZPSS-D	Stainless steel Stainless steel plastic roller	SS-400-HT SS-400-HT	SS-400-HT SS-400-HT		ST-CH-ZP PA6	ST-HT-ZP ST-HT-ZP
Stainless CH2-HP-SS CH2-HP-SS-D CH2-HP-SS400 CH2-HP-SS400-D	Stainless steel 400 series Stainless steel 400 series plastic roller Stainless steel 400 series Stainless steel 400 series plastic roller	SS-304 SS-304 SS-400-HT SS-400-HT	SS-304 SS-304 SS-400-HT SS-400-HT		SS-304 PA6 SS-304 PA6	SS-304 SS-304 SS-304 SS-304
Low Maintenance CH2-HP-ZP-TPB CH2-HP-ZP-TPB-D CH2-HP-SS-TPB CH2-HP-SS-TPB-D CH2-HP-SS400-TPB CH2-HP-SS400-TPB-D	Steel steel roller TPB Zinc Plated Steel plastic roller TPB Zinc Plated Stainless steel TPB Zinc Plated Stainless steel plastic roller TPB Zinc Plated Stainless steel 400 series TPB Zinc Plated Stainless steel 400 series plastic roller TPB Zinc Plated	ST-CH-ZP ST-CH-ZP SS-304 SS-304 SS-400-HT SS-400-HT	ST-CH-ZP ST-CH-ZP SS-304 SS-304 SS-400-HT SS-400-HT	TPB TPB TPB TPB TPB TPB	ST-CH-ZP PA6 SS-304 PA6 SS-304 PA6	ST-HT-ZP ST-HT-ZP SS-304 SS-304 SS-304 SS-304

Key	ST-CH - Steel, case hardened	SS-304 - Stainless steel 304
	ST-CH-ZP - Steel, case hardened, zinc plated	SS-400-HT - Stainless steel 400 series, through hardened
	ST-HT - Steel, through hardened	PA6 - Nylon PA6
	ST-HT-ZP - Steel, through hardened, zinc plated	TPB - Thermoplastic bushing

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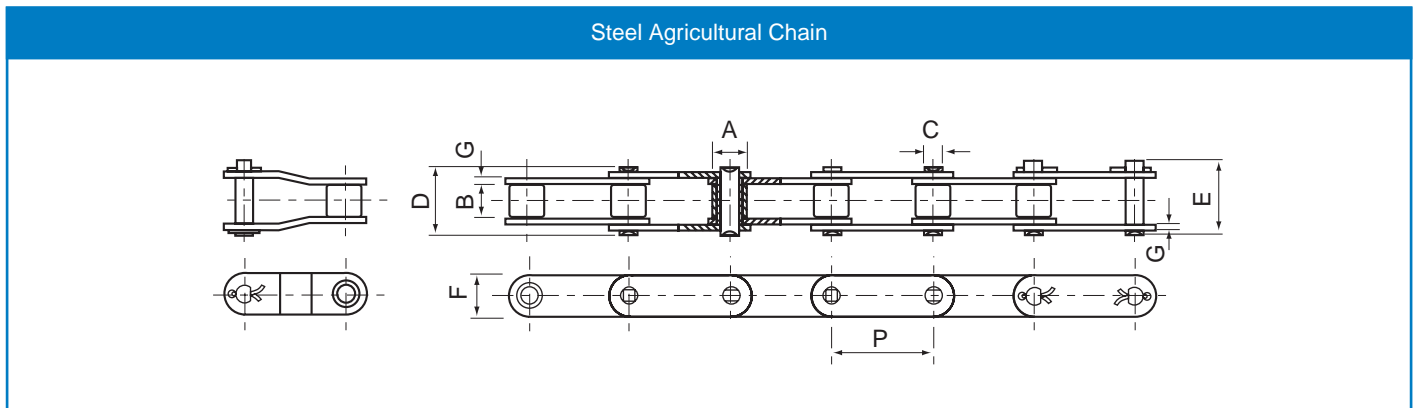
Agricultural Chain

Steel Agricultural Chain



Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Side plate height	Plate thickness	Minimum tensile strength	Average tensile strength	Weight
	P	A	B	C	D	E	F	G	kN	kN	kg/m
S32	29.21	11.43	15.88	4.45	26.70	28.80	13.20	1.80	8.00	21.60	0.86
S42	34.93	14.27	19.05	7.00	34.30	37.00	19.80	2.80	27.00	50.80	1.60
S45	41.40	15.24	22.23	5.72	37.70	40.40	17.30	2.80	18.00	36.10	1.66
S52	38.10	15.24	22.23	5.72	37.70	40.40	17.30	2.80	18.00	36.10	1.68
S55	41.40	17.78	22.23	5.72	37.70	40.40	17.30	2.80	18.00	36.10	1.80
S55X	41.40	15.88	20.00	8.28	38.00	40.70	20.00	3.00	50.00	55.00	2.20
S55R	41.40	17.78	22.23	8.90	41.00	44.00	22.40	3.50	45.00	73.10	2.49
S62	41.91	19.05	25.40	5.72	40.30	43.00	17.30	2.50	27.00	36.10	1.87
S77	58.34	18.26	22.23	8.90	43.20	46.40	26.20	4.00	45.00	73.10	2.65
S88	66.27	22.86	28.58	8.90	49.80	53.00	26.20	4.00	45.00	73.10	3.25

Steel Agricultural Chain



Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Side plate height	Plate thickness	Minimum tensile strength	Average tensile strength	Weight
	P	A	B	C	D	E	F	G	kN	kN	kg/m
38.4	38.400	15.88	19.05	6.92	33.80	37.00	17.30	2.50	25.00	33.00	1.65
38.4-V	38.400	15.88	18.00	6.92	33.80	37.00	17.30	3.00	31.50	40.00	1.74
38.4-VB	38.400	15.88	19.05	8.27	36.20	39.40	20.50	3.00	45.00	50.00	2.12
CA550	41.400	16.87	19.81	7.19	35.00	38.00	19.30	2.80	39.10	51.20	1.94
CA555	41.400	16.87	12.70	7.19	29.70	33.10	19.30	3.10	39.10	56.00	1.83
CA557	41.400	17.78	20.24	8.00	37.40	40.60	23.10	3.10	55.61	74.30	2.65
CA620	42.010	17.91	24.51	7.19	41.80	45.20	20.20	3.25	39.10	55.10	2.35
CA627	30.000	15.88	19.05	8.28	36.10	39.40	20.50	3.00	50.00	55.00	2.51
CA650	50.800	25.00	19.05	9.53	40.40	44.70	25.00	4.00	90.00	95.00	3.49
CA2060H	38.100	11.91	12.70	5.94	29.74	31.72	17.45	3.25	31.28	40.50	1.50

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Agricultural Chain Attachments

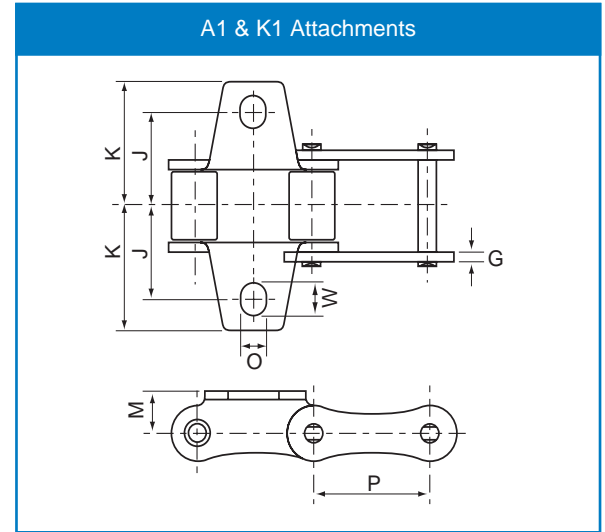
S Series A1 & K1 Attachments

Chain number	P	G	J	K	M	O	W
S32	29.21	1.80	21.50	30.50	8.60	5.30	6.90
S42	34.93	2.80	27.00	37.45	14.00	8.30	11.50
S45	41.40	2.80	27.00	37.50	11.40	8.50	11.70
S52	38.10	2.80	29.40	39.00	11.40	8.30	9.90
S55	41.40	2.80	27.00	37.50	11.40	8.50	11.70
S62	41.91	2.50	33.40	47.70	11.40	6.50	13.00
S77	58.34	4.00	38.10	50.80	20.80	8.40	11.70
S88	66.27	4.00	48.50	59.70	20.80	8.40	10.00

A1 = Attachment one side

K1 = Attachment both sides

Note:- Slotted holes



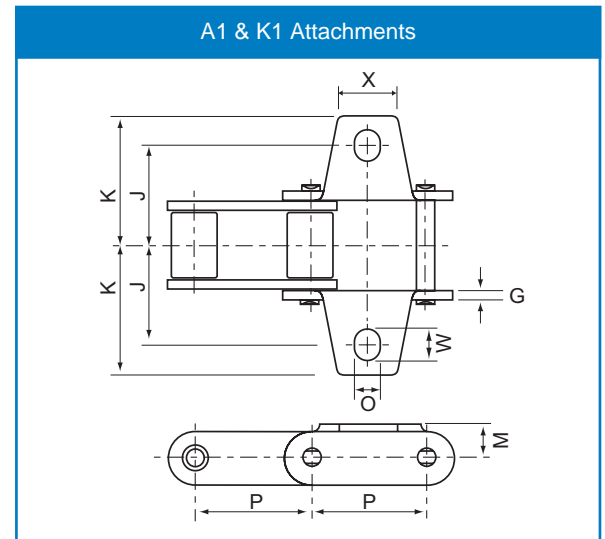
38.4 & CA Series A1 & K1 Attachments

Chain number	P	G	J	K	M	O	W	X
38.4	38.40	2.50	29.00	41.50	15.40	9.00		
38.4-V	38.40	3.00	28.75	41.00	15.40	9.00		
38.4-VB	38.40	3.00	29.00	43.50	14.00	10.50		
CA550	41.40	2.80	26.25	38.10	12.70	8.30	10.00	22.00
CA557	41.40	3.10	25.40	36.00	15.90	8.70		

A1 = Attachment one side

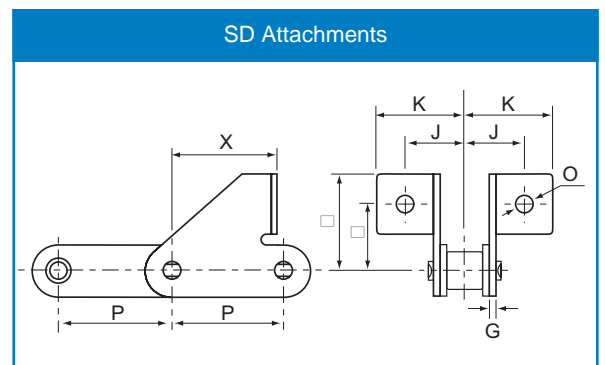
K1 = Attachment both sides

Note:- Slotted holes



S, 38.4 & CA Series SD Attachment

Chain number	P	G	Q	J	K	H	X	O
S45	41.40	2.80	26.00	29.00	44.25	16.00	24.00	6.40
S55	41.40	2.80	26.00	29.00	44.25	16.00	24.00	6.40
38.4	38.40	2.50	37.00	26.00	35.50	24.00	38.40	8.40
38.4-V	38.40	3.00	37.00	26.00	35.50	24.00	38.40	8.40
38.4-VB	38.40	3.00	34.00	26.00	35.50	25.00	38.40	8.40
CA550	41.40	2.80	42.90	23.80	34.10	31.00	36.90	8.70

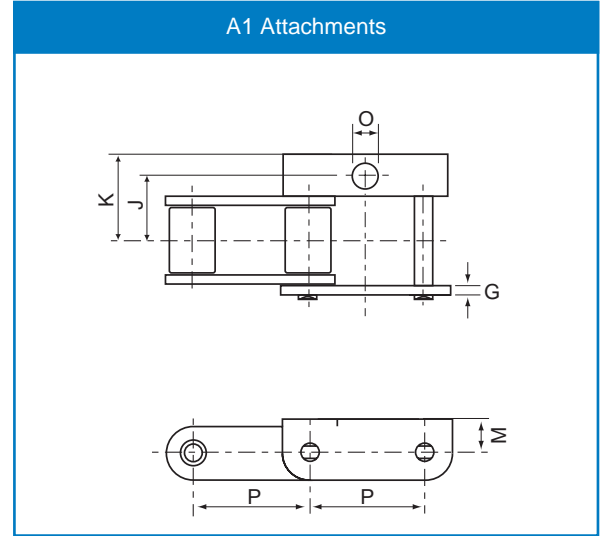


Agricultural Chain Attachments

CA Series A1 Attachment

Chain number	P	G	J	K	M	O
CA620	42.01	3.25	34.58	45.40	14.35	10.30

A1 = Attachment one side



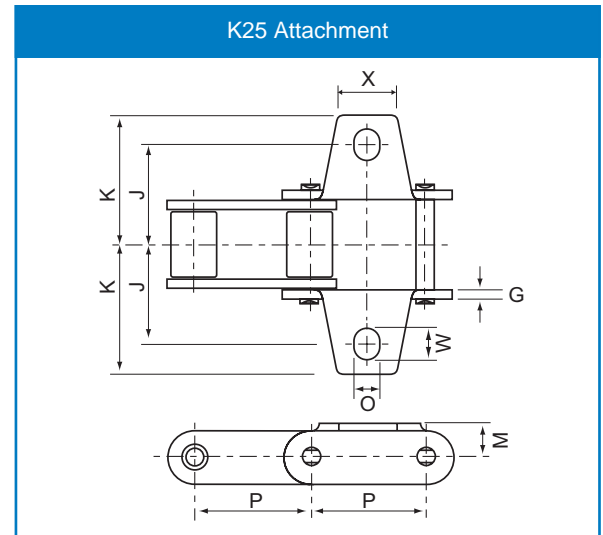
CA Series K25 Attachment

Chain number	P	G	J	K	M	O	W	X
CA550	41.40	2.80	50.80	35.70	12.70	8.70	10.00	22.23

A1 = Attachment one side

K1 = Attachment both sides

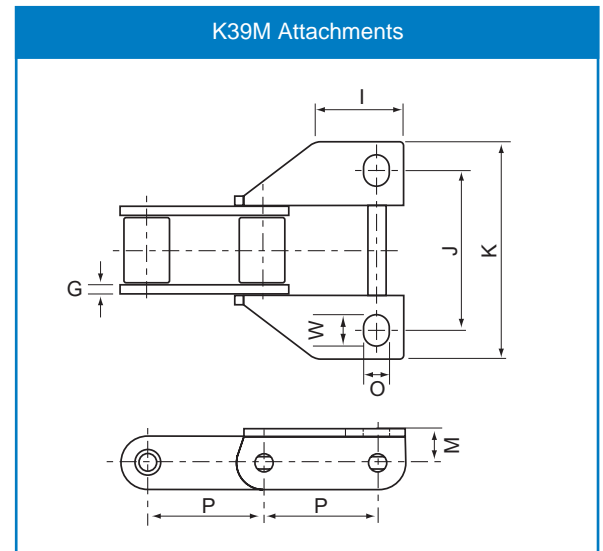
Note:- Slotted holes



CA Series K39M Attachment

Chain number	P	G	I	J	K	M	O	W
CA550	41.40	2.80	30.0	50.80	72.00	12.70	9.90	13.00
CA557	41.40	3.10	38.1	53.94	76.20	14.60	9.90	13.00

NOTE:- Slotted holes



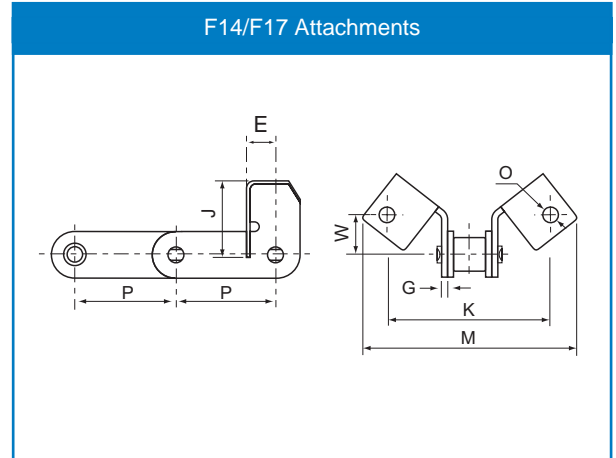
Agricultural Chain Attachments

CA Series F14 Attachments

Chain number	P	G	J	K	M	O	W	E
CA550	41.40	2.80	31.75	79.40	101.60	8.33	15.90	20.24
CA557	41.40	3.10	31.75	79.40	109.80	8.60	15.88	19.60

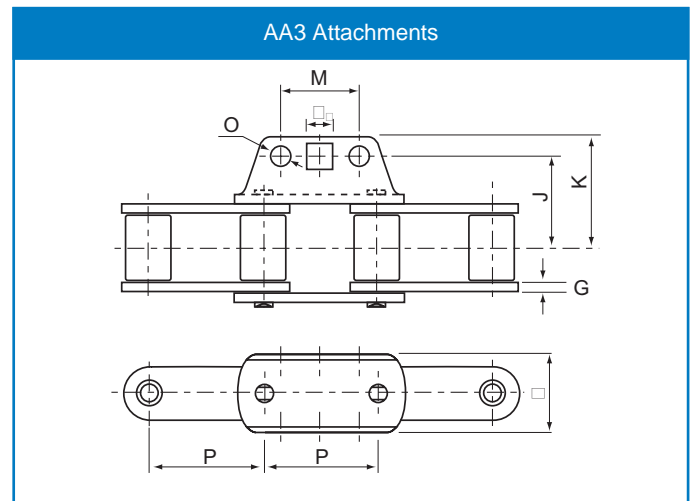
CA Series F17 Attachment

Chain number	P	G	J	K	M	O	W	E
CA550	41.40	2.80	40.89	114.30	143.70	9.91	20.57	23.68



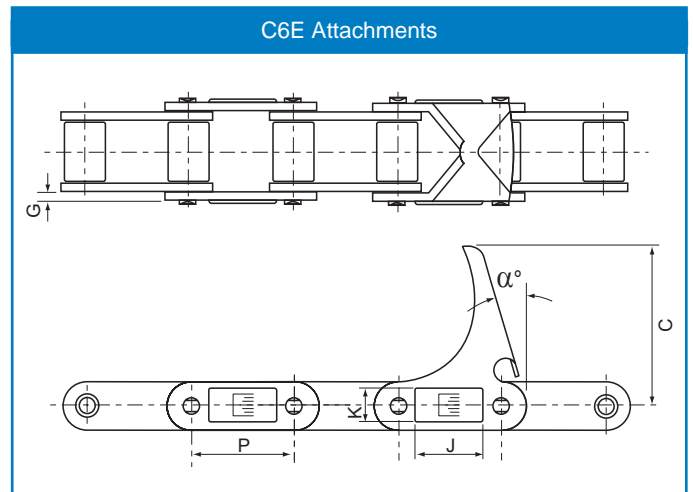
CA Series AA3 Attachment

Chain number	P	G	J	K	M	H	O	S ₁
CA557	41.40	3.10	31.90	43.29	30.20	31.06	8.20	9.73



CA Series C6E Attachment

Chain number	P	G	C	J	K	α°
CA550	41.40	2.80	55.60	23.60	13.50	20.00
CA555	41.40	3.10	63.50	23.60	13.50	15.00
C2060H	38.10	3.25	63.50	-	-	22.50

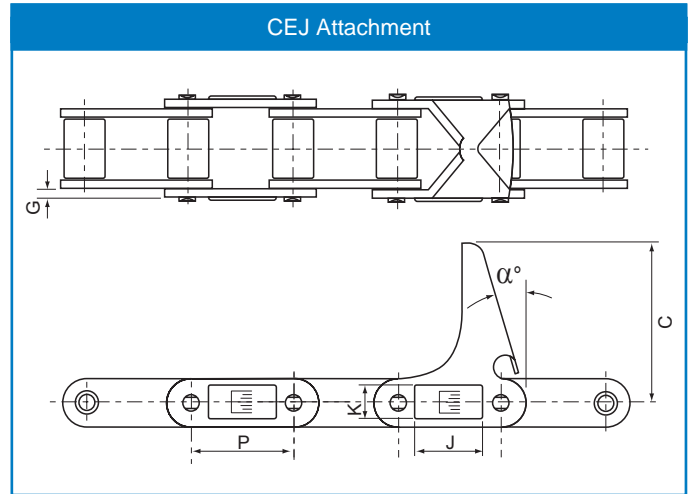


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Agricultural Chain Attachments

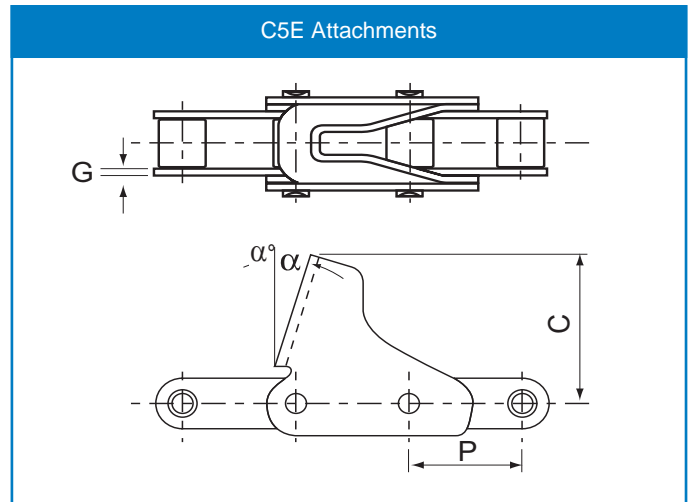
CA Series 6EJ Attachment

Chain number	P	G	C	J	K	α°
CA620	42.01	3.20	66.00	23.60	13.50	15.00



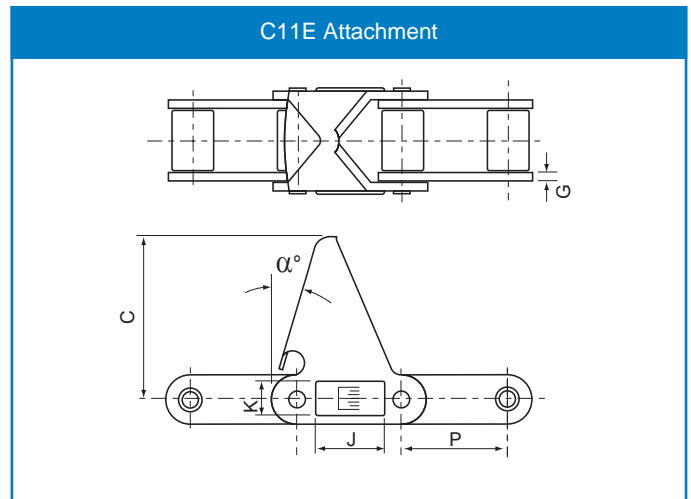
CA Series C5E Attachment

Chain number	P	G	C	α°
CA550	41.40	2.80	59.00	15.00
CA555	41.40	3.10	57.15	15.00



CA Series C11E Attachment

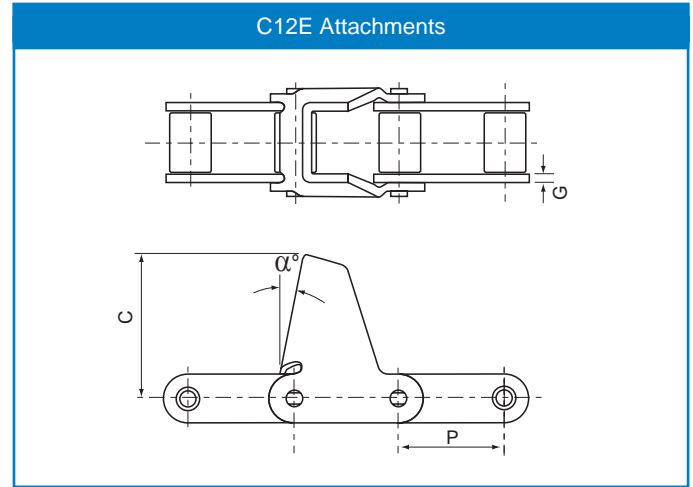
Chain number	P	G	C	J	K	α°
CA550	41.40	2.80	59.00	23.60	13.50	15.00



Agricultural Chain Attachments

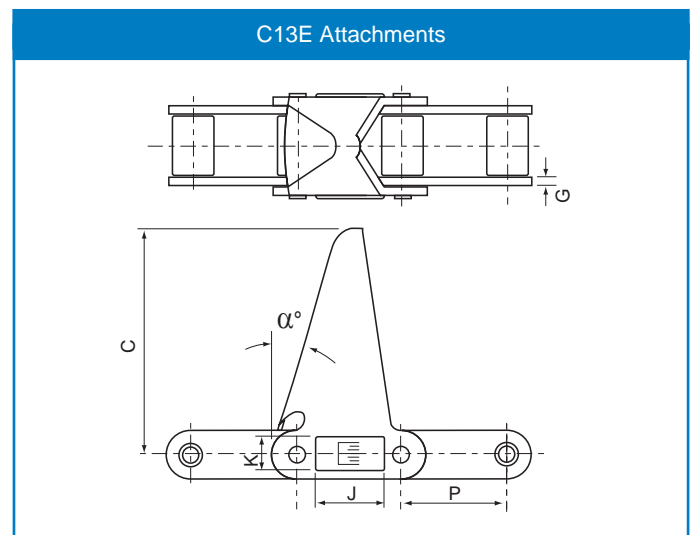
CA Series C12E Attachment

Chain number	P	G	C	α°
CA550	41.40	2.80	59.00	9.00



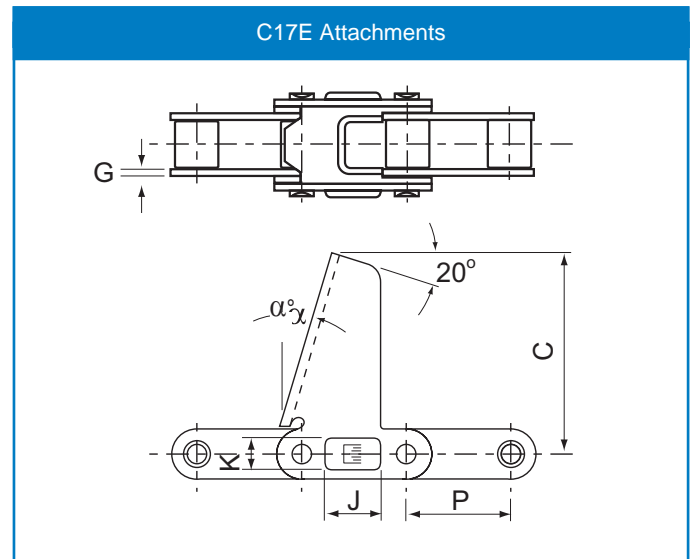
CA Series C13E Attachment

Chain number	P	G	C	J	K	α°
CA550	41.40	2.80	92.10	23.60	13.50	15.00



CA Series C17E Attachment

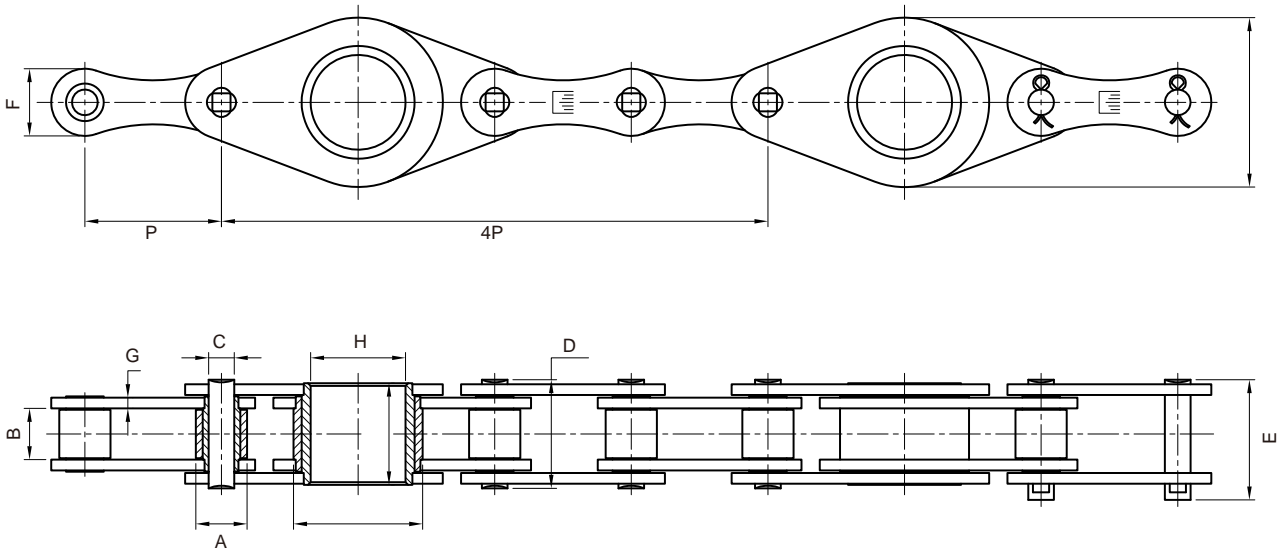
Chain number	P	G	C	J	K	α°
CA550	41.40	2.80	76.20	23.60	13.50	15.00



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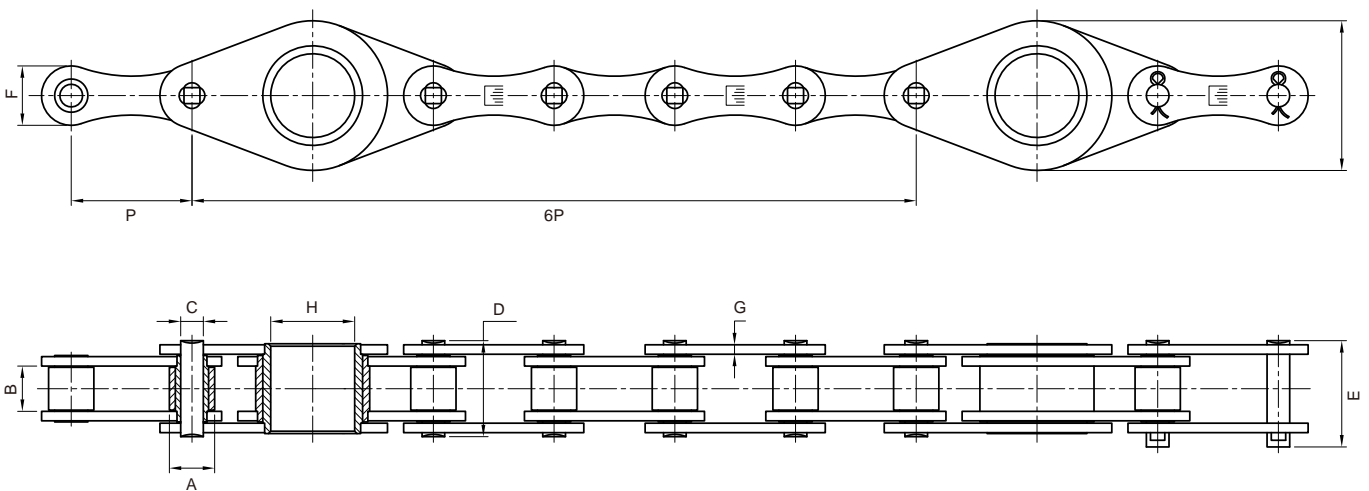
Agricultural Chain Attachments

CA650F3 X L4



Model	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Side plate height	Plate thickness	Hollow pin inner diameter	Minimum tensile strength kN	Attachment spacing
	P	A	B	C	D	E	F	G			
CA650F3/L4	50.80	19.05	19.05	9.53	40.40	44.7	25.00	4.00	35.3	90.00	4P

CA650F3 X L6

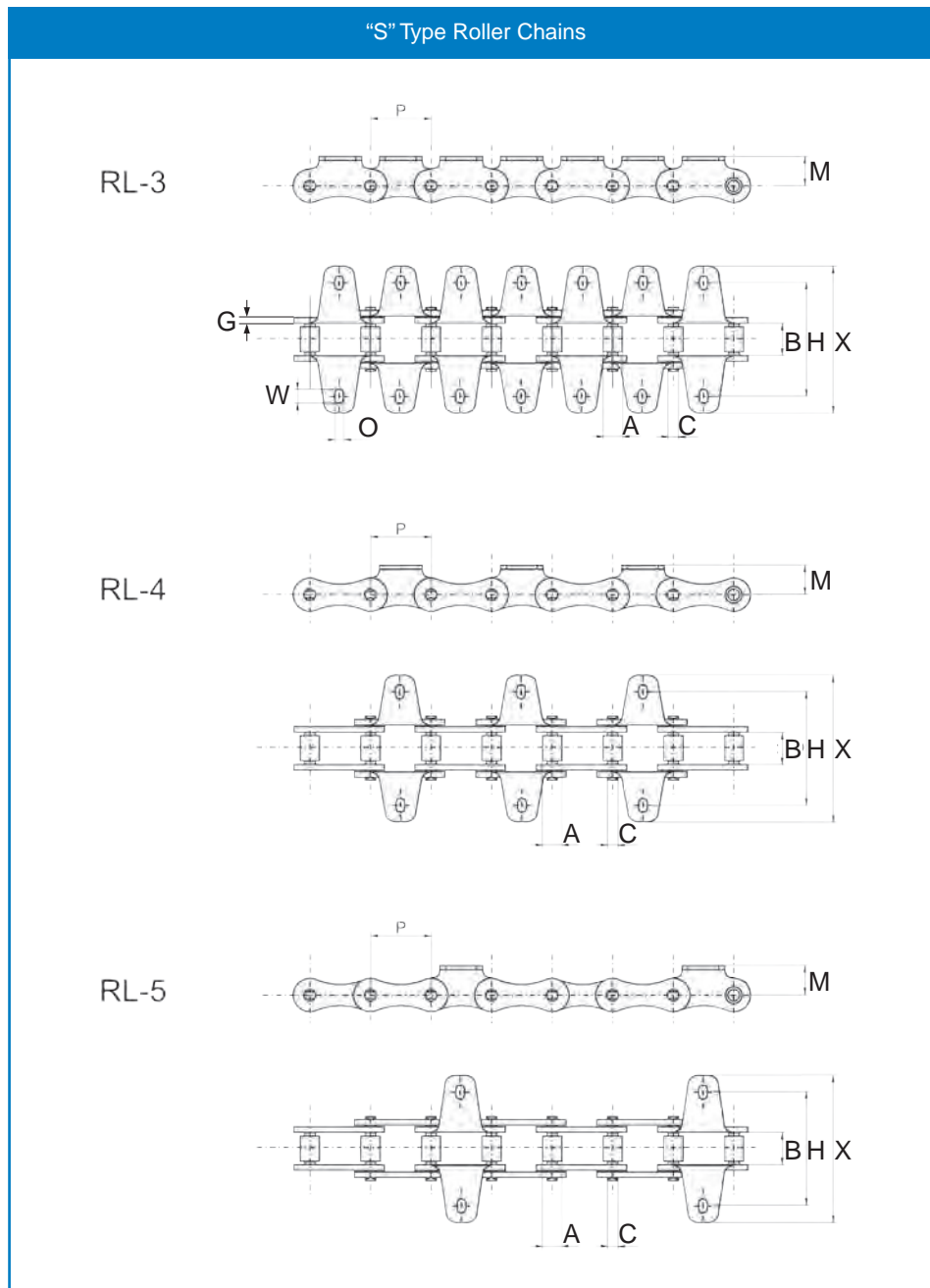


Model	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length		Side plate height	Plate thickness	Hollow pin inner diameter	Minimum tensile strength kN	Attachment spacing
	P	A	B	C	D	E	F	G			
CA650F3/L6	50.80	19.05	19.05	9.53	40.40	44.7	25.00	4.00	35.3	90.00	6P

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Agricultural Chain Attachments

“S” Type Roller Chains

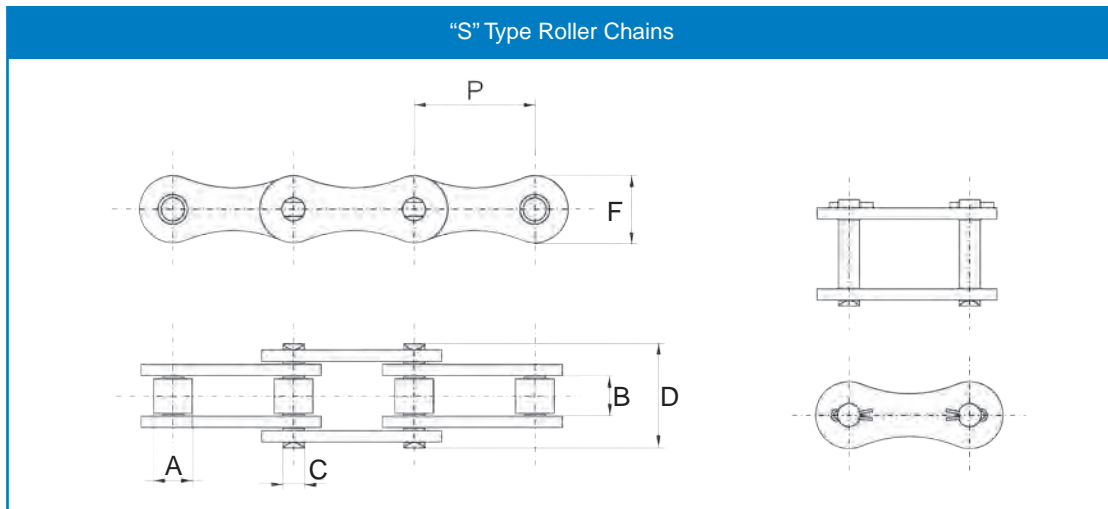


Chain number	Pitch	Roller diameter	Width between inner plates	Pin diameter	Side plate thickness	Attachment height					Average tensile strength
	P	A	B	C	G	H	X	M	O	W	kN
S55X/RL-3	41.40	15.88	20.00	8.28	3.00	52.00	79.40	17.00	8.30	10.00	55.00
S55X/RL-4	41.40	15.88	20.00	8.28	3.00	52.00	79.40	17.00	8.30	10.00	55.00
S55X/RL-5	41.40	15.88	20.00	8.28	3.00	52.00	79.40	17.00	8.30	10.00	55.00

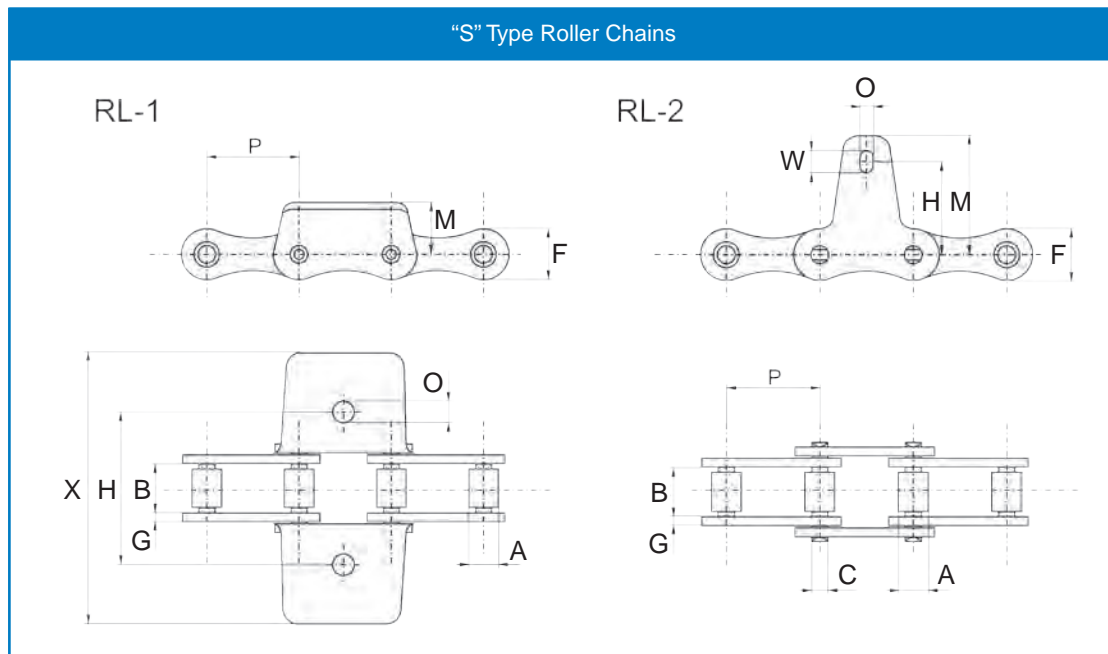
All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Agricultural Chain Attachments

“S” Type Roller Chains



Chain	Pitch	Roller diameter	Width between inner plates	Pin diameter	Side plate height	Pin length	Average tensile strength
	P	A	B	C	F	D	kN
S55X/TM-1	41.40	15.88	20.00	8.28	20.00	38.00	55.00

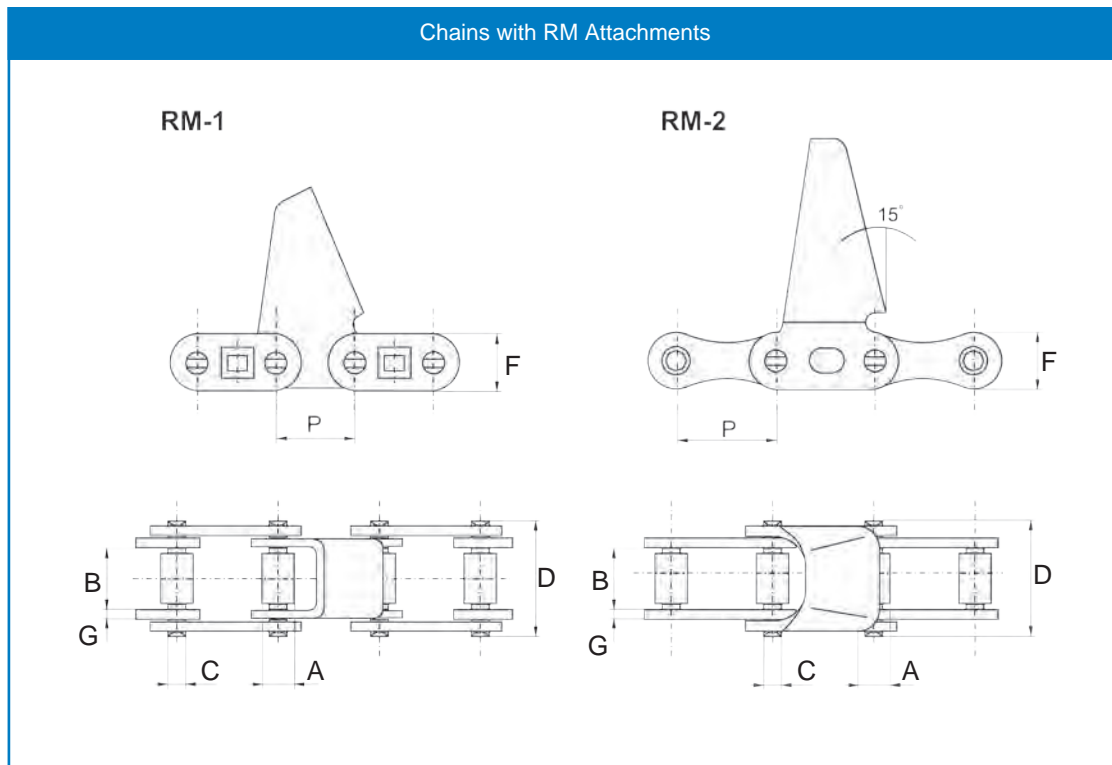


Chain	Pitch	Roller diameter	Width between inner plates	Pin diameter	Side plate height	Side plate thickness	Attachment height	Attachment height	Attachment height	Attachment height	Average tensile strength	
	P	A	B	C	F	G	H	X	M	O	W	kN
S55X RL-1	41.40	15.88	20.00	8.28	20.00	3.00	52.00	90.00	17.00	8.30	-	55.00
S55X RL-2	41.40	15.88	20.00	8.28	20.00	3.00	23.70	-	34.40	8.30	10.00	55.00

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Agricultural Chain Attachments

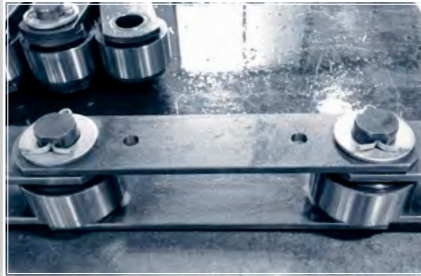
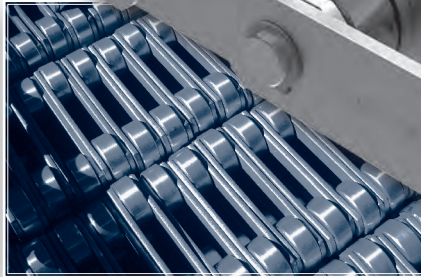
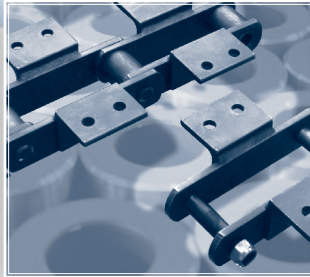
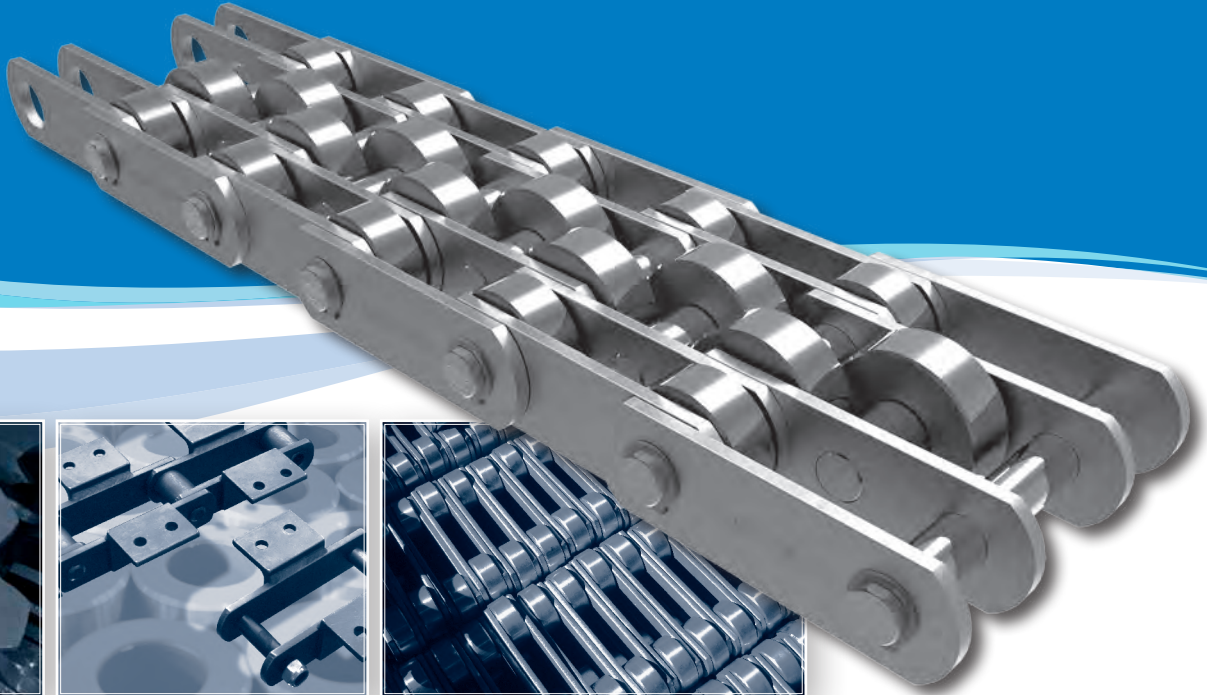
Chains with RM Attachment



Model	Pitch	Roller diameter	Width between inner plates	Pin diameter	Pin length	Side plate height	Plate thickness	Minimum tensile strength
	P	A	B	C	D	F	G	kN
RM1	30.00	15.88	20.00	8.28	35.80	20.70	3.00	40.00
RM2	30.00	15.88	20.00	8.28	38.00	20.00	3.00	40.00

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

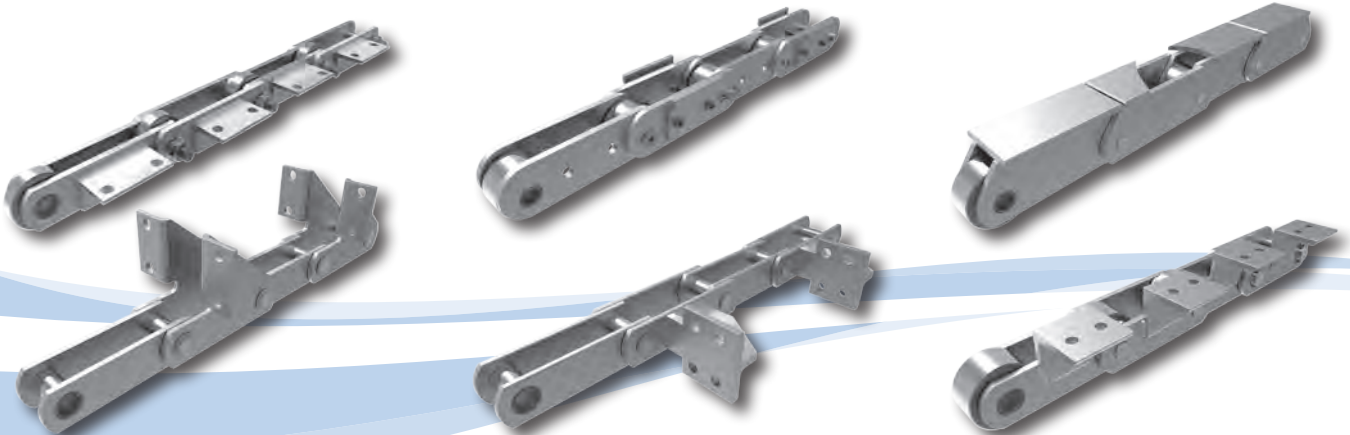
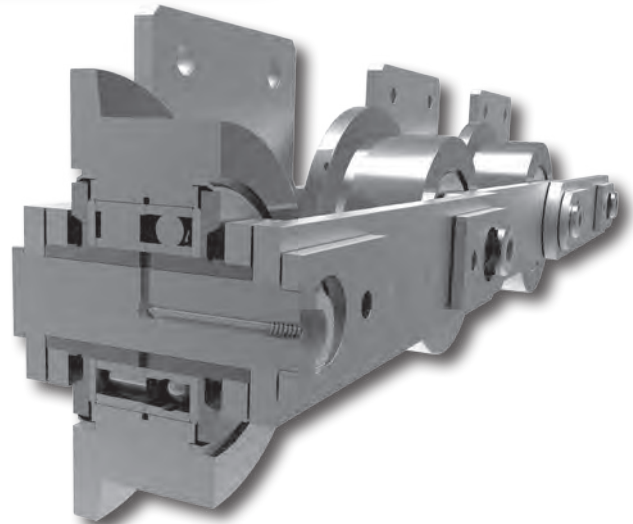
Conveyor Chains



Here's a Challenge:

European-quality Conveyor chains manufactured in our dedicated plant in the industrialised east coast of China supplying a global market.

- Specialists in the production of spin riveted chains
- High grade induction hardened alloy steel pins
- State-of-the-art European machines giving the best rivet on any standard chain



The Benefits of Challenge Spin Riveted Conveyor Chain

- **Material** – High quality steels used throughout

- **Link plates cropped from high carbon cold drawn steel**

To avoid internal stresses associated with guillotined steel, Challenge produces all plates from high tolerance, on size, cold drawn steel bars resulting in a plate better able to withstand fatigue and shock loads.

- **Bushes with location shoulders and interference fit**

For precise assembly; control on inner width and prevention of bush rotation. Bush shoulder length extended to form clearance between inner and outer plates and provide uniform lubrication; increased strength and life. This reduces the possibility of chain seizure.

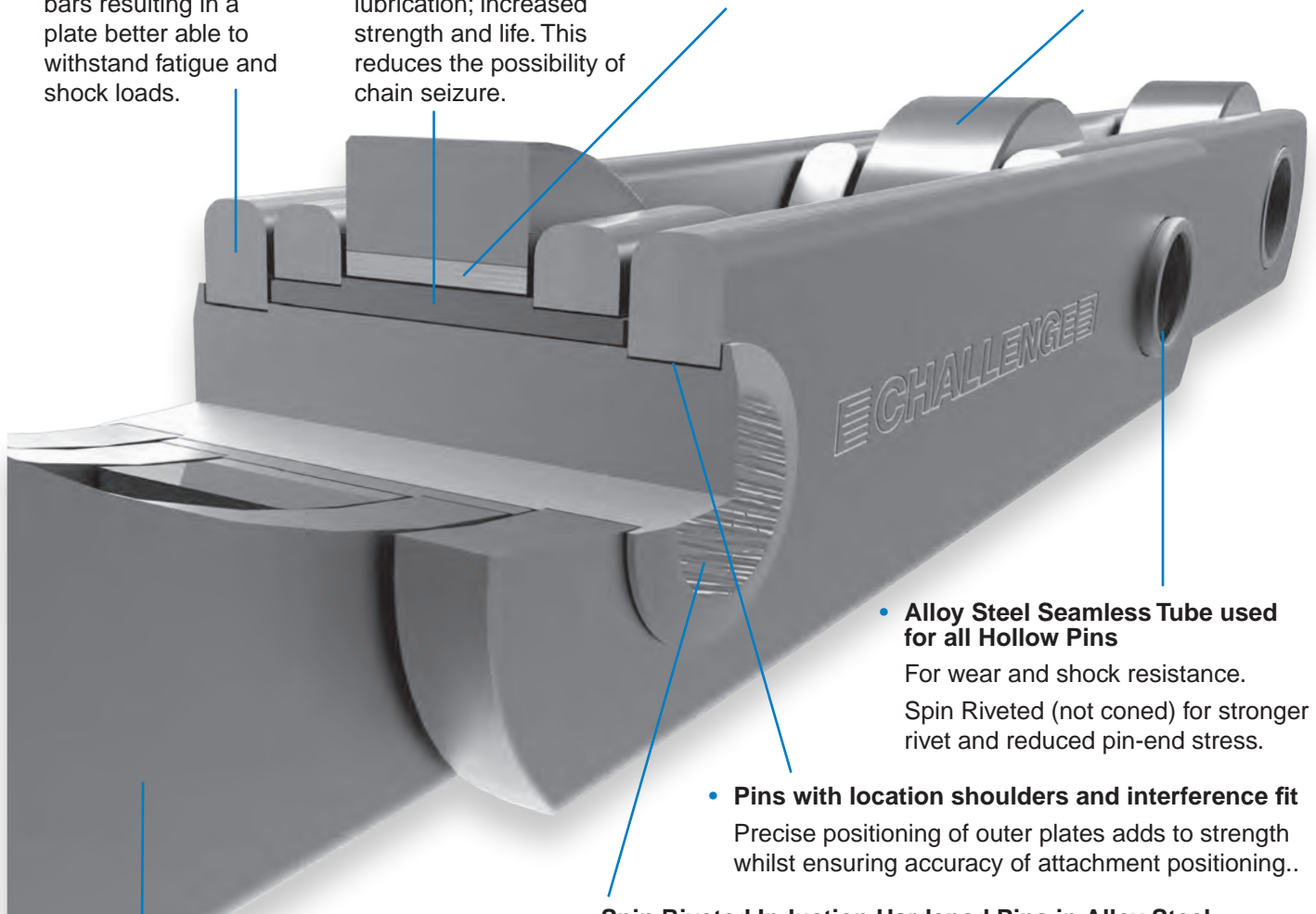
- **Case Hardened Alloy steel bushes precision machined from seamless tube**

Ensuring minimum distortion and superior concentricity.

- **Optional Stainless Steel or Nitride treated liner bushes**

- **Hardened Rollers with grinding**

Grinding the outer diameter gives excellent wear resistance and good load carrying qualities plus reduced wear on sprockets and better visual result.



- **Shot peened to produce a strong surface and reduce fatigue**

- **Challenge has invested heavily in CNC controlled machinery for optimum batch component conformity.**

- **Attachment plates jig assembled maintains position and squareness.**

- **Alloy Steel Seamless Tube used for all Hollow Pins**

For wear and shock resistance.

Spin Riveted (not coned) for stronger rivet and reduced pin-end stress.

- **Pins with location shoulders and interference fit**

Precise positioning of outer plates adds to strength whilst ensuring accuracy of attachment positioning..

- **Spin Riveted Induction Hardened Pins in Alloy Steel**

For optimum life and the strongest rivet in any standard chain..

- **Holes precision punched on dedicated progression tooling**

Guarantees consistently high tolerance pitch control and strong, fatigue resistant chain.

- **Attachment and options**

CNC welded and integral attachments, special bushes, bearings. Zinc and Nickel plated parts, molykoted pins, bushes, and rollers. Plastic rollers, flanged rollers, hardened plates, stainless parts, liner bushes etc. All specials produced in highest quality - fast turnaround.

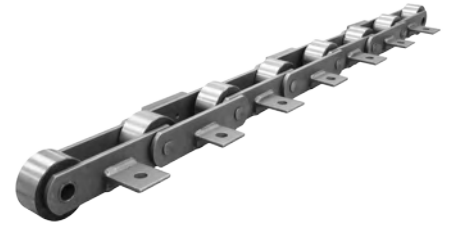
Just a few of the limitless options available:



6" pitch 09060 Sugar Chain w/ A42 attachment



250mm pitch Clay Reclaimer Chain w/ A2 attachment



125mm pitch M112 chain with special A1 attachment and bolted plastic wear pad



160mm pitch M160 chain with special integral scraper attachment, sheradised plates and Molykote® round parts



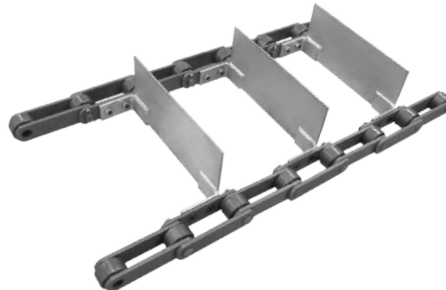
350mm pitch Sugar Chain w/ pin and bush through-lubrication



250mm pitch coal reclaimer chain w/ gusseted integral A2 attachment



160mm pitch bolted furnace chain w/ welded A2 attachment



125mm pitch twin strand bolted scraper chain, pin and bush w/ molykote®, sheradised plates and galvanised scraper plate



100mm pitch chain with A2 attachment



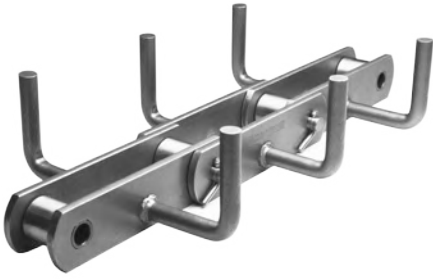
FV180-B-125 w/ drilled integral scraper for feed mill



315mm pitch clay reclaimer chain w/ integral A2 attachment and anti-rotation pins



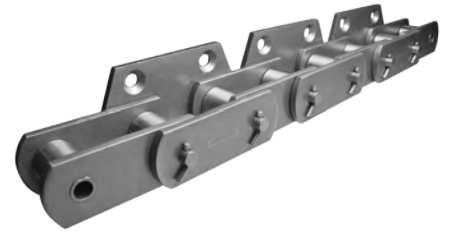
125mm pitch M224 bush chain



152.4mm pitch FU270 flow conveyor chain w/ welded scraper bars



315mm pitch clinker reclaimer chain w/ SA2 attachment



125mm pitch NSE400 bucket elevator chain w/ G4 attachment



152.4mm pitch bucket elevator chain w/ G4 attachment with square holes for captive bolts



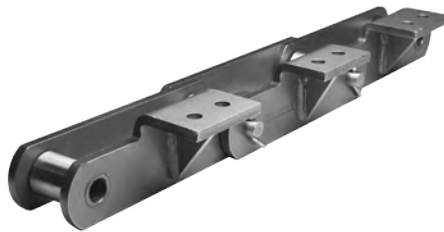
160mm pitch bucket elevator chain w/ G4 attachment for sugar refinery



315mm pitch coal supply chain w/ integral A2 attachment and bolted locking plate



250mm pitch clay supply chain w/ integral A2 attachment



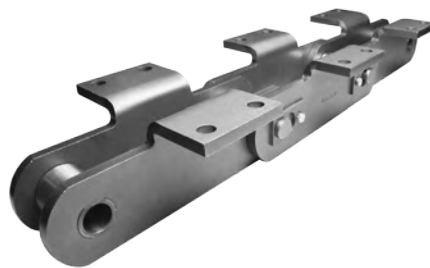
200mm pitch limestone supply chain w/ gusseted integral A2 attachment



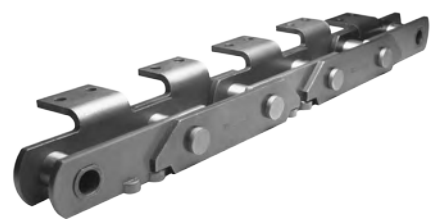
200mm pitch clay scaling supply chain w/ integral K1 attachment



125mm pitch NSE600 bucket elevator chain w/ G4 attachment



315mm pitch clay supply chain w/ integral K2 attachment and bolted locking plate



160mm pitch self supporting clinker tray conveyor chain w/ integral A2 attachment

SPECIAL CHAIN APPLICATIONS?

CHALLENGE® HAS ALL THE OPTIONS!

Oilite® Bushes

Optional Stainless Steel or Nitride treated liner bushes

Twin Track Roller

Needle Bearing Roller

Shot peened to produce a strong surface and reduce fatigue

Flanged Rollers

Outboard Rollers

Link plates cropped from high carbon cold drawn steel

To avoid internal stresses associated with guillotined steel, Challenge produces all plates from high tolerance, on size, cold drawn steel bars resulting in a plate better able to withstand fatigue and shock loads.

Molykote® Dry Lube:- Pins, Bushes, Rollers

Case Hardened Alloy steel bushes precision machined from seamless tube

Ensuring minimum distortion and superior concentricity.

Material

High quality steels used throughout

Robotic Welding

Attachment plates jig assembled to maintain position and squareness

Special Oils

Laser Cut Attachments

Galvanised Attachments

Zinc Plated Attachments

Alloy Steel Seamless Tube used for all Hollow Pins

For wear and shock resistance. Spin Riveted (not coned) for stronger rivet and reduced pin-end stress.

IGUS® Bushes

Spin Riveted Induction Hardened Pins in Alloy Steel
For optimum life and the strongest rivet in any standard chain.

Stainless Steel Pins

Pins with location shoulders and interference fit

Holes precision punched on dedicated progression tooling
Guarantees consistently high tolerance pitch control and strong, fatigue resistant chain.

Sherardized Link Plates

Delrin® Rollers

Through Lube Chain Bush Lubrication

Bushes with location shoulders/flats and interference fit

For precise assembly; control on inner width and prevention of bush rotation. Bush shoulder length extended to form clearance between inner and outer plates and provide uniform lubrication; increased strength and life. This reduces the possibility of chain seizure.

Other Options

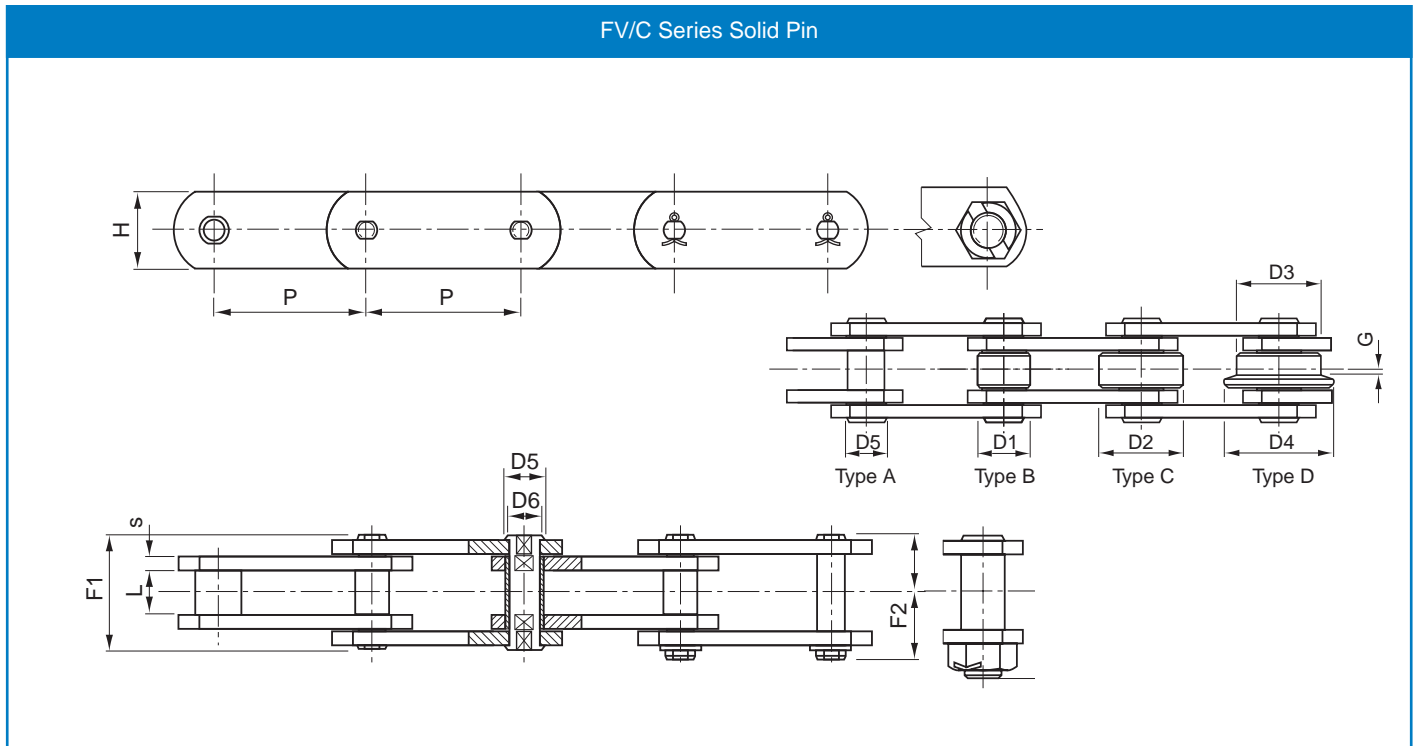
CNC welded and integral attachments, special bushes, bearings. Zinc and Nickel plated parts, molykoted pins, bushes, and rollers. Plastic rollers, flanged rollers, hardened plates, stainless parts, liner bushes etc. All specials produced in highest quality - fast turnaround.

HOT DIPPED IN
FORMULA 818X
+MOLY

Conveyor Chain

FV/C Series

Metric Conveyor Chain (DIN 8165)



Solid Pin

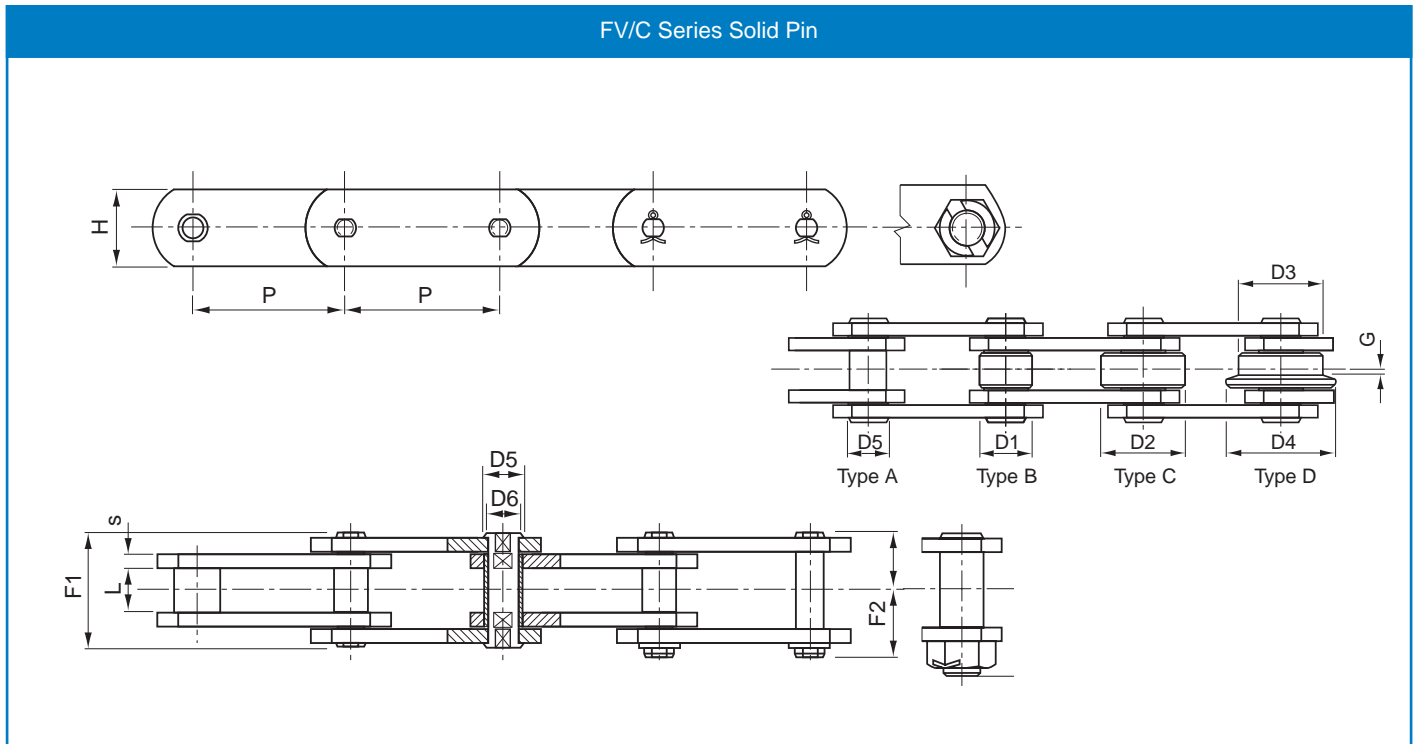
DIN Number	Chain number	Pitch P	L	G	H	S	F1	F2	D1	D2	D3	D4	D5	D6	Breaking Load kN	HT Breaking Load, kN	Weight (Type C) kg/m
FV40	C42	50	18	4	25	3	36	21	20	32	40	50	15	10	42	47	4.0
"	"	63	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3.3
"	"	80	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3.0
"	"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2.6
"	"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2.3
FV63	C64	63	22	5	30	4	45	26	26	40	50	63	18	12	64	75	6.4
"	"	80	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5.3
"	"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.7
"	"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.0
"	"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3.5
FV90	C100	63	25	6.5	35	5	53	30	30	48	63	78	20	14	100	115	10.0
"	"	80	"	"	"	"	"	"	"	"	"	"	"	"	"	"	8.6
"	"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7.3
"	"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6.5
"	"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5.8
"	"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.8
"	"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.6
FV112	C120	100	30	7.5	40	6	62	35	32	55	72	90	22	16	120	170	11.2
"	"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	"	9.6
"	"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	8.3
"	"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7.5
"	"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6.7

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Conveyor Chain

FV/C Series

Metric Conveyor Chain (DIN 8165)



Solid Pin

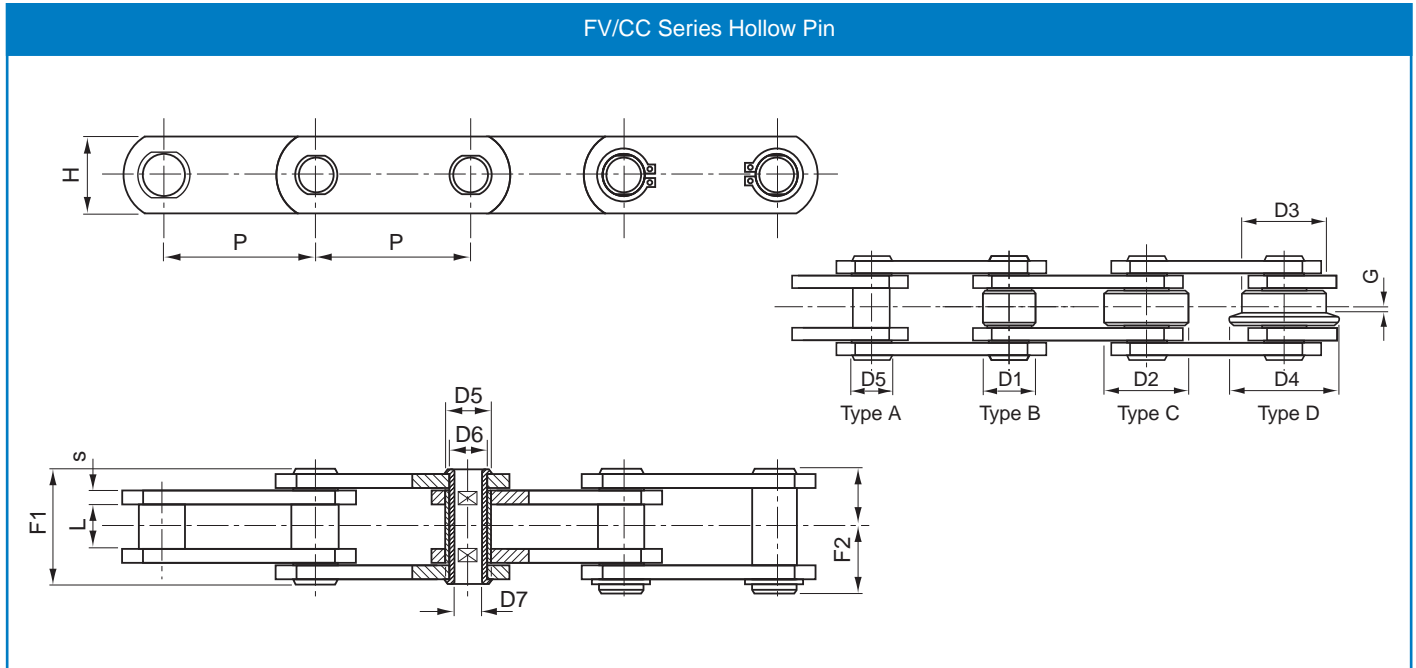
DIN Number	Chain number	Pitch P	L	G	H	S	F1	F2	D1	D2	D3	D4	D5	D6	Breaking Load kN	HT Breaking Load, kN	Weight (Type C) kg/m
FV140	C145	100	35	9	45	6	67	38	36	60	80	100	26	18	145	180	14.3
"	"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	"	12.3
"	"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	10.5
"	"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	9.0
"	"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	8.3
FV180	C190	125	45	13	50	8	86	49	42	70	100	125	30	20	190	250	18.9
"	"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	16.7
"	"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	14.8
"	"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	13.0
"	"	315	"	"	"	"	"	"	"	"	"	"	"	"	"	"	11.6
FV250	C275	160	55	15	60	8	97	55	50	80	125	155	36	26	275	300	23.8
"	"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	20.6
"	"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	17.9
"	"	315	"	"	"	"	"	"	"	"	"	"	"	"	"	"	15.8
"	"	400	"	"	"	"	"	"	"	"	"	"	"	"	"	"	13.9
FV315	C370	160	65	18	70	10	113	70	60	90	140	175	42	30	370	480	33.3
"	"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	28.9
"	"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	25.3
"	"	315	"	"	"	"	"	"	"	"	"	"	"	"	"	"	22.4
"	"	400	"	"	"	"	"	"	"	"	"	"	"	"	"	"	20.2

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Conveyor Chain

FV/CC Series

Metric Conveyor Chain (DIN 8165)



Hollow Pin

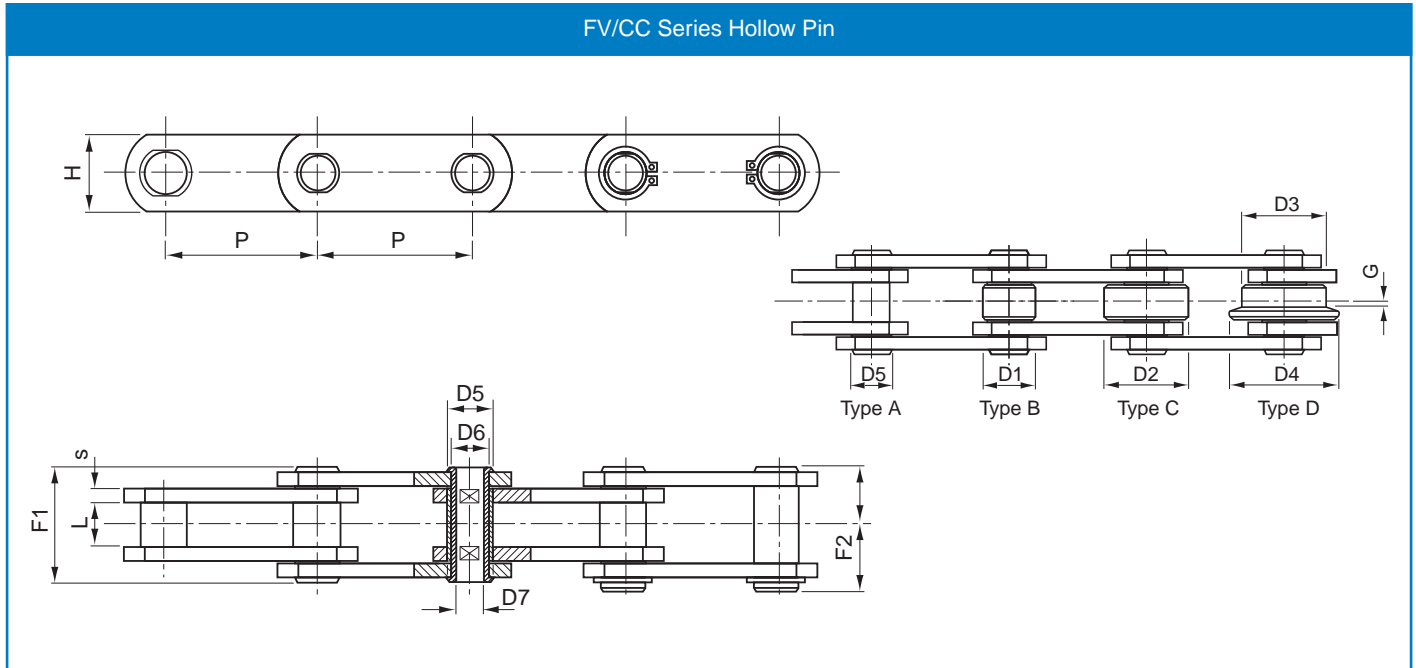
DIN Number	Chain number	Pitch P	L	G	H	S	F1	F2	D1	D2	D3	D4	D5	D6	D7	Breaking Load kN	Weight (Type C) kg/m
FV63	CC46	63	22	5	30	4	45	28	26	40	50	63	18	12	8	46	5.7
"	"	80	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.9
"	"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.3
"	"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3.8
"	"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3.4
FV90	CC73	63	25	6.5	35	5	53	30	30	48	63	78	20	14	10	73	9.1
"	"	80	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7.8
"	"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6.8
"	"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5.6
"	"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5.3
"	"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.7
"	"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.3
FV112	CC90	100	30	7.5	40	6	62	32	32	55	72	90	22	16	11	90	10.2
"	"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	"	8.9
"	"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7.8
"	"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7.0
"	"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6.3
FV140	CC110	100	35	9	45	6	67	35	36	60	80	100	26	18	12	110	12.9
"	"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	"	11.2
"	"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	9.7
"	"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	8.6
"	"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7.7

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Conveyor Chain

FV/CC Series

Metric Conveyor Chain (DIN 8165)



Hollow Pin

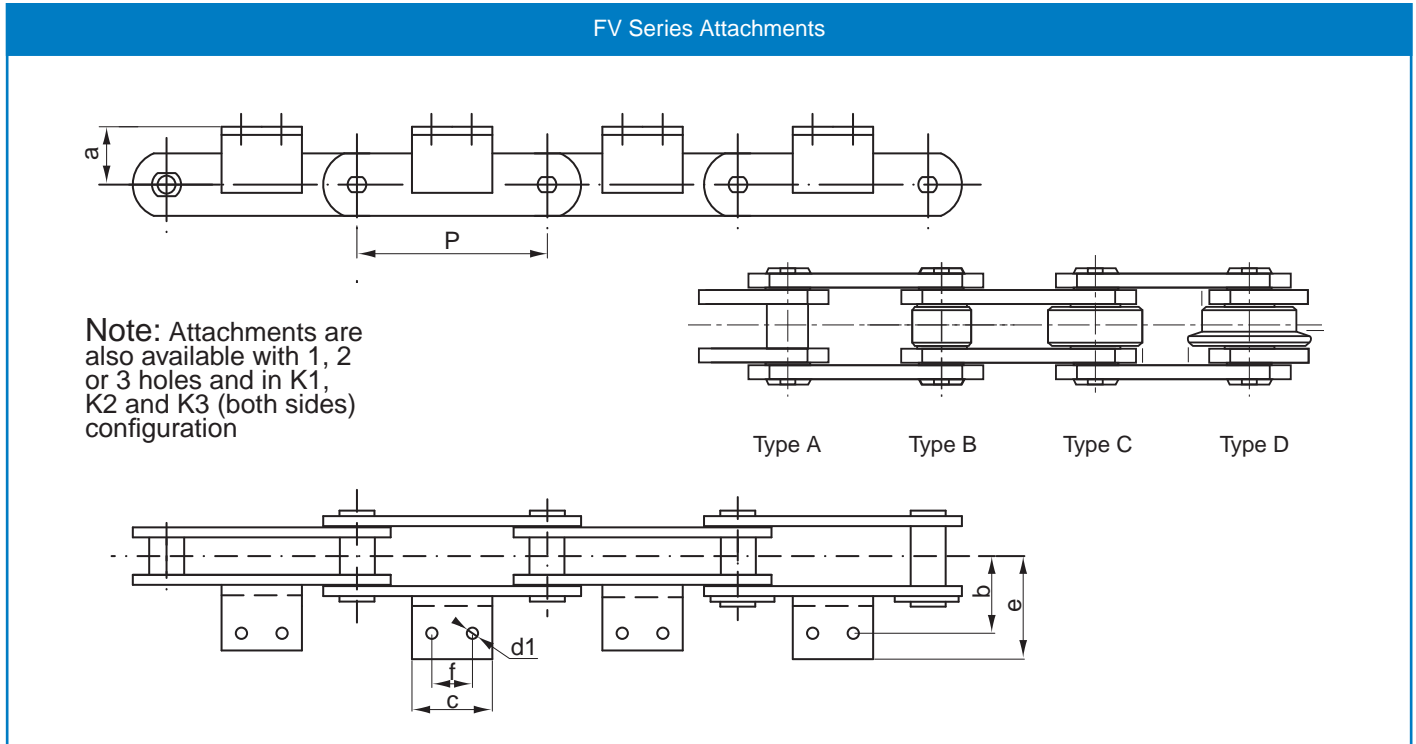
DIN Number	Chain number	Pitch P	L	G	H	S	F1	F2	D1	D2	D3	D4	D5	D6	D7	Breaking Load kN	Weight (Type C) kg/m
FV180	CC145	125	45	13	50	8	86	45	42	70	100	125	30	20	14	145	18.2
"	"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	15.6
"	"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	13.8
"	"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	12.3
"	"	315	"	"	"	"	"	"	"	"	"	"	"	"	"	"	11.0
FV250	CC215	160	55	15	60	8	97	55	50	80	125	155	36	26	18	215	20.5
"	"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	18.0
"	"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	15.9
"	"	315	"	"	"	"	"	"	"	"	"	"	"	"	"	"	14.2
FV315	CC295	160	65	18	70	10	117	63	60	90	140	175	42	30	20	295	34.1
"	"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	29.5
"	"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	25.8
"	"	315	"	"	"	"	"	"	"	"	"	"	"	"	"	"	22.8
"	"	400	"	"	"	"	"	"	"	"	"	"	"	"	"	"	20.2

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Conveyor Chain Attachments

FV Series Attachments

Metric Conveyor Chain (DIN 8165)



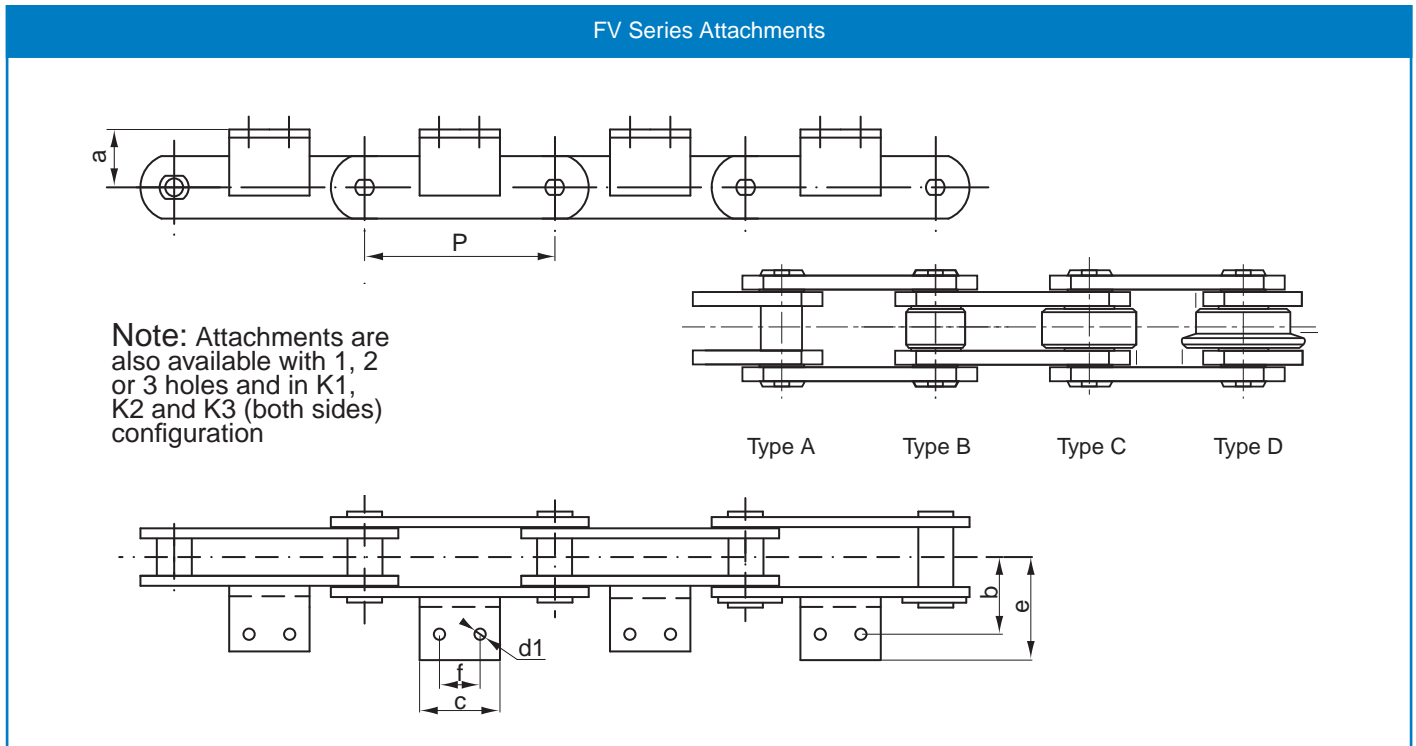
DIN Number	Chain Number	Pitch P	a	b	c	d1	e	f	Welded or Integral attachment	Chain Weight - Excluding Attachments kg/metre				Attachment Weight (A2) kg each
										Type A	Type B	Type C	Type D	
FV40	C42	50	20	25	45	6.5	64.0	*	x	2.4	2.9	4.0	5.6	0.050
"	"	63	"	"	31	"	40.5	*	x	2.0	2.4	3.3	4.5	0.036
"	"	80	"	"	45	"	"	25	25x3	1.9	2.2	3.0	3.9	0.050
"	"	100	"	"	50	"	"	30	"	1.7	2.0	2.6	3.3	0.056
"	"	125	"	"	60	"	"	30	"	1.6	1.9	2.3	3.0	0.067
FV63	C64	63	30	34	40	8.4	50.0	*	30x4	3.8	4.5	6.4	8.9	0.063
"	"	80	"	"	45	"	"	25	"	3.2	3.8	5.3	7.2	0.095
"	"	100	"	"	50	"	"	30	"	3.0	3.5	4.7	6.2	0.110
"	"	125	"	"	60	"	"	40	"	2.7	3.0	4.0	5.3	0.140
"	"	160	"	"	70	"	"	50	"	2.4	2.7	3.5	4.4	0.170
FV90	C100	63	35	40	30	8.4	64.0	*	40x4	5.6	6.8	10.0	14.7	0.072
"	"	80	"	"	45	"	"	25	"	5.1	6.0	8.6	12.3	0.110
"	"	100	"	"	50	"	"	30	"	4.5	5.3	7.3	10.3	0.130
"	"	125	"	"	60	"	"	40	"	4.2	4.8	6.5	8.8	0.160
"	"	160	"	"	70	"	"	50	"	4.0	4.5	5.8	7.6	0.200
"	"	200	"	"	80	"	"	60	"	3.5	3.8	4.8	5.8	0.240
"	"	250	"	"	85	"	"	65	"	3.4	3.7	4.6	5.4	0.210
FV112	C120	100	40	50	50	11.0	70.0	30	40x6	6.7	7.7	11.2	18.8	0.190
"	"	125	"	"	65	"	"	40	"	6.0	6.8	9.6	15.7	0.250
"	"	160	"	"	75	"	"	50	"	5.5	6.1	8.3	13.0	0.290
"	"	200	"	"	90	"	"	65	"	5.2	5.7	7.5	11.3	0.350
"	"	250	"	"	105	"	"	80	"	4.9	5.3	6.7	9.8	0.410

* Attachment With One Hole

Conveyor Chain Attachments

FV Series Attachments

Metric Conveyor Chain (DIN 8165)



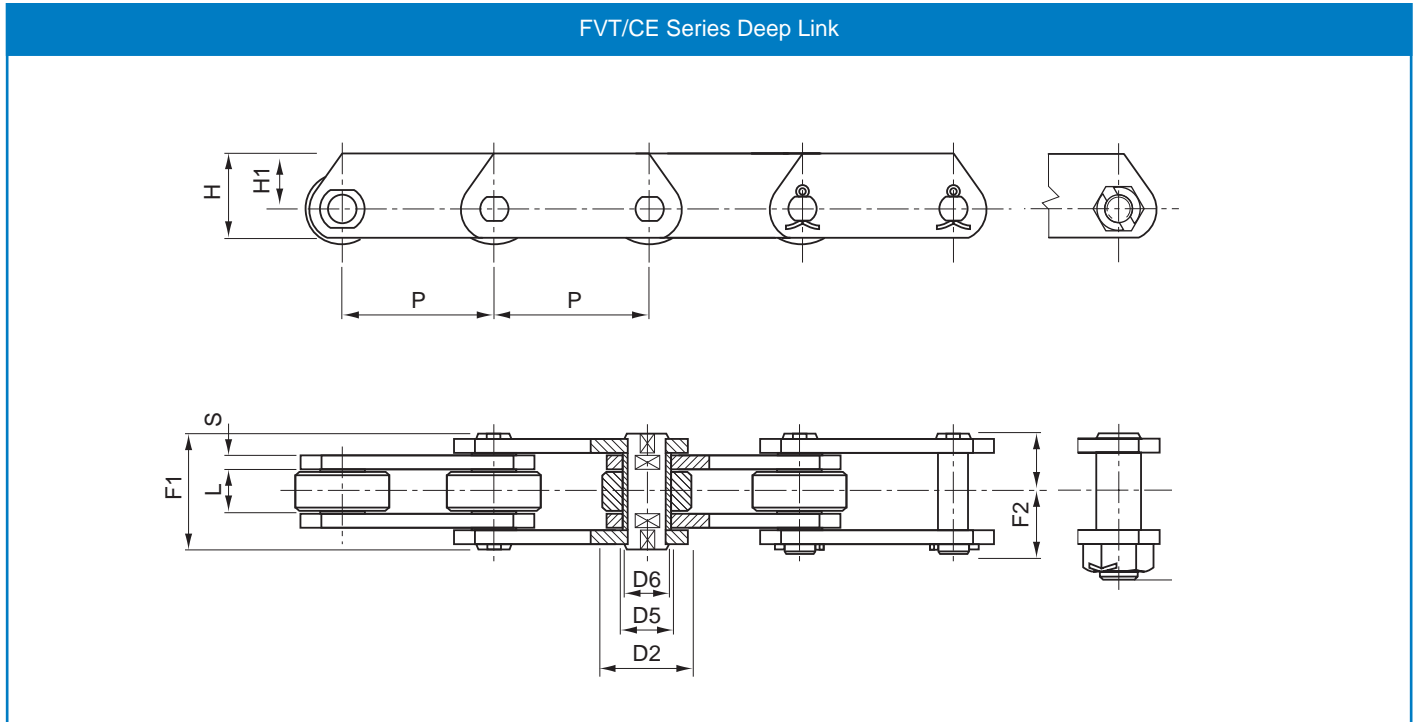
DIN Number	Chain Number	Pitch P	a	b	c	d1	e	f	Welded or Integral attachment	Chain Weight - Excluding Attachments kg/metre				Attachment Weight (A2) kg each
										Type A	Type B	Type C	Type D	
FV140	C145	100	45	50	55	11	81	30	50x6	8.2	9.5	14.3	21.4	0.23
"	"	125	"	"	65	"	"	40	"	7.4	8.5	12.3	18.0	0.30
"	"	160	"	"	75	"	"	50	"	6.7	7.5	10.5	14.9	0.36
"	"	200	"	"	90	"	"	65	"	6.0	6.7	9.0	12.8	0.45
"	"	250	"	"	105	"	"	80	"	5.8	6.3	8.3	11.0	0.54
FV180	C190	125	45	64	63	13	91	35	60x8	10.5	12.4	18.9	31.3	0.37
"	"	160	"	"	80	"	"	50	"	10.2	11.7	16.7	26.5	0.47
"	"	200	"	"	95	"	"	65	"	9.6	10.8	14.8	25.9	0.56
"	"	250	"	"	110	"	"	80	"	8.9	9.8	13.0	19.3	0.65
"	"	315	"	"	130	"	"	100	"	8.3	9.0	11.6	16.6	0.77
FV250	C275	160	55	69	80	14	106	50	60x8	13.4	16.4	23.8	45.9	0.58
"	"	200	"	"	95	"	"	65	"	12.3	14.7	20.6	38.3	0.69
"	"	250	"	"	110	"	"	80	"	11.3	13.3	17.9	32.1	0.81
"	"	315	"	"	130	"	"	100	"	10.5	12.0	15.8	27.0	0.96
"	"	400	"	"	130	"	"	100	"	9.8	10.7	13.9	23.8	0.96
FV315	C370	160	60	85	50	14	123.5	*	70x10	20.4	24.9	33.3	67.8	0.52
"	"	200	"	"	95	"	"	65	"	18.5	22.1	28.9	56.4	0.96
"	"	250	"	"	110	"	"	80	"	17.0	20.0	25.3	47.3	1.11
"	"	315	"	"	130	"	"	100	"	15.9	18.2	22.4	39.9	1.32
"	"	400	"	"	130	"	"	100	"	15.0	16.8	20.2	34.0	1.32

* Attachment With One Hole

Conveyor Chain

FVT/CE Series

Metric Conveyor Chain (DIN 8165)



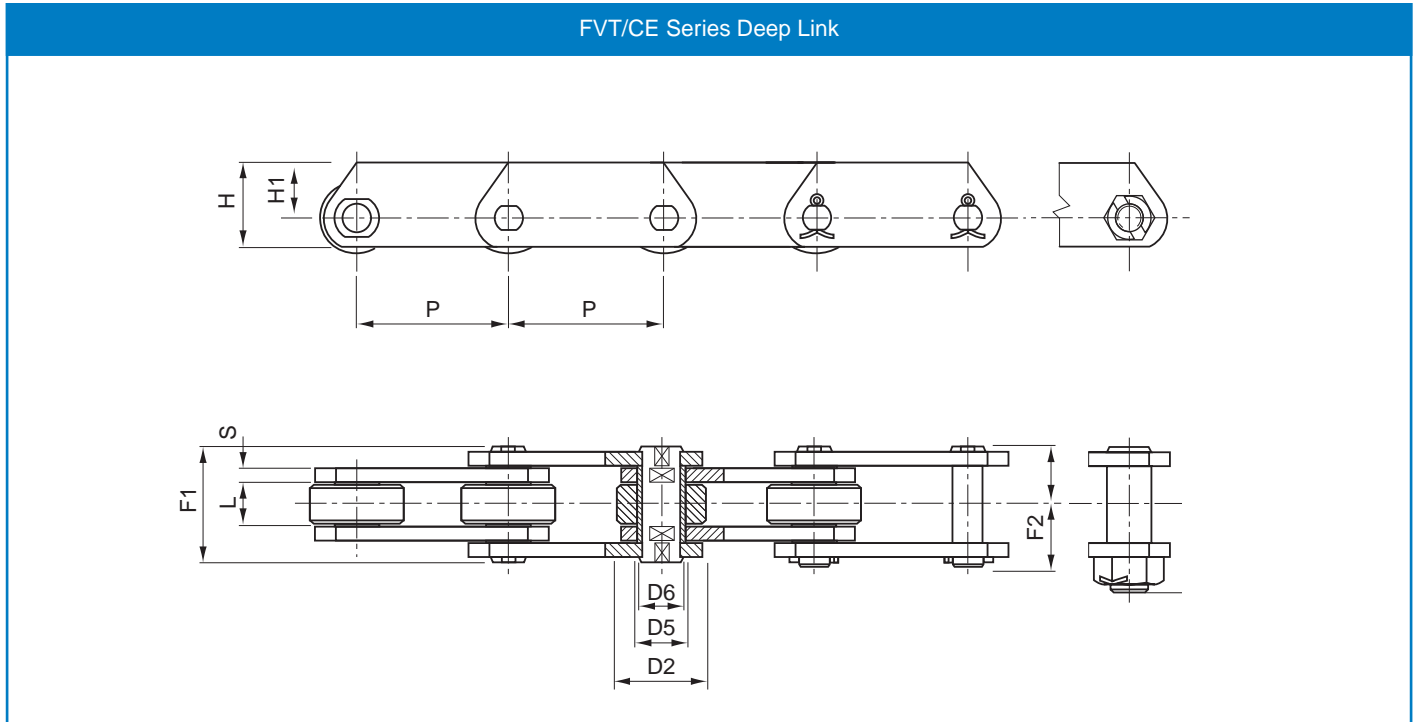
Deep Link

DIN Number	Chain number	P Pitch	L	H	H1	S	F1	F2	D2	D5	D6	Breaking Load kN	HT Breaking Load, kN	Weight kg/m
FVT40	CE42	50	18	35	22.5	3	36	21	32	15	10	42	47	5.0
"	"	63	"	"	"	"	"	"	"	"	"	"	"	4.3
"	"	80	"	"	"	"	"	"	"	"	"	"	"	3.8
"	"	100	"	"	"	"	"	"	"	"	"	"	"	3.4
"	"	125	"	"	"	"	"	"	"	"	"	"	"	3.0
FVT63	CE64	63	22	40	25	4	45	26	40	18	12	64	75	7.5
"	"	80	"	"	"	"	"	"	"	"	"	"	"	6.5
"	"	100	"	"	"	"	"	"	"	"	"	"	"	5.7
"	"	125	"	"	"	"	"	"	"	"	"	"	"	5.1
"	"	160	"	"	"	"	"	"	"	"	"	"	"	4.5
FVT90	CE100	63	25	45	27.5	5	53	30	48	20	14	100	115	11.7
"	"	80	"	"	"	"	"	"	"	"	"	"	"	10.0
"	"	100	"	"	"	"	"	"	"	"	"	"	"	8.7
"	"	125	"	"	"	"	"	"	"	"	"	"	"	7.7
"	"	160	"	"	"	"	"	"	"	"	"	"	"	6.8
"	"	200	"	"	"	"	"	"	"	"	"	"	"	5.8
"	"	250	"	"	"	"	"	"	"	"	"	"	"	5.4
FVT112	CE120	100	30	50	30	6	62	35	55	22	16	120	170	12.7
"	"	125	"	"	"	"	"	"	"	"	"	"	"	11.7
"	"	160	"	"	"	"	"	"	"	"	"	"	"	9.7
"	"	200	"	"	"	"	"	"	"	"	"	"	"	8.7
"	"	250	"	"	"	"	"	"	"	"	"	"	"	8.0

Conveyor Chain

FVT/CE Series

Metric Conveyor Chain (DIN 8165)



Deep Link

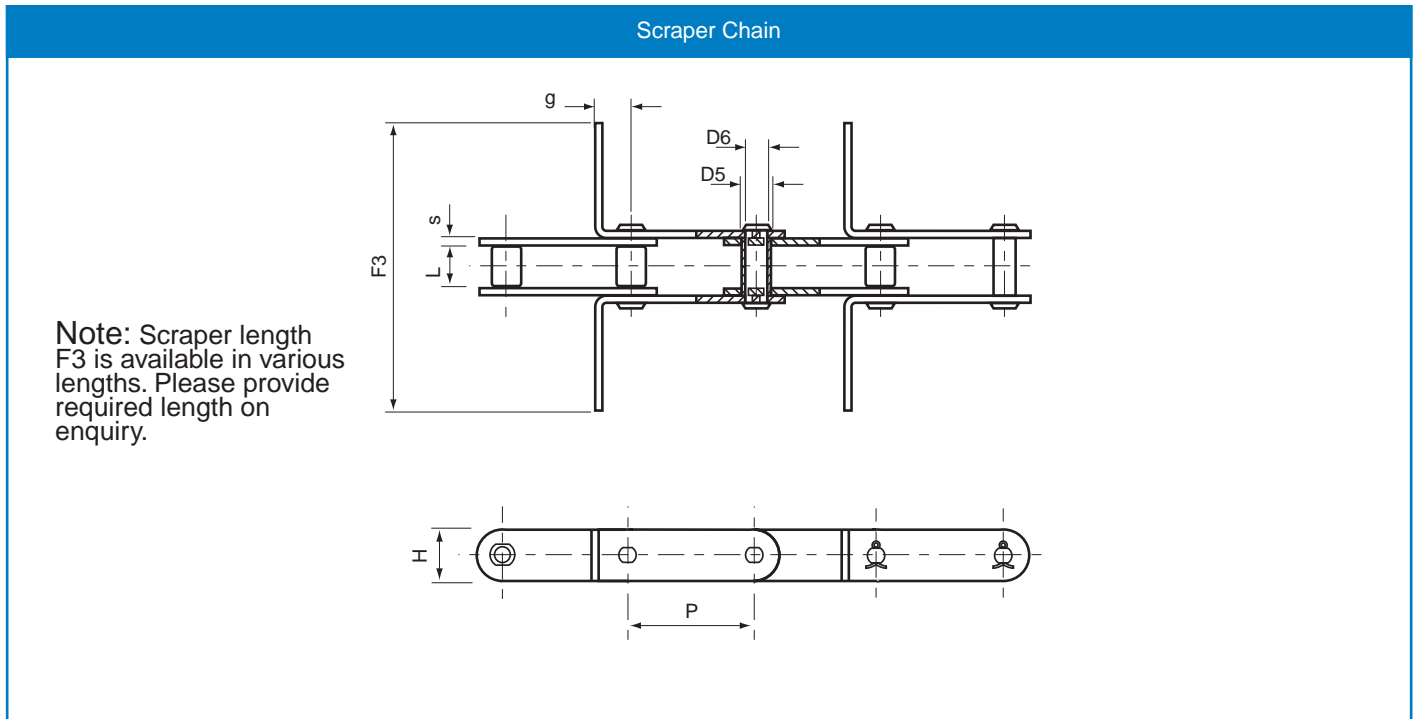
DIN Number	Chain Number	P Pitch	L	H	H1	S	F1	F2	D2	D5	D6	Breaking Load kN	HT Breaking Load, kN	Weight kg/m
FVT140	CE145	100	35	60	37.5	6	67	38	60	25	18	145	180	16.8
"	"	125	"	"	"	"	"	"	"	"	"	"	"	14.6
"	"	160	"	"	"	"	"	"	"	"	"	"	"	12.6
"	"	200	"	"	"	"	"	"	"	"	"	"	"	11.3
"	"	250	"	"	"	"	"	"	"	"	"	"	"	10.1
FVT180	CE190	125	45	70	45	8	86	49	70	30	20	190	250	24.2
"	"	160	"	"	"	"	"	"	"	"	"	"	"	20.8
"	"	200	"	"	"	"	"	"	"	"	"	"	"	18.4
"	"	250	"	"	"	"	"	"	"	"	"	"	"	16.5
"	"	315	"	"	"	"	"	"	"	"	"	"	"	14.9
FVT250	CE275	160	55	80	50	8	97	55	80	36	26	275	300	28.2
"	"	200	"	"	"	"	"	"	"	"	"	"	"	24.5
"	"	250	"	"	"	"	"	"	"	"	"	"	"	21.7
"	"	315	"	"	"	"	"	"	"	"	"	"	"	19.3
FVT315	CE295	160	65	90	55	10	26	70	90	42	30	370	480	39.9
"	"	200	"	"	"	"	"	"	"	"	"	"	"	34.8
"	"	250	"	"	"	"	"	"	"	"	"	"	"	30.6
"	"	315	"	"	"	"	"	"	"	"	"	"	"	27.3
"	"	400	"	"	"	"	"	"	"	"	"	"	"	24.5

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Conveyor Chain

FV/CR Series

Metric Conveyor Chain (DIN 8165)



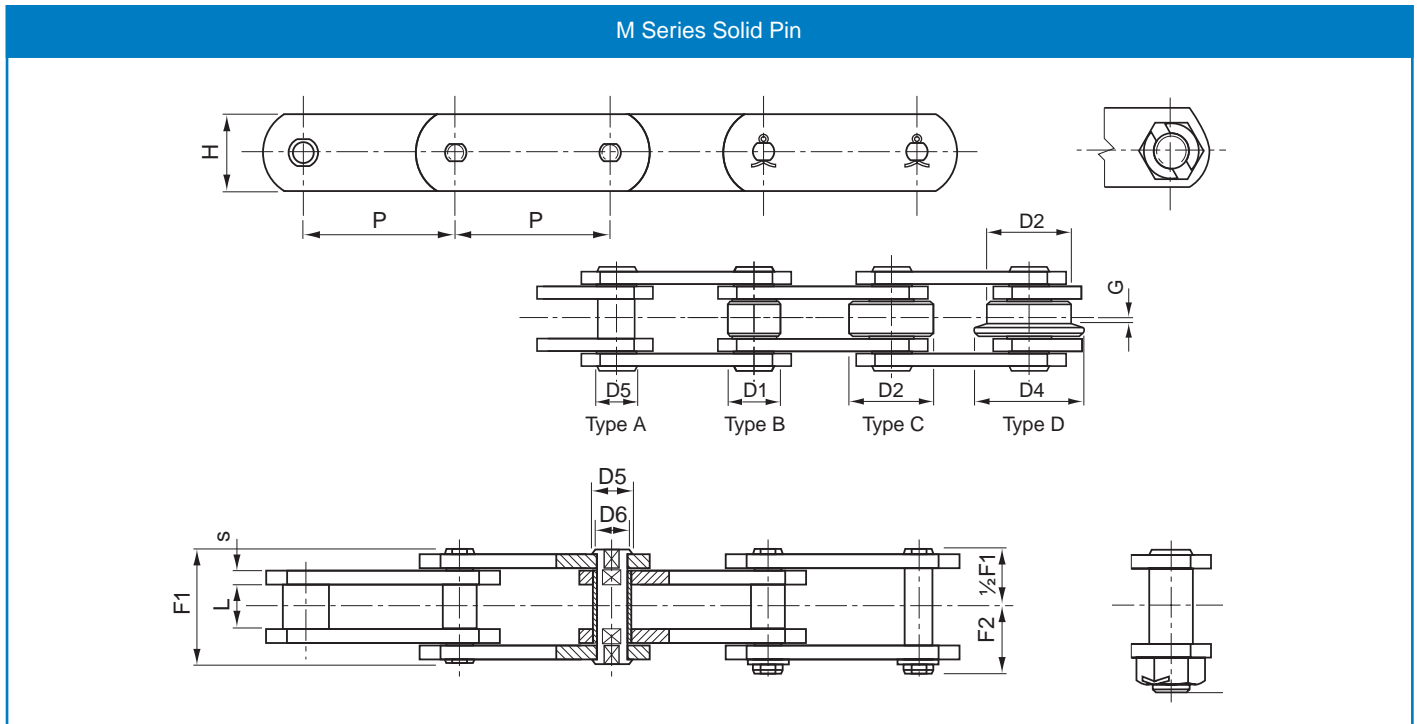
Scraper Chain

DIN Number	Chain Number	Pitch P	L	H	S	g	F3	D5	D6	Breaking Load kN	Weight kg/m
FV40	CR42	80	18	25	3	25	*	15	10	42	1.9
"	"	100	"	"	"	"	*	"	"	"	1.7
"	"	125	"	"	"	"	*	"	"	"	1.6
FV63	CR64	100	22	30	4	25	*	18	12	64	3.0
"	"	125	"	"	"	"	*	"	"	"	2.7
"	"	150	"	"	"	"	*	"	"	"	2.4
FV90	CR100	100	25	35	5	30	*	20	14	100	4.5
"	"	125	"	"	"	"	*	"	"	"	4.2
"	"	150	"	"	"	"	*	"	"	"	4.0
FV112	CR120	100	30	40	6	35	*	22	16	120	6.7
"	"	125	"	"	"	"	*	"	"	"	6.0
"	"	150	"	"	"	"	*	"	"	"	5.5
FV140	CR145	100	35	45	"	38	*	26	18	145	7.4
"	"	125	"	"	"	"	*	"	"	"	6.7
"	"	150	"	"	"	"	*	"	"	"	6.0
FV180	CR190	125	45	50	8	44	*	30	20	190	10.5
"	"	150	"	"	"	"	*	"	"	"	10.2
"	"	200	"	"	"	"	*	"	"	"	9.6
FV250	CR275	125	55	60	"	50	*	36	26	275	13.4
"	"	150	"	"	"	"	*	"	"	"	12.3
"	"	200	"	"	"	"	*	"	"	"	11.3

Conveyor Chain

M Series

Metric Conveyor Chain (DIN 8167)



Solid Pin

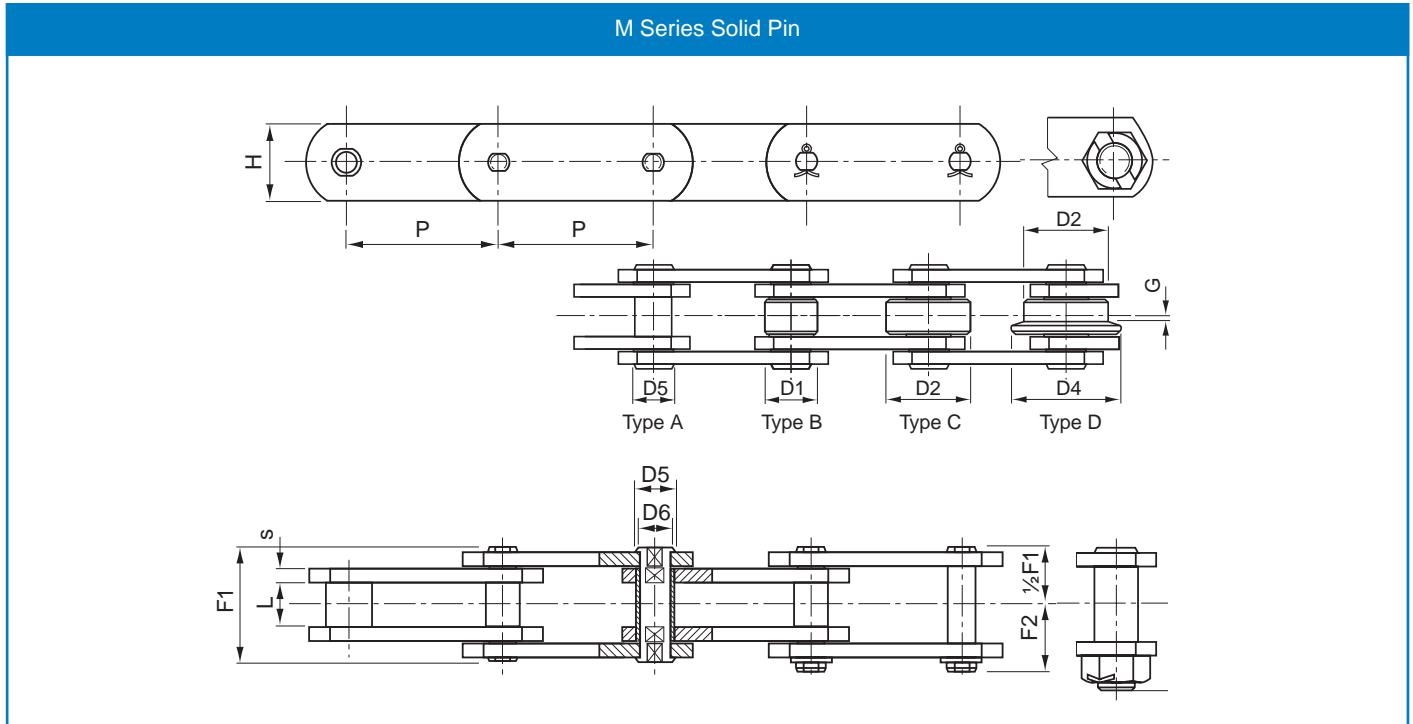
Chain number	Pitch P	L	G	H	S	F1	F2	D1	D2	D4	D5	D6	Breaking Load kN	HT Breaking Load, kN	Weight (Type C) kg/m
M 20	40	16	3.5	18	2.5	33.0	19.0	12.5	25	32	9	6	20	32	2.4
"	50	"	"	"	"	"	"	"	"	"	"	"	"	"	2.0
"	63	"	"	"	"	"	"	"	"	"	"	"	"	"	1.8
"	80	"	"	"	"	"	"	"	"	"	"	"	"	"	1.6
M28	50	18	4.0	20	3	36.0	20.5	15.0	30	36	10	7	28	42	3.3
"	63	"	"	"	"	"	"	"	"	"	"	"	"	"	2.8
"	80	"	"	"	"	"	"	"	"	"	"	"	"	"	2.5
"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	2.1
M 40	63	20	4.5	25	4	40.5	24.0	18.0	36	45	11	8	40	60	4.4
"	80	"	"	"	"	"	"	"	"	"	"	"	"	"	3.7
"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	3.2
"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	2.9
M 56	63	24	7.0	30	4	45.0	26.0	21.0	42	50	15	10	56	85	6.8
"	80	"	"	"	"	"	"	"	"	"	"	"	"	"	5.7
"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	5.0
"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	4.4
"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	3.9
M 80	80	28	7.0	35	5	54.5	30.5	25.0	50	60	18	12	80	125	9.2
"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	7.9
"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	6.9
"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	6.0
"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	5.3

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Conveyor Chain

M Series

Metric Conveyor Chain (DIN 8167)



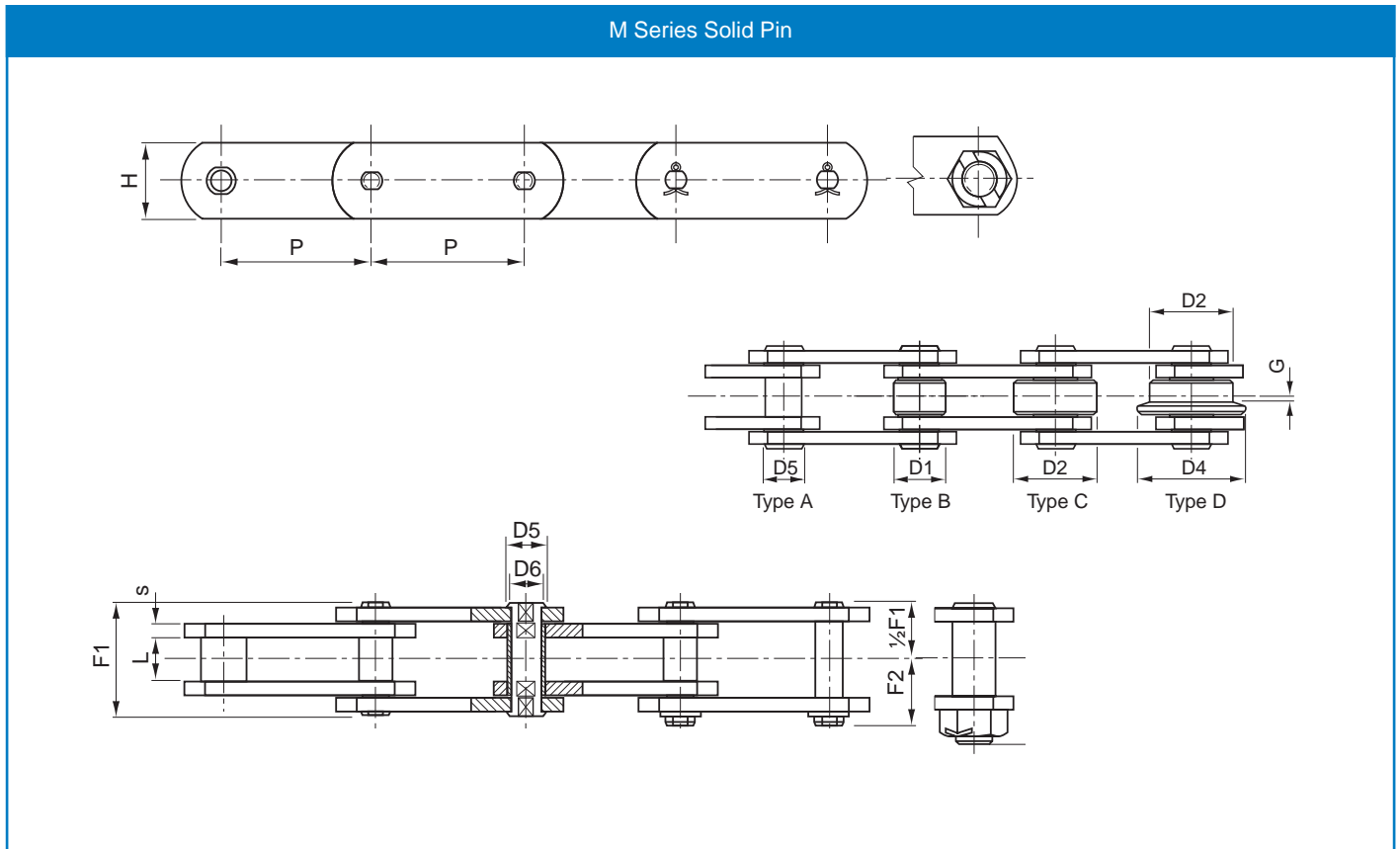
Solid Pin

Chain number	Pitch P	L	G	H	S	F1	F2	D1	D2	D4	D5	D6	Breaking Load kN	HT Breaking Load, kN	Weight (Type C) kg/m
M 112	80	32	7.5	40	6	63	36.0	30	60	75	21	15	112	175	14.0
"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	12.0
"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	10.4
"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	9.0
"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	7.9
M 160	100	37	8.5	50	7	72	41.5	36	70	90	25	18	160	260	18.9
"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	16.3
"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	14.0
"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	12.2
"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	11.0
M 224	125	43	10.0	60	8	84	47.0	42	85	105	30	21	224	340	25.8
"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	22.0
"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	19.0
"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	16.7
"	315	"	"	"	"	"	"	"	"	"	"	"	"	"	14.9
M 315	160	48	10.5	70	10	97	55.0	50	100	124	36	25	315	520	33.3
"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	28.7
"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	25.2
"	315	"	"	"	"	"	"	"	"	"	"	"	"	"	22.3
"	400	"	"	"	"	"	"	"	"	"	"	"	"	"	20.0

Conveyor Chain

M Series

Metric Conveyor Chain (DIN 8167)



Solid Pin

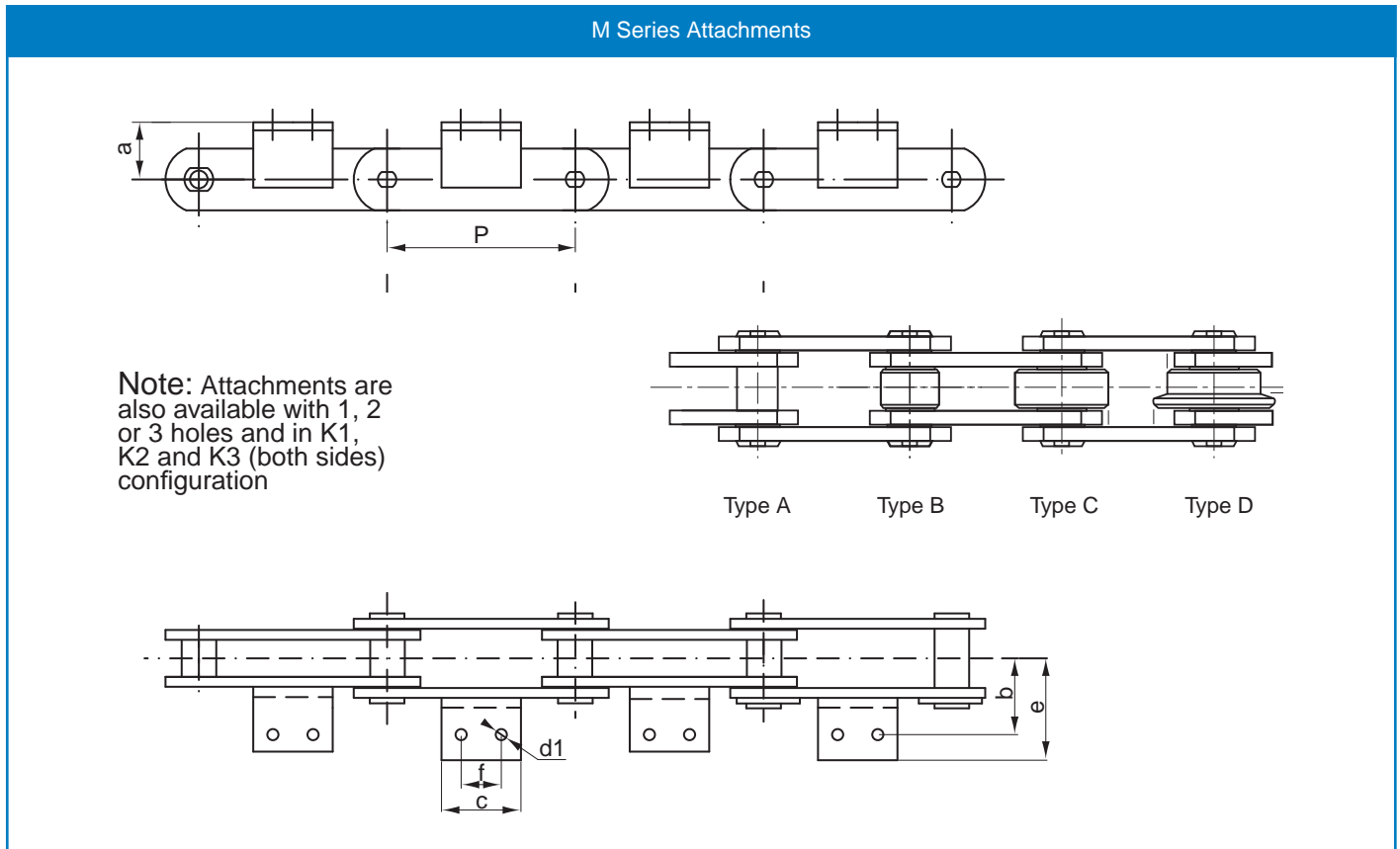
Chain number	Pitch P	L	G	H	S	F1	F2	D1	D2	D4	D5	D6	Breaking Load kN	HT Breaking Load, kN	Weight (Type C) kg/m
M 450	200	56	11.5	80	12	114	67.0	60	120	149	42	30	450	700	40.5
"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	39.5
"	315	"	"	"	"	"	"	"	"	"	"	"	"	"	34.5
"	400	"	"	"	"	"	"	"	"	"	"	"	"	"	30.5
M 630	250	67	15.0	100	14	137	87.5	70	140	170	50	36	630	900	64.0
"	315	"	"	"	"	"	"	"	"	"	"	"	"	"	55.5
"	400	"	"	"	"	"	"	"	"	"	"	"	"	"	49.0
"	500	"	"	"	"	"	"	"	"	"	"	"	"	"	43.6
M 900	250	78	17.0	120	16	153	95.0	85	170	210	60	44	900	1250	98.3
"	315	"	"	"	"	"	"	"	"	"	"	"	"	"	84.2
"	400	"	"	"	"	"	"	"	"	"	"	"	"	"	72.5
"	500	"	"	"	"	"	"	"	"	"	"	"	"	"	63.8
"	600	"	"	"	"	"	"	"	"	"	"	"	"	"	56.6

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Conveyor Chain Attachments

M Series Attachments

Metric Conveyor Chain (DIN 8167)



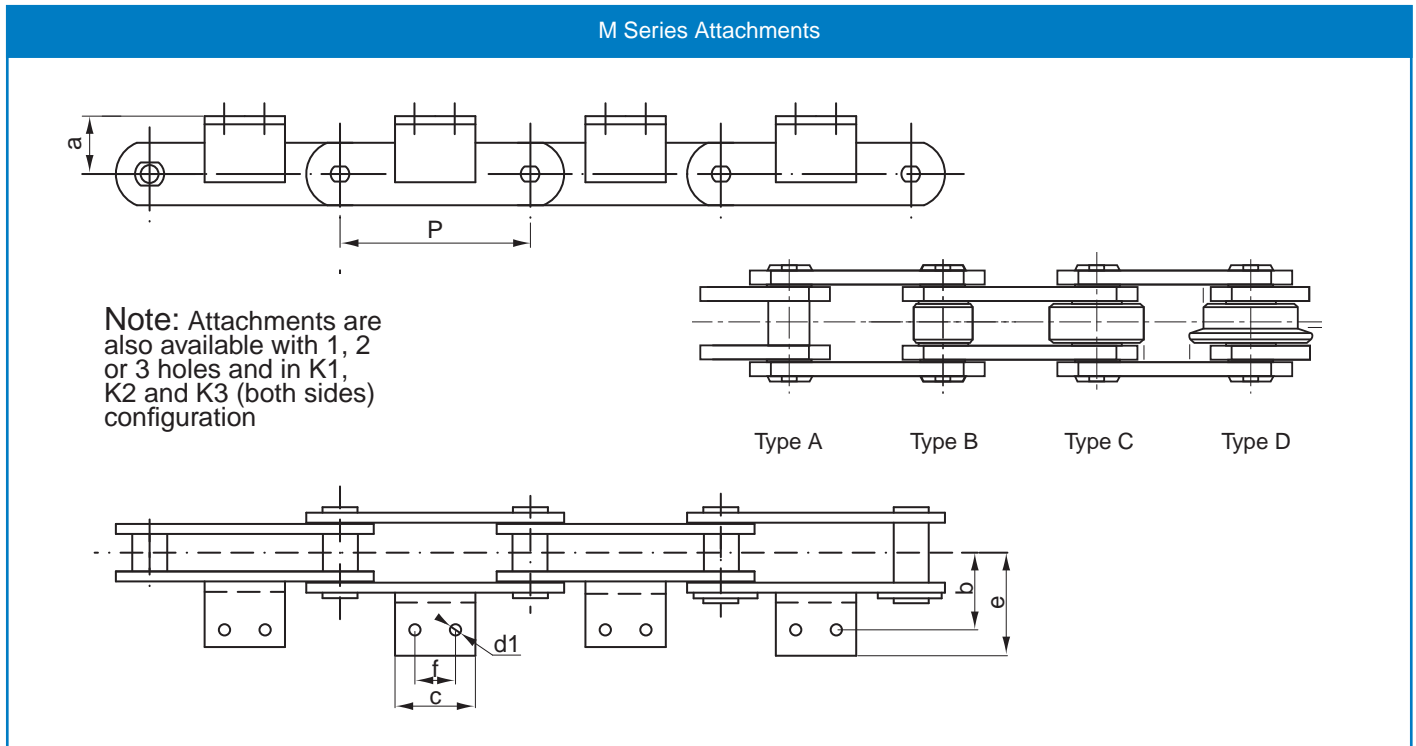
Chain Number	Pitch P	a	b	c	d1	e	f	Welded or Integral attachment	Chain Weight - Excluding Attachments kg/metre				Attachment Weight (A2) kg each
									Type A	Type B	Type C	Type D	
M 20	40	16	27	14	6.6	40	*	•	1.10	1.3	2.4	2.5	0.02
"	50	"	"	14	"	"	*	•	1.01	1.3	2.0	2.1	0.02
"	63	"	"	35	"	"	20	25x3	0.99	1.2	1.8	1.9	0.04
"	80	"	"	50	"	"	35	"	0.90	1.1	1.6	1.6	0.06
M 28	50	20	32	20	9	47	*	20x3	1.60	1.9	3.3	3.4	0.02
"	63	"	"	20	"	"	*	30x3	1.50	1.7	2.8	2.9	0.02
"	80	"	"	45	"	"	25	"	1.40	1.6	2.5	2.6	0.05
"	100	"	"	60	"	"	40	"	1.30	1.5	2.1	2.2	0.08
M 40	63	25	35	31	9	50	*	30x4	2.25	2.6	4.4	4.6	0.04
"	80	"	"	45	"	"	20	"	2.00	2.3	3.7	3.9	0.07
"	100	"	"	60	"	"	40	"	1.90	2.1	3.2	3.4	0.10
"	125	"	"	85	"	"	65	"	1.80	2.0	2.9	3.0	0.15
M 56	63	30	44	22	11	61	*	40x4	3.40	3.9	6.8	7.2	0.05
"	80	"	"	30	"	"	*	"	3.00	3.4	5.7	6.0	0.07
"	100	"	"	50	"	"	25	"	2.80	3.1	5.0	5.2	0.12
"	125	"	"	75	"	"	50	"	2.60	2.9	4.4	4.5	0.18
"	160	"	"	110	"	"	85	"	2.54	2.7	3.9	4.1	0.27
M 80	80	35	48	30	11	65	*	40x4	4.70	5.4	9.2	9.4	0.07
"	100	"	"	50	"	"	25	"	4.30	4.8	7.9	8.0	0.12
"	125	"	"	75	"	"	50	"	4.00	4.4	6.9	7.0	0.18
"	160	"	"	110	"	"	85	"	3.70	4.0	6.0	6.1	0.27
"	200	"	"	150	"	"	125	"	3.50	3.8	5.3	5.4	0.36

* Attachment With One Hole

Conveyor Chain Attachments

M Series Attachments

Metric Conveyor Chain (DIN 8167)



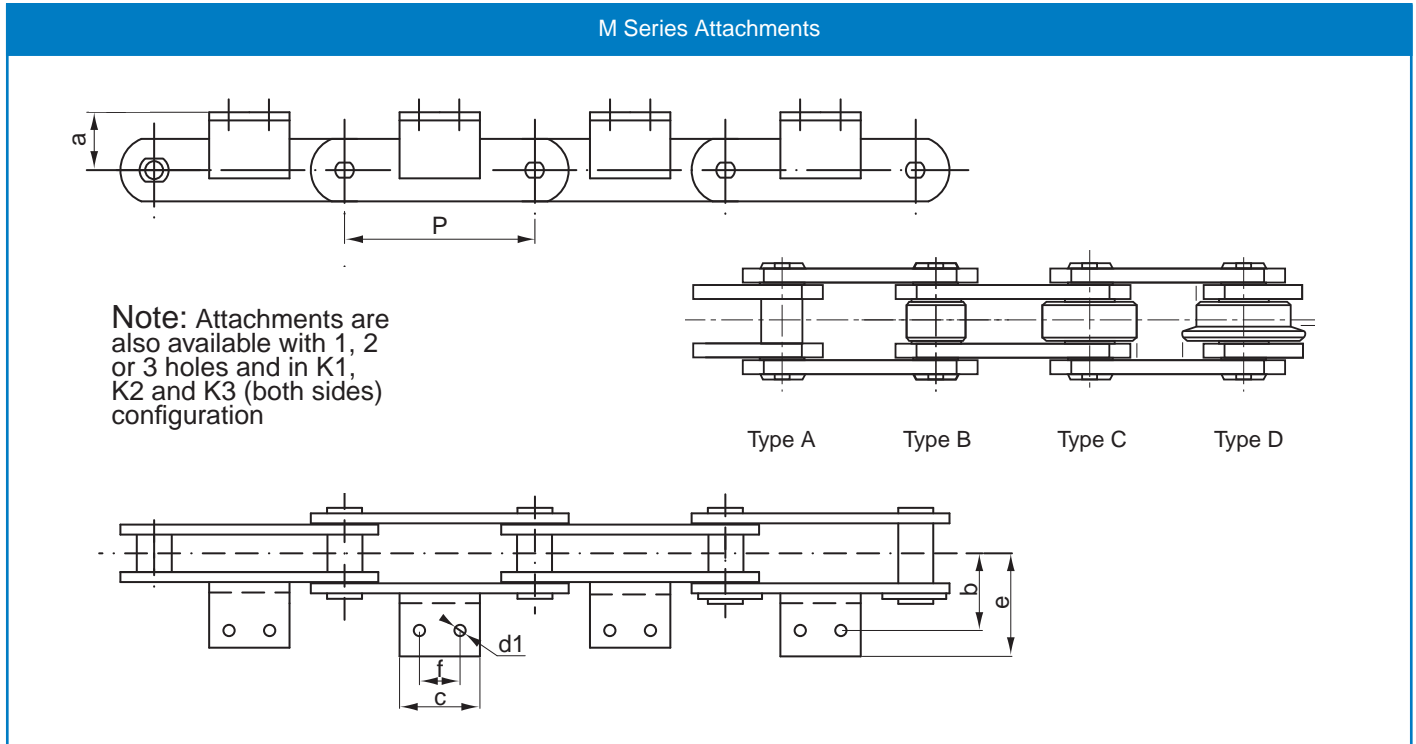
Chain Number	Pitch P	a	b	c	d1	e	f	Welded or Integral attachment	Chain Weight - Excluding Attachments kg/metre				Attachment Weight (A2) kg each
									Type A	Type B	Type C	Type D	
M 112	80	40	55	28	14	80	*	50x6	6.8	8.0	14.0	14.7	0.13
"	100	"	"	40	"	"	*	"	6.2	7.2	12.0	12.5	0.18
"	125	"	"	65	"	"	35	"	5.7	6.5	10.4	10.8	0.30
"	160	"	"	95	"	"	65	"	5.3	5.9	9.0	9.3	0.44
"	200	"	"	130	"	"	100	"	5.0	5.5	7.9	8.2	0.59
M 160	100	45	62	30	14	85	*	50x6	9.7	11.2	18.9	20.2	0.13
"	125	"	"	50	"	"	25	"	8.9	10.0	16.3	18.1	0.23
"	160	"	"	80	"	"	50	"	8.2	9.1	14.0	15.4	0.37
"	200	"	"	115	"	"	85	"	7.6	8.4	12.2	13.4	0.53
"	250	"	"	175	"	"	145	"	7.3	7.9	11.0	12.0	0.80
M 224	125	55	70	35	18	100	*	63x8	13.0	14.8	25.8	26.6	0.30
"	160	"	"	60	"	"	*	"	12.0	13.4	22.0	22.7	0.43
"	200	"	"	100	"	"	65	"	11.0	12.1	19.0	19.5	0.71
"	250	"	"	160	"	"	125	"	10.3	11.2	16.7	17.1	1.13
"	315	"	"	230	"	"	190	"	9.8	10.5	14.9	15.2	1.60
M 315	160	65	80	35	18	115	*	70x10	18.3	20.4	33.3	34.6	0.36
"	200	"	"	85	"	"	50	"	16.7	18.4	28.7	29.7	0.84
"	250	"	"	140	"	"	100	"	15.6	17.0	25.2	26.0	1.41
"	315	"	"	190	"	"	155	"	14.6	15.7	22.3	22.9	1.93
"	400	"	"	205	"	"	155	"	13.9	14.8	20.0	20.5	2.08

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Conveyor Chain Attachments

M Series Attachments

Metric Conveyor Chain (DIN 8167)



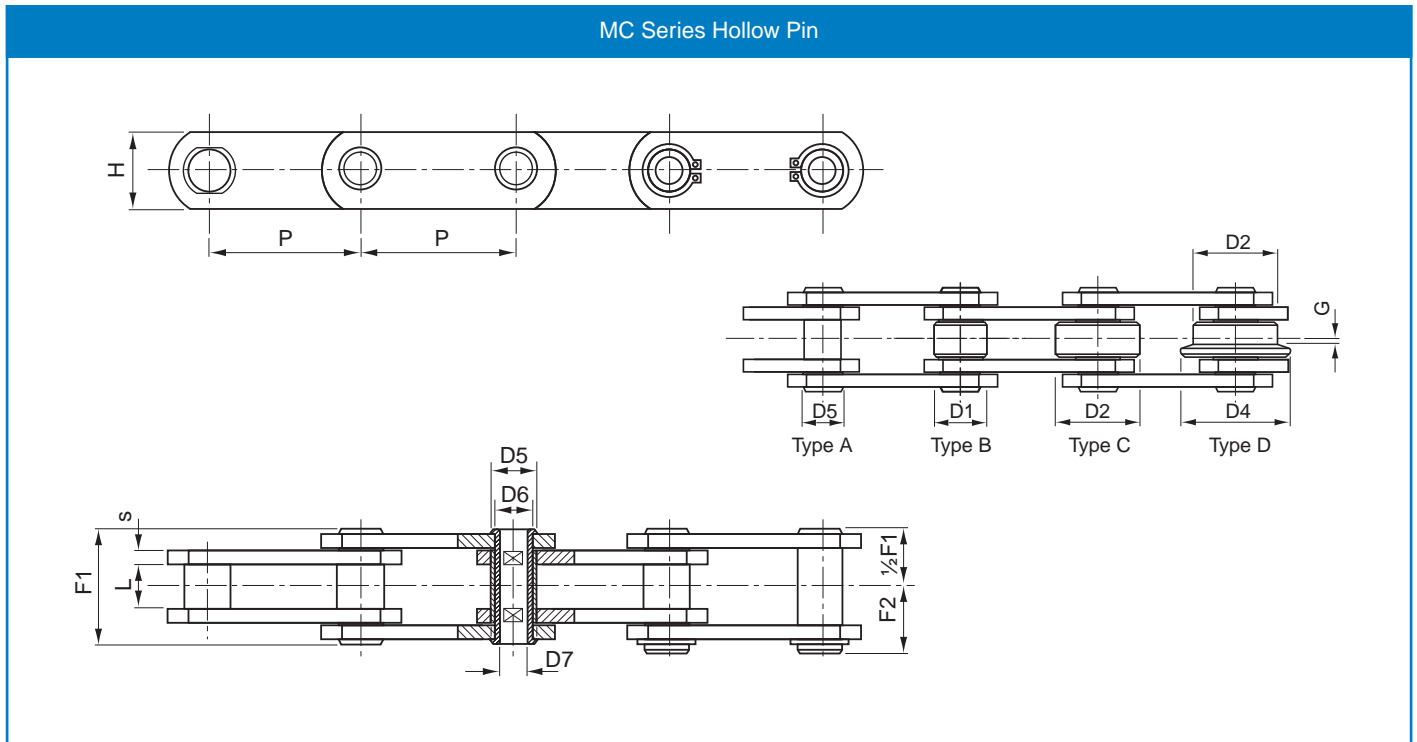
Chain Number	Pitch P	a	b	c	d1	e	f	Welded or Integral attachment	Chain Weight - Excluding Attachments kg/metre				Attachment Weight (A2) kg each
									Type A	Type B	Type C	Type D	
M 450	200	75	90	50	18	125	*	70x10	24.0	27.0	40.5	47.0	0.56
"	250	"	"	125	"	"	85	"	22.0	24.9	39.5	41.0	1.35
"	315	"	"	195	"	"	155	"	21.0	23.0	34.5	36.0	2.12
"	400	"	"	280	"	"	240	"	19.6	21.2	30.5	31.4	3.06
M 630	250	90	115	50	24	165	*	100x12	36.0	40.8	64.0	66.9	0.90
"	315	"	"	150	"	"	100	"	33.4	36.6	55.5	57.7	2.70
"	400	"	"	240	"	"	190	"	31.5	33.9	49.0	50.7	4.30
"	500	"	"	350	"	"	300	"	29.6	31.6	43.6	45.0	6.20
M 900	250	110	140	60	30	195	*	120x15	49.7	56.5	98.3	104.5	1.60
"	315	"	"	125	"	"	65	"	45.5	51.8	84.2	89.7	3.30
"	400	"	"	215	"	"	155	"	42.0	46.2	72.5	76.9	5.70
"	500	"	"	300	"	"	240	"	39.3	42.7	63.8	67.6	8.00
"	600	"	"	350	"	"	300	"	37.3	39.9	56.6	58.9	8.00

* Attachment With One Hole

Conveyor Chain

MC Series Hollow Pin

Metric Conveyor Chain (DIN 8167)



Hollow Pin

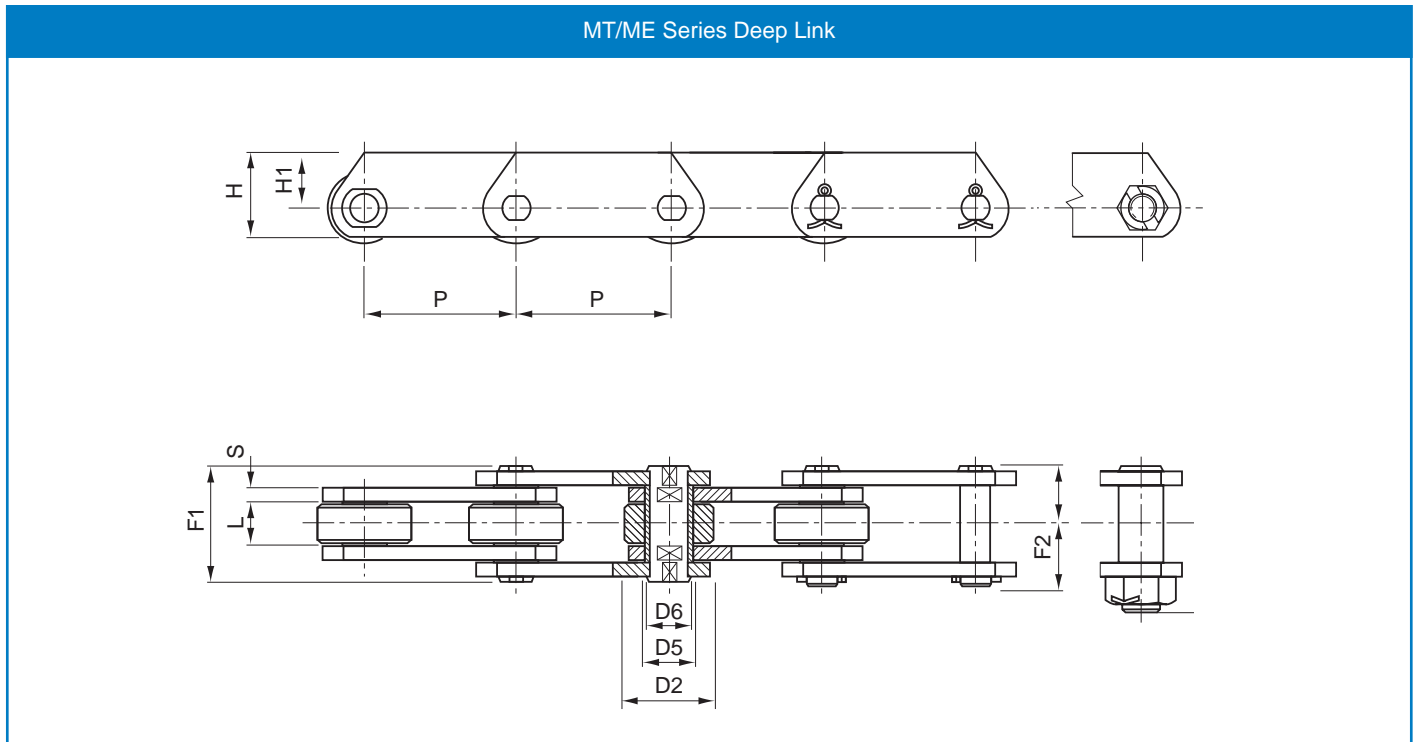
Chain number	Pitch P	L	G	H	S	F1	F2	D1	D2	D4	D5	D6	D7	Breaking Load kN	HT Breaking Load, kN	Weight (Type C) kg/m
MC 28	50	20	4.5	25	3	36.0	20.5	25	36	45	17	13.0	8.2	28	40	4.3
"	63	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3.8
"	80	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3.2
"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2.8
"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2.5
MC 56	63	24	7.0	35	4	45.0	25.0	30	50	60	21	15.5	10.2	56	90	8.5
"	80	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7.2
"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6.2
"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5.4
"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.7
MC 112	80	32	8.5	50	6	62.5	33.0	42	70	85	29	22.0	14.3	112	180	16.6
"	100	"	"	"	"	"	"	"	"	"	"	"	"	"	"	14.0
"	125	"	"	"	"	"	"	"	"	"	"	"	"	"	"	11.2
"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	10.2
"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	8.9
"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7.9
MC 224	125	43	10.5	70	8	83.0	44.0	60	100	120	42	30.0	20.3	224	350	32.3
"	160	"	"	"	"	"	"	"	"	"	"	"	"	"	"	27.1
"	200	"	"	"	"	"	"	"	"	"	"	"	"	"	"	23.5
"	250	"	"	"	"	"	"	"	"	"	"	"	"	"	"	20.6
"	315	"	"	"	"	"	"	"	"	"	"	"	"	"	"	17.2

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Conveyor Chain

MT/ME Series Deep Link

Metric Conveyor Chain (DIN 8167)



Deep Link

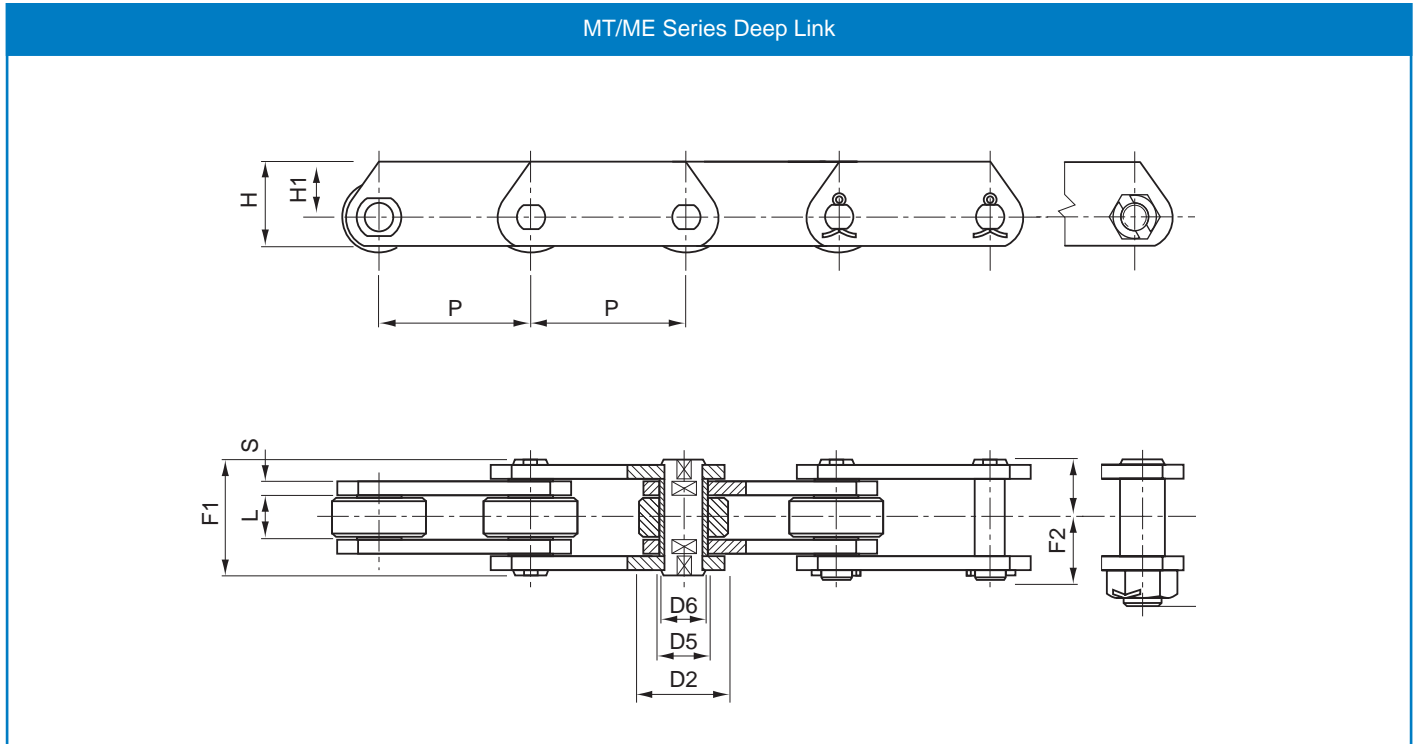
Chain Number	Pitch P	L	S	H	H1	F1	F2	D2	D5	D6	Breaking Load kN	HT Breaking Load, kN	Weight (Type C) kg/m
ME 20	40	16	2.5	25	16.0	33.0	19.0	25	9	6	20	32	3.0
"	50	"	"	"	"	"	"	"	"	"	"	"	2.6
"	63	"	"	"	"	"	"	"	"	"	"	"	2.3
"	80	"	"	"	"	"	"	"	"	"	"	"	2.0
ME 28	50	18	3.0	30	20.0	36.0	20.5	30	10	7	28	42	4.1
"	63	"	"	"	"	"	"	"	"	"	"	"	3.5
"	80	"	"	"	"	"	"	"	"	"	"	"	3.1
"	100	"	"	"	"	"	"	"	"	"	"	"	2.8
ME 40	63	20	4.0	35	22.5	40.5	24.0	36	11	8	40	60	5.5
"	80	"	"	"	"	"	"	"	"	"	"	"	4.8
"	100	"	"	"	"	"	"	"	"	"	"	"	4.2
"	125	"	"	"	"	"	"	"	"	"	"	"	3.7
ME 56	63	24	4.0	45	30.0	45.0	26.0	42	15	10	56	85	8.3
"	80	"	"	"	"	"	"	"	"	"	"	"	7.0
"	100	"	"	"	"	"	"	"	"	"	"	"	6.1
"	125	"	"	"	"	"	"	"	"	"	"	"	5.4
ME 80	80	28	5.0	50	32.5	54.5	30.5	50	18	12	80	125	11.0
"	100	"	"	"	"	"	"	"	"	"	"	"	9.5
"	125	"	"	"	"	"	"	"	"	"	"	"	8.5
"	160	"	"	"	"	"	"	"	"	"	"	"	7.2
"	200	"	"	"	"	"	"	"	"	"	"	"	6.0

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Conveyor Chain

MT/ME Series

Metric Conveyor Chain (DIN 8167)



Deep Link

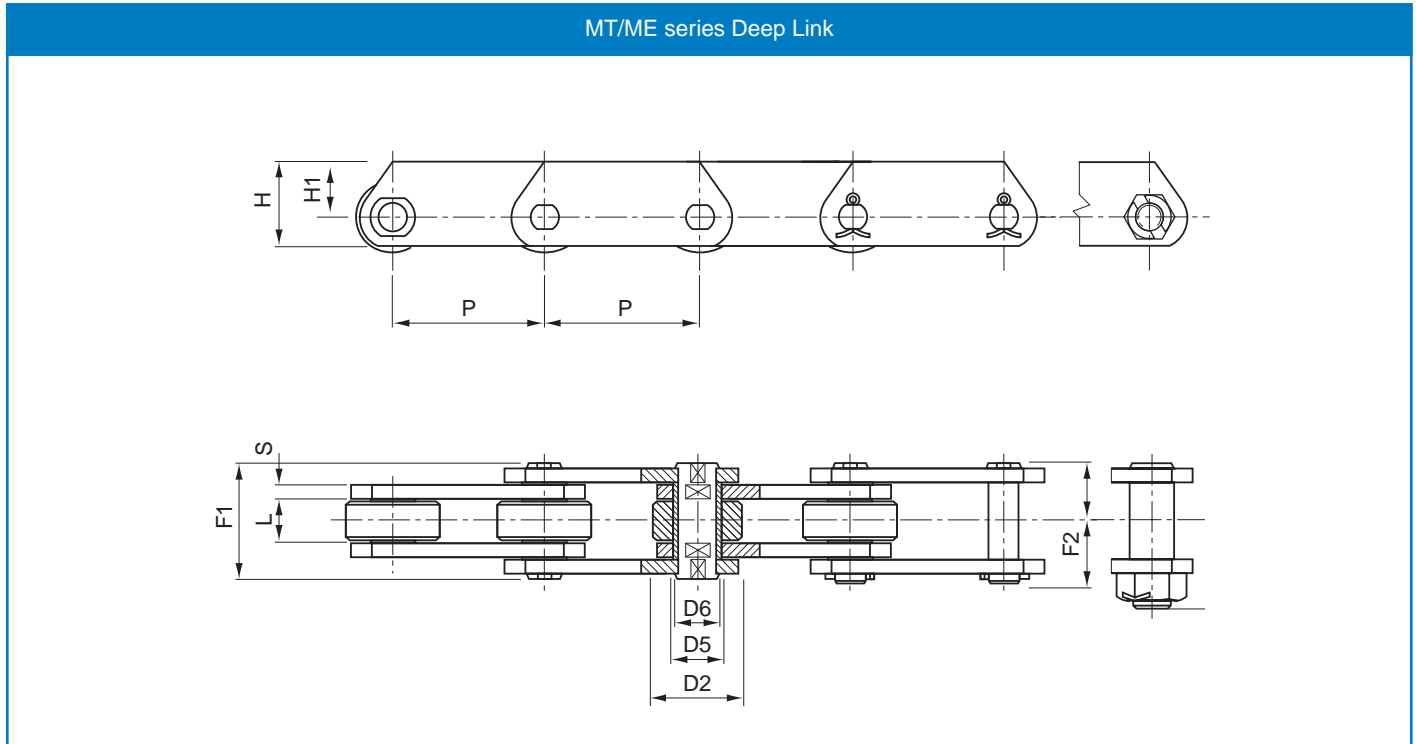
Chain Number	Pitch P	L	S	H	H1	F1	F2	D2	D5	D6	Breaking Load kN	HT Breaking Load, kN	Weight kg/m
ME 112	80	32	6	60	40	63	36.0	60	21	15	112	175	17.0
"	100	"	"	"	"	"	"	"	"	"	"	"	14.5
"	125	"	"	"	"	"	"	"	"	"	"	"	13.0
"	160	"	"	"	"	"	"	"	"	"	"	"	11.0
"	200	"	"	"	"	"	"	"	"	"	"	"	10.0
ME 160	100	37	7	70	45	72	41.5	70	25	18	160	260	21.5
"	125	"	"	"	"	"	"	"	"	"	"	"	19.0
"	160	"	"	"	"	"	"	"	"	"	"	"	17.0
"	200	"	"	"	"	"	"	"	"	"	"	"	15.0
"	250	"	"	"	"	"	"	"	"	"	"	"	13.5
ME 224	125	43	8	90	60	84	47.0	85	30	21	224	340	32.5
"	160	"	"	"	"	"	"	"	"	"	"	"	27.5
"	200	"	"	"	"	"	"	"	"	"	"	"	23.0
"	250	"	"	"	"	"	"	"	"	"	"	"	21.0
"	315	"	"	"	"	"	"	"	"	"	"	"	19.0
ME 315	160	48	10	100	65	97	55.0	100	36	25	315	520	43.0
"	200	"	"	"	"	"	"	"	"	"	"	"	37.0
"	250	"	"	"	"	"	"	"	"	"	"	"	32.0
"	315	"	"	"	"	"	"	"	"	"	"	"	28.6
"	400	"	"	"	"	"	"	"	"	"	"	"	25.5

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Conveyor Chain

MT/ME Series

Metric Conveyor Chain (DIN 8167)



Deep Link

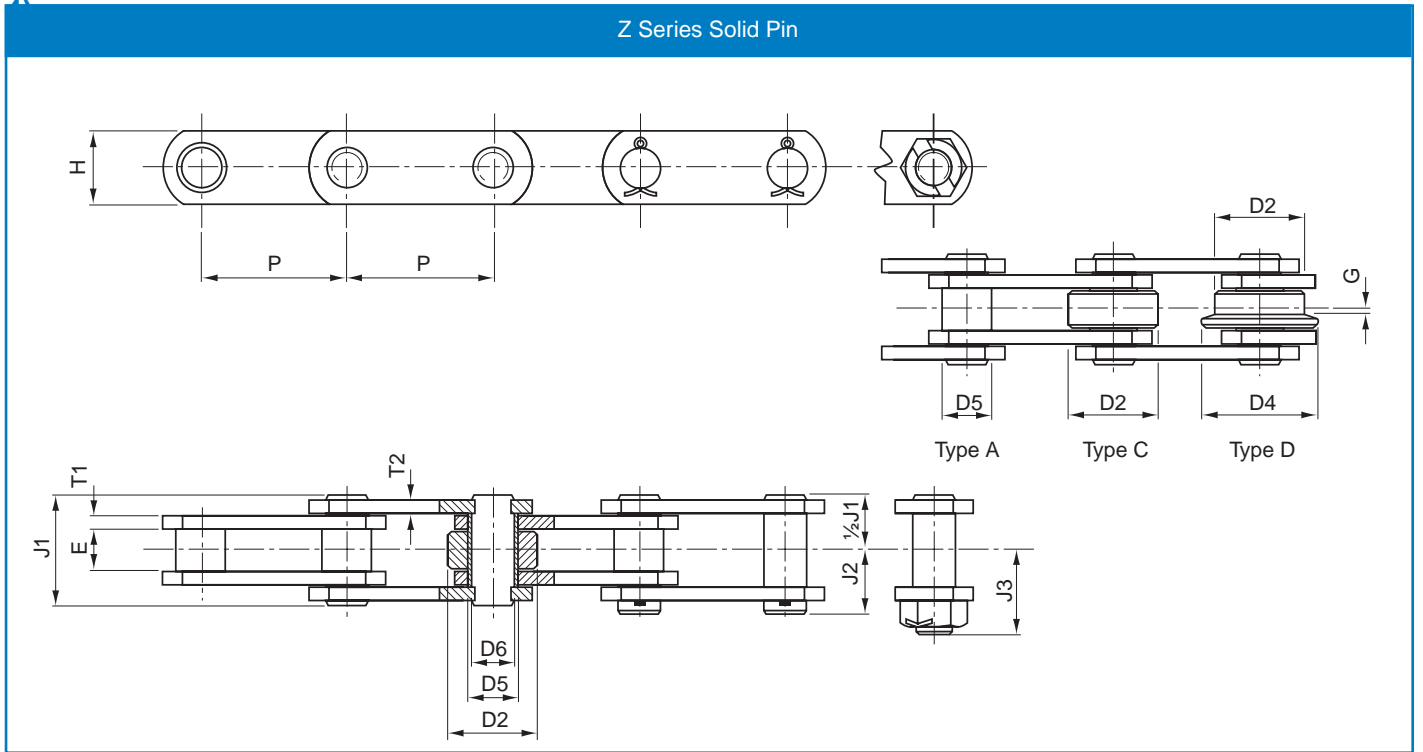
Chain Number	Pitch P	L	S	H	H1	F1	F2	D2	D5	D6	Breaking Load kN	HT Breaking Load, kN	Weight kg/m
ME 450	200	56	12	120	80	114	67.0	120	42	30	450	700	47
"	250	"	"	"	"	"	"	"	"	"	"	"	41
"	315	"	"	"	"	"	"	"	"	"	"	"	36
"	400	"	"	"	"	"	"	"	"	"	"	"	32
ME 630	250	66	14	140	90	137	87.5	140	50	36	630	900	71
"	315	"	"	"	"	"	"	"	"	"	"	"	62.5
"	400	"	"	"	"	"	"	"	"	"	"	"	56
"	500	"	"	"	"	"	"	"	"	"	"	"	50.6
"	600	"	"	"	"	"	"	"	"	"	"	"	46.5
ME 900	250	78	16	180	120	153	95.0	170	60	44	900	1,250	108.5
"	315	"	"	"	"	"	"	"	"	"	"	"	94.5
"	400	"	"	"	"	"	"	"	"	"	"	"	82.5
"	500	"	"	"	"	"	"	"	"	"	"	"	73.8
"	600	"	"	"	"	"	"	"	"	"	"	"	66.7

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Conveyor Chain

Z Series

BS Conveyor Chain (BS 416 Part



Solid Pin

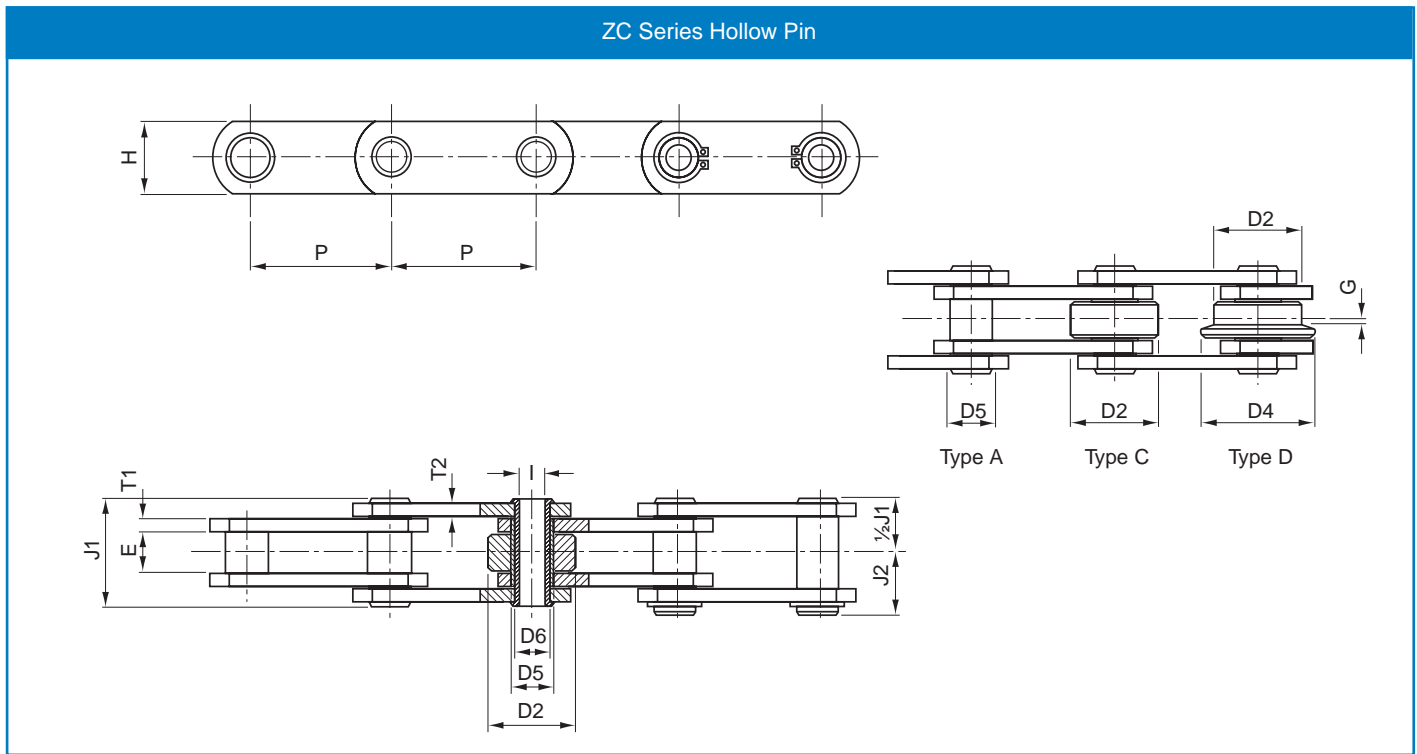
Chain number	Minimum Breaking Load, lbf	Pitch Inches P	Pitch mm P	E	H	T1	T2	J1	J2	J3	D2	D4	D5	D6	G	Breaking Load kN	HT Breaking Load, kN	Weight (Type C) kg/m
Z40	7500	2.0	50.8	15.2	25.4	3.8	3.8	37	22	29	31.75	40	19	14	2.5	40	50	4
"	"	2.5	63.5	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3.5
"	"	3.0	76.2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3.2
"	"	3.5	88.9	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3
"	"	4.0	101.6	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2.8
"	"	5.0	127.0	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2.6
"	"	6.0	152.4	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2.4
Z100	15000	3.0	76.2	19	38.1	5.1	3.8	46	28	38	47.63	60	25.4	19	3.5	100	130	7.7
"	"	3.5	88.9	"	"	"	"	"	"	"	"	"	"	"	"	"	"	7
"	"	4.0	101.6	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6.5
"	"	5.0	127.0	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5.8
"	"	6.0	152.4	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5.3
"	"	7.0	177.8	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5
"	"	8.0	203.2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.7
Z160	30000	4.0	101.6	25.4	50.8	7.1	5.1	59	34.5	49	66.7	82	34.9	26.97	3.5	156	200	14.3
"	"	5.0	127.0	"	"	"	"	"	"	"	"	"	"	"	"	"	"	12.5
"	"	6.0	152.4	"	"	"	"	"	"	"	"	"	"	"	"	"	"	11.3
"	"	7.0	177.8	"	"	"	"	"	"	"	"	"	"	"	"	"	"	10.5
"	"	8.0	203.2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	9.8
"	"	9.0	228.6	"	"	"	"	"	"	"	"	"	"	"	"	"	"	9.3
"	"	10.0	254.0	"	"	"	"	"	"	"	"	"	"	"	"	"	"	9
Z300	45000	6.0	152.4	38	65	10	8	82.5	47	65	88.9	107.9	41.3	31.75	8.5	300	380	24.3
"	"	7.0	177.8	"	"	"	"	"	"	"	"	"	"	"	"	"	"	22
"	"	8.0	203.2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	21
"	"	10.0	254.0	"	"	"	"	"	"	"	"	"	"	"	"	"	"	18
"	"	12.0	304.8	"	"	"	"	"	"	"	"	"	"	"	"	"	"	16.5

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Conveyor Chain

ZC Series

BS Conveyor Chain (BS 416 Part



Hollow Pin

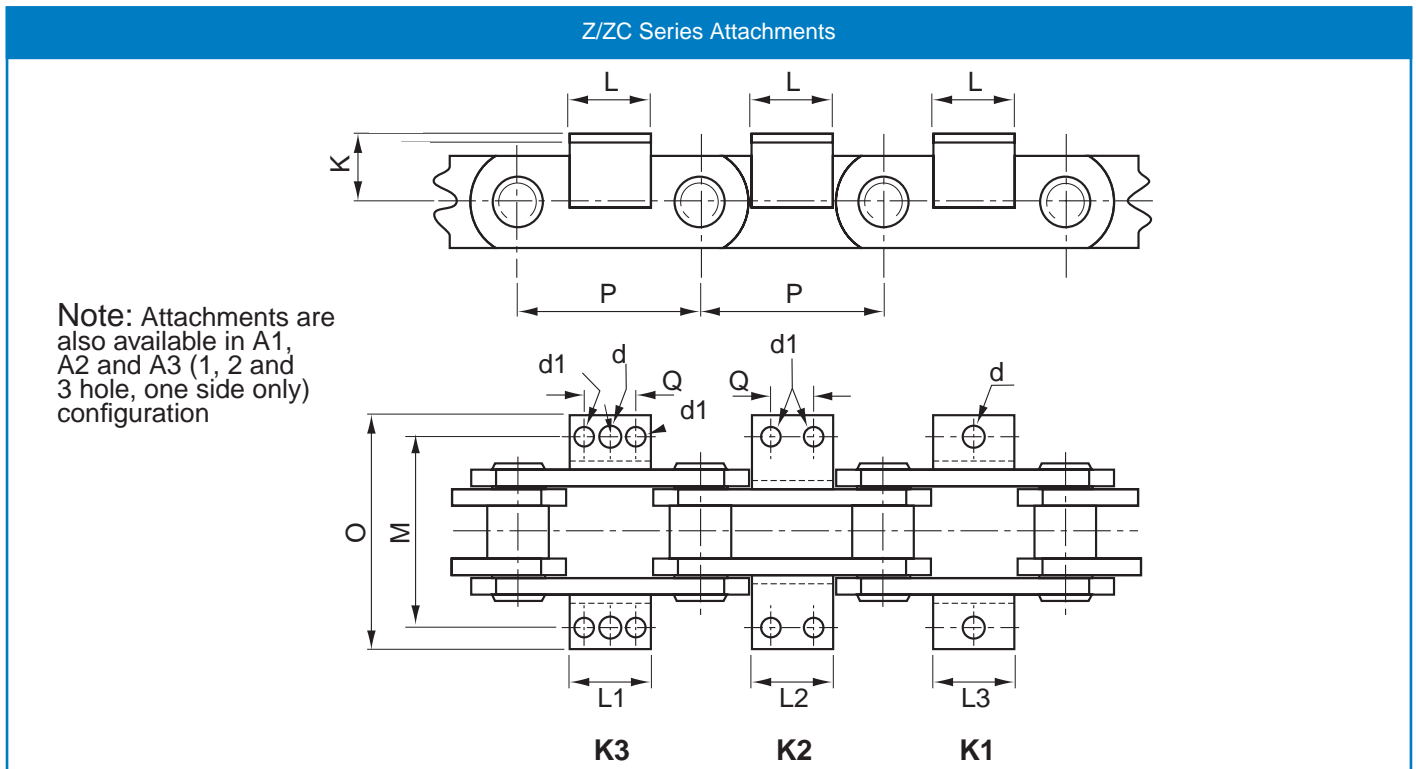
Chain number	Minimum Breaking Load, lbf	Pitch Inches P	Pitch mm P	E	I	H	T1	T2	J1	J2	D2	D4	D5	D6	G	Breaking Load, kN	HT Breaking Load, kN	Weight (Type C) kg/m
ZC21	4500	1.5	38.1	12.7	6.5	18	2.5	2.5	26	14.5	25.4	/	11	9	/	21	/	2.2
"	"	2.0	50.8	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1.7
"	"	2.5	63.5	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1.6
"	"	3.0	76.2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	1.4
ZC40	6000	2.0	50.8	15.2	10.3	25.4	3.8	3.8	37.2	21.5	31.75	40	19	14	2.5	40	50	3.6
"	"	2.5	63.5	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3.2
"	"	3.0	76.2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	3.0
"	"	3.5	88.9	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2.8
"	"	4.0	101.6	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2.6
"	"	5.0	127.0	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2.4
"	"	6.0	152.4	"	"	"	"	"	"	"	"	"	"	"	"	"	"	2.3
ZC60	12000	3.0	76.2	19	13.2	38.1	5.1	3.8	44	24.5	47.63	60	25.4	19	3.5	60	120	7.0
"	"	3.5	88.9	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6.4
"	"	4.0	101.6	"	"	"	"	"	"	"	"	"	"	"	"	"	"	6.0
"	"	5.0	127.0	"	"	"	"	"	"	"	"	"	"	"	"	"	"	5.3
"	"	6.0	152.4	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.9
"	"	7.0	177.8	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.6
"	"	8.0	203.2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	4.4
ZC150	24000	4.0	101.6	25.4	19.6	50.8	7.1	5.1	57	32	66.7	82	34.9	26.97	3.5	150	190	12.8
"	"	5.0	127.0	"	"	"	"	"	"	"	"	"	"	"	"	"	"	11.3
"	"	6.0	152.4	"	"	"	"	"	"	"	"	"	"	"	"	"	"	11.0
"	"	7.0	177.8	"	"	"	"	"	"	"	"	"	"	"	"	"	"	9.5
"	"	8.0	203.2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	9.0
"	"	9.0	228.6	"	"	"	"	"	"	"	"	"	"	"	"	"	"	8.6
"	"	10.0	254.0	"	"	"	"	"	"	"	"	"	"	"	"	"	"	8.2
ZC300	36000	6.0	152.4	38	23	65	10	8	82.5	44	88.9	107.9	41.3	31.75	8.5	300	380	22.3
"	"	7.0	177.8	"	"	"	"	"	"	"	"	"	"	"	"	"	"	20.2
"	"	8.0	203.2	"	"	"	"	"	"	"	"	"	"	"	"	"	"	18.8
"	"	10.0	254.0	"	"	"	"	"	"	"	"	"	"	"	"	"	"	16.4
"	"	12.0	304.8	"	"	"	"	"	"	"	"	"	"	"	"	"	"	15.2

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Conveyor Chain Attachments

Z/ZC Series Attachments

BS Conveyor Chain (BS 4116 Part 4)



Conveyor Attachments

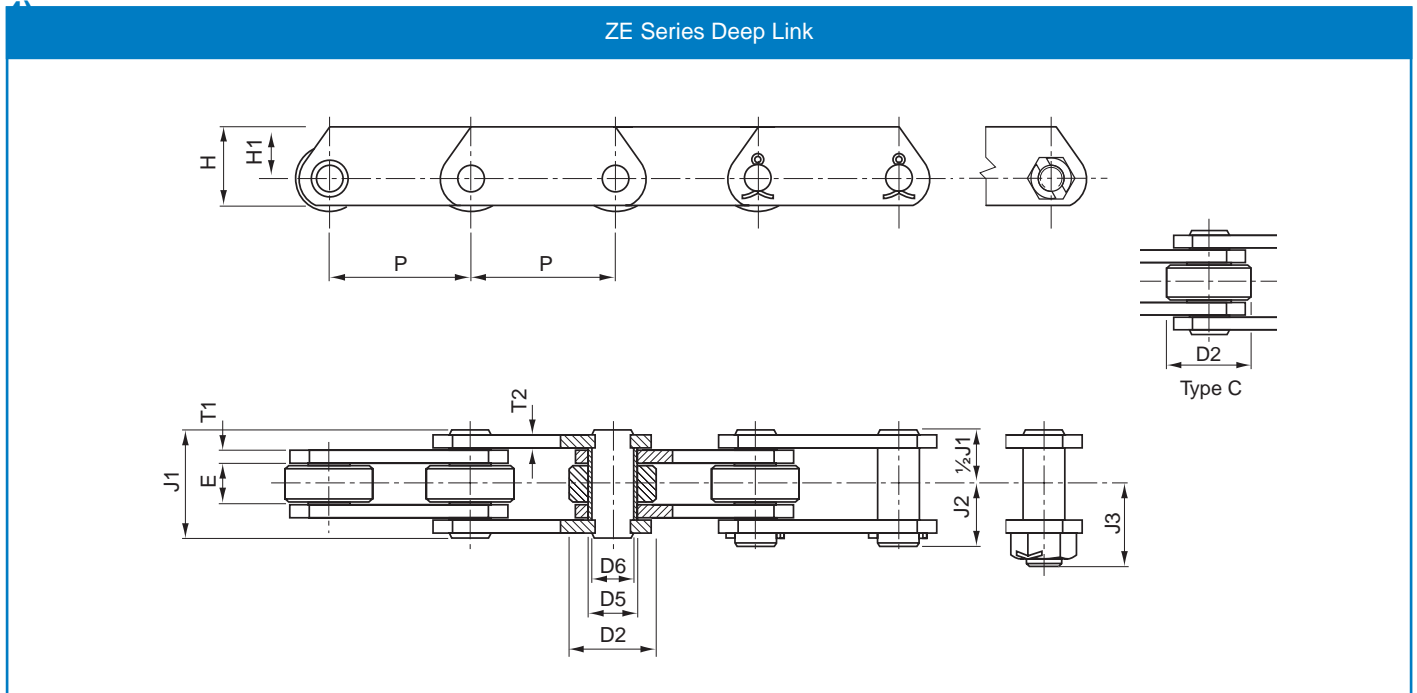
Chain Number	Pitch Inches P	Pitch mm P	Attachment Type	K	M	L1	L2	L3	d	d1	O	Q	Average Weight (Each) kg
Z40	2.0	50.8	K1	19	76.2	19.0	-	-	10.6	-	129	-	0.10
"	2.5	63.5	"	"	"	19.0	-	-	"	-	112	-	0.10
"	3.0	76.2	"	"	"	28.0	-	-	"	-	136	-	0.10
"	3.5	88.9	"	"	"	28.0	-	-	"	-	112	-	0.10
"	4.0	101.6	K1,K2,K3	"	"	56.0	56.0	64.0	"	9.2	110	31.8	0.10
"	5.0	127.0	"	"	"	56.0	56.0	85.0	"	"	112	31.8	0.20
"	6.0	152.4	"	"	"	83.8	83.8	88.0	"	"	112	57.2	0.20
Z100	3.0	76.2	K1	31.8	88.9	35.0	-	-	14	-	130	-	0.12
"	3.5	88.9	"	"	"	35.0	-	-	"	-	"	-	0.12
"	4.0	101.6	K1,K2,K3	"	"	35.0	56.0	64.0	"	11	"	31.8	0.10
"	5.0	127.0	"	"	"	56.0	56.0	64.0	"	"	"	31.8	0.30
"	6.0	152.4	"	"	"	56.0	84.0	90.0	"	"	"	57.2	0.32
"	7.0	177.8	"	"	"	56.0	127.0	130.0	"	"	"	89	0.40
"	8.0	203.2	"	"	"	56.0	127.0	130.0	"	"	"	89	0.40
Z160	5.0	127.0	K1,K2	38.1	108	56.0	56.0	-	-	12.7	-	31.7	0.30
"	6.0	152.4	"	"	"	"	84.0	-	-	"	154	57.2	0.38
"	7.0	177.8	"	"	"	"	108.0	-	-	"	"	69.85	0.38
"	8.0	203.2	"	"	"	"	127.0	-	-	"	"	88.9	0.60
"	9.0	228.6	"	"	"	"	168.0	-	-	"	"	133.35	0.69
"	10.0	254.0	"	"	"	"	168.0	-	-	"	"	133.35	0.75
Z300	6.0	152.4	K1	65	146	70.0			17.0	/	200	38.1	0.50
"	7.0	177.8	"	"	"	70.0			"	/	"	38.1	0.50
"	8.0	203.2	K1,K2	"	"	100.0			"	14	"	76.2	0.70
"	10.0	254.0	"	"	"	152.4			"	"	"	90	0.90
"	12.0	304.8	"	"	"	225.0			"	"	"	190	1.60

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Conveyor Chain

ZE Series

BS Conveyor Chain (BS 416 Part A)



Deep Link

Chain Number	Minimum Breaking Load, lbf	Pitch Inches	Pitch mm	E	H	H1	T1	T2	J1	J2	J3	D2	D5	D6	Breaking Load kN	HT Breaking Load, kN	Weight (Type C) kg/m
ZE40	7500	2.0	50.8	15.2	38.1	25.4	3.8	3.8	37	22	29	31.75	19	14	40	60	5.0
"	"	2.5	63.5	"	"	"	"	"	"	"	"	"	"	"	"	"	4.6
"	"	3.0	76.2	"	"	"	"	"	"	"	"	"	"	"	"	"	4.2
"	"	3.5	88.9	"	"	"	"	"	"	"	"	"	"	"	"	"	4.0
"	"	4.0	101.6	"	"	"	"	"	"	"	"	"	"	"	"	"	3.8
"	"	5.0	127.0	"	"	"	"	"	"	"	"	"	"	"	"	"	3.5
"	"	6.0	152.4	"	"	"	"	"	"	"	"	"	"	"	"	"	3.3
ZE100	15000	3.0	76.2	19	50.8	30	5.1	5.1	48	28	38	47.63	25.4	19	100	160	8.9
"	"	3.5	88.9	"	"	"	"	"	"	"	"	"	"	"	"	"	8.4
"	"	4.0	101.6	"	"	"	"	"	"	"	"	"	"	"	"	"	7.6
"	"	5.0	127.0	"	"	"	"	"	"	"	"	"	"	"	"	"	6.8
"	"	6.0	152.4	"	"	"	"	"	"	"	"	"	"	"	"	"	6.3
"	"	7.0	177.8	"	"	"	"	"	"	"	"	"	"	"	"	"	5.9
"	"	8.0	203.2	"	"	"	"	"	"	"	"	"	"	"	"	"	5.7
ZE160	30000	4.0	101.6	25.4	70	45	7.1	5.1	59	34.5	49	66.7	34.9	26.97	156	200	17.5
"	"	5.0	127.0	"	"	"	"	"	"	"	"	"	"	"	"	"	15.4
"	"	6.0	152.4	"	"	"	"	"	"	"	"	"	"	"	"	"	13.8
"	"	7.0	177.8	"	"	"	"	"	"	"	"	"	"	"	"	"	12.8
"	"	8.0	203.2	"	"	"	"	"	"	"	"	"	"	"	"	"	12.0
"	"	9.0	228.6	"	"	"	"	"	"	"	"	"	"	"	"	"	11.3
"	"	10.0	254.0	"	"	"	"	"	"	"	"	"	"	"	"	"	10.5
ZE300	45000	6.0	152.4	38	90	60	10	8	82.5	47	65	88.9	41.3	31.75	300	380	32.0
"	"	7.0	177.8	"	"	"	"	"	"	"	"	"	"	"	"	"	29.5
"	"	8.0	203.2	"	"	"	"	"	"	"	"	"	"	"	"	"	27.0
"	"	10.0	254.0	"	"	"	"	"	"	"	"	"	"	"	"	"	24.5
"	"	12.0	304.8	"	"	"	"	"	"	"	"	"	"	"	"	"	23.0

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Conveyor Chain Attachments

Attachment Chain Designations




Attachment Chain Designations

M 1 - 01

Attachment Orientation

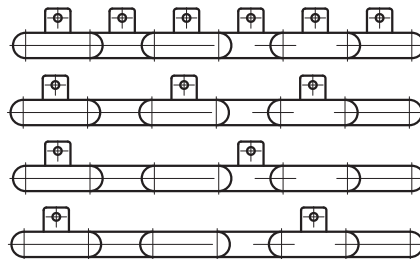
- M = Vertical one side 
- MK = Vertical both sides 
- A = Horizontal one side 
- K = Horizontal both sides 

Mounting Holes

- 1 = Single Hole 
- 2 = Double 
- 3 = Triple 

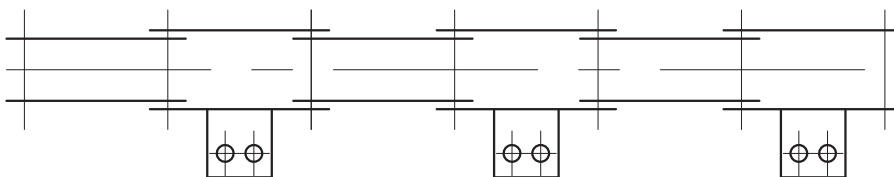
Frequency

- 01 = Every side plate
- 02 = Every other side plate
- 03 = Every third side plate
- 04 = Every fourth side plate

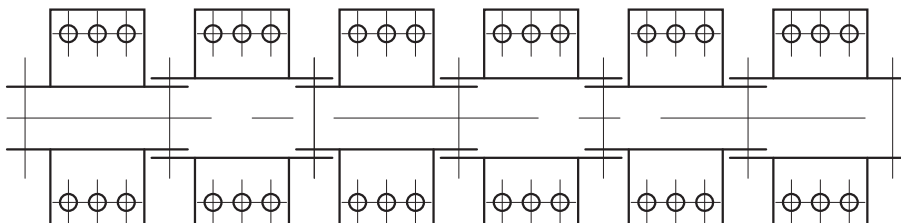


Examples

A2-02

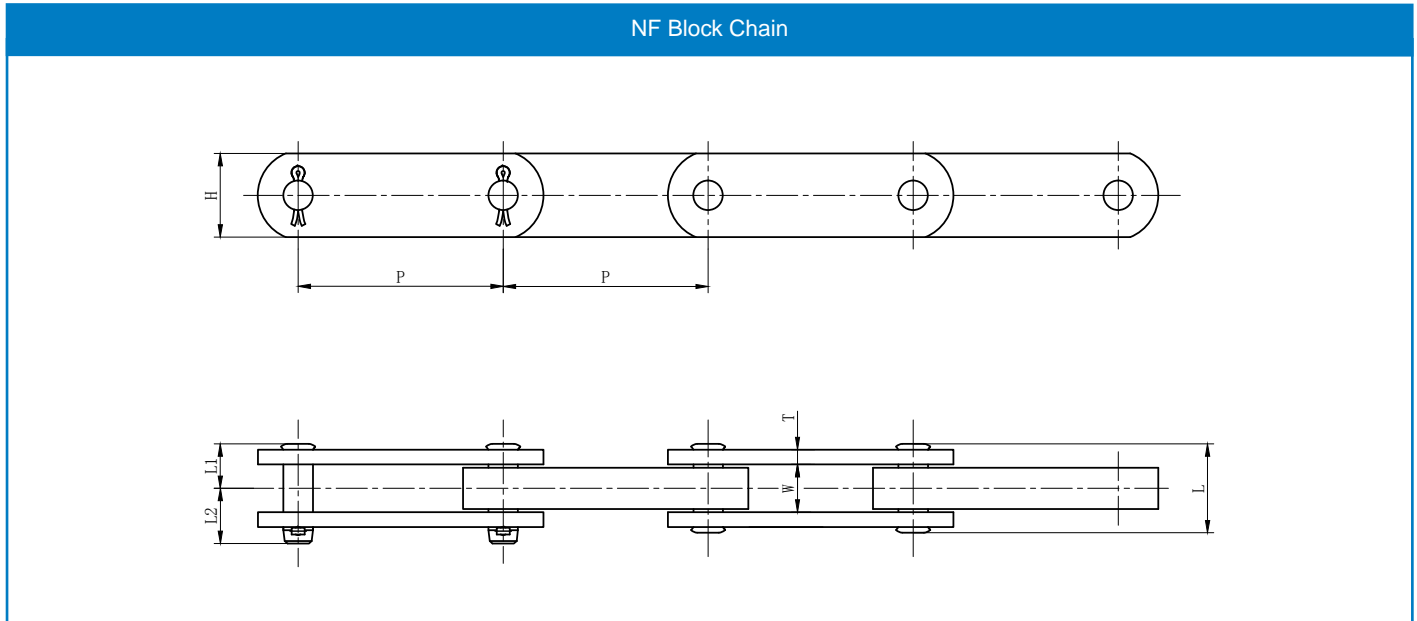


K3-01



Block Chain

NF Block Chain

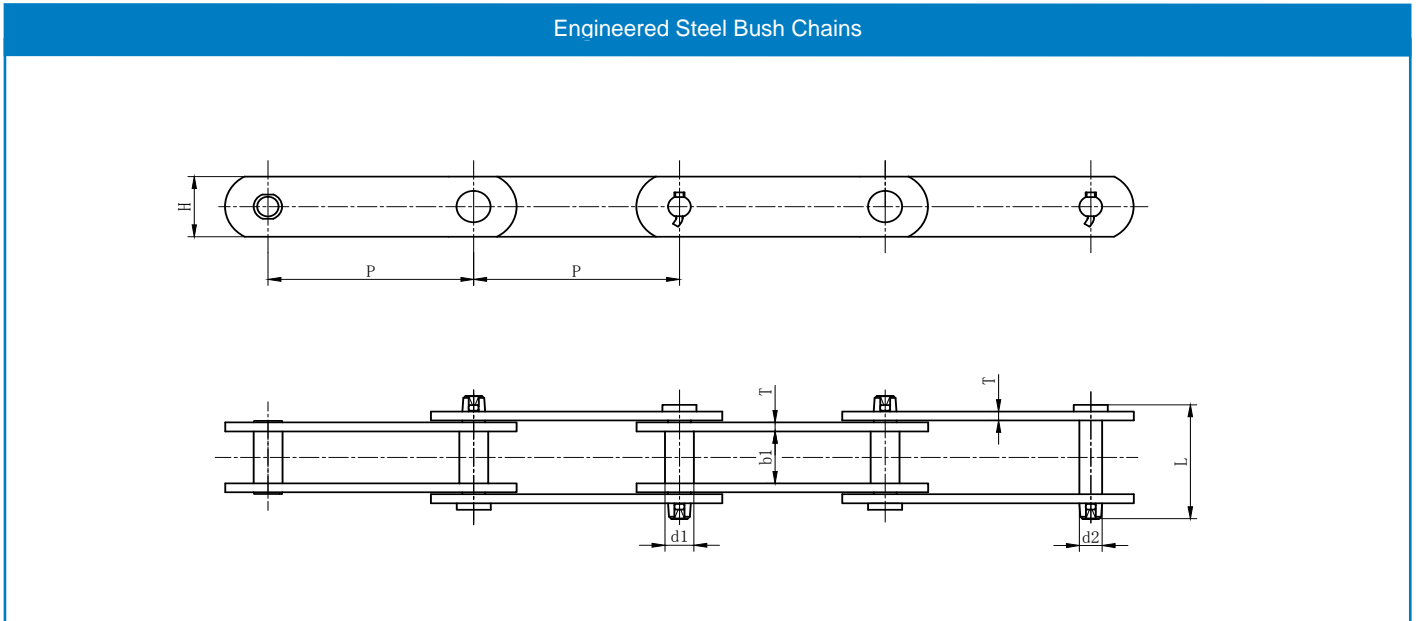


Chain number	Chain pitch	Roller diameter	Width between inner plates	Bearing pin diameter	Pin length			Side plate height	Plate thickness	Tensile strength	Approx weight
	P	R	W	D	L	L1	L2	H	T	kN(kgf)	kg/m
NF 30150	150.00	/	23.3	/	47.0	24.00	32.00	38.1	7.9	309(31500)	7.0
NF 30200	200.00	/	23.3	/	47.0	24.00	32.00	38.1	7.9	309(31500)	6.6
NF 40150	150.00	/	26.5	/	50.0	25.50	33.50	44.5	7.9	397(40500)	9.0
NF 40200	200.00	/	26.5	/	50.0	25.50	33.50	44.5	7.9	397(40500)	8.5
NF 56200	200.00	/	29.5	/	57.0	29.50	40.50	54	9.5	554(56500)	12.3
NF 56250	250.00	/	29.5	/	57.0	29.50	40.50	54	9.5	554(56500)	12.0
NF 63200	200.00	/	31.5	/	59.0	30.50	41.50	57	9.5	618(63000)	13.7
NF 63250	250.00	/	31.5	/	59.0	30.50	41.50	57	9.5	618(63000)	13.0
NF 70200	200.00	/	33.5	/	61.0	31.50	42.50	63.5	9.5	721(73500)	16.2
NF 70250	250.00	/	33.5	/	61.0	31.50	42.50	63.5	9.5	721(73500)	15.5
NF 90200	200.00	/	38	/	68.0	34.50	45.50	72	10.5	907(92500)	21.0
NF 90250	250.00	/	38	/	68.0	34.50	45.50	72	10.5	907(92500)	20.0
NF115250	250.00	/	40	/	76.0	38.00	49.00	76.2	12.7	1120(114000)	25.0
NF115300	300.00	/	40	/	76.0	38.00	49.00	76.2	12.7	1120(114000)	24.0
NF140250	250.00	/	47.5	/	84.0	44.00	54.00	85	14	1400(143000)	32.0
NF140300	300.00	/	47.5	/	84.0	44.00	54.00	85	14	1400(143000)	31.0
NF180300	300.00	/	52.5	/	94.0	48.50	58.50	95	16	1740(177500)	39.0
NF180350	350.00	/	52.5	/	94.0	48.50	58.50	95	16	1740(177500)	37.8
NF210300	300.00	/	59	/	101.0	51.50	61.50	110	16	2150(219500)	50.0
NF210350	350.00	/	59	/	101.0	51.50	61.50	110	16	2150(219500)	48.3
NF250300	300.00	/	66	/	114.0	58.50	68.50	112	19	2440(248500)	58.8
NF250350	350.00	/	66	/	114.0	58.50	68.50	112	19	2440(248500)	56.7
NF280300	300.00	/	67	/	115.0	58.50	68.50	122	19	2720(277500)	66.0
NF280350	350.00	/	67	/	115.0	58.50	68.50	122	19	2720(277500)	62.3

These chains consist of outer link plates, inner block links and pins.

Engineered Bush Chains

Engineered Steel Bush Chains

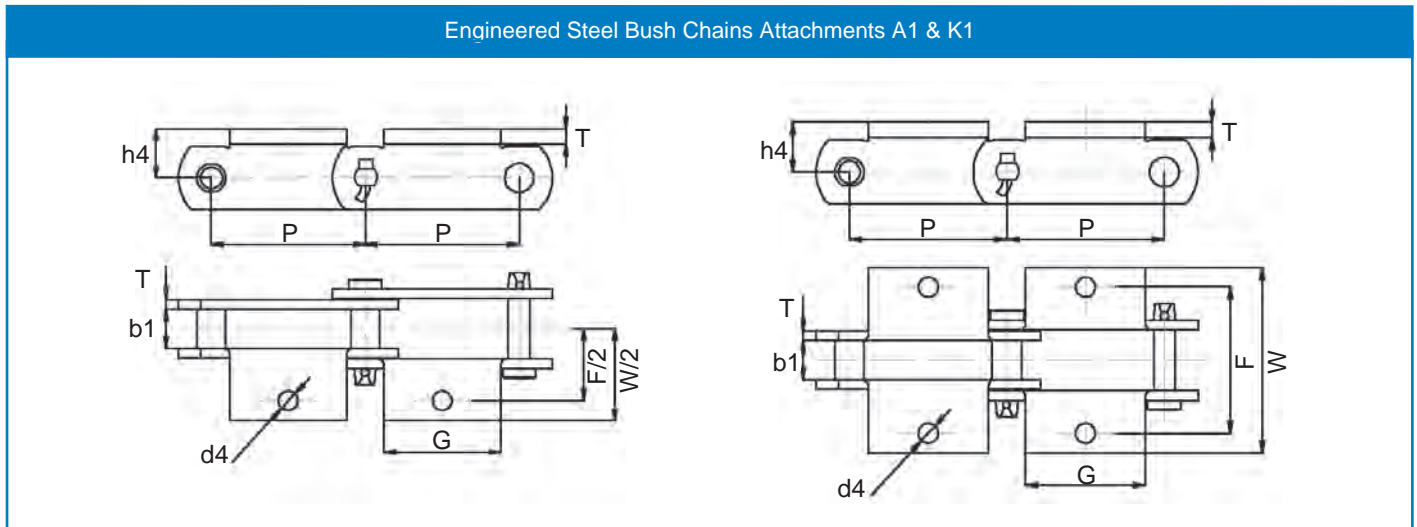


ANSI chain number	Challenge chain number	Pitch inches	Pitch mm	Bush diameter	Width between inner plates	Pin diameter	Pin length	Side plate height	Plate thickness	Average Tensile strength	Approx weight
		P	P	d1 max	b1 min	d2	L max	H	T	kN/bf	kg/m
S102B	S102B	4.00	101.60	25.4	54.1	15.88	111.3	38.10	9.70	176.00	10.40
S110	S110	6.00	152.40	32	54.1	15.88	111.3	38.10	9.70	176.00	9.80
S111	S111	4.76	120.90	36.6	66.8	19.05	131.2	50.80	9.70	235.40	15.90
S131	S131	3.08	78.11	32	33.5	15.88	90.5	38.10	9.70	176.00	11.60
S150	S150	6.05	153.67	44.7	84.3	25.4	164.6	63.50	12.70	416.00	25.70
S188	S188	2.61	66.27	22.4	26.9	12.7	68.6	28.40	6.40	112.20	5.60
S856	S856	6.00	152.40	44.4	76.2	25.4	154.9	63.50	12.70	401.50	25.00
S857	S857	6.00	152.40	44.4	76.2	25.4	154.9	82.60	12.70	475.20	32.00
S859	S859	6.00	152.40	60.4	95.3	31.75	188.5	101.60	16.00	759.00	55.90
S864	S864	7.00	177.80	60.4	95.3	31.75	188.5	101.60	16.00	759.00	51.80

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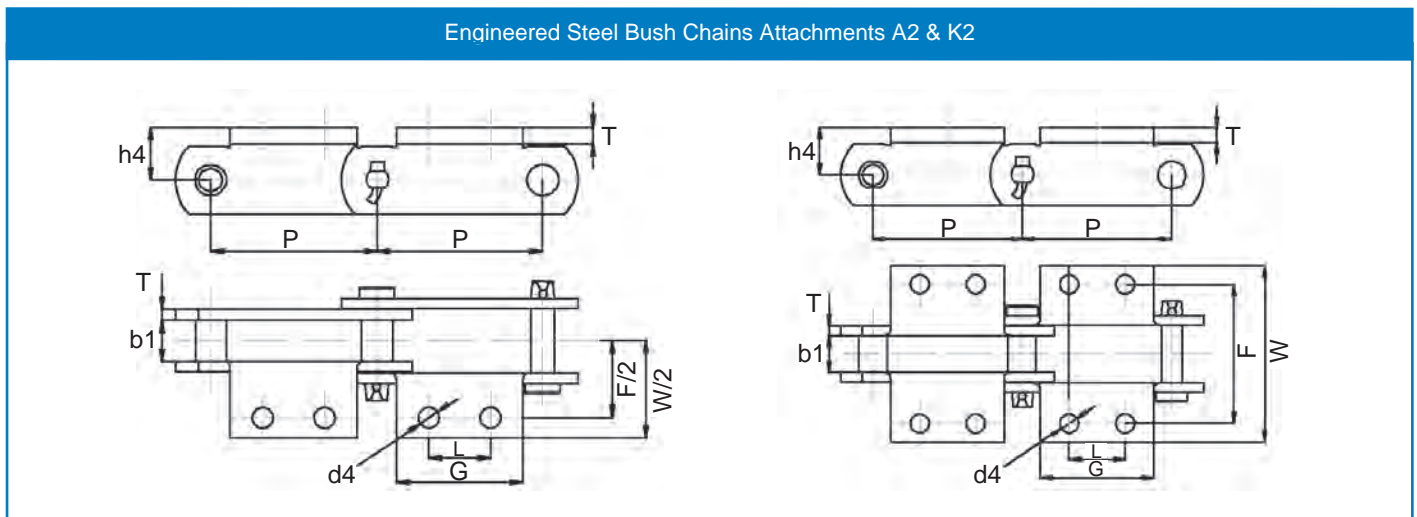
Engineered Bush Chains

Engineered Steel Bush Chains Attachments A1 & K1



ANSI chain number	Challenge chain number	Pitch inches	Pitch mm	Attachment diameter					Plate thickness
		P	P	G	F	W	h4	d4	T
S102B	S102B	4.00	101.60	77.0	121.0	180.8	25.4	10.20	9.70
S131	S131	3.08	78.11	73.9	104.6	157	25.4	13.50	9.70
S188	S188	2.61	66.27	54.6	95.2	131.6	20.6	10.20	6.40

Engineered Steel Bush Chains Attachments A2 & K2

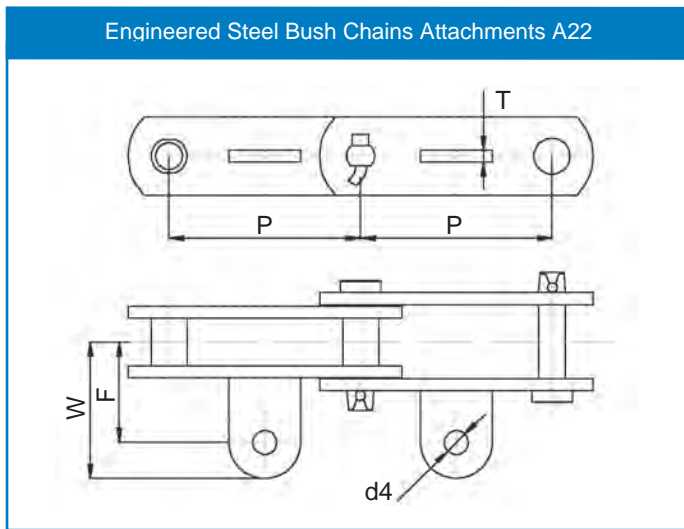


ANSI chain number	Challenge chain number	Pitch inches	Hole distance	Attachment diameter					Plate thickness
		P	L	G max	F	W max	h4	d4 min	T
S102B	S102B	101.60	44.50	69.9	134.9	180.8	25.4	10.20	9.70
S110	S110	152.40	44.50	89.6	134.9	180.8	25.4	10.20	9.70
S111	S111	120.90	58.70	92.7	158.8	210.8	38.1	13.50	9.70
S131	S131	78.11	38.10	73.9	104.6	157	25.4	13.50	9.70
S150	S150	153.67	69.90	108.7	190.5	249.4	47.8	13.50	12.70
S188	S188	66.27	31.80	54.6	106.4	131.6	20.6	8.60	6.40
S856	S856	152.40	63.50	103.1	184.2	241.3	47.8	16.80	12.70

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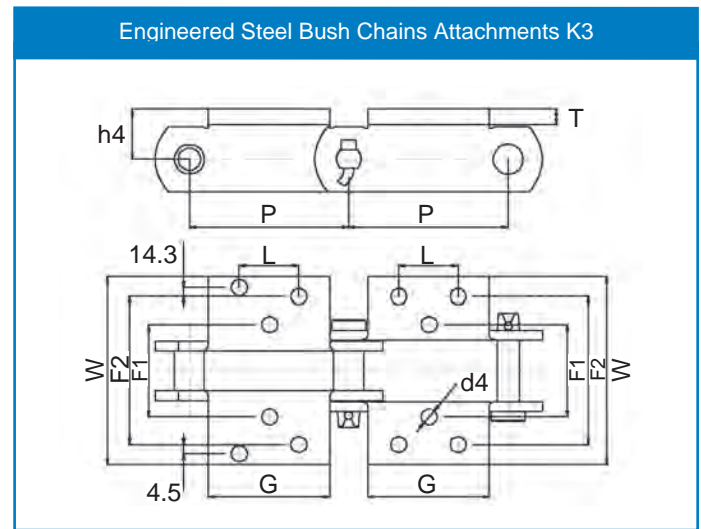
Engineered Bush Chains

Engineered Steel Bush Chains Attachments A22



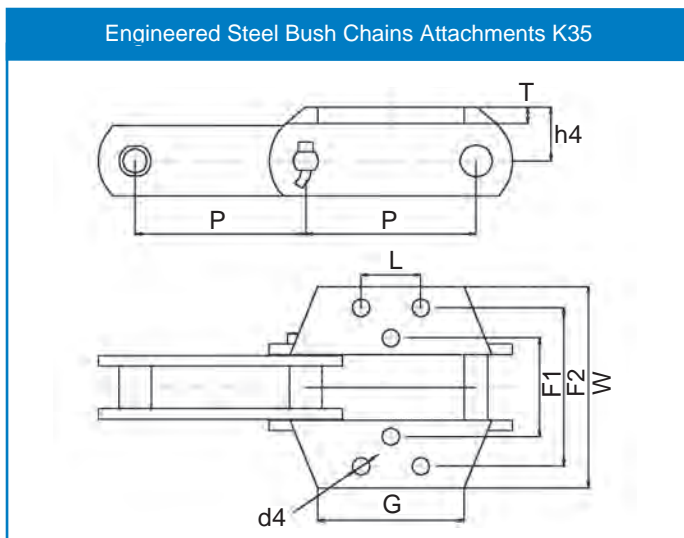
ANSI chain number	Challenge chain number	Pitch		Attachment diameter				Plate thickness	
		inches	mm	P	G	F	W	h4	d4
S188	S188	2.61	66.27	49.2	45.2	61.2	/	10.20	10.40
/	S188A22F1	2.61	66.27	32.0	45.2	61.2	/	12.00	6.40

Engineered Steel Bush Chains Attachments K3



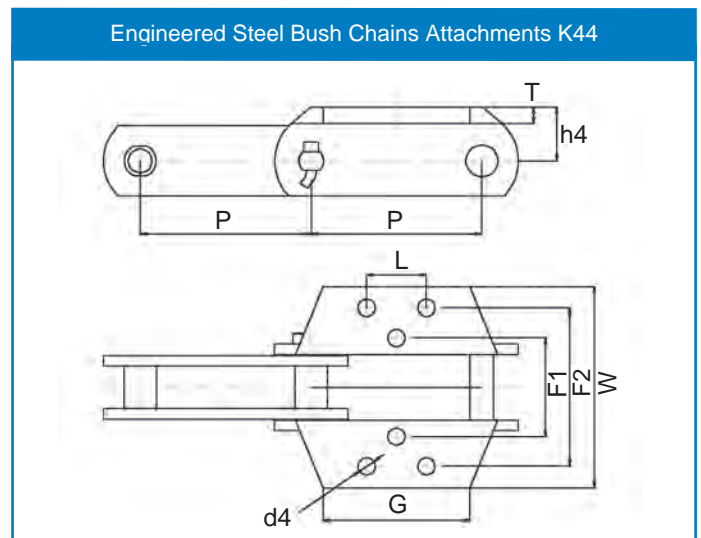
ANSI chain number	Challenge chain number	Pitch		Attachment diameter				Plate thickness		
		inches	mm	P	G	L	F1	F2	W	h4
S150	S150	153.67	109.5	69.9	190.5	292.1	347.5	47.80	13.50	13.5
S856	S856	152.40	152.4	69.9	166.6	277.9	349.3	47.80	13.50	13.5

Engineered Steel Bush Chains Attachments K35



ANSI chain number	Challenge chain number	Pitch		Attachment diameter				Plate thickness		
		inches	mm	P	G	L	F1	F2	W	h4
S856	S856	152.40	146.1	63.5	184.2	298.5	349.3	47.80	16.80	13.5

Engineered Steel Bush Chains Attachments K44

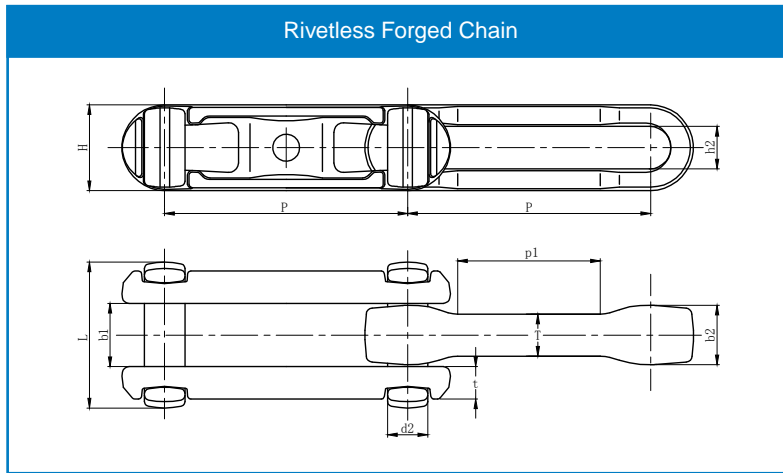


ANSI chain number	Challenge chain number	Pitch		Attachment diameter				Plate thickness			
		inches	mm	P	G	L1	L2	F1	F2	W	h4
S857	S857	152.40	146.1	88.9	88.9	177.8	304.8	355.60	63.50	13.5	13.5
S859	S859	152.40	146.1	114.3	69.9	228.6	330.2	381.00	76.20	16.8	13.5
S864	S864	177.80	146.1	139.7	95.3	228.6	330.2	381.00	76.20	16.8	13.5

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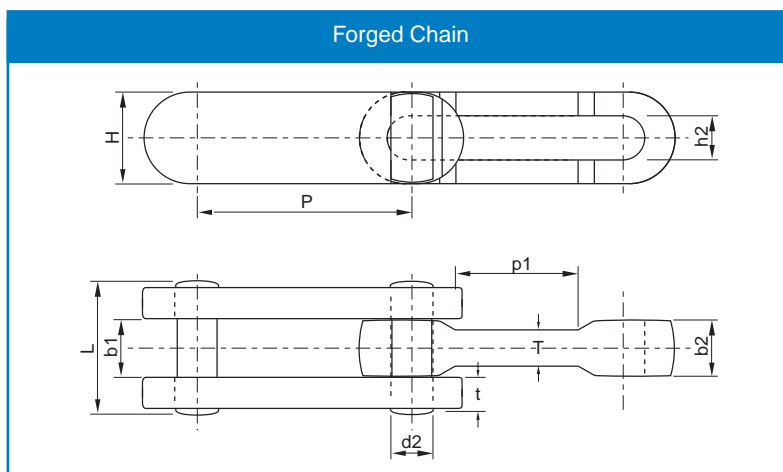
Drop Forged Chain

Rivetless Forged Chain



Chain number	Pitch mm P	Pin diameter d2	Pin length L	Center link gap		Chain height		Plate thickness		Center link width b1	Ultimate tensile strength / kN Q min
				h2 min	H max	t	T				
X228	50.80	6.40	27.70	7.90	18.00	6.40	9.40	13.00	26.70		
X348	76.20	12.40	43.90	13.50	27.90	10.20	13.00	20.10	97.90		
X458	101.60	16.00	57.20	16.80	36.60	12.20	16.30	27.20	210.00		
X458XP	101.60	16.00	57.20	16.80	36.60	12.20	16.30	27.20	255.00		
468	102.40	19.05	84.10	22.35	47.80	10.40	28.70	42.93	391.00		
X678	152.40	22.10	77.00	24.10	51.60	17.80	21.10	34.30	380.00		
X678XP	152.40	22.10	77.00	24.10	51.60	17.80	21.10	34.30	450.00		
698	152.40	28.70	95.25	31.75	65.00	14.20	25.40	41.40	650.00		
698XP	152.40	28.70	95.25	31.75	65.00	14.20	25.40	41.40	720.00		
998	229.40	28.70	95.30	31.75	67.60	14.20	25.40	42.93	578.00		
9118	229.40	35.00	124.00	38.10	76.20	19.80	33.30	51.10	979.00		

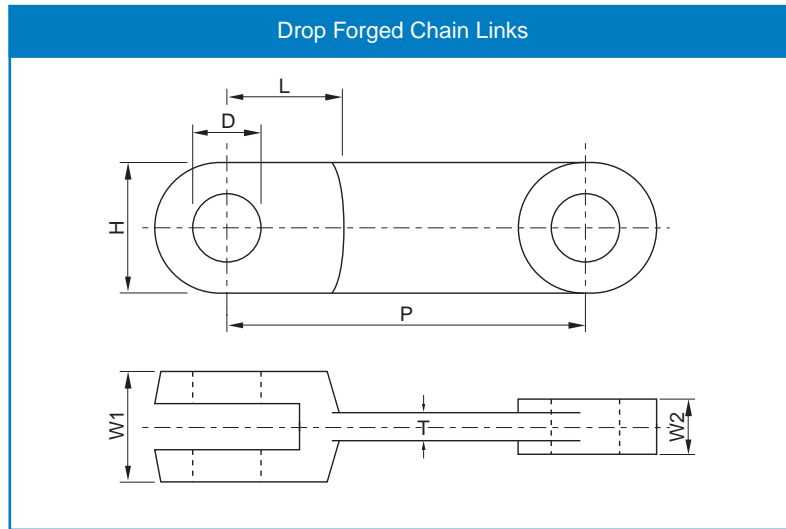
Forged Chain



Chain number	Pitch mm P	Pin diameter d2	Pin length L	Center link gap		Chain height		Plate thickness		Center link width b1	Ultimate tensile strength / kN Q min
				h2 min	H max	t	T				
S348	76.68	12.70	44.45	20.57	28.70	12.70	14.22	8.89	3.58		
S458	102.39	16.00	52.32	26.92	35.05	16.00	17.53	17.78	5.22		
S468	102.39	19.05	74.68	42.93	50.80	28.70	22.35	29.78	11.78		
S678	153.19	22.35	76.20	36.58	50.80	20.57	25.40	34.22	12.83		
S698	153.19	28.70	82.55	41.40	63.50	25.40	31.75	48.00	17.45		
S998	229.39	28.70	82.55	42.93	63.50	25.40	31.75	48.00	18.05		
S9118	229.39	35.05	111.25	54.10	76.20	33.27	38.10	81.33	34.75		

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Drop Forged Chain



Chain number	Pitch mm	H	W1	W2	T	L	D	*Weight kg	Min. UTS kN
102	102	36	28	12	7.6	32	14	0.44	150
142	142	50	42	20	11	46	25	1.26	300
142H	142	50	62	30	16.5	55	25	2.1	450
142T	142	50	62	30	16.5	55	25	2.1	600
200	200	60	62	28	20	58	25	3.2	500
216	216	72	58	25	18	60	35	4.6	582
260	260	75	70	31	20	79	32	5.65	700

* Weight including Pin and Circlip.

Nylon and welded steel flights available, eg:

Square Bar Flight

U Flight

OO Flight

Flat Bar Flight

Closed U Flight

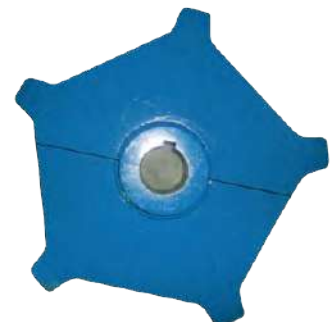
OO Flight with Filler Plates

Paddle Flight

Close U Flight with Filler Plates

Return Cup Flights

All types of sprocket available



The Benefits Spin Riveted Palm Oil Chain

Challenge Palm Oil conveyor chains are designed to withstand the harsh environments found in today's modern Palm Oil mills. Shock loads, heat and lubricating issues demand a tough, high quality solution.

Material – High quality alloy steels used throughout.

Case Hardened alloy steel precision machined bushes

– Ensuring minimum distortion and superior concentricity.

Bushes from seamless tube with location shoulders and interference fit

– For precise assembly; control on inner width and prevention of pin rotation. Bush shoulder length extended to form clearance between inner and outer plates providing uniform lubrication, increased strength and life and greatly minimises possibility of chain seizure.

Spin Riveted Induction Hardened Pins in alloy steel – For optimum life.

Pins with location shoulders and interference fit – For precise positioning of outer plate.

Hardened Rollers with outer diameter finished by grinding

– Gives excellent wear resistance and good load carrying qualities plus reduced wear on sprockets and a better visual result.

Link plates cropped from cold drawn steel

– Ensures internal stresses are minimised resulting in a plate able to withstand fatigue and shock loads.

Holes precision punched on dedicated progression tooling – consistently high tolerance pitch control guaranteed.

Links manufactured from high carbon steel – Giving increased breaking load.

Shot peened – Produces strong surface and reduced fatigue.

Attachments and options

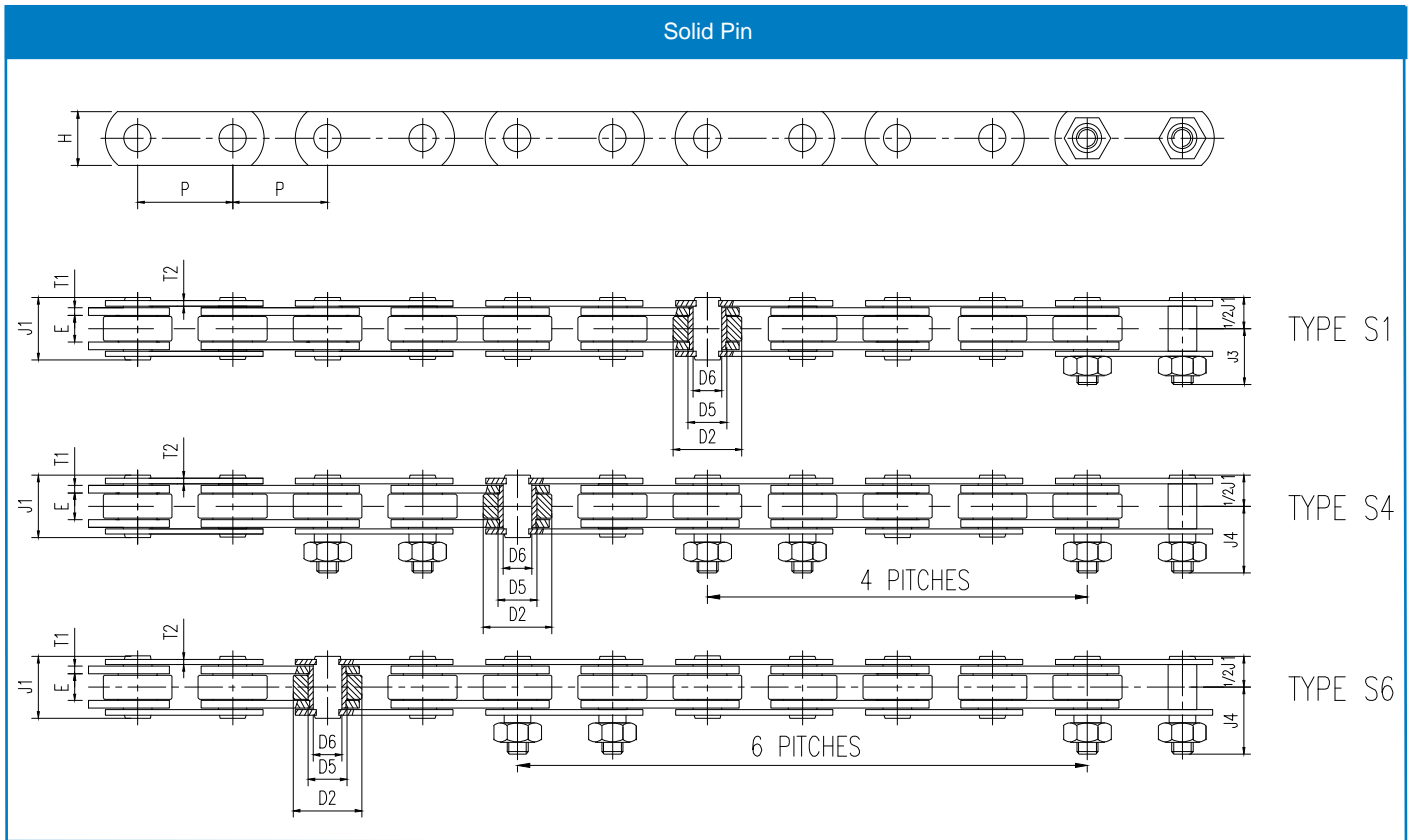
– Zinc and Nickel plated parts, molykoted pins, bushes and rollers. Flanged rollers, hardened plates, Stainless parts, liner bushes etc.

Connecting links – Use zinc plated steel locking nuts (Nyloc).



Palm Oil Chain

BS Conveyor Chain (BS 4116 Part 4)



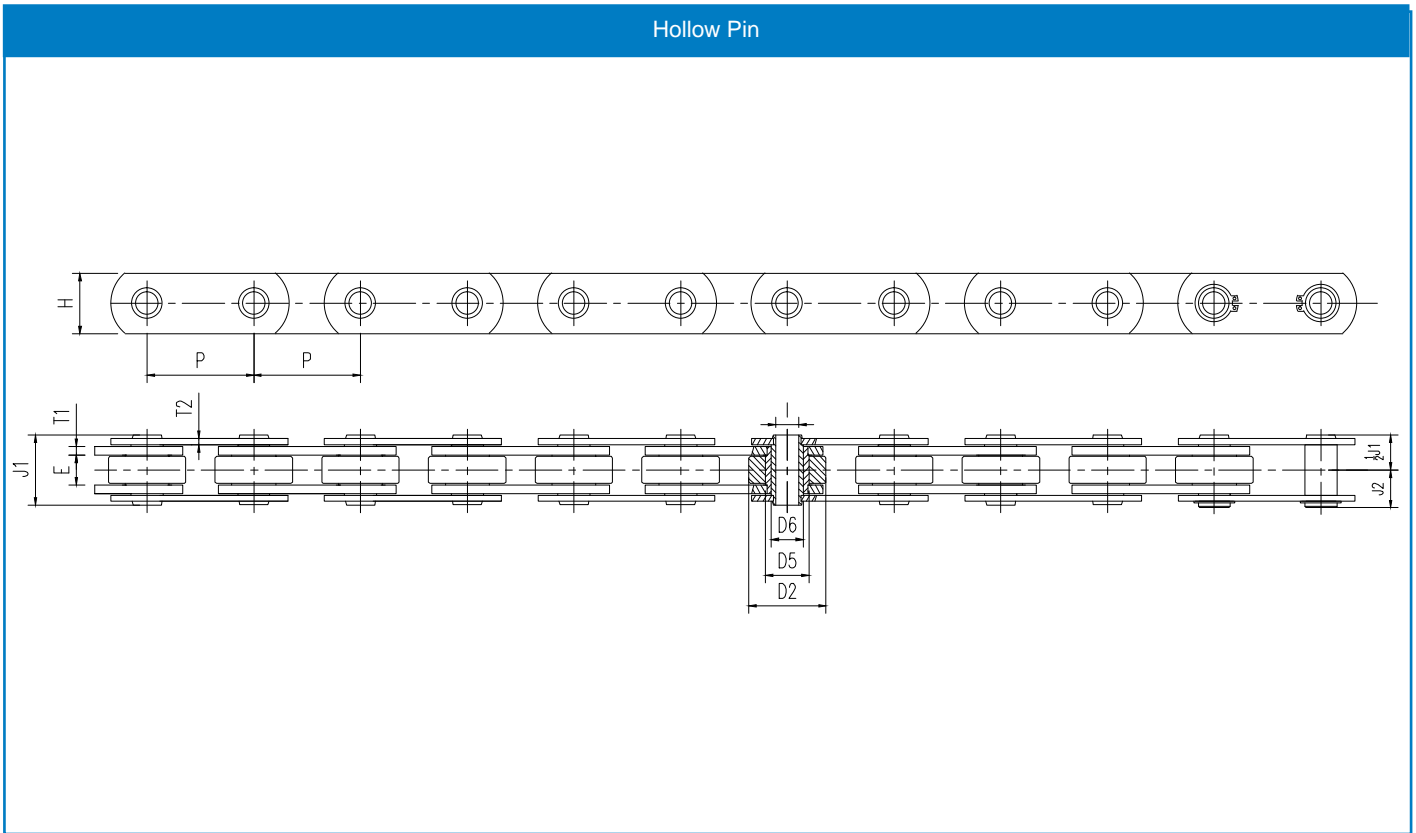
Solid Pin

BS Chain Range	Chain number	Series	Chain type	Pitch	Pitch	E	H	T1	T2	J1	J3	J4	D2	D5	D6	Minimum breaking load lbf	Minimum breaking load kN	Weight kg/m
				Inches	mm													
Z100	RCC-Z100C101.6	Standard	S1	4.0	101.6	19.16	38.1	5.1	3.8	46.1	38.3	-	47.63	25.4	19	20,000	89	6.5
"	RCC-Z100C101.6*	Extra	"	"	"	"	"	"	"	"	"	-	"	"	"	27,000	120	"
"	RCC-Z120C101.6	Extra Plus	"	"	"	"	"	"	5.1	48.5	"	-	"	"	"	32,000	142	7.0
Z100	RCC-Z100C101.6-EP4	Standard	S4	4.0	101.6	19.16	38.1	5.1	3.8	46.1	38.3	47	25.4	25.4	19	20,000	89	6.7
"	RCC-Z100C101.6-EP4*	Extra	"	"	"	"	"	"	"	"	"	"	"	"	"	27,000	120	"
"	RCC-Z120C101.6-EP4	Extra Plus	"	"	"	"	"	"	5.1	48.5	"	48	"	"	"	32,000	142	7.2
Z100	RCC-Z100C101.6-EP6	Standard	S6	4.0	101.6	19.16	38.1	5.1	3.8	46.1	38.3	47	25.4	25.4	19	20,000	89	6.6
"	RCC-Z100C101.6-EP6*	Extra	"	"	"	"	"	"	"	"	"	"	"	"	"	27,000	120	"
"	RCC-Z120C101.6-EP6	Extra Plus	"	"	"	"	"	"	5.1	48.5	"	"	"	"	"	32,000	142	7.1
Z100	RCC-Z100C152.4	Standard	S1	6.0	152.4	19.16	38.1	5.1	3.8	46.1	38.3	-	25.4	25.4	19	20,000	89	5.3
"	RCC-Z100C152.4*	Extra	"	"	"	"	"	"	"	"	"	-	"	"	"	27,000	120	"
"	RCC-Z120C152.4	Extra Plus	"	"	"	"	"	"	5.1	48.5	"	-	"	"	"	32,000	142	5.6
Z160	RCC-Z160C101.6	Standard	S1	4.0	101.6	25.5	50.8	7.1	5.1	59.13	48.9	-	66.7	34.9	26.9	38,000	169	14.3
"	RCC-Z260C101.6	Extra	"	"	"	"	"	"	"	"	"	-	"	"	"	60,000	266	"
"	RCC-Z460C101.6	Extra Plus	"	"	"	"	"	10	10	"	"	-	"	"	"	100,000	445	"
Z160	RCC-Z160C152.4	Standard	S1	6.0	152.4	25.5	50.8	7.1	5.1	59.13	48.9	-	66.7	34.9	26.9	38,000	169	11.3
"	RCC-Z260C152.4	Extra	"	"	"	"	"	"	"	"	"	-	"	"	"	60,000	266	"
"	RCC-Z460C152.4	Extra Plus	"	"	"	"	"	10	10	"	"	-	"	"	"	100,000	445	"
Z160	RCC-Z160C152.4-EP4	Standard	S4	6.0	152.4	25.5	50.8	7.1	5.1	59.13	48.9	63	66.7	34.9	26.9	38,000	169	11.7
"	RCC-Z260C152.4-EP4	Extra	"	"	"	"	"	"	"	"	"	"	"	"	"	60,000	266	"
"	RCC-Z460C152.4-EP4	Extra Plus	"	"	"	"	"	10	10	"	"	"	"	"	"	100,000	445	"
Z160	RCC-Z160C152.4-EP6	Standard	S6	6.0	152.4	25.5	50.8	7.1	5.1	59.13	48.9	63	66.7	34.9	26.9	38,000	169	11.5
"	RCC-Z260C152.4-EP6	Extra	"	"	"	"	"	"	"	"	"	"	"	"	"	60,000	266	"
"	RCC-Z460C152.4-EP6	Extra Plus	"	"	"	"	"	10	10	"	"	"	"	"	"	100,000	445	"
Z300	RCC-Z300C152.4	Standard	S1	6.0	152.4	38	65	10	8	82.5	60.3	-	88.9	41.3	31.75	75,000	334	24.3
"	RCC-Z500C152.4	Extra	"	"	"	"	"	"	"	"	"	-	"	"	"	90,000	400	"
"	RCC-Z500C152.4*	Extra Plus	"	"	"	"	"	"	"	"	"	-	"	"	"	120,000	534	"

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Palm Oil Chain

BS Conveyor Chain (BS 4116 Part 4)



Hollow Pin

BS Chain Range	Chain number	Series	Pitch Inches P	Pitch mm P	E	I	H	T1	T2	J1	J2	D2	D5	D6	Minimum breaking load lbf	Minimum breaking load kN	Weight kg/m
ZC60	RCC-ZC60C101.6	Standard	4.0	101.6	19.16	13.2	38.1	5.1	3.8	44.1	24.7	47.63	25.4	19	20,000	89	6.0
"	RCC-ZC60C101.6*	Extra Plus	"	"	"	"	"	"	"	"	"	"	"	"	27,000	120	"
ZC60	RCC-ZC60C152.4	Standard	6.0	152.4	19.16	13.2	38.1	5.1	3.8	44.1	24.7	47.63	25.4	19	20,000	89	4.9
"	RCC-ZC60C152.4*	Extra Plus	"	"	"	"	"	"	"	"	"	"	"	"	27,000	120	"
ZC150	RCC-ZC150C101.6	Standard	4.0	101.6	25.5	19.6	50.8	7.1	5.1	57.1	31.9	66.7	34.9	26.9	35,000	156	12.8
"	RCC-ZC220C101.6	Extra	"	"	"	"	"	"	"	"	"	"	"	"	46,000	205	"
ZC150	RCC-ZC220C101.6*	Extra Plus	4.0	101.6	25.5	19.6	50.8	7.1	5.1	57.1	31.9	66.7	34.9	26.9	50,000	222	12.8
"	RCC-ZC150C152.4	Standard	6.0	152.4	"	"	"	"	"	"	"	"	"	"	35,000	156	11.0
ZC150	RCC-ZC220C152.4	Extra	6.0	152.4	25.5	19.6	50.8	7.1	5.1	57.1	31.9	66.7	34.9	26.9	46,000	205	11.0
"	RCC-ZC220C152.4*	Extra Plus	"	"	"	"	"	"	"	"	"	"	"	"	50,000	222	"

Sugar Chain

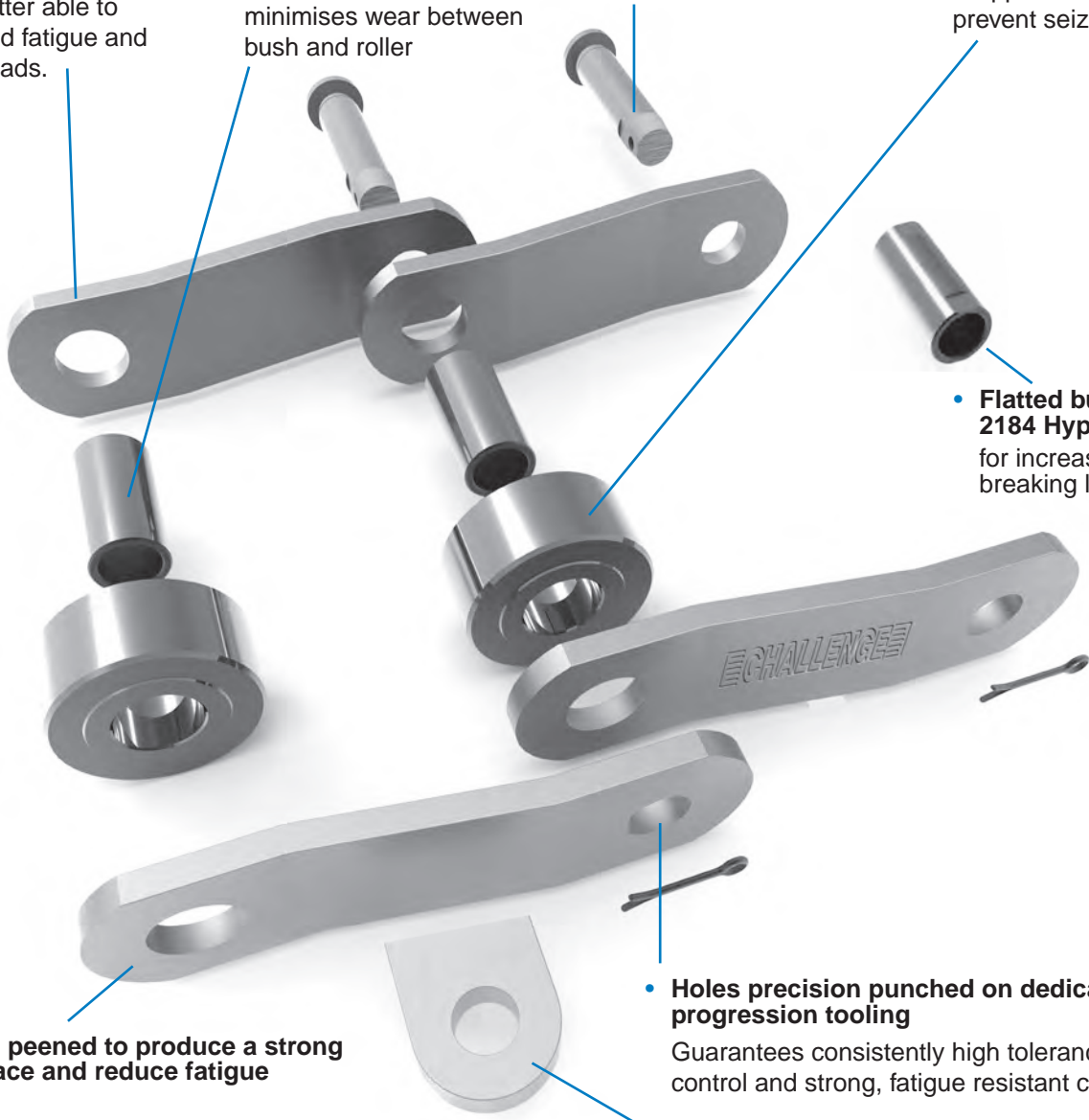


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Sugar Chain

The Benefits of Challenge Sugar Chain

- Material** – High quality steels used throughout
- Link plates cropped from high carbon cold drawn steel**
 To avoid internal stresses associated with guillotined steel, Challenge produces all plates from high tolerance, on size, cold drawn steel bars resulting in a plate better able to withstand fatigue and shock loads.
- Case Hardened Alloy steel bushes precision machined from seamless tube**
 Ensuring minimum distortion and superior concentricity. Interference fit extends wear life by preventing bush rotation. Surface grinding minimises wear between bush and roller
- Induction Hardened Pins in High Chrome Alloy Steel**
 Pins headed and flatted to ensure location and prevent rotation. Challenge EasyFit® pins designed with long lead in to aid on-site maintenance and assembly.
- Hardened Rollers with grinding**
 Grinding the outer diameter gives excellent wear resistance and good load carrying qualities plus reduced wear on sprockets and better visual result. Stepped down to help prevent seizure.
- Flatted bush on 2184 Hyper Chain for increased breaking load.**
- Shot peened to produce a strong surface and reduce fatigue**
- Challenge has invested heavily in CNC controlled machinery for optimum batch component conformity.**
- Attachment plates jig assembled maintains position and squareness.**
- Holes precision punched on dedicated progression tooling**
 Guarantees consistently high tolerance pitch control and strong, fatigue resistant chain.
- Robotic welding of attachment**
 All industry standard attachments available.

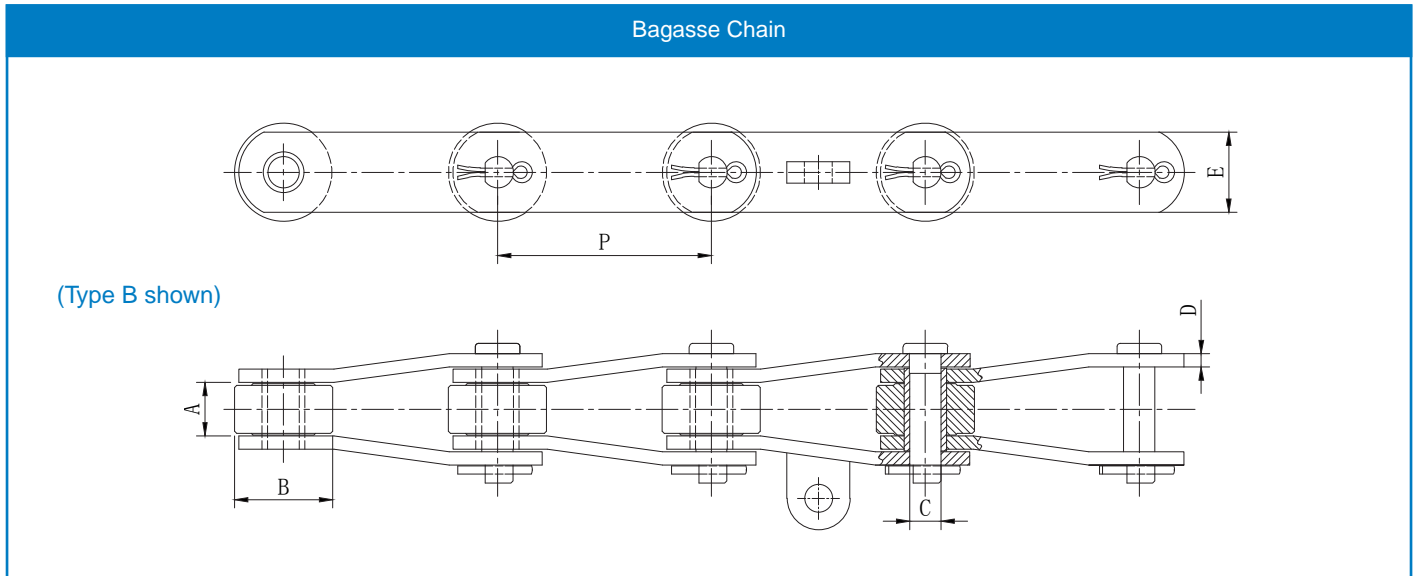


In-house design team for all special requirements.

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Sugar Chain

Bagasse Chain



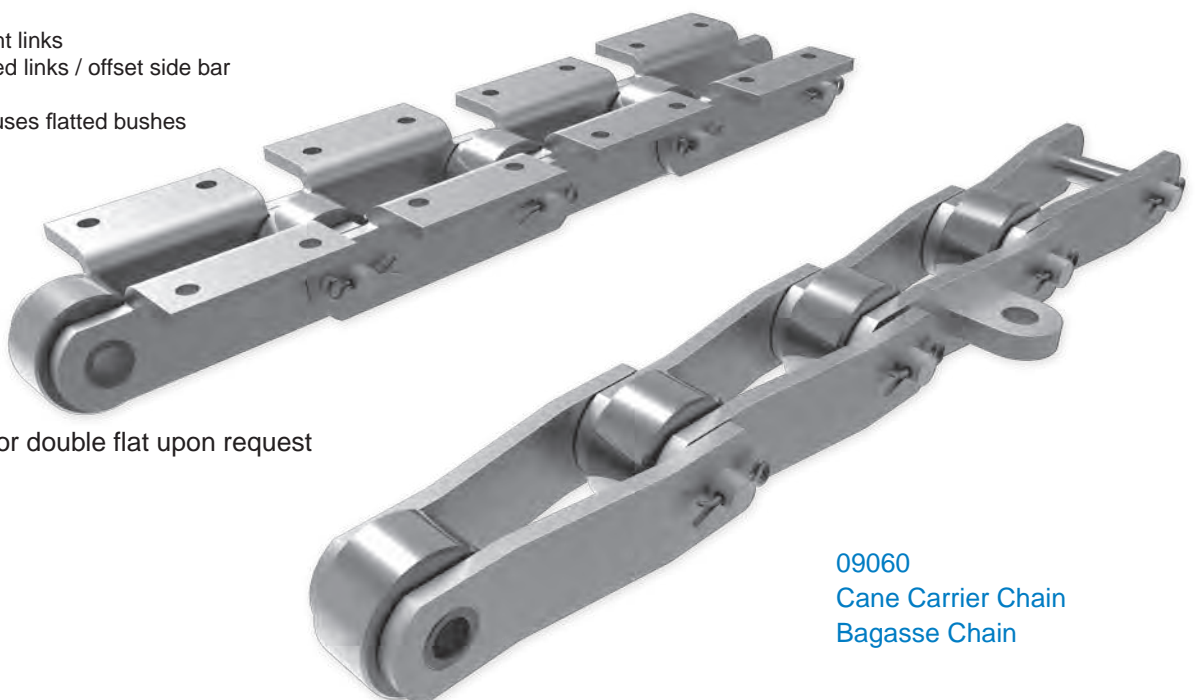
Chain number	Type	Pitch P	Inside width A	Roller diameter B	Pin diameter C	Plate thickness D	Plate height E	Attachment		Transverse pitch K	Breaking load(kN)	Weight (kg/m)		
								hole diameter F	hole centres G					
CH1796	A	152.4	38.1	69.85	22.2	9.52	57.15	12.7	82.5	114.3	115.8	88.9	445	22
CH1796	B	"	"	"	"	"	"	"	"	"	"	"	"	22.9
CH2184	B	152.4	34.93	76.2	22.2	9.52	50.8	14.3	88.9	127	143	88.9	356	21
* CH2184 HYPER	"	"	"	"	"	"	"	"	"	"	"	"	380	"
CH9060	A	152.4	38.1	69.85	18.9	9.52	50.8	12.7	82.5	114.3	115.8	88.9	272	18.5
CH9060	B	"	"	"	"	"	"	"	"	"	"	"	"	"
CH9061	A	152.4	38.1	69.85	18.9	9.52	57.15	12.7	82.5	114.3	115.8	88.9	386	19.85
CH9061	B	"	"	"	"	"	"	"	"	"	"	"	"	20.3
CH9063	A	152.4	38.1	76.2	23.82	10.28	63.5	14.3	88.9	127.9	142.9	100	620	25.1
CH9063	B	"	"	"	"	"	"	"	"	"	"	"	"	"

Stainless steel versions available upon request.

TYPE A with straight links

TYPE B with cranked links / offset side bar

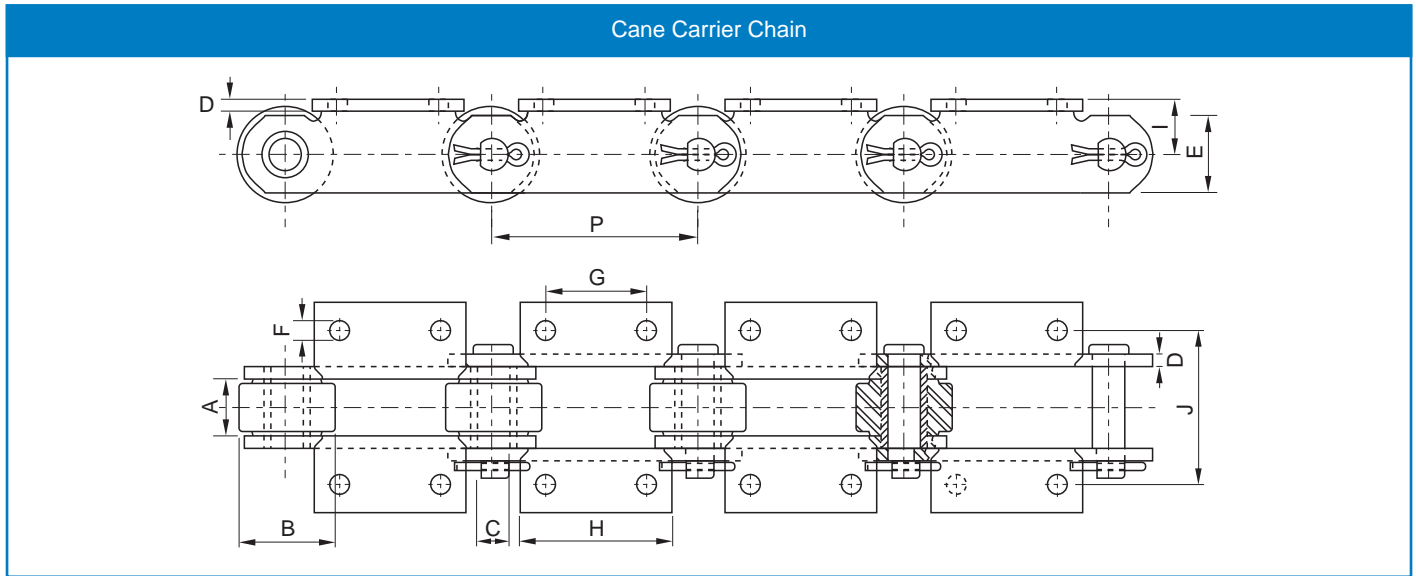
* CH2184 HYPER uses flatted bushes



Pins with single or double flat upon request

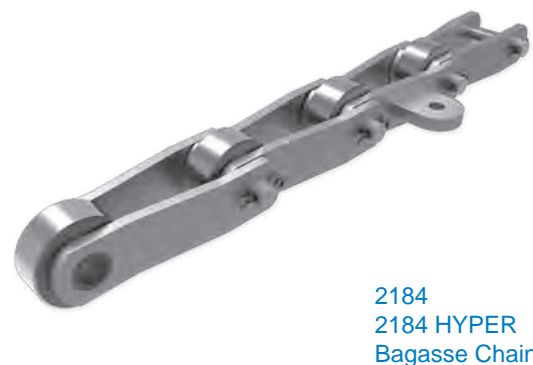
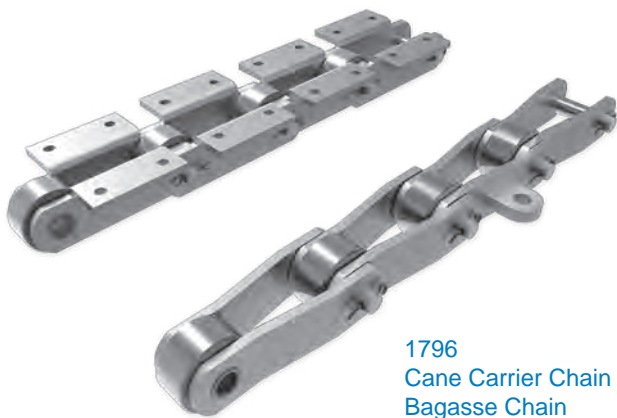
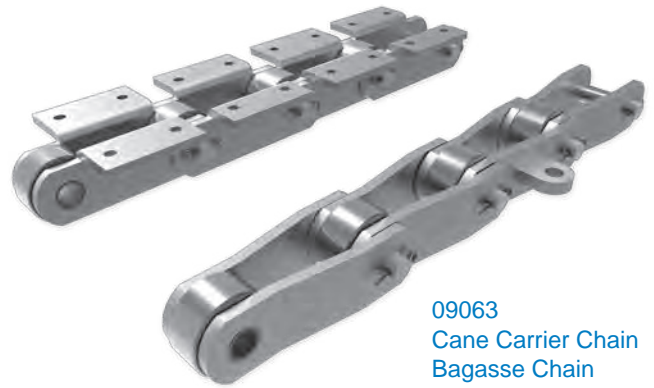
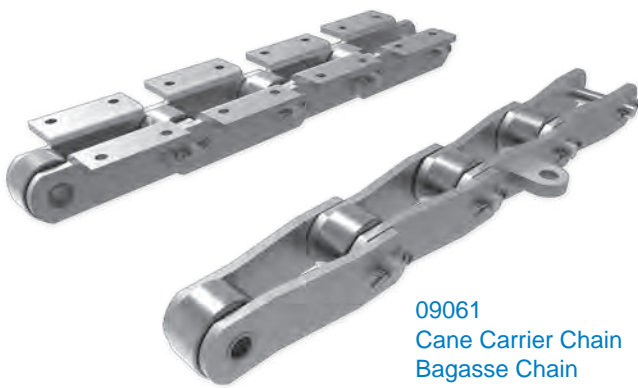
Sugar Chain

Cane Carrier Chain



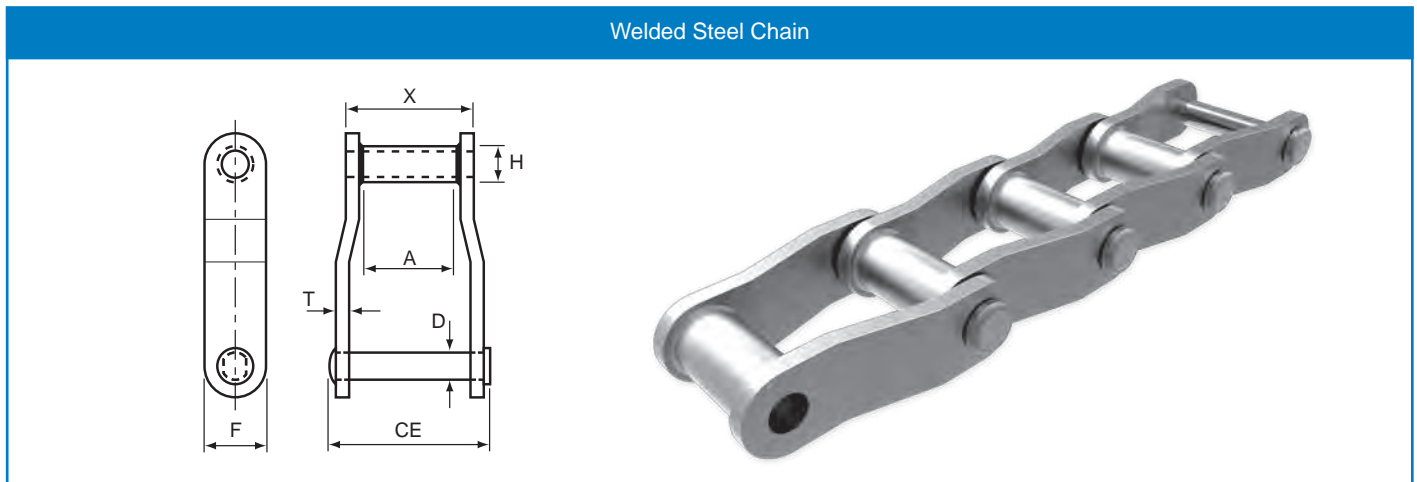
Chain number	Pitch P	Inside width A	Roller diameter B	Pin diameter C	Plate thick D	Plate height E	Attachment hole diameter F	Attachment hole centres G	Attachment length H	Platform height I	Transverse pitch J	Breaking Load (kN)	Weight (kg/m)
CH9060	152.40	36.50	69.85	18.90	9.52	50.80	12.70	76.20	114.30	41.30	111.20	272	24.70
CH9061	152.40	36.50	69.85	18.90	9.52	57.15	12.70	76.20	114.30	41.30	111.20	386	25.30
CH9063	152.40	36.50	76.20	23.80	10.30	63.50	12.70	76.20	114.30	44.45	111.20	620	27.50
CH1796	152.40	38.10	69.85	22.23	9.52	57.15	12.70	76.20	114.30	41.30	111.20	445	26.20

Heat treated stainless steel versions available upon request.



Sugar Chain

Welded Steel Chain

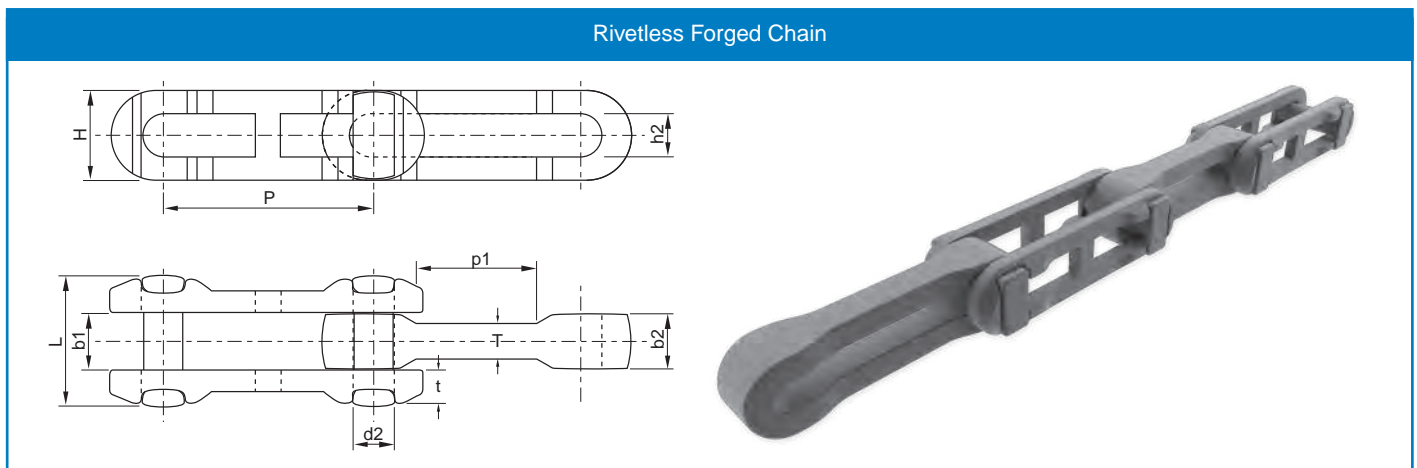


Welded Steel Chain (Offset Side Bar)

Chain Number	Pitch		Average Ultimate Strength lbf	Max. Working Load lbf	Approx. Links Per Foot	Average Weight lbf/ft	Dimensions						
	mm	Inches					CE	X	D	T	F	H	A
WR78	66.26	2.609	24000	3000	4.6	4.0	76.20	50.80	12.70	6.35	28.58	22.23	28.58
WH78	66.26	2.609	36000	3500	4.6	4.0	76.20	50.80	12.70	6.35	28.58	22.23	28.58
WR82	78.10	3.074	30000	5000	3.9	5.0	79.50	57.00	14.29	6.40	31.80	25.40	32.00
WH82	78.10	3.074	40000	6650	3.9	5.2	79.50	57.00	14.29	6.40	31.80	27.00	32.00
WR124	101.60	4.000	46000	6300	3.0	8.3	107.95	69.85	19.05	9.53	38.10	31.75	38.10
WH124	101.60	4.000	60000	7350	3.0	8.3	107.95	69.85	19.05	9.53	38.10	31.75	38.10
WR132	153.67	6.050	84000	13100	2.0	14.2	158.75	111.00	25.40	12.70	50.80	41.28	73.03
WH132	153.67	6.050	110000	15000	2.0	14.2	158.75	111.00	25.40	12.70	50.80	41.28	73.03

WR - Welded steel chain - through hardened pins and case hardened bushes.
 WH - Welded steel chain - all components fully heat treated

Rivetless Forged Chain

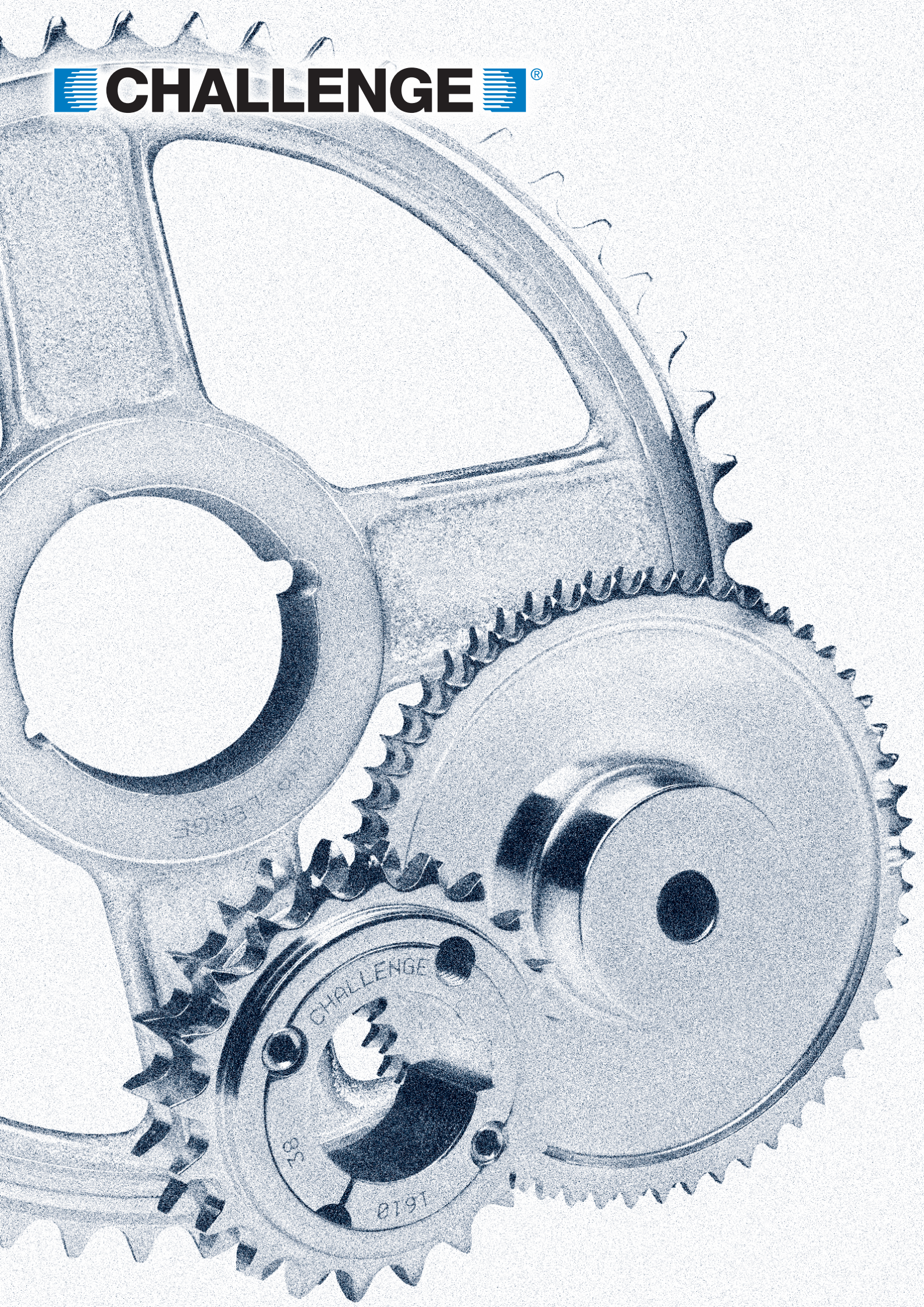


Chain number	Pitch mm P	Pin diameter d2	Pin length L	Center link gap		Plate thickness		Center link width b1	Ultimate tensile strength / kN Q min
				h2 min	Chain height H max	t	T		
X348	76.20	12.40	43.90	13.50	27.90	10.20	13.00	20.10	97.90
X678	152.40	22.10	77.00	24.10	51.60	17.80	21.10	34.30	380.00
698	152.40	28.70	95.25	31.75	65.00	14.20	25.40	41.40	650.00

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Notes

CHALLENGE®





Features

General

The material used is either C45 steel which can be both welded and hardened, or GG22 close grain cast iron.

All standard steel sprockets are produced from either sawn bar or from a forged block.

Special sprockets in small quantities are produced from a plate and then welded onto a hub.

BS Taper Bore Sprockets

- 06B – 24B in simplex, duplex and triplex
- Produced from either C45 steel or from GG22 close grain cast iron dependent upon the sprocket style and design

BS Pilot Bore Sprockets

- 03B – 32B in simplex, duplex and triplex including sizes 081/083/084 and 085
- Produced from either C45 steel or GG22 close grain cast iron dependent upon the sprocket style and design

Plate Wheel Sprockets

- Plate Wheels are available in sizes 03B – 32B including sizes 081/083/084 and 085
- ANSI can be produced to order
- Produced from C45 steel

Double Simplex Sprockets

- Are available in both Taper Bore and Pilot Bore configuration, covering sizes 06B to 16B
- Produced from C45 steel

Idler Sprockets

- With a ball bearing insert, these sprockets are available in British Standard sizes 05B through to 20B
- Also available are sprockets to suit ANSI chain in sizes 35 – 80
- Produced from C45 steel

ANSI Pilot Bore Sprockets

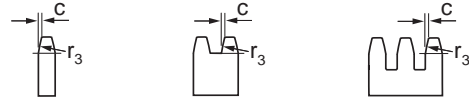
- Sizes 35 – 100 in simplex, duplex and triplex
- Sizes 120 – 160 in simplex and duplex
- All C45 steel construction
- Hardened teeth available for all sizes

Taper Bore Sprockets

BS Taper Bore Sprockets

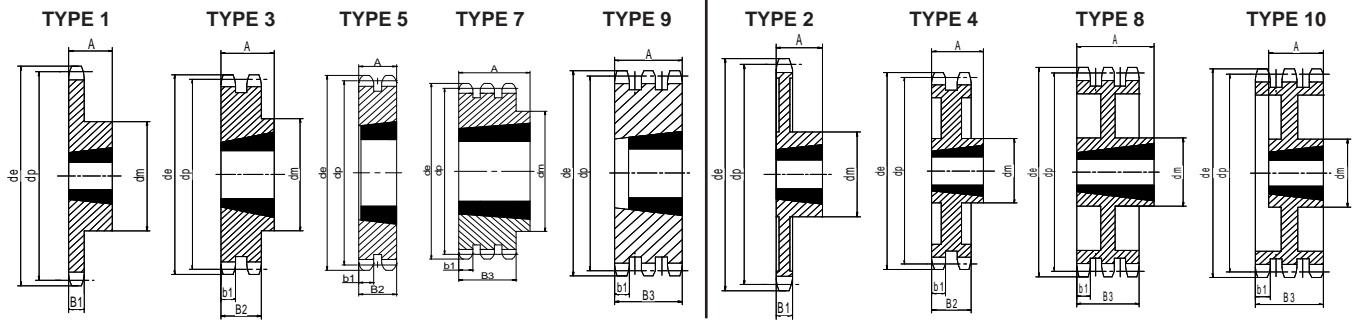
06B 3/8" x 7/32"

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	10.0	Pitch	9.525
Chamfer c	1.0	Width Between inner Plates	5.720
Tooth Width b1	5.2	Roller Diameter	6.350
Tooth Width B1	5.3		
Tooth Width B2	15.4		
Tooth Width B3	25.6		



TYPES : 1, 3, 5, 7, 9 C45 STEEL

TYPES : 2, 4, 8, 10 GG22 CAST IRON



Teeth	Outer Dia de	Pitch Dia dp	Simplex					Duplex					Triplex				
			Ref	Hub Dia dm	Length thro' Bore A	Taper	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper	Type
17	55.3	51.83	31-17	45*	22	1008	1	32-17	41*	22	1008	3	33-17	-	25.6	1008	9
18	58.3	54.85	31-18	45	22	1008	1	32-18	43	22	1008	3	-	-	-	-	-
19	61.3	57.87	31-19	45	22	1008	1	32-19	46	22	1008	3	33-19	-	25.6	1008	9
20	64.3	60.89	31-20	46	22	1008	1	32-20	48	22	1008	3	-	-	-	-	-
21	68.0	63.91	31-21	46	22	1008	1	32-21	49	22	1008	3	33-21	-	25.6	1008	9
22	71.0	66.93	31-22	50	22	1108	1	32-22	52	22	1108	3	-	-	-	-	-
23	73.5	69.95	31-23	63*	25	1210	1	32-23	59	25	1210	3	33-23	-	25.6	1210	9
24	77.0	72.97	31-24	63	25	1210	1	32-24	61	25	1210	3	-	-	-	-	-
25	80.0	76.02	31-25	63	25	1210	1	32-25	64	25	1210	3	33-25	-	25.6	1210	9
26	83.0	79.02	31-26	63	25	1210	1	32-26	65	25	1210	3	-	-	-	-	-
27	86.0	82.02	31-27	63	25	1210	1	32-27	70	25	1210	3	33-27	-	25.6	1210	9
28	89.0	85.07	31-28	63	25	1210	1	32-28	70	25	1210	3	-	-	-	-	-
30	94.7	91.12	31-30	63	25	1210	1	32-30	75	25	1210	3	33-30	79	38.0	1615	7
38	119.5	115.35	31-38	70	25	1210	1	32-38	80	25	1610	3	33-38	90	36.0	1615	7
45	140.7	136.55	31-45	70	25	1210	1	32-45	80	25	1610	3	33-45	95	32.0	2012	7
57	176.9	172.91	31-57	70	25	1210	1	32-57	80	25	1610	3	33-57	95	32.0	2012	7
76	234.9	230.49	31-76	70	25	1210	1	32-76	80	25	1610	3	33-76	95	32.0	2012	7
38	119.5	115.35	31-38	70	25	1210	2	32-38	80	25	1610	4	33-38	80	25.6	1610	10
45	140.7	136.55	31-45	70	25	1210	2	32-45	80	25	1610	4	33-45	80	25.6	1610	10
57	176.9	172.91	31-57	70	25	1210	2	32-57	80	25	1610	4	33-57	80	25.6	1610	10
76	234.9	230.49	31-76	70	25	1210	2	32-76	80	25	1610	4	33-76	80	38.0	1615	8
95	292.5	288.08	31-95	80	25	1210	2	32-95	90	25	1610	4	-	-	-	-	-
114	349.6	345.68	31-114	80	25	1610	2	32-114	95	32	2012	4	33-114	95	32.0	2012	8

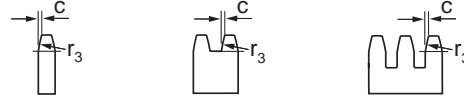
*denotes undercut

Taper Bore Sprockets

BS Taper Bore Sprockets

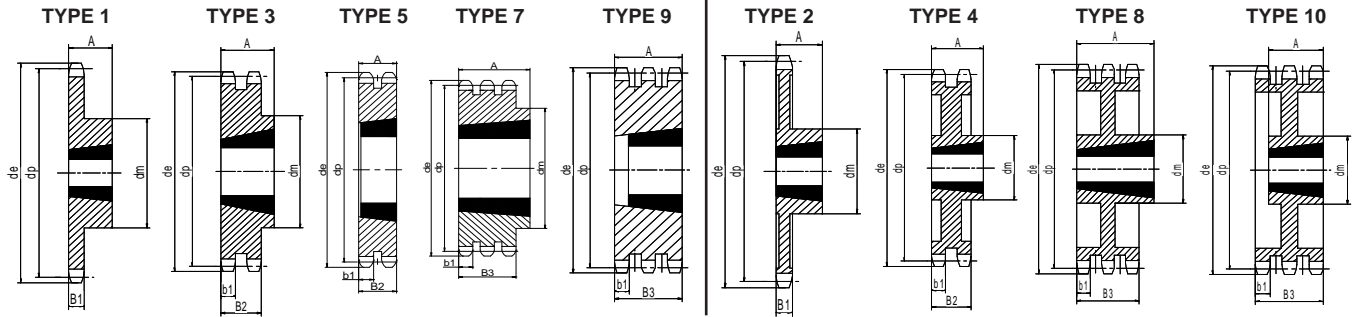
08B 1/2" x 5/16"

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	13.0	Pitch	12.700
Chamfer c	1.3	Width Between inner Plates	7.750
Tooth Width b1	7.0	Roller Diameter	8.510
Tooth Width B1	7.2		
Tooth Width B2	21.0		
Tooth Width B3	34.9		



TYPES : 1, 3, 5, 7, 9 C45 STEEL

TYPES : 2, 4, 8, 10 GG22 CAST IRON



Teeth	Outer Dia de	Pitch Dia dp	Simplex					Duplex					Triplex					
			Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	
14	61.8	57.07	41-14	45	22	1008	1	-	-	-	-	-	-	-	-	-	-	-
15	65.5	61.90	41-15	45	22	1008	1	42-15	46	22	1008	3	43-15	-	34.9	1008	9	-
16	69.5	65.10	41-16	50	22	1108	1	42-16	50	22	1108	3	-	-	-	-	-	-
17	73.6	69.11	41-17	60	25	1210	1	42-17	56*	25	1210	3	43-17	-	34.9	1210	9	-
18	77.8	73.14	41-18	60*	25	1210	1	42-18	60*	25	1210	3	-	-	-	-	-	-
19	81.7	77.16	41-19	63	25	1210	1	42-19	62	25	1210	3	43-19	-	34.9	1210	9	-
20	85.8	81.19	41-20	71*	25	1610	1	42-20	66*	25	1610	3	-	-	-	-	-	-
21	89.7	85.22	41-21	71	25	1610	1	42-21	70	25	1610	3	43-21	-	34.9	1610	9	-
22	93.8	89.24	41-22	71	25	1610	1	42-22	76	25	1610	3	-	-	-	-	-	-
23	98.2	93.27	41-23	76	25	1610	1	42-23	79	25	1610	3	43-23	-	34.9	1610	9	-
24	101.8	97.29	41-24	76	25	1610	1	42-24	84	25	1610	3	-	-	-	-	-	-
25	105.8	101.33	41-25	76	25	1610	1	42-25	87	32	2012	3	43-25	-	34.9	2012	9	-
26	110.0	105.36	41-26	76	25	1610	1	42-26	87	32	2012	3	-	-	-	-	-	-
27	114.0	109.40	41-27	76	25	1610	1	42-27	87	32	2012	3	43-27	-	34.9	2012	9	-
28	118.0	113.42	41-28	90	32	2012	1	42-28	87	32	2012	3	-	-	-	-	-	-
30	126.1	121.50	41-30	90	32	2012	1	42-30	87	32	2012	3	43-30	-	34.9	2012	9	-
31	130.2	125.54	41-31	90	32	2012	1	42-31	87	32	2012	3	43-31	-	34.9	2012	9	-
38	158.6	153.80	41-38	90	32	2012	1	42-38	100	32	2012	3	43-38	-	34.9	2012	9	-
45	188.0	182.07	41-45	100	32	2012	1	42-45	100	32	2012	3	43-45	110	45.0	2517	7	-
57	236.4	230.54	41-57	100	32	2012	1	42-57	100	32	2012	3	43-57	110	45.0	2517	7	-
76	313.3	307.33	41-76	100	32	2012	1	42-76	100	32	2012	3	43-76	110	45.0	2517	7	-
38	158.6	153.80	41-38	95	32	2012	2	42-38	95	32	2012	4	43-38	-	34.9	2012	10	-
45	188.0	182.07	41-45	95	32	2012	2	42-45	100	32	2012	4	43-45	-	45.0	2517	8	-
57	236.4	230.54	41-57	100	32	2012	2	42-57	100	32	2012	4	43-57	-	45.0	2517	8	-
76	313.3	307.33	41-76	100	32	2012	2	42-76	100	32	2012	4	43-76	-	45.0	2517	8	-
95	390.1	384.11	41-95	100	32	2012	2	42-95	100	32	2012	4	43-95	-	34.9	2012	8	-
114	400.9	460.90	41-114	110	45	2517	2	42-114	110	45	2517	4	-	-	-	-	-	-

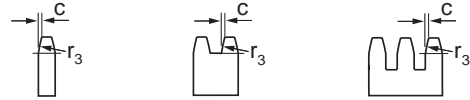
*denotes undercut

Taper Bore Sprockets

BS Taper Bore Sprockets

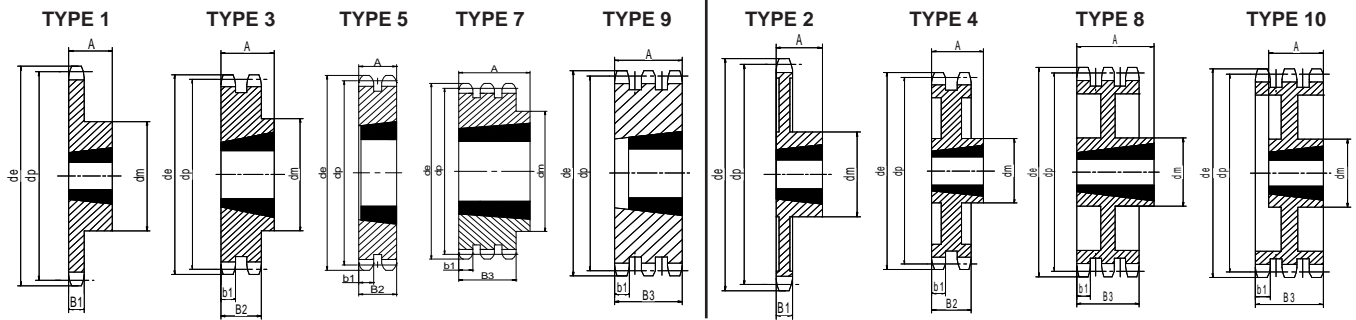
10B 5/8" x 3/8"

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	16.0	Pitch	15.875
Chamfer c	1.6	Width Between inner Plates	9.650
Tooth Width b1	9.0	Roller Diameter	10.160
Tooth Width B1	9.1		
Tooth Width B2	25.5		
Tooth Width B3	42.1		



TYPES : 1, 3, 5, 7, 9 C45 STEEL

TYPES : 2, 4, 8, 10 GG22 CAST IRON



Teeth	Outer Dia de	Pitch Dia dp	Simplex					Duplex					Triplex					
			Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	
13	73.0	66.32	51-13	47	22	1008	1	-	-	-	-	-	-	-	-	-	-	-
14	78.0	71.34	51-14	52	22	1108	1	-	-	-	-	-	-	-	-	-	-	-
15	83.0	76.36	51-15	60*	25	1210	1	52-15	-	25.5	1210	5	53-15	-	42.1	1210	9	-
16	88.0	81.37	51-16	70*	25	1610	1	52-16	-	25.5	1610	5	-	-	-	-	-	-
17	93.0	86.36	51-17	71*	25	1610	1	52-17	-	25.5	1610	5	53-17	-	42.1	1210	9	-
18	98.3	91.42	51-18	75*	25	1610	1	52-18	-	25.5	1610	5	-	-	-	-	-	-
19	103.3	96.45	51-19	75	25	1610	1	52-19	-	25.5	1610	5	53-19	-	42.1	1615	9	-
20	108.4	101.49	51-20	75	25	1610	1	52-20	-	25.5	1610	5	-	-	-	-	-	-
21	113.4	106.52	51-21	76	25	1610	1	52-21	-	25.5	1610	5	53-21	-	42.1	1615	9	-
22	118.0	111.55	51-22	76	25	1610	1	52-22	-	25.5	1610	5	-	-	-	-	-	-
23	123.4	116.58	51-23	76	25	1610	1	52-23	-	25.5	1610	5	53-23	-	42.1	2012	9	-
24	128.3	121.62	51-24	90	25	1610	1	52-24	90	32	2012	3	-	-	-	-	-	-
25	134.0	126.66	51-25	90	32	2012	1	52-25	90	32	2012	3	53-25	105	45	2517	7	-
26	139.0	131.70	51-26	90	32	2012	1	52-26	90	32	2012	3	-	-	-	-	-	-
27	144.0	136.75	51-27	90	32	2012	1	52-27	90	32	2012	3	53-27	110	45	2517	7	-
28	148.7	141.78	51-28	90	32	2012	1	52-28	90	32	2012	3	-	-	-	-	-	-
29	153.8	146.83	51-29	90	32	2012	1	52-29	90	32	2012	3	53-29	120	45	2517	7	-
30	158.8	151.87	51-30	90	32	2012	1	52-30	90	32	2012	3	53-30	120	45	2517	7	-
38	199.2	192.24	51-38	100	32	2012	1	52-38	110	45	2517	3	53-38	110	45	2517	7	-
45	235.0	227.58	51-45	100	32	2012	1	52-45	110	45	2517	3	53-45	110	45	2517	7	-
57	296.0	288.18	51-57	100	32	2012	1	52-57	110	45	2517	3	53-57	110	45	2517	7	-
76	392.1	384.16	51-76	100	32	2012	1	52-76	110	45	2517	3	53-76	110	45	2517	7	-
38	199.2	192.24	51-38	100	32	2012	2	52-38	110	45	2517	4	53-38	110	45	2517	8	-
45	235.0	227.58	51-45	100	32	2012	2	52-45	110	45	2517	4	53-45	110	45	2517	8	-
57	296.0	288.18	51-57	100	32	2012	2	52-57	110	45	2517	4	53-57	110	45	2517	8	-
76	392.1	384.16	51-76	100	32	2012	2	52-76	110	45	2517	4	53-76	110	45	2517	8	-
95	488.5	480.14	51-95	110	45	2517	2	52-95	110	45	2517	4	-	-	-	-	-	-
114	584.1	576.13	51-114	110	45	2517	2	52-114	110	45	2517	4	-	-	-	-	-	-

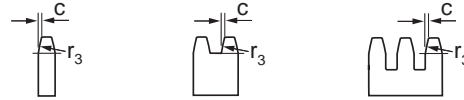
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Taper Bore Sprockets

BS Taper Bore Sprockets

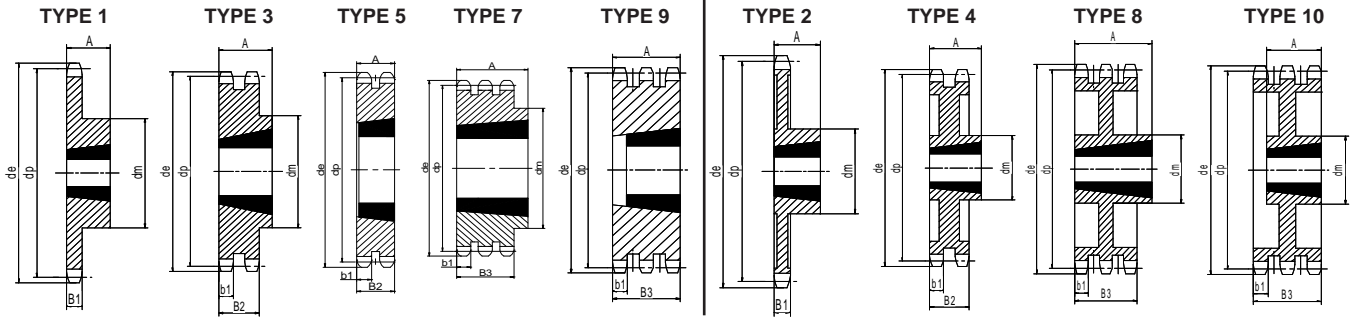
12B 3/4" x 7/16"

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	19.0	Pitch	19.050
Chamfer c	2.0	Width Between inner Plates	11.680
Tooth Width b1	10.8	Roller Diameter	12.070
Tooth Width B1	11.1		
Tooth Width B2	30.3		
Tooth Width B3	49.8		



TYPES : 1, 3, 5, 7, 9 C45 STEEL

TYPES : 2, 4, 8, 10 GG22 CAST IRON



Teeth	Outer Dia de	Pitch Dia dp	Simplex					Duplex					Triplex					
			Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	
13	87.5	79.59	61-13	60	25	1210	1	-	-	-	-	-	-	-	-	-	-	-
14	93.6	85.61	61-14	70*	25	1610	1	-	-	-	-	-	-	-	-	-	-	-
15	99.8	91.63	61-15	70	25	1610	1	62-15	-	30.3	1610	5	63-15	-	49.8	1615	9	-
16	105.5	97.65	61-16	75	25	1610	1	62-16	-	30.3	1610	5	-	-	-	-	-	-
17	111.5	103.67	61-17	76	25	1610	1	62-17	-	30.3	1610	5	63-17	-	49.8	1615	9	9
18	118.0	109.71	61-18	90	32	2012	1	62-18	90	32	2012	3	-	-	-	-	-	-
19	124.2	115.75	61-19	90	32	2012	1	62-19	90	32	2012	3	63-19	-	49.8	2012	9	9
20	129.7	121.78	61-20	90	32	2012	1	62-20	108	45	2517	3	-	-	-	-	-	-
21	136.0	127.82	61-21	102	45	2517	1	62-21	108	45	2517	3	63-21	-	49.8	2517	9	9
22	141.8	133.86	61-22	102	45	2517	1	62-22	108	45	2517	3	-	-	-	-	-	-
23	149.0	139.90	61-23	108	45	2517	1	62-23	108	45	2517	3	63-23	-	49.8	2517	9	9
24	153.9	145.94	61-24	108	45	2517	1	62-24	108	45	2517	3	-	-	-	-	-	-
25	160.0	152.00	61-25	108	45	2517	1	62-25	108	45	2517	3	63-25	-	49.8	2517	9	9
26	165.9	158.04	61-26	108	45	2517	1	62-26	108	45	2517	3	-	-	-	-	-	-
27	172.3	164.00	61-27	108	45	2517	1	62-27	108	45	2517	3	63-27	140	51	3020	7	7
28	178.0	170.13	61-28	108	45	2517	1	62-28	108	45	2517	3	-	-	-	-	-	-
29	184.1	176.19	61-29	108	45	2517	1	62-29	108	45	2517	3	63-29	140	51	3020	7	7
30	190.5	182.25	61-30	108	45	2517	1	62-30	108	45	2517	3	63-30	140	51	3020	7	7
38	239.0	230.69	61-38	108	45	2517	1	62-38	140	51	3020	3	63-38	140	51	3020	7	7
45	282.5	273.10	61-45	108	45	2517	1	62-45	140	51	3020	3	63-45	140	51	3020	7	7
57	355.4	345.81	61-57	108	45	2517	1	62-57	140	51	3020	3	63-57	140	51	3020	7	7
76	469.9	460.99	61-76	108	45	2517	1	62-76	140	51	3020	3	63-76	140	51	3020	7	7
30	190.5	182.25	61-30	108	45	2517	2	-	-	-	-	-	-	-	-	-	-	-
38	239.0	230.69	61-38	110	45	2517	2	62-38	140	51	3020	4	63-38	140	51	3020	8	8
45	282.5	273.10	61-45	108	45	2517	2	62-45	140	51	3020	4	63-45	140	51	3020	8	8
57	355.4	345.81	61-57	108	45	2517	2	62-57	140	51	3020	4	63-57	140	51	3020	8	8
76	469.9	460.99	61-76	108	45	2517	2	62-76	140	51	3020	4	63-76	140	51	3020	8	8
95	585.1	576.17	61-95	108	45	2517	2	62-95	140	51	3020	4	63-95	140	76	3030	8	8
114	700.6	691.36	61-114	140	51	3020	2	62-114	140	76	3030	4	63-114	165	89	3535	8	8

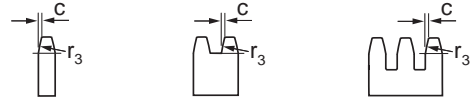
*denotes undercut

Taper Bore Sprockets

BS Taper Bore Sprockets

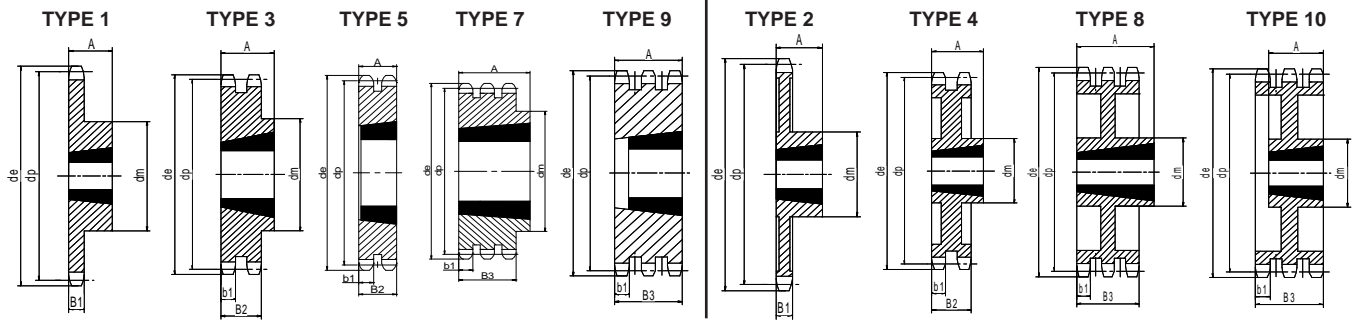
16B 1" x 17.02 mm

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	26.0	Pitch	25.400
Chamfer c	2.5	Width Between inner Plates	17.020
Tooth Width b1	15.8	Roller Diameter	15.880
Tooth Width B1	16.2		
Tooth Width B2	47.7		
Tooth Width B3	79.6		



TYPES : 1, 3, 5, 7, 9 C45 STEEL

TYPES : 2, 4, 8, 10 GG22 CAST IRON



Teeth	Outer Dia de	Pitch Dia dp	Simplex					Duplex					Triplex					
			Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	
13	117.0	106.12	81-13	73	38	1615	1	-	-	-	-	-	-	-	-	-	-	-
14	125.0	114.15	81-14	76	38	1615	1	-	-	-	-	-	-	-	-	-	-	-
15	133.0	122.17	81-15	76	38	1615	1	82-15	-	47.7	2012	5	83-15	-	79.6	2012	9	-
16	141.0	130.20	81-16	90	32	2012	1	82-16	-	47.7	2517	5	-	-	-	-	-	-
17	149.0	138.22	81-17	90	32	2012	1	82-17	-	47.7	2517	5	83-17	-	79.6	2517	9	-
18	157.0	146.28	81-18	108	45	2517	1	82-18	-	47.7	2517	5	-	-	-	-	-	-
19	165.2	154.33	81-19	108	45	2517	1	82-19	-	47.7	2517	5	83-19	-	79.6	3030	9	-
20	173.2	162.38	81-20	108	45	2517	1	82-20	-	47.7	2517	5	-	-	-	-	-	-
21	181.2	170.43	81-21	110	45	2517	1	82-21	140	51	3020	3	83-21	-	79.6	3030	9	-
22	189.3	178.48	81-22	110	45	2517	1	82-22	140	51	3020	3	-	-	-	-	-	-
23	197.5	186.53	81-23	110	45	2517	1	82-23	140	51	3020	3	83-23	159	89	3535	7	-
24	205.5	194.59	81-24	110	45	2517	1	82-24	140	51	3020	3	-	-	-	-	-	-
25	213.5	202.66	81-25	110	45	2517	1	82-25	140	51	3020	3	83-25	175	89	3535	7	-
26	221.6	210.72	81-26	110	45	2517	1	82-26	140	51	3020	3	-	-	-	-	-	-
27	229.6	218.79	81-27	110	45	2517	1	82-27	140	51	3020	3	83-27	175	89	3535	7	-
28	237.7	226.85	81-28	110	45	2517	1	82-28	140	51	3020	3	-	-	-	-	-	-
30	254.0	243.00	81-30	140	51	3020	1	82-30	140	76	3030	3	83-30	175	89	3535	7	-
38	320.7	307.59	81-38	140	51	3020	1	82-38	140	76	3030	3	83-38	175	89	3535	7	-
45	377.1	360.13	81-45	140	51	3020	1	82-45	140	76	3030	3	83-45	215	102	4040	7	-
57	474.0	461.07	81-57	140	51	3020	1	82-57	175	89	3535	3	83-57	215	102	4040	7	-
76	627.0	614.65	81-76	140	51	3020	1	82-76	175	89	3535	3	83-76	215	102	4040	7	-
95	781.1	768.20	-	-	-	-	-	-	-	-	-	-	83-95	215	102	4040	7	-
30	254.0	243.00	-	-	-	-	-	-	-	-	-	-	83-30	175	89	3535	8	-
38	320.7	307.59	81-38	140	51	3020	2	82-38	140	76	3030	4	83-38	175	89	3535	8	-
45	377.1	364.13	81-45	140	51	3020	2	82-45	140	76	3030	4	83-45	215	102	4040	8	-
57	474.0	461.07	81-57	140	51	3020	2	82-57	175	89	3535	4	83-57	215	102	4040	8	-
76	627.0	614.65	81-76	140	51	3020	2	82-76	175	89	3535	4	83-76	215	102	4040	8	-
95	781.1	768.22	81-95	140	51	3020	2	82-95	215	102	4040	4	83-95	215	102	4040	8	-

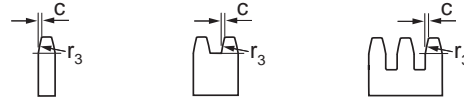
All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Taper Bore Sprockets

BS Taper Bore Sprockets

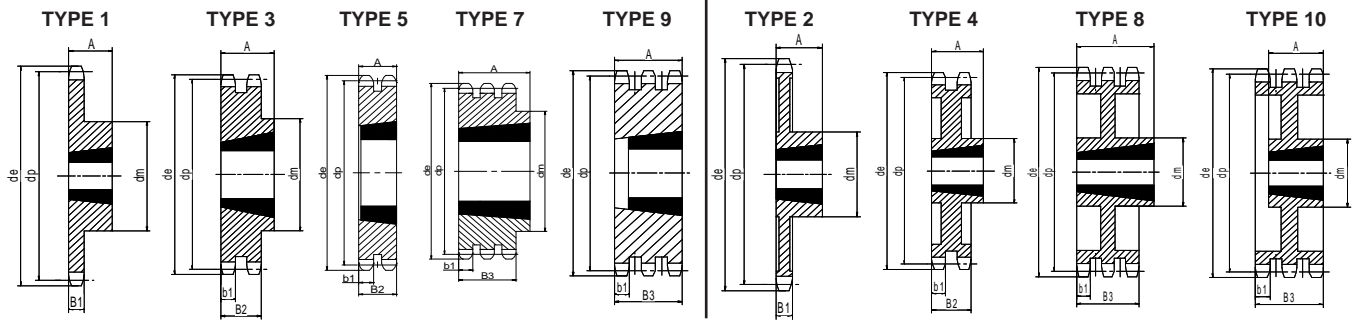
20B 1.1/4" x 3/4"

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	32.0	Pitch	31.750
Chamfer c	3.5	Width Between inner Plates	19.560
Tooth Width b1	18.2	Roller Diameter	19.050
Tooth Width B1	18.5		
Tooth Width B2	54.6		
Tooth Width B3	91.0		



TYPES : 1, 3, 5, 7, 9 C45 STEEL

TYPES : 2, 4, 8, 10 GG22 CAST IRON



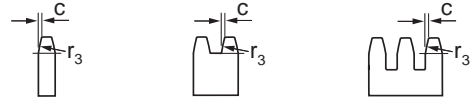
Teeth	Outer Dia de	Pitch Dia dp	Simplex					Duplex					Triplex					
			Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	
13	147.8	132.65	101-13	90	32	2012	1	-	-	-	-	-	-	-	-	-	-	-
14	157.8	142.68	101-14	108	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
15	167.9	152.72	101-15	108	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
16	177.9	162.75	101-16	108	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
17	187.9	172.78	101-17	108	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
18	198.0	182.85	101-18	108	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
19	208.1	192.91	101-19	110	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
20	218.1	202.98	101-20	110	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
21	228.2	213.04	101-21	110	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
22	238.3	223.11	101-22	110	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
23	248.3	233.17	101-23	110	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
24	258.4	243.23	101-24	110	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
25	268.5	253.33	101-25	110	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
26	278.6	263.40	101-26	150	51	3020	1	-	-	-	-	-	-	-	-	-	-	-
27	288.6	273.80	101-27	150	51	3020	1	-	-	-	-	-	-	-	-	-	-	-
28	298.7	283.56	101-28	150	51	3020	1	-	-	-	-	-	-	-	-	-	-	-
29	308.8	293.65	101-29	150	51	3020	1	-	-	-	-	-	-	-	-	-	-	-
30	318.9	303.75	101-30	150	51	3020	1	-	-	-	-	-	-	-	-	-	-	-
35	369.4	354.20	101-35	150	51	3020	1	-	-	-	-	-	-	-	-	-	-	-
38	399.6	384.49	101-38	150	51	3020	1	-	-	-	-	-	-	-	-	-	-	-
45	470.3	455.17	101-45	150	51	3020	1	102-45	215	102	4040	3	-	-	-	-	-	-
57	591.5	576.36	101-57	150	51	3020	1	102-57	215	102	4040	3	-	-	-	-	-	-
76	783.5	768.32	101-76	150	51	3020	1	102-76	215	102	4040	3	-	-	-	-	-	-
38	399.6	384.49	101-38	160	51	3020	2	102-38	140	51	3020	6	103-38	140	91	3030	8	8
45	470.3	455.17	101-45	160	51	3020	2	102-45	140	51	3020	6	103-45	165	91	3535	8	8
57	591.5	576.36	101-57	160	51	3020	2	102-57	165	89	3535	4	103-57	165	91	3535	8	8
76	783.5	768.32	101-76	165	89	3535	2	-	-	-	-	-	103-76	165	91	3535	8	8

Taper Bore Sprockets

BS Taper Bore Sprockets

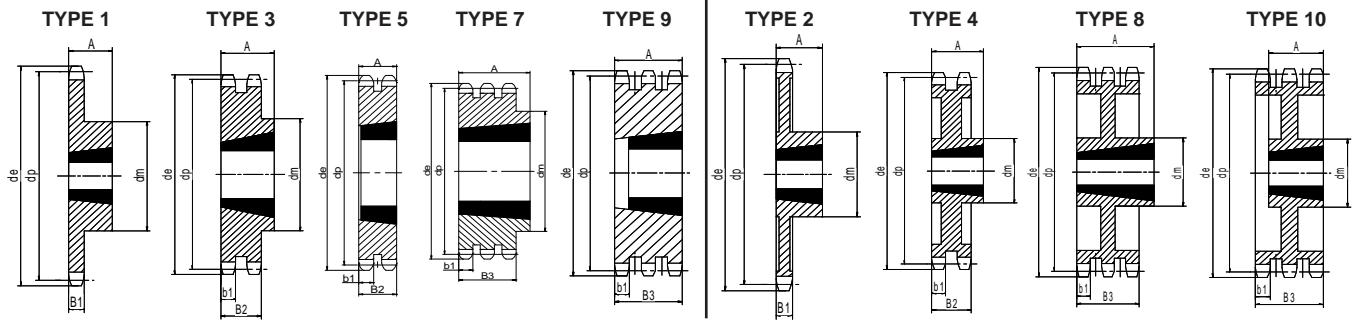
24B 1.1/2" x 1"

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	38.0	Pitch	38.1
Chamfer c	4.0	Width Between inner Plates	25.4
Tooth Width b1	23.6	Roller Diameter	25.4
Tooth Width B1	24.1		
Tooth Width B2	72.0		
Tooth Width B3	120.3		



TYPES : 1, 3, 5, 7, 9 C45 STEEL

TYPES : 2, 4, 8, 10 GG22 CAST IRON



Teeth	Outer Dia de	Pitch Dia dp	Simplex					Duplex					Triplex					
			Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	Ref	Hub Dia dm	Length thro' Bore A	Taper Bush	Type	
13	174.2	159.18	121-13	110	44	2517	1	-	-	-	-	-	-	-	-	-	-	-
15	198.2	183.26	121-15	150	51	3020	1	-	-	-	-	-	-	-	-	-	-	-
17	222.3	207.34	121-17	165	89	3535	1	-	-	-	-	-	-	-	-	-	-	-
19	246.5	231.49	121-19	165	89	3535	1	-	-	-	-	-	-	-	-	-	-	-
21	270.6	255.65	121-21	165	89	3535	1	-	-	-	-	-	-	-	-	-	-	-
23	294.8	279.80	121-23	165	89	3535	1	-	-	-	-	-	-	-	-	-	-	-
25	319.0	304.00	121-25	165	89	3535	1	-	-	-	-	-	-	-	-	-	-	-
30	379.5	364.50	121-30	165	89	3535	1	-	-	-	-	-	-	-	-	-	-	-
45	561.3	546.20	121-45	215	102	4040	1	122-45	235	114	4545	3	-	-	-	-	-	-
57	706.5	691.63	121-57	235	114	4545	1	122-57	235	114	4545	3	-	-	-	-	-	-
76	936.9	921.98	121-76	235	114	4545	1	122-76	235	114	4545	3	-	-	-	-	-	-
38	476.2	461.39	121-38	215	102	4040	2	122-38	215	102	4040	4	123-38	215	102	4040	10	
45	561.3	546.20	121-45	215	102	4040	2	122-45	215	102	4040	4	123-45	215	120.3	4040	8	
57	706.5	691.63	121-57	215	102	4040	2	122-57	215	102	4040	4	123-57	215	120.3	4040	8	
76	936.9	921.98	121-76	215	102	4040	2	122-76	215	102	4040	4	123-76	215	120.3	4040	8	

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Pilot Bore Sprockets

BS Pilot Bore Sprockets

03B 5 x 2.5 mm

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	5.0	Pitch	5.000
Chamfer c	0.6	Width Between Inner Plates	2.500
Tooth Width B_1	2.3	Roller Diameter	3.200

Type 1 (C45)

Teeth	Outer Dia d_e	Pitch Dia d_p	Hub Dia d_m	Simplex Length thro' Bore A	Stock Bore D_1	Type
8	15.2	13.06	7	10	4	1
9	16.8	14.62	8	10	5	1
10	18.3	16.18	9	10	5	1
11	19.9	17.75	11	10	6	1
12	21.5	19.32	12	10	6	1
13	23.0	20.89	14	10	6	1
14	24.6	22.47	15	10	6	1
15	26.2	24.04	16	10	6	1
16	27.8	25.63	18	13	8	1
17	29.4	27.20	18	13	8	1
18	30.9	28.79	18	13	8	1
19	32.5	30.38	18	13	8	1
20	34.1	31.96	18	13	8	1
21	35.7	33.54	20	13	8	1
22	37.3	35.13	20	13	8	1
23	38.9	36.72	20	13	8	1
24	40.5	38.30	20	13	8	1
25	42.0	39.89	20	13	8	1
26	43.6	41.48	25	15	8	1
27	45.2	43.07	25	15	8	1
28	46.8	44.65	25	15	8	1
29	48.4	46.25	25	15	8	1
30	50.0	47.83	25	15	8	1
31	51.6	49.42	30	15	8	1
32	53.2	51.01	30	15	8	1
33	54.8	52.60	30	15	8	1
34	56.3	54.19	30	15	8	1
35	57.9	55.78	30	15	8	1
36	59.5	57.37	30	15	8	1
37	61.1	58.96	30	15	8	1
38	62.7	60.54	30	15	8	1
39	64.3	62.13	30	15	8	1
40	65.9	63.73	30	15	8	1

Pilot Bore Sprockets

BS Pilot Bore Sprockets

04B 6 x 2.8 mm

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	6.0	Pitch	6.000
Chamfer c	0.7	Width Between Inner Plates	2.800
Tooth Width B1	2.6	Roller Diameter	4.000

Type 1 (C45)

Teeth	Outer Dia de	Pitch Dia dp	Hub Dia dm	Simplex Length thro' Bore A	Stock Bore D1	Type
8	18.0	15.67	9.8	10	5	1
9	19.9	17.54	11.5	10	5	1
10	21.7	19.42	13.0	10	6	1
11	23.6	21.30	14.0	10	6	1
12	25.4	23.18	16.0	10	6	1
13	27.3	25.05	18.0	10	6	1
14	29.2	26.96	20.0	10	6	1
15	31.1	28.86	20.0	10	6	1
16	33.0	30.76	20.0	13	8	1
17	35.0	32.65	20.0	13	8	1
18	36.9	34.55	20.0	13	8	1
19	38.8	36.44	20.0	13	8	1
20	40.7	38.34	20.0	13	8	1
21	42.6	40.25	25.0	13	8	1
22	44.5	42.16	25.0	13	8	1
23	46.4	44.06	25.0	13	8	1
24	48.3	45.96	25.0	13	8	1
25	50.2	47.87	25.0	13	8	1
26	52.1	49.77	30.0	15	8	1
27	54.0	51.67	30.0	15	8	1
28	55.9	53.58	30.0	15	8	1
29	57.8	55.50	30.0	15	8	1
30	59.8	57.42	30.0	15	8	1
31	61.7	59.31	30.0	15	10	1
32	63.6	61.21	30.0	15	10	1
33	65.5	63.11	30.0	15	10	1
34	67.4	65.02	30.0	15	10	1
35	69.3	66.93	30.0	15	10	1
36	71.2	68.84	30.0	15	10	1
37	73.1	70.75	30.0	15	10	1
38	75.0	72.66	30.0	15	10	1
39	76.9	74.56	30.0	15	10	1
40	78.9	76.47	30.0	15	10	1
45	88.5	86.01	40.0	18	12	1
50	98.0	95.55	50.0	20	12	1
57	111.4	108.93	50.0	20	12	1

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Pilot Bore Sprockets

BS Pilot Bore Sprockets

05B		8 x 3 mm	
SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	8.0	Pitch	8.000
Chamfer c	1.0	Width Between Inner Plates	3.000
Tooth Width b1	2.7	Roller Diameter	5.000
Tooth Width B1	2.8		
Tooth Width B2	8.3		

Type 1 (C45)
Type 1 (C45)

Teeth	Outer Dia de	Pitch Dia dp	Simplex			Duplex			Type
			Hub Dia dm	Length thro' Bore A	Stock Bore D1	Hub Dia dm	Length thro' Bore A	Stock Bore D1	
8	24.0	20.90	13	12	6	12	18	6	1
9	26.6	23.39	15	12	6	15	18	6	1
10	29.2	25.89	17	12	6	17	18	8	1
11	31.7	28.39	18	13	7	19	18	8	1
12	34.2	30.91	20	13	7	21	18	8	1
13	36.7	33.42	23	13	7	24	18	8	1
14	39.2	35.95	25	13	7	26	18	8	1
15	41.7	38.48	28	13	7	29	18	8	1
16	44.3	41.01	30	14	8	32	20	10	1
17	46.8	43.53	30	14	8	34	20	10	1
18	49.3	46.07	30	14	8	37	20	10	1
19	51.9	48.61	30	14	8	39	20	10	1
20	54.4	51.14	30	14	8	40	20	10	1
21	57.0	53.67	35	14	8	40	20	10	1
22	59.5	56.21	35	14	8	40	20	10	1
23	62.0	58.75	35	14	8	40	20	10	1
24	64.6	61.29	35	14	8	40	20	10	1
25	67.5	63.83	35	14	8	40	20	10	1
26	69.5	66.37	40	16	10	50	22	12	1
27	72.2	68.91	40	16	10	50	22	12	1
28	74.8	71.45	40	16	10	50	22	12	1
29	77.3	73.99	40	16	10	50	22	12	1
30	79.8	76.53	40	16	10	50	22	12	1
31	82.4	79.08	40	16	12	60	22	12	1
32	84.9	81.61	40	16	12	60	22	12	1
33	87.5	84.16	40	16	12	60	22	12	1
34	90.0	86.70	40	16	12	60	22	12	1
35	92.5	89.24	40	16	12	60	22	12	1
36	95.0	91.79	40	16	12	60	22	12	1
37	97.6	94.33	40	16	12	60	22	12	1
38	100.2	96.88	40	16	12	60	22	12	1
39	102.7	99.42	40	16	12	60	22	12	1
40	105.2	101.97	40	16	12	60	22	12	1
45	118.0	114.69	60	20	12	-	-	-	1
50	130.7	127.41	60	20	12	-	-	-	1
57	148.6	145.22	80	20	14	-	-	-	1
76	197.9	193.59	78	34.4	-	-	-	-	1

Pilot Bore Sprockets

BS Pilot Bore Sprockets

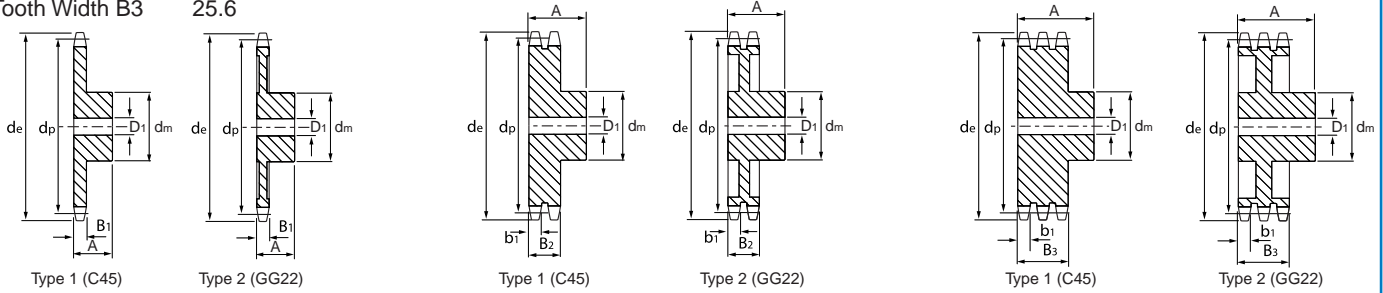
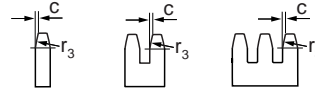
06B 3/8" x 7/32"

SPROCKET

Tooth Radius r_3	10.0
Chamfer c	1.0
Tooth Width b_1	5.2
Tooth Width B_1	5.3
Tooth Width B_2	15.4
Tooth Width B_3	25.6

CHAIN

Pitch	9.525
Width Between Inner Plates	5.720
Roller Diameter	6.350



Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex			Duplex			Triplex			Type
			Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	
8	28.0	24.89	15	22	8	15	22	8	15	32	8	1
9	31.0	27.85	18	22	8	18	22	8	18	32	8	1
10	34.0	30.82	20	22	8	20	22	8	20	32	10	1
11	37.0	33.80	22	25	8	22	25	10	22	35	12	1
12	40.0	36.80	25	25	8	25	25	10	25	35	12	1
13	43.0	39.80	28	25	10	28	25	10	28	35	12	1
14	46.3	42.80	31	25	10	31	25	10	31	35	12	1
15	49.3	45.81	34	25	10	34	25	10	34	35	12	1
16	52.3	48.82	37	28	10	37	30	12	37	35	12	1
17	55.3	51.83	40	28	10	40	30	12	40	35	12	1
18	58.3	54.85	43	28	10	43	30	12	43	35	12	1
19	61.3	57.87	45	28	10	46	30	12	46	35	12	1
20	64.3	60.89	46	28	10	49	30	12	49	35	12	1
21	68.0	63.91	48	28	12	52	30	16	52	40	16	1
22	71.0	66.93	50	28	12	55	30	16	55	40	16	1
23	73.5	69.95	52	28	12	58	30	16	58	40	16	1
24	77.0	72.97	54	28	12	61	30	16	61	40	16	1
25	80.0	76.00	57	28	12	64	30	16	64	40	16	1
26	83.0	79.02	60	28	12	67	30	16	67	40	16	1
27	86.0	82.04	60	28	12	70	30	16	70	40	16	1
28	89.0	85.07	60	28	12	73	30	16	73	40	16	1
29	92.0	88.09	60	28	12	76	30	16	76	40	16	1
30	94.7	91.12	60	28	12	79	30	16	79	40	16	1
31	98.3	94.15	65	30	14	80	30	16	80	40	16	1
32	101.3	97.17	65	30	14	80	30	16	80	40	16	1
33	104.3	100.20	65	30	14	80	30	16	80	40	16	1
34	107.3	103.23	65	30	14	80	30	16	85	40	16	1
35	110.4	106.26	65	30	14	80	30	16	85	40	16	1
36	113.4	109.29	70	30	14	90	30	16	90	40	16	1
37	116.4	112.32	70	30	14	90	30	16	90	40	16	1
38	119.5	115.34	70	30	14	90	30	16	90	40	16	1
39	122.5	118.37	70	30	14	90	30	16	90	40	16	1
40	125.5	121.40	70	30	14	90	30	16	90	40	16	1
38	119.5	115.34	70	32	20	80	40	20	90	56	24	2
45	140.7	136.54	70	32	20	80	40	20	90	56	24	2
57	176.9	172.91	70	32	20	80	40	20	90	56	24	2
76	234.9	230.49	70	32	20	80	40	20	100	56	24	2
95	292.5	288.08	80	40	20	90	45	20	100	56	24	2
114	349.6	345.68	80	40	20	95	45	20	100	56	24	2

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Pilot Bore Sprockets

BS Pilot Bore Sprockets

081		1/2" x 1/8"	
SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	13.0	Pitch	12.700
Chamfer c	1.0	Width Between Inner Plates	3.300
Tooth Width B1	3.0	Roller Diameter	7.750

Type 1 (C45)

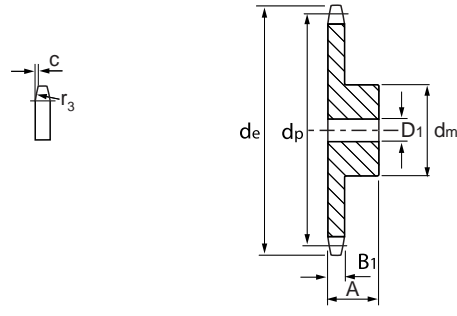
Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex			Type
			Hub Dia d_m	Length thro' Bore A	Stock Bore D1	
8	37.2	33.18	21	14	8	1
9	41.5	37.13	25	14	8	1
10	46.2	41.10	28	14	8	1
11	49.6	45.07	31	16	8	1
12	53.9	49.07	35	16	8	1
13	58.4	53.06	39	16	8	1
14	62.8	57.07	43	16	8	1
15	66.8	61.09	47	16	8	1
16	70.9	65.10	50	18	10	1
17	74.9	69.11	50	18	10	1
18	78.9	73.14	50	18	10	1
19	82.9	77.16	50	18	10	1
20	86.9	81.19	50	18	10	1
21	91.0	85.22	60	20	12	1
22	95.0	89.24	60	20	12	1
23	99.0	93.27	60	20	12	1
24	103.0	97.29	60	20	12	1
25	107.1	101.33	60	20	12	1
26	111.2	105.36	70	20	16	1
27	115.4	109.40	70	20	16	1
28	119.4	113.42	70	20	16	1
29	123.4	117.46	70	20	16	1
30	127.5	121.50	70	20	16	1
31	131.5	125.54	70	20	16	1
32	135.5	129.56	70	20	16	1
33	139.6	133.60	70	20	16	1
34	143.6	137.64	70	20	16	1
35	147.6	141.68	70	20	16	1
36	151.7	145.72	70	25	16	1
37	155.7	149.76	70	25	16	1
38	159.8	153.80	70	25	16	1
39	163.8	157.83	70	25	16	1
40	167.8	161.87	70	25	16	1

Pilot Bore Sprockets

BS Pilot Bore Sprockets

083 / 084 1/2" x 3/16"

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	13.0	Pitch	12.700
Chamfer c	1.3	Width Between Inner Plates	4.880
Tooth Width B1	4.5	Roller Diameter	7.750



Type 1 (C45)

Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex			Type
			Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	
8	38.5	33.18	21	14	8	1
9	41.5	37.13	25	14	8	1
10	46.2	41.10	28	14	8	1
11	49.6	45.07	31	16	8	1
12	53.9	49.07	35	16	8	1
13	58.4	53.06	39	16	8	1
14	62.8	57.07	43	16	8	1
15	66.8	61.09	47	16	8	1
16	70.9	65.10	50	18	10	1
17	74.9	69.10	50	18	10	1
18	78.9	73.14	50	18	10	1
19	82.9	77.16	50	18	10	1
20	86.9	81.19	50	18	10	1
21	91.0	85.22	60	20	12	1
22	95.0	89.24	60	20	12	1
23	99.0	93.27	60	20	12	1
24	103.0	97.29	60	20	12	1
25	107.1	101.33	60	20	12	1
26	111.2	105.36	70	20	16	1
27	115.4	109.40	70	20	16	1
28	119.4	113.42	70	20	16	1
29	123.4	117.46	70	20	16	1
30	127.5	121.50	70	20	16	1
31	131.5	125.54	70	20	16	1
32	135.5	129.56	70	20	16	1
33	139.6	133.60	70	20	16	1
34	143.6	137.64	70	20	16	1
35	147.6	141.68	70	20	16	1
36	151.7	145.72	70	25	16	1
37	155.7	149.76	70	25	16	1
38	159.8	153.80	70	25	16	1
39	163.8	157.83	70	25	16	1
40	167.8	161.87	70	25	16	1

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Pilot Bore Sprockets

BS Pilot Bore Sprockets

085		1/2" x 1/4"	
SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	13.0	Pitch	12.700
Chamfer c	1.3	Width Between Inner Plates	6.400
Tooth Width B_i	5.9	Roller Diameter	7.750

Type 1 (C45)

Teeth	Outer Dia d_e	Pitch Dia d_p	Hub Dia d_m	Simplex Length thro' Bore A	Stock Bore D_1	Type
8	38.5	33.18	20	25	10	1
9	41.5	37.13	24	25	10	1
10	46.2	41.10	26	25	10	1
11	49.6	45.07	29	25	10	1
12	53.9	49.07	33	28	10	1
13	58.4	53.06	37	28	10	1
14	62.8	57.07	41	28	10	1
15	66.8	61.09	45	28	10	1
16	70.9	65.10	50	28	12	1
17	74.9	69.11	52	28	12	1
18	78.9	73.14	56	28	12	1
19	82.9	77.16	60	28	12	1
20	86.9	81.19	64	28	12	1
21	91.0	85.22	68	28	14	1
22	95.0	89.24	70	28	14	1
23	99.0	93.27	70	28	14	1
24	103.0	97.29	70	28	14	1
25	107.1	101.33	70	28	14	1
26	111.2	105.36	70	30	16	1
27	115.4	109.40	70	30	16	1
28	119.4	113.42	70	30	16	1
29	123.4	117.46	80	30	16	1
30	127.5	121.50	80	30	16	1
31	131.5	125.54	90	30	16	1
32	135.5	129.56	90	30	16	1
33	139.6	133.60	90	30	16	1
34	143.6	137.64	90	30	16	1
35	147.6	141.68	90	30	16	1
36	151.7	145.72	90	35	16	1
37	155.7	149.76	90	35	16	1
38	159.8	153.80	90	35	16	1
39	163.8	157.83	90	35	16	1
40	167.8	161.87	90	35	16	1

Pilot Bore Sprockets

BS Pilot Bore Sprockets

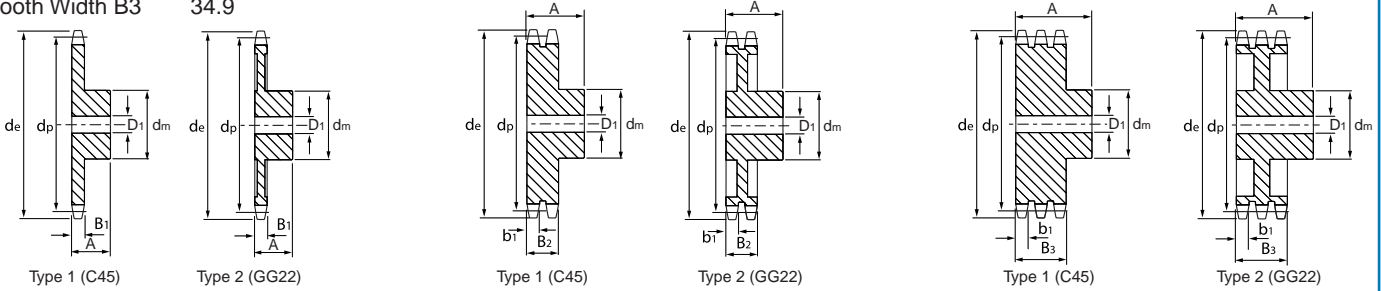
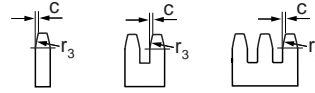
08B 1/2" x 5/16"

SPROCKET

Tooth Radius r_3	13.0
Chamfer c	1.3
Tooth Width b_1	7.0
Tooth Width B_1	7.2
Tooth Width B_2	21.0
Tooth Width B_3	34.9

CHAIN

Pitch	12.700
Width Between Inner Plates	7.750
Roller Diameter	8.510



Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex			Duplex			Triplex			Type
			Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	
8	37.2	33.18	20	25	10	20	32	10	20	46	10	1
9	41.0	37.13	24	25	10	24	32	10	24	46	12	1
10	45.2	41.10	26	25	10	28	32	10	28	46	12	1
11	48.7	45.07	29	25	10	32	35	12	32	50	16	1
12	53.0	49.07	33	28	10	35	35	12	35	50	16	1
13	57.4	53.06	37	28	10	38	35	12	38	50	16	1
14	61.8	57.07	41	28	10	42	35	12	42	50	16	1
15	65.5	61.09	45	28	10	46	35	12	46	50	16	1
16	69.5	65.10	50	28	12	50	38	14	50	50	16	1
17	73.6	69.11	52	28	12	54	38	14	54	50	16	1
18	77.8	73.14	56	28	12	58	38	14	58	50	16	1
19	81.7	77.16	60	28	12	62	38	14	62	50	16	1
20	85.8	81.19	64	28	12	66	38	14	66	50	16	1
21	89.7	85.22	68	28	14	70	40	16	70	55	20	1
22	93.8	89.24	70	28	14	70	40	16	70	55	20	1
23	98.2	93.27	70	28	14	70	40	16	70	55	20	1
24	101.8	97.29	70	28	14	75	40	16	75	55	20	1
25	105.8	101.33	70	28	14	80	40	16	80	55	20	1
26	110.0	105.36	70	30	16	85	40	20	85	55	20	1
27	114.0	109.40	70	30	16	85	40	20	85	55	20	1
28	118.0	113.42	70	30	16	90	40	20	90	55	20	1
29	122.0	117.46	80	30	16	95	40	20	95	55	20	1
30	126.1	121.50	80	30	16	100	40	20	100	55	20	1
31	130.2	125.54	90	30	16	100	40	20	110	55	20	1
32	134.3	129.56	90	30	16	100	40	20	110	55	20	1
33	138.4	133.60	90	30	16	100	40	20	110	55	20	1
34	142.6	137.64	90	30	16	100	40	20	110	55	20	1
35	146.7	141.68	90	30	16	100	40	20	110	55	20	1
36	151.0	145.72	90	35	20	100	40	20	120	55	25	1
37	154.6	149.76	90	35	20	100	40	20	120	55	25	1
38	158.6	153.80	90	35	20	100	40	20	120	55	25	1
39	162.7	157.83	90	35	20	100	40	20	120	55	25	1
40	166.8	161.87	90	35	20	100	40	20	120	55	25	1
38	158.6	153.80	70	40	24	90	50	24	100	60	24	2
45	188.0	182.07	70	40	24	90	50	24	100	60	24	2
57	236.4	230.54	70	40	24	90	50	24	100	60	24	2
76	313.3	307.33	80	40	24	100	56	24	100	60	24	2
95	390.1	384.11	80	45	24	100	56	24	120	67	24	2
114	466.9	460.90	80	45	25	100	63	25	120	67	25	2

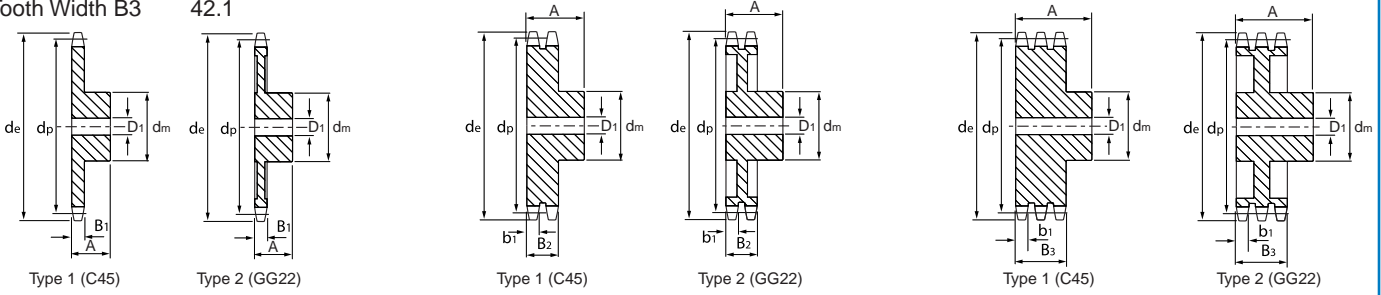
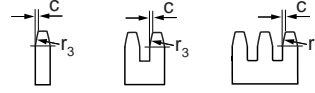
All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Pilot Bore Sprockets

BS Pilot Bore Sprockets

10B 5/8" x 3/8"

SPROCKET		CHAIN	
	mm		mm
Tooth Radius r_3	16.0	Pitch	15.875
Chamfer c	1.6	Width Between Inner Plates	9.650
Tooth Width b_1	9.0	Roller Diameter	10.160
Tooth Width B_1	9.1		
Tooth Width B_2	25.5		
Tooth Width B_3	42.1		



Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex			Duplex			Triplex			Type
			Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	
8	47.0	41.48	25	25	10	25	40	12	25	55	12	1
9	52.6	46.42	30	25	10	30	40	12	30	55	12	1
10	57.5	51.37	35	25	10	35	40	12	35	55	16	1
11	63.0	56.34	37	30	12	39	40	14	39	55	16	1
12	68.0	61.34	42	30	12	44	40	14	44	55	16	1
13	73.0	66.32	47	30	12	49	40	14	49	55	16	1
14	78.0	71.34	52	30	12	54	40	14	54	55	16	1
15	83.0	76.36	57	30	12	59	40	14	59	55	16	1
16	88.0	81.37	60	30	14	64	45	16	64	60	16	1
17	93.0	86.39	60	30	14	69	45	16	69	60	16	1
18	98.3	91.42	70	30	14	74	45	16	74	60	16	1
19	103.3	96.45	70	30	14	79	45	16	79	60	16	1
20	108.4	101.49	75	30	14	84	45	16	84	60	16	1
21	113.4	106.52	75	30	16	85	45	16	85	60	20	1
22	118.0	111.55	80	30	16	90	45	16	90	60	20	1
23	123.4	116.58	80	30	16	95	45	16	95	60	20	1
24	128.3	121.62	80	30	16	100	45	16	100	60	20	1
25	134.0	126.66	80	30	16	105	45	16	105	60	20	1
26	139.0	131.70	85	35	20	110	45	20	110	60	20	1
27	144.0	136.75	85	35	20	110	45	20	110	60	20	1
28	148.7	141.78	90	35	20	115	45	20	115	60	20	1
29	153.8	146.83	90	35	20	115	45	20	115	60	20	1
30	158.8	151.87	90	35	20	120	45	20	120	60	20	1
31	163.9	156.92	95	35	20	120	45	20	120	60	20	1
32	168.9	161.95	95	35	20	120	45	20	120	60	20	1
33	174.5	167.00	95	35	20	120	45	20	120	60	20	1
34	179.0	172.05	95	35	20	120	45	20	120	60	20	1
35	184.1	177.10	95	35	20	120	45	20	120	60	20	1
36	189.1	182.15	100	35	20	120	45	20	120	60	25	1
37	194.2	187.20	100	35	20	120	45	20	120	60	25	1
38	199.2	192.24	100	35	20	120	45	20	120	60	25	1
39	204.2	197.29	100	35	20	120	45	20	120	60	25	1
40	209.3	202.34	100	35	20	120	45	20	120	60	25	1
38	199.2	192.24	80	40	24	100	50	30	100	60	32	2
45	235.0	227.58	80	40	24	100	50	30	100	60	32	2
57	296.0	288.18	90	45	24	100	56	30	100	63	32	2
76	392.1	384.16	90	50	24	100	63	30	110	67	35	2
95	488.5	480.14	100	56	24	110	63	30	125	70	35	2
114	584.1	576.13	100	56	25	125	70	30	125	80	35	2

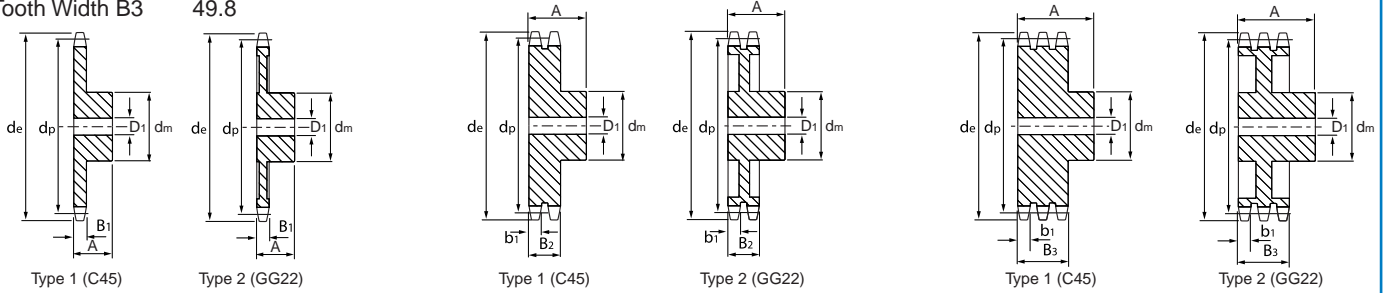
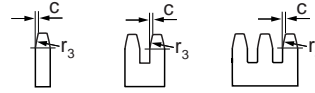
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Pilot Bore Sprockets

BS Pilot Bore Sprockets

12B 3/4" x 7/16"

SPROCKET		CHAIN	
	mm		mm
Tooth Radius r_3	19.0	Pitch	19.050
Chamfer c	2.0	Width Between Inner Plates	11.680
Tooth Width b1	10.8	Roller Diameter	12.070
Tooth Width B1	11.1		
Tooth Width B2	30.3		
Tooth Width B3	49.8		



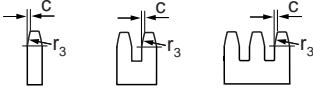
Teeth	Outer Dia de	Pitch Dia dp	Simplex			Duplex			Triplex			Type
			Hub Dia dm	Length thro' Bore A	Stock Bore D1	Hub Dia dm	Length thro' Bore A	Stock Bore D1	Hub Dia dm	Length thro' Bore A	Stock Bore D1	
8	57.6	49.78	31	30	12	31	45	12	31	65	16	1
9	62.0	55.70	37	30	12	37	45	12	37	65	16	1
10	69.0	61.64	42	30	12	42	45	12	42	65	16	1
11	75.0	67.61	46	35	14	47	50	16	47	70	20	1
12	81.5	73.60	52	35	14	53	50	16	53	70	20	1
13	87.5	79.59	58	35	14	59	50	16	59	70	20	1
14	93.6	85.61	64	35	14	65	50	16	65	70	20	1
15	99.8	91.63	70	35	14	71	50	16	71	70	20	1
16	105.5	97.65	75	35	16	77	50	20	77	70	20	1
17	111.5	103.67	80	35	16	83	50	20	83	70	20	1
18	118.0	109.71	80	35	16	89	50	20	89	70	20	1
19	124.2	115.75	80	35	16	95	50	20	95	70	20	1
20	129.7	121.78	80	35	16	100	50	20	100	70	20	1
21	136.0	127.82	90	40	20	100	50	20	100	70	20	1
22	141.8	133.86	90	40	20	100	50	20	100	70	20	1
23	149.0	139.90	90	40	20	110	50	20	110	70	20	1
24	153.9	145.94	90	40	20	110	50	20	110	70	20	1
25	160.0	152.00	90	40	20	120	50	20	120	70	20	1
26	165.9	158.04	95	40	20	120	50	20	120	70	20	1
27	172.3	164.09	95	40	20	120	50	20	120	70	20	1
28	178.0	170.13	95	40	20	120	50	20	120	70	20	1
29	184.1	176.19	95	40	20	120	50	20	120	70	20	1
30	190.5	182.25	95	40	20	120	50	20	120	70	20	1
31	196.3	188.31	100	40	20	120	50	20	130	70	25	1
32	203.3	194.35	100	40	20	120	50	20	130	70	25	1
33	209.3	200.40	100	40	20	120	50	20	130	70	25	1
34	214.6	206.46	100	40	20	120	50	20	130	70	25	1
35	221.0	212.52	100	40	20	120	50	20	130	70	25	1
36	226.8	218.58	100	40	25	120	50	25	130	70	25	1
37	232.9	224.64	100	40	25	120	50	25	130	70	25	1
38	239.0	230.69	100	40	25	120	50	25	130	70	25	1
39	245.1	236.75	100	40	25	120	50	25	130	70	25	1
40	251.3	242.81	100	40	25	120	50	25	130	70	25	1
38	239.0	230.69	100	56	24	110	63	30	140	70	30	2
45	282.5	273.10	100	56	24	110	63	30	140	70	30	2
57	355.4	345.81	100	56	30	120	63	30	140	70	40	2
76	469.9	460.99	100	56	30	135	63	30	160	75	40	2
95	585.1	576.17	100	65	30	135	70	30	170	82	40	2
114	700.6	691.36	100	65	30	135	70	30	170	82	40	2

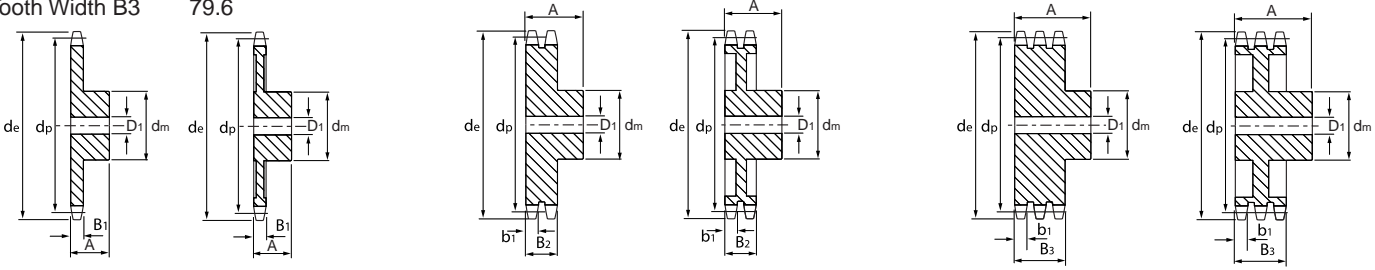
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Pilot Bore Sprockets

BS Pilot Bore Sprockets

16B 1" x 17.02 mm

SPROCKET	mm	CHAIN	mm	
Tooth Radius r_3	26.0	Pitch	25.400	
Chamfer c	2.5	Width Between Inner Plates	17.020	
Tooth Width b_1	15.8	Roller Diameter	15.880	
Tooth Width B_1	16.2			
Tooth Width B_2	47.7			
Tooth Width B_3	79.6			



Type 1 (C45) Type 2 (GG22) Type 1 (C45) Type 2 (GG22) Type 1 (C45) Type 2 (GG22)

Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex			Duplex			Triplex			Type
			Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	
8	77.0	66.37	42	35	16	42	65	16	42	95	20	1
9	85.0	74.27	50	35	16	50	65	16	50	95	20	1
10	93.0	82.19	55	35	16	56	65	16	56	95	20	1
11	99.5	90.14	61	40	16	64	70	20	64	100	25	1
12	109.0	98.14	69	40	16	72	70	20	72	100	25	1
13	117.0	106.12	78	40	16	80	70	20	80	100	25	1
14	125.0	114.15	84	40	16	88	70	20	88	100	25	1
15	133.0	122.17	92	40	16	96	70	20	96	100	25	1
16	141.0	130.20	100	45	20	104	70	25	104	100	30	1
17	149.0	138.22	100	45	20	112	70	25	112	100	30	1
18	157.0	146.28	100	45	20	120	70	25	120	100	30	1
19	165.2	154.33	100	45	20	128	70	25	128	100	30	1
20	173.2	162.38	100	45	20	130	70	25	130	100	30	1
21	181.2	170.43	110	50	20	130	70	25	130	100	30	1
22	189.3	178.48	110	50	20	130	70	25	130	100	30	1
23	197.5	186.53	110	50	20	130	70	25	130	100	30	1
24	205.5	194.59	110	50	20	130	70	25	130	100	30	1
25	213.5	202.66	110	50	20	130	70	25	130	100	30	1
26	221.6	210.72	120	50	20	130	70	25	130	100	30	1
27	229.6	218.79	120	50	20	130	70	25	130	100	30	1
28	237.7	226.85	120	50	20	130	70	25	130	100	30	1
29	245.8	234.92	120	50	20	130	70	25	130	100	30	1
30	254.0	243.00	120	50	20	130	70	25	130	100	30	1
31	262.0	251.08	120	50	25	140	70	25	140	100	30	1
32	270.0	259.13	120	50	25	140	70	25	140	100	30	1
33	278.5	267.21	120	50	25	140	70	25	140	100	30	1
34	287.0	275.28	120	50	25	140	70	25	140	100	30	1
35	296.2	283.36	120	50	25	140	70	25	140	100	30	1
36	304.6	291.44	120	50	25	140	70	25	140	100	30	1
37	312.6	299.51	120	50	25	140	70	25	140	100	30	1
38	320.7	307.59	120	50	25	140	70	25	140	100	30	1
39	328.8	315.67	120	50	25	140	70	25	140	100	30	1
40	336.9	323.75	120	50	25	140	70	25	140	100	30	1
30	254.0	243.00	110	65	30	125	75	40	145	90	40	2
38	320.0	307.59	110	65	30	140	75	40	160	100	45	2
45	377.0	364.12	125	70	30	150	75	40	160	100	45	2
57	474.0	461.07	125	70	35	170	90	40	165	100	45	2
76	627.0	614.65	140	80	35	175	95	40	200	110	45	2
95	781.0	768.22	140	80	40	175	95	45	200	110	50	2

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Pilot Bore Sprockets

BS Pilot Bore Sprockets

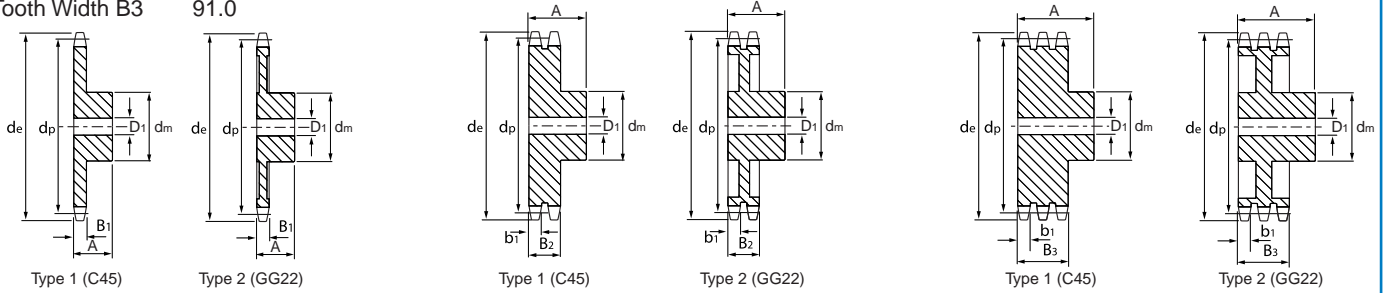
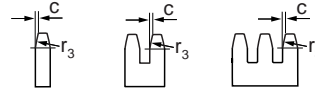
20B 1.1/4" x 3/4"

SPROCKET

Tooth Radius r_3	32.0
Chamfer c	3.5
Tooth Width b_1	18.2
Tooth Width B_1	18.5
Tooth Width B_2	54.6
Tooth Width B_3	91.0

CHAIN

Pitch	31.750
Width Between Inner Plates	19.560
Roller Diameter	19.050



Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex			Duplex			Triplex			Type
			Hub Dia d_m	Length thro' Bore A	Stock Bore D1	Hub Dia d_m	Length thro' Bore A	Stock Bore D1	Hub Dia d_m	Length thro' Bore A	Stock Bore D1	
8	98.1	82.96	53	40	20	53	75	20	53	110	25	1
9	108.0	92.84	63	40	20	63	75	20	63	110	25	1
10	117.9	102.74	70	40	20	70	75	20	70	110	25	1
11	127.8	112.68	77	45	20	80	80	25	80	115	30	1
12	137.8	122.68	88	45	20	90	80	25	90	115	30	1
13	147.8	132.65	98	45	20	100	80	25	100	115	30	1
14	157.8	142.68	108	45	20	110	80	25	110	115	30	1
15	167.9	152.72	118	45	20	120	80	25	120	115	30	1
16	177.9	162.75	120	50	25	120	80	30	120	115	30	1
17	187.9	172.78	120	50	25	120	80	30	120	115	30	1
18	198.0	182.85	120	50	25	120	80	30	120	115	30	1
19	208.1	192.91	120	50	25	120	80	30	120	115	30	1
20	218.1	202.98	120	50	25	120	80	30	120	115	30	1
21	228.2	213.04	140	55	30	140	80	30	140	115	30	1
22	238.3	223.11	140	55	30	140	80	30	140	115	30	1
23	248.3	233.17	140	55	30	140	80	30	140	115	30	1
24	258.4	243.23	140	55	30	140	80	30	140	115	30	1
25	268.5	253.33	140	55	30	140	80	30	140	115	30	1
26	278.6	263.40	150	55	30	150	80	30	150	115	30	1
27	288.6	273.80	150	55	30	150	80	30	150	115	30	1
28	298.7	283.56	150	55	30	150	80	30	150	115	30	1
29	308.8	293.65	150	55	30	150	80	30	150	115	30	1
30	318.9	303.75	150	55	30	150	80	30	150	115	30	1
31	329.0	313.85	150	55	30	150	80	30	150	115	30	1
32	339.1	323.91	150	55	30	150	80	30	150	115	30	1
33	349.2	334.01	150	55	30	150	80	30	150	115	30	1
34	359.3	344.10	150	55	30	150	80	30	150	115	30	1
35	369.4	354.20	150	55	30	150	80	30	150	115	30	1
36	379.5	364.30	150	55	30	150	80	30	150	115	30	1
37	389.5	374.39	150	55	30	150	80	30	150	115	30	1
38	399.6	384.49	150	55	30	150	80	30	150	115	30	1
39	409.7	394.59	150	55	30	150	80	30	150	115	30	1
40	419.8	404.66	150	55	30	150	80	30	150	115	30	1
30	318.9	303.75	115	70	35	130	80	40	160	100	50	2
38	399.6	384.49	125	70	35	140	90	45	180	110	56	2
45	470.3	455.17	125	70	35	140	90	45	180	110	56	2
57	591.5	576.36	135	80	40	160	100	50	180	125	63	2
76	783.5	768.32	140	90	50	180	100	56	200	140	63	2
95	976.9	960.28	-	-	-	180	100	60	220	140	70	2

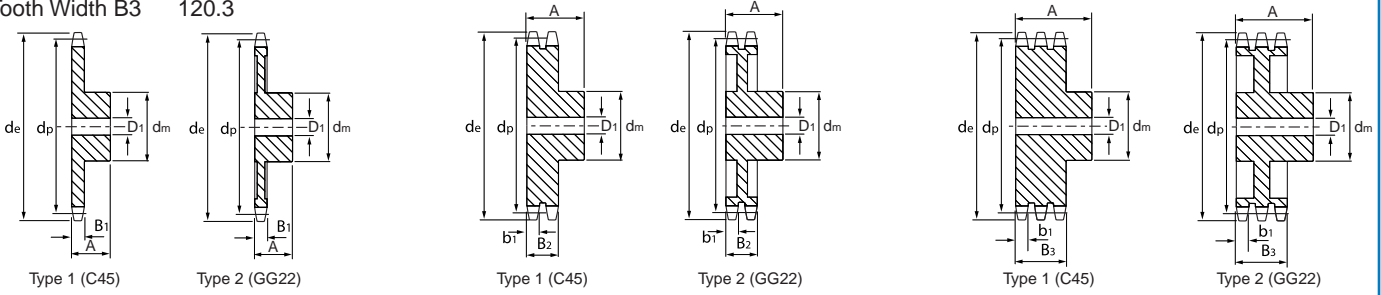
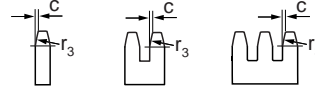
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Pilot Bore Sprockets

BS Pilot Bore Sprockets

24B 1.1/2" x 1"

SPROCKET		CHAIN	
	mm		mm
Tooth Radius r_3	38.0	Pitch	38.100
Chamfer c	4.0	Width Between Inner Plates	25.400
Tooth Width b_1	23.6	Roller Diameter	25.400
Tooth Width B_1	24.1		
Tooth Width B_2	72.0		
Tooth Width B_3	120.3		



Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex			Duplex			Triplex			Type
			Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	
8	115.0	99.55	58	45	20	58	95	25	58	140	25	1
9	126.4	111.40	70	45	20	70	95	25	70	140	25	1
10	138.0	123.29	80	45	20	80	95	25	80	140	25	1
11	150.0	135.21	90	50	25	90	100	25	90	150	30	1
12	162.0	147.22	102	50	25	102	100	25	102	150	30	1
13	174.2	159.18	114	50	25	114	100	25	114	150	30	1
14	186.2	171.22	128	50	25	128	100	25	128	150	30	1
15	198.2	183.26	140	50	25	140	100	25	132	150	30	1
16	210.3	195.30	140	55	25	140	100	30	136	150	30	1
17	222.3	207.34	140	55	25	150	100	30	140	150	30	1
18	234.3	219.42	140	55	25	150	100	30	150	150	30	1
19	246.5	231.49	140	55	25	160	100	30	160	150	30	1
20	258.6	243.57	140	55	25	160	100	30	160	150	30	1
21	270.6	255.65	150	60	30	160	100	30	160	150	40	1
22	282.7	267.73	150	60	30	160	100	30	160	150	40	1
23	294.8	279.80	150	60	30	160	100	30	160	150	40	1
24	306.8	291.88	150	60	30	160	100	30	160	150	40	1
25	319.0	304.00	150	60	30	160	100	30	160	150	40	1
26	331.0	316.08	160	60	30	160	100	30	160	150	40	1
27	343.2	328.19	160	60	30	160	100	30	160	150	40	1
28	355.2	340.27	160	60	30	160	100	30	160	150	40	1
29	367.3	352.38	160	60	30	160	100	30	160	150	40	1
30	379.5	364.50	160	60	30	160	100	30	160	150	40	1
31	391.6	376.62	160	60	30	160	100	40	160	150	40	1
32	403.7	388.69	160	60	30	160	100	40	160	150	40	1
33	415.8	400.81	160	60	30	160	100	40	160	150	40	1
34	427.8	412.93	160	60	30	160	100	40	160	150	40	1
35	440.0	425.04	160	60	30	160	100	40	160	150	40	1
36	452.0	437.16	160	60	30	160	100	40	160	150	40	1
37	464.2	449.27	160	60	30	160	100	40	160	150	40	1
38	476.2	461.39	160	60	30	160	100	40	160	150	40	1
39	488.5	473.50	160	60	30	160	100	40	160	150	40	1
40	500.6	485.62	160	60	30	160	100	40	160	150	40	1
30	379.5	364.50	130	85	40	160	95	40	180	150	60	2
38	476.2	461.39	140	90	45	180	100	45	200	150	60	2
45	561.2	546.20	140	90	45	180	100	45	200	150	60	2
57	706.5	691.63	160	100	45	200	110	55	200	150	70	2
76	936.9	921.98	170	100	45	220	120	55	-	-	-	2
95	1167.3	1152.33	200	125	50	220	140	55	-	-	-	2
114	1402.8	1382.72	-	-	-	-	-	-	230	160	75	2

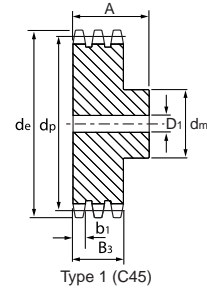
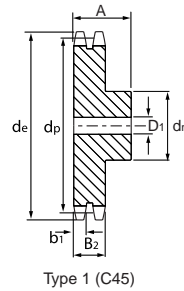
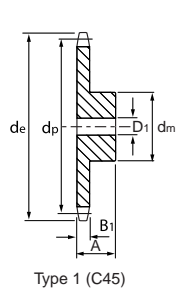
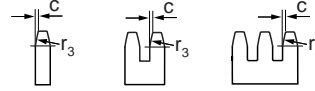
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Pilot Bore Sprockets

BS Pilot Bore Sprockets

28B 1.3/4" x 1.1/4"

SPROCKET		CHAIN	
	mm		mm
Tooth Radius r_3	44.0	Pitch	44.450
Chamfer c	5.0	Width Between Inner Plates	30.990
Tooth Width b_1	28.8	Roller Diameter	27.940
Tooth Width B_1	29.4		
Tooth Width B_2	88.4		
Tooth Width B_3	148.0		



Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex			Duplex			Triplex			Type
			Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	Hub Dia d_m	Length thro' Bore A	Stock Bore D_1	
8	132.0	116.15	74	70	25	74	120	30	74	180	30	1
9	148.4	129.96	88	70	25	88	120	30	88	180	30	1
10	162.3	143.85	100	70	25	100	120	30	100	180	30	1
11	176.3	157.77	112	70	25	112	120	30	112	180	30	1
12	189.3	171.74	125	70	25	125	120	30	125	180	30	1
13	204.2	185.75	125	70	25	125	120	30	125	180	30	1
14	218.2	199.76	130	70	25	130	120	30	130	180	30	1
15	232.3	213.79	145	70	25	145	120	30	145	180	30	1
16	246.3	227.84	160	75	30	160	120	30	160	180	30	1
17	260.0	241.90	160	75	30	160	120	30	160	180	30	1
18	274.0	255.98	160	75	30	160	120	30	160	180	30	1
19	289.0	270.06	160	75	30	180	120	30	180	180	30	1
20	303.0	284.15	160	75	30	180	120	30	180	180	30	1
21	317.0	298.24	170	75	30	180	120	30	180	180	40	1
22	331.0	312.34	170	75	30	180	120	30	180	180	40	1
23	345.0	326.44	170	75	30	180	120	30	180	180	40	1
24	359.0	340.55	170	75	30	180	120	30	180	180	40	1
25	373.0	354.66	170	75	30	180	120	30	180	180	40	1
26	387.0	368.77	170	75	30	180	120	40	180	180	40	1
27	401.0	382.88	170	75	30	180	120	40	180	180	40	1
28	416.0	397.00	170	75	30	180	120	40	180	180	40	1
29	430.0	411.12	170	75	30	180	120	40	180	180	40	1
30	444.0	425.24	170	75	30	180	120	40	180	180	40	1
31	458.0	439.37	180	75	30	200	120	40	200	180	40	1
32	472.0	453.49	180	75	30	200	120	40	200	180	40	1
33	486.0	467.62	180	75	30	200	120	40	200	180	40	1
34	500.0	481.75	180	75	30	200	120	40	200	180	40	1
35	514.0	495.88	180	75	30	200	120	40	200	180	40	1
36	529.0	510.01	180	75	30	200	120	40	200	180	40	1
37	543.0	524.13	180	75	30	200	120	40	200	180	40	1
38	557.0	538.27	180	75	30	200	120	40	200	180	40	1
39	571.0	552.40	180	75	30	200	120	40	200	180	40	1
40	585.0	566.54	180	75	30	200	120	40	200	180	40	1

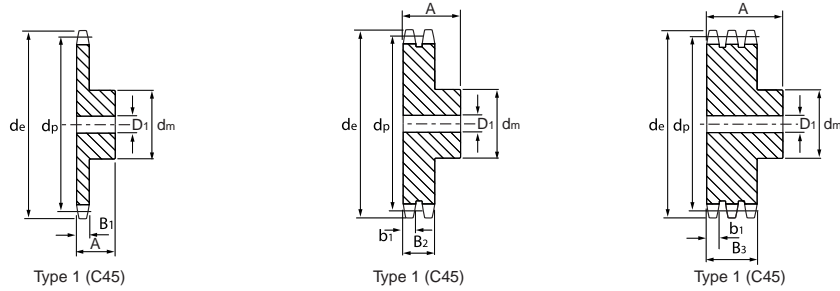
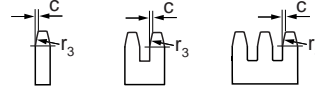
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Pilot Bore Sprockets

BS Pilot Bore Sprockets

32B 2" x 1.1/4"

SPROCKET		CHAIN	
	mm		mm
Tooth Radius r_3	51.0	Pitch	50.800
Chamfer c	6.0	Width Between Inner Plates	30.990
Tooth Width b_1	28.8	Roller Diameter	29.210
Tooth Width B_1	29.4		
Tooth Width B_2	87.4		
Tooth Width B_3	146.0		



Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex			Duplex			Triplex			Type
			Hub Dia d_m	Length thro' Bore A	Stock Bore D1	Hub Dia d_m	Length thro' Bore A	Stock Bore D1	Hub Dia d_m	Length thro' Bore A	Stock Bore D1	
8	153.2	132.74	85	80	30	85	120	30	85	180	30	1
9	169.0	148.54	100	80	30	100	120	30	100	180	30	1
10	185.0	164.39	115	80	30	115	120	30	115	180	30	1
11	200.8	180.31	125	80	30	125	120	35	125	180	35	1
12	216.8	196.29	133	80	30	133	120	35	133	180	35	1
13	232.8	212.29	145	80	30	145	120	35	145	180	35	1
14	248.8	228.29	155	80	30	155	120	35	155	180	35	1
15	264.8	244.30	160	80	30	160	120	35	160	180	35	1
16	280.9	260.40	160	90	30	160	120	40	160	180	40	1
17	296.9	276.46	170	90	30	180	120	40	180	180	40	1
18	313.0	292.55	170	90	30	180	120	40	180	180	40	1
19	329.1	308.66	170	90	30	200	120	40	200	180	40	1
20	345.2	324.71	180	90	30	200	120	40	200	180	40	1
21	361.3	340.82	180	90	40	200	120	40	200	180	40	1
22	377.5	356.98	180	90	40	200	120	40	200	180	40	1
23	393.6	373.08	180	90	40	200	120	40	200	180	40	1
24	409.7	389.18	180	90	40	200	120	40	200	180	40	1
25	425.8	405.33	180	90	40	200	120	40	200	180	40	1
26	441.9	421.44	180	90	40	200	120	40	200	180	40	1
27	458.1	437.59	180	90	40	200	120	40	200	180	40	1
28	474.2	453.69	180	90	40	200	120	40	200	180	40	1
29	492.0	469.85	180	90	40	-	-	-	-	-	-	1
30	506.5	486.00	180	90	40	200	120	40	200	180	40	1
32	538.8	518.27	180	90	40	-	-	-	-	-	-	1
35	589.5	566.71	180	90	40	-	-	-	-	-	-	1
38	635.5	615.16	180	90	40	-	-	-	-	-	-	1
40	670.3	647.47	180	90	40	-	-	-	-	-	-	1

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Plate Wheels

BS Pilot Bore Plate Wheels

03B		5 x 2.5 mm	
SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	5.0	Pitch	5.000
Chamfer c	0.6	Width Between Inner Plates	2.500
Tooth Width B_1	2.3	Roller Diameter	3.200

Material C45

Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex Stock Bore D_1
8	15.2	13.06	4
9	16.8	14.62	4
10	18.3	16.18	4
11	19.9	17.75	5
12	21.5	19.32	5
13	23.0	20.89	5
14	24.6	22.47	5
15	26.2	24.04	5
16	27.8	25.63	6
17	29.4	27.20	6
18	30.9	28.79	6
19	32.5	30.38	6
20	34.1	31.96	6
21	35.7	33.54	8
22	37.3	35.13	8
23	38.9	36.72	8
24	40.5	38.30	8
25	42.0	39.89	8
26	43.6	41.48	8
27	45.2	43.07	8
28	46.8	44.65	8
29	48.4	46.25	8
30	50.0	47.83	8
31	51.5	49.42	8
32	53.2	51.01	8
33	54.8	52.60	8
34	56.3	54.19	8
35	57.9	55.78	8
36	59.5	57.37	8
37	61.1	58.96	8
38	62.7	60.54	8
39	64.3	62.13	8
40	65.9	63.73	8
41	67.5	65.31	8
42	69.1	66.91	8
43	70.6	68.49	8

Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex Stock Bore D_1
44	72.2	70.09	8
45	73.8	71.68	8
46	75.4	73.27	8
47	77.0	74.86	8
48	78.6	76.45	8
49	80.2	78.03	8
50	81.8	79.63	8
51	83.4	81.22	10
52	85.0	82.81	10
53	86.6	84.40	10
54	88.1	85.97	10
55	89.7	87.58	10
56	91.3	89.17	10
57	92.9	90.76	10
58	94.5	92.35	10
59	96.1	93.94	10
60	97.7	95.53	10
62	100.9	98.72	12
64	104.1	101.90	12
65	105.6	103.49	12
66	107.2	105.08	12
68	110.4	108.26	12
70	113.6	111.44	12
72	116.8	114.63	12
75	121.6	119.40	12
76	123.1	120.99	12
80	129.5	127.35	12
85	137.5	135.31	14
90	145.4	143.27	14
95	153.4	151.22	14
100	161.3	159.18	14
110	177.2	175.09	14
114	183.6	181.49	14
120	193.2	191.01	14
125	201.1	198.96	14

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Plate Wheels

BS Pilot Bore Plate Wheels

04B		6 x 2.8 mm	
SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	6.0	Pitch	6.000
Chamfer c	0.7	Width Between Inner Plates	2.800
Tooth Width B_1	2.6	Roller Diameter	4.000

Material C45

Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex Stock Bore D_1
8	18.0	15.67	5
9	19.9	17.54	5
10	21.7	19.42	6
11	23.7	21.30	6
12	25.4	23.18	6
13	27.3	25.05	8
14	29.2	26.96	8
15	31.1	28.86	8
16	33.0	30.76	8
17	35.0	32.65	8
18	36.9	34.55	8
19	38.8	36.44	8
20	40.7	38.34	8
21	42.6	40.25	8
22	44.5	42.16	8
23	46.4	44.06	8
24	48.3	45.96	8
25	50.2	47.87	8
26	52.1	49.77	10
27	54.0	51.67	10
28	55.9	53.58	10
29	57.8	55.50	10
30	59.8	57.42	10
31	61.7	59.31	10
32	63.6	61.21	10
33	65.5	63.11	10
34	67.4	65.02	10
35	69.3	66.93	10
36	71.2	68.84	10
37	73.1	70.75	10
38	75.0	72.66	10
39	76.9	74.56	10
40	78.9	76.47	10
41	80.8	78.38	12
42	82.7	80.28	12
43	84.7	82.19	12

Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex Stock Bore D_1
44	86.6	84.10	12
45	88.5	86.01	12
46	90.4	87.92	12
47	92.3	89.83	12
48	94.2	91.74	12
49	96.1	93.64	12
50	98.0	95.55	12
51	99.9	97.47	12
52	101.8	99.37	12
53	103.7	101.27	12
54	105.6	103.17	12
55	107.6	105.08	12
56	109.5	107.00	12
57	111.4	108.93	12
58	113.3	110.82	12
59	115.2	112.71	12
60	117.1	114.62	12
62	120.9	118.45	16
64	124.7	122.27	16
65	126.6	124.18	16
66	128.5	126.09	16
68	132.4	129.91	16
70	136.2	133.73	16
72	140.0	137.55	16
75	145.7	143.28	16
76	147.6	145.19	16
80	155.3	152.82	16
85	164.8	162.37	16
90	174.4	171.92	16
95	183.9	181.47	16
100	193.5	191.01	16
110	211.6	210.11	16
114	220.2	217.75	16
120	231.7	229.20	16
125	241.2	238.75	16

Plate Wheels

BS Pilot Bore Plate Wheels

05B		8 x 3 mm	
SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	8.0	Pitch	8.000
Chamfer c	1.0	Width Between Inner Plates	3.000
Tooth Width b1	2.7	Roller Diameter	5.000
Tooth Width B1	2.8		
Tooth width B2	8.3		

Material C45

Material C45

Teeth	Outer Dia de	Pitch Dia dp	Simplex	Duplex
			Stock Bore D1	Stock Bore D1
8	24.0	20.90	6	8
9	26.6	23.39	6	8
10	29.2	25.89	8	8
11	31.7	28.39	8	8
12	34.2	30.91	8	8
13	36.7	33.42	8	8
14	39.2	35.95	8	8
15	41.7	38.48	8	8
16	44.3	41.01	8	10
17	46.8	43.53	8	10
18	49.3	46.07	8	10
19	51.9	48.61	8	10
20	54.4	51.14	8	10
21	57.0	53.67	8	10
22	59.5	56.21	8	10
23	62.0	58.75	8	10
24	64.6	61.29	8	10
25	67.5	63.83	8	10
26	69.5	66.37	10	12
27	72.2	68.91	10	12
28	74.8	71.45	10	12
29	77.3	73.99	10	12
30	79.8	76.53	10	12
31	82.4	79.08	10	12
32	84.9	81.61	10	12
33	87.5	84.16	10	12
34	90.0	86.70	10	12
35	92.5	89.24	10	12
36	95.0	91.79	10	12
37	97.6	94.33	10	12
38	100.2	96.88	10	12
39	102.7	99.42	10	12
40	105.3	101.97	10	12
41	107.8	104.51	12	14
42	110.4	107.05	12	14
43	112.9	109.60	12	14

Teeth	Outer Dia de	Pitch Dia dp	Simplex	Duplex
			Stock Bore D1	Stock Bore D1
44	115.5	112.14	12	14
45	118.0	114.69	12	14
46	120.6	117.23	12	14
47	123.1	119.77	12	14
48	125.6	122.32	12	14
49	128.2	124.89	12	14
50	130.7	127.41	12	14
51	133.3	129.95	14	16
52	135.8	132.49	14	16
53	138.4	135.04	14	16
54	140.9	137.59	14	16
55	143.5	140.13	14	16
56	146.0	142.68	14	16
57	148.6	145.22	14	16
58	151.0	147.77	14	16
59	153.6	150.31	14	16
60	156.2	152.85	14	16
62	162.0	157.95	16	20
64	167.1	163.04	16	20
65	169.2	165.58	16	20
66	172.2	168.13	16	20
68	177.3	173.22	16	20
70	182.4	178.31	16	20
72	187.5	183.41	20	20
75	195.1	191.04	20	20
76	197.7	193.59	20	20
78	202.8	198.68	-	20
80	207.9	203.77	20	20
85	220.6	216.50	20	20
90	233.4	229.23	20	20
95	246.1	241.96	20	20
100	258.9	254.68	20	-
110	284.3	280.15	20	-
114	294.5	290.33	20	20
120	310.0	305.61	20	-
125	322.5	318.34	20	-

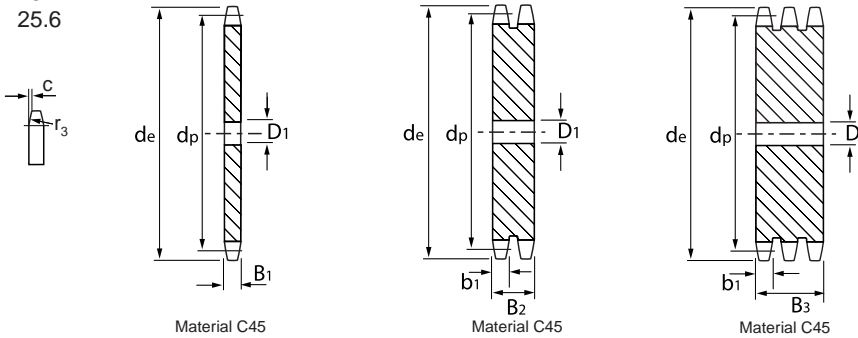
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Plate Wheels

BS Pilot Bore Plate Wheels

06B 3/8" x 7/32"

SPROCKET		CHAIN	
	mm		mm
Tooth Radius r_3	10.0	Pitch	9.525
Chamfer c	1.0	Width Between Inner Plates	5.720
Tooth Width b_1	5.2	Roller Diameter	6.350
Tooth Width B_1	5.3		
Tooth Width B_2	15.4		
Tooth Width B_3	25.6		



Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex	Duplex	Triplex
			Stock Bore D1	Stock Bore D1	Stock Bore D1
8	28.0	24.89	6	8	8
9	31.0	27.85	7	8	8
10	34.0	30.82	7	8	10
11	37.0	33.80	8	10	12
12	40.0	36.80	8	10	12
13	43.0	39.80	8	10	12
14	46.3	42.80	8	10	12
15	49.3	45.81	8	10	12
16	52.3	48.82	10	12	12
17	55.3	51.83	10	12	12
18	58.3	54.85	10	12	12
19	61.3	57.87	10	12	12
20	64.3	60.89	10	12	12
21	68.0	63.91	12	12	16
22	71.0	66.93	12	12	16
23	73.5	69.95	12	12	16
24	77.0	72.97	12	12	16
25	80.0	76.00	12	12	16
26	83.0	79.02	12	16	16
27	86.0	82.04	12	16	16
28	89.0	85.07	12	16	16
29	92.0	88.09	12	16	16
30	94.7	91.12	12	16	16
31	98.3	94.15	16	16	16
32	101.3	97.17	16	16	16
33	104.3	100.20	16	16	16
34	107.3	103.23	16	16	16
35	110.4	106.26	16	16	16
36	113.4	109.29	16	16	20
37	116.4	112.32	16	16	20
38	119.5	115.35	16	16	20
39	122.5	118.37	16	16	20
40	125.5	121.40	16	16	20
41	128.5	124.43	16	20	20
42	131.6	127.46	16	20	20
43	134.6	130.49	16	20	20

Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex	Duplex	Triplex
			Stock Bore D1	Stock Bore D1	Stock Bore D1
44	137.6	133.52	16	20	20
45	140.7	136.54	16	20	20
46	143.7	139.58	20	20	20
47	146.7	142.61	20	20	20
48	149.7	145.64	20	20	20
49	152.7	148.66	20	20	20
50	155.7	151.69	20	20	20
51	158.7	154.72	20	20	20
52	161.8	157.75	20	20	20
53	164.8	160.78	20	20	20
54	167.8	163.82	20	20	20
55	170.8	166.85	20	20	20
56	173.8	169.88	20	20	25
57	176.9	172.91	20	20	25
58	179.9	175.93	20	20	25
59	183.0	178.96	20	20	25
60	186.0	181.99	20	20	25
62	192.1	188.06	20	25	25
64	198.2	194.12	20	25	25
65	201.6	197.15	20	25	25
66	204.6	200.18	20	25	25
68	210.7	206.24	20	25	25
70	216.7	212.30	20	25	25
72	222.8	218.37	20	25	25
75	231.9	227.46	20	25	25
76	234.9	230.49	20	25	25
78	241.0	236.55	-	25	25
80	247.1	242.61	20	25	25
85	262.2	257.77	25	25	25
90	277.4	272.93	25	25	25
95	292.5	288.08	25	25	25
100	307.7	303.25	25	25	25
110	338.0	333.55	25	25	25
114	349.5	345.68	25	25	25
120	368.3	363.86	25	25	25
125	383.5	379.02	25	25	25

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Plate Wheels

BS Pilot Bore Plate Wheels

081		1/2" x 1/8"	
SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	13.0	Pitch	12.700
Chamfer c	1.3	Width Between Inner Plates	3.300
Tooth Width B_1	3.0	Roller Diameter	7.750

Material C45

Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex Stock Bore D_1
8	37.2	33.18	8
9	41.5	37.13	8
10	46.2	41.10	8
11	49.6	45.07	8
12	53.9	49.07	8
13	58.4	53.06	8
14	62.8	57.07	8
15	66.8	61.09	8
16	70.9	65.10	10
17	74.9	69.11	10
18	78.9	73.14	10
19	82.9	77.16	10
20	86.9	81.19	10
21	91.0	85.22	10
22	95.0	89.24	10
23	99.0	93.27	10
24	103.0	97.29	10
25	107.1	101.33	10
26	111.2	105.36	12
27	115.4	109.40	12
28	119.4	113.42	12
29	123.4	117.46	12
30	127.5	121.50	12
31	131.5	125.54	12
32	135.5	129.56	12
33	139.6	133.60	12
34	143.6	137.64	12
35	147.6	141.68	12
36	151.7	145.72	16
37	155.7	149.76	16
38	159.8	153.80	16
39	163.8	157.83	16
40	167.8	161.87	16
41	171.4	165.91	16
42	175.4	169.95	16

Teeth	Outer Dia d_e	Pitch Dia d_p	Simplex Stock Bore D_1
43	179.5	173.99	16
44	183.5	178.03	16
45	187.5	182.07	16
46	191.6	186.10	20
47	195.6	190.14	20
48	199.7	194.18	20
49	203.7	198.22	20
50	207.8	202.26	20
51	211.8	206.30	20
52	215.9	210.34	20
53	219.9	214.37	20
54	224.0	218.43	20
55	228.0	222.46	20
56	232.1	226.50	20
57	236.1	230.54	20
58	240.2	234.58	20
59	244.2	238.62	20
60	248.2	242.66	20
62	256.7	250.75	20
64	264.8	258.82	20
65	268.8	262.86	20
66	272.9	266.90	25
68	280.9	274.99	25
70	289.0	283.07	25
72	297.1	291.16	25
75	309.2	303.27	25
76	313.3	307.33	25
78	321.4	315.40	25
80	329.4	323.48	25
85	349.7	343.70	25
90	369.9	363.90	25
100	410.3	404.31	25
114	466.9	460.90	25
120	491.2	485.16	25
125	511.4	505.37	25

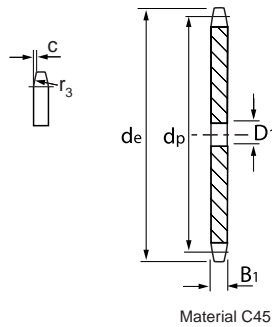
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Plate Wheels

BS Pilot Bore Plate Wheels

083 / 084 1/2" x 3/16"

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	13.0	Pitch	12.700
Chamfer c	1.3	Width Between Inner Plates	4.880
Tooth Width BI	4.5	Roller Diameter	7.750



Teeth	Outer Dia de	Pitch Dia dp	Simplex Stock Bore D1
8	38.5	33.18	8
9	41.5	37.18	8
10	46.2	41.10	8
11	49.6	45.07	8
12	53.9	49.07	8
13	58.4	53.06	8
14	62.8	57.07	8
15	66.8	61.09	8
16	70.9	65.10	8
17	74.9	69.11	8
18	78.9	73.14	8
19	82.9	77.16	8
20	86.9	81.19	8
21	91.0	85.22	8
22	95.0	89.24	8
23	99.0	93.27	8
24	103.0	97.29	8
25	107.1	101.33	8
26	111.2	105.36	8
27	115.4	109.40	8
28	119.4	113.42	8
29	123.4	117.46	8
30	127.5	121.50	8
31	131.5	125.54	8
32	135.5	129.56	8
33	139.6	133.60	8
34	143.6	137.64	8
35	147.6	141.68	8
36	151.7	145.72	8
37	155.7	149.76	8
38	159.8	153.80	8
39	163.8	157.83	8
40	167.8	161.87	8
41	171.4	165.91	8
42	175.4	169.95	16

Teeth	Outer Dia de	Pitch Dia dp	Simplex Stock Bore D1
43	179.5	173.99	16
44	183.5	178.03	16
45	187.5	182.07	16
46	191.6	186.10	16
47	195.6	190.14	16
48	199.7	194.18	16
49	203.7	198.22	16
50	207.8	202.26	16
51	211.8	206.30	16
52	215.9	210.34	16
53	219.9	214.37	16
54	224.0	218.43	16
55	228.0	222.46	16
56	232.1	226.50	16
57	236.1	230.54	16
58	240.2	234.58	16
59	244.2	238.62	16
60	248.2	242.66	16
62	256.7	250.75	16
64	264.8	258.82	16
65	268.8	262.86	16
66	272.9	266.90	16
68	280.9	274.99	16
70	289.0	283.07	16
75	309.2	303.27	16
72	297.1	291.16	16
76	313.3	307.33	16
78	321.4	315.40	16
80	329.4	323.48	16
85	349.7	343.70	16
90	369.9	363.90	-
95	390.1	384.11	25
100	410.3	404.31	25
110	450.7	444.74	25
114	466.9	460.90	-
120	491.2	485.16	25
125	511.4	505.37	-

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Plate Wheels

BS Pilot Bore Plate Wheels

085		1/2" x 1/4"	
SPROCKET	mm	CHAIN	mm
Tooth Radius r3	13.0	Pitch	12.700
Chamfer c	1.3	Width Between Inner Plates	6.400
Tooth Width B1	5.9	Roller Diameter	7.750

Material C45

Teeth	Outer Dia de	Pitch Dia dp	Simplex Stock Bore D1
8	38.5	33.18	8
9	41.5	37.18	8
10	46.2	41.10	8
11	49.6	45.07	8
12	53.9	49.07	8
13	58.4	53.06	8
14	62.8	57.07	8
15	66.8	61.09	8
16	70.9	65.10	10
17	74.9	69.11	10
18	78.9	73.14	10
19	82.9	77.16	10
20	86.9	81.19	10
21	91.0	85.22	10
22	95.0	89.24	10
23	99.0	93.27	10
24	103.0	97.29	10
25	107.1	101.33	10
26	111.2	105.36	12
27	115.4	109.40	12
28	119.4	113.42	12
29	123.4	117.46	12
30	127.5	121.50	12
31	131.5	125.54	12
32	135.5	129.56	12
33	139.6	133.60	12
34	143.6	137.64	12
35	147.6	141.68	12
36	151.7	145.72	16
37	155.7	149.76	16
38	159.8	153.80	16
39	163.8	157.83	16
40	167.8	161.87	16
41	171.4	165.91	16
42	175.4	169.95	16

Teeth	Outer Dia de	Pitch Dia dp	Simplex Stock Bore D1
43	179.5	173.99	16
44	183.5	178.03	16
45	187.5	182.07	16
46	191.6	186.10	20
47	195.6	190.14	20
48	199.7	194.18	20
49	203.7	198.22	20
50	207.8	202.26	20
51	211.8	206.30	20
52	215.9	210.34	20
53	219.9	214.37	20
54	224.0	218.43	20
55	228.0	222.46	20
56	232.1	226.50	20
57	236.1	230.54	20
58	240.2	234.58	20
59	244.2	238.62	20
60	248.2	242.66	20
62	256.7	250.75	20
64	264.8	258.82	20
65	268.8	262.86	20
66	272.9	266.90	25
68	280.9	274.99	25
70	289.0	283.07	25
72	297.1	291.16	25
75	309.2	303.27	25
76	313.3	307.33	25
78	321.4	315.40	25
80	329.4	323.48	25

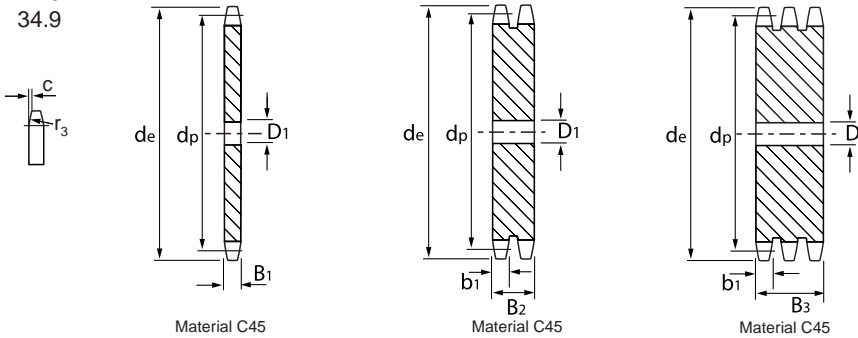
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Plate Wheels

BS Pilot Bore Plate Wheels

08B 1/2" x 5/16"

SPROCKET		CHAIN	
	mm		mm
Tooth Radius r3	13.0	Pitch	12.700
Chamfer c	1.3	Width Between Inner Plates	7.750
Tooth Width b1	7.0	Roller Diameter	8.510
Tooth Width B1	7.2		
Tooth Width B2	21.0		
Tooth Width B3	34.9		



Teeth	Outer Dia de	Pitch Dia dp	Simplex Stock Bore D1	Duplex Stock Bore D1	Triplex Stock Bore D1
8	37.2	33.18	8	10	10
9	41.0	37.13	8	10	10
10	45.2	41.10	8	10	10
11	48.7	45.07	10	10	12
12	53.0	49.07	10	10	12
13	57.4	53.06	10	10	12
14	61.8	57.07	10	10	12
15	65.5	61.09	10	10	12
16	69.5	65.10	10	12	16
17	73.6	69.11	10	12	16
18	77.8	73.14	10	12	16
19	81.7	77.16	10	12	16
20	85.8	81.19	10	12	16
21	89.7	85.22	12	16	16
22	93.8	89.24	12	16	16
23	98.2	93.27	12	16	16
24	101.8	97.29	12	16	16
25	105.8	101.33	12	16	16
26	110.0	105.36	16	16	16
27	114.0	109.40	16	16	16
28	118.0	113.42	16	16	16
29	122.0	117.46	16	16	16
30	126.1	121.50	16	16	16
31	130.2	125.54	16	16	20
32	134.3	129.56	16	16	20
33	138.4	133.60	16	16	20
34	142.6	137.64	16	16	20
35	146.7	141.68	16	16	20
36	151.0	145.72	16	20	20
37	154.6	149.76	16	20	20
38	158.6	153.80	16	20	20
39	162.7	157.83	16	20	20
40	166.8	161.87	16	20	20
41	171.4	165.91	20	20	25
42	175.4	169.95	20	20	25
43	179.7	173.99	20	20	25

Teeth	Outer Dia de	Pitch Dia dp	Simplex Stock Bore D1	Duplex Stock Bore D1	Triplex Stock Bore D1
44	183.8	178.03	20	20	25
45	188.0	182.07	20	20	25
46	192.1	186.10	20	20	25
47	196.2	190.14	20	20	25
48	200.3	194.18	20	20	25
49	204.3	198.22	20	20	25
50	208.3	202.26	20	20	25
51	212.1	206.30	20	25	25
52	216.1	210.34	20	25	25
53	220.2	214.37	20	25	25
54	224.1	218.43	20	25	25
55	228.1	222.46	20	25	25
56	232.2	226.50	20	25	25
57	236.4	230.54	20	25	25
58	240.5	234.58	20	25	-
59	244.5	238.62	20	25	-
60	248.6	242.66	20	25	25
62	256.9	250.75	25	25	25
64	265.1	258.82	25	25	25
65	269.0	262.86	25	25	25
66	273.0	266.90	25	25	25
68	281.0	274.99	25	25	25
70	289.0	283.07	25	25	25
72	297.2	291.16	25	25	25
75	309.2	303.27	25	25	25
76	313.2	307.33	25	25	25
78	321.4	315.40	25	-	-
80	329.4	323.48	25	25	25
85	349.0	343.69	25	25	25
90	369.9	363.90	25	25	25
95	390.1	384.11	25	25	25
100	410.3	404.31	25	25	25
110	450.7	444.74	25	25	-
114	466.9	460.90	25	25	25
120	491.2	485.16	25	25	25
125	511.3	505.37	25	25	25

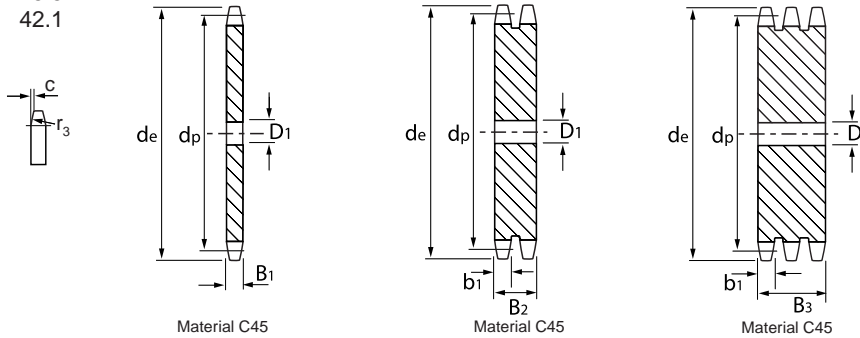
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Plate Wheels

BS Pilot Bore Plate Wheels

10B 5/8" x 3/8"

SPROCKET		CHAIN	
	mm		mm
Tooth Radius r_3	16.0	Pitch	15.875
Chamfer c	1.6	Width Between Inner Plates	9.650
Tooth Width b_1	9.0	Roller Diameter	10.160
Tooth Width B_1	9.1		
Tooth Width B_2	25.5		
Tooth Width B_3	42.1		



Teeth	Outer Dia de	Pitch Dia dp	Simplex	Duplex	Triplex
			Stock Bore D1	Stock Bore D1	Stock Bore D1
8	47.0	41.48	10	10	12
9	52.6	46.42	10	10	12
10	57.5	51.37	10	10	12
11	63.0	56.34	10	12	12
12	68.0	61.34	10	12	12
13	73.0	66.32	10	12	12
14	78.0	71.34	10	12	12
15	83.0	76.36	10	12	12
16	88.0	81.37	12	12	16
17	93.0	86.39	12	12	16
18	98.3	91.42	12	12	16
19	103.3	96.45	12	12	16
20	108.4	101.49	12	12	16
21	113.4	106.52	12	16	16
22	118.0	111.55	12	16	16
23	123.4	116.58	12	16	16
24	128.3	121.62	12	16	16
25	134.0	126.66	12	16	16
26	139.0	131.70	16	16	20
27	144.0	136.75	16	16	20
28	148.7	141.78	16	16	20
29	153.8	146.83	16	16	20
30	158.8	151.87	16	16	20
31	163.9	156.92	16	20	20
32	168.9	161.95	16	20	20
33	174.5	167.00	16	20	20
34	179.0	172.05	16	20	20
35	184.1	177.10	16	20	20
36	189.1	182.15	20	20	25
37	194.2	187.20	20	20	25
38	199.2	192.24	20	20	25
39	204.2	197.29	20	20	25
40	209.3	202.34	20	20	25
41	214.8	207.39	20	20	25
42	219.9	212.44	20	20	25
43	224.9	217.49	20	20	25

Teeth	Outer Dia de	Pitch Dia dp	Simplex	Duplex	Triplex
			Stock Bore D1	Stock Bore D1	Stock Bore D1
44	230.0	222.53	20	20	25
45	235.0	227.58	20	20	25
46	240.1	232.63	20	25	25
47	245.1	237.68	20	25	25
48	250.2	242.73	20	25	25
49	255.2	247.78	20	25	25
50	260.3	252.82	20	25	25
51	265.3	257.87	20	25	-
52	270.4	262.92	20	25	25
53	275.4	267.97	20	25	25
54	280.5	273.03	20	25	-
55	285.5	278.08	20	25	25
56	290.6	283.13	25	25	-
57	296.0	288.18	25	25	25
58	300.7	293.23	25	25	-
59	305.7	298.27	25	25	-
60	310.8	303.32	25	25	25
62	321.4	313.43	25	25	-
64	331.5	323.83	25	25	30
65	336.5	328.58	25	25	30
66	341.6	333.63	25	25	-
68	351.7	343.74	25	25	30
70	361.8	353.84	25	25	30
72	371.9	363.95	25	25	30
75	387.1	379.09	25	25	30
76	392.1	384.16	25	25	-
78	402.2	394.25	25	-	30
80	412.3	404.35	25	25	30
85	437.6	429.62	30	30	30
90	462.8	454.88	30	30	30
95	488.5	480.14	30	30	30
100	513.4	505.40	30	30	30
110	563.9	555.92	-	30	30
114	584.1	576.13	-	30	30
120	614.8	606.44	-	30	-
125	639.7	631.71	-	30	-

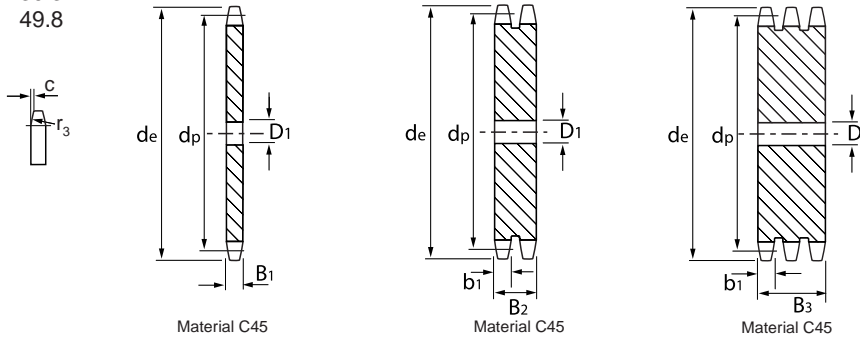
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Plate Wheels

BS Pilot Bore Plate Wheels

12B 3/4" x 7/16"

SPROCKET		CHAIN	
	mm		mm
Tooth Radius r_3	19.0	Pitch	19.050
Chamfer c	2.0	Width Between Inner Plates	11.680
Tooth Width b_1	10.8	Roller Diameter	12.070
Tooth Width B_1	11.1		
Tooth Width B_2	30.3		
Tooth Width B_3	49.8		



Teeth	Outer Dia de	Pitch Dia dp	Simplex	Duplex	Triplex
			Stock Bore D1	Stock Bore D1	Stock Bore D1
8	57.6	49.78	12	12	12
9	62.0	55.70	12	12	12
10	69.0	61.64	12	12	12
11	75.0	67.61	14	14	16
12	81.5	73.10	14	14	16
13	87.5	79.59	14	14	16
14	93.6	85.61	14	14	16
15	99.8	91.63	14	14	16
16	105.5	97.65	14	16	16
17	111.5	103.67	14	16	16
18	118.0	109.71	14	16	16
19	124.2	115.75	14	16	16
20	129.7	121.78	14	16	16
21	136.0	127.82	16	16	20
22	141.8	133.86	16	16	20
23	149.0	139.90	16	16	20
24	153.9	145.94	16	16	20
25	160.0	152.00	16	16	20
26	165.9	158.04	16	20	20
27	172.3	164.09	16	20	20
28	178.0	170.13	16	20	20
29	184.1	176.19	16	20	20
30	190.5	182.25	16	20	20
31	196.3	188.31	20	20	25
32	203.3	194.35	20	20	25
33	209.3	200.40	20	20	25
34	214.6	206.46	20	20	25
35	221.0	212.52	20	20	25
36	226.8	218.58	20	25	25
37	232.9	224.64	20	25	25
38	239.0	230.69	20	25	25
39	245.1	236.75	20	25	25
40	251.3	242.81	20	25	25
41	257.3	248.87	25	25	25
42	264.5	254.93	25	25	25
43	270.5	260.98	25	25	25

Teeth	Outer Dia de	Pitch Dia dp	Simplex	Duplex	Triplex
			Stock Bore D1	Stock Bore D1	Stock Bore D1
44	276.5	267.04	25	25	25
45	282.5	273.10	25	25	25
46	287.9	279.16	25	25	25
47	294.0	285.21	25	25	25
48	300.1	291.27	25	25	25
49	306.2	297.33	25	25	25
50	312.3	303.39	25	25	25
51	318.4	309.45	25	25	-
52	324.5	315.50	25	25	25
53	330.5	321.56	25	25	-
54	336.6	327.64	25	25	25
55	342.7	333.70	25	25	25
56	348.7	339.75	25	25	-
57	355.4	345.81	25	25	30
58	361.5	351.87	25	25	30
60	373.0	363.99	25	25	30
62	385.1	376.12	25	30	-
64	397.2	388.24	25	30	-
65	403.2	394.29	25	30	30
66	409.2	400.35	-	30	30
68	421.4	412.49	30	-	-
70	433.6	424.60	30	30	30
72	447.0	436.74	30	30	30
75	463.9	454.91	30	30	-
76	469.9	460.99	30	30	30
78	482.1	473.10	30	-	-
80	494.2	485.22	30	30	30
85	524.5	515.55	30	30	-
90	554.8	545.86	30	30	-
95	585.1	576.17	30	30	-
100	615.4	606.47	-	30	-

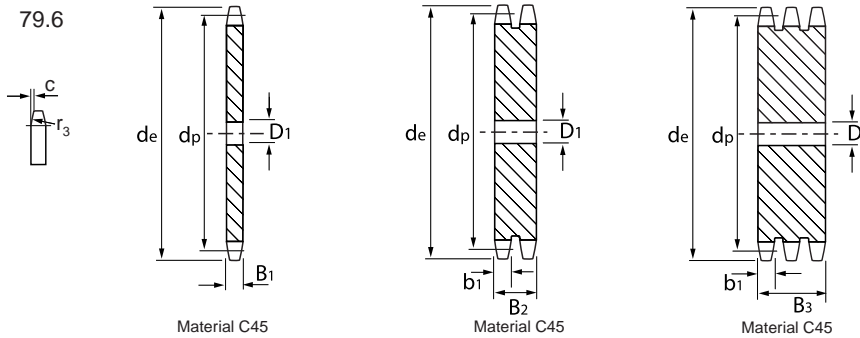
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Plate Wheels

BS Pilot Bore Plate Wheels

16B 1" x 17.02 mm

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	26.0	Pitch	25.400
Chamfer c	2.5	Width Between Inner Plates	17.020
Tooth Width b1	15.8	Roller Diameter	15.880
Tooth Width B1	16.2		
Tooth Width B2	47.7		
Tooth Width B3	79.6		



Teeth	Outer Dia de	Pitch Dia dp	Simplex Stock Bore D1	Duplex Stock Bore D1	Triplex Stock Bore D1
8	77.0	66.37	12	16	20
9	85.0	74.27	12	16	20
10	93.0	82.19	12	16	20
11	99.5	90.14	16	20	20
12	109.0	98.14	16	20	20
13	117.0	106.12	16	20	20
14	125.0	114.15	16	20	20
15	133.0	122.17	16	20	20
16	141.0	130.20	20	20	30
17	149.0	138.22	20	20	30
18	157.0	146.28	20	20	30
19	165.2	154.33	20	20	30
20	173.2	162.38	20	20	30
21	181.2	170.43	20	25	30
22	189.3	178.48	20	25	30
23	197.5	186.53	20	25	30
24	205.5	194.59	20	25	30
25	213.5	202.66	20	25	30
26	221.6	210.72	20	25	30
27	229.6	218.79	20	25	30
28	237.7	226.85	20	25	30
29	245.8	234.92	20	25	30
30	254.0	243.00	20	25	30
31	262.0	251.08	25	25	30
32	270.0	259.13	25	25	30
33	278.5	267.21	25	25	30
34	287.0	275.28	25	25	30
35	296.2	283.36	25	25	30
36	304.6	291.44	25	25	30
37	312.6	299.51	25	25	30
38	320.7	307.59	25	25	30
39	328.8	315.67	25	25	30
40	336.9	323.75	25	25	30
41	345.0	331.82	25	-	-
42	353.0	339.90	25	25	30
43	361.1	347.98	25	25	-

Teeth	Outer Dia de	Pitch Dia dp	Simplex Stock Bore D1	Duplex Stock Bore D1	Triplex Stock Bore D1
44	369.1	356.06	25	25	30
45	377.1	364.13	25	25	30
46	385.2	372.21	25	30	30
47	393.2	380.29	25	-	-
48	401.3	388.36	25	30	30
49	409.3	396.44	25	-	-
50	417.4	404.52	25	30	30
51	425.5	412.60	30	-	-
52	433.6	420.67	30	30	40
53	441.7	428.75	30	-	-
54	448.3	436.85	30	-	-
55	457.9	444.93	30	30	40
56	466.0	453.01	30	40	-
57	474.0	461.07	30	40	40
58	482.1	469.16	30	-	-
60	498.3	485.32	30	40	-
62	514.5	501.50	30	-	-
64	530.7	517.65	30	-	-
65	538.8	525.73	30	-	-
66	546.8	533.80	30	-	-
68	562.9	549.98	30	-	-
70	579.2	566.14	30	-	-
72	595.4	582.32	30	-	-
75	619.7	606.55	30	-	-
76	627.0	614.65	30	-	-
78	643.3	630.80	30	-	-
80	660.0	646.96	30	-	-
85	699.9	687.40	30	-	-
90	740.3	727.81	30	-	-
95	781.1	768.22	30	-	-

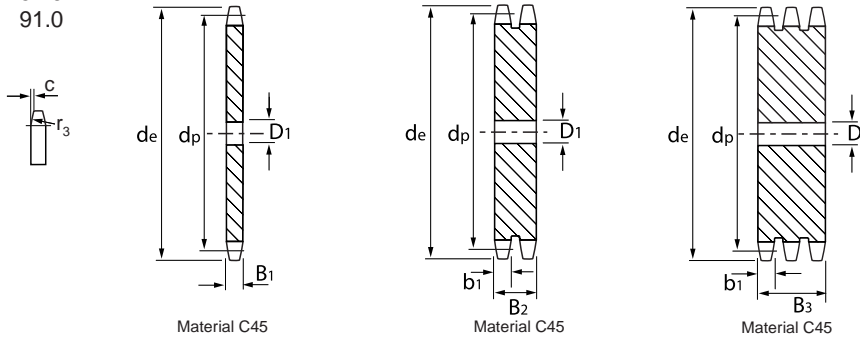
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Plate Wheels

BS Pilot Bore Plate Wheels

20B 1.1/4" x 19.56 mm

SPROCKET		CHAIN	
	mm		mm
Tooth Radius r3	32.0	Pitch	31.750
Chamfer c	3.5	Width Between Inner Plates	19.560
Tooth Width b1	18.2	Roller Diameter	19.050
Tooth Width B1	18.5		
Tooth Width B2	54.6		
Tooth Width B3	91.0		



Teeth	Outer Dia de	Pitch Dia dp	Simplex	Duplex	Triplex
			Stock Bore D1	Stock Bore D1	Stock Bore D1
8	98.1	82.96	16	20	20
9	108.0	92.84	16	20	20
10	117.9	102.74	16	20	20
11	127.8	112.68	20	20	25
12	137.8	122.68	20	20	25
13	147.8	132.65	20	20	25
14	157.8	142.68	20	20	25
15	167.9	152.72	20	20	25
16	177.9	162.75	20	30	30
17	187.9	172.78	20	30	30
18	198.0	182.85	20	30	30
19	208.1	192.91	20	30	30
20	218.1	202.98	20	30	30
21	228.2	213.04	25	30	30
22	238.3	223.11	25	30	30
23	248.3	233.17	25	30	30
24	258.4	243.23	25	30	30
25	268.5	253.33	25	30	30
26	278.6	263.40	30	30	30
27	288.6	273.40	30	30	30
28	298.7	283.56	30	30	30
29	308.8	293.65	30	30	-
30	318.9	303.75	30	30	30
31	329.0	313.85	30	30	-
32	339.1	323.91	30	30	30
33	349.2	334.01	30	30	30
34	359.3	344.10	30	30	30
35	369.4	354.20	30	30	30
36	379.5	364.30	30	30	30
37	389.5	374.39	30	30	30
38	399.6	384.49	30	30	30
39	409.7	394.59	30	30	-
40	419.8	404.66	30	30	30
41	429.9	414.78	30	-	-

Teeth	Outer Dia de	Pitch Dia dp	Simplex	Duplex	Triplex
			Stock Bore D1	Stock Bore D1	Stock Bore D1
42	440.0	424.80	30	30	-
43	450.1	434.97	30	-	-
44	460.2	445.07	30	-	-
45	470.3	455.07	30	30	-
46	480.4	465.26	30	30	-
48	500.6	485.46	30	30	-
50	520.8	505.65	30	30	-
51	530.9	515.75	30	-	-
52	541.0	525.84	30	-	-
53	551.1	535.94	-	-	-
54	561.2	546.07	30	-	-
55	571.3	556.16	30	-	-
56	581.4	566.26	30	-	-
57	591.5	576.36	30	-	-

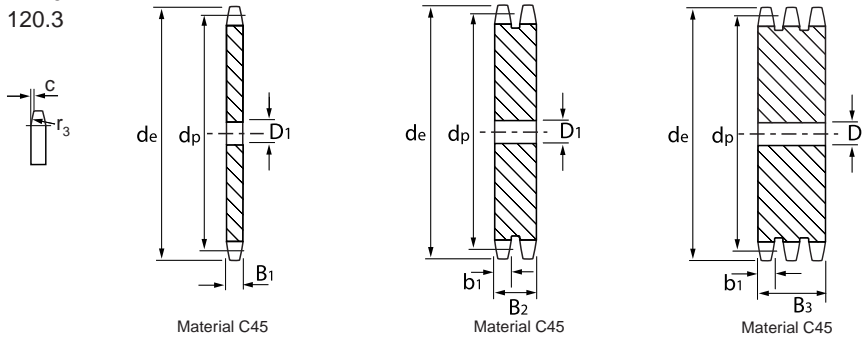
Plate Wheels

BS Pilot Bore Plate Wheels

24B 1.1/2" x 25.4 mm

SPROCKET	mm
Tooth Radius r_3	38.0
Chamfer c	4.0
Tooth Width b1	23.6
Tooth Width B1	24.1
Tooth Width B2	72.0
Tooth Width B3	120.3

CHAIN	mm
Pitch	38.100
Width Between Inner Plates	25.400
Roller Diameter	25.400



Teeth	Outer Dia de	Pitch Dia dp	Simplex Stock Bore D1	Duplex Stock Bore D1	Triplex Stock Bore D1
8	115.0	99.50	20	25	25
9	126.4	111.40	20	25	25
10	138.0	123.29	20	25	25
11	150.0	135.21	25	25	30
12	162.0	147.22	25	25	30
13	174.2	159.18	25	25	30
14	186.2	171.22	25	25	30
15	198.2	183.26	25	25	30
16	210.3	195.30	25	30	30
17	222.3	207.34	25	30	30
18	234.3	219.42	25	30	30
19	246.5	231.49	25	30	30
20	258.6	243.57	25	30	30
21	270.6	255.65	30	30	40
22	282.7	267.73	30	30	40
23	294.8	279.80	30	30	40
24	306.8	291.88	30	30	40
25	319.0	304.00	30	30	40
26	331.0	316.08	30	30	40
27	343.2	328.19	30	30	40
28	355.2	340.27	30	30	40
29	367.3	352.38	30	30	40
30	379.5	364.50	30	30	40
31	391.6	376.62	30	40	40
32	403.7	388.69	30	40	40
33	415.8	400.81	30	40	40
34	427.8	412.93	30	40	40
35	440.0	425.04	30	40	40
36	452.0	437.16	30	40	40
37	464.2	449.27	30	40	40
38	476.2	461.39	30	40	40
40	500.6	485.62	30	-	40

Teeth	Outer Dia de	Pitch Dia dp	Simplex Stock Bore D1	Duplex Stock Bore D1	Triplex Stock Bore D1
41	512.6	497.74	30	-	-
42	524.7	509.85	30	-	-
43	536.8	521.97	30	-	-
44	549.0	534.08	30	-	-
45	561.2	546.20	30	-	-
46	573.3	558.32	30	-	-
48	597.4	582.55	30	-	-

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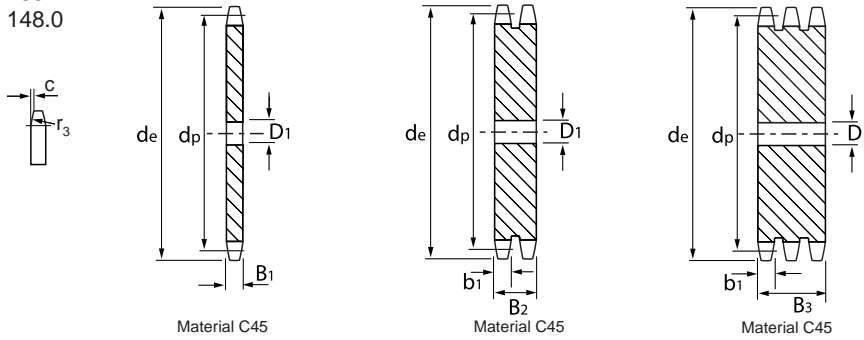
Plate Wheels

BS Pilot Bore Plate Wheels

28B 1.3/4" x 1.1/4"

SPROCKET	mm
Tooth Radius r_3	44.0
Chamfer c	5.0
Tooth Width B1	29.4
Tooth Width b1	28.8
Tooth Width B2	88.4
Tooth Width B3	148.0

CHAIN	mm
Pitch	44.450
Width Between Inner Plates	30.990
Roller Diameter	27.940



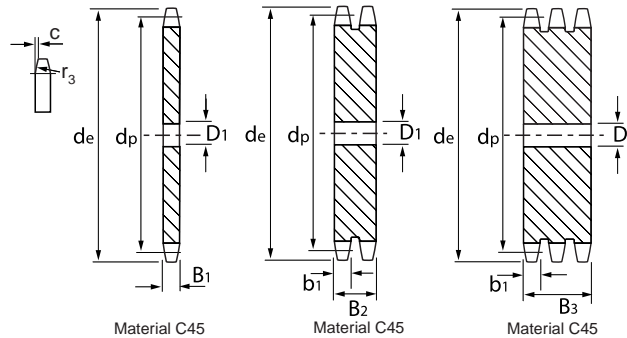
Teeth	Outer Dia de	Pitch Dia dp	Simplex	Duplex	Triplex
			Stock Bore D1	Stock Bore D1	Stock Bore D1
8	132.0	116.15	25	25	25
9	148.4	129.96	25	25	25
10	162.3	143.85	25	25	25
11	176.3	157.77	25	30	30
12	189.3	171.74	25	30	30
13	204.2	185.75	25	30	30
14	218.2	199.76	25	30	30
15	232.3	213.79	25	30	30
16	246.3	227.84	30	30	30
17	260.0	241.90	30	30	30
18	274.0	255.98	30	30	30
19	289.0	270.06	30	30	30
20	303.0	284.15	30	30	30
21	317.0	298.24	30	30	40
22	331.0	312.34	30	30	-
23	345.0	326.44	30	30	40
24	359.0	340.55	30	30	-
25	373.0	354.66	30	30	-
26	387.0	368.77	30	40	-
27	401.0	382.88	30	-	-
28	416.0	397.00	30	40	-
30	444.0	425.24	30	40	-
32	472.0	453.49	30	-	-
34	500.0	481.75	30	-	-
35	514.0	495.88	30	-	-
36	529.0	510.01	30	-	-
38	557.0	538.27	30	-	-
40	585.0	566.54	30	-	-

Plate Wheels

BS Pilot Bore Plate Wheels

32B 2" x 1.1/4"

SPROCKET	mm	CHAIN	mm
Tooth Radius r_3	51.0	Pitch	50.800
Chamfer c	6.0	Width Between Inner Plates	30.990
Tooth Width B1	29.4	Roller Diameter	29.210
Tooth Width b1	28.8		
Tooth Width B2	87.4		
Tooth Width B3	146.0		



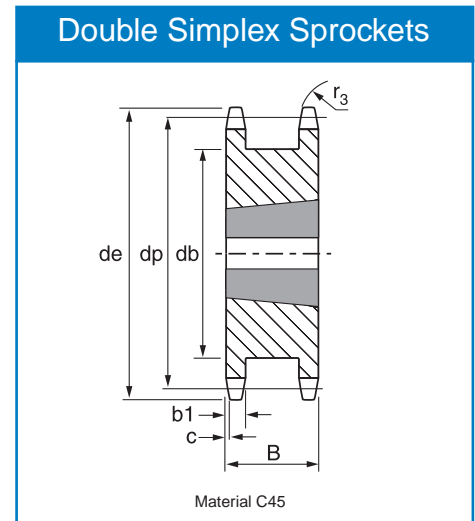
Teeth	Outer Dia de	Pitch Dia dp	Simplex	Duplex	Triplex
			Stock Bore D1	Stock Bore D1	Stock Bore D1
8	153.2	132.74	25	25	25
9	169.0	148.54	25	25	25
10	185.0	164.39	25	25	25
11	200.8	180.31	30	35	35
12	216.8	196.29	30	35	35
13	232.8	212.29	30	35	35
14	248.8	228.29	30	35	35
15	264.8	244.30	30	35	35
16	280.9	260.40	30	40	40
17	296.9	276.46	30	40	40
18	313.0	292.55	30	40	40
19	329.1	308.66	30	40	40
20	345.2	324.71	30	40	40
21	361.3	340.82	40	40	-
22	377.5	356.98	40	40	-
23	393.6	373.08	40	40	-
24	409.7	389.18	40	40	-
25	425.8	405.33	40	40	-
26	441.9	421.44	40	40	-
27	458.1	437.58	40	-	-
28	474.2	453.69	40	-	-
30	506.5	486.00	40	-	40
32	538.8	518.27	40	-	40
35	589.5	566.71	40	-	40

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Double Simplex Sprockets

Taper Bore Double Simplex Sprockets

06B		3/8" x 7/32"			
SPROCKET		mm			
Tooth Radius r_3		10.00			
Chamfer c		1.00			
Tooth Width b1		5.30			
Teeth	Outer Dia d_e	Pitch Dia d_p	Width B	Hub Dia d_b	Taper Bush
18	58.3	54.85	23.5	43	1008
19	61.3	57.87	23.5	46	1008
20	64.3	60.89	23.5	48	1108
21	68.0	63.91	23.5	52	1108
23	73.5	69.95	23.5	58	1108
25	80.0	76.00	23.5	64	1108



08B		1/2" x 5/16"			
SPROCKET		mm			
Tooth Radius r_3		13.00			
Chamfer c		1.30			
Tooth Width b1		7.20			
Teeth	Outer Dia d_e	Pitch Dia d_p	Width B	Hub Dia d_b	Taper Bush
15	65.5	61.09	31	45	1008
16	69.5	65.10	31	49	1108
17	73.6	69.11	31	53	1108
18	77.8	73.14	31	58	1210
19	81.7	77.16	31	62	1210
20	85.8	81.19	31	66	1210
21	89.7	85.22	31	70	1610
23	98.2	93.27	31	78	1610
25	105.8	101.33	31	86	2012

10B		5/8" x 3/8"			
SPROCKET		mm			
Tooth Radius r_3		16.00			
Chamfer c		1.60			
Tooth Width b1		9.20			
Teeth	Outer Dia d_e	Pitch Dia d_p	Width B	Hub Dia d_b	Taper Bush
12	68.0	61.34	36.5	45	1108
13	73.0	66.32	36.5	50	1108
14	78.0	71.34	36.5	55	1108
15	83.0	76.36	36.5	60	1210
16	88.0	81.37	36.5	65	1210
17	93.0	86.39	36.5	70	1610
18	98.3	91.42	36.5	75	1610
19	103.3	96.45	36.5	80	1610
20	108.4	101.49	36.5	85	1610
21	113.4	106.52	36.5	90	2012
23	123.4	116.58	36.5	100	2012
25	134.0	126.66	36.5	110	2012

12B		3/4" x 7/16"			
SPROCKET		mm			
Tooth Radius r_3		19.00			
Chamfer c		2.00			
Tooth Width b1		11.20			
Teeth	Outer Dia d_e	Pitch Dia d_p	Width B	Hub Dia d_b	Taper Bush
13	87.5	79.59	45	59	1210
14	93.6	85.61	45	65	1210
15	99.8	91.63	45	71	1610
16	105.5	97.65	45	77	1610
17	111.5	103.67	45	83	1610
18	118.0	109.71	45	89	2012
19	124.2	115.75	45	95	2012
20	129.7	121.78	45	101	2517
21	136.0	127.82	45	107	2517
23	149.0	139.90	45	119	2517
25	160.0	152.00	45	131	2517

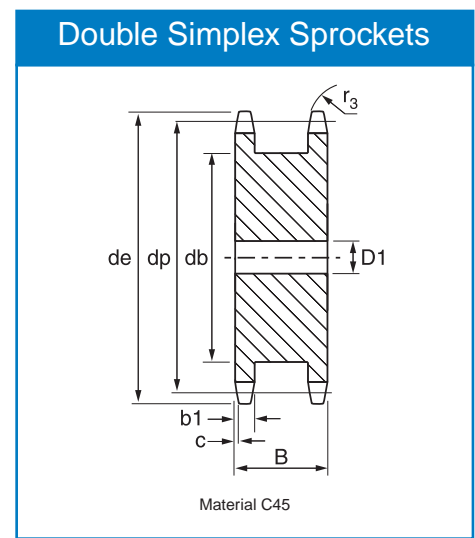
16B		1" x 17.02 mm			
SPROCKET		mm			
Tooth Radius r_3		26.00			
Chamfer c		2.50			
Tooth Width b1		16.20			
Teeth	Outer Dia d_e	Pitch Dia d_p	Width B	Hub Dia d_b	Taper Bush
12	109.0	98.14	63.5	72	1615
13	117.0	106.12	63.5	81	1615
14	125.0	114.15	63.5	88	2012
15	133.0	122.17	63.5	97	2012
16	141.0	130.20	63.5	104	2012
17	149.0	138.22	63.5	113	2517
18	157.0	146.28	63.5	121	2517
19	165.2	154.33	63.5	129	2517
20	173.2	162.38	63.5	137	3020
21	181.2	170.43	63.5	145	3020
23	197.5	186.53	63.5	161	3525
25	213.5	202.66	63.5	177	3525

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused. All dimensions in millimetres unless otherwise stated.

Double Simplex Sprockets

Pilot Bore Double Simplex Sprockets

06B		3/8" x 7/32"			
SPROCKET		mm			
Tooth Radius r_3		10.00			
Chamfer c		1.00			
Tooth Width b1		5.30			
Teeth	Outer Dia d_e	Pitch Dia d_p	Width B	Hub Dia d_b	Stock Bore D1
14	46.3	42.80	23.5	31	10
15	49.3	54.81	23.5	34	10
16	52.3	48.82	23.5	37	10
17	55.3	51.83	23.5	40	10
18	58.3	54.85	23.5	43	10
19	61.3	57.87	23.5	46	10
20	64.3	60.89	23.5	48	10
21	68.0	63.91	23.5	52	10



08B		1/2" x 5/16"			
SPROCKET		mm			
Tooth Radius r_3		13.00			
Chamfer c		1.30			
Tooth Width b1		7.20			
Teeth	Outer Dia d_e	Pitch Dia d_p	Width B	Hub Dia d_b	Stock Bore D1
12	53.0	49.07	31	35	12
13	57.4	53.06	31	38	12
14	61.8	57.07	31	41	12
15	65.6	61.09	31	45	12
16	69.5	65.10	31	49	12
17	73.6	69.11	31	53	12
18	77.8	73.14	31	58	12
19	81.7	77.16	31	62	12
20	85.8	81.19	31	66	12
21	89.7	85.22	31	70	18
23	98.2	93.27	31	78	18

10B		5/8" x 3/8"			
SPROCKET		mm			
Tooth Radius r_3		16.00			
Chamfer c		1.60			
Tooth Width b1		9.20			
Teeth	Outer Dia d_e	Pitch Dia d_p	Width B	Hub Dia d_b	Stock Bore D1
12	68.0	61.34	36.5	45	19
13	73.0	66.32	36.5	50	19
14	78.0	71.34	36.5	55	19
15	83.0	76.36	36.5	60	19
16	88.0	81.37	36.5	65	19
17	93.0	86.39	36.5	70	19
18	98.3	91.42	36.5	75	19
19	103.3	96.45	36.5	80	19
20	108.4	101.49	36.5	85	19
21	113.4	106.52	36.5	90	19
23	123.4	116.58	36.5	100	19

12B		3/4" x 7/16"			
SPROCKET		mm			
Tooth Radius r_3		19.00			
Chamfer c		2.00			
Tooth Width b1		11.20			
Teeth	Outer Dia d_e	Pitch Dia d_p	Width B	Hub Dia d_b	Stock Bore D1
12	81.5	73.61	45	53	24
13	87.5	79.59	45	59	24
14	93.6	85.61	45	65	24
15	99.8	91.63	45	71	24
16	105.5	97.65	45	77	24
17	111.5	103.67	45	83	24
18	118.0	109.71	45	89	24
19	124.2	115.75	45	95	24
20	129.7	121.78	45	101	24
21	136.0	127.82	45	107	24
23	149.0	139.90	45	119	24

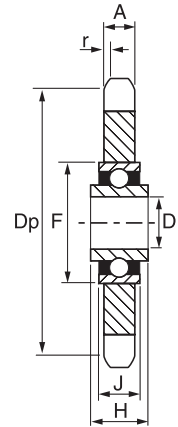
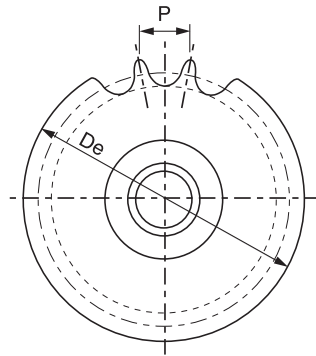
16B		1" x 17.02 mm			
SPROCKET		mm			
Tooth Radius r_3		26.00			
Chamfer c		2.50			
Tooth Width b1		16.20			
Teeth	Outer Dia d_e	Pitch Dia d_p	Width B	Hub Dia d_b	Stock Bore D1
12	109.0	98.14	63.5	72	25
13	117.0	106.12	63.5	81	25
14	125.0	114.15	63.5	88	25
15	133.0	122.17	63.5	97	25
16	141.0	130.20	63.5	104	25
17	149.0	138.22	63.5	113	25
18	157.0	146.28	63.5	121	25
19	165.2	154.33	63.5	129	25

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Idler Sprockets

Idler Sprockets

Idler Sprockets



Material C45

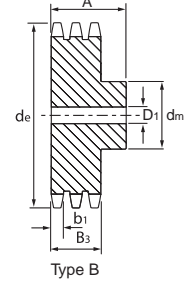
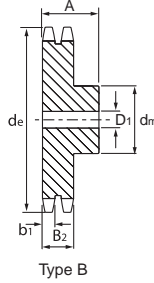
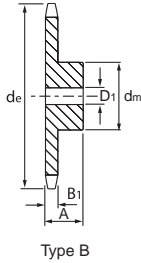
ISO Chain Size	Chain Pitch x Width Between Inner Plates	Teeth	Outer Dia de	Pitch Dia dp	Tooth Width A	Bearing Bore D1	Bearing Bore Width H	Bearing Outside Dia F	Bearing Width J
05B	8 mm x 3 mm	23	62.0	58.75	2.8	16.2	18.3	40	12
06B	3/8" x 7/32"	21	68.0	63.91	5.3	16.2	18.3	40	12
081	1/2" x 1/8"	18	78.9	73.14	3.0	16.2	18.3	40	12
083	1/2" x 3/16"	18	78.9	73.14	4.5	16.2	18.3	40	12
084	1/2" x 3/16"	18	78.9	73.14	4.5	16.2	18.3	40	12
08B	1/2" x 5/16"	16	69.5	65.10	7.2	16.2	18.3	40	12
08B	1/2" x 5/16"	18	77.8	73.14	7.2	16.2	18.3	40	12
10B	5/8" x 3/8"	14	78.0	71.34	9.1	16.2	18.3	40	12
10B	5/8" x 3/8"	15	83.0	76.36	9.1	16.2	18.3	40	12
10B	5/8" x 3/8"	17	93.0	86.30	9.1	16.2	18.3	40	12
12B	3/4" x 7/16"	13	87.5	79.59	11.1	16.2	18.3	40	12
12B	3/4" x 7/16"	15	99.8	91.63	11.1	16.2	18.3	40	12
16B	1" x 17.02 mm	12	109.0	98.14	16.2	20.0	17.7	47	14
20B	1.1/4" x 3/4"	13	147.8	132.65	18.5	25.0	21.0	52	15

ANSI Chain Size	Chain Pitch x Width Between Inner Plates	Teeth	Outer Dia de	Pitch Dia dp	Tooth Width A	Bearing Bore D1	Bearing Bore Width H	Bearing Outside Dia F	Bearing Width J
35	3/8" x 3/16"	20	65.77	60.89	4.4	16.20	18.3	40	12
40	1/2" x 5/16"	17	75.68	69.12	7.4	16.20	18.3	40	12
40	1/2" x 5/16"	18	79.70	73.14	7.4	16.20	18.3	40	12
50	5/8" x 3/8"	15	83.00	76.36	9.0	16.20	18.3	40	12
50	5/8" x 3/8"	17	93.00	86.39	9.0	16.20	18.3	40	12
60	3/4" x 1/2"	13	89.49	79.59	12.0	16.20	18.3	40	12
60	3/4" x 1/2"	15	101.52	91.63	12.0	16.20	18.3	40	12
80	1" x 5/8"	12	103.28	90.14	15.0	19.05	17.7	47	14

ANSI Pilot Bore Sprockets

ANSI Pilot Bore Sprockets (all C45 steel construction)

35 3/8" pitch



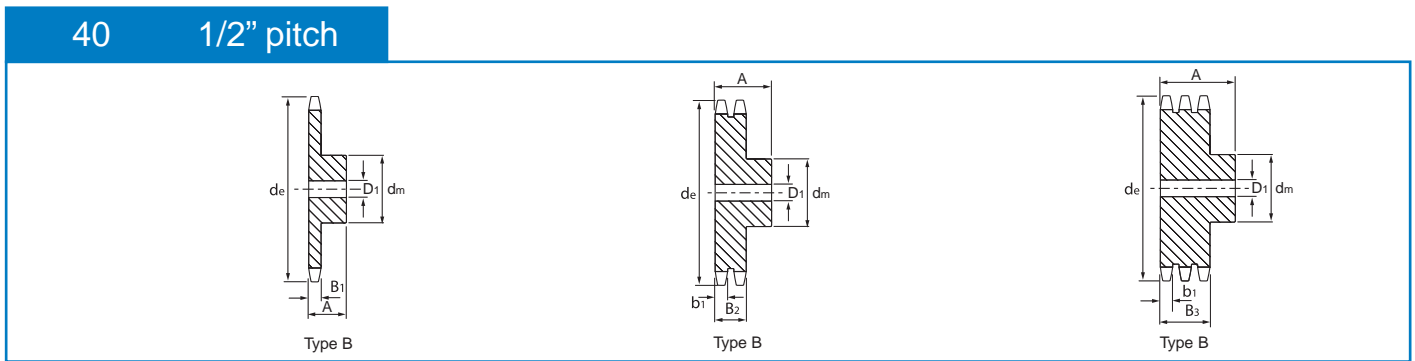
Teeth	Outer Dia de	Simplex					Duplex						Triplex						
		Hub Dia dm	Length thro' Bore A	B1	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B2	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B3	Stock Bore D1	Type	
8	1.13	3/4*	3/4	0.168	3/8	B													
9	1.26	27/32*	3/4	0.168	3/8	B													
10	1.38	31/32*	3/4	0.168	3/8	B													
11	1.50	1.1/16*	3/4	0.168	3/8	B													
12	1.63	1.7/32*	3/4	0.168	1/2	B	63/64	1.1/4	0.162	0.561	1/2	B							
13	1.75	1.1/4*	3/4	0.168	1/2	B	1.7/64	1.1/4	0.162	0.561	1/2	B	1.7/64	1.3/4	0.162	0.960	1/2	B	
14	1.87	1.1/4	3/4	0.168	1/2	B	1.1/4	1.1/4	0.162	0.561	1/2	B	1.1/4	1.3/4	0.162	0.960	1/2	B	
15	1.99	1.11/32	3/4	0.168	1/2	B	1.13/32	1.1/4	0.162	0.561	1/2	B	1.13/32	1.3/4	0.162	0.960	1/2	B	
16	2.11	1.15/32	3/4	0.168	1/2	B	1.15/32	1.1/4	0.162	0.561	1/2	B	1.15/32	1.3/4	0.162	0.960	1/2	B	
17	2.23	1.19/32	3/4	0.168	1/2	B	1.19/32	1.1/4	0.162	0.561	1/2	B	1.19/32	1.3/4	0.162	0.960	1/2	B	
18	2.35	1.23/32	3/4	0.168	1/2	B	1.23/32	1.1/4	0.162	0.561	1/2	B	1.23/32	1.3/4	0.162	0.960	1/2	B	
19	2.47	1.27/32	3/4	0.168	1/2	B	1.7/8	1.1/4	0.162	0.561	1/2	B	1.7/8	1.3/4	0.162	0.960	1/2	B	
20	2.59	1.15/16	3/4	0.168	1/2	B	1.15/16	1.3/8	0.162	0.561	3/4	B	1.15/16	1.7/8	0.162	0.960	3/4	B	
21	2.71	2	7/8	0.168	1/2	B	2.1/16	1.3/8	0.162	0.561	3/4	B	2.1/16	1.7/8	0.162	0.960	3/4	B	
22	2.83	2	7/8	0.168	1/2	B	2.3/16	1.3/8	0.162	0.561	3/4	B	2.3/16	1.7/8	0.162	0.960	3/4	B	
23	2.95	2	7/8	0.168	1/2	B	2.1/4	1.3/8	0.162	0.561	3/4	B	2.1/4	1.7/8	0.162	0.960	3/4	B	
24	3.07	2	7/8	0.168	1/2	B	2.1/4	1.3/8	0.162	0.561	3/4	B	2.1/4	1.7/8	0.162	0.960	3/4	B	
25	3.19	2	7/8	0.168	1/2	B	2.1/4	1.3/8	0.162	0.561	3/4	B	2.1/4	1.7/8	0.162	0.960	3/4	B	
26	3.31	2	7/8	0.168	1/2	B	2.1/2	1.3/8	0.162	0.561	3/4	B	2.1/2	1.7/8	0.162	0.960	3/4	B	
27	3.43	2	7/8	0.168	1/2	B													
28	3.55	2	7/8	0.168	1/2	B													
30	3.79	2	7/8	0.168	1/2	B	2.1/2	1.3/8	0.162	0.561	3/4	B	2.1/2	1.7/8	0.162	0.960	3/4	B	
32	4.03	2	7/8	0.168	1/2	B													
35	4.39	2.1/4	7/8	0.168	5/8	B													
36	4.51	2.1/4	7/8	0.168	5/8	B	2.1/2	1.3/8	0.162	0.561	3/4	B	2.1/2	1.7/8	0.162	0.960	3/4	B	
40	4.99	2.1/4	1	0.168	5/8	B													
42	5.23	2.1/4	1	0.168	5/8	B	2.1/2	1.3/8	0.162	0.561	3/4	B	2.1/2	1.7/8	0.162	0.960	3/4	B	
45	5.59	2.1/4	1	0.168	5/8	B													
48	5.95	2.1/4	1	0.168	5/8	B	2.1/2	1.3/8	0.162	0.561	3/4	B	2.1/2	1.7/8	0.162	0.960	3/4	B	
52	6.43						2.1/2	1.3/8	0.162	0.561	3/4	B	2.1/2	1.7/8	0.162	0.960	3/4	B	
54	6.66	2.1/4	1	0.168	5/8	B													
60	7.38	2.1/4	1	0.168	3/4	B	2.1/2	1.3/8	0.162	0.561	3/4	B	2.1/2	1.7/8	0.162	0.960	3/4	B	
68	8.34						3.1/2	1.1/2	0.162	0.561	3/4	B	3.1/2	1.7/8	0.162	0.960	3/4	B	
70	8.58	2.1/4	1	0.168	3/4	B													
72	8.81	2.1/4	1	0.168	3/4	B	3.1/2	1.1/2	0.162	0.561	3/4	B	3.1/2	1.7/8	0.162	0.960	3/4	B	
76	9.29						3.1/2	1.1/2	0.162	0.561	3/4	B	3.1/2	1.7/8	0.162	0.960	3/4	B	
80	9.77	2.1/4	1	0.168	3/4	B													
84	10.25	2.1/4	1	0.168	3/4	B	3.1/2	1.1/2	0.162	0.561	3/4	B	3.1/2	1.7/8	0.162	0.960	3/4	B	
95	11.56						3.1/2	1.1/2	0.162	0.561	1	B	3.3/4	2.1/8	0.162	0.960	1	B	
96	11.68	2.1/4	1	0.168	3/4	B	3.1/2	1.1/2	0.162	0.561	1	B	3.3/4	2.1/8	0.162	0.960	1	B	
102	12.40						3.1/2	1.1/2	0.162	0.561	1	B	3.3/4	2.1/8	0.162	0.960	1	B	
112	13.59	2.1/4	1	0.168	3/4	B													

The full range of sprockets are also available with hardened teeth - contact CHALLENGE for further details

* has a recessed groove in the hub for chain clearance

ANSI Pilot Bore Sprockets

ANSI Pilot Bore Sprockets (all C45 steel construction)



Teeth	Outer Dia de	Simplex					Duplex					Triplex							
		Hub Dia dm	Length thro' Bore A	B1	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B2	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B3	Stock Bore D1	Type	
8	1.51	63/64*	7/8	0.284	1/2	B													
9	1.67	1.1/16*	7/8	0.284	1/2	B													
10	1.84	1.1/4*	7/8	0.284	1/2	B													
11	2.00	1.3/8*	7/8	0.284	1/2	B	1.7/16*	1.1/2	0.275	0.841	1/2	B	1.7/16*	2.1/8	0.275	1.407	1/2	B	
12	2.17	1.9/16*	7/8	0.284	1/2	B	1.9/16*	1.1/2	0.275	0.841	1/2	B	1.9/16*	2.1/8	0.275	1.407	1/2	B	
13	2.33	1.9/16	7/8	0.284	1/2	B	1.1/2	1.1/2	0.275	0.841	1/2	B	1.1/2	2.1/8	0.275	1.407	1/2	B	
14	2.49	1.11/16	7/8	0.284	1/2	B	1.11/16	1.1/2	0.275	0.841	1/2	B	1.11/16	2.1/8	0.275	1.407	1/2	B	
15	2.65	1.13/16	7/8	0.284	1/2	B	1.13/16	1.1/2	0.275	0.841	1/2	B	1.13/16	2.1/8	0.275	1.407	1/2	B	
16	2.81	2	7/8	0.284	5/8	B	2	1.1/2	0.275	0.841	5/8	B	2	2.1/8	0.275	1.407	5/8	B	
17	2.98	2.1/8	1	0.284	5/8	B	2.1/8	1.1/2	0.275	0.841	5/8	B	2.1/8	2.1/8	0.275	1.407	5/8	B	
18	3.14	2.5/16	1	0.284	5/8	B	2.5/16	1.1/2	0.275	0.841	5/8	B	2.5/16	2.1/8	0.275	1.407	5/8	B	
19	3.30	2.1/2	1	0.284	5/8	B	2.1/2	1.1/2	0.275	0.841	5/8	B	2.1/2	2.1/8	0.275	1.407	5/8	B	
20	3.46	2.5/8	1	0.284	5/8	B	2.5/8	1.5/8	0.275	0.841	5/8	B	2.5/8	2.1/4	0.275	1.407	5/8	B	
21	3.62	2.3/4	1	0.284	5/8	B	2.3/4	1.5/8	0.275	0.841	5/8	B	2.3/4	2.1/4	0.275	1.407	5/8	B	
22	3.78	2.7/8	1	0.284	5/8	B	2.7/8	1.5/8	0.275	0.841	5/8	B	2.7/8	2.1/4	0.275	1.407	5/8	B	
23	3.94	3	1	0.284	5/8	B	3	1.5/8	0.275	0.841	5/8	B	3	2.1/4	0.275	1.407	5/8	B	
24	4.10	3.1/4	1	0.284	5/8	B	3.1/4	1.5/8	0.275	0.841	5/8	B	3.1/4	2.1/4	0.275	1.407	5/8	B	
25	4.26	3.1/4	1	0.284	5/8	B	3.1/4	1.5/8	0.275	0.841	5/8	B	3.1/4	2.1/4	0.275	1.407	5/8	B	
26	4.42	3.1/4	1	0.284	5/8	B	3.1/4	1.5/8	0.275	0.841	5/8	B	3.1/4	2.1/4	0.275	1.407	5/8	B	
27	4.58	3.1/4	1	0.284	5/8	B													
28	4.74	3.1/4	1	0.284	5/8	B													
29	4.90	3.1/4	1	0.284	5/8	B													
30	5.06	3.1/4	1	0.284	5/8	B	3.1/4	1.5/8	0.275	0.841	7/8	B	3.1/4	2.1/4	0.275	1.407	7/8	B	
31	5.22	3.1/4	1	0.284	5/8	B													
32	5.38	3.1/4	1	0.284	5/8	B													
33	5.54	3.1/4	1	0.284	5/8	B													
34	5.70	3.1/4	1	0.284	5/8	B													
35	5.86	3.1/4	1	0.284	5/8	B	3.1/4	1.5/8	0.275	0.841	7/8	B	3.1/4	2.1/4	0.275	1.407	7/8	B	
36	6.02	3.1/4	1	0.284	5/8	B	3.3/4	1.5/8	0.275	0.841	15/16	B	3.3/4	2.3/8	0.275	1.407	15/16	B	
37	6.18	3.1/4	1	0.284	5/8	B													
38	6.33	3.1/4	1	0.284	5/8	B													
39	6.49	3.1/4	1	0.284	5/8	B													
40	6.65	3.1/2	1.1/8	0.284	3/4	B	3.3/4	1.3/4	0.275	0.841	15/16	B							
41	6.81	3.1/2	1.1/8	0.284	3/4	B													
42	6.97	3.1/2	1.1/8	0.284	3/4	B	3.3/4	1.3/4	0.275	0.841	15/16	B	3.3/4	2.3/8	0.275	1.407	15/16	B	
43	7.13	3.1/2	1.1/8	0.284	3/4	B													
44	7.29	3.1/2	1.1/8	0.284	3/4	B													
45	7.45	3.1/2	1.1/8	0.284	3/4	B	3.3/4	1.3/4	0.275	0.841	15/16	B							
46	7.61	3.1/2	1.1/8	0.284	3/4	B													
47	7.77	3.1/2	1.1/8	0.284	3/4	B													
48	7.93	3.1/2	1.1/8	0.284	3/4	B	3.3/4	1.3/4	0.275	0.841	15/16	B	3.3/4	2.3/8	0.275	1.407	15/16	B	
49	8.09	3.1/2	1.1/8	0.284	3/4	B													
50	8.25	3.1/2	1.1/8	0.284	3/4	B													
51	8.41	3.1/2	1.1/8	0.284	3/4	B													
52	8.57	3.1/2	1.1/8	0.284	3/4	B	3.3/4	1.3/4	0.275	0.841	15/16	B	3.3/4	2.3/8	0.275	1.407	15/16	B	
53	8.73	3.1/2	1.1/8	0.284	3/4	B													
54	8.89	3.1/2	1.1/8	0.284	3/4	B	3.3/4	1.3/4	0.275	0.841	15/16	B							
55	9.04	3.1/2	1.1/8	0.284	3/4	B													
56	9.20	3.1/2	1.1/8	0.284	3/4	B													
57	9.36	3.1/2	1.1/8	0.284	3/4	B													
58	9.52	3.1/2	1.1/8	0.284	3/4	B													
59	9.68	3.1/2	1.1/8	0.284	3/4	B													
60	9.84	3.1/2	1.1/8	0.284	3/4	B	3.3/4	1.3/4	0.275	0.841	15/16	B	3.3/4	2.3/8	0.275	1.407	15/16	B	
68	11.12			0.284															
70	11.43	4	1.1/4	0.284	3/4	B	4.1/4	2.1/8	0.275	0.841	1.3/16	B	4	2.5/8	0.275	1.407	1.3/16	B	
72	11.75	4	1.1/4	0.284	3/4	B	4.1/4	2.1/8	0.275	0.841	1.3/16	B	4	2.5/8	0.275	1.407	1.3/16	B	
76	12.39						4.1/4	2.1/8	0.275	0.841	1.3/16	B	4	2.5/8	0.275	1.407	1.3/16	B	
80	13.03	4	1.1/4	0.284	3/4	B	4.1/4	2.1/8	0.275	0.841	1.3/16	B	4.1/4	2.3/4	0.275	1.407	1.3/16	B	
84	13.66	4	1.1/4	0.284	3/4	B	4.1/4	2.1/8	0.275	0.841	1.3/16	B	4.1/4	2.3/4	0.275	1.407	1.3/16	B	
95	15.41						4.1/4	2.1/8	0.275	0.841	1.3/16	B	4.1/4	2.3/4	0.275	1.407	1.3/16	B	
96	15.57	4	1.1/4	0.284	1	B	4.1/4	2.1/8	0.275	0.841	1.3/16	B							
102	16.53						4.1/4	2.1/8	0.275	0.841	1.3/16	B	4.1/4	2.3/4	0.275	1.407	1.3/16	B	
112	18.12	4	1.1/4	0.284	1	B	4.1/4	2.1/8	0.275	0.841	1.3/16	B							

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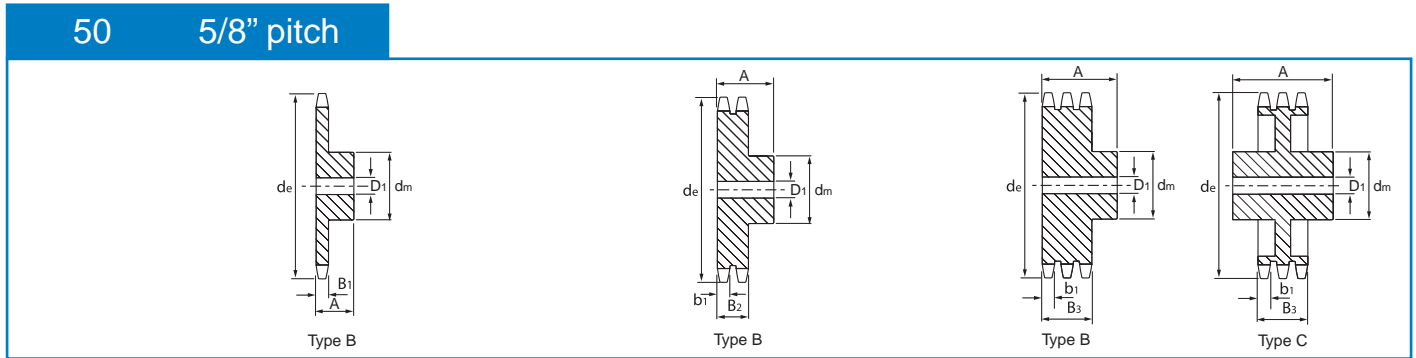
* has a recessed groove in the hub for chain clearance

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All dimensions in inches unless otherwise stated.

ANSI Pilot Bore Sprockets

ANSI Pilot Bore Sprockets (all C45 steel construction)



Teeth	Outer Dia de	Simplex					Duplex					Triplex						
		Hub Dia dm	Length thro' Bore A	B1	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B2	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B3	Stock Bore D1	Type
8	1.88	1.1/8*	1	0.343	5/8	B												
9	2.09	1.3/8*	1	0.343	5/8	B												
10	2.30	1.9/16*	1	0.343	5/8	B												
11	2.50	1.3/4*	1	0.343	5/8	B	1.15/32	1.3/4	0.332	1.045	5/8	B	1.15/32	2.1/2	0.332	1.758	5/8	B
12	2.71	1.63/64*	1	0.343	5/8	B	1.11/16	1.3/4	0.332	1.045	5/8	B	1.11/16	2.1/2	0.332	1.758	5/8	B
13	2.91	1.7/8	1	0.343	5/8	B	1.7/8	1.3/4	0.332	1.045	5/8	B	1.7/8	2.1/2	0.332	1.758	5/8	B
14	3.11	2.1/8	1	0.343	5/8	B	2.1/16	1.3/4	0.332	1.045	5/8	B	2.1/16	2.1/2	0.332	1.758	5/8	B
15	3.32	2.3/8	1	0.343	5/8	B	2.5/16	1.3/4	0.332	1.045	3/4	B	2.5/16	2.1/2	0.332	1.758	3/4	B
16	3.52	2.1/2	1	0.343	5/8	B	2.1/2	1.3/4	0.332	1.045	3/4	B	2.1/2	2.1/2	0.332	1.758	3/4	B
17	3.72	2.11/16	1	0.343	5/8	B	2.11/16	1.3/4	0.332	1.045	3/4	B	2.11/16	2.1/2	0.332	1.758	3/4	B
18	3.92	2.7/8	1	0.343	5/8	B	2.15/16	1.3/4	0.332	1.045	3/4	B	2.15/16	2.1/2	0.332	1.758	3/4	B
19	4.12	3	1	0.343	5/8	B	3.1/8	1.3/4	0.332	1.045	1	B	3.1/8	2.1/2	0.332	1.758	1	B
20	4.32	3	1	0.343	3/4	B	3.1/4	1.3/4	0.332	1.045	1	B	3.1/4	2.5/8	0.332	1.758	1	B
21	4.52	3	1	0.343	3/4	B	3.1/2	1.3/4	0.332	1.045	1	B	3.1/2	2.5/8	0.332	1.758	1	B
22	4.72	3	1	0.343	3/4	B	3.9/16	1.7/8	0.332	1.045	1	B	3.9/16	2.5/8	0.332	1.758	1	B
23	4.92	3	1	0.343	3/4	B	3.5/8	1.7/8	0.332	1.045	1	B	3.5/8	2.5/8	0.332	1.758	1	B
24	5.12	3	1.1/4	0.343	3/4	B	3.5/8	1.7/8	0.332	1.045	1	B	3.5/8	2.5/8	0.332	1.758	1	B
25	5.32	3	1.1/4	0.343	3/4	B	3.5/8	1.7/8	0.332	1.045	1	B	3.5/8	2.5/8	0.332	1.758	1	B
26	5.52	3	1.1/4	0.343	3/4	B	3.3/4	1.7/8	0.332	1.045	1	B	3.3/4	2.5/8	0.332	1.758	1	B
27	5.72	3	1.1/4	0.343	3/4	B												
28	5.92	3	1.1/4	0.343	3/4	B												
29	6.12	3	1.1/4	0.343	3/4	B												
30	6.32	3.1/4	1.1/4	0.343	3/4	B	3.3/4	1.7/8	0.332	1.045	1	B	3.3/4	2.5/8	0.332	1.758	1	B
31	6.52	3.1/4	1.1/4	0.343	3/4	B												
32	6.72	3.1/4	1.1/4	0.343	3/4	B	3.3/4	1.7/8	0.332	1.045	1	B						
33	6.92	3.1/4	1.1/4	0.343	3/4	B												
34	7.12	3.1/4	1.1/4	0.343	3/4	B												
35	7.32	3.1/4	1.1/4	0.343	3/4	B	3.3/4	1.7/8	0.332	1.045	1	B	3.3/4	2.5/8	0.332	1.758	1	B
36	7.52	3.1/4	1.1/4	0.343	3/4	B	4	2.1/8	0.332	1.045	1.3/16	B	4	2.3/4	0.332	1.758	1.3/16	B
37	7.72	3.1/4	1.1/4	0.343	3/4	B												
38	7.92	3.1/4	1.1/4	0.343	3/4	B												
39	8.12	3.1/4	1.1/4	0.343	3/4	B												
40	8.32	3.1/4	1.1/4	0.343	3/4	B	4	2.1/8	0.332	1.045	1.3/16	B						
41	8.52	3.1/4	1.1/4	0.343	3/4	B												
42	8.72	3.1/4	1.1/4	0.343	3/4	B	4	2.1/8	0.332	1.045	1.3/16	B	4	2.3/4	0.332	1.758	1.3/16	B
43	8.91	3.1/4	1.1/4	0.343	3/4	B												
44	9.11	3.1/4	1.1/4	0.343	3/4	B												
45	9.31	3.3/4	1.1/4	0.343	3/4	B	4	2.1/8	0.332	1.045	1.3/16	B						
46	9.51	3.3/4	1.1/4	0.343	1	B												
47	9.71	3.3/4	1.1/4	0.343	1	B												
48	9.91	3.3/4	1.1/4	0.343	1	B	4.1/4	2.3/8	0.332	1.045	1.3/16	B	4	3.1/8	0.332	1.758	1.3/16	B
49	10.11	3.3/4	1.1/4	0.343	1	B												
50	10.31	3.3/4	1.1/4	0.343	1	B												
51	10.51	3.3/4	1.1/4	0.343	1	B												
52	10.71	3.3/4	1.1/4	0.343	1	B	4.1/4	2.3/8	0.332	1.045	1.3/16	B	4	3.1/8	0.332	1.758	1.3/16	B
53	10.91	3.3/4	1.1/4	0.343	1	B												
54	11.11	3.3/4	1.1/4	0.343	1	B	4.1/4	2.3/8	0.332	1.045	1.3/16	B						
55	11.31	3.3/4	1.1/4	0.343	1	B												
56	11.50	3.3/4	1.1/4	0.343	1	B												
57	11.70	3.3/4	1.1/4	0.343	1	B												
58	11.90	3.3/4	1.1/4	0.343	1	B												
59	12.10	3.3/4	1.1/4	0.343	1	B												
60	12.30	3.3/4	1.1/4	0.343	1	B	4.1/2	2.3/8	0.332	1.045	1.5/16	B	4.1/2	3.1/8	0.332	1.758	1.5/16	B
68	13.89						4.1/2	2.3/8	0.332	1.045	1.5/16	B	4.1/2	3.1/8	0.332	1.758	1.5/16	B
70	14.29	3.3/4	1.3/4	0.343	1	B												
72	14.69	3.3/4	1.3/4	0.343	1	B	4.1/2	2.3/8	0.332	1.045	1.5/16	B	4.3/4	3.1/2	0.332	1.758	1.5/16	C
76	15.49	3.3/4	1.3/4	0.343	1	B	4.1/2	2.3/8	0.332	1.045	1.5/16	B	4.3/4	3.1/2	0.332	1.758	1.5/16	C
80	16.28	4.1/4	1.3/4	0.343	1	B												
84	17.08	4.1/4	1.3/4	0.343	1	B	4.1/2	2.3/8	0.332	1.045	1.5/16	B	4.3/4	3.1/2	0.332	1.758	1.5/16	C
95	19.27	4.1/4	1.3/4	0.343	1	B	4.1/2	2.3/8	0.332	1.045	1.5/16	B	4.3/4	3.3/4	0.332	1.758	1.5/16	C
96	19.47	4.1/4	1.3/4	0.343	1	B	4.1/2	2.3/8	0.332	1.045	1.5/16	B						
102	20.66						4.1/2	2.3/8	0.332	1.045	1.5/16	B	4.3/4	3.3/4	0.332	1.758	1.5/16	C
112	22.65	4.1/4	1.3/4	0.343	1	B	5.1/4	2.3/8	0.332	1.045	1.5/16	B						

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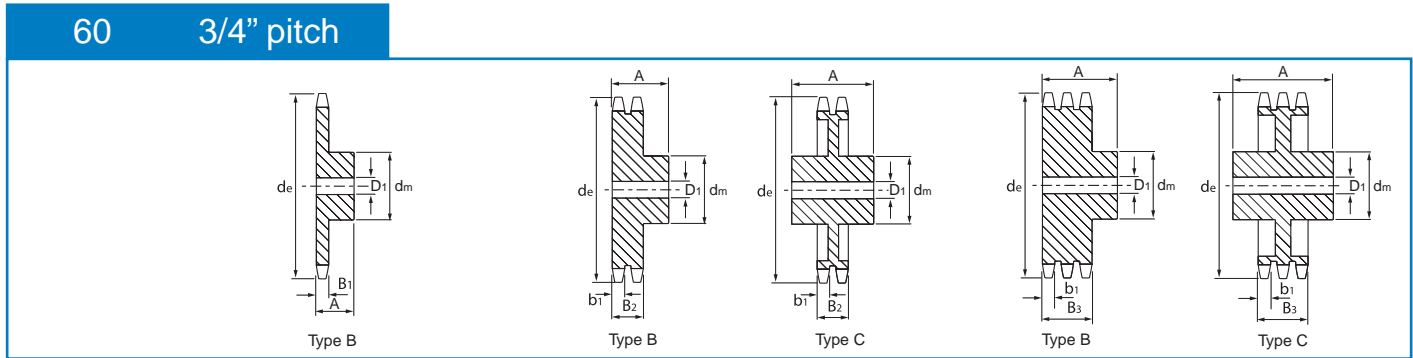
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ANSI Pilot Bore Sprockets

ANSI Pilot Bore Sprockets (all C45 steel construction)



Teeth	Outer Dia de	Simplex						Duplex						Triplex					
		Hub Dia dm	Length thro' Bore A	B1	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B2	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B3	Stock Bore D1	Type	
8	2.26	1.15/32*	1.1/4	0.459	5/8	B													
9	2.51	1.9/16*	1.1/4	0.459	3/4	B													
10	2.76	1.15/16*	1.1/4	0.459	3/4	B													
11	3.00	2.1/16*	1.1/4	0.459	3/4	B	1.13/16	2.1/8	0.444	1.341	1	B	1.13/16	3	0.444	2.238	1	B	
12	3.25	2.3/8*	1.1/4	0.459	3/4	B	2.1/8	2.1/8	0.444	1.341	1	B	2.1/8	3	0.444	2.238	1	B	
13	3.49	2.11/32	1.1/4	0.459	3/4	B	2.1/4	2.1/8	0.444	1.341	1	B	2.1/4	3	0.444	2.238	1	B	
14	3.74	2.9/16	1.1/4	0.459	3/4	B	2.1/2	2.1/8	0.444	1.341	1	B	2.1/2	3	0.444	2.238	1	B	
15	3.98	2.7/8	1.1/4	0.459	3/4	B	2.13/16	2.1/8	0.444	1.341	1	B	2.13/16	3	0.444	2.238	1	B	
16	4.22	3.1/16	1.1/4	0.459	3/4	B	3	2.1/8	0.444	1.341	1	B	3	3	0.444	2.238	1	B	
17	4.46	3.1/4	1.1/4	0.459	3/4	B	3.1/4	2.1/8	0.444	1.341	1	B	3.1/4	3	0.444	2.238	1	B	
18	4.70	3.1/2	1.1/4	0.459	3/4	B	3.1/2	2.1/8	0.444	1.341	1	B	3.1/2	3	0.444	2.238	1	B	
19	4.95	3.1/2	1.1/4	0.459	3/4	B	3.11/16	2.1/8	0.444	1.341	1	B	3.11/16	3	0.444	2.238	1	B	
20	5.19	3.7/8	1.1/4	0.459	3/4	B	3.3/4	2.1/8	0.444	1.341	1	B	3.3/4	3	0.444	2.238	1	B	
21	5.43	4	1.1/4	0.459	3/4	B	4.1/8	2.1/8	0.444	1.341	1	B	4.1/8	3	0.444	2.238	1	B	
22	5.67	4	1.1/4	0.459	3/4	B	4.1/4	2.1/8	0.444	1.341	1	B	4.1/4	3	0.444	2.238	1	B	
23	5.91	4	1.1/4	0.459	3/4	B	4.1/4	2.1/8	0.444	1.341	1	B	4.1/4	3	0.444	2.238	1	B	
24	6.15	4	1.1/4	0.459	3/4	B	4.1/4	2.1/8	0.444	1.341	1	B	4.1/4	3	0.444	2.238	1	B	
25	6.39	4	1.1/4	0.459	3/4	B	4.1/4	2.1/8	0.444	1.341	1	B	4.1/4	3	0.444	2.238	1	B	
26	6.63	4	1.1/4	0.459	3/4	B	4.1/4	2.1/8	0.444	1.341	1	B	4.1/4	3	0.444	2.238	1	B	
27	6.87	4	1.1/4	0.459	3/4	B													
28	7.11	4	1.1/4	0.459	3/4	B													
29	7.35	4	1.1/4	0.459	3/4	B													
30	7.59	4	1.1/4	0.459	3/4	B	4.1/4	2.1/8	0.444	1.341	1	B	4.1/4	3	0.444	2.238	1	B	
31	7.83	4	1.1/4	0.459	3/4	B													
32	8.07	4	1.1/4	0.459	3/4	B	4.1/2	2.3/8	0.444	1.341	1.1/4	B							
33	8.30	4	1.1/4	0.459	1	B													
34	8.54	4	1.1/4	0.459	1	B													
35	8.78	4	1.1/4	0.459	1	B	4.1/2	2.3/8	0.444	1.341	1.1/4	B	4.1/2	3.1/4	0.444	2.238	1.1/4	B	
36	9.02	4	1.1/4	0.459	1	B	4.1/2	2.3/8	0.444	1.341	1.1/4	B	4.1/2	3.1/4	0.444	2.238	1.1/4	B	
37	9.26	4	1.1/4	0.459	1	B													
38	9.50	4.1/4	1.1/4	0.459	1	B													
39	9.74	4.1/4	1.1/4	0.459	1	B													
40	9.98	4.1/4	1.1/4	0.459	1	B	4.3/4	2.3/4	0.444	1.341	1.1/4	B							
41	10.22	4.1/4	1.1/4	0.459	1	B													
42	10.46	4.1/4	1.1/4	0.459	1	B	4.3/4	2.3/4	0.444	1.341	1.1/4	B	4.3/4	3.5/8	0.444	2.238	1.1/4	B	
43	10.70	4.1/4	1.1/4	0.459	1	B													
44	10.94	4.1/4	1.1/4	0.459	15/16	B													
45	11.18	4.1/4	1.1/4	0.459	15/16	B	4.3/4	2.3/4	0.444	1.341	1.1/4	B	4.3/4	3.5/8	0.444	2.238	1.1/4	B	
46	11.42	4.1/4	1.1/4	0.459	15/16	B													
47	11.65	4.1/4	1.1/4	0.459	15/16	B													
48	11.89	4.1/4	1.1/4	0.459	15/16	B													
49	12.13	4.1/4	1.1/4	0.459	15/16	B													
50	12.37	4.1/4	1.1/4	0.459	15/16	B													
51	12.61	4.1/4	1.1/4	0.459	15/16	B													
52	12.85	4.1/4	1.1/4	0.459	15/16	B	4.3/4	2.3/4	0.444	1.341	1.1/4	B	4.3/4	3.1/2	0.444	2.238	1.1/4	C	
53	13.09	4.1/4	1.1/4	0.459	15/16	B													
54	13.33	4.1/4	1.3/4	0.459	15/16	B													
55	13.57	4.1/4	1.3/4	0.459	1.1/4	B													
56	13.81	4.1/4	1.3/4	0.459	1.1/4	B													
57	14.04	4.1/4	1.3/4	0.459	1.1/4	B													
58	14.28	4.1/4	1.3/4	0.459	1.1/4	B													
59	14.52	4.1/4	1.3/4	0.459	1.1/4	B													
60	14.76	4.1/4	1.3/4	0.459	1.1/4	B	4.3/4	2.3/4	0.444	1.341	1.1/4	B	4.3/4	3.1/2	0.444	2.238	1.1/4	C	
64	15.72	4.1/4	1.3/4	0.459	1.1/4	B													
65	15.96	4.1/4	1.3/4	0.459	1.1/4	B													
68	16.67	4.1/4	1.3/4	0.459	1.1/4	B	5	3	0.444	1.341	1.1/4	C	5	3.1/2	0.444	2.238	1.1/4	C	
70	17.15	4.1/4	1.3/4	0.459	1.1/4	B													
72	17.63	4.1/4	2	0.459	1.1/4	B	5	3	0.444	1.341	1.1/4	C	5	3.1/2	0.444	2.238	1.1/4	C	
76	18.58	4.1/4	2	0.459	1.1/4	B	5	3	0.444	1.341	1.1/4	C	5.1/2	3.1/2	0.444	2.238	1.1/2	C	
80	19.54	4.1/4	2	0.459	1.1/4	B													
84	20.49	4.3/4	2	0.459	1.1/4	B													
90	21.93	5	2.1/4	0.459	1.1/4	B													
95	23.12																		
96	23.36	5.1/2	2.1/4	0.459	1.1/4	B	5.1/2	3.1/2	0.444	1.341	1.1/4	C	5.1/2	4	0.444	2.238	1.1/2	C	
112	27.18	5.1/2	2.1/4	0.459	1.1/4	B													

The full range of sprockets are also available with hardened teeth - contact CHALLENGE for further details

* has a recessed groove in the hub for chain clearance

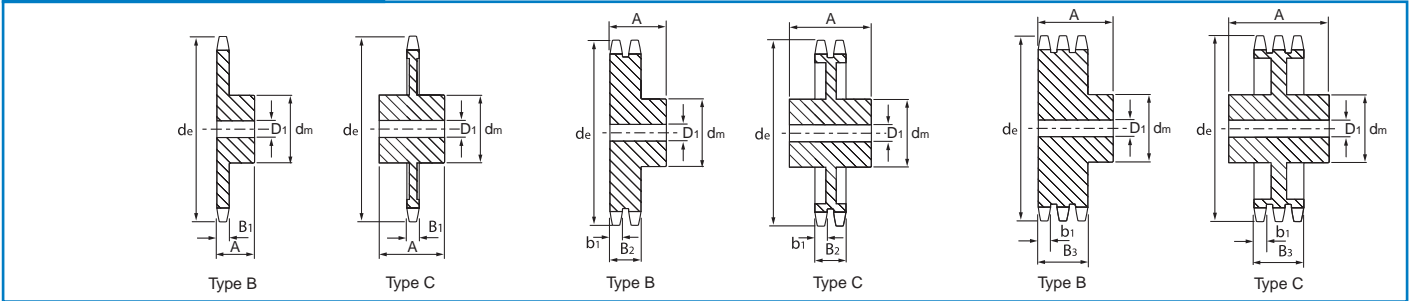
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All dimensions in inches unless otherwise stated.

ANSI Pilot Bore Sprockets

ANSI Pilot Bore Sprockets (all C45 steel construction)

80 1" pitch



Teeth	Outer Dia de	Simplex					Duplex					Triplex							
		Hub Dia dm	Length thro' Bore A	B1	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B2	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B3	Stock Bore D1	Type	
8	3.01	1.15/16*	1.5/8	0.575	1	B													
9	3.35	2.1/4*	1.5/8	0.575	1	B													
10	3.68	2.9/16*	1.5/8	0.575	1	B	2.9/16*	2.3/4	0.557	1.710	1	B	2.1/2	3.5/8	0.557	2.863	1	B	
11	4.01	2.13/16*	1.5/8	0.575	1	B	2.1/2	2.1/2	0.557	1.710	1	B	2.27/32	3.5/8	0.557	2.863	1	B	
12	4.33	3.1/8*	1.5/8	0.575	1	B	2.27/32	2.1/2	0.557	1.710	1	B	3.5/32	3.5/8	0.557	2.863	1	B	
13	4.66	3	1.1/2	0.575	1	B	3.5/32	2.1/2	0.557	1.710	1	B	3.15/32	3.5/8	0.557	2.863	1	B	
14	4.98	3.1/4	1.1/2	0.575	1	B	3.15/32	2.1/2	0.557	1.710	1	B	3.51/64	3.5/8	0.557	2.863	1	B	
15	5.30	3.13/16	1.1/2	0.575	1	B	3.51/64	2.1/2	0.557	1.710	1	B	4	3.7/8	0.557	2.863	1	B	
16	5.63	4	1.1/2	0.575	1	B	4	2.3/4	0.557	1.710	1	B	4.27/64	3.7/8	0.557	2.863	1	B	
17	5.95	4	1.1/2	0.575	1	B	4.27/64	2.3/4	0.557	1.710	1	B	4.47/64	3.7/8	0.557	2.863	1	B	
18	6.27	4.1/4	1.1/2	0.575	1	B	4.47/64	2.3/4	0.557	1.710	1	B	5	3.7/8	0.557	2.863	1	B	
19	6.59	4.1/4	1.1/2	0.575	1	B	5	2.3/4	0.557	1.710	1	B	5	3.7/8	0.557	2.863	1	B	
20	6.91	4.1/4	1.1/2	0.575	1	B	5	2.3/4	0.557	1.710	1	B	5	3.7/8	0.557	2.863	1	B	
21	7.24	4.1/4	1.3/4	0.575	1	B	5	2.3/4	0.557	1.710	1	B	5	3.7/8	0.557	2.863	1	B	
22	7.56	4.1/4	1.3/4	0.575	1	B	5	2.3/4	0.557	1.710	1	B	5	3.7/8	0.557	2.863	1	B	
23	7.88	4.1/4	1.3/4	0.575	1	B	5	2.3/4	0.557	1.710	1	B	5	3.7/8	0.557	2.863	1	B	
24	8.20	4.1/4	1.3/4	0.575	1	B	5.1/4	2.3/4	0.557	1.710	1	B	5.1/4	3.7/8	0.557	2.863	1	B	
25	8.52	4.1/4	1.3/4	0.575	1	B	5.1/4	3	0.557	1.710	1	B	5.1/4	3.7/8	0.557	2.863	1	B	
26	8.84	4.3/4	2	0.575	1.1/4	B	5.1/4	3	0.557	1.710	1	B	5.1/4	3.7/8	0.557	2.863	1	B	
27	9.16	4.3/4	2	0.575	1.1/4	B													
28	9.48	4.3/4	2	0.575	1.1/4	B													
29	9.80	4.3/4	2	0.575	1.3/16	B													
30	10.11	4.3/4	2	0.575	1.3/16	B	5.3/4	3	0.557	1.710	1.1/4	B	5.3/4	4.1/4	0.557	2.863	1.1/4	B	
31	10.43	4.3/4	2	0.575	1.3/16	B													
32	10.75	4.3/4	2	0.575	1.3/16	B	5.3/4	3	0.557	1.710	1.1/4	B							
33	11.07	4.3/4	2	0.575	1.3/16	B													
34	11.39	4.3/4	2	0.575	1.3/16	B													
35	11.71	4.3/4	2	0.575	1.3/16	B	5.3/4	3	0.557	1.710	1.1/4	B	5.3/4	4.1/4	0.557	2.863	1.1/4	B	
36	12.03	4.3/4	2	0.575	1.3/16	B	5.3/4	3.1/8	0.557	1.710	1.1/4	B	5.3/4	4.1/4	0.557	2.863	1.1/4	B	
37	12.35	4.3/4	2	0.575	1.3/16	B													
38	12.67	4.3/4	2	0.575	1.3/16	B													
39	12.99	4.3/4	2	0.575	1.3/16	B													
40	13.31	4.3/4	2	0.575	1.3/16	B													
41	13.63	4.3/4	2	0.575	1.1/4	B													
42	13.94	4.3/4	2	0.575	1.1/4	B	5.3/4	3.1/8	0.557	1.710	1.1/4	B	6	4.1/2	0.557	2.863	1.1/4	C	
43	14.26	4.3/4	2	0.575	1.1/4	B													
44	14.58	4.3/4	2	0.575	1.1/4	B													
45	14.90	4.3/4	2	0.575	1.1/4	B	5.3/4	3.1/8	0.557	1.710	1.1/4	B	6	4.1/2	0.557	2.863	1.1/4	C	
46	15.22	4.3/4	2	0.575	1.1/4	B													
47	15.54	4.3/4	2	0.575	1.1/4	B													
48	15.86	4.3/4	2	0.575	1.1/4	B													
49	16.18	4.3/4	2	0.575	1.1/4	B													
50	16.50	4.3/4	2	0.575	1.1/4	B													
51	16.81	4.3/4	2	0.575	1.1/4	B													
52	17.13	4.3/4	2	0.575	1.1/4	B	5.3/4	3.3/4	0.557	1.710	1.1/2	C	6	4.1/2	0.557	2.863	1.1/2	C	
53	17.45	4.3/4	2	0.575	1.1/4	B													
54	17.77	5.1/4	2	0.575	1.1/4	B													
55	18.09	5.1/4	2	0.575	1.1/4	B													
56	18.41	5.1/4	2	0.575	1.1/4	B													
57	18.73	5.1/4	2	0.575	1.1/4	B													
58	19.04	5.1/4	2	0.575	1.1/4	B													
59	19.36	5.1/4	2	0.575	1.1/4	B													
60	19.68	5.1/4	2	0.575	1.1/4	B	5.3/4	3.3/4	0.557	1.710	1.1/2	C	6.1/4	4.3/4	0.557	2.863	1.1/2	C	
65	21.27	5.1/4	2	0.575	1.1/4	B													
68	22.23						6	4	0.557	1.710	1.1/2	C	6.1/4	4.3/4	0.557	2.863	1.1/2	C	
70	22.87	6.1/4	3.1/2	0.575	1.1/2	C													
72	23.50	6.1/4	3.1/2	0.575	1.1/2	C													
76	24.78	6.1/4	3.1/2	0.575	1.1/2	C	6	4	0.557	1.710	1.1/2	C	6.1/4	4.3/4	0.557	2.863	1.1/2	C	
80	26.05	6.1/4	3.1/2	0.575	1.1/2	C													
84	27.33	6.1/4	3.1/2	0.575	1.1/2	C													
90	29.24	6.1/4	3.1/2	0.575	1.1/2	C													
95	30.83						6	4.1/4	0.557	1.710	1.1/2	C	6.3/4	5	0.557	2.863	1.1/2	C	
96	31.15	6.1/4	3.1/2	0.575	1.1/2	C													
112	36.24	6.1/4	3.1/2	0.575	1.1/2	C													

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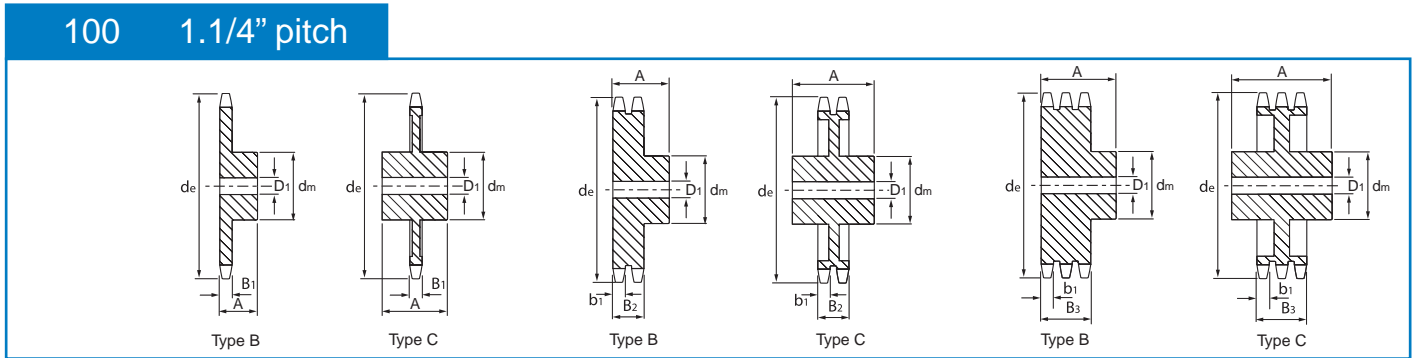
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ANSI Pilot Bore Sprockets

ANSI Pilot Bore Sprockets (all C45 steel construction)



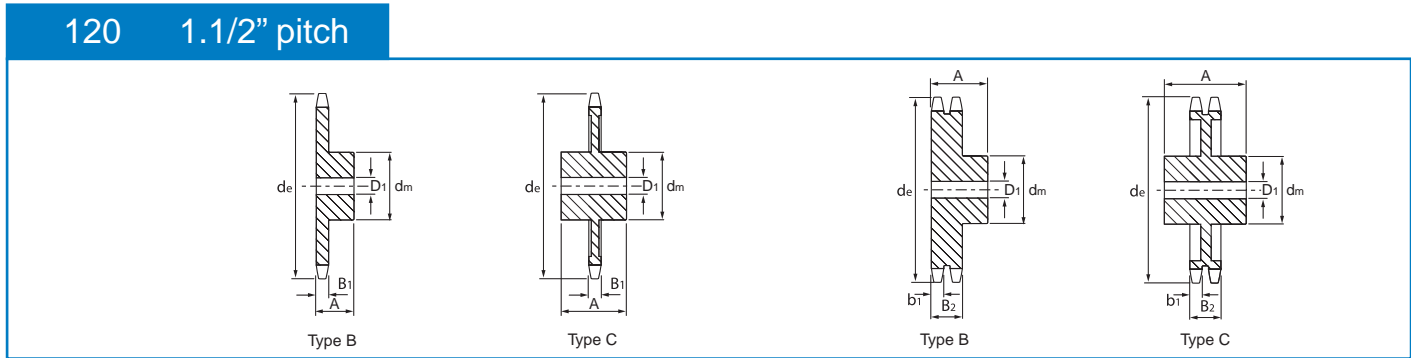
Teeth	Outer Dia de	Simplex					Duplex						Triplex						
		Hub Dia dm	Length thro' Bore A	B1	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B2	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B3	Stock Bore D1	Type	
8	3.77	2.7/16*	1.7/8	0.692	1	B													
9	4.18	2.13/16*	1.7/8	0.692	1	B	2.3/8	2.7/8	0.669	2.077	1	B							
10	4.60	3.1/4*	1.7/8	0.692	1	B	2.3/4	2.7/8	0.669	2.077	1	B							
11	5.01	3.9/16*	1.7/8	0.692	1	B	3.1/8	2.7/8	0.669	2.077	1	B	3.1/8	4.1/4	0.669	3.485	1	B	
12	5.42	4*	1.7/8	0.692	1	B	3.3/8	2.7/8	0.669	2.077	1.1/8	B	3.3/8	4.1/4	0.669	3.485	1.1/8	B	
13	5.82	3.7/8	1.5/8	0.692	1	B	3.13/16	2.7/8	0.669	2.077	1.1/8	B	3.13/16	4.1/4	0.669	3.485	1.1/8	B	
14	6.23	4.3/16	1.5/8	0.692	1.1/4	B	4.3/16	2.7/8	0.669	2.077	1.1/8	B	4.3/16	4.1/4	0.669	3.485	1.1/8	B	
15	6.63	4.1/2	1.3/4	0.692	1.1/4	B	4.5/8	3.1/8	0.669	2.077	1.1/4	B	4.5/8	4.1/2	0.669	3.485	1.1/4	B	
16	7.03	4.1/2	1.3/4	0.692	1.5/16	B	5	3.1/8	0.669	2.077	1.1/4	B	5	4.1/2	0.669	3.485	1.1/4	B	
17	7.44	4.1/2	1.3/4	0.692	1.5/16	B	5.1/4	3.1/8	0.669	2.077	1.1/4	B	5.1/4	4.1/2	0.669	3.485	1.1/4	B	
18	7.84	4.1/2	1.3/4	0.692	1.5/16	B	5.1/4	3.1/8	0.669	2.077	1.1/4	B	5.1/4	4.3/4	0.669	3.485	1.1/4	B	
19	8.24	4.1/2	2	0.692	1.5/16	B	5.1/2	3.3/8	0.669	2.077	1.1/4	B	5.1/2	4.3/4	0.669	3.485	1.1/4	B	
20	8.64	4.1/2	2	0.692	1.5/16	B	5.1/2	3.3/8	0.669	2.077	1.1/4	B	5.1/2	4.3/4	0.669	3.485	1.1/4	B	
21	9.04	4.1/2	2	0.692	1.5/16	B	5.1/2	3.3/8	0.669	2.077	1.1/4	B	5.1/2	4.3/4	0.669	3.485	1.1/4	B	
22	9.44	4.1/2	2	0.692	1.5/16	B	5.1/2	3.3/8	0.669	2.077	1.1/4	B	5.1/2	4.3/4	0.669	3.485	1.1/4	B	
23	9.84	4.1/2	2	0.692	1.1/4	B	5.1/2	3.3/8	0.669	2.077	1.1/4	B	5.1/2	4.3/4	0.669	3.485	1.1/4	B	
24	10.25	4.1/2	2	0.692	1.1/4	B	5.3/4	3.3/8	0.669	2.077	1.1/4	B	5.3/4	4.3/4	0.669	3.485	1.1/4	B	
25	10.65	4.1/2	2	0.692	1.1/4	B	5.3/4	3.3/8	0.669	2.077	1.1/4	B	5.3/4	4.3/4	0.669	3.485	1.1/4	B	
26	11.05	5	2	0.692	1.1/4	B	5.3/4	3.3/8	0.669	2.077	1.1/2	B	5.3/4	4.3/4	0.669	3.485	1.1/2	B	
27	11.44	5	2	0.692	1.1/4	B													
28	11.84	5	2	0.692	1.1/4	B													
29	12.24	5	2	0.692	1.1/4	B													
30	12.64	5	2	0.692	1.1/4	B	5.3/4	3.3/8	0.669	2.077	1.1/2	B	5.3/4	4.3/4	0.669	3.485	1.1/2	B	
32	13.44	5	2	0.692	1.1/4	B													
35	14.64	5	2.1/2	0.692	1.1/4	B	6	4.1/4	0.669	2.077	1.1/2	C	6	5	0.669	3.485	1.1/2	C	
36	15.04	5	2.1/2	0.692	1.1/4	B													
38	15.84	5	2.1/2	0.692	1.1/4	B													
39	16.23	5	2.1/2	0.692	1.1/4	B													
40	16.63	5	2.1/2	0.692	1.1/4	B													
42	17.43	5	2.1/2	0.692	1.1/4	B													
45	18.63	5	2.1/2	0.692	1.1/2	B	6	4.1/2	0.669	2.077	1.1/2	C	6	5	0.669	3.485	1.1/2	C	
48	19.82	6	2.1/2	0.692	1.1/2	B													
54	22.21	6	3.1/4	0.692	1.1/2	C													
60	24.60	6	3.1/4	0.692	1.1/2	C	7.1/2	5	0.669	2.077	1.1/2	C	7.1/2	5	0.669	3.485	1.1/2	C	
70	28.58	7	3.3/4	0.692	1.1/2	C	7.1/2	5	0.669	2.077	1.1/2	C	7.1/2	5	0.669	3.485	1.1/2	C	
72	29.38	7	3.3/4	0.692	1.1/2	C													
76	30.97	7	3.3/4	0.692	1.1/2	C													
80	32.57	7	3.3/4	0.692	1.1/2	C	7.1/2	5	0.669	2.077	1.1/2	C	7.1/2	5	0.669	3.485	1.1/2	C	
84	34.16	7	3.3/4	0.692	1.1/2	C													
90	36.55	7	3.3/4	0.692	1.1/2	C													
96	38.93	7	4.1/2	0.692	1.1/2	C													

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* has a recessed groove in the hub for chain clearance

ANSI Pilot Bore Sprockets

ANSI Pilot Bore Sprockets (all C45 steel construction)



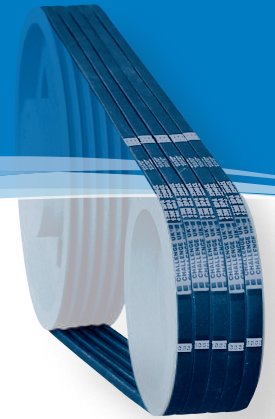
Teeth	Outer Dia de	Simplex					Duplex					
		Hub Dia dm	Length thro' Bore A	B1	Stock Bore D1	Type	Hub Dia dm	Length thro' Bore A	b1	B2	Stock Bore D1	Type
9	5.02	3.3/8*	2.1/4	0.924	1.3/8	B						
10	5.52	3.3/4*	2.1/4	0.924	1.3/8	B						
11	6.01	3.9/16	2.1/8	0.924	1.3/8	B	3.9/16	3.3/4	0.894	2.683	1.1/2	B
12	6.50	4.1/8	2.1/8	0.924	1.3/8	B	4.1/16	3.3/4	0.894	2.683	1.1/2	B
13	6.99	4.9/16	2.1/4	0.924	1.3/8	B	4.1/2	3.3/4	0.894	2.683	1.1/2	B
14	7.47	4.3/4	2.1/4	0.924	1.3/8	B	5	3.3/4	0.894	2.683	1.1/2	B
15	7.96	4.3/4	2.3/8	0.924	1.1/4	B	5.1/4	3.3/4	0.894	2.683	1.1/2	B
16	8.44	5.1/4	2.3/8	0.924	1.1/4	B	5.1/4	3.3/4	0.894	2.683	1.1/2	B
17	8.92	5.1/4	2.3/8	0.924	1.1/4	B	5.1/4	3.3/4	0.894	2.683	1.1/2	B
18	9.41	5.1/4	2.3/8	0.924	1.1/4	B	5.1/4	3.3/4	0.894	2.683	1.1/2	B
19	9.89	5.1/4	2.3/8	0.924	1.1/4	B	5.1/4	3.3/4	0.894	2.683	1.1/2	B
20	10.37	5.1/4	2.3/8	0.924	1.1/4	B	5.1/2	3.3/4	0.894	2.683	1.1/2	B
21	10.85	5.1/4	2.3/8	0.924	1.1/4	B	5.1/2	3.3/4	0.894	2.683	1.1/2	B
22	11.33	5.1/4	2.3/8	0.924	1.1/4	B	5.3/4	4	0.894	2.683	1.1/2	B
23	11.81	5.1/4	2.3/8	0.924	1.1/4	B	6.1/2	4	0.894	2.683	1.1/2	B
24	12.29	5.1/4	2.3/8	0.924	1.1/4	B	6.1/2	4	0.894	2.683	1.1/2	B
25	12.77	5.1/4	2.3/8	0.924	1.1/4	B	6.1/2	4	0.894	2.683	1.1/2	B
26	13.25	6	2.1/2	0.924	1.1/2	B	6.1/2	4	0.894	2.683	1.1/2	B
28	14.21	6	2.1/2	0.924	1.1/2	B						
30	15.17	6	2.1/2	0.924	1.1/2	B	6.1/2	4	0.894	2.683	1.1/2	B
32	16.13	6	2.1/2	0.924	1.1/2	B						
35	17.57	6	2.1/2	0.924	1.1/2	B	7.1/2	6	0.894	2.683	1.1/2	C
36	18.05	6	2.1/2	0.924	1.1/2	B						
40	19.96	6	3.3/4	0.924	1.1/2	C						
42	20.92	6	3.3/4	0.924	1.1/2	C						
45	22.35	6	3.3/4	0.924	1.1/2	C	7.1/2	6	0.894	2.683	1.1/2	C
48	23.79	6	4	0.924	1.1/2	C						
54	26.65	6	4	0.924	1.1/2	C						
60	29.52	7	4	0.924	1.1/2	C	9.1/2	6.1/4	0.894	2.683	1.1/2	C
70	34.30	7.1/2	4.1/2	0.924	1.1/2	C						
80	39.08	7.1/2	4.1/2	0.924	1.1/2	C						

The full range of sprockets are also available with hardened teeth - contact CHALLENGE for further details

* has a recessed groove in the hub for chain clearance

CHALLENGE®





Features

'V' and Wedge Belts (CRE & Envelope Type)

- Belts comply with ISO, BS, DIN and RMA standards
- Factory complies with ISO 9001 standards
- High quality polyester cords used to ensure minimum stretch
- Wide range of international standard lengths
- Excellent anti-static, oil and heat resistant properties complying with ISO 1813
- Comply with American Petroleum Institute standards

Cogged Raw Edge (CRE) Belts

- Available in Wedge sections SPZX, SPAX, SPBX and SPCX
- Available in Classical belt sections 'AX' and 'BX'
- Ideal for small pulleys
- Conform to all major international standards

Envelope Type Belts

- Available in Wedge sections SPZ, SPA, SPB and SPC
- Available in classical 'V' sections Z(M), A, B, C and D
- Treated envelope covering
- Conform to all major international standards

Classical Timing Belts

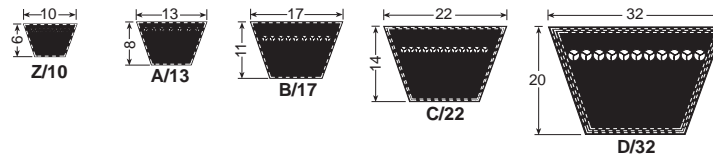
- The original synchronous belt
- Available in XL (1/5"), L (3/8"), H (1/2") and XH (7/8") pitches
- Fully comply with ISO 5296
- Several standard widths available up to 4" (in XH)

Curved Tooth Timing Belts, HTD®

- The first metric and biggest selling range of synchronous belts
- Available in sections 3 mm, 5 mm, 8 mm and 14 mm pitch
- Conform to ISO 13050

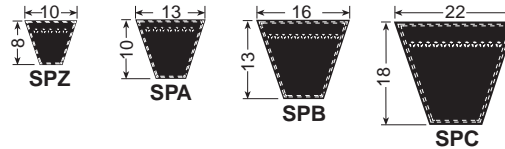
Challenge V and Wedge Belts

Classical 'V' Belts ISO 4184, BS 3790, DIN 2215, RMA IP20



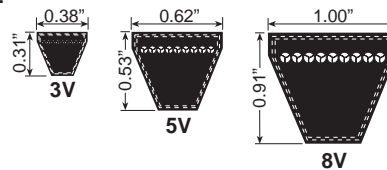
Section	Z	A	B	C	D
Top Width	10.0	13.0	17.0	22.0	32.0
Pitch Width	8.5	11.0	14.0	19.0	27.0
Section Height	6.0	8.0	11.0	14.0	19.0
Inside Length <small>Li = Lp minus α</small>	$\alpha = 22$	$\alpha = 30$	$\alpha = 40$	$\alpha = 58$	$\alpha = 75$
Outside Length <small>La = Li plus y</small>	$y = 38$	$y = 50$	$y = 69$	$y = 88$	$y = 126$

Wedge Belts ISO 4184, BS 3790, DIN 7753, RMA IP22



Section	SPZ	SPA	SPB	SPC
Top Width	10.0	13.0	16.0	22.0
Pitch Width	8.5	11.0	14.0	19.0
Section Height	8.0	10.0	13.0	18.0
Inside Length <small>Li = Lp minus α</small>	$\alpha = 37$	$\alpha = 45$	$\alpha = 60$	$\alpha = 83$
Outside Length <small>La = Li plus y</small>	$y = 50$	$y = 63$	$y = 82$	$y = 113$

Narrow V Belts RMA IP22



Section	3V	5V	8V
Top Width <small>Nominal inch</small>	0.38	0.62	1.00
Section Height <small>Nominal inch</small>	0.31	0.53	0.91
Inside Length <small>Li = Lp minus α inch</small>	$\alpha = 1.95$	$\alpha = 3.33$	$\alpha = 3.90$

Belt Mass

Section - V kg/m	Z	A	B	C	D
	0.060	0.100	0.175	0.305	0.635
Section - Wedge kg/m	SPZ	SPA	SPB	SPC	
	0.072	0.115	0.190	0.360	
Section - Wedge lbs/foot	3V	5V	8V		
	0.055	0.156	0.420		

Lp = Pitch Length
Li = Inside Length
La = Outside Length

Challenge belts have excellent heat and oil resistance as well as anti static properties and conform to ISO1813. The Challenge belt factory has ISO 9001 certification.

Working Temperature:

-30°C to +70°C

Classical V-Belts

Z 10 x 6						A 13 x 8					
Imperial Li	Metric Lp	Metric Li	Imperial Li	Metric Lp	Metric Li	Imperial Li	Metric Lp	Metric Li	Imperial Li	Metric Lp	Metric Li
Z15	10 x 410	385	Z46.5	10 x 1210	1185	A18	13 x 490	460	A74	13 x 1920	1890
Z15.5	10 x 420	395	Z47	10 x 1220	1195	A19	13 x 520	490	A75	13 x 1940	1910
Z15.7	10 x 425	400	Z48	10 x 1240	1215	A20	13 x 540	510	A76	13 x 1960	1930
Z16.5	10 x 445	420	Z49	10 x 1270	1245	A21	13 x 570	540	A77	13 x 1990	1960
Z16.7	10 x 450	425	Z50	10 x 1290	1265	A22	13 x 590	560	A78	13 x 2020	1990
Z17.5	10 x 470	445	Z51	10 x 1320	1295	A23	13 x 620	590	A79	13 x 2050	2020
Z17.7	10 x 475	450	Z52	10 x 1340	1315	A24	13 x 650	620	A80	13 x 2070	2040
Z18	10 x 480	455	Z53	10 x 1370	1345	A25	13 x 670	640	A81	13 x 2090	2060
Z18.5	10 x 495	470	Z54	10 x 1390	1365	A26	13 x 700	670	A82	13 x 2120	2090
Z19	10 x 510	485	Z55	10 x 1420	1395	A27	13 x 720	690	A83	13 x 2140	2110
Z19.5	10 x 520	495	Z56	10 x 1450	1425	A28	13 x 750	720	A84	13 x 2170	2140
Z20	10 x 530	505	Z57	10 x 1470	1445	A29	13 x 770	740	A85	13 x 2190	2160
Z20.5	10 x 545	520	Z58	10 x 1500	1475	A30	13 x 800	770	A86	13 x 2220	2190
Z21	10 x 560	535	Z59	10 x 1520	1495	A31	13 x 820	790	A87	13 x 2240	2210
Z21.7	10 x 575	550	Z60	10 x 1550	1525	A32	13 x 850	820	A88	13 x 2270	2240
Z22	10 x 580	555	Z62	10 x 1600	1575	A33	13 x 870	840	A89	13 x 2300	2270
Z22.2	10 x 585	560	Z63	10 x 1620	1595	A34	13 x 900	870	A90	13 x 2320	2290
Z23	10 x 610	585	Z64	10 x 1650	1625	A35	13 x 920	890	A91	13 x 2350	2320
Z23.5	10 x 620	595	Z68	10 x 1750	1725	A36	13 x 950	920	A92	13 x 2370	2340
Z24	10 x 630	605	Z75	10 x 1920	1895	A37	13 x 980	950	A93	13 x 2400	2370
Z24.7	10 x 655	630	Z78	10 x 2000	1975	A38	13 x 1000	970	A94	13 x 2420	2390
Z25	10 x 660	635				A39	13 x 1030	1000	A95	13 x 2450	2420
Z25.7	10 x 675	655				A40	13 x 1050	1020	A96	13 x 2470	2440
Z26	10 x 680	660				A41	13 x 1080	1050	A97	13 x 2500	2470
Z26.5	10 x 700	675				A42	13 x 1100	1070	A98	13 x 2530	2500
Z27	10 x 710	685				A43	13 x 1130	1100	A99	13 x 2550	2520
Z28	10 x 730	705				A44	13 x 1150	1120	A100	13 x 2580	2550
Z29	10 x 760	735				A45	13 x 1180	1150	A102	13 x 2630	2600
Z29.5	10 x 770	745				A46	13 x 1200	1170	A103	13 x 2650	2620
Z30	10 x 780	755				A47	13 x 1230	1200	A104	13 x 2680	2650
Z30.7	10 x 805	780				A48	13 x 1250	1220	A105	13 x 2700	2670
Z31	10 x 810	785				A49	13 x 1280	1250	A106	13 x 2730	2700
Z31.5	10 x 820	795				A50	13 x 1310	1280	A107	13 x 2750	2720
Z32	10 x 840	815				A51	13 x 1330	1300	A108	13 x 2780	2750
Z33	10 x 860	835				A52	13 x 1360	1330	A109	13 x 2800	2770
Z33.7	10 x 880	855				A53	13 x 1380	1350	A110	13 x 2830	2800
Z34	10 x 890	865				A54	13 x 1410	1380	A112	13 x 2880	2850
Z35	10 x 910	885				A55	13 x 1430	1400	A113	13 x 2910	2880
Z35.5	10 x 930	905				A56	13 x 1460	1430	A115	13 x 2960	2930
Z36	10 x 940	915				A57	13 x 1480	1450	A116	13 x 2980	2950
Z36.5	10 x 950	925				A58	13 x 1510	1480	A117	13 x 3010	2980
Z37	10 x 960	935				A59	13 x 1530	1500	A118	13 x 3030	3000
Z37.5	10 x 980	945				A60	13 x 1560	1530	A120	13 x 3080	3050
Z38	10 x 990	955				A61	13 x 1580	1550	A124	13 x 3190	3160
Z39	10 x 1010	985				A62	13 x 1610	1580	A125	13 x 3200	3170
Z39.5	10 x 1030	1005				A63	13 x 1640	1610	A128	13 x 3290	3260
Z40	10 x 1040	1015				A64	13 x 1660	1630	A130	13 x 3340	3310
Z40.5	10 x 1050	1025				A65	13 x 1690	1660	A132	13 x 3390	3360
Z41	10 x 1060	1035				A66	13 x 1710	1680	A134	13 x 3440	3410
Z42	10 x 1090	1065				A67	13 x 1740	1710	A136	13 x 3490	3460
Z42.5	10 x 1100	1075				A68	13 x 1760	1730	A138	13 x 3540	3510
Z43	10 x 1120	1095				A69	13 x 1790	1760	A140	13 x 3590	3560
Z44	10 x 1140	1115				A70	13 x 1810	1780	A144	13 x 3690	3660
Z45	10 x 1170	1145				A71	13 x 1840	1810	A154	13 x 3950	3920
Z45.5	10 x 1180	1155				A72	13 x 1860	1830	A158	13 x 4050	4020
Z46	10 x 1190	1165				A73	13 x 1890	1860	A173	13 x 4430	4400

Classical V-Belts

B								
17 x 11								
Imperial Li	Metric Lp	Metric Li	Imperial Li	Metric Lp	Metric Li	Imperial Li	Metric Lp	Metric Li
B22	17 x 600	560	B79	17 x 2050	2010	B148	17 x 3800	3760
B24	17 x 650	610	B80	17 x 2080	2040	B150	17 x 3850	3810
B25	17 x 670	630	B81	17 x 2100	2060	B152	17 x 3900	3860
B26	17 x 700	660	B82	17 x 2130	2090	B154	17 x 3950	3910
B28	17 x 750	710	B83	17 x 2150	2110	B155	17 x 3980	3940
B29	17 x 780	740	B84	17 x 2180	2140	B158	17 x 4060	4020
B30	17 x 810	770	B85	17 x 2200	2160	B160	17 x 4110	4050
B31	17 x 830	790	B86	17 x 2230	2190	B162	17 x 4160	4120
B32	17 x 860	820	B87	17 x 2250	2210	B164	17 x 4210	4170
B33	17 x 880	840	B88	17 x 2280	2240	B166	17 x 4260	4220
B34	17 x 910	870	B89	17 x 2300	2260	B168	17 x 4310	4270
B35	17 x 930	890	B90	17 x 2330	2290	B173	17 x 4440	4400
B36	17 x 960	920	B91	17 x 2350	2310	B180	17 x 4620	4580
B37	17 x 980	940	B92	17 x 2380	2340	B184	17 x 4720	4670
B38	17 x 1010	970	B93	17 x 2410	2370	B185	17 x 4740	4700
B39	17 x 1030	990	B94	17 x 2420	2380	B187	17 x 4790	4750
B40	17 x 1060	1020	B95	17 x 2460	2420	B193	17 x 4940	4900
B41	17 x 1080	1040	B96	17 x 2480	2440	B194	17 x 4970	4930
B42	17 x 1110	1070	B97	17 x 2510	2470	B195	17 x 5000	4960
B43	17 x 1130	1090	B98	17 x 2530	2490	B197	17 x 5050	5010
B44	17 x 1160	1120	B99	17 x 2560	2520	B204	17 x 5220	5180
B45	17 x 1180	1140	B100	17 x 2580	2540	B210	17 x 5380	5340
B46	17 x 1210	1170	B101	17 x 2610	2570	B215	17 x 5510	5470
B47	17 x 1240	1200	B102	17 x 2630	2590	B220	17 x 5630	5590
B48	17 x 1260	1220	B103	17 x 2660	2620	B222	17 x 5680	5640
B49	17 x 1290	1250	B104	17 x 2680	2640	B225	17 x 5760	5720
B50	17 x 1310	1270	B105	17 x 2710	2670	B238	17 x 6090	6050
B51	17 x 1340	1300	B106	17 x 2740	2700	B240	17 x 6120	6080
B52	17 x 1370	1330	B107	17 x 2760	2720	B255	17 x 6500	6460
B53	17 x 1390	1350	B108	17 x 2790	2750	B256	17 x 6550	6490
B54	17 x 1410	1370	B110	17 x 2840	2800	B264	17 x 6750	6710
B55	17 x 1440	1400	B111	17 x 2870	2830	B268	17 x 6850	6810
B56	17 x 1470	1430	B112	17 x 2890	2850	B298	17 x 7610	7570
B57	17 x 1490	1450	B113	17 x 2920	2880	B358	17 x 9140	9100
B58	17 x 1520	1480	B114	17 x 2940	2900			
B59	17 x 1540	1500	B115	17 x 2960	2920			
B60	17 x 1570	1530	B116	17 x 2990	2950			
B61	17 x 1590	1550	B117	17 x 3020	2980			
B62	17 x 1620	1580	B118	17 x 3040	3000			
B63	17 x 1640	1600	B120	17 x 3090	3050			
B64	17 x 1670	1630	B122	17 x 3140	3100			
B65	17 x 1690	1650	B124	17 x 3190	3150			
B66	17 x 1720	1680	B125	17 x 3220	3160			
B66.5	17 x 1730	1690	B126	17 x 3240	3200			
B67	17 x 1740	1700	B128	17 x 3290	3250			
B68	17 x 1770	1730	B130	17 x 3350	3310			
B69	17 x 1800	1760	B131	17 x 3380	3340			
B70	17 x 1820	1780	B132	17 x 3400	3360			
B71	17 x 1850	1810	B134	17 x 3450	3410			
B72	17 x 1870	1830	B135	17 x 3480	3440			
B73	17 x 1900	1860	B136	17 x 3500	3460			
B74	17 x 1920	1880	B138	17 x 3550	3510			
B75	17 x 1950	1910	B140	17 x 3600	3560			
B76	17 x 1970	1930	B142	17 x 3650	3610			
B77	17 x 2000	1960	B144	17 x 3700	3660			
B78	17 x 2020	1980	B146	17 x 3750	3710			

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Classical V-Belts

C 22 x 14

Imperial Li	Metric Lp	Metric Li	Imperial Li	Metric Lp	Metric Li	Imperial Li	Metric Lp	Metric Li
C40	22 x 1070	1012	C111	22 x 2880	2822	C268	22 x 6860	6802
C42	22 x 1120	1062	C112	22 x 2900	2842	C270	22 x 6910	6852
C43	22 x 1150	1092	C114	22 x 2950	2892	C285	22 x 7290	7232
C44	22 x 1170	1112	C115	22 x 2980	2922	C298	22 x 7630	7572
C45	22 x 1200	1142	C116	22 x 3000	2942	C300	22 x 7670	7612
C46	22 x 1220	1162	C118	22 x 3050	2992	C314	22 x 8030	7972
C48	22 x 1270	1212	C119	22 x 3080	3022	C330	22 x 8440	8382
C50	22 x 1320	1262	C120	22 x 3100	3042	C345	22 x 8820	8762
C51	22 x 1350	1292	C122	22 x 3160	3102	C360	22 x 9200	9142
C52	22 x 1380	1322	C123	22 x 3190	3132	C420	22 x 10690	10632
C53	22 x 1400	1342	C124	22 x 3210	3152			
C54	22 x 1430	1372	C125	22 x 3240	3182			
C55	22 x 1450	1392	C128	22 x 3310	3252			
C56	22 x 1480	1422	C130	22 x 3360	3302			
C57	22 x 1510	1452	C131	22 x 3390	3332			
C58	22 x 1530	1472	C132	22 x 3410	3352			
C59	22 x 1560	1502	C133	22 x 3430	3372			
C60	22 x 1580	1522	C134	22 x 3460	3402			
C61	22 x 1610	1552	C136	22 x 3510	3452			
C62	22 x 1630	1572	C138	22 x 3560	3502			
C63	22 x 1660	1602	C140	22 x 3610	3552			
C64	22 x 1680	1622	C141	22 x 3640	3582			
C65	22 x 1700	1642	C142	22 x 3660	3602			
C67	22 x 1760	1702	C143	22 x 3690	3632			
C68	22 x 1780	1722	C144	22 x 3710	3652			
C69	22 x 1810	1752	C145	22 x 3740	3682			
C70	22 x 1830	1772	C146	22 x 3760	3702			
C71	22 x 1860	1802	C148	22 x 3820	3762			
C72	22 x 1880	1822	C150	22 x 3870	3812			
C73	22 x 1910	1852	C152	22 x 3920	3862			
C74	22 x 1930	1872	C154	22 x 3970	3912			
C75	22 x 1960	1902	C156	22 x 4020	3962			
C76	22 x 1980	1922	C158	22 x 4070	4012			
C77	22 x 2010	1952	C159	22 x 4100	4042			
C78	22 x 2040	1982	C160	22 x 4120	4062			
C79	22 x 2060	2002	C162	22 x 4170	4112			
C80	22 x 2090	2032	C164	22 x 4220	4162			
C81	22 x 2110	2052	C166	22 x 4270	4212			
C82	22 x 2140	2082	C167	22 x 4300	4242			
C83	22 x 2160	2102	C168	22 x 4320	4262			
C84	22 x 2190	2132	C170	22 x 4370	4312			
C85	22 x 2210	2152	C173	22 x 4450	4392			
C86	22 x 2230	2172	C175	22 x 4500	4442			
C87	22 x 2270	2212	C180	22 x 4630	4572			
C88	22 x 2290	2232	C182	22 x 4680	4622			
C89	22 x 2320	2262	C184	22 x 4730	4672			
C90	22 x 2340	2282	C185	22 x 4750	4692			
C91	22 x 2370	2312	C190	22 x 4880	4822			
C92	22 x 2390	2332	C195	22 x 5010	4952			
C93	22 x 2420	2362	C200	22 x 5140	5082			
C94	22 x 2440	2382	C204	22 x 5240	5182			
C95	22 x 2470	2412	C208	22 x 5340	5282			
C96	22 x 2490	2432	C210	22 x 5390	5332			
C97	22 x 2520	2462	C214	22 x 5480	5422			
C98	22 x 2550	2492	C220	22 x 5640	5582			
C99	22 x 2580	2522	C224	22 x 5740	5682			
C100	22 x 2600	2542	C225	22 x 5770	5712			
C101	22 x 2630	2572	C228	22 x 5850	5792			
C102	22 x 2650	2592	C238	22 x 6100	6042			
C104	22 x 2700	2642	C240	22 x 6150	6092			
C105	22 x 2720	2662	C248	22 x 6360	6302			
C106	22 x 2750	2692	C250	22 x 6410	6352			
C108	22 x 2800	2742	C255	22 x 6540	6482			
C110	22 x 2850	2792	C256	22 x 6570	6512			

D 32 x 20

Imperial Li	Metric Lp	Metric Li	Imperial Li	Metric Lp	Metric Li
D90	32 x 2350	2275	D228	32 x 5870	5795
D97	32 x 2530	2455	D230	32 x 5920	5845
D98	32 x 2570	2495	D232	32 x 5980	5905
D101	32 x 2640	2565	D238	32 x 6130	6055
D102	32 x 2660	2585	D240	32 x 6180	6105
D105	32 x 2750	2675	D248	32 x 6380	6305
D108	32 x 2830	2755	D250	32 x 6430	6355
D109	32 x 2850	2775	D255	32 x 6560	6485
D110	32 x 2880	2805	D270	32 x 6940	6865
D112	32 x 2930	2855	D280	32 x 7190	7115
D113	32 x 2960	2885	D285	32 x 7320	7245
D120	32 x 3130	3055	D298	32 x 7650	7575
D124	32 x 3230	3155	D300	32 x 7700	7625
D128	32 x 3330	3255	D314	32 x 8060	7985
D130	32 x 3380	3305	D315	32 x 8090	8015
D132	32 x 3430	3355	D328	32 x 8410	8335
D136	32 x 3540	3465	D330	32 x 8460	8385
D137	32 x 3560	3485	D340	32 x 8710	8635
D140	32 x 3640	3565	D358	32 x 9170	9095
D144	32 x 3740	3665	D360	32 x 9220	9145
D148	32 x 3840	3765	D380	32 x 9730	9655
D150	32 x 3890	3815	D394	32 x 10080	10005
D152	32 x 3940	3865	D418	32 x 10700	10625
D154	32 x 3990	3915	D420	32 x 10740	10665
D156	32 x 4040	3965	D440	32 x 11250	11175
D158	32 x 4090	4015	D441	32 x 11270	11195
D162	32 x 4200	4125	D450	32 x 11500	11425
D166	32 x 4300	4225	D480	32 x 12260	12185
D170	32 x 4400	4325	D525	32 x 13410	13335
D173	32 x 4480	4405	D540	32 x 13790	13715
D177	32 x 4580	4505	D564	32 x 14400	14325
D180	32 x 4650	4575	D600	32 x 15310	15235
D185	32 x 4780	4705			
D187	32 x 4830	4755			
D191	32 x 4930	4855			
D195	32 x 5030	4955			
D204	32 x 5260	5185			
D210	32 x 5420	5345			
D220	32 x 5660	5585			
D225	32 x 5800	5725			

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Classical CRE V-Belts

AX 13 x 8

Imperial Li	Metric Lp	Metric Li	Imperial Li	Metric Lp	Metric Li
AX16	13 x 470	440	AX77	13 x 1990	1960
AX18	13 x 490	460	AX78	13 x 2020	1990
AX19	13 x 520	490	AX79	13 x 2050	2020
AX20	13 x 540	510	AX80	13 x 2070	2040
AX21	13 x 570	540	AX81	13 x 2090	2060
AX22	13 x 590	560	AX82	13 x 2120	2090
AX23	13 x 620	590	AX83	13 x 2140	2110
AX24	13 x 650	620	AX84	13 x 2170	2140
AX25	13 x 670	640	AX85	13 x 2190	2160
AX26	13 x 700	670	AX86	13 x 2220	2190
AX27	13 x 720	690	AX87	13 x 2240	2210
AX28	13 x 750	720	AX88	13 x 2270	2240
AX29	13 x 770	740	AX89	13 x 2300	2270
AX30	13 x 800	770	AX90	13 x 2320	2290
AX31	13 x 820	790	AX91	13 x 2350	2320
AX32	13 x 850	820	AX92	13 x 2370	2340
AX33	13 x 870	840	AX93	13 x 2400	2370
AX34	13 x 900	870	AX94	13 x 2420	2390
AX35	13 x 920	890	AX95	13 x 2450	2420
AX36	13 x 950	920	AX96	13 x 2470	2440
AX37	13 x 980	950	AX97	13 x 2500	2470
AX38	13 x 1000	970	AX98	13 x 2530	2500
AX39	13 x 1030	1000			
AX40	13 x 1050	1020			
AX41	13 x 1080	1050			
AX42	13 x 1100	1070			
AX43	13 x 1130	1100			
AX44	13 x 1150	1120			
AX45	13 x 1180	1150			
AX46	13 x 1200	1170			
AX47	13 x 1230	1200			
AX48	13 x 1250	1220			
AX49	13 x 1280	1250			
AX50	13 x 1310	1280			
AX51	13 x 1330	1300			
AX52	13 x 1360	1330			
AX53	13 x 1380	1350			
AX54	13 x 1410	1380			
AX55	13 x 1430	1400			
AX56	13 x 1460	1430			
AX57	13 x 1480	1450			
AX58	13 x 1510	1480			
AX59	13 x 1530	1500			
AX60	13 x 1560	1530			
AX61	13 x 1580	1550			
AX62	13 x 1610	1580			
AX63	13 x 1640	1610			
AX64	13 x 1660	1630			
AX65	13 x 1690	1660			
AX66	13 x 1710	1680			
AX67	13 x 1740	1710			
AX68	13 x 1760	1730			
AX69	13 x 1790	1760			
AX70	13 x 1810	1780			
AX71	13 x 1840	1810			
AX72	13 x 1860	1830			
AX73	13 x 1890	1860			
AX74	13 x 1920	1890			
AX75	13 x 1940	1910			
AX76	13 x 1960	1930			

BX 17 x 11

Imperial Li	Metric Lp	Metric Li	Imperial Li	Metric Lp	Metric Li
BX22	17 x 600	560	BX86	17 x 2230	2190
BX24	17 x 650	610	BX87	17 x 2250	2210
BX26	17 x 700	660	BX88	17 x 2280	2240
BX28	17 x 750	710	BX89	17 x 2300	2260
BX30	17 x 810	770	BX90	17 x 2330	2290
BX31	17 x 830	790	BX91	17 x 2350	2310
BX32	17 x 860	820	BX92	17 x 2380	2340
BX33	17 x 880	840	BX93	17 x 2410	2370
BX34	17 x 910	870	BX94	17 x 2420	2380
BX35	17 x 930	890			
BX36	17 x 960	920			
BX37	17 x 980	940			
BX38	17 x 1010	970			
BX39	17 x 1030	990			
BX40	17 x 1060	1020			
BX41	17 x 1080	1040			
BX42	17 x 1110	1070			
BX43	17 x 1130	1090			
BX44	17 x 1160	1120			
BX45	17 x 1180	1140			
BX46	17 x 1210	1170			
BX47	17 x 1240	1200			
BX48	17 x 1260	1220			
BX49	17 x 1290	1250			
BX50	17 x 1310	1270			
BX51	17 x 1340	1300			
BX52	17 x 1370	1330			
BX53	17 x 1390	1350			
BX54	17 x 1410	1370			
BX55	17 x 1440	1400			
BX56	17 x 1470	1430			
BX57	17 x 1490	1450			
BX58	17 x 1520	1480			
BX59	17 x 1540	1500			
BX60	17 x 1570	1530			
BX61	17 x 1590	1550			
BX62	17 x 1620	1580			
BX63	17 x 1640	1600			
BX64	17 x 1670	1630			
BX65	17 x 1690	1650			
BX66	17 x 1720	1680			
BX67	17 x 1740	1700			
BX68	17 x 1770	1730			
BX69	17 x 1800	1760			
BX70	17 x 1820	1780			
BX71	17 x 1850	1810			
BX72	17 x 1870	1830			
BX73	17 x 1900	1860			
BX74	17 x 1920	1880			
BX75	17 x 1950	1910			
BX76	17 x 1970	1930			
BX77	17 x 2000	1960			
BX78	17 x 2020	1980			
BX79	17 x 2050	2010			
BX80	17 x 2080	2040			
BX81	17 x 2100	2060			
BX82	17 x 2130	2090			
BX83	17 x 2150	2110			
BX84	17 x 2180	2140			
BX85	17 x 2200	2160			

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Wedge Belts

SPZ (10N) 10 x 8			SPA (13N) 13 x 10			SPB (16N) 16 x 13		SPC 22N 22 x 18
Metric Lp	Metric Lp	Metric Lp	Metric Lp	Metric Lp	Metric Lp	Metric Lp	Metric Lp	Metric Lp
512	1140	1887	632	1332	2300	1250	3500	2000
530	1162	1900	657	1357	2360	1260	3550	2120
545	1180	1937	682	1360	2430	1320	3600	2240
562	1187	1950	707	1362	2460	1340	3650	2360
580	1200	1962	732	1382	2482	1360	3750	2425
612	1212	2000	750	1400	2487	1400	3800	2450
630	1222	2030	757	1407	2500	1410	3900	2500
637	1237	2087	782	1432	2580	1450	4000	2650
662	1250	2120	800	1450	2607	1500	4060	2800
670	1262	2137	807	1457	2650	1550	4100	3000
687	1270	2150	825	1482	2720	1590	4250	3150
710	1287	2160	832	1500	2782	1600	4310	3350
737	1300	2187	850	1507	2800	1650	4500	3550
750	1312	2240	857	1532	2832	1700	4560	3750
760	1320	2280	875	1550	2847	1750	4710	4000
762	1337	2300	882	1557	2882	1800	4750	4100
772	1340	2360	900	1582	2900	1850	4820	4250
787	1347	2410	907	1600	2932	1900	5000	4500
797	1362	2500	925	1607	2982	1950	5070	4750
800	1387	2540	932	1632	3000	2000	5300	5000
812	1400	2650	950	1650	3150	2020	5380	5300
825	1412	2690	957	1657	3182	2060	5600	5600
837	1420	2800	975	1682	3350	2120	5680	6000
850	1437	2840	982	1700	3450	2150	5990	6300
862	1462	2990	1000	1707	3550	2200	6000	6700
875	1470	3000	1007	1732	3750	2240	6300	7000
887	1487	3150	1032	1750	4000	2280	6340	7100
900	1500	3170	1057	1757	4250	2300	6700	7500
912	1512	3350	1060	1782	4500	2350	7100	7750
925	1520	3550	1082	1800		2360	7500	8000
937	1537	3810	1090	1807		2400	8000	8500
940	1550		1107	1832		2410		9000
950	1560		1120	1857		2450		9500
962	1562		1132	1882		2500		10000
975	1587		1150	1900		2530		
987	1600		1157	1937		2550		
1000	1612		1180	1950		2600		
1010	1637		1182	1957		2650		
1012	1650		1200	1982		2680		
1020	1662		1207	2000		2700		
1037	1687		1220	2032		2800		
1060	1700		1232	2057		2840		
1062	1737		1250	2060		2990		
1080	1750		1257	2120		3000		
1087	1762		1272	2132		3150		
1090	1787		1280	2157		3170		
1100	1800		1282	2182		3270		
1112	1837		1300	2207		3320		
1120	1850		1307	2240		3340		
1137	1862		1320	2282		3350		

Equivalent belt designations are:

- 10N (SPZ) is interchangeable with 3V and 9N
- 16N (SPB) is interchangeable with 5V and 15N
- 25N (8V) is interchangeable with SPP

These do not apply to Banded belts

CRE Wedge Belts

SPZX 10 x 8		SPAX 13 x 10		SPBX 16 x 13	SPCX 22 x 18
Metric Lp	Metric Lp	Metric Lp	Metric Lp	Metric Lp	Metric Lp
587	1202	690	1500	1000	2240
600	1212	732	1507	1060	2360
612	1220	750	1522	1120	2650
630	1230	757	1532	1180	2800
637	1237	775	1550	1250	
660	1250	782	1557	1320	
662	1262	800	1582	1340	
670	1270	807	1600	1400	
687	1280	825	1607	1450	
690	1287	832	1632	1500	
710	1300	850	1650	1600	
722	1312	857	1682	1700	
730	1320	875	1700	1750	
737	1337	882	1732	1800	
750	1340	900	1750	1850	
760	1360	907	1757	1900	
762	1362	925	1782	1950	
772	1387	932	1800	1970	
775	1400	950	1832	2000	
787	1412	957	1850	2020	
800	1420	969	1900	2120	
812	1437	975	1950	2240	
817	1450	982	1957	2280	
825	1462	1000	1982	2360	
837	1470	1007	2000	2400	
850	1487	1030	2032	2410	
862	1500	1032	2057	2500	
875	1512	1060	2060	2650	
887	1520	1082	2120	2800	
900	1537	1090	2160		
912	1550	1107	2180		
917	1560	1120	2240		
925	1562	1132	2282		
937	1587	1142	2300		
950	1600	1150	2360		
962	1612	1157			
975	1650	1172			
987	1662	1180			
1000	1700	1207			
1010	1750	1220			
1012	1762	1232			
1030	1800	1250			
1037	1850	1257			
1040	1900	1272			
1047	1950	1280			
1057	2000	1282			
1060	2030	1307			
1077	2040	1320			
1080	2080	1332			
1087	2120	1357			
1110	2160	1360			
1112	2200	1380			
1120	2240	1382			
1137	2280	1400			
1140	2360	1420			
1150		1432			
1162		1450			
1180		1457			
1187		1462			
1200		1482			

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Narrow V Belts

3V (9N) 0.38 x 0.31	
Belt Designation	Effective Outside Length
3V250	25.0
3V265	26.5
3V280	28.0
3V300	30.0
3V315	31.5
3V335	33.5
3V355	35.5
3V375	37.5
3V400	40.0
3V425	42.5
3V450	45.0
3V475	47.5
3V500	50.0
3V530	53.0
3V560	56.0
3V600	60.0
3V630	63.0
3V670	67.0
3V710	71.0
3V750	75.0
3V800	80.0
3V850	85.0
3V900	90.0
3V950	95.0
3V1000	100.0
3V1060	106.0
3V1120	112.0
3V1180	118.0
3V1250	125.0
3V1320	132.0
3V1400	140.0

5V (15N) 0.62 x 0.53	
Belt Designation	Effective Outside Length
5V500	50
5V530	53
5V560	56
5V600	60
5V630	63
5V670	67
5V710	71
5V750	75
5V800	80
5V850	85
5V900	90
5V950	95
5V1000	100
5V1060	106
5V1120	112
5V1180	118
5V1250	125
5V1320	132
5V1400	140
5V1500	150
5V1600	160
5V1700	170
5V1800	180
5V1900	190
5V2000	200
5V2120	212
5V2240	224
5V2360	236
5V2500	250
5V2650	265
5V2800	280
5V3000	300
5V3150	315
5V3350	335
5V3550	355

8V (25N) 1.00 x 0.91	
Belt Designation	Effective Outside Length
8V1000	100
8V1060	106
8V1120	112
8V1180	118
8V1250	125
8V1320	132
8V1400	140
8V1500	150
8V1600	160
8V1700	170
8V1800	180
8V1900	190
8V2000	200
8V2120	212
8V2240	224
8V2360	236
8V2500	250
8V2650	265
8V2800	280
8V3000	300
8V3150	315
8V3350	335
8V3550	355
8V3750	375
8V4000	400
8V4250	425
8V4500	450
8V4750	475
8V5000	500

Selection Procedure

Wedge belt selection procedure

1) Service factor

Refer to Table 1 on page 162 and select a service factor appropriate to the drive conditions.

2) Design power

Multiply the machine absorbed power (kW) by the service factor to obtain the design power.

If the machine absorbed power is not known, use the prime mover power (kW).

The design power is used as a basis for selecting the drive.

3) Belt section

Refer to Table 2 on page 163.

Note the intersection of the speed of the faster shaft (on the horizontal scale) and the design power (on the vertical scale).

The point of intersection indicates the preferable belt section.

4) Speed ratio

Divide the rotational speed of the high speed shaft by that of the low speed shaft to obtain the speed ratio.

5) Pulley pitch diameters

For the chosen section from step 3), refer to Table 3 Speed ratios on pages 164 and 165, then select two pulleys* that match closely the required speed ratio from step 4).

*Note : the use of small pulleys can overload motor bearings. It is preferable to use larger driving pulleys if possible.

Most applications will allow for a driven speed tolerance of $\pm 2\%$.

6) Belt length

Calculate the required pitch length of belt required from the following formula :-

$$L = 2C + \frac{(D-d)^2}{4C} + 1.57(D+d)$$

Where L = pitch length of belt in mm
C = centre distance required in mm
d = small pulley pitch diameter in mm
D = large pulley pitch diameter in mm

From the list of belts (pages 157, 158), choose a belt nearest to the calculated value.

When a centre distance value is not specified, choose one equal to or exceeding the sum of the pulley diameters.

7) Centre distance

To obtain the approximate actual centre distance, divide the difference between the chosen belt and the belt length required from step 6) by 2.

If the chosen belt is longer, add the value to the required centre distance or if it is shorter, deduct the value from the required centre distance.

Note: This simple method is usually accurate to within 2 millimetres.

If a more accurate centre distance value is required, use the formulae below :-

$$C = A + \sqrt{A^2 - B}$$

$$\text{Where } A = \frac{L}{4} - 0.3935(D+d)$$

$$\text{and } B = \frac{(D-d)^2}{8}$$

8) Power per belt (kW)

Refer to Table 4 power ratings (pages 166, 167) for the section of belt chosen.

Read across the top row to the small pulley pitch diameter chosen. Then read down to the speed of the faster shaft to obtain the power per belt in kW.

If necessary, interpolate for a more accurate value.

9) Power addition for speed ratio

Refer to the same pages as the power ratings.

Read across the top to the column which contains the speed ratio being used.

Then read down to the speed of the faster shaft to obtain the power addition for the speed ratio.

10) Correction factor for belt length

Refer to Table 5 on page 167 and note the correction factor for the length of belt chosen in step 6).

11) Correction factor for angle of contact on the small pulley

Refer to Table 6 on page 167 and calculate the value for $\frac{D-d}{C}$

From the value, choose the nearest correction factor.

12) Corrected power per belt (kW)

Add the power addition for speed ratio (step 9) to the power per belt (step 8).

Multiply the result by the correction factors for belt length (step 10) and angle of contact (step 11) to obtain the corrected power per belt.

13) number of belts required

Divide the design power (step 2) by the corrected power per belt (step 12) to obtain the number of belts required for the drive.

14) Shaft dimensions

From the pulley dimension Tables, (pages 181 to 193), check that the chosen pulleys have a taper bush that will accommodate the required shaft sizes.

Selection Procedure

Wedge Belt Selection Example

Design a Wedge belt drive from a 90kW, 1440 rev/min direct on line start electric motor to a Belt Conveyor which carries copper ore and absorbs 81 kW.

The conveyor has to run at 403 rev/min for 12 hours per day.

The required centre distance is 1200 mm. The motor shaft is 75 mm diameter and the conveyor shaft 105 mm diameter.

1) Service factor

From Table 1 on page 162, the service factor chosen for a non-uniformly loaded belt conveyor running for 12 hours per day and driven by a direct on line electric motor is **1.3**

2) Design power

$$81 \times 1.3 = \mathbf{105.3 \text{ kW}}$$

3) Belt section

From Table 2 on page 163, note the point of intersection of the design power of 105.3 kW (on the horizontal axis) and the speed of the faster shaft of 1440 rev/min (on the vertical axis).

The point of intersection indicates **SPB or SPC** section wedge belts. A point of intersection near the top of a band usually gives the most economical selection, in this case **SPB** is chosen.

4) Speed ratio

$$\frac{1440}{403} = \mathbf{3.57 : 1}$$

5) Pulley pitch diameters

From the SPB speed ratio Table 3 on page 165, pulley pitch diameters of 280 mm and 1000 mm match the speed ratio requirement of 3.57 : 1

The speed ratio of $1000/280 = 3.57 : 1$ will give a driven speed of 403 rev/min.

6) Belt length

Using the following formula, calculate the length of belt required :-

$$\text{Belt length (L)} = 2 \times 1200 + \frac{(1000 - 280)^2}{4 \times 1200} + 1.57 \times (1000 + 280)$$

$$= 2400 + 108 + 2010$$

$$= \mathbf{4518 \text{ mm}}$$

from the SPB belt length Tables on page 157, the nearest belt is an SPB4500

7) Centre distance

The **SPB4500** will give a centre distance of :-

$$1200 - \frac{(4518 - 4500)}{2} = \mathbf{1191 \text{ mm}}$$

8) Power per belt (kW)

From the SPB power ratings on Table 4 page 166, the power per belt for a 280mm pulley running at 1440 rev/min is **22.55 kW**

9) Power addition for speed ratio

From the same page as the power ratings, the power addition for the speed ratio of 3.57 : 1 is **1.21 kW**

10) Correction factor for belt length

From Table 5 on page 167, the correction factor for an SPB4500 is **1.05**

11) Correction factor for angle of contact

$$\text{First, calculate } \frac{D-d}{C}$$

and then refer to Table 6 on page 167 to obtain the correction factor.

$$\frac{D-d}{C} = \frac{1000 - 280}{1191} = 0.60$$

the correction factor is **0.96**

12) Corrected power per belt (kW)

$$= (22.55 + 1.21) \times 1.05 \times 0.96$$

$$= \mathbf{23.95 \text{ kW per belt}}$$

13) Number of belts required

Divide the design power (step 2) by the corrected power/belt (step 12) to obtain the number of belts required.

$$\frac{105.3}{23.95} = 4.4$$

use **5 SPB belts**

14) Shaft dimensions

From the SPB pulley dimension Tables (pages 187 to 189), it is confirmed that the pulleys taper bushes can accommodate the required shaft sizes.

Drive Specification

Motor pulley :	280 x 5 SPB 3535 / 75 mm
Conveyor pulley	1000 x 5 SPB 4545 / 105 mm

5 off SPB4500 giving 1191 mm centres

Selection Data

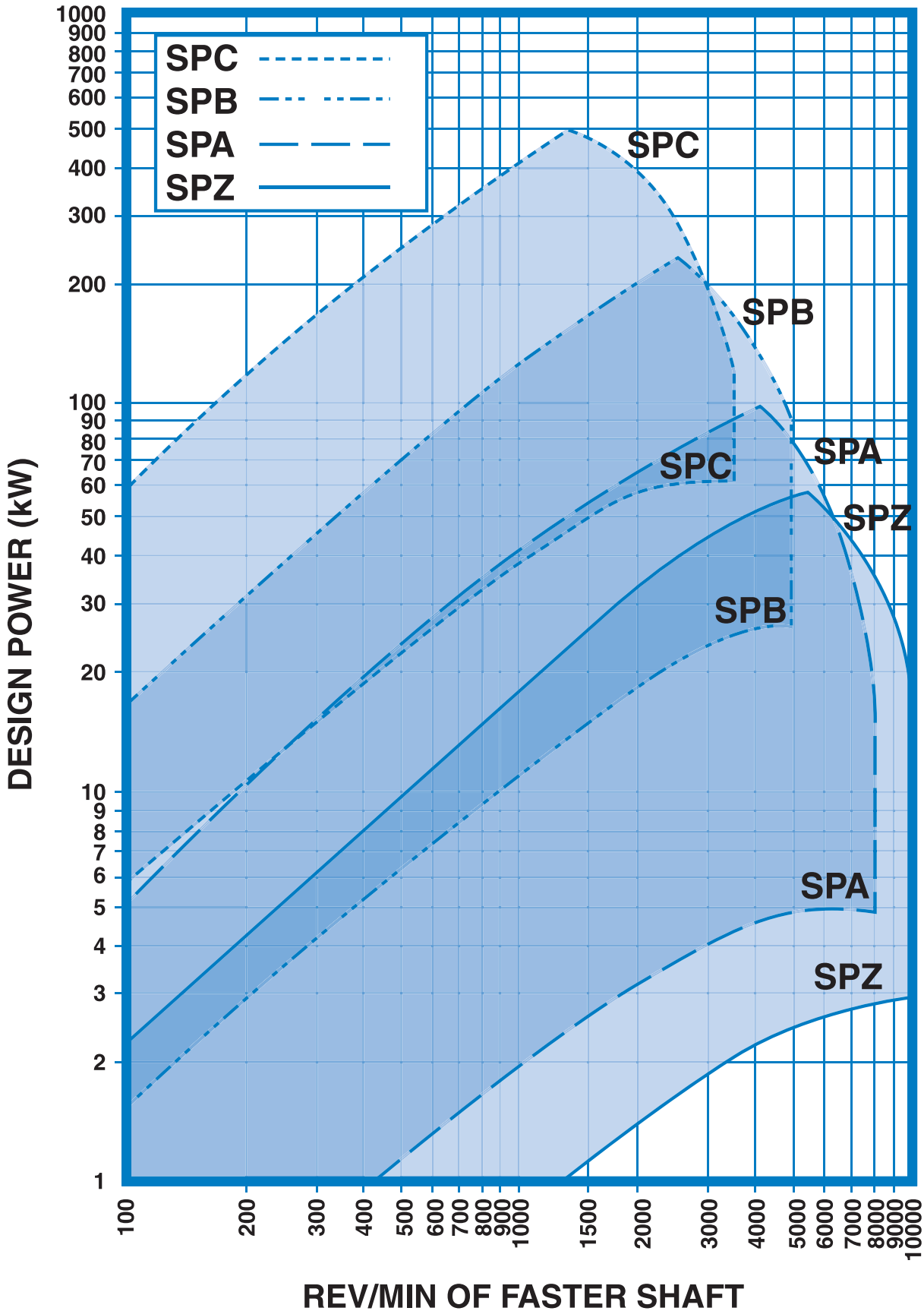
Table 1 - Service Factors

Type of driven machine	Type of prime mover					
	'Soft' Starts			'Heavy' Starts		
	AC electric motors: star-delta DC motors: shunt wound Engines with 4 or more cylinders All prime movers with mechanical or electronic soft start devices.			AC electric motors :- direct – on – line DC motors : series and compound wound Engines with less than 4 cylinders		
	number of hours per day running					
	under 10	10 - 16	over 16	under 10	10 - 16	over 16
Uniform load: Light duty agitators, belt conveyors for sand etc., fans upto 7.5 kW, centrifugal compressors and pumps,	1.0	1.1	1.2	1.1	1.2	1.3
Moderate load: Variable density agitators, belt conveyors (non-uniform loads), fans over 7.5 kW, other rotary compressors and pumps, generators, machine tools, printing machinery, laundry machinery, rotary screens, rotary woodworking machinery	1.1	1.2	1.3	1.2	1.3	1.4
Heavy load: Reciprocating compressors and pumps, positive displacement blowers, heavy duty conveyors such as screw, bucket etc., hammer mills, pulverisers, presses, shears, punches, rubber machinery	1.2	1.3	1.4	1.4	1.5	1.6
Severe load: Crushers – gyratory, jaw, roll etc., rolling mills, calenders, quarry machinery, vibrating screens	1.3	1.4	1.5	1.5	1.6	1.8

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Selection Data

Table 2 - Belt Section



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Selection Data

Table 3 - Speed ratios SPZ & SPA

SPZ	71	75	80	85	90	95	100	106	112	118	125	132	140
71	1.00												
75	1.06	1.00											
80	1.13	1.07	1.00										
85	1.20	1.13	1.06	1.00									
90	1.27	1.20	1.13	1.06	1.00								
95	1.34	1.27	1.19	1.12	1.06	1.00							
100	1.41	1.33	1.25	1.18	1.11	1.05	1.00						
106	1.49	1.41	1.33	1.25	1.18	1.12	1.06	1.00					
112	1.58	1.49	1.40	1.32	1.24	1.18	1.12	1.06	1.00				
118	1.66	1.57	1.48	1.39	1.31	1.24	1.18	1.11	1.05	1.00			
125	1.76	1.67	1.56	1.47	1.39	1.32	1.25	1.18	1.12	1.06	1.00		
132	1.86	1.76	1.65	1.55	1.47	1.39	1.32	1.25	1.18	1.12	1.06	1.00	
140	1.97	1.87	1.75	1.65	1.56	1.47	1.40	1.32	1.25	1.19	1.12	1.06	1.00
150	2.11	2.00	1.88	1.76	1.67	1.58	1.50	1.42	1.34	1.27	1.20	1.14	1.07
160	2.25	2.13	2.00	1.88	1.78	1.68	1.60	1.51	1.43	1.36	1.28	1.21	1.14
170	2.39	2.27	2.13	2.00	1.89	1.79	1.70	1.60	1.52	1.44	1.36	1.29	1.21
180	2.54	2.40	2.25	2.12	2.00	1.89	1.80	1.70	1.61	1.53	1.44	1.36	1.29
190	2.68	2.53	2.38	2.24	2.11	2.00	1.90	1.79	1.70	1.61	1.52	1.44	1.36
200	2.82	2.67	2.50	2.35	2.22	2.11	2.00	1.89	1.79	1.69	1.60	1.52	1.43
224	3.15	2.99	2.80	2.64	2.49	2.36	2.24	2.11	2.00	1.90	1.79	1.70	1.60
250	3.52	3.33	3.13	2.94	2.78	2.63	2.50	2.36	2.23	2.12	2.00	1.89	1.79
280	3.94	3.73	3.50	3.29	3.11	2.95	2.80	2.64	2.50	2.37	2.24	2.12	2.00
315	4.44	4.20	3.94	3.71	3.50	3.32	3.15	2.97	2.81	2.67	2.52	2.39	2.25
355	5.00	4.73	4.44	4.18	3.94	3.74	3.55	3.35	3.17	3.01	2.84	2.69	2.54
400	5.63	5.33	5.00	4.71	4.44	4.21	4.00	3.77	3.57	3.39	3.20	3.03	2.86
450	6.34	6.00	5.63	5.29	5.00	4.74	4.50	4.25	4.02	3.81	3.60	3.41	3.21
500	7.04	6.67	6.25	5.88	5.56	5.26	5.00	4.72	4.46	4.24	4.00	3.79	3.57
630	8.87	8.40	7.88	7.41	7.00	6.63	6.30	5.94	5.63	5.34	5.04	4.77	4.50

SPA	90	95	100	106	112	118	125	132	140	150	160	170	180	190	200
90	1.00														
95	1.06	1.00													
100	1.11	1.05	1.00												
106	1.18	1.12	1.06	1.00											
112	1.24	1.18	1.12	1.06	1.00										
118	1.31	1.24	1.18	1.11	1.05	1.00									
125	1.39	1.32	1.25	1.18	1.12	1.06	1.00								
132	1.47	1.39	1.32	1.25	1.18	1.12	1.06	1.00							
140	1.56	1.47	1.40	1.32	1.25	1.19	1.12	1.06	1.00						
150	1.67	1.58	1.50	1.42	1.34	1.27	1.20	1.14	1.07	1.00					
160	1.78	1.68	1.60	1.51	1.43	1.36	1.28	1.21	1.14	1.07	1.00				
170	1.89	1.79	1.70	1.60	1.52	1.44	1.36	1.29	1.21	1.13	1.06	1.00			
180	2.00	1.89	1.80	1.70	1.61	1.53	1.44	1.36	1.29	1.20	1.13	1.06	1.00		
190	2.11	2.00	1.90	1.79	1.70	1.61	1.52	1.44	1.36	1.27	1.19	1.12	1.06	1.00	
200	2.22	2.11	2.00	1.89	1.79	1.69	1.60	1.52	1.43	1.33	1.25	1.18	1.11	1.05	1.00
212	2.36	2.23	2.12	2.00	1.89	1.80	1.70	1.61	1.51	1.41	1.33	1.25	1.18	1.12	1.06
224	2.49	2.36	2.24	2.11	2.00	1.90	1.79	1.70	1.60	1.49	1.40	1.32	1.24	1.18	1.12
236	2.62	2.48	2.36	2.23	2.11	2.00	1.89	1.79	1.69	1.57	1.48	1.39	1.31	1.24	1.18
250	2.78	2.63	2.50	2.36	2.23	2.12	2.00	1.89	1.79	1.67	1.56	1.47	1.39	1.32	1.25
280	3.11	2.95	2.80	2.64	2.50	2.37	2.24	2.12	2.00	1.87	1.75	1.65	1.56	1.47	1.40
300	3.33	3.16	3.00	2.83	2.68	2.54	2.40	2.27	2.14	2.00	1.88	1.76	1.67	1.58	1.50
315	3.50	3.32	3.15	2.97	2.81	2.67	2.52	2.39	2.25	2.10	1.97	1.85	1.75	1.66	1.58
355	3.94	3.74	3.55	3.35	3.17	3.01	2.84	2.69	2.54	2.37	2.22	2.09	1.97	1.87	1.78
400	4.44	4.21	4.00	3.77	3.57	3.39	3.20	3.03	2.86	2.67	2.50	2.35	2.22	2.11	2.00
450	5.00	4.74	4.50	4.25	4.02	3.81	3.60	3.41	3.21	3.00	2.81	2.65	2.50	2.37	2.25
500	5.56	5.26	5.00	4.72	4.46	4.24	4.00	3.79	3.57	3.33	3.13	2.94	2.78	2.63	2.50
560	6.22	5.89	5.60	5.28	5.00	4.75	4.48	4.24	4.00	3.73	3.50	3.29	3.11	2.95	2.80
630	7.00	6.63	6.30	5.94	5.63	5.34	5.04	4.77	4.50	4.20	3.94	3.71	3.50	3.32	3.15
800	8.89	8.42	8.00	7.55	7.14	6.78	6.40	6.06	5.71	5.33	5.00	4.71	4.44	4.21	4.00

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Selection Data

Table 3 - Speed ratios SPB & SPC

SPB	140	150	160	170	180	190	200	212	224	236	250	280	300	315
140	1.00													
150	1.07	1.00												
160	1.14	1.07	1.00											
170	1.21	1.13	1.06	1.00										
180	1.29	1.20	1.13	1.06	1.00									
190	1.36	1.27	1.19	1.12	1.06	1.00								
200	1.43	1.33	1.25	1.18	1.11	1.05	1.00							
212	1.51	1.41	1.33	1.25	1.18	1.12	1.06	1.00						
224	1.60	1.49	1.40	1.32	1.24	1.18	1.12	1.06	1.00					
236	1.69	1.57	1.48	1.39	1.31	1.24	1.18	1.11	1.05	1.00				
250	1.79	1.67	1.56	1.47	1.39	1.32	1.25	1.18	1.12	1.06	1.00			
280	2.00	1.87	1.75	1.65	1.56	1.47	1.40	1.32	1.25	1.19	1.12	1.00		
300	2.14	2.00	1.88	1.76	1.67	1.58	1.50	1.42	1.34	1.27	1.20	1.07	1.00	
315	2.25	2.10	1.97	1.85	1.75	1.66	1.58	1.49	1.41	1.33	1.26	1.13	1.05	1.00
335	2.39	2.23	2.09	1.97	1.86	1.76	1.68	1.58	1.50	1.42	1.34	1.20	1.12	1.06
355	2.54	2.37	2.22	2.09	1.97	1.87	1.78	1.67	1.58	1.50	1.42	1.27	1.18	1.13
400	2.86	2.67	2.50	2.35	2.22	2.11	2.00	1.89	1.79	1.69	1.60	1.43	1.33	1.27
450	3.21	3.00	2.81	2.65	2.50	2.37	2.25	2.12	2.01	1.91	1.80	1.61	1.50	1.43
500	3.57	3.33	3.13	2.94	2.78	2.63	2.50	2.36	2.23	2.12	2.00	1.79	1.67	1.59
560	4.00	3.73	3.50	3.29	3.11	2.95	2.80	2.64	2.50	2.37	2.24	2.00	1.87	1.78
630	4.50	4.20	3.94	3.71	3.50	3.32	3.15	2.97	2.81	2.67	2.52	2.25	2.10	2.00
710	5.07	4.73	4.44	4.18	3.94	3.74	3.55	3.35	3.17	3.01	2.84	2.54	2.37	2.25
800	5.71	5.33	5.00	4.71	4.44	4.21	4.00	3.77	3.57	3.39	3.20	2.86	2.67	2.54
900	6.43	6.00	5.63	5.29	5.00	4.74	4.50	4.25	4.02	3.81	3.60	3.21	3.00	2.86
1000	7.14	6.67	6.25	5.88	5.56	5.26	5.00	4.72	4.46	4.24	4.00	3.57	3.33	3.17
1250	8.93	8.33	7.81	7.35	6.94	6.58	6.25	5.90	5.58	5.30	5.00	4.46	4.17	3.97

SPC	224	236	250	265	280	300	315	335	355	375	400	425	450	475	500	530	560
224	1.00																
236	1.05	1.00															
250	1.12	1.06	1.00														
265	1.18	1.12	1.06	1.00													
280	1.25	1.19	1.12	1.06	1.00												
300	1.34	1.27	1.20	1.13	1.07	1.00											
315	1.41	1.33	1.26	1.19	1.13	1.05	1.00										
335	1.50	1.42	1.34	1.26	1.20	1.12	1.06	1.00									
355	1.58	1.50	1.42	1.34	1.27	1.18	1.13	1.06	1.00								
375	1.67	1.59	1.50	1.42	1.34	1.25	1.19	1.12	1.06	1.00							
400	1.79	1.69	1.60	1.51	1.43	1.33	1.27	1.19	1.13	1.07	1.00						
425	1.90	1.80	1.70	1.60	1.52	1.42	1.35	1.27	1.20	1.13	1.06	1.00					
450	2.01	1.91	1.80	1.70	1.61	1.50	1.43	1.34	1.27	1.20	1.13	1.06	1.00				
475	2.12	2.01	1.90	1.79	1.70	1.58	1.51	1.42	1.34	1.27	1.19	1.12	1.06	1.00			
500	2.23	2.12	2.00	1.89	1.79	1.67	1.59	1.49	1.41	1.33	1.25	1.18	1.11	1.05	1.00		
530	2.37	2.25	2.12	2.00	1.89	1.77	1.68	1.58	1.49	1.41	1.33	1.25	1.18	1.12	1.06	1.00	
560	2.50	2.37	2.24	2.11	2.00	1.87	1.78	1.67	1.58	1.49	1.40	1.32	1.24	1.18	1.12	1.06	1.00
630	2.81	2.67	2.52	2.38	2.25	2.10	2.00	1.88	1.77	1.68	1.58	1.48	1.40	1.33	1.26	1.19	1.13
710	3.17	3.01	2.84	2.68	2.54	2.37	2.25	2.12	2.00	1.89	1.78	1.67	1.58	1.49	1.42	1.34	1.27
800	3.57	3.39	3.20	3.02	2.86	2.67	2.54	2.39	2.25	2.13	2.00	1.88	1.78	1.68	1.60	1.51	1.43
1000	4.46	4.24	4.00	3.77	3.57	3.33	3.17	2.99	2.82	2.67	2.50	2.35	2.22	2.11	2.00	1.89	1.79
1250	5.58	5.30	5.00	4.72	4.46	4.17	3.97	3.73	3.52	3.33	3.13	2.94	2.78	2.63	2.50	2.36	2.23

Selection Data

Table 4 - Power ratings

SPZ Power ratings (kW)									Power addition (kW) for speed ratio				
rev/min	71	75	80	90	100	112	125	140	1.00 - 1.05	1.06 - 1.25	1.26 - 2.00	2.01 - 3.00	over 3.00
400	0.51	0.57	0.63	0.76	0.91	1.08	1.25	1.47	0.00	0.04	0.07	0.07	0.07
600	0.70	0.78	0.89	1.08	1.30	1.55	1.82	2.12	0.00	0.05	0.08	0.08	0.08
720	0.82	0.89	1.04	1.28	1.54	1.83	2.15	2.50	0.00	0.06	0.10	0.11	0.12
800	0.88	0.99	1.14	1.41	1.68	2.00	2.35	2.74	0.00	0.07	0.11	0.12	0.13
960	1.01	1.16	1.33	1.66	1.96	2.34	2.74	3.23	0.00	0.08	0.13	0.15	0.15
1200	1.23	1.40	1.60	2.01	2.38	2.87	3.37	3.93	0.00	0.10	0.17	0.17	0.19
1440	1.45	1.63	1.86	2.34	2.80	3.38	3.98	4.62	0.00	0.13	0.20	0.22	0.23
1600	1.57	1.76	2.03	2.56	3.06	3.68	4.33	5.05	0.00	0.14	0.22	0.24	0.26
2000	1.87	2.10	2.43	3.08	3.70	4.42	5.20	6.09	0.00	0.17	0.28	0.30	0.32
2400	2.13	2.43	2.80	3.55	4.27	5.10	5.99	7.00	0.00	0.21	0.33	0.36	0.39
2800	2.38	2.74	3.15	4.00	4.81	5.76	6.75	7.88	0.00	0.24	0.39	0.43	0.45
2880	2.43	2.80	3.22	4.09	4.92	5.89	6.90	8.05	0.00	0.25	0.40	0.44	0.45
3200	2.62	3.01	3.48	4.41	5.32	6.36	7.43	8.65	0.00	0.28	0.45	0.49	0.51
3600	2.85	3.26	3.80	4.80	5.80	6.92	8.07	9.35	0.00	0.31	0.50	0.55	0.58
4000	3.03	3.47	4.06	5.14	6.20	7.38	8.58	9.86	0.00	0.35	0.56	0.61	0.64
4500	3.25	3.72	4.37	5.54	6.67	7.92	9.17	10.42	0.00	0.39	0.62	0.68	0.72
5000	3.44	3.96	4.62	5.87	7.05	8.32	9.56	10.79	0.00	0.44	0.70	0.73	0.77

SPA Power ratings (kW)											Power addition (kW) for speed ratio				
rev/min	90	100	112	118	125	132	140	160	180	200	1.00 - 1.05	1.06 - 1.25	1.26 - 2.00	2.01 - 3.00	over 3.00
400	0.87	1.11	1.43	1.56	1.73	1.90	2.09	2.59	3.06	3.55	0.00	0.07	0.14	0.16	0.16
600	1.20	1.55	1.99	2.19	2.44	2.69	2.97	3.66	4.35	5.02	0.00	0.13	0.21	0.23	0.25
720	1.40	1.81	2.32	2.57	2.86	3.15	3.48	4.30	5.11	5.88	0.00	0.16	0.26	0.28	0.30
800	1.50	1.97	2.54	2.81	3.13	3.44	3.81	4.72	5.61	6.47	0.00	0.18	0.29	0.31	0.33
960	1.72	2.28	2.96	3.30	3.66	4.04	4.47	5.55	6.59	7.62	0.00	0.21	0.34	0.37	0.40
1200	2.04	2.72	3.55	3.98	4.42	4.88	5.41	6.72	7.99	9.24	0.00	0.27	0.43	0.47	0.49
1440	2.35	3.15	4.12	4.64	5.17	5.71	6.33	7.86	9.35	10.81	0.00	0.32	0.51	0.56	0.59
1600	2.53	3.41	4.47	5.02	5.60	6.19	6.87	8.54	10.14	11.72	0.00	0.36	0.57	0.62	0.66
2000	2.98	4.03	5.33	5.95	6.66	7.38	8.20	10.18	12.04	13.92	0.00	0.45	0.71	0.78	0.82
2400	3.31	4.56	6.04	6.76	7.58	8.39	9.32	11.52	13.61	15.60	0.00	0.54	0.86	0.93	0.99
2800	3.66	5.11	6.78	7.61	8.54	9.45	10.48	12.91	15.21	17.29	0.00	0.63	1.00	1.09	1.15
2880	3.68	5.16	6.84	7.68	8.62	9.53	10.57	13.02	15.34	17.42	0.00	0.64	1.03	1.12	1.19
3200	3.88	5.47	7.27	8.18	9.18	10.15	11.23	13.76	16.09	18.51	0.00	0.72	1.14	1.25	1.32
3600	4.11	5.83	7.77	8.76	9.83	10.85	12.00	14.60	16.91	19.71	0.00	0.81	1.29	1.40	1.48

SPB Power ratings (kW)										Power addition (kW) for speed ratio					
rev/min	140	160	180	200	224	236	250	280	315	1.00 - 1.05	1.06 - 1.25	1.26 - 2.00	2.01 - 3.00	over 3.00	
200	1.40	1.79	2.19	2.57	3.06	3.28	3.52	4.12	4.78		0.00	0.09	0.15	0.16	0.17
400	2.52	3.29	4.02	4.78	5.66	6.10	6.61	7.70	8.92		0.00	0.19	0.29	0.32	0.34
600	3.50	4.60	5.65	6.73	7.98	8.50	9.33	10.88	12.62		0.00	0.28	0.45	0.48	0.51
720	4.08	5.36	6.61	7.88	9.34	9.90	10.93	12.75	14.78		0.00	0.33	0.54	0.59	0.62
800	4.45	5.87	7.23	8.63	10.24	10.94	11.98	13.97	16.18		0.00	0.37	0.60	0.65	0.69
960	5.19	6.85	8.48	10.12	12.03	13.00	14.04	16.37	18.94		0.00	0.44	0.70	0.77	0.81
1200	6.17	8.20	10.18	12.15	14.45	15.61	16.84	19.53	22.53		0.00	0.56	0.89	0.97	1.03
1440	7.13	9.50	11.84	14.11	16.79	18.12	19.53	22.55	25.93		0.00	0.66	1.06	1.15	1.21
1600	7.66	10.25	12.77	15.20	18.04	19.46	20.96	24.14	27.56		0.00	0.75	1.19	1.29	1.37
1800	8.31	11.16	13.89	16.52	19.56	21.07	22.67	26.01	29.47		0.00	0.84	1.34	1.45	1.54
2000	8.94	12.04	14.97	17.80	21.00	22.60	24.29	27.76	31.21		0.00	0.93	1.48	1.62	1.71
2400	9.91	13.37	16.59	19.63	23.15	24.55	26.83	29.45	31.95		0.00	1.11	1.78	1.94	2.05
2880	10.95	14.78	18.29	21.51	25.29	26.39	29.29	-	-		0.00	1.32	2.11	2.31	2.44
3000	11.11	15.01	18.56	21.75	25.45	26.53	29.42	-	-		0.00	1.39	2.23	2.42	2.57

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Selection Data

Table 4 - Power ratings (continued)

SPC Power ratings (kW)														Power addition (kW) for speed ratio				
rev/min	224	236	250	265	280	300	315	335	355	400	450	500	560	1.00-1.05	1.06-1.25	1.26-2.00	2.01-3.00	over 3.00
200	3.99	4.47	4.95	5.27	6.04	6.71	7.30	8.09	8.73	10.34	12.06	13.81	15.87	0.00	0.29	0.46	0.50	0.53
400	7.16	8.04	8.98	10.02	11.05	12.28	13.40	14.78	16.15	19.09	22.40	25.59	29.40	0.00	0.57	0.92	1.00	1.06
600	9.86	11.04	12.43	13.99	15.35	17.14	18.71	20.63	22.52	26.65	31.17	35.57	40.66	0.00	0.86	1.37	1.50	1.59
720	11.41	12.77	14.43	16.29	17.84	19.95	21.79	24.03	26.20	31.02	36.21	41.27	47.04	0.00	1.03	1.65	1.80	1.90
800	12.41	13.84	15.71	17.66	19.46	21.74	23.75	26.18	28.54	33.76	39.32	44.33	50.77	0.00	1.15	1.83	2.00	2.11
960	14.34	15.93	18.20	20.33	22.59	25.23	27.56	30.36	33.08	39.06	45.29	50.11	57.80	0.00	1.37	2.20	2.40	2.54
1200	16.78	18.78	21.36	23.73	26.53	29.62	32.29	35.41	38.55	45.07	51.63	56.89	63.01	0.00	1.72	2.75	3.00	3.17
1440	19.05	21.44	24.30	26.88	30.17	33.67	36.63	40.02	43.49	50.36	56.96	62.32	-	0.00	2.06	3.30	3.60	3.81
1600	20.14	22.92	25.82	28.93	29.55	35.57	38.64	42.18	45.58	52.35	58.09	-	-	0.00	2.29	3.67	4.00	4.23
1800	21.39	24.30	27.39	30.63	33.82	37.51	40.66	44.04	47.43	53.97	-	-	-	0.00	2.58	4.12	4.50	4.76
2000	22.25	25.33	28.53	31.82	35.09	38.74	41.82	45.08	48.40	-	-	-	-	0.00	2.86	4.58	5.00	5.29

Table 5 - Correction factors for belt length

SPZ		SPA		SPB		SPC	
Belt length (mm)	Correction factor	Belt length (mm)	Correction factor	Belt length (mm)	Correction factor	Belt length (mm)	Correction factor
510 - 710	0.80	750 - 900	0.80	1250 - 1340	0.80	2000 - 2240	0.80
737 - 950	0.85	925 - 1120	0.85	1400 - 1600	0.85	2360 - 2800	0.85
962 - 1250	0.90	1132 - 1600	0.90	1650 - 2240	0.90	3000 - 3350	0.90
1270 - 1500	0.95	1632 - 2240	0.95	2280 - 3000	0.95	3550 - 4500	0.95
1520 - 2120	1.00	2300 - 2800	1.00	3150 - 3750	1.00	4750 - 5600	1.00
2150 - 2840	1.05	2900 - 3550	1.05	3800 - 5000	1.05	6000 - 8000	1.05
2990 - 3810	1.10	3750 - 4500	1.10	5070 - 7990	1.10	8500 - 10000	1.10

Table 6 - correction factors for angle of contact on small pulley

$\frac{D-d}{C}$	Angle of contact	Correction factor	$\frac{D-d}{C}$	Angle of contact	Correction factor
0.00	180°	1.00	0.80	133°	0.94
0.10	174°	0.99	0.90	127°	0.92
0.20	169°	0.99	1.00	120°	0.91
0.30	163°	0.98	1.10	113°	0.89
0.40	157°	0.98	1.20	106°	0.87
0.50	151°	0.97	1.30	99°	0.85
0.60	145°	0.96	1.40	91°	0.82
0.70	139°	0.95	1.45	87°	0.80

Belt Tensioning

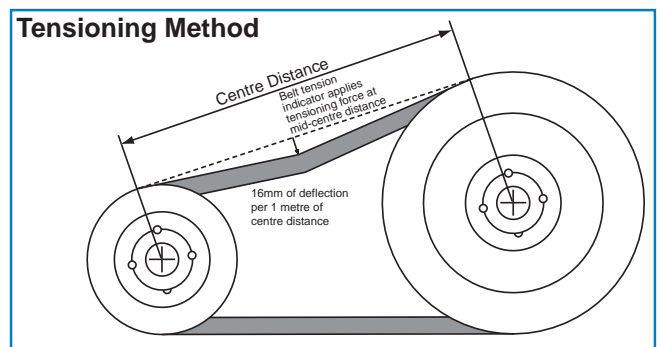
Challenge 'V' and Wedge belts are manufactured to ensure precise length and to stay matched during storage and on the drive for many years. This also ensures that each belt, when correctly tensioned, will take the correct share of the load to be transmitted, thus helping to achieve maximum life for the drive.

We recommend using the CHALLENGE Belt Tensioning Gauge to obtain the correct tension for the drive thus ensuring optimum life from the belts. This method has been verified by successful drives globally

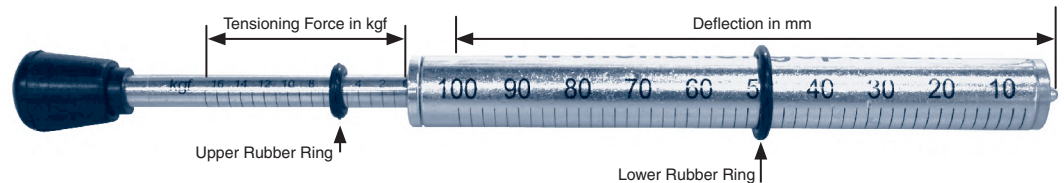
Method of belt tensioning using the CHALLENGE Belt Tension Gauge

- 1] Install the belts to be a snug fit around the pulleys
- 2] Rotate the pulleys a few revolutions to allow the belts to sit correctly in the pulley grooves. Be careful not to trap fingers !
- 3] Calculate the deflection in mm on a basis of 16 mm per metre of centre distance
- 4] Set the lower black rubber ring on the large tube to the deflection required in mm
- 5] Set the upper ring (on the metal rod) against the top of the large tube
- 6] Place the belt tension indicator on top of the belt at the middle of the centre distance and apply a force at right angles to the belt, deflecting it to the point where the lower rubber ring is level with the top of an adjacent belt.
- 7] Read off the tensioning force value indicated by the bottom edge of the upper rubber ring
- 8] Compare this force to the value in the table and adjust the tension until the correct value is attained
- 9] A new drive should be tensioned to the 1.3 x tensioning force to allow for belt tension decay during the initial bedding in period.

- After approximately 30 minutes of running and thereafter, the tension should be set to the basic tensioning value
- 10] For a single belt drive, use a straight edge across the two pulleys to act as a reference point and apply the CHALLENGE Belt Tension Gauge as per point 6.
 - 11] If a CHALLENGE Belt Tension Gauge is not available, using a spring balance and rule is acceptable.



Belt Tension Indicator



Tensioning forces

Belt section	Tensioning force to deflect belt 16 mm per metre of centre distance		
	Small pulley diameter (mm)	Basic tensioning forces (kgf)	1.3 x tensioning forces (kgf)
SPZ	56 – 71	1.6	2.1
	75 – 90	1.8	2.3
	90 – 125	2.0	2.6
	125 +	2.1	2.7
SPA	63 – 100	2.2	2.8
	106 – 140	3.0	3.9
	150 – 200	3.7	4.8
	200 +	4.0	5.2
SPB	100 – 160	4.0	5.2
	170 – 224	5.1	6.6
	236 – 355	6.3	8.2
	355 +	6.6	8.6
SPC	200 – 250	7.1	9.2
	265 – 355	9.4	12.2
	375 +	12.0	15.6
Z	56 – 100	0.5 – 0.8	0.6 – 1.0
A	80 – 140	1.0 – 1.5	1.3 – 1.9
B	125 – 200	2.0 – 3.1	2.6 – 4.0
C	200 – 400	4.1 – 6.1	5.5 – 7.9
D	355 – 600	7.1 – 10.7	9.2 – 13.9

The tensioning forces in the table above are representative for a correctly designed drive. A precise tensioning force for a particular drive can be calculated from basic principles if desired. Contact Challenge for details

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Trouble Shooting

Trouble Shooting

Problem	Excessive Oil Exposure to Elements	Contact with Pulley	Insufficient Tension	Stalled Driven Pulley	Constant Slippage	Rough Pulley	Sub Standard Pulley	Excessive Tension	Shock Load	Foreign Material	Excessive Dust	Worn Pulleys	High Ambient Temperature	Damaged Tensile Member	Incorrect Drive Set up	Improper Make-up	Mixed Old & New Belts	Different Materials	Belt/Pulley Incompatible	Clean Pulleys & Belts	Replace Belts & Belts	Install Protection	Check Belt Length	Tension Obstruction	Replace Pulleys	File Smooth	Align Drive	Provide Ventilation	Check for Proper Belt Use Only New Belts	Check Fit
Loose Cover & Swell	*																													
Weathering or Cracks	*																													
Gouges	*	*																												
Spin Burn	*	*																												
Envelope Wear	*	*	*																											
Uneven Envelope Wear	*	*	*	*																										
Ply Separation	*	*	*	*	*																									
Side Split	*	*	*	*	*																									
Broken Belts	*	*	*	*	*																									
Belt Turn Over	*	*	*	*	*																									
Hardening & Premature Cracking	*	*	*	*	*																									
Belt Squeal	*	*	*	*	*																									
Excessive Stretch	*	*	*	*	*																									
Excessive Vibration	*	*	*	*	*																									
Belts too Long at Installation								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Belts too Short at Installation								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Mismatched Belts at Installation							*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

Question to Ask on “Belt Failures”

- 1) Ask for the above information. Check the design, using this information?
- 2) Were the belts tensioned correctly?
- 3) Has the alignment of the drive been checked?
- 4) Have the pulleys been checked for wear?
- 5) Ensure that the belts were not “levered” onto the pulley.
- 6) Compare the belts visual condition against the under mentioned “Trouble Shooting” table in “problems” and decide on the best probable cause/s.

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Classical Timing Belts

Challenge Classical Timing Belts

Challenge classical synchronous belts are manufactured to ISO 5296 in four pitch sizes.

Belt Dimensions

	XL	L	H	XH	
	Extra Light	Light	Heavy	Extra Heavy	
	Belt Pitch (P)	1/5" (5.080)	3/8" (9.525)	1/2" (12.700)	7/8" (22.225)
	Tooth Depth (T)	1.27	1.91	2.29	6.35
Belt Thickness (H)	2.40	3.60	4.40	11.40	

XL (Extra Light Series) 1/5" Pitch (5.08mm)

Width			Pitch Length	Number of Teeth
1/4" (6.5 mm) Part Number	5/16" (7.9 mm) Part Number	3/8" (9.5 mm) Part Number		
60XL025	60XL031	60XL037	152.4	30
70XL025	70XL031	70XL037	177.8	35
80XL025	80XL031	80XL037	203.2	40
90XL025	90XL031	90XL037	228.6	45
98XL025	98XL031	98XL037	248.9	49
100XL025	100XL031	100XL037	254.0	50
102XL025	102XL031	102XL037	259.1	51
104XL025	104XL031	104XL037	264.2	52
106XL025	106XL031	106XL037	269.2	53
110XL025	110XL031	110XL037	279.4	55
120XL025	120XL031	120XL037	304.8	60
130XL025	130XL031	130XL037	330.2	65
140XL025	140XL031	140XL037	355.6	70
146XL025	146XL031	146XL037	370.8	73
150XL025	150XL031	150XL037	381.0	75
156XL025	156XL031	156XL037	396.2	78
160XL025	160XL031	160XL037	406.4	80
170XL025	170XL031	170XL037	431.8	85
176XL025	176XL031	176XL037	447.0	88
180XL025	180XL031	180XL037	457.2	90
182XL025	182XL031	182XL037	462.3	91
188XL025	188XL031	188XL037	477.5	94
190XL025	190XL031	190XL037	482.6	95
198XL025	198XL031	198XL037	502.9	99
200XL025	200XL031	200XL037	508.0	100
202XL025	202XL031	202XL037	513.1	101
210XL025	210XL031	210XL037	533.4	105
212XL025	212XL031	212XL037	538.5	106
214XL025	214XL031	214XL037	543.6	107
220XL025	220XL031	220XL037	558.8	110
228XL025	228XL031	228XL037	579.1	114
230XL025	230XL031	230XL037	584.2	115
234XL025	234XL031	234XL037	594.4	117
240XL025	240XL031	240XL037	609.6	120
250XL025	250XL031	250XL037	635.0	125
260XL025	260XL031	260XL037	660.4	130

Classical Timing Belts

L (Light Series) 3/8" Pitch (9.525mm)

Width			Pitch Length	Number of Teeth
1/2" (13 mm) Part Number	3/4" (19 mm) Part Number	1" (25 mm) Part Number		
124L050	124L075	124L100	314.3	33
135L050	135L075	135L100	342.9	36
150L050	150L075	150L100	381.0	40
173L050	173L075	173L100	438.2	46
187L050	187L075	187L100	476.3	50
202L050	202L075	202L100	514.4	54
210L050	210L075	210L100	533.4	56
225L050	225L075	225L100	571.5	60
240L050	240L075	240L100	609.6	64
255L050	255L075	255L100	647.7	68
270L050	270L075	270L100	685.8	72
285L050	285L075	285L100	723.9	76
300L050	300L075	300L100	762.0	80
322L050	322L075	322L100	819.2	86
334L050	334L075	334L100	848.4	89
345L050	345L075	345L100	876.3	92
367L050	367L075	367L100	933.5	98
390L050	390L075	390L100	990.6	104
405L050	405L075	405L100	1028.7	108
412L050	412L050	412L100	1047.8	110
420L050	420L075	420L100	1066.8	112
450L050	450L075	450L100	1143.0	120
480L050	480L075	480L100	1219.2	128
510L050	510L075	510L100	1295.4	136
540L050	540L075	540L100	1371.6	144
600L050	600L075	600L100	1524.0	160

Classical Timing Belts

H (Heavy Series) 1/2" Pitch (12.7mm)

Width					Pitch Length	Number of Teeth
3/4" (19 mm) Part Number	1" (25 mm) Part Number	1.1/2" (38 mm) Part Number	2" (51 mm) Part Number	3" (75 mm) Part Number		
240H075	240H100	240H150	240H200	240H300	609.6	48
270H075	270H100	270H150	270H200	270H300	685.8	54
300H075	300H100	300H150	300H200	300H300	762.0	60
310H075	310H100	310H150	310H200	310H300	787.4	62
330H075	330H100	330H150	330H200	330H300	838.2	66
360H075	360H100	360H150	360H200	360H300	914.4	72
370H075	370H100	370H150	370H200	370H300	939.8	74
390H075	390H100	390H150	390H200	390H300	990.6	78
420H075	420H100	420H150	420H200	420H300	1066.8	84
450H075	450H100	450H150	450H200	450H300	1143.0	90
480H075	480H100	480H150	480H200	480H300	1219.2	96
510H075	510H100	510H150	510H200	510H300	1295.4	102
540H075	540H100	540H150	540H200	540H300	1371.6	108
570H075	570H100	570H150	570H200	570H300	1447.8	114
600H075	600H100	600H150	600H200	600H300	1524.0	120
630H075	630H100	630H150	630H200	630H300	1600.2	126
660H075	660H100	660H150	660H200	660H300	1676.4	132
670H075	670H100	670H150	670H200	670H300	1701.8	134
700H075	700H100	700H150	700H200	700H300	1778.0	140
725H075	725H100	725H150	725H200	725H300	1841.5	145
750H075	750H100	750H150	750H200	750H300	1905.0	150
800H075	800H100	800H150	800H200	800H300	2032.0	160
850H075	850H100	850H150	850H200	850H300	2159.0	170
900H075	900H100	900H150	900H200	900H300	2286.0	180
1000H075	1000H100	1000H150	1000H200	1000H300	2540.0	200
1100H075	1100H100	1100H150	1100H200	1100H300	2794.0	220
1120H075	1120H100	1120H150	1120H200	1120H300	2844.8	224
1140H075	1140H100	1140H150	1140H200	1140H300	2895.6	228
1150H075	1150H100	1150H150	1150H200	1150H300	2921.0	230
1250H075	1250H100	1250H150	1250H200	1250H300	3175.0	250
1400H075	1400H100	1400H150	1400H200	1400H300	3556.0	280
1645H075	1645H100	1645H150	1645H200	1645H300	4178.3	329
1700H075	1700H100	1700H150	1700H200	1700H300	4318.0	340

XH (Extra Heavy Series) 7/8" Pitch (22.225mm)

Width			Pitch Length	Number of Teeth
2" (51 mm) Part Number	3" (75 mm) Part Number	4" (102 mm) Part Number		
507XH200	507XH300	507XH400	1289.1	58
534XH200	534XH300	534XH400	1356.4	61
560XH200	560XH300	560XH400	1422.4	64
630XH200	630XH300	630XH400	1600.2	72
700XH200	700XH300	700XH400	1778.0	80
770XH200	770XH300	770XH400	1955.8	88
840XH200	840XH300	840XH400	2133.6	96
980XH200	980XH300	980XH400	2489.2	112
1120XH200	1120XH300	1120XH400	2844.8	128
1260XH200	1260XH300	1260XH400	3200.4	144
1400XH200	1400XH300	1400XH400	3556.0	160
1540XH200	1540XH300	1540XH400	3911.6	176
1750XH200	1750XH300	1750XH400	4445.0	200

Curved Tooth Timing Belts HTD®

Challenge Curved Tooth Timing Belts HTD®

HTD is a registered trademark of Gates Corporation

The special curved tooth design provides improved power transmission in a wide range of industrial applications.

The precision formed teeth ensure smooth engagement with pulley grooves ensuring a long trouble free service life.

Challenge Curved Tooth Timing Belts conform to ISO 13050

3M and 5M pitch belts are especially suited for many domestic, office machinery and power tool applications.

8M and 14M pitch belts are widely used in high performance drive applications.

Belt Dimensions

	3M	5M	8M	14M
Belt Pitch (P)	3.00	5.00	8.00	14.00
Tooth Depth (T)	1.15	2.00	3.20	6.00
Belt Thickness (H)	2.40	3.80	5.40	9.70

Curved Tooth, 3mm Pitch 3M

Width			Number of Teeth
6mm Part Number	9mm Part Number	15mm Part Number	
90-3M-6	90-3M-9	90-3M-15	30
105-3M-6	105-3M-9	105-3M-15	35
129-3M-6	129-3M-9	129-3M-15	43
141-3M-6	141-3M-9	141-3M-15	47
144-3M-6	144-3M-9	144-3M-15	48
147-3M-6	147-3M-9	147-3M-15	49
150-3M-6	150-3M-9	150-3M-15	50
159-3M-6	159-3M-9	159-3M-15	53
168-3M-6	168-3M-9	168-3M-15	56
174-3M-6	174-3M-9	174-3M-15	58
177-3M-6	177-3M-9	177-3M-15	59
180-3M-6	180-3M-9	180-3M-15	60
186-3M-6	186-3M-9	186-3M-15	62
195-3M-6	195-3M-9	195-3M-15	65
201-3M-6	201-3M-9	201-3M-15	67
204-3M-6	204-3M-9	204-3M-15	68
210-3M-6	210-3M-9	210-3M-15	70
213-3M-6	213-3M-9	213-3M-15	71
225-3M-6	225-3M-9	225-3M-15	75
231-3M-6	231-3M-9	231-3M-15	77
240-3M-6	240-3M-9	240-3M-15	80
243-3M-6	243-3M-9	243-3M-15	81
246-3M-6	246-3M-9	246-3M-15	82
249-3M-6	249-3M-9	249-3M-15	83
252-3M-6	252-3M-9	252-3M-15	84
255-3M-6	255-3M-9	255-3M-15	85
261-3M-6	261-3M-9	261-3M-15	87
264-3M-6	264-3M-9	264-3M-15	88
267-3M-6	267-3M-9	267-3M-15	89
270-3M-6	270-3M-9	270-3M-15	90
276-3M-6	276-3M-9	276-3M-15	92
285-3M-6	285-3M-9	285-3M-15	95
288-3M-6	288-3M-9	288-3M-15	96
291-3M-6	291-3M-9	291-3M-15	97
297-3M-6	297-3M-9	297-3M-15	99
300-3M-6	300-3M-9	300-3M-15	100
312-3M-6	312-3M-9	312-3M-15	104
318-3M-6	318-3M-9	318-3M-15	106
327-3M-6	327-3M-9	327-3M-15	109
330-3M-6	330-3M-9	330-3M-15	110
333-3M-6	333-3M-9	333-3M-15	111
336-3M-6	336-3M-9	336-3M-15	112
339-3M-6	339-3M-9	339-3M-15	113

Width			Number of Teeth
6mm Part Number	9mm Part Number	15mm Part Number	
345-3M-6	345-3M-9	345-3M-15	115
357-3M-6	357-3M-9	357-3M-15	119
363-3M-6	363-3M-9	363-3M-15	121
375-3M-6	375-3M-9	375-3M-15	125
384-3M-6	384-3M-9	384-3M-15	128
390-3M-6	390-3M-9	390-3M-15	130
393-3M-6	393-3M-9	393-3M-15	131
405-3M-6	405-3M-9	405-3M-15	135
420-3M-6	420-3M-9	420-3M-15	140
432-3M-6	432-3M-9	432-3M-15	144
447-3M-6	447-3M-9	447-3M-15	149
474-3M-6	474-3M-9	474-3M-15	158
480-3M-6	480-3M-9	480-3M-15	160
486-3M-6	486-3M-9	486-3M-15	162
489-3M-6	489-3M-9	489-3M-15	163
501-3M-6	501-3M-9	501-3M-15	167
510-3M-6	510-3M-9	510-3M-15	170
513-3M-6	513-3M-9	513-3M-15	171
522-3M-6	522-3M-9	522-3M-15	174
531-3M-6	531-3M-9	531-3M-15	177
537-3M-6	537-3M-9	537-3M-15	179
564-3M-6	564-3M-9	564-3M-15	188
570-3M-6	570-3M-9	570-3M-15	190
576-3M-6	576-3M-9	576-3M-15	192
579-3M-6	579-3M-9	579-3M-15	193
597-3M-6	597-3M-9	597-3M-15	199
600-3M-6	600-3M-9	600-3M-15	200
633-3M-6	633-3M-9	633-3M-15	211
648-3M-6	648-3M-9	648-3M-15	216
669-3M-6	669-3M-9	669-3M-15	223
711-3M-6	711-3M-9	711-3M-15	237
735-3M-6	735-3M-9	735-3M-15	245
738-3M-6	738-3M-9	738-3M-15	246
756-3M-6	756-3M-9	756-3M-15	252
804-3M-6	804-3M-9	804-3M-15	268
882-3M-6	882-3M-9	882-3M-15	294
945-3M-6	945-3M-9	945-3M-15	315
1062-3M-6	1062-3M-9	1062-3M-15	354
1125-3M-6	1125-3M-9	1125-3M-15	375
1245-3M-6	1245-3M-9	1245-3M-15	415
1263-3M-6	1263-3M-9	1263-3M-15	421
1500-3M-6	1500-3M-9	1500-3M-15	500
1530-3M-6	1530-3M-9	1530-3M-15	510

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Curved Tooth Timing Belts HTD®

Curved Tooth, 5mm Pitch 5M

Width			Number of Teeth
9mm Part Number	15mm Part Number	25mm Part Number	
305-5M-9	305-5M-15	305-5M-25	61
325-5M-9	325-5M-15	325-5M-25	65
345-5M-9	345-5M-15	345-5M-25	69
350-5M-9	350-5M-15	350-5M-25	70
375-5M-9	375-5M-15	375-5M-25	75
400-5M-9	400-5M-15	400-5M-25	80
420-5M-9	420-5M-15	420-5M-25	84
425-5M-9	425-5M-15	425-5M-25	85
450-5M-9	450-5M-15	450-5M-25	90
455-5M-9	455-5M-15	455-5M-25	91
460-5M-9	460-5M-15	460-5M-25	92
465-5M-9	465-5M-15	465-5M-25	93
475-5M-9	475-5M-15	475-5M-25	95
500-5M-9	500-5M-15	500-5M-25	100
525-5M-9	525-5M-15	525-5M-25	105
535-5M-9	535-5M-15	535-5M-25	107
565-5M-9	565-5M-15	565-5M-25	113
575-5M-9	575-5M-15	575-5M-25	115
580-5M-9	580-5M-15	580-5M-25	116
600-5M-9	600-5M-15	600-5M-25	120
610-5M-9	610-5M-15	610-5M-25	122
615-5M-9	615-5M-15	615-5M-25	123
635-5M-9	635-5M-15	635-5M-25	127
640-5M-9	640-5M-15	640-5M-25	128
670-5M-9	670-5M-15	670-5M-25	134
675-5M-9	675-5M-15	675-5M-25	135
700-5M-9	700-5M-15	700-5M-25	140
705-5M-9	705-5M-15	705-5M-25	141
710-5M-9	710-5M-15	710-5M-25	142
725-5M-9	725-5M-15	725-5M-25	145
740-5M-9	740-5M-15	740-5M-25	148

Width			Number of Teeth
9mm Part Number	15mm Part Number	25mm Part Number	
750-5M-9	750-5M-15	750-5M-25	150
755-5M-9	755-5M-15	755-5M-25	151
800-5M-9	800-5M-15	800-5M-25	160
835-5M-9	835-5M-15	835-5M-25	167
850-5M-9	850-5M-15	850-5M-25	170
890-5M-9	890-5M-15	890-5M-25	178
900-5M-9	900-5M-15	900-5M-25	180
935-5M-9	935-5M-15	935-5M-25	187
940-5M-9	940-5M-15	940-5M-25	188
950-5M-9	950-5M-15	950-5M-25	190
980-5M-9	980-5M-15	980-5M-25	196
1000-5M-9	1000-5M-15	1000-5M-25	200
1025-5M-9	1025-5M-15	1025-5M-25	205
1050-5M-9	1050-5M-15	1050-5M-25	210
1100-5M-9	1100-5M-15	1100-5M-25	220
1125-5M-9	1125-5M-15	1125-5M-25	225
1135-5M-9	1135-5M-15	1135-5M-25	227
1195-5M-9	1195-5M-15	1195-5M-25	239
1200-5M-9	1200-5M-15	1200-5M-25	240
1240-5M-9	1240-5M-15	1240-5M-25	248
1270-5M-9	1270-5M-15	1270-5M-25	254
1420-5M-9	1420-5M-15	1420-5M-25	284
1595-5M-9	1595-5M-15	1595-5M-25	319
1690-5M-9	1690-5M-15	1690-5M-25	338
1790-5M-9	1790-5M-15	1790-5M-25	358
1800-5M-9	1800-5M-15	1800-5M-25	360
1870-5M-9	1870-5M-15	1870-5M-25	374
1895-5M-9	1895-5M-15	1895-5M-25	379
1945-5M-9	1945-5M-15	1945-5M-25	389
2000-5M-9	2000-5M-15	2000-5M-25	400

Curved Tooth Timing Belts HTD®

Curved Tooth, 8mm Pitch 8M

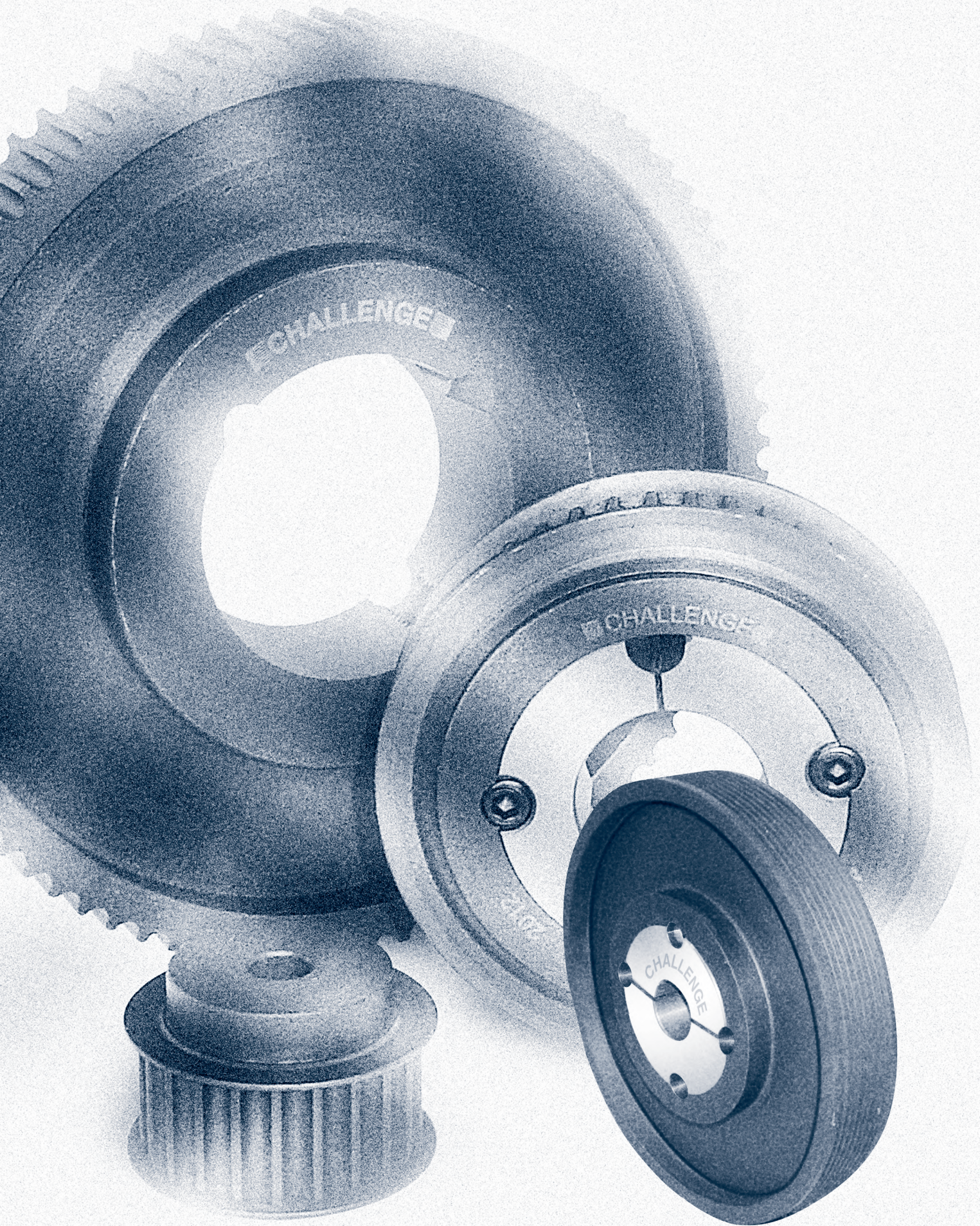
Width				Number of Teeth
20mm Part Number	30mm Part Number	50mm Part Number	85mm Part Number	
480-8M-20	480-8M-30	480-8M-50	480-8M-85	60
536-8M-20	536-8M-30	536-8M-50	536-8M-85	67
544-8M-20	544-8M-30	544-8M-50	544-8M-85	68
560-8M-20	560-8M-30	560-8M-50	560-8M-85	70
600-8M-20	600-8M-30	600-8M-50	600-8M-85	75
608-8M-20	608-8M-30	608-8M-50	608-8M-85	76
632-8M-20	632-8M-30	632-8M-50	632-8M-85	79
640-8M-20	640-8M-30	640-8M-50	640-8M-85	80
680-8M-20	680-8M-30	680-8M-50	680-8M-85	85
720-8M-20	720-8M-30	720-8M-50	720-8M-85	90
800-8M-20	800-8M-30	800-8M-50	800-8M-85	100
840-8M-20	840-8M-30	840-8M-50	840-8M-85	105
880-8M-20	880-8M-30	880-8M-50	880-8M-85	110
896-8M-20	896-8M-30	896-8M-50	896-8M-85	112
920-8M-20	920-8M-30	920-8M-50	920-8M-85	115
960-8M-20	960-8M-30	960-8M-50	960-8M-85	120
1000-8M-20	1000-8M-30	1000-8M-50	1000-8M-85	125
1040-8M-20	1040-8M-30	1040-8M-50	1040-8M-85	130
1080-8M-20	1080-8M-30	1080-8M-50	1080-8M-85	135
1120-8M-20	1120-8M-30	1120-8M-50	1120-8M-85	140
1200-8M-20	1200-8M-30	1200-8M-50	1200-8M-85	150
1224-8M-20	1224-8M-30	1224-8M-50	1224-8M-85	153
1280-8M-20	1280-8M-30	1280-8M-50	1280-8M-85	160
1352-8M-20	1352-8M-30	1352-8M-50	1352-8M-85	169
1440-8M-20	1440-8M-30	1440-8M-50	1440-8M-85	180
1464-8M-20	1464-8M-30	1464-8M-50	1464-8M-85	183
1600-8M-20	1600-8M-30	1600-8M-50	1600-8M-85	200
1760-8M-20	1760-8M-30	1760-8M-50	1760-8M-85	220
1800-8M-20	1800-8M-30	1800-8M-50	1800-8M-85	225
2000-8M-20	2000-8M-30	2000-8M-50	2000-8M-85	250
2200-8M-20	2200-8M-30	2200-8M-50	2200-8M-85	275
2400-8M-20	2400-8M-30	2400-8M-50	2400-8M-85	300
2520-8M-20	2520-8M-30	2520-8M-50	2520-8M-85	315
2600-8M-20	2600-8M-30	2600-8M-50	2600-8M-85	325
2800-8M-20	2800-8M-30	2800-8M-50	2800-8M-85	350

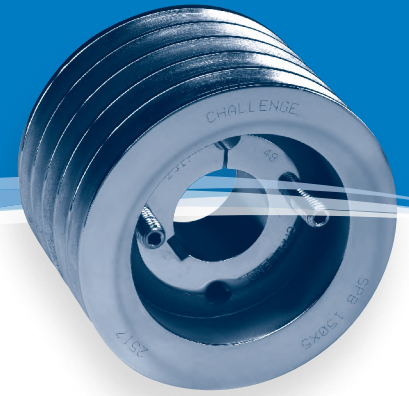
Curved Tooth Timing Belts HTD®

Curved Tooth, 14mm Pitch 14M

Width					Number of Teeth
40mm Part Number	55mm Part Number	85mm Part Number	115mm Part Number	170mm Part Number	
966-14M-40	966-14M-55	966-14M-85	966-14M-115	966-14M-170	69
994-14M-40	994-14M-55	994-14M-85	994-14M-115	994-14M-170	71
1092-14M-40	1092-14M-55	1092-14M-85	1092-14M-115	1092-14M-170	78
1106-14M-40	1106-14M-55	1106-14M-85	1106-14M-115	1106-14M-170	79
1190-14M-40	1190-14M-55	1190-14M-85	1190-14M-115	1190-14M-170	85
1260-14M-40	1260-14M-55	1260-14M-85	1260-14M-115	1260-14M-170	90
1288-14M-40	1288-14M-55	1288-14M-85	1288-14M-115	1288-14M-170	92
1344-14M-40	1344-14M-55	1344-14M-85	1344-14M-115	1344-14M-170	96
1400-14M-40	1400-14M-55	1400-14M-85	1400-14M-115	1400-14M-170	100
1442-14M-40	1442-14M-55	1442-14M-85	1442-14M-115	1442-14M-170	103
1568-14M-40	1568-14M-55	1568-14M-85	1568-14M-115	1568-14M-170	112
1610-14M-40	1610-14M-55	1610-14M-85	1610-14M-115	1610-14M-170	115
1764-14M-40	1764-14M-55	1764-14M-85	1764-14M-115	1764-14M-170	126
1778-14M-40	1778-14M-55	1778-14M-85	1778-14M-115	1778-14M-170	127
1848-14M-40	1848-14M-55	1848-14M-85	1848-14M-115	1848-14M-170	132
1890-14M-40	1890-14M-55	1890-14M-85	1890-14M-115	1890-14M-170	135
1904-14M-40	1904-14M-55	1904-14M-85	1904-14M-115	1904-14M-170	136
1960-14M-40	1960-14M-55	1960-14M-85	1960-14M-115	1960-14M-170	140
2100-14M-40	2100-14M-55	2100-14M-85	2100-14M-115	2100-14M-170	150
2240-14M-40	2240-14M-55	2240-14M-85	2240-14M-115	2240-14M-170	160
2310-14M-40	2310-14M-55	2310-14M-85	2310-14M-115	2310-14M-170	165
2380-14M-40	2380-14M-55	2380-14M-85	2380-14M-115	2380-14M-170	170
2450-14M-40	2450-14M-55	2450-14M-85	2450-14M-115	2450-14M-170	175
2590-14M-40	2590-14M-55	2590-14M-85	2590-14M-115	2590-14M-170	185
2660-14M-40	2660-14M-55	2660-14M-85	2660-14M-115	2660-14M-170	190
2800-14M-40	2800-14M-55	2800-14M-85	2800-14M-115	2800-14M-170	200
3150-14M-40	3150-14M-55	3150-14M-85	3150-14M-115	3150-14M-170	225
3360-14M-40	3360-14M-55	3360-14M-85	3360-14M-115	3360-14M-170	240
3500-14M-40	3500-14M-55	3500-14M-85	3500-14M-115	3500-14M-170	250
3850-14M-40	3850-14M-55	3850-14M-85	3850-14M-115	3850-14M-170	275
3920-14M-40	3920-14M-55	3920-14M-85	3920-14M-115	3920-14M-170	280
4326-14M-40	4326-14M-55	4326-14M-85	4326-14M-115	4326-14M-170	309
4578-14M-40	4578-14M-55	4578-14M-85	4578-14M-115	4578-14M-170	327

CHALLENGE®





Features

- All Challenge pulleys are produced from cast iron or steel and have a phosphated finish for protection
- V, Mi-Lock and Poly-V pulleys are balanced to Q6.3 or better allowing them to run at peripheral (rim) speeds up to 40 m/s

V Belt Pulleys

- Can accommodate both wedge and classical belts
- Dual duty design complying with ISO 4183
- Manufactured from GG25 high grade cast iron
- Available in taper bore. Pilot and QD bush bores can be produced on enquiry.
- A wide range of non-standard styles and sizes up to a diameter of 2400 mm can be produced.

Mi-Lock (Bi-Lock) Pulleys

- A simple, effective one or two groove pulley system
- No keyways or grub screws required due to the unique high torque locking system
- Manufactured from GG25 high grade cast iron

Poly-V Pulleys

- Available in sections J, K and L sections
- Manufactured from GG25 high grade cast iron

Classical Timing Belt Pulleys

- Available in taper bore for L (3/8") and H (1/2") sections
- Also available in pilot bore for XL (1/5"), L (3/8") and H (1/2") sections
- Manufactured from either high grade cast iron or steel
- Pulleys suit standard belt widths

HTD® Pulleys

- Available in sections 5M, 8M and 14M
- Available in both taper and pilot bore
- Manufactured from either high grade cast iron or steel

Metric Timing Pulleys

- Available in sections T2.5, T5 and T10
- Only available in pilot bore, can be manufactured in taper bore
- Manufactured from either aluminium or cast iron

General Information

Material and Groove Specifications:

Challenge V pulleys are manufactured from fine grain grey cast iron grade GG25 and are phosphated.

Groove dimensions conform to ISO 4183 for both eccentricity of outside diameter to bore and groove side wobble tolerance.

They are suitable for use with all wedge belts according to ISO 4184 and all classical V-belts according to ISO 4184.

Peripheral Speeds:

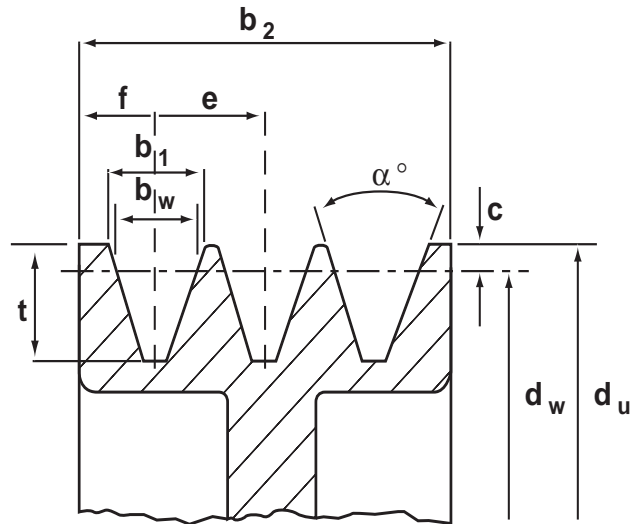
Peripheral (rim) speeds of up to 40 m/s are permissible

Balancing Specifications:

All Challenge pulleys are balanced to grade Q6.3 or better.

- Pulleys with a weight of 100kg and above are dynamically balanced (two planes).
- All pulleys with a weight less than 100kg are statically machine balanced (one plane).

V-belt Pulleys to ISO 4183

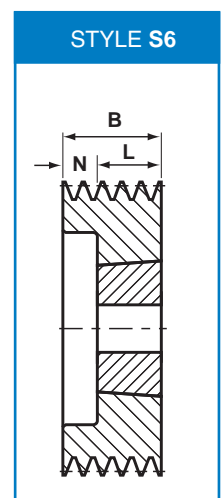
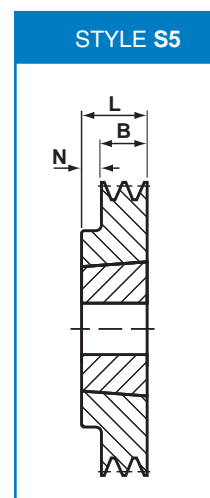
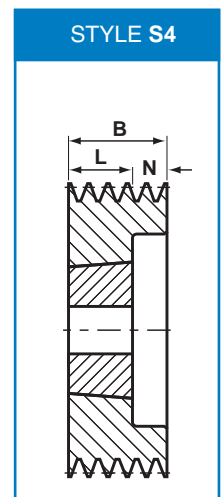
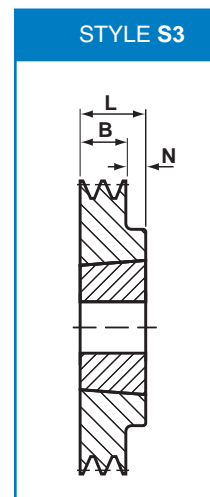
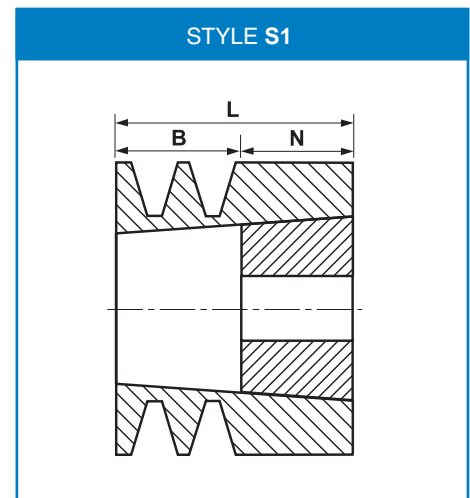


Profile	dw (mm)	α°	b1	bw	c	f	e	tmin
SPZ	Up to 80	34	9.7	8.5	2.0	8±0.3	12±0.3	11+0.6
	Over 80	38						
SPA	Up to 118	34	12.7	11.0	2.8	10±0.3	15±0.3	14+0.6
	Over 118	38						
SPB	Up to 190	34	16.3	14.0	3.5	12.5±0.4	19±0.4	18+0.6
	Over 190	38						
SPC	Up to 315	34	22.0	19.0	4.8	17±0.5	25.5±0.5	24+0.6
	Over 315	38						

Face Width of Pulleys, b₂

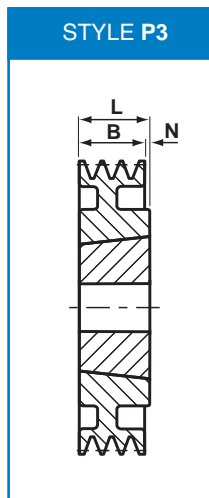
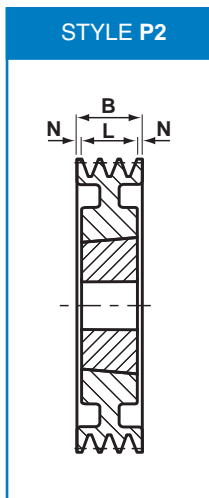
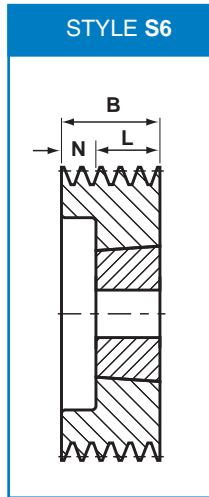
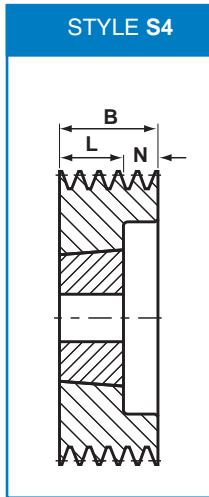
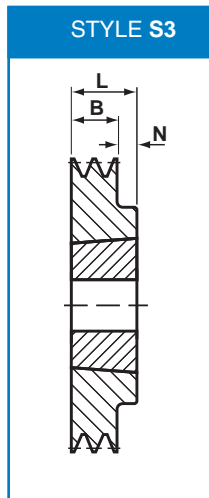
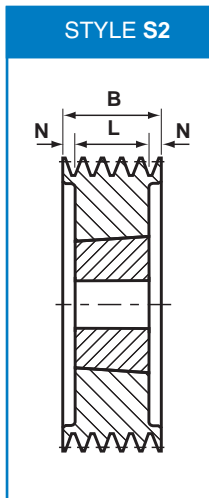
No. of Grooves	1	2	3	4	5	6	8	10	12
SPZ	16	28	40	52	64	76	100	-	-
SPA	20	35	50	65	80	95	-	-	-
SPB	25	44	63	82	101	120	158	196	-
SPC	-	-	85	110.5	136	161.5	212.5	263.5	314.5

Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
56	60	1	1008	25	S1	15	35	22	0.5
56	60	2	1108	28	S1	27	47	22	0.5
60	64	1	1008	25	S1	15	23	22	0.3
60	64	2	1108	28	S1	27	47	22	0.7
63	67	1	1108	28	S3	16	23	7	0.3
63	67	2	1108	28	S6	28	23	5	0.3
63	67	3	1108	28	S6	40	23	17	0.5
67	71	1	1108	28	S3	16	23	7	0.3
67	71	2	1108	28	S6	28	23	5	0.4
67	71	3	1108	28	S6	40	23	17	0.6
71	75	1	1108	28	S3	16	23	7	0.4
71	75	2	1108	28	S6	28	23	5	0.5
71	75	3	1108	28	S6	40	23	17	0.6
71	75	4	1108	28	S6	52	23	29	0.8
75	79	1	1108	28	S3	16	23	7	0.4
75	79	2	1210	32	S6	28	26	2	0.6
75	79	3	1210	32	S6	40	26	14	0.6
75	79	4	1210	32	S6	52	26	27	0.9
80	84	1	1210	32	S3	16	26	10	0.5
80	84	2	1210	32	S6	28	26	2	0.6
80	84	3	1210	32	S6	40	26	14	0.8
80	84	4	1210	32	S6	52	26	26	0.9
85	89	1	1210	32	S3	16	26	10	0.6
85	89	2	1610	42	S6	28	26	2	0.7
85	89	3	1610	42	S6	40	26	14	0.8
85	89	4	1610	42	S6	52	26	26	0.9
85	89	5	1610	42	S6	64	26	38	1.3
90	94	1	1210	32	S3	16	26	10	0.7
90	94	2	1610	42	S6	28	26	2	0.7
90	94	3	1610	42	S6	40	26	14	0.9
90	94	4	1610	42	S6	52	26	26	1.1
90	94	5	1610	42	S6	64	26	38	1.4
90	94	6	1610	42	S6	76	26	50	1.6
95	99	1	1210	32	S3	16	26	10	0.8
95	99	2	1610	42	S6	28	26	2	0.8
95	99	3	1610	42	S6	40	26	14	1.1
95	99	4	1610	42	S6	52	26	26	1.3
95	99	5	1610	42	S6	64	26	38	1.6
95	99	6	1610	42	S6	76	26	50	1.8
100	104	1	1210	32	S3	16	26	10	0.8
100	104	2	1610	42	S6	28	26	2	1.0
100	104	3	1610	42	S6	40	26	14	1.2
100	104	4	1610	42	S6	52	26	26	1.4
100	104	5	2012	50	S6	64	32	32	1.6
100	104	6	2012	50	S6	76	32	44	1.9
106	110	1	1610	42	S3	16	26	10	0.9
106	110	2	1610	42	S6	28	26	2	1.2
106	110	3	1610	42	S6	40	26	14	1.4
106	110	4	1610	42	S6	52	26	26	1.6
106	110	5	2012	50	S6	64	32	32	1.9
106	110	6	2012	50	S6	76	32	44	2.2
112	116	1	1610	42	S3	16	26	10	1.0
112	116	2	1610	42	S6	28	26	2	1.4
112	116	3	2012	50	S6	40	32	8	1.5
112	116	4	2012	50	S6	52	32	20	1.7
112	116	5	2012	50	S6	64	32	32	2.2
112	116	6	2012	50	S6	76	32	44	2.5
118	122	1	1610	42	S3	16	26	10	1.1
118	122	2	1610	42	S6	28	26	2	1.6
118	122	3	2012	50	S6	40	32	8	1.7
118	122	4	2012	50	S4	52	32	20	2.0
118	122	5	2012	50	S6	64	32	32	2.3
118	122	6	2517	65	S6	76	45	31	2.5



Pulley Configuration: S=Solid, P=Plate, A=Arm.
= lightening holes

SPZ

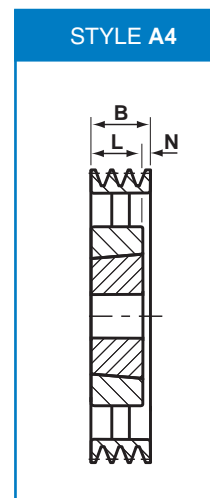
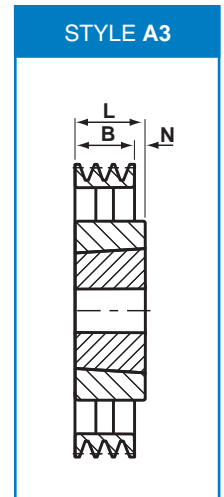
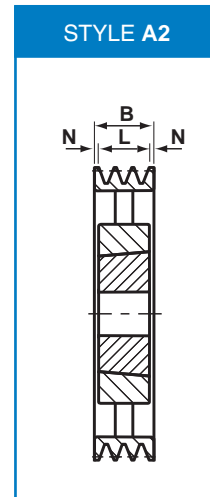
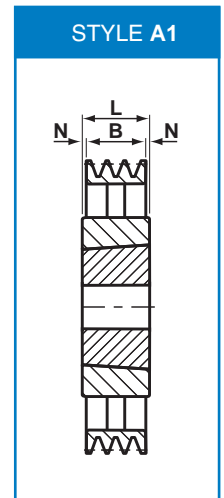
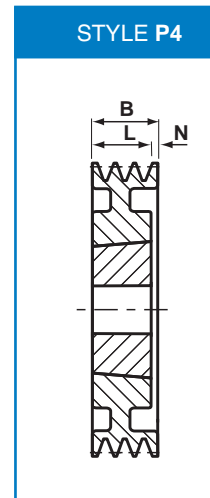


Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
125	129	1	1610	42	S3	16	26	10	1.2
125	129	2	1610	42	S6	28	26	2	1.8
125	129	3	2012	50	S6	40	32	8	2.1
125	129	4	2012	50	S4	52	32	20	2.3
125	129	5	2012	50	S6	64	32	32	2.7
125	129	6	2517	65	S6	76	45	31	3.0
132	136	1	1610	42	S3	16	26	10	1.4
132	136	2	1610	42	S6	28	26	2	2.1
132	136	3	2012	50	S6	40	32	8	2.4
132	136	4	2012	50	S6	52	32	20	2.7
132	136	5	2517	65	S6	64	45	19	3.2
132	136	6	2517	65	S6	76	45	31	3.5
140	144	1	1610	42	P3	16	26	10	1.6
140	144	2	1610	42	S6	28	26	2	2.4
140	144	3	2012	50	S4	40	32	8	2.8
140	144	4	2012	50	S4	52	32	20	3.2
140	144	5	2517	65	S4	64	45	19	3.5
140	144	6	2517	65	S4	76	45	31	3.9
150	154	1	1610	42	P3	16	26	10	1.9
150	154	2	2012	50	S3	28	32	4	2.6
150	154	3	2012	50	S4	40	32	8	3.4
150	154	4	2517	65	S4	52	45	7	3.9
150	154	5	2517	65	S4	64	45	19	4.3
150	154	6	2517	65	S4	76	45	31	4.7
160	164	1	1610	42	P3	16	26	10	2.1
160	164	2	2012	50	S3	28	32	4	3.1
160	164	3	2012	50	S4	40	32	8	3.9
160	164	4	2517	65	S4	52	45	7	4.7
160	164	5	2517	65	S4	64	45	19	5.1
160	164	6	2517	65	S4	76	45	31	5.5
170	174	1	1610	42	P3	16	26	10	1.7
170	174	2	2012	50	P3	28	32	4	3.4
170	174	3	2012	50	P4	40	32	8	4.3
170	174	4	2517	65	S4	52	45	7	5.4
170	174	5	2517	65	S4	64	45	19	6.1
170	174	6	2517	65	S4	76	45	31	6.7
180	184	1	1610	42	P3	16	26	10	1.8
180	184	2	2012	50	P3	28	32	4	2.7
180	184	3	2012	50	P4	40	32	8	3.3
180	184	4	2517	65	S4	52	45	7	6.5
180	184	5	2517	65	S4	64	45	19	6.9
180	184	6	2517	65	S4	76	45	31	7.3
190	194	1	1610	42	P3	16	26	10	2.5
190	194	2	2012	50	P3	28	32	4	3.2
190	194	3	2012	50	P4	40	32	8	5.1
190	194	4	2517	65	P4	52	45	7	5.5
190	194	5	2517	65	S2	64	45	9.5	6.5
190	194	6	2517	65	S2	76	45	15.5	7.2
190	194	8	2517	65	S2	100	45	27.5	8.5
200	204	1	2012	50	P3	16	32	16	3.2
200	204	2	2012	50	P3	28	32	4	3.4
200	204	3	2012	50	P4	40	32	8	3.6
200	204	4	2517	65	P4	52	45	7	5.4
200	204	5	2517	65	P2	64	45	9.5	6.1
200	204	6	2517	65	P2	76	45	15.5	6.6
200	204	8	2517	65	P2	100	45	27.5	9.6
224	228	1	2012	50	A3	16	32	16	2.8
224	228	2	2012	50	P3#	28	32	4	3.5
224	228	3	2012	50	P4#	40	32	8	4.2
224	228	4	2517	65	P4#	52	45	7	6.3
224	228	5	2517	65	P2	64	45	9.5	7.0
224	228	6	2517	65	P2#	76	45	15.5	7.6
224	228	8	2517	65	P2	100	45	27.5	12.3

Pulley Configuration: S=Solid, P=Plate, A=Arm.
= lightening holes

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused

Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
250	254	1	2012	50	A3	16	32	16.0	3.2
250	254	2	2012	50	A3	28	32	4.0	3.9
250	254	3	2012	50	A4	40	32	8.0	4.7
250	254	4	2517	65	P4#	52	45	7.0	6.8
250	254	5	2517	65	P2#	64	45	9.5	8.1
250	254	6	2517	65	P2#	76	45	15.5	8.3
250	254	8	2517	65	P2#	100	45	27.5	10.2
280	284	1	2012	50	A1	16	32	8.0	4.6
280	284	2	2012	50	A3	28	32	4.0	5.4
280	284	3	2517	65	A3	40	45	5.0	7.3
280	284	4	2517	65	A4	52	45	7.0	8.1
280	284	5	2517	65	A2	64	45	9.5	9.8
280	284	6	2517	65	A2	76	45	15.5	9.9
280	284	8	2517	65	A2	100	45	27.5	11.2
315	319	1	2012	50	A1	16	32	8.0	5.8
315	319	2	2012	50	A3	28	32	4.0	6.4
315	319	3	2517	65	A3	40	45	5.0	8.3
315	319	4	2517	65	A4	52	45	7.0	9.2
315	319	5	2517	65	A2	64	45	9.5	11.0
315	319	6	2517	65	A2	76	45	15.5	11.5
315	319	8	2517	65	A2	100	45	27.5	13.9
355	359	1	2012	50	A1	16	32	8.0	4.0
355	359	2	2012	50	A3	28	32	4.0	6.5
355	359	3	2517	65	A3	40	45	5.0	8.9
355	359	4	2517	65	A4	52	45	7.0	9.5
355	359	5	2517	65	A2	64	45	9.5	14.8
355	359	6	2517	65	A2	76	45	15.5	14.8
355	359	8	3030	75	A2	100	45	27.5	17.0
400	404	1	2012	50	A1	16	32	8.0	6.0
400	404	2	2517	65	A3	28	45	17.0	8.8
400	404	3	2517	65	A3	40	45	5.0	10.5
400	404	4	2517	65	A4	52	45	7.0	11.5
400	404	5	3020	75	A2	64	52	6.0	13.8
*400	404	6	3030	75	A3	76	77	1.0	17.6
*400	404	8	3030	75	A2	100	77	12.0	19.0
450	454	2	2517	65	A1	28	45	8.5	11.1
450	454	3	2517	65	A3	40	45	5.0	11.6
450	454	4	3020	75	A2	52	52	-	11.7
450	454	5	3020	75	A2	64	52	6.0	18.0
450	454	6	3030	75	A3	76	77	1.0	21.6
450	454	8	3030	75	A2	100	77	12.0	22.6
500	504	2	2517	65	A1	28	45	8.5	12.2
500	504	3	2517	65	A3	40	45	5.0	10.1
500	504	4	3020	75	A2	52	52	-	12.4
500	504	5	3030	75	A1	64	77	6.5	22.3
500	504	6	3030	75	A3	76	77	1.0	24.5
500	504	8	3030	75	A2	100	77	11.5	28.0
630	634	3	2517	65	A3	40	45	5.0	17.4
630	634	4	3030	75	A1	52	77	12.5	24.0
630	634	5	3030	75	A1	64	77	6.5	27.6
630	634	6	3535	90	A1	76	89	6.5	33.0
630	634	8	3535	90	A2	100	89	5.5	40.0
*800	804	4	3030	75	A1	52	77	12.5	28.4
*800	804	5	3535	90	A2	64	89	12.5	33.1
*800	804	6	3535	90	A2	76	89	6.5	40.6
*800	804	8	3535	90	A2	100	89	5.5	43.6

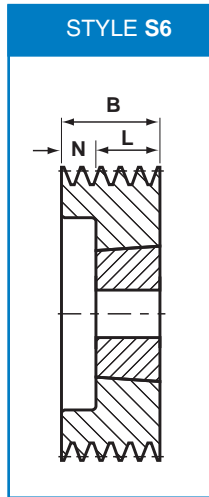
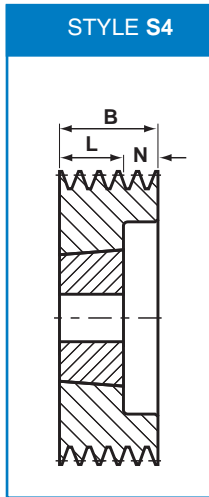
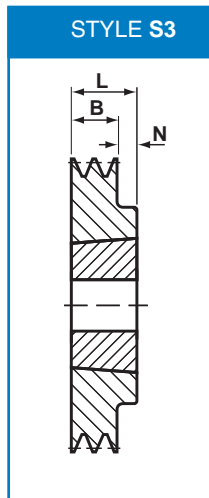
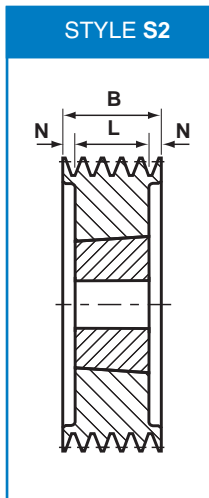


Pulley Configuration: S=Solid, P=Plate, A=Arm.

= lightening holes

* = Not stocked, available to order

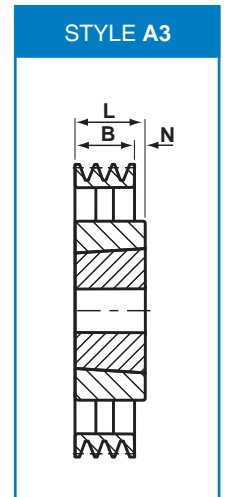
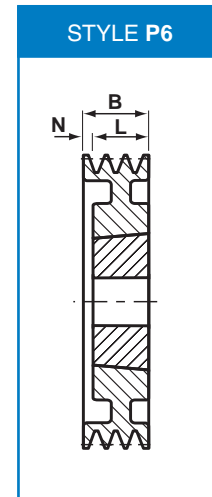
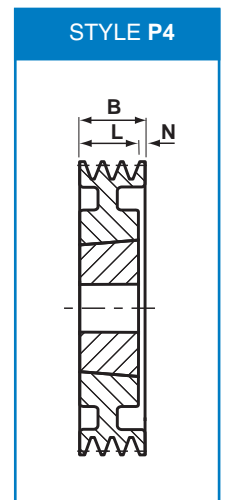
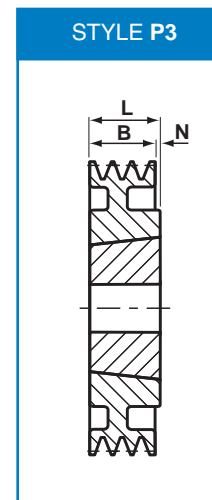
SPA



Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
63	68.5	1	1108	28	S3	20	23	21.0	0.6
63	68.5	2	1108	28	S6	35	23	12.0	0.8
67	72.5	1	1108	28	S3	20	23	3.0	0.4
67	72.5	2	1108	28	S6	35	23	12.0	0.6
71	76.5	1	1108	28	S3	20	23	3.0	0.4
71	76.5	2	1108	28	S6	35	23	12.0	0.6
71	76.5	3	1108	28	S6	50	23	27.0	0.8
75	80.5	1	1108	28	S3	20	23	3.0	0.5
75	80.5	2	1108	28	S6	35	23	12.0	0.6
75	80.5	3	1108	28	S6	50	23	27.0	0.8
80	85.5	1	1210	32	S3	20	26	6.0	0.6
80	85.5	2	1210	32	S6	35	26	9.0	0.6
80	85.5	3	1210	32	S6	50	26	24.0	0.9
85	90.5	1	1210	32	S3	20	26	6.0	0.6
85	90.5	2	1210	32	S6	35	26	9.0	0.7
85	90.5	3	1210	32	S6	50	26	24.0	1.1
90	95.5	1	1210	32	S3	20	26	6.0	0.8
90	95.5	2	1610	42	S6	35	26	9.0	0.8
90	95.5	3	1610	42	S6	50	26	24.0	1.1
90	95.5	4	1615	42	S6	65	38	27.0	1.4
90	95.5	5	1615	42	S6	80	38	42.0	1.6
95	100.5	1	1210	32	S3	20	26	6.0	0.9
95	100.5	2	1610	42	S6	35	26	9.0	0.9
95	100.5	3	1610	42	S6	50	26	24.0	1.3
95	100.5	4	1615	42	S6	65	38	27.0	1.7
95	100.5	5	1615	42	S6	80	38	42.0	1.9
100	105.5	1	1610	42	S3	20	26	6.0	0.9
100	105.5	2	1610	42	S6	35	26	9.0	1.1
100	105.5	3	1610	42	S6	50	26	24.0	1.4
100	105.5	4	1615	42	S6	65	38	27.0	1.9
100	105.5	5	1615	42	S6	80	38	42.0	2.0
100	105.5	6	1615	42	S6	95	38	57.0	2.4
106	111.5	1	1610	42	S3	20	26	6.0	0.9
106	111.5	2	1610	42	S6	35	26	9.0	1.2
106	111.5	3	1610	42	S6	50	26	24.0	1.6
106	111.5	4	2012	50	S6	65	32	33.0	1.9
106	111.5	5	2012	50	S6	80	32	48.0	2.3
106	111.5	6	2012	50	S6	95	32	63.0	2.6
112	117.5	1	1610	42	S3	20	26	6.0	1.0
112	117.5	2	1610	42	S6	35	26	9.0	1.4
112	117.5	3	2012	50	S6	50	32	18.0	1.8
112	117.5	4	2012	50	S6	65	32	33.0	2.2
112	117.5	5	2012	50	S6	80	32	48.0	2.6
112	117.5	6	2012	50	S6	95	32	63.0	2.7
118	123.5	1	1610	42	S3	20	26	6.0	1.2
118	123.5	2	1610	42	S6	35	26	9.0	1.6
118	123.5	3	2012	50	S6	50	32	18.0	2.1
118	123.5	4	2012	50	S6	65	32	33.0	2.5
118	123.5	5	2012	50	S4	80	32	48.0	2.8
118	123.5	6	2012	50	S4	95	32	63.0	2.9
125	130.5	1	1610	42	S3	20	26	6.0	1.4
125	130.5	2	1610	42	S4	35	26	10.0	1.9
125	130.5	3	2012	50	S4	50	32	18.0	2.3
125	130.5	4	2012	50	S4	65	32	33.0	2.8
125	130.5	5	2012	50	S2	80	32	24.0	3.3
125	130.5	6	2012	50	S2	95	32	31.5	3.8
132	137.5	1	1610	42	S3	20	26	6.0	1.6
132	137.5	2	2012	50	S4	35	32	3.0	2.2
132	137.5	3	2012	50	S4	50	32	18.0	2.7
132	137.5	4	2517	65	S4	65	45	20.0	3.2
132	137.5	5	2517	65	S2	80	45	17.5	3.8
132	137.5	6	2517	65	S2	95	45	25.0	3.8

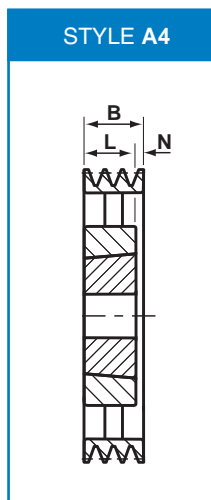
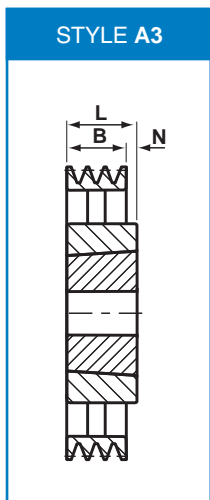
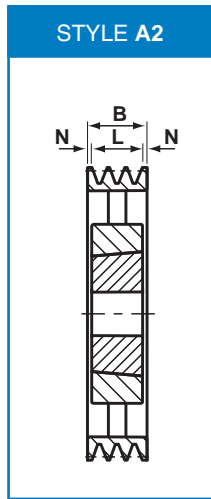
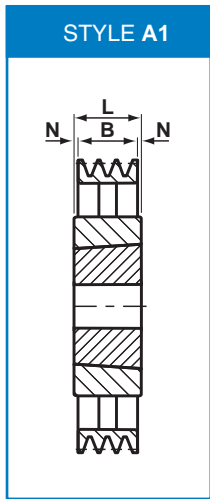
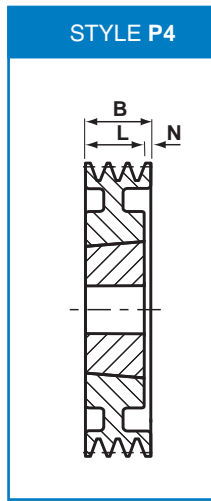
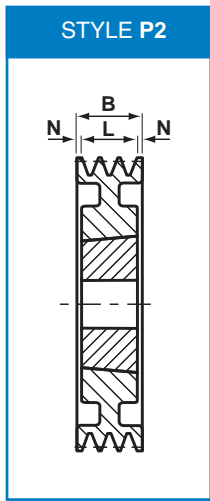
Pulley Configuration: S=Solid, P=Plate, A=Arm.
= lightening holes

Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
140	145.5	1	1610	42	S3	20	26	6.0	1.8
140	145.5	2	2012	50	S6	35	32	3.0	2.6
140	145.5	3	2517	65	S4	50	45	5.0	3.0
140	145.5	4	2517	65	S4	65	45	20.0	3.6
140	145.5	5	2517	65	S2	80	45	17.5	4.1
140	145.5	6	2517	65	S2	95	45	25.0	4.1
150	155.5	1	1610	42	S3	20	26	6.0	2.2
150	155.5	2	2012	50	S6	35	32	3.0	3.1
150	155.5	3	2517	65	S4	50	45	5.0	3.7
150	155.5	4	2517	65	S4	65	45	20.0	4.3
150	155.5	5	2517	65	S2	80	45	17.5	4.9
150	155.5	6	2517	65	S2	95	45	25.0	5.7
160	165.5	1	1610	42	P3	20	26	6.0	2.5
160	165.5	2	2012	50	S6	35	32	3.0	3.8
160	165.5	3	2517	65	S4	50	45	5.0	4.5
160	165.5	4	2517	65	S4	65	45	20.0	5.1
160	165.5	5	2517	65	S2	80	45	17.5	5.8
160	165.5	6	2517	65	S2	95	45	25.0	6.4
170	175.5	1	1610	42	P3	20	26	6.0	2.0
170	175.5	2	2012	50	S6	35	32	3.0	3.3
170	175.5	3	2517	65	S4	50	45	5.0	4.5
170	175.5	4	2517	65	S4	65	45	20.0	5.9
170	175.5	5	2517	65	S2	80	45	17.5	6.6
170	175.5	6	2517	65	S2	95	45	25.0	7.3
180	185.5	1	1610	42	P3	20	26	6.0	2.4
180	185.5	2	2012	50	P6	35	32	3.0	4.8
180	185.5	3	2517	65	S4	50	45	5.0	6.2
180	185.5	4	2517	65	S4	65	45	20.0	6.9
180	185.5	5	3020	75	S4	80	52	28.0	7.0
180	185.5	6	3020	75	S2	95	52	21.5	8.5
190	195.5	1	2012	50	P3	20	32	12.0	2.7
190	195.5	2	2012	50	P4	35	32	3.0	4.4
190	195.5	3	2517	65	P4	50	45	5.0	5.5
190	195.5	4	3020	75	S4	65	52	13.0	7.2
190	195.5	5	3020	75	S4	80	52	28.0	7.7
190	195.5	6	3020	75	S2	95	52	21.5	10.0
200	205.5	1	2012	50	P3	20	32	12.0	3.2
200	205.5	2	2517	65	P3	35	45	10.0	5.0
200	205.5	3	2517	65	P4	50	45	5.0	5.8
200	205.5	4	3020	75	S4	65	52	13.0	8.4
200	205.5	5	3020	75	S4	80	52	28.0	9.3
200	205.5	6	3020	75	S2	95	52	21.5	12.0
212	217.5	1	2012	50	P3	20	32	12.0	2.9
212	217.5	2	2517	65	P3	35	45	10.0	4.7
212	217.5	3	2517	65	P4	50	45	5.0	6.0
212	217.5	4	3020	75	S4	65	52	13.0	7.8
212	217.5	5	3020	75	S2	80	52	14.0	9.5
212	217.5	6	3020	75	S2	95	52	21.5	14.0
224	229.5	1	2012	50	A3	20	32	12.0	3.7
224	229.5	2	2517	65	P3	35	45	10.0	5.7
224	229.5	3	2517	65	P4	50	45	5.0	6.7
224	229.5	4	3020	75	P4	65	52	13.0	11.0
224	229.5	5	3020	75	S4	80	52	28.0	12.0
224	229.5	6	3020	75	S2	95	52	21.5	14.8
236	241.5	1	2012	50	P3#	20	32	12.0	3.2
236	241.5	2	2517	65	P3#	35	45	10.0	5.4
236	241.5	3	2517	65	P4	50	45	5.0	6.6
236	241.5	4	3020	75	P4	65	52	13.0	9.8
236	241.5	5	3020	75	P4	80	52	28.0	12.2
236	241.5	6	3020	75	S2	95	52	21.5	12.5



Pulley Configuration: S=Solid, P=Plate, A=Arm.
= lightening holes

SPA

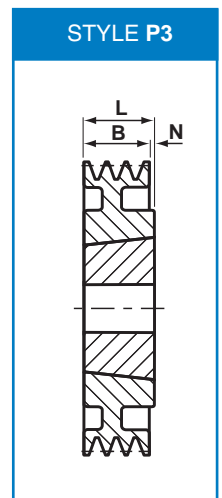
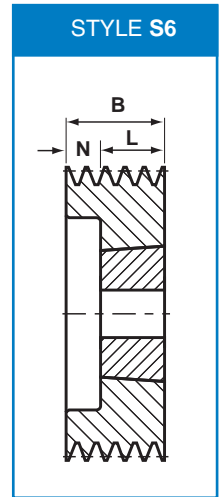
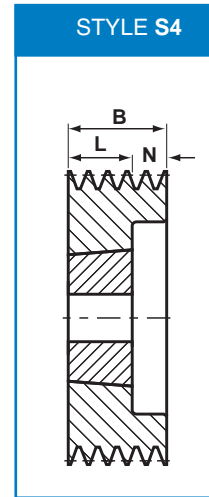
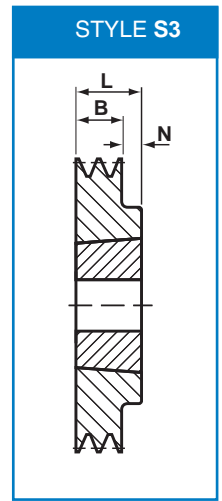
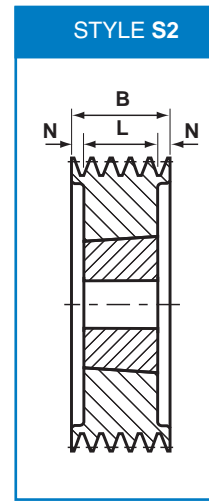


Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
250	255.5	1	2012	50	A3	20	32	12.0	4.4
250	255.5	2	2517	65	A3	35	45	10.0	6.4
250	255.5	3	2517	65	P4#	50	45	5.0	7.5
250	255.5	4	3020	75	P4	65	52	13.0	9.8
250	255.5	5	3020	75	P4	80	52	28.0	11.0
250	255.5	6	3020	75	S2	95	52	21.5	17.5
280	285.5	1	2012	50	A3	20	32	12.0	5.2
280	285.5	2	2517	65	A3	35	45	10.0	7.3
280	285.5	3	2517	65	A4	50	45	5.0	8.4
280	285.5	4	3020	75	P2#	65	52	6.5	11.0
280	285.5	5	3535	90	P3	80	89	9.0	17.0
280	285.5	6	3535	90	P4	95	89	6.0	19.1
300	305.5	1	2012	50	A3	20	32	12.0	4.3
300	305.5	2	2517	65	A3	35	45	10.0	6.2
300	305.5	3	3020	75	A4	50	52	2.0	9.3
300	305.5	4	3020	75	P2#	65	52	6.5	12.4
300	305.5	5	3535	90	P3#	80	89	9.0	16.5
300	305.5	6	3535	90	P4	95	89	6.0	19.5
315	320.5	1	2012	50	A3	20	32	12.0	6.3
315	320.5	2	2517	65	A3	35	45	10.0	9.2
315	320.5	3	3020	75	A3	50	52	2.0	11.0
315	320.5	4	3020	75	A2	65	52	6.5	13.0
315	320.5	5	3535	90	P3#	80	89	9.0	19.0
315	320.5	6	3535	90	P4#	95	89	6.0	24.0
355	360.5	1	2012	50	A3	20	32	12.0	5.6
355	360.5	2	2517	65	A3	35	45	10.0	9.0
355	360.5	3	3020	75	A3	50	52	2.0	12.0
355	360.5	4	3020	75	A2	65	52	6.5	13.0
355	360.5	5	3535	90	A3	80	89	9.0	20.0
355	360.5	6	3535	90	A4	95	89	6.0	24.2
400	405.5	1	2012	50	A3	20	32	12.0	6.4
400	405.5	2	2517	65	A3	35	45	10.0	10.0
400	405.5	3	3020	75	A3	50	52	2.0	13.0
400	405.5	4	3020	75	A2	65	52	6.5	14.5
400	405.5	5	3535	90	A3	80	89	9.0	21.5
400	405.5	6	3535	90	A4	95	89	6.0	25.1
450	455.5	1	2012	50	A3	20	32	12.0	6.2
450	455.5	2	2517	65	A3	35	45	10.0	11.5
450	455.5	3	3020	75	A3	50	52	2.0	14.5
450	455.5	4	3020	75	A2	65	52	6.5	16.5
450	455.5	5	3535	90	A3	80	89	9.0	23.0
450	455.5	6	3535	90	A4	95	89	6.0	40.0
500	505.5	1	2517	65	A3	20	45	25.0	6.5
500	505.5	2	2517	65	A3	35	45	10.0	12.5
500	505.5	3	3020	75	A3	50	52	2.0	15.5
500	505.5	4	3020	75	A2	65	52	6.5	18.0
500	505.5	5	3535	90	A3	80	89	9.0	25.0
500	505.5	6	3535	90	A4	95	89	6.0	54.2
560	565.5	2	3020	75	A3	35	52	17.0	18.4
560	565.5	3	3020	75	A3	50	52	2.0	16.0
560	565.5	4	3535	90	A1	65	89	12.0	23.5
560	565.5	5	3535	90	A3	80	89	9.0	27.0
560	565.5	6	3535	90	A4	95	89	6.0	55.1
630	635.5	2	3020	75	A3	35	52	17.0	20.5
630	635.5	3	3020	75	A3	50	52	2.0	20.0
630	635.5	4	3535	90	A3	65	89	24.0	28.0
630	635.5	5	3535	90	A3	80	89	9.0	31.0
630	635.5	6	4040	100	A3	95	102	7.0	56.3
800	805.5	3	3535	90	A3	50	89	39.0	36.0
800	805.5	4	3535	90	A3	65	89	24.0	46.0
800	805.5	5	4040	100	A1	80	102	11.0	55.5
800	805.5	6	4040	100	A3	95	102	7.0	66.0

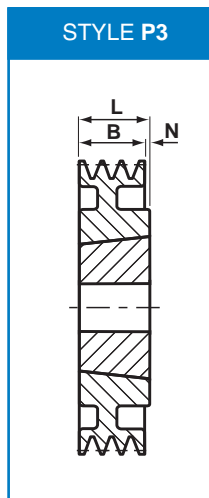
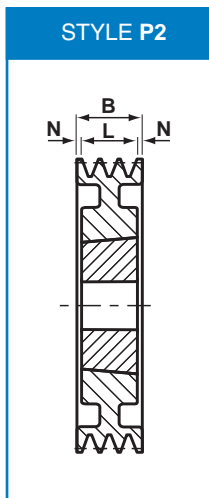
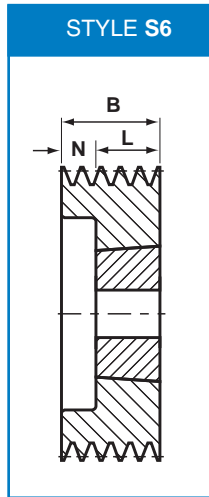
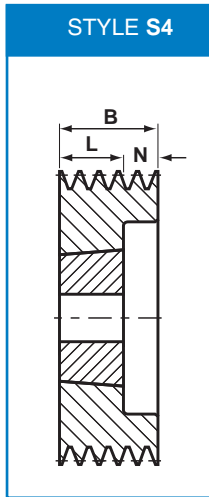
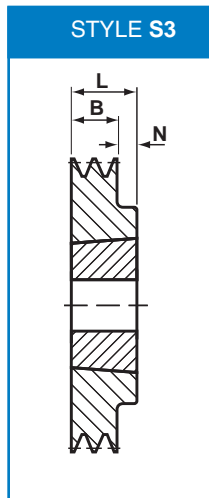
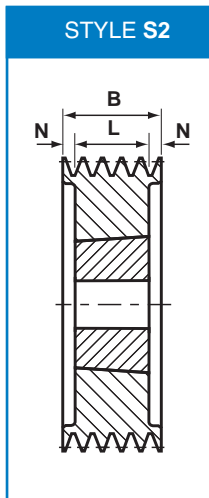
Pulley Configuration: S=Solid, P=Plate, A=Arm.
= lightening holes

Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
100	107	1	1610	42	S3	25	26	1.0	0.9
100	107	2	1610	42	S6	44	26	18.0	1.4
100	107	3	1610	42	S6	63	26	37.0	1.9
106	113	1	1610	42	S3	25	26	1.0	1.0
106	113	2	1610	42	S6	44	26	18.0	1.5
106	113	3	1610	42	S6	63	26	37.0	2.0
112	119	1	1610	42	S3	25	26	1.0	1.2
112	119	2	1610	42	S4	44	26	18.0	1.7
112	119	3	1610	42	S6	63	26	37.0	2.3
118	125	1	1610	42	S3	25	26	1.0	1.3
118	125	2	1610	42	S4	44	26	18.0	1.9
118	125	3	1610	42	S6	63	26	37.0	2.6
125	132	1	1610	42	S3	25	26	1.0	1.5
125	132	2	2012	50	S4	44	32	12.0	2.3
125	132	3	2012	50	S4	63	32	31.0	2.3
125	132	4	2012	50	S2	82	32	25.0	3.7
125	132	5	2012	50	S6	101	32	69.0	4.4
132	139	1	1610	42	S3	25	26	1.0	1.8
132	139	2	2012	50	S4	44	32	12.0	2.4
132	139	3	2012	50	S4	63	32	31.0	3.1
132	139	4	2012	50	S2	82	32	25.0	3.8
132	139	5	2517	60	S6	101	45	56.0	4.6
140	147	1	1610	42	S3	25	26	1.0	2.1
140	147	2	2012	50	S4	44	32	12.0	2.8
140	147	3	2012	50	S4	63	32	31.0	3.6
140	147	4	2517	65	S2	82	45	18.5	4.5
140	147	5	2517	65	S2	101	45	28.0	5.3
140	147	6	2517	65	S2	120	45	37.5	6.1
150	157	1	1610	42	S3	25	26	1.0	2.5
150	157	2	2012	50	S4	44	32	12.0	3.4
150	157	3	2517	65	S4	63	45	18.0	4.1
150	157	4	2517	65	S2	82	45	18.5	4.9
150	157	5	2517	65	S2	101	45	28.0	5.8
150	157	6	2517	65	S2	120	45	37.5	6.6
160	167	1	1610	42	S3	25	26	1.0	2.9
160	167	2	2012	50	S6	44	32	12.0	3.9
160	167	3	2517	65	S6	63	45	18.0	4.9
160	167	4	2517	65	S2	82	45	18.5	5.8
160	167	5	2517	65	S2	101	45	28.0	6.7
160	167	6	3020	75	S2	120	52	34.0	6.5
160	167	8	3020	75	S2	158	52	53.0	8.5
170	177	1	1610	42	P3	25	26	1.0	3.3
170	177	2	2012	50	S6	44	32	12.0	4.5
170	177	3	2517	65	S6	63	45	18.0	5.8
170	177	4	2517	65	S2	82	45	18.5	6.7
170	177	5	3020	75	S2	101	52	24.5	6.8
170	177	6	3020	75	S2	120	52	34.0	7.8
170	177	8	3030	75	S2	158	77	40.5	11.0
180	187	1	1610	42	P3	25	26	1.0	3.8
180	187	2	2517	65	S3	44	45	1.0	5.3
180	187	3	2517	65	S6	63	45	18.0	6.7
180	187	4	2517	65	S2	82	45	18.5	7.7
180	187	5	3020	75	S2	101	52	24.5	8.0
180	187	6	3020	75	S2	120	52	34.0	9.0
180	187	8	3030	75	S2	158	77	40.5	12.0

Pulley Configuration: S=Solid, P=Plate, A=Arm.
= lightening holes



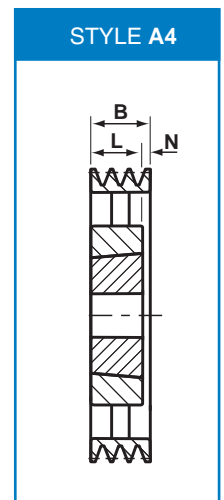
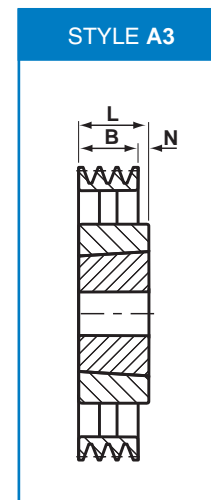
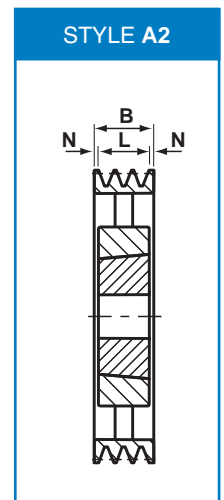
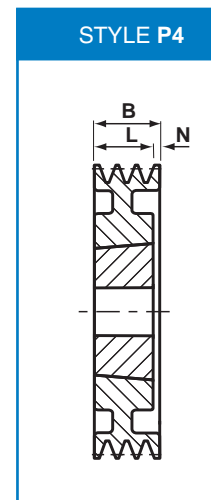
SPB



Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
190	197	1	2012	50	P3	25	32	7.0	4.4
190	197	2	2517	65	S3	44	45	1.0	6.5
190	197	3	2517	65	S6	63	45	18.0	7.6
190	197	4	2517	65	S2	82	45	18.5	8.7
190	197	5	3020	75	S2	101	52	24.5	9.1
190	197	6	3020	75	S2	120	52	34.0	10.0
190	197	8	3030	75	S2	158	77	40.5	13.0
200	207	1	2012	50	P3	25	32	7.0	4.4
200	207	2	2517	65	P3	44	45	1.0	7.5
200	207	3	2517	65	P4	63	45	18.0	8.8
200	207	4	3020	75	S4	82	52	30.0	9.4
200	207	5	3020	75	S2	101	52	24.5	10.0
200	207	6	3020	75	S2	120	52	34.0	12.0
200	207	8	3535	90	S2	158	89	34.5	15.0
212	219	1	2012	50	P3	25	32	7.0	4.1
212	219	2	2517	65	P3	44	45	1.0	5.9
212	219	3	2517	65	P4	63	45	18.0	7.4
212	219	4	3020	75	S4	82	52	30.0	11.0
212	219	5	3020	75	S2	101	52	24.5	12.0
212	219	6	3535	90	S2	120	89	15.5	15.0
212	219	8	3535	90	S2	158	89	34.5	18.0
224	231	1	2012	50	P3	25	32	7.0	4.5
224	231	2	2517	65	P3	44	45	1.0	6.4
224	231	3	2517	65	P4	63	45	18.0	8.0
224	231	4	3020	75	S4	82	52	30.0	12.0
224	231	5	3020	75	S2	101	52	24.5	14.0
224	231	6	3535	90	S2	120	89	15.5	18.0
224	231	8	3535	90	S2	158	89	34.5	21.0
224	231	10	3535	90	S2	196	89	53.5	23.0
236	243	1	2012	50	P3#	25	32	7.0	4.9
236	243	2	2517	65	P3	44	45	1.0	6.9
236	243	3	2517	65	P4	63	45	18.0	8.3
236	243	4	3020	75	S4	82	52	30.0	14.0
236	243	5	3535	90	S4	101	89	12.0	19.0
236	243	6	3535	90	S2	120	89	15.5	21.0
236	243	8	3535	90	S2	158	89	34.5	24.0
236	243	10	3535	90	S2	196	89	53.5	26.0
250	257	1	2012	50	P3#	25	32	7.0	5.5
250	257	2	2517	65	P3#	44	45	1.0	7.3
250	257	3	3020	75	P4	63	52	11.0	10.0
250	257	4	3020	75	P4	82	52	30.0	12.0
250	257	5	3535	90	S4	101	89	12.0	23.0
250	257	6	3535	90	S2	120	89	15.5	24.0
250	257	8	3535	90	S2	158	89	34.5	27.0
250	257	10	3535	90	S2	196	89	53.5	31.0
280	287	1	2012	50	A3	25	32	7.0	6.5
280	287	2	2517	65	A3	44	45	1.0	9.1
280	287	3	3020	75	P4#	63	52	11.0	12.0
280	287	4	3020	75	P2#	82	52	15.0	14.0
280	287	5	3535	90	P2	101	89	6.0	20.0
280	287	6	3535	90	P2	120	89	15.5	22.0
280	287	8	3535	90	P2	158	89	34.5	25.0
280	287	10	3535	90	P2	196	89	53.5	29.0
300	307	1	2012	50	A3	25	32	7.0	6.8
300	307	2	2517	65	A3	44	45	1.0	8.6
300	307	3	3020	75	P4#	63	52	11.0	9.8
300	307	4	3535	90	P3	82	89	7.0	14.5
300	307	5	3535	90	P2	101	89	6.0	19.5
300	307	6	3535	90	P2	120	89	15.5	22.0
300	307	8	3535	90	P2	158	89	34.5	41.0
300	307	10	3535	90	P2	196	89	53.5	33.0

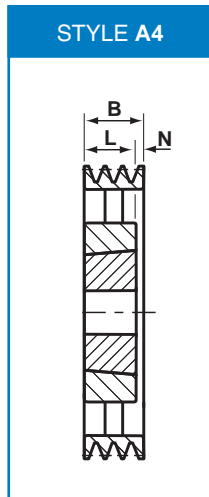
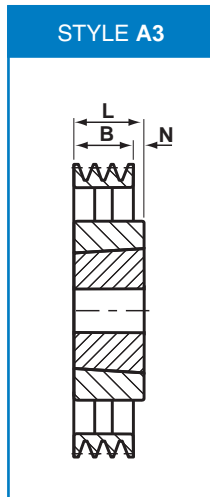
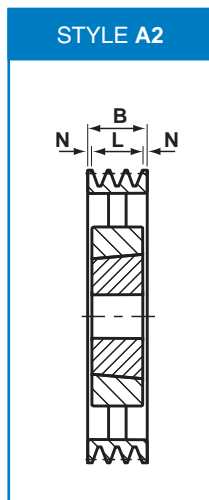
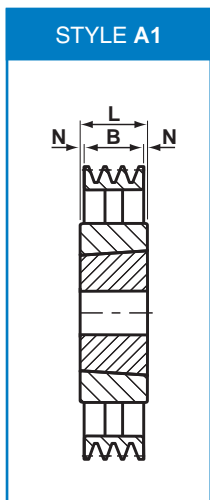
Pulley Configuration: S=Solid, P=Plate, A=Arm.
= lightening holes

Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
315	322	1	2012	50	A3	25	32	7.0	7.9
315	322	2	2517	65	A3	44	45	1.0	11.0
315	322	3	3020	75	A4	63	52	11.0	14.0
315	322	4	3535	90	P3#	82	89	7.0	20.0
315	322	5	3535	90	P2	101	89	6.0	23.0
315	322	6	3535	90	P2#	120	89	15.5	25.0
315	322	8	3535	90	P2	158	89	34.5	29.0
315	322	10	3535	90	P2	196	89	53.5	33.0
335	342	2	2517	65	A3	44	45	7.0	11.3
335	342	3	3020	75	A4	63	52	11.0	12.0
335	342	4	3535	90	A3	82	89	7.0	18.4
335	342	5	3535	90	A2	101	89	6.0	19.6
335	342	6	3535	90	A2	120	89	15.5	22.0
335	342	8	3535	90	P2#	158	89	34.5	29.0
335	342	10	4040	100	P2	196	102	47.0	37.0
355	362	2	3020	75	A3	44	52	8.0	14.0
355	362	3	3020	75	A4	63	52	11.0	17.0
355	362	4	3535	90	A3	82	89	7.0	24.0
355	362	5	3535	90	A2	101	89	6.0	26.0
355	362	6	3535	90	A2	120	89	15.5	29.0
355	362	8	3535	90	A2	158	89	34.5	34.0
355	362	10	4040	100	P2#	196	102	47.0	41.0
400	407	2	3020	75	A3	44	52	8.0	11.4
400	407	3	3535	90	A3	63	89	26.0	17.0
400	407	4	3535	90	A3	82	89	7.0	22.0
400	407	5	3535	90	A2	101	89	6.0	25.5
400	407	6	3535	90	A2	120	89	15.5	28.5
400	407	8	4040	100	A2	158	102	28.0	41.0
400	407	10	4040	100	A2	196	102	47.0	46.0
450	457	2	3020	75	A3	44	52	8.0	14.0
450	457	3	3535	90	A3	63	89	26.0	22.0
450	457	4	3535	90	A3	82	89	7.0	25.5
450	457	5	3535	90	A2	101	89	6.0	29.0
450	457	6	4040	100	A2	120	102	9.0	35.0
450	457	8	4040	100	A2	158	102	28.0	52.0
450	457	10	4545	110	A2	196	114	41.0	56.0
500	507	2	3020	75	A3	44	52	8.0	15.5
500	507	3	3535	90	A3	63	89	26.0	24.0
500	507	4	3535	90	A3	82	89	7.0	28.0
500	507	5	3535	90	A2	101	89	6.0	32.0
500	507	6	4040	100	A2	120	102	9.0	49.0
500	507	8	4040	100	A2	158	102	28.0	58.0
500	507	10	4545	110	A2	196	114	41.0	58.0
560	567	2	3020	75	A3	44	52	8.0	25.0
560	567	3	3535	90	A3	63	89	26.0	26.0
560	567	4	3535	90	A3	82	89	7.0	31.0
560	567	5	4040	100	A3	101	102	1.0	39.0
560	567	6	4040	100	A2	120	102	9.0	42.5
560	567	8	4545	110	A2	158	114	22.0	59.0
560	567	10	4545	110	A2	196	114	41.0	66.0
630	637	2	3030	75	A3	44	77	33.0	19.3
630	637	3	3535	90	A3	63	89	26.0	31.0
630	637	4	3535	90	A3	82	89	7.0	36.5
630	637	5	4040	100	A3	101	102	1.0	44.5
630	637	6	4040	100	A2	120	102	9.0	51.0
630	637	8	4545	110	A2	158	114	22.0	66.0
630	637	10	4545	110	A2	196	114	41.0	75.0



Pulley Configuration: S=Solid, P=Plate, A=Arm.
= lightening holes

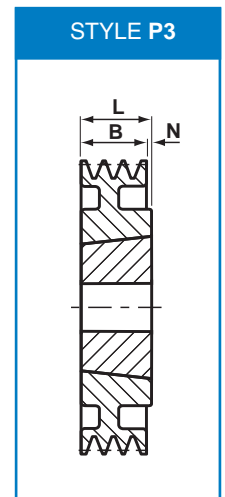
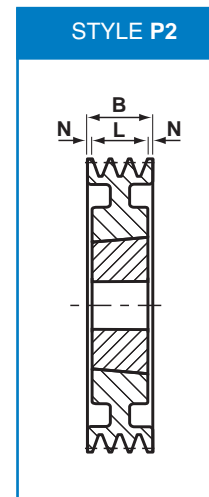
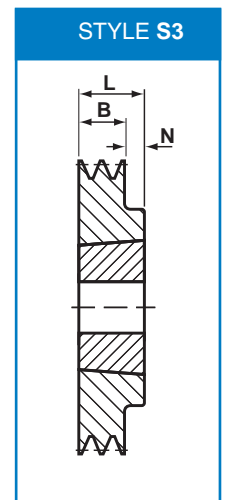
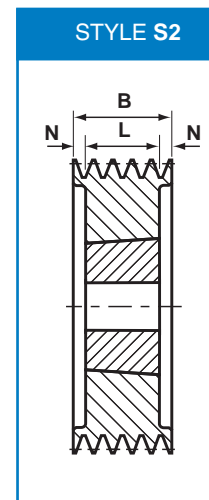
SPB



Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
710	717	3	3535	90	A3	63	89	26.0	36
710	717	4	3535	90	A3	82	89	7.0	41
710	717	5	4040	100	A3	101	102	1.0	51
710	717	6	4545	110	A4	120	114	6.0	59
710	717	8	4545	110	A2	158	114	22.0	78
710	717	10	4545	110	A2	196	114	41.0	88
800	807	3	3535	90	A3	63	89	26.0	38
800	807	4	4040	100	A3	82	102	20.0	48
800	807	5	4040	100	A3	101	102	1.0	56
800	807	6	4545	110	A4	120	114	6.0	66
800	807	8	4545	110	A2	158	114	22.0	100
800	807	10	4545	110	A2	196	114	41.0	110
900	907	3	3535	90	A3	63	89	26.0	50
900	907	4	4040	100	A3	82	102	20.0	88
900	907	5	4545	110	A1	101	114	6.5	114
900	907	6	4545	110	A4	120	114	6.0	120
900	907	8	4545	110	A2	158	114	22.0	132
900	907	10	5050	125	A2	196	127	34.5	140
1000	1007	3	4040	100	A3	63	102	39.0	70
1000	1007	4	4040	100	A3	82	102	20.0	78
1000	1007	5	4545	110	A1	101	114	6.5	93
1000	1007	6	4545	110	A4	120	114	6.0	100
1000	1007	8	5050	125	A2	158	127	15.5	140
1000	1007	10	5050	125	A2	196	127	34.5	150
1250	1257	3	4040	100	A1	63	102	19.5	75
1250	1257	4	4545	110	A1	82	114	16.0	158
1250	1257	5	4545	110	A1	101	114	6.5	179
1250	1257	6	5050	125	A3	120	127	7.0	180
1250	1257	8	5050	125	A2	158	127	15.5	224
1250	1257	10	5050	125	A2	196	127	35.0	320

Pulley Configuration: S = Solid, P = Plate, A = Arm.
= lightening holes

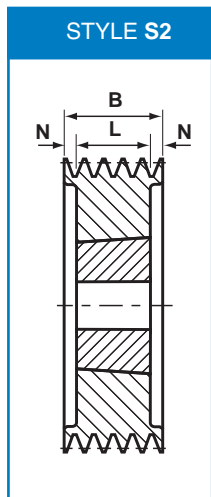
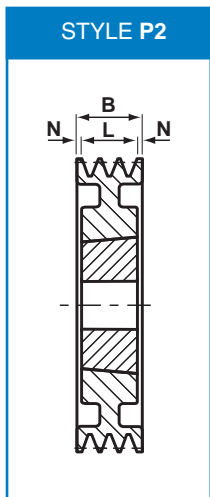
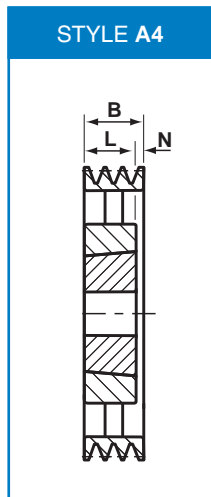
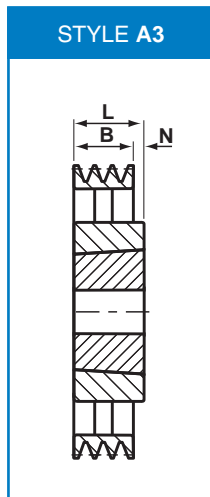
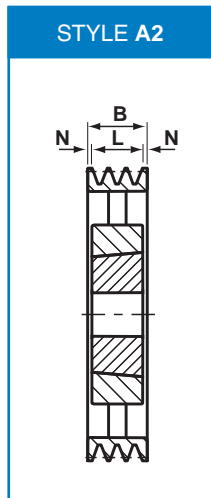
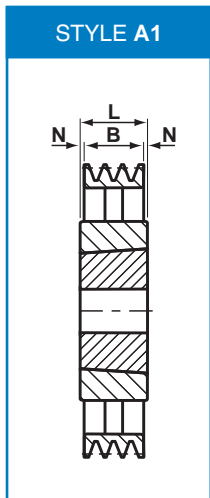
Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
200	209.5	3	2517	65	S2	85.0	45	20.0	10.2
200	209.5	4	3020	75	S2	110.5	52	29.3	11.0
200	209.5	5	3535	90	S2	136.0	89	23.5	12.5
200	209.5	6	3535	90	S2	161.5	89	36.3	17.5
200	209.5	8	3535	90	S2	212.5	89	61.8	18.5
212	221.5	3	3020	75	S2	85.0	52	16.5	11.0
212	221.5	4	3020	75	S2	110.5	52	29.8	13.5
212	221.5	5	3535	90	S2	136.0	89	23.5	14.5
212	221.5	6	3535	90	S2	161.5	89	36.3	19.0
212	221.5	8	3535	90	S2	212.5	89	61.8	22.1
224	233.5	3	3020	75	S2	85.0	52	16.5	12.0
224	233.5	4	3535	90	S2	110.5	89	10.8	16.0
224	233.5	5	3535	90	S2	136.0	89	23.5	18.0
224	233.5	6	3535	90	S2	161.5	89	36.3	20.0
224	233.5	8	3535	90	S2	212.5	89	61.8	25.0
236	245.5	3	3020	75	S2	85.0	52	16.5	14.0
236	245.5	4	3535	90	S2	110.5	89	10.8	19.0
236	245.5	5	3535	90	S2	136.0	89	23.5	21.0
236	245.5	6	3535	90	S2	161.5	89	36.3	23.0
236	245.5	8	3535	90	S2	212.5	89	61.8	28.0
250	259.5	3	3020	75	P2	85.0	52	16.5	13.0
250	259.5	4	3535	90	S2	110.5	89	10.8	22.0
250	259.5	5	3535	90	S2	136.0	89	23.5	25.0
250	259.5	6	3535	90	S2	161.5	89	36.3	27.0
250	259.5	8	3535	90	S2	212.5	89	61.8	32.0
250	259.5	10	4040	100	S2	263.5	102	80.8	35.0
265	274.5	3	3535	90	S3	85.0	89	4.0	24.0
265	274.5	4	3535	90	S2	110.5	89	10.8	26.0
265	274.5	5	3535	90	S2	136.0	89	23.5	29.0
265	274.5	6	3535	90	S2	161.5	89	36.3	31.0
265	274.5	8	3535	90	S2	212.5	89	61.8	36.0
265	274.5	10	4040	100	S2	263.5	102	80.8	60.0
280	289.5	3	3535	90	P3	85.0	89	4.0	19.0
280	289.5	4	3535	90	P2	110.5	89	10.8	21.0
280	289.5	5	3535	90	P2	136.0	89	23.5	24.0
280	289.5	6	3535	90	P2	161.5	89	36.3	36.0
280	289.5	8	3535	90	S2	212.5	89	61.8	41.0
280	289.5	10	4040	100	S2	263.5	102	80.8	46.0
300	309.5	3	3535	90	P3	85.0	89	4.0	21.0
300	309.5	4	3535	90	P2	110.5	89	10.8	24.0
300	309.5	5	3535	90	P2	136.0	89	23.5	24.0
300	309.5	6	3535	90	P2	161.5	89	36.3	29.0
300	309.5	8	4040	100	S2	212.5	102	55.3	48.0
300	309.5	10	4545	110	S2	263.5	114	74.8	54.0
315	324.5	3	3535	90	P3#	85.0	89	4.0	21.0
315	324.5	4	3535	90	P2#	110.5	89	10.8	24.0
315	324.5	5	3535	90	P2#	136.0	89	23.5	28.0
315	324.5	6	3535	90	P2	161.5	89	36.3	31.0
315	324.5	8	4040	100	P2	212.5	102	55.3	54.0
315	324.5	10	4545	110	S2	263.5	114	74.8	60.0
335	344.5	3	3535	90	P3#	85.0	89	4.0	24.0
335	344.5	4	3535	90	P2#	110.5	89	10.8	27.0
335	344.5	5	3535	90	P2#	136.0	89	23.5	31.0
335	344.5	6	3535	90	P2#	161.5	89	36.3	34.0
335	344.5	8	4040	100	P2	212.5	102	55.3	45.0
335	344.5	10	4545	110	S2	263.5	114	74.8	85.0
335	344.5	12	5050	125	S2	314.5	127	50-137	111.0
355	364.5	3	3535	90	A3	85.0	89	4.0	26.0
355	364.5	4	3535	90	A2	110.5	89	10.8	30.0
355	364.5	5	3535	90	A2	136.0	89	23.5	34.0
355	364.5	6	3535	90	A2	161.5	89	36.3	37.0
355	364.5	8	4040	100	P2	212.5	102	55.3	48.0
355	364.5	10	4545	110	S2	263.5	114	74.8	81.0
355	364.5	12	5050	125	S2	314.5	127	50-137	124.0



Note
Dimension 'N' on SPC 12 groove pulleys is shown as 50mm - 137mm. The 137mm is the dimension from the edge of the pulley to the taper bush entry end of the hub

Pulley Configuration: S=Solid, P=Plate, A=Arm.
= lightening holes

SPC



Note
Dimension 'N' on SPC 12 groove pulleys is shown as 50mm - 137mm. The 137mm is the dimension from the edge of the pulley to the taper bush entry end of the hub

Pulley Configuration: S=Solid, P=Plate, A=Arm.
= lightening holes

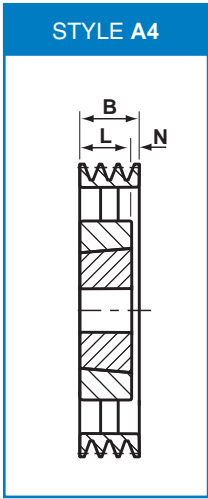
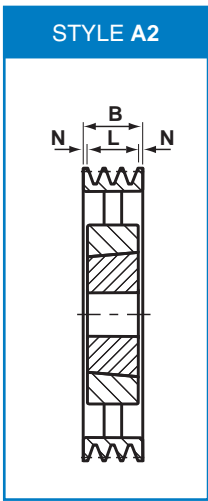
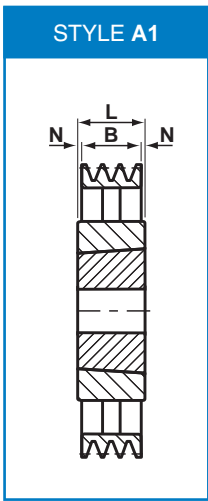
Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
375	384.5	3	3535	90	A3	85.0	89	4.0	29.0
375	384.5	4	3535	90	A2	110.5	89	10.8	33.0
375	384.5	5	3535	90	A2	136.0	89	23.5	36.0
375	384.5	6	4040	100	A2	161.5	102	29.8	44.0
375	384.5	8	4545	110	P2	212.5	114	49.3	57.0
375	384.5	10	4545	110	S2	263.5	114	74.8	92.0
375	384.5	12	5050	125	S2	314.5	127	50-137	138.0
400	409.5	3	3535	90	A3	85.0	89	4.0	31.0
400	409.5	4	3535	90	A2	110.5	89	10.8	35.0
400	409.5	5	3535	90	A2	136.0	89	23.5	40.0
400	409.5	6	4040	100	A2	161.5	102	29.8	48.0
400	409.5	8	4545	110	P2	212.5	114	49.3	62.0
400	409.5	10	5050	125	P2	263.5	127	68.3	73.0
400	409.5	12	5050	125	S2	314.5	127	50-137	156.0
425	434.5	3	3535	90	A3	85.0	89	4.0	37.0
425	434.5	4	3535	90	A2	110.5	89	10.8	42.0
425	434.5	5	3535	90	A2	136.0	89	23.5	46.0
425	434.5	6	4040	100	A2	161.5	102	29.8	56.0
425	434.5	8	4545	110	A2	212.5	114	49.3	68.0
425	434.5	10	5050	125	P2	263.5	127	68.3	105.0
425	434.5	12	5050	125	P2	314.5	127	50-137	130.0
450	459.5	3	3535	90	A3	85.0	89	4.0	34.0
450	459.5	4	3535	90	A2	110.5	89	10.8	39.0
450	459.5	5	4040	100	A2	136.0	102	17.0	49.0
450	459.5	6	4545	110	A2	161.5	114	23.8	67.0
450	459.5	8	5050	125	A2	212.5	127	42.8	81.0
450	459.5	10	5050	125	P2#	263.5	127	68.3	94.0
450	459.5	12	5050	125	A2	314.5	127	50-137	133.0
475	484.5	3	3535	90	A3	85.0	89	4.0	30.0
475	484.5	4	3535	90	A2	110.5	89	10.8	37.0
475	484.5	5	4040	100	A2	136.0	102	17.0	48.0
475	484.5	6	4545	110	A2	161.5	114	23.8	65.0
475	484.5	8	5050	125	A2	212.5	127	42.8	100.0
475	484.5	10	5050	125	A2	263.5	127	68.3	125.0
475	484.5	12	5050	125	A2	314.5	127	50-137	142.0
500	509.5	3	3535	90	A3	85.0	89	4.0	31.9
500	509.5	4	3535	90	A2	110.5	89	10.8	44.0
500	509.5	5	4040	100	A2	136.0	102	17.0	54.0
500	509.5	6	4545	110	A2	161.5	114	23.8	67.0
500	509.5	8	5050	125	A2	212.5	127	42.8	91.0
500	509.5	10	5050	125	A2	263.5	127	68.3	111.0
500	509.5	12	5050	125	A2	314.5	127	50-137	148.0
530	539.5	3	3535	90	A3	85.0	89	4.0	34.5
530	539.5	4	4040	100	A4	110.5	102	8.5	45.0
530	539.5	5	4545	110	A2	136.0	114	11.0	56.0
530	539.5	6	5050	125	A2	161.5	127	17.3	73.0
530	539.5	8	5050	125	A2	212.5	127	42.8	105.0
530	539.5	10	5050	125	A2	263.5	127	68.3	145.0
530	539.5	12	5050	125	A2	314.5	127	50-137	155.0
560	569.5	3	3535	90	A3	85.0	89	4.0	37.0
560	569.5	4	4040	100	A4	110.5	102	8.5	60.0
560	569.5	5	4545	110	A2	136.0	114	11.0	60.0
560	569.5	6	5050	125	A2	161.5	127	17.3	85.0
560	569.5	8	5050	125	A2	212.5	127	42.8	101.0
560	569.5	10	5050	125	A2	263.5	127	68.3	121.0
560	569.5	12	5050	125	A2	314.5	127	50-137	164.0
630	639.5	3	4040	100	A1	85.0	102	8.5	49.5
630	639.5	4	4545	110	A3	110.5	114	3.5	114.0
630	639.5	5	5050	125	A4	136.0	127	9.0	91.0
630	639.5	6	5050	125	A2	161.5	127	17.3	97.0
630	639.5	8	5050	125	A2	212.5	127	42.8	116.0
630	639.5	10	5050	125	A2	263.5	127	68.3	130.0
630	639.5	12	5050	125	A2	314.5	127	50-137	185.0

Pitch Dia. dw	Outside Dia. du	Groove No.	Bush Size	Max Bore	Pulley Config. & Style	Rim Width B	L	N	Weight kg
710	719.5	3	4040	100	A1	85.0	102	8.5	57.0
710	719.5	4	4545	110	A3	110.5	114	3.5	70.3
710	719.5	5	5050	125	A4	136.0	127	9.0	92.0
710	719.5	6	5050	125	A2	161.5	127	17.3	100.0
710	719.5	8	5050	125	A2	212.5	127	42.8	130.0
710	719.5	10	5050	125	A2	263.5	127	68.3	145.0
710	719.5	12	6050	150	A2	314.5	127	50-137	230.0
800	809.5	3	4545	110	A1	85.0	114	14.5	65.0
800	809.5	4	5050	125	A1	110.5	127	8.3	76.5
800	809.5	5	5050	125	A4	136.0	127	9.0	143.0
800	809.5	6	5050	125	A2	161.5	127	17.3	120.0
800	809.5	8	5050	125	A2	212.5	127	42.8	150.0
800	809.5	10	5050	125	A2	263.5	127	68.3	170.0
800	809.5	12	6050	150	A2	314.5	127	50-137	277.0
1000	1009.5	3	5050	125	A1	85.0	127	21.0	116.0
1000	1009.5	4	5050	125	A1	110.5	127	8.3	125.0
1000	1009.5	5	5050	125	A4	136.0	127	9.0	143.0
1000	1009.5	6	5050	125	A2	161.5	127	17.3	155.0
1000	1009.5	8	5050	125	A2	212.5	127	42.8	205.0
1000	1009.5	10	5050	125	A2	263.5	127	68.3	230.0
1000	1009.5	12	6050	150	A2	314.5	127	50-137	346.0
1250	1259.5	4	5050	125	A1	110.5	127	8.3	214.0
1250	1259.5	5	5050	125	A4	136.0	127	9.0	187.0
1250	1259.5	6	5050	125	A2	161.5	127	17.3	200.0
1250	1259.5	8	5050	125	A2	212.5	127	42.8	252.0
1250	1259.5	10	5050	125	A2	263.5	127	68.3	300.0
1250	1259.5	12	6050	150	A2	314.5	127	50-137	435.0

Pulley Configuration: S=Solid, P=Plate, A=Arm.
= lightening holes

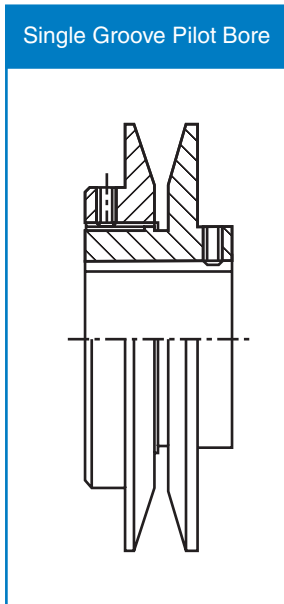
Note
Dimension 'N' on SPC 12 groove pulleys is shown as 50mm - 137mm. The 137mm is the dimension from the edge of the pulley to the taper bush entry end of the hub

Note 2
Larger taper bored pulleys utilising taper bush sizes 6050, 7060 and 8065 are also available to order.
Challenge manufacture pulleys up to a maximum of 2400mm diameter with 20 grooves in pilot or taper bore



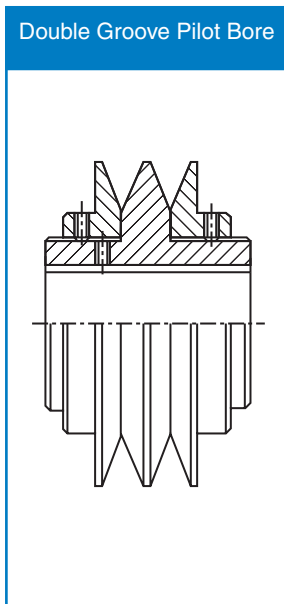
Variable Speed Pulleys

Single Groove Variable Speed Pulley - Pilot Bore



Type	Belt Section	Max Bore	Mid Pitch Dia	Max/Min Dia	Total Width	Weight kg
84Z1-P	SPZ	20	71	62 - 80	35	0.7
95Z1-P	SPZ	20	82	73 - 91	35	0.8
100Z1-P	SPZ	20	87	78 - 96	35	1.1
108Z1-P	SPZ	24	97	90 - 104	40	1.7
108A1-P	SPA	24	89	76 - 102	40	1.8
120A1-P	SPA	24	101	88 - 114	40	2.0
129A1-P	SPA	30	110	97 - 123	45	2.1
139A1-P	SPA	30	121	109 - 133	45	2.2
146A1-P	SPA	30	128	116 - 140	45	2.4
156A1-P	SPA	40	138	126 - 150	45	3.3
164A1-P	SPA	40	146	134 - 158	45	3.6
177A1-P	SPA	50	160	149 - 171	65	6.2
187A1-P	SPA	50	170	159 - 181	65	6.5
178B1-P	SPB	50	155	139 - 171	65	6.0
187B1-P	SPB	50	164	148 - 180	65	6.5
200B1-P	SPB	50	178	163 - 193	60	7.1
215B1-P	SPB	50	198	178 - 208	60	7.4
226B1-P	SPB	50	204	189 - 219	60	7.6
244B1-P	SPB	60	224	211 - 237	70	9.7
256B1-P	SPB	60	236	223 - 249	70	11.8

Double Groove Variable Speed Pulley - Pilot Bore



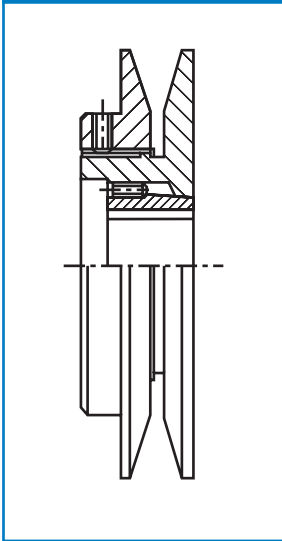
Type	Belt Section	Max Bore	Mid Pitch Dia	Max/Min Dia	Total Width	Weight kg
108A2-P	SPA	28	89	76 - 102	70	3.6
120A2-P	SPA	30	101	88 - 114	70	4.7
129A2-P	SPA	30	111	99 - 123	70	5.3
139A2-P	SPA	40	121	109 - 133	70	5.8
146A2-P	SPA	40	128	116 - 140	70	5.9
156A2-P	SPA	40	138	126 - 150	70	6.2
164A2-P	SPA	40	146	134 - 158	70	6.5
177A2-P	SPA	50	160	149 - 171	90	9.3
187A2-P	SPA	50	170	159 - 181	90	9.8
160B2-P	SPB	42	137	121 - 153	90	6.4
178B2-P	SPB	50	155	139 - 171	90	9.3
187B2-P	SPB	50	164	148 - 180	90	9.9
200B2-P	SPB	50	178	163 - 193	105	11.5
215B2-P	SPB	50	193	178 - 208	105	11.6
226B2-P	SPB	50	204	189 - 219	105	11.8
244B2-P	SPB	60	224	211 - 237	110	14.3
250B-2P	SPB	60	230	217 - 243	110	14.3
256B2-P	SPB	60	236	223 - 249	110	17.2
320B-2P	SPB	60	300	287 - 313	110	36.8
355B2-P	SPB	60	315	302 - 328	110	41.5

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused

Variable Speed Pulleys

Single Groove Variable Speed Pulley - Taper Bore

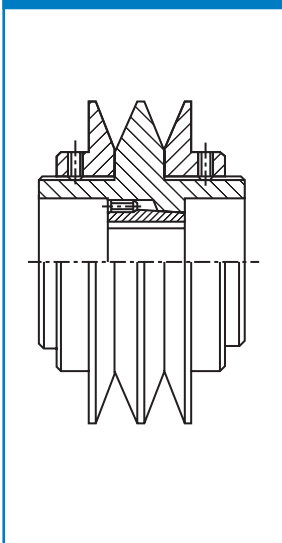
Single Groove Taper Bore



Type	Belt Section	Taper Bush	Max Bore	Mid Pitch Dia	Max/Min Dia	Total Width	Weight kg
84Z1-T	SPZ	1108	28	71	62 - 80	28	0.65
95Z1-T	SPZ	1108	28	82	73 - 91	30	0.85
100Z1-T	SPZ	1108	28	87	78 - 96	30	1.00
108Z1-T	SPZ	1210	32	97	90 - 104	35	1.30
108A1-T	SPA	1210	32	89	76 - 102	35	1.40
120A1-T	SPA	1210	32	101	88 - 114	35	1.60
129A1-T	SPA	1210	32	110	97 - 123	35	1.90
139A1-T	SPA	1610	42	121	109 - 133	35	2.50
146A1-T	SPA	1610	42	128	116 - 140	35	2.70
156A1-T	SPA	1610	42	138	126 - 150	35	3.10
164A1-T	SPA	1610	42	146	134 - 158	35	3.50
177A1-T	SPA	2012	50	160	149 - 171	40	4.30
187A1-T	SPA	2012	50	170	159 - 181	40	4.70
178B1-T	SPB	2012	50	155	139 - 171	40	4.30

Double Groove Variable Speed Pulley - Taper Bore

Double Groove Taper Bore

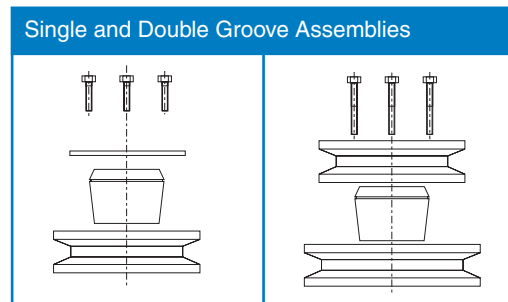
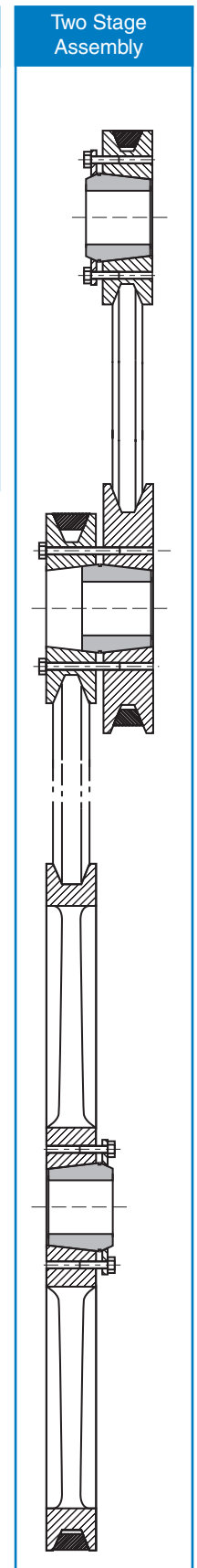
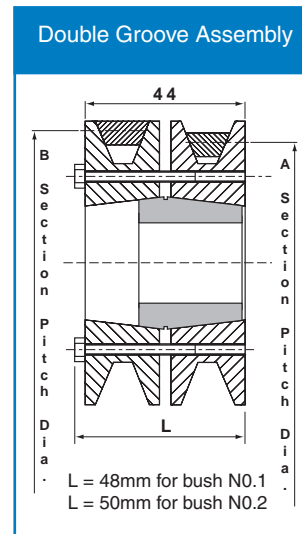
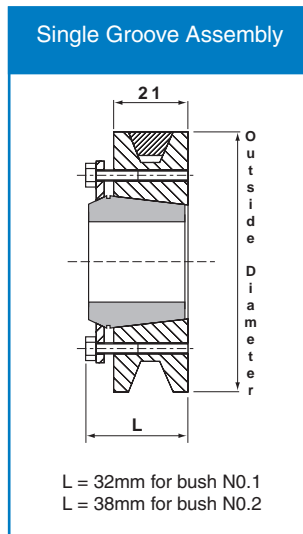


Type	Belt Section	Taper Bush	Max Bore	Mid Pitch Dia	Max/Min Dia	Total Width	Weight kg
120A2-T	SPA	1215	32	101	88 - 114	65	4.4
129A2-T	SPA	1215	32	110	97 - 123	65	4.6
139A2-T	SPA	1615	42	121	109 - 133	70	4.9
146A2-T	SPA	1615	42	128	116 - 140	70	5.3
156A2-T	SPA	1615	42	138	126 - 150	70	5.7
164A2-T	SPA	1615	42	146	134 - 158	70	6.1
177A2-T	SPA	2012	50	160	149 - 171	90	8.1
187A2-T	SPA	2012	50	170	159 - 181	90	8.7
178B2-T	SPB	2012	50	155	139 - 171	90	8.1
187B2-T	SPB	2012	50	164	148 - 180	90	8.7

Mi-Lock

Mi-Lock Pulleys

Pitch Dia.		Outside Diameter	Weight kg	Mi-Lock Bush
A	B			
071	081	88	0.42	1
075	085	92	0.47	1
080	090	97	0.53	1
085	095	102	0.62	1
090	100	107	0.72	1
095	105	111	0.80	1
100	110	117	0.91	1
106	116	123	1.02	1
112	122	129	0.98	1
118	128	135	1.05	1
125	135	142	1.17	1
132	142	149	1.28	1
140	150	157	1.49	2
150	160	167	1.61	2
160	170	177	1.75	2
180	190	197	2.03	2
200	209	216	2.38	2
224	233	240	3.34	2
250	259	266	4.22	2
280	289	296	3.77	2
315	324	331	4.45	2
355	364	371	4.94	2
400	409	416	7.51	2
450	459	466	9.05	2



Note: The same pulley is used for both A and B section belts but is ordered using 'A' pitch diameter.

Mi-Lock Bush Sizes

Bush Reference		Bush Shaft Sizes
Mi-Lock Bush No. 1	mm	10, 11, 12, 14, 15, 16, 18, 19, 20, 22, 24, 25, 28
	inch	3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1", 1.1/16", 1.1/8"
Mi-Lock Bush No. 2	mm	16, 18, 19, 20, 22, 24, 25, 28, 30, 32, 35, 38, 40, 42
	inch	1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8", 15/16", 1", 1.1/16", 1.1/8", 1.3/16", 1.1/4", 1.5/16", 1.3/8", 1.7/16", 1.1/2", 1.9/16"

Notes On Ordering Mi-Lock Pulleys and Bushes

Use the 'A' column for specifying pulley size*
Single Groove Assembly
1 x Pulley 1 x Bush (No.1 or No.2) 1 x Retaining ring set (No.1 or No.2)
Double Groove Assembly
2 x Pulleys 1 x Bush (No.1 or No.2) 1 x LR Bolt kit (No.1 or No.2)

Mi-Lock Ring Sets and LR Ring Kits

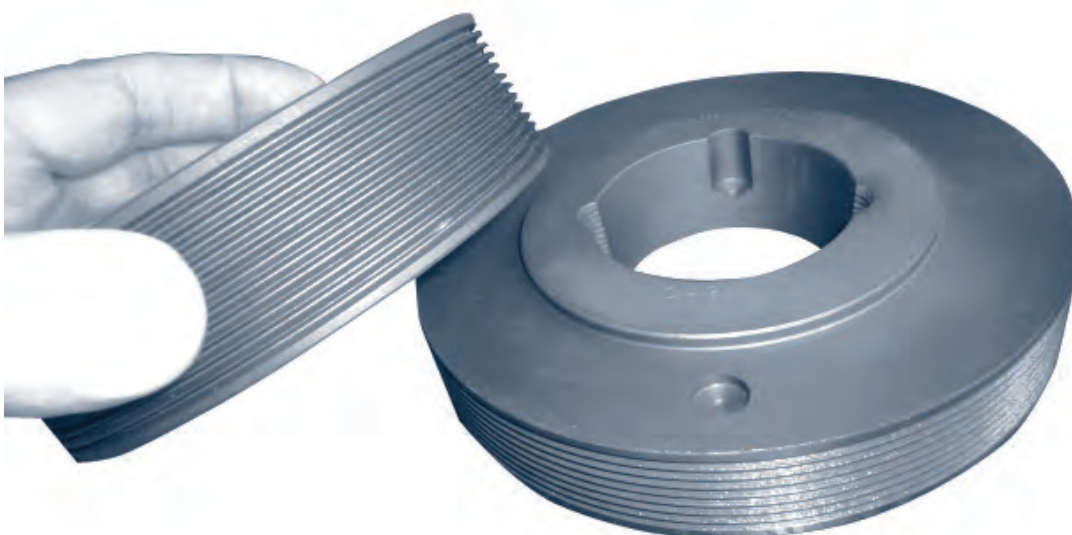
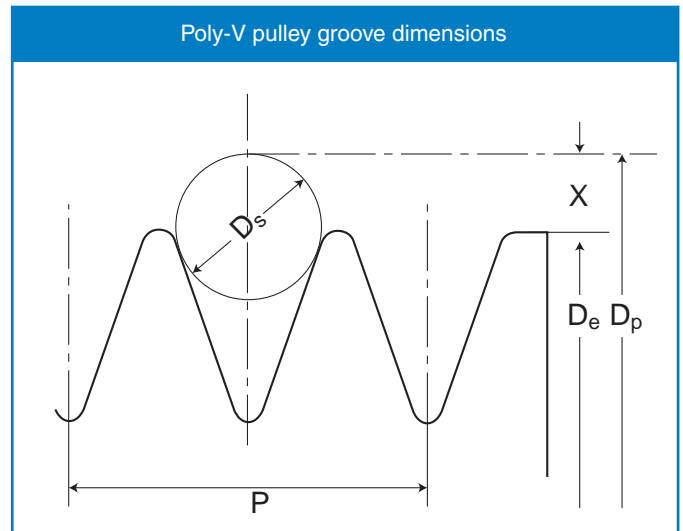
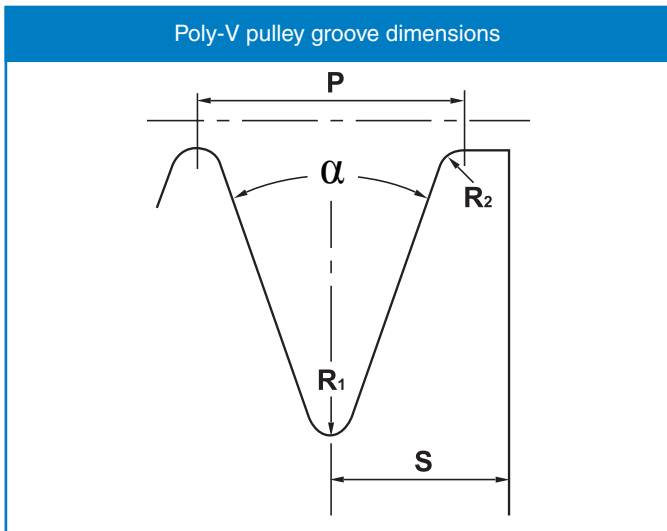
Retaining Ring Sets No. 1 & No. 2	LR Bolt Kits (Long reach)
1 x Retainer 3 x Short bolts 3 x Washers	3 x Long bolts 3 x Washers

POLY-V Pulleys

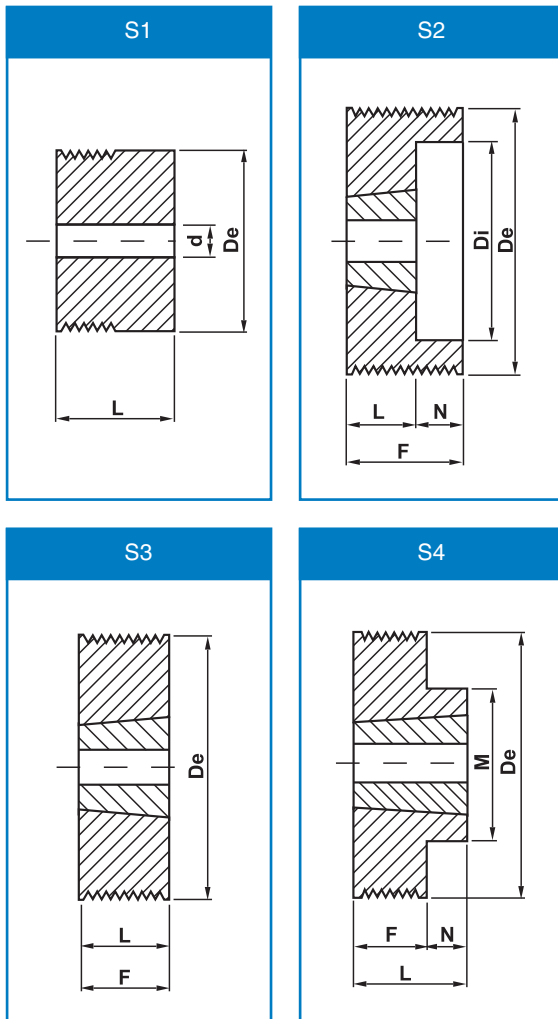
Challenge Poly-V pulleys are manufactured according to ISO 9982 specification (Pulleys and V-ribbed belts for industrial applications). This encompasses product designation, geometry, roughness and pulley run out.

Groove dimensions of Poly-V pulleys according to ISO 9982

	H	J	Section K	L	M
α	40±0.5	40±0.5	40±0.5	40±0.5	40±0.5
P	1.50±0.03	2.34±0.03	3.56±0.05	4.70±0.05	9.40±0.08
Tolerance ΣP	±0.30	±0.30	±0.30	±0.30	±0.30
S min.	1.30	1.80	2.50	3.30	6.40
R1 max.	0.30	0.40	0.50	0.40	0.75
R2 min.	0.15	0.20	0.25	0.40	0.75
Ds	1.00±0.01	1.50±0.01	2.50±0.01	3.50±0.01	7.00±0.01
2X=Dp-De	0.11	0.23	0.99	2.36	4.53



POLY-V Section J

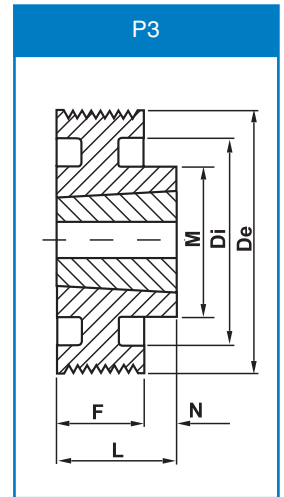
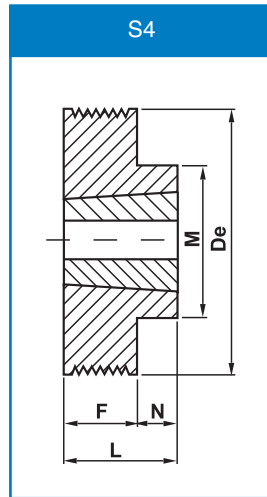
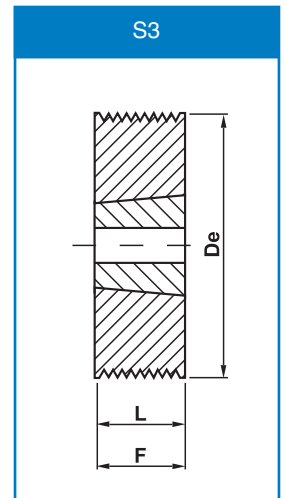
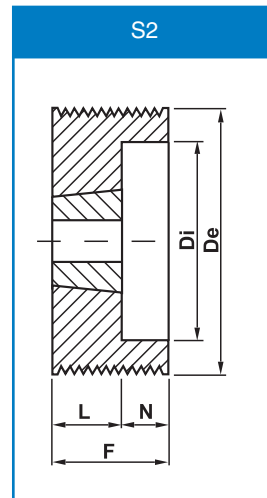


De	Groove Number	Bush Size	Style	F	L	N	M	Di	d
20	4	-	S1	13.5	22.5	-	-	-	5.0
	8	-	S1	23.0	32.0	-	-	-	5.0
	12	-	S1	32.5	41.5	-	-	-	5.0
	16	-	S1	42.0	51.0	-	-	-	5.0
	20	-	S1	52.0	61.0	-	-	-	5.0
25	4	-	S1	13.5	22.5	-	-	-	5.0
	8	-	S1	23.0	32.0	-	-	-	5.0
	12	-	S1	32.5	41.5	-	-	-	5.0
	16	-	S1	42.0	51.0	-	-	-	5.0
	20	-	S1	52.0	61.0	-	-	-	5.0
30	4	-	S1	13.5	22.5	-	-	-	9.5
	8	-	S1	23.0	32.0	-	-	-	9.5
	12	-	S1	32.5	41.5	-	-	-	9.5
	16	-	S1	42.0	51.0	-	-	-	9.5
	20	-	S1	52.0	61.0	-	-	-	9.5
35	4	-	S1	13.5	22.5	-	-	-	9.5
	8	-	S1	23.0	32.0	-	-	-	9.5
	12	-	S1	32.5	41.5	-	-	-	9.5
	16	-	S1	42.0	51.0	-	-	-	9.5
	20	-	S1	52.0	61.0	-	-	-	9.5
40	4	-	S1	13.5	22.5	-	-	-	12.0
	8	-	S1	23.0	32.0	-	-	-	12.0
	12	-	S1	32.5	41.5	-	-	-	12.0
	16	-	S1	42.0	51.0	-	-	-	12.0
	20	-	S1	52.0	61.0	-	-	-	12.0
45	4	-	S1	13.5	22.5	-	-	-	12.0
	8	-	S1	23.0	32.0	-	-	-	12.0
	12	-	S1	32.5	41.5	-	-	-	12.0
	16	-	S1	42.0	51.0	-	-	-	12.0
	20	-	S1	52.0	61.0	-	-	-	12.0
50	4	-	S1	13.5	22.5	-	-	-	12.0
	8	-	S1	23.0	32.0	-	-	-	12.0
	12	-	S1	32.5	41.5	-	-	-	12.0
	16	-	S1	42.0	51.0	-	-	-	12.0
	20	-	S1	52.0	61.0	-	-	-	12.0
56	4	1108	S4	13.5	23.0	9.5	50	-	-
	8	1108	S3	23.0	23.0	-	-	-	-
	12	-	S1	32.5	41.5	-	-	-	12.0
	16	-	S1	42.0	51.0	-	-	-	12.0
	20	-	S1	52.0	61.0	-	-	-	12.0
60	4	1108	S4	13.5	23.0	9.5	50	-	-
	8	1108	S3	23.0	23.0	-	-	-	-
	12	1108	S2	32.5	23.0	9.5	-	45	-
	16	-	S1	42.0	51.0	-	-	-	12.0
	20	-	S1	52.0	61.0	-	-	-	12.0
63	4	1108	S4	13.5	23.0	9.5	50	-	-
	8	1108	S3	23.0	23.0	-	-	-	-
	12	1108	S2	32.5	23.0	9.5	-	45	-
	16	-	S1	42.0	51.0	-	-	-	12.0
	20	-	S1	52.0	61.0	-	-	-	12.0
67	4	1108	S4	13.5	23.0	9.5	50	-	-
	8	1108	S3	23.0	23.0	-	-	-	-
	12	1108	S2	32.5	23.0	9.5	-	51	-
	16	-	S1	42.0	51.0	-	-	-	12.0
	20	-	S1	52.0	61.0	-	-	-	12.0

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused

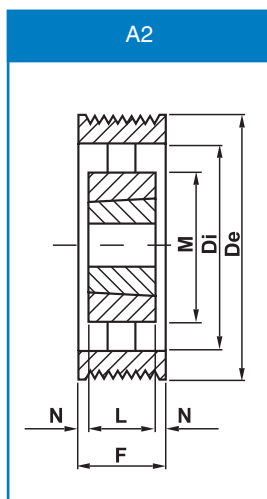
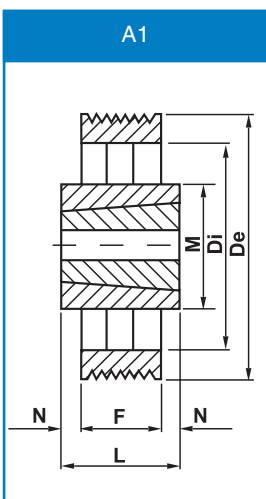
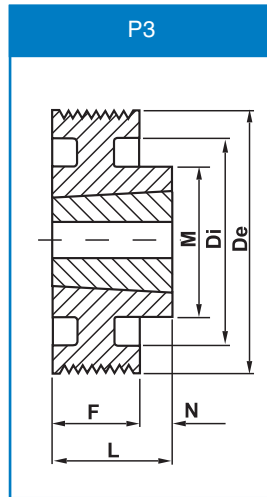
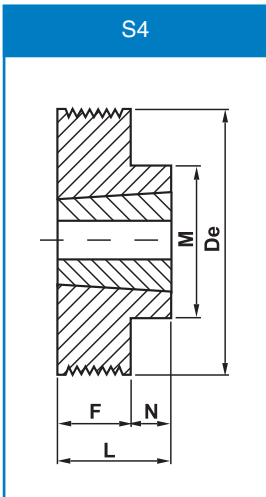
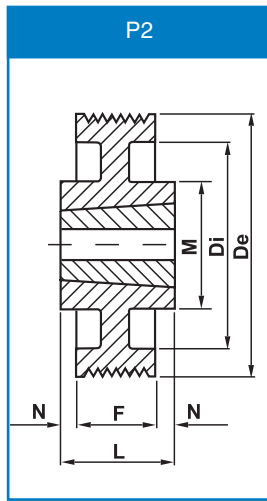
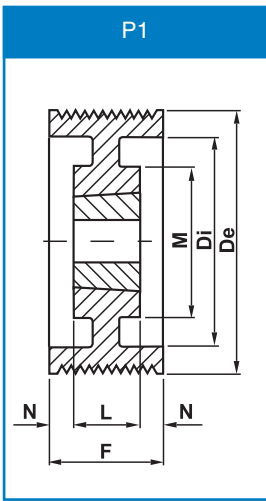
POLY-V Section J

De	Groove Number	Bush Size	Style	F	L	N	M	Di
71	4	1108	S4	13.5	23	9.5	60	-
	8	1108	S3	23.0	23	-	-	-
	12	1108	S2	32.5	23	9.5	-	55
	16	1215	S3	42.0	42	-	-	55
	20	1215	S2	52.0	42	10.0	-	55
75	4	1108	S4	13.5	23	9.5	60	-
	8	1108	S3	23.0	23	-	-	-
	12	1210	S2	32.5	26	6.5	-	59
	16	1610	S2	42.0	26	16.0	-	59
	20	1615	S2	52.0	42	10.0	-	59
80	4	1310	S4	13.5	26	12.5	70	-
	8	1310	S4	23.0	26	3.0	70	-
	12	1610	S2	32.5	26	6.5	-	64
	16	1610	S2	42.0	26	16.0	-	64
	20	1615	S2	52.0	42	10.0	-	64
85	4	1310	S4	13.5	26	12.5	70	-
	8	1310	S4	23.0	26	3.0	70	-
	12	1610	S2	32.5	26	6.5	-	69
	16	1610	S2	42.0	26	16.0	-	69
	20	1615	S2	52.0	42	10.0	-	69
90	4	1610	S4	13.5	26	12.5	82	-
	8	1610	S4	23.0	26	3.0	82	-
	12	1610	S2	32.5	26	6.5	-	74
	16	1610	S2	42.0	26	16.0	-	74
	20	1615	S2	52.0	42	10.0	-	74
95	4	1610	S4	13.5	26	12.5	82	-
	8	1610	S4	23.0	26	3.0	82	-
	12	1610	S2	32.5	26	6.5	-	79
	16	1610	S2	42.0	26	16.0	-	79
	20	1615	S2	52.0	42	10.0	-	79
100	4	1610	S4	13.5	26	12.5	82	-
	8	1610	S4	23.0	26	3.0	82	-
	12	1610	S2	32.5	26	6.5	-	82
	16	1610	S2	42.0	26	16.0	-	82
	20	1615	S2	52.0	42	10.0	-	82
106	4	1610	S4	13.5	26	12.5	88	-
	8	1610	S4	23.0	26	3.0	88	-
	12	1610	S2	32.5	26	6.5	-	88
	16	1610	S2	42.0	26	16.0	-	88
	20	1615	S2	52.0	42	10.0	-	88
112	4	1610	S4	13.5	26	12.5	90	-
	8	1610	S4	23.0	26	3.0	90	-
	12	1610	S2	32.5	26	6.5	-	94
	16	1610	S2	42.0	26	16.0	-	94
	20	1615	S2	52.0	42	10.0	-	94
118	4	1610	S4	13.5	26	12.5	90	-
	8	1610	S4	23.0	26	3.0	90	-
	12	2012	S2	32.5	32	0.5	-	98
	16	2012	S2	42.0	32	10.0	-	98
	20	2012	S2	52.0	32	20.0	-	98
125	4	1610	P3	13.5	26	12.5	90	109
	8	1610	P3	23.0	26	3.0	90	109
	12	2012	S2	32.5	32	0.5	-	105
	16	2012	S2	42.0	32	10.0	-	105
	20	2517	S2	52.0	45	7.0	-	105



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POLY-V Section J

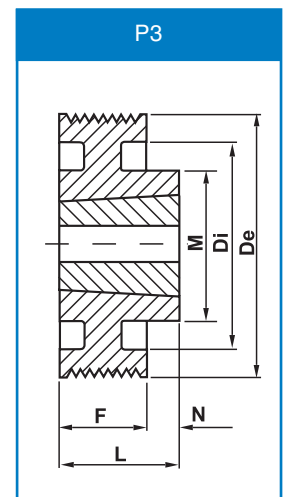
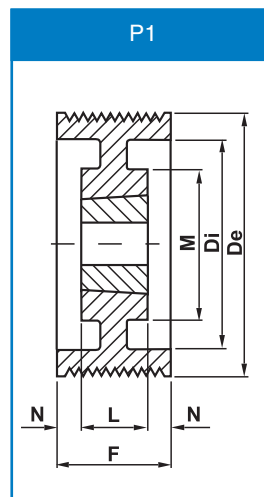
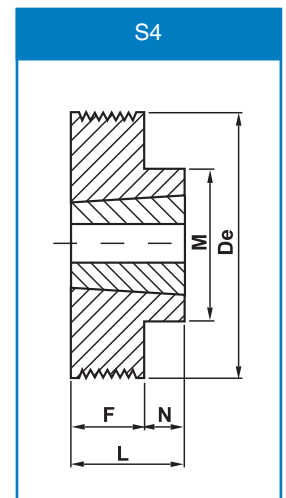
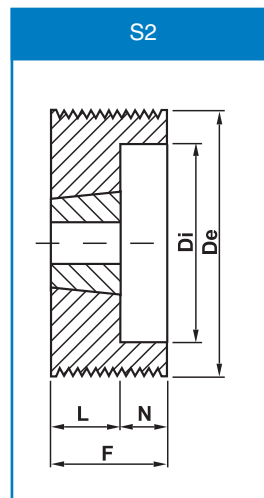


De	Groove Number	Bush Size	Style	F	L	N	M	Di
132	4	1610	P3	13.5	26	12.50	90	116
	8	1610	P3	23.0	26	3.00	90	116
	12	2012	S2	32.5	32	0.50	-	112
	16	2012	S2	42.0	32	10.00	-	112
	20	2517	S2	52.0	45	7.00	-	112
140	4	1610	P3	13.5	26	12.50	90	124
	8	1610	P3	23.0	26	3.00	90	124
	12	2517	S4	32.5	45	12.50	120	-
	16	2517	S4	42.0	45	3.00	120	-
	20	2517	S2	52.0	45	7.00	-	124
160	4	2012	P3	13.5	32	18.50	110	144
	8	2012	P3	23.0	32	9.00	110	144
	12	2517	P3	32.5	45	12.50	120	140
	16	2517	P3	42.0	45	3.00	120	140
	20	2517	S2	52.0	45	7.00	-	140
180	4	2012	P2	13.5	32	9.25	110	164
	8	2012	P2	23.0	32	4.50	110	164
	12	2517	P2	32.5	45	6.25	120	160
	16	2517	P2	42.0	45	1.50	120	160
	20	2517	P1	52.0	45	3.50	120	160
200	4	2012	P2	13.5	32	9.25	110	185
	8	2012	P2	23.0	32	4.50	110	185
	12	2517	P2	32.5	45	6.25	120	180
	16	2517	P2	42.0	45	1.50	120	180
	20	2517	P1	52.0	45	3.50	120	180
224	4	2012	P2	13.5	32	9.25	110	208
	8	2012	P2	23.0	32	4.50	110	208
	12	2517	P2	32.5	45	6.25	120	204
	16	2517	P2	42.0	45	1.50	120	204
	20	2517	P1	52.0	45	3.50	120	204
250	4	2012	A1	13.5	32	9.25	110	234
	8	2012	A1	23.0	32	4.50	110	234
	12	2517	P2	32.5	45	6.25	120	230
	16	2517	P2	42.0	45	1.50	120	230
	20	2517	P1	52.0	45	3.50	120	230
280	4	2012	A1	13.5	32	9.25	110	264
	8	2012	A1	23.0	32	4.50	110	264
	12	2517	A1	32.5	45	6.25	120	260
	16	2517	A1	42.0	45	1.50	120	260
	20	2517	A2	52.0	45	3.50	120	260
315	4	2012	A1	13.5	32	9.25	110	299
	8	2012	A1	23.0	32	4.50	110	299
	12	2517	A1	32.5	45	6.25	120	295
	16	2517	A1	42.0	45	1.50	120	295
	20	2517	A2	52.0	45	3.50	120	295
355	4	2517	A1	13.5	45	15.70	120	339
	8	2517	A1	23.0	45	11.00	120	339
	12	2517	A1	32.5	45	6.25	120	335
	16	3020	A1	42.0	52	5.00	146	335
	20	3020	A2	52.0	52	-	146	335
400	4	2517	A1	13.5	45	15.75	120	380
	8	2517	A1	23.0	45	11.00	120	380
	12	2517	A1	32.5	45	6.25	120	380
	16	3020	A1	42.0	52	5.00	146	380
	20	3020	A2	52.0	52	-	146	380

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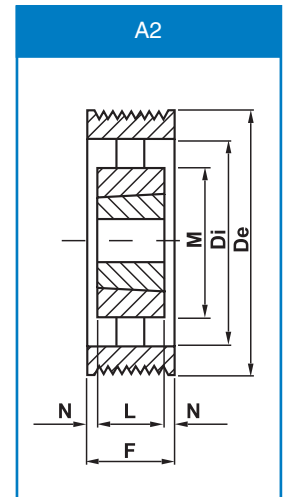
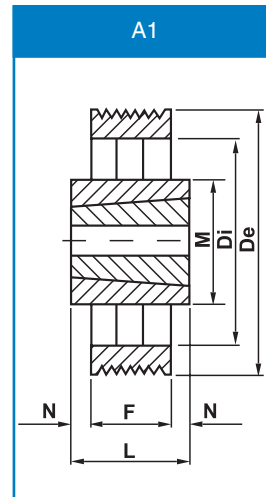
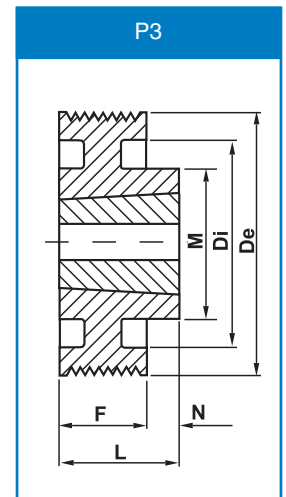
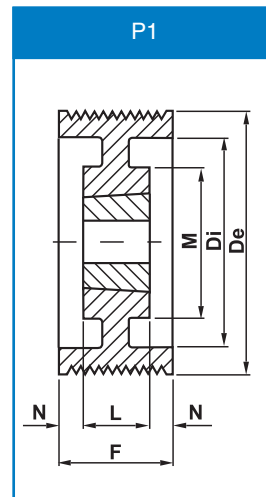
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De	Groove Number	Bush Size	Style	F	L	N	M	Di
80	4	1310	S4	22	26	4	78	-
	8	1310	S2	36	26	10	-	60
85	4	1310	S4	22	26	4	78	-
	8	1310	S2	36	26	10	-	65
90	4	1610	S4	22	26	4	86	-
	8	1610	S2	36	26	10	-	70
95	4	1610	S4	22	26	4	86	-
	8	1610	S2	36	26	10	-	75
100	4	1610	S4	22	26	4	86	-
	8	1610	S2	36	26	10	-	80
	12	1610	S2	50	26	24	-	80
	16	2012	S2	64	32	32	-	80
112	4	1610	S4	22	26	4	86	-
	8	1610	S2	36	26	10	-	92
	12	1610	S2	50	26	24	-	92
	16	2012	S2	64	32	32	-	92
118	4	1610	S4	22	26	4	86	-
	8	1610	S2	36	26	10	-	98
	12	1610	S2	50	26	24	-	98
	16	2012	S2	64	32	32	-	98
125	4	1610	S4	22	26	4	86	-
	8	1610	S2	36	26	10	-	105
	12	1610	S2	50	26	24	-	105
	16	2012	S2	64	32	32	-	105
132	4	1610	S4	22	26	4	86	-
	8	1610	S2	36	26	10	-	112
	12	2012	S2	50	32	18	-	112
	16	2012	S2	64	32	32	-	112
140	4	1610	S4	22	26	4	86	-
	8	2012	S2	36	32	10	-	120
	12	2012	S2	50	32	18	-	120
	16	2012	S2	64	32	32	-	120
150	4	2012	S4	22	32	10	104	-
	8	2012	S2	36	32	4	-	130
	12	2012	S2	50	32	18	-	130
	16	2517	S2	64	45	19	-	130
160	4	2012	S4	22	32	10	104	-
	8	2012	S2	36	32	4	-	140
	12	2012	S2	50	32	18	-	140
	16	2517	S2	64	45	19	-	140
170	4	2012	P3	22	32	10	104	150
	8	2012	S2	36	32	4	-	150
	12	2517	S2	50	45	5	-	150
	16	2517	S2	64	45	19	-	150
180	4	2012	P3	22	32	10	104	160
	8	2517	P3	36	45	9	117	160
	12	2517	P1	50	45	5	117	160
	16	2517	P1	64	45	19	117	160
190	4	2012	P3	22	32	10	104	170
	8	2517	P3	36	45	9	117	170
	12	2517	P1	50	45	5	117	170
	16	2517	P1	64	45	19	117	170
200	4	2012	P3	22	32	10	104	180
	8	2517	P3	36	45	9	117	180
	12	2517	P1	50	45	5	117	180
	16	2517	P1	64	45	19	117	180



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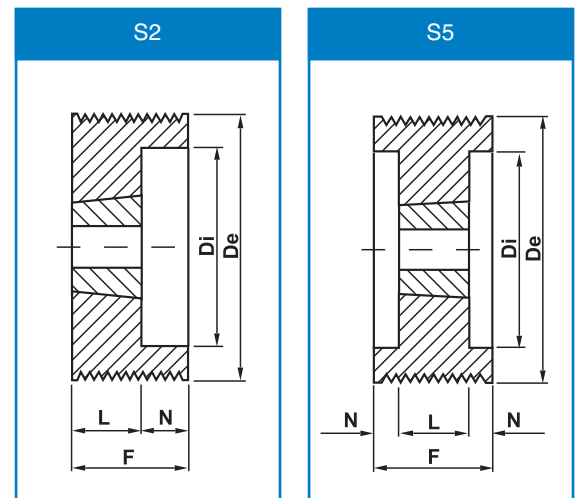
De	Groove Number	Bush Size	Style	F	L	N	M	Di
212	4	2012	P3	22	32	10	104	192
	8	2517	P3	36	45	9	117	192
	12	2517	P1	50	45	5	117	192
	16	2517	P1	64	45	19	117	192
224	4	2012	A1	22	32	10	104	204
	8	2517	P3	36	45	9	117	204
	12	2517	P1	50	45	5	117	204
	16	2517	P1	64	45	19	117	204
236	4	2012	A1	22	32	10	104	216
	8	2517	A1	36	45	9	117	216
	12	2517	A2	50	45	5	117	216
	16	2517	A2	64	45	19	117	216
250	4	2012	A1	22	32	10	104	230
	8	2517	A1	36	45	9	117	230
	12	2517	A2	50	45	5	117	230
	16	2517	A2	64	45	19	117	230
265	4	2517	A1	22	45	23	117	245
	8	2517	A1	36	45	9	117	245
	12	2517	A2	50	45	5	117	245
	16	3020	A2	64	51	13	144	245
280	4	2517	A1	22	45	23	117	260
	8	2517	A1	36	45	9	117	260
	12	2517	A2	50	45	5	117	260
	16	3020	A2	64	51	13	144	260
300	4	2517	A1	22	45	23	117	280
	8	2517	A1	36	45	9	117	280
	12	2517	A2	50	45	5	117	280
	16	3020	A2	64	51	13	144	280
315	4	2517	A1	22	45	23	117	290
	8	2517	A1	36	45	9	117	290
	12	3020	A1	50	51	1	144	290
	16	3020	A2	64	51	13	144	290
335	4	2517	A1	22	45	23	117	310
	8	2517	A1	36	45	9	117	310
	12	3020	A1	50	51	1	144	310
	16	3020	A2	64	51	13	144	310
355	4	2517	A1	22	45	23	117	330
	8	2517	A1	36	45	9	117	330
	12	3020	A1	50	51	1	144	330
	16	3020	A2	64	51	13	144	330
375	4	2517	A1	22	45	23	117	350
	8	3020	A1	36	51	15	144	350
	12	3020	A1	50	51	1	144	350
	16	3020	A2	64	51	13	144	350
400	4	2517	A1	22	45	23	117	375
	8	3020	A1	36	51	15	144	375
	12	3020	A1	50	51	1	144	375
	16	3535	A1	64	89	13	172	375
425	4	3020	A1	22	51	29	144	400
	8	3020	A1	36	51	15	144	400
	12	3020	A1	50	51	1	144	400
	16	3535	A1	64	89	13	172	400
450	4	3020	A1	22	51	29	144	425
	8	3020	A1	36	51	15	144	425
	12	3020	A1	50	51	1	144	425
	16	3535	A1	64	89	13	172	425



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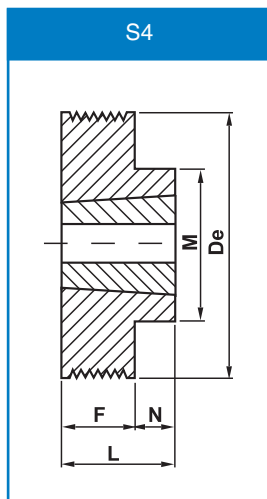
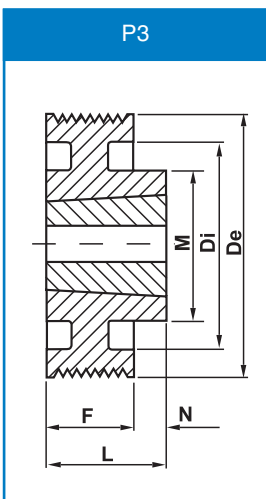
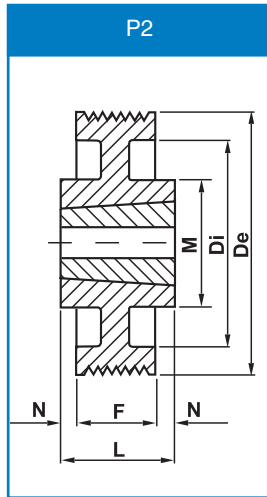
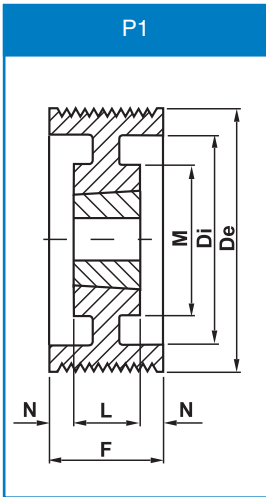
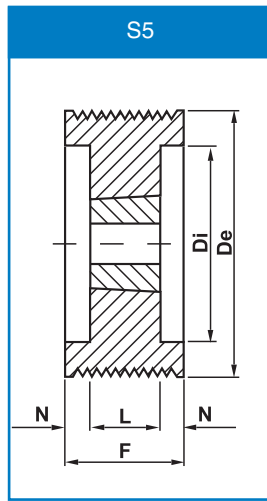
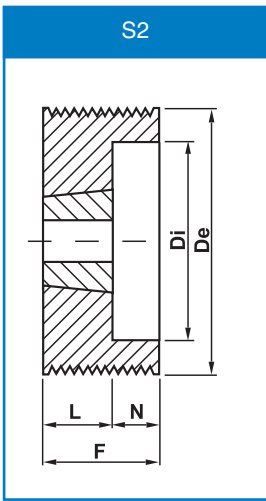
POLY-V Section L

De	Groove Number	Bush Size	Style	F	L	N	Di
75	6	1210	S2	38.5	26	12.5	56
	8	1210	S2	48.0	26	22.0	56
	10	1215	S2	57.0	42	15.0	56
	12	1215	S2	67.0	42	25.0	56
80	6	1210	S2	38.5	26	12.5	56
	8	1210	S2	48.0	26	22.0	56
	10	1215	S2	57.0	42	15.0	56
	12	1215	S2	67.0	42	25.0	56
85	6	1210	S2	38.5	26	12.5	61
	8	1210	S2	48.0	26	22.0	61
	10	1215	S2	57.0	42	15.0	61
	12	1215	S2	67.0	42	25.0	61
	16	1215	S5	86.0	42	22.0	61
90	6	1210	S2	38.5	26	12.5	66
	8	1210	S2	48.0	26	22.0	66
	10	1215	S2	57.0	42	15.0	66
	12	1215	S2	67.0	42	25.0	66
	16	1215	S5	86.0	42	22.0	66
95	6	1210	S2	38.5	26	12.5	71
	8	1210	S2	48.0	26	22.0	71
	10	1215	S2	57.0	42	15.0	71
	12	1215	S2	67.0	42	25.0	71
	16	1215	S5	86.0	42	22.0	71
100	6	1610	S2	38.5	26	12.5	76
	8	1610	S2	48.0	26	22.0	76
	10	2012	S2	57.0	32	25.0	79
	12	2012	S2	67.0	32	35.0	79
	16	2012	S5	86.0	32	27.0	79
106	6	1610	S2	38.5	26	12.5	82
	8	1610	S2	48.0	26	22.0	82
	10	2012	S2	57.0	32	25.0	82
	12	2012	S2	67.0	32	35.0	82
	16	2012	S5	86.0	32	27.0	82
112	6	1610	S2	38.5	26	12.5	88
	8	1610	S2	48.0	26	22.0	88
	10	2012	S2	57.0	32	25.0	88
	12	2012	S2	67.0	32	35.0	88
	16	2012	S5	86.0	32	27.0	88
118	6	2012	S2	38.5	32	6.5	94
	8	2012	S2	48.0	32	16.0	94
	10	2517	S5	57.0	45	6.0	97
	12	2517	S5	67.0	45	11.0	97
	16	2517	S5	86.0	45	20.5	97
	20	2517	S5	105	45	30.0	97
125	6	2012	S2	38.5	32	6.5	101
	8	2012	S2	48.0	32	16.0	101
	10	2517	S5	57.0	45	6.0	101
	12	2517	S5	67.0	45	11.0	101
	16	2517	S5	86.0	45	20.5	101
	20	2517	S5	105	45	30.0	101
132	6	2012	S2	38.5	32	6.5	108
	8	2012	S2	48.0	32	16.0	108
	10	2517	S5	57.0	45	6.0	108
	12	2517	S5	67.0	45	11.0	108
	16	2517	S5	86.0	45	20.5	108
	20	2517	S5	105	45	30.0	108



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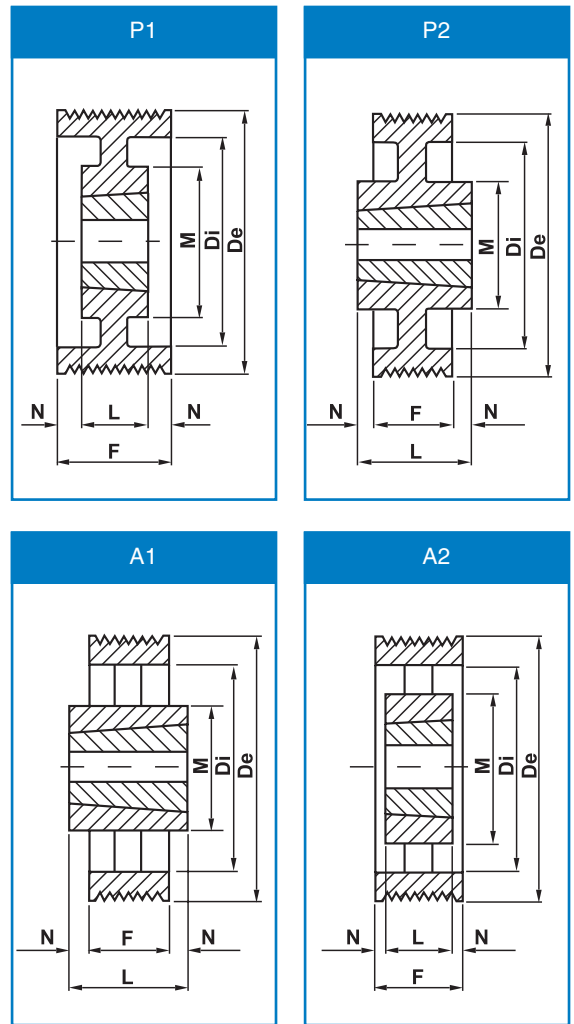


De	Groove Number	Bush Size	Style	F	L	N	M	Di
140	6	2517	S4	38.5	45	6.50	120	-
	8	2517	S2	48.0	45	3.00	-	116
	10	2517	S5	57.0	45	6.00	-	116
	12	2517	S5	67.0	45	11.00	-	116
	16	2517	S5	86.0	45	20.50	-	116
150	20	3020	S5	105	52	26.50	-	116
	6	2517	S4	38.5	45	6.50	120	-
	8	2517	S2	48.0	45	3.00	-	126
	10	2517	S5	57.0	45	6.00	-	126
	12	2517	S5	67.0	45	11.00	-	126
160	16	2517	S5	86.0	45	20.50	-	126
	20	3020	S5	105	52	26.50	-	126
	6	2517	S4	38.5	45	6.50	120	-
	8	2517	S2	48.0	45	3.00	-	136
	10	2517	S5	57.0	45	6.00	-	136
170	12	2517	S5	67.0	45	11.00	-	136
	16	3020	S5	86.0	52	17.00	-	136
	20	3020	S5	105	52	26.50	-	136
	6	2517	P3	38.5	45	6.50	120	146
	8	2517	S2	48.0	45	3.00	-	146
180	10	2517	S5	57.0	45	6.00	-	146
	12	2517	S5	67.0	45	11.00	-	146
	16	3020	S5	86.0	52	17.00	-	146
	20	3020	S5	105	52	26.50	-	146
	6	2517	P2	38.5	45	3.25	120	156
	8	2517	P1	48.0	45	1.50	120	156
190	10	2517	P1	57.0	45	6.00	120	156
	12	2517	P1	67.0	45	11.00	120	156
	16	3020	S5	86.0	52	17.00	-	156
	20	3020	S5	105	52	26.50	-	156
	6	2517	P2	38.5	45	3.25	120	166
200	8	2517	P1	48.0	45	1.50	120	166
	10	2517	P1	57.0	45	6.00	120	166
	12	2517	P1	67.0	45	11.00	120	166
	16	3020	P1	86.0	52	17.00	146	166
	20	3020	P1	105	52	26.50	146	166
212	6	2517	P2	38.5	45	3.25	120	176
	8	2517	P1	48.0	45	1.50	120	176
	10	3020	P1	57.0	52	2.50	146	176
	12	3020	P1	67.0	52	7.50	146	176
	16	3020	P1	86.0	52	17.00	146	176
	20	3535	S5	105	89	8.00	-	176
	6	2517	P2	38.5	45	3.25	120	188
224	8	2517	P1	48.0	45	1.50	120	188
	10	3020	P1	57.0	52	2.50	146	188
	12	3020	P1	67.0	52	7.50	146	188
	16	3020	P1	86.0	52	17.00	146	188
	20	3535	S5	105	89	8.00	-	188
	6	2517	P2	38.5	45	3.25	120	202
236	8	2517	P1	48.0	45	1.50	120	202
	10	3020	P1	57.0	52	2.50	146	202
	12	3020	P1	67.0	52	7.50	146	202
	16	3020	P1	86.0	52	17.00	146	202
	20	3535	P1	105	89	8.00	178	202
	6	2517	P2	38.5	45	3.25	120	214
240	8	2517	P1	48.0	45	1.50	120	214
	10	3020	P1	57.0	52	2.50	146	214
	12	3020	P1	67.0	52	7.50	146	214
	16	3020	P1	86.0	52	17.00	146	214
	20	3535	P1	105	89	8.00	178	214

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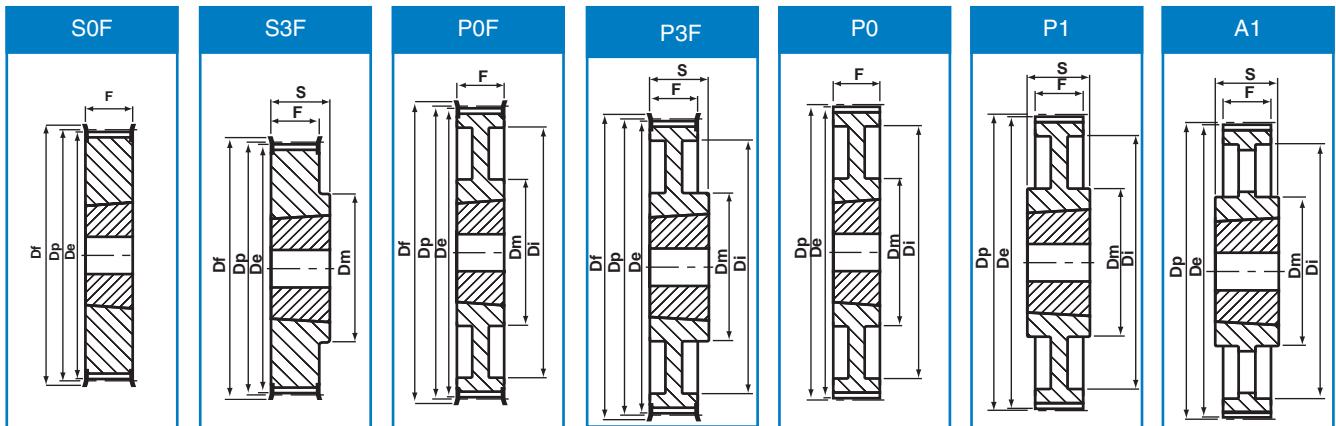
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250	6	2517	A1	38.5	45	3.25	120	228
	8	2517	P1	48.0	45	1.50	120	228
	10	3020	P1	57.0	52	2.50	146	228
	12	3020	P1	67.0	52	7.50	146	228
	16	3020	P1	86.0	52	17.00	146	228
	20	3535	P1	105	89	8.00	178	228
280	6	2517	P2	38.5	45	3.25	120	256
	8	3020	P2	48.0	52	2.00	146	256
	10	3020	P1	57.0	52	2.50	146	256
	12	3020	P1	67.0	52	7.50	146	256
	16	3535	P2	86.0	89	1.50	178	256
	20	3535	P1	105	89	8.00	178	256
315	6	2517	A1	38.5	45	3.25	120	285
	8	3020	A1	48.0	52	2.00	146	285
	10	3535	P2	57.0	89	16.00	178	285
	12	3535	P2	67.0	89	11.00	178	285
	16	3535	P2	86.0	89	1.50	178	285
	20	4040	P1	105	102	1.50	215	285
355	6	3020	A1	38.5	52	6.75	146	325
	8	3020	A1	48.0	52	2.00	146	325
	10	3535	A1	57.0	89	16.00	178	325
	12	3535	A1	67.0	89	11.00	178	325
	16	3535	A1	86.0	89	1.50	178	325
	20	4040	P1	105	102	1.50	215	325
400	6	3020	A1	38.5	52	6.75	146	370
	8	3020	A1	48.0	52	2.00	146	370
	10	3535	A1	57.0	89	16.00	178	370
	12	3535	A1	67.0	89	11.00	178	370
	16	3535	A1	86.0	89	1.50	178	370
	20	4040	A2	105	102	1.50	215	370
450	6	3020	A1	38.5	52	6.75	146	420
	8	3020	A1	48.0	52	2.00	146	420
	10	3535	A1	57.0	89	16.00	178	420
	12	3535	A1	67.0	89	11.00	178	420
	16	3535	A1	86.0	89	1.50	178	420
	20	4040	A1	105	102	1.50	215	420
500	6	3020	A1	38.5	52	6.75	146	470
	8	3020	A1	48.0	52	2.00	146	470
	10	3535	A1	57.0	89	16.00	178	470
	12	3535	A1	67.0	89	11.00	178	470
	16	3535	A1	86.0	89	1.50	178	470
	20	5050	A1	105	127	11.00	267	470
630	6	3020	A1	38.5	52	6.75	146	600
	8	3020	A1	48.0	52	2.00	146	600
	10	3535	A1	57.0	89	16.00	178	600
	12	3535	A1	67.0	89	11.00	178	600
	16	4040	A1	86.0	102	8.00	215	600
	20	5050	A1	105	127	11.00	267	600
800	6	3535	A1	38.5	89	25.20	178	770
	8	3535	A1	48.0	89	20.50	178	770
	10	4040	A1	57.0	102	22.50	215	770
	12	4040	A1	67.0	102	17.50	215	770
	16	5050	A1	86.0	127	20.50	267	770
	20	5050	A1	105	127	11.00	267	770



Timing Taper Bore

Light (L) - 3/8" (9.525 mm) pitch L050 - 1/2" (13 mm) wide belts

Product Designation	Number of Teeth	Type	Bush Size	De	Dp	Df	Dm	Di	F	S	Weight kg
18-L-050	18	S3F	1108	54	54.57	60	43	-	19	22	0.2
19-L-050	19	S3F	1108	57	57.61	63	43	-	19	22	0.2
20-L-050	20	S3F	1108	60	60.64	67	48	-	19	22	0.2
21-L-050	21	S3F	1108	63	63.77	70	48	-	19	22	0.3
22-L-050	22	S3F	1108	66	66.70	75	51	-	19	22	0.3
23-L-050	23	S3F	1108	69	69.73	79	54	-	19	22	0.4
24-L-050	24	S3F	1108	72	72.77	79	54	-	19	22	0.4
25-L-050	25	S3F	1108	75	75.80	87	56	-	19	22	0.5
26-L-050	26	S3F	1108	78	78.83	87	60	-	19	22	0.5
27-L-050	27	S3F	1108	81	81.86	91	65	-	19	22	0.6
28-L-050	28	S3F	1108	84	84.89	91	65	-	19	22	0.6
30-L-050	30	S3F	1108	90	90.96	97	70	-	19	22	0.8
32-L-050	32	S3F	1108	96	97.02	102	74	-	19	22	0.9
36-L-050	36	S3F	1108	108	109.15	120	87	-	19	22	1.2
40-L-050	40	S3F	1210	121	121.28	128	87	-	19	25	1.5
48-L-050	48	P3F	1210	145	145.53	150	88	124	19	25	2.3
60-L-050	60	P1	1610	181	181.91	-	92	166	19	25	2.0
72-L-050	72	A1	1610	218	218.30	-	92	202	19	25	3.0
84-L-050	84	A1	1610	254	254.68	-	106	236	19	25	4.0
96-L-050	96	A1	2012	290	291.06	-	106	270	19	32	5.5
120-L-050	120	A1	2012	363	363.83	-	106	343	19	32	6.8



L075 - 3/4" (19 mm) wide belts

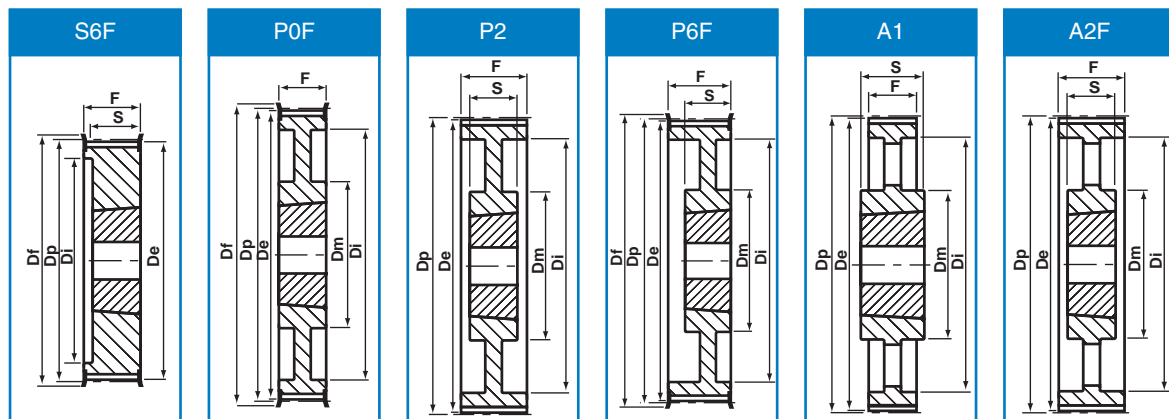
Product Designation	Number of Teeth	Type	Bush Size	De	Dp	Df	Dm	Di	F	S	Weight kg
18-L-075	18	S0F	1108	54	54.57	60	-	-	25.4	-	0.2
19-L-075	19	S0F	1108	57	57.61	63	-	-	25.4	-	0.3
20-L-075	20	S0F	1108	60	60.64	67	-	-	25.4	-	0.3
21-L-075	21	S0F	1108	63	63.67	70	-	-	25.4	-	0.4
22-L-075	22	S0F	1108	66	66.70	75	-	-	25.4	-	0.4
23-L-075	23	S0F	1108	69	69.73	79	-	-	25.4	-	0.4
24-L-075	24	S0F	1108	72	72.77	79	-	-	25.4	-	0.5
25-L-075	25	S0F	1108	75	75.80	87	-	-	25.4	-	0.6
26-L-075	26	S0F	1108	78	78.83	87	-	-	25.4	-	0.6
27-L-075	27	S0F	1108	81	81.86	91	-	-	25.4	-	0.7
28-L-075	28	S0F	1108	84	84.89	91	-	-	25.4	-	0.7
30-L-075	30	S0F	1108	90	90.96	97	-	-	25.4	-	0.9
32-L-075	32	S0F	1108	96	97.05	102	-	-	25.4	-	1.0
36-L-075	36	S0F	1210	108	109.15	120	-	-	25.4	-	1.2
40-L-075	40	S0F	1210	121	121.28	128	-	-	25.4	-	1.7
48-L-075	48	P0F	1610	145	145.53	150	92	124	25.4	-	2.5
60-L-075	60	P0	1610	181	181.91	-	92	166	25.4	25	3.0
72-L-075	72	A0	1610	218	218.30	-	92	202	25.4	25	4.0
84-L-075	84	A1	2012	254	254.68	-	106	236	25.4	32	5.2
96-L-075	96	A1	2012	290	291.06	-	106	270	25.4	32	6.5
120-L-075	120	A1	2012	363	363.83	-	106	343	25.4	32	7.6

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused

Timing Taper Bore

Light (L) - 3/8" (9.525 mm) pitch L100 - 1" (25 mm) wide belts

Product Designation	Number of Teeth	Type	Bush Size	De	Dp	Df	Dm	Di	F	S	Weight kg
18-L-100	18	S6F	1108	54	54.57	60	-	38	32	22	0.2
19-L-100	19	S6F	1108	57	57.61	63	-	38	32	22	0.3
20-L-100	20	S6F	1108	60	60.64	67	-	45	32	22	0.4
21-L-100	21	S6F	1108	63	63.67	70	-	47	32	22	0.4
22-L-100	22	S6F	1108	66	66.70	75	-	51	32	22	0.4
23-L-100	23	S6F	1108	69	69.73	79	-	54	32	22	0.5
24-L-100	24	S6F	1108	72	72.77	79	-	54	32	22	0.6
25-L-100	25	S6F	1108	75	75.80	87	-	56	32	22	0.6
26-L-100	26	S6F	1108	78	78.83	87	-	60	32	22	0.7
27-L-100	27	S6F	1108	81	81.86	91	-	62	32	22	0.8
28-L-100	28	S6F	1108	84	84.89	91	-	65	32	22	0.8
30-L-100	30	S6F	1210	90	91.96	97	-	71	32	25	0.9
32-L-100	32	S6F	1210	96	97.02	102	-	75	32	25	1.0
36-L-100	36	S6F	1210	108	109.15	120	-	89	32	25	1.4
40-L-100	40	S6F	1610	121	121.28	128	-	101	32	25	1.7
48-L-100	48	P6F	1610	145	145.53	150	92	124	32	25	2.7
60-L-100	60	P2	1610	181	181.91	-	92	166	32	25	2.4
72-L-100	72	A1	2012	218	218.30	-	106	202	32	32	4.4
84-L-100	84	A1	2012	254	254.68	-	106	236	32	32	6.0
96-L-100	96	A1	2012	290	291.06	-	106	270	32	32	7.1
120-L-100	120	A1	2012	363	363.83	-	106	343	32	32	8.5



Heavy (H) - 1/2" (12.7 mm) pitch H100 - 1" (25 mm) wide belts

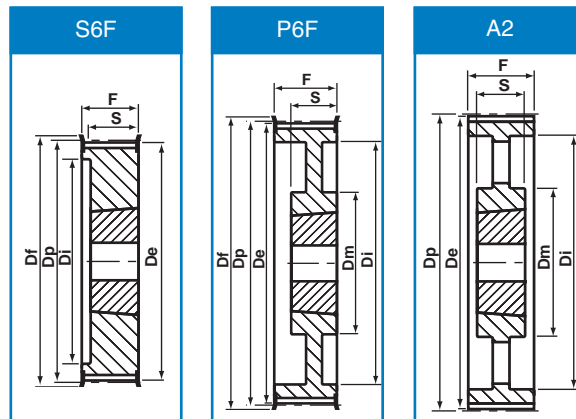
Product Designation	Number of Teeth	Type	Bush Size	De	Dp	Df	Dm	Di	F	S	Weight kg
16-H-100	16	S6F	1108	63	64.68	71	-	45	32	22	0.4
18-H-100	18	S6F	1210	71	72.77	79	-	52	32	25	0.5
19-H-100	19	S6F	1210	75	76.81	83	-	56	32	25	0.6
20-H-100	20	S6F	1210	79	80.85	87	-	60	32	25	0.7
21-H-100	21	S6F	1210	84	84.89	91	-	63	32	25	0.8
22-H-100	22	S6F	1210	88	88.94	94	-	67	32	25	0.9
23-H-100	23	S6F	1210	92	92.98	102	-	70	32	25	0.9
24-H-100	24	S6F	1610	96	97.02	102	-	75	32	25	1.0
25-H-100	25	S6F	1610	100	101.06	112	-	79	32	25	1.0
26-H-100	26	S6F	1610	104	105.11	112	-	83	32	25	1.2
27-H-100	27	S6F	1610	108	109.15	120	-	87	32	25	1.3
28-H-100	28	S6F	1610	112	113.19	120	-	91	32	25	1.5
30-H-100	30	S6F	1610	120	121.28	128	-	99	32	25	1.7
32-H-100	32	P6F	1610	128	129.36	135	92	108	32	25	2.0
36-H-100	36	P6F	1610	144	145.53	158	92	124	32	25	2.7
40-H-100	40	P6F	1610	160	161.70	168	92	140	32	25	3.6
44-H-100	44	P0F	2012	177	177.87	184	106	153	32	32	3.8
48-H-100	48	P0F	2012	193	194.04	200	106	169	32	32	4.2
60-H-100	60	A1	2012	241	242.55	-	106	223	32	32	4.8
72-H-100	72	A1	2012	290	291.06	-	106	270	32	32	5.7
84-H-100	84	A1	2012	338	339.57	-	106	318	32	32	6.8
96-H-100	96	A1	2517	387	388.08	-	119	366	32	45	8.2

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Timing Taper Bore

H150 - 1.1/2" (38 mm) wide belts

Product Designation	Number of Teeth	Type	Bush Size	De	Dp	Df	Dm	Di	F	S	Weight kg
18-H-150	18	S6F	1210	71	72.77	79	-	53	46	25	0.6
19-H-150	19	S6F	1210	75	76.81	83	-	56	46	25	0.7
20-H-150	20	S6F	1210	79	80.85	87	-	60	46	25	0.8
21-H-150	21	S6F	1210	84	84.89	91	-	64	46	25	1.0
22-H-150	22	S6F	1210	88	88.94	94	-	68	46	25	1.2
23-H-150	23	S6F	1610	92	92.98	102	-	71	46	25	1.3
24-H-150	24	S6F	1610	96	97.02	102	-	74	46	25	1.0
25-H-150	25	S6F	1610	100	101.06	112	-	78	46	25	1.2
26-H-150	26	S6F	1610	104	105.11	112	-	82	46	25	1.4
27-H-150	27	S6F	1610	108	109.15	120	-	87	46	25	1.6
28-H-150	28	S6F	1610	112	113.19	120	-	91	46	25	1.8
30-H-150	30	S6F	1610	112	121.28	128	-	99	46	25	2.3
32-H-150	32	P6F	1610	128	129.36	135	92	108	46	25	2.3
36-H-150	36	P6F	1610	144	145.53	158	92	124	46	25	3.1
40-H-150	40	P6F	1610	160	161.70	168	92	140	46	25	4.0
44-H-150	44	P6F	2012	177	177.87	184	106	153	46	32	4.4
48-H-150	48	P6F	2012	193	194.04	200	106	169	46	32	4.8
60-H-150	60	A2	2012	241	242.55	-	106	223	46	32	5.4
72-H-150	72	A2	2012	290	291.06	-	106	270	46	32	6.5
84-H-150	84	A2	2012	338	339.57	-	106	320	46	32	8.4
96-H-150	96	A2	2517	387	388.08	-	119	366	46	45	11.0



H200 - 2" (51 mm) wide belts

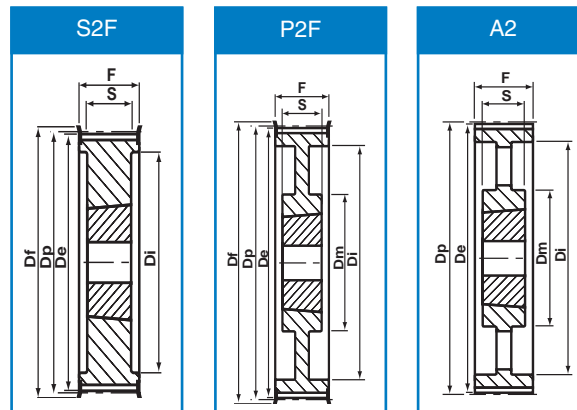
Product Designation	Number of Teeth	Type	Bush Size	De	Dp	Df	Dm	Di	F	S	Weight kg
18-H-200	18	S6F	1210	71	72.77	79	-	52	58	25	0.8
19-H-200	19	S6F	1210	75	76.81	83	-	56	58	25	0.9
20-H-200	20	S6F	1610	79	80.85	87	-	60	58	25	1.0
21-H-200	21	S6F	1610	84	84.89	91	-	64	58	25	1.7
22-H-200	22	S6F	1610	88	88.94	94	-	68	58	25	1.5
23-H-200	23	S6F	1610	92	92.98	102	-	71	58	25	1.8
24-H-200	24	S6F	1610	96	97.02	102	-	74	58	25	1.5
25-H-200	25	S6F	1610	100	101.06	112	-	78	58	25	1.5
26-H-200	26	S6F	1610	104	105.11	112	-	82	58	25	1.8
27-H-200	27	S6F	1610	108	109.15	120	-	87	58	25	1.9
28-H-200	28	S6F	1610	112	113.19	120	-	91	58	25	2.3
30-H-200	30	S6F	1610	120	121.28	128	-	99	58	25	3.0
32-H-200	32	S6F	2012	128	129.36	135	-	107	58	32	3.0
36-H-200	36	P6F	2012	144	145.53	158	102	124	58	32	3.6
40-H-200	40	P6F	2012	160	161.70	168	106	140	58	32	4.0
44-H-200	44	P6F	2012	177	177.87	184	106	153	58	32	4.6
48-H-200	48	P6F	2517	193	194.04	200	119	169	58	45	7.0
60-H-200	60	A2	2517	241	242.55	-	119	223	58	45	8.0
72-H-200	72	A2	2517	290	291.06	-	119	270	58	45	9.0
84-H-200	84	A2	2517	338	339.57	-	119	320	58	45	10.0
96-H-200	96	A2	2517	387	388.08	-	119	366	58	45	13.4

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused

Timing Taper Bore

Heavy (H) - 1/2" (12.7 mm) pitch H300 - 3" (76 mm) wide belts

Product Designation	Number of Teeth	Type	Bush Size	De	Dp	Df	Dm	Di	F	S	Weight kg
20-H-300	20	S2F	1615	79	80.85	87	-	65	86	38	1.5
21-H-300	21	S2F	1615	84	84.89	91	-	66	86	38	12.0
22-H-300	22	S2F	1615	88	88.94	94	-	67	86	38	1.6
23-H-300	23	S2F	1615	92	92.98	102	-	71	86	38	1.8
24-H-300	24	S2F	1615	96	97.02	102	-	75	86	38	2.1
25-H-300	25	S2F	1615	100	101.06	112	-	79	86	38	2.0
26-H-300	26	S2F	1615	104	105.11	112	-	83	86	38	2.7
27-H-300	27	S2F	2012	108	109.15	120	-	87	86	32	3.0
28-H-300	28	S2F	2012	112	113.19	120	-	91	86	32	3.4
30-H-300	30	S2F	2012	120	121.28	128	-	99	86	32	3.9
32-H-300	32	S2F	2517	128	129.36	135	-	107	86	45	4.3
36-H-300	36	S2F	2517	144	145.53	158	-	124	86	45	4.5
40-H-300	40	S2F	2517	160	161.70	168	-	137	86	45	6.0
44-H-300	44	P2F	2517	177	177.87	184	119	153	86	45	6.5
48-H-300	48	P2F	2517	193	194.04	200	119	169	86	45	7.6
60-H-300	60	A2	2517	241	242.55	-	119	223	86	45	8.4
72-H-300	72	A2	2517	290	291.06	-	119	270	86	45	10.4
84-H-300	84	A2	2517	338	339.57	-	119	320	86	45	12.5
96-H-300	96	A2	3030	387	338.08	-	150	362	86	76	14.2
120-H-300	120	A2	3030	484	485.10	-	150	460	86	76	18.8

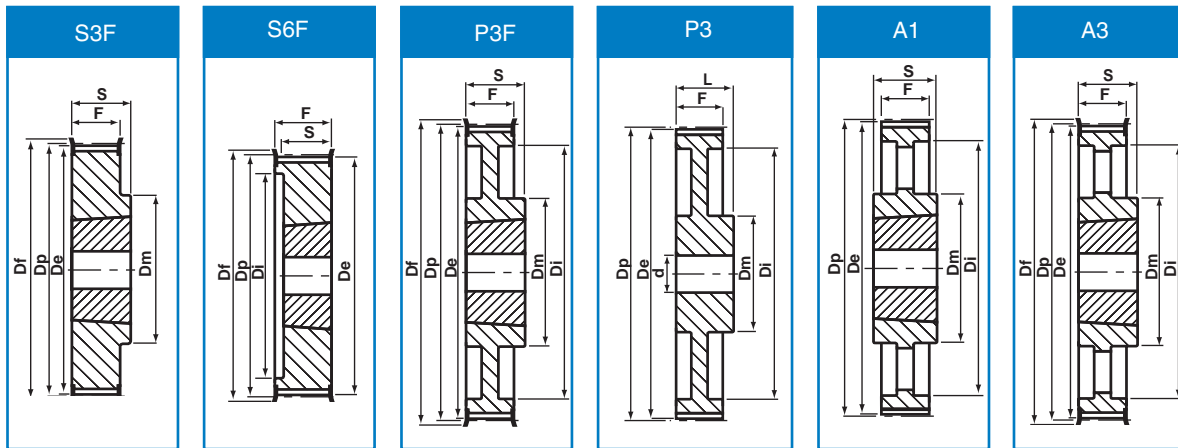


HTD[®] Taper Bore

5mm Pitch 5M-15 (15mm Wide Belt)

(For use with HTD belts only)

Product Description	Number of Teeth	Type	Bush Size	Dp	De	Df	Dm	Di	F	S	Weight kg
34-5M-15	34	S3F	1008	54.11	53	57	43	-	21	22	0.19
36-5M-15	36	S3F	1108	57.30	56	60	44	-	21	22	0.20
38-5M-15	38	S3F	1108	60.48	59	66	48	-	21	22	0.25
40-5M-15	40	S3F	1108	63.66	63	71	52	-	21	22	0.31
44-5M-15	44	S3F	1108	70.03	69	75	54	-	21	22	0.40
48-5M-15	48	S3F	1210	76.39	75	83	64	-	21	25	0.45
56-5M-15	56	S3F	1210	89.13	88	93	70	-	21	25	0.67
64-5M-15	64	S3F	1210	101.86	101	106	78	-	21	25	0.96
72-5M-15	72	S3F	1610	114.59	113	119	90	-	21	25	1.19
80-5M-15	80	S3F	1610	127.32	126	135	92	-	21	25	1.57
90-5M-15	90	A1	1610	143.24	142	-	92	126	21	25	1.47
112-5M-15	112	A1	1610	178.25	177	-	92	162	21	25	1.94
136-5M-15	136	A1	2012	216.45	215	-	106	199	21	32	3.06
150-5M-15	150	A1	2012	238.73	238	-	106	222	21	32	3.90



8mm Pitch 8M-20 (20mm Wide Belt)

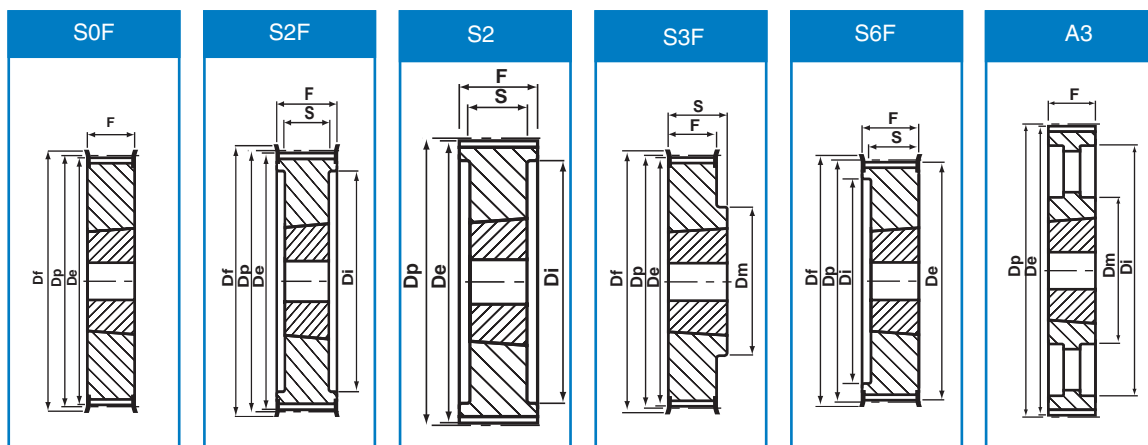
Product Description	Number of Teeth	Type	Bush Size	Dp	De	Df	Dm	Di	F	S	Weight kg
22-8M-20	22	S6F	1008	56.02	55	60	-	41	28	22	0.24
24-8M-20	24	S6F	1108	61.12	60	66	-	42	28	22	0.30
26-8M-20	26	S6F	1108	66.21	65	71	-	46	28	22	0.36
28-8M-20	28	S6F	1108	71.30	70	75	-	50	28	22	0.44
30-8M-20	30	S6F	1108	76.39	75	83	-	58	28	22	0.53
32-8M-20	32	S6F	1610	81.49	80	87	-	62	28	25	0.42
34-8M-20	34	S6F	1610	86.58	85	91	-	65	28	25	0.55
36-8M-20	36	S6F	1610	91.67	90	91	-	68	28	25	0.68
38-8M-20	38	S6F	1610	96.77	95	103	-	72	28	25	0.80
40-8M-20	40	S6F	1610	101.86	100	106	-	76	28	25	1.00
44-8M-20	44	S3F	2012	112.05	111	119	93	-	28	32	1.20
48-8M-20	48	S3F	2012	122.23	121	127	96	-	28	32	1.60
56-8M-20	56	S3F	2012	142.60	141	148	110	-	28	32	2.40
64-8M-20	64	P3F	2012	162.97	162	168	110	137	28	32	2.70
72-8M-20	72	P3F	2012	183.35	182	192	110	158	28	32	3.30
80-8M-20	80	P3	2012	203.72	202	-	110	180	28	32	3.50
90-8M-20	90	A3	2012	229.18	228	-	110	204	28	32	3.65
112-8M-20	112	A3	2517	285.21	284	-	125	260	28	45	6.20
144-8M-20	144	A3	2517	366.69	365	-	125	341	28	45	9.00
168-8M-20	168	A1	3525	427.81	426	-	190	402	28	65	16.40
192-8M-20	192	A1	3525	488.92	488	-	190	460	28	65	21.80

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HTD® Taper Bore

8mm Pitch 8M-30 (30mm Wide Belt)

Product Description	Number of Teeth	Type	Bush Size	Dp	De	Df	Dm	Di	F	S	Weight kg
22-8M-30	22	S6F	1008	56.02	55	60	-	41	38	22	0.24
24-8M-30	24	S6F	1108	61.12	60	66	-	42	38	22	0.38
26-8M-30	26	S6F	1108	66.21	65	71	-	46	38	22	0.45
28-8M-30	28	S6F	1108	71.30	70	75	-	50	38	22	0.50
30-8M-30	30	S0F	1615	76.39	75	83	-	-	38	-	0.55
32-8M-30	32	S0F	1615	81.49	80	87	-	-	38	-	0.59
34-8M-30	34	S0F	1615	86.58	85	91	-	-	38	-	0.77
36-8M-30	36	S0F	1615	91.67	90	91	-	-	38	-	0.96
38-8M-30	38	S0F	1615	96.77	95	103	-	-	38	-	1.15
40-8M-30	40	S0F	1615	101.86	100	106	-	-	38	-	1.34
44-8M-30	44	S2F	2012	112.05	111	119	-	91	38	32	1.33
48-8M-30	48	S2F	2012	122.23	121	127	-	95	38	32	1.78
56-8M-30	56	S2F	2012	142.60	141	148	-	117	38	32	3.76
64-8M-30	64	S3F	2517	162.97	162	168	125	-	38	45	4.20
72-8M-30	72	P3F	2517	183.35	182	192	125	158	38	45	4.30
80-8M-30	80	P3	2517	203.72	202	-	125	180	38	45	4.60
90-8M-30	90	A3	2517	229.18	228	-	125	204	38	45	5.00
112-8M-30	112	A3	2517	285.21	284	-	125	260	38	45	6.20
144-8M-30	144	A3	2517	366.69	365	-	125	341	38	45	9.00



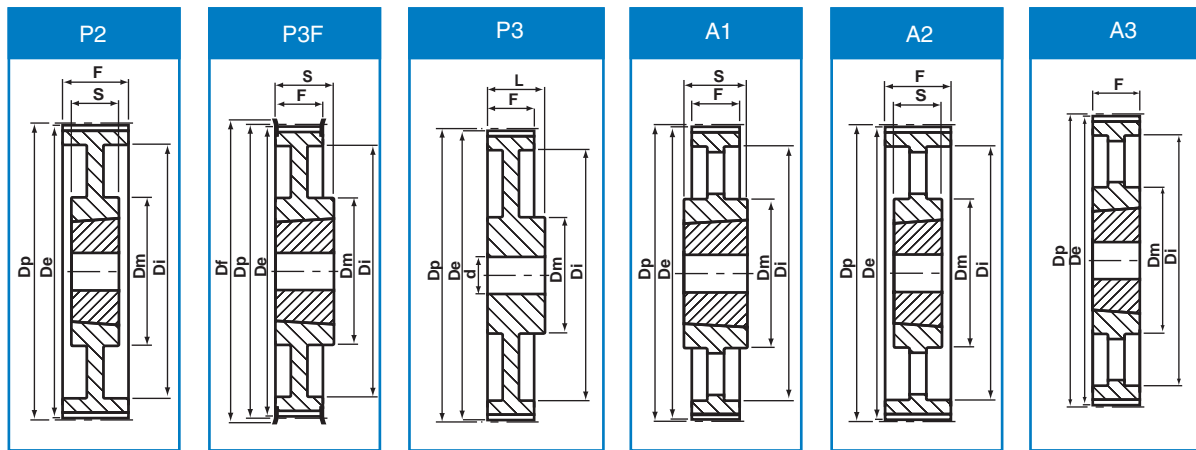
8mm Pitch 8M-50 (50mm Wide Belt)

Product Description	Number of Teeth	Type	Bush Size	Dp	De	Df	Dm	Di	F	S	Weight kg
28-8M-50	28	S6F	1210	71.30	70	75	-	50	60	25	0.60
30-8M-50	30	S6F	1615	76.39	75	83	-	58	60	38	0.65
32-8M-50	32	S6F	1615	81.49	80	87	-	62	60	38	0.82
34-8M-50	34	S6F	1615	86.58	85	91	-	65	60	38	1.10
36-8M-50	36	S6F	1615	91.67	90	99	-	68	60	38	1.30
38-8M-50	38	S6F	1615	96.77	95	103	-	72	60	38	1.60
40-8M-50	40	S2F	2012	101.86	100	106	-	82	60	32	1.71
44-8M-50	44	S2F	2012	112.05	111	119	-	91	60	32	1.78
48-8M-50	48	S2F	2012	122.23	121	127	-	96	60	32	2.30
56-8M-50	56	S2F	2517	142.60	141	148	-	116	60	45	3.40
64-8M-50	64	S2F	2517	162.97	162	168	-	137	60	45	5.00
72-8M-50	72	S2F	2517	183.35	182	192	125	158	60	45	6.70
80-8M-50	80	S2	3020	203.72	202	-	-	180	60	51	8.80
90-8M-50	90	P2	3020	229.18	228	-	170	204	60	51	10.00
112-8M-50	112	P2	3020	285.21	284	-	170	260	60	51	12.00
144-8M-50	144	A2	3020	366.69	365	-	170	341	60	51	15.20
168-8M-50	168	A1	3525	427.81	426	-	190	402	60	65	16.40
192-8M-50	192	A1	3525	488.92	488	-	190	460	60	65	21.80

HTD® Taper Bore

8mm Pitch 8M-85 (85mm Wide Belt)

Product Description	Number of Teeth	Type	Bush Size	Dp	De	Df	Dm	Di	F	S	Weight kg
34-8M-85	34	S2F	1615	86.58	85	91	-	65	95	38	1.43
36-8M-85	36	S2F	1615	91.67	90	98	-	68	95	38	1.87
38-8M-85	38	S2F	1615	96.77	95	103	-	72	95	38	2.20
40-8M-85	40	S2F	2012	101.86	100	106	-	82	95	32	1.80
44-8M-85	44	S2F	2012	112.05	111	119	-	91	95	32	2.30
48-8M-85	48	S2F	2517	122.23	121	127	-	100	95	45	2.66
56-8M-85	56	S2F	2517	142.60	141	148	-	117	95	45	4.45
64-8M-85	64	S2F	2517	162.97	162	168	-	137	95	45	6.20
72-8M-85	72	S2F	3020	183.35	182	192	-	158	95	51	8.00
80-8M-85	80	S2	3020	203.72	202	-	-	180	95	51	10.00
90-8M-85	90	P2	3020	229.18	228	-	170	204	95	51	10.80
112-8M-85	112	P2	3020	285.21	284	-	170	260	95	51	15.00
144-8M-85	144	A2	3525	366.69	365	-	190	341	95	65	20.00
168-8M-85	168	A2	3525	427.81	426	-	190	402	95	65	23.00
192-8M-85	192	A2	3525	488.92	488	-	190	460	95	65	28.50



14mm Pitch 14M-40 (40mm Wide Belt)

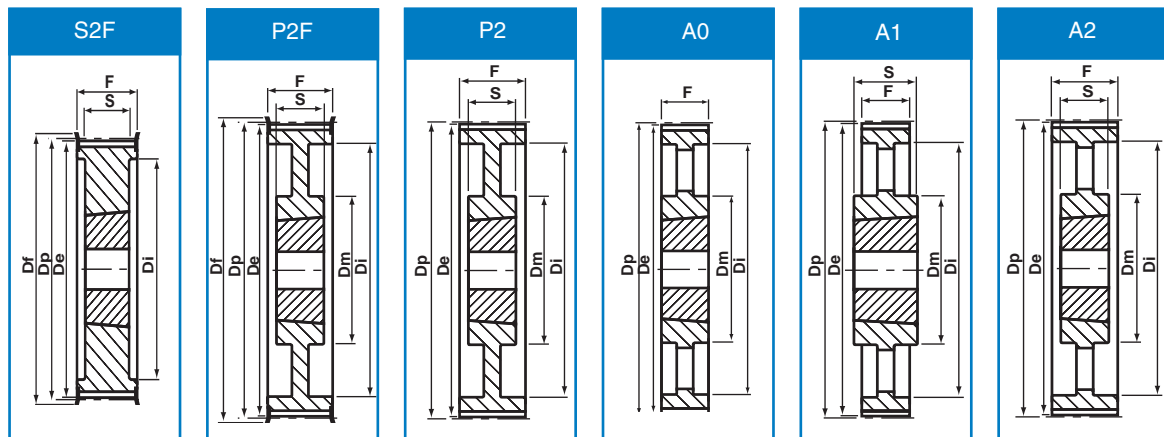
Product Description	Number of Teeth	Type	Bush Size	Dp	De	Df	Dm	Di	F	S	Weight kg
28-14M-40	28	S2F	2012	124.78	122	127	-	98	54	32	2.10
29-14M-40	29	S2F	2012	129.23	127	138	-	100	54	32	2.38
30-14M-40	30	S2F	2012	133.69	131	138	-	100	54	32	2.65
32-14M-40	32	S2F	2012	142.60	140	154	-	104	54	32	3.40
34-14M-40	34	S2F	2517	151.52	149	160	-	110	54	45	3.87
36-14M-40	36	S2F	2517	160.43	158	168	-	120	54	45	4.80
38-14M-40	38	S2F	2517	169.34	167	183	-	130	54	45	5.40
40-14M-40	40	S2F	2517	178.28	175	188	-	138	54	45	6.00
44-14M-40	44	S2F	3020	196.08	193	211	-	155	54	51	7.80
48-14M-40	48	S2F	3020	213.90	211	226	-	170	54	51	9.40
56-14M-40	56	P2F	3020	249.55	247	256	170	208	54	51	10.10
64-14M-40	64	P2F	3020	285.21	282	296	170	242	54	51	13.40
72-14M-40	72	P2	3020	320.86	318	-	170	280	54	51	15.20
80-14M-40	80	A2	3020	356.51	354	-	170	315	54	51	16.00
90-14M-40	90	A2	3020	401.07	398	-	170	360	54	51	17.80
112-14M-40	112	A2	3020	499.11	496	-	170	457	54	51	25.60
144-14M-40	144	A2	3020	641.71	639	-	170	600	54	51	32.00
168-14M-40	168	A2	3020	748.66	746	-	170	706	54	51	44.00
192-14M-40	192	A2	3020	855.62	853	-	170	813	54	51	49.00
216-14M-40	216	A2	3020	962.57	960	-	170	920	54	51	55.00

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HTD® Taper Bore

14mm Pitch 14M-55 (55mm Wide Belt)

Product Description	Number of Teeth	Type	Bush Size	Dp	De	Df	Dm	Di	F	S	Weight kg
28-14M-55	28	S2F	2012	124.78	122	127	-	98	70	32	2.20
29-14M-55	29	S2F	2012	129.23	127	138	-	100	70	32	2.74
30-14M-55	30	S2F	2517	133.69	131	138	-	100	70	45	2.70
32-14M-55	32	S2F	2517	142.60	140	154	-	108	70	45	3.66
34-14M-55	34	S2F	2517	151.52	149	160	-	110	70	45	4.55
36-14M-55	36	S2F	2517	160.43	158	168	-	120	70	45	5.20
38-14M-55	38	S2F	2517	169.34	167	183	-	130	70	45	6.20
40-14M-55	40	S2F	2517	178.25	175	188	-	138	70	45	7.00
44-14M-55	44	S2F	3020	196.08	193	211	-	155	70	51	8.60
48-14M-55	48	S2F	3020	213.90	211	226	-	170	70	51	10.40
56-14M-55	56	P2F	3020	249.55	247	256	170	208	70	51	12.00
64-14M-55	64	P2F	3020	285.21	282	296	170	242	70	51	14.50
72-14M-55	72	P2	3020	320.86	318	-	170	280	70	51	16.20
80-14M-55	80	A2	3020	356.51	354	-	170	315	70	51	17.50
90-14M-55	90	A2	3020	401.07	398	-	170	360	70	51	20.10
112-14M-55	112	A2	3020	499.11	496	-	170	457	70	51	28.40
144-14M-55	144	A2	3020	641.71	634	-	170	600	70	51	36.20
168-14M-55	168	A2	3020	748.66	746	-	170	706	70	51	49.00
192-14M-55	192	A2	3020	855.62	853	-	170	813	70	51	53.00
216-14M-55	216	A1	3535	962.57	960	-	190	920	70	89	65.90



14mm Pitch 14M-85 (85mm Wide Belt)

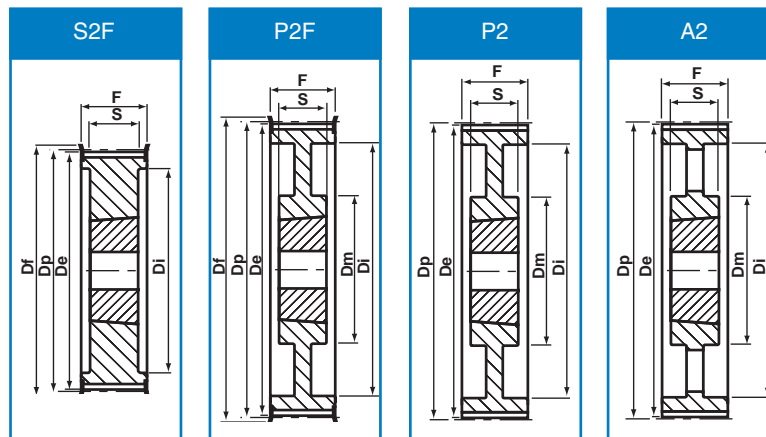
Product Description	Number of Teeth	Type	Bush Size	Dp	De	Df	Dm	Di	F	S	Weight kg
28-14M-85	28	S2F	2517	124.78	122	127	-	98	102	45	2.70
29-14M-85	29	S2F	2517	129.23	127	138	-	100	102	45	3.40
30-14M-85	30	S2F	2517	133.69	131	138	-	100	102	45	3.75
32-14M-85	32	S2F	2517	142.60	140	154	-	108	102	45	4.80
34-14M-85	34	S2F	2517	151.52	149	160	-	110	102	45	6.00
36-14M-85	36	S2F	3020	160.43	158	168	-	125	102	51	5.80
38-14M-85	38	S2F	3020	169.34	167	183	-	130	102	51	6.80
40-14M-85	40	S2F	3020	178.25	175	188	-	138	102	51	8.00
44-14M-85	44	S2F	3030	196.08	193	211	-	155	102	76	11.80
48-14M-85	48	S2F	3030	213.90	211	226	-	170	102	76	15.10
56-14M-85	56	S2F	3535	249.55	247	256	190	210	102	89	18.00
64-14M-85	64	P2F	3535	285.21	282	296	190	242	102	89	23.00
72-14M-85	72	P2	3535	320.86	318	-	190	280	102	89	25.00
80-14M-85	80	A2	3535	356.51	354	-	190	315	102	89	26.00
90-14M-85	90	A2	3535	401.07	398	-	190	360	102	89	28.00
112-14M-85	112	A2	3535	499.11	496	-	190	457	102	89	36.50
144-14M-85	144	A2	3535	641.71	639	-	190	600	102	89	48.00
168-14M-85	168	A2	3535	748.66	746	-	190	706	102	89	60.00
192-14M-85	192	A0	4040	855.62	853	-	230	813	102	102	86.00
216-14M-85	216	A0	4040	962.57	960	-	230	920	102	102	91.50

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HTD® Taper Bore

14mm Pitch 14M-115 (115mm Wide Belt)

Product Description	Number of Teeth	Type	Bush Size	Dp	De	Df	Dm	Di	F	S	Weight kg
28-14M-115	28	S2F	2517	124.78	122	127	-	98	133	45	3.70
29-14M-115	29	S2F	2517	129.23	127	138	-	100	133	45	4.00
30-14M-115	30	S2F	2517	133.69	131	138	-	100	133	45	5.00
32-14M-115	32	S2F	2517	142.60	140	154	-	108	133	45	6.80
34-14M-115	34	S2F	2517	151.52	149	160	-	110	133	45	6.80
36-14M-115	36	S2F	3020	160.43	158	168	-	125	133	51	7.00
38-14M-115	38	S2F	3020	169.34	167	183	-	130	133	51	8.40
40-14M-115	40	S2F	3020	178.25	175	188	-	140	133	51	9.20
44-14M-115	44	S2F	3030	196.08	193	211	-	155	133	76	14.00
48-14M-115	48	S2F	3030	213.90	211	226	-	170	133	76	17.10
56-14M-115	56	S2F	3535	249.55	247	265	-	210	133	89	24.80
64-14M-115	64	P2F	3535	285.21	282	296	190	242	133	89	27.00
72-14M-115	72	P2	3535	320.86	318	-	190	280	133	89	29.00
80-14M-115	80	A2	3535	356.51	354	-	190	315	133	89	32.00
90-14M-115	90	A2	3535	401.07	398	-	190	360	133	89	36.50
112-14M-115	112	A2	3535	499.11	497	-	190	457	133	89	46.00
144-14M-115	144	A2	4040	641.71	639	-	230	600	133	102	68.00
168-14M-115	168	A2	4040	748.66	746	-	230	706	133	102	82.60
192-14M-115	192	A2	4040	855.62	853	-	230	813	133	102	96.00
216-14M-115	216	A2	4040	962.57	960	-	230	920	133	102	107.00



14mm Pitch 14M-170 (170mm Wide Belt)

Product Description	Number of Teeth	Type	Bush Size	Dp	De	Df	Dm	Di	F	S	Weight kg
38-14M-170	38	S2F	3030	169.34	167	183	-	130	187	76	11.70
40-14M-170	40	S2F	3030	178.25	175	188	-	140	187	76	13.00
44-14M-170	44	S2F	3535	196.08	193	211	-	155	187	89	15.00
48-14M-170	48	S2F	3535	213.90	211	226	-	175	187	89	19.00
56-14M-170	56	S2F	3535	249.55	247	256	-	210	187	89	28.50
64-14M-170	64	S2F	4040	285.21	282	296	-	240	187	102	41.00
72-14M-170	72	P2	4040	320.86	318	-	230	280	187	102	46.90
80-14M-170	80	P2	4040	356.51	354	-	230	315	187	102	48.00
90-14M-170	90	A2	4040	401.07	398	-	230	360	187	102	52.50
112-14M-170	112	A2	5050	499.11	496	-	265	456	187	127	74.50
144-14M-170	144	A2	5050	641.71	639	-	265	600	187	127	91.00
168-14M-170	168	A2	5050	748.66	746	-	265	706	187	127	116.00
192-14M-170	192	A2	5050	855.62	853	-	265	813	187	127	134.00
216-14M-170	216	A2	5050	962.57	960	-	265	920	187	127	146.50

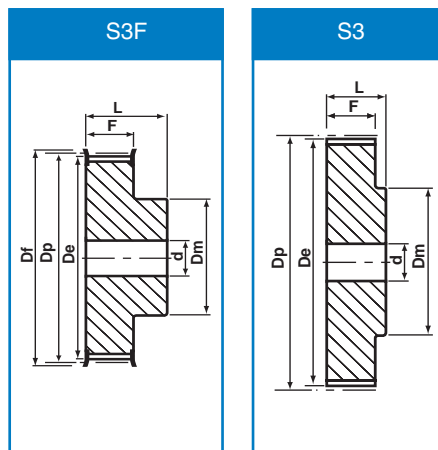
All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused

Metric Timing Pilot Bore

T2.5 Pitch = 2.5mm Belt Width = 6mm

Teeth	Type	De	Df	Dm	F	L	d	Weight kg
12	S3F	9	13	12	10.5	16	4	0.003
14	S3F	11	15	14	10.5	16	4	0.004
15	S3F	11	15	15	10.5	16	4	0.005
18	S3F	14	18	10	11	16	4	0.006
19	S3F	15	18	10	11	16	4	0.007
20	S3F	15	20	12	11	16	4	0.008
24	S3F	19	23	12	11	16	4	0.012
25	S3F	19	23	14	11	16	4	0.013
30	S3F	23	28	16	11	16	6	0.018
32	S3F	25	32	16	11	16	6	0.020
36	S3F	28	37	20	11	16	6	0.026
40	S3F	31	38	22	11	16	6	0.032
48	S3	38	-	26	11	16	6	0.048
60	S3	47	-	34	11	16	8	0.073

Material; Aluminium



Metric Timing Pilot Bore

T5 Pitch = 5mm Belt Width = 10mm

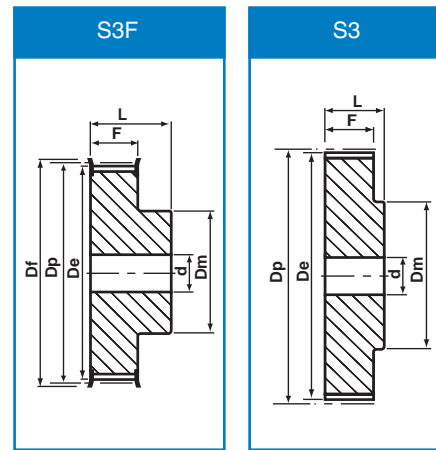
Teeth	Type	De	Df	Dm	F	L	d	Weight kg
10	S3F	15	20	8	15	21	6	0.012
12	S3F	18	23	11	15	21	6	0.016
14	S3F	21	25	14	15	21	6	0.019
15	S3F	23	28	16	15	21	6	0.021
16	S3F	25	32	18	15	21	6	0.025
18	S3F	28	32	20	15	21	6	0.031
19	S3F	29	36	22	15	21	6	0.036
20	S3F	31	36	23	15	21	6	0.038
22	S3F	34	38	24	15	21	6	0.046
24	S3F	37	42	26	15	21	6	0.054
25	S3F	39	44	26	15	21	6	0.058
26	S3F	41	44	26	15	21	6	0.061
27	S3F	42	48	30	15	21	8	0.064
28	S3F	44	48	32	15	21	8	0.068
30	S3F	47	51	34	15	21	8	0.075
32	S3F	50	54	38	15	21	8	0.088
36	S3F	56	63	38	15	21	8	0.114
40	S3F	63	66	40	15	21	8	0.138
42	S3F	66	71	40	15	21	8	0.160
44	S3	69	-	45	15	21	8	0.174
48	S3	76	-	50	15	21	8	0.200
60	S3	95	-	65	15	21	8	0.307

T5 Pitch = 5mm Belt Width = 16mm

Teeth	Type	De	Df	Dm	F	L	d	Weight kg
10	S3F	15	20	8	21	27	6	0.016
12	S3F	18	23	11	21	27	6	0.022
14	S3F	21	25	14	21	27	6	0.026
15	S3F	23	28	16	21	27	6	0.029
16	S3F	25	32	18	21	27	6	0.035
18	S3F	28	32	20	21	27	6	0.043
19	S3F	29	36	22	21	27	6	0.049
20	S3F	31	36	23	21	27	6	0.053
22	S3F	34	38	24	21	27	6	0.065
24	S3F	37	42	26	21	27	6	0.076
25	S3F	39	44	26	21	27	6	0.082
26	S3F	41	44	26	21	27	6	0.085
27	S3F	42	48	30	21	27	8	0.090
28	S3F	44	48	32	21	27	8	0.098
30	S3F	47	51	34	21	27	8	0.105
32	S3F	50	54	38	21	27	8	0.123
36	S3F	56	63	38	21	27	8	0.160
40	S3F	63	66	40	21	27	8	0.193
42	S3F	66	71	40	21	27	8	0.215
44	S3	69	-	45	21	27	8	0.234
48	S3	76	-	50	21	27	8	0.280
60	S3	95	-	65	21	27	8	0.430

T5 Pitch = 5mm Belt Width = 25mm

Teeth	Type	De	Df	Dm	F	L	d	Weight kg
10	S3F	15	20	8	30	36	6	0.023
12	S3F	18	23	11	30	36	6	0.031
14	S3F	21	25	14	30	36	6	0.037
15	S3F	23	28	16	30	36	6	0.041
16	S3F	25	32	18	30	36	6	0.050
18	S3F	28	32	20	30	36	6	0.061
19	S3F	29	36	22	30	36	6	0.070
20	S3F	31	36	23	30	36	6	0.076
22	S3F	34	38	24	30	36	6	0.090
24	S3F	37	42	26	30	36	6	0.109
25	S3F	39	44	26	30	36	6	0.116
26	S3F	41	44	26	30	36	6	0.124
27	S3F	42	48	30	30	36	8	0.128
28	S3F	44	48	32	30	36	8	0.140
30	S3F	47	51	34	30	36	8	0.150
32	S3F	50	54	38	30	36	8	0.176
36	S3F	56	63	38	30	36	8	0.230
40	S3F	63	66	40	30	36	8	0.276
42	S3F	66	71	40	30	36	8	0.310
44	S3	69	-	45	30	36	8	0.344
48	S3	76	-	50	30	36	8	0.400
60	S3	95	-	65	30	36	8	0.614



Material; Aluminium

Metric Timing Pilot Bore

T10 Pitch = 10mm Belt Width = 16mm

Teeth	Type	Material	De	Df	Dm	F	L	d	Weight kg
12	S3F	Al	36	42	28	21	31	6	0.076
14	S3F	Al	43	48	32	21	31	8	0.104
15	S3F	Al	46	51	32	21	31	8	0.116
16	S3F	Al	49	54	35	21	31	8	0.134
18	S3F	Al	55	60	40	21	31	8	0.167
19	S3F	Al	59	66	44	21	31	8	0.184
20	S3F	Al	62	66	46	21	31	8	0.208
22	S3F	Al	68	75	52	21	31	8	0.249
24	S3F	Al	75	83	58	21	31	8	0.288
25	S3F	Al	78	83	60	21	31	8	0.310
26	S3F	Al	81	87	60	21	31	8	0.337
27	S3F	Al	84	91	60	21	31	8	0.364
28	S3F	Al	87	93	60	21	31	8	0.399
30	S3F	Al	94	97	60	21	31	8	0.441
32	S3F	Al	100	106	65	21	31	10	0.493
36	S3F	Al	113	119	70	21	31	10	0.623
40	S3F	Al	125	131	80	21	31	10	0.767
44	S3	Al	138	-	88	21	31	10	0.932
48	S3	Al	151	-	95	21	31	16	1.090
60	S3	Al	189	-	110	21	31	16	1.701

T10 Pitch = 10mm Belt Width = 25mm

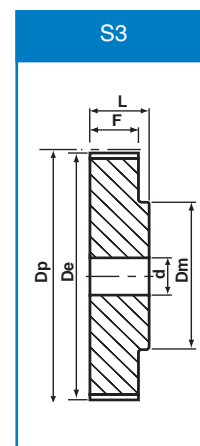
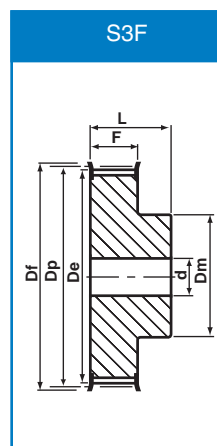
Teeth	Type	Material	De	Df	Dm	F	L	d	Weight kg
12	S3F	Al	36	42	28	30	40	6	0.099
14	S3F	Al	43	48	32	30	40	8	0.134
15	S3F	Al	46	51	32	30	40	8	0.152
16	S3F	Al	49	54	35	30	40	8	0.176
18	S3F	Al	55	60	40	30	40	8	0.224
19	S3F	Al	59	66	44	30	40	8	0.247
20	S3F	Al	62	66	46	30	40	8	0.276
22	S3F	Al	68	75	52	30	40	8	0.378
24	S3F	Al	75	83	58	30	40	8	0.392
25	S3F	Al	78	83	60	30	40	8	0.422
26	S3F	Al	81	87	60	30	40	8	0.485
27	S3F	Al	84	91	60	30	40	8	0.536
28	S3F	Al	87	93	60	30	40	8	0.585
30	S3F	Al	94	97	60	30	40	8	0.640
32	S3F	Al	100	106	65	30	40	10	0.693
36	S3F	Al	113	119	70	30	40	10	0.873
40	S3F	Al	125	131	80	30	40	10	1.067
44	S3	Al	138	-	88	30	40	10	1.310
48	S3	Al	151	-	95	30	40	16	1.516
60	S3	Al	189	-	110	30	40	16	2.339

T10 Pitch = 10mm Belt Width = 32mm

Teeth	Type	Material	De	Df	Dm	F	L	d	Weight kg
18	S3F	Al	55	60	40	38	47	10	0.253
19	S3F	Al	59	66	44	38	47	10	0.286
20	S3F	Al	62	66	46	38	47	12	0.322
22	S3F	Al	68	75	52	38	47	12	0.393
24	S3F	Al	75	83	58	38	47	12	0.475
25	S3F	Al	78	83	60	38	47	12	0.527
26	S3F	Al	81	87	60	38	47	12	0.564
27	S3F	Al	84	91	60	38	47	12	0.602
28	S3F	CI	87	93	60	38	47	12	0.642
30	S3F	CI	94	97	60	38	47	12	0.740
32	S3F	CI	100	106	65	38	47	12	0.844
36	S3F	CI	113	119	70	38	47	16	1.083
40	S3F	CI	125	131	80	38	47	16	1.317
44	S3	CI	138	-	88	38	47	16	1.611
48	S3	CI	151	-	95	38	47	16	1.931
60	S3	CI	189	-	110	38	47	16	3.004

T10 Pitch = 10mm Belt Width = 50mm

Teeth	Type	Material	De	Df	Dm	F	L	d	Weight kg
18	S3F	Al	55	60	40	56	66	10	0.422
19	S3F	Al	59	66	44	56	66	10	0.466
20	S3F	Al	62	66	46	56	66	12	0.520
22	S3F	Al	68	75	52	56	66	12	0.631
24	S3F	Al	74	83	58	56	66	12	0.736
25	S3F	Al	78	83	60	56	66	12	0.766
26	S3F	Al	81	87	60	56	66	12	0.847
27	S3F	Al	84	91	60	56	66	12	0.946
28	S3F	CI	87	93	60	56	66	12	1.074
30	S3F	CI	94	97	60	56	66	12	1.169
32	S3F	CI	100	106	65	56	66	12	1.300
36	S3F	CI	113	119	75	56	66	16	1.637
40	S3F	CI	125	131	80	56	66	16	1.999
44	S3	CI	138	-	88	56	66	16	2.386
48	S3	CI	151	-	95	56	66	16	2.830
60	S3	CI	189	-	110	56	66	16	4.366



Material;
Al = Aluminium
CI = Cast iron (GG25)

Timing Pilot Bore

Extra Light (XL) - 1/5" (5.08 mm) pitch

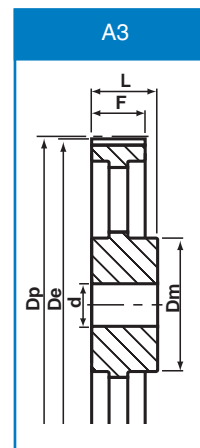
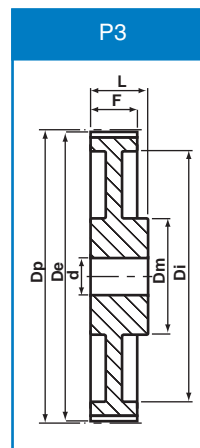
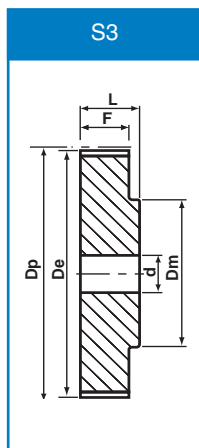
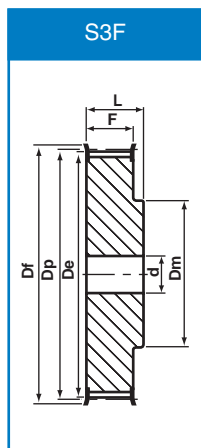
Light (L) - 3/8" (9.525 mm) pitch

XL037 - 3/8" (9.5 mm) wide belts

L050 - 1/2" (13 mm) wide belts

Product	Type	De	Dp	Df	Dm	F	L	d
10-XL-037	S3F	16	16.17	23	10	14.4	20	6
11-XL-037	S3F	17	17.79	23	10	14.4	20	6
12-XL-037	S3F	19	19.40	25	10	14.4	20	6
13-XL-037	S3F	21	21.02	25	10	14.4	20	6
14-XL-037	S3F	22	22.64	28	15	14.4	20	6
15-XL-037	S3F	24	24.26	28	16	14.4	20	6
16-XL-037	S3F	25	25.87	32	20	14.4	20	6
17-XL-037	S3F	27	27.49	32	20	14.4	20	6
18-XL-037	S3F	29	29.11	35	20	14.4	20	6
19-XL-037	S3F	30	30.72	35	24	14.4	22	6
20-XL-037	S3F	32	32.34	38	24	14.4	22	6
21-XL-037	S3F	33	34.96	38	25	14.4	22	6
22-XL-037	S3F	35	35.57	41	25	14.4	22	6
23-XL-037	S3F	37	37.19	41	30	14.4	22	8
24-XL-037	S3F	38	38.81	44	30	14.4	22	8
25-XL-037	S3F	40	40.43	44	30	14.4	22	8
26-XL-037	S3F	42	42.04	48	34	14.4	22	8
27-XL-037	S3F	43	43.66	48	34	14.4	22	8
28-XL-037	S3F	45	45.28	51	38	14.4	22	8
29-XL-037	S3F	47	46.90	51	38	14.4	22	8
30-XL-037	S3F	48	48.51	54	38	14.4	22	8
32-XL-037	S3F	51	51.74	57	38	14.4	25	8
34-XL-037	S3F	54	55.98	61	45	14.4	25	8
35-XL-037	S3F	56	56.60	61	45	14.4	25	8
36-XL-037	S3	58	58.21	-	45	14.4	25	8
38-XL-037	S3	61	61.45	-	45	14.4	25	8
39-XL-037	S3	63	63.06	-	45	14.4	25	8
40-XL-037	S3	64	64.68	-	45	14.4	25	8
42-XL-037	S3	67	67.91	-	45	14.4	25	8
44-XL-037	S3	71	71.15	-	45	14.4	25	8
45-XL-037	S3	72	72.77	-	45	14.4	25	10
48-XL-037	P3	77	77.62	-	45	14.4	25	10
52-XL-037	P3	84	84.08	-	45	14.4	25	10
56-XL-037	P3	90	90.55	-	45	14.4	25	10
57-XL-037	P3	92	92.17	-	45	14.4	25	10
60-XL-037	P3	97	97.02	-	45	14.4	25	10
68-XL-037	P3	109	109.96	-	45	14.4	25	10
70-XL-037	P3	113	113.19	-	45	14.4	25	10
72-XL-037	P3	116	116.42	-	45	14.4	25	10

Product	Type	De	Dp	Df	Dm	F	L	d
10-L-050	S3F	30	30.33	37	20	19	28	8
11-L-050	S3F	33	33.35	37	22	19	30	8
12-L-050	S3F	36	36.37	43	24	19	30	8
13-L-050	S3F	39	39.41	43	28	19	30	8
14-L-050	S3F	42	42.44	48	28	19	30	10
15-L-050	S3F	45	45.48	51	34	19	30	10
16-L-050	S3F	48	48.51	54	36	19	32	10
17-L-050	S3F	51	51.54	57	36	19	32	10
18-L-050	S3F	54	54.59	60	40	19	32	10
19-L-050	S3F	57	57.61	64	40	19	32	10
20-L-050	S3F	60	60.63	67	40	19	32	10
21-L-050	S3F	63	63.68	70	45	19	32	10
22-L-050	S3F	66	66.70	75	45	19	32	10
23-L-050	S3F	69	69.73	79	55	19	32	10
24-L-050	S3F	72	72.77	79	55	19	32	10
25-L-050	S3F	75	75.80	83	58	19	32	10
26-L-050	S3F	78	78.84	86	58	19	32	12
27-L-050	S3F	81	81.86	87	58	19	32	12
28-L-050	S3F	84	84.89	91	58	19	32	12
30-L-050	S3F	90	91.96	97	70	19	32	12
32-L-050	S3F	96	97.03	102	70	19	32	12
33-L-050	S3F	99	100.05	106	70	19	32	12
34-L-050	S3F	102	103.08	112	70	19	32	12
35-L-050	S3F	105	106.12	112	70	19	32	12
36-L-050	S3F	108	109.14	115	70	19	32	12
40-L-050	S3F	121	121.29	128	70	19	32	12
42-L-050	S3F	127	127.34	135	70	19	32	12
44-L-050	S3F	133	133.40	142	70	19	32	12
45-L-050	S3F	136	136.44	142	70	19	32	12
48-L-050	S3F	145	145.54	150	70	19	32	12
50-L-050	A3	151	151.60	-	70	19	32	12
56-L-050	A3	169	169.79	-	70	19	32	14
57-L-050	A3	172	172.82	-	70	19	32	14
60-L-050	A3	181	181.92	-	75	19	42	14
68-L-050	A3	205	206.18	-	75	19	42	14
70-L-050	A3	211	212.24	-	75	19	42	14
72-L-050	A3	218	218.29	-	75	19	42	14
84-L-050	A3	254	254.69	-	75	19	42	14
96-L-050	A3	290	291.06	-	75	19	42	14



All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused

Timing Pilot Bore

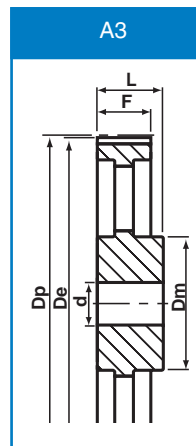
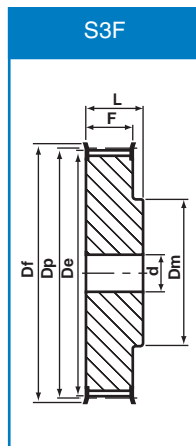
Light (L) - 3/8" (9.525 mm) pitch

L075 - 3/4" (19 mm) wide belts

Product	Type	De	Dp	Df	Dm	F	L	d
10-L-075	S3F	30	30.33	37	20	25.4	38	8
11-L-075	S3F	33	33.35	37	22	25.4	38	8
12-L-075	S3F	36	36.37	43	24	25.4	38	8
13-L-075	S3F	39	39.41	43	28	25.4	38	8
14-L-075	S3F	42	42.44	48	28	25.4	38	12
15-L-075	S3F	45	45.48	51	34	25.4	38	12
16-L-075	S3F	45	48.51	54	36	25.4	38	12
17-L-075	S3F	51	51.54	57	36	25.4	38	12
18-L-075	S3F	54	54.59	60	40	25.4	38	12
19-L-075	S3F	57	57.61	64	40	25.4	38	12
20-L-075	S3F	60	60.63	67	40	25.4	38	12
21-L-075	S3F	63	63.68	70	45	25.4	38	12
22-L-075	S3F	66	66.70	75	45	25.4	38	12
23-L-075	S3F	69	69.73	79	55	25.4	38	12
24-L-075	S3F	72	72.77	79	55	25.4	38	12
25-L-075	S3F	75	75.80	83	58	25.4	38	12
26-L-075	S3F	78	78.84	86	58	25.4	38	12
27-L-075	S3F	81	81.86	87	58	25.4	38	12
28-L-075	S3F	84	84.89	91	58	25.4	38	12
30-L-075	S3F	90	90.96	97	70	25.4	38	12
32-L-075	S3F	96	97.03	102	70	25.4	38	12
33-L-075	S3F	99	100.05	106	70	25.4	38	12
34-L-075	S3F	102	103.08	112	70	25.4	38	12
35-L-075	S3F	105	106.12	112	70	25.4	38	12
36-L-075	S3F	108	109.14	115	70	25.4	38	12
38-L-075	S3F	114	115.22	120	70	25.4	38	12
40-L-075	S3F	121	121.29	128	70	25.4	38	12
42-L-075	S3F	127	127.34	135	70	25.4	38	12
44-L-075	S3F	133	133.40	142	70	25.4	38	12
45-L-075	S3F	136	136.44	142	70	25.4	38	12
48-L-075	S3F	145	145.54	150	70	25.4	38	12
50-L-075	A3	151	151.60	-	70	25.4	38	14
52-L-075	A3	157	157.66	-	70	25.4	38	14
56-L-075	A3	169	169.79	-	70	25.4	38	14
57-L-075	A3	172	172.82	-	70	25.4	38	14
60-L-075	A3	181	181.92	-	75	25.4	38	14
70-L-075	A3	211	212.23	-	75	25.4	45	14
72-L-075	A3	218	218.29	-	75	25.4	45	14
84-L-075	A3	254	254.69	-	75	25.4	45	14
96-L-075	A3	290	291.06	-	75	25.4	45	14

L100 - 1" (25 mm) wide belts

Product	Type	De	Dp	Df	Dm	F	L	d
10-L-100	S3F	30	30.33	37	20	32	45	8
11-L-100	S3F	33	33.35	37	22	32	45	8
12-L-100	S3F	36	36.37	43	24	32	45	8
13-L-100	S3F	39	39.41	43	28	32	45	8
14-L-100	S3F	42	42.44	48	28	32	45	12
15-L-100	S3F	45	45.48	51	34	32	45	12
16-L-100	S3F	48	48.51	54	36	32	45	12
17-L-100	S3F	51	51.54	57	36	32	45	12
18-L-100	S3F	54	54.59	60	40	32	45	12
19-L-100	S3F	57	57.61	64	40	32	45	12
20-L-100	S3F	60	60.63	67	40	32	45	12
21-L-100	S3F	63	63.68	70	45	32	45	14
22-L-100	S3F	66	66.70	75	45	32	45	14
23-L-100	S3F	69	69.73	79	55	32	45	14
24-L-100	S3F	72	72.77	79	55	32	45	14
25-L-100	S3F	75	75.80	83	58	32	45	14
26-L-100	S3F	78	78.84	86	58	32	45	14
27-L-100	S3F	81	81.86	87	58	32	45	14
28-L-100	S3F	84	84.89	91	58	32	45	14
30-L-100	S3F	90	90.96	97	70	32	45	14
32-L-100	S3F	96	97.03	102	70	32	45	14
33-L-100	S3F	99	100.05	106	70	32	45	14
34-L-100	S3F	102	103.08	112	70	32	45	14
35-L-100	S3F	105	106.12	112	70	32	45	14
36-L-100	S3F	108	109.14	115	70	32	45	14
40-L-100	S3F	121	121.29	128	70	32	45	14
42-L-100	S3F	127	127.34	135	70	32	45	14
44-L-100	S3F	133	133.40	142	70	32	45	14
45-L-100	S3F	136	136.44	142	70	32	45	14
48-L-100	S3F	145	145.54	150	70	32	45	14
50-L-100	A3	151	151.60	-	70	32	45	14
52-L-100	A3	157	157.66	-	70	32	45	14
56-L-100	A3	169	169.79	-	70	32	45	14
57-L-100	A3	172	172.82	-	70	32	45	14
60-L-100	A3	181	181.92	-	75	32	45	14
68-L-100	A3	205	206.17	-	75	32	45	14
72-L-100	A3	218	218.29	-	75	32	45	14
84-L-100	A3	254	254.69	-	75	32	45	14
96-L-100	A3	290	291.06	-	75	32	45	14



Timing Pilot Bore

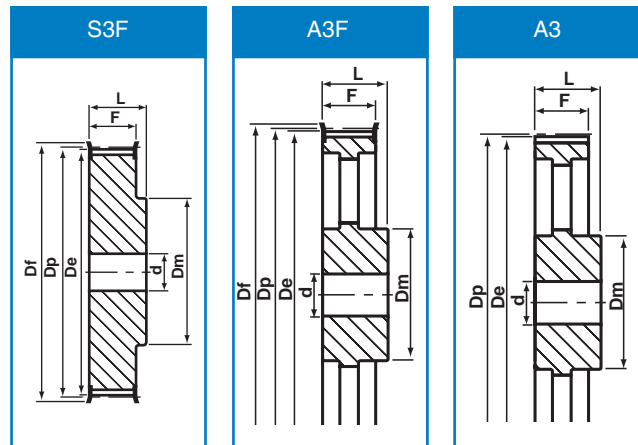
Heavy (H) - 1/2" (12.7 mm) pitch

H075 - 3/4" (19 mm) wide belts

Product	Type	De	Dp	Df	Dm	F	L	d
14-H-075	S3F	55	56.59	64	40	25.5	40	12
15-H-075	S3F	59	60.64	70	45	25.5	40	12
16-H-075	S3F	63	64.67	70	45	25.5	40	12
17-H-075	S3F	67	68.72	75	45	25.5	40	12
18-H-075	S3F	71	72.77	79	55	25.5	40	12
19-H-075	S3F	75	76.81	83	60	25.5	40	12
20-H-075	S3F	79	80.85	86	62	25.5	40	12
21-H-075	S3F	84	84.89	91	65	25.5	40	12
22-H-075	S3F	88	88.93	94	68	25.5	40	12
23-H-075	S3F	92	92.98	97	72	25.5	40	12
24-H-075	S3F	96	97.03	102	72	25.5	40	12
25-H-075	S3F	100	101.06	106	72	25.5	40	12
26-H-075	S3F	104	105.11	112	80	25.5	40	12
27-H-075	S3F	108	109.15	115	80	25.5	40	12
28-H-075	S3F	112	113.18	120	80	25.5	40	12
30-H-075	S3F	112	121.29	128	80	25.5	40	12
32-H-075	S3F	128	129.30	135	80	25.5	40	12
33-H-075	S3F	132	133.40	142	80	25.5	40	12
34-H-075	S3F	136	137.45	150	80	25.5	40	12
35-H-075	S3F	140	141.49	150	80	25.5	40	12
36-H-075	S3F	144	145.54	150	80	25.5	40	12
38-H-075	S3F	152	153.62	158	80	25.5	40	12
40-H-075	S3F	160	161.70	168	80	25.5	40	12
42-H-075	S3F	168	169.79	184	80	25.5	40	12
44-H-075	A3	177	177.88	-	80	25.5	40	14
48-H-075	A3	193	194.03	-	90	25.5	45	14
50-H-075	A3	201	202.13	-	90	25.5	45	14

H100 - 1" (25 mm) wide belts

Product	Type	De	Dp	Df	Dm	F	L	d
14-H-100	S3F	55	56.59	64	40	32	45	12
15-H-100	S3F	59	60.64	70	45	32	45	12
16-H-100	S3F	63	64.67	70	45	32	45	12
17-H-100	S3F	67	68.72	75	45	32	45	12
18-H-100	S3F	71	72.77	79	55	32	45	12
19-H-100	S3F	75	76.81	83	60	32	45	14
20-H-100	S3F	79	80.85	86	62	32	45	14
21-H-100	S3F	84	84.89	91	65	32	45	14
22-H-100	S3F	88	88.93	94	68	32	45	14
23-H-100	S3F	92	92.98	97	72	32	45	14
24-H-100	S3F	96	97.03	102	72	32	45	14
25-H-100	S3F	100	101.06	106	72	32	45	14
26-H-100	S3F	104	105.11	112	80	32	45	14
27-H-100	S3F	108	109.15	115	80	32	45	14
28-H-100	S3F	112	113.18	120	80	32	45	14
29-H-100	S3F	116	117.23	120	80	32	45	14
30-H-100	S3F	120	121.29	128	80	32	45	14
32-H-100	S3F	128	129.30	135	80	32	45	14
33-H-100	S3F	132	133.40	142	80	32	45	14
34-H-100	S3F	136	137.45	150	80	32	45	14
35-H-100	S3F	140	141.49	150	80	32	45	14
36-H-100	S3F	144	145.54	150	80	32	45	14
38-H-100	S3F	152	153.62	158	80	32	45	14
40-H-100	S3F	160	161.70	168	80	32	45	14
42-H-100	S3F	168	169.79	184	80	32	45	14
44-H-100	A3F	177	177.88	184	80	32	50	14
45-H-100	A3F	181	181.91	192	80	32	50	14
48-H-100	A3F	193	194.03	200	90	32	50	14
50-H-100	A3	201	202.13	-	90	32	50	20
52-H-100	A3	209	210.21	-	90	32	50	20
57-H-100	A3	229	230.42	-	90	32	50	20
58-H-100	A3	233	234.47	-	90	32	50	20
60-H-100	A3	241	242.55	-	120	32	50	20
68-H-100	A3	274	274.90	-	120	32	55	20
70-H-100	A3	282	282.98	-	120	32	55	20
72-H-100	A3	290	291.06	-	120	32	55	20
84-H-100	A3	338	339.57	-	120	32	55	20
96-H-100	A3	387	388.09	-	120	32	60	20
120-H-100	A3	484	485.12	-	120	32	60	20
156-H-100	A3	629	630.64	-	120	32	60	20



All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused

Timing Pilot Bore

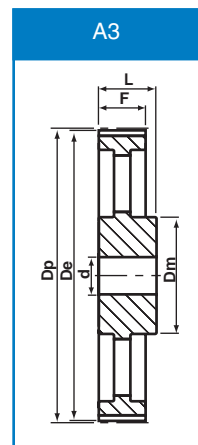
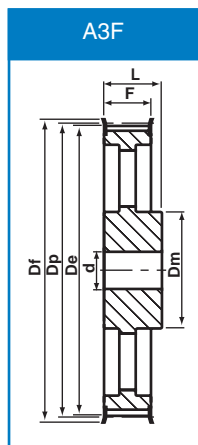
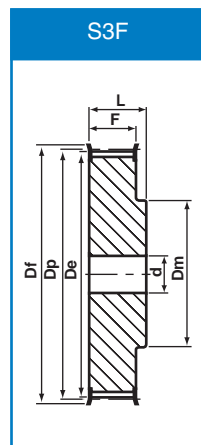
Heavy (H) - 1/2" (12.7 mm) pitch

H150 - 1.1/2" (38 mm) wide belts

Product	Type	De	Dp	Df	Dm	F	L	d
14-H-150	S3F	55	56.59	64	42	46	58	20
15-H-150	S3F	59	60.64	70	45	46	58	20
16-H-150	S3F	63	64.67	70	45	46	58	20
17-H-150	S3F	67	68.72	75	45	46	58	20
18-H-150	S3F	71	72.77	79	55	46	58	20
19-H-150	S3F	75	76.81	82	60	46	58	20
20-H-150	S3F	79	80.85	86	62	46	58	20
21-H-150	S3F	84	84.89	91	65	46	58	20
22-H-150	S3F	88	88.93	94	68	46	58	20
23-H-150	S3F	92	92.98	97	72	46	58	20
24-H-150	S3F	96	97.03	102	72	46	58	20
25-H-150	S3F	100	101.06	106	72	46	58	20
26-H-150	S3F	104	105.11	112	80	46	58	20
27-H-150	S3F	108	109.15	115	80	46	58	20
28-H-150	S3F	112	113.18	120	80	46	58	20
29-H-150	S3F	116	117.23	120	80	46	58	20
30-H-150	S3F	120	121.29	128	80	46	58	20
32-H-150	S3F	128	129.30	135	80	46	58	20
33-H-150	S3F	132	133.40	142	80	46	58	20
34-H-150	S3F	136	137.45	150	80	46	58	20
35-H-150	S3F	140	141.49	150	80	46	58	20
36-H-150	S3F	144	145.54	150	80	46	58	20
38-H-150	S3F	152	153.62	158	80	46	58	20
40-H-150	S3F	160	161.70	168	80	46	58	20
42-H-150	S3F	168	169.79	184	80	46	58	20
45-H-150	A3F	181	181.91	192	80	46	58	20
48-H-150	A3F	193	194.03	200	90	46	58	20
50-H-150	A3	201	202.13	-	90	46	65	20
52-H-150	A3	209	210.21	-	90	46	65	20
57-H-150	A3	229	230.43	-	90	46	65	20
58-H-150	A3	233	234.47	-	90	46	65	20
60-H-150	A3	241	242.55	-	120	46	65	20
68-H-150	A3	274	274.91	-	120	46	65	25
70-H-150	A3	281	282.98	-	120	46	65	25
72-H-150	A3	290	291.06	-	120	46	65	25
84-H-150	A3	338	339.57	-	120	46	65	25
96-H-150	A3	387	388.09	-	120	46	65	25
120-H-150	A3	484	485.12	-	120	46	65	25
156-H-100	A3	629	630.64	-	120	46	65	25

H200 - 2" (51 mm) wide belts

Product	Type	De	Dp	Df	Dm	F	L	d
14-H-200	S3F	55	56.59	64	42	58	70	20
15-H-200	S3F	59	60.64	70	45	58	70	20
16-H-200	S3F	63	64.67	70	45	58	70	20
17-H-200	S3F	67	68.72	75	45	58	70	20
18-H-200	S3F	71	72.77	79	55	58	70	20
19-H-200	S3F	75	76.81	82	60	58	70	20
20-H-200	S3F	79	80.85	86	62	58	70	20
21-H-200	S3F	84	84.89	91	65	58	70	20
22-H-200	S3F	88	88.93	94	68	58	70	20
23-H-200	S3F	92	92.98	97	72	58	70	20
24-H-200	S3F	96	97.03	102	72	58	70	20
25-H-200	S3F	100	101.06	106	72	58	70	20
26-H-200	S3F	104	105.11	112	80	58	70	20
27-H-200	S3F	108	109.15	115	80	58	70	20
28-H-200	S3F	112	113.18	120	80	58	70	20
29-H-200	S3F	116	117.23	120	80	58	70	20
30-H-200	S3F	120	121.29	128	80	58	70	20
32-H-200	S3F	128	129.30	135	80	58	70	20
33-H-200	S3F	132	133.40	142	80	58	70	20
34-H-200	S3F	136	137.45	150	80	58	70	20
35-H-200	S3F	140	141.49	150	80	58	70	20
36-H-200	S3F	144	145.54	150	80	58	70	20
38-H-200	S3F	152	153.62	158	80	58	70	20
40-H-200	S3F	160	161.70	168	80	58	70	20
42-H-200	S3F	168	169.79	184	80	58	70	20
44-H-200	A3F	177	177.88	184	80	58	70	20
45-H-200	A3F	181	181.91	192	80	58	70	20
48-H-200	A3F	193	194.03	200	90	58	75	25
50-H-200	A3	201	202.13	-	90	58	75	25
52-H-200	A3	209	210.21	-	90	58	75	25
57-H-200	A3	229	230.42	-	90	58	75	25
58-H-200	A3	233	234.47	-	90	58	75	25
60-H-200	A3	241	242.55	-	120	58	75	25
68-H-200	A3	274	274.90	-	120	58	75	28
70-H-200	A3	282	282.98	-	120	58	75	28
72-H-200	A3	290	291.06	-	120	58	75	28
84-H-200	A3	338	339.57	-	120	58	75	28
96-H-200	A3	387	388.09	-	120	58	75	28
120-H-200	A3	484	485.12	-	120	58	75	28
156-H-100	A3	629	630.64	-	120	58	75	28

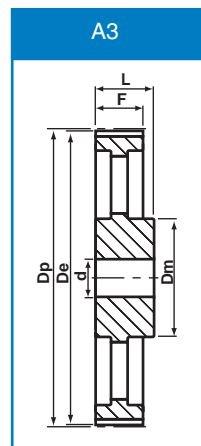
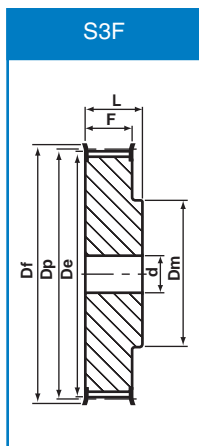


Timing Pilot Bore

Heavy (H) - 1/2" (12.7 mm) pitch

H300 - 3" (76 mm) wide belts

Product	Type	De	Dp	Df	Dm	F	L	d
14-H-300	S3F	55	56.59	64	42	86	100	20
15-H-300	S3F	59	60.64	70	45	86	100	20
16-H-300	S3F	63	64.67	70	45	86	100	20
17-H-300	S3F	67	68.72	75	45	86	100	20
18-H-300	S3F	71	72.77	79	55	86	100	20
19-H-300	S3F	75	76.81	83	60	86	100	20
20-H-300	S3F	79	80.85	86	62	86	100	20
21-H-300	S3F	84	84.89	91	65	86	100	20
22-H-300	S3F	88	88.93	94	68	86	100	20
23-H-300	S3F	92	92.98	97	72	86	100	20
24-H-300	S3F	96	97.03	102	72	86	100	20
25-H-300	S3F	100	101.06	106	72	86	100	20
26-H-300	S3F	104	105.11	112	80	86	100	20
27-H-300	S3F	108	109.15	115	80	86	100	20
28-H-300	S3F	112	113.18	120	80	86	100	20
30-H-300	S3F	120	121.29	128	80	86	100	20
32-H-300	S3F	128	129.30	135	80	86	100	20
33-H-300	S3F	132	133.40	142	80	86	100	20
34-H-300	S3F	136	137.45	150	80	86	100	20
35-H-300	S3F	140	141.49	150	80	86	100	25
36-H-300	S3F	144	145.54	150	80	86	100	25
38-H-300	S3F	152	153.62	158	80	86	100	25
40-H-300	S3F	160	161.70	168	80	86	100	25
42-H-300	S3F	168	169.79	184	80	86	100	25
44-H-300	A3	177	177.88	-	90	86	100	25
45-H-300	A3	181	181.91	-	90	86	100	25
48-H-300	A3	193	194.03	-	90	86	100	25
50-H-300	A3	201	202.13	-	90	86	100	25
52-H-300	A3	209	210.21	-	90	86	100	25
57-H-300	A3	229	230.47	-	90	86	100	25
58-H-300	A3	233	234.47	-	90	86	100	25
60-H-300	A3	241	242.55	-	120	86	100	25
70-H-300	A3	282	282.98	-	120	86	100	30
72-H-300	A3	290	291.06	-	120	86	100	30
84-H-300	A3	338	339.57	-	120	86	100	30
96-H-300	A3	387	388.09	-	120	86	100	30
120-H-300	A3	484	485.12	-	120	86	100	30
150-H-300	A3	605	606.38	-	120	86	100	30
156-H-300	A3	629	630.64	-	120	86	100	30

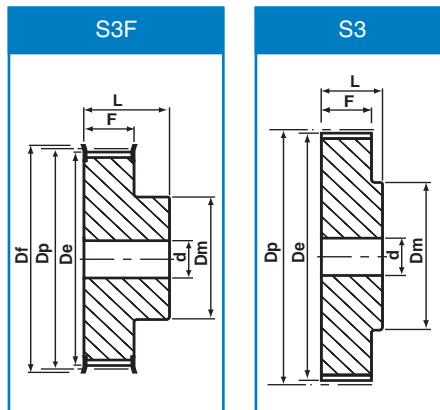


All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused

HTD® Pilot Bore

5mm Pitch 5M-09 (9mm Wide Belt)

Product Designation	Number of teeth	Type	De	Dp	Df	Dm	F	L	d	Weight kg
12-5M-09	12	S3F	18	19.10	23	13	15	20.0	6	0.02
14-5M-09	14	S3F	21	22.28	25	14	15	20.0	6	0.03
15-5M-09	15	S3F	23	23.87	28	16	15	20.0	6	0.04
16-5M-09	16	S3F	24	25.46	28	17	15	20.0	6	0.05
18-5M-09	18	S3F	28	28.65	32	20	15	20.0	6	0.07
20-5M-09	20	S3F	31	31.83	37	23	15	22.5	6	0.09
21-5M-09	21	S3F	32	33.42	38	24	15	22.5	6	0.11
22-5M-09	22	S3F	34	35.01	38	26	15	22.5	6	0.11
24-5M-09	24	S3F	37	38.20	43	27	15	22.5	6	0.14
26-5M-09	26	S3F	40	41.38	44	30	15	22.5	6	0.17
28-5M-09	28	S3F	43	44.56	48	31	15	22.5	6	0.20
30-5M-09	30	S3F	47	47.75	51	35	15	22.5	6	0.23
32-5M-09	32	S3F	50	50.93	54	38	15	22.5	8	0.27
36-5M-09	36	S3F	56	57.30	60	38	15	22.5	8	0.32
40-5M-09	40	S3F	63	63.66	70	38	15	22.5	8	0.40
44-5M-09	44	S3	69	70.03	-	38	15	25.5	8	0.17
48-5M-09	48	S3	75	76.39	-	45	15	25.5	8	0.18
60-5M-09	60	S3	94	95.49	-	45	15	25.5	8	0.23
72-5M-09	72	S3	113	114.59	-	45	15	25.5	8	0.27



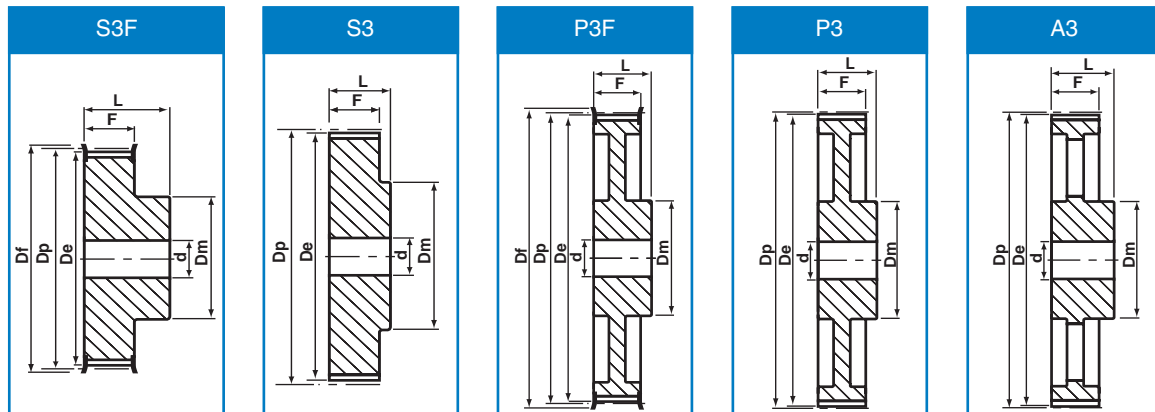
5mm Pitch 5M-15 (15mm Wide Belt)

Product Designation	Number of teeth	Type	De	Dp	Df	Dm	F	L	d	Weight kg
12-5M-15	12	S3F	18	19.10	23	13	21	26	6	0.03
14-5M-15	14	S3F	21	22.28	25	14	21	26	6	0.04
15-5M-15	15	S3F	23	23.87	28	16	21	26	6	0.05
16-5M-15	16	S3F	24	25.45	28	17	21	26	6	0.06
18-5M-15	18	S3F	28	28.65	32	20	21	26	6	0.08
20-5M-15	20	S3F	31	31.83	37	23	21	26	6	0.11
21-5M-15	21	S3F	32	33.42	38	24	21	26	6	0.13
22-5M-15	22	S3F	34	35.01	38	26	21	26	6	0.14
24-5M-15	24	S3F	37	38.20	43	27	21	28	6	0.18
26-5M-15	26	S3F	40	41.38	44	30	21	28	6	0.22
28-5M-15	28	S3F	43	44.56	48	31	21	28	6	0.25
30-5M-15	30	S3F	47	47.75	51	35	21	28	6	0.30
32-5M-15	32	S3F	50	50.93	54	38	21	28	8	0.35
36-5M-15	36	S3F	56	57.30	60	38	21	28	8	0.42
40-5M-15	40	S3F	63	63.66	70	38	21	28	8	0.52
44-5M-15	44	S3	69	70.03	-	38	20	30	8	0.22
48-5M-15	48	S3	75	76.39	-	38	20	30	8	0.28
60-5M-15	60	S3	94	95.49	-	50	20	30	8	0.30
72-5M-15	72	S3	113	114.59	-	50	20	30	8	0.36

HTD[®] Pilot Bore

5mm Pitch 5M-25 (25mm Wide Belt)

Product Designation	Number of teeth	Type	De	Dp	Df	Dm	F	L	d	Weight kg
12-5M-25	12	S3F	18	19.10	23	13	31	36	6	0.05
14-5M-25	14	S3F	21	22.28	25	14	31	36	6	0.07
15-5M-25	15	S3F	23	23.87	28	16	31	36	6	0.08
16-5M-25	16	S3F	24	25.45	28	17	31	36	6	0.10
18-5M-25	18	S3F	28	28.65	32	20	31	36	6	0.12
20-5M-25	20	S3F	31	31.83	37	23	31	36	6	0.16
21-5M-25	21	S3F	32	33.42	38	24	31	38	6	0.19
22-5M-25	22	S3F	34	35.01	38	26	31	38	6	0.21
24-5M-25	24	S3F	37	38.20	43	27	31	38	6	0.25
26-5M-25	26	S3F	40	41.38	44	30	31	38	6	0.30
28-5M-25	28	S3F	43	44.56	48	31	31	38	6	0.35
30-5M-25	30	S3F	47	47.75	51	35	31	38	6	0.42
32-5M-25	32	S3F	50	50.93	54	38	31	38	8	0.48
36-5M-25	36	S3F	56	57.30	60	39	31	38	8	0.59
40-5M-25	40	S3F	63	63.66	70	38	31	38	8	0.74
44-5M-25	44	S3	69	70.03	-	38	31	40	8	0.32
48-5M-25	48	S3	75	76.39	-	38	31	40	8	0.28
60-5M-25	60	S3	94	95.49	-	50	31	40	8	0.44
72-5M-25	72	S3	113	114.59	-	50	31	40	8	0.53



8mm Pitch 8M-20 (20mm Wide Belt)

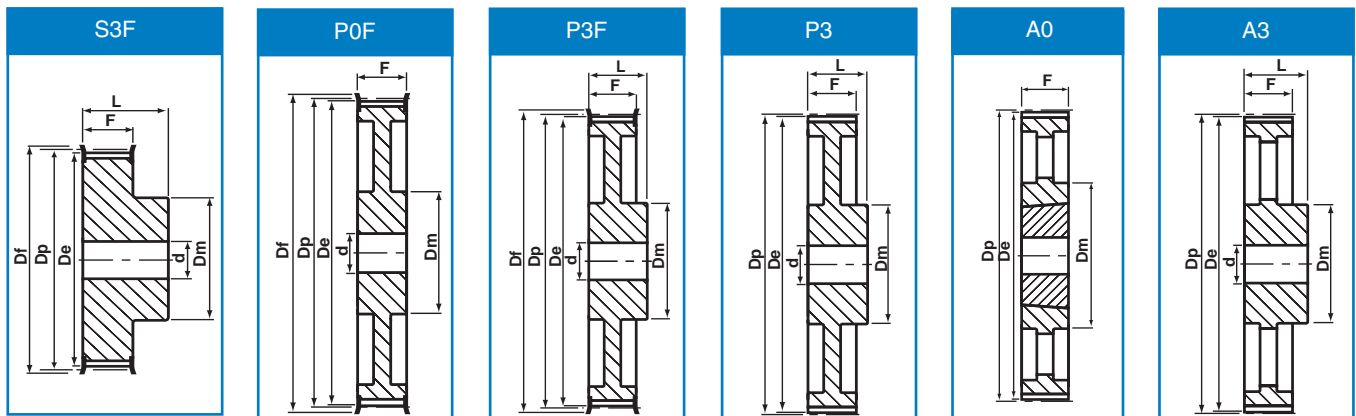
Product Designation	Number of teeth	Type	De	Dp	Df	Dm	Di	F	L	d	Weight kg
22-8M-20	22	S3F	55	56.02	60	43	-	28	38	12	0.54
24-8M-20	24	S3F	60	61.12	67	45	-	28	38	12	0.65
26-8M-20	26	S3F	65	66.21	70	50	-	28	38	12	0.80
28-8M-20	28	S3F	70	71.30	75	50	-	28	38	16	0.87
30-8M-20	30	S3F	75	76.39	83	55	-	28	38	16	1.02
32-8M-20	32	S3F	80	81.49	87	60	-	28	38	16	1.20
34-8M-20	34	S3F	85	86.58	91	70	-	28	38	16	1.40
36-8M-20	36	S3F	90	91.67	97	70	-	28	38	16	1.55
38-8M-20	38	S3F	95	96.77	102	75	-	28	38	16	1.65
40-8M-20	40	S3F	100	101.86	106	75	-	28	38	16	1.74
44-8M-20	44	S3F	111	112.05	120	75	-	28	38	16	2.10
48-8M-20	48	S3F	121	122.23	128	75	-	28	38	16	2.44
56-8M-20	56	P3F	141	142.60	150	80	117	28	38	16	2.60
64-8M-20	64	P3F	162	162.97	168	80	137	28	38	16	2.90
72-8M-20	72	P3F	182	183.35	192	80	158	28	38	16	3.10
80-8M-20	80	P3	202	203.72	-	90	180	28	38	16	3.80
90-8M-20	90	P3	228	229.18	-	90	204	28	38	16	4.20
112-8M-20	112	A3	284	285.21	-	90	260	28	38	16	5.20
144-8M-20	144	A3	365	366.69	-	90	341	28	38	20	7.50
168-8M-20	168	A3	426	427.81	-	100	402	28	38	20	10.00
192-8M-20	192	A3	488	488.92	-	100	463	28	38	20	14.40

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused

HTD® Pilot Bore

8mm Pitch 8M-30 (30mm Wide Belt)

Product Designation	Number of teeth	Type	De	Dp	Df	Dm	Di	F	L	d	Weight kg
22-8M-30	22	S3F	55	56.02	60	43	-	38	48	12	0.69
24-8M-30	24	S3F	60	61.12	67	45	-	38	48	12	0.84
26-8M-30	26	S3F	65	66.21	70	50	-	38	48	12	1.00
28-8M-30	28	S3F	70	71.30	75	50	-	38	48	16	1.12
30-8M-30	30	S3F	75	76.39	83	55	-	38	48	16	1.32
32-8M-30	32	S3F	80	81.49	87	60	-	38	48	16	1.53
34-8M-30	34	S3F	85	86.58	91	70	-	38	48	16	1.80
36-8M-30	36	S3F	90	91.67	97	70	-	38	48	16	1.99
38-8M-30	38	S3F	95	96.77	102	75	-	38	48	16	2.27
40-8M-30	40	S3F	100	101.86	106	75	-	38	48	16	2.40
44-8M-30	44	S3F	111	112.05	120	75	-	38	48	16	2.80
48-8M-30	48	S3F	121	122.23	128	75	-	38	48	16	3.20
56-8M-30	56	P3F	141	142.60	150	80	117	38	48	16	3.60
64-8M-30	64	P3F	162	162.97	168	80	138	38	48	16	4.30
72-8M-30	72	P3F	182	183.35	192	80	158	38	48	16	4.80
80-8M-30	80	P3	202	203.72	-	90	180	38	48	16	5.10
90-8M-30	90	P3	228	229.18	-	90	204	38	48	16	5.70
112-8M-30	112	A3	284	285.21	-	90	260	38	48	16	6.80
144-8M-30	144	A3	365	366.69	-	90	341	38	48	20	9.30
168-8M-30	168	A3	426	427.81	-	100	402	38	48	20	11.40
192-8M-30	192	A3	488	488.92	-	100	463	38	48	20	16.00



8mm Pitch 8M-50 (50mm Wide Belt)

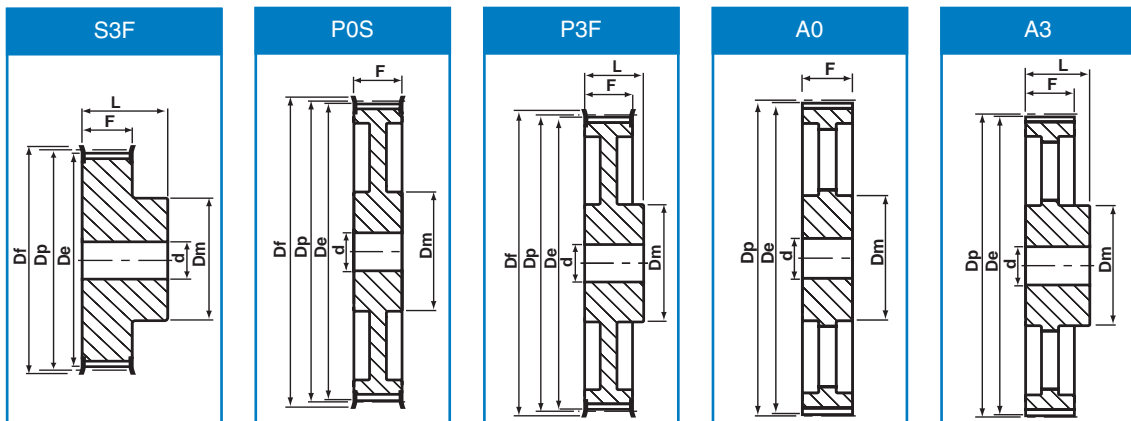
Product Designation	Number of teeth	Type	De	Dp	Df	Dm	Di	F	L	d	Weight kg
22-8M-50	22	S3F	55	56.02	60	43	-	60	70	12	1.00
24-8M-50	24	S3F	60	61.12	67	45	-	60	70	12	1.23
26-8M-50	26	S3F	65	66.21	70	50	-	60	70	12	1.50
28-8M-50	28	S3F	70	71.30	75	50	-	60	70	16	1.67
30-8M-50	30	S3F	75	76.39	83	55	-	60	70	16	1.97
32-8M-50	32	S3F	80	81.49	87	60	-	60	70	16	2.27
34-8M-50	34	S3F	85	86.58	91	70	-	60	70	16	2.69
36-8M-50	36	S3F	90	91.67	97	70	-	60	70	16	2.97
38-8M-50	38	S3F	95	96.77	102	75	-	60	70	16	3.23
40-8M-50	40	S3F	100	101.86	106	75	-	60	70	18	3.50
44-8M-50	44	S3F	111	112.05	120	75	-	60	70	18	3.90
48-8M-50	48	S3F	121	122.23	128	80	-	60	70	18	4.30
56-8M-50	56	P0F	141	142.60	150	90	117	60	60	18	5.00
64-8M-50	64	P0F	162	162.97	168	100	137	60	60	18	5.60
72-8M-50	72	P0F	182	183.35	192	100	158	60	60	18	6.80
80-8M-50	80	A0	202	203.72	-	110	180	60	60	18	6.90
90-8M-50	90	A0	228	229.18	-	110	204	60	60	18	8.60
112-8M-50	112	A0	284	285.21	-	110	260	60	60	18	9.60
144-8M-50	144	A0	365	366.69	-	110	341	60	60	20	13.80
168-8M-50	168	A0	426	427.81	-	120	402	60	60	20	16.00
192-8M-50	192	A0	488	488.92	-	130	463	60	60	20	22.40

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused. All dimensions in millimetres unless otherwise stated.

HTD[®] Pilot Bore

8mm Pitch 8M-85 (85mm Wide Belt)

Product Designation	Number of teeth	Type	De	Dp	Df	Dm	Di	F	L	d	Weight kg
22-8M-85	22	S3F	55	56.02	60	43	-	95	105	12	1.55
24-8M-85	24	S3F	60	61.12	67	45	-	95	105	12	1.90
26-8M-85	26	S3F	65	66.21	70	50	-	95	105	12	2.25
28-8M-85	28	S3F	70	71.30	75	50	-	95	105	16	2.55
30-8M-85	30	S3F	75	76.39	83	55	-	95	105	16	3.00
32-8M-85	32	S3F	80	81.49	87	60	-	95	105	16	3.57
34-8M-85	34	S3F	85	86.58	91	70	-	95	105	16	4.00
36-8M-85	36	S3F	90	91.67	97	70	-	95	105	16	4.50
38-8M-85	38	S3F	95	96.77	102	75	-	95	105	16	4.90
40-8M-85	40	S3F	100	101.86	106	75	-	95	105	16	5.20
44-8M-85	44	S3F	111	112.05	120	75	-	95	105	18	6.60
48-8M-85	48	S3F	121	122.23	128	80	-	95	105	18	7.60
56-8M-85	56	S3F	141	142.60	150	90	-	95	105	18	9.80
64-8M-85	64	P0F	162	162.97	168	100	137	95	95	20	10.40
72-8M-85	72	P0F	182	183.35	192	100	158	95	95	20	11.40
80-8M-85	80	A0	202	203.72	-	110	180	95	95	20	13.20
90-8M-85	90	A0	228	229.18	-	110	204	95	95	20	16.30
112-8M-85	112	A0	284	285.21	-	110	260	95	95	25	21.50
144-8M-85	144	A0	365	366.69	-	110	341	95	95	25	23.60
168-8M-85	168	A0	426	427.81	-	120	402	95	95	25	26.10
192-8M-85	192	A0	488	488.92	-	130	463	95	95	25	30.60



14mm Pitch 14M-40 (40mm Wide Belt)

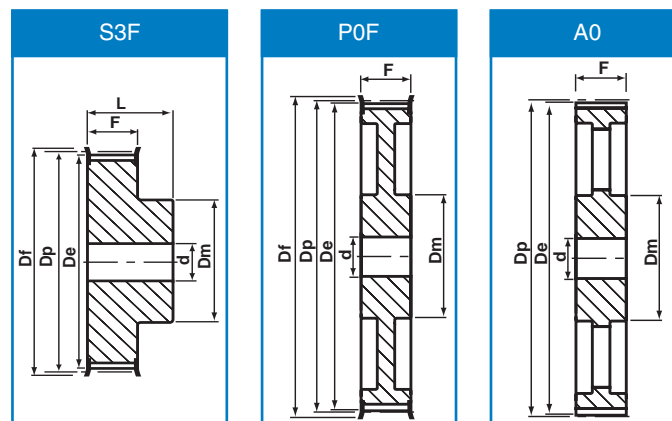
Product Designation	Number of teeth	Type	De	Dp	Df	Dm	Di	F	L	d	Weight kg
28-14M-40	28	S3F	122	124.78	128	100	-	54	69	24	4.73
29-14M-40	29	S3F	127	129.23	142	100	-	54	69	24	5.09
30-14M-40	30	S3F	131	133.69	142	100	-	54	69	24	5.45
32-14M-40	32	S3F	140	142.60	158	100	-	54	69	24	6.17
34-14M-40	34	S3F	149	151.52	158	100	-	54	69	24	6.88
36-14M-40	36	S3F	158	160.43	168	100	-	54	69	24	7.60
38-14M-40	38	S3F	167	169.34	184	120	-	54	69	24	8.28
40-14M-40	40	S3F	175	178.25	192	120	-	54	69	24	9.26
44-14M-40	44	S3F	193	196.08	211	120	-	54	69	24	10.32
48-14M-40	48	P3F	211	213.90	226	135	172	54	69	24	11.50
56-14M-40	56	P3F	247	249.55	265	135	207	54	69	28	13.05
64-14M-40	64	P3F	282	285.21	296	135	242	54	69	28	14.40
72-14M-40	72	A3	318	320.86	-	135	278	54	69	28	16.90
80-14M-40	80	A3	354	356.51	-	135	314	54	69	28	18.50
90-14M-40	90	A3	398	401.07	-	135	358	54	69	28	20.00
112-14M-40	112	A3	496	499.11	-	135	456	54	69	28	26.70
144-14M-40	144	A3	639	641.71	-	135	600	54	69	28	35.00
168-14M-40	168	A3	746	748.66	-	135	706	54	69	28	44.20
192-14M-40	192	A3	853	855.62	-	135	813	54	69	28	52.20
216-14M-40	216	A3	960	962.57	-	150	920	54	69	28	60.00

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HTD® Pilot Bore

14mm Pitch 14M-55 (55mm Wide Belt)

Product Designation	Number of teeth	Type	De	Dp	Df	Dm	Di	F	L	d	Weight kg
28-14M-55	28	S3F	122	124.78	128	100	-	70	85	24	5.60
29-14M-55	29	S3F	127	129.23	142	100	-	70	85	24	6.10
30-14M-55	30	S3F	131	133.69	142	100	-	70	85	24	6.60
32-14M-55	32	S3F	140	142.60	158	100	-	70	85	24	7.60
34-14M-55	34	S3F	149	151.52	158	100	-	70	85	24	8.60
36-14M-55	36	S3F	158	160.43	168	100	-	70	85	24	9.60
38-14M-55	38	S3F	167	169.34	184	120	-	70	85	24	10.80
40-14M-55	40	S3F	175	178.25	192	120	-	70	85	24	11.20
44-14M-55	44	S3F	193	196.08	211	120	-	70	85	24	12.50
48-14M-55	48	P0F	211	213.90	226	135	172	70	70	24	13.70
56-14M-55	56	P0F	247	249.55	265	135	207	70	70	28	14.50
64-14M-55	64	P0F	282	285.21	296	135	242	70	70	28	15.60
72-14M-55	72	A0	318	320.86	-	135	278	70	70	28	16.90
80-14M-55	80	A0	354	356.51	-	135	314	70	70	28	20.00
90-14M-55	90	A0	398	401.07	-	135	358	70	70	28	22.60
112-14M-55	112	A0	496	499.11	-	135	456	70	70	28	29.50
144-14M-55	144	A0	639	641.71	-	135	600	70	70	28	39.00
168-14M-55	168	A0	746	748.66	-	135	706	70	70	28	48.50
192-14M-55	192	A0	853	855.62	-	135	813	70	70	28	57.80
216-14M-55	216	A0	960	962.57	-	150	920	70	70	28	67.00



14mm Pitch 14M-85 (85mm Wide Belt)

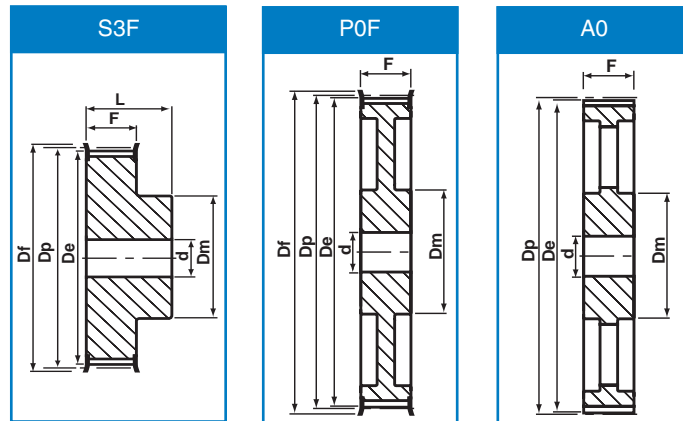
Product Designation	Number of teeth	Type	De	Dp	Df	Dm	Di	F	L	d	Weight kg
28-14M-85	28	S3F	122	124.78	128	100	-	102	117	24	7.70
29-14M-85	29	S3F	127	129.23	142	100	-	102	117	24	8.40
30-14M-85	30	S3F	131	133.69	142	100	-	102	117	24	9.10
32-14M-85	32	S3F	140	142.60	158	100	-	102	117	24	10.50
34-14M-85	34	S3F	149	151.52	158	100	-	102	117	24	11.90
36-14M-85	36	S3F	158	160.43	168	100	-	102	117	32	13.20
38-14M-85	38	S3F	167	169.34	184	120	-	102	117	32	15.15
40-14M-85	40	S3F	175	178.25	192	135	-	102	117	32	17.10
44-14M-85	44	S3F	193	196.08	211	135	-	102	117	32	23.30
48-14M-85	48	S3F	211	213.90	226	150	-	102	117	32	25.00
56-14M-85	56	P0F	249	249.55	265	150	207	102	102	32	25.00
64-14M-85	64	P0F	282	285.21	296	150	242	102	102	32	30.50
72-14M-85	72	A0	318	320.86	-	150	278	102	102	32	28.80
80-14M-85	80	A0	354	356.51	-	150	314	102	102	32	30.10
90-14M-85	90	A0	398	401.07	-	150	358	102	102	32	33.00
112-14M-85	112	A0	496	499.11	-	150	456	102	102	32	41.80
144-14M-85	144	A0	639	641.71	-	150	600	102	102	32	52.40
168-14M-85	168	A0	746	748.66	-	150	706	102	102	32	60.30
192-14M-85	192	A0	853	855.62	-	165	813	102	102	32	70.20
216-14M-85	216	A0	960	962.57	-	165	920	102	102	32	81.00

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HTD[®] Pilot Bore

14mm Pitch 14M-115 (115mm Wide Belt)

Product Designation	Number of teeth	Type	De	Dp	Df	Dm	Di	F	L	d	Weight kg
28-14M-115	28	S3F	122	124.78	128	100	-	133	148	32	9.20
29-14M-115	29	S3F	127	129.23	142	100	-	133	148	32	10.20
30-14M-115	30	S3F	131	133.69	142	100	-	133	148	32	11.20
32-14M-115	32	S3F	140	142.60	158	100	-	133	148	32	13.20
34-14M-115	34	S3F	149	151.52	158	100	-	133	148	32	14.80
36-14M-115	36	S3F	158	160.43	168	100	-	133	148	32	16.60
38-14M-115	38	S3F	167	169.34	184	120	-	133	148	32	19.20
40-14M-115	40	S3F	175	178.25	192	135	-	133	148	32	20.56
44-14M-115	44	S3F	193	196.08	211	140	-	133	148	32	21.93
48-14M-115	48	S3F	211	213.90	226	150	-	133	148	32	25.00
56-14M-115	56	S3F	247	249.55	265	150	-	133	148	32	27.50
64-14M-115	64	P0F	282	285.21	296	150	242	133	133	32	30.10
72-14M-115	72	A0	318	320.86	-	150	278	133	133	32	32.83
80-14M-115	80	A0	354	356.51	-	150	314	133	133	32	35.55
90-14M-115	90	A0	399	401.07	-	150	358	133	133	32	41.00
112-14M-115	112	A0	496	499.11	-	150	456	133	133	32	54.40
144-14M-115	144	A0	639	641.71	-	165	600	133	133	32	67.80
168-14M-115	168	A0	746	748.66	-	165	706	133	133	32	75.80
192-14M-115	192	A0	853	855.62	-	165	813	133	133	32	88.30
216-14M-115	216	A0	960	962.57	-	165	920	133	133	32	98.00

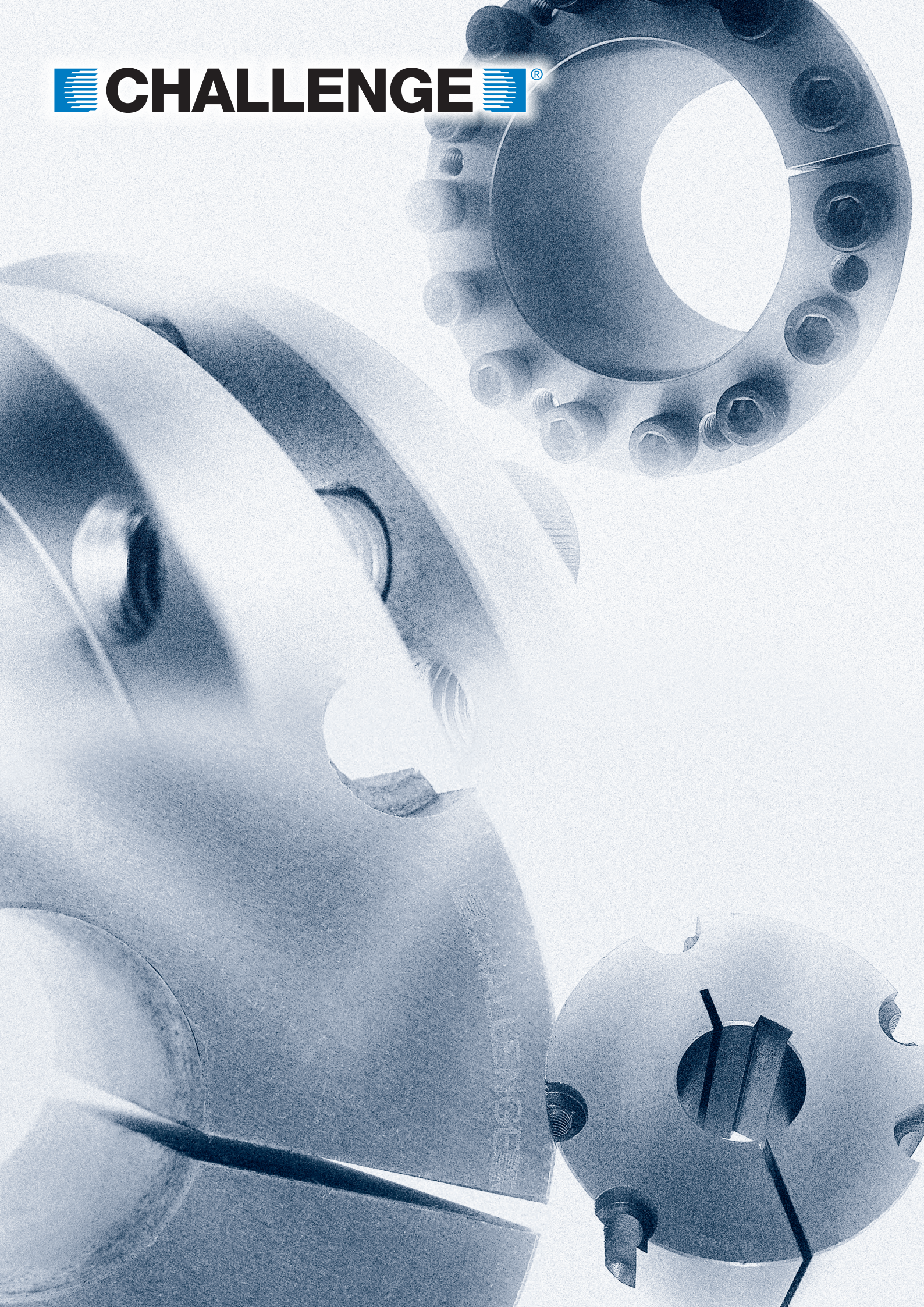


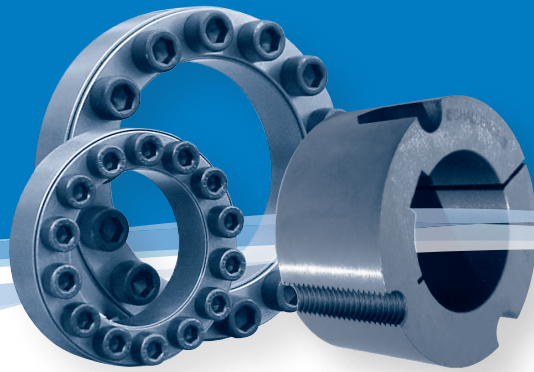
14mm Pitch 14M-170 (170mm Wide Belt)

Product Designation	Number of teeth	Type	De	Dp	Df	Dm	Di	F	L	d	Weight kg
28-14M-170	28	S3F	122	124.78	128	100	-	187	202	32	13.80
29-14M-170	29	S3F	127	129.23	142	100	-	187	202	32	14.20
30-14M-170	30	S3F	131	133.69	142	100	-	187	202	32	15.60
32-14M-170	32	S3F	140	142.60	158	100	-	187	202	32	18.10
34-14M-170	34	S3F	149	151.52	158	100	-	187	202	32	20.40
36-14M-170	36	S3F	158	160.43	168	120	-	187	202	32	23.50
38-14M-170	38	S3F	167	169.34	184	135	-	187	202	32	26.50
40-14M-170	40	S3F	175	178.25	192	135	-	187	202	32	30.10
44-14M-170	44	S3F	193	196.08	211	160	-	187	202	32	37.80
48-14M-170	48	S3F	211	213.90	226	160	-	187	202	32	44.50
56-14M-170	56	S3F	247	249.55	265	160	-	187	202	32	61.00
64-14M-170	64	S3F	282	285.21	296	180	-	187	202	32	81.00
72-14M-170	72	A0	318	320.86	-	180	278	187	187	32	61.40
80-14M-170	80	A0	354	356.51	-	180	314	187	187	32	65.00
90-14M-170	90	A0	398	401.07	-	180	358	187	187	38	68.00
112-14M-170	112	A0	496	499.11	-	200	456	187	187	38	87.50
144-14M-170	144	A0	639	641.71	-	220	600	187	187	38	114.00
168-14M-170	168	A0	746	748.66	-	220	706	187	187	38	125.00
192-14M-170	192	A0	853	855.62	-	220	813	187	187	38	136.40
216-14M-170	216	A0	960	962.57	-	220	920	187	187	38	147.00

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused

 **CHALLENGE**  [®]





Features

Taper Bushes

- Easy installation and removal
- No re-boring as a full range of both metric and imperial bores are available
- Totally proven bush system. Millions in use world wide
- Fit standard shafts
- Quality screws used
- Keys not required on light duty applications
- Short length bushes allow increased maximum bores
- Superior packaging complete with fitting instructions

Adaptors

- Allows pilot bore products to be adapted for taper bush use
- Avoids the need to drill, tap and taper bore
- Plain outside diameter or keyed are available
- Conform to all major international standards

Bolt-on-Hubs

- Designed to accept the universally popular taper bush
- A convenient way in which products such as fan rotors, impellers etc can be converted to accept taper bushes without welding

Weld-on-Hubs

- Manufactured from low carbon steel and designed to accept taper bushes
- Provide a convenient means of welding hubs into fan rotors, plate sprockets etc.
- Three different designs available

Cone Clamping Elements

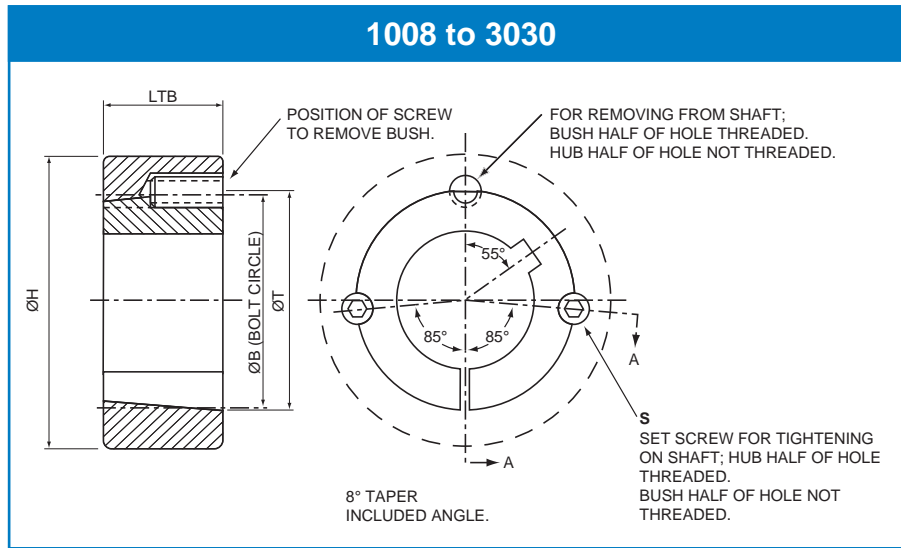
- Premium grade quality with high machining tolerances and surface finishes
- Wide range of sizes and configurations
- Keyless design
- Simple installation and ease of removal
- Zero backlash eliminates fretting corrosion and is unaffected by alternating torques
- Angular and axial misalignment capability

Taper Bushes

Range and Material Specifications:

Challenge Taper Bushes are manufactured to the highest quality standards using GG22 - 25 cast iron depending on size. Thin wall bushes are produced either from C45 steel or GGG close grain cast iron. All surfaces are carefully machined to provide maximum contact area and transmission of torque.

In excess of 700 sizes of Challenge Taper Bushes are manufactured and stocked making this one of the most comprehensive ranges available today.

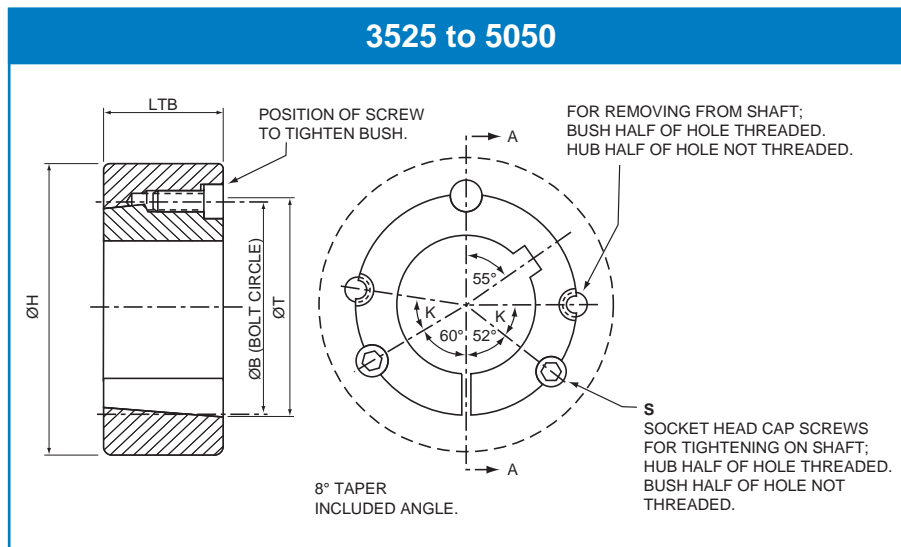


Taper Bush 1008 to 3030

Bush Size	T	LTB	Minimum hub Dia H			B	Set Screws S	
			200 N/mm ² GG Iron	250 N/mm ² GG Iron	420 N/mm ² Steel		Quantity	Size (BSW)
1008	35.20	22.3	59	54	51	33.73	2	1/4" x 1/2"
1108	38.38	22.3	61	57	54	36.92	2	1/4" x 1/2"
1210	47.62	25.4	99	86	78	44.44	2	3/8" x 5/8"
1215	47.62	38.1	79	73	68	44.44	2	3/8" x 5/8"
1310	50.80	25.4	100	88	80	47.63	2	3/8" x 5/8"
1610	57.15	25.4	102	92	85	53.97	2	3/8" x 5/8"
1615	57.15	38.1	86	81	77	53.97	2	3/8" x 5/8"
2012	69.85	31.8	115	106	99	66.68	2	7/16" x 7/8"
2517	85.73	44.5	125	119	113	82.55	2	1/2" x 1"
2525	85.73	63.5	115	111	108	82.56	2	1/2" x 1"
3020	107.96	50.8	154	146	140	101.60	2	5/8" x 1.1/4"
3030	107.96	76.2	141	136	132	101.60	2	5/8" x 1.1/4"

Severe operating conditions may require the use of a larger diameter hub.

Taper Bushes



Taper Bush 3525 to 5050

Bush Size	T	LTB	Minimum hub Dia H			B	Cap Screws S		K
			200 N/mm ² GG Iron	250 N/mm ² GG Iron	420 N/mm ² Steel		Quantity	Size (BSW)	
3525	127.00	63.5	206	191	178	122.68	3	1/2" x 1.1/2"	40°
3535	127.00	89.0	185	176	168	122.68	3	1/2" x 1.1/2"	40°
4030	146.05	76.2	220	207	197	140.72	3	5/8" x 1.3/4"	40°
4040	146.05	101.5	203	195	188	140.72	3	5/8" x 1.1/4"	40°
4535	161.93	89.0	221	212	205	155.70	3	3/4" x 2"	40°
4545	161.93	114.3	211	205	200	155.70	3	3/4" x 2"	40°
5040	177.80	101.6	236	229	223	170.69	3	7/8" x 2.1/4"	37°
5050	177.80	127.0	230	223	219	170.69	3	7/8" x 2.1/4"	37°

Severe operating conditions may require the use of a larger diameter hub.

Taper Bushes

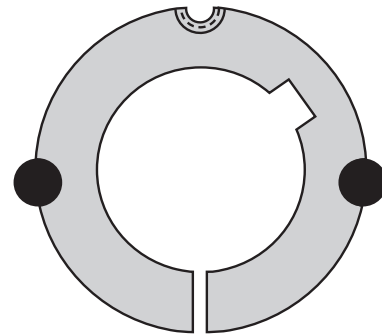
To Install

- 1 Ensure the mating surfaces are clean and free from oil and dirt. Insert the bush into the hub so that the securing holes are aligned
- 2 Lightly oil the thread of the screws and place them loosely into the threaded holes of the hub as shown in the diagram
- 3 Clean the shaft and fit the hub and bush to the shaft as one unit in the desired position. Remember that the bush will nip the shaft first and the hub will then be drawn slightly on to the bush
- 4 Using a hexagon wrench, gradually tighten the screws alternately until tight
- 5 Hammer against the large end of the bush using a block to avoid damaging the bush. The screws can now be tightened more. Repeat this procedure until the correct wrench tightening torque is achieved from the table below
- 6 To achieve the best balance, if a key is not used, position the keyways in the bush and hub diametrically opposite to each other
- 7 If a key is to be fitted, locate it in the shaft keyway before fitting the bush. It is essential that a parallel key with top clearance be fitted. Under no circumstances should taper or top fitting keys be used
- 8 After the drive has been running for a short time, check the tightness of the screws
- 9 Finally, fill all empty holes with grease to exclude dirt and prevent corrosion

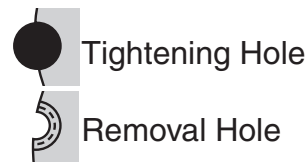
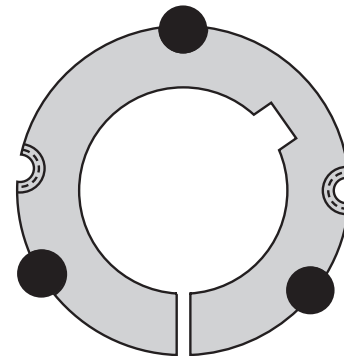
To Remove

- 1 Slacken all screws and remove one or two screws, according to the number of removal holes (see diagrams)
- 2 Lightly oil the screw(s) and insert it or them into the removal hole(s) and tighten down until the assembly loosens. If the bush does not loosen immediately, lightly tap the hub
- 3 Remove the assembly from the shaft

1008 to 3030



3525 to 5050



Recommended Wrench Torque

Bush Size	Screws	Tightening Torque (Nm)	Bush Size	Screws	Tightening Torque (Nm)	Bush Size	Screws	Tightening Torque (Nm)
1008	1/4" Set Screws	6	2012	7/16" Set Screws	30	4030	5/8" Cap Screws	170
1108	1/4" Set Screws	6	2517	1/2" Set Screws	50	4040	5/8" Cap Screws	170
1210	3/8" Set Screws	20	2525	1/2" Set Screws	50	4535	3/4" Cap Screws	190
1215	3/8" Set Screws	20	3020	5/8" Set Screws	90	4545	3/4" Cap Screws	190
1310	3/8" Set Screws	20	3030	5/8" Set Screws	90	5040	7/8" Cap Screws	270
1610	3/8" Set Screws	20	3525	1/2" Cap Screws	105	5050	7/8" Cap Screws	270
1615	3/8" Set Screws	20	3535	1/2" Cap Screws	105			

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Taper Bushes - Metric

1008

Bore	Weight kg †	Keyseat	
		Bush	Shaft
9	0.13	3 x 1.4	3 x 1.8
10	0.13	3 x 1.4	3 x 1.8
11	0.12	4 x 1.8	4 x 2.5
12	0.12	4 x 1.8	4 x 2.5
14	0.11	5 x 2.3	5 x 3.0
15	0.11	5 x 2.3	5 x 3.0
16	0.10	5 x 2.3	5 x 3.0
18	0.10	6 x 2.8	6 x 3.5
19	0.09	6 x 2.8	6 x 3.5
20	0.09	6 x 2.8	6 x 3.5
22	0.08	6 x 2.8	6 x 3.5
24*	0.07	8 x 1.3*	8 x 4.0
25*	0.06	8 x 1.3*	8 x 4.0

1108

Bore	Weight kg †	Keyseat	
		Bush	Shaft
9	0.15	3 x 1.4	3 x 1.8
10	0.15	3 x 1.4	3 x 1.8
11	0.15	4 x 1.8	4 x 2.5
12	0.14	4 x 1.8	4 x 2.5
14	0.14	5 x 2.3	5 x 3.0
15	0.13	5 x 2.3	5 x 3.0
16	0.13	5 x 2.3	5 x 3.0
17	0.12	5 x 2.3	5 x 3.0
18	0.12	6 x 2.8	6 x 3.5
19	0.11	6 x 2.8	6 x 3.5
20	0.11	6 x 2.8	6 x 3.5
22	0.10	6 x 2.8	6 x 3.5
24	0.09	8 x 3.3	8 x 4.0
25	0.08	8 x 3.3	8 x 4.0
28*	0.06	8 x 1.3*	8 x 4.0

1210

Bore	Weight kg †	Keyseat	
		Bush	Shaft
11	0.26	4 x 1.8	4 x 2.5
12	0.26	4 x 1.8	4 x 2.5
14	0.25	5 x 2.3	5 x 3.0
15	0.25	5 x 2.3	5 x 3.0
16	0.24	5 x 2.3	5 x 3.0
18	0.23	6 x 2.8	6 x 3.5
19	0.23	6 x 2.8	6 x 3.5
20	0.22	6 x 2.8	6 x 3.5
22	0.21	6 x 2.8	6 x 3.5
24	0.19	8 x 3.3	8 x 4.0
25	0.19	8 x 3.3	8 x 4.0
28	0.16	8 x 3.3	8 x 4.0
30	0.15	8 x 3.3	8 x 4.0
32	0.14	10 x 3.3	10 x 5.0

1215

Bore	Weight kg †	Keyseat	
		Bush	Shaft
11	0.39	4 x 1.8	4 x 2.5
12	0.39	4 x 1.8	4 x 2.5
14	0.37	5 x 2.3	5 x 3.0
16	0.36	5 x 2.3	5 x 3.0
18	0.34	6 x 2.8	6 x 3.5
19	0.34	6 x 2.8	6 x 3.5
20	0.33	6 x 2.8	6 x 3.5
22	0.31	6 x 2.8	6 x 3.5
24	0.29	8 x 3.3	8 x 4.0
25	0.28	8 x 3.3	8 x 4.0
28	0.24	8 x 3.3	8 x 4.0
30	0.22	8 x 3.3	8 x 4.0
32	0.20	10 x 3.3	10 x 5.0

1310

Bore	Weight kg †	Keyseat	
		Bush	Shaft
14	0.31	5 x 2.3	5 x 3.0
16	0.30	5 x 2.3	5 x 3.0
18	0.29	6 x 2.8	6 x 3.5
19	0.28	6 x 2.8	6 x 3.5
20	0.28	6 x 2.8	6 x 3.5
22	0.26	5 x 2.8	6 x 3.5
24	0.25	8 x 3.3	8 x 4.0
25	0.25	8 x 3.3	8 x 4.0
28	0.22	8 x 3.3	8 x 4.0
30	0.20	8 x 3.3	8 x 4.0
32	0.18	10 x 3.3	10 x 5.0
35	0.16	10 x 3.3	10 x 5.0

1610

Bore	Weight kg †	Keyseat	
		Bush	Shaft
14	0.38	5 x 2.3	5 x 3.0
15	0.37	5 x 2.3	5 x 3.0
16	0.37	5 x 2.3	5 x 3.0
18	0.36	6 x 2.8	6 x 3.5
19	0.35	6 x 2.8	6 x 3.5
20	0.35	6 x 2.8	6 x 3.5
22	0.33	6 x 2.8	6 x 3.5
24	0.32	8 x 3.3	8 x 4.0
25	0.31	8 x 3.3	8 x 4.0
28	0.29	8 x 3.3	8 x 4.0
30	0.27	8 x 3.3	8 x 4.0
32	0.26	10 x 3.3	10 x 5.0
35	0.22	10 x 3.3	10 x 5.0
38	0.19	10 x 3.3	10 x 5.0
40	0.18	12 x 3.3	12 x 5.0
42	0.16	12 x 3.3	12 x 5.0

† Net weight including screws.

Keyways are in accordance with BS4235, Part 1, 1972, DIN6885 and conform to ISO recommendations with the exception of those marked* which are shallower.

Depth of key measured at centre.

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Taper Bushes - Metric

1615

Bore	Weight kg †	Keyseat	
		Bush	Shaft
14	0.57	5 x 2.3	5 x 3.0
16	0.56	5 x 2.3	5 x 3.0
18	0.54	6 x 2.8	6 x 3.5
19	0.54	6 x 2.8	6 x 3.5
20	0.53	6 x 2.8	6 x 3.5
22	0.51	6 x 2.8	6 x 3.5
24	0.49	8 x 3.3	8 x 4.0
25	0.48	8 x 3.3	8 x 4.0
28	0.44	8 x 3.3	8 x 4.0
30	0.42	8 x 3.3	8 x 4.0
32	0.39	10 x 3.3	10 x 5.0
35	0.34	10 x 3.3	10 x 5.0
38	0.30	10 x 3.3	10 x 5.0
40	0.28	12 x 3.3	12 x 5.0
42*	0.24	12 x 2.2*	12 x 5.0

2012

Bore	Weight kg †	Keyseat	
		Bush	Shaft
14	0.76	5 x 2.3	5 x 3.0
16	0.75	5 x 2.3	5 x 3.0
18	0.74	6 x 2.8	6 x 3.5
19	0.73	6 x 2.8	6 x 3.5
20	0.73	6 x 2.8	6 x 3.5
22	0.71	6 x 2.8	6 x 3.5
24	0.69	8 x 3.3	8 x 4.0
25	0.69	8 x 3.3	8 x 4.0
28	0.66	8 x 3.3	8 x 4.0
30	0.63	8 x 3.3	8 x 4.0
32	0.61	10 x 3.3	10 x 5.0
35	0.57	10 x 3.3	10 x 5.0
38	0.53	10 x 3.3	10 x 5.0
40	0.51	12 x 3.3	12 x 5.0
42	0.48	12 x 3.3	12 x 5.0
45	0.43	14 x 3.8	14 x 5.5
48	0.38	14 x 3.8	14 x 5.5
50	0.34	14 x 3.8	14 x 5.5

2517

Bore	Weight kg †	Keyseat	
		Bush	Shaft
16	1.67	5 x 2.3	5 x 3.0
18	1.65	6 x 2.8	6 x 3.5
19	1.64	6 x 2.8	6 x 3.5
20	1.63	6 x 2.8	6 x 3.5
22	1.61	6 x 2.8	6 x 3.5
24	1.59	8 x 3.3	8 x 4.0
25	1.57	8 x 3.3	8 x 4.0
28	1.53	8 x 3.3	8 x 4.0
30	1.50	8 x 3.3	8 x 4.0
32	1.47	10 x 3.3	10 x 5.0
35	1.42	10 x 3.3	10 x 5.0
38	1.36	10 x 3.3	10 x 5.0
40	1.32	12 x 3.3	12 x 5.0
42	1.28	12 x 3.3	12 x 5.0
45	1.21	14 x 3.8	14 x 5.5
48	1.14	14 x 3.8	14 x 5.5
50	1.09	14 x 3.8	14 x 5.5
55	0.96	16 x 4.3	16 x 6.0
60	0.81	18 x 4.4	18 x 7.0
65	0.65	18 x 4.4	18 x 7.0

2525

Bore	Weight kg †	Keyseat	
		Bush	Shaft
18	2.18	6 x 2.8	6 x 3.5
19	2.17	6 x 2.8	6 x 3.5
20	2.16	6 x 2.8	6 x 3.5
22	2.13	6 x 2.8	6 x 3.5
24	2.09	8 x 3.3	8 x 4.0
25	2.07	8 x 3.3	8 x 4.0
28	2.02	8 x 3.3	8 x 4.0
30	1.97	8 x 3.3	8 x 4.0
32	1.93	10 x 3.3	10 x 5.0
35	1.85	10 x 3.3	10 x 5.0
38	1.77	10 x 3.3	10 x 5.0
40	1.71	12 x 3.3	12 x 5.0
42	1.65	12 x 3.3	12 x 5.0
45	1.56	14 x 3.8	14 x 5.5
48	1.46	14 x 3.8	14 x 5.5
50	1.38	14 x 3.8	14 x 5.5
55	1.19	16 x 4.3	16 x 6.0
60	0.98	18 x 4.4	18 x 7.0

3020

Bore	Weight kg †	Keyseat	
		Bush	Shaft
20	2.93	8 x 3.3	8 x 4.0
25	2.87	8 x 3.3	8 x 4.0
28	2.82	8 x 3.3	8 x 4.0
30	2.79	8 x 3.3	8 x 4.0
32	2.75	10 x 3.3	10 x 5.0
35	2.69	10 x 3.3	10 x 5.0
38	2.63	10 x 3.3	10 x 5.0
40	2.58	12 x 3.3	12 x 5.0
42	2.53	12 x 3.3	12 x 5.0
45	2.46	14 x 3.8	14 x 5.5
48	2.37	14 x 3.8	14 x 5.5
50	2.32	14 x 3.8	14 x 5.5
55	2.16	16 x 4.3	16 x 6.0
60	1.99	18 x 4.4	18 x 7.0
65	1.81	18 x 4.4	18 x 7.0
70	1.61	20 x 4.9	20 x 7.5
75	1.39	20 x 4.9	20 x 7.5

3030

Bore	Weight kg †	Keyseat	
		Bush	Shaft
25	4.04	8 x 3.3	8 x 4.0
35	3.77	10 x 3.3	10 x 5.0
38	3.67	10 x 3.3	10 x 5.0
40	3.60	12 x 3.3	12 x 5.0
42	3.53	12 x 3.3	12 x 5.0
45	3.42	14 x 3.8	14 x 5.5
48	3.29	14 x 3.8	14 x 5.5
50	3.21	14 x 3.8	14 x 5.5
55	2.98	16 x 4.3	16 x 6.0
60	2.72	18 x 4.4	18 x 7.0
65	2.44	18 x 4.4	18 x 7.0
70	2.15	20 x 4.9	20 x 7.5
75	1.83	20 x 4.9	20 x 7.5

† Net weight including screws.

Keyways are in accordance with BS4235, Part 1, 1972, DIN6885 and conform to ISO recommendations with the exception of those marked* which are shallower. Depth of key measured at centre.

Taper Bushes - Metric

3525

Bore	Weight kg †	Keyseat	
		Bush	Shaft
35	4.91	10 x 3.3	10 x 5.0
38	4.83	10 x 3.3	10 x 5.0
40	4.77	12 x 3.3	12 x 5.0
42	4.71	12 x 3.3	12 x 5.0
45	4.62	14 x 3.8	14 x 5.5
48	4.52	14 x 3.8	14 x 5.5
50	4.44	14 x 3.8	14 x 5.5
55	4.25	16 x 4.3	16 x 6.0
60	4.04	18 x 4.4	18 x 7.0
65	3.81	18 x 4.4	18 x 7.0
70	3.56	20 x 4.9	20 x 7.5
75	3.29	20 x 4.9	20 x 7.5
80	3.01	22 x 5.4	22 x 9.0
85	2.70	22 x 5.4	22 x 9.0
90	2.38	25 x 5.4	25 x 9.0
95	2.17	25 x 5.4	25 x 9.0
100*	1.79	28 x 5.4*	28 x 10.0

3535

Bore	Weight kg †	Keyseat	
		Bush	Shaft
32	6.65	10 x 3.3	10 x 5.0
35	6.55	10 x 3.3	10 x 5.0
38	6.43	10 x 3.3	10 x 5.0
40	6.35	12 x 3.3	12 x 5.0
42	6.27	12 x 3.3	12 x 5.0
45	6.13	14 x 3.8	14 x 5.5
48	5.99	14 x 3.8	14 x 5.5
50	5.89	14 x 3.8	14 x 5.5
55	5.62	16 x 4.3	16 x 6.0
60	5.32	18 x 4.4	18 x 7.0
65	5.00	18 x 4.4	18 x 7.0
70	4.65	20 x 4.9	20 x 7.5
75	4.28	20 x 4.9	20 x 7.5
80	3.88	22 x 5.4	22 x 9.0
85	3.45	22 x 5.4	22 x 9.0
90	3.00	25 x 5.4	25 x 9.0

4030

Bore	Weight kg †	Keyseat	
		Bush	Shaft
40	7.55	12 x 3.3	12 x 5.0
42	7.48	12 x 3.3	12 x 5.0
45	7.36	14 x 3.8	14 x 5.5
48	7.24	14 x 3.8	14 x 5.5
50	7.15	14 x 3.8	14 x 5.5
55	6.92	16 x 4.3	16 x 6.0
60	6.67	18 x 4.4	18 x 7.0
65	6.39	18 x 4.4	18 x 7.0
70	6.09	20 x 4.9	20 x 7.5
75	5.77	20 x 4.9	20 x 7.5
80	5.43	22 x 5.4	22 x 9.0
85	5.06	22 x 5.4	22 x 9.0
90	4.68	25 x 5.4	25 x 9.0
95	4.27	25 x 5.4	25 x 9.0
100	3.84	28 x 6.4	28 x 10.0
105	3.59	28 x 6.4	28 x 10.0
110	3.09	28 x 6.4	28 x 10.0
115*	2.56	32 x 5.4*	32 x 11.0

4040

Bore	Weight kg †	Keyseat	
		Bush	Shaft
40	9.83	12 x 3.3	12 x 5.0
42	9.73	12 x 3.3	12 x 5.0
45	9.58	14 x 3.8	14 x 5.5
48	9.41	14 x 3.8	14 x 5.5
50	9.30	14 x 3.8	14 x 5.5
55	8.99	16 x 4.3	16 x 6.0
60	8.65	18 x 4.4	18 x 7.0
65	8.28	18 x 4.4	18 x 7.0
70	7.88	20 x 4.9	20 x 7.5
75	7.46	20 x 4.9	20 x 7.5
80	7.00	22 x 5.4	22 x 9.0
85	6.51	22 x 5.4	22 x 9.0
90	6.00	25 x 5.4	25 x 9.0
95	5.45	25 x 5.4	25 x 9.0
100	4.88	28 x 6.4	28 x 10.0

† Net weight including screws.

Bold italic type indicates bushes made of **GGG cast iron**.

Keyways are in accordance with BS4235, Part 1, 1972, DIN6885 and conform to ISO recommendations with the exception of those marked* which are shallower.

Depth of key measured at centre.

Taper Bushes - Metric

4535

Bore	Weight kg †	Keyseat	
		Bush	Shaft
55	10.33	16 x 4.3	10 x 6.0
60	10.03	18 x 4.4	18 x 7.0
65	9.71	18 x 4.4	18 x 7.0
70	9.36	20 x 4.9	20 x 7.5
75	8.99	20 x 4.9	20 x 7.5
80	8.59	22 x 5.4	22 x 9.0
85	8.16	22 x 5.4	22 x 9.0
90	7.71	25 x 5.4	25 x 9.0
95	7.23	25 x 5.4	25 x 9.0
100	6.73	28 x 6.4	28 x 10.0
105	6.20	28 x 6.4	28 x 10.0
110	5.65	28 x 6.4	28 x 10.0
115	5.38	32 x 7.4	32 x 11.0
120	4.73	32 x 7.4	32 x 11.0
125	4.06	32 x 7.4	32 x 11.0

4545

Bore	Weight kg †	Keyseat	
		Bush	Shaft
55	13.72	16 x 4.3	16 x 6.0
60	13.34	18 x 4.4	18 x 7.0
65	12.93	18 x 4.4	18 x 7.0
70	12.48	20 x 4.9	20 x 7.5
75	12.00	20 x 4.9	20 x 7.5
80	11.49	22 x 5.4	22 x 9.0
85	10.94	22 x 5.4	22 x 9.0
90	10.36	25 x 5.4	25 x 9.0
95	9.75	25 x 5.4	25 x 9.0
100	9.10	28 x 6.4	28 x 10.0
105	8.42	28 x 6.4	28 x 10.0
110	7.71	28 x 6.4	28 x 10.0

5040

Bore	Weight kg †	Keyseat	
		Bush	Shaft
70	13.42	20 x 4.9	20 x 7.5
75	12.99	20 x 4.9	20 x 7.5
80	12.53	22 x 5.4	22 x 9.0
85	12.05	22 x 5.4	22 x 9.0
90	11.53	25 x 5.4	25 x 9.0
95	10.99	25 x 5.4	25 x 9.0
100	10.41	28 x 6.4	28 x 10.0
105	9.81	28 x 6.4	28 x 10.0
110	9.17	28 x 6.4	28 x 10.0
115	8.51	32 x 7.4	32 x 11.0
120	7.82	32 x 7.4	32 x 11.0
125	7.10	32 x 7.4	32 x 11.0

5050

Bore	Weight kg †	Keyseat	
		Bush	Shaft
70	16.33	20 x 4.9	20 x 7.5
75	15.80	20 x 4.9	20 x 7.5
80	15.23	22 x 5.4	22 x 9.0
85	14.62	22 x 5.4	22 x 9.0
90	13.97	25 x 5.4	25 x 9.0
95	13.29	25 x 5.4	25 x 9.0
100	12.58	28 x 6.4	28 x 10.0
105	11.82	28 x 6.4	28 x 10.0
110	11.03	28 x 6.4	28 x 10.0
115	10.20	32 x 7.4	32 x 11.0
120	9.33	32 x 7.4	32 x 11.0
125	8.43	32 x 7.4	32 x 11.0

† Net weight including screws.

Bold italic type indicates bushes made of **GGG cast iron**.

Keyways are in accordance with BS4235, Part 1, 1972, DIN6885 and conform to ISO recommendations with the exception of those marked* which are shallower.

Depth of key measured at centre.

NOTE

CHALLENGE can manufacture larger taper bush sizes including 6050, 7060 and 8065. These are available to order with the following maximum bores:

6050 150 mm or 6"

7060 175 mm or 7"

8065 200 mm or 8"

Pilot bore taper bushes in these sizes are also available.

Taper Bushes - Imperial

1008

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
3/8	0.13	0.125 x 0.060	0.125 x 0.072	
7/16	0.12	0.125 x 0.060	0.125 x 0.072	
1/2	0.12	0.125 x 0.060	0.125 x 0.072	
9/16	0.11	0.125 x 0.060	0.125 x 0.072	
5/8	0.11	0.188 x 0.088	0.188 x 0.107	
11/16	0.10	0.188 x 0.088	0.188 x 0.107	
3/4	0.09	0.188 x 0.088	0.188 x 0.107	
13/16	0.09	0.250 x 0.115	0.250 x 0.142	
7/8	0.08	0.250 x 0.115	0.250 x 0.142	
15/16	0.07	0.250 x 0.115	0.250 x 0.142	
1*	0.06	0.250 x 0.052*	0.250 x 0.142	

1108

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
3/8	0.15	0.125 x 0.060	0.125 x 0.072	
7/16	0.14	0.125 x 0.060	0.125 x 0.072	
1/2	0.14	0.125 x 0.060	0.125 x 0.072	
9/16	0.13	0.188 x 0.088	0.188 x 0.107	
5/8	0.13	0.188 x 0.088	0.188 x 0.107	
11/16	0.12	0.188 x 0.088	0.188 x 0.107	
3/4	0.11	0.188 x 0.088	0.188 x 0.107	
13/16	0.11	0.250 x 0.115	0.250 x 0.142	
7/8	0.10	0.250 x 0.115	0.250 x 0.142	
15/16	0.09	0.250 x 0.115	0.250 x 0.142	
1	0.08	0.250 x 0.115	0.250 x 0.142	
1.1/16	0.07	0.312 x 0.065*	0.312 x 0.177	
1.1/8*	0.06	0.312 x 0.065*	0.312 x 0.177	

1210

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
1/2	0.25	0.125 x 0.060	0.125 x 0.072	
9/16	0.24	0.188 x 0.088	0.188 x 0.107	
5/8	0.24	0.188 x 0.088	0.188 x 0.107	
11/16	0.23	0.188 x 0.088	0.188 x 0.107	
3/4	0.22	0.188 x 0.088	0.188 x 0.107	
13/16	0.21	0.250 x 0.115	0.250 x 0.142	
7/8	0.20	0.250 x 0.115	0.250 x 0.142	
15/16	0.19	0.250 x 0.115	0.250 x 0.142	
1	0.18	0.250 x 0.115	0.250 x 0.142	
1.1/16	0.17	0.312 x 0.112	0.312 x 0.177	
1.1/8	0.15	0.312 x 0.112	0.312 x 0.177	
1.3/16	0.14	0.312 x 0.112	0.312 x 0.177	
1.1/4	0.13	0.312 x 0.112	0.312 x 0.177	
1.5/16	0.12	0.375 x 0.112	0.375 x 0.213	

1215

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
9/16	0.38	0.188 x 0.088	0.188 x 0.101	
5/8	0.36	0.188 x 0.088	0.188 x 0.101	
11/16	0.34	0.188 x 0.088	0.188 x 0.107	
3/4	0.33	0.188 x 0.088	0.188 x 0.107	
13/16	0.32	0.250 x 0.115	0.250 x 0.142	
7/8	0.30	0.250 x 0.115	0.250 x 0.142	
15/16	0.28	0.250 x 0.115	0.250 x 0.142	
1	0.27	0.250 x 0.115	0.250 x 0.142	
1.1/16	0.25	0.312 x 0.112	0.312 x 0.177	
1.1/8	0.23	0.312 x 0.112	0.312 x 0.177	
1.3/16	0.21	0.312 x 0.112	0.312 x 0.177	
1.1/4	0.20	0.312 x 0.112	0.312 x 0.177	

1310

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
1/2	0.31	0.125 x 0.060	0.125 x 0.072	
5/8	0.30	0.188 x 0.088	0.188 x 0.107	
3/4	0.28	0.188 x 0.088	0.188 x 0.107	
7/8	0.26	0.250 x 0.115	0.250 x 0.142	
1	0.24	0.250 x 0.115	0.250 x 0.142	
1.1/8	0.21	0.312 x 0.112	0.312 x 0.177	
1.1/4	0.19	0.312 x 0.112	0.312 x 0.177	
1.3/8	0.16	0.375 x 0.110	0.375 x 0.213	

1610

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
1/2	0.38	0.125 x 0.060	0.125 x 0.072	
9/16	0.37	0.188 x 0.088	0.188 x 0.107	
5/8	0.37	0.188 x 0.088	0.188 x 0.107	
11/16	0.36	0.188 x 0.088	0.188 x 0.107	
3/4	0.35	0.188 x 0.088	0.188 x 0.107	
13/16	0.34	0.250 x 0.115	0.250 x 0.142	
7/8	0.33	0.250 x 0.115	0.250 x 0.142	
15/16	0.32	0.250 x 0.115	0.250 x 0.142	
1	0.31	0.250 x 0.115	0.250 x 0.142	
1.1/16	0.30	0.312 x 0.112	0.312 x 0.177	
1.1/8	0.28	0.312 x 0.112	0.312 x 0.177	
1.3/16	0.27	0.312 x 0.112	0.312 x 0.177	
1.1/4	0.26	0.312 x 0.112	0.312 x 0.177	
1.5/16	0.24	0.375 x 0.110	0.375 x 0.213	
1.3/8	0.22	0.375 x 0.110	0.375 x 0.213	
1.7/16	0.21	0.375 x 0.110	0.375 x 0.213	
1.1/2	0.19	0.375 x 0.110	0.375 x 0.213	
1.9/16	0.17	0.438 x 0.134	0.438 x 0.248	
1.5/8	0.16	0.438 x 0.134	0.438 x 0.248	
1.11/16	0.15	0.438 x 0.134	0.438 x 0.248	

† Net weight including screws.

Keyways are parallel and in accordance with BS46: Part 1:1958, with the exception of those marked* which are shallower.

Depth of key measured at centre

Taper Bushes - Imperial

1615

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
1/2	0.58	0.125 x 0.060	0.125 x 0.072	
5/8	0.56	0.188 x 0.088	0.188 x 0.107	
3/4	0.54	0.188 x 0.088	0.188 x 0.107	
7/8	0.51	0.250 x 0.115	0.250 x 0.142	
1	0.48	0.250 x 0.115	0.250 x 0.142	
1.1/8	0.44	0.312 x 0.112	0.312 x 0.177	
1.1/4	0.40	0.312 x 0.112	0.312 x 0.177	
1.5/16	0.37	0.375 x 0.110	0.375 x 0.213	
1.3/8	0.35	0.375 x 0.110	0.375 x 0.213	
1.7/16	0.32	0.375 x 0.110	0.375 x 0.213	
1.1/2	0.30	0.375 x 0.110	0.375 x 0.213	
1.5/8*	0.26	0.438 x 0.103*	0.438 x 0.248	

2012

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
7/16	0.79	0.125 x 0.060	0.125 x 0.072	
9/16	0.77	0.188 x 0.088	0.188 x 0.107	
5/8	0.76	0.188 x 0.088	0.188 x 0.107	
11/16	0.75	0.188 x 0.088	0.188 x 0.107	
3/4	0.74	0.188 x 0.088	0.188 x 0.107	
13/16	0.72	0.250 x 0.115	0.250 x 0.142	
7/8	0.71	0.250 x 0.115	0.250 x 0.142	
15/16	0.70	0.250 x 0.115	0.250 x 0.142	
1	0.69	0.250 x 0.115	0.250 x 0.142	
1.1/16	0.67	0.312 x 0.112	0.312 x 0.177	
1.1/8	0.65	0.312 x 0.112	0.312 x 0.177	
1.3/16	0.64	0.312 x 0.112	0.312 x 0.177	
1.1/4	0.62	0.312 x 0.112	0.312 x 0.177	
1.5/16	0.60	0.375 x 0.110	0.375 x 0.213	
1.3/8	0.58	0.375 x 0.110	0.375 x 0.213	
1.7/16	0.56	0.375 x 0.110	0.375 x 0.213	
1.1/2	0.54	0.375 x 0.110	0.375 x 0.213	
1.9/16	0.52	0.438 x 0.134	0.438 x 0.248	
1.5/8	0.49	0.438 x 0.134	0.438 x 0.248	
1.11/16	0.47	0.438 x 0.134	0.438 x 0.248	
1.3/4	0.44	0.438 x 0.134	0.438 x 0.248	
1.13/16	0.42	0.500 x 0.131	0.500 x 0.283	
1.7/8	0.39	0.500 x 0.131	0.500 x 0.283	
1.15/16	0.36	0.500 x 0.131	0.500 x 0.283	
2	0.35	0.500 x 0.131	0.500 x 0.283	

2517

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
3/4	1.64	0.188 x 0.088	0.188 x 0.107	
13/16	1.62	0.250 x 0.115	0.250 x 0.142	
7/8	1.61	0.250 x 0.115	0.250 x 0.142	
15/16	1.59	0.250 x 0.115	0.250 x 0.142	
1	1.57	0.250 x 0.115	0.250 x 0.142	
1.1/16	1.55	0.312 x 0.112	0.312 x 0.177	
1.1/8	1.53	0.312 x 0.112	0.312 x 0.177	
1.3/16	1.51	0.312 x 0.112	0.312 x 0.177	
1.1/4	1.48	0.312 x 0.112	0.312 x 0.177	
1.5/16	1.45	0.375 x 0.110	0.375 x 0.213	
1.3/8	1.42	0.375 x 0.110	0.375 x 0.213	
1.7/16	1.39	0.375 x 0.110	0.375 x 0.213	
1.1/2	1.36	0.375 x 0.110	0.375 x 0.213	
1.9/16	1.33	0.438 x 0.134	0.438 x 0.248	
1.5/8	1.30	0.438 x 0.134	0.438 x 0.248	
1.11/16	1.26	0.438 x 0.134	0.438 x 0.248	
1.3/4	1.23	0.438 x 0.134	0.438 x 0.248	
1.13/16	1.19	0.500 x 0.131	0.500 x 0.263	
1.7/8	1.15	0.500 x 0.131	0.500 x 0.263	
1.15/16	1.11	0.500 x 0.131	0.500 x 0.263	
2	1.07	0.500 x 0.131	0.500 x 0.283	
2.1/8	0.99	0.625 x 0.185	0.625 x 0.354	
2.3/16	0.94	0.625 x 0.185	0.625 x 0.354	
2.1/4	0.90	0.625 x 0.185	0.625 x 0.354	
2.5/16	0.85	0.625 x 0.185	0.625 x 0.354	
2.3/8	0.80	0.625 x 0.185	0.625 x 0.354	
2.7/16	0.75	0.625 x 0.185	0.625 x 0.354	
2.1/2	0.70	0.625 x 0.185	0.625 x 0.354	

2525

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
7/8	2.12	0.250 x 0.115	0.250 x 0.142	
1	2.07	0.250 x 0.115	0.250 x 0.142	
1.1/8	2.01	0.312 x 0.112	0.312 x 0.177	
1.1/4	1.93	0.312 x 0.112	0.312 x 0.177	
1.3/8	1.86	0.375 x 0.110	0.375 x 0.213	
1.1/2	1.77	0.375 x 0.110	0.375 x 0.213	
1.5/8	1.68	0.438 x 0.134	0.438 x 0.248	
1.3/4	1.58	0.438 x 0.134	0.438 x 0.248	
1.7/8	1.47	0.500 x 0.131	0.500 x 0.283	
2	1.36	0.500 x 0.131	0.500 x 0.283	
2.1/8	1.23	0.625 x 0.185	0.625 x 0.364	
2.1/4	1.10	0.625 x 0.185	0.625 x 0.354	
2.3/8	0.97	0.625 x 0.185	0.625 x 0.354	
2.1/2	0.82	0.625 x 0.153*	0.625 x 0.354	

† Net weight including screws.

Keyways are parallel and in accordance with BS46: Part 1:1958, with the exception of those marked* which are shallower.

Depth of key measured at centre

Taper Bushes - Imperial

3020

Bore	Weight	Keyseat	
	kg †	Bush	Shaft
1.1/16	2.85	0.312 x 0.112	0.212 x 0.177
1.3/16	2.80	0.312 x 0.112	0.212 x 0.177
1.1/4	2.75	0.312 x 0.112	0.212 x 0.177
1.5/16	2.72	0.375 x 0.110	0.375 x 0.213
1.3/8	2.69	0.375 x 0.110	0.375 x 0.213
1.7/16	2.65	0.375 x 0.110	0.375 x 0.213
1.1/2	2.62	0.375 x 0.110	0.375 x 0.213
1.9/16	2.59	0.438 x 0.134	0.438 x 0.248
1.5/8	2.55	0.438 x 0.134	0.438 x 0.248
1.11/16	2.51	0.438 x 0.134	0.438 x 0.248
1.3/4	2.47	0.438 x 0.134	0.438 x 0.248
1.13/16	2.43	0.500 x 0.131	0.500 x 0.283
1.7/8	2.38	0.500 x 0.131	0.500 x 0.283
1.15/16	2.33	0.500 x 0.131	0.500 x 0.283
2	2.29	0.500 x 0.131	0.500 x 0.283
2.1/16	2.24	0.625 x 0.185	0.625 x 0.354
2.1/8	2.19	0.625 x 0.185	0.625 x 0.354
2.3/16	2.14	0.625 x 0.185	0.625 x 0.354
2.1/4	2.09	0.625 x 0.185	0.625 x 0.354
2.5/16	2.04	0.625 x 0.185	0.625 x 0.354
2.3/8	1.98	0.625 x 0.185	0.625 x 0.354
2.7/16	1.92	0.625 x 0.185	0.625 x 0.354
2.1/2	1.86	0.625 x 0.185	0.625 x 0.354
2.9/16	1.80	0.750 x 0.209	0.750 x 0.424
2.5/8	1.74	0.750 x 0.209	0.750 x 0.424
2.11/16	1.68	0.750 x 0.209	0.750 x 0.424
2.3/4	1.61	0.750 x 0.209	0.750 x 0.424
2.13/16	1.55	0.750 x 0.209	0.750 x 0.424
2.7/8	1.48	0.750 x 0.209	0.750 x 0.424
2.15/16	1.41	0.750 x 0.209	0.750 x 0.424
3	1.34	0.750 x 0.209	0.750 x 0.424

3030

Bore	Weight	Keyseat	
	kg †	Bush	Shaft
1.1/4	3.87	0.312 x 0.112	0.312 x 0.177
1.3/8	3.77	0.375 x 0.110	0.375 x 0.213
1.1/2	3.67	0.375 x 0.110	0.375 x 0.213
1.5/8	3.56	0.438 x 0.134	0.438 x 0.248
1.11/16	3.50	0.438 x 0.134	0.438 x 0.248
1.3/4	3.44	0.438 x 0.134	0.438 x 0.248
1.13/16	3.38	0.500 x 0.131	0.500 x 0.283
1.7/8	3.31	0.500 x 0.131	0.500 x 0.283
1.15/16	3.24	0.500 x 0.131	0.500 x 0.283
2	3.17	0.500 x 0.131	0.500 x 0.283
2.1/16	3.09	0.625 x 0.185	0.625 x 0.354
2.1/8	3.02	0.625 x 0.185	0.625 x 0.354
2.3/16	2.95	0.625 x 0.185	0.625 x 0.354
2.1/4	2.87	0.625 x 0.185	0.625 x 0.354
2.5/16	2.77	0.625 x 0.185	0.625 x 0.354
2.3/8	2.70	0.625 x 0.185	0.625 x 0.354
2.7/16	2.61	0.625 x 0.185	0.625 x 0.354
2.1/2	2.53	0.625 x 0.185	0.625 x 0.354
2.9/16	2.44	0.750 x 0.209	0.750 x 0.424
2.5/8	2.35	0.750 x 0.209	0.750 x 0.424
2.11/16	2.25	0.750 x 0.209	0.750 x 0.424
2.3/4	2.16	0.750 x 0.209	0.750 x 0.424
2.13/16	2.06	0.750 x 0.209	0.750 x 0.424
2.7/8	1.96	0.750 x 0.209	0.750 x 0.424
2.15/16	1.85	0.750 x 0.209	0.750 x 0.424
3	1.75	0.750 x 0.209	0.750 x 0.424

† Net weight including screws.

Keyways are parallel and in accordance with BS46: Part 1:1958, with the exception of those marked* which are shallower.

Depth of key measured at centre

Taper Bushes - Imperial

3525

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
1.1/2	4.83	0.375 x 0.110	0.375 x 0.213	
1.5/8	4.74	0.438 x 0.134	0.438 x 0.248	
1.9/16	4.71	0.438 x 0.134	0.438 x 0.248	
1.11/16	4.67	0.438 x 0.134	0.438 x 0.248	
1.3/4	4.64	0.438 x 0.134	0.438 x 0.248	
1.13/16	4.59	0.500 x 0.131	0.500 x 0.283	
1.7/8	4.53	0.500 x 0.131	0.500 x 0.283	
1.15/16	4.48	0.500 x 0.131	0.500 x 0.283	
2	4.41	0.500 x 0.131	0.500 x 0.283	
2.1/16	4.35	0.625 x 0.185	0.625 x 0.354	
2.1/8	4.29	0.625 x 0.185	0.625 x 0.354	
2.3/16	4.23	0.625 x 0.185	0.625 x 0.354	
2.1/4	4.16	0.625 x 0.185	0.625 x 0.354	
2.5/16	4.09	0.625 x 0.185	0.625 x 0.354	
2.3/8	4.02	0.625 x 0.185	0.625 x 0.354	
2.7/16	3.95	0.625 x 0.185	0.625 x 0.354	
2.1/2	3.88	0.625 x 0.185	0.625 x 0.354	
2.9/16	3.81	0.750 x 0.209	0.750 x 0.424	
2.5/8	3.73	0.750 x 0.209	0.750 x 0.424	
2.11/16	3.65	0.750 x 0.209	0.750 x 0.424	
2.3/4	3.57	0.750 x 0.209	0.750 x 0.424	
2.13/16	3.48	0.750 x 0.209	0.750 x 0.424	
2.7/8	3.40	0.750 x 0.209	0.750 x 0.424	
2.15/16	3.32	0.750 x 0.209	0.750 x 0.424	
3	3.23	0.750 x 0.209	0.750 x 0.424	
3.1/16	3.14	0.875 x 0.264	0.875 x 0.495	
3.1/8	3.04	0.875 x 0.264	0.875 x 0.495	
3.3/16	2.95	0.875 x 0.264	0.875 x 0.495	
3.1/4	2.85	0.875 x 0.264	0.875 x 0.495	
3.5/16	2.76	0.875 x 0.264	0.875 x 0.495	
3.3/8	2.66	0.875 x 0.264	0.875 x 0.495	
3.7/16	2.55	0.875 x 0.264	0.875 x 0.495	
3.1/2	2.45	0.875 x 0.264	0.875 x 0.495	
3.9/16	2.35	1.000 x 0.318	1.000 x 0.566	
3.11/16	2.25	1.000 x 0.318	1.000 x 0.566	
3.3/4*	2.15	1.000 x 0.245*	1.000 x 0.566	
3.13/16*	1.99	1.000 x 0.245*	1.000 x 0.566	
3.15/16*	1.82	1.000 x 0.155*	1.000 x 0.566	
4*	1.66	1.000 x 0.155*	1.000 x 0.566	

3535

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
1.1/2	6.43	0.375 x 0.110	0.375 x 0.213	
1.9/16	6.36	0.438 x 0.134	0.438 x 0.248	
1.5/8	6.30	0.438 x 0.134	0.438 x 0.248	
1.11/16	6.23	0.438 x 0.134	0.438 x 0.248	
1.3/4	6.16	0.438 x 0.134	0.438 x 0.248	
1.13/16	6.09	0.500 x 0.131	0.500 x 0.283	
1.7/8	6.01	0.500 x 0.131	0.500 x 0.283	
1.15/16	5.93	0.500 x 0.131	0.500 x 0.283	
2	5.85	0.500 x 0.131	0.500 x 0.283	
2.1/16	5.77	0.625 x 0.185	0.625 x 0.354	
2.1/8	5.68	0.625 x 0.185	0.625 x 0.354	
2.3/16	5.59	0.625 x 0.185	0.625 x 0.354	
2.1/4	5.49	0.625 x 0.185	0.625 x 0.354	
2.5/16	5.39	0.625 x 0.185	0.625 x 0.354	
2.3/8	5.30	0.625 x 0.185	0.625 x 0.354	
2.7/16	5.20	0.625 x 0.185	0.625 x 0.354	
2.1/2	5.10	0.625 x 0.185	0.625 x 0.354	
2.9/16	4.99	0.750 x 0.209	0.750 x 0.424	
2.5/8	4.88	0.750 x 0.209	0.750 x 0.424	
2.11/16	4.77	0.750 x 0.209	0.750 x 0.424	
2.3/4	4.66	0.750 x 0.209	0.750 x 0.424	
2.13/16	4.55	0.750 x 0.209	0.750 x 0.424	
2.7/8	4.43	0.750 x 0.209	0.750 x 0.424	
2.15/16	4.30	0.750 x 0.209	0.750 x 0.424	
3	4.18	0.750 x 0.209	0.750 x 0.424	
3.1/16	4.06	0.875 x 0.264	0.875 x 0.495	
3.1/8	3.93	0.875 x 0.264	0.875 x 0.495	
3.3/16	3.80	0.875 x 0.264	0.875 x 0.495	
3.1/4	3.66	0.875 x 0.264	0.875 x 0.495	
3.5/16	3.53	0.875 x 0.264	0.875 x 0.495	
3.3/8	3.39	0.875 x 0.264	0.875 x 0.495	
3.7/16	3.24	0.875 x 0.264	0.875 x 0.495	
3.1/2	3.10	0.875 x 0.264	0.875 x 0.495	

4030

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
1.3/4	7.38	0.438 x 0.134	0.438 x 0.248	
1.7/8	7.25	0.500 x 0.131	0.500 x 0.283	
2	7.12	0.500 x 0.131	0.500 x 0.283	
2.1/8	6.97	0.625 x 0.185	0.625 x 0.354	
2.1/4	6.81	0.625 x 0.185	0.625 x 0.354	
2.3/8	6.65	0.625 x 0.185	0.625 x 0.354	
2.1/2	6.47	0.625 x 0.185	0.625 x 0.354	
2.5/8	6.29	0.750 x 0.209	0.750 x 0.424	
2.3/4	6.10	0.750 x 0.209	0.750 x 0.424	
2.7/8	5.90	0.750 x 0.209	0.750 x 0.424	
3	5.69	0.750 x 0.209	0.750 x 0.424	
3.1/8	5.47	0.875 x 0.264	0.875 x 0.495	
3.1/4	5.24	0.875 x 0.264	0.875 x 0.495	
3.3/8	5.01	0.875 x 0.264	0.875 x 0.495	
3.1/2	4.67	0.875 x 0.264	0.875 x 0.495	
3.3/4	4.25	1.000 x 0.318	1.000 x 0.566	
4	3.69	1.000 x 0.318	1.000 x 0.566	
4.1/4	3.30	1.250 x 0.366	1.250 x 0.707	
4.1/2*	2.63	1.250 x 0.255*	1.250 x 0.707	

† Net weight including screws.

Bold italic type indicates bushes made of **GGG Cast Iron**.

Keyways are parallel and in accordance with BS46:Part 1:1958, with the exception of those marked* which are shallower.

Depth of key measured at centre.

Taper Bushes - Imperial

4040

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
1.3/4	9.61	0.438 x 0.134	0.438 x 0.248	
1.7/8	9.43	0.500 x 0.131	0.500 x 0.283	
2	9.25	0.500 x 0.131	0.500 x 0.238	
2.1/16	9.15	0.625 x 0.185	0.625 x 0.354	
2.1/8	9.05	0.625 x 0.185	0.625 x 0.354	
2.3/16	8.95	0.625 x 0.185	0.625 x 0.354	
2.1/4	8.85	0.625 x 0.185	0.625 x 0.354	
2.5/16	8.74	0.625 x 0.185	0.625 x 0.354	
2.3/8	8.63	0.625 x 0.185	0.625 x 0.354	
2.7/16	8.51	0.625 x 0.185	0.625 x 0.354	
2.1/2	8.39	0.625 x 0.185	0.625 x 0.354	
2.9/16	8.27	0.750 x 0.209	0.750 x 0.424	
2.5/8	8.15	0.750 x 0.209	0.750 x 0.424	
2.11/16	8.03	0.750 x 0.209	0.750 x 0.424	
2.3/4	7.90	0.750 x 0.209	0.750 x 0.424	
2.13/16	7.77	0.750 x 0.209	0.750 x 0.424	
2.7/8	7.63	0.750 x 0.209	0.750 x 0.424	
2.15/16	7.49	0.750 x 0.209	0.750 x 0.424	
3	7.35	0.750 x 0.209	0.750 x 0.424	
3.1/16	7.21	0.875 x 0.264	0.875 x 0.495	
3.1/8	7.06	0.875 x 0.264	0.875 x 0.495	
3.3/16	6.91	0.875 x 0.264	0.875 x 0.495	
3.1/4	6.75	0.875 x 0.264	0.875 x 0.495	
3.5/16	6.59	0.875 x 0.264	0.875 x 0.495	
3.3/8	6.44	0.875 x 0.264	0.875 x 0.495	
3.7/16	6.28	0.875 x 0.264	0.875 x 0.495	
3.1/2	6.11	0.875 x 0.264	0.875 x 0.495	
3.9/16	5.72	1.000 x 0.318	1.000 x 0.566	
3.3/4	5.42	1.000 x 0.318	1.000 x 0.566	
3.11/16	5.24	1.000 x 0.318	1.000 x 0.566	
3.13/16	5.06	1.000 x 0.318	1.000 x 0.566	
3.15/16	4.88	1.000 x 0.318	1.000 x 0.566	
4	4.69	1.000 x 0.318	1.000 x 0.566	

4535

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
2.1/4	10.21	0.625 x 0.185	0.625 x 0.354	
2.3/8	10.01	0.625 x 0.185	0.625 x 0.354	
2.1/2	9.81	0.625 x 0.185	0.625 x 0.354	
2.5/8	9.60	0.750 x 0.209	0.750 x 0.424	
2.3/4	9.37	0.750 x 0.209	0.750 x 0.424	
2.7/8	9.14	0.750 x 0.209	0.750 x 0.424	
3	8.90	0.750 x 0.209	0.750 x 0.424	
3.1/8	8.64	0.875 x 0.264	0.875 x 0.495	
3.1/4	8.38	0.875 x 0.264	0.875 x 0.495	
3.3/8	8.10	0.875 x 0.264	0.875 x 0.495	
3.1/2	7.81	0.875 x 0.264	0.875 x 0.495	
3.3/4	7.21	1.000 x 0.318	1.000 x 0.566	
4	6.56	1.000 x 0.318	1.000 x 0.566	
4.1/4	5.88	1.250 x 0.366	1.250 x 0.707	
4.1/2	5.15	1.250 x 0.366	1.250 x 0.707	
4.3/4	4.65	1.250 x 0.366	1.250 x 0.707	
5*	3.78	1.250 x 0.358*	1.250 x 0.707	

4545

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
2.3/16	13.69	0.625 x 0.185	0.625 x 0.354	
2.1/4	13.56	0.625 x 0.185	0.625 x 0.354	
2.5/16	13.44	0.625 x 0.185	0.625 x 0.354	
2.3/8	13.32	0.625 x 0.185	0.625 x 0.354	
2.7/16	13.19	0.625 x 0.185	0.625 x 0.354	
2.1/2	13.06	0.625 x 0.185	0.625 x 0.354	
2.5/8	12.78	0.750 x 0.209	0.750 x 0.424	
2.3/4	12.50	0.750 x 0.209	0.750 x 0.424	
2.7/8	12.19	0.750 x 0.209	0.750 x 0.424	
3	11.88	0.750 x 0.209	0.750 x 0.424	
3.1/16	11.72	0.875 x 0.264	0.875 x 0.495	
3.1/8	11.55	0.875 x 0.264	0.875 x 0.495	
3.1/4	11.21	0.875 x 0.264	0.875 x 0.495	
3.3/8	10.86	0.875 x 0.264	0.875 x 0.495	
3.7/16	10.68	0.875 x 0.264	0.875 x 0.495	
3.1/2	10.49	0.875 x 0.264	0.875 x 0.495	
3.9/16	10.11	1.000 x 0.318	1.000 x 0.566	
3.3/4	9.72	1.000 x 0.318	1.000 x 0.566	
3.13/16	9.28	1.000 x 0.318	1.000 x 0.566	
4	8.89	1.000 x 0.318	1.000 x 0.566	
4.1/4	8.00	1.250 x 0.366	1.250 x 0.707	
4.5/16	7.54	1.250 x 0.366	1.250 x 0.707	
4.1/2	7.07	1.250 x 0.366	1.250 x 0.707	

5040

Bore	Weight		Keyseat	
	kg †	Bush	Shaft	
3	12.88	0.750 x 0.209	0.750 x 0.424	
3.1/8	12.59	0.875 x 0.264	0.875 x 0.495	
3.1/4	12.29	0.875 x 0.264	0.875 x 0.495	
3.3/8	11.97	0.875 x 0.264	0.875 x 0.495	
3.1/2	11.65	0.875 x 0.264	0.875 x 0.495	
3.3/4	10.96	1.000 x 0.318	1.000 x 0.566	
4	10.22	1.000 x 0.318	1.000 x 0.566	
4.1/4	9.44	1.250 x 0.366	1.250 x 0.707	
4.1/2	8.61	1.250 x 0.366	1.250 x 0.707	
4.3/4	7.73	1.250 x 0.366	1.250 x 0.707	
5	6.80	1.250 x 0.366	1.250 x 0.707	

† Net weight including screws.

Bold italic type indicates bushes made of **GGG Cast Iron**.

Keyways are parallel and in accordance with BS46:Part 1:1958, with the exception of those marked* which are shallower.

Depth of key measured at centre.

Taper Bushes - Imperial

5050

Bore	Weight	Keyseat	
	kg †	Bush	Shaft
3	15.66	0.750 x 0.209	0.750 x 0.424
3.1/8	15.30	0.875 x 0.264	0.875 x 0.495
3.1/4	14.92	0.875 x 0.264	0.875 x 0.495
3.7/16	14.52	0.875 x 0.264	0.875 x 0.495
3.1/2	14.12	0.875 x 0.264	0.875 x 0.495
3.3/4	13.26	1.000 x 0.318	1.000 x 0.566
4	12.34	1.000 x 0.318	1.000 x 0.566
4.1/4	11.36	1.250 x 0.366	1.250 x 0.707
4.7/16	10.84	1.250 x 0.366	1.250 x 0.707
4.1/2	10.32	1.250 x 0.366	1.250 x 0.707
4.3/4	9.22	1.250 x 0.366	1.250 x 0.707
5	8.06	1.250 x 0.366	1.250 x 0.707

† Net weight including screws.

Keyways are parallel and in accordance with BS46:Part 1:1958, with the exception of those marked* which are shallower.

Depth of key measured at centre.

NOTE

Challenge can manufacture larger taper bush sizes including 6050, 7060 and 8065. These are available to order with the following maximum bores:

6050 150 mm or 6"

7060 175 mm or 7"

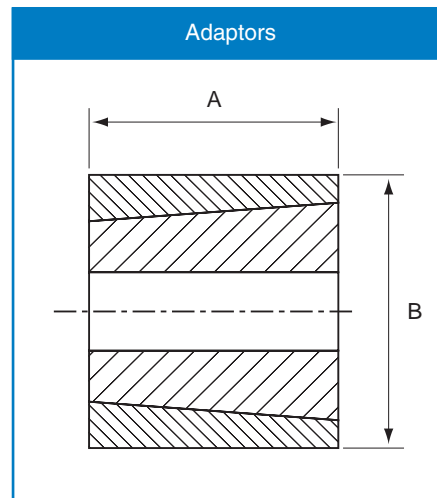
8065 200 mm or 8"

Pilot bore taper bushes in these sizes are also available.

Adaptors

Adaptors

Hub Type	A	B	Key Section
1008PM	22	45	-
1008KM	22	45	5 x 5
1210PM	25	60	-
1210KM	25	60	6 x 6
1610PM	25	70	-
1610KM	25	70	10 x 8
2517PM	45	105	-
2517KM	45	105	16 x 10
3030PM	76	130	-
3030KM	76	130	20 x 12
3535PM	90	160	-
3535KM	90	160	22 x 12
4040PM	102	185	-
4040KM	102	185	24 x 12



Adaptors for Pilot Bored components allow them to take standard Taper Bushes. This added convenience removes the need to drill, tap and taper-bore.

PM = Plain outside diameter

KM = Keyway on outside diameter allowing additional torque transmission

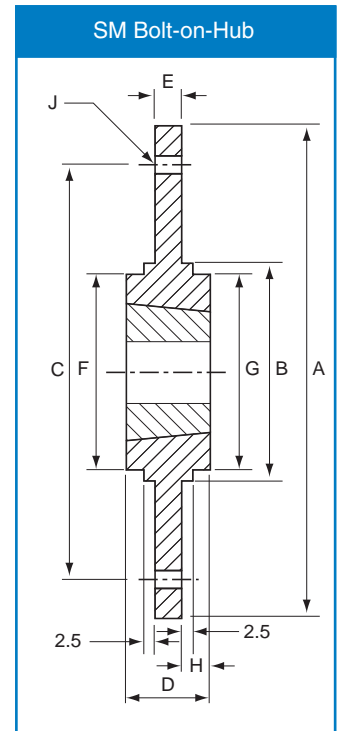
Bolt-on-Hubs

Taper Bore Bolt-on-Hubs are designed for use with the universally accepted Taper Bush. They provide a convenient means of securing fan rotors, impellers, agitators and other devices which must be fastened firmly to shafts.

Challenge Bolt-on-Hubs, type BF and SM, complete the range. They are manufactured from GG22 cast iron and are phosphated for extra rust protection.

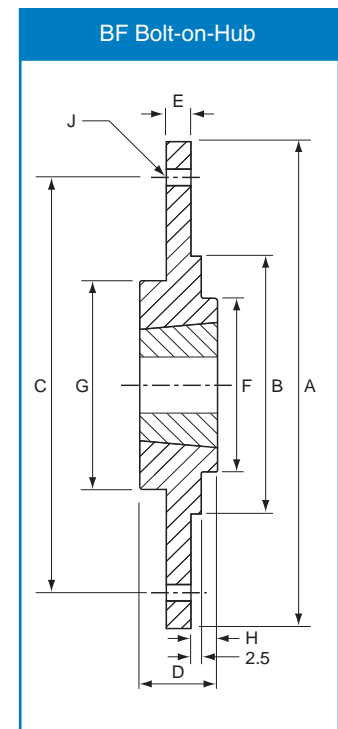
SM Bolt-on-Hubs

Hub Reference	Bush Number	A	B	C	D	E	F/G	H	J (No. x Diam)
SM 12	1210	180	90	135	26	6.5	80	9.75	6 x 7.5
SM 16-1	1610	200	110	150	26	7.5	90	9.25	6 x 7.5
SM 16-2	1615	200	110	150	38	7.5	90	15.25	6 x 7.5
SM 20	2012	270	140	190	32	8.5	100	11.75	6 x 9.5
SM 25	2517	340	170	240	45	9.5	119	17.75	8 x 11.5
SM 30-1	3020	430	220	300	51	13.5	147	18.75	8 x 13.5
SM 30-2	3020	485	250	340	51	13.5	147	18.75	8 x 13.5



BF Bolt-on-Hubs

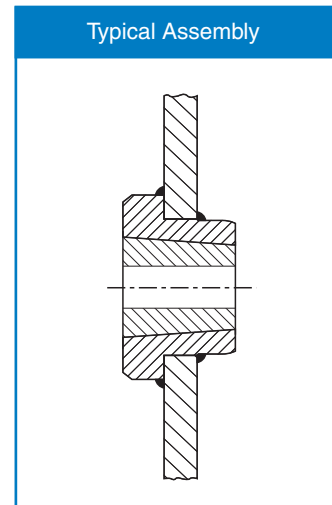
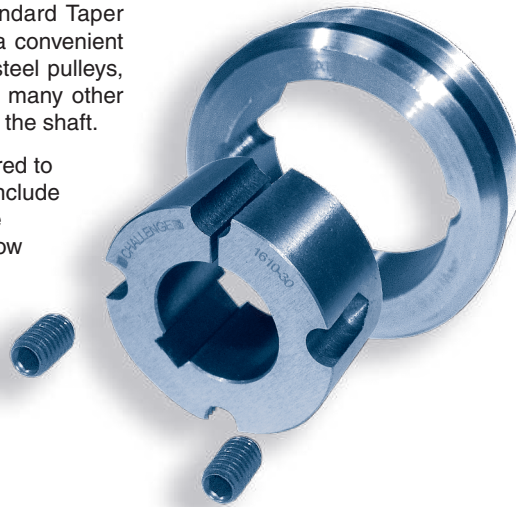
Hub Reference	Bush Number	A	B	C	D	E	F	G	H	J (No. x Diam)
BF12	1210	120	80	100	25	6.5	74	80	10	6 x 6.5
BF16	1610	130	90	110	25	6.5	84	90	10	6 x 6.5
BF20	2012	145	100	125	32	8.5	99	100	13	6 x 8.5
BF25	2517	185	130	155	44	11.5	120	119	20	6 x 10.5
BF30	3020	220	165	190	50	11.5	146	147	20	6 x 13.0



Weld-on-Hubs

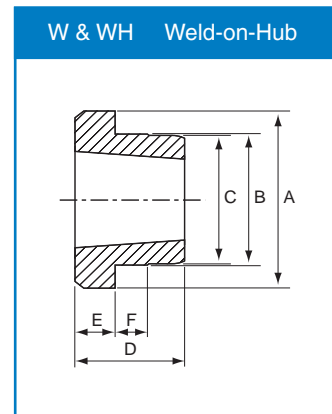
Taper Bore Weld-on-Hubs are made out of steel, drilled, tapped and taper bored to receive standard Taper Bushes. The extended flange provides a convenient means of welding hubs into fan rotors, steel pulleys, plate sprockets, impellers, agitators and many other devices which must be firmly fastened to the shaft.

Challenge Weld-on-Hubs are manufactured to complement the Taper Bush range and include W, WH and WM Taper Bore Hubs. All are manufactured to world standards using low carbon steel.



W Weld-on-Hubs

Hub Reference	Bush Size	A	B	C	D	E	F	F1	X
W12	1215	73	64	63	38	16	10	-	-
W16	1615	83	73	72	38	16	10	-	-
W25	2517	127	111	110	44	19	13	-	-
WG30	3030	150	133	133	76	25	19	23	23
WG35	3535	184	159	158	89	32	25	30	30
WG40	4040	225	197	196	102	32	32	34	34
WG45	4545	254	222	221	114	38	38	38	38
WG50	5050	276	241	240	127	38	38	42	42
WG60	6050	375	343	342	127	38	38	42	42
WG70	7060	425	375	374	153	51	51	51	51
WG80	8065	445	394	393	165	51	51	55	55
WG100	10085	559	495	494	216	51	51	72	72

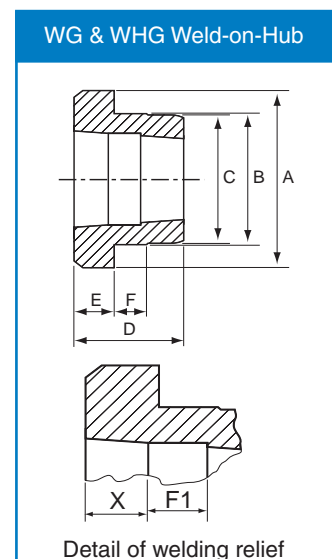


“G” notation represents welding relief.

WH Weld-on-Hubs

Hub Reference	Bush Size	A	B	C	D	E	F	F1	X
WH12	1210	70	65	64.5	25	9	10	-	-
WH16-1	1610	80	75	74.5	25	9	10	-	-
WH20	2012	95	90	89.5	32	12	12	-	-
WH25	2517	115	110	109.5	44	19	15	-	-
WHG30-2	3020	145	140	139.5	50	20	15	17	17
WHG35	3525	190	180	179.5	65	25	25	22	22
WHG40-1	4030	200	190	189.0	76	32	30	25	25
WHG40-2	4040	200	190	189.5	101	32	30	34	34
WHG45-1	4535	210	200	199.5	89	40	30	30	30
WHG45-2	4545	210	200	199.5	114	40	30	38	38
WHG50-1	5040	230	220	219.5	102	40	35	34	34
WHG50-2	5050	230	220	219.5	127	40	35	42	42

“G” notation represents welding relief.

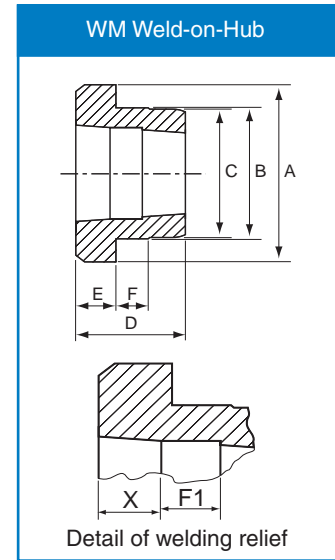


Weld-on-Hubs

WM Weld-on-Hubs

Hub Reference	Bush Size	A	B	C	D	E	F	F1	X
WMG12	1210	70	60	58	26	9	10	9	9
WMG16-1	1610	83	70	68	26	9	10	9	9
WMG16-2	1615	83	70	68	38	16	11	13	13
WMG20	2012	95	90	88	32	12	12	11	11
WMG25	2517	127	110	108	44	19	13	15	15
WMG30-2	3020	152	130	125	50	20	15	17	17
WMG30-3	3030	152	130	125	76	25	19	25	25
WMG35	3535	184	155	151	89	32	25	30	30
WMG40	4040	225	195	187	102	32	32	34	34
WMG45	4545	254	220	213	114	38	38	38	38
WMG50	5050	276	242	228	127	38	38	42	42

“G” notation represents welding relief.



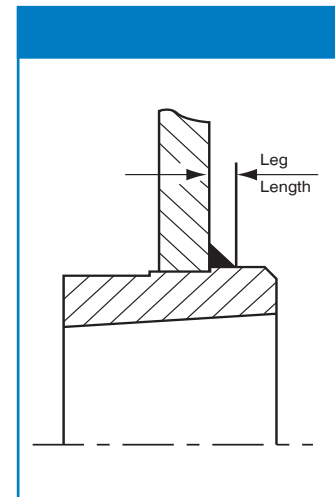
WELD-ON-HUB WELDING INSTRUCTIONS

Challenge Weld-on-Hubs are made from steel, drilled, tapped and taper bored to receive standard Taper Bushes. The external flange provides a convenient means of welding hubs into fan rotors, steel pulleys, plate sprockets, impellers and many other devices which need to be firmly fastened to a shaft.

It is recommended that a continuous 45° mitre weld be used, working on the larger hub diameter section only. To ensure accuracy in the welded assembly it is essential to apply only sufficient weld to achieve sufficient strength. Excess weld should not be necessary for normal use which, due to greater heat input, gives a higher risk of distortion. The Table A shows the recommended continuous fillet weld requirements for each hub size.

For electric arc welding, low hydrogen electrodes are recommended.

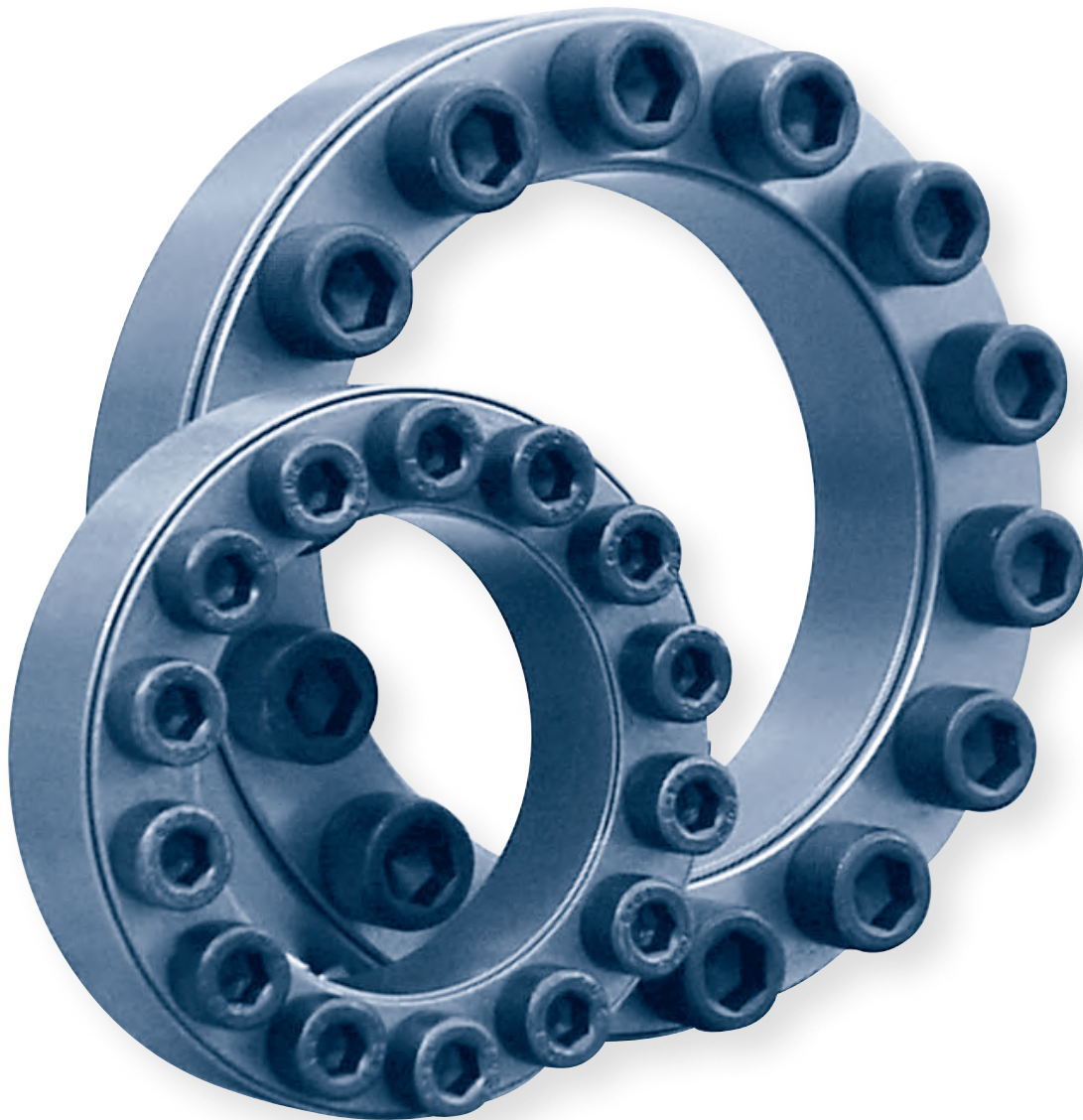
Please note: the “G” reference on Challenge welding-on-hubs represents a welding relief inside the bore to help avoid problems with distortion caused by welding hook.
(see F1)



Hub Size.	Leg Length mm
WH12	4
WH16	4
WH20	5
WH25	5
WH30	6
WH35	6
WH40	8
WH45	8
WH50	10

Table A

Cone Clamping Elements



Cone Clamping Elements

For SHAFTLOCK 01:

To Install

- 1 Ensure the hub and shaft surfaces are clean and degreased.
- 2 Apply a thin coating of light machine oil to screw threads and conical surfaces (do not use any molybdenum disulphide based or E.P. oils).
- 3 Loosely assemble the clamping element into the required position and tighten the clamping screws in diagonal sequence to the requisite torque, Ts.
- 4 If the application is subject to corrosive environmental conditions, apply grease to protect screw heads etc.

To Remove

- 1 Loosen all of the clamping screws in the same diagonal sequence as assembly.
- 2 The clamping element should now self release.
- 3 If necessary, tap the screws lightly with a soft hammer.
- 4 If the clamping element tapers still don't release, remove the lighter coloured screws and replace them with metric screws one size larger.
- 5 Tighten them sequentially to break the clamping ring cone tapers.
- 6 Lubricate all screws with a light machine oil for the future use of the Challenge Cone Clamping Element.

For SHAFTLOCK 02, 04, 07:

To Install

- 1 Ensure the hub and shaft surfaces are clean and degreased.
- 2 Apply a thin coating of light machine oil to screw threads and conical surfaces (do not use any molybdenum disulphide based or E.P. oils).
- 3 Loosely assemble the clamping element into the required position and tighten the clamping screws in diagonal sequence to the requisite torque, Ts.
- 4 If the application is subject to corrosive environmental conditions, apply grease to protect screw heads etc.

To Remove

- 1 Loosen all of the clamping screws in the same diagonal sequence as assembly.
- 2 The clamping element should now self release.
- 3 If necessary, tap the screws lightly with a soft hammer.
- 4 If the clamping element tapers still don't release, remove some of the bolts and insert them into threaded removal holes.
- 5 Tighten them sequentially to break the clamping ring cone tapers.
- 6 Lubricate all screws with a light machine oil for the future use of the Challenge Cone Clamping Element.

For SHAFTLOCK 19:

To Install

- 1 Ensure the hub and shaft surfaces are clean and degreased.
- 2 Apply a thin coating of light machine oil to screw threads and conical surfaces (do not use any molybdenum disulphide based or E.P. oils).
- 3 Align all of the component slots and loosely assemble the clamping element into the required position.
- 4 Tighten the clamping screws in diagonal sequence to the requisite torque, Ts.
- 5 If the application is subject to corrosive environmental conditions, apply grease to protect screw heads etc.

To Remove

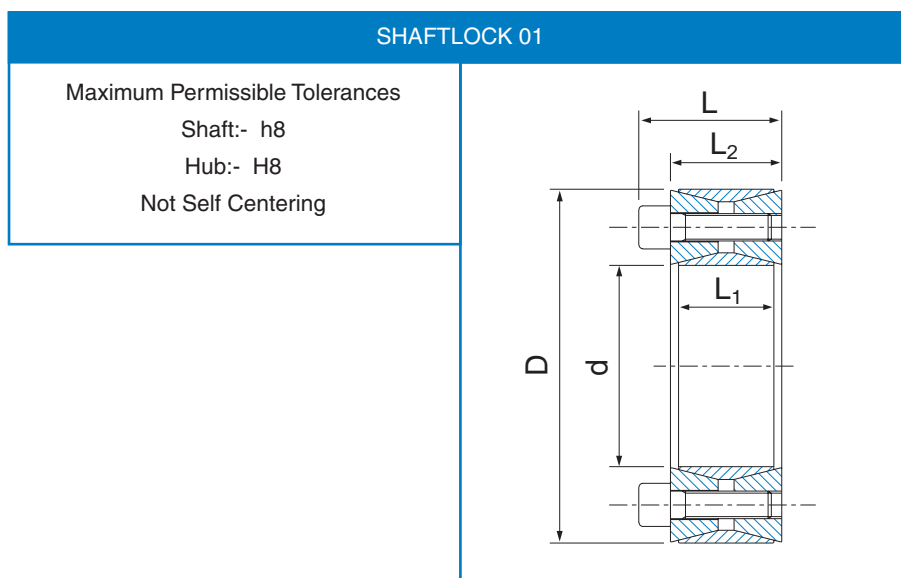
- 1 Loosen all of the clamping screws in the same diagonal sequence as assembly.
- 2 Remove some bolts and insert them into the threaded hole that passes through the front clamping element cone and the centre section plate to reach the surface of the rear cone.
- 3 Tighten the screws sequentially to release the rear cone.
- 4 Remove some bolts and insert them into the threaded hole in the front cone so that they reach the centre section plate.
- 5 Tighten the screws sequentially to release the front cone.
- 6 Lubricate all screws with a light machine oil for the future use of the Challenge Cone Clamping Element.

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Cone Clamping Elements

SHAFTLOCK 01 Clamping Element

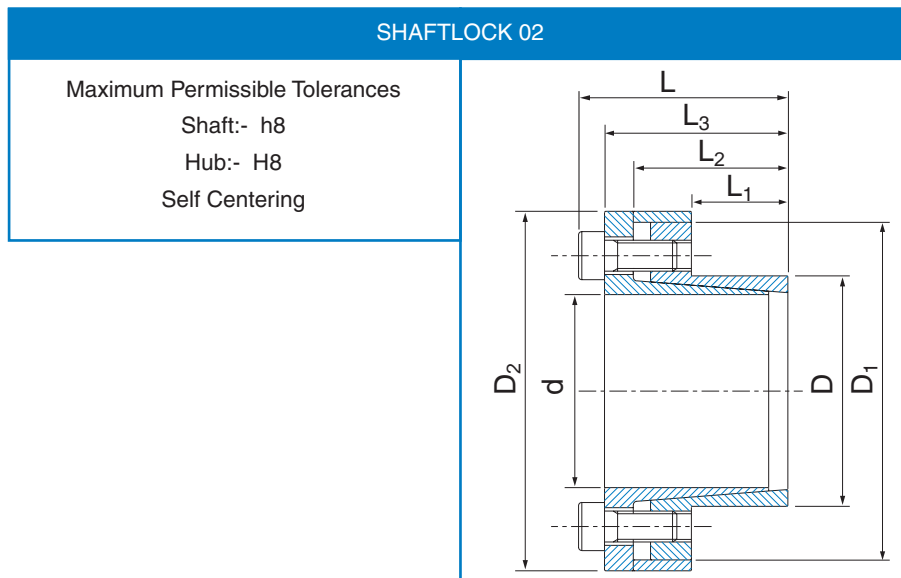
Dimensions					Transmission Axial		Contact Pressure		Locking Screws (DIN 912-12.9)		
d	D	L ₁	L ₂	L	Torque Mt	Force Ft	Shaft P	Hub P ₁	Qty.	Size	Tightening Torque T _s
mm	mm	mm	mm	mm	Nm	kN	N/mm ²	N/mm ²			Nm
19	47	17	20	26	299	26.8	220	93	8	M6x18	17
20	47	17	20	26	308	26.8	210	93	8	M6x18	17
22	47	17	20	26	325	26.8	207	96	8	M6x18	17
24	50	17	20	26	415	30.1	206	103	9	M6x18	17
25	50	17	20	26	432	30.1	206	103	9	M6x18	17
28	55	17	20	26	483	33.5	204	103	10	M6x18	17
30	55	17	20	26	518	33.5	190	103	10	M6x18	17
32	60	17	20	26	739	40.2	214	114	12	M6x18	17
35	60	17	20	26	808	40.2	196	114	12	M6x18	17
38	65	17	20	26	1025	46.9	204	122	14	M6x18	17
40	65	17	20	26	1079	46.9	200	122	14	M6x18	17
42	75	20	24	32	1768	73.2	228	125	12	M8x22	38
45	75	20	24	32	1894	73.2	208	125	12	M8x22	38
48	80	20	24	32	2019	73.2	190	110	12	M8x22	38
50	80	20	24	32	2105	73.2	189	115	12	M8x22	38
55	85	20	24	32	2700	85.4	200	130	14	M8x22	38
60	90	20	24	32	2944	85.4	180	122	14	M8x22	38
65	95	20	24	32	3646	97.6	191	130	16	M8x22	38
70	110	24	28	38	5405	134.4	211	132	14	M10x25	75
75	115	24	28	38	5750	134.4	194	128	14	M10x25	75
80	120	24	28	38	6095	134.4	182	124	14	M10x25	75
85	125	24	28	38	7475	153.6	196	133	16	M10x25	75
90	130	24	28	38	7935	153.6	181	128	16	M10x25	75
95	135	24	28	38	9430	172.8	196	139	18	M10x25	75
100	145	26	33	45	11351	197.4	198	139	14	M12x30	130
110	155	26	33	45	12420	187.4	181	128	14	M12x30	130
120	165	26	33	45	15525	225.6	187	139	16	M12x30	130
130	180	34	38	50	21045	282.0	168	119	20	M12x35	130
140	190	34	38	50	24955	310.1	168	128	22	M12x35	130
150	200	34	38	50	29095	338.4	170	128	24	M12x35	130
160	210	34	38	50	33695	366.6	171	132	26	M12x35	130
170	225	38	44	58	37950	389.0	162	123	22	M14x40	207
180	235	38	44	58	43700	424.0	168	128	24	M14x40	207
190	250	46	52	66	54050	495.0	154	114	28	M14x45	207
200	260	46	52	66	60950	531.0	157	118	30	M14x45	207
220	285	50	56	72	79810	631.0	152	117	26	M16X50	290



Cone Clamping Elements

SHAFTLOCK 02 Clamping Element

Dimensions								Transmission		Contact Pressure		Lock Screws (DIN912-129)		
d	D	L ₁	L ₂	L ₃	L	D ₂	D ₁	Torque Mt	Axial Force Ft	Shaft P	Hub P ₁	Qty.	Size	Tightening Torque Ts
mm	mm	mm	mm	mm	mm	mm	mm	Nm	kN	N/mm ²	N/mm ²			Nm
8	15	12	21	24	28	28	25	35	7.2	190.0	105.0	4	M4x10	5.2
9	16	14	23	27	31	32	28	37	7.2	150.0	92.0	4	M4x12	5.2
10	16	14	23	27	31	32	28	46	9.0	140.0	90.0	4	M4x12	5.2
11	18	14	23	27	31	34	30	58	9.0	174.8	106.8	4	M4x12	5.2
12	18	14	23	27	31	34	30	63	9.0	160.8	106.8	4	M4x12	5.2
14	23	14	23	27	31	39	35	74	9.0	137.4	83.6	4	M4x12	5.2
15	24	16	29	36	42	45	40	114	13.0	161.8	101.2	3	M6x18	17.0
16	24	16	29	36	42	45	40	121	13.0	151.7	101.2	3	M6x18	17.0
18	26	18	31	38	44	47	42	182	18.0	159.8	110.7	4	M6x18	17.0
19	27	18	31	38	44	48	43	192	18.0	151.4	106.6	4	M6x18	17.0
20	28	18	31	38	44	49	44	202	21.0	143.9	102.8	4	M6x18	17.0
22	32	25	38	45	51	54	48	267	21.0	112.8	77.6	4	M6x18	17.0
24	34	25	38	45	51	56	50	291	21.0	103.4	73.0	4	M6x18	17.0
25	34	25	38	45	51	56	50	302	21.0	99.3	73.0	4	M6x18	17.0
28	39	25	38	45	51	61	55	423	31.0	110.8	79.6	5	M6x18	17.0
30	41	25	38	45	51	63	57	545	31.0	124.1	90.8	6	M6x18	17.0
32	43	30	43	50	56	65	59	581	31.0	97.0	72.2	6	M6x18	17.0
35	47	30	43	50	56	69	63	848	42.0	118.9	88.0	8	M6x18	17.0
38	50	30	43	50	56	72	66	920	42.0	108.9	82.8	8	M6x18	17.0
40	53	32	45	52	58	75	69	1089	53.0	109.1	82.3	9	M6x18	17.0
42	55	32	45	52	58	77	71	1143	53.0	103.9	79.3	9	M6x18	17.0
45	59	40	56	64	72	85	79	2013	78.0	127.4	97.2	8	M8x22	42.0
48	62	40	56	64	72	88	82	2147	78.0	119.5	92.5	8	M8x22	42.0
50	65	50	66	74	82	92	85	2796	97.0	114.7	98.2	10	M8x22	42.0
55	71	50	66	74	82	98	91	3075	97.0	104.3	80.8	10	M8x22	42.0
60	77	50	66	74	82	104	97	3355	97.0	95.6	74.5	10	M8x22	42.0
65	84	50	66	74	82	111	104	3634	97.0	88.2	68.8	10	M8x22	42.0
70	90	60	80	91	101	122	115	4970	123.0	86.7	67.4	8	M10x25	84.0
75	95	60	80	91	101	126	119	6259	197.0	93.0	74.0	9	M10x25	84.0
80	100	65	85	96	106	131	124	8780	237.0	97.0	77.0	12	M10x25	84.0
85	106	65	85	96	106	137	130	9307	237.0	91.0	73.0	12	M10x25	84.0
90	112	65	85	96	106	143	136	11473	276.0	100.0	51.0	14	M10x25	84.0
95	120	65	85	96	106	153	144	12293	276.0	95.0	75.0	14	M10x25	84.0
100	125	65	89	102	114	162	153	15788	348.0	114.0	91.0	12	M12x30	145.0
110	140	70	94	107	119	177	168	17683	348.0	96.0	75.0	12	M12x30	145.0
120	155	90	114	127	139	195	185	26098	465.0	91.0	71.0	16	M12x30	145.0
130	165	90	114	127	139	205	195	27781	465.0	84.0	66.0	16	M12x30	145.0
140	175	90	114	127	139	215	205	29465	465.0	78.0	63.0	16	M12x30	145.0
150	185	90	114	127	139	225	215	31149	465.0	73.0	59.0	16	M12x30	145.0



All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Cone Clamping Elements

SHAFTLOCK 03 Clamping Element

Dimensions				Transmission Axial Force			Contact Pressure	
d	D	L	L ₁	Torque M _t Nm	F _a kN	F _t kN	Shaft P N/mm ²	Hub P ₁ N/mm ²
mm	mm	mm	mm					
8	11	4.5	3.7	0.97	4.3	2.9	98	73
10	13	4.5	3.7	1.37	12.1	6.9	98	75
12	15	4.5	3.7	1.64	12.4	9.8	98	78
13	16	4.5	3.7	1.80	12.7	12.0	98	79
14	18	6.3	5.3	2.74	20.4	19.2	98	76
15	19	6.3	5.3	2.94	23.5	22.1	98	77
16	20	6.3	5.3	3.14	23.9	25.1	98	78
17	21	6.3	5.3	3.33	24.2	28.3	98	79
18	22	6.3	5.3	3.53	24.8	31.8	98	80
19	24	6.3	5.3	3.72	29.1	35.3	98	77
20	25	6.3	5.3	3.92	29.5	39.2	98	78
22	26	6.3	5.3	4.31	28.3	47.0	98	83
24	28	6.3	5.3	4.70	29.4	56.8	98	84
25	30	6.3	5.3	4.90	31.8	60.8	98	81
28	32	6.3	5.3	5.49	31.9	76.4	98	86
30	35	6.3	5.3	5.88	34.8	88.2	98	84
32	36	6.3	5.3	6.27	35.9	100.0	98	87
35	40	7.0	6.0	7.74	44.8	136.0	98	86
36	42	7.0	6.0	7.94	47.3	144.0	98	84
38	44	7.0	6.0	8.43	48.8	160.0	98	84
40	45	8.0	6.6	9.75	57.6	195.0	98	87
42	48	8.0	6.6	10.30	61.4	216.0	98	86
45	52	10.0	8.6	14.30	90.3	321.0	98	85
48	55	10.0	8.6	15.30	92.7	367.0	98	85
50	57	10.0	8.6	15.90	94.7	397.0	98	86
55	62	10.0	8.6	17.40	99.7	480.0	98	87
56	64	12.0	10.4	21.60	125.6	603.0	98	86
60	68	12.0	10.4	23.00	130.9	692.0	98	86
63	71	12.0	10.4	24.20	134.6	764.0	98	87
65	73	12.0	10.4	25.00	134.9	813.0	98	87
70	79	14.0	12.2	31.60	172.4	1110.0	98	87
71	80	14.0	12.2	32.00	174.0	1140.0	98	87
75	84	14.0	12.2	33.80	185.7	1260.0	98	87
80	91	17.0	15.0	44.10	247.1	1770.0	98	86
90	101	17.0	15.0	50.00	266.2	2240.0	98	87
100	114	21.0	18.7	69.60	370.8	3450.0	98	86
110	124	21.0	18.7	76.40	406.1	4170.0	98	87
120	134	21.0	18.7	83.30	432.0	4950.0	98	88
130	148	28.0	25.3	122.00	640.8	7840.0	98	86
140	158	28.0	25.3	131.00	676.5	9110.0	98	87
150	168	28.0	25.3	140.00	713.0	10500.0	98	87

SHAFTLOCK 03

Maximum Permissible Tolerances

Up to 38mm
Shaft:- h6
Hub:- H7

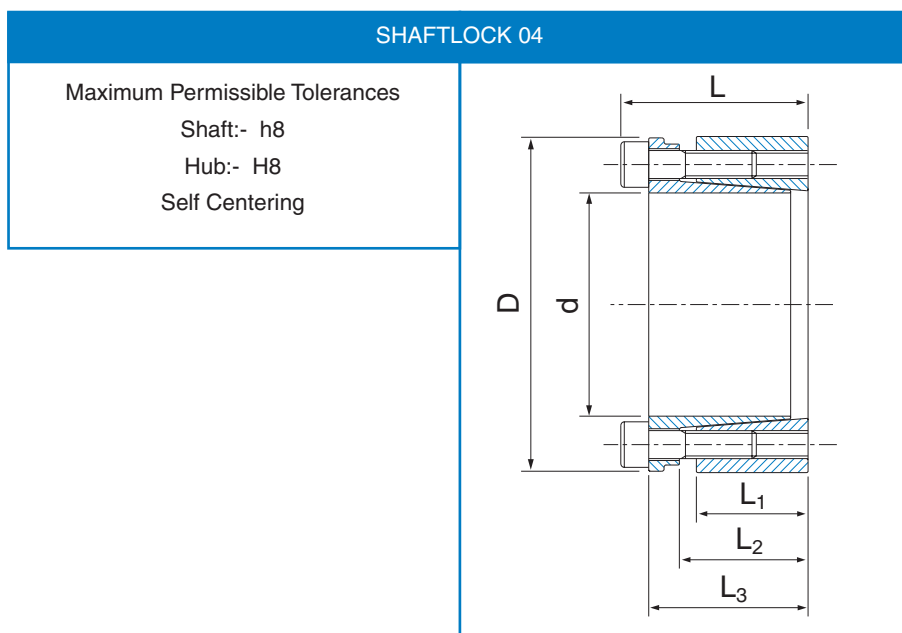
Over 40mm
Shaft:- h8
Hub:- H8

Not Self Centering

Cone Clamping Elements

SHAFTLOCK 04 Clamping Element

Dimensions						Transmission Axial		Contact Pressure		Lock Screws (DIN 912-12.9)		
d	D	L ₁	L ₂	L ₃	L	Torque Mt	Force Ft	Shaft P	Hub P ₁	Qty.	Size	Tightening Torque Ts
mm	mm	mm	mm	mm	mm	Nm	kN	N/mm ²	N/mm ²			Nm
19	47	26	31	39	45	332	32	193	78	4	M6x25	17
20	47	26	31	39	45	349	32	183	78	4	M6x25	17
22	47	26	31	39	45	383	32	166	78	4	M6x25	17
24	50	26	31	39	45	629	48	229	110	6	M6x25	17
25	50	26	31	39	45	654	48	220	110	6	M6x25	17
28	55	26	31	39	45	733	48	196	100	6	M6x25	17
30	55	26	31	39	45	785	48	183	100	6	M6x25	17
32	60	26	31	39	45	1116	65	229	122	8	M6x25	17
35	60	26	31	39	45	1220	65	209	122	8	M6x25	17
38	65	26	31	39	45	1325	65	193	113	8	M6x25	17
40	65	26	31	39	45	1395	65	183	113	8	M6x25	17
42	75	30	36	47	55	1982	87	204	115	6	M8x30	41
45	75	30	36	47	55	2123	87	191	115	6	M8x30	41
48	80	30	36	47	55	2265	87	179	107	6	M8x30	41
50	80	30	36	47	55	2359	87	172	107	6	M8x30	41
55	85	30	36	47	55	3458	116	208	135	8	M8x30	41
60	90	30	36	47	55	3772	116	191	127	8	M8x30	41
65	95	30	36	47	55	4087	116	176	120	8	M8x30	41
70	110	40	46	57	67	7136	189	199	127	8	M10x35	83
75	115	40	46	62	72	7645	189	186	121	8	M10x35	83
80	120	40	46	62	72	8155	189	174	116	8	M10x35	83
85	125	40	46	62	72	10831	236	205	139	10	M10x35	83
90	130	40	46	62	72	11469	236	193	134	10	M10x35	83
95	135	40	46	62	72	12106	236	183	129	10	M10x35	83
100	145	46	52	77	89	14837	275	176	121	8	M12x45	145
110	155	46	52	77	89	16320	275	160	114	8	M12x45	145
120	165	46	52	77	89	22254	343	183	133	10	M12x45	145
130	180	46	52	77	89	28931	412	203	147	12	M12x45	145
140	190	51	59	84	98	28233	373	154	114	8	M14x45	230
150	200	51	59	84	98	37817	467	180	135	10	M14x45	230
160	210	51	59	84	98	40339	467	169	129	10	M14x45	230
170	225	51	59	84	98	51426	560	191	144	12	M14x45	230
180	235	51	59	84	98	54451	560	180	138	12	M14x45	230

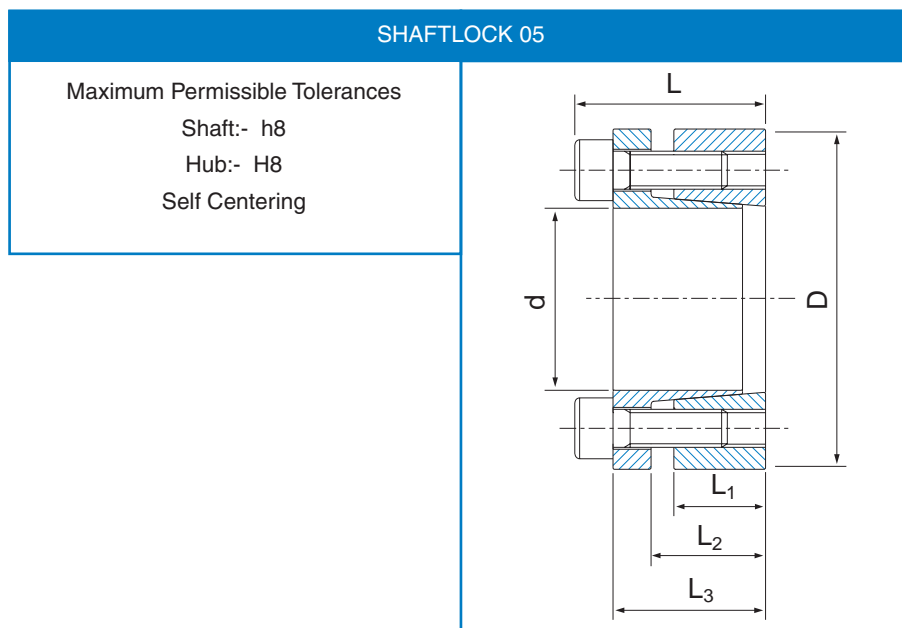


All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Cone Clamping Elements

SHAFTLOCK 05 Clamping Element

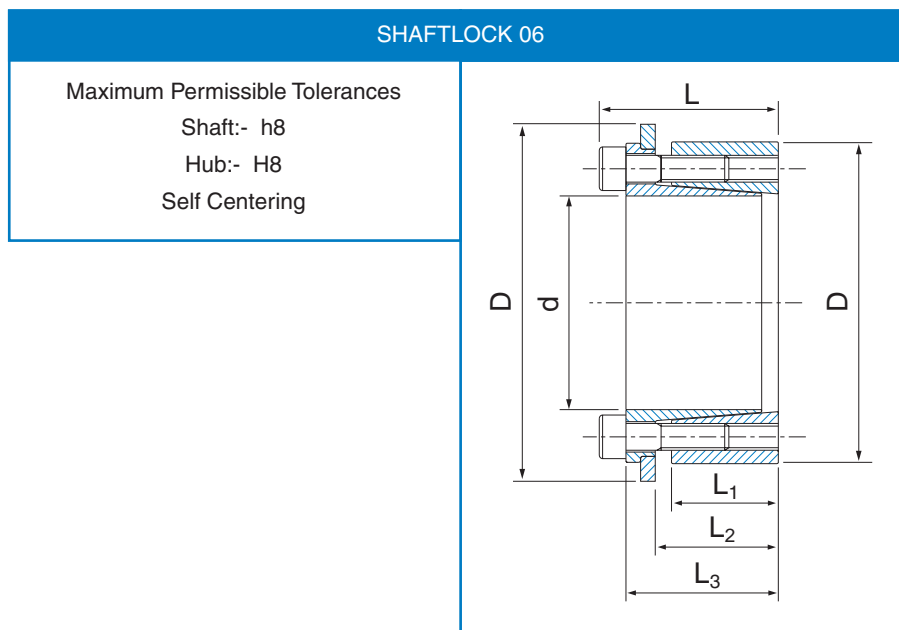
Dimensions						Transmission Axial		Contact Pressure		Lock Screws (DIN 912-12.9)		
d	D	L ₁	L ₂	L ₃	L	Torque Mt	Force Ft	Shaft P	Hub P ₁	Qty.	Size	Tightening Torque Ts
mm	mm	mm	mm	mm	mm	Nm	kN	N/mm ²	N/mm ²			Nm
19	47	17	22	28	34	295	29	262	106	5	M6x20	13
20	47	17	22	28	34	310	29	249	106	5	M6x20	13
22	47	17	22	28	34	341	29	227	106	5	M6x20	13
24	50	17	22	28	34	446	34	249	120	6	M6x20	13
25	50	17	22	28	34	465	34	239	120	6	M6x20	13
28	55	17	22	28	34	521	34	213	109	6	M6x20	13
30	55	17	22	28	34	558	34	199	109	6	M6x20	13
32	60	17	22	28	34	793	46	249	133	8	M6x20	13
35	60	17	22	28	34	867	46	227	133	8	M6x20	13
38	65	17	22	28	34	942	46	210	122	8	M6x20	13
40	65	17	22	28	34	991	46	199	122	8	M6x20	13
42	75	20	25	33	41	1688	74	261	146	7	M8x25	32
45	75	20	25	33	41	1808	74	244	146	7	M8x25	32
50	80	20	25	33	41	2009	74	219	137	7	M8x25	32
55	85	20	25	33	41	2527	85	228	148	8	M8x25	32
60	90	20	25	33	41	2757	85	209	139	8	M8x25	32
65	95	20	25	33	41	3359	96	217	149	9	M8x25	32
70	110	24	30	40	50	5225	138	243	154	8	M10x30	65
75	115	24	30	40	50	5599	138	226	148	8	M10x30	65
80	120	24	30	40	50	5972	138	212	142	8	M10x30	65
85	125	24	30	40	50	7139	156	225	153	9	M10x30	65
90	130	24	30	40	50	7558	156	212	147	9	M10x30	65
95	135	24	30	40	50	8865	173	223	157	10	M10x30	65
100	145	26	32	44	56	10521	195	221	152	8	M12x35	110
110	155	26	32	44	56	11573	195	201	143	8	M12x35	110
120	165	26	32	44	56	14206	219	207	151	9	M12x35	110
130	180	34	40	52	64	20516	292	195	141	12	M12x35	110
140	190	34	40	54	68	21963	291	180	133	9	M14x40	170
150	200	34	40	54	68	26148	323	187	140	10	M14x40	170
160	210	34	40	54	68	30681	355	192	147	11	M14x40	170
170	225	44	50	64	78	35563	387	153	115	12	M14x40	170
180	235	44	50	64	78	37655	387	144	110	12	M14x40	170



Cone Clamping Elements

SHAFTLOCK 06 Clamping Element

Dimensions							Transmission Axial		Contact Pressure		Lock Screws (DIN 912-12.9)		
d	D	D ₁	L ₁	L ₂	L ₃	L	Torque Mt	Force Ft	Shaft P	Hub P ₁	Qty.	Size	Tightening Torque T _s
mm	mm	mm	mm	mm	mm	mm	Nm	kN	N/mm ²	N/mm ²			Nm
19	47	53	26	31	39	45	203	20	118	48	4	M6x20	17
20	47	53	26	31	39	45	214	20	112	48	4	M6x20	17
22	47	53	26	31	39	45	234	20	102	48	4	M6x20	17
24	50	56	26	31	39	45	384	30	140	67	6	M6x20	17
25	50	56	26	31	39	45	401	30	135	67	6	M6x20	17
28	55	61	26	31	39	45	449	30	120	61	6	M6x20	17
30	55	61	26	31	39	45	482	30	112	61	6	M6x20	17
32	60	66	26	31	39	45	685	40	140	75	8	M6x20	17
35	60	66	26	31	39	45	750	40	128	75	8	M6x20	17
38	65	71	26	31	39	45	813	40	118	69	8	M6x20	17
40	65	71	26	31	39	45	856	40	112	69	8	M6x20	17
42	75	81	30	36	47	55	1215	54	125	70	6	M8x30	41
45	75	81	30	36	47	55	1301	54	117	70	6	M8x30	41
48	80	86	30	36	47	55	1389	54	110	66	6	M8x30	41
50	80	86	30	36	47	55	1446	54	105	66	6	M8x30	41
55	85	91	30	36	47	55	2120	71	128	83	8	M8x30	41
60	90	96	30	36	47	55	2313	71	117	78	8	M8x30	41
65	95	101	30	36	47	55	2506	71	108	74	8	M8x30	41
70	110	116	40	46	57	67	4372	116	122	78	8	M10x35	83
75	115	121	40	46	62	72	4685	116	114	74	8	M10x35	83
80	120	126	40	46	62	72	4997	116	107	71	8	M10x35	83
85	125	131	40	46	62	72	6638	145	125	85	10	M10x35	83
90	130	136	40	46	62	72	7029	145	118	82	10	M10x35	83
95	135	141	40	46	62	72	7419	145	112	79	10	M10x35	83
100	145	151	46	52	77	89	9093	168	108	74	8	M12x45	145
110	155	161	46	52	77	89	10001	168	98	70	8	M12x45	145
120	165	171	46	52	77	89	13640	210	112	82	10	M12x45	145
130	180	186	46	52	77	89	17734	253	125	90	12	M12x45	145
140	190	196	51	59	84	98	17302	229	95	70	8	M14x45	230
150	200	206	51	59	84	98	23174	286	110	83	10	M14x45	230
160	210	216	51	59	84	98	24718	286	103	79	10	M14x45	230
170	225	231	51	59	84	98	31518	343	117	88	12	M14x45	230
180	235	241	51	59	84	98	33372	343	110	84	12	M14x45	230

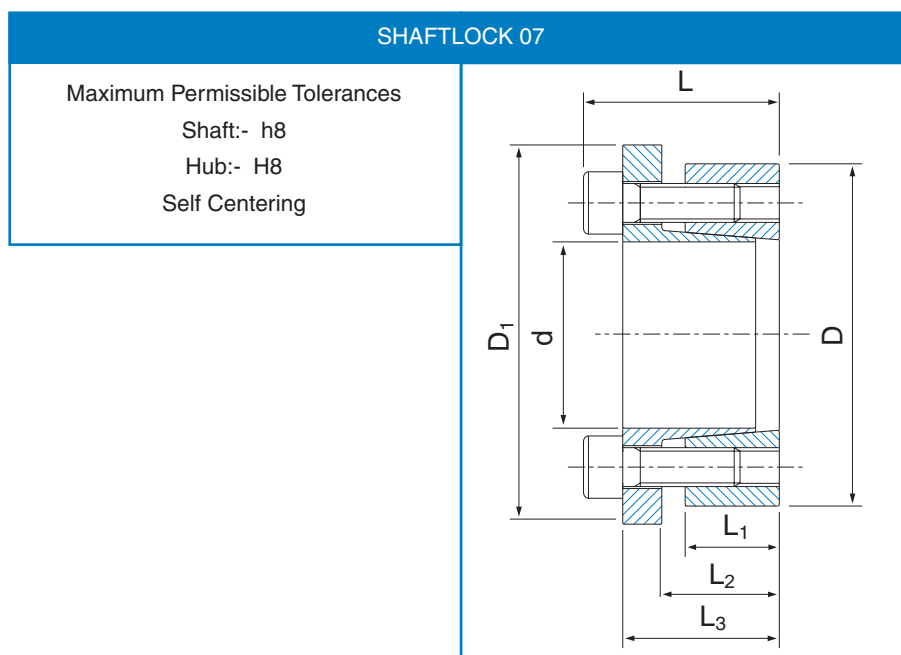


All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Cone Clamping Elements

SHAFTLOCK 07 Clamping Element

Dimensions							Transmission Axial		Contact Pressure		Lock Screws (DIN 912-12.9)		
d	D	D ₁	L ₁	L ₂	L ₃	L	Torque Mt	Force Ft	Shaft P	Hub P ₁	Qty.	Size	Tightening Torque Ts
mm	mm	mm	mm	mm	mm	mm	Nm	kN	N/mm ²	N/mm ²			Nm
19	47	56	17	22	28	34	244	24	217	88	5	M6x20	17
20	47	56	17	22	28	34	257	24	206	88	5	M6x20	17
22	47	56	17	22	28	34	282	24	187	88	5	M6x20	17
24	50	59	17	22	28	34	369	29	206	99	6	M6x20	17
25	50	59	17	22	28	34	384	29	198	99	6	M6x20	17
28	55	64	17	22	28	34	431	29	177	90	6	M6x20	17
30	55	64	17	22	28	34	462	29	165	90	6	M6x20	17
32	60	69	17	22	28	34	657	38	206	110	8	M6x20	17
35	60	69	17	22	28	34	718	38	188	110	8	M6x20	17
38	65	74	17	22	28	34	780	38	174	101	8	M6x20	17
40	65	74	17	22	28	34	821	38	165	101	8	M6x20	17
42	75	84	20	25	33	41	1360	60	210	118	7	M8x25	41
45	75	84	20	25	33	41	1457	60	196	118	7	M8x25	41
50	80	89	20	25	33	41	1619	60	177	110	7	M8x25	41
55	85	94	20	25	33	41	2034	68	184	119	8	M8x25	41
60	90	99	20	25	33	41	2218	68	168	112	8	M8x25	41
65	95	104	20	25	33	41	2703	77	175	120	9	M8x25	41
70	110	119	24	30	40	50	4197	111	195	124	8	M10x30	83
75	115	124	24	30	40	50	4496	111	182	119	8	M10x30	83
80	120	129	24	30	40	50	4796	111	171	114	8	M10x30	83
85	125	134	24	30	40	50	5730	125	180	123	9	M10x30	83
90	130	139	24	30	40	50	6067	125	170	118	9	M10x30	83
95	135	144	24	30	40	50	7114	139	179	126	10	M10x30	83
100	145	154	26	32	44	56	8724	162	183	126	8	M12x35	145
110	155	164	26	32	44	56	9597	162	167	118	8	M12x35	145
120	165	174	26	32	44	56	11771	182	172	125	9	M12x35	145
130	180	189	34	40	52	64	17006	242	162	117	12	M12x35	145
140	190	199	34	40	54	68	18673	247	153	113	9	M14x40	230
150	200	209	34	40	54	68	22229	274	159	119	10	M14x40	230
160	210	219	34	40	54	68	26081	302	164	125	11	M14x40	230
170	225	234	44	50	64	78	30229	329	130	98	12	M14x40	230
180	235	244	44	50	64	78	32007	329	123	94	12	M14x40	230



Cone Clamping Elements

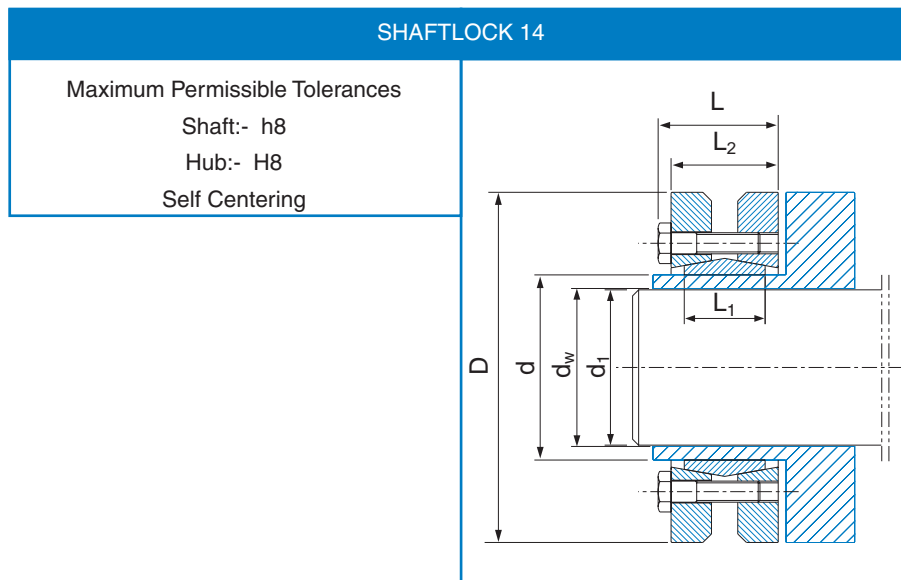
SHAFTLOCK 14 Clamping Element

Dimensions							Transmission		Contact Press Shaft P N/mm ²	Lock Screws (DIN 912-12.9) Tightening		
d mm	D mm	dw mm	L ₁ mm	L ₂ mm	L mm	C _(dw-d1) mm	Torque Mt Nm	Axial Force Ft kN		Qty.	Size	Torque Ts Nm
24	50	19	14	19.5	23.0	0.017	162	15.0	272	6	M5x18	4.9
		20					200	18.5				
		21					238	21.0				
30	60	24	16	21.5	25.0	0.017	285	15.7	221	7	M5x18	4.9
		25					323	23.7				
		26					361	26.7				
36	72	28	18	23.5	27.5	0.032	418	27.0	292	5	M6x20	11.8
		30					542	38.0				
		31					599	43.0				
44	80	32	20	25.5	29.5	0.032	589	44.0	301	7	M6x20	11.8
		35					741	49.0				
		36					817	54.0				
50	90	38	22	27.5	31.5	0.032	893	48.8	275	8	M6x25	11.8
		40					1102	58.8				
		42					1311	69.0				
55	100	42	23	30.5	34.5	0.032	1102	48.0	239	8	M6x25	11.8
		45					1444	61.7				
		48					1786	77.0				
62	110	48	23	30.5	34.5	0.048	1758	69.0	265	10	M6x25	11.8
		50					2090	80.9				
		52					2280	90.0				
68	115	50	23	30.5	34.5	0.048	1900	71.2	242	10	M6x25	11.8
		55					2375	80.9				
		60					2993	95.7				
75	138	55	25	32.5	37.8	0.048	2375	94.4	259	7	M8x30	29.4
		60					3040	111.0				
		65					3753	126.0				
80	145	60	25	32.5	37.8	0.048	3040	99.3	243	7	M8x30	29.4
		65					3705	115.0				
		70					4370	130.0				
90	155	65	30	39.0	44.3	0.048	4513	141.0	257	10	M8x35	29.4
		70					5700	160.0				
		75					6888	178.0				
100	170	70	34	44.0	49.3	0.048	6555	163.0	245	12	M8x35	29.4
		75					7125	182.0				
		80					8550	202.0				
110	185	75	39	50.0	56.4	0.048	6840	185.0	232	9	M10x40	57.8
		80					8550	207.0				
		85					10260	221.0				
125	215	85	42	54.0	60.4	0.069	10450	240.0	253	12	M10x40	57.8
		90					12350	262.0				
		95					14250	285.0				

Cone Clamping Elements

SHAFTLOCK 14 Clamping Element

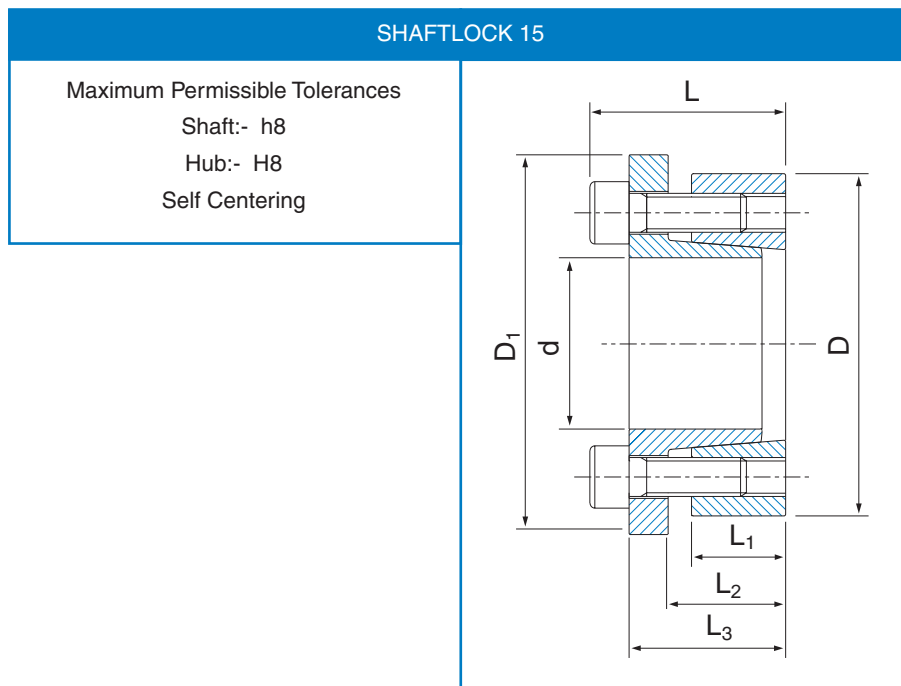
Dimensions							Transmission Torque Mt Nm	Axial Force Ft kN	Contact Press Shaft P N/mm ²	Lock Screws (DIN 912-12.9) Tightening		
d mm	D mm	dw mm	L ₁ mm	L ₂ mm	L mm	C _(dw-d1) mm				Qty.	Size	Torque Ts Nm
140	230	95	46	60.5	68.0	0.069	14345	308.0	251	10	M12x45	98.0
		100					16720	331.0				
		105					19095	357.0				
155	265	105	50	64.5	72.0	0.069	20900	366.0	250	12	M12x50	98.0
		110					23750	392.0				
		115					26600	417.0				
165	290	115	56	71.0	81.0	0.069	29450	513.0	263	8	M16x55	245.0
		120					33250	544.0				
		125					37050	564.0				
175	300	125	56	71.0	81.0	0.079	34200	576.0	248	8	M16x55	250.0
		130					38950	630.0				
		135					45000	666.0				



Cone Clamping Elements

SHAFTLOCK 15 Clamping Element

Dimensions							Transmission Axial		Contact Pressure		Lock Screws (DIN 912-12.9)		
d	D	D ₁	L ₁	L ₂	L ₃	L	Torque Mt	Force Ft	Shaft P	Hub P ₁	Qty.	Size	Tightening Torque T _s
mm	mm	mm	mm	mm	mm	mm	Nm	kN	N/mm ²	N/mm ²			Nm
14	55	62	17	22	31	39	233	31	383	97	4	M8x25	37
16	55	62	17	22	31	39	267	31	335	97	4	M8x25	37
18	55	62	17	22	31	39	333	34	330	108	4	M8x25	41
19	55	62	17	22	31	39	351	34	313	108	4	M8x25	41
20	55	62	17	22	31	39	369	34	297	108	4	M8x25	41
22	55	62	17	22	31	39	407	34	270	108	4	M8x25	41
24	55	62	17	22	31	39	444	34	247	108	4	M8x25	41
25	55	62	17	22	31	39	462	34	238	108	4	M8x25	41
28	55	62	17	22	31	39	517	34	212	108	4	M8x25	41
30	55	62	17	22	31	39	555	34	198	108	4	M8x25	41
24	65	72	17	22	31	39	554	43	309	114	5	M8x25	41
25	65	72	17	22	31	39	578	43	297	114	5	M8x25	41
28	65	72	17	22	31	39	647	43	265	114	5	M8x25	41
30	65	72	17	22	31	39	693	43	247	114	5	M8x25	41
32	65	72	17	22	31	39	739	43	232	114	5	M8x25	41
35	65	72	17	22	31	39	808	43	212	114	5	M8x25	41
38	65	72	17	22	31	39	878	43	195	114	5	M8x25	41
40	65	72	17	22	31	39	923	43	185	114	5	M8x25	41
30	80	87	20	25	33	41	971	60	295	110	7	M8x25	41
32	80	87	20	25	33	41	1036	60	276	110	7	M8x25	41
35	80	87	20	25	33	41	1133	60	253	110	7	M8x25	41
38	80	87	20	25	33	41	1230	60	233	110	7	M8x25	41
40	80	87	20	25	33	41	1295	60	221	110	7	M8x25	41
42	80	87	20	25	33	41	1360	60	210	110	7	M8x25	41
45	80	87	20	25	33	41	1457	60	196	110	7	M8x25	41
48	80	87	20	25	33	41	1554	60	184	110	7	M8x25	41
50	80	87	20	25	33	41	1619	60	177	110	7	M8x25	41

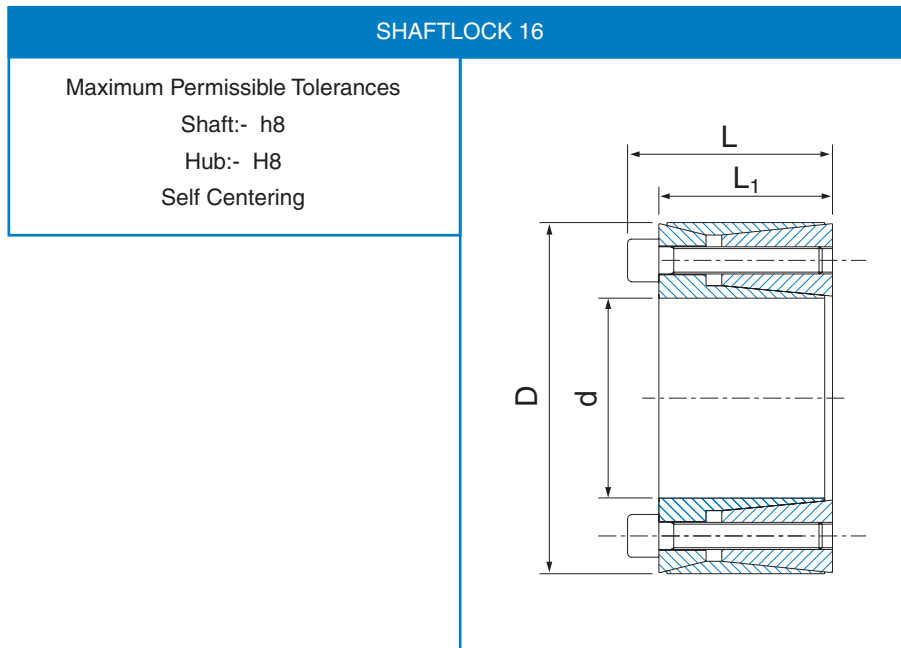


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Cone Clamping Elements

SHAFTLOCK 16 Clamping Element

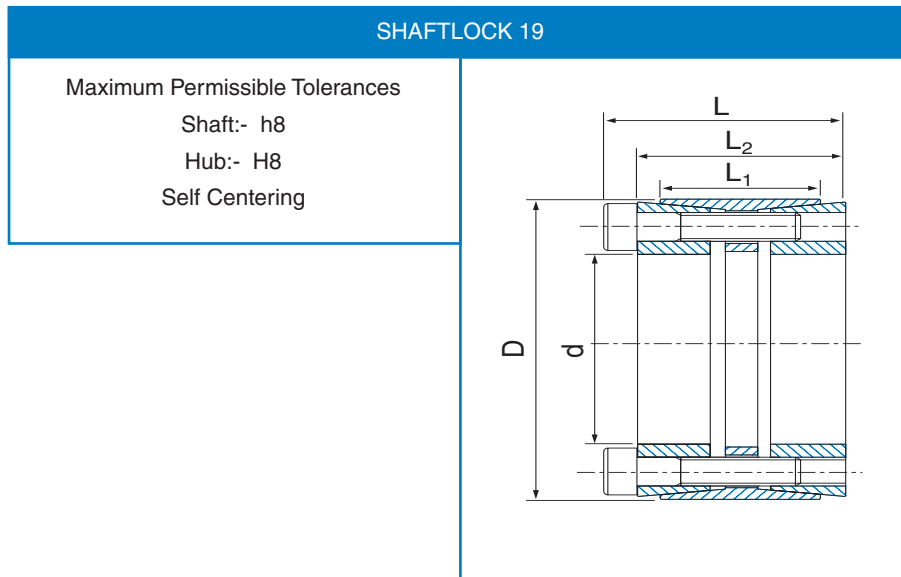
Dimensions				Transmission Axial		Contact Pressure		Lock Screws (DIN 912-12.9)		
d	D	L	L ₁	Torque Mt	Force Ft	Shaft P	Hub P ₁	Qty.	Size	Tightening Torque Ts
mm	mm	mm	mm	Nm	kN	N/mm ²	N/mm ²			Nm
16	32	24	18.0	79	9	83	41	4	M4x16	5
16	40	24	18.0	231	23	83	74	4	M6x16	17
19	41	24	18.0	244	23	155	72	4	M6x16	17
20	42	24	18.0	256	23	147	70	4	M6x16	17
22	44	24	18.0	283	23	134	67	4	M6x16	17
24	46	24	18.0	462	35	184	96	6	M6x16	17
25	47	24	18.0	482	35	177	94	6	M6x16	17
28	50	24	18.0	539	35	158	88	6	M6x16	17
30	52	24	18.0	578	35	147	85	6	M6x16	17
32	54	24	18.0	616	35	138	82	6	M6x16	17
35	57	28	21.5	671	26	135	80	6	M6x18	17
36	58	28	21.5	693	35	103	64	8	M6x18	17
38	60	28	21.5	732	35	97	62	8	M6x18	17
40	62	28	21.5	770	35	93	60	8	M6x18	17
42	70	36	28.0	1903	82	159	96	8	M8x25	40
45	73	36	28.0	2038	82	149	92	8	M8x25	40
48	76	36	28.0	2175	82	139	88	8	M8x25	40
50	78	36	28.0	2265	82	134	86	8	M8x25	40
55	83	36	28.0	2848	94	139	92	8	M8x25	40
60	88	36	28.0	3106	94	127	87	8	M8x25	40
65	93	45	35.0	3366	94	94	66	8	M8x25	40
70	105	45	35.0	5138	133	124	83	8	M10x30	81
75	110	45	35.0	5504	133	116	79	8	M10x30	81
80	115	45	35.0	6606	150	122	85	8	M10x30	81
85	120	45	35.0	7798	167	127	90	10	M10x30	81
90	125	45	35.0	8257	167	120	87	10	M10x30	81
100	138	45	35.0	9174	167	108	79	10	M10x30	81



Cone Clamping Elements

SHAFTLOCK 19 Clamping Element

Dimensions					Transmission		Contact Pressure		Locking Screws (DIN 912-12.9)		
d	D	L	L ₂	L ₁	Torque	Axial Force	Shaft	Hub	Qty.	Size	Tightening Torque
mm	mm	mm	mm	mm	Mt Nm	Ft kN	P N/mm ²	P ₁ N/mm ²			Ts Nm
25	55	46	40	32	802	59	292	100	6	M6X35	17
28	55	46	40	32	899	59	261	100	6	M6X35	17
30	55	46	40	32	962	59	243	100	6	M6X35	17
35	60	60	54	44	1308	69	172	77	7	M6X45	17
38	75	62	54	44	2562	125	285	112	7	M8X50	41
40	75	62	54	44	2697	125	271	112	7	M8X50	41
42	75	62	54	44	2832	125	258	112	7	M8X50	41
45	75	62	54	44	3034	125	241	112	7	M8X50	41
48	80	72	64	56	3701	143	199	94	8	M8X55	41
50	80	72	64	56	3855	143	191	94	8	M8X55	41
55	85	72	64	56	4769	161	196	99	9	M8X55	41
60	90	72	64	56	5780	178	199	104	10	M8X55	41
65	95	72	64	56	6263	178	184	99	10	M8X55	41
70	110	88	78	70	10933	289	218	111	10	M10X60	83
75	115	88	78	70	11714	289	203	106	10	M10X60	83
80	120	88	78	70	13745	318	209	112	11	M10X60	83
85	125	88	78	70	15932	347	215	117	12	M10X60	83
90	130	88	78	70	16870	347	203	112	12	M10X60	83
95	135	88	78	70	17807	347	192	108	12	M10X60	83
100	145	112	100	90	25002	463	195	105	11	M12X80	145
110	155	112	100	90	30003	505	193	107	12	M12X80	145
120	165	112	100	90	38190	589	207	117	14	M12X80	145
130	180	130	116	104	48204	687	185	108	12	M14X90	230
140	190	130	116	104	60559	801	201	120	14	M14X90	230
150	200	130	116	104	69521	858	201	122	15	M14X90	230
160	210	130	116	104	79100	916	201	124	16	M14X90	230
170	225	164	148	134	100770	1098	190	107	14	M16X110	360
180	235	164	148	134	114319	1176	193	110	15	M16X110	360
190	250	164	148	134	128714	1255	195	110	16	M16X110	360
200	260	164	148	134	135489	1255	185	106	16	M16X110	360
220	285	164	148	134	167668	1411	189	109	18	M16X110	360

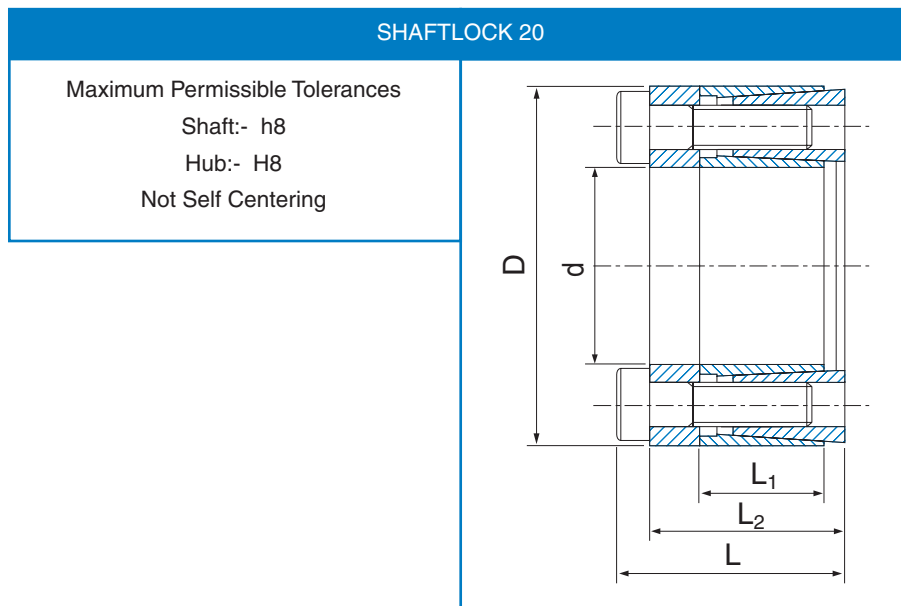


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Cone Clamping Elements

SHAFTLOCK 20 Clamping Element

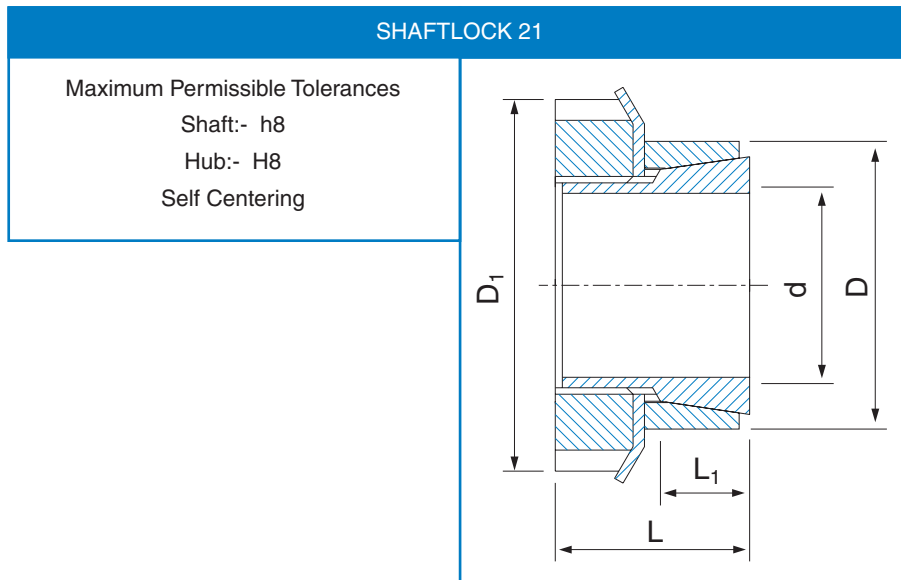
Dimensions					Transmission		Contact Pressure		Locking Screws (DIN 912-12.9)		
d	D	L	L ₂	L ₁	Mt	Ft	Shaft	Hub	Qty.	Size	Tightening Torque
mm	mm	mm	mm	mm	Nm	kN	P	P ₁			T _s
							N/mm ²	N/mm ²			Nm
18	40	24.5	18.5	12	184	19	167	75	6	M6X15	17
19	41	24.5	18.5	12	194	19	159	73	6	M6X15	17
20	42	24.5	18.5	12	204	19	151	72	6	M6X15	17
24	46	24.5	18.5	12	245	19	126	65	6	M6X15	17
25	47	24.5	18.5	12	341	25	161	86	8	M6X15	17
28	50	24.5	18.5	12	382	25	144	81	8	M6X15	17
30	52	24.5	18.5	12	409	25	134	77	8	M6X15	17
35	57	28.0	22.0	15	716	38	145	89	12	M6X15	17
38	60	28.0	22.0	15	778	38	134	85	12	M6X15	17
40	62	28.0	22.0	15	819	38	127	82	12	M6X15	17
42	70	36.0	28.0	18	1551	68	171	103	12	M8X22	41
45	73	36.0	28.0	18	1661	68	160	99	12	M8X22	41
48	76	36.0	28.0	18	1772	68	150	95	12	M8X22	41
50	78	36.0	28.0	18	1846	68	144	92	12	M8X22	41
55	83	36.0	28.0	18	2708	91	175	116	16	M8X22	41
60	88	36.0	28.0	18	2954	91	160	109	16	M8X22	41
70	105	45.0	35.0	22	4037	107	129	86	12	M10X25	80
80	115	45.0	35.0	22	6150	142	150	104	16	M10X25	80



Cone Clamping Elements

SHAFTLOCK 21 Clamping Element

Dimensions					Transmission Torque Mt Nm	Axial Force Ft kN	Contact Pressure		Locking Screws (DIN 912-12.9)		
d mm	D mm	D ₁ mm	L mm	L ₁ mm			Shaft P N/mm ²	Hub P ₁ N/mm ²	Qty.	Size	Tightening Torque Ts Nm
15	25	32	31	20	83	9	91	55	1	M20x1.0	95
18	30	38	33	21	135	13	98	59	1	M25x1.5	160
19	30	38	33	21	143	13	93	59	1	M25x1.5	160
20	30	38	33	21	150	13	88	59	1	M25x1.5	160
24	35	45	38	25	218	15	74	51	1	M30x1.5	220
25	35	45	38	25	227	15	71	51	1	M30x1.5	220
28	40	52	44	28	337	20	76	53	1	M35x1.5	340
30	40	52	44	28	362	20	71	53	1	M35x1.5	340
35	45	58	45	28	522	25	75	58	1	M40x1.5	480
40	50	65	46	28	752	31	82	66	1	M45x1.5	680
45	55	70	47	28	974	36	84	69	1	M50x1.5	870
50	60	75	47	28	1095	37	77	64	1	M55x2.0	970
55	65	80	48	28	1251	38	73	61	1	M60x2.0	1100
60	70	85	50	28	1489	41	73	62	1	M65x2.0	1300

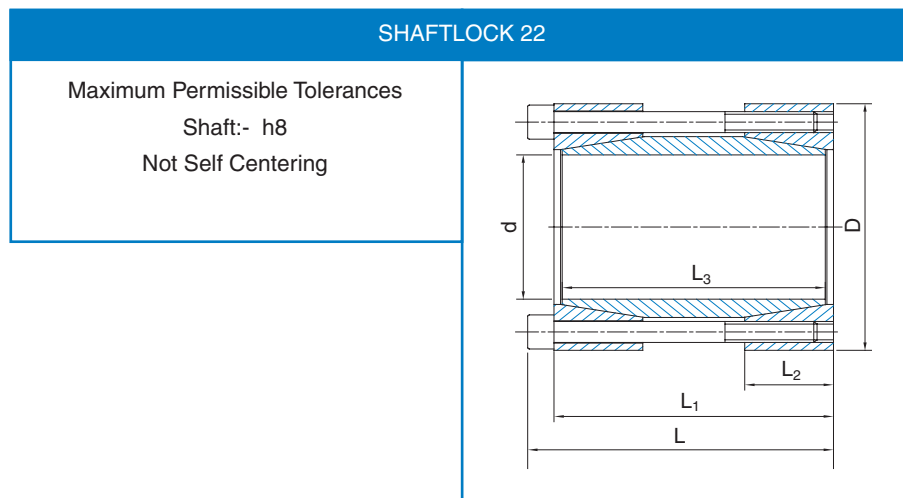


All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

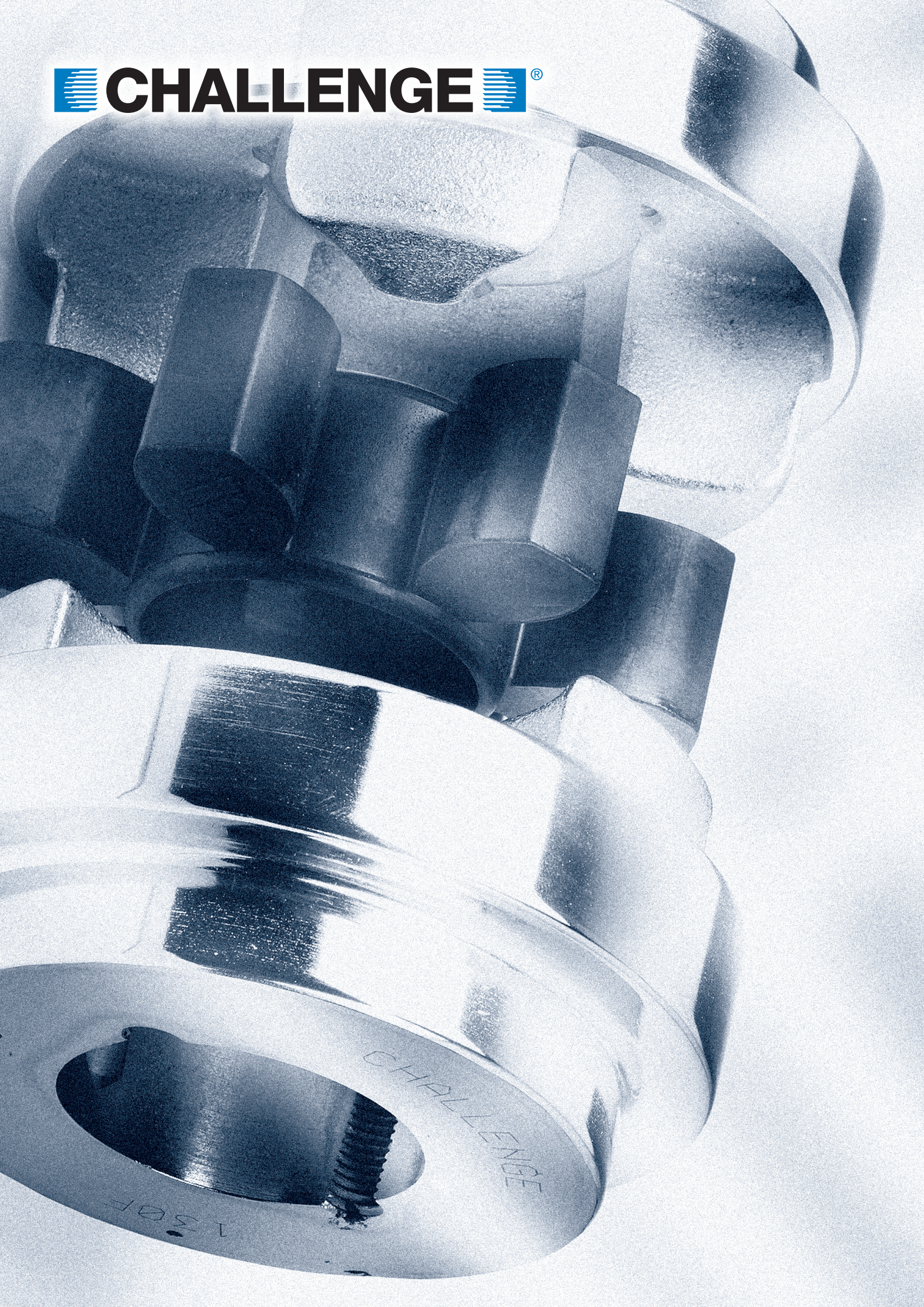
Cone Clamping Elements

SHAFTLOCK 22 Clamping Element

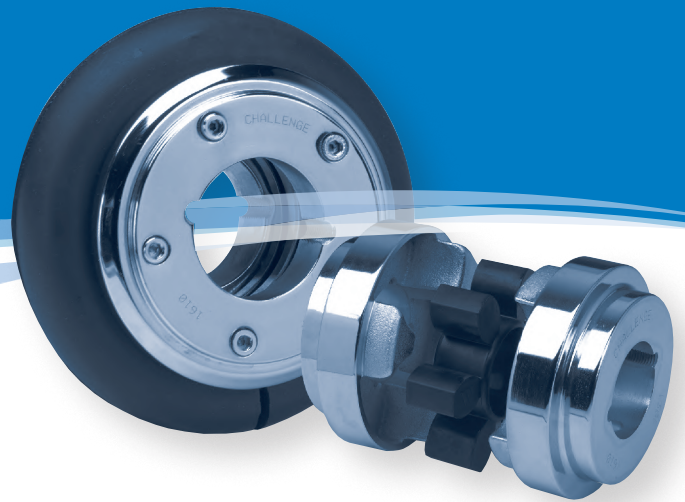
Dimensions						Transmission Torque Force Mt Nm	Axial Force Ft kN	Contact Pressure Shaft P N/mm ²	Locking Screws (DIN 912-12.9)		
d mm	D mm	L ₁ mm	L ₂ mm	L ₃ mm	L mm				Qty.	Size	Tightening Torque Ts Nm
17	50	50	16.0	44	56	179	20	154	4	M6X45	17
18	50	50	16.0	44	56	190	20	146	4	M6X45	17
19	50	50	16.0	44	56	201	20	138	4	M6X45	17
20	50	50	16.0	44	56	211	20	131	4	M6X45	17
24	55	60	18.5	54	66	379	29	133	6	M6X55	17
25	55	60	18.5	54	66	395	29	128	6	M6X55	17
28	60	60	18.5	54	66	443	29	114	6	M6X55	17
30	60	60	18.5	54	66	474	29	107	6	M6X55	17
32	63	60	18.5	54	66	505	29	100	6	M6X55	17
35	75	75	22.0	67	83	684	36	91	4	M8X70	42
38	75	75	22.0	67	83	742	36	84	4	M8X70	42
40	75	75	22.0	67	83	782	36	80	4	M8X70	42
42	78	75	22.0	67	83	821	36	76	4	M8X70	42
45	85	85	24.5	76	93	1318	54	93	6	M8X80	42
48	90	85	24.5	76	93	1405	54	88	6	M8X80	42
50	90	85	24.5	76	93	1463	54	84	6	M8X80	42
55	94	85	24.5	76	93	2146	72	102	8	M8X80	42
60	100	85	24.5	76	93	2341	72	93	8	M8X80	42
65	105	85	24.5	76	93	2536	72	86	8	M8X80	42
70	115	100	29.0	90	110	4364	115	108	8	M10X95	84



 **CHALLENGE**  [®]



Shaft Couplings



Features

FFX

- Up to 14675 Nm torque on 6 pole motors
- Up to 4° angular misalignment
- Up to 12° 'wind up' shock absorption
- Can accommodate simultaneous maximum misalignment in all planes
- Tyre can be changed without moving prime mover or driven machine
- Visual inspection of tyre to detect wear
- Zero backlash makes the FFX ideal for reversing duties as the load carrying cords are wound in both directions. Reversing drives are not a problem
- Steel clamping rings used throughout the range for superior tyre/clamping ring grip
- Fire resistant and anti static (FRAS) tyres available
- No lubrication required
- Taper bush and pilot bore flanges available

HRC

- Designed specifically for use with IEC motors
- Torques up to 3150 Nm
- Up to 1° angular misalignment
- Good shock absorption properties
- Quick and easy assembly
- Taper bush and Pilot bore flanges available
- High grade cast iron hubs
- Fail safe operation

NPX

- Designed to industry standard
- Available with three part flanges, thus allowing the segments to be changed without disturbing either the driving or driven shaft
- High levels of torsional flexibility
- High speed capability
- Suit IEC electric motor applications
- Taper bore and pilot bore flanges

RPX

- Fully machined with curved jaw design. This reduces vibration and allows for increased shock loading
- Designed to industry standard
- High torque for size
- Taper bore and pilot bore flanges
- 92 shore (yellow) and 98 shore (red) elements available

JAW

- International design
- Low cost wide range of sizes from 16 mm to 127 mm diameter

CHAIN

- High torque capacity
- Bores from 12 mm to 150 mm diameter
- Fully sealed casing with 'O' rings

FFX Tyre Coupling Selection

Tyre Coupling selection procedure

- 1] **Service Factor.**
From Table 1 on page 269, select the service factor that is appropriate for the application
- 2] **Design Power.**
Multiply the absorbed power of the driven machine, in kW, by the service factor, from step 1) to obtain the design power. If the absorbed power is not known, use the prime mover power.
- 3] **Tyre coupling size selection.**
Refer to Table 2 on page 269.
Read down the left hand vertical column to the required speed
Read horizontally across on the speed line until a power equal to or in excess of the design power, from step 2), is reached.
Read vertically to the top of the column to obtain the correct size of tyre coupling.
- 4] **Bore dimensions.**
From the dimensions Table on page 270, check that the selected coupling will fit the shafts.



Tyre Coupling selection example

Select a Challenge tyre coupling to drive a reciprocating pump from a 980 rev/min, 30 kW electric motor. The pump absorbs 24 kW and runs for 16 hours/day. The motor shaft is 60 mm diameter and the pump shaft 55 mm diameter. Taper bush flanges are required for both shafts.

- 1] **Service factor.**
From Table 2 on page 269, the service factor for this application is 1.9
- 2] **Design power.**
Using the absorbed power of the pump, the design power is $24 \times 1.9 = 45.6$ kW
- 3] **Tyre coupling size selection.**
Refer to Table 2 on page 269
By reading down and interpolating for the required speed of 980 rev/min, it is seen that an FFX 090 will transmit 50.45 kW which is in excess of the 45.6 kW required from step 2)
- 4] **Bore dimensions.**
From the dimensions Table on page 270, it is seen that both 'F' and 'H' flanges on an FFX 090 take a 2517 taper bush which are available with bores to suit the shaft requirements of the application.



FFX Tyre Coupling Selection

Table 1, Service Factors

Special cases For applications where shock, vibration and torque fluctuations occur – consult Challenge	Type of prime mover					
	'Soft' Starts			'Heavy' Starts		
	Electric motors and other smooth running prime movers			Internal Combustion Engines		
	Number of hours per day running					
Type of driven machine	10 and under	over 10 - 16 incl	over 16	10 and under	over 10 - 16 incl	over 16
Uniform load Light duty agitators, belt conveyors for sand etc., fans upto 7.5 kW, centrifugal compressors and pumps,	0.8	0.9	1.0	1.3	1.4	1.5
Moderate load Variable density agitators, belt conveyors (non-uniform loads), fans over 7.5 kW, other rotary compressors and pumps, generators, machine tools, printing machinery, laundry machinery, rotary screens, rotary woodworking machinery	1.3	1.4	1.5	1.8	1.9	2.0
Heavy load Reciprocating compressors and pumps, positive displacement blowers, heavy duty conveyors such as screw, bucket etc., hammer mills, pulverisers, presses, shears, punches, rubber machinery	1.8	1.9	2.0	2.3	2.4	2.5
Severe load Crushers – gyratory, jaw, roll etc., rolling mills, calenders, quarry machinery, vibrating screens	2.3	2.4	2.5	2.8	2.9	3.0

Table 2, Power Ratings (kW)

Rotational speed in rev/min	FFX 40	FFX 50	FFX 60	FFX 70	FFX 80	FFX 90	FFX 100	FFX 110	FFX 120	FFX 140	FFX 160	FFX 180	FFX 200	FFX 220	FFX 250
100	0.28	0.87	1.58	2.59	4.06	5.16	6.83	9.09	14.2	26.7	41.8	65.4	96.8	120	154
150	0.42	13.1	2.37	3.89	6.09	7.74	10.2	13.6	21.3	40.1	62.7	98.1	145	180	231
200	0.56	1.74	3.16	5.18	8.12	10.3	13.7	18.2	28.5	53.4	83.6	131	194	240	308
300	0.84	2.61	4.74	7.77	12.2	15.5	20.5	27.3	42.6	80.1	125	196	290	360	462
400	1.12	3.48	6.32	10.4	16.2	20.6	27.3	36.4	56.8	107	167	262	387	480	616
500	1.41	4.36	7.88	12.9	20.2	25.7	34.1	45.4	71.4	134	209	327	484	601	767
600	1.68	5.22	9.48	15.5	24.4	31.0	41.0	54.5	85.2	160	251	392	581	720	924
700	1.97	6.10	11.0	18.1	28.4	36.0	47.7	63.6	99.8	187	292	458	678	842	1074
720	2.02	6.26	11.3	18.6	29.2	37.1	49.1	65.4	103	192	301	471	697	866	1104
800	2.25	6.97	12.5	20.7	32.4	41.2	54.5	72.3	114	214	334	523	775	962	1227
900	2.53	7.84	14.1	23.3	36.5	46.3	61.4	81.8	128	241	376	589	872	1082	1380
960	2.69	8.36	15.1	24.8	38.9	49.4	65.5	87.3	137	257	401	628	929	1154	1472
1000	2.81	8.71	15.7	25.9	40.6	51.5	68.2	90.9	143	267	419	655	968	1203	1534
1200	3.37	10.4	18.9	31.0	48.6	61.8	81.8	109	171	321	502	785	1162	-	-
1400	3.93	12.2	22.0	36.2	56.8	72.1	95.5	127	200	375	585	916	-	-	-
1440	4.04	12.5	22.6	37.2	58.4	74.2	98.3	131	206	385	602	942	-	-	-
1500	4.21	13.0	23.6	38.8	60.9	77.3	102	136	214	401	627	982	-	-	-
1800	5.05	15.6	28.3	46.5	73.0	92.7	123	164	257	481	-	-	-	-	-
2000	5.62	17.4	31.5	51.8	81.1	103	136	182	286	-	-	-	-	-	-
2500	7.02	21.7	39.3	64.7	102	129	145	-	-	-	-	-	-	-	-
2880	8.08	25.0	45.3	74.5	117	149	-	-	-	-	-	-	-	-	-
3000	8.42	26.1	47.2	77.6	122	155	-	-	-	-	-	-	-	-	-
3500	9.82	30.4	55.1	90.6	-	-	-	-	-	-	-	-	-	-	-
4000	11.2	34.8	63.0	-	-	-	-	-	-	-	-	-	-	-	-
4500	12.6	39.1	-	-	-	-	-	-	-	-	-	-	-	-	-

All power ratings are constant torque, interpolate for speeds not listed

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

FFX Tyre Couplings

FFX Tyre Coupling Data

Coupling Size	Bush Size	Max Bore		Pilot Bore	A	B	C	M *	Types F & H		Type B		Weight# kg
		Metric	Inch						F	D	F	D	
040B	-	32	-	12	104	-	82	11.0	-	-	33	22	0.84
040F	1008	25	1"	-	104	-	82	11.0	33.0	22	-	-	0.84
040H	1008	25	1"	-	104	-	82	11.0	33.0	22	-	-	0.84
050B	-	38	-	15	133	79	100	12.5	-	-	45	32.5	1.26
050F	1210	32	1.1/4"	-	133	79	100	12.5	37.5	25	-	-	1.26
050H	1210	32	1.1/4"	-	133	79	100	12.5	37.5	25	-	-	1.26
060B	-	45	-	18	165	103	124.5	16.5	-	-	55	38.5	2.10
060F	1610	42	1.5/8"	-	165	103	124.5	16.5	41.5	25	-	-	2.10
060H	1610	42	1.5/8"	-	165	103	124.5	16.5	41.5	25	-	-	2.10
070B	-	50	-	22	187	80	142	11.5	-	-	46.5	35	3.26
070F	2012	50	2"	-	187	80	142	11.5	44.5	33	-	-	3.26
070H	1610	42	1.5/8"	-	187	80	142	11.5	42.5	31	-	-	3.15
080B	-	60	-	25	211	98	165	12.5	-	-	55	42.5	5.15
080F	2517	65	2.1/2"	-	211	98	165	12.5	58.5	46	-	-	5.15
080H	2012	50	2"	-	211	98	165	12.5	45.5	33	-	-	4.83
090B	-	70	-	28	235	108	187	13.5	-	-	63.5	50	7.46
090F	2517	65	2.1/2"	-	235	108	187	13.5	59.5	46	-	-	7.35
090H	2517	65	2.1/2"	-	235	108	187	13.5	59.5	46	-	-	7.35
100B	-	80	-	32	254	120	214	13.5	-	-	70.5	57	10.4
100F	3020	75	3"	-	254	120	214	13.5	65.5	52	-	-	10.4
100H	2517	65	2.1/2"	-	254	120	214	13.5	59.5	46	-	-	9.87
110B	-	90	-	30	279	134	232	12.5	-	-	70.5	58	13.1
110F	3020	75	3"	-	279	134	232	12.5	64.5	52	-	-	12.3
110H	3020	75	3"	-	279	134	232	12.5	64.5	52	-	-	12.3
120B	-	100	-	38	314	143	262	14.5	-	-	84.5	70	17.7
120F	3525	100	4"	-	314	140	262	14.5	80.5	66	-	-	17.3
120H	3020	75	3"	-	314	140	262	14.5	66.5	52	-	-	16.7
140B	-	130	-	75	359	178	313	16.0	-	-	110	94	23.3
140F	3525	100	4"	-	359	178	313	16.0	82.0	66	-	-	23.4
140H	3525	100	4"	-	359	178	313	16.0	82.0	66	-	-	23.4
160B	-	140	-	75	402	197	347	15.0	-	-	117	102	37.6
160F	4030	115	4.1/2"	-	402	197	347	15.0	92.4	77.4	-	-	34.1
160H	4030	115	4.1/2"	-	402	197	347	15.0	92.4	77.4	-	-	34.1
180B	-	150	-	75	470	205	396	23.0	-	-	137	114	51.6
180F	4535	125	5"	-	470	205	396	23.0	112.0	89	-	-	44.3
180H	4535	125	5"	-	470	205	396	23.0	112.0	89	-	-	44.3
200B	-	150	-	85	508	206	433	24.0	-	-	138	114	61.1
200F	4535	125	5"	-	508	206	433	24.0	113.0	89	-	-	56.3
200H	4535	125	5"	-	508	206	433	24.0	113.0	89	-	-	56.3
220B	-	160	-	85	562	224	472	27.5	-	-	154.5	127	83.6
220F	5040	125	5"	-	562	224	472	27.5	129.5	102	-	-	75.6
220H	5040	125	5"	-	562	224	472	27.5	129.5	102	-	-	75.6
250B	-	190	-	88	628	254	532	28.5	-	-	160.5	132	109.0
250F	5040	125	5"	-	628	254	532	28.5	155.5	127	-	-	106.0
250H	5040	125	5"	-	628	254	532	28.5	155.5	127	-	-	106.0

Notes

= Is the weight for a half coupling.

* = M is half the distance between flange faces

NB. All flexible tyres have an angular misalignment capacity up to 4°

Fire resistant and anti static (FRAS) tyres are available

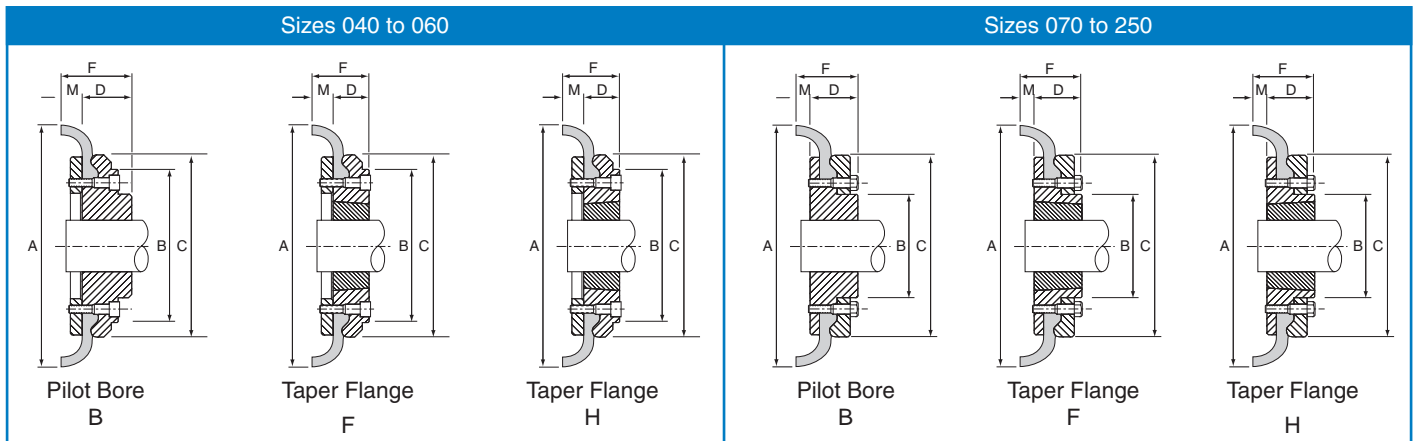
Challenge standard tyres are manufactured from natural rubber with an operating temperature span between -50°C and +50°C.

Challenge FRAS tyres are manufactured from chloroprene rubber and have an operating temperature span between -15°C and +70°C

All Challenge FFX Flanges up to size 180 are produced from forged C45 steel. From size 200 upwards are produced from GGG.

FFX Tyre Couplings

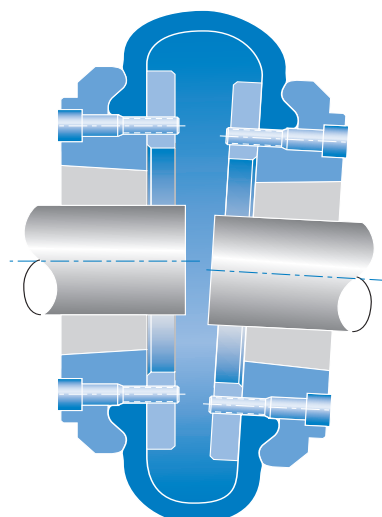
FFX Tyre Coupling Data



FFX Coupling Installation and Operational Data

Coupling Size	Flange Face Spacing mm	Gap Between Tyre Ends mm	Nominal Torque Nm	Max Speed rev/min	Max Parallel Misalignment mm	Max End Float* mm	Clamping Screw	
							Size	Torque Nm
40	22	2	24	4500	1.1	1.3	M6	15
50	25	2	66	4500	1.3	1.7	M6	15
60	33	2	127	4000	1.6	2.0	M6	15
70	23	3	250	3600	1.9	2.3	M8	24
80	25	3	375	3100	2.1	2.6	M8	24
90	27	3	500	3000	2.4	3.0	M10	40
100	27	3	675	2600	2.6	3.3	M10	40
110	25	3	875	2300	2.9	3.7	M10	40
120	29	3	1330	2050	3.2	4.0	M12	50
140	32	5	2325	1800	3.7	4.6	M12	55
160	30	5	3770	1600	4.2	5.3	M16	80
180	46	6	6270	1500	4.8	6.0	M16	105
200	48	6	9325	1300	5.3	6.6	M16	120
220	55	6	11600	1100	5.8	7.3	M20	165
250	59	6	14675	1000	6.6	8.2	M20	165

* End Float, alternatively called axial misalignment



Accommodate simultaneous maximum misalignment in all planes.

FFX Tyre Coupling Installation

Installation Instructions

- 1] Clean all parts
- 2] Assemble the flanges onto the shafts after connecting the clamping rings loosely to them
- 3] Move the flanges along the shafts until dimension '2M' is obtained (see Table 3). Ensure there is sufficient gap between the shaft ends to allow for any axial movement
- 4] Check the alignment in both parallel and angular planes to ensure the shafts are aligned as accurately as possible – the more accurate the alignment, the less the tyre wear. See Table 3 for misalignment values
- 5] Fit the tyre into the gap between the flange and clamping ring, ensuring the tyre bead is correctly located. When correctly seated, the tyre gap should match the value in Table 4
- 6] Tighten the clamping ring screws alternately, and gradually, until the correct torque is achieved (see Table 3)

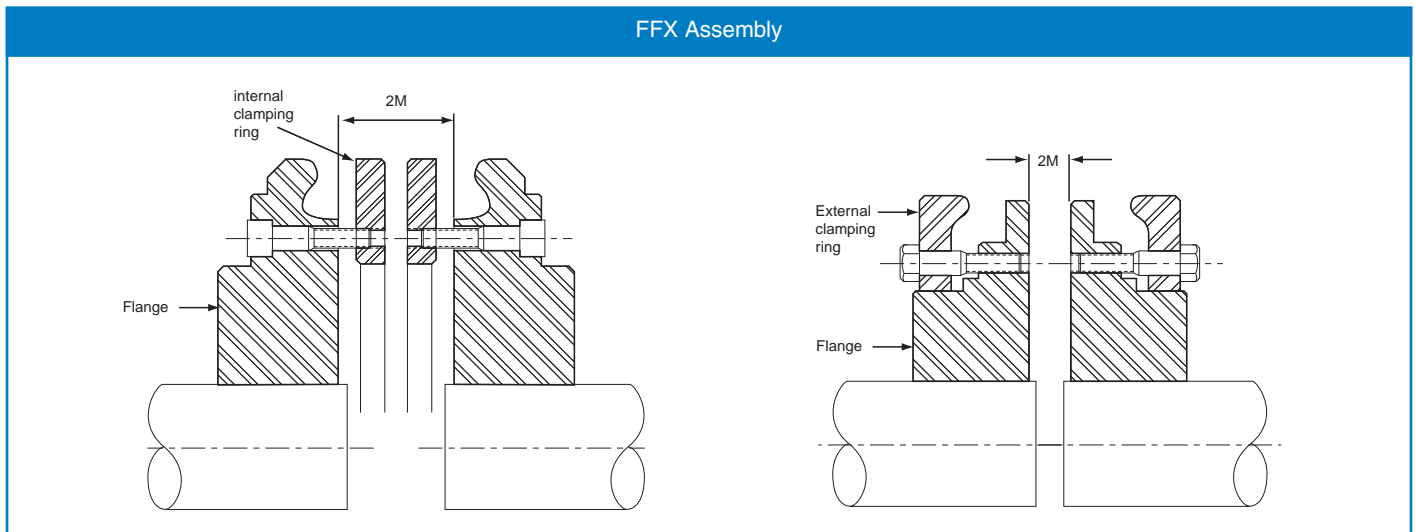


Table 3

FFX Coupling size	040	050	060	070	080	090	100	110	120	140	160	180	200	220	250
Parallel misalignment	1.0	1.3	1.6	1.9	2.1	2.4	2.6	2.9	3.2	3.7	4.2	4.8	5.3	5.8	6.6
Axial (end float) misalignment	1.3	1.7	2.0	2.3	2.6	3.0	3.3	3.7	4.0	4.6	5.3	6.0	6.6	7.3	8.2
Angular misalignment	4°	4°	4°	4°	4°	4°	4°	4°	4°	4°	4°	4°	4°	4°	4°
'2M' dimension	22	25	33	23	25	27	27	25	29	32	30	46	48	55	59
Clamping ring screw torque - Nm	15	15	15	24	24	40	40	40	50	55	80	105	120	165	165

Table 4

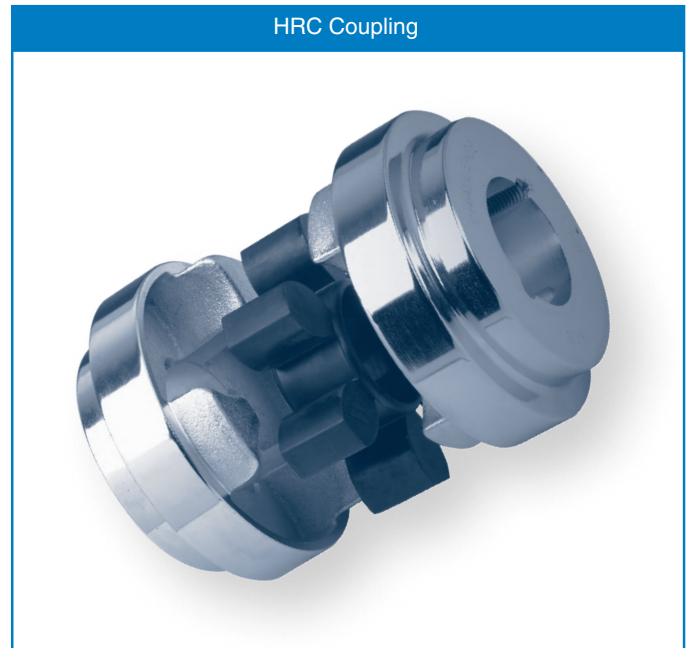
FFX Coupling Size	040 to 060	070 to 120	140 to 160	180 to 250
Gap between tyre ends	2	3	5	6

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

HRC Couplings

HRC Coupling selection procedure

- 1] **Service Factor**
from Table 1 on page 274, select the service factor that is appropriate for the application
- 2] **Design Power**
Multiply the absorbed power of the driven machine, in kW, by the service factor, from step 1) to obtain the design power. If the absorbed power is not known, use the prime mover power.
- 3] **HRC coupling size selection**
Refer to Table 2 on page 274.
Read down the left hand vertical column to the required speed. Interpolate if the exact speed is not listed
Read horizontally across on the speed line until a power equal to or in excess of the design power, from step 2), is reached
Read vertically to the top of the column to obtain the correct size of HRC coupling.
- 4] **Bore dimensions**
From the dimension Tables on page 275, check that the selected coupling will fit the shafts.



HRC Coupling selection example

Select a Challenge HRC coupling to couple an 11 kW, 970 rev/min motor to a machine tool which has to run for 17 hours/day. The motor shaft is 42 mm diameter and the machine tool shaft 38 mm diameter
Taper bush flanges are required for both shafts.

- 1] **Service factor**
From Table 1 on page 274, the service factor for this application is 2.00
- 2] **Design power**
As the machine tool absorbed power is not known, the motor power is used as a basis for selecting the coupling.
The design power is $11 \times 2.00 = 22.0 \text{ kW}$
- 3] **HRC coupling size selection**
Refer to Table 2 on page 274.
By reading down and interpolating for the required speed of 970 rev/min, it is seen that an HRC 130 will transmit 32.0 kW which is in excess of the 22.0 kW required from step 2)
- 4] **Bore dimensions**
From the dimension Table on page 275, the flanges on an HRC 130 take 1610 taper bushes which are available with bores to suit the shaft requirements of the application.



HRC Coupling Selection

Table 1, Service Factors

Special cases For applications where shock, vibration and torque fluctuations occur – consult Challenge	Type of prime mover					
	'Soft' Starts			'Heavy' Starts		
	Electric motors and other smooth running prime movers			Internal Combustion Engines		
	Number of hours per day running					
Type of driven machine	10 and under	over 10 - 16 incl	over 16	10 and under	over 10 - 16 incl	over 16
Uniform load Light duty agitators, belt conveyors for sand etc., fans up to 7.5 kW, centrifugal compressors and pumps	1.0	1.12	1.25	1.25	1.40	1.60
Moderate load Variable density agitators, belt conveyors (non-uniform loads), fans over 7.5 kW, other rotary compressors and pumps, machine tools, printing machinery, laundry machinery, rotary screens, rotary woodworking machinery	1.5	1.75	2.00	2.00	2.25	2.50
Heavy load Reciprocating compressors and pumps, positive displacement blowers, heavy duty conveyors such as screw, bucket etc., hammer mills, pulverisers, presses, shears, punches, rubber machinery, crushers, metal mills	2.50	2.75	3.00	3.00	3.50	4.00

Table 2, Power Ratings (kW)

Rotational speed in rev/min	70	90	110	130	150	180	230	280
100	0.33	0.84	1.68	3.30	6.28	9.95	20.9	33.0
150	0.50	1.26	2.52	4.95	9.42	14.9	31.4	49.5
200	0.66	1.68	3.36	6.60	12.6	19.9	41.8	66.0
300	0.99	2.52	5.04	9.90	18.8	29.9	62.7	99.0
400	1.32	3.36	6.72	13.2	25.1	39.8	83.6	132
500	1.65	4.20	8.40	16.5	31.4	49.8	105	165
600	1.98	5.04	10.1	19.8	37.7	59.7	125	198
700	2.31	5.88	11.8	23.1	44.0	69.7	146	231
720	2.37	6.05	12.1	23.8	45.2	71.6	150	238
800	2.64	6.72	13.4	26.4	50.3	79.6	167	264
900	2.97	7.56	15.1	29.7	56.5	89.6	188	297
960	3.17	8.06	16.1	31.7	60.3	95.5	201	317
1000	3.33	8.40	16.8	33.0	62.8	99.5	209	330
1200	3.96	10.1	20.2	39.6	75.4	119	251	396
1400	4.62	11.8	23.5	46.2	87.9	139	293	462
1440	4.75	12.1	24.2	47.5	90.4	143	301	475
1500	4.95	12.6	25.2	49.5	94.2	149	314	495
1800	5.94	15.1	30.2	59.4	113	179	376	594
2000	6.60	16.8	33.6	66.0	126	199	418	660
2500	8.25	21.0	42.0	82.5	157	249	523	-
2880	9.50	24.2	48.4	95.0	181	287	-	-
3000	9.90	25.2	50.4	99.0	188	299	-	-
3500	11.6	29.4	58.8	116	220	348	-	-
4000	13.2	33.6	67.2	132	251	-	-	-
4500	14.9	37.8	75.6	149	283	-	-	-
5000	16.5	42.0	84.0	-	-	-	-	-

All power ratings are constant torque
Interpolate for speeds not listed

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

HRC Couplings

HRC Common Data

Coupling Size	Nominal Torque Nm	Overall Diameter A	Hub Diameter B	Assembled Length F	Element		Parallel Misalignment	Weight kg	Assembled Length (L)		
					Ring Dia E	Ring Width G			FF, FH, HH	FB,HB	BB
70	31	69	60	25.5	31	18.5	0.3	1.00	65.5	65.5	65.5
90	80	85	70	30.5	32	22.5	0.3	1.17	69.5	76.5	82.5
110	160	112	100	45.5	45	29.5	0.3	5.00	82.5	100.5	119.5
130	315	130	105	53.5	50	36.5	0.4	5.46	89.5	110.5	131.5
150	600	150	115	60.5	62	40.5	0.4	7.11	107.5	129.5	152.5
180	950	180	125	73.5	77	49.5	0.4	16.65	142.5	165.5	189.5
230	2000	225	155	85.5	99	59.5	0.5	26.05	164.5	202.5	239.5
280	3150	275	206	105.5	119	74.5	0.5	50.05	207.5	246.5	285.5

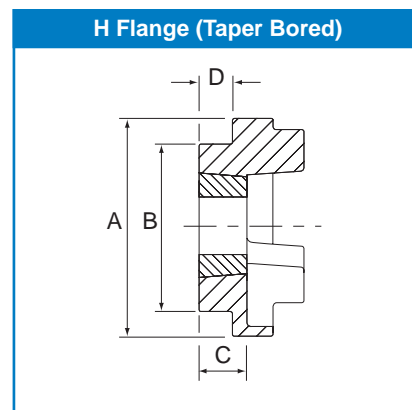
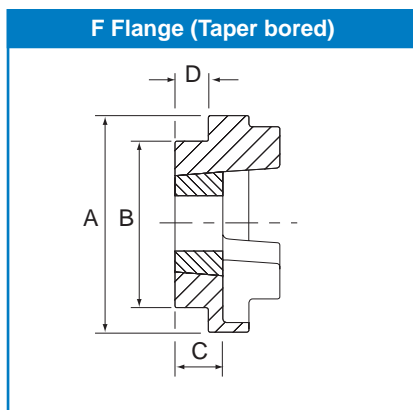
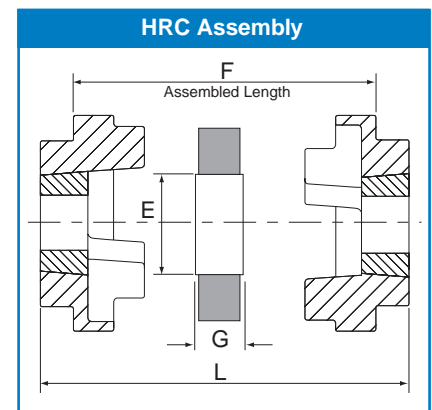
Angular misalignment capacity up to 1 deg

Weight is for an FF, FH or HH coupling with mid range Taper Bushes
F refers to combinations of flanges: FF, FH, HH, FB, HB, BB.

The elastomeric element in Challenge HRC couplings is manufactured from nitrile rubber with an operating temperature span between -40°C and +100°C.

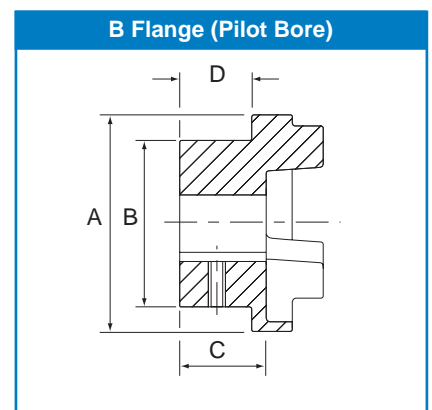
HRC Type F & H

Coupling No	Bush size	Max. Bore		Shoulder Width D	Hub Width C
		mm	inch		
70	1008	25	1"	20.0	23.5
90	1108	28	1.1/8"	19.5	23.5
110	1610	42	1.5/8"	18.5	26.5
130	1610	42	1.5/8"	18.0	26.5
150	2012	50	2"	23.5	33.5
180	2517	65	2.1/2"	34.5	46.5
230	3020	75	3"	39.5	52.5
280	3525	100	4"	51.0	66.5



HRC Type B (Pilot Bore)

Coupling No	Max. Bore	Pilot Bore	Keyway Screw Size	Shoulder Width D	Hub Width C
70	32	8	M 6	20	23.5
90	42	10	M 6	26	30.5
110	55	10	M10	37	45.5
130	60	15	M10	39	47.5
150	70	20	M10	46	56.5
180	80	25	M10	58	70.5
230	100	25	M12	77	90.5
280	115	30	M16	90	105.5



NPX Couplings

NPX Coupling selection procedure

Based on Power and Speed

1] Service Factor

From Table 1 on page 277, select the service factor that is appropriate for the application

2] Design Power

Multiply the absorbed power, kW, of the driven machine by the service factor, from step 1) to obtain the design power.
If the absorbed power is not known, use the prime mover power.

3] NPX coupling size selection

Refer to Table 2 on page 277.

Read down the left hand vertical column to the required speed.
Interpolate if the exact speed is not listed
Read horizontally across on the speed line until a power equal to or in excess of the design power, from step 2), is reached.
Read vertically to the top of the column to obtain the correct size of NPX coupling.

4] Bore dimensions

From the dimension Tables on pages 279 and 280, check that the selected coupling will fit the shafts.

Based on IEC Electric Motors (page 278)

1] Note the frame size of the motor, power, speed (or number of poles)

2] Read across to the column headed by the motor speed (or number of poles)

3] The next column to the motor power gives the size of NPX coupling required
Pilot bore flange sizes are in normal type face. Taper bore flanges are in italic



NPX coupling selection example

Select a Challenge NPX coupling to couple a 15.0 kW, 1460 rev/min motor to a pulveriser which absorbs 13.2 kW.

Both shaft diameters are 42 mm and Taper bush flanges are required for both shafts.

1] Service factor

from Table 1 on page 277, the service factor for this application is 1.75

2] Design power

using the absorbed power of the pulveriser, the design power is $13.2 \times 1.75 = 23.1$ kW

3] NPX coupling size selection

Refer to Table 2 on page 277

By reading down and interpolating for the required speed of 1460 rev/min, it is seen that an NPX size 110 will transmit 24.5 kW which is in excess of the 23.1 kW required from step 2)

4] Bore dimensions

from the dimension Table on page 280, the flanges on an NPX 110 take a 1610 taper bush which are available with bores to suit the shaft requirements of the application

NPX Coupling Selection

Table 1, Service Factors

Special cases For applications where shock, vibration and torque fluctuations occur – consult Challenge	Type of prime mover		
	Electric motors and other smooth running devices	Internal combustion engines with 4 or more cylinders	Internal combustion engines with less than 4 cylinders
Type of driven machine			
Uniform load Light duty agitators, belt conveyors for sand etc., fans upto 7.5 kW, centrifugal compressors and pumps, generators	1.00	1.25	1.50
Moderate load Variable density agitators, belt conveyors (non-uniform loads), fans over 7.5 kW, other rotary compressors and pumps, machine tools, printing machinery, laundry machinery, rotary screens, rotary woodworking machinery	1.25	1.50	2.00
Heavy load Reciprocating compressors and pumps, positive displacement blowers, heavy duty conveyors such as screw, bucket etc., hammer mills, pulverisers, presses, shears, punches, rubber machinery, crushers, metal mills	1.75	2.00	2.50

The above Service Factors are based on 24 hours/day duty

Table 2, Power Ratings (kW)

Rotational speed in rev/min	58	68	80	95	110	125	140	160	180	200	225	250
100	0.20	0.36	0.63	1.05	1.68	2.51	3.77	5.86	9.22	14.0	20.9	29.3
150	0.30	0.54	0.95	1.58	2.52	3.77	5.66	8.79	13.8	21.0	31.4	44.0
200	0.40	0.72	1.26	2.10	3.36	5.02	7.54	11.7	18.4	28.0	41.8	58.6
300	0.60	1.08	1.89	3.15	5.04	7.53	11.3	17.6	27.7	42.0	62.7	87.9
400	0.80	1.44	2.52	4.20	6.72	10.0	15.1	23.4	36.9	56.0	83.6	117
500	1.00	1.80	3.15	5.25	8.40	12.6	18.9	29.3	46.1	70.2	105	147
600	1.20	2.16	3.78	6.30	10.1	15.1	22.6	35.2	55.3	84.0	125	176
700	1.40	2.52	4.41	7.35	11.8	17.6	26.4	41.0	64.5	98.2	147	205
720	1.44	2.59	4.54	7.56	12.1	18.1	27.1	42.2	66.4	101	151	211
800	1.60	2.88	5.04	8.40	13.4	20.1	30.2	46.9	73.8	112	168	235
900	1.80	3.24	5.67	9.45	15.1	22.6	33.9	52.7	83.0	126	188	264
960	1.92	3.46	6.05	10.1	16.1	24.1	36.2	56.3	88.5	135	201	281
1000	2.00	3.60	6.30	10.5	16.8	25.1	37.7	58.6	92.2	140	209	293
1200	2.40	4.32	7.56	12.6	20.2	30.1	45.2	70.3	111	168	251	352
1400	2.80	5.04	8.82	14.7	23.5	35.1	52.8	82.0	129	196	293	410
1440	2.88	5.18	9.07	15.1	24.2	36.1	54.3	84.4	133	202	302	422
1500	3.00	5.40	9.45	15.8	25.2	37.7	56.6	87.9	138	210	314	440
1800	3.60	6.48	11.3	18.9	30.2	45.2	67.9	105	166	253	377	528
2000	4.00	7.20	12.6	21.0	33.6	50.2	75.4	117	184	281	419	586
2500	5.00	9.00	15.8	26.3	42.0	62.8	94.3	147	231	351	524	733
2880	5.76	10.4	18.1	30.2	48.4	72.3	109	169	266	404	603	-
3000	6.00	10.8	18.9	31.5	50.4	75.3	113	176	277	421	628	-
3500	7.00	12.6	22.1	36.8	58.8	87.9	132	205	323	-	-	-
4000	8.00	14.4	25.2	42.0	67.2	100	151	234	-	-	-	-
4500	9.00	16.2	28.4	47.3	75.6	113	170	-	-	-	-	-
5000	10.0	18.0	31.5	52.5	84.0	126	-	-	-	-	-	-

All power ratings are constant torque
Interpolate for speeds not listed

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

NPX Coupling Selection

IEC motor selection Table (50Hz)

Frame size, shaft diameter and length			Motor power (kW) 2-pole 3000 rev/min	NPX size *	Motor power (kW) 4-pole 1500 rev/min	NPX size *	Motor power (kW) 6-pole 1000 rev/min	NPX size *	Motor power (kW) 8-pole 750 rev/min	NPX size *
	2 pole	4, 6, 8 pole								
80	19 x 40		0.75	58 / 80	0.55	58 / 80	0.37	58 / 80	0.18	
			1.1	58 / 80	0.75	58 / 80	0.55	58 / 80	0.25	
90S	24 x 50		1.5	68 / 80	1.1	68 / 80	0.75	68 / 80	0.37	
90L			2.2	68 / 80	1.5	68 / 80	1.1	68 / 80	0.55	
100L	28 x 60		3.0	80 / 80	2.2	80 / 80	1.5	80 / 80	0.75	80 / 80
					3.0				1.1	80 / 80
112M			4.0	80 / 80	4.0	80 / 80	2.2	80 / 80	1.5	80 / 80
132S	38 x 80		5.5	95 / 110	5.5	95 / 110	3.0	95 / 110	2.2	95 / 110
			7.5	95 / 110		95 / 110				
132M					7.5		4.0	95 / 110	3.0	95 / 110
							5.5	95 / 110		
160M	42 x 110		11	95 / 110	11	95 / 110	7.5	95 / 110	4.0	95 / 110
			15	95 / 110					5.5	95 / 110
160L			18.5	95 / 110	15	110 / 110	11	110 / 110	7.5	110 / 110
180M	48 x 110		22	110 / 125	18.5	110 / 125				
180L					22	125 / 125	15	125 / 125	11	125 / 125
200L	55 x 110		30	125 / 160	30	125 / 160	18.5	125 / 160	15	125 / 160
			37	125 / 160			22	140 / 160		
225S	55 x 110	60 x 140		125 / 160	37	140 / 160			18.5	140 / 160
225M			45	125 / 160	45	140 / 160	30	140 / 160	22	140 / 160
250M	60 x 140	65 x 140	55	140 / 160	55	160 / 160	37	160 / 160	30	160 / 160
280S	75 x 140		75	160 / 160	75	<i>200</i>	45	<i>200</i>	37	<i>250</i>
280M			90	160 / 160	90	<i>200</i>	55	<i>200</i>	45	<i>250</i>
315S	80 x 170		110	160 / 160	110	<i>250</i>	75	<i>250</i>	55	<i>250</i>
315M			132	160 / 160	132		90	<i>250</i>	75	<i>250</i>
315L	65 x 140		160	160 / 160	160		110	<i>250</i>	90	<i>250</i>
			200		200		132	<i>250</i>	110	<i>250</i>
315	85 x 170						160	<i>250</i>	132	<i>250</i>
			250		250	<i>250</i>	200			

The above selection procedure is based on the following parameters:-

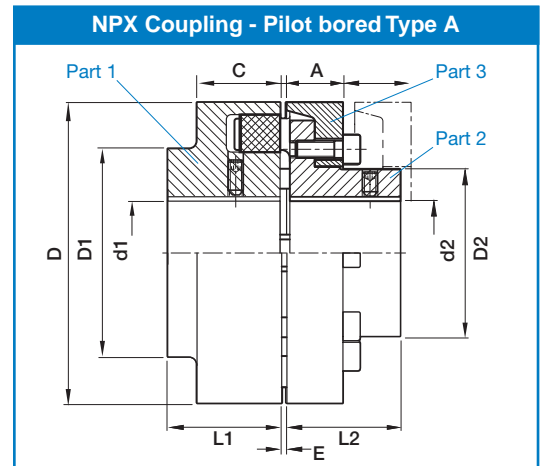
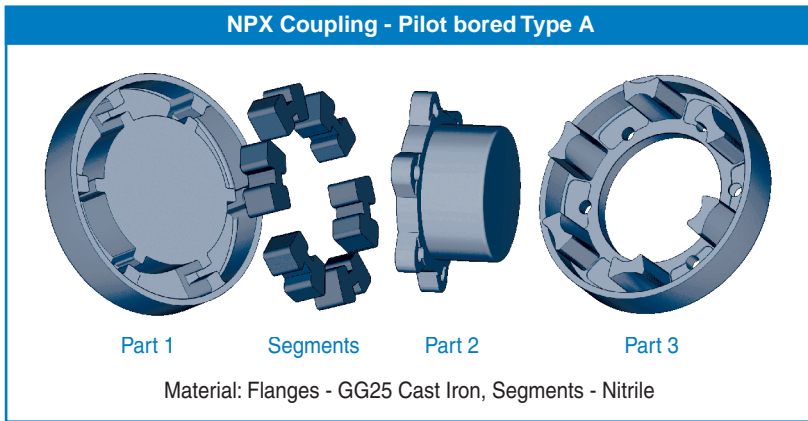
- Service factor of 1.25
- No more than 25 starts per hour

If the parameters differ from the above, the selection should be based on power and speed

* Pilot bore flanges are in **bold normal** type face

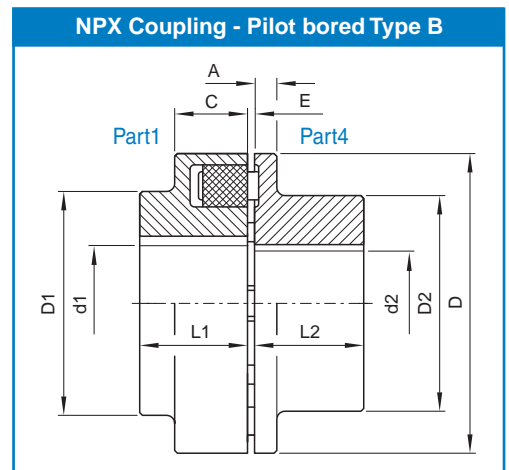
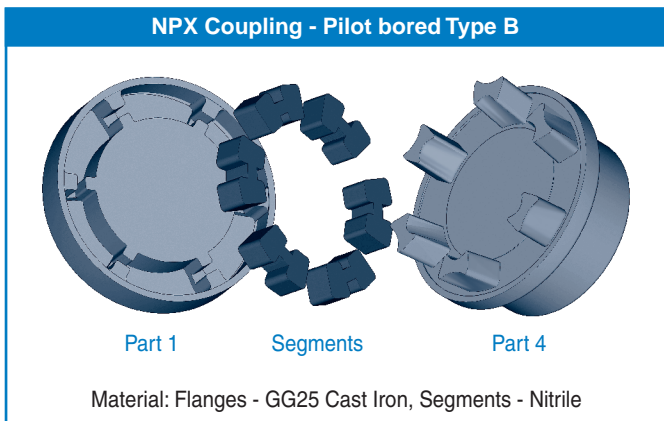
* Taper bore flanges are in *light italic* type face

NPX Couplings



Pilot bored Type A

Size	Power at 100 rev/min kW	Torque		Max Speed rev/min	Minimum bore		Maximum bore		D parts 1 and 3	L1 part 1	L2 part 2	D1 part 1	D2 part 2	A part 3	C part 1	E	Weight of flange kg		
		Rated Nm	Max Nm		d1 part 1	d2 part 2	d1 part 1	d2 part 2									flange part 1	flange part 2	flange part 3
110	1.68	160	480	5000	17	12	48	38	111	40	40	86	62	20.0	34	2 - 4	1.95	1.38	1.97
125	2.51	240	720	5000	18	15	55	45	126	50	50	100	75	23.5	36	2 - 4	3.05	2.42	1.97
140	3.77	360	1080	4900	20	17	60	50	141	55	55	100	82	28.0	34	2 - 4	3.65	3.04	2.50
160	5.86	560	1680	4250	25	20	65	58	161	60	60	108	95	28.0	40	2 - 6	5.05	4.19	3.49
180	9.22	880	2640	3800	25	20	75	65	180	70	70	125	108	30.0	42	2 - 6	7.80	5.94	4.41
200	14.03	1340	4020	3400	30	25	85	75	200	80	80	140	122	32.5	47	2 - 6	11.0	8.61	6.02
225	20.94	2000	6000	3000	35	30	90	85	225	90	90	150	138	38.0	52	2 - 6	15.0	12.06	8.93
250	29.32	2800	8400	2750	45	45	100	95	250	100	100	165	155	42.0	60	3 - 8	19.5	17.41	11.70



Pilot bored Type B

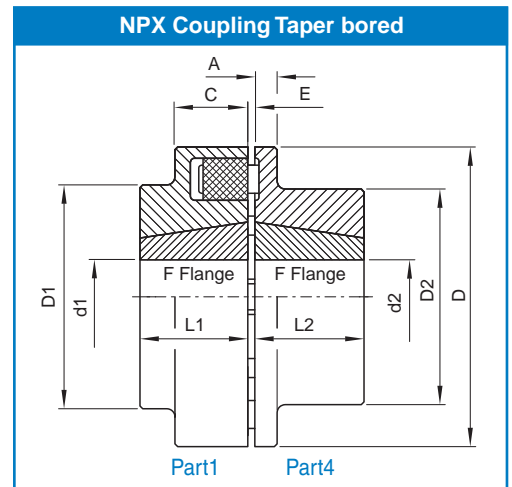
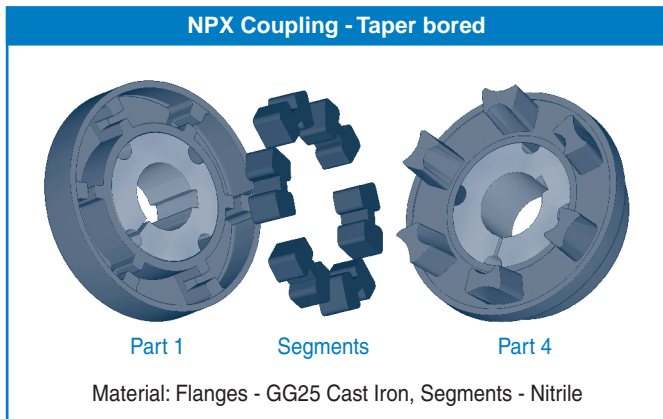
Size	Power at 100 rev/min kW	Torque		Max Speed rev/min	Minimum bore		Maximum bore		D parts 1 and 4	L1 part 1	L2 part 4	D1 part 1	A part 4	C part 1	E	Weight of flange kg	
		Rated Nm	Max Nm		d1 part 1	d2 part 4	d1 part 1	d2 part 4								part 1	part 4
58	0.20	19	57	5000	-	-	19	19	59	20	20	-	8	20	2 - 4	0.24	0.28
68	0.36	34	102	5000	-	-	24	24	69	20	20	-	8	20	2 - 4	0.32	0.45
80	0.63	60	180	5000	12	12	30	30	81	30	30	-	10	30	2 - 4	0.75	0.94
95	1.05	100	300	5000	12	12	42	42	96	35	36	76	13	30	2 - 4	1.30	1.55
110	1.68	160	480	5000	17	17	48	48	111	40	40	86	14	34	2 - 4	1.95	2.25
125	2.51	240	720	5000	18	18	55	55	126	50	50	100	18	36	2 - 4	3.05	3.60
140	3.77	360	1080	4900	20	20	60	60	141	55	55	100	20	34	2 - 4	3.65	4.50
160	5.86	560	1680	4250	25	25	65	65	161	60	60	108	20	40	2 - 6	5.05	5.95
180	9.22	880	2640	3800	25	25	75	75	180	70	70	125	20	42	2 - 6	7.80	8.50
200	14.03	1340	4020	3400	30	30	85	85	200	80	80	140	24	47	2 - 6	11.0	12.4
225	20.94	2000	6000	3000	35	35	90	90	225	90	90	150	18	52	2 - 6	15.0	15.5
250	29.32	2800	8400	2750	45	45	100	100	250	100	100	165	18	60	3 - 8	19.5	19.5

Weight and inertia figures are for a mid range bore.

Temperature range -30°C to 75°C

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused. All dimensions in millimetres unless otherwise stated.

NPX Couplings



Taper bored

Size	Power at 100 rev/min kW	Torque		Max speed rev/min	Bush for F flange	Max bore d1/d2 parts 1 and 4	D parts 1 and 4	L1 part 1	L2 part 4	D1 part 1	D2 part 4	A part 4	C part 1	E	Weight of flange kg	
		rated Nm	max Nm												flange part 1	flange part 4
80	0.63	60	180	5000	1108	28	80	22.5	22.5	0	0	22.5	22.5	2 - 4	0.75	0.94
95	1.05	100	300	5000	1210	32	95	26.5	26.5	0	76	13.0	26.5	2 - 4	1.30	1.55
110	1.68	160	480	5000	1615	42	110	38.5	38.5	86	86	14.0	34.0	2 - 4	1.95	2.25
125	2.51	240	720	5000	2012	50	125	32.5	32.5	0	100	18.0	32.5	2 - 4	3.05	3.60
140	3.77	360	1080	4900	2012	50	140	32.5	32.5	0	100	20.0	32.5	2 - 4	3.65	4.50
160	5.86	560	1680	4250	2517	65	160	46.0	46.0	108	108	20.0	40.0	2 - 6	5.05	5.95
180	9.22	880	2640	3800	2517	65	180	46.0	46.0	125	125	20.0	42.0	2 - 6	7.80	8.50
200	14.03	1340	4020	3400	3020	75	200	52.0	52.0	140	140	24.0	47.0	2 - 6	11.0	12.4
225	20.94	2000	6000	3000	3020	75	225	52.0	52.0	150	150	18.0	52.0	2 - 6	15.0	15.5
250	29.32	2800	8400	2750	3535	90	250	90.0	90.0	165	165	18.0	60.0	3 - 8	19.5	19.5

Weight and inertia figures are for a mid range bore.

Temperature range -30°C to 75°C

RPX Couplings

RPX Coupling selection procedure Based on Power and Speed

- 1] **Service Factor**
From Table 1 on page 282, select the service factor that is appropriate for the application
- 2] **Design Power**
Multiply the absorbed power, kW, of the driven machine by the service factor, from step 1) to obtain the design power. If the absorbed power is not known, use the prime mover power.
- 3] **RPX coupling size selection**
Refer to Table 2 on page 283 and select either the standard 92 shore spider or the higher torque 98 shore spider. Read down the left hand vertical column to the required speed. (Interpolate if the exact speed is not listed). Read horizontally across on the speed line until a power equal to or in excess of the design power, from step 2), is reached. Read vertically to the top of the column to obtain the correct size of RPX coupling.
- 4] **Bore dimensions**
From the dimension Tables on page 285, check that the selected coupling will fit the shafts.

Based on IEC Electric Motors, see page 284

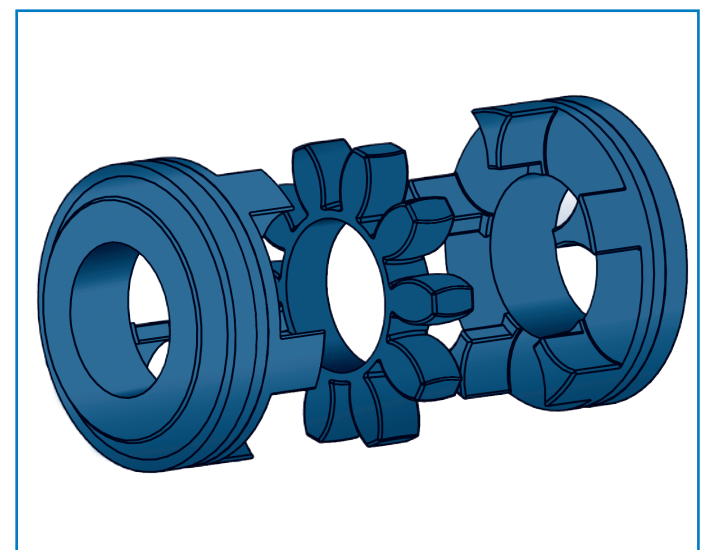
- 1] Note the frame size of the motor, power, speed (or number of poles)
- 2] Read across to the column headed by the motor speed (or number of poles)
- 3] The next column to the motor power gives the size of RPX coupling required

RPX Coupling selection example

Select a Challenge RPX coupling to couple an 11.0 kW, 1450 rev/min motor to a hammer mill which absorbs 9.6 kW running for 12 hours per day with no more than 30 stops/starts per hour. A good shock absorbing spider is required for this heavy duty application.

The ambient temperature is + 38°C. The motor shaft is 42mm diameter and the kiln shaft 38mm.

- 1] **Service factor**
From Table 1 on page 282, the service factor for this application is: $1.75 \times 1.2 \times 1.0 = 2.1$
- 2] **Design power**
The design power is $9.6 \times 2.1 = 20.2$ kW



- 3] **RPX coupling size selection**
Because of its shock absorbing characteristics, the 92 shore spider is chosen: Refer to Table 2 on page 283

By reading down and interpolating for the required speed of 1450 rev/min, it is seen that an RPX size 38 will transmit 28.9 kW which is in excess of the 20.2 kW required from step 2)
- 4] **Bore dimensions**
From the dimension Tables on page 285, the flanges on an RPX 38 take an 1108 taper bush with a maximum bore of 28mm. Therefore, pilot bore flanges will be required as follows: Flange Type 1 bored 38mm and flange Type 1a bored 42mm

If taper bore flanges are required then a RPX size 42 will have to be used. The RPX size 42 utilises a 1610 taper bush with a maximum bore of 42mm.

RPX Coupling Selection

Table 1, Service Factors

Special cases For applications where shock, vibration and torque fluctuations occur – consult Challenge	Type of prime mover		
	Type of driven machine	Electric motors and other smooth running devices	Internal combustion engines with 4 or more cylinders
Uniform load Light duty agitators, belt conveyors for sand etc., fans up to 7.5 kW, centrifugal compressors and pumps,	1.0	1.25	1.50
Moderate load Variable density agitators, belt conveyors (non-uniform loads), fans over 7.5 kW, other rotary compressors and pumps, machine tools, printing machinery, laundry machinery, rotary screens, rotary woodworking machinery	1.25	1.50	2.00
Heavy load Reciprocating compressors and pumps, positive displacement blowers, heavy duty conveyors such as screw, bucket etc., hammer mills, pulverisers, presses, shears, punches, rubber machinery, crushers, metal mills	1.75	2.00	2.50

The above Service Factors are based on 24 hours/day duty

Additional service factor multiplier for temperature : -30°C to +30° = 1.00, +40°C = 1.2, +60°C = 1.4, +80°C = 1.8

Additional frequent start multiplier : up to 100 starts/hour = 1.0 100-200 = 1.2 200-400= 1.4 400-800=1.6

Challenge elements are manufactured from polyurethane with an operating temperature span between -40°C to +100°C.

They can also accommodate transient temperatures up to +120°C

RPX Coupling Selection

Table 2, Power Ratings (kW) for 92 shore elements (Yellow)

Rotational speed in rev/min	19	24	28	38	42	48	55	65	75	90
100	0.10	0.37	1.00	1.99	2.78	3.25	4.29	6.55	13.4	25.1
150	0.15	0.56	1.50	2.99	4.17	4.88	6.44	9.83	20.1	37.7
200	0.20	0.74	2.00	3.98	5.56	6.50	8.58	13.1	26.8	50.2
300	0.30	1.11	3.00	5.97	8.34	9.75	12.9	19.7	40.2	75.3
400	0.40	1.48	4.00	7.96	11.1	13.0	17.2	26.2	53.6	100
500	0.52	1.83	4.98	9.95	13.9	16.2	21.5	32.7	67.0	126
600	0.60	2.22	6.00	11.9	16.7	19.5	25.7	39.3	80.4	151
700	0.73	2.56	6.97	13.9	19.4	22.7	30.1	45.8	93.8	176
720	0.75	2.64	7.16	14.3	20.0	23.4	30.9	47.1	96.5	181
800	0.84	2.93	7.96	15.9	22.2	26.0	34.3	52.4	107	201
900	0.94	3.29	8.96	17.9	25.0	29.2	38.6	58.9	121	226
960	1.01	3.51	9.55	19.1	26.6	31.2	41.2	62.8	129	241
1000	1.05	3.66	9.95	19.9	27.8	32.5	42.9	65.5	134	251
1200	1.26	4.39	11.9	23.9	33.3	39.0	51.5	78.5	161	302
1400	1.47	5.12	13.9	27.9	38.9	45.4	60.1	91.6	188	352
1440	1.51	5.27	14.3	28.7	40.0	46.7	61.8	94.2	193	362
1500	1.57	5.49	14.9	29.9	41.6	48.7	64.4	98.2	201	377
1800	1.88	6.59	17.9	35.8	50.0	58.4	77.3	118	241	452
2000	2.09	7.32	19.9	39.8	55.5	64.9	85.9	131	268	503
2500	2.62	9.15	24.9	49.8	69.4	81.2	107	164	335	628
2880	3.02	10.5	28.7	57.3	79.9	93.5	124	188	386	724
3000	3.14	11.0	29.9	59.7	83.3	97.4	129	196	402	754
3500	3.66	12.8	34.8	69.7	97.1	114	150	229	469	880
4000	4.19	14.6	39.8	79.6	111	130	172	262	536	-
4500	4.71	16.5	44.8	89.6	125	146	193	295	603	-
5000	5.24	18.3	49.8	99.5	139	162	215	327	-	-

Table 2, Power Ratings (kW) for 98 shore elements (Red)

Rotational speed in rev/min	19	24	28	38	42	48	55	65	75	90
100	0.18	0.63	1.68	3.40	4.71	5.50	7.17	9.84	20.1	37.7
150	0.27	0.95	2.52	5.10	7.07	8.25	10.8	14.8	30.2	56.6
200	0.36	1.26	3.36	6.80	9.42	11.0	14.3	19.7	40.2	75.4
300	0.54	1.89	5.04	10.2	14.1	16.5	21.5	29.5	60.3	113
400	0.72	2.52	6.72	13.6	19.0	22.0	28.7	39.4	80.4	151
500	0.89	3.14	8.38	17.0	23.6	27.5	35.9	49.2	101	189
600	1.08	3.78	10.1	20.4	28.3	33.0	43.0	59.0	121	226
700	1.25	4.40	11.7	23.8	33.0	38.5	50.2	68.9	141	264
720	1.28	4.52	12.1	24.5	33.9	39.6	51.6	70.9	145	271
800	1.42	5.02	13.4	27.2	37.7	44.0	57.4	78.7	161	302
900	1.60	5.65	15.1	30.6	42.4	49.5	64.6	88.6	181	339
960	1.71	6.03	16.1	32.7	45.2	52.8	68.9	94.5	193	362
1000	1.78	6.28	16.8	34.0	47.1	55.0	71.7	98.4	201	377
1200	2.14	7.54	20.1	40.8	56.5	66.0	86.1	118	241	452
1400	2.49	8.79	23.5	47.6	66.0	77.0	100	138	281	528
1440	2.56	9.04	24.1	49.0	67.9	79.2	103	142	290	543
1500	2.67	9.42	25.1	51.0	70.7	82.5	108	148	302	566
1800	3.20	11.3	30.2	61.3	84.8	98.9	129	177	362	679
2000	3.56	12.6	33.5	68.1	94.2	110	143	197	402	754
2500	4.45	15.7	41.9	85.1	118	137	179	246	503	943
2880	5.13	18.1	48.2	98.0	136	158	207	283	579	1086
3000	5.34	18.8	50.3	102	141	165	215	295	603	1131
3500	6.23	22.0	58.6	119	165	192	251	345	704	1320
4000	7.12	25.1	67.0	136	188	220	287	394	804	-
4500	8.01	28.3	75.4	153	212	247	323	443	905	-
5000	8.90	31.4	83.8	170	236	275	359	492	-	-

All power ratings are constant torque
Interpolate for speeds not listed

92 shore (yellow) are the standard elements and 98 shore (red) elements can be used for higher torques.

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

RPX Coupling Selection

IEC Motor Selection Table (50Hz)

Frame size shaft diameter and length		Motor power (kW) 2-pole 3000 rev/min	RPX size *	Motor power (kW) 4-pole 1500 rev/min	RPX size *	Motor power (kW) 6-pole 1000 rev/min	RPX size *	Motor power (kW) 8-pole 750 rev/min	RPX size *	
	2 pole	4, 6, 8 pole								
80	19 x 40		0.75	19 / 24	0.55	19 / 24	0.37	19 / 24	0.18	19 / 24
			1.1	19 / 24	0.75	19 / 24	0.55	19 / 24	0.25	19 / 24
90S	24 x 50		1.5	19 / 24	1.1	19 / 24	0.75	19 / 24	0.37	19 / 24
90L			2.2	19 / 24	1.5	19 / 24	1.1	19 / 24	0.55	19 / 24
100L	28 x 60		3.0	24 / 28	2.2	24 / 28	1.5	24 / 28	0.75	24 / 28
					3.0	24 / 28			1.1	24 / 28
112M	38 x 80		4.0	24 / 28	4.0	24 / 28	2.2	24 / 28	1.5	24 / 28
132S			5.5	28 / 42	5.5	28 / 42	3.0	28 / 42	2.2	28 / 42
			7.5	28 / 42						
132M					7.5	28 / 42	4.0	28 / 42	3.0	28 / 42
							5.5	28 / 42		
160M	42 x 110		11	38 / 42	11	38 / 42	7.5	38 / 42	4.0	38 / 42
			15	38 / 42					5.5	38 / 42
160L	48 x 110		18.5	38 / 42	15	38 / 42	11	38 / 42	7.5	38 / 42
180M			22	38 / 42	18.5	42 / 55				
180L					22	42 / 55	15	42 / 55	11	42 / 55
		200L	55 x 110		30	42 / 65	30	42 / 65	18.5	42 / 65
				37	42 / 65			22	42 / 65	
225S	55 x 110	60 x 140			37	48 / 65			18.5	48 / 65
225M			45	42 / 65	45	55 / 65	30	55 / 65	22	55 / 65
250M	60 x 140	65 x 140	55	48 / 65	55	55 / 65	37	65 / 65	30	65 / 65
280S		75 x 140	75	48 / 65	75	65 / 75	45	65 / 75	37	65 / 75
280M			90	48 / 65	90	75 / 75	55	75 / 75	45	75 / 75
315S		80 x 170	110	65 / 65	110	75 / 90	75	75 / 90	55	75 / 90
315M	65 x 140		132	65 / 65	132	75 / 90	90	75 / 90	75	90 / 90
			160	65 / 65	160	90 / 90	110	90 / 90	90	90 / 90
315L			200	75 / 75	200	90 / 90	132	90 / 90	110	90 / 90
							160	90 / 90	132	90 / 90
315		85 x 170	250	75 / 75	250	90 / 90	200	90 / 90		

The above selection procedure is based on the following parameters:-

- Service factor of 2.0
- 30° C maximum temperature
- 92 Shore insert
- 100 starts per hour maximum

If the parameters differ from the above, selection should be based on power and speed

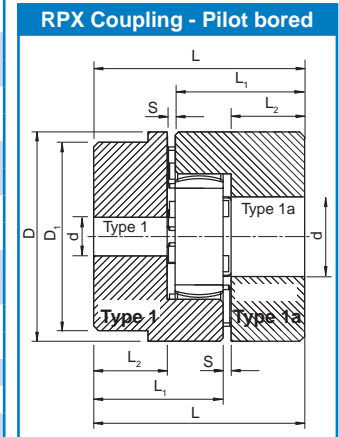
* Pilot bore flanges are in **bold normal** type face

* Taper bore flanges are in *light italic* type face

RPX Coupling Selection

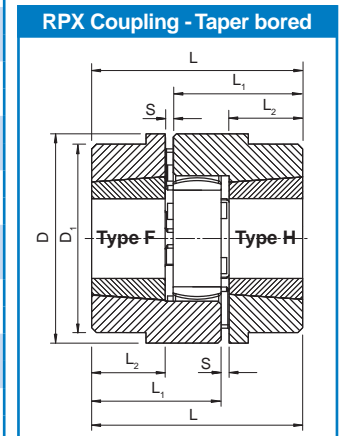
RPX Coupling Data - Pilot bored

TYPE	Max Speed rev/min	Rated Torque		D	D ₁	d-min	d-max	S	L ₁	L ₂	L	Material	Weight kg/hub
		92 shore Nm	98 shore Nm										
19 1	19000	10	17	40	32	6	19	1.0	39.0	25	65	Al	0.19
1a				40	-	19	24	1.0	39.0	25	65	Al	-
24 1	14000	35	60	56	40	9	24	1.0	46.0	30	77	Al	0.38
1a				56	-	22	28	1.0	46.0	30	77	Al	-
28 1	11800	95	160	65	48	10	28	1.5	52.5	35	89	Al	0.62
1a				65	-	28	38	1.5	52.5	35	89	Al	-
38 1	9500	190	325	80	66	12	38	1.0	66.0	45	112	CI	1.36
1a				80	-	38	45	1.0	66.0	45	112	CI	-
42 1	8000	265	450	95	75	14	42	1.0	73.0	50	124	CI	2.03
1a				95	-	42	55	1.0	73.0	50	124	CI	-
48 1	7100	310	525	105	85	15	48	1.5	80.5	56	138	CI	2.85
1a				105	-	48	60	1.5	80.5	56	138	CI	-
55 1	6300	410	685	120	98	20	55	2.0	91.0	65	158	CI	4.32
1a				120	-	55	70	2.0	91.0	65	158	CI	-
65 1	5600	625	940	135	115	20	65	1.5	105.5	75	182	CI	6.66
75 1	4750	1280	1920	160	135	30	75	1.0	120.0	85	206	CI	10.48
90 1	3750	2400	3600	200	160	40	90	1.5	139.5	100	241	CI	17.89



RPX Coupling Data - Taper bored

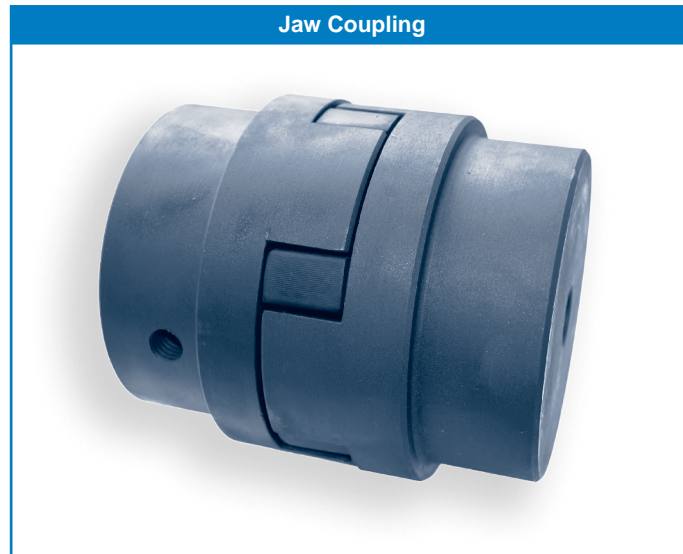
TYPE	Max Speed rev/min	Rated Torque		Bush Size	Max Bore	D	D ₁	S	L ₁	L ₂	L	Material	Weight kg/hub
		92 shore Nm	98 shore Nm										
24 F	14000	35	60	1008	25	56	-	1.0	39.0	23	63	CI	0.31
H				1008	25	56	-	1.0	39.0	23	63	CI	0.31
28 F	11800	95	160	1108	28	65	-	1.5	40.5	23	65	CI	0.46
H				1108	28	65	-	1.5	40.5	23	65	CI	0.46
38 F	9500	190	325	1108	28	80	78	1.0	44.0	23	68	CI	0.79
H				1108	28	80	78	1.0	44.0	23	68	CI	0.79
42 F	8000	265	450	1610	42	95	94	1.0	49.0	26	76	CI	1.10
H				1610	42	95	94	1.0	49.0	26	76	CI	1.10
48 F	7100	310	525	1615	42	105	104	1.5	63.5	39	104	CI	2.07
H				1615	42	105	104	1.5	63.5	39	104	CI	2.07
55 F	6300	410	685	2012	50	120	118	2.0	59.0	33	94	CI	2.22
H				2012	50	120	118	2.0	59.0	33	94	CI	2.22
65 F	5600	625	940	2012	50	135	133	1.5	63.5	33	98	CI	3.14
H				2517	65	135	133	1.5	75.5	45	122	CI	4.03
75 F	4750	1280	1920	2517	65	160	135	1.0	81.0	46	128	CI	4.69
H				3020	75	160	135	1.0	87.0	52	140	CI	4.99
90 F	3750	2400	3600	3020	75	200	160	1.5	91.5	52	145	CI	7.74
H				3525	100	200	160	1.5	103.5	64	169	CI	8.74



RPX Elements are manufactured from polyurethane and are available in Shore 92 (yellow) and Shore 98 (red) hardness

Material: Al = Aluminium CI = GG25 Cast Iron

Jaw Couplings

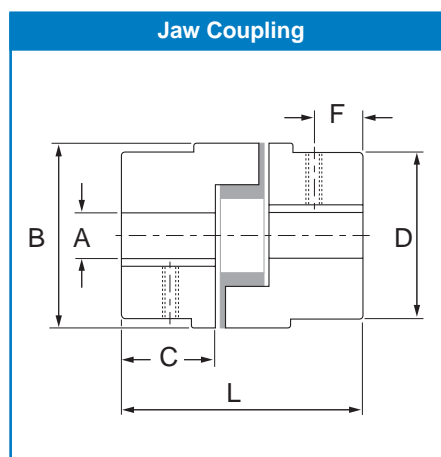


Jaw Coupling Data

Coupling Size	Nominal Torque Nm	Maximum Speed rev/min	Pilot Bore A	Maximum Bore A	Overall Diameter B	Assembled Length L	Hub Width C	Hub Diameter D	Set Screw Position F	Set Screw Size	Complete Weight kg
035	0.50	31000	4.8	8	16.0	20	7	16.0	3.0	M3	0.06
050	3.51	18000	6	14	27.5	44	16	27.5	6.5	M6	0.10
070	5.77	14000	9	19	35.0	51	19	35.0	9.5	M6	0.25
075	11.9	11000	9	24	44.5	54	21	44.5	8.0	M6	0.45
090	19.2	9000	9	24	54.0	54	21	54.0	8.7	M6	0.55
095	25.8	9000	9	28	54.0	64	25	54.0	11.5	M8	0.65
100	55.4	7000	12	35	65.0	89	35	65.0	12.5	M8	1.60
110	105	5000	15	42	84.0	108	43	84.0	20.5	M10	3.00
150	150	4000	15	48	96.0	115	45	96.0	22.5	M10	4.90
190	200	3600	19	55	115.0	133	54	102.0	22.5	M12	7.00
225	280	3600	19	60	127.0	153	64	108.0	25.5	M12	9.00

Angular misalignment capacity up to 1°
Parallel misalignment capacity up to 0.38mm

Weight is for a complete coupling with a pilot bore
Nitrile insert temperature range -40 °C to 100 °C



Chain Couplings

Chain Coupling Data

Coupling Size	Chain Size	Bore		Casing O.D. A	Casing Width B	Assembled Width C	Hub Length D	Hub Diameter E	Bolt Centres F	Torque Ratings Nm	Complete Weight kg
		Min	Max								
3012	35-2	12	15	70	62	65	28	25	57	150	0.5
4012	40-2	12	20	78	72	78	36	31	61	210	1.0
4014	40-2	12	25	85	75	80	36	43	72	300	1.4
4016	40-2	14	30	92	75	80	36	50	77	380	1.8
5014	50-2	14	35	101	84	100	45	53	82	550	2.5
5016	50-2	16	40	111	85	100	45	60	92	725	3.2
5018	50-2	16	45	123	85	100	45	70	106	925	4.0
6018	60-2	20	55	144	106	122	54	85	122	1750	7.2
6020	60-2	20	70	160	108	123	54	98	132	2050	9.5
6022	60-2	25	75	168	116	123	54	110	145	2400	11.3
8018	80-2	30	75	190	128	140	67	110	160	3800	14.7
8020	80-2	30	85	211	138	144	67	120	184	4700	18.2
8022	80-2	35	95	226	138	155	67	140	196	5500	23.3
10020	100-2	40	110	280	155	176	79	160	250	8700	36.0
12018	120-2	40	120	305	180	198	89	170	280	13250	49.0
12022	120-2	40	150	355	180	218	99	210	335	17800	77.0

Chain Coupling Selection

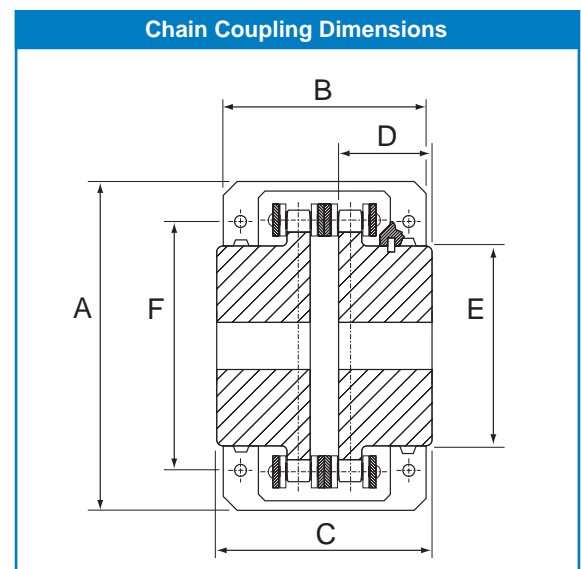
In general, the torque capacity of the coupling exceeds the normal torque transmitted by the largest shaft size that the coupling can accommodate.

Therefore, select the smallest coupling which accommodates both shaft diameters.

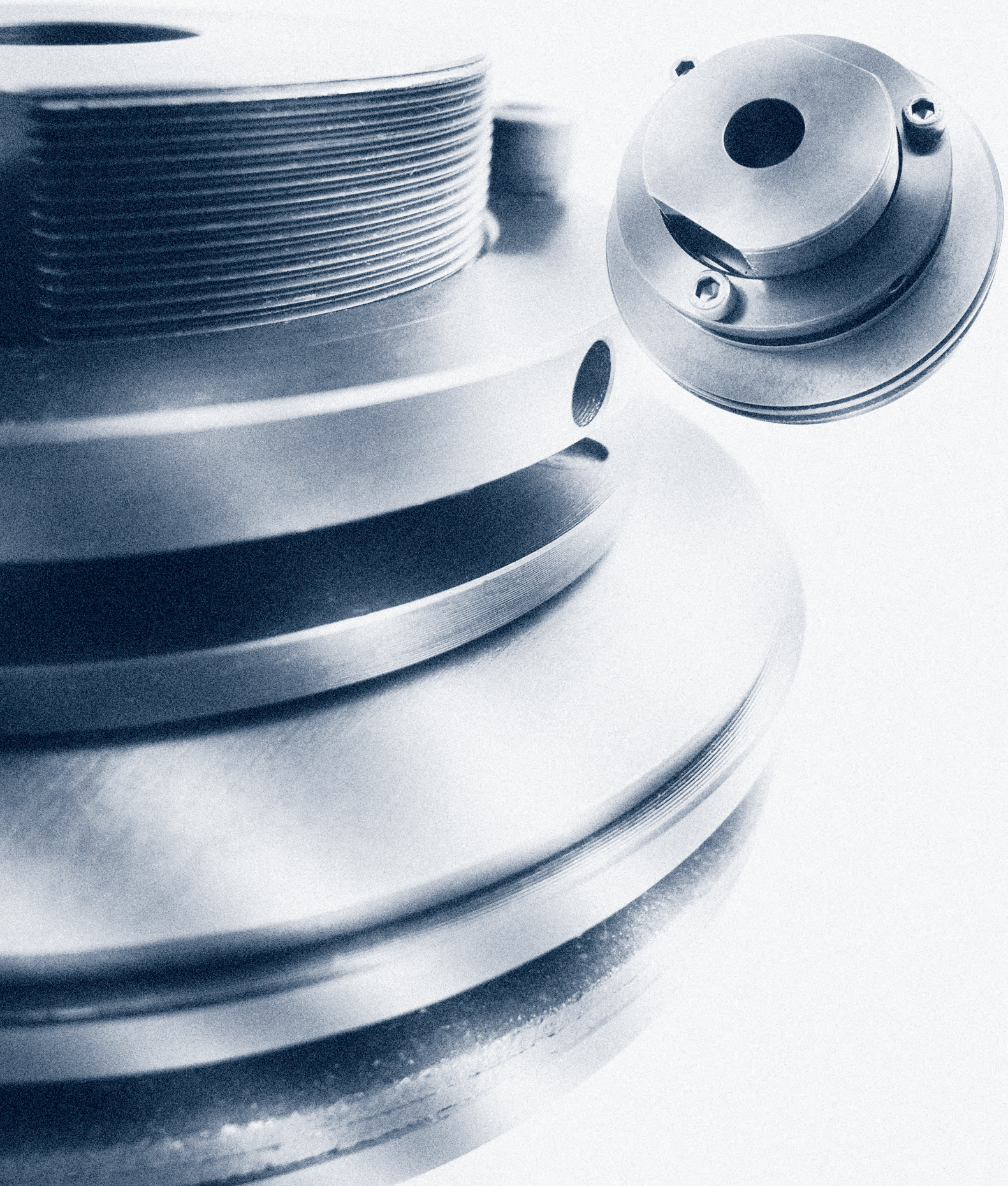
Where there is reverse operation, shock loads, or any other severe operating condition, it is recommended that the next coupling size up is selected.

Operation

In order to ensure that the maximum service life of the coupling is achieved, the cover together with the supplied 'O' rings should always be used. This is even more important when the drive is operating at high speeds or in a moist environment. The space between the cover and chain, should be filled with a soft to medium consistency grease.



CHALLENGE®



Torque Limiters



Features

- Prevent machine damage
- Eliminates costly down time
- No expensive electronics
- Simple installation
- No manual resetting required
- For use with CHALLENGE sprockets, gears, pulleys, couplings etc

Torque Limiters

Challenge Torque Limiter

The Challenge Torque limiter is a mechanical protective device that limits the transmitted torque in a drive system by slipping when the torque demand exceeds a preset value. This excessive torque is normally a result of shock loads, overloads, or machine jams. The torque limiter automatically re-engages when the overload is removed. No manual re-setting is required. Challenge Torque Limiters prevent machine damage, thus eliminating costly downtime.

Challenge Torque Limiters utilize spring loaded friction discs for their operation and slip torque is preset by adjustment of the spring force using the adjustment nut or bolts.

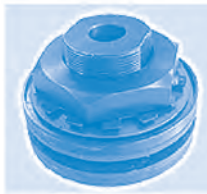
Challenge Torque Limiters can be used with platewheel sprockets, gears, pulleys, or flange plates as the centre member. This centre member is clamped between two friction discs.

Because the Challenge Torque Limiter ratings are realistic and consistent with optimum spring loads, they permit longer slip time, maintain re-engagement at preset torque and provide long lasting machine protection. This is an important advantage over the shear-pin mechanism which only serves as a one-shot remedy.



Sizes 50-1 and 50-2

- Single Nut Adjustment
- Lock Washer to prevent the nut from loosening



Sizes 65-1 and 65-2 Sizes 89-1 and 89-2

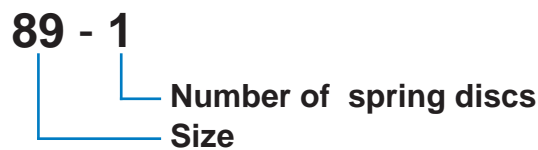
- Single Nut Adjustment
- Lock Washer to prevent the nut from loosening



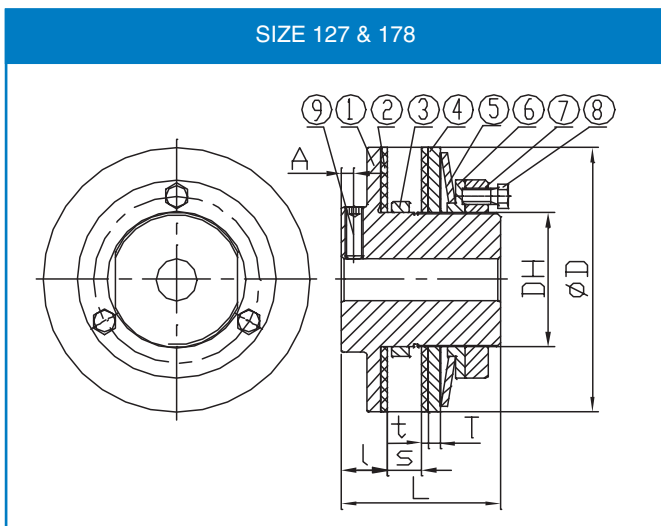
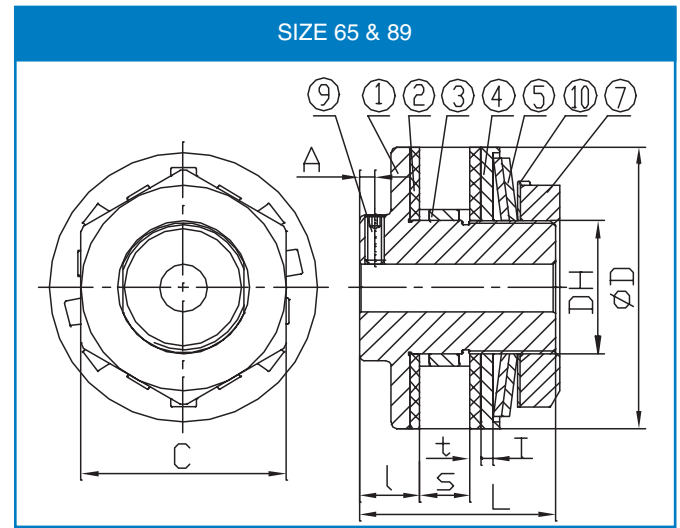
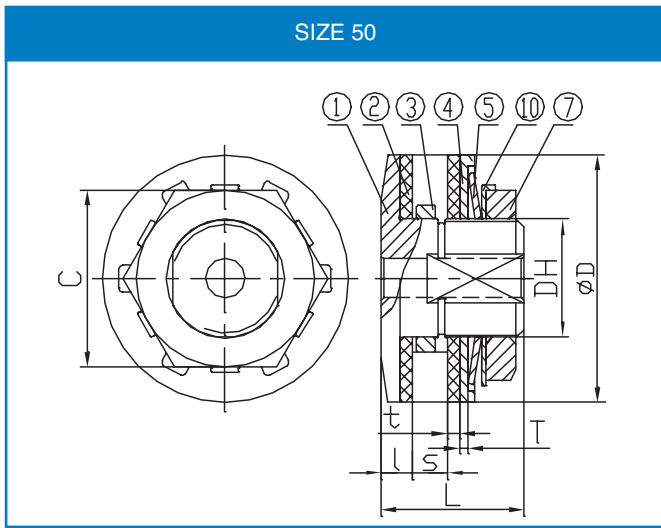
Sizes 127-1 and 127-2 Sizes 178-1 and 178-2

- Three Bolts Adjustment
- Torque preset by the three bolts (an adjustment nut to fix a pilot plate in place)

Designation



Torque Limiters



Description of parts

- ① Hub
- ② Friction Disc
- ③ Bush
- ④ Pressure Plate
- ⑤ Disc Spring
- ⑥ Pilot Plate
- ⑦ Adjustment Nut
- ⑧ Adjustment Bolt
- ⑨ Set Screw
- ⑩ Lock Washer

Dimensions and Capacity for Sizes 50 to 178

Size	Torque Range kg.m	Plain Bore	Max. Bore	Bush Length	O.D. of Bush	Bore for Centre Member	D	DH	L	I	T	t	S	(Max)	A	C	Adjust. Nut	Adjust. Bolt	Set Screw	Weight kg
50-1	0.3 ~ 1.0	8	14	3.8	30 -0.020	30 +0.033	50	24	29	6.5	1.6	2.5	7	-	36	M24	-	-		0.248
50-2	0.7 ~ 2.0			6.0	30 -0.041	30 +0														0.256
65-1	0.7 ~ 2.8	10	22	6.0	41 -0.025	41 +0.039	65	35	48	16.0	4.0	3.2	9	4.0	50	M35	-	M5		0.721
65-2	1.4 ~ 5.5			8.0	41 -0.050	41 +0														0.739
89-1	2.0 ~ 7.6	17	25	6.0	49 -0.025	49 +0.039	89	42	62	19.0	4.0	3.2	16	5.0	65	M42	-	M6		2.417
89-2	3.5 ~ 15.2			8.0																49 -0.050
127-1	4.8 ~ 21.4	20	42	6.0	74 -0.030	74 +0.046	127	65	76	22.0	6.0	3.2	16	6.0	-	M65	M8	M8		3.692
127-2	9.0 ~ 42.9			8.0																74 -0.060
178-1	11.8 ~ 58.1	30	64	8.0	105 -0.036	105 +0.054	178	95	98	24.0	7.0	3.2	29	6.5	-	M95	M10	M10		9.033
178-2	22.8 ~ 111			9.5																105 -0.071
				14.5																
				17.0																
				22.0																

1 kg.m = 9.81 Nm

Torque Limiters

SELECTION PROCEDURE

1. Determine the required slip torque required for the machine. If the slip torque is not known then set the torque limiter to 1.5 ~ 2 times the torque that the motor produces on the shaft where the torque limiter is to be mounted.
2. From the Torque Range column, select a torque limiter that has sufficient torque. Also ensure that the chosen size can accommodate the required bore.
3. Based on the thickness of the centre member to be inserted between the friction discs, determine the required bush length. Always choose a bush, which will not exceed the width of the centre member. The maximum width of the centre member that can be accommodated is shown as "S max." in the dimension table.

Note: All Challenge Torque limiters are stocked with the longest bush length.

Therefore it may be necessary to machine the bush to suit the required centre member

Bore Sizes, Minimum Recommended number of Sprocket Teeth and Bush Lengths

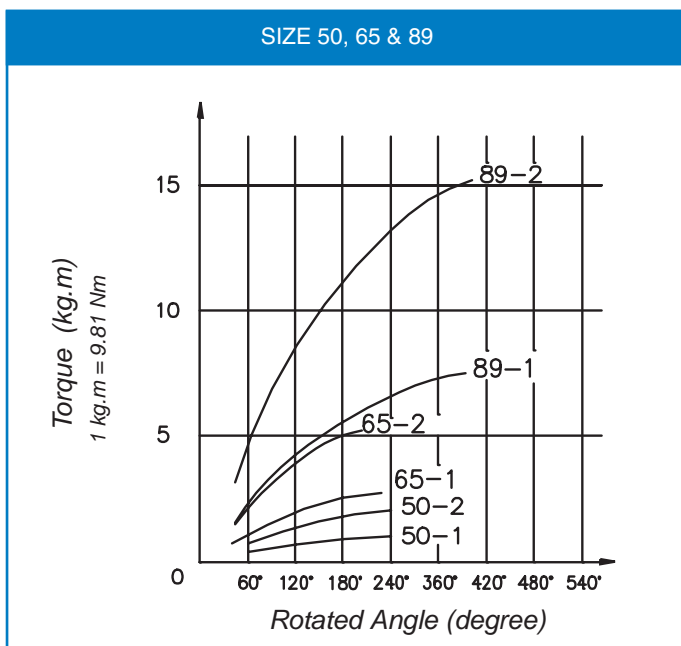
Size	Bore of Centre Member (mm)	Sprocket Pitch and Number of Teeth													
		9.525 – (06B)		12.7 – (08B)		15.875 – (10B)		19.05 – (12B)		25.4 – (16B)		31.75 – (20B)		38.1 – (24B)	
		Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)
50	30	20	3.8	16	6										
65	41			20	6	17	8								
89	49			26	6	21	8	18	9.5	15	14.5				
127	74			35	6	29	8	25	9.5	19	14.5				
178	105					39	8	33	9.5	26	14.5	21	17	18	22

SETTING THE TORQUE

Setting the torque on the limiter is achieved by tightening or loosening the adjustment nut and/or the adjustment bolts. An adjustment nut is provided for torque adjustment on the size 50 through to size 89. On the sizes 127 and 178, the adjustment is accomplished by adjusting the provided bolts.

If the torque limiter slips under normal loading conditions, tighten the nut (for size 50 ~ size 89) or the bolts (for size 127 ~ size 178) gradually until the torque limiter stops slipping.

Always tighten (or loosen) the bolts or nut evenly. Try this adjustment several times, so as to find the proper torque setting for the machine.



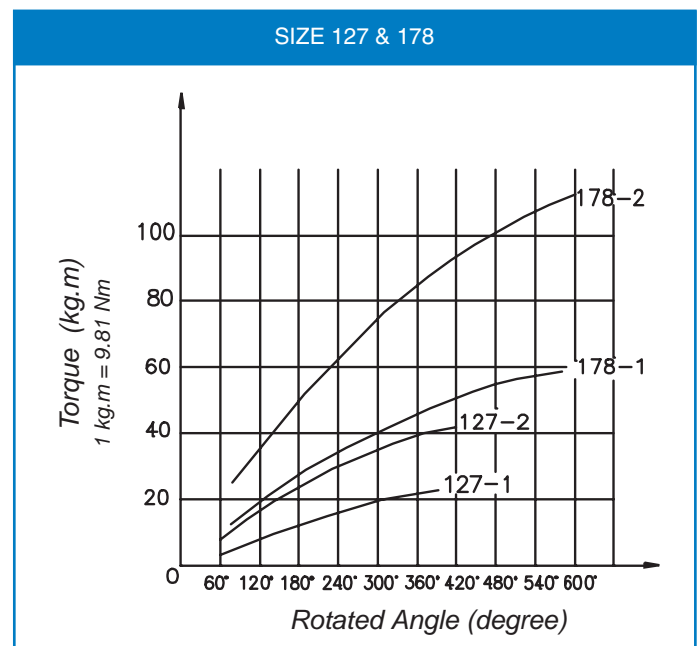
CENTRE MEMBER INFORMATION

1. So as to obtain the rated torque release and re-engagement, Challenge recommend that the centre member should be machined on its rubbing surfaces. The recommended surface finish is Ra1.6. It should also be flat, parallel, square with the bore and free from rust, scale, and oil. If these recommendations are not adhered to, the slip torque could be erratic.
2. The recommended bore that the centre member should be machined to, is shown in the table below. Also, provided is the minimum number of sprocket teeth to be used, together with the suggested bush length.

ROTATED ANGLE AND SETTING TORQUE

The chart below shows the relation between the effective rotated angle and preset torque and can be used as guidance. As an example, size 127-2 at 30kg.m (294Nm) needs a rotated angle of +260 degrees of adjustment on the bolts.

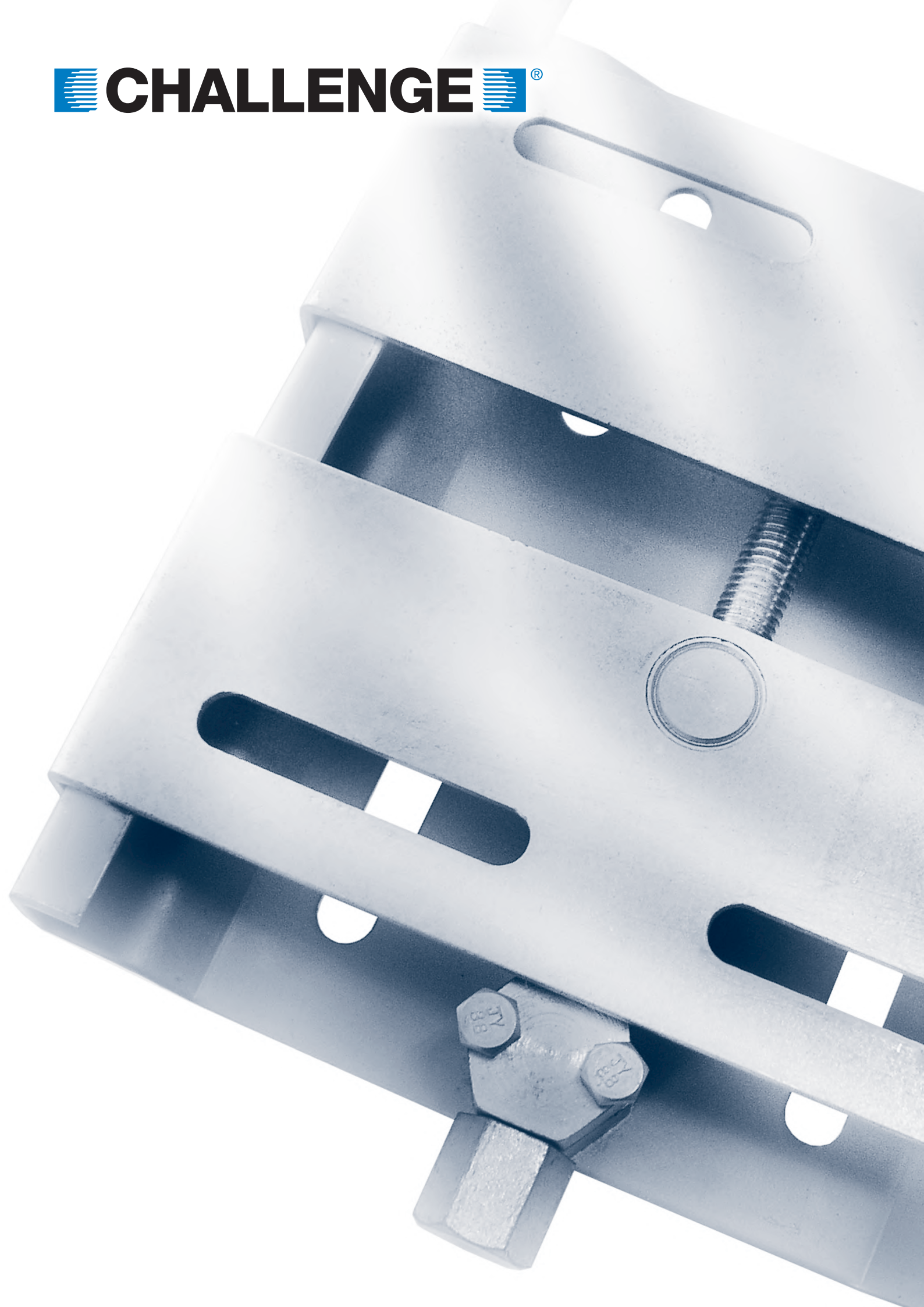
To get the precise torque setting, Challenge recommends the run-in of the torque limiter.



All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Notes

 **CHALLENGE**  [®]





Features

Rapid Fit

- Available in five sizes covering motor frames 63 to 180
- Manufactured from cold rolled steel plate making them extremely durable
- Galvanised to protect against the elements
- Easily adjustable to accommodate more than one motor size and also adjust the belt tension
- No drilling necessary

Standard Motor Mounts

- Available in three sizes covering motor frames 63 to 225
- Manufactured from cold rolled steel plate making them extremely durable
- Stove enamelled finish with zinc plated adjustment screws to protect against the elements
- Requires drilling to accommodate various motor sizes

Slide Rails

- Available in seven sizes covering motor frames 63 to 255
- Manufactured from steel
- Galvanised to protect against the elements
- Easily adjustable

Rapid Fit Motor Mounts

Specification

The fastest and most economical method of securing motors to machine beds. The five sizes are manufactured from cold rolled steel and then galvanised. They can accommodate motor frame sizes 63 to 180 and have four slotted holes for fastening the base to the foundation.

Alignment

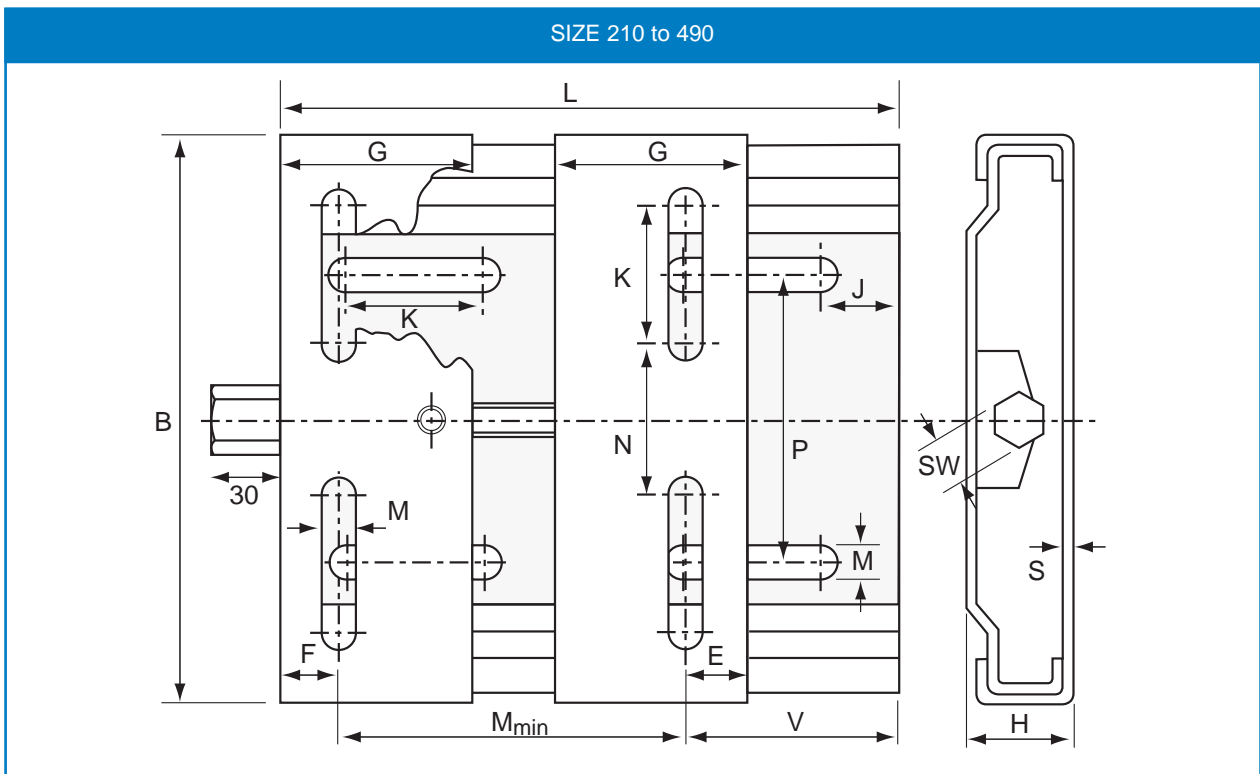
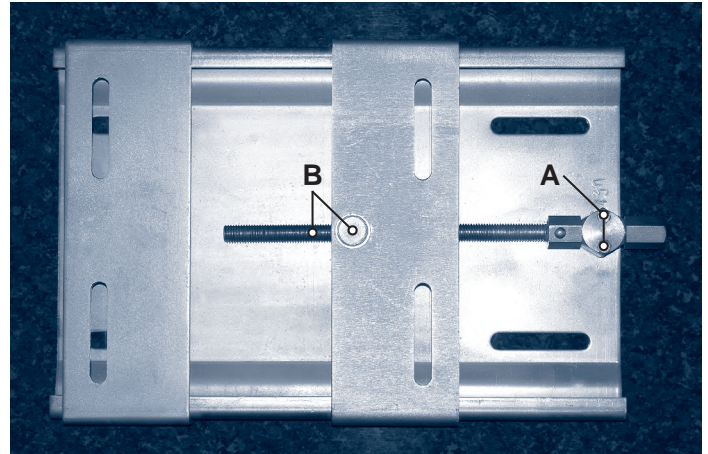
The pressed top plate is designed to slide over the base plate preventing vibration and noise whilst ensuring continuous belt alignment. Belts are tensioned by adjusting a single screw.

Motor Mounting

The motor is bolted to the two piece top plate which accommodates a wide range of motors. Centre distance adjustments can be made without the need to loosen the motor bolts.

Rapid Fit Motor Mount Fitting Instructions

1. Slightly loosen the two bolts holding the Cap (A), just in front of the hex adjustment nut
2. Lightly oil the shaft under this cap
3. Lightly oil the shaft thread where it enters the adjustment plate (B)
4. Adjust the base to accommodate the required motor
5. Tighten the two bolts (A) again, thus locking the Motor Mount in position



Dimensions for Sizes 210 to 490 Rapid Fit Motor Mount

Type	Frame Size	L	B	H	M _{min}	G	E	J	K	M	N	P	SW	S	Weight kg
210	63 - 80	210	195	33	100	70	20	25	50.0	10.5	43	90	19	3	2.4
270	63 - 100	270	195	33	100	70	20	25	50.0	10.5	43	90	19	3	2.8
340	90 - 132	340	290	40	140	95	27	29	62.5	12.5	90	165	22	4	7.4
430	90 - 160	430	290	40	140	95	27	29	62.5	12.5	90	165	22	4	8.0
490	160 - 180	490	410	40	254	95	40	30	60.0	15.0	193	142/284	22	4	12.0

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Standard Motor Mounts

Specification

Produced in three sizes for motors from frame size 63 to 225 and manufactured from pressed steel fabrications with four slotted holes for fastening the base to the foundation.

Alignment

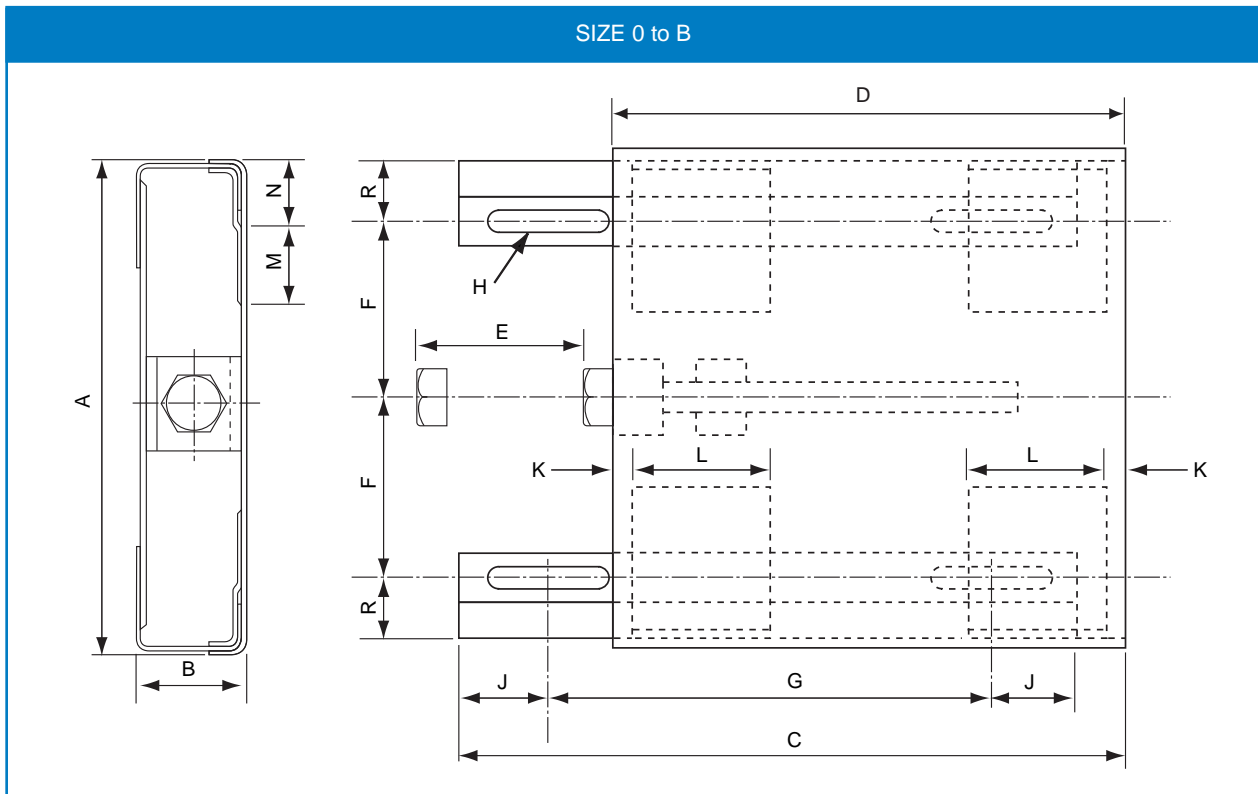
The pressed top plate is designed to slide exactly over the mounting rails preventing vibration and noise whilst ensuring continuous belt alignment. Belts are tensioned by adjusting a single screw which is possible whilst the motor is running.

Surface Finish

Stove enamelled finish with zinc plated adjustment screws to prevent corrosion.

Motor Mounting

The top plate requires drilling to accommodate the required motor mounting bolts. Centre distance adjustments can be made without the need to loosen the motor bolts.



Dimensions for Sizes 0 to B Motor Mounts

Base Ref	Motor Frame Ref	Motor Bolt Holes	Movement															Weight kg
			A	B	C	D	E	F	G	H	J	K	I	M	N	R	SW	
0	63 71	7	146	29	225	170	80	55.0	148	9.5 x 25	27	60	50	32	18	15.0	17	1.4
A	80 90S 90L	10	240	55	325	258	100	89.0	215	13 x 51	45	10	70	51	32	28.5	24	5.3
	100S 100L 112S 112M 132S	12																
	132M	12																
	160M 160L 180M 180L	15																
	200M 200L 225S 225M	19																
B			428	60	578	450	180	172.5	370	17 x 50	51	28	100	98	42	36.0	24	19.0

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused. All dimensions in millimetres unless otherwise stated.

Slide Rails

Specification

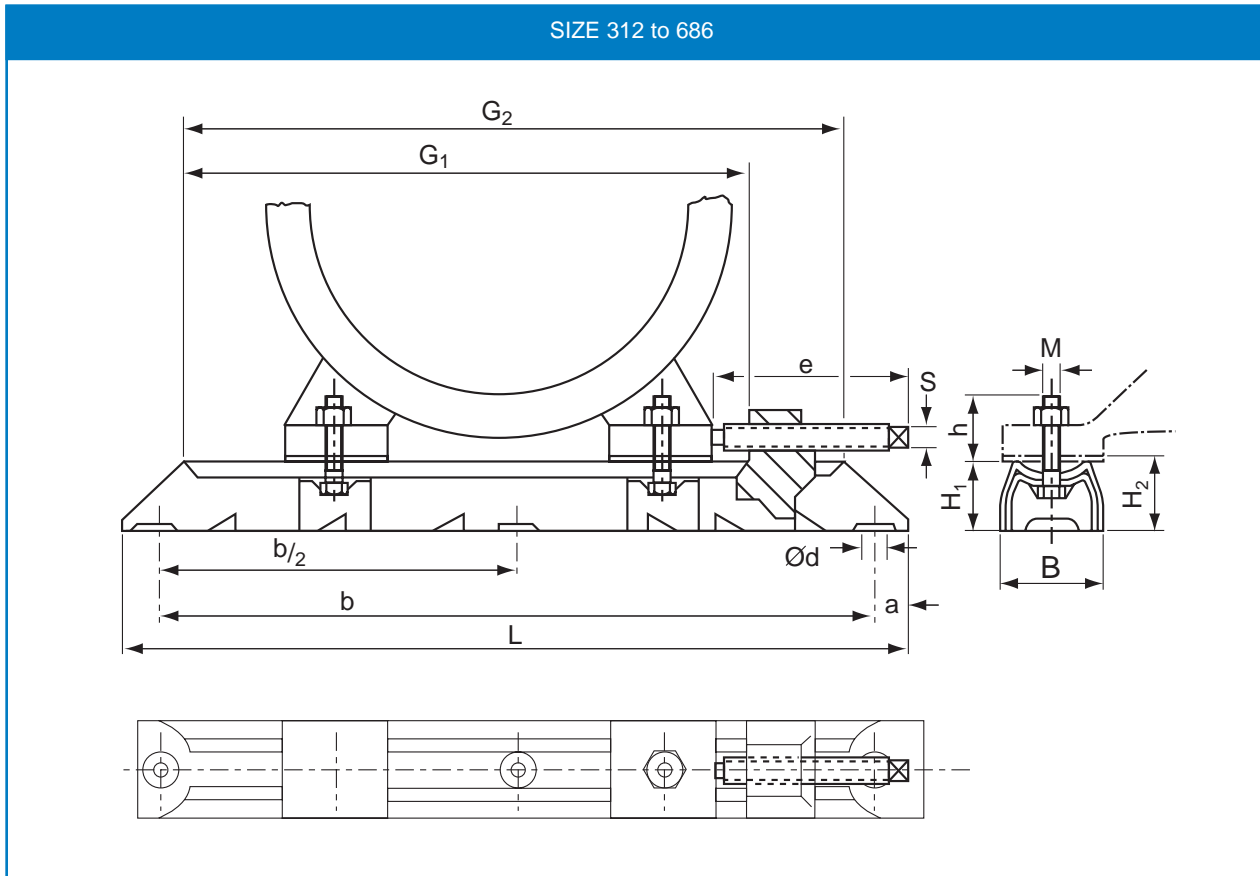
Covering frame sizes 63 to 225, Challenge slide rails are manufactured in galvanised steel with movable positioning blocks for rapid accurate drive alignment.

Alignment

The pressed steel rails are solidly fixed by three securing bolts while the motor is bolted to the rails eradicating vibration and noise whilst ensuring rigid positioning.

Motor Mounting

The motor is bolted to the slide rails and positioned with the aid of adjustment screws. The motor must be stopped and the motor bolts loosened before repositioning.



Dimensions for Sizes 312 to 686 Slide Rails

Base Ref	Overall Length L	Slide Length G ₁	Motor Frame Ref	M x h	I x S	G ₂	a	b	b/2	Ø d	B	H ₁	H ₂	Weight kg
312/6	312	240	63/71	M6 x 19	75 x 6	262	16	280	-	12	40	28	30	1.4
312/8	312	240	80/90	M8 x 27	75 x 6	262	16	280	-	12	40	28	30	1.5
375/6	375	305	63/71	M6 x 19	75 x 6	325	16	343	-	12	40	26	30	1.5
375/8	375	305	80/90	M8 x 27	75 x 6	325	16	343	-	12	40	28	30	1.6
375/10	375	305	100/112	M10 x 32	75 x 6	325	16	343	-	12	40	28	30	1.6
395/8	395	302	80/90	M8 x 28	97 x 8	325	20	355	-	12	50	40	43	3.4
395/10	395	302	100/112	M10 x 35	97 x 8	325	20	355	-	12	50	40	43	3.4
495/8	495	405	80/90	M8 x 29	97 x 8	425	20	455	-	12	50	40	43	4.0
495/10	495	405	100/112/132	M10 x 35	97 x 8	425	20	455	-	12	50	40	43	4.0
495/12	495	405	160	M12 x 49	97 x 8	425	20	455	-	12	50	40	43	4.0
530/10	530	413	132	M10 x 37	119 x 9	442	25	480	-	14	60	50	54	6.4
530/12	530	413	160	M12 x 49	119 x 9	442	25	480	-	14	60	50	54	6.4
630/10	630	515	132	M10 x 37	119 x 9	542	25	580	-	14	60	50	54	8.2
630/12	630	515	160/180	M12 x 45	119 x 9	542	25	580	-	14	60	50	54	8.2
686/12	686	538	160/180	M12 x 43	154 x 12	575	28	630	315	18	75	60	64	12.8
686/16	686	538	200/225	M16 x 62	154 x 12	575	28	630	315	18	75	60	64	12.8

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Notes

CHALLENGE®

CHALLENGE

CE IEC60034-1

TYPE
Duty.
V

CLASS
Hz kW

Serial No

IP

r/min

W

eff2

380V

3000

1.5

1.5

1.5

1.5

1.5

1.5

1.5

1.5

1.5

1.5

1.5

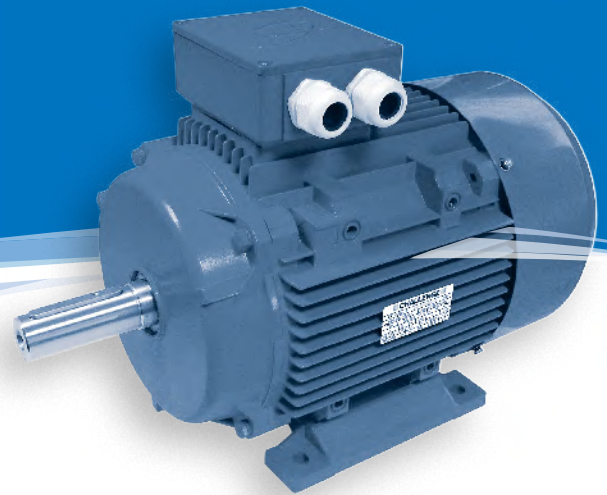
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Features

Three phase motors

- 2, 4, 6 and 8 pole up to 315kW available complying to IEC 60034,
- IEC 60034 specifies energy-efficiency classes for single-speed, three-phase, cage-induction motors with 2, 4 or 6 poles. It classifies three classes: IE1 (standard), IE2 (high) and IE3 (premium). For each class the efficiency is defined for a rated output range from 0.75 to 375 kW. In the European Community the IE2 class is mandatory for all new motors since 16 June 2011. The IE3 class became mandatory from 1 January 2015
- Premium efficiency - complying with IE3 efficiency levels according to IEC60034-30
- From frame size 56 to 355
- Manufactured from high grade cast aluminium alloy or GG25 Cast Iron with engineered grade plastic terminal boxes
- Multi-mount detachable feet as standard
- Full range of mounting positions available
- Voltage ratings of 380v / 400v / 415v
- 50 Hz or 60 Hz rated frequencies

Single phase motors

- Manufactured from high grade cast aluminium alloy with engineered grade plastic terminal boxes
- Fully comply with IEC 60034
- Frames sizes 56 - 100
- Voltage ratings of 110v / 220v / 230v / 240v
- 50 Hz and 60 Hz rated frequencies
- Available with permanent capacitors or as capacitor start – capacitor run

General Information

CHALLENGE series three phase asynchronous AC electric motors, Are totally enclosed fan cooled (**IC-411**) squirrel caged type, With **IP55** enclosure protection, Class **F** insulation and **SI** continuous Duty/Rating.

The motors are manufactured from high grade die cast aluminium alloy and come with multi-mount detachable feet as standard, which allows for various mounting positions to be achieved.

The temperature ratings are **-15° C to +40° degrees C to a maximum altitude of 1000 metres above sea level.**

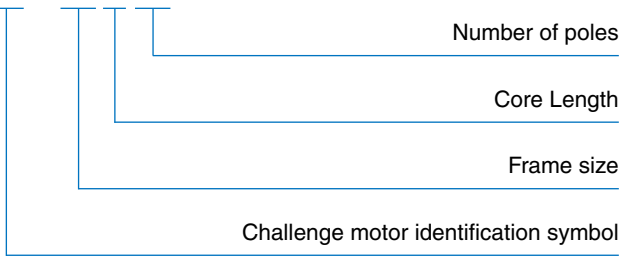
CHALLENGE motors have voltage ratings of 380v / 400v / 415v.

They have a rated frequency of 50Hz and 60Hz. Connection is **STAR** up to and including 3kW and from 4kW and above the connection is **DELTA**, allowing for **STAR/DELTA** starting.

Designation

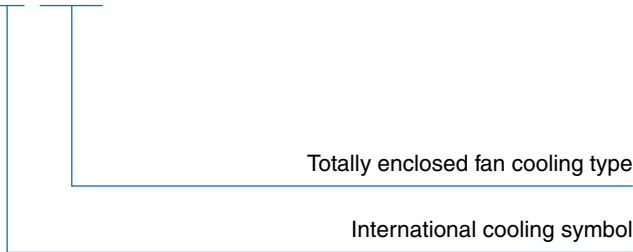
Motor Identification Symbol

CML-801-2



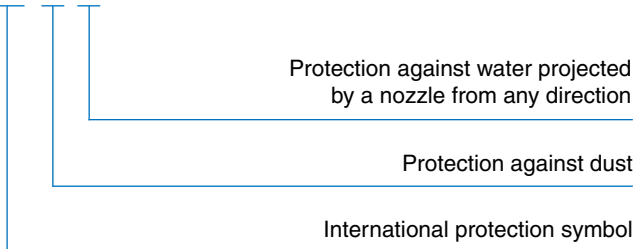
Cooling Method

IC-411



Protection Class

IP-5-5



Standards and Regulations




CE Marking

Our three phase induction motors comply with the requirements of the following international standard:

IEC 60034

Together with the Low Voltage Directive 73/23 (1973), modified by the Directive 93/68 (1993) and the EMC-Directive 89/336.

They comply with the requirements of the EC Directive Machines 89/392. In accordance with this Directive induction motors are components intended solely for integration into other machines. Commissioning is forbidden until conformity of the end product with this Directive is proved!

The  symbol was applied for the first time in 1995.



Mechanical Design

Degrees of protection

Degrees of protection for mechanical machines are designated in accordance with IEC 60034-5 by the letters **IP** and two characteristic numerals.

First numeral:	
Protection against contact and ingress of foreign bodies	
IP	Description
0	No special protection
1	Protection against solid foreign bodies larger than 50 mm (Example: inadvertent contact with a hand)
2	Protection against solid foreign bodies larger than 12 mm (Example: inadvertent contact with fingers)
3	Protection against solid foreign bodies larger than 2.5 mm (Example: Wires, tools)
4	Protection against solid foreign bodies larger than 1 mm (Example: Wires, bands)
5	Protection against dust (harmful deposits of dust)
6	Complete protection against dust. Is not described for electrical machines to IEC 34-5.

Second numeral:	
Protection against ingress of water	
IP	Description
0	No special protection
1	Protection against vertically falling water drops (condensation)
2	Protection against dropping water when inclined by up to 15°
3	Protection against waterspray at up to 60° from vertical
4	Protection against water splashed from any direction
5	Protection against water projected by a nozzle from any direction
6	Protection against heavy seas or water projected in powerful jets
7	Protection when submerged between 0.15 m and 1 m
8	Protection when continuously submerged in water at conditions agreed between the manufacturer and the user

Challenge motors conform to protection IP 55 / IEC 60034-5.

The standard design for horizontal mounting is suitable for indoor and protected outdoor installation, climate group temperature ratings -15° C to +40° C.

For unprotected outdoor installations, including all installations in severe climatic conditions such as high humidity, large storms, extremely dusty or aggressive industrial environments etc, as well as all vertical mountings, require special protective measures as recommended below:

- Protective cowl (for vertical *shaft-down* motors)
- For vertical *shaft-up* motors additional bearing seal and flange drainage
- Special paint finish
- Treatment of winding with protective moisture-proof varnish
- Anti-condensation heating
- Condensation drain holes

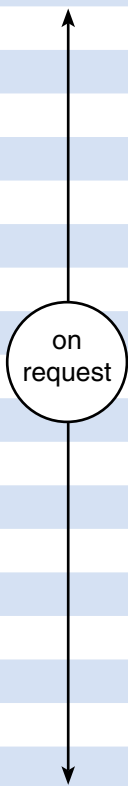
The special measures to be applied have to be agreed with the factory once the conditions of installation have been settled.

The corresponding conditions of installation have to be clearly indicated in the order.

Conditions of Installation

Challenge motors are designed for operation at altitudes ≤ 1000 m above sea level and at ambient temperatures of up to 40° C. Exceptions are indicated on the rating plate.

Permissible temperature rises to various standards

Standard/Regulation	Temperature of coolant	Permissible temperature rise in K (measured by resistance method)		
		Temperature class		
	°C	B	F	H
VDE 0530 part 1	40	80	105	125
International IEC 34-1	40	80	105	125
Britain BS 2613	40	80	105	
Canada CSA	40	80	105	
USA NEMA and ANSI	40	80	105	
Italy CEI	40	80	105	
Sweden SEN	40	80	105	
Norway NEK	40	80	105	
Belgium NBN	40	80	105	
France NF	40	80	105	
Switzerland SEV	40	80	105	
India IS	40	80	-	
Germanischer Lloyd ¹⁾	45	75	90	
American Bureau of Shipping ¹⁾	50	70	95	
Bureau Veritas ¹⁾	45	70	100	
Norske Veritas ¹⁾	45	70	90 ²⁾	
Lloyds Register ¹⁾	45	70	90	
Registro Italiano Navale ¹⁾	45	70	90	
Korean Register ¹⁾	50	70	90	
China Classification Society ¹⁾	45	75	95	

¹⁾ Classification societies for marine motors

²⁾ Only with special approval

Standards and Regulations

The motors comply with the relevant Standards and Regulations

Title Electrical	IEC	EU CENELEC	D DIN/VDE	I CEI/UNEL	GB BS	F NFC	E UNE
General stipulations for electrical machines	60034-1	EN 60034-1	DIN EN 60034-1	CEI EN 60034-1	4999-1 4999-69	51-200 51-111	UNE EN 60034-1
Rotating electrical machines: methods for determining losses and efficiency using tests	60034-2	HD 53 2	DIN EN 60034-2	CEI EN 60034-2	4999-34	51-112	UNE EN 60034-2
Terminal markings and direction of rotation of rotating electrical machines	60034-8	HD 53 8 S4	DIN VDE 0530-8	CEI 2-8	4999-3	51-118	20113-8-96
Starting performance	60034-12	EN 60034-12	DIN EN 6034-12	CEI EN 60034-12	4999-112		UNE EN 60034-12
Standard voltages	60038	HD 472 S1	DIN IEC 60038	CEI 8-6			
Insulating materials	60085		DIN IEC 60085	CEI 15-26			

Mechanical							
Dimensions and output ratings	60072		DIN EN 50347	UNEL 13113			
Mounting dimensions and relationship frame sizes-output ratings, IM B3	60072	HD 231	DIN 42673-1	UNEL 13113	499-10 51-110	51-105 51-104	20106-1/26 1980
Mounting dimensions and relationship frame sizes-output ratings, IM B5	60072	HD 231	DIN 42677-1	UNEL 13117		20106-2-74	
Mounting dimensions and relationship frame sizes-output ratings, IM B14	60072	HD 231	DIN 42677-1	UNEL 13118	499-10 51-110	51-105 51-104	20106-2-IC-80
Cylindrical shaft ends for electric motors	60072	HD 231	DIN 748-3	UNEL 13502	4999-10	51-111	
Degrees of protection	60034-5	EN 60034-5	DIN IE60034-5	CEI IE60034-5	4999-20	EN 60034-5	20111-5
Methods of cooling	60034-6	EN 60034-6	DIN EN60034-6	CEI EN60034-6	4999-21		EN 60034-6
Mounting arrangements	60034-7	EN 60034-7	DIN EN60034-7	CEI EN60034-7	4999-22	51-117	EN 60034-7
Noise limits	60034-9	EN 60034-9	DIN EN60034-9	CEI EN60034-9	4999-51	51-119	EN 60034-9
Mechanical vibration	60034-14	EN 60034-14	DIN EN60034-14	CEI EN60034-14	4999-50	51-111	EN 60034-14
Mounting flanges			DIN 42948	UNEL 13501			
Tolerances of mounting and shaft extensions			DIN 42955	UNEL 13501/ 13502			
Classification of environmental conditions	600721-2-1		DIN IEC 60721-2-1	CEI 75-1			
Mechanical vibration; balancing	21940		ISO 21940-32:2012				

Starting Options

Connection

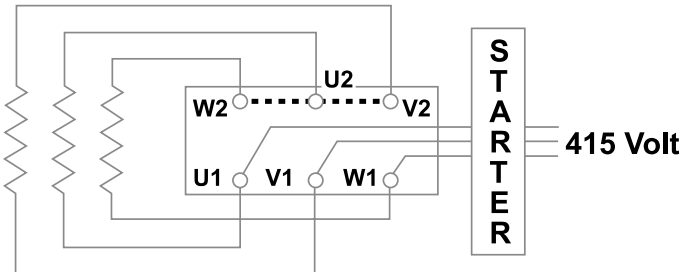
A motor's rated voltage must agree with the power supply line-to-line voltage. Care must therefore be taken to ensure the correct connection to the motor terminals.

Internal connections, Voltages and VF drive selection.

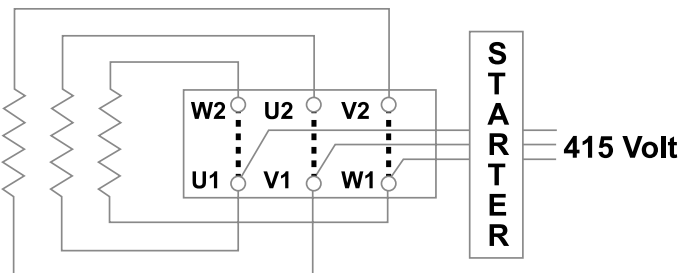
Standard terminal connections for motors 3.0 kW and below is 230 volt delta / 400 volt star. These motors are designed for 400 volt Direct On Line (D.O.L.) starting, when connected in the star configuration. They are also suitable for operation with 230 volt three phase variable frequency drives, when connected in the delta configuration.

Standard terminal connections for motors 4.0 kW and above is 400 volt delta / 690 volt star. These motors are designed for 400 volt Direct On Line (D.O.L.) starting, when connected in the delta configuration. They are also suitable for operation with 400 volt three phase variable frequency drives. Alternatively they can be operated D.O.L. in the star configuration from a 690 volt supply or with a 690 volt variable frequency drive. In this case the drive must be supplied with an output reactor to protect the winding insulation. These motors are also suitable for 400 volt star-delta starting as described below.

Motor connected for D.O.L. starting with bridges in place for star connection (3.0.kW and below)



Motor connected for D.O.L. starting with bridges in place for delta connection (4.0.kW and above)



D.O.L. Starters

When an electric motor is started by direct connection to the power supply (D.O.L.), it draws a high current, called the 'starting current', which is approximately equal in magnitude to the locked rotor current I_S . As listed in the performance data locked rotor current can be up to 8 times the rated current I_N of the motor. In circumstances where the motor starts under no load or where high starting torque is not required, it is preferable to reduce the starting current by one of the following means.

Star - Delta starting

Motors 4.0 kW and above are suitable for the star-delta starting method. Through the use of a star-delta starter, the motor terminals are connected in the star configuration during starting, and reconnected to the delta configuration when running. The benefits of this starting method are a significantly lower starting current, to a value about $\frac{1}{3}$ of the D.O.L. starting current, and a corresponding starting torque also reduced to about $\frac{1}{3}$ of its D.O.L. value. It should be noted that a second current surge occurs on changeover to the delta connection. The level of this surge will depend on the speed the motor has reached at the moment of changeover.

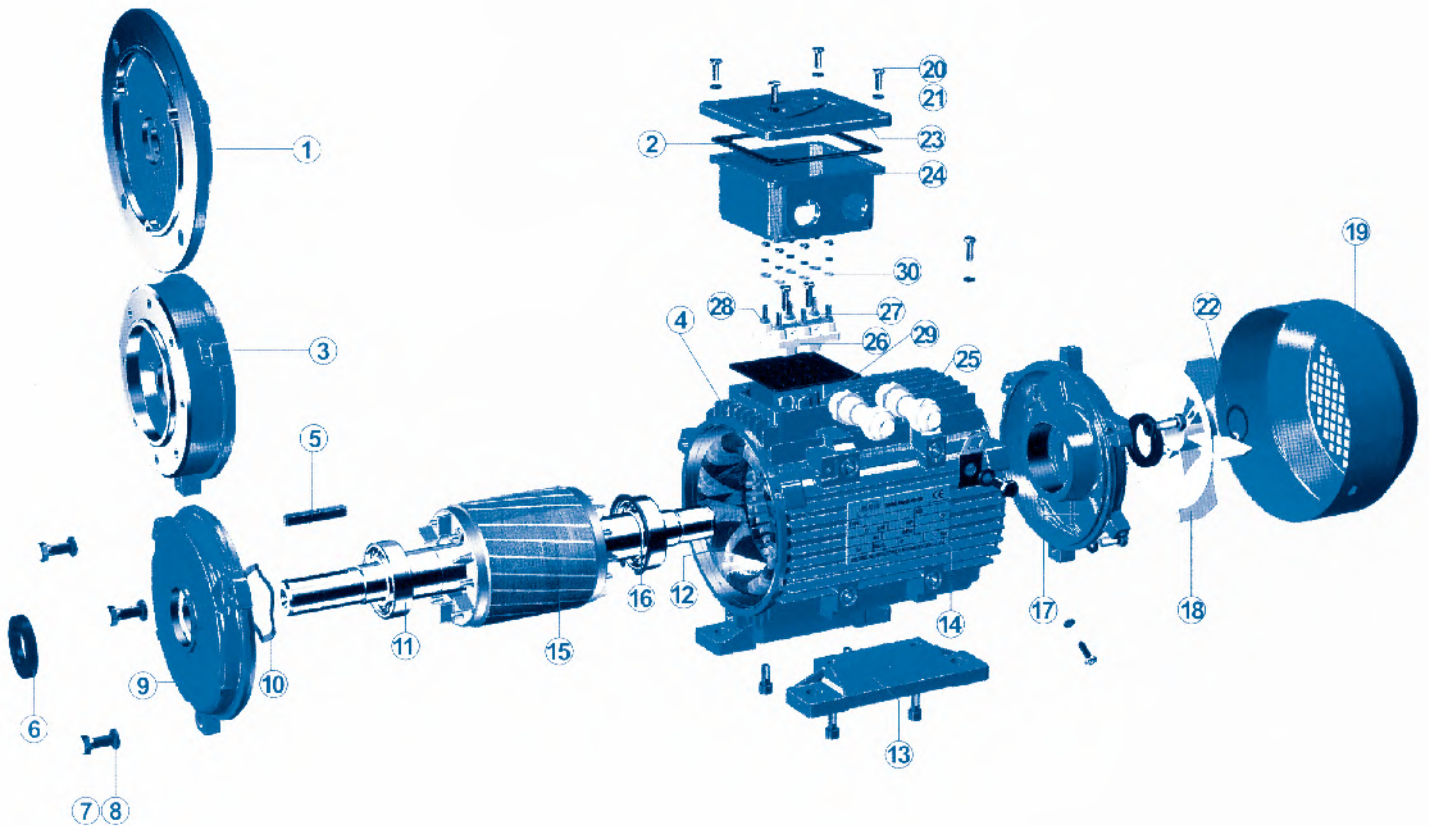
Electronic soft starters

Through the use of an electronic soft starter, which controls such parameters as current and voltage, the starting sequence can be totally controlled. The starter can be programmed to limit the amount of starting current and by limiting the rate of the current increase the startup time is extended. Where large heavy loads are to be started it is especially important to extend the startup time.

Variable frequency drives

Variable frequency drives are primarily recognized for their ability to manipulate power from a constant 3 phase 50 Hz power supply converting it to variable frequency power. This enables the speed of motor to be matched to its load in a flexible and energy efficient manner. The only way of producing starting torque equal to full load torque with full load current is by using VF drives. The functionally flexible VF drive is also commonly used to reduce energy consumption on fans, pumps and compressors and offer a simple and repeatable method of changing speeds or flow rates.

Components



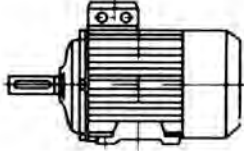
- | | | |
|---------------------------|----------------------------|------------------------------|
| 1. B5 Flange | 11. Bearing | 21. Washer |
| 2. Gasket | 12. Stator | 22. Fan clamp |
| 3. B14 Flange | 13. Multimount Feet | 23. Terminal box lid |
| 4. Housing | 14. Name plate | 24. Terminal box base |
| 5. Key | 15. Rotor | 25. Cable gland |
| 6. Oil Seal | 16. Circlip | 26. Terminal board |
| 7. Bolt | 17. Rear end shield | 27. Brass lug |
| 8. Spring washer | 18. Fan | 28. Brass nut |
| 9. Front endshield | 19. Fan cowl | 29. Earth mark |
| 10. Wave washer | 20. Screw | 30. Brass washer |

Mounting Arrangements

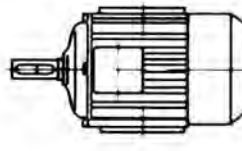
Mounting arrangements to IEC 60034-7

IM B3 = Foot mounted

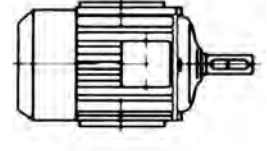
IM B3



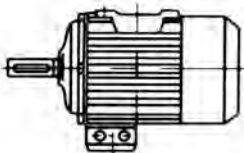
IM B6



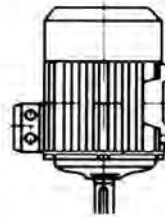
IM B7



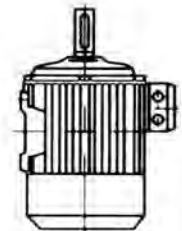
IM B8



IM V5

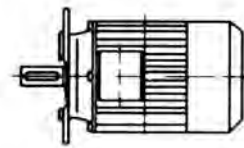


IM V6

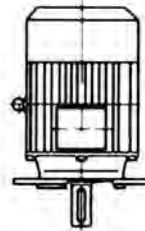


IM B5 = Flange mounted

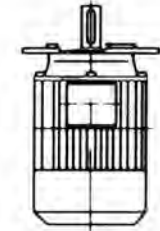
IM B5



IM V1

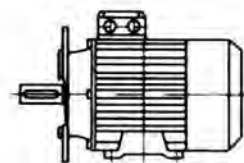


IM V3

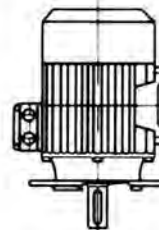


IM B35 = Foot & flange mounted

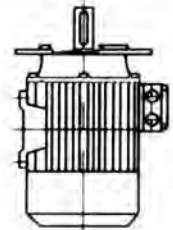
IM B35



IM V15

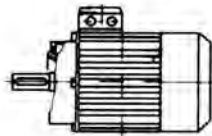


IM V36

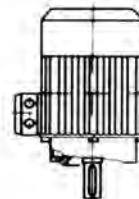


IM B14 = Reduced flange mounted

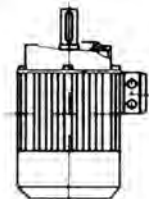
IM B14



IM V18

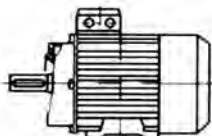


IM V19

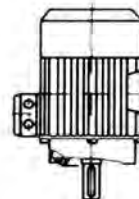


IM B34 = Foot & reduced flange mounted

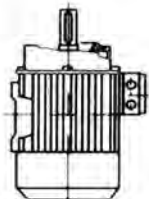
IM B34



IM V58



IM V69



Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Technical Data IE3

3000/3600rpm, 2-pole, 50/60Hz, IP55

Type	Nominal Output 50Hz		Speed 50Hz Rpm	Rated current 50Hz In A			Power Factor 50Hz Cosφ 10%	Efficiency at 50Hz			Rated torque 50Hz Nm	Starting current	Starting torque	
	Frame Size	kW		380V	400V	415V		Class	Load					
									100%	75%				50%
EML 80M1-2	80M	0.75	2882	1.68	1.59	1.54	0.83	IE3	81.4	81.4	78.2	2.47	7	3.1
EML 80M2-2	80M	1.1	2883	2.43	2.31	2.23	0.83	IE3	83	83	80.4	3.7	7.6	3.5
EML 90S -2	90S	1.5	2901	3.2	3.04	2.93	0.84	IE3	84.8	84.8	82.7	4.91	7.8	3.5
EML 90L-2	90L	2.2	2901	4.56	4.33	4.17	0.85	IE3	86.2	86.2	85.1	7.36	8.4	3.6
EML 100L-2	100L	3	2906	6.04	5.73	5.53	0.87	IE3	87.2	87.2	85.9	9.8	8.4	3.6
EML 112M-2	112M	4	2918	7.65	7.27	7	0.9	IE3	88.1	88.1	87.9	13.4	8.4	2.5
EML 132S2	132S	5.5	2941	10.7	10.2	9.83	0.87	IE3	89.2	89.2	87.9	18.2	8.1	2.4
EML 132S2-2	132S	7.5	2938	14.2	13.5	13	0.89	IE3	90.1	90.1	89.6	24.2	8.2	2.5
EML 132M-2	132M	11	2930	20.6	19.6	18.9	0.89	IE3	91.2	91.2	91.2	36.5	7.7	2.5
EML 160M1-2	160M	15	2955	27.8	26.4	25.5	0.89	IE3	91.9	91.9	91.5	48.2	8.2	2.4
EML 160M2-2	160M	18.5	2954	33.7	32	30.8	0.9	IE3	92.4	92.4	92.3	60.3	8.2	2.4
EML 160L1-2	160L	22	2954	39.9	37.9	36.6	0.9	IE3	92.7	92.7	92.7	72.3	8.2	2.4
EML 160L2-2	160L	22	2963	40.8	38.7	37.3	0.88	IE3	92.7	92.7	91.7	72.1	7.8	2.1
EML 180M1-2	180M	30	2958	54.1	51.4	49.5	0.9	IE3	93.3	93.3	92.7	96.3	7.1	1.9
EML 180M2-2	180M	30	2973	57.2	54.3	52.4	0.85	IE3	93.3	93.3	92	95.8	7.5	2.1
EML 200L1-2	200L	37	2973	69	65.5	63.1	0.87	IE3	93.7	93.7	92.7	120	7.4	2.1
EML 200L1-2	200L	45	2972	83.3	79.1	76.3	0.87	IE3	94	94	93.3	144	7.3	2.2
EML 200L1-2	200L	45	2976	82	77.9	75.1	0.89	IE3	94	94	93.1	144	7.2	1.7
EML 225M1-2	225M	55	2975	99.2	94.3	90.9	0.89	IE3	94.3	94.3	93.7	179	7.2	1.8
EML 225M1-2	225M	55	2980	98.2	93.3	90	0.9	IE3	94.3	94.3	93.7	179	7.5	1.8
EML 250M1-2	250M	75	2981	134	128	123	0.9	IE3	94.8	94.8	94	239	8.2	2.1
EML 250M1-2	250M	75	2982	133	126	122	0.9	IE3	94.8	94.8	93.8	239	7.5	1.8
EML 280S-2	280S	90	2981	159	151	145	0.91	IE3	95	95	94.3	287	7.3	1.8
EML 280M1-2	280M	110	2983	194	184	177	0.91	IE3	95.3	95.3	94.7	353	8	2
EML 280M2-2	280M	110	2983	196	186	180	0.89	IE3	95.3	95.3	94	358	6.9	1.7
EML 315S-2	315S	132	2983	235	224	216	0.89	IE3	95.5	95.5	94.4	418	7.1	1.8
EML 315M-2	315M	160	2983	284	270	260	0.89	IE3	95.7	95.7	94.4	513	7.1	1.8
EML 315L1-2	315L	200	2984	356	339	326	0.89	IE3	95.8	95.8	94.9	644	7.1	1.9
EML 315L2-2	315L	250	2983	443	420	405	0.9	IE3	95.8	95.8	94.7	800	6.8	1.7
EML 355M2-2	355M	315	2983	554	526	507	0.9	IE3	95.8	95.8	94.8	1014	6.9	1.8
EML 355L1-2	355L	355	2986	626	595	573	0.9	IE3	95.8	95.8	95	1133	7.9	2.2
EML 355L2-2	355L	375	2986	659	626	603	0.9	IE3	95.8	95.8	95.2	1200	7.8	2.2

From frame sizes 180 to 200 the motor can be supplied in a cast iron construction (ref CMC).

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Technical Data IE3

1500/1800rpm, 4-pole, 50/60Hz, IP55

Type	Nominal Output 50Hz		Speed 50Hz Rpm	Rated current 50Hz In A			Power Factor 50Hz Cosφ 10%	Class	Efficiency at 50Hz			Rated torque 50Hz Nm	Starting current	Starting torque
	Frame Size	Kw		380V	400V	415V			Load					
									100%	75%	50%			
EML 80M1-4	80M	0.75	1441	1.79	1.7	1.64	0.77	IE3	82.9	82.9	80.1	4.94	6.3	2.8
EML 90S1-4	90S	1.1	1450	2.55	2.42	2.33	0.78	IE3	84.5	84.5	81.6	7.36	7.2	3
EML 90S2-4	90L	1.5	1449	3.4	3.23	3.11	0.78	IE3	85.6	85.6	83.2	9.83	7.4	3.2
EML 100L1-4	100L	2.2	1462	4.75	4.51	4.35	0.81	IE3	86.9	86.9	85.8	14.6	8	2.7
EML 100L2-4	100L	3	1460	6.28	5.97	5.75	0.83	IE3	87.8	87.8	87.3	19.5	8.1	2.9
EML 112M-4	112M	4	1459	8.36	7.94	7.65	0.82	IE3	88.7	88.7	88.2	26.9	8	2.7
EML 132S-4	132S	5.5	1470	11.4	10.8	10.4	0.82	IE3	89.6	89.6	89.6	36.4	6.9	2.2
EML 132M1-4	132M	7.5	1467	15.2	14.4	13.9	0.83	IE3	90.4	90.4	90.4	48.6	6.8	2.3
EML 132M2-4	132M	11	1468	22.8	21.6	20.9	0.8	IE3	91.4	91.4	91.4	72.8	7.4	2.8
EML 160M1-4	160M	11	1476	21.7	20.7	19.9	0.84	IE3	91.4	91.4	91.4	72.4	7.3	2.4
EML 160M2-4	160L	15	1476	29.2	27.8	26.8	0.85	IE3	92.1	92.1	92.1	96.5	7.5	2.5
EML 180M1-4	180M	18.5	1477	36.8	35	33.7	0.83	IE3	92.6	92.6	92.3	121	7.1	2.2
EML 180L1-4	180L	22	1478	43.8	41.6	40.1	0.82	IE3	93	93	92.7	145	7.5	2.4
EML 180L2-4	180L	30	1475	57.8	54.9	53	0.84	IE3	93.6	93.6	93.4	193	6.9	2.2
EML 200L1-4	200L	30	1482	57.1	54.2	52.3	0.85	IE3	93.6	93.6	93.5	192	8	2.6
EML 200L2-4	200L	37	1481	69.8	66.3	63.9	0.86	IE3	93.9	93.9	93.8	240	7.7	2.6
EML 225S-4	225S	37	1483	70.8	67.2	64.8	0.85	IE3	93.9	93.9	93.8	240	7.1	2.2
EML 225M1-4	225M	45	1484	85	80.7	77.8	0.85	IE3	94.2	94.2	94.2	288	7.5	2.4
EML 225M2-4	225M	55	1485	104	99	95.4	0.85	IE3	94.6	94.6	94.5	360	8	2.7
EML 250M1-4	250M	55	1488	103	97.7	94.2	0.86	IE3	94.6	94.6	94.2	359	7.1	2
EML 250M2-4	250M	75	1487	140	133	128	0.86	IE3	95	95	94.5	479	7	2
EML 280S-4	280S	75	1489	137	130	126	0.87	IE3	95	95	94.2	478	6.3	2.1
EML 280M1-2	280M	90	1489	163	155	149	0.88	IE3	95.2	95.2	94.8	574	6.1	2
EML 280M2-2	280M	110	1488	198	188	181	0.88	IE3	95.5	95.5	95.1	718	6	2.1
EML 315S-4	315S	110	1489	204	194	187	0.86	IE3	95.5	95.5	94.7	717	7.1	2
EML 315M-4	315M	132	1489	243	231	223	0.86	IE3	95.6	95.6	95	837	7.3	2.1
EML 315L1-4	315L	160	1489	290	275	265	0.88	IE3	95.9	95.9	95.4	1028	7.3	2.2
EML 315L2-4	315L	200	1489	363	345	332	0.87	IE3	96	96	95.5	1291	7.2	2.2
EML 355M-4	355M	250	1491	446	424	408	0.89	IE3	96	96	96	1600	7.1	1.9
EML 355L1-4	355L	315	1491	557	529	510	0.9	IE3	96	96	96	2030	7.1	1.9
EML 355L2-4	355L	355	1491	629	598	576	0.89	IE3	96	96	96	2268	7.2	2
EML 355L3-4	355L	375	1491	663	630	607	0.9	IE3	96	96	96	2403	6.8	1.9

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Technical Data IE3

1000/1200rpm, 6-pole, 50/60Hz, IP55

Type	Nominal Output 50Hz		Speed 50Hz Rpm	Rated current 50Hz In A			Power Factor 50Hz Cosφ 10%	Class	Efficiency at 50Hz			Rated torque 50Hz Nm	Starting current	Starting torque
	Frame Size	Kw		380V	400V	415V			Load					
									100%	75%	50%			
EML 90S-6	90S	0.75	953	2.1	2	1.92	0.69	IE3	78.9	78.9	76.2	7.47	5.6	3.2
EML 90L-6	90L	1.1	947	2.99	2.84	2.74	0.69	IE3	81	81	77.3	11.3	5.4	3.2
EML 100L-6	100L	1.5	972	3.82	3.62	3.49	0.72	IE3	82.5	82.5	78.8	14.7	6.6	2.6
EML 112M-6	112M	2.2	963	5.31	5.04	4.86	0.75	IE3	84.3	84.3	83.7	22.2	6.5	2.7
EML 132S-6	132S	3	973	6.95	6.6	6.37	0.77	IE3	85.6	85.6	85.6	29.3	5.6	1.9
EML 132M1-6	132M	4	975	9.14	8.68	8.37	0.77	IE3	86.8	86.8	86.8	40.2	6	2.1
EML 132M2-6	132M	5.5	975	12.4	11.8	11.4	0.77	IE3	88	88	88	54.9	6.2	2.2
EML 160M-6	160M	7.5	978	15.7	14.9	14.4	0.82	IE3	89.1	89.1	89.1	72.8	5.6	1.8
EML 160L1-6	160L	9.3	980	19.6	18.7	18	0.8	IE3	89.8	89.8	89.3	90.9	6.1	2
EML 160L2-6	160L	11	980	23	21.9	21.1	0.8	IE3	90.3	90.3	89.9	109	6.1	2.1
EML 180L1-6	180L	15	984	31.9	30.3	29.2	0.78	IE3	91.2	91.2	90.6	145	6.9	2.4
EML 180L2-6	180L	18.5	983	38.7	36.7	35.4	0.79	IE3	91.7	91.7	91.1	181	6.6	2.3
EML 200L1-6	200L	18.5	986	38.6	36.6	35.3	0.8	IE3	91.7	91.7	91.7	181	6.3	2.1
EML 200L2-6	200L	22	985	45.3	43	41.4	0.8	IE3	92.2	92.2	92.2	217	6.1	2.1
EML 200L3-6	200L	30	985	62	58.9	56.8	0.79	IE3	92.9	92.9	92.4	289	6.2	2.2
EML 225M1-6	225M	30	987	58.8	55.9	53.9	0.83	IE3	92.9	92.9	92.4	289	6.8	2.1
EML 225M2-6	225M	37	987	72.3	68.7	66.2	0.83	IE3	93.3	93.3	92.7	361	6.9	2.2
EML 250M1-6	250M	37	987	72	68.4	65.9	0.84	IE3	93.3	93.3	93.2	361	6.6	2.2
EML 250M2-6	250M	45	987	87	82.6	79.6	0.84	IE3	93.7	93.7	93.4	433	6.6	2.2
EML 280S-6	280S	45	989	88.6	84.1	81.1	0.82	IE3	93.7	93.7	92.8	432	6	1.7
EML 280M1-6	280M	55	989	106	101	97.3	0.84	IE3	94.1	94.1	93.5	533	6	1.8
EML 280M2-6	280M	75	990	143	136	131	0.84	IE3	94.6	94.6	94.1	719	6.6	2
EML 315S-6	315S	75	991	147	139	135	0.82	IE3	94.6	94.6	94.4	720	6	1.8
EML 315M-6	315M	90	992	176	168	161	0.82	IE3	95	95	94.7	864	6.1	1.9
EML 315L1-6	315L	110	992	214	203	196	0.82	IE3	95.3	95.3	94.8	1080	6.4	2
EML 315L2-6	315L	132	992	257	244	235	0.82	IE3	95.5	95.5	95.1	1258	6.5	2.1
EML 355M1-6	355M	160	992	302	287	277	0.84	IE3	95.8	95.8	95.4	1543	6.6	2
EML 355M2-6	355M	200	992	378	359	346	0.84	IE3	95.8	95.8	95.6	1938	6.8	2.1
EML 355L1-6	355L	250	992	470	446	430	0.84	IE3	95.8	95.8	95.7	2404	6.9	2.2

Technical Data IE3

750/900rpm, 8-pole, 50/60Hz, IP55,

Type	Nominal Output 50Hz		Speed 50Hz Rpm	Rated current 50Hz In A			Power Factor 50Hz Cosφ 10%	Efficiency at 50Hz			Rated torque 50Hz Nm	Starting current	Starting torque	
	Frame Size	Kw		380V	400V	415V		Class	Load					
									100%	75%				50%
EML 100L-6	100L	0.75	721	2.17	2.06	1.99	0.7	IE3	75	75	73.8	9.88	5.1	1.9
EML 100L-6	100L	1.1	719	3.03	2.88	2.77	0.71	IE3	77.7	77.7	74.8	14.9	5	1.9
EML 112M-6	112M	1.5	710	3.93	3.74	3.6	0.73	IE3	79.7	79.7	79.1	20.1	5	1.8
EML 132S-6	132S	2.2	725	5.67	5.38	5.19	0.72	IE3	81.9	81.9	81.9	29.5	5	1.8
EML 132M1-6	132M	3	725	7.57	7.19	6.93	0.72	IE3	83.6	83.6	83.6	39.4	5	1.8
EML 160M-6	160M	4	730	9.94	9.45	9.11	0.72	IE3	85	85	85	53.8	5.3	1.7
EML 160M-6	160M	5.5	730	13.2	12.6	12.1	0.73	IE3	86.5	86.5	86.5	73.4	5.3	1.7
EML 160L1-6	160L	7.5	728	17.5	16.7	16.1	0.74	IE3	87.8	87.8	87.7	98	5.4	1.8
EML 180L1-6	180L	11	730	25	23.7	22.9	0.75	IE3	89.3	89.3	89.1	147	6.4	1.7
EML 180L1-6	180L	15	730	33.6	31.9	30.7	0.75	IE3	90.4	90.4	89.7	195	6.6	1.8
EML 200L1-6	200L	15	739	34.7	32.9	31.8	0.73	IE3	90.4	90.4	88.7	193	5.5	1.9
EML 200L1-6	200L	18.5	738	42.2	40	38.6	0.73	IE3	91.1	91.1	89.2	242	5.2	1.8
EML 225S-6	225S	18.5	738	39.1	37.1	35.8	0.79	IE3	91.1	91.1	90.5	241	5.2	1.7
EML 225M1-6	225M	22	738	45.7	43.4	41.9	0.8	IE3	91.5	91.5	91.1	290	5.2	1.7
EML 225M1-6	225M	30	739	62.7	59.5	57.4	0.79	IE3	92.4	92.4	91.4	386	5.6	1.9
EML 250M1-6	250M	30	739	61.1	58	55.9	0.81	IE3	92.4	92.4	92.2	386	5.3	1.8
EML 250M1-6	250M	37	740	76.1	72.3	69.7	0.8	IE3	92.9	92.9	92.4	482	5.7	2
EML 280S-6	280S	37	742	75.7	71.9	69.3	0.8	IE3	92.9	92.9	92	480	5.8	1.8
EML 280M1-6	280M	45	742	92	87.4	84.2	0.8	IE3	93.5	93.5	92.6	576	5.6	1.8
EML 280M2-6	280M	55	741	112	106	103	0.79	IE3	93.9	93.8	93	721	5.5	1.8
EML 315S-6	315S	55	742	121	115	111	0.75	IE3	92.5	92.5	91.4	720	5.2	1.7
EML 315S-6	315S	75	743	163	154	149	0.75	IE3	93.1	93.1	92.1	960	5.3	1.8
EML 315S-6	315S	90	743	194	184	177	0.76	IE3	93.4	93.4	92.6	1151	5.4	1.9
EML 315L1-6	315L	110	742	230	219	211	0.78	IE3	93.7	93.7	93.3	1440	5.3	1.8
EML 315L1-6	315L	132	743	266	253	244	0.8	IE3	94	94	93.8	1679	5.3	1.7
EML 355M2-6	355M	110	743	216	206	198	0.82	IE3	93.7	93.7	93.3	1439	6.1	1.4
EML 355M2-6	355M	132	742	254	242	233	0.84	IE3	94	94	93.5	1679	5.9	1.4
EML 355M2-6	355M	150	742	288	274	264	0.84	IE3	94.2	94.2	93.8	1920	5.9	1.4
EML 355M2-6	355M	160	742	308	292	282	0.84	IE3	94.3	94.3	93.7	2444	6.2	1.5
EML 355M2-6	355M	185	742	352	335	323	0.84	IE3	94.5	94.5	94	2399	6.1	1.5
EML 355L1-6	355L	200	742	380	361	348	0.85	IE3	94.6	94.6	94	2591	6.3	1.6
EML 355L1-6	355L	220	743	418	397	382	0.85	IE3	94.6	94.6	94	2878	6.5	1.6

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Cable Entry and Bearing Sizes

Cable Entry

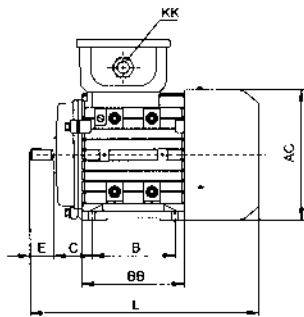
Classified number	Frame size	Max .fl.amps	Entry size
1	63-80	2.6	1 x M20x1.5
2	90	6.8	1 x M25x1.5
3	100-132	15.4	2 x M32x1.5
4	160-180	42.5	2 x M40x1.5
5	200	84.2	2 x M50x1.5

Bearing Size

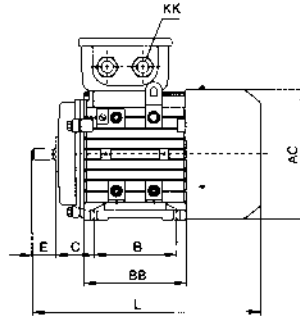
Frame size	Poles	Drive End	Non-Drive End
56	2 to 4	6201 2RS-C3 (6201 ZZ-C3)	6201 2RS-C3 (6201 ZZ-C3)
63	2 to 6	6201 2RS-C3 (6201 ZZ-C3)	6201 2RS-C3 (6201 ZZ-C3)
71	2 to 8	6202 2RS-C3 (6202 ZZ-C3)	6202 2RS-C3 (6202 ZZ-C3)
80	2 to 8	6204 2RS-C3 (6204 ZZ-C3)	6204 2RS-C3 (6204 ZZ-C3)
90	2 to 8	6205 2RS-C3 (6205 ZZ-C3)	6205 2RS-C3 (6205 ZZ-C3)
100	2 to 8	6206 2RS-C3 (6206 ZZ-C3)	6206 2RS-C3 (6206 ZZ-C3)
112	2 to 8	6206 2RS-C3 (6206 ZZ-C3)	6206 2RS-C3 (6206 ZZ-C3)
132	2 to 8	6208 2RS-C3 (6208 ZZ-C3)	6208 2RS-C3 (6208 ZZ-C3)
160	2 to 8	6309 2RS-C3 (6309 ZZ-C3)	6309 2RS-C3 (6309 ZZ-C3)
180	2 to 8	6311 ZZ-C3	6311 ZZC3
200	2 to 8	6312 ZZ-C3	6312 ZZC3

Mounting and Overall Dimensions

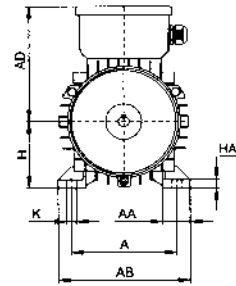
IM B3 Foot mounted frame size 56 to 200



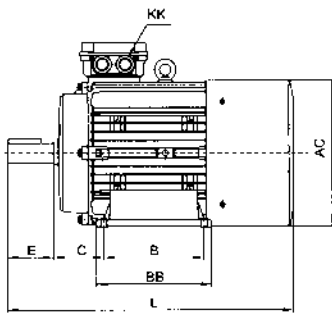
56-90



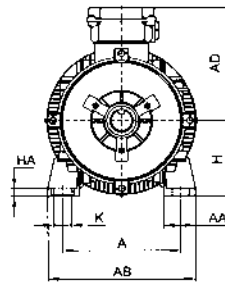
100-160



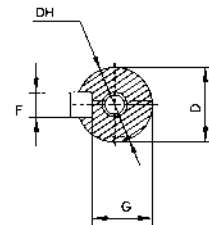
56-160



180-200



180-200

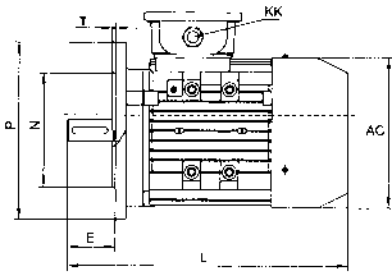


Frame Size	Mounting Dimensions																	Overall Dimensions L	
	A	AA	AB	BB	HA	AC	AD	B	C	D	DH	E	F	G	H	K	KK		
			Metric		PG														
56	90	23	115	88	7	110	100	71	36	9	M4x12	20	3	7.2	56	5.8	1-M20X1.5	1-PG11	199
63	100	24	135	100	7	130	111	80	40	11	M4x12	23	4	8.5	63	7.0	1-M20X1.5	1-PG11	217
71	112	26	150	110	8	145	118	90	45	14	M5x12	30	5	11	71	7.0	1-M20X1.5	1-PG11	245
80	125	35	165	125	9	175	134	100	50	19	M6x16	40	6	15.5	80	10.0	1-M25X1.5	1-PG16	287
90S	140	37	180	125	10	195	140	100	56	24	M8x19	50	8	20.0	90	10.0	1-M25X1.5	1-PG16	315
90L	140	37	180	150	10	195	140	125	56	24	M8x19	50	8	20.0	90	10.0	1-M25X1.5	1-PG16	340
100L	160	40	205	172	11	215	160	140	63	28	M10x22	60	8	24.0	100	12.0	1-M32X1.5	1-PG21	385
112M	190	41	230	181	12	240	178	140	70	28	M10x22	60	8	24.0	112	12.0	2-M32X1.5	2-PG21	400
132S	216	51	270	186	15	275	206	140	89	38	M12x28	80	10	33.0	132	12.0	2-M32X1.5	2-PG21	483
132M	216	51	270	224	15	275	206	178	89	38	M12x28	80	10	33.0	132	12.0	2-M32X1.5	2-PG21	510
160M	254	55	320	260	18	330	255	210	108	42	M16x36	110	12	37.0	160	15.0	2-M40X1.5	2-PG29	615
160L	254	55	320	304	18	330	255	254	108	42	M16x36	110	12	37.0	160	16.0	2-M40X1.5	2-PG29	670
180M	279	75	350	315	18	355	272	241	121	48	M16x36	110	14	42.5	180	15	2-M32x1.5	2-PG29	765
180L	279	75	350	315	18	355	272	279	121	48	M16x36	110	14	42.5	180	15	2-M32x1.5	2-PG29	765
200L	318	100	398	355	24	355	272	305	133	55	M20x42	110	16	49	200	19	2-M32x1.5	2-PG36	790

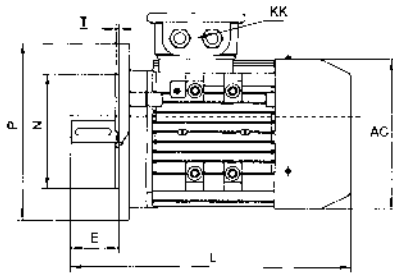
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Mounting and Overall Dimensions

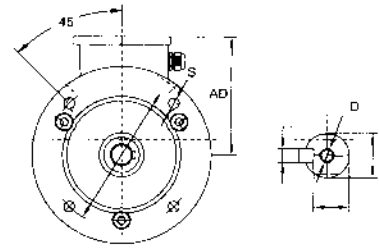
IM B5 Flange mounted frame size 56 to 200



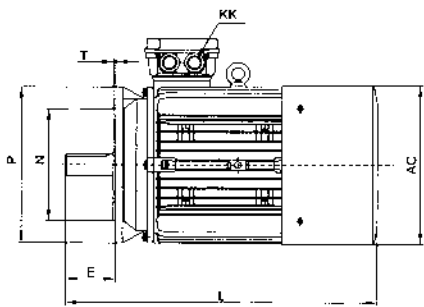
56-90



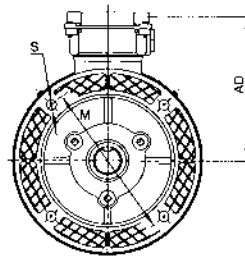
100-160



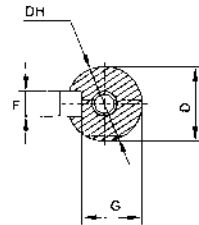
56-160



180-200



180-200

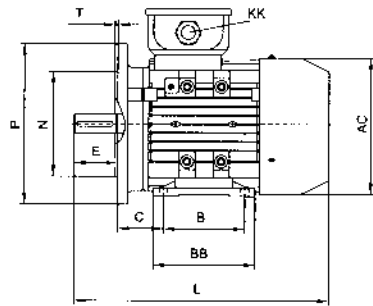


Frame Size	Mounting Dimensions													Overall Dimensions						
	HA	AC	AD	B	C	D	DH	E	F	G	H	K	KK		L	M	N	P	S	T
													Metric	PG						
56	7	110	100	71	36	9	M4x12	20	3	7.2	56	5.8	1-M20x1.5	1-PG11	199	100	80	120	7	3.0
63	7	130	111	80	40	11	M4x12	23	4	8.5	63	7.0	1-M20x1.5	1-PG11	217	115	95	140	10	3.0
71	8	145	118	90	45	14	M5x12	30	5	11	71	7.0	1-M20x1.5	1-PG11	245	130	110	160	12	3.5
80	9	175	134	100	50	19	M6x16	40	6	15.5	80	10.0	1-M25x1.5	1-PG16	287	165	130	200	12	3.5
90S	10	195	140	100	56	24	M8x19	50	8	20.0	90	10.0	1-M25x1.5	1-PG16	315	165	130	200	12	3.5
90L	10	195	140	125	56	24	M8x19	50	8	20.0	90	10.0	1-M25x1.5	1-PG16	340	165	130	200	12	3.5
100L	11	215	160	140	63	28	M10x22	60	8	24.0	100	12.0	1-M32x1.5	1-PG21	385	215	180	250	15	4.0
112M	12	240	178	140	70	28	M10x22	60	8	24.0	112	12.0	2-M32x1.5	2-PG21	400	215	180	250	15	4.0
132S	15	275	206	140	89	38	M12x28	80	10	33.0	132	12.0	2-M32x1.5	2-PG21	483	265	230	300	15	4.0
132M	15	275	206	178	89	38	M12x28	80	10	33.0	132	12.0	2-M32x1.5	2-PG21	510	265	230	300	15	4.0
160M	18	330	255	210	108	42	M16x36	110	12	37.0	160	15.0	2-M40x1.5	2-PG29	615	300	250	350	19	5.0
160L	18	330	255	254	108	42	M16x36	110	12	37.0	160	16.0	2-M40x1.5	2-PG29	670	300	250	350	19	5.0
180M	18	355	272	241	121	48	M 16x36	110	14	42.5	180	15	2-M32x1.5	2-PG29	765	300	250	350	19	5.0
180L	18	355	272	279	121	48	M16x36	110	14	42.5	180	15	2-M32x1.5	2-PG29	765	300	250	350	19	5.0
200L	24	355	272	305	133	55	M20x42	110	16	49	200	19	2-M32x1.5	2-PG36	790	350	300	400	19	5.0

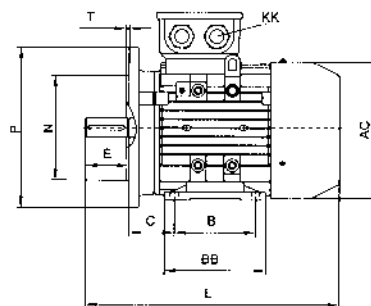
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Mounting and Overall Dimensions

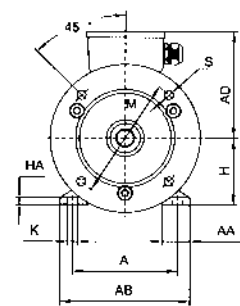
IM B35 Foot and flange mounted frame size 56 to 200



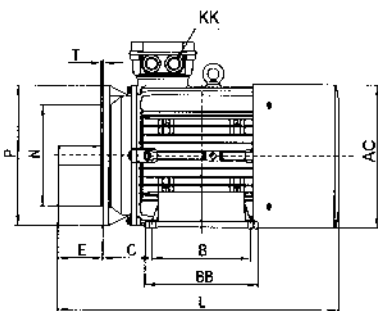
56-90



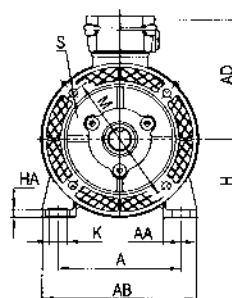
100-160



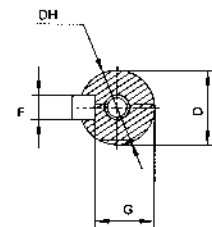
56-160



180-200



180-200

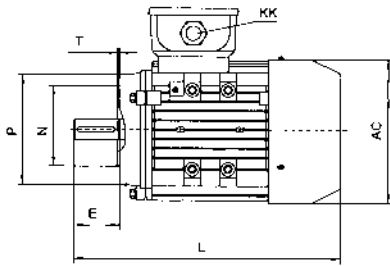


Frame Size	Mounting Dimensions																	Overall Dimensions						
	A	AA	AB	BB	HA	AC	AD	B	C	D	DH	E	F	G	H	K	KK		L	M	N	P	S	T
																	Metric							
56	90	23	115	88	7	110	100	71	36	9	M4X12	20	3	7.2	56	5.8	1-M20X1.5	1-PG11	199	100	80	120	7	3.0
63	100	24	135	100	7	130	111	80	40	11	M4X12	23	4	8.5	63	7.0	1-M20X1.5	1-PG11	217	115	95	140	10	3.0
71	112	26	150	110	8	145	118	90	45	14	M5X12	30	5	11	71	7.0	1-M20X1.5	1-PG11	245	130	110	160	12	3.5
80	125	35	165	125	9	175	134	100	50	19	M6X16	40	6	15.5	80	10.0	1-M25X1.5	1-PG16	287	165	130	200	12	3.5
90S	140	37	180	125	10	195	140	100	56	24	M8X19	50	8	20.0	90	10.0	1-M25X1.5	1-PG16	315	165	130	200	12	3.5
90L	140	37	180	150	10	195	140	125	56	24	M8X19	50	8	20.0	90	10.0	1-M25X1.5	1-PG16	340	165	130	200	12	3.5
100L	160	40	205	172	11	215	160	140	63	28	M10X22	60	8	24.0	100	12.0	1-M32X1.5	1-PG21	385	215	180	250	15	4.0
112M	190	41	230	181	12	240	178	140	70	28	M10X22	60	8	24.0	112	12.0	2-M32X1.5	2-PG21	400	215	180	250	15	4.0
132S	216	51	270	186	15	275	206	140	89	38	M12X28	80	10	33.0	132	12.0	2-M32X1.5	2-PG21	483	265	230	300	15	4.0
132M	216	51	270	224	15	275	206	178	89	38	M12X28	80	10	33.0	132	12.0	2-M32X1.5	2-PG21	510	265	230	300	15	4.0
160M	254	55	320	260	18	330	255	210	108	42	M16X36	110	12	37.0	160	15.0	2-M40X1.5	2-PG29	615	300	250	350	19	5.0
160L	254	55	320	304	18	330	255	254	108	42	M16X36	110	12	37.0	160	16.0	2-M40X1.5	2-PG29	670	300	250	350	19	5.0
180M	279	75	350	315	18	355	272	241	121	48	M16X36	110	14	42.5	180	15	2-M32x1.5	2-PG29	765	300	250	350	19	5.0
180L	279	75	350	315	18	355	272	279	121	48	M16X36	110	14	42.5	180	15	2-M32x1.5	2-PG29	765	300	250	350	19	5.0
200L	318	100	398	355	24	355	272	305	133	55	M20X42	110	16	49	200	19	2-M32X1.5	2-PG36	790	350	300	400	19	5.0

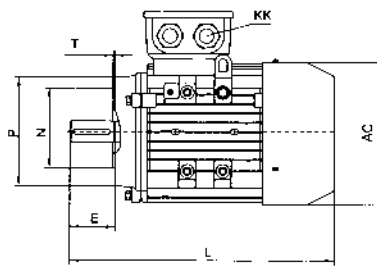
All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Mounting and Overall Dimensions

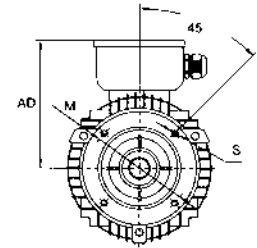
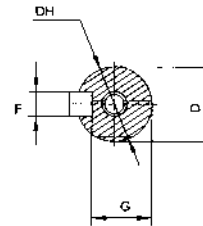
IM B14A Reduced flange mounted frame size 56 to 160



56-90



100-160



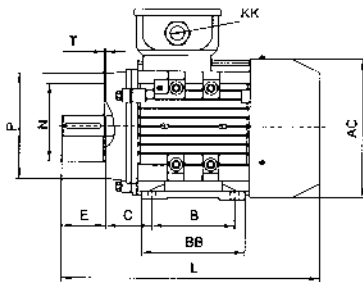
56-160

Frame Size	Mounting Dimensions									Overall Dimensions					
	AC	AD	D	DH	E	F	G	KK		L	M	N	P	S	T
								Metric	PG						
56	110	100	9	M4x12	20	3	7.2	1-M20x1.5	1-PG11	199	65	50	80	M5	2.5
63	130	111	11	M4x12	23	4	8.5	1-M20x1.5	1-PG11	217	75	60	90	M5	2.5
71	145	118	14	M5x12	30	5	11.0	1-M20x1.5	1-PG11	245	85	70	105	M6	2.5
80	175	134	19	M6x16	40	6	15.5	1-M25x1.5	1-PG16	297	100	80	120	M6	3.0
90S	195	140	24	M8x19	50	8	20.0	1-M25x1.5	1-PG16	315	115	95	140	M8	3.0
90L	195	140	24	M8x19	50	8	20.0	1-M25x1.5	1-PG16	340	115	95	140	M8	3.0
100L	215	160	28	M10x22	60	8	24.0	1-M32x1.5	1-PG21	385	130	110	160	M8	3.5
112M	240	178	28	M10x22	60	8	24.0	2-M32x1.5	2-PG21	400	130	110	160	M8	3.5
132S	275	206	38	M12x28	80	10	33.0	2-M32x1.5	2-PG21	483	165	130	200	M10	3.5
132M	275	206	38	M12x28	80	10	33.0	2-M32x1.5	2-PG21	510	165	130	200	M10	3.5
160M	330	255	42	M16x36	110	12	37.0	2-M40x1.5	2-PG29	615	215	180	250	M12	4.0
160L	330	255	42	M16x36	110	12	37.0	2-M40x1.5	2-PG29	670	215	180	250	M12	4.0

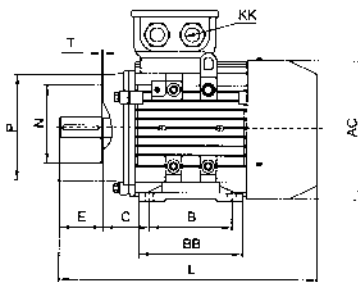
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Mounting and Overall Dimensions

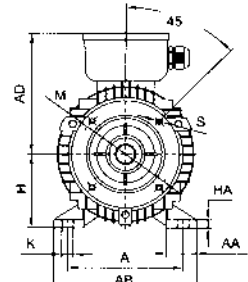
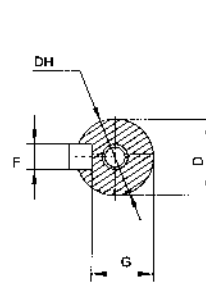
IM B3 B14A Reduced flange and foot mounted frame size 56 to 160



56-90



90-160



56-160

Frame Size	Mounting Dimensions									Overall Dimensions					
	AC	AD	D	DH	E	F	G	KK		L	M	N	P	S	T
								Metric	PG						
56	110	100	9	M4x12	20	3	7.2	1-M20x1.5	1-PG11	199	65	50	80	M5	2.5
63	130	111	11	M4x12	23	4	8.5	1-M20x1.5	1-PG11	217	75	60	90	M5	2.5
71	145	118	14	M5x12	30	5	11.0	1-M20x1.5	1-PG11	245	85	70	105	M6	2.5
80	175	134	19	M6x16	40	6	15.5	1-M25x1.5	1-PG16	297	100	80	120	M6	3.0
90S	195	140	24	M8x19	50	8	20.0	1-M25x1.5	1-PG16	315	115	95	140	M8	3.0
90L	195	140	24	M8x19	50	8	20.0	1-M25x1.5	1-PG16	340	115	95	140	M8	3.0
100L	215	160	28	M10x22	60	8	24.0	1-M32x1.5	1-PG21	385	130	110	160	M8	3.5
112M	240	178	28	M10x22	60	8	24.0	2-M32x1.5	2-PG21	400	130	110	160	M8	3.5
132S	275	206	38	M12x28	80	10	33.0	2-M32x1.5	2-PG21	483	165	130	200	M10	3.5
132M	275	206	38	M12x28	80	10	33.0	2-M32x1.5	2-PG21	510	165	130	200	M10	3.5
160M	330	255	42	M16x36	110	12	37.0	2-M40x1.5	2-PG29	615	215	180	250	M12	4.0
160L	330	255	42	M16x36	110	12	37.0	2-M40x1.5	2-PG29	670	215	180	250	M12	4.0

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Single Phase General Information

CHALLENGE series single phase AC electric motors, Are totally enclosed fan cooled (**IC-411**) squirrel caged type, With **IP55** enclosure protection, Class **F** insulation and **S1** continuous Duty/ Rating.

The motors are manufactured from high grade die cast aluminium alloy with a terminal box constructed of engineering grade plastic and come with multi-mount detachable feet as standard, which allows for various mounting positions to be achieved.

The temperature ratings are -15° C to +40° degrees C to a maximum altitude of 1000 metres above sea level.

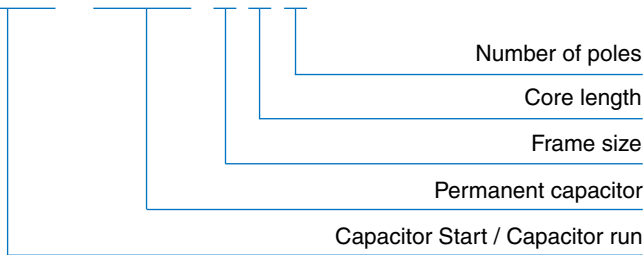
CHALLENGE motors have voltage ratings of:
110v / 220v / 230v / 240v.

They have a rated frequency of 50Hz and 60Hz.

Designation

Motor Identification Symbol

CMLL CMLY 801-2



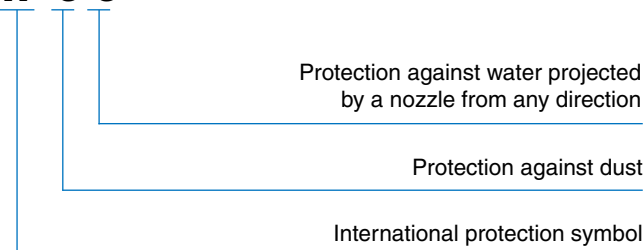
Cooling Method

IC-411



Protection Class

IP-5-5



Standards and Regulations




CE Marking

Our single phase induction motors comply with the requirements of the following international standard:

IEC 60034

Together with the Low Voltage Directive 73/23 (1973), modified by the Directive 93/68 (1993) and the EMC-Directive 89/336.

They comply with the requirements of the EC Directive Machines 89/392. In accordance with this Directive induction motors are components intended solely for integration into other machines. Commissioning is forbidden until conformity of the end product with this Directive is proved!

The  symbol was applied for the first time in 1995.

Technical Data Single Phase

CMLY Single phase motors with permanent capacitors

Type	Output		Current (A)	Speed rev/min	Efficiency n% 100%	Power Factor Cos 10%	Ts Tn	Tmax Tn	Is In	Capacity (UF)	Moment (J) kgm ²	Weight kg
	kW	hp										
CMLY561-2	0.09	0.12	0.7	2720	55	0.90	0.60	1.7	3.6	10	0.00010	3.4
CMLY562-2	0.12	0.18	1.0	2720	55	0.90	0.60	1.7	3.6	14	0.00012	3.7
CMLY631-2	0.18	0.25	1.47	2760	60	0.92	0.66	1.7	3.7	10	0.000150	4.1
CMLY632-2	0.25	0.37	1.91	2760	60	0.92	0.66	1.7	3.7	10	0.000163	4.5
CMLY711-2	0.37	0.5	3.12	2800	65	0.92	0.71	1.7	3.7	16	0.000350	6.4
CMLY712-2	0.55	0.75	3.63	2800	65	0.92	0.74	1.7	3.9	20	0.000460	6.6
CMLY801-2	0.75	1	5.50	2810	67	0.92	0.75	1.7	3.9	25	0.000970	8.3
CMLY802-2	1.1	1.5	7.52	2820	67	0.95	0.77	1.7	4.3	30	0.001090	9.1
CMLY90S-2	1.5	2	10.75	2840	72	0.95	0.78	1.7	4.8	40	0.002690	13.5
CMLY90L-2	2.2	3	13.10	2840	73	0.95	0.80	1.7	4.8	50	0.003080	15.6
CMLY100L-2	3	4	16.8	2800	79	0.99	0.80	1.9	4.8	60	0.01260	20.0
CMLY561-4	0.06	0.08	0.65	1360	55	0.90	0.61	1.7	3.1	5	0.00030	3.4
CMLY562-4	0.09	0.12	0.85	1360	55	0.90	0.61	1.7	3.1	6.3	0.00040	3.6
CMLY63M	0.12	0.18	1.40	1340	60	0.9	0.68	1.7	3.2	8	0.000170	4.1
CMLY632-4	0.18	0.25	1.52	1340	60	0.9	0.68	1.7	3.3	10	0.000230	4.6
CMLY711-4	0.25	0.37	2.2	1370	62	0.92	0.73	1.7	3.4	12.5	0.000400	6.3
CMLY712-4	0.37	0.5	2.80	1370	62	0.92	0.75	1.7	3.4	12.5	0.000570	7.3
CMLY801-4	0.55	0.75	4.51	1400	63	0.92	0.78	1.7	3.5	20	0.001400	9.8
CMLY802-4	0.75	1	5.2	1400	65	0.92	0.78	1.7	3.7	25	0.001600	10.5
CMLY90S-4	1.1	1.5	8.85	1410	70	0.95	0.80	1.7	4	30	0.002830	13.6
CMLY90L-4	1.5	2	9.51	1410	71	0.95	0.80	1.7	4.6	40	0.003590	16.8
CMLY100L1-4	2.2	3	14.0	1420	79	0.85	0.82	1.9	4.8	50	0.00540	20.0
CMLY100L2-4	3	4	16.7	1420	79	0.98	0.83	1.9	4.8	60	0.00670	21.5

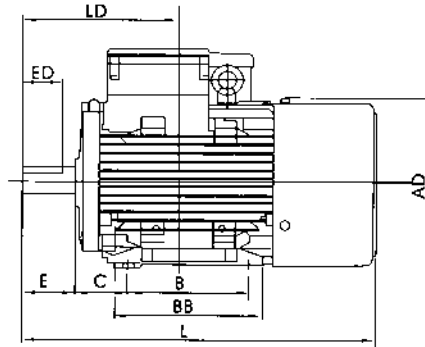
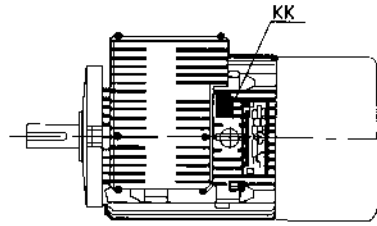
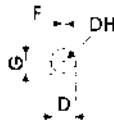
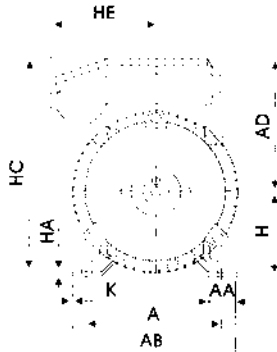
CMLL Single phase motors with capacitor start - capacitor run

Type	Output		Current (A)	Speed rev/min	Efficiency n% 100%	Power Factor Cos 10%	Ts Tn	Tmax Tn	Is In	Moment (J) kgm ²	Weight kg
	kW	hp									
CMLL711-2	0.37	0.50	2.73	2760	69	0.92	1.8	1.8	5.8	0.000610	6.5
CMLL712-2	0.55	0.75	3.88	2780	72	0.92	1.8	1.8	5.4	0.000720	7.2
CMLL801-2	0.75	1	5.15	2800	75	0.92	1.8	1.7	5.7	0.000970	8.5
CMLL802-2	1.1	1.5	7.02	2800	78	0.95	1.8	1.7	5.6	0.001100	9.5
CMLL90S-2	1.5	2	9.40	2800	78	0.95	1.7	1.7	6.0	0.002960	13.2
CMLL90L-2	2.2	3	13.70	2800	82	0.95	1.7	1.7	6.2	0.003240	14.5
CMLL100L1-2	3.0	4	18.40	2820	83	0.95	1.7	1.7	6.4	0.003930	21.0
CMLL711-4	0.25	0.37	1.99	1360	65	0.92	1.8	1.8	6.0	0.000910	6.7
CMLL712-4	0.37	0.55	2.81	1370	67	0.92	1.8	1.8	5.7	0.000100	7.4
CMLL801-4	0.55	0.75	4.00	1400	70	0.92	1.8	1.7	5.4	0.001700	8.8
CMLL802-4	0.75	1.0	5.30	1400	71	0.92	1.8	1.7	5.5	0.001960	10.0
CMLL90S-4	1.1	1.5	7.20	1400	76	0.95	1.7	1.7	5.7	0.003050	13.5
CMLL90L-4	1.5	2	9.57	1400	78	0.95	1.7	1.7	6.0	0.003890	16.6
CMLL100L1-4	2.2	3	13.85	1410	80	0.95	1.7	1.7	6.1	0.005100	24.0
CMLL100L1-4	3	4	18.17	1420	83	0.95	1.7	1.7	6.4	0.006300	28.2

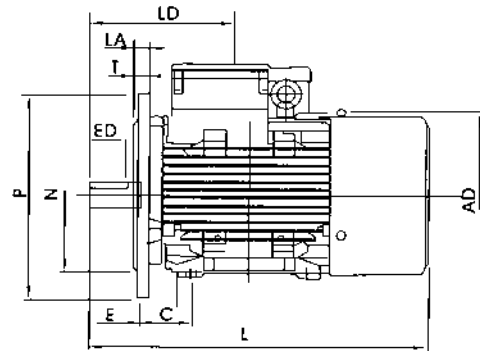
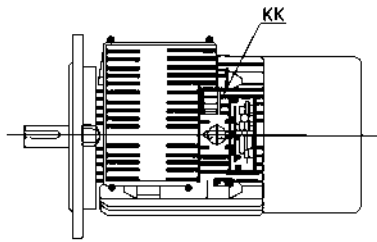
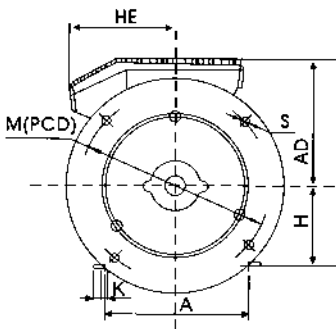
Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Mounting and Overall Dimensions

IM B3 frame size 56 to 100



IM B5/V1 frame size 56 to 100



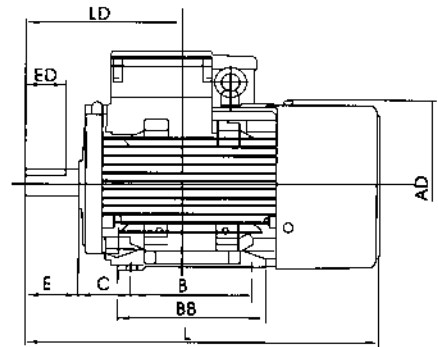
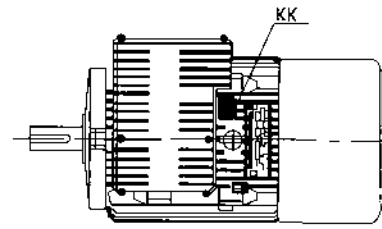
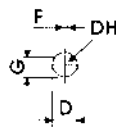
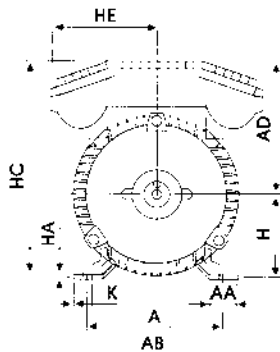
CMLY Single phase motors with permanent capacitors

Frame	A	AA	AB	AC	AD	B	BB	C	D	DH	E	F	G	H	K	KK	L	M	N	P	S	T
56 63	100	24	135	130	115	80	115	40	11	M4 X 12	23	4	8.5	63	7	1-M20 X 1.5	217	115	95	140	10	3.0
71	112	26	150	145	120	90	125	45	14	M5 X 12	30	5	11.0	71	7	1-M20 X 1.5	245	130	130	160	10	3.5
80	125	35	165	175	145	100	135	50	19	M6 X 16	40	6	15.5	80	10	1-M25 X 1.5	300	165	165	200	12	3.5
90S	140	37	180	195	155	100	140	56	24	M8 X 19	50	8	20.0	90	10	1-M25 X 1.5	320	165	165	200	12	3.5
90L	140	37	180	195	155	125	165	56	24	M8 X 19	50	8	20.0	90	10	1-M25 X 1.5	350	165	165	200	12	3.5
100L	160	40	205	215	180	140	185	63	28	M10 X 22	60	8	24.0	100	12	1-M25 X 1.5	385	215	215	250	15	4.0

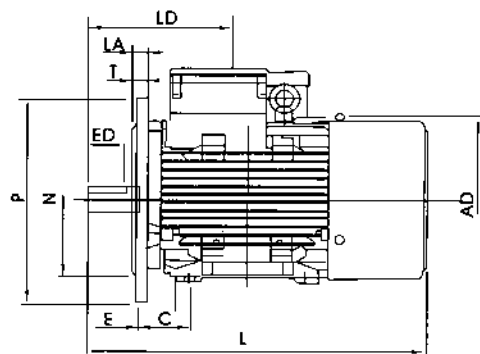
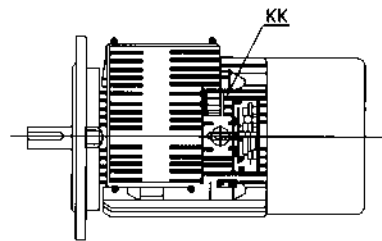
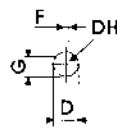
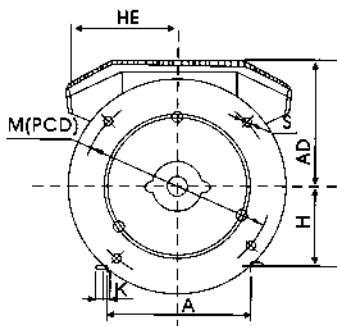
Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused. All dimensions in millimetres unless otherwise stated.

Mounting and Overall Dimensions

IM B3 frame size 71 to 100



IM B5/V1 frame size 71 to 100



CMLL Single phase motors with capacitor start - capacitor run

Frame	A	AA	AB	AC	AD	B	BB	C	D	DH	E	F	G	H	K	KK	L	M	N	P	S	T
71	112	26	150	145	120	90	125	45	14	M5 X 12	30	5	11.0	71	7	1-M20 X 1.5	245	130	110	160	10	3.5
80	125	35	165	175	145	100	135	50	19	M6 X 16	40	6	15.5	80	10	1-M25 X 1.5	300	165	130	200	12	3.5
90S	140	37	180	195	155	100	140	56	24	M8 X 19	50	8	20.0	90	10	1-M25 X 1.5	320	165	130	200	12	3.5
90L	140	37	180	195	155	125	165	56	24	M8 X 19	50	8	20.0	90	10	1-M25 X 1.5	350	165	130	200	12	3.5
100	160	40	205	215	180	140	185	63	28	M10 X 22	60	8	24.0	100	12	1-M25 X 1.5	385	215	180	250	15	4.0

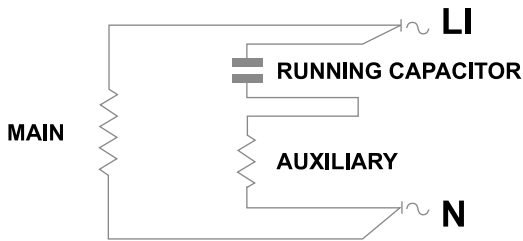
All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Single Phase Connections

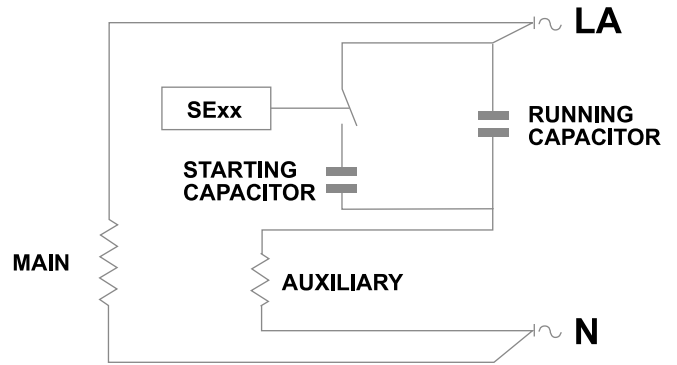
Connection

A motor's rated voltage must agree with the power supply line-to-line voltage. Care must therefore be taken to ensure the correct connection to the motor terminals.

CMLY Series

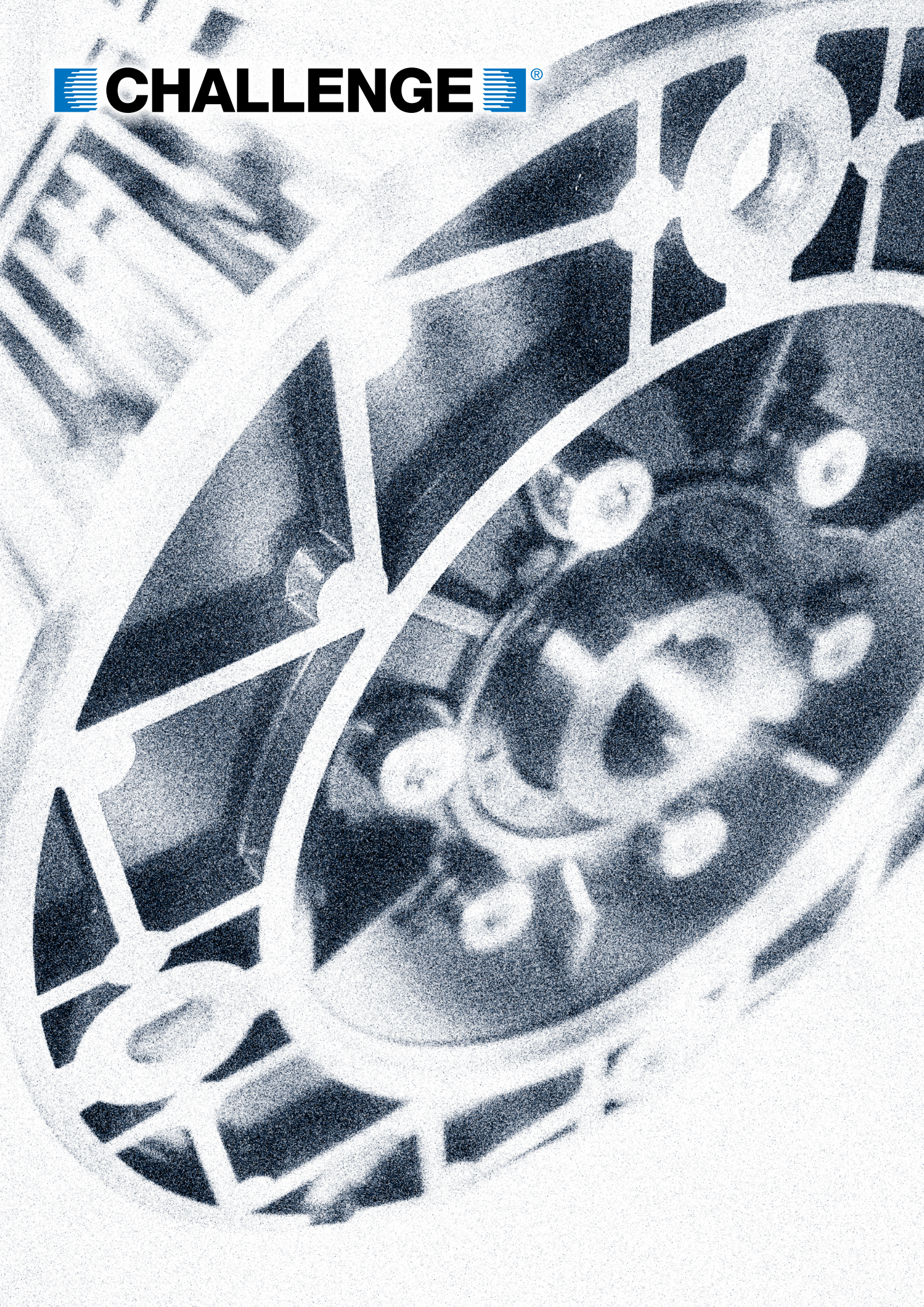


CMLL Series

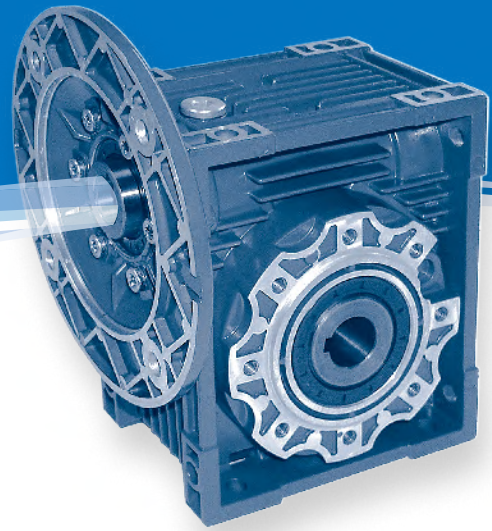


SExx: electronic device for connection of starting capacitor

 **CHALLENGE**  [®]



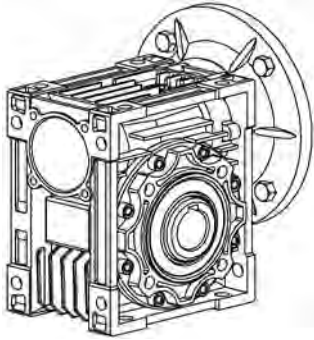
Worm Gear Units



Features

- A versatile range of modular aluminium bodied Worm Gear Drives with a large range of mounting positions
- Meet industry standard for sizes and performance
- Offered with hollow shafts, output shafts, motors, double reduction units, shaft mounting, torque arms
- Combinations of worm and helical gears offer great flexibility and very large speed reductions upto 5000 : 1
- Gears are manufactured from case hardened tempered steel (20MnCr5) and are accurately ground on the involute

Versions



CMRV 025-150

The service factor (f.s.) depends on the operating conditions the reduction unit is subjected to.

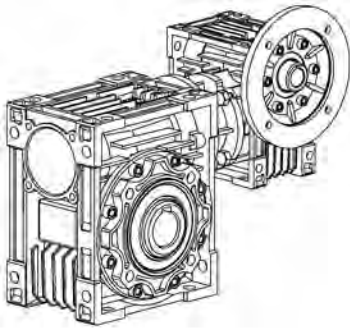
The parameters that need to be taken into consideration to select the most adequate service factor correctly comprise:

- Type of load of the operated machine : A - B - C
- Length of daily operating time: hours/day (Δ)
- Start-up frequency: starts/hour (*)

TYPE OF LOAD:	A - uniform	$fa \leq 0.3$
	B - moderate shocks	$fa \leq 3$
	C - heavy shocks	$fa \leq 10$

$fa = Je/Jm$

- Je (kgm²) moment of reduced external inertia at the drive-shaft
- Jm (kgm²) moment of inertia of motor If $fa > 10$ call our Technical Service.

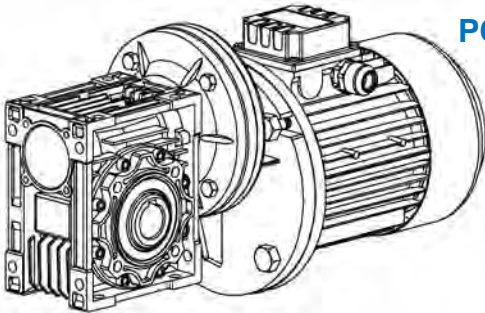


CMRV-CMRV...

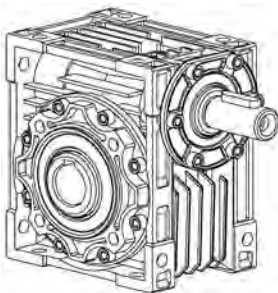
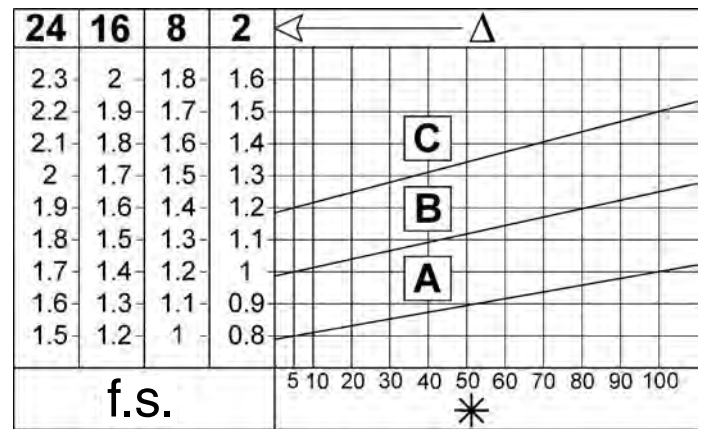
A - Screw feeders for light materials, fans, assembly lines, conveyor belts for light materials, small mixers, lifts, cleaning machines, fillers, control machines.

B - Winding devices, woodworking machine feeders, goods lifts, balancers, threading machines, medium mixers, conveyor belts for heavy materials, winches, sliding doors, fertilizer scrapers, packing machines, concrete mixers, crane mechanisms, milling cutters, folding machines, gear pumps.

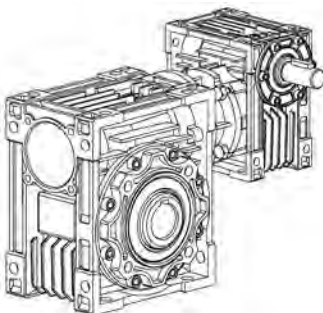
C - Mixers for heavy materials, shears, presses, centrifuges, rotating supports, winches and lifts for heavy materials, grinding lathes, stone mills, bucket elevators, drilling machines, hammer mills, cam presses, folding machines, turntables, tumbling barrels, vibrators, shredders.



PC-CMRV...



CRV 030-150



CRV-CMRV...

Direction of Rotation



The helix is right-handed

Critical Applications

The performance given in the catalogue correspond to mounting position B3 or similar, ie. when the first stage is not entirely immersed in oil. For other mounting positions and/or particular input speeds, refer to the Tables that highlight different critical situations for each size of reduction unit.

It is also necessary to take due consideration of and carefully assess the following applications by calling our Technical Service:

- As a speed increasing.
- Use in services that could be hazardous for people if the reduction unit fails.
- Applications with especially high inertia.
- Use as a lifting winch.
- Applications with high dynamic strain on the case of the reduction unit.
- In places with T° under -5°C or over 40°C.
- Use in chemically aggressive environments.

- Use in a salty environment.
- Mounting positions not envisaged in the catalogue.
- Use in radioactive environments.
- Use in environments pressures other than atmospheric pressure.

Avoid applications where even partial immersion of the reduction unit is required.

The maximum torque (*) that the gear reducer can support must not exceed two times the nominal torque (f.s.=1) stated in the performance tables.

(*) intended for momentary overloads due to starting at full load, braking, shocks or other causes, particularly those that are dynamic.

CRMV	025	030	040	050	063	075	090	110	130	150
V5: 1500 < n1 < 3000	-	-	-	-	-	B	B	B	B	B
n1 > 3000	B	B	B	B	B	A	A	A	A	A
V6	B	B	B	B	B	B	B	B	B	B

A = Application not recommended

B = Check the application or call technical department

Installation and Lubrication

When installing the reduction unit it is necessary to note the following recommendations:

- The mounting on the machine must be stable to avoid any vibration.
- Check the correct direction of rotation of the reduction unit output shaft before fitting the unit to the machine.
- In the case of particularly lengthy periods of storage (4/6 months), if the oil seal is not immersed in the lubricant inside the unit, it is recommended to change it since the rubber could stick to the shaft or may even have lost the elasticity it needs to function properly.
- Whenever possible, protect the reduction unit against solar radiation and bad weather.
- Ensure the motor cools correctly by assuring good passage of air from the fan side.
- In the case of ambient temperatures < -5°C or > +40°C call the Technical Service.
- The various parts (pulleys, gear wheels, couplings, shafts, etc.) must be mounted on the solid or hollow shafts using special threaded holes or other systems that anyhow ensure correct operation without risking damage to the bearings or external parts of the units. Lubricate the surfaces in contact to avoid seizure or oxidation.
- Painting must definitely not go over rubber parts and the holes on the breather plugs, if any.
- For units equipped with oil plugs, replace the closed plug used for shipping with the special breather plug.

- Check the correct level of the lubricant through the indicator, if there is one.
- Starting must take place gradually, without immediately applying the maximum load.
- When there are parts, objects or materials under the motor drive that can be damaged by even limited spillage of oil, special protection should be fitted.
- The reduction units size 025-030-040-050-063-075-090 are supplied complete with synthetic oil (lubricated for life) and can therefore be mounted in any position envisaged in the catalogue. The only exceptions are CMRV090- and CRV075-090- in position. V5/V6 for which you should call our Technical Service to assess the conditions of use.
- The reduction units size 110, 130 and 150 are supplied complete with lubricant, mineral oil.
- For sizes 110, 130 and 150 it is necessary to specify the position, otherwise the reduction units are supplied with the quantity of oil relating to position B3, (breather supplied).
- Only reduction units 110, 130 and 150 are fitted with breather, level and oil drainage plugs. It is necessary, after installation, to replace the closed plug used for transportation with the breather plug supplied with the unit.
- The pre-stage helical modules are supplied complete with life-long lubricant, synthetic oil and can therefore be mounted in all the positions. Lubrication is separated from that of the worm reduction unit.

Lubrication

In cases of ambient temperatures not envisaged in the table, call our Technical Service.

In the case of temperatures under -30°C or over 60°C it is necessary to use oil seals with special properties.

For operating ranges with temperatures under 0°C it is necessary to consider the following:

- 1- The motors need to be suitable for operation at the envisaged ambient temperature.

- 2- The power of the electric motor needs to be adequate for exceeding the higher starting torques required.
- 3- In the case of reduction units with a cast-iron case, pay attention to impact loads since cast iron may have problems of fragility at temperatures under -15°C.
- 4- During the early stages of service, problems of lubrication may arise due to the high level of viscosity taken on by the oil and so it is wise to have a few minutes of rotation under no load.

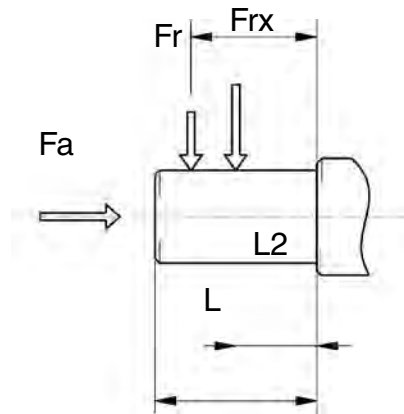
The oil needs to be changed after approximately 10,000 hours. This period depends on the type of service and the environment where the reduction unit is working.

	T°C - ISO...	AGIP	SHELL	ESSO	MOBIL	CASTROL	BP
CMRV025-090 PC063-090 (synthetic oil)	(-25) - (+50) ISO VG320	Telium VSF320	Tivela oil S320	S220	Glygoyle 30	Alphasyn PG32	Energol SG-XP320
CMRV110-150 (mineral oil)	(-5) - (+40) ISO VG460	Blasia 460	Omala oil 460	Spartan EP460	Mobilgear 634	Alphamax 460	Energol GR-XP460
	(-15) - (+25) ISO VG220	Blasia 220	Omala oil 220	Spartan EP220	Mobilgear 630	Alphamax 220	Energol GR-XP220

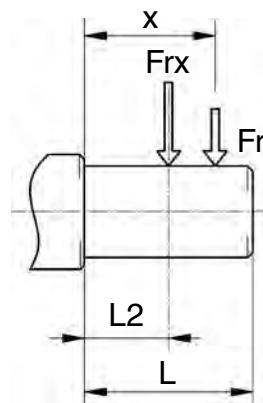
CMRV	025	030	040	050	063	075	090	110	130	150	PC	063	071	080	090
B3								3	4.5	7					
B8								2.2	3.3	5.1					
B6-B7	0.02	0.04	0.08	0.15	0.3	0.55	1	2.5	3.5	5.4		0.05	0.07	0.15	0.16
V5								3	4.5	7					
V6								2.2	3.3	5.1					

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Radial Loads



CRMV	025	030	040	050	063	075	090	110	130	150
a	50	65	84	101	120	131	162	176	188	215
b	38	50	64	76	95	101	122	136	148	174
Fr2 max	1350	1830	3490	4840	6270	7380	8180	12000	13500	18000



CRMV	030	040	050	063	075	090	110	130	150
a	86	106	129	159	192	227	266	314	350
b	76	94,5	114	139	176	202	236	274	310
Fr2 max	210	350	490	700	980	1270	1700	2100	2800

The radial load on the shaft is calculated with the following formula:

F_{re} (N) Resulting radial load

M (Nm) Torque on the shaft

D (mm) Diameter of the transmission member mounted on the shaft

F_r (N) Value of the maximum permitted radial load (see relative tables)

$f_z = 1.1$ gear pinion

1.4 chain wheel

1.7 v-pulley

2.5 flat pulley

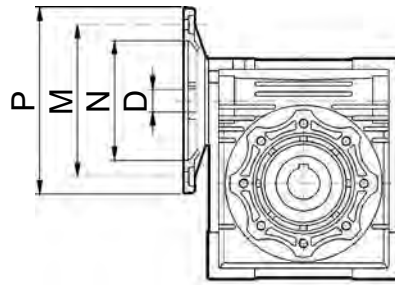
When the resulting radial load is not applied on the centre line of the shaft it is necessary to calculate the effective load with the following formula:

$a, b, x =$ (see relative tables)

$$F_{re} = \frac{2000 \times M \times f_z}{D} \leq Fr1 \text{ to } Fr2$$

$$F_{re} \leq \frac{F_r \times a}{(b + x)} \leq Fr1max \text{ to } Fr2max$$

Possible Motor Flanges



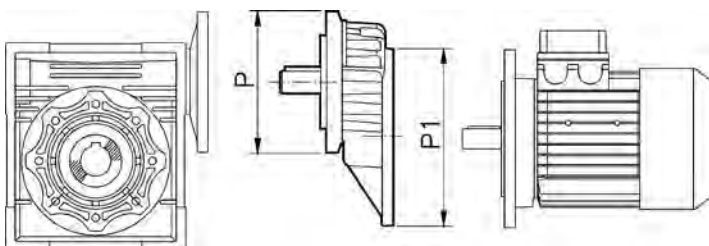
CMRV	PAM IEC	N	M	P	D												
					5	7,5	10	15	20	25	30	40	50	60	80	100	
025	56B14	50	65	80	9	9	9	9	9	-	9	9	9	9	-	-	
	63B5	95	115	140	11	11	11	11	11	11	11	11	11	-	-	-	
030	63B14	60	75	90													
	56B5	80	100	120	9	9	9	9	9	9	9	9	9	9	9	-	
	56B14	50	65	80													
040	71B5	110	130	160	14	14	14	14	14	14	14	14	14	-	-	-	-
	71B14	70	85	105													
	63B5	95	115	140	11	11	11	11	11	11	11	11	11	11	11	11	11
	63B14	60	75	90													
050	56B5	80	100	120	-	-	-	-	-	-	-	-	-	9	9	9	9
	80B5	130	165	200	19	19	19	19	19	19	19	-	-	-	-	-	-
	80B14	80	100	120													
	71B5	110	130	160	14	14	14	14	14	14	14	14	14	14	14	14	-
	71B14	70	85	105													
063	63B5	95	115	140	-	-	-	-	-	-	-	11	11	11	11	11	11
	90B5	130	165	200	-	24	24	24	24	24	24	-	-	-	-	-	-
	90B14	95	115	140													
	80B5	130	165	200	-	19	19	19	19	19	19	19	19	19	19	-	-
	80B14	80	100	120													
	71B5	110	130	160	-	-	-	-	-	-	-	14	14	14	14	14	14
075	71B14	70	85	105													
	100/112B5	180	215	250	-	28	28	28	-	-	-	-	-	-	-	-	-
	100/112B14	110	130	160													
	90B5	130	165	200	-	24	24	24	24	24	24	24	-	-	-	-	-
	90B14	95	115	140													
	80B5	130	165	200	-	-	-	-	19	19	19	19	19	19	19	19	19
	80B14	80	100	120													
090	71B5	110	130	160	-	-	-	-	-	-	-	-	14	14	14	14	14
	100/112B5	180	215	250	-	28	28	28	28	28	28	-	-	-	-	-	-
	100/112B14	110	130	160													
	90B5	130	165	200	-	24	24	24	24	24	24	24	24	24	24	-	-
	90B14	95	115	140													
	80B5	130	165	200	-	-	-	-	-	-	-	19	19	19	19	19	19
110	80B14	80	100	120													
	132B5	230	265	300	-	38*	38*	38*	38*	-	-	-	-	-	-	-	-
	100/112B5	180	215	250	-	28	28	28	28	28	28	28	28	28	28	-	-
	90B5	130	165	200	-	-	-	-	-	24	24	24	24	24	24	24	24
130	80B5	130	165	200	-	-	-	-	-	-	-	-	-	-	-	19	19
	132B5	230	265	300	-	38*	38*	38*	38*	38*	38*	38*	-	-	-	-	-
	100/112B5	180	215	250	-	-	-	-	-	28	28	28	28	28	28	28	28
150	90B5	130	165	200	-	-	-	-	-	-	-	-	-	-	-	24	24
	160B5	250	300	350	-	42	42	42	42	42	-	-	-	-	-	-	-
	132B5	230	265	300	-	-	-	-	38	38	38	38	38	38	38	-	-
	100/112B5	180	215	250	-	-	-	-	-	-	-	-	28	28	28	28	28

* Low profile key supplied by Challenge

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

PC & CMRV Combinations

CMRV	i	PC 063		PC 071		PC 080			PC 090		
		105 / 11 i = 3	105 / 14 i = 3	120 / 14 i = 3	120 / 19 i = 3	160 / 19 i = 3	160 / 24 i = 3	160 / 28 i = 3	160 / 19 i = 2,42	160 / 24 i = 2,42	160 / 28 i = 2,42
040	25										
	30										
	40										
	50										
	60										
	80										
	100										
050	25										
	30										
	40										
	50										
	60										
	80										
	100										
063	25										
	30										
	40										
	50										
	60										
	80										
	100										
075	25										
	30										
	40										
	50										
	60										
	80										
	100										
090	25										
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	60										
	80										
	100										
110	25										
	30										
	40										
	50										
	60										
	80										
	100										
130	25										
	30										
	40										
	50										
	60										
	80										
	100										



	P1	P	(P)
PC 063	63B5-140 /11		
PC 071	71B5-160 /14	120 / 14	(120 / 19)
PC 080	80B5-200 /19	160 / 14	(160 / 24) (160 / 28)
PC 090	90B5-200 /24	160 / 24	(160 / 19) (160 / 128)

(P) Only on request

Efficiency

Efficiency

Efficiency is a parameter which has a major influence on the sizing of certain applications, and basically depends on gear pair design elements.

The mesh data table on page 331 shows dynamic efficiency ($n_1=1400$ rev/min) and static efficiency values.

Note: These values are only achieved after the unit has been run in.

Dynamic Irreversibility

Dynamic irreversibility is achieved when the output shaft stops instantly and the drive is no longer transmitted through the worm shaft. This condition requires a dynamic efficiency of $\eta_d < 0.5$.

Static Irreversibility

Static irreversibility is achieved when, with the gear reducer at a standstill, the application of a load to the output shaft does not set the worm shaft in motion. This condition requires a static efficiency of $\eta_s < 0.5$.

The Table below shows approximate irreversibility classes.

Vibrations and shocks can affect a gear reducer's irreversibility. For the irreversibility conditions of a combined geared unit, one must consider that the efficiency of the group is given by the product of the efficiencies of each single reducer, i.e.: $\eta_{tot} = \eta_1 \times \eta_2$

η_d	DYNAMIC IRREVERSIBILITY
> 0.6	Dynamic reversibility
0.5 to 0.6	Low dynamic reversibility
0.4 to 0.5	Good dynamic irreversibility
< 0.4	Dynamic irreversibility

η_s	STATIC IRREVERSIBILITY
> 0.55	Static reversibility
0.5 to 0.55	Low static reversibility
< 0.5	Static irreversibility

Mesh Data

RV	i=ratio	7.5	10	15	20	25	30	40	50	60	80	100
05	Z1	4	3	2	2		1	1	1	1		
	γ	25°03'	19°19'	13°09'	10°41'		6°40'	5°23'	4°31'	3°53'		
	Mx	1,3	1,3	1,3	0,995		1,3	0,995	0,8	0,67		
	$\eta_d(1400)$	0,85	0,83	0,79	0,75		0,67	0,62	0,58	0,55		
	η_s	0,71	0,68	0,61	0,56		0,46	0,41	0,36	0,34		
030	Z1	4	3	2	2	1	1	1	1	1	1	
	γ	18°49'	14°20'	9°40'	7°42'	5°35'	4°52'	3°52'	3°12'	2°45'	2°07'	
	Mx	1,44	1,44	1,44	1,09	1,7	1,44	1,09	0,89	0,74	0,56	
	$\eta_d(1400)$	0,85	0,82	0,77	0,73	0,68	0,65	0,59	0,55	0,51	0,44	
	η_s	0,67	0,63	0,55	0,5	0,43	0,39	0,35	0,31	0,27	0,23	
040	Z1	4	3	2	2	2	1	1	1	1	1	1
	γ	24°28'	18°51'	12°49'	10°23'	8°43'	6°29'	5°14'	4°23'	3°47'	2°57'	2°25'
	Mx	2,06	2,06	2,06	1,57	1,27	2,06	1,57	1,27	1,06	0,81	0,65
	$\eta_d(1400)$	0,87	0,85	0,82	0,78	0,75	0,7	0,65	0,62	0,58	0,52	0,47
	η_s	0,71	0,67	0,6	0,55	0,51	0,45	0,4	0,36	0,32	0,28	0,24
050	Z1	4	3	2	2	2	1	1	1	1	1	1
	γ	23°54'	18°23'	12°30'	10°06'	8°29'	6°19'	5°06'	4°16'	3°40'	2°52'	2°21'
	Mx	2,56	2,56	2,56	1,95	1,58	2,56	1,95	1,58	1,32	1	0,8
	$\eta_d(1400)$	0,88	0,86	0,82	0,79	0,76	0,72	0,67	0,63	0,59	0,53	0,49
	η_s	0,7	0,66	0,59	0,55	0,51	0,44	0,39	0,35	0,32	0,27	0,23
063	Z1	4	3	2	2	2	1	1	1	1	1	1
	γ	24°31'	18°53'	12°51'	10°25'	8°45'	6°30'	5°15'	4°24'	3°47'	2°58'	2°26'
	Mx	3,25	3,25	3,25	2,48	2	3,25	2,48	2	1,68	1,27	1,02
	$\eta_d(1400)$	0,88	0,87	0,83	0,81	0,78	0,74	0,7	0,66	0,62	0,57	0,51
	η_s	0,71	0,67	0,6	0,55	0,51	0,45	0,4	0,36	0,33	0,28	0,24
075	Z1	4	3	2	2	2	1	1	1	1	1	1
	γ	26°17'	20°20'	13°52'	11°18'	9°32'	7°02'	5°42'	4°48'	4°08'	3°14'	2°40'
	Mx	3,94	3,94	3,94	3	2,42	3,94	3	2,42	2,03	1,54	1,24
	$\eta_d(1400)$	0,89	0,88	0,85	0,82	0,80	0,76	0,72	0,69	0,65	0,60	0,55
	η_s	0,71	0,68	0,61	0,57	0,53	0,46	0,42	0,38	0,35	0,29	0,26
090	Z1	4	3	2	2	2	1	1	1	1	1	1
	γ	29°11'	22°44'	15°36'	12°50'	10°54'	7°57'	6°30'	5°30'	4°46'	3°45'	3°06'
	Mx	4,84	4,84	4,84	3,69	2,98	4,84	3,69	2,98	2,5	1,89	1,52
	$\eta_d(1400)$	0,9	0,89	0,86	0,84	0,82	0,78	0,75	0,72	0,69	0,63	0,59
	η_s	0,73	0,7	0,64	0,6	0,56	0,49	0,45	0,41	0,38	0,32	0,28
110	Z1	4	3	2	2	2	1	1	1	1	1	1
	γ	28°15'	21°57'	15°02'	14°41'	12°34'	7°39'	7°28'	6°22'	5°32'	4°24'	3°39'
	Mx	5,875	5,875	5,875	4,62	3,73	5,875	4,62	3,73	3,13	2,37	1,91
	$\eta_d(1400)$	0,9	0,89	0,86	0,85	0,84	0,79	0,78	0,75	0,72	0,67	0,63
	η_s	0,72	0,69	0,63	0,62	0,59	0,48	0,48	0,44	0,41	0,36	0,32
130	Z1	4	3	2	2	2	1	1	1	1	1	1
	γ	28°41'	22°19'	15°18'	13°52'	11°49'	7°47'	7°02'	5°58'	5°11'	4°07'	3°24'
	Mx	6,97	6,97	6,97	5,4	4,37	6,97	5,4	4,37	3,67	2,77	2,23
	$\eta_d(1400)$	0,91	0,89	0,87	0,86	0,84	0,8	0,78	0,75	0,72	0,68	0,64
	η_s	0,72	0,69	0,63	0,61	0,58	0,49	0,46	0,43	0,39	0,34	0,3
150	Z1	6	4	3	2	2	2	1	1	1	1	1
	γ	32°09'	24°35'	17°27'	12°53'	11°19'	9°50'	6°32'	5°43'	4°57'	3°55'	3°14'
	Mx	5,5	6,155	5,5	6,155	5	4,193	6,155	5	4,193	3,17	2,55
	$\eta_d(1400)$	0,91	0,9	0,88	0,86	0,84	0,83	0,78	0,76	0,73	0,68	0,64
	η_s	0,73	0,71	0,66	0,6	0,57	0,54	0,45	0,42	0,39	0,33	0,29

Materials and Design Features (PC)

The **PC** construction is modular and therefore it can be supplied as a separate unit to be mounted on any type of fitted geared motor (PAM). In this connection, the various possibilities of flange/output shafts.

Fitting the pre-stage helical module on the main reduction unit is easily done as for any motor of Type B14.

The pre-stage unit cannot be used by itself, but only coupled with another reduction unit.

Materials

Case in aluminium alloy.

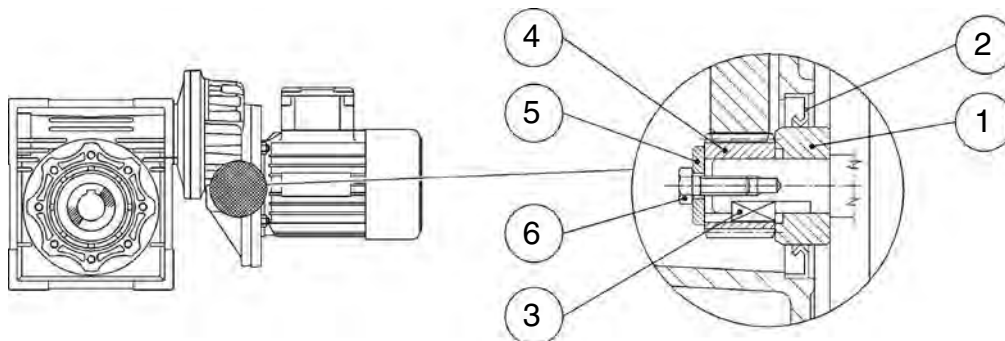
Gears in case hardened tempered steel
20MnCr5 (UNI7846) accurately ground on the involute.

Coupling to electric motor

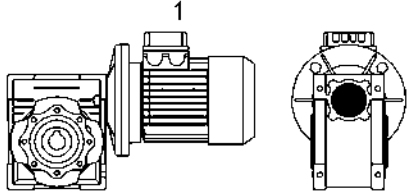
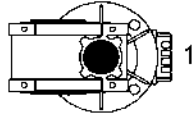
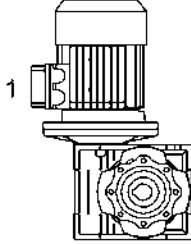
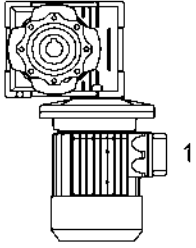
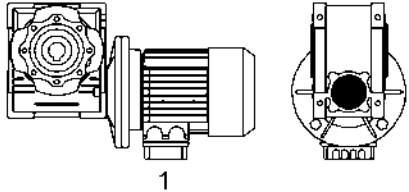
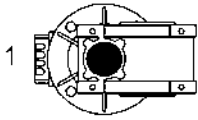
Correctly fitting the pinion on the electric motor shaft requires you keep to the following instructions:

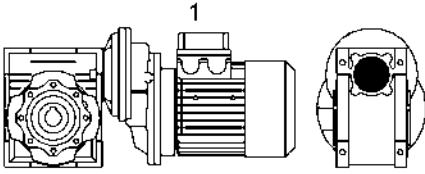
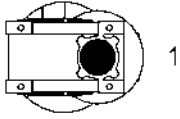
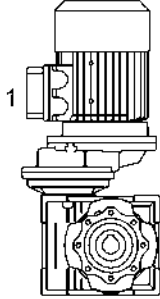
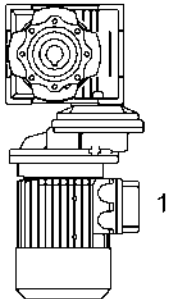
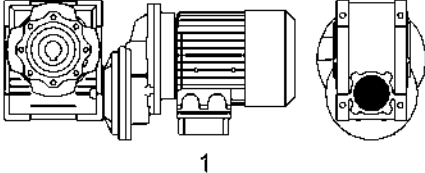
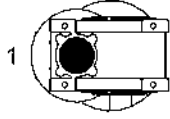
- a) Thoroughly clean the electric motor shaft.
- b) Remove the motor key from its seat.
- c) Fit the bush (1) to the drive shaft as shown in the diagram. To make this easier, you can heat the bush to approximately 70/80°C.
- d) Fit the new key (3) provided in place of the one removed beforehand.
- e) Fit the pinion (4) taking the same precautions as described in point (c).
- f) Fit the washer (5) and tighten with the screw (6).
- g) Remove the rubber cap mounted on the seat of the oil seal, taking care since the pre-stage unit is already complete with lubricant.
- h) Fit the oil seal (2) and then the motor assembly, taking care not to damage the lip of the oil seal.

Note: For correct operation, with no vibration or noise, it is recommended to use good quality motors.



Mounting Positions

CMRV - CRV			
CMRV...U - B3	B6	V5	V6
			
B8	B7		
			

PC - CMRV			
CMRV...U - B3	B6	V5	V6
			
B8	B7		
			

“U” version is related to sizes from CMRV 025-075 and CRV 030-063. For these sizes it is not necessary to specify mounting position.

Unless specified otherwise, the standard positions are B3.

For positions not envisaged, it is necessary to contact our Technical department.

Execution of Double Reduction

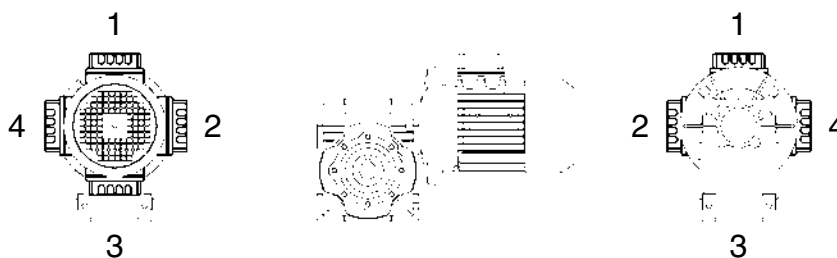
CMRV-CMRV / CRV-CMRV			
AS1	AS2	VS1	VS2
PS1	PS2	BS1	BS2

The position of the 1st reducer with respect to the 2nd gear reducer depend on the version. Unless otherwise specified at the time of order, combination groups are supplied in version BS2. The specified mounting position refers to the 2nd gear reducer.

Flange F	
D	S

Unless specified otherwise, the reduction unit is supplied with the flange in pos. D referred to position B3.

In the case of specific requirements, when ordering, specify the position of the terminal box as shown in the diagram.



CMRV Performance

input n1 = 1400 rev/min		Geared Motors					Gear Units			
i	output n2 = rev/min	Size	P1 (kW)	Motor Frame	M2 (Nm)	f.s.	Size	M2 (Nm)	Fr1 (N)	Fr2 (N)
7.5	186.7	CMRV025	0.09	56B4	3.9	2.8	CRV025	10	118	503
10	140.0		0.09	56B4	5.1	2.4		10	118	553
15	93.3		0.09	56B4	7.3	1.6		11	118	633
20	70.0		0.09	56B4	9.0	1.3		11	118	697
30	46.7		0.09	56B4	12	1.1		12	118	798
40	35.0		0.09	56B4	15	0.9		12	118	878
50	28.0		0.06	56A4	12	0.9		10	118	946
60	23.3		0.06	56A4	14	0.7		10	118	1006
7.5	186.7	CMRV030	0.22	63C4	10	1.9	CRV030	18	150	683
10	140.0		0.22	63C4	12	1.5		18	169	752
15	93.3		0.22	63C4	17	1.0		18	169	861
20	70.0		0.22	63C4	22	0.8		18	190	948
25	56.0		0.18	63B4	21	1.0		21	210	1021
30	46.7		0.18	63B4	24	0.8		20	210	1085
40	35.0		0.12	63A4	19	0.9		18	210	1194
50	28.0		0.12	63A4	23	0.8		17	210	1286
60	23.3		0.09	56B4	19	0.9		16	210	1367
80	17.5		0.06	56A4	14	0.9		13	210	1504
7.5	186.7	CMRV040	0.55	71C4	24	1.6	CRV040	40	294	1315
10	140.0		0.55	71C4	32	1.3		40	331	1447
15	93.3		0.55	71C4	46	0.9		40	331	1657
20	70.0		0.37	71B4	39	1.0		39	350	1824
25	56.0		0.37	71B4	47	0.8		38	350	1964
30	46.7		0.37	71B4	53	0.8		45	350	2087
40	35.0		0.25	71A4	44	0.9		41	350	2298
50	28.0		0.22	63C4	47	0.8		39	350	2475
60	23.3		0.18	63B4	43	0.8		36	350	2630
80	17.5		0.12	63A4	34	1.0		33	350	2895
100	14.0	0.12	63A4	38	0.8	29	350	3118		
7.5	186.7	CMRV050	0.92	80C4	41	1.7	CRV050	71	401	1805
10	140.0		0.92	80C4	54	1.3		72	490	1987
15	93.3		0.92	80C4	77	1.0		74	490	2274
20	70.0		0.75	80B4	81	0.9		73	490	2503
25	56.0		0.55	80A4	71	1.0		70	490	2696
30	46.7		0.55	80A4	81	1.0		84	490	2865
40	35.0		0.37	71B4	68	1.1		76	490	3153
50	28.0		0.37	71B4	80	0.9		73	490	3397
60	23.3		0.37	71B4	89	0.8		68	490	3610
80	17.5		0.25	71A4	72	0.9		65	490	3973
100	14.0	0.18	63B4	60	0.9	55	490	4280		

CMRV Performance

input n1 = 1400 rev/min		Geared Motors					Gear Units			
i	output n2 = rev/min	Size	P1 (kW)	Motor Frame	M2 (Nm)	f.s.	Size	M2 (Nm)	Fr1 (N)	Fr2 (N)
7.5	186.7	CMRV063	1.84	90LL4	83	1.5	CRV063	128	500	2359
10	140.0		1.84	90LL4	109	1.2		130	571	2597
15	93.3		1.84	90LL4	156	0.9		140	615	2973
20	70.0		1.5	90LL4	166	0.8		135	667	3272
25	56.0		1.1	90S4	146	0.9		130	700	3524
30	46.7		1.1	90S4	167	1.0		160	700	3745
40	35.0		0.92	80C4	176	0.8		145	700	4122
50	28.0		0.55	80A4	124	1.1		135	700	4440
60	23.3		0.55	80A4	140	0.9		130	700	4719
80	17.5		0.37	71B4	115	1.1		122	700	5193
100	14.0		0.37	71B4	129	0.9		118	700	5595
7.5	186.7	CMRV075	4	112M4	182	1.0	CRV075	185	700	2785
10	140.0		4	112M4	240	0.8		195	830	3065
15	93.3		3	100L4	261	0.8		200	851	3509
20	70.0		1.84	90LL4	206	1.0		210	980	3862
25	56.0		1.84	90LL4	251	0.8		200	980	4160
30	46.7		1.84	90LL4	286	0.8		230	980	4421
40	35.0		1.1	90S4	216	1.0		220	980	4865
50	28.0		0.92	80C4	217	1.0		210	980	5241
60	23.3		0.92	80C4	245	0.8		200	980	5569
80	17.5		0.55	80A4	180	1.1		190	980	6130
100	14.0		0.55	80A4	206	0.9		180	980	6603
7.5	186.7	CMRV090	4.8	112MS4	221	1.3	CRV090	290	900	3081
10	140.0		4.8	112MS4	291	1.1		310	1082	3391
15	93.3		4.8	112MS4	422	0.9		360	1257	3882
20	70.0		4	112M4	458	0.8		355	1270	4273
25	56.0		3	100LB4	420	0.8		340	1270	4603
30	46.7		3	100LB4	479	0.9		410	1270	4891
40	35.0		1.84	90LL4	377	1.0		360	1270	5383
50	28.0		1.84	90LL4	452	0.8		340	1270	5799
60	23.3		1.5	90LL4	424	0.8		320	1270	6163
80	17.5		0.92	80C4	316	0.9		285	1270	6783
100	14.0		0.75	80B4	302	0.9		270	1270	7306

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CMRV Performance

input n1 = 1400 rev/min		Geared Motors					Gear Units			
i	output n2 = rev/min	Size	P1 (kW)	Motor Frame	M2 (Nm)	f.s.	Size	M2 (Nm)	Fr1 (N)	Fr2 (N)
7.5	186.7	CMRV110	9.2	132M4	424	1.3	CRV110	552	1200	3893
10	140.0		7.5	132L4	455	1.3		598	1463	4285
15	93.3		7.5	132L4	660	1.0		656	1604	4905
20	70.0		5.5	132S4	638	1.0		644	1700	5399
25	56.0		4.8	112MS4	688	1.0		679	1700	5816
30	46.7		4	112M4	647	1.1		725	1700	6181
40	35.0		3	100LB4	638	1.1		702	1700	6803
50	28.0		3	100LB4	767	0.9		660	1700	7328
60	23.3		2.2	100LA4	648	1.0		616	1700	7787
80	17.5		1.5	90L4	548	0.9		515	1700	8571
100	14.0	1.1	90S4	473	1.0	483	1700	9232		
7.5	186.7	CMRV130	9.2	132M4	428	1.8	CRV130	750	1500	5092
10	140.0		9.2	132M4	559	1.5		820	1845	5605
15	93.3		9.2	132M4	819	1.1		920	2070	6416
20	70.0		9.2	132M4	1079	0.8		910	2100	7062
25	56.0		9.2	132M4	1318	0.7		930	2100	7607
30	46.7		7.5	132L4	1228	0.8		1040	2100	8084
40	35.0		7.5	132L4	1596	0.7		1050	2100	8897
50	28.0		4.8	112MS4	1228	0.8		980	2100	9584
60	23.3		4	112M4	1179	0.8		900	2100	10185
80	17.5		3	100LB4	1113	0.8		840	2100	11210
100	14.0	1.84	90LL4	803	0.9	740	2100	12076		
7.5	186.7	CMRV150	15	160L4	698	1.7	CRV150	1200	1950	6962
10	140.0		15	160L4	921	1.3		1240	2267	7663
15	93.3		15	160L4	1351	0.9		1250	2285	8771
20	70.0		15	160L4	1760	0.7		1300	2674	9654
25	56.0		11	160M4	1576	0.8		1200	2800	10400
30	46.7		9.2	132M4	1563	0.8		1200	2800	11051
40	35.0		9.2	132M4	1958	0.8		1550	2800	12163
50	28.0		5.5	132S4	1426	1.0		1400	2800	13103
60	23.3		5.5	132S4	1643	0.8		1260	2800	13924
80	17.5		4	112M4	1484	0.8		1150	2800	15325
100	14.0	3	100LB4	1310	0.8	1000	2800	16508		

PC-CMRV Performance

input n1 = 1400 rev/min		Geared Motors						
i	output n2 = rev/min	Size	P1 (kW)	Motor Frame	M2 (Nm)	f.s.	Fr2 (N)	
75	18.7	PC063+CMRV040	0.18	63B4	64	0.8	2833	
90	15.6		0.18	63B4	70	0.8	3011	
120	11.7		0.18	63B4	85	0.6	3314	
150	9.3		0.12	63A4	66	0.7	3490	
180	7.8		0.12	63A4	74	0.6	3490	
240	5.8		0.12	63A4	86	0.5	3490	
75	18.7	PC063+CMRV050	0.22	63C4	78	1.2	3889	
90	15.6		0.22	63C4	86	1.2	4132	
120	11.7		0.22	63C4	106	0.9	4548	
150	9.3		0.18	63B4	101	0.9	4840	
180	7.8		0.18	63B4	113	0.7	4840	
240	5.8		0.18	63B4	133	0.6	4840	
300	4.7	PC063+CMRV063	0.12	63A4	98	0.7	4840	
120	11.7		0.22	63C4	110	1.7	5945	
150	9.3		0.22	63C4	126	1.4	6270	
180	7.8		0.22	63C4	143	1.1	6270	
240	5.8		0.18	63B4	139	1.0	6270	
300	4.7		0.18	63B4	155	0.8	6270	
75	18.7	PC071+CMRV050	0.25	71A4	88	1.0	3889	
90	15.6		0.25	71A4	98	1.1	4132	
120	11.7		0.25	71A4	121	0.8	4548	
150	9.3		0.25	71A4	141	0.6	4840	
75	18.7	PC071+CMRV063	0.25	71A4	91	1.8	5083	
90	15.6		0.55	71C4	219	0.9	5401	
120	11.7		0.37	71B4	185	1.0	5945	
150	9.3		0.37	71B4	212	0.8	6270	
180	7.8		0.25	71A4	163	1.0	6270	
240	5.8		0.25	71A4	192	0.7	6270	
300	4.7		0.25	71A4	215	0.6	6270	
75	18.7		PC071+CMRV075	0.55	71C4	205	1.2	6000
90	15.6	0.55		71C4	230	1.3	6375	
120	11.7	0.55		71C4	284	1.0	7017	
150	9.3	0.37		71B4	223	1.1	7380	
180	7.8	0.37		71B4	254	0.9	7380	
240	5.8	0.25		71A4	201	1.1	7380	
300	4.7	0.25		71A4	230	0.9	7380	
120	11.7	PC071+CMRV090		0.55	71C4	297	1.6	7764
150	9.3			0.55	71C4	355	1.3	8180
180	7.8			0.55	71C4	398	1.0	8180
240	5.8		0.37	71B4	321	1.1	8180	
300	4.7		0.37	71B4	371	0.9	8180	

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PC-CMRV Performance

input n1 = 1400 rev/min		Geared Motors					
i	output n2 = rev/min	Size	P1 (kW)	Motor Frame	M2 (Nm)	f.s.	Fr2 (N)
75	18.7	PC080+CMRV075	0.92	80C4	344	0.7	6000
90	15.6		0.92	80C4	384	0.8	6375
120	11.7		0.55	80A4	284	1.0	7017
150	9.3		0.55	80A4	332	0.8	7380
180	7.8		0.55	80A4	378	0.6	7380
75	18.7	PC080+CMRV090	0.92	80C4	353	1.2	6638
90	15.6		0.92	80C4	401	1.4	7054
120	11.7		0.92	80C4	497	1.0	7764
150	9.3		0.92	80C4	593	0.8	8180
180	7.8		0.75	80B4	543	0.7	8180
75	18.7	PC080+CMRV110	0.92	80C4	367	2.5	8388
120	11.7		0.92	80C4	527	1.8	9811
150	9.3		0.92	80C4	621	1.4	10320
180	7.8		0.92	80C4	712	1.1	10320
240	5.8		0.75	80B4	700	0.9	10320
300	4.7		0.55	80A4	597	1.0	10320
75	18.7		PC080+CMRV130	0.92	80C4	367	3.3
90	15.6	0.92		80C4	412	3.4	11659
120	11.7	0.92		80C4	527	2.5	12832
150	9.3	0.92		80C4	631	1.9	13500
180	7.8	0.92		80C4	712	1.5	13500
240	5.8	0.92		80C4	874	1.1	13500
300	4.7	0.92		80C4	998	0.9	13500
60.5	23.1	PC090+CMRV110		1.84	90LL4	592	1.5
72.6	19.3		1.84	90LL4	656	1.5	8298
97	14.5		1.84	90LL4	850	1.1	9133
121.0	11.6		1.84	90LL4	1002	0.9	9838
145	9.6		1.5	90L4	936	0.8	10320
193.6	7.2		1.1	90S4	828	0.8	10320
242.0	5.8		1.1	90S4	962	0.6	10320
60.5	23.1	PC090+CMRV130	1.84	90LL4	592	2.0	10213
72.6	19.3		1.84	90LL4	665	2.1	10853
97	14.5		1.84	90LL4	850	1.5	11945
121.0	11.6		1.84	90LL4	1018	1.2	12868
145.2	9.6		1.84	90LL4	1148	0.9	13500
193.6	7.2		1.5	90L4	1149	0.8	13500
242	5.8		1.1	90S4	962	0.9	13500

CMRV-CMRV Performance

input n1 = 1400 rev/min		Geared Motors					Gear Units							
i	output n2 = rev/min	Size	P1 (kW)	Motor Frame	M2 (Nm)	f.s.	Size	M2 (Nm)	Fr1 (N)	Fr2 (N)				
100	14.0	CMRV025/030	0.09	56B4	38	0.8				1620				
150	9.3		0.09	56B4	49	0.6				1830				
200	7.0		0.09	56B4	62	0.5				1830				
250	5.6		0.09	56B4	66	0.5				1830				
300	4.7		0.09	56B4	75	0.4				1830				
400	3.5		0.09	56B4	107	0.3				1830				
500	2.8		0.09	56B4	115	0.3				1830				
600	2.3		0.09	56B4	135	0.2				1830				
750	1.9		0.09	56B4	151	0.2				1830				
900	1.6		0.09	56B4	178	0.2				1830				
1200	1.2		0.09	56B4	212	0.1				1830				
1500	0.9		0.09	56B4	247	0.1				1830				
1800	0.78		0.09	56B4	304	0.1				1830				
2400	0.58		0.09	56B4	340	0.1				1830				
3000	0.47		0.09	56B4	405	0.1				1830				
300	4.7	CMRV025/040	0.06	56A4	59	1.2				3490				
400	3.5		0.06	56A4	71	0.9				3490				
500	2.8		0.06	56A4	82	0.7				3490				
600	2.3		0.06	56A4	101	0.6				3490				
750	1.9		0.06	56A4	116	0.5				3490				
900	1.6		0.06	56A4	143	0.5				3490				
1200	1.2		0.06	56A4	171	0.4				3490				
1500	0.9		0.06	56A4	197	0.3				3490				
1800	0.8		0.06	56A4	217	0.3				3490				
2400	0.6		0.06	56A4	268	0.2				3490				
3000	0.5		0.06	56A4	324	0.2				3490				
4000	0.4		0.06	56A4	294	0.1				3490				
5000	0.3		0.06	56A4	356	0.1				3490				
300	4.7		CMRV030/040	0.09	56B4	88				0.8	CRV030/040	73	210	3490
400	3.5			0.06	56A4	70				0.9		65	210	3490
500	2.8	0.06		56A4	96	0.6	61	210	3490					
600	2.3	0.06		56A4	104	0.7	73	210	3490					
750	1.9	0.06		56A4	121	0.6	73	210	3490					
900	1.6	0.06		56A4	139	0.5	73	210	3490					
1200	1.2	0.06		56A4	166	0.4	65	210	3490					
1500	0.9	0.06		56A4	196	0.4	73	210	3490					
1800	0.8	0.06		56A4	218	0.3	73	210	3490					
2400	0.58	0.06		56A4	261	0.2	65	210	3490					
3200	0.4	0.06		56A4	300	0.2	65	210	3490					
4000	0.4	0.06		56A4	279	0.1	33	210	3490					
5000	0.28	0.06		56A4	338	0.1	29	210	3490					

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CMRV-CMRV Performance

input n1 = 1400 rev/min		Geared Motors					Gear Units			
i	output n2 = rev/min	Size	P1 (kW)	Motor Frame	M2 (Nm)	f.s.	Size	M2 (Nm)	Fr1 (N)	Fr2 (N)
300	4.7	CMRV030/050	0.12	63A4	119	1.2	CRV030/050	145	210	4840
400	3.5		0.12	63A4	142	0.9		124	210	4840
500	2.8		0.12	63A4	164	0.7		120	210	4840
600	2.3		0.09	56B4	159	0.9		145	210	4840
750	1.9		0.09	56B4	185	0.8		145	210	4840
900	1.6		0.09	56B4	212	0.7		145	210	4840
1200	1.2		0.06	56A4	169	0.7		124	210	4840
1500	0.93		0.06	56A4	199	0.7		145	210	4840
1800	0.78		0.06	56A4	222	0.7		145	210	4840
2400	0.6		0.06	56A4	266	0.5		124	210	4840
3000	0.5		0.06	56A4	307	0.4		120	210	4840
4000	0.35		0.06	56A4	288	0.3		82	210	4840
4800	0.29		0.06	56A4	311	0.3		82	210	4840
300	4.7		CMRV030/063	0.22	63C4	210		1.1	CRV030/063	230
400	3.5	0.22		63C4	271	0.8	230	210		6270
500	2.8	0.18		63B4	257	0.8	216	210		6270
600	2.3	0.12		63A4	208	1.1	230	210		6270
750	1.9	0.12		63A4	241	0.9	216	210		6270
900	1.6	0.09		56B4	200	1.0	198	210		6270
1200	1.2	0.09		56B4	263	0.9	230	210		6270
1500	0.93	0.09		56B4	305	0.7	216	210		6270
1800	0.78	0.06		56A4	225	0.9	198	210		6270
2400	0.58	0.06		56A4	276	0.8	230	210		6270
3000	0.47	0.06		56A4	319	0.7	216	210		6270
4000	0.35	0.06		56A4	306	0.6	172	210		6270
5000	0.28	0.06		56A4	360	0.4	150	210		6270
300	4.7	CMRV040/075		0.37	71B4	405	1.0	CRV040/075		390
400	3.5		0.37	71B4	498	0.7	360		350	7380
500	2.8		0.25	71A4	384	0.8	320		350	7380
600	2.3		0.18	63B4	362	1.1	390		350	7380
750	1.9		0.18	63B4	435	0.9	390		350	7380
900	1.6		0.18	63B4	487	0.8	390		350	7380
1200	1.2		0.12	63A4	399	0.9	360		350	7380
1500	0.93		0.09	56B4	360	1.1	390		350	7380
1800	0.78		0.09	56B4	404	1.0	390		350	7380
2400	0.58		0.09	56B4	496	0.7	360		350	7380
3000	0.47		0.06	56A4	377	0.8	320		350	7380
4000	0.35		0.06	56A4	355	0.7	250		350	7380
5000	0.28		0.06	56A4	419	0.5	230		350	7380

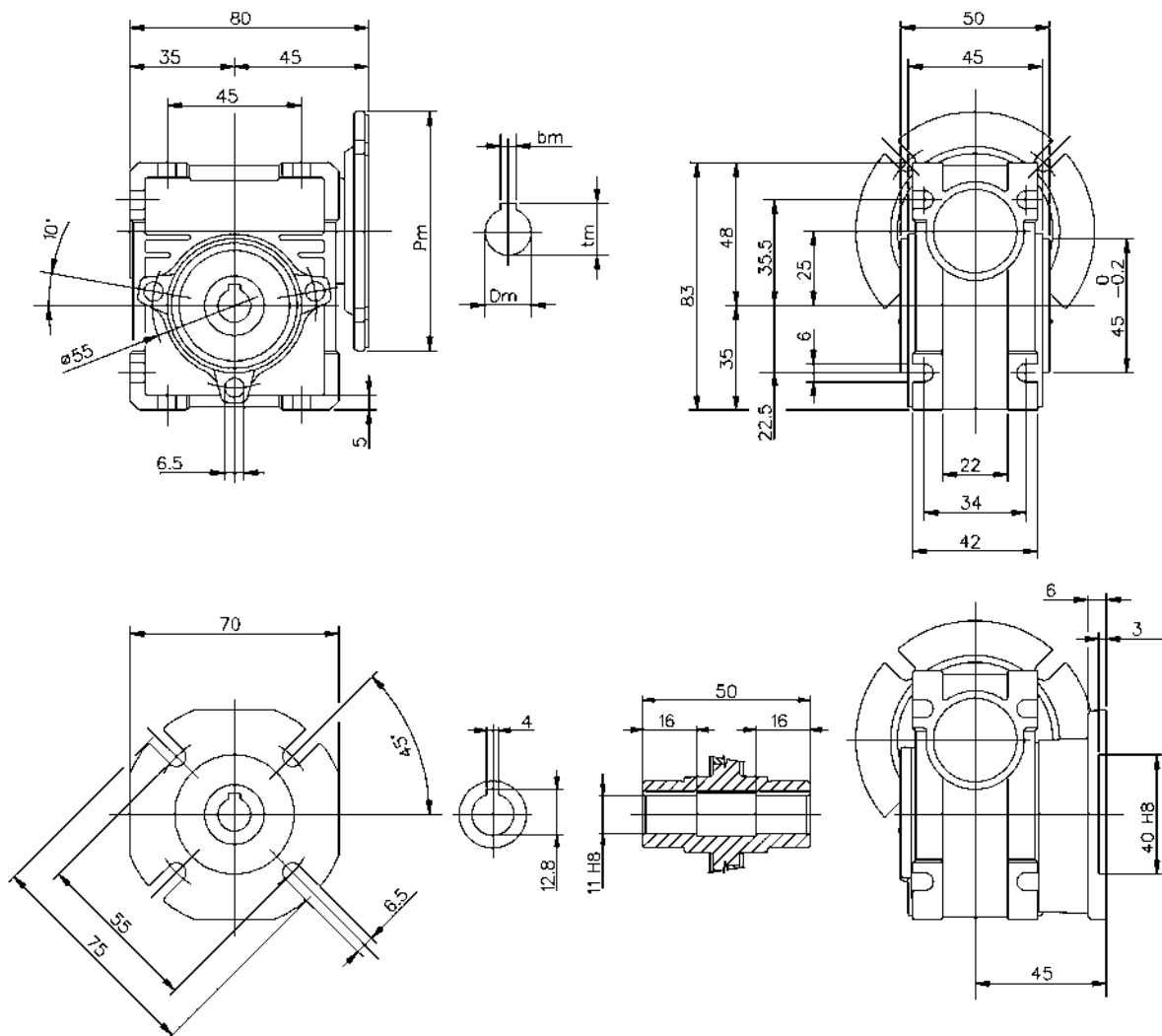
CMRV-CMRV Performance

input n1 = 1400 rev/min		Geared Motors					Gear Units			
i	output n2 = rev/min	Size	P1 (kW)	Motor Frame	M2 (Nm)	f.s.	Size	M2 (Nm)	Fr1 (N)	Fr2 (N)
300	4.7	CMRV040/090	0.37	71B4	402	1.5	CRV040/090	610	350	8180
400	3.5		0.37	71B4	523	1.2		610	350	8180
500	2.8		0.37	71B4	611	0.9		560	350	8180
600	2.3		0.37	71B4	757	0.8		610	350	8180
750	1.9		0.25	71A4	598	0.9		560	350	8180
900	1.6		0.25	71A4	667	0.8		505	350	8180
1200	1.2		0.18	63B4	629	1.0		610	350	8180
1500	0.93		0.18	63B4	735	0.8		560	350	8180
1800	0.78		0.12	63A4	547	0.9		505	350	8180
2400	0.58		0.12	63A4	695	0.9		610	350	8180
3000	0.47		0.09	56B4	609	0.9		560	350	8180
4000	0.35		0.09	56B4	548	0.8		460	350	8180
5000	0.28		0.06	56A4	431	1.0		410	350	8180
300	4.7		CMRV050/110	0.92	80C4	1069		1.2	CRV050/110	1265
400	3.5	0.92		80C4	1382	0.9	1185	490		10320
500	2.8	0.55		80A4	984	1.1	1100	490		10320
600	2.3	0.55		80A4	1181	1.0	1185	490		10320
750	1.9	0.55		80A4	1411	0.9	1265	490		10320
900	1.6	0.37		71B4	1079	1.2	1265	490		10320
1200	1.2	0.37		71B4	1396	0.8	1185	490		10320
1500	0.93	0.25		71A4	1064	1.2	1265	490		10320
1800	0.78	0.25		71A4	1195	1.1	1265	490		10320
2400	0.58	0.18		63B4	1113	1.1	1185	490		10320
3000	0.47	0.12		63A4	884	1.2	1100	490		10320
4000	0.35	0.12		63A4	784	1.0	819	490		10320
5000	0.28	0.12		63A4	928	0.80	746	490		10320
300	4.7	CMRV063/130		1.5	90L4	1789	1.0	CRV063/130		1760
400	3.5		1.5	90L4	2279	0.7	1650		700	13500
500	2.8		1.1	90S4	1991	0.8	1550		700	13500
600	2.3		0.75	80B4	1631	1.0	1650		700	13500
750	1.9		0.75	80B4	2005	0.9	1760		700	13500
900	1.6		0.75	80B4	2283	0.8	1760		700	13500
1200	1.2		0.55	80A4	2132	0.8	1650		700	13500
1500	0.93		0.37	71B4	1674	1.1	1760		700	13500
1800	0.78		0.37	71B4	1887	0.9	1760		700	13500
2400	0.58		0.25	71A4	1624	1.0	1650		700	13500
3000	0.47		0.25	71A4	1935	0.8	1550		700	13500
4000	0.35		0.25	71A4	2046	0.6	1220		700	13500
5000	0.28		0.25	71A4	2430	0.5	1100		700	13500

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CMRV-CMRV Performance

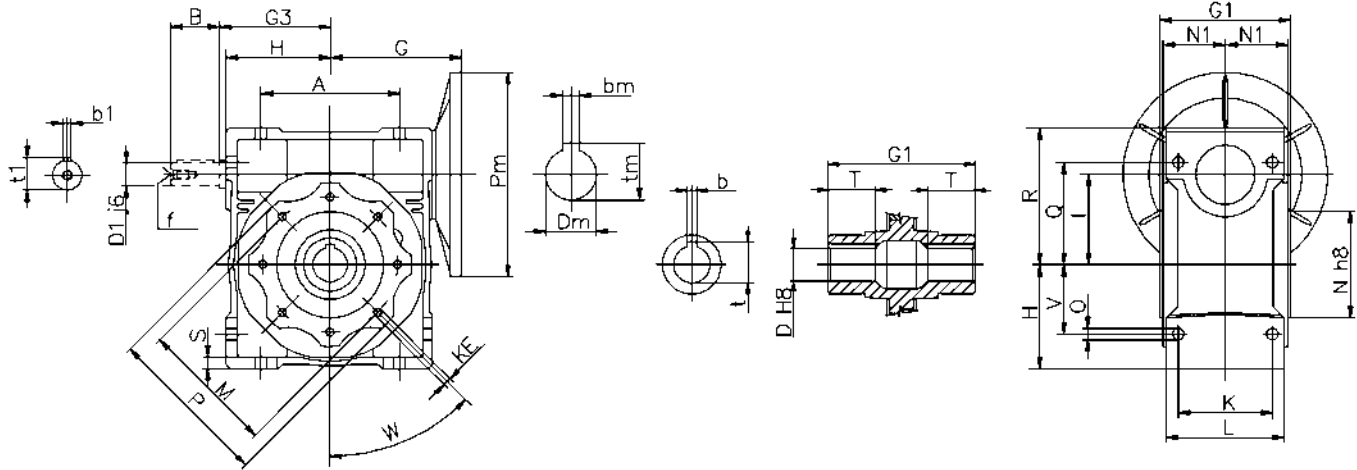
input n1 = 1400 rev/min		Geared Motors					Gear Units			
i	output n2 = rev/min	Size	P1 (kW)	Motor Frame	M2 (Nm)	f.s.	Size	M2 (Nm)	Fr1 (N)	Fr2 (N)
150	9.3	CRV063/150	1.84	90LL4	1259	1.9	CRV063/150	2340	700	18000
200	7.0		1.84	90LL4	1616	1.4		2340	700	18000
250	5.6		1.84	90LL4	1966	1.0		2050	700	18000
300	4.7		1.84	90LL4	2281	1.0		2340	700	18000
400	3.5		1.84	90LL4	2708	1.0		2670	700	18000
500	2.8		1.84	90LL4	3167	0.7		2330	700	18000
600	2.3		1.5	90L4	3057	0.9		2670	700	18000
750	1.9		1.1	90S4	2616	0.9		2330	700	18000
900	1.6		0.92	80C4	2717	0.8		2100	700	18000
1200	1.2		0.92	80C4	3288	0.8		2670	700	18000
1800	0.8		0.55	80A4	2638	0.8		2100	700	18000
2400	0.6		0.55	80A4	3182	0.8		2670	700	18000
3000	0.5		0.37	71B4	2535	0.9		2330	700	18000
4000	0.4		0.25	71A4	2026	0.9		1880	700	18000
5000	0.3		0.25	71A4	2251	0.7		1650	700	18000



For the dimensions concerning the motor connection area (Pm, Dm, bm, tm) please refer to the Table shown at page 350.

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused. All dimensions in millimetres unless otherwise stated.

Dimensions



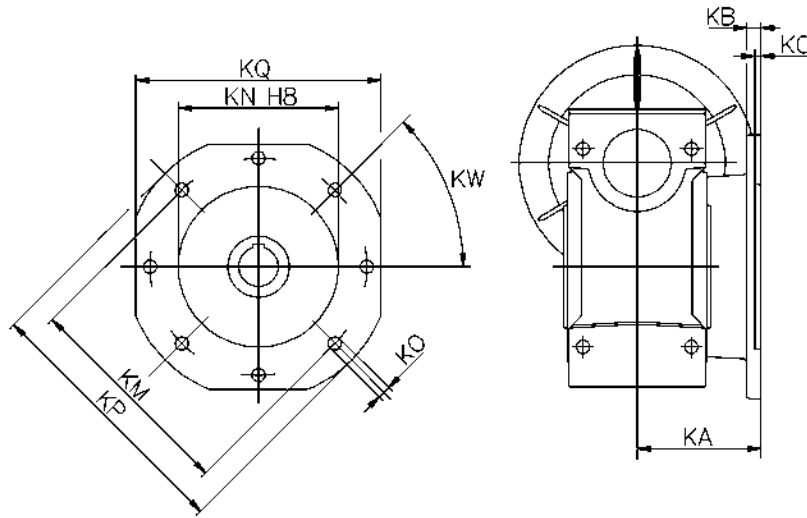
	030	040	050	063	075	090	110	130	150
A	54	70	80	100	120	140	170	200	240
B	20	23	30	40	50	50	60	80	80
D	14	18	25	25	28	35	42	45	50
D1	9	11	14	19	24	24	28	30	35
G	55	70	80	95	112.5	129.5	160	180	210
G1	63	78	92	112	120	140	155	170	200
G3	45	53	64	75	90	108	135	155	175
H	40	50	60	72	86	103	127.5	147.5	170
I	30	40	50	63	75	90	110	130	150
K	44	60	70	85	90	100	115	120	145
KE	M6*11 (4)	M6*10 (4)	M8*10 (4)	M8*14(8)	M8*14(8)	M10*18(8)	M10*18(8)	M12*21(8)	M12*21(8)
L	56	71	85	103	112	130	144	155	185
M	65	75	85	95	115	130	165	215	215
N	55	60	70	80	95	110	130	180	180
N1	29	36.5	43.5	53	57	67	74	81	96
O	6.5	6.5	8.5	8.5	11.5	13	14	16	18
P	75	87	100	110	140	160	200	250	250
Q	44	55	64	80	93	102	125	140	180
R	57	71.5	84	102	119	135	167.5	187.5	230
S	5.5	6.5	7	8	10	11	14.5	15.5	18
T	21	26	30	36	40	45	50	60	72.5
V	27	35	40	50	60	70	85	100	120
W	45°	45°	45°	45°	45°	45°	45°	45°	45°
b	5	6	8	8	8 (10)	10	12	14	14
t	16.3	20.8 (21.8)	28.3 (27.3)	28.3 (31.3)	31.3 (38.3)	38.3 (41.3)	45.3	48.8	53.8
b1	3	4	5	6	8	8	8	8	10
t1	10.2	12.5	16	21.5	27	27	31	33	38
f	-	-	M6	M6	M8	M8	M10	M10	M12
kg	1.2	2.3	3.5	6.2	9	13	35	48	84

kg = Weight without motor

For the dimensions concerning the motor connection area (Pm, Dm, bm, tm) please refer to the Table shown at page 350.

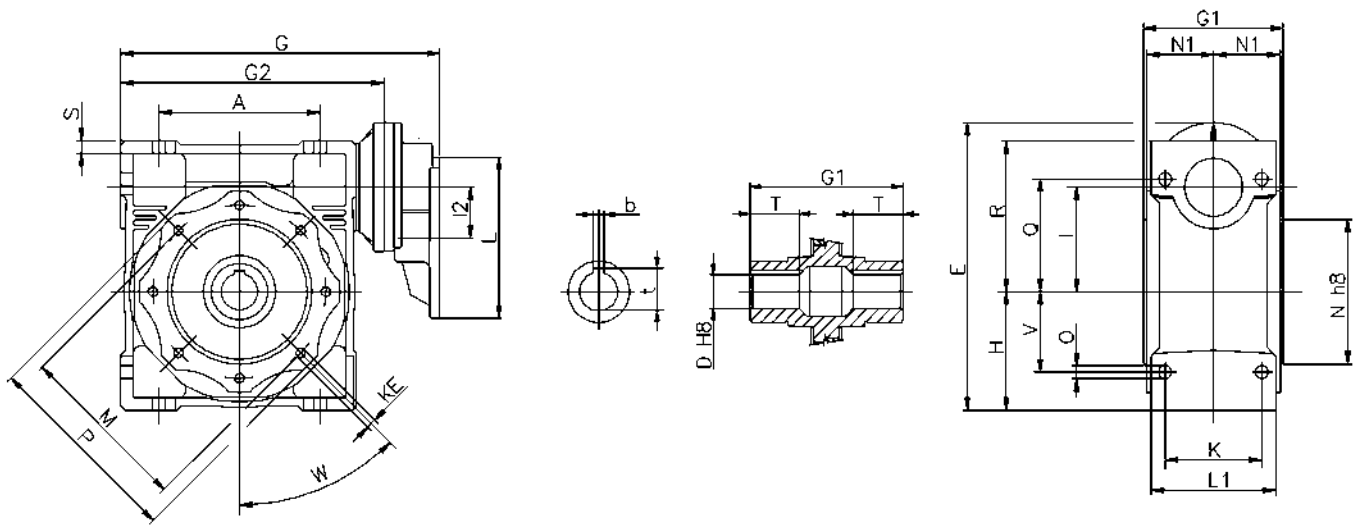
All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Dimensions of Output Flanges



Flange	030	040	050	063	075	090	110	130	150	
F	KA	54.5	67	90	82	111	111	131	140	155
	KB	6	7	9	10	13	13	15	15	15
	KC	4	4	5	6	6	6	6	6	6
	KN	50	60	70	115	130	152	170	180	180
	KM	68	80 min	90 min	150	165	175	230	255	255
	KO	6.5 x 4	9 x 4	11 x 4	11 x 4	14 x 4	14 x 4	14 x 8	16 x 8	16 x 8
	KP	80	110	125	180	200	210	280	320	320
	KQ	70	95	110	142	170	200	260	290	290
	KW	45°	45°	45°	45°	45°	45°	45°	22.5°	22.5°
FL	KA	-	97	120	112	90	122	180	-	-
	KB	-	7	9	10	13	18	15	-	-
	KC	-	4	5	6	6	6	6	-	-
	KN	-	60	70	115	110	180	170	-	-
	KM	-	80 min	90 min	150	130	215	230	-	-
	KO	-	9 x 4	11 x 4	11 x 4	14 x 4	14 x 4	14 x 8	-	-
	KP	-	110	125	180	160	250	280	-	-
	KQ	-	95	110	142	-	-	260	-	-
	KW	-	45°	45°	45°	45°	45°	45°	-	-
FB	KA	-	80	89	98	-	110	-	-	-
	KB	-	9	10	10	-	17	-	-	-
	KC	-	5	5	5	-	6	-	-	-
	KN	-	95	110	130	-	130	-	-	-
	KM	-	115	130	165	-	165	-	-	-
	KO	-	9.5 x 4	9.5 x 4	11 x 4	-	11 x 4	-	-	-
	KP	-	140	160	200	-	200	-	-	-
	KW	-	45°	45°	45°	-	45°	-	-	-

PC & CMRV Dimensions



	PC063+CMRV			PC071+CMRV				PC80 / PC090+CMRV			
	040	050	063	050	063	075	090	075	090	110	130
A	70	80	100	80	100	120	140	120	140	170	200
E	147	167	192	177.5	202.5	228.5	260.5	241	273	317.5	357.5
G	165	185	212	193	220	251.5	285.5	267.5	301.5	356.5	396.5
G1	78	92	112	92	112	120	140	120	140	155	170
G2	120	140	167	140	167	198.5	232.5	198.5	232.5	287.5	327.5
H	50	60	72	60	72	86	103	86	103	127.5	147.5
I	40	50	63	50	63	75	90	75	90	110	130
I2	40	40	40	50	50	50	50	63	63	63	63
L	140	140	140	160	160	160	160	200	200	200	200
L1	71	85	103	85	103	112	130	112	130	144	155
K	60	70	85	70	85	90	100	90	100	115	120
KE	M6*10(4)	M8*10(4)	M8*14(8)	M8*10(4)	M8*14(8)	M8*14(8)	M10*18(8)	M8*14(8)	M10*18(8)	M10*18(8)	M12*21(8)
M	75	85	95	85	95	115	130	115	130	165	215
N	60	70	80	70	80	95	110	95	110	130	180
N1	36.5	43.5	53	43.5	53	57	67	57	67	74	81
O	6.5	8.5	8.5	8.5	8.5	11.5	13	11.5	13	14	16
P	87	100	110	100	110	140	160	140	160	200	250
Q	55	64	80	64	80	93	102	93	102	125	140
R	71.5	84	102	84	102	119	135	119	135	167.5	187.5
S	6.5	7	8	7	8	10	11	10	11	14.5	15.5
T	26	30	36	30	36	40	45	40	45	50	60
V	35	40	50	40	50	60	70	60	70	85	100
W	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°
D	18	25	25	25	25	28	35	28	35	42	45
b	6	8	8	8	8	8	10	8	10	12	14
t	20.8	28.3	28.3	28.3	28.3	31.3	38.3	31.3	38.3	45.3	48.8
kg	3.4	4.6	7.3	5.1	7.8	10.6	14.6	12.4	16.4	38.4	51.4

kg = Weight without motor

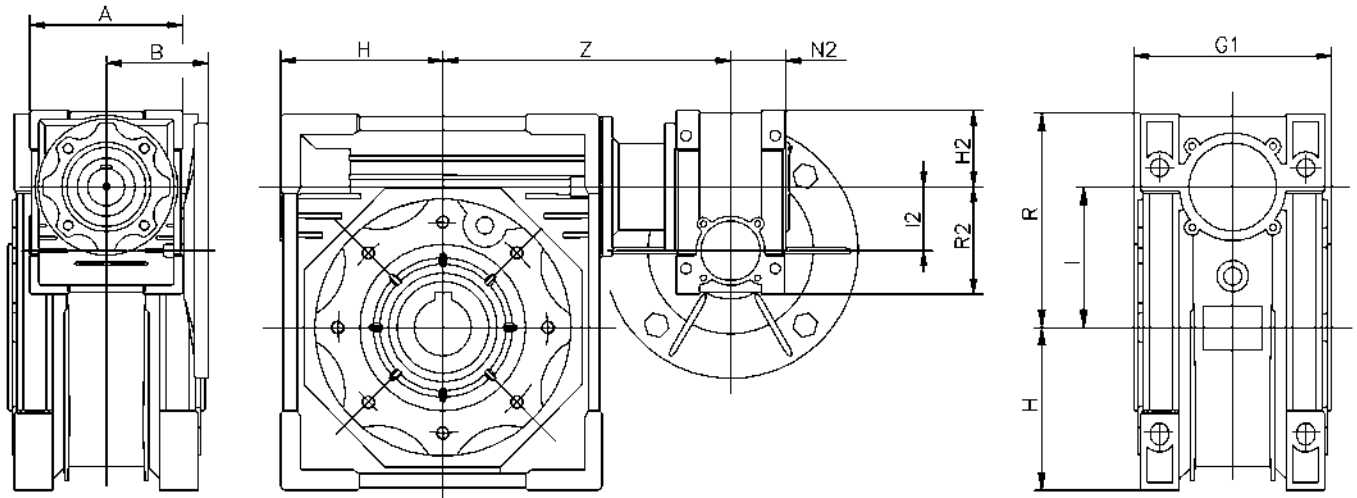
For the dimensions of the output flanges, please consider the drawing of relevant CMRV size.

For the dimensions of the hollow shafts in option, please consider the drawing of relevant CMRV size.

For the dimensions of the double extension worm shafts, please consider the drawing of relevant CMRV size.

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

CMRV & CMRV Dimensions

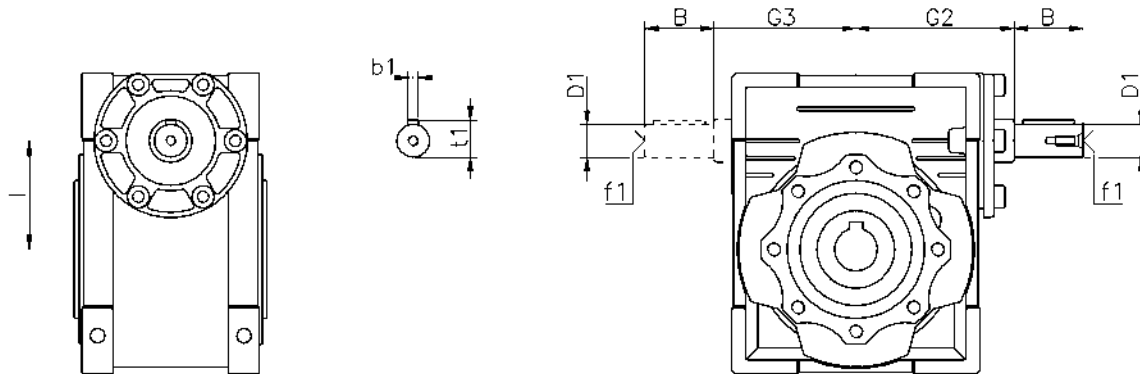


	CMRV-CMRV									
	025-030	025-040	030-040	030-050	030-063	040-075	040-09	050-110	063-130	063-150
A	70	70	80	80	80	100	100	120	144	144
B	45	45	55	55	55	70	70	80	95	95
G1	63	78	78	92	112	120	140	155	170	200
H	40	50	50	60	72	86	103	127.5	147.5	170
I	30	40	40	50	63	75	90	110	130	150
R	57	71.5	71.5	84	102	119	135	167.5	187.5	230
H2	35	35	40	40	40	50	50	60	72	72
I2	25	25	30	30	30	40	40	50	63	63
N2	22.5	22.5	29	29	29	36.5	36.5	43.5	53	53
R2	48	48	57	57	57	71.5	71.5	84	102	102
Z	100	115	122	132	145	167.5	184.5	226	245	275
kg	1.9	3	3.5	4.7	7.4	11.3	15.3	38.5	54.2	90.2

kg = Weight without motor

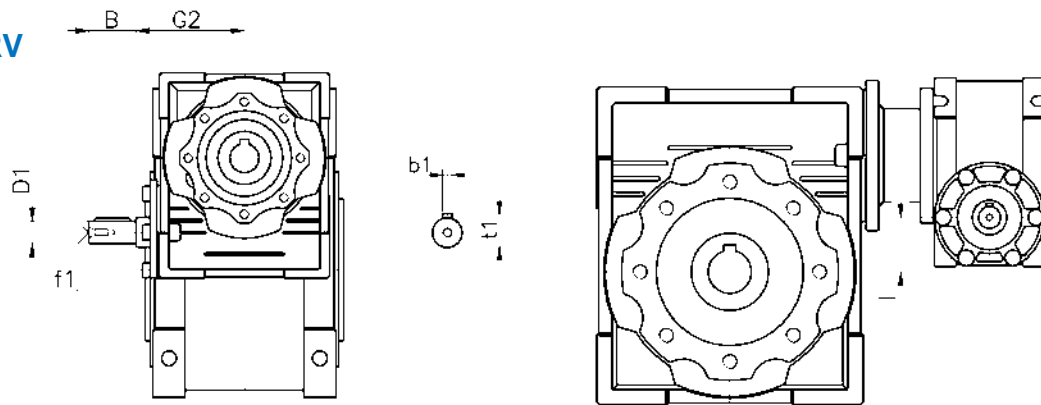
CRV & CRV-CMRV Dimensions

CRV



CRV	030	040	050	063	075	090	110	130	150
B	20	23	30	40	50	50	60	80	80
D1	9 j6	11 j6	14 j6	19 j6	24 j6	24 j6	28 j6	30 j6	35 j6
G2	51	60	74	90	105	125	142	162	195
G3	45	53	64	75	90	108	135	155	175
I	30	40	50	63	75	90	110	130	150
b1	3	4	5	6	8	8	8	8	10
f1	-	-	M6	M6	M8	M8	M10	M10	M12
t1	10,2	12,5	16	21,5	27	27	31	33	38

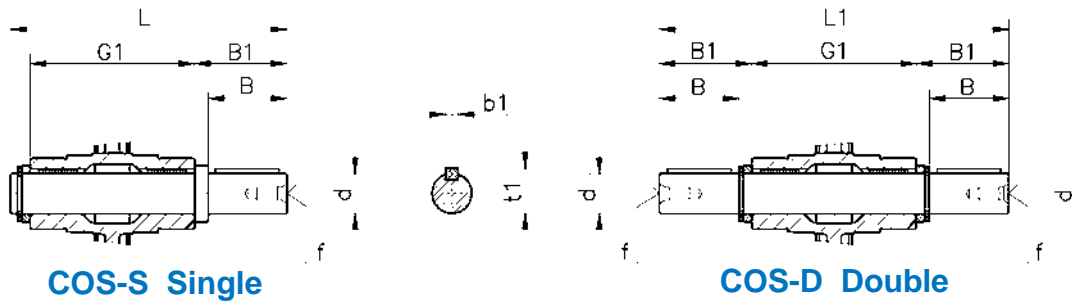
CRV-CMRV



CRV-CMRV	030-040	030-050	030-063	040-075	040-090	050-110	063-130	063-150
B	20	20	20	23	23	30	40	40
D1	9 j6	9 j6	9 j6	11 j6	11 j6	14 j6	19 j6	19 j6
G2	51	51	51	60	60	74	90	90
I	10	20	33	35	50	60	67	87
b1	3	3	3	4	4	5	6	6
f1	-	-	-	-	-	M6	M6	M6
t1	10,2	10,2	10,2	12,5	12,5	16	21,5	21,5

For the missing dimensions, please consult the CMRV size drawing.

Output Shafts & CTA Torque Arms

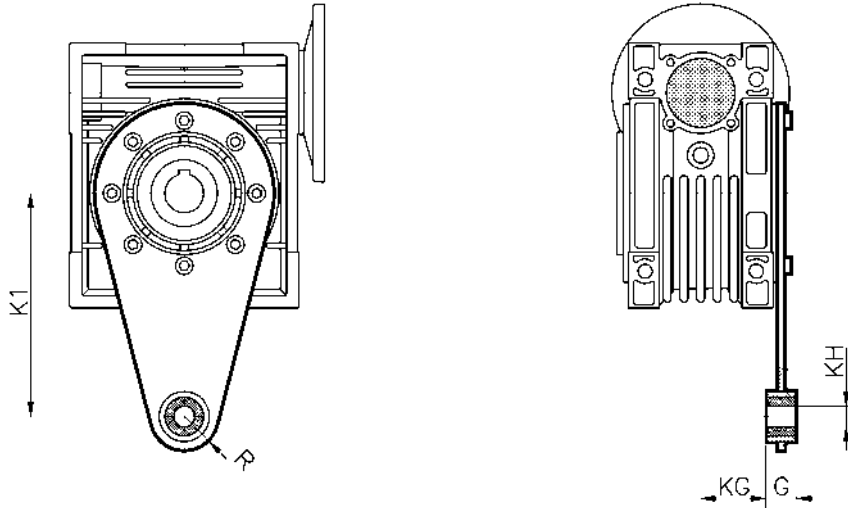


COS-S Single

COS-D Double

Size	d	B	B1	G1	L	L1	f	b1	t1
025	11g6 (9)	23 (25)	25,5 (30)	50	81 (85,5)	101	-	4 (3)	12,5 (10,2)
030	14 h6	30	32,5	63	102	128	M6	5	16
040	18 h6	40	43	78	128	164	M6	6	20,5
050	25 h6	50	53,5	92	153	199	M10	8	28
063	25 h6	50	53,5	112	173	219	M10	8	28
075	28 h6	60	63,5	120	192	247	M10	8	31
090	35 h6	80	84,5	140	234	309	M12	10	38
110	42 h6	80	84,5	155	249	324	M16	12	45
130	45 h6	80	85	170	265	340	M16	14	48,5
150	50 h6	82	87	200	297	374	M16	14	53,5

CTA Torque arms

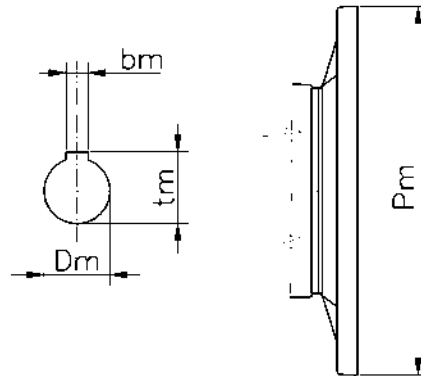


Size	K1	G	KG	KH	R
025	70	14	17,5	8	15
030	85	14	24	8	15
040	100	14	31,5	10	18
050	100	14	38,5	10	18
063	150	14	49	10	18
075	200	25	47,5	20	30
090	200	25	57,5	20	30
110	250	30	62	25	35
130	250	30	69	25	35
150	250	30	84	25	35

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Motor Input Flanges PAM B5 & PAM B14

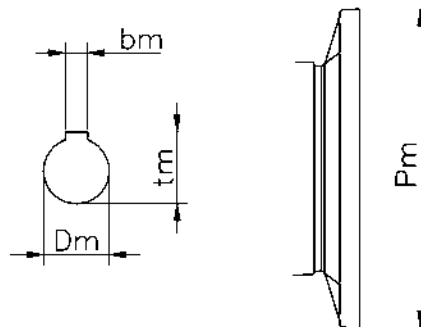
PAM B5



Dimensions

B5	IEC										
	056	063	071	080	090	100	112	132	160	180	200
Pm	120	140	160	200	200	250	250	300	350	350	400
Dm	9	11	14	19	24	28	28	38	42	48	55
bm	3	4	5	6	8	8	8	10	12	14	16
tm	10,4	12,8	16,3	21,8	27,3	31,3	31,3	41,3	45,3	51,8	59,3

PAM B14

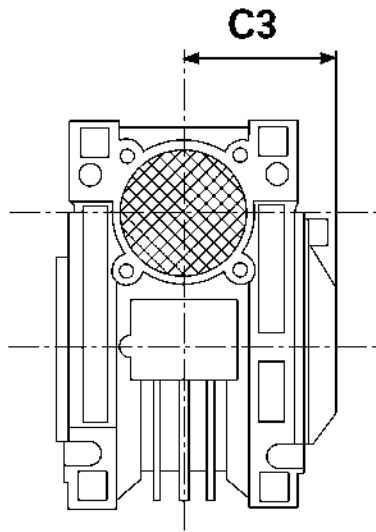


Dimensions

B14	IEC							
	056	063	071	080	090	100	112	132
Pm	80	90	105	120	140	160	160	200
Dm	9	11	14	19	24	28	28	38
bm	3	4	5	6	8	8	8	10
tm	10,4	12,8	16,3	21,8	27,3	31,3	31,3	41,3

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

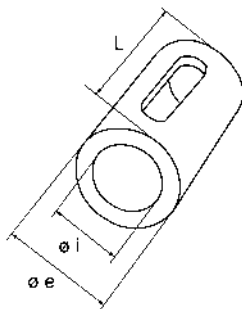
Cover & Shaft Sleeves



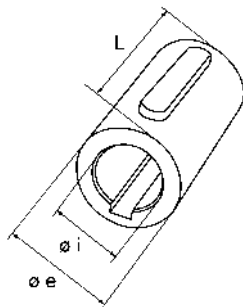
Cover

TYPE	C3
030	43
040	50
050	59
063	70
075	75
090	87
110	95
130	103

CMS Reduction bushing kit



SINGLE SIZE SHAFT SLEEVES				
TYPE	øi/øe	L	KEY	Weight kgf
CMS	9/11	20	4/3 x 4 x 11	0.006
CMS	11/14	30	5/4 x 6 x 10	0.015
CMS	14/19	40	6 x 5 x 30	0.045
CMS	19/24	50	6 x 5.5 x 20 8 x 5.5 x 40	0.07
CMS	24/28	60	8 x 9 x 40	0.08
CMS	28/38	80	10 x 7 x 60	0.33
CMS	38/42	110	12/10 x 10 x 48	0.22



DOUBLE SIZE SHAFT SLEEVES				
TYPE	øi/øe	L	KEY	Weight kgf
CMS	9/11	40	6 x 6 x 30	0.06
CMS	11/24	50	8 x 7 x 40	0.12
CMS	19/28	60	8 x 7 x 50	0.6
CMS	24/38	80	10 x 8 x 60	0.44

Drive Design

Drive design

Example:

To design a drive a few simple questions need to be asked, then calculated first.

For example, a belt conveyor needs to be driven by a shaft mounted worm gear unit.

Belt speed required: say for example 55 feet per minute

Diameter of drive roller/drum: say for example 1 foot

Calculation for the output speed the gear unit needs to run at, or the drum speed needs to be, is as follows:

Diameter of drum in feet, multiplied by 3.142 (pi) multiplied by the speed in rev/min, gives you the feet per min / Belt speed,

So, $1 \times 3.142 \times 17.5 \text{ rev/min} = 54.985 \text{ ft per min}$ say 55 feet per min.

Our gear unit output speed needs to be **17.5 rev/min**

If we assume our motor input speed is 1400 rev/min divided by 17.5 rev/min, gives you 80, so the ratio of the gear unit is 80:1.

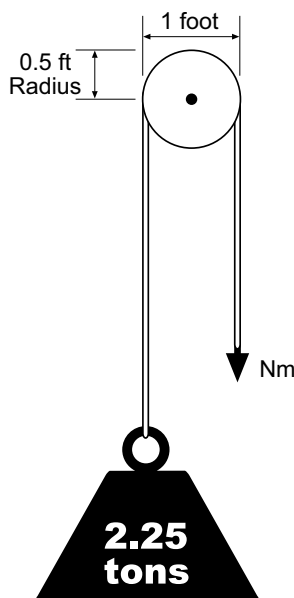
Now we need to calculate the power required:

To do this we need to calculate the torque in Newton metres (Nm), the calculation is as follows:

Load in lbs multiplied by the radius of the roller/drum gives you the torque required to lift the load vertically.

By exerting a pull around a drum or pulley see Fig 1

Fig 1



The load including the belt is 2.25 tons.

So, $2240 \text{ lbf} = 1 \text{ ton} \times 2.25 = 5040 \text{ lbf}$ / $2.25 \text{ tons} \times 0.5 \text{ ft}$ radius of roller/drum = 2520 lbf.ft torque to convert to Nm $\times 1.3558 = 3416 \text{ Nm}$

Now we have to apply a coefficient of friction or rolling friction, Effectively we will lay the lifting torque in Fig 1 flat, as if rotating the illustration 90 degrees clockwise.

So the lifting torque is $3416 \text{ Nm} \times 0.05 = 170.8 \text{ Nm}$ coefficient of friction or rolling friction for this type of application.

We now have a required torque of **170.8Nm**. What we need to do now is apply a service factor.

Service factors can vary considerably depending on the application.

Example:

Conveyors running 16 hours per day with up to 10 stops and starts per hour would be a service factor of 1.3, therefore we take the required torque of **170.8Nm multiplied by the 1.3 service factor = 221.39 Nm say 222Nm** this is called the design power.

We can now look in the catalogue and find a gear unit with a rated torque of 222Nm or slightly larger with a service factor (f/s) of 1 or more.

The unit we require is a CMRV090 80:1 the catalogue shows this unit rated at .92kW At 316Nm torque.

Now we take .92kW divided by 316Nm and multiply by 222Nm = 0.646kW.

0.92kW and 0.646kW motors are none standard so we need to choose a **0.75kW 4 pole 1400rev/min motor in a 80B5** output flange and a **CMRV090 80:1 B5 80 input flange**.

the actual torque we will get from our selection is 257Nm which will now give a service factor of 1.5.

Useful formulae:

Feet per minute = diameter of drum/roller x 3.142 ft x rev/min

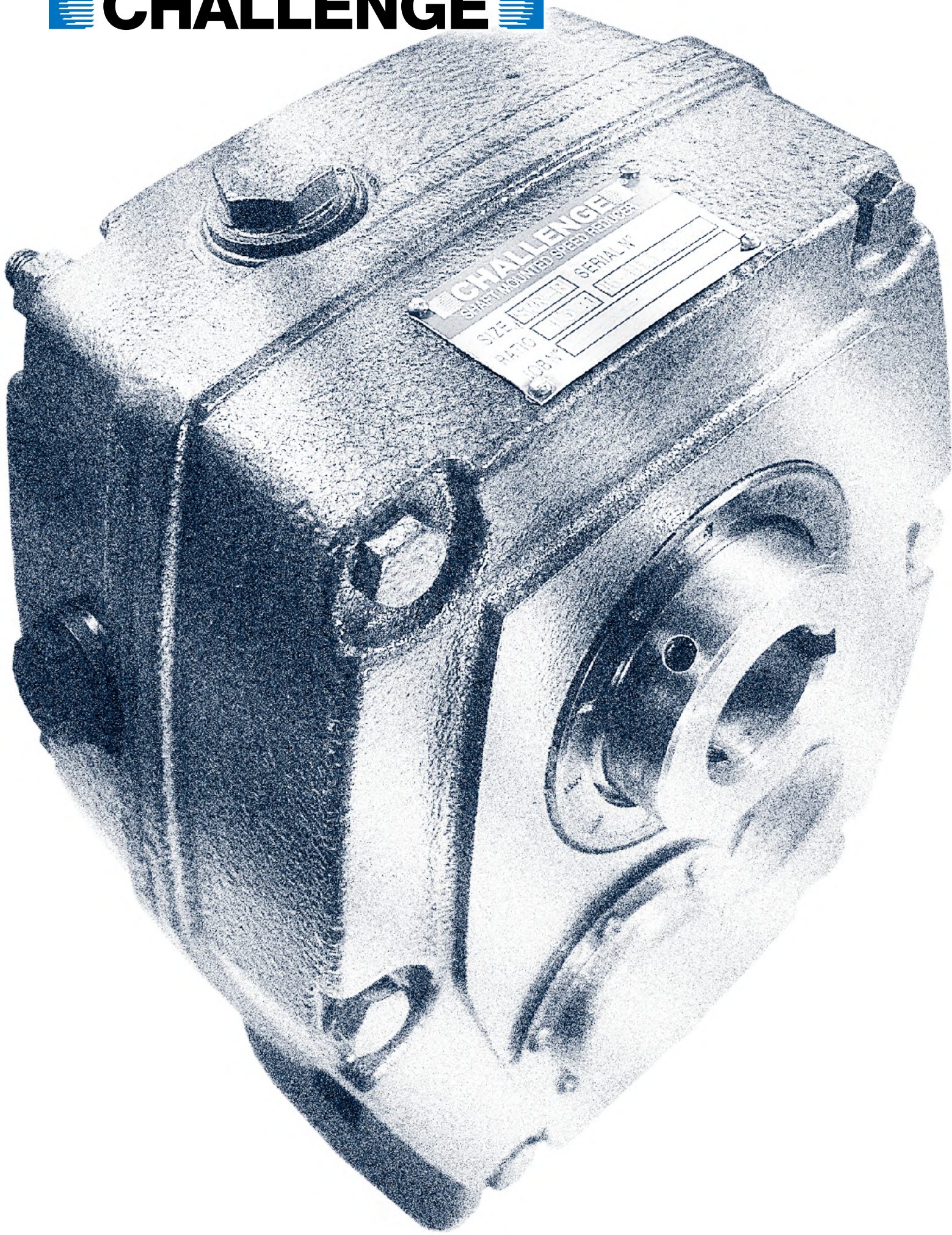
kW to torque Nm = $\frac{\text{kW} \times 9550}{\text{rev/min}}$

Coefficient of friction:

Coefficient of friction varies from application to application, but a general rule for anti friction bearings is 0.01 to 0.05, for example, a chain conveyor on a 5° Incline would use a coefficient of friction equal to 0.05, inclines over 45° should be treated as a straight lift.

Notes

CHALLENGE®



CHALLENGE
SHIFT MOUNTED SPEED REDUCER

SIZE	TYPE	SERIAL NO.
RATIO	INPUT	OUTPUT
COBY		

Shaft Mounted Speed Reducers

Metric Range



Features

The Challenge SMSR stands tall amongst the crowd. Packed full of attention to detail, the Challenge SMSR delivers performance in the harshest of applications.

Shaft mounted drives remove the need for couplings, mounting plinths and have infinitely variable ratios due to the belt drive. They are also incredibly simple to fit and can be mounted in any position as no motor base is required.

- Grip-Loc hubs now available for simple installation and removal
- Includes complete torque arm assembly
- Interchangeable with most other manufacturers
- Production line manufacturing guarantees tolerances and consistent quality.
- Gears produced on German manufactured hobbing centres to achieve the highest quality helical gear components.
 - Pinions; 8620 steel
 - Gears; 20MnCr5 steel
- All gears are ground
- Final heat treatment includes gas carburising to a depth of 1mm, then grinding to DIN class 6.
- Castings crack tested
- All units test run prior to final quality control checks
- Full traceability guaranteed with unique Challenge serial number.
- Backstops also available to prevent reversing
- Drive ratios exceed 150:1 with a belt drive
- Double lipped oil seals used throughout
- Standard ball and cylindrical roller bearings used - in stock around the world

Shaft Mounted Speed Reducer

Shaft Mounted Speed Reducer selection procedure

1] Service Factor.

From Table 1 on page 357, select the service factor that is appropriate for the application

2] Design Power.

Multiply the absorbed power of the driven machine by the service factor, from step 1) to obtain the design power.

If the absorbed power is not known, use the motor power

3] SMSR gear unit size selection.

Refer to the power rating Tables on pages 357 and 358 then read down the left hand vertical column to the required output speed. (interpolate if the exact speed is not listed).

Read horizontally across on the speed line until a power equal to or in excess of the design power, from step 2), is reached.

Read vertically to the top of the column to obtain the correct size of SMSR unit.

The ratio of the chosen unit is determined by the required output speed.

Go to page 371 or 372 in order to check the chosen SMSR will fit the driven machine shaft.

Wedge belt drive selection procedure.

Two methods are used for the belt drive selection.

One for 1440 rev/min electric motors and secondly for all other speeds.

1440 rev/min electric motor speed.

a] Output speed.

Refer to the Wedge belt drive selection pages (pages 359 to 367) for the chosen gear unit size. Read down the left hand column headed 'output speed' until a speed equal to or near to that required is found.

b] Pulley pitch diameters.

Read across from the chosen output speed to obtain the pulley diameters for the motor shaft and SMSR input shaft

On smaller size gear units, it may well be that single belt drives are recommended. If, on such drives, two belts are preferred, special attention must be made to belt tensioning.

If in any doubt, please contact CHALLENGE.

c] Centre distance.

Refer to page 160 in order to calculate the correct belt length for the required centre distance

Other prime mover speeds

a] SMSR unit input shaft speed.

Multiply the chosen SMSR gear unit output speed by its exact speed ratio to obtain the SMSR gear unit input shaft speed.

The exact gear ratio of the chosen SMSR can be found at the bottom of the SMSR dimension Table on page 369 column 2 .

b] Selection of Wedge belt drive.

The correct Wedge belt can be designed by referring to the selection procedure on page 160.

Shaft Mounted Speed Reducer selection example

Select a CHALLENGE Shaft Mounted Speed Reducer to drive a rotary kiln which absorbs 0.95 kW when running at 20 rev/min for upto 8 hours/day.

The prime mover is a 1.1 kW, 1440 rev/min electric motor with a star-delta starter and a 24 mm shaft.

The kiln has a 50 mm shaft and 450 mm drive centres are required.

1] Service Factor.

From Table 1 on page 357, the chosen service factor is 1.25.

2] Design Power.

Using the kiln absorbed power of 0.95 kW, the design power is :-
 $0.95 \times 1.25 = 1.19 \text{ kW}$

3] SMSR gear unit size selection.

From the SMSR power rating Table on page 358, a size D13 or D20 will transmit 1.58 kW at 20 rev/min which is excess of the required 1.19 kW from step 2).

A size D20 rather than a D13 is chosen as it will utilize a more economically priced Wedge belt drive.

On checking the hub sizes on page 371, it is seen that the D20 has a 50 mm standard hub bore which matches the kiln shaft of 50 mm.

Wedge belt drive selection procedure.

As the motor speed is 1440 rev/min, the following selection method is used :-

1440 rev/min electric motor speed.

a] Output speed.

Refer to the drive selection page 361 for SMSR size 'D' units. Read down the left hand column to required output speed of 20 rev/min.

b] Pulley pitch diameters.

Read across from the chosen output speed to obtain the prime mover and SMSR input shaft pulley diameters. The electric motor to be fitted with a 71 x 1 SPZ pulley and the SMSR input shaft with a 250 x 1 SPZ

c] Centre distance.

Refer to page 160 and by using the appropriate formulae, an SPZ1420 will give a centre distance of 449 mm.

Drive Specification.

SMSR size: D20 with a standard hub bore of 50 mm

Motor pulley: 71 x 1 SPZ with taper bush size 1108 bored 24 mm

SMSR input shaft pulley: 250 x 1 SPZ with taper bush 2012 bored 25 mm

An SPZ1420 Wedge belt gives a centre distance of 449 mm.

Shaft Mounted Speed Reducer

Table 1, Service Factors

Type of driven machine	Number of hours per day running		
	under 10	10 - 16	over 16
Uniformly loaded applications Agitators and mixers - uniform density, centrifugal blowers, belt conveyors and elevators, non-reversing laundry machines, line shafts, centrifugal and rotary pumps, wire drawing machines	1.00	1.12	1.25
Moderate shock load applications Agitators and mixers – variable density, conveyors – medium duty, cranes, feeders – pulsating loads, hoists, kiln, other laundry machinery, lifts, piston pumps with 3 or more cylinders, paper making machinery, rubber mixers and calenders, rotary screens, textile machinery	1.25	1.40	1.60
Heavy duty machinery Brick making machinery, heavy duty conveyors, crushers, reciprocating feeders, hammer mills, piston pumps with 1 or 2 cylinders, rubber masticators, vibrating machines	1.60	1.80	2.00

SMSR Power Rating Table kW (Ratio 5:1) Single Reduction

Output rev/min	SMSR Size							
	B5	C5	D5	E5	F5	G5	H5	J5
100	2.02	3.14	5.20	8.03	11.44	19.03	27.50	58.52
110	2.15	3.32	5.50	8.44	12.06	20.06	29.00	61.89
120	2.27	3.51	5.80	8.85	12.67	21.10	30.49	65.25
130	2.40	3.70	6.09	9.26	13.29	22.13	31.99	68.62
140	2.53	3.88	6.39	9.68	13.90	23.17	33.48	71.98
150	2.65	4.07	6.69	10.09	14.52	24.20	34.98	75.35
160	2.78	4.23	6.95	10.45	15.03	25.21	36.37	78.32
170	2.91	4.38	7.21	10.80	15.53	26.22	37.75	81.29
180	3.03	4.54	7.47	11.16	16.04	27.24	39.14	84.26
190	3.16	4.69	7.73	11.52	16.54	28.25	40.52	87.23
200	3.29	4.85	7.99	11.88	17.05	29.26	41.91	90.20
210	3.42	4.99	8.20	12.19	17.47	27.24	43.14	92.84
220	3.55	5.12	8.42	12.50	17.89	25.21	44.37	95.48
230	3.68	5.25	8.63	12.80	18.30	23.19	45.61	98.12
240	3.81	5.39	8.85	13.11	18.72	21.16	46.84	100.76
250	3.94	5.52	9.06	13.42	19.14	19.14	48.07	103.40
260	4.07	5.64	9.25	13.71	19.47	22.95	49.13	105.82
270	4.20	5.76	9.43	13.99	19.80	26.75	50.18	108.24
280	4.33	5.87	9.61	14.28	20.13	30.56	51.24	110.66
290	4.46	5.99	9.79	14.56	20.46	34.36	52.29	113.08
300	4.59	6.11	9.98	14.85	20.79	38.17	53.35	115.50
310	4.71	6.21	10.15	15.11	21.05	38.92	54.19	117.92
320	4.84	6.32	10.33	15.38	21.32	39.67	55.02	120.34
330	4.96	6.43	10.51	15.64	21.58	40.41	55.86	122.76
340	5.09	6.54	10.68	15.91	21.85	41.16	56.69	125.18
350	5.21	6.64	10.86	16.17	22.11	41.91	57.53	126.00
360	5.34	6.75	11.04	16.43	22.33	42.50	58.12	128.10
370	5.46	6.85	11.22	16.70	22.55	43.10	58.72	129.20
380	5.58	6.95	11.40	16.96	22.77	43.69	59.31	130.20
390	5.71	7.05	11.59	17.23	22.99	44.29	59.91	131.30
400	5.83	7.15	11.77	17.49	23.21	44.88	60.50	134.00
Torque (Nm) @ 100 rev/min	193	299	497	767	1093	1817	2626	5589

Note: Challenge do not recommend the use of backstops on 5:1 units as this affects the units power ratings. Should this be necessary please contact the Challenge Technical Department.

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Shaft Mounted Speed Reducer

SMSR Power Rating Table kW (Ratio 13:1 & 20:1)

Double Reduction

Output rev/min	SMSR Size										
	B13/B20	C13/C20	D13/D20	E13/E20	F13/F20	G13/G20	H13/H20	J13/J20	S 20	K 20	L 20
10	0.29	0.49	0.82	1.25	1.97	3.11	4.90	7.80	11.0	14.6	23.0
12	0.36	0.58	0.96	1.48	2.45	3.71	5.90	9.20	13.1	17.3	27.3
14	0.42	0.67	1.11	1.73	2.71	4.30	6.80	10.70	15.2	20.0	31.6
16	0.47	0.77	1.27	1.97	3.09	4.89	7.70	12.10	17.3	22.6	35.9
18	0.53	0.86	1.41	2.20	3.44	5.48	8.70	13.60	19.3	25.1	40.1
20	0.59	0.96	1.58	2.43	3.82	6.08	9.50	15.10	21.4	27.6	44.3
22	0.63	1.04	1.73	2.67	4.18	6.63	10.40	16.40	23.4	30.1	48.4
24	0.69	1.13	1.86	2.89	4.55	7.22	11.30	17.90	25.4	32.6	52.5
26	0.75	1.22	2.02	3.13	4.91	7.79	12.10	19.30	27.3	35.1	56.6
28	0.81	1.32	2.18	3.36	5.27	8.35	13.10	20.60	29.3	37.5	60.6
30	0.86	1.41	2.32	3.58	5.63	8.92	13.90	22.50	31.2	39.8	64.7
32	0.92	1.50	2.47	3.81	5.98	9.49	14.80	23.60	33.2	42.2	68.6
34	0.98	1.60	2.63	4.04	6.34	10.04	15.70	25.10	35.1	44.5	72.6
38	1.10	1.79	2.91	4.48	7.05	11.12	17.40	27.60	39.0	49.0	80.4
40	1.16	1.87	3.07	4.71	7.41	11.87	18.20	29.00	40.8	51.2	84.2
42	1.20	1.96	3.19	4.92	7.75	12.39	19.30	30.10	42.6	53.2	87.9
46	1.30	2.13	3.48	5.37	8.28	13.65	21.10	32.60	46.4	57.1	95.1
50	1.42	2.30	3.78	5.81	9.07	14.60	22.80	35.00	50.1	60.8	102.2
52	1.47	2.37	4.00	6.03	9.14	15.23	23.40	35.60	51.6	62.7	105.0
54	1.52	2.47	4.14	6.23	9.42	15.86	24.40	36.30	52.8	64.5	109.2
58	1.64	2.61	4.43	6.66	10.02	16.80	25.80	38.00	55.7	68.0	115.5
62	1.76	2.77	4.71	7.23	10.61	17.96	27.50	40.20	57.8	71.5	121.8
66	1.86	2.94	5.01	7.68	11.24	19.01	29.70	42.50	60.4	75.0	128.1
70	1.96	3.07	5.13	8.11	11.76	20.16	30.60	44.70			
74	2.06	3.18	5.42	8.54	12.39	21.11	32.00	47.00			
78	2.15	3.32	5.70	8.97	12.92	22.26	33.60	49.20			
80	2.23	3.39	5.81	9.19	13.23	22.47	34.30	50.20			
85	2.34	3.58	6.14	9.71	13.97	23.31	36.20	52.80			
90	2.48	3.79	6.49	10.24	14.60	24.57	37.90	55.30			
95	2.61	4.00	6.81	10.50	15.44	25.83	39.00	58.00			
100	2.73	4.19	7.15	11.03	16.17	27.09	40.70	60.50			
105	2.85	4.41	7.48	11.55	17.01						
110	2.98	4.62	7.81								
115	3.11										
Torque (Nm) @ 10 rev/min	277	468	783	1194	1881	2970	4680	7449	10505	13943	21965

Note: The wavy line ~~~~~ indicates maximum output speed for 20:1 ratio units, for speeds above this limit use 13:1 or 5:1 ratio units.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

B 5:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
51	5.63	71	400	1SPZ*
57	5.00	80	400	1SPZ*
64	4.44	90	400	1SPZ*
71	4.00	100	400	1SPZ*
80	3.57	112	400	1SPZ*
86	3.32	95	315	1SPZ*
91	3.15	100	315	1SPZ*
97	2.94	85	250	2SPZ
101	2.82	71	200	2SPZ
107	2.67	75	200	2SPZ
113	2.54	71	180	2SPZ
119	2.40	75	180	2SPZ
128	2.23	112	250	1SPZ*
134	2.13	75	160	2SPZ
137	2.09	67	140	3SPZ
145	1.97	71	140	3SPZ
151	1.89	106	200	1SPA*
160	1.79	112	200	1SPA*
168	1.70	106	180	1SPA*
171	1.67	67	112	3SPZ
177	1.61	112	180	2SPZ
181	1.58	71	112	3SPZ
187	1.53	118	180	1SPA*
190	1.50	100	150	2SPA
200	1.43	112	160	1SPA*
205	1.39	90	125	2SPZ
210	1.36	118	160	1SPA*
216	1.32	106	140	2SPA
222	1.29	140	180	1SPZ*
228	1.25	112	140	1SPA*
235	1.21	132	160	1SPA*
242	1.18	95	112	2SPZ
250	1.14	140	160	1SPA*
256	1.12	112	125	1SPA*
266	1.07	140	150	1SPA*
270	1.06	90	95	3SPZ
285	1.00	100	100	2SPZ
302	1.06	90	85	3SPZ
306	1.07	150	140	1SPA*
319	1.12	140	125	1SPA*
324	1.14	150	132	1SPA*
336	1.18	100	85	3SPZ
342	1.20	180	150	1SPA*
355	1.24	112	90	3SPZ
362	1.27	150	118	1SPZ*
365	1.28	160	125	2SPZ
376	1.32	112	85	3SPZ
380	1.33	200	150	1SPA*
387	1.36	160	118	2SPA
396	1.39	125	90	3SPZ

B 13:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
17	5.97	67	400	1SPZ*
22	4.70	67	315	1SPZ*
24	4.20	75	315	1SPZ*
28	3.73	67	250	1SPZ*
31	3.33	75	250	1SPZ*
34	2.99	67	200	1SPZ*
36	2.82	71	200	1SPZ*
38	2.69	67	180	1SPZ*
41	2.54	71	180	1SPZ*
43	2.39	67	160	1SPZ*
46	2.25	71	160	1SPZ*
48	2.13	75	160	1SPZ*
51	2.00	80	160	1SPZ*
55	1.88	85	160	1SPZ*
59	1.75	80	140	1SPZ*
62	1.65	85	140	1SPZ*
64	1.60	100	160	1SPZ*
66	1.56	90	140	1SPZ*
70	1.47	85	125	1SPZ*
74	1.39	90	125	1SPZ*
78	1.32	95	125	1SPZ*
82	1.25	100	125	1SPZ*
86	1.20	71	85	2SPZ
91	1.13	71	80	2SPZ
97	1.06	100	106	1SPA*
103	1.00	106	106	1SPA*
109	1.06	112	106	1SPA*
115	1.12	125	112	1SPZ*
117	1.13	85	75	2SPZ
121	1.18	125	106	1SPA*
123	1.20	90	75	2SPZ
125	1.21	160	132	1SPA*
129	1.25	140	112	1SPZ*
130	1.27	95	75	2SPZ
132	1.29	180	140	1SPA*
136	1.32	140	106	1SPA*
140	1.36	180	132	1SPA*
143	1.39	125	90	2SPZ
146	1.42	150	106	1SPA*
148	1.44	180	125	1SPA*
151	1.47	125	85	2SPZ
154	1.49	112	75	2SPZ
155	1.51	160	106	1SPA*
157	1.53	180	118	1SPA*
161	1.56	125	80	2SPZ
165	1.61	180	112	1SPA*
170	1.65	140	85	2SPZ
172	1.67	125	75	2SPZ
175	1.70	180	106	1SPA*
180	1.75	140	80	2SPZ

B 20:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	6.67	75	500	2SPZ
11	6.25	80	500	2SPZ
12	5.97	67	400	1SPZ*
13	5.26	95	500	2SPZ
14	5.00	80	400	1SPZ*
15	4.70	67	315	1SPZ*
16	4.20	75	315	1SPZ*
17	3.94	80	315	1SPZ*
18	3.73	67	250	1SPZ*
19	3.57	112	400	1SPZ*
20	3.52	71	250	1SPZ*
21	3.33	75	250	1SPZ*
22	3.12	80	250	1SPZ*
23	2.99	67	200	1SPZ*
24	2.82	71	200	1SPZ*
25	2.78	90	250	1SPZ*
26	2.69	67	180	1SPZ*
27	2.54	71	180	1SPZ*
29	2.39	67	160	1SPZ*
30	2.25	71	160	1SPZ*
32	2.13	75	160	1SPZ*
33	2.09	67	140	1SPZ*
34	2.00	80	160	1SPZ*
35	1.97	71	140	1SPZ*
37	1.87	67	125	1SPZ*
39	1.76	71	125	1SPZ*
40	1.70	106	180	1SPA
41	1.67	67	112	1SPZ*
43	1.58	71	112	1SPZ*
44	1.56	90	140	1SPZ*
45	1.53	118	180	1SPA
46	1.49	67	100	1SPZ*
47	1.47	85	125	1SPZ*
48	1.42	67	95	1SPZ*
49	1.39	90	125	1SPZ*
50	1.36	132	180	1SPA
51	1.34	71	95	1SPZ*
52	1.32	85	112	1SPZ*
54	1.27	71	90	1SPZ*
55	1.24	90	112	1SPZ*
57	1.20	75	90	1SPZ*
58	1.18	85	100	1SPZ*
61	1.13	75	85	1SPZ*
62	1.11	90	100	1SPZ*
64	1.07	140	150	1SPA
65	1.06	80	85	1SPZ*
69	1.00	80	80	1SPZ*
72	1.05	100	95	1SPZ*
73	1.07	80	75	2SPZ
76	1.11	100	90	1SPZ*

* Single belt drives can be used, however, two belts can also be used without overloading the SMSR input shaft bearings.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

C 5:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
51	5.63	71	400	2SPZ
61	4.70	67	315	2SPZ
64	4.44	71	315	2SPZ
71	4.00	100	400	1SPA*
76	3.77	106	400	1SPA*
80	3.57	112	400	1SPZ*
86	3.33	75	250	3SPZ
89	3.20	125	400	1SPZ*
94	3.03	132	400	1SPA*
100	2.86	140	400	1SPZ*
107	2.67	118	315	1SPA*
113	2.52	125	315	1SPA*
120	2.39	132	315	1SPA*
127	2.25	80	180	3SPZ
134	2.13	75	160	3SPZ
143	2.00	100	200	2SPZ
151	1.89	132	250	1SPA*
160	1.79	140	250	1SPA*
168	1.70	106	180	2SPA
171	1.67	150	250	1SPA*
177	1.61	112	180	2SPZ
178	1.60	125	200	1SPA
187	1.53	118	180	2SPA
190	1.50	100	150	2SPA
200	1.43	140	200	1SPA*
205	1.39	90	125	3SPZ
209	1.36	132	180	2SPA
214	1.33	150	200	1SPA*
222	1.29	140	180	2SPZ
223	1.28	125	160	1SPA
235	1.21	132	160	2SPA
242	1.18	106	125	2SPA
250	1.14	140	160	2SPZ
254	1.12	80	90	4SPZ
257	1.11	180	200	1SPA*
269	1.06	118	125	2SPA
285	1.00	100	100	3SPZ
300	1.05	118	112	2SPA
306	1.07	150	140	2SPA
317	1.11	200	180	1SPA*
326	1.14	160	140	2SPZ
336	1.18	100	85	4SPZ
338	1.19	140	118	2SPA
342	1.20	150	125	2SPA
355	1.24	112	90	4SPZ
363	1.27	150	118	2SPA
367	1.29	180	140	2SPZ
375	1.32	125	95	3SPZ
387	1.36	160	118	2SPA
396	1.39	250	180	1SPA*

C 13:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
18	5.97	67	400	1SPZ*
21	5.00	80	400	1SPZ*
25	4.20	75	315	1SPZ*
27	3.94	80	315	1SPZ*
30	3.52	71	250	1SPZ*
34	3.12	80	250	1SPZ*
36	2.94	85	250	1SPZ*
38	2.78	90	250	1SPZ*
40	2.63	95	250	1SPZ*
42	2.50	100	250	1SPZ*
44	2.39	67	160	2SPZ
48	2.22	90	200	1SPZ*
50	2.11	95	200	1SPZ*
53	2.00	100	200	1SPZ*
57	1.87	75	140	2SPZ
59	1.79	112	200	1SPZ*
63	1.67	75	125	2SPZ
66	1.61	112	180	1SPZ*
70	1.51	106	160	1SPA*
73	1.44	125	180	1SPZ*
76	1.40	80	112	2SPZ
80	1.32	85	112	2SPZ
83	1.27	118	150	1SPA*
85	1.24	90	112	2SPZ
87	1.21	132	160	1SPA*
89	1.19	118	140	1SPA*
93	1.14	132	150	1SPA*
95	1.11	90	100	2SPZ
100	1.06	125	132	1SPA*
106	1.00	95	95	2SPZ
112	1.06	132	125	1SPA*
119	1.12	140	125	1SPA*
125	1.18	112	95	2SPZ
127	1.20	90	75	3SPZ
132	1.24	112	90	2SPZ
134	1.27	95	75	3SPZ
136	1.29	180	140	1SPA*
139	1.32	125	95	2SPZ
141	1.33	100	75	3SPZ
144	1.36	180	132	1SPA*
147	1.39	125	90	2SPZ
152	1.44	180	125	1SPA*
156	1.47	140	95	2SPZ
158	1.49	112	75	3SPZ
161	1.53	180	118	1SPA*
165	1.56	140	90	2SPZ
169	1.60	200	125	1SPA*
174	1.65	140	85	3SPZ
176	1.67	125	75	3SPZ
179	1.69	200	118	1SPA*

C 20:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	7.04	71	500	2SPZ
11	6.25	80	500	2SPZ
12	5.97	67	400	1SPZ*
13	5.63	71	400	1SPZ*
15	4.70	67	315	1SPZ*
16	4.44	71	315	1SPZ*
17	4.20	75	315	1SPZ*
18	3.94	80	315	1SPZ*
19	3.73	67	250	1SPZ*
20	3.52	71	250	1SPZ*
21	3.33	75	250	1SPZ*
22	3.20	125	400	1SPZ*
23	3.12	80	250	1SPZ*
24	2.99	67	200	1SPZ*
25	2.82	71	200	1SPZ*
26	2.69	67	180	1SPZ*
28	2.54	71	180	1SPZ*
30	2.39	67	160	1SPZ*
31	2.25	71	160	1SPZ*
33	2.13	75	160	1SPZ*
34	2.09	67	140	2SPZ
36	1.97	71	140	1SPZ*
37	1.89	95	180	1SPZ*
38	1.87	75	140	1SPZ*
40	1.75	80	140	1SPZ*
41	1.70	106	180	1SPA
42	1.68	95	160	1SPZ*
43	1.65	85	140	1SPZ*
44	1.60	100	160	1SPZ*
45	1.56	80	125	1SPZ*
46	1.53	118	180	1SPA
47	1.50	100	150	1SPA
48	1.47	85	125	1SPZ*
49	1.44	125	180	1SPZ*
50	1.42	67	95	2SPZ
51	1.39	90	125	1SPZ*
52	1.34	67	90	2SPZ
53	1.33	75	100	2SPZ
54	1.32	95	125	1SPZ*
55	1.28	125	160	1SPZ*
56	1.27	67	85	2SPZ
57	1.24	90	112	1SPZ*
59	1.19	67	80	2SPZ
60	1.18	95	112	1SPZ*
62	1.14	140	160	1SPZ
63	1.12	67	75	2SPZ
66	1.07	75	80	2SPZ
67	1.06	71	75	2SPZ
70	1.00	100	100	1SPA
74	1.05	100	95	2SPZ

* Single belt drives can be used, however, two belts can also be used without overloading the SMSR input shaft bearings.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

D 5:1

Nominal Output Speed	Pulley Ratio	Pulley Motor	Dia (mm) Gearbox	Number of Belts
51	5.62	112	630	1SPA*
54	5.26	95	500	2SPZ
60	4.77	132	630	1SPA*
64	4.46	112	500	1SPA*
67	4.24	118	500	1SPA*
75	3.79	132	500	1SPA*
82	3.50	90	315	3SPZ
86	3.32	95	315	3SPZ
91	3.15	100	315	2SPA
101	2.81	112	315	2SPZ
107	2.67	150	400	1SPA*
113	2.52	125	315	2SPZ
120	2.39	132	315	2SPA
128	2.23	112	250	2SPA
135	2.12	118	250	2SPA
143	2.00	100	200	3SPZ
151	1.89	106	200	3SPA
159	1.80	100	180	3SPZ
163	1.75	180	315	1SPA*
171	1.67	150	250	2SPA
178	1.61	112	180	3SPZ
181	1.57	200	315	1SPA*
187	1.53	118	180	2SPA
190	1.50	100	150	3SPA
200	1.43	112	160	3SPZ
204	1.40	100	140	3SPA
209	1.36	132	180	2SPA
216	1.32	106	140	3SPA
222	1.29	140	180	2SPA
228	1.25	112	140	3SPZ
235	1.21	132	160	2SPA
242	1.18	106	125	3SPA
250	1.14	140	160	2SPA
255	1.12	100	112	4SPZ
266	1.07	140	150	2SPA
269	1.06	118	125	3SPA
285	1.00	140	140	2SPA
301	1.05	118	112	3SPA
306	1.07	150	140	2SPA
317	1.11	100	90	5SPZ
324	1.14	150	132	3SPA
337	1.18	200	170	2SPB
342	1.20	180	150	2SPA
346	1.21	160	132	3SPA
356	1.25	250	200	1SPA*
365	1.28	160	125	3SPZ
375	1.32	125	95	5SPZ
380	1.33	200	150	2SPA
387	1.36	160	118	3SPA
396	1.39	125	90	5SPZ

D 13:1

Nominal Output Speed	Pulley Ratio	Pulley Motor	Dia (mm) Gearbox	Number of Belts
11	9.40	67	630	3SPZ
14	7.46	67	500	2SPZ
18	5.97	67	400	2SPZ
19	5.63	71	400	1SPZ*
21	5.00	80	400	1SPZ*
22	4.71	85	400	1SPZ*
25	4.21	95	400	1SPZ*
26	4.00	100	400	1SPZ*
28	3.73	67	250	2SPZ
30	3.50	90	315	1SPZ*
34	3.15	100	315	1SPZ*
36	2.97	106	315	1SPA*
38	2.82	71	200	2SPZ
40	2.67	75	200	2SPZ
42	2.50	100	250	1SPA*
44	2.40	75	180	2SPZ
47	2.25	80	180	2SPZ
50	2.12	85	180	2SPZ
53	2.00	90	180	2SPZ
56	1.89	95	180	2SPZ
60	1.78	90	160	2SPZ
63	1.68	95	160	2SPZ
64	1.65	85	140	3SPZ
66	1.60	125	200	1SPA*
70	1.52	132	200	1SPA*
71	1.50	100	150	2SPA
72	1.47	85	125	3SPZ
74	1.43	140	200	1SPA*
76	1.39	90	125	3SPZ
79	1.33	150	200	1SPA*
80	1.32	85	112	3SPZ
82	1.29	140	180	1SPA*
85	1.25	112	140	2SPZ
88	1.20	150	180	1SPA*
90	1.18	85	100	4SPZ
92	1.14	140	160	2SPZ
94	1.12	160	180	1SPA*
100	1.06	100	106	3SPA
101	1.05	112	118	2SPA
106	1.00	100	100	3SPZ
112	1.05	118	112	2SPA
118	1.11	200	180	1SPA*
120	1.14	150	132	2SPA
125	1.18	132	112	2SPA
127	1.20	150	125	2SPA
128	1.21	160	132	2SPA
132	1.25	200	160	1SPA*
135	1.27	150	118	2SPA
136	1.29	180	140	2SPA
139	1.32	125	95	3SPZ

D 20:1

Nominal Output Speed	Pulley Ratio	Pulley Motor	Dia (mm) Gearbox	Number of Belts
10	7.04	71	500	2SPZ
11	6.25	80	500	2SPZ
12	5.97	67	400	1SPZ*
13	5.63	71	400	1SPZ*
14	5.00	80	400	1SPZ*
15	4.70	67	315	1SPZ*
16	4.44	71	315	1SPZ*
17	4.20	75	315	1SPZ*
18	3.94	80	315	1SPZ*
19	3.73	67	250	1SPZ*
20	3.52	71	250	1SPZ*
21	3.33	75	250	1SPZ*
22	3.20	125	400	1SPZ*
23	3.12	80	250	1SPZ*
24	2.94	85	250	1SPZ*
25	2.78	90	250	1SPZ*
26	2.69	67	180	2SPZ
27	2.63	95	250	1SPZ*
28	2.50	100	250	1SPZ*
30	2.35	85	200	1SPZ*
32	2.22	90	200	1SPZ*
33	2.13	75	160	2SPZ
34	2.09	67	140	2SPZ
35	2.00	100	200	1SPZ*
37	1.89	95	180	1SPZ*
38	1.87	67	125	2SPZ
39	1.80	100	180	1SPZ*
40	1.75	80	140	2SPZ
41	1.70	106	180	1SPA*
42	1.67	75	125	2SPZ
44	1.61	112	180	1SPZ*
45	1.58	71	112	2SPZ
46	1.53	118	180	1SPA*
47	1.49	75	112	2SPZ
49	1.44	125	180	1SPZ*
50	1.40	80	112	2SPZ
51	1.39	90	125	2SPZ
52	1.34	67	90	3SPZ
53	1.32	106	140	1SPA*
55	1.28	125	160	1SPZ*
56	1.27	67	85	3SPZ
58	1.21	132	160	1SPA*
59	1.20	125	150	1SPA*
60	1.18	85	100	2SPZ
62	1.14	140	160	1SPZ*
63	1.11	90	100	2SPZ
66	1.07	140	150	1SPA
67	1.06	90	95	2SPZ
70	1.00	125	125	1SPA
74	1.06	132	125	1SPA

* Single belt drives can be used, however, two belts can also be used without overloading the SMSR input shaft bearings.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

E 5:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
51	5.56	90	500	3SPZ
54	5.26	95	500	3SPZ
60	4.77	132	630	2SPA
63	4.50	140	630	1SPA*
68	4.20	150	630	1SPA*
73	3.94	160	630	1SPA*
80	3.57	112	400	2SPA
84	3.39	118	400	2SPA
89	3.20	125	400	2SPA
96	2.97	106	315	3SPA
101	2.81	112	315	3SPZ
107	2.67	150	400	2SPA
113	2.52	125	315	3SPZ
120	2.39	132	315	2SPA
127	2.25	140	315	2SPA
136	2.11	95	200	5SPZ
143	2.00	100	200	4SPA
151	1.89	95	180	5SPZ
160	1.79	112	200	4SPZ
168	1.70	106	180	4SPA
173	1.65	170	280	2SPB
178	1.60	125	200	3SPA
183	1.56	160	250	2SPA
189	1.51	106	160	4SPA
198	1.44	125	180	4SPZ
204	1.40	160	224	2SPB
209	1.36	132	180	3SPA
214	1.33	150	200	3SPA
223	1.28	125	160	3SPA
228	1.25	200	250	2SPA
235	1.21	132	160	3SPA
240	1.19	118	140	4SPA
250	1.14	140	160	4SPZ
254	1.12	160	180	2SPB
257	1.11	180	200	2SPA
266	1.07	140	150	3SPA
270	1.06	125	132	4SPA
285	1.00	125	125	5SPZ
301	1.05	118	112	5SPA
304	1.07	160	150	3SPA
317	1.11	200	180	2SPA
324	1.14	150	132	4SPA
336	1.18	200	170	2SPB
342	1.20	180	150	2SPA
356	1.25	212	170	2SPB
365	1.28	160	125	5SPZ
376	1.32	224	170	2SPB
380	1.33	200	150	3SPA
387	1.36	160	118	4SPA
396	1.39	250	180	2SPA

E 13:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
11	9.40	67	630	3SPZ
13	8.40	75	630	3SPZ
14	7.46	67	500	2SPZ
16	6.67	75	500	2SPZ
18	5.97	67	400	2SPZ
19	5.63	71	400	2SPZ
21	5.00	100	500	1SPA*
24	4.44	71	315	2SPZ
25	4.20	75	315	2SPZ
26	4.00	100	400	1SPA*
28	3.77	106	400	1SPA*
31	3.39	118	400	1SPA*
33	3.20	125	400	1SPA*
35	3.03	132	400	1SPA*
36	2.94	85	250	2SPZ
38	2.78	90	250	2SPZ
40	2.63	95	250	2SPZ
42	2.52	125	315	1SPA*
44	2.39	132	315	1SPA*
45	2.35	85	200	3SPZ
47	2.25	80	180	3SPZ
50	2.12	85	180	3SPZ
53	2.00	100	200	2SPA
55	1.89	95	180	3SPZ
56	1.89	106	200	2SPA
59	1.79	112	200	2SPA
60	1.75	180	315	1SPA*
62	1.70	106	180	2SPA
65	1.61	112	180	2SPA
66	1.60	100	160	3SPZ
69	1.53	118	180	2SPA
71	1.50	100	150	3SPA
73	1.44	125	180	2SPA
74	1.43	140	200	2SPZ
76	1.39	180	250	1SPA*
78	1.36	132	180	2SPA
79	1.34	112	150	3SPA
80	1.32	100	132	3SPA
82	1.29	140	180	2SPA
83	1.28	125	160	2SPA
85	1.25	200	250	1SPA*
87	1.21	132	160	2SPA
89	1.18	112	132	3SPA
90	1.18	170	200	2SPB
93	1.14	140	160	2SPA
95	1.12	125	140	3SPZ
99	1.07	140	150	2SPA
100	1.06	100	106	4SPA
101	1.05	95	100	5SPZ
106	1.00	112	112	4SPZ

E 20:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	7.04	71	500	2SPZ
11	6.25	80	500	2SPZ
12	5.97	67	400	1SPZ*
13	5.63	71	400	1SPZ*
14	5.00	80	400	1SPZ*
15	4.71	85	400	1SPZ*
16	4.44	90	400	1SPZ*
17	4.21	95	400	1SPZ*
18	4.00	100	400	1SPZ*
19	3.71	85	315	1SPZ*
20	3.52	71	250	2SPZ
21	3.32	95	315	1SPZ*
22	3.15	100	315	1SPZ*
23	3.12	80	250	2SPZ
24	2.99	67	200	2SPZ
25	2.82	71	200	2SPZ
26	2.67	75	200	2SPZ
28	2.54	71	180	2SPZ
29	2.40	75	180	2SPZ
30	2.35	85	200	2SPZ
31	2.25	80	180	2SPZ
33	2.13	75	160	3SPZ
34	2.09	67	140	3SPZ
35	2.00	80	160	2SPZ
37	1.88	85	160	2SPZ
38	1.87	67	125	3SPZ
39	1.79	112	200	1SPA*
40	1.75	180	315	1SPA*
42	1.69	118	200	1SPA*
43	1.65	85	140	3SPZ
44	1.60	125	200	1SPA*
45	1.56	160	250	1SPA*
46	1.53	118	180	2SPA
47	1.52	132	200	1SPA*
48	1.47	95	140	2SPZ
49	1.44	125	180	1SPA*
50	1.40	100	140	2SPZ
52	1.36	132	180	1SPA*
53	1.33	150	200	1SPA*
54	1.32	95	125	3SPZ
55	1.27	118	150	2SPA
56	1.25	100	125	2SPA
58	1.21	132	160	2SPA
59	1.20	150	180	1SPA*
60	1.18	106	125	2SPA
62	1.14	140	160	2SPZ
63	1.11	90	100	3SPZ
66	1.07	140	150	2SPA
67	1.06	106	112	2SPA
70	1.00	160	160	1SPA*

* Single belt drives can be used, however, two belts can also be used without overloading the SMSR input shaft bearings.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

F 5:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
50	5.71	140	800	3SPZ
57	5.00	100	500	3SPA
61	4.72	106	500	3SPA
68	4.21	95	400	5SPZ
73	3.94	160	630	2SPA
77	3.71	170	630	2SPB
82	3.50	180	630	2SPB
86	3.32	95	315	6SPZ
91	3.15	100	315	5SPZ
97	2.94	170	500	2SPB
103	2.78	180	500	2SPA
108	2.63	190	500	2SPB
113	2.52	125	315	4SPZ
121	2.35	170	400	2SPB
127	2.25	140	315	4SPZ
135	2.12	118	250	4SPA
143	2.00	125	250	5SPZ
151	1.89	132	250	4SPA
160	1.79	140	250	5SPZ
168	1.69	118	200	5SPA
173	1.65	170	280	2SPB
178	1.60	125	200	4SPA
181	1.56	160	250	2SPB
187	1.53	118	180	5SPA
192	1.49	212	315	2SPB
200	1.43	140	200	5SPZ
205	1.39	180	250	2SPB
215	1.32	160	212	3SPB
222	1.29	140	180	4SPA
226	1.26	250	315	2SPB
235	1.21	132	160	5SPA
242	1.18	190	224	2SPB
250	1.14	140	160	6SPZ
255	1.12	200	224	2SPB
267	1.07	150	160	4SPA
271	1.05	224	236	2SPB
285	1.00	224	224	2SPB
301	1.06	224	212	2SPB
304	1.07	160	150	4SPA
317	1.11	200	180	3SPA
324	1.14	150	132	5SPA
336	1.18	200	170	3SPB
342	1.20	180	150	4SPA
356	1.25	212	170	3SPB
360	1.26	315	250	2SPB
365	1.28	160	125	6SPA
376	1.32	224	170	3SPB
380	1.33	200	150	4SPA
387	1.36	160	118	6SPA
396	1.39	250	180	3SPA

F 13:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	10.67	75	800	3SPZ
11	9.40	67	630	3SPZ
13	8.40	75	630	3SPZ
14	7.46	67	500	2SPZ
15	7.04	71	500	2SPZ
17	6.30	100	630	1SPA*
19	5.62	112	630	1SPA*
21	5.04	125	630	1SPA*
24	4.44	90	400	2SPZ
25	4.24	118	500	1SPA*
26	4.00	125	500	1SPA*
28	3.79	132	500	1SPA*
30	3.57	140	500	1SPA*
32	3.33	150	500	1SPA*
34	3.15	100	315	2SPA
36	2.97	106	315	2SPA
38	2.81	112	315	2SPA
39	2.67	118	315	2SPA
40	2.63	190	500	2SPB
42	2.50	100	250	3SPZ
45	2.36	106	250	3SPA
47	2.25	140	315	2SPZ
48	2.22	180	400	1SPA*
50	2.12	118	250	2SPA
53	2.00	100	200	3SPA
55	1.89	132	250	2SPA
56	1.89	106	200	3SPA
58	1.80	100	180	4SPZ
60	1.75	180	315	2SPA
63	1.68	95	160	5SPZ
66	1.61	112	180	3SPA
68	1.56	160	250	2SPA
69	1.53	118	180	3SPA
71	1.50	100	150	4SPA
74	1.44	125	180	4SPZ
76	1.40	100	140	5SPZ
78	1.36	132	180	3SPA
80	1.32	160	212	2SPB
81	1.32	170	224	2SPB
83	1.28	125	160	3SPA
85	1.25	160	200	2SPA
88	1.21	132	160	3SPA
89	1.19	118	140	4SPA
90	1.18	170	200	2SPB
93	1.14	132	150	3SPA
95	1.12	118	132	4SPA
99	1.06	160	170	2SPB
100	1.06	118	125	4SPA
106	1.00	140	140	4SPZ
112	1.06	170	160	2SPB

F 20:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	7.04	71	500	2SPZ
11	6.67	75	500	2SPZ
12	5.97	67	400	2SPZ
13	5.63	71	400	2SPZ
14	5.00	80	400	2SPZ
15	4.70	67	315	2SPZ
16	4.44	71	315	2SPZ
17	4.20	75	315	2SPZ
18	4.00	100	400	1SPA*
19	3.77	106	400	1SPA*
20	3.57	112	400	1SPA*
21	3.39	118	400	1SPA*
22	3.20	125	400	1SPZ*
23	3.03	132	400	1SPA*
24	2.94	85	250	2SPZ
25	2.86	140	400	1SPZ*
26	2.67	118	315	1SPA*
27	2.63 ⁿ	95	250	2SPZ
28	2.50	80	200	3SPZ
29	2.40	75	180	3SPZ
30	2.39	132	315	1SPA*
31	2.25	80	180	3SPZ
33	2.17	85	180	3SPZ
35	2.00	100	200	2SPA
36	1.97	160	315	1SPA*
37	1.88	85	160	3SPZ
39	1.79	112	200	2SPZ
40	1.75	80	140	4SPZ
42	1.70	106	180	2SPA
43	1.65	85	140	4SPZ
44	1.60	125	200	2SPZ
45	1.56	160	250	1SPA*
46	1.53	118	180	2SPA
47	1.50	100	150	3SPA
48	1.48	160	236	2SPB
49	1.43	112	160	2SPA
50	1.40	100	140	3SPZ
51	1.39	180	250	1SPA*
52	1.36	118	160	2SPA
53	1.32	100	132	3SPA
55	1.29	140	180	2SPZ
56	1.25	100	125	3SPA
58	1.21	132	160	2SPA
59	1.20	125	150	2SPA
60	1.18	106	125	3SPA
62	1.14	132	150	2SPA
63	1.11	106	118	3SPA
66	1.06	132	140	2SPA
67	1.05	112	118	3SPA
70	1.00	200	200	2SPA

* Single belt drives can be used, however, two belts can also be used without overloading the SMSR input shaft bearings.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

G 5:1

Nominal Output Speed	Pulley Ratio	Pulley Motor	Dia (mm) Gearbox	Number of Belts
51	5.62	112	630	3SPA
54	5.26	95	500	5SPZ
60	4.77	132	630	3SPA
63	4.50	140	630	4SPZ
67	4.24	118	500	4SPA
71	4.00	125	500	5SPZ
77	3.71	170	630	2SPB
84	3.39	118	400	5SPA
89	3.20	125	400	6SPZ
94	3.03	132	400	4SPA
101	2.81	224	630	2SPB
107	2.67	150	400	4SPA
114	2.50	160	400	2SPB
121	2.36	212	500	2SPB
127	2.25	140	315	5SPA
136	2.10	150	315	5SPA
143	2.00	200	400	3SPA
151	1.89	212	400	3SPB
160	1.79	140	250	6SPA
163	1.75	180	315	3SPB
168	1.69	236	400	2SPB
172	1.66	190	315	3SPB
178	1.60	250	400	2SPB
183	1.56	180	280	3SPB
190	1.50	236	355	3SPB
192	1.49	212	315	3SPB
200	1.43	140	200	6SPA
206	1.39	170	236	4SPB
214	1.33	150	200	6SPA
225	1.27	280	355	2SPB
228	1.25	200	250	3SPB
238	1.20	250	300	3SPC
242	1.18	200	236	3SPB
252	1.13	265	300	3SPC
256	1.11	212	236	3SPB
266	1.07	280	300	3SPC
270	1.06	212	224	3SPB
285	1.00	224	224	3SPB
301	1.05	236	224	3SPB
306	1.07	300	280	3SPC
317	1.11	200	180	4SPB
322	1.13	355	315	2SPB
336	1.18	200	170	5SPB
341	1.20	335	280	3SPC
355	1.24	224	180	4SPB
359	1.26	315	250	2SPB
374	1.31	236	180	4SPB
381	1.33	315	236	3SPB
396	1.39	250	180	5SPA
399	1.40	224	160	5SPB

G 13:1

Nominal Output Speed	Pulley Ratio	Pulley Motor	Dia (mm) Gearbox	Number of Belts
11	9.40	67	630	3SPZ
12	8.87	71	630	3SPZ
13	8.40	75	630	3SPZ
14	7.41	85	630	3SPZ
15	7.04	71	500	3SPZ
16	6.63	95	630	3SPZ
17	6.30	100	630	2SPA
18	5.88	85	500	3SPZ
19	5.62	112	630	3SPZ
20	5.26	95	500	3SPZ
21	5.00	80	400	3SPZ
22	4.77	132	630	2SPA
23	4.72	106	500	2SPA
24	4.46	112	500	2SPZ
25	4.21	95	400	3SPZ
27	4.00	125	500	2SPZ
28	3.77	106	400	2SPA
30	3.57	140	500	2SPZ
31	3.39	118	400	2SPA
33	3.20	125	400	2SPA
34	3.15	100	315	3SPA
36	2.97	106	315	3SPA
38	2.81	112	315	3SPZ
40	2.63	95	250	5SPZ
42	2.50	100	250	4SPZ
44	2.39	132	315	2SPA
45	2.36	106	250	3SPA
47	2.25	140	315	2SPA
50	2.11	95	200	5SPZ
53	2.00	100	200	4SPA
56	1.89	132	250	3SPA
57	1.85	170	315	2SPB
59	1.79	140	250	4SPZ
61	1.75	180	315	2SPA
63	1.69	118	200	4SPA
64	1.65	170	280	2SPB
66	1.60	125	200	5SPZ
70	1.53	118	180	4SPA
72	1.48	160	236	2SPB
74	1.43	140	200	3SPA
76	1.39	170	236	2SPB
80	1.33	150	200	3SPA
83	1.27	118	150	5SPA
85	1.24	180	224	2SPB
87	1.21	132	160	4SPA
90	1.18	180	212	2SPB
93	1.14	140	160	4SPA
95	1.11	180	200	3SPA
100	1.06	212	224	2SPB

G 20:1

Nominal Output Speed	Pulley Ratio	Pulley Motor	Dia (mm) Gearbox	Number of Belts
10	7.04	71	500	2SPZ
11	6.25	80	500	2SPZ
12	5.97	67	400	3SPZ
13	5.33	75	400	3SPZ
14	5.00	80	400	2SPZ
15	4.71	85	400	2SPZ
16	4.44	90	400	2SPZ
17	4.21	95	400	2SPZ
18	4.00	100	400	2SPZ
19	3.71	85	315	3SPZ
20	3.57	112	400	2SPZ
21	3.33	150	500	2SPA
22	3.20	125	400	2SPZ
23	3.03	132	400	2SPA
24	2.94	85	250	3SPZ
25	2.78	90	250	3SPZ
26	2.67	150	400	1SPA*
27	2.63	95	250	3SPZ
28	2.52	125	315	2SPZ
30	2.36	106	250	3SPA
31	2.25	140	315	2SPZ
32	2.23	112	250	2SPA
33	2.12	118	250	2SPA
34	2.10	150	315	2SPA
35	2.00	100	200	3SPA
36	1.97	160	315	2SPA
37	1.89	95	180	4SPZ
39	1.80	100	180	4SPZ
40	1.75	180	315	2SPA
41	1.70	106	180	3SPA
42	1.67	150	250	2SPA
44	1.60	125	200	3SPZ
45	1.56	160	250	2SPA
47	1.50	100	150	4SPA
48	1.47	95	140	5SPZ
49	1.43	112	160	4SPZ
50	1.40	100	140	4SPA
51	1.39	180	250	2SPA
52	1.36	118	160	3SPA
53	1.33	150	200	2SPA
55	1.28	125	160	3SPA
56	1.25	160	200	2SPA
58	1.21	132	160	3SPA
59	1.20	125	150	3SPA
60	1.18	170	200	2SPB
62	1.14	132	150	3SPA
63	1.11	180	200	2SPA
66	1.07	140	150	3SPA
67	1.05	190	200	2SPB
70	1.00	180	180	2SPB

* Single belt drives can be used, however, two belts can also be used without overloading the SMSR input shaft bearings.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

H 5:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
50	5.71	140	800	5SPZ
54	5.26	190	1000	3SPB
60	4.77	132	630	5SPA
63	4.50	140	630	4SPA
71	4.00	200	800	3SPA
82	3.50	180	630	3SPA
86	3.32	190	630	3SPB
91	3.15	200	630	3SPA
96	2.97	212	630	3SPB
101	2.81	224	630	3SPB
107	2.67	150	400	6SPA
113	2.52	250	630	2SPB
121	2.35	170	400	4SPB
127	2.25	280	630	2SPB
136	2.11	190	400	4SPB
142	2.01	236	475	3SPC
145	1.97	160	315	6SPA
150	1.91	236	450	3SPC
160	1.79	224	400	3SPB
163	1.75	180	315	4SPB
168	1.69	236	400	3SPB
172	1.66	190	315	4SPB
178	1.60	265	425	3SPC
181	1.57	200	315	5SPA
188	1.52	280	425	3SPC
192	1.49	212	315	4SPB
200	1.43	280	400	3SPB
211	1.35	315	425	3SPC
216	1.32	212	280	4SPB
225	1.27	315	400	2SPB
228	1.25	224	280	3SPC
238	1.20	250	300	3SPC
242	1.18	212	250	4SPB
252	1.13	265	300	3SPC
256	1.11	212	236	5SPB
266	1.07	280	300	3SPC
271	1.05	224	236	4SPB
285	1.00	200	200	5SPB
300	1.05	315	300	3SPC
306	1.07	300	280	3SPC
317	1.11	200	180	6SPB
323	1.13	300	265	3SPC
336	1.18	212	180	6SPB
341	1.20	335	280	3SPC
357	1.25	250	200	6SPA
362	1.27	355	280	3SPB
375	1.32	250	190	5SPB
381	1.33	315	236	3SPC
396	1.39	250	180	6SPB
399	1.40	280	200	5SPB

H 13:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	10.67	75	800	3SPZ
11	9.41	85	800	3SPZ
12	8.89	90	800	3SPZ
13	8.42	95	800	3SPZ
14	7.87	80	630	3SPZ
16	6.63	95	630	3SPZ
18	5.94	106	630	2SPA
19	5.62	112	630	2SPA
21	5.00	100	500	3SPA
23	4.72	106	500	3SPA
25	4.21	95	400	5SPZ
27	4.00	100	400	4SPZ
28	3.77	106	400	4SPA
30	3.57	140	500	2SPA
32	3.33	150	500	2SPA
34	3.15	100	315	5SPZ
35	3.03	132	400	3SPA
37	2.86	140	400	4SPZ
38	2.78	180	500	2SPA
40	2.67	118	315	4SPA
42	2.50	160	400	2SPB
44	2.39	132	315	4SPA
45	2.35	170	400	2SPB
47	2.25	140	315	5SPZ
48	2.22	180	400	2SPB
50	2.10	150	315	3SPA
51	2.09	170	355	2SPB
54	1.97	160	315	2SPB
56	1.89	132	250	4SPA
57	1.87	190	355	2SPB
59	1.79	140	250	4SPA
61	1.75	180	315	2SPB
64	1.66	190	315	2SPB
66	1.60	250	400	2SPB
68	1.56	160	250	3SPB
72	1.48	160	236	3SPB
74	1.43	140	200	5SPA
76	1.39	180	250	3SPB
79	1.33	236	315	2SPB
80	1.33	150	200	5SPA
82	1.29	140	180	5SPA
85	1.25	224	280	2SPB
90	1.18	180	212	3SPB
95	1.11	180	200	4SPA
100	1.06	212	224	3SPB

H 20:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	7.04	71	500	3SPZ
11	6.63	95	630	3SPZ
12	5.88	85	500	3SPZ
13	5.56	90	500	3SPZ
14	5.04	125	630	2SPA
15	4.71	85	400	3SPZ
16	4.44	90	400	3SPZ
17	4.24	118	500	2SPA
18	4.00	125	500	2SPZ
19	3.77	106	400	3SPA
20	3.57	112	400	2SPA
21	3.39	118	400	2SPA
22	3.20	125	400	2SPA
23	3.03	132	400	2SPA
24	2.97	106	315	3SPA
25	2.86	140	400	2SPA
26	2.67	150	400	2SPA
27	2.63	95	250	5SPZ
28	2.52	125	315	4SPZ
30	2.36	106	250	4SPA
31	2.25	140	315	3SPZ
32	2.23	112	250	4SPZ
33	2.12	118	250	3SPA
34	2.10	150	315	2SPA
35	2.00	125	250	3SPA
36	1.97	160	315	2SPA
37	1.89	132	250	3SPA
38	1.85	170	315	2SPB
39	1.79	140	250	4SPZ
40	1.75	180	315	2SPA
41	1.70	106	180	5SPA
42	1.69	118	200	4SPA
44	1.60	125	200	5SPZ
45	1.57	200	315	2SPA
47	1.52	132	200	4SPA
48	1.47	170	250	2SPB
49	1.44	125	180	4SPA
51	1.39	170	236	2SPB
52	1.36	132	180	4SPA
53	1.33	150	200	3SPA
54	1.31	180	236	2SPB
55	1.27	118	150	5SPA
57	1.24	180	224	2SPB
59	1.20	125	150	5SPA
60	1.18	190	224	2SPB

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

J 5:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
51	5.56	180	1000	3SPB
54	5.26	190	1000	3SPB
57	5.00	160	800	4SPB
61	4.71	170	800	4SPB
63	4.50	140	630	6SPA
68	4.21	190	800	4SPB
71	4.00	200	800	5SPA
76	3.77	212	800	4SPB
80	3.57	224	800	3SPB
84	3.39	236	800	3SPB
89	3.20	250	800	3SPB
96	2.97	212	630	4SPB
100	2.86	280	800	3SPB
107	2.67	236	630	4SPB
112	2.54	315	800	3SPB
120	2.38	265	630	3SPC
127	2.24	250	560	3SPC
134	2.13	375	800	3SPC
143	2.00	250	500	4SPB
150	1.90	250	475	3SPC
159	1.79	265	475	3SPC
168	1.70	280	475	3SPC
171	1.67	300	500	3SPC
178	1.60	265	425	3SPC
181	1.57	400	630	3SPC
189	1.51	315	475	3SPC
201	1.42	250	355	4SPC
203	1.41	355	500	3SPC
211	1.35	315	425	3SPC
215	1.32	400	530	3SPC
225	1.27	315	400	4SPB
228	1.25	300	375	3SPC
238	1.20	375	450	3SPC
241	1.18	300	355	3SPC
252	1.13	265	300	4SPC
255	1.12	335	375	3SPC
266	1.07	280	300	4SPC
269	1.06	335	355	3SPC
285	1.00	280	280	4SPC
300	1.05	315	300	4SPC
302	1.06	355	335	3SPC
306	1.07	300	280	4SPC
319	1.12	375	335	3SPC
338	1.18	355	300	4SPC
341	1.19	400	335	3SPC
357	1.25	375	300	4SPC
360	1.26	315	250	5SPC
362	1.27	400	315	3SPC
381	1.33	315	236	5SPC
382	1.34	355	265	4SPC

J 13:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
11	10.00	100	1000	3SPA
12	8.89	90	800	4SPZ
13	8.00	100	800	3SPA
14	7.55	106	800	3SPA
15	7.14	112	800	3SPA
16	6.63	95	630	5SPZ
17	6.40	125	800	3SPZ
18	5.94	106	630	4SPA
19	5.62	112	630	3SPA
21	5.04	125	630	4SPZ
22	4.77	132	630	3SPA
23	4.72	106	500	4SPA
24	4.50	140	630	4SPZ
25	4.24	118	500	4SPA
27	3.94	160	630	2SPB
29	3.71	170	630	2SPB
30	3.57	140	150	4SPA
32	3.33	150	500	3SPA
34	3.12	160	500	3SPA
35	3.03	132	400	4SPA
37	2.86	140	400	4SPA
38	2.78	180	500	3SPA
40	2.63	190	500	2SPB
42	2.50	160	400	3SPB
44	2.39	132	315	5SPA
45	2.36	212	500	2SPB
47	2.25	355	800	3SPB
48	2.22	180	400	3SPB
50	2.12	224	475	3SPC
51	2.09	170	355	3SPB
53	2.00	200	400	3SPA
54	1.97	160	315	4SPB
56	1.90	224	425	3SPC
57	1.87	190	355	3SPB
59	1.79	140	250	6SPA
61	1.75	180	315	4SPA
64	1.66	190	315	3SPB
67	1.57	200	315	4SPA
68	1.56	180	280	4SPB
71	1.49	212	315	3SPB
72	1.47	170	250	5SPB
74	1.43	280	400	2SPB
76	1.39	180	250	5SPA
79	1.33	236	315	3SPB
81	1.32	190	250	4SPB
83	1.27	315	400	2SPB
85	1.24	190	236	4SPB
89	1.19	236	280	3SPB
95	1.12	250	280	3SPB
100	1.06	212	224	4SPB

J 20:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Gearbox	Number of Belts
10	7.00	90	630	3SPZ
11	6.30	100	630	3SPZ
12	5.94	106	630	3SPA
13	5.62	112	630	3SPZ
14	5.00	100	500	3SPA
15	4.72	106	500	3SPA
16	4.50	140	630	2SPA
17	4.21	95	400	5SPZ
18	4.00	100	400	4SPA
19	3.77	106	400	4SPA
20	3.57	140	500	3SPZ
21	3.39	118	400	3SPA
22	3.20	125	400	3SPA
23	3.03	132	400	3SPA
24	2.94	170	500	2SPB
25	2.78	180	500	2SPA
26	2.67	118	315	4SPA
27	2.63	190	500	2SPB
28	2.52	125	315	5SPZ
30	2.35	170	400	2SPB
31	2.25	140	315	5SPZ
32	2.22	180	400	2SPB
33	2.12	118	250	5SPA
34	2.09	170	355	3SPB
35	2.01	236	475	3SPC
36	1.97	160	315	3SPA
37	1.91	236	450	3SPC
38	1.87	190	355	2SPB
39	1.79	140	250	4SPA
40	1.75	180	315	3SPA
41	1.70	250	425	3SPC
42	1.67	150	250	4SPA
43	1.65	170	280	3SPB
44	1.60	125	200	6SPA
45	1.57	200	315	3SPA
47	1.49	212	315	2SPB
48	1.47	190	280	3SPB
49	1.43	140	200	5SPA
51	1.39	170	236	3SPB
53	1.33	150	200	5SPA
54	1.31	180	236	3SPB
55	1.29	140	180	6SPA
56	1.25	200	250	4SPA
57	1.24	190	236	3SPB
59	1.19	160	190	4SPB
60	1.18	200	236	3SPB
63	1.12	160	180	5SPA
66	1.06	236	250	3SPB
67	1.06	170	180	4SPB
70	1.00	280	280	2SPB

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Shaft Mounted Speed Reducer

Wedge Belt Drives for 1440 rev/min Electric Motors

S 20:1

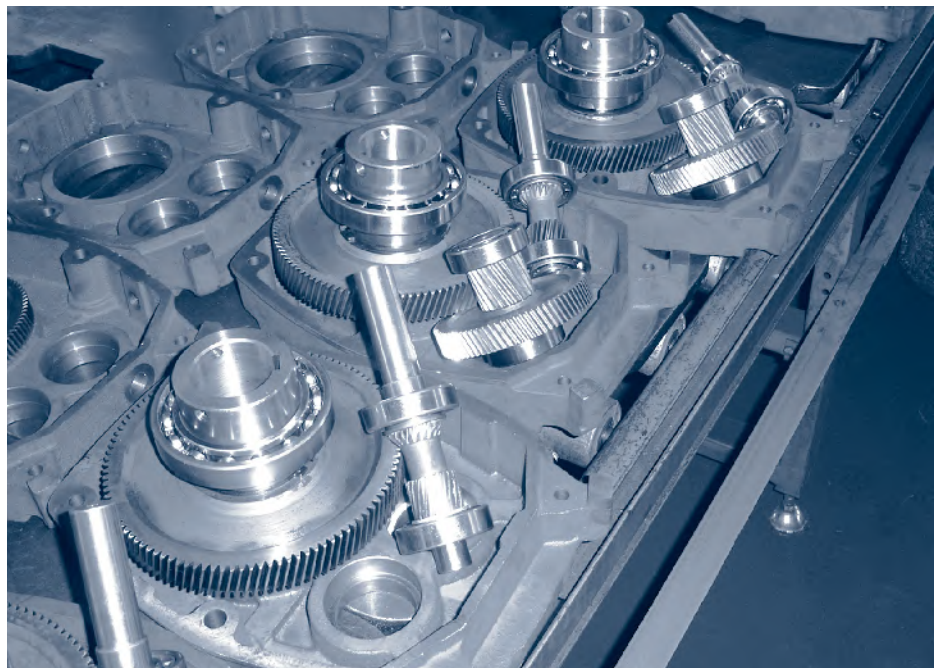
Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Dia (mm) Gearbox	Number of Belts
10	7.14	112	800	3SPA
12	5.94	106	630	4SPA
14	5.04	125	630	4SPA
16	4.46	112	500	4SPA
18	3.94	160	630	3SPA
22	3.20	125	400	5SPA
24	2.94	170	500	3SPB
26	2.67	150	400	4SPA
28	2.50	160	400	4SPB
30	2.37	150	355	4SPB
32	2.22	180	400	4SPA
34	1.97	160	315	4SPB
38	1.87	190	355	4SPB
40	1.75	180	315	4SPB
42	1.66	190	315	4SPB
46	1.50	236	355	3SPB
50	1.40	200	280	4SPB
52	1.33	236	315	3SPC
54	1.31	180	236	5SPB
58	1.20	250	300	3SPC
62	1.13	265	300	3SPC
66	1.07	280	300	3SPC

K 20:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Dia (mm) Gearbox	Number of Belts
10	7.14	140	1000	3SPB
12	6.06	132	800	4SPA
14	5.00	160	800	3SPB
16	4.44	180	800	3SPB
18	3.94	160	630	4SPB
22	3.29	170	560	4SPB
24	2.97	212	630	3SPB
26	2.81	224	630	3SPB
28	2.52	250	630	3SPB
30	2.36	212	500	3SPB
32	2.23	224	500	3SPB
34	2.00	200	400	4SPB
38	1.89	212	400	4SPB
40	1.80	236	425	3SPC
42	1.70	250	425	3SPC
46	1.59	236	375	3SPC
50	1.42	250	355	3SPC
52	1.41	224	315	4SPC
54	1.34	250	335	3SPC
58	1.25	300	375	3SPC
62	1.18	300	355	3SPC
66	1.12	335	375	3SPC

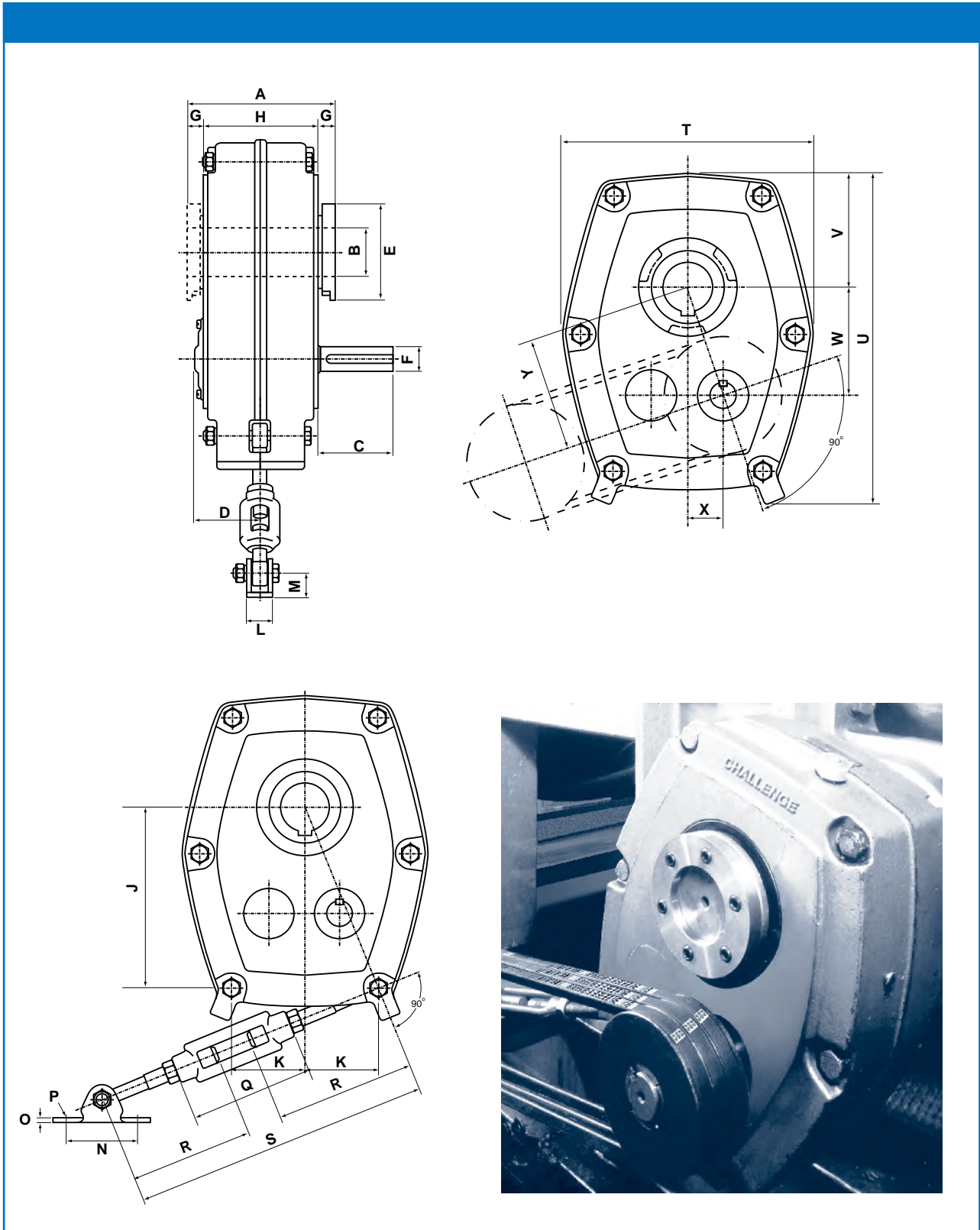
L 20:1

Nominal Output Speed	Pulley Ratio	Pulley Motor Dia (mm)	Dia (mm) Gearbox	Number of Belts
10	7.14	140	1000	4SPB
12	6.25	160	1000	3SPB
14	5.26	190	1000	3SPB
16	4.46	224	1000	3SPB
18	4.00	200	800	3SPB
22	3.34	190	630	4SPB
24	3.02	265	800	3SPC
26	2.81	224	630	3SPC
28	2.64	212	560	5SPB
30	2.50	224	560	5SPB
32	2.25	280	630	4SPB
34	2.12	236	500	5SPB
38	1.91	236	450	5SPC
40	1.87	300	560	4SPC
42	1.77	300	530	4SPC
46	1.60	250	400	4SPC
50	1.48	425	630	3SPC
52	1.40	400	560	3SPC
54	1.35	315	425	4SPC
58	1.27	315	400	4SPC
62	1.19	315	375	4SPC
66	1.12	335	375	4SPC



Shaft Mounted Speed Reducer

SMSR Dimensions



Note: for flange mounting positions-consult CHALLENGE

Shaft Mounted Speed Reducer

SMSR Dimensions Table

		SMSR Dimensions										
		B	C	D	E	F	G	H	J	S	K	L
A		134	142	152	170	189	212	242	257	290	310	356
B		30	40	50	55	65	75	85	100	120	125	150
Output hub key		8 x 7	12 x 8	14 x 9	16 x 10	18 x 11	20 x 12	22 x 14	28 x 16	32 x 18	32 x 18	36 x 20
C		63	72	77	85	90	105	116	135	145	186	216
D		59	65	68	76	87	110	115	119	123	196	203
E		80	90	100	115	130	145	170	200	186	218	238
F		19	22	25	28	32	42	48	55	55	60	65
Input shaft keyway		6x3.5x50	6x3.5x59	8x4x63	8x4x70	10x5x70	12x5x90	14x5.5x95	16x6x100	16x6x100	18x7x110	18x7x110
G		15	17	17	20	20	20	26	30	35	44	44
H		104	108	118	130	149	172	190	197	220	222	268
J		131	156	88	222	242	277	330	424	456	513	590
K		55	59	76	90	98	110	88	102	157	102	160
L		24	24	28	28	34	34	70	70	70	70	110
M		20	20	24	24	30	30	50	50	50	51	76
N		65	65	75	75	100	100	120	120	120	120	180
O		5	5	5	5	6	6	18	18	18	18	26
P		10	10	12	12	16	16	16	16	16	M16	M24
Q		200	200	216	216	216	216	222	222	222	222	265
R		300	300	350	350	375	375	375	375	375	375	400
S	Min	600	600	700	700	750	750	750	750	750	750	775
	Max	750	750	850	850	900	900	900	900	900	900	925
T		186	218	258	278	317	365	434	542	542	643	770
U		241	282	338	386	419	475	550	700	734	841	1000
V		81	96	117	129	143	162	195	254	254	298	370
W		75	90	110	125	141	156	189	255	255	280	324
X		25	31	37	43	50	56	62	75	75	100	119
Y		79	95	116	133	150	166	200	266	266	297	345
Weight-kgf	single reduction	19	25	34	45	59	88	139	202	-	-	-
	double reduction	20	26	36	50	64	98	150	216	380	411	714
Exact Gear Ratios												
Nominal	5:1	5.050	5.050	5.047	5.047	5.047	5.047	5.047	5.047	-	-	-
Ratios	13:1	13.984	13.596	13.589	13.589	13.589	13.589	13.589	13.589	-	-	-
	20:1	20.456	20.456	20.456	20.456	20.456	20.456	20.456	20.456	20.455	19.970	19.580

Shaft Mounted Speed Reducer

Standard Hub Bores

SMSR	Bore in Standard Hub	Additional Bores using Reducing Bushes
B	30	25
C	40	35, 32, 30
D	50	45, 42, 40, 38
E	55	50, 45, 42
F	65	60, 55, 50
G	75	70, 65, 60
H	85	80, 75, 70
J	100	95, 90
S	120	110, 100, 90
K	125	110, 100, 90
L	150	130, 125, 100

Alternative Hub Bores (Maximum)

SMSR	Bore in Alternative Hub	Additional Bores using Reducing Bushes
B	40	35
C	50	45
D	55	-
E	65	60
F	75	70
G	85	80
H	100	95, 90
J	120	110, 115

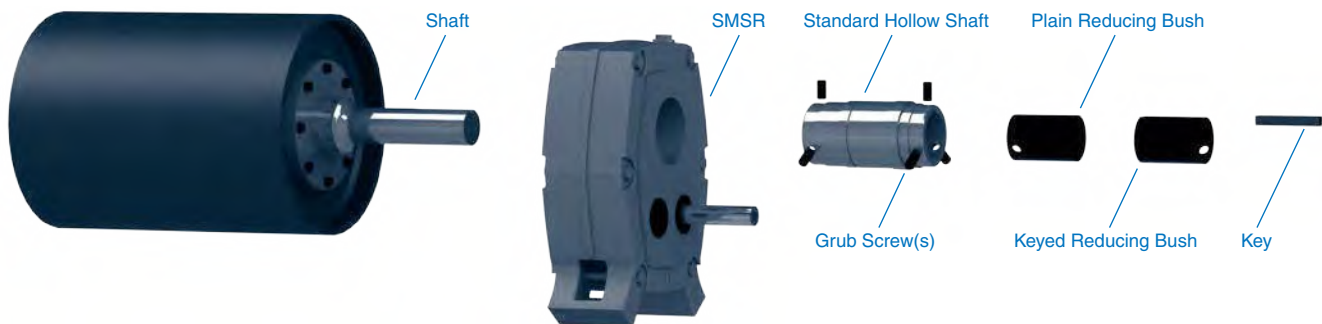
Standard hub bores are machined to F7 limits and a h7 tolerance is recommended for the shaft.

Keyways for standard output hubs and reducing bushes are machined to BS 4235. The shaft keyway should be machined in accordance with the Table below.

Shaft ϕ	Key	Shaft ϕ	Key	Shaft ϕ	Key	Shaft ϕ	Key
30	8 x 7	45	14 x 9	75	20 x 12	110	28 x 16
32	10 x 8	50	14 x 9	80	22 x 14	120	32 x 18
35	10 x 8	55	16 x 10	85	22 x 14	125	32 x 18
38	10 x 8	60	18 x 11	90	25 x 14	130	32 x 18
40	12 x 8	65	18 x 11	95	25 x 14	140	36 x 20
42	12 x 8	70	20 x 12	100	28 x 16	150	36 x 20

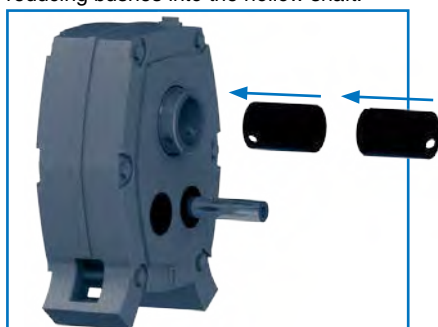
Challenge Reducing Bush Locking System

Keys are supplied when reduction bushes are used. Usually two keys are supplied, but for thin walled bushes, a single stepped key will be supplied.

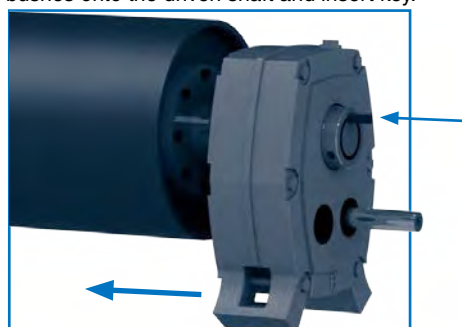


Procedure for Assembly

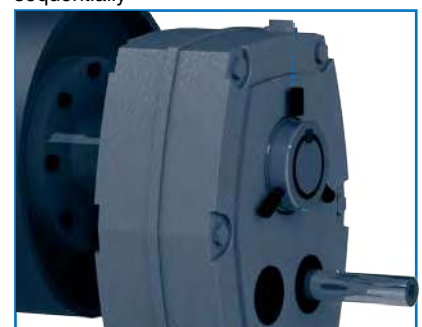
Step 1: Insert the keyed and plain reducing bushes into the hollow shaft.



Step 2: Mount gearbox with reducing bushes onto the driven shaft and insert key.



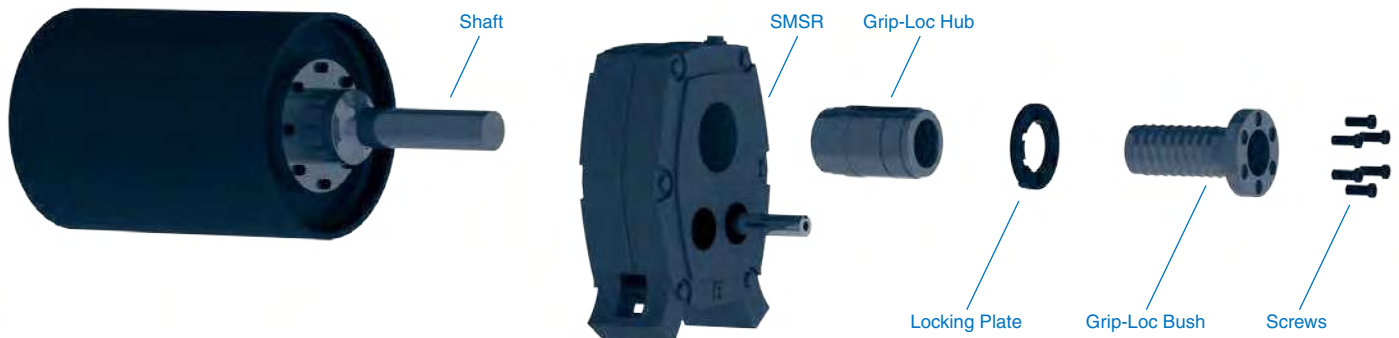
Step 3: Tighten grub screws on collar sequentially



All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Shaft Mounted Speed Reducer

Challenge Grip-Loc Locking System



Advantages

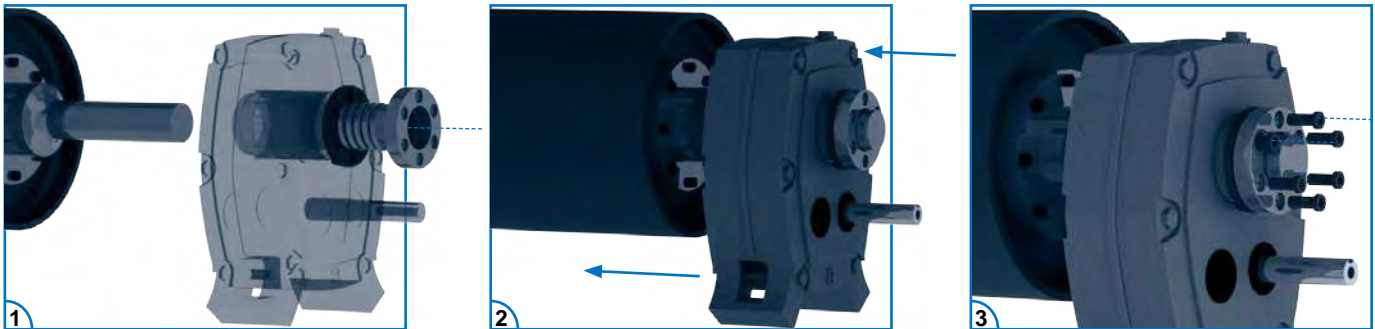
- Has sufficient torque transmitting ability to avoid the need for conventional shaft keys
- Reversible assembly
- Obviates problems caused by the usual operating environment and atmospheric conditions
- By virtue of the design, Grip-Loc prevents the onset of fretting corrosion, which often causes problems with more conventional mounting systems
- Much more simple to install and remove than keyed assemblies
- Fits standard shafts with h11 tolerances

Grip-Loc Bush Bores

SMSR	Available Bores
B	20,25,30
C	30,35,40
D	40,45,50
E	45,50,55
F	55,60,65
G	65,70,75
H	75,80,85
J	90,95,100
S	120
K	125
L	150

Procedure for Assembly

- 1) Screw Grip-Loc Bush (clockwise) into Grip-Loc Hub.
- 2) Mount on driven shaft to the required position.
- 3) Tighten cap head screws sequentially (which draws the bush against its opposing taper and locks solid against the shaft).



Procedure for Removal

This is a much simpler operation compared to the “hollow shaft” speed reducers that utilise parallel keys.

Many Shaft Mounted Speed Reducer applications are subject to poor operating conditions, such as in quarries etc. When the time comes to remove the SMSR from the shaft, a build up of corrosion can become a major problem and make the disassembly difficult.

As the Grip-Loc hub and shaft are of dissimilar metals, fretting corrosion is not a problem. Therefore, when the Grip-Loc screws are loosened and the tapers part, sufficient clearance is created for the Grip-Loc bush and speed reducer to be easily removed from the shaft.

Safety

Once a Grip-Loc hub has been correctly installed, there is no possibility for the taper to “break” and thus allow the speed reducer to move on the shaft.

The installation and removal screws play no part in holding the taper grip and even their removal would not adversely affect the performance of Grip-Loc.

Shaft Mounted Speed Reducer

SMSR Output Hub Options

SIZE	GEARBOXES WITH STANDARD OUTPUT HUBS			GEARBOXES WITH ALTERNATE OUTPUT HUBS			GEARBOXES WITH GRIP-LOC OUTPUT HUBS		
	Boxes with Standard Output Hubs (bore in mm)	Reducing bushes available from stock	Reducing bushes - outer diameter reduce to inner diameter	Boxes with Standard Output Hubs (bore in mm)	Reducing bushes available from stock	Reducing bushes - outer diameter reduce to inner diameter	Boxes with Grip-Loc Output Hubs	Grip-Loc Bushes available from stock	Grip-Loc Bushes - bore size
B	B5 (30)	1	30mm to 25mm	B13AB (40)	1	40mm to 35mm	B5GL	3	30mm 25mm 20mm
	B13 (30)			B20AB (40)			B13GL		
	B20 (30)						B20GL		
C	C5 (40)	3	40mm to 35mm 40mm to 32mm 40mm to 30mm	C5AB (50)	1	50mm to 45mm	C5GL	3	40mm 35mm 30mm
	C13 (40)			C13AB (50)			C13GL		
	C20 (40)			C20AB (50)			C20GL		
D	D5 (50)	4	50mm to 45mm 50mm to 42mm 50mm to 40mm 50mm to 38mm	D5AB (55)	0		D5GL	3	50mm 45mm 40mm
	D13 (50)			D13AB (55)			D13GL		
	D20 (50)			D20AB (55)			D20GL		
E	E5 (55)	3	55mm to 50mm 55mm to 45mm 55mm to 42mm	E5AB (65)	1	65mm to 60mm	E5GL	3	55mm 50mm 45mm
	E13 (55)			E13AB (65)			E13GL		
	E20 (55)			E20AB (65)			E20GL		
F	F5 (65)	3	65mm to 60mm 65mm to 55mm 65mm to 50mm	F5AB (75)	1	75mm to 70mm	F5GL	3	65mm 60mm 55mm
	F13 (65)			F13AB (75)			F13GL		
	F20 (65)			F20AB (75)			F20GL		
G	G5 (75)	3	75mm to 70mm 75mm to 65mm 75mm to 60mm	G5AB (85)	1	85mm to 80mm	G5GL	3	75mm 70mm 65mm
	G13 (75)			G13AB (85)			G13GL		
	G20 (75)			G20AB (85)			G20GL		
H	H5 (85)	3	85mm to 80mm 85mm to 75mm 85mm to 70mm	H5AB (100)	2	100mm to 95mm 100mm to 90mm	H5GL	3	85mm 80mm 75mm
	H13 (85)			H13AB (100)			H13GL		
	H20 (85)			H20AB (100)			H20GL		
J	J5 (100)	2	100mm to 95mm 100mm to 90mm	J5AB (120)	2	120mm to 115mm 120mm to 110mm	J5GL	4	100mm 95mm 90mm 85mm
	J13 (100)			J13AB (120)			J13GL		
	J20 (100)			J20AB (120)			J20GL		

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Shaft Mounted Speed Reducer

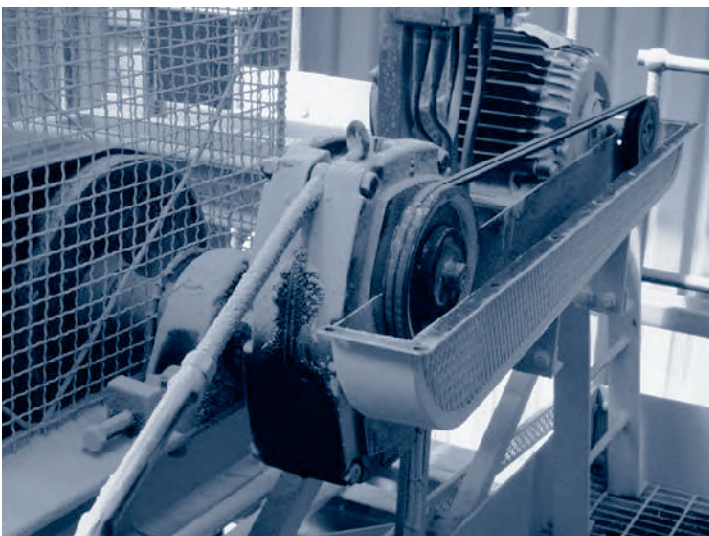
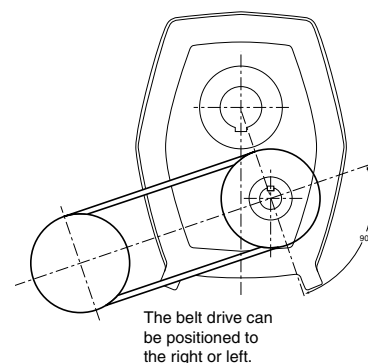
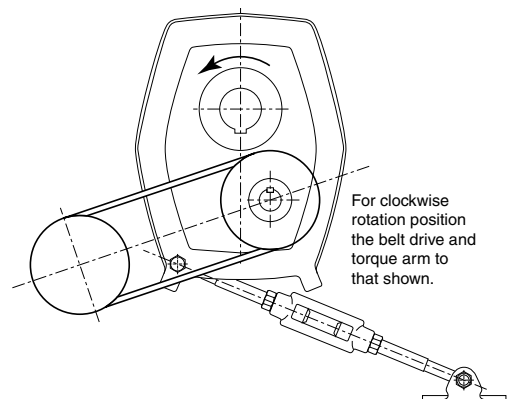
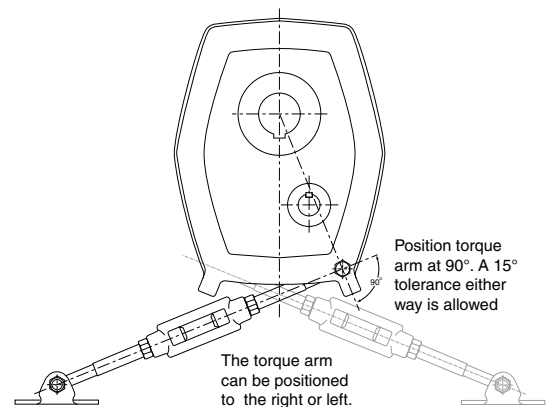
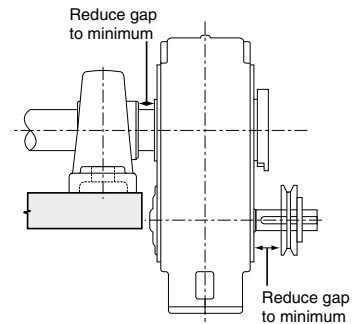
SMSR Installation

Satisfactory performance depends on correct installation, lubrication and maintenance. Therefore it is important that the instructions in the installation leaflet are followed carefully.

1. Prepare driven shaft by removing key and ensuring surface is clean, smooth and free from burrs. Coat shaft with "Anti Seize Compound".
2. Align reducer hub and shaft keyway then gently slide the reducer on to the driven shaft. Mount the reducer as close to driven shaft bearing as possible to reduce the overhung load. If possible the end of the driven shaft should be level with the outer edge of reducer output hub.
3. Fit the drive key to protrude at least one third way into length of hub keyway and flush with outer edge of reducer hub.
4. The hub clamp can now be tightened.

The Challenge SMSR creates little, if any, axial load on the shaft necessitating only light clamping to locate the unit on to the driven shaft.

5. Install pulley on gearbox input shaft as close to the reducer as possible. Failure to do this will cause excessive loads in the input shaft bearings and could cause their premature failure.
6. Install motor and belt drive with the belt pull at approximately 90° to the centre line between driven and input shafts. This will permit tensioning of the belt drive with the torque arm. The torque arm itself should work in tension. If output hub runs anti-clockwise, the torque arm should be positioned to the right.
7. Install torque-arm fulcrum on a rigid support so that the torque arm will be at approximately right angles to the centre line through the driven shaft and the torque-arm case bolt.
8. Make sure there is sufficient take up in the turn-buckle for belt tension adjustment.



Shaft Mounted Speed Reducer

Lubrication

Units are supplied without oil and should be filled before running with a recommended lubricant to the correct level dependant on the mounting position.

Remove the taper plugs from the filler/breather and level positions as shown in the diagram.

Fill until the lubricant overflows the oil level aperture. Replace the level taper plug.

For output speeds below 10 rev/min, consult Challenge.

Fit the filler/breather plug (supplied loose).

Synthetic Lubricants

Certain approved synthetic lubricants are suitable for use in gear units - consult your lubricant supplier

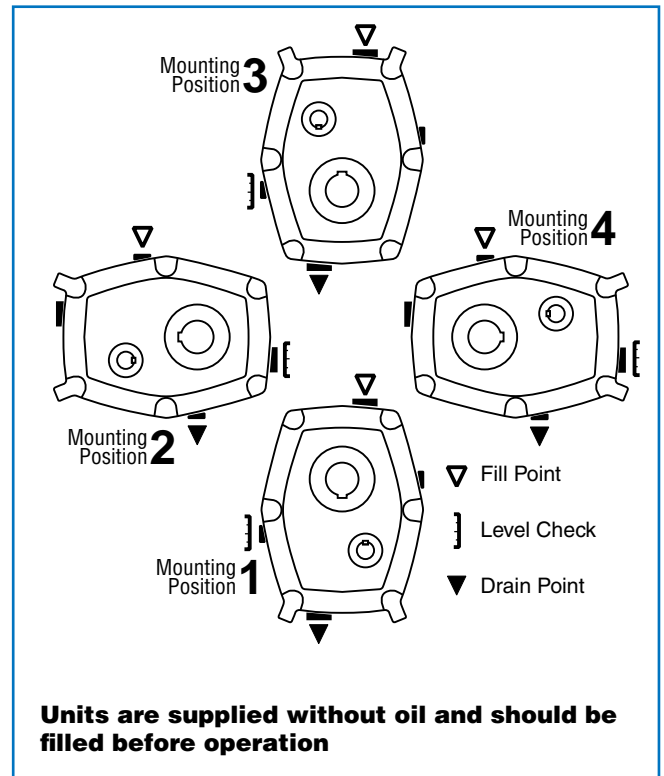
Recommended oil change periods

The first change should be after 2500 hours and thereafter every 8000 hours of running or two years.

If the temperature exceeds 70°C, then oil changes should be every 6 months.

If the application is subject to frequent stops/starts, oil changes should be more frequent.

It is also recommended that the breather plug should be changed with every oil change.



Lubricant Capacity

SMSR Size	Capacity (Litres)							
	5:1				13:1 & 20:1			
	Mounting Position				Mounting Position			
	1	2	3	4	1	2	3	4
B	0.4	0.4	0.4	0.5	0.3	0.5	0.4	0.5
C	0.6	0.7	0.6	0.8	0.8	1.5	1.2	1.3
D	1.0	1.4	1.2	1.5	0.8	1.5	1.2	1.3
E	1.9	2.0	1.8	1.9	1.7	2.0	1.8	1.6
F	2.6	2.5	2.5	2.6	2.3	2.5	2.5	2.5
G	3.3	4.1	3.3	4.6	3.0	4.3	3.4	3.9
H	4.8	7.1	5.0	7.1	4.5	7.0	5.0	6.9
J	9.3	16.0	12.0	16.0	7.5	14.0	11.0	13.0
S	-	-	-	-	9.1	16.4	12.6	15.4
K	-	-	-	-	12.5	13.5	24.0	11.5
L	-	-	-	-	22.5	34.0	52.0	27.0

Mineral Oil ISO Viscosity Grade

Unit Ratio	5:1				13:1 & 20:1							
	0 - 100	101 - 200	201 - 400		0 - 20	21 - 50		51 - 120		0 - 50	51 - 80	
SMSR Size	BCDE	BCDE	BC	DEFGHJ	BCDEF	BCD	EFGHJS	BCD	EFGHJS	K L	K L	
Amb Temp °C	FGHJ	FGHJ	BC	DEFGHJ	GHJS	BCD	EFGHJS	BCD	EFGHJS	K L	K L	
-10 to +5	100	100	100	68	150	150	150	100	100	100	100	
+6 to +25	460	320	320	220	680	680	460	460	320	320	220	
+26 to +40	800	680	380	460	800	800	800	680	460	460	320	

Note: Do not use Extreme Pressure (E.P.) mineral oils when using a backstop.

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Shaft Mounted Speed Reducer

Backstops

Note: Challenge do not recommend the use of backstops on 5:1 units as this affects the units power ratings. Should this be necessary please contact the Challenge Technical Department.

IMPORTANT - Direction of Shaft Rotation

Care should be taken to ensure that the backstop is installed correctly for the required shaft rotation direction. Incorrect installation will cause damage to the internal gears when power from the motor is applied.

With the arrow facing AWAY from the reducer, the direction of the free shaft rotation is as follows:

Type 1 and Type 1 (a)

An arrow on the OUTER RACE indicates the internal sprag gears free rotation direction. The shaft will therefore rotate in the opposite direction.

i.e. arrow marking **clockwise** on the outer race indicates that the shafts free rotation direction is **anti-clockwise**.

Type 2

These units include an inner race. An arrow marked on this INNER RACE indicates the inner race's free rotation direction and therefore the shafts free rotation direction.

i.e. arrow marking **clockwise** on the inner race indicates that the shafts free rotation direction is **clockwise**.

If you require the shaft to rotate in the opposite direction, turn the backstop around so that the side which has an arrow faces the reducer.

Installation

If the reducer is filled with oil, drain off the oil before proceeding.

Step 1: Remove the backstop cover and gasket from the reducer body.

Step 2: Determine the required direction of shaft rotation.

Locate the backstop into the housing. Feed the key into the backstop outer race and housing keyways. In the case of backstops with an inner race, feed another key into the backstop's inner race and the shaft keyways and install the circlips on the shaft groove.

Step 3: Install the backstop cover with a new gasket

Step 4: Refill the reducer with the correct quantity and grade of oil.

CAUTION: When pressing the backstop into the housing, do NOT use a hammer. The backstop may be tapped gently if necessary with a soft mallet.

Type 1



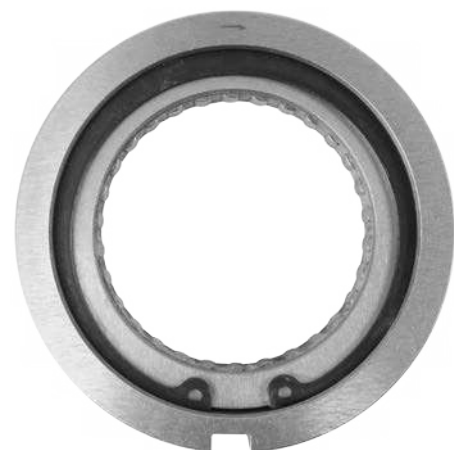
SMSR: B, C, D, E, F

Type 2



SMSR: G, H, J

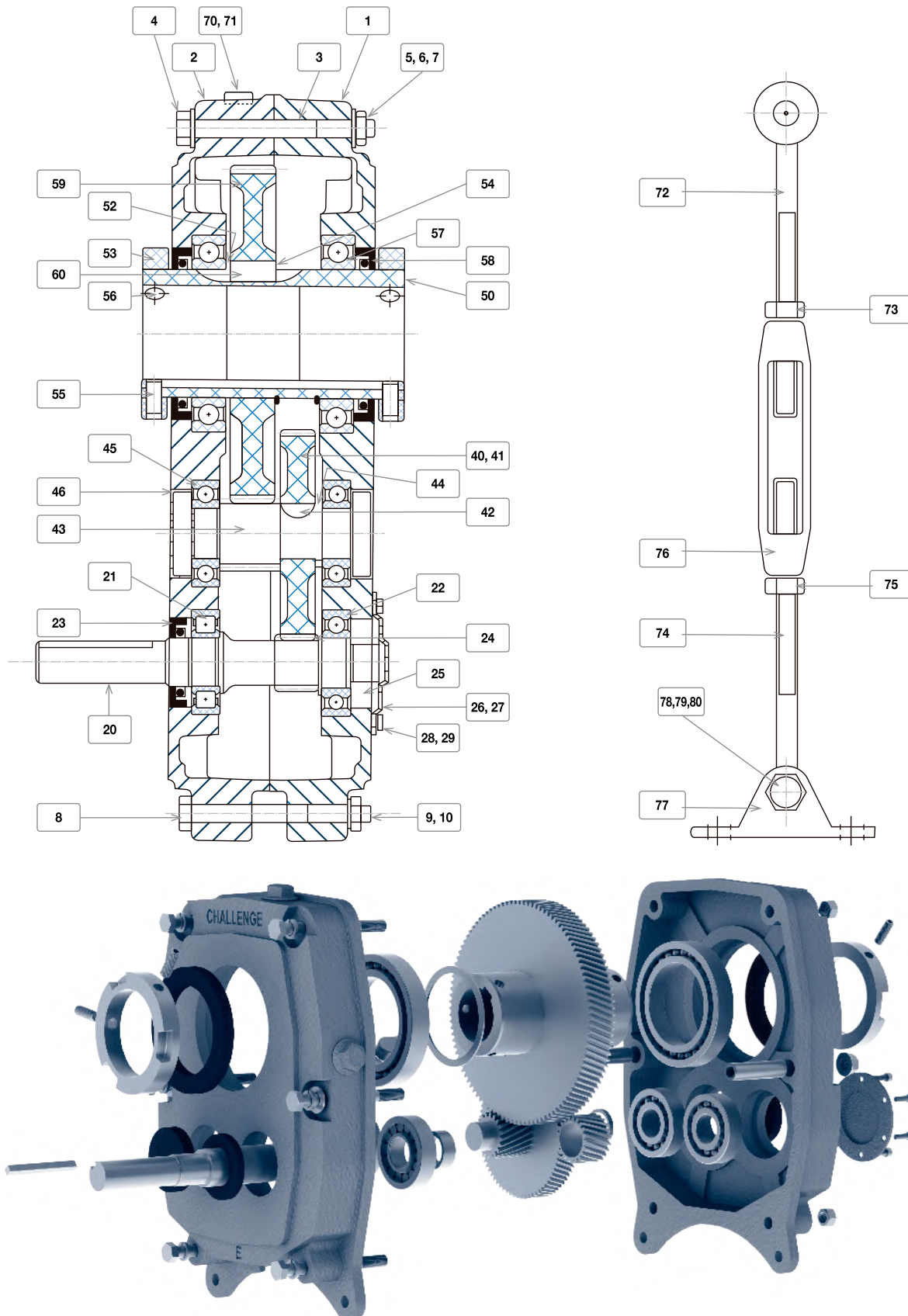
Type 1 (a)



SMSR: S, K, L

Shaft Mounted Speed Reducer

Maintenance Parts Product Codes



Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Shaft Mounted Speed Reducer

Maintenance Parts Product Codes

drawing number	description	number required	B	C	D	E	F	G	H	J	S	K	L
1	Case (right hand)	1	B6002	C6002	D6002	E6002	F6002	G6002	H6002	J6002	S6002	K6002	L6002
2	Case (left hand)	1	B6003	C6003	D6003	E6003	F6003	G6003	H6003	J6003	S6003	K6003	L6003
3	Hollow dowel	2	B7004	C7004	D7004	E7004	F7004	G7004	H7004	J7004	S7004	K7004	L7004
4	Case bolt	6	B943702	C943830	D943831	E943840	F943850	G943851	H943841	J943842	S943842	K943842	L943842
5	Case nut	6	B943810	C943811-1	D943811	E943812-1	F943813-1	G943813-1	H943812	J943812	S943812	K943812	L943812
6	Case plain washer	4	B913820	C943821	D943821	E943822	F943823	G843823	H943822	J943822	S943822	K943822	L943822
7	Case lock washer	6	B943870	C943871	D943871	E943872	F943973	G943873	H943872	J943872	S943872	K943872	L943872
8	Torque arm case bolt	2	-	-	-	-	-	-	H943852	J943852	S943852	K943852	L943852
9	Torque arm case bolt nut	2	-	-	-	-	-	-	H943813-1	J943813-1	S943813-1	K943813-1	L943813-1
10	Torque arm case bolt lock washer	2	-	-	-	-	-	-	H943864	J943864	S943864	K943864	L943864
20	Input shaft and pinion (5:1) *	1	B6128	C6120	D6120	E6128	F6120	G6120	H6120	J6120	S6120	K6120	L6120
20	Input shaft and pinion (13:1)	1	B6108	C6100	D6100	E6109	F6100	G6100	H6100	J6100	S6100	K6100	L6100
20	Input shaft and pinion (20:1)	1	B6118	C6110	D6110	E6119	F6110	G6110	H6110	J6110	S6110	K6110	L6110
21	Input shaft bearing-shaft side	1	BNJ204EC	CNJ205EC	DNJ206EC	ENJ306EC	FNJ307EC	GNJ309EC	HNJ310EC	JNJ312EC	SNJ312EC	KNJ312EC	LNJ312EC
22	Input shaft bearing-backtop side	1	B6303	C6205	D6206	E6306	F6307	G6309	H6310	J6312	S6312	K6312	L6312
23	Input shaft oil seal	1	B946043	C946301	D946302	E946443	F946303	G946304	H946305	J946022	S946022	K946022	L946022
24	Input shaft spacer	1	B6050	C6050	D6050	E6050	F6050	G6050	H6050	J6050	S6050	K6050	L6050
25	Backstop	1†	B-B.Stop	C-B.Stop	D-B.Stop	E-B.Stop	F-B.Stop	G-B.Stop	H-B.Stop	J-B.Stop	S-B.Stop	K-B.Stop	L-B.Stop
26	Backstop cover	1	B7012	C7012	D7012	E7012	F6012	G6012	H6012	J6012	S6012	K6012	L6012
27	Backstop cover gasket	1	B7013	C7013	D7013	E7013	F7013	G7013	H7013	J7013	S7013	K7013	L7013
28	Backstop cover screw	6	B943480	C943480	D943490	E943490	F943490	G943690	H943690	J943690	S943690	K943690	L943690
29	Backstop cover lockwasher	6	B943686	C943686	D943687	E943687	F943687	G943680	H943680	J943680	S943680	K943680	L943680
40	1st reduction gear (13:1)	1	B6101	C6101	D6101	E6101	F6101	G6101	H6101	J6101	S6101	K6101	L6101
41	1st reduction gear (20:1)	1	B6111	C6111	D6111	E6111	F6111	G6111	H6111	J6111	S6111	K6111	L6111
42	1st reduction gear key	1	B7021	C7021	D7021	E7021	F7021	G7021	H7021	J7021	S7021	K7021	L7021
43	Intermediate pinion (13:1 & 20:1)	1	B6022	C6022	D6022	E6022	F6022	G6022-1	H6022	J6022	S6022	K6022	L6022
44	Intermediate pinion distance piece	1	B6023	C6023	D6023	E6023	F6023	G6023	H6023	J6023	S6023	K6023	L6023
45	Intermediate bearing (13:1, 20:1)	2	B6303	C6205	D6206	E6306	F6307	G6309	H6310	J6312	S6312	K6312	L6312
46	Intermediate cover	2	B7025	C7025	D7025	E7025	F7025	G7025	H7025	J7025	S7025	K7025	L7025
50	Output hub (standard hub bore)	1	B6105	C6105	D6105	E6105	F6105	G6105	H6105	J6105	S6105	K6105	L6105
50	Output hub (alternative hub bore-upper)	1	B6106	C6106	D6106	E6106	F6106	G6106	H6106	J6106	S6106	K6106	L6106
52	Output hub spacer	1	B6030	C6030	D6030	E6030	F6030	G6030	H6030	J6030-1	S6030-1	K6030-1	L6030-1
53	Output hub collar	2	B6031	C6031	D6031	E6031	F6031	G6031	H6031	J6031	S6031	K6031	L6031
54	Output hub circlip	2	B944187	C944188	D944189	E944190	F944191	G944192	-	-	-	-	-
55	Collar screw (standard hub) over key	1	B942614-1	C942700-1	D942700-1	E942711-1	F942711	G942711-1	H942721-1	J942722-1	S942722-1	K942722-1	L942722-1
56	Collar screw (standard hub) over shaft	1	B942615	C942701	D942701-1	E942712	F942713	G942713	H942724	J942724	S942724	K942724	L942724
55	Collar screw (alternative hub-upper) over key	1	B942614-2	C942700-2	D942700-2	E942710	F942710	G942711-2	H942721-2	J942721	S942721	K942721	L942721
56	Collar screw (alternative hub-upper) over shaft	1	B942614-3	C942700-3	D942701-2	E942711-2	F942712	G942712	H942722	J942722-2	S942722-2	K942722-2	L942722-2
57	Output hub bearing	2	B6011	C6013	D6015	E6017	F6020	G6022	H6026	J6030	S6030	K6030	L6030
58	Output hub oilseal	2	B946306	C946307	D946308	E946309	F946310	G946311	H946312	J946313	S946313	K946313	L946313
59	Output hub reduction gear	1	B6026	C6026	D6026	E6026	F6026	G6026	H6026-1	J6026	S6026	K6026	L6026
60	Output hub reduction gear key	1	B6027	C6027	D6027	E6027	F6027	G6027	H6027	J6027	S6027	K6027	L6027
70	Pipe plug	4#	B942395	C942395	D942395	E942395	F942395	G942396	H942396	J942396	S942396	K942396	L942396
71	Breather plug	1#	B946097	C946097	D946097	E946097	F946097	G946098	H946098	J946098	S946098	K946098	L946098
72	Torque arm rod end	1	B7041	C7041	D7041	E7041	F7041	G7041	H7041	J7041	S7041	K7041	L7041
73	Torque arm rod end locknut	1	B943812	C943812	D943813	E943813	F943815	G943815	H943816	J943816	S943816	K943816	L943816
74	Torque arm extension	1	B7043	C7043	D7043	E7043	F7043	G7043	H7043	J7043	S7043	K7043	L7043
75	Torque arm extension locknut	1	B943790	C943790	D943791	E943791	F943792	G943792	H943793	J943793	S943793	K943793	L943793
76	Turnbuckle	1	B7045	C7045	D7045	E7045	F7045	G7045	H7045	J7045	S7045	K7045	L7045
77	Fulcrum	1	B6046	C6046	D6046	E6046	F6046	G6046	H6046	J6046	S6046	K6046	L6046
78	Torque arm fulcrum bolt	1	B943832	C943832	D943843	E943843	F943854	G943854	H943855	J943855	S943855	K943855	L943855
79	Torque arm fulcrum bolt nut	1	B943811	C943811-2	D943812	E943812-2	F943813-2	G943813-2	H943813-2	J943813-2	S943813-2	K943813-2	L943813-2
80	Torque arm fulcrum bolt lockwasher	1	B943682	C943682	D943683	E943683	F943684	G943684	H943684	J943684	S943684	K943684	L943684

Note: Challenge do not recommend the use of backstops on 5:1 units as this effects the units power ratings. Should this be necessary please contact the Challenge Technical Department.

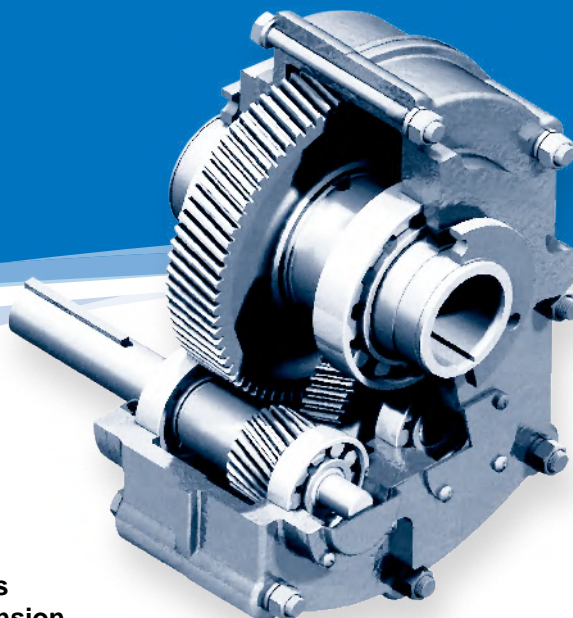
† if required

can be positioned to suit

Note

Shaft Mounted Speed Reducers

TXT Range



Features

Challenge TXT range of Shaft Mounted Speed Reducers are inch in design for America and other imperial dimension countries.

Challenge TXT gear units are manufactured in eight gear case sizes, from size 2 to size 9, maximum power up to 150hp, nominal gear ratios are 15:1 and 25:1. A wide choice of final driven speeds can be determined by the use of an appropriate input belt drive. The units will normally be oil lubricated, but they are equally suitable for long life synthetic lubricants.

1. Twin Tapered Output Hub

A tapered bore in both sides of the reducer's output hub snugs up against a matching taper on the outer surface of the bushing. Bushing mounting screws pass through the bushing flange into a mounting collar on the hub. As the screws are tightened, the bushing moves inward, gripping the driven machine's input shaft tightly and evenly around every point on its circumference. It is easy-on, easy-off. All of the output bushing bores accord to ANSI standards. Also available are ISO standard straight bore output hubs.

2. Precision High Quality Gearing

Computer designed helical gears, strong alloy materials for high load capacity, case carburized for long life, ground profile, crown tooth profile, in conformance with ISO 1328-1997. 98% efficiency per stage, smooth quiet operation with several teeth in mesh.

3. Power Ratings

All TXT SMSR's have power ratings to ISO standards.

4. Maximum Capacity Housing Design

Close grain cast iron construction. Excellent vibration dampening and shock resistance features. Precision bored and dowelled to ensure accurate in-line assembly.

5. Strong Alloy Steel Shafts

Strong alloy steel, hardened, ground on journals, gear seatings and extensions, for maximum load and maximum torsional loads. Generous size shaft keys for shock loading.

6. Using an adapter for mounting the torque arm increases the strength of the gear case. The torque arm is easy-on and easy-off for reliability and controls the position of the standard torque arm mounting within recommended limits.

7. BackStops

As an optional part, anti-run back devices are available.

8. Bearing and Oilseals

Bearings are all tapered roller (except TXT2), having long life service time. Oilseals are double lipped garter spring type, ensuring effective oil sealing.

9. Torque Arm Assembly

For easy adjustment of the belt.

Shaft Mounted Speed Reducer

TXT Speed Reducer Selection Procedure

The selection tables for Challenge TXT Shaft Mounted Reducers are for electric motor selections up to 150hp with output speeds up to 400rpm using AGMA recommended application class numbers. For extreme shock or high energy loads which must be absorbed, as when stalling; for power source other than an electric motor; or for extreme ambient temperatures, or oversized equipment, consult Challenge.

Step 1: Determine Class of Service - See table 1, page 381 to 383, to determine the Load Classification for applications under normal conditions. Find the type application and duty cycle that most closely matches your specific application.

Class I Steady loads not exceeding motor hp rating and light shock loads operating up to 10 hours a day. Moderate shock loads are allowable if the operation is intermittent.

For Class I applications, the maximum value of starting and momentary peak loads should not exceed 2 x motor hp rating. If it exceeds this amount it should be divided by 2 and the result used in the selection table instead of the motor hp rating.

Class II Steady load not exceeding motor hp rating for over 10 hours a day. Moderate shock loads are allowable for up to 10 hours a day.

For Class II applications, the maximum value of starting and momentary peak loads should not exceed 2.8 x motor hp rating. If it exceeds this amount it should be divided by 2.8 and the result used in the selection table instead of the motor hp rating.

Class III Moderate shock loads for over 10 hours a day. Heavy shock loads are allowable up to 10 hours a day.

For Class III applications, the maximum value of starting and momentary peak loads should not exceed 4 x motor hp rating. If it exceeds this amount it should be divided by 4 and the result used in the selection table instead of the motor hp rating.

Step 2: Determine Reducer Size - See the selection tables, pages 384 through 386. From selection tables class I, II or III read the reducer size for the application horsepower and output speed. Note: For applications where fan cooling is unacceptable, use the selection tables with an increased class number. Where more than one reducer selection is listed, the most economical ratio is generally listed first. See table 11, page 400 for maximum input and output speeds.

Step 3: Compare Hollow Shaft Bore of the TXT425 with the size of the driven shaft. All Challenge taper bushed Shaft Mount Reducers require bushings. Refer to reducer page 396 table 7 for available bushings. If the driven shaft is larger than the bore of the selected reducer, the shaft must

be machined to the proper size, or select a larger reducer. Check driven shaft and key for strength.

Step 4: Check Dimensions - See table 5, page 395 for reducer dimensions, table 11, page 400 for reducer weights and actual ratio. See page 397 for reducer mounting positions.

Step 5: Select a Belt Drive Arrangement - From the Belt Drives tables, page 387 to 394, select the required sheave ratio for the belt drive. Be careful to select the belt drive so that the sheave mounted on the reducer shaft is not smaller than the minimum sheave diameter with table 14 page 400. Note: Mount the sheave as close as possible to the reducer to minimize the effect of the overhung load on the reducer.

Note: For different bore diameters, bushings must be ordered separately, Backstops also need to be ordered separately. Torque arm and adapter are standard parts for the reducer. Each reducer unit is dispatched with them.

Selection Example

A 10 hp 1750rpm motor is used to drive an uniformly loaded belt conveyor moving sand, operating 16 hours a day. Head pulley shaft diameter is 2.7/16" and rotates at 70rpm. The driven conveyor cannot be allowed to move backwards.

Step 1: Determine Class of Service - From page 381 table 1, locate "belt conveyors, uniformly loaded or fed" for over 10 hours per day. This load is classified as a Class II application.

Step 2: Determine Reducer Size - From table 3 - Class II Application, page 385, find the column for 10 hp and read down to 70 rpm. A TXT 425 reducer is the correct selection.

Step 3: Compare Hollow Shaft Bore of TXT 425 with the application driven shaft diameter, page 396, 2.7/16" is the maximum bore available for this size reducer, so it will work on this application. Be sure to check the driven shaft and key strength.

Step 4: Check Dimensions and Weights - See page 395, for reducer dimensions, table 11, page 400 for reducer weights and actual ratio, etc. See page 397 for information on mounting positions.

Step 5: Select a Belt Drive Arrangement - From the Belt Drive table page 389, read down for 70rpm, find the V-Belt drive ratio of 1.03. Sheave diameter of driver is 6.20", the driven is 6.40", belt size is B, belt number is 3. From table 14, page 400, the TXT 425's minimum sheave diameter is 4.60", so the selection is correct.

Step 6: The reducer cannot be allowed to move backwards, so the backstop assembly must be ordered.

Note: when you need to assembly the backstop on the reducer, please specify the output rotation direction when you order. For example, from the input side, the output hub rotates clockwise.

Shaft Mounted Speed Reducer

Application Classification

Table 1 Application Classification and Class Numbers

Application	Class Numbers		Application	Class Numbers	
	3 to 10 Hrs per Day	Over 10 Hrs per Day		3 to 10 Hrs per Day	Over 10 Hrs per Day
Agitators (Mixers)			Stackers	II	II
Pure Liquids	I	II	Winches	II	II
Liquids and Solids	II	II	Elevators		
Liquids-Variable Density	II	II	Bucket	II	II
Blowers			Centrifugal Discharge	I	II
Centrifugal	I	II	Escalators	I	II
Lobe	II	II	Freight	II	II
Vane	II	II	Gravity Discharge	I	II
Brewing and Distilling			Extruders		
Bottling Machinery	I	II	General	II	II
Brew Kettles-Continuous Duty	II	II	Plastics		
Cookers-Continuous Duty	II	II	Variable Speed Drive	III	III
Mash Tubs-Continuous Duty	II	II	Fixed Speed Drive	III	III
Scale Hopper-Frequent Starts	II	II	Rubber		
Can Filling Machines	I	II	Continous Screw Operation	III	III
Car Dumpers	III	III	Intermittent Screw Operation	III	III
Car Pullers	II	II	Fans		
Clarifiers	I	II	Centrifugal	I	II
Classifiers	II	II	Forced Draft	II	II
Clay Working Machinery			Induced Draft	II	II
Brick Press	III	III	Industrial & Mine	II	II
Briquette Machine	III	III	Feeders		
Pug Mill	II	II	Apron	II	II
Compactors	III+	III+	Belt	II	II
Compressors			Disc	I	II
Centrifugal	I	II	Reciprocating	III	III
Lobe	II	II	Screw	II	II
Reciprocating, Multi-Cylinder	II	III	Food Industry		
Reciprocating, Single-Cylinder	III	III	Cereal Cooker	I	II
Conveyors			Dough Mixer	II	II
(Includes Apron, Assembly, Belt, Bucket, Chain, Flight, Oven and Screw)			Meat Grinder	II	II
Uniformly Loaded or Fed	I	II	Slicers	II	II
Heavy Duty-Not Uniformly Fed	II	II	Generators and Exciters	II	II
Severe Duty-Reciprocating or Shaker	III	III	Hammer Mills	II	II
Cranes	III+	III+	Hoists	III+	III+
Crusher			Laundry Tumblers	II	II
Stone or Ore	III	III	Laundry Washers	II	II
Dredges			Lumber Industry		
Cable Reels	II	II	Bakers		
Conveyors	II	II	Spindle Feed	II	II
Cutter Head Drives	III	III	Main Drive	III	III
Pumps	III	III	Conveyors		
Screen Drives	III	III			

III+ Large service factor needed, consult Challenge for more information on class number.

Shaft Mounted Speed Reducer

Application Classification

Table 1 Application Classification and Class Numbers (continued)

Application	Class Numbers		Application	Class Numbers	
	3 to 10 Hrs per Day	Over 10 Hrs per Day		3 to 10 Hrs per Day	Over 10 Hrs per Day
Burner	II	II	Coilers & Uncoilers	I	II
Main or Heavy Duty	II	II	Edge Trimmers	II	II
Main Log	III	III	Flatteners	II	II
Re-saw, Merry-Go-Round	II	II	Loopers (Accumulators)	I	I
Slab	III	III	Pinch Rolls	II	II
Transfer	II	II	Scrap Choppers	II	II
Chains			Shears	III	III
Floor	II	II	Slitters	II	II
Green	II	III	Mills. Rotary Type		
Cut-Off Saws			Ball & Rod		
Chain	II	III	Spur Ring Gear	III	III
Drag	II	III	Helical Ring Gear	II	II
Debarking Drums	III	III	Direct Connected	III	III
Feeds			Cement Kilns	II	II
Edger	II	II	Dryers & Coolers	II	II
Gang	III	III	Mixers Cement	II	II
Trimmer	II	II	Paper Mills		
Log Deck	III	III	Agitators (Mixers)	II	II
Log Hauls-Incline-Well Type	III	III	Agitators for Pure Liquors	II	II
Log Tuning Devices	III	III	Barking Drums	III	III
Planer Feed	II	II	Barkers-Mechanical	III	III
Planer Tilting Hoists	II	II	Beater	II	II
Rolls-Live-off brg.-Roll Cases	III	III	Breaker Stack	II	II
Sorting Table	II	II	Chipper	III	III
Triple Hoist	II	II	Chip Feeder	II	II
Transfers			Coating Rolls	II	II
Chain	II	III	Conveyors		
Craneway	II	III	Chip, Bark, Chemical	II	II
Tray Drives	II	II	Log (including Slab)	III	III
Veneer Lathe Drives	II	II	Couch Rolls	II	II
Metal Mills			Cutter	III	III
Draw bench Carriage and Main Drive	II	II	Cylinder Molds	II	II
Runout Table			Embossers	II	II
Non-Reversing-Group Drives	II	II	Extruder	II	II
Non-Reversing-Individual Drives	III	III	Fourdrinier Rolls (includes Lump breaker, dandy roll, wire tuning, and return rolls)	II	II
Reversing Drives	III	III	Jordan	II	II
Slab Pushers	II	II	Kiln Drive	II	II
Shears	III	III	Mt. Hope Roll	II	II
Wire Drawing	II	II	Paper Rolls	II	II
Wire Winding Machine	II	II	Platter	II	II
Metal Strip Processing Machinery			Presses-Felt & Suction	II	II
Bridles	II	II			

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Shaft Mounted Speed Reducer

Application Classification

Table 1 Application Classification and Class Numbers (continued)

Application	Class Numbers		Application	Class Numbers	
	3 to 10 Hrs per Day	Over 10 Hrs per Day		3 to 10 Hrs per Day	Over 10 Hrs per Day
Pulper	III	III	Cracker Warmer - 2 roll, 1 corrugated roll	III	III
Pump-Vacuum	II	II	Cracker - 2 corrugated rolls	III	III
Reel (Surface Type)	II	II	Holding, Feed & Blend Mill-2 rolls	II	II
Screens			Refiners-2 rolls	II	II
Chip	II	II	Calenders	II	II
Rotary	II	II	Sand Muller	II	II
Vibrating	III	III	Sewage Disposal Equipment		
Size Press	II	II	Bar Screens	II	II
Thickener (AC Motor)	II	II	Chemical Feeders	II	II
Thickener (DC Motor)	II	II	Dewatering Screens	II	II
Washer (AC Motor)	II	II	Scum Breakers	II	II
Washer (DC Motor)	II	II	Slow or Rapid Mixers	II	II
Wind and Unwind Stand	I	I	Sludge Collectors	II	II
Winders (Surface Type)	II	II	Thickener	II	II
Plastics Industry-Secondary Processing			Vacuum Filters	II	II
Blow Molders	II	II	Screens		
Coating	II	II	Air Washing	I	II
Film	II	II	Rotary-Stone or Gravel	II	II
Pipe	II	II	Traveling Water Intake	I	I
Pre-Plasticizers	II	II	Screw Conveyors		
Rods	II	II	Uniformly Loaded or Fed	I	II
Sheet	II	II	Heavy Duty	II	II
Tubing	II	II	Sugar Industry		
Pullers-Barge Haul	II	II	Beet Slicer	III	III
Pumps			Cane Knives	II	II
Centrifugal	I	II	Crushers	II	II
Proportioning	II	II	Mills (low speed end)	III	III
Reciprocating			Textile Industry		
Single Acting, 3 or more cylinders	II	II	Batches	II	II
Double Acting, 2 or more cylinders	II	II	Calenders	II	II
Rotary			Cards	II	II
Gear Type	I	II	Dry Cans	II	II
Lobe	I	II	Dyeing Machinery	II	II
Vane	I	II	Looms	II	II
Rubber and Plastics Industry			Mangles	II	II
Intensive Internal Mixers			Nappers	II	II
Batch Mixers	III	III	Pads	II	II
Continous Mixers	II	II	Stashers	II	II
Mixing Mill			Soapers	II	II
2 smooth rolls	II	II	Spinners	II	II
2 corrugated rolls	III	III	Tenter Frames	II	II
Batch Drop Mill-2 smooth rolls	II	II	Washers	II	II
			Winders	II	II

Shaft Mounted Speed Reducer

TXT Power Ratings

Table 3 Class II Selection Table for TXT SMRS's

Rating HP	Output rpm	Reducer Selection	Rating HP	Output rpm	Reducer Selection	
1/3	4~6	225	15	10~12	926	
1/2	4~5	325		13~19	825	
	6~9	225		20~27	725	
3/4	4~5	425		28~47	625 615	
	6~8	325		48~70	525 515	
	9~16	225		71~82	515 525	
1	5~7	425		83~140	415	
	8~11	325		20	13~17	926
	12~22	225			18~26	825
1-1/2	5~6	525			27~38	725 715
	7~11	425	39~68		625 615	
	12~18	325	69~80		515 525	
2	19~34	225 215	81~89		515	
	4~5	625	90~117		515*	
	6~9	525	118~125		415*	
	10~14	425	25		16~22	926
	15~24	325 315			23~33	825 815
25~47	225 215	34~49		725 715		
3	4~5	725		50~80	615 625	
	6~8	625		81~94	615	
	9~14	525		95~125	515*	
	15~22	425 415		30	20~27	926 915
	23~38	325 315			28~41	825 815
39~70	225 215	42~60			725 715	
71~75	215 225	61~76			625 615	
5	4~6	825	77~89		615	
	7~8	725	90~125	615*		
	9~14	625	40	26~36	926 915	
	15~24	525		37~56	825 815	
	25~37	425 415		57~75	725 715	
	38~69	325 315		76~88	715	
	70~85	215 225		89~120	615*	
86~136	215	50		33~46	926 915	
7-1/2	5			926	47~70	825 815
	6~9		825	71~72	815 825	
	10~13		725	73~120	715*	
	14~21		625	60	40~56	926 915
	22~38	525 515	57~70		825 815	
	39~59	425 415	71~75		815 825	
	60~70	325 315	76~89		815	
	71~85	325 315	90~120		715*	
	86~110	315	75		50~73	926 915
	111~140	215			74~75	815 825
10	6~7	926		76~120	815*	
	8~12	825		100	68~75	915* 926*
	13~18	725			76~103	915*
	19~29	625 615	104~120		815*	
	30~52	525 515	125	86~120	915*	
	53~70	425 415				
	71~84	415 425				
	85~140	315				

* Fan cooling required.

Shaft Mounted Speed Reducer

TXT Power Ratings

Table 4 Class III Selection Table for TXT SMSR's

Rating HP	Output rpm	Reducer Selection	Rating HP	Output rpm	Reducer Selection	
1/4	4-6	225	7-1/2	57-70	425 415	
1/3	5-9	225		71-85	415 425	
1/2	4-5	425		86-93	415	
	6-7	325		94-140	315	
3/4	8-15	225	10	9-12	926	
	4	525		13-18	825	
	5-7	425		19-26	725 715	
	8-12	325		27-45	625 615	
13-23	225	46-70		525 515		
1	4-6	525		71-78	515 525	
	7-10	425	79-141	415		
	11-17	325	15	14-19	926	
18-32	225	20-28		825 815		
1-1/2	4-5	625		29-41	725 715	
	6-10	525		42-70	625 615	
	11-15	425		71-75	615 625	
	16-26	325		76-125	515	
2	27-51	225 215	20	19-25	926 915	
	5-7	625		26-38	825 815	
	8-13	525		39-57	725 715	
	14-21	425		58-70	625 615	
	22-36	325 315		71-114	615	
3	37-71	225 215	25	115-125	515*	
	4-5	825		23-32	926 915	
	6-7	725		33-49	825 815	
	8-12	625		50-70	725 715	
	13-20	525		71-74	715 725	
	21-32	425 415		75-104	615	
	33-57	325 315		105-125	615*	
	58-70	225 215		30	28-39	926 915
	71-85	215 225			40-60	825 815
	86-113	215			61-70	725 715
5	5	926	71-98		715	
	6-8	825	99-125	615		
	9-12	725	40	38-53	926 915	
	13-20	625		54-70	825 815	
	21-36	525 515		71-84	815	
	37-56	425 415		85-89	715	
	57-70	325 315	50	90-120	715*	
	71-85	315 325		47-69	926 915	
	86-103	315		70-75	815 825	
	104-140	215		76-110	815	
7-1/2	7-8	926		111-120	715*	
	9-13	825		60	57-75	926 915
	14-19	725	76-85		915	
	20-32	625 615	75	86-115	815	
	33-56	525 515		73-75	915* 926*	
				76-120	915*	

* Fan cooling required.

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Shaft Mounted Speed Reducer

Belt Drives for 1750 rpm motors

TXT 215 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
17	7.17	2.65	19.00	2-3V	76	1.63	3.80	6.20	4-A
20	6.33	3.00	19.00	2-3V	77	1.62	6.80	11.00	2-B
21	6.00	3.00	18.00	3-A	78	1.60	5.00	8.00	3-3V
22	5.67	3.35	19.00	2-3V	79	1.57	6.00	9.40	2-B
22	5.63	3.20	18.00	2-A	81	1.53	4.50	6.90	3-3V
24	5.29	3.40	18.00	2-A	81	1.53	3.80	5.80	4-A
24	5.28	2.65	14.00	3-3V	83	1.50	3.60	5.40	4-A
25	5.00	3.60	18.00	2-A	84	1.49	3.35	5.00	4-3V
27	4.69	3.20	15.00	2-A	85	1.47	3.40	5.00	4-A
27	4.67	3.00	14.00	2-3V	85	1.47	6.40	9.40	2-B
29	4.29	4.20	18.00	2-A	85	1.46	4.12	6.00	3-3V
30	4.22	4.50	19.00	2-3V	87	1.43	6.00	8.60	2-B
30	4.09	4.40	18.00	2-A	88	1.42	3.35	4.75	4-3V
31	4.00	2.65	10.60	3-3V	88	1.41	3.40	4.80	4-A
31	4.00	3.00	12.00	3-A	90	1.39	4.60	6.40	3-A
33	3.75	3.20	12.00	3-A	90	1.39	6.20	8.60	2-B
35	3.60	5.00	18.00	2-A	91	1.37	4.75	6.50	3-3V
35	3.58	5.30	19.00	2-3V	93	1.34	3.35	4.50	4-3V
35	3.53	3.00	10.60	3-3V	93	1.34	6.40	8.60	2-B
35	3.53	3.00	10.60	3-A	94	1.33	4.50	6.00	3-3V
38	3.31	3.20	10.60	3-A	94	1.33	3.60	4.80	4-A
38	3.26	4.60	15.00	2-A	94	1.33	8.00	10.60	2-3V
39	3.21	4.80	15.40	2-B	94	1.32	3.80	5.00	4-A
39	3.16	3.35	10.60	3-3V	97	1.29	4.12	5.30	3-3V
40	3.12	3.40	10.60	3-A	97	1.29	4.80	6.20	3-A
40	3.11	4.50	14.00	2-3V	97	1.28	3.60	4.60	4-A
41	3.02	2.65	8.00	3-3V	100	1.25	4.80	6.00	3-A
42	3.00	4.00	12.00	2-A	101	1.23	6.50	8.00	2-3V
44	2.86	2.80	8.00	3-3V	101	1.23	6.00	7.40	2-B
44	2.86	4.20	12.00	2-A	102	1.22	4.60	5.60	3-A
45	2.75	6.90	19.00	2-3V	103	1.21	4.12	5.00	3-3V
46	2.73	3.00	8.20	3-A	103	1.21	3.80	4.60	3-A
46	2.73	4.40	12.00	2-A	104	1.20	5.00	6.00	3-3V
47	2.67	3.00	8.00	3-3V	105	1.19	5.20	6.20	3-B
48	2.58	4.80	12.40	2-B	105	1.19	5.40	6.40	3-B
49	2.54	3.15	8.00	4-3V	106	1.18	4.50	5.30	4-3V
50	2.48	5.00	12.40	2-B	107	1.17	4.80	5.60	3-B
52	2.42	6.20	15.00	2-A	107	1.16	5.60	6.50	3-3V
52	2.39	3.35	8.00	3-3V	107	1.16	7.40	8.60	2-B
52	2.38	5.20	12.40	2-B	109	1.14	4.20	4.80	4-A
53	2.33	3.00	7.00	4-A	111	1.12	5.00	5.60	3-3V
54	2.30	3.00	6.90	4-3V	111	1.12	5.00	5.60	3-B
54	2.29	4.80	11.00	2-B	113	1.10	4.20	4.60	4-A
57	2.20	5.00	11.00	2-B	115	1.08	6.00	6.50	3-3V
57	2.19	3.65	8.00	3-3V	115	1.08	4.80	5.20	3-B
58	2.16	3.80	8.20	3-A	118	1.06	5.00	5.30	3-3V
59	2.12	5.00	10.60	2-3V	118	1.06	6.20	6.60	3-B
59	2.12	5.20	11.00	2-B	120	1.04	5.00	5.20	3-B
61	2.04	5.40	11.00	2-B	121	1.03	6.60	6.80	3-B
61	2.03	6.90	14.00	2-3V	125	1.00	4.12	4.12	4-3V
64	1.96	4.80	9.40	2-B	125	1.00	8.60	8.60	2-B
66	1.90	5.80	11.00	2-B	128	0.97	6.00	5.80	3-A
66	1.89	3.65	6.90	3-3V	130	0.96	5.00	4.80	3-B
66	1.88	5.00	9.40	2-B	131	0.95	5.60	5.30	3-3V
67	1.87	3.00	5.60	4-3V	131	0.95	3.80	3.60	5-A
67	1.87	3.00	5.60	4-A	134	0.93	6.00	5.60	3-3V
68	1.83	5.80	10.60	2-A	134	0.93	5.80	5.40	3-B
70	1.79	3.35	6.00	3-3V	134	0.93	5.40	5.00	3-B
70	1.79	4.80	8.60	2-B	135	0.92	6.50	6.00	3-3V
71	1.75	8.00	14.00	2-3V	135	0.92	5.20	4.80	3-B
72	1.74	5.40	9.40	2-B	135	0.92	4.50	4.12	4-3V
72	1.72	5.00	8.60	2-B	137	0.91	9.40	8.60	2-B
74	1.68	5.60	9.40	2-B	137	0.91	4.40	4.00	4-A
75	1.67	3.35	5.60	3-3V	138	0.90	5.30	4.75	3-3V
76	1.63	6.50	10.60	2-3V	140	0.89	5.60	5.00	3-B

TXT 225 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
10	7.17	2.65	19.00	2-3V	49	1.54	5.60	8.60	2-B
12	6.33	3.00	19.00	2-3V	49	1.53	3.65	5.60	3-3V
12	6.00	3.00	18.00	2-A	50	1.51	5.30	8.00	2-3V
14	5.29	3.40	18.00	2-A	50	1.49	3.35	5.00	3-3V
14	5.28	2.65	14.00	2-3V	51	1.48	5.00	7.40	2-B
15	5.00	2.80	14.00	2-3V	51	1.46	5.60	8.20	2-A
15	5.00	3.00	15.00	2-A	52	1.45	3.65	5.30	3-3V
16	4.69	3.20	15.00	2-A	53	1.42	5.20	7.40	2-B
16	4.67	3.00	14.00	2-3V	53	1.42	4.80	6.80	2-B
17	4.44	3.15	14.00	2-3V	53	1.42	3.35	4.75	3-3V
17	4.41	3.40	15.00	2-A	54	1.38	5.00	6.90	2-3V
18	4.18	3.35	14.00	2-3V	54	1.38	4.80	6.60	2-B
18	4.17	3.60	15.00	2-A	56	1.33	6.00	8.00	2-3V
19	3.95	3.80	15.00	2-A	56	1.33	4.80	6.40	2-B
20	3.84	3.65	14.00	2-3V	57	1.32	5.00	6.60	2-B
20	3.75	3.20	12.00	2-A	58	1.30	5.00	6.50	2-3V
22	3.37	3.15	10.60	2-3V	58	1.29	4.80	6.20	2-B
22	3.33	3.60	12.00	2-A	58	1.29	4.12	5.30	3-3V
23	3.31	3.20	10.60	2-A	59	1.27	5.20	6.60	2-B
24	3.16	3.35	10.60	2-3V	59	1.26	4.75	6.00	3-3V
24	3.12	3.40	10.60	2-A	60	1.25	4.80	6.00	2-B
25	3.02	2.65	8.00	3-3V	61	1.23	5.60	6.90	2-3V
25	2.94	3.60	10.60	2-A	61	1.23	5.30	6.50	2-3V
26	2.90	3.65	10.60	2-3V	61	1.23	5.20	6.40	2-B
26	2.86	4.20	12.00	2-A	62	1.20	5.00	6.00	2-3V
26	2.86	2.80	8.00	3-3V	62	1.21	4.80	5.80	2-B
27	2.75	6.90	19.00	2-3V	64	1.17	4.80	5.60	2-B
27	2.73	4.40	12.00	2-A	65	1.16	5.60	6.50	2-3V
28	2.65	4.00	10.60	2-A	65	1.15	6.00	6.90	2-3V
29	2.61	4.60	12.00	2-A	65	1.15	5.20	6.00	2-B
29	2.60	2.65	6.90	3-3V	66	1.13	5.30	6.00	2-3V
29	2.54	3.15	8.00	3-3V	66	1.13	4.80	5.40	2-B
30	2.52	4.20	10.60	2-A	67	1.12	5.00	5.60	2-3V
31	2.45	2.65	6.50	3-3V	67	1.12	5.00	5.60	2-B
31	2.41	4.40	10.60	2-A	68	1.10	5.80	6.40	2-B
31	2.39	3.35	8.00	3-3V	69	1.09	4.12	4.50	3-3V
33	2.26	2.65	6.00	3-3V	69	1.08	6.00	6.50	2-3V
33	2.25	4.00	9.00	2-A	69	1.08	4.80	5.20	2-B
34	2.21	4.80	10.60	2-A	70	1.07	5.60	6.00	2-B
34	2.19	3.65	8.00	2-3V	71	1.06	5.00	5.30	2-3V
35	2.14	4.20	9.00	2-A	71	1.06	5.30	5.60	2-3V
35	2.11	2.65	5.60	3-3V	71	1.06	3.60	3.80	3-A
36	2.06	3.15	6.50	3-3V	72	1.04	5.00	5.20	2-B
37	2.05	4.00	8.20	2-A	75	1.00	6.20	6.20	2-B
37	2.04	4.60	9.40	2-B	75	1.00	4.50	4.50	3-3V
37	2.00	2.65	5.30	3-3V	77	0.97	6.40	6.20	2-B
38	1.95	4.20	8.20	2-A	80	0.94	6.90	6.50	2-3V
39	1.94	4.12	8.00	2-3V	80	0.94	6.60	6.20	2-B
39	1.93	3.00	5.80	3-A	80	0.94	6.40	6.00	2-B
40	1.89	3.65	6.90	2-3V	81	0.92	7.40	6.80	2-B
40	1.87	3.00	5.60	3-3V	81	0.93	6.00	5.60	3-3V
40	1.86	4.40	8.20	2-A	81	0.92	4.50	4.12	3-3V
42	1.80	5.00	9.00	2-A	81	0.92	3.65	3.35	4-3V
42	1.78	3.65	6.50	2-3V	82	0.91	6.60	6.00	2-B
42	1.79	2.65	4.75	3-3V	83	0.90	5.00	4.50	3-3V
42	1.78	4.60	8.20	2-A	84	0.89	7.40	6.60	2-B
44	1.71	4.80	8.20	2-A	84	0.89	4.12	3.65	4-3V
45	1.67	4.12	6.90	2-3V	84	0.89	3.80	3.40	4-A
45	1.67	4.20	7.00	2-A	85	0.88	6.60	5.80	2-B
46	1.64	3.65	6.00	2-3V	85	0.88	6.00	5.30	3-3V
47	1.61	4.60	7.40	2-B					
47	1.61	2.80	4.50	3-3V					
47	1.59	5.40	8.60	2-B					
47	1.58	3.35	5.30	3-3V					
49	1.54	4.80	7.40	2-B					

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

All dimensions in inches unless otherwise stated.

Shaft Mounted Speed Reducer

Belt Drives for 1750 rpm motors

TXT 315 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
12	9.43	2.65	25.00	3-3V	72	1.64	3.65	6.00	4-3V
16	7.17	2.65	19.00	3-3V	73	1.62	5.80	9.40	3-B
19	6.33	3.00	19.00	2-3V	74	1.60	5.00	8.00	3-3V
20	6.03	3.15	19.00	3-3V	75	1.57	6.00	9.40	3-B
20	6.00	3.00	18.00	3-A	76	1.54	4.80	7.40	3-B
21	5.67	3.35	19.00	3-3V	77	1.53	4.50	6.90	4-3V
21	5.63	3.20	18.00	3-A	77	1.52	4.20	6.40	4-A
22	5.29	3.40	18.00	3-A	79	1.49	7.40	11.00	2-B
22	5.28	2.65	14.00	3-3V	81	1.45	4.40	6.40	4-A
24	5.00	2.80	14.00	3-3V	82	1.44	4.50	6.50	4-3V
24	5.00	3.00	15.00	3-A	83	1.42	4.80	6.80	3-B
25	4.69	3.20	15.00	3-A	85	1.38	5.00	6.90	3-3V
25	4.67	3.00	14.00	3-3V	85	1.38	4.20	5.80	4-A
27	4.29	4.20	18.00	2-A	87	1.36	14.00	19.00	2-3V
28	4.22	4.50	19.00	2-3V	87	1.35	4.60	6.20	4-A
28	4.17	3.60	15.00	3-A	88	1.33	8.00	10.60	2-3V
29	4.00	2.65	10.60	3-3V	89	1.32	5.00	6.60	3-B
29	4.00	3.00	12.00	3-A	91	1.29	4.12	5.30	4-3V
31	3.79	2.80	10.60	3-3V	91	1.29	4.80	6.20	3-B
31	3.75	3.20	12.00	3-A	92	1.28	5.00	6.40	3-B
32	3.68	5.00	18.40	2-B	94	1.25	4.80	6.00	3-B
35	3.41	4.40	15.00	3-A	95	1.24	4.50	5.60	4-3V
35	3.40	4.12	14.00	3-3V	96	1.23	5.30	6.50	3-3V
36	3.31	3.20	10.60	4-A	96	1.23	5.20	6.40	3-B
37	3.16	3.35	10.60	3-3V	98	1.20	5.00	6.00	3-3V
37	3.16	3.80	12.00	3-A	98	1.20	5.00	6.00	3-B
38	3.11	4.50	14.00	3-3V	99	1.19	5.20	6.20	3-B
38	3.08	5.00	15.40	2-B	101	1.16	5.60	6.50	3-3V
40	2.94	3.60	10.60	3-A	101	1.16	7.40	8.60	2-B
41	2.90	3.65	10.60	3-3V	103	1.14	4.20	4.80	4-A
41	2.85	5.40	15.40	2-B	104	1.13	5.30	6.00	3-3V
42	2.80	5.00	14.00	2-3V	104	1.13	4.60	5.20	4-A
42	2.79	3.80	10.60	3-A	104	1.13	4.80	5.40	3-B
44	2.67	3.00	8.00	4-3V	105	1.12	5.00	5.60	3-3V
44	2.65	4.00	10.60	3-A	107	1.10	4.20	4.60	4-A
45	2.61	4.60	12.00	3-A	108	1.09	4.12	4.50	4-3V
46	2.57	4.12	10.60	3-3V	108	1.09	8.60	9.40	2-B
47	2.50	5.60	14.00	2-3V	109	1.08	4.80	5.20	3-B
47	2.48	5.00	12.40	2-B	111	1.06	5.00	5.30	3-3V
50	2.37	3.80	9.00	3-A	111	1.06	6.40	6.80	3-B
51	2.33	6.00	14.00	2-3V	113	1.04	5.00	5.20	3-B
52	2.28	3.60	8.20	4-A	118	1.00	4.12	4.12	4-3V
53	2.23	4.75	10.60	3-3V	118	1.00	8.60	8.60	2-B
54	2.19	3.20	7.00	5-A	121	0.97	6.40	6.20	3-A
54	2.17	3.00	6.50	5-3V	123	0.96	5.20	5.00	3-B
56	2.12	5.20	11.00	3-B	124	0.95	5.60	5.30	3-3V
57	2.06	3.35	6.90	4-3V	124	0.95	3.80	3.60	5-A
57	2.05	4.00	8.20	4-A	127	0.93	6.00	5.60	3-3V
59	2.00	5.30	10.60	3-3V	127	0.93	5.80	5.40	3-B
59	2.00	6.20	12.40	2-B	128	0.92	4.80	4.40	4-A
61	1.94	6.40	12.40	2-B	128	0.92	4.50	4.12	4-3V
62	1.90	3.15	6.00	5-3V	129	0.91	9.40	8.60	2-B
63	1.88	6.60	12.40	2-B	131	0.90	6.20	5.60	3-A
63	1.87	3.00	5.60	5-3V	131	0.90	5.30	4.75	3-3V
65	1.82	6.80	12.40	2-B	131	0.90	5.80	5.20	3-B
65	1.80	5.00	9.00	3-A	134	0.88	6.00	5.30	3-3V
66	1.79	3.35	6.00	4-3V	134	0.88	5.20	4.60	3-B
66	1.78	4.50	8.00	3-3V	134	0.88	4.80	4.20	4-A
66	1.77	6.20	11.00	2-B	135	0.87	4.75	4.12	4-3V
68	1.72	6.40	11.00	2-B	137	0.86	5.80	5.00	3-B
69	1.71	4.80	8.20	3-A	137	0.86	6.50	5.60	3-3V
70	1.68	3.15	5.30	5-3V	137	0.86	8.60	7.40	2-B
70	1.67	4.12	6.90	3-3V	138	0.85	5.40	4.60	3-B
70	1.67	6.60	11.00	2-B	138	0.85	5.60	4.75	3-3V
70	1.68	3.80	6.40	4-A	140	0.84	6.40	5.40	3-A

TXT 325 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
10	7.17	2.65	19.00	2-3V	48	1.48	5.00	7.40	2-B
11	6.33	3.00	19.00	2-3V	48	1.46	4.12	6.00	3-3V
12	6.03	3.15	19.00	2-3V	49	1.43	5.60	8.00	2-3V
12	6.00	3.00	18.00	3-A	49	1.43	6.00	8.60	2-B
13	5.63	3.20	18.00	2-A	50	1.42	3.35	4.75	3-3V
13	5.28	2.65	14.00	3-3V	50	1.42	4.80	6.80	2-B
14	5.00	2.80	14.00	3-3V	51	1.39	3.60	5.00	3-A
14	5.00	3.60	18.00	2-A	51	1.38	5.00	6.90	2-3V
15	4.69	3.20	15.00	2-A	51	1.38	4.80	6.60	2-B
15	4.67	3.00	14.00	2-3V	52	1.37	3.65	5.00	3-3V
16	4.44	3.15	14.00	2-3V	53	1.34	3.35	4.50	3-3V
16	4.41	3.40	15.00	2-A	53	1.33	4.80	6.40	2-B
17	4.18	3.35	14.00	2-3V	54	1.30	5.00	6.50	2-3V
17	4.17	3.60	15.00	2-A	54	1.32	5.00	6.60	2-B
18	3.95	3.80	15.00	2-A	56	1.27	5.20	6.60	2-B
18	3.84	3.65	14.00	2-3V	56	1.26	4.75	6.00	3-3V
19	3.80	5.00	19.00	2-3V	57	1.25	4.80	6.00	2-B
19	3.75	3.20	12.00	3-A	57	1.23	5.60	6.90	2-3V
20	3.53	3.00	10.60	3-3V	57	1.23	5.30	6.50	2-3V
20	3.53	3.00	10.60	3-A	57	1.23	5.20	6.40	2-B
21	3.40	4.12	14.00	2-3V	58	1.21	4.80	5.80	2-B
21	3.31	3.20	10.60	3-A	59	1.20	5.00	6.00	2-3V
22	3.26	4.60	15.00	2-A	59	1.19	5.40	6.40	2-B
22	3.16	3.35	10.60	3-3V	60	1.18	4.50	5.30	3-3V
23	3.12	3.40	10.60	3-A	60	1.17	4.80	5.60	2-B
23	3.02	2.65	8.00	3-3V	61	1.16	5.60	6.50	2-3V
25	2.86	2.80	8.00	3-3V	61	1.15	6.00	6.90	2-3V
25	2.86	4.20	12.00	2-A	61	1.15	5.40	6.20	2-B
26	2.73	4.40	12.00	2-A	63	1.13	4.80	5.40	2-B
26	2.67	3.00	8.00	3-3V	63	1.12	5.00	5.60	2-3V
27	2.65	4.00	10.60	2-A	63	1.12	5.20	5.80	2-B
27	2.60	2.65	6.90	3-3V	64	1.11	4.50	5.00	3-3V
29	2.45	2.65	6.50	3-3V	65	1.08	6.00	6.50	2-3V
29	2.41	4.40	10.60	2-A	65	1.08	4.80	5.20	2-B
30	2.39	4.60	11.00	2-B	65	1.08	5.00	5.40	2-B
30	2.32	2.80	6.50	3-3V	66	1.07	5.60	6.00	2-3V
31	2.26	2.65	6.00	3-3V	68	1.04	5.00	5.20	2-B
31	2.25	4.00	9.00	2-A	69	1.03	6.00	6.20	2-B
32	2.21	4.80	10.60	2-A	71	1.00	5.00	5.00	2-3V
32	2.19	3.65	8.00	2-3V	71	1.00	5.00	5.00	2-B
33	2.12	5.00	10.60	2-3V	74	0.96	5.60	5.40	2-B
33	2.12	5.20	11.00	2-B	74	0.95	3.15	3.00	4-3V
34	2.07	5.80	12.00	2-A	74	0.96	5.00	4.80	2-B
34	2.06	3.35	6.90	3-3V	74	0.95	3.80	3.60	3-A
35	2.04	5.40	11.00	2-B	75	0.94	5.30	5.00	2-3V
35	2.00	3.00	6.00	4-3V	76	0.93	6.00	5.60	2-3V
36	1.96	4.80	9.40	2-B	76	0.93	5.60	5.20	2-B
36	1.94	3.35	6.50	3-3V	79	0.90	6.20	5.60	2-B
37	1.90	5.80	11.00	2-B	79	0.90	5.30	4.75	2-3V
37	1.89	3.65	6.90	3-3V	79	0.89	5.60	5.00	2-B
39	1.81	5.20	9.40	2-B	80	0.88	6.00	5.30	2-3V
40	1.79	4.80	8.60	2-B	80	0.88	5.20	4.60	2-B
40	1.79	3.35	6.00	3-3V	81	0.87	6.20	5.40	2-B
40	1.78	3.65	6.50	3-3V	82	0.86	6.50	5.60	2-3V
41	1.72	5.00	8.60	2-B	82	0.86	5.80	5.00	2-B
43	1.65	5.20	8.60	2-B	83	0.85	5.40	4.60	2-B
43	1.64	3.65	6.00	3-3V	85	0.83	6.00	5.00	2-3V
44	1.60	5.00	8.00	2-3V	85	0.83	6.00	5.00	2-B
44	1.59	5.40	8.60	2-B					
45	1.58	3.35	5.30	3-3V					
45	1.57	6.00	9.40	2-B					
46	1.54	4.80	7.40	2-B					
46	1.53	3.65	5.60	3-3V					
47	1.50	6.00	9.00	2-A					
47	1.49	3.35	5.00	3-3V					

All dimensions in inches unless otherwise stated.

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Shaft Mounted Speed Reducer

Belt Drives for 1750 rpm motors

TXT 415 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
12	9.43	2.65	25.00	3-3V	76	1.53	4.50	6.90	5-3V
13	8.93	2.80	25.00	3-3V	77	1.50	6.00	9.00	4-A
16	7.46	3.35	25.00	3-3V	79	1.47	6.40	9.40	3-B
16	7.17	2.65	19.00	3-3V	80	1.45	4.75	6.90	5-3V
18	6.33	3.00	19.00	3-3V	81	1.43	5.60	8.00	4-3V
19	6.03	3.15	19.00	3-3V	81	1.43	6.00	8.60	3-B
19	6.00	3.00	18.00	3-A	84	1.38	5.00	6.90	4-3V
21	5.63	3.20	18.00	4-A	84	1.38	4.80	6.60	4-B
21	5.56	4.50	25.00	3-3V	86	1.34	6.40	8.60	3-B
23	5.00	3.00	15.00	4-A	87	1.33	4.50	6.00	5-3V
24	4.74	3.80	18.00	3-A	87	1.33	4.80	6.40	4-B
25	4.67	3.00	14.00	4-3V	88	1.32	5.00	6.60	4-B
26	4.44	3.15	14.00	4-3V	89	1.30	7.10	9.25	3-5V
26	4.41	3.40	15.00	4-A	90	1.29	4.80	6.20	4-B
28	4.17	3.60	15.00	4-A	92	1.26	4.75	6.00	5-3V
29	4.00	4.75	19.00	2-3V	92	1.26	6.80	8.60	3-B
29	3.95	3.80	15.00	3-A	92	1.26	5.40	6.80	4-B
31	3.75	4.00	15.00	4-A	93	1.25	4.80	6.00	5-B
32	3.57	4.20	15.00	4-A	94	1.23	5.30	6.50	5-3V
33	3.53	3.00	10.60	5-3V	94	1.23	6.00	7.40	4-B
34	3.41	4.40	15.00	4-A	96	1.21	4.80	5.80	5-B
34	3.37	3.15	10.60	5-3V	96	1.20	5.00	6.00	5-3V
35	3.33	3.60	12.00	4-A	97	1.19	6.20	7.40	4-B
37	3.16	3.80	12.00	4-A	98	1.18	4.75	5.60	6-3V
37	3.11	4.50	14.00	3-3V	98	1.18	5.60	6.60	4-B
38	3.08	5.00	15.40	3-B	99	1.17	5.80	6.80	4-B
39	2.94	3.60	10.60	4-A	101	1.15	8.50	9.75	3-5V
40	2.90	3.65	10.60	4-3V	101	1.14	5.60	6.40	4-B
41	2.85	5.40	15.40	3-B	102	1.13	4.80	5.40	5-B
41	2.80	5.00	14.00	3-3V	103	1.12	5.00	5.60	5-3V
43	2.70	4.60	12.40	4-B	103	1.12	4.75	5.30	6-3V
44	2.64	5.30	14.00	3-3V	104	1.11	5.60	6.20	4-B
44	2.61	4.60	12.00	4-A	105	1.10	5.80	6.40	4-B
46	2.50	5.60	14.00	3-3V	106	1.09	8.50	9.25	3-5V
46	2.50	4.80	12.00	4-A	106	1.09	8.60	9.40	3-B
48	2.41	4.40	10.60	4-A	108	1.07	5.60	6.00	5-3V
49	2.38	5.20	12.40	3-B	108	1.07	5.80	6.20	4-B
49	2.36	4.50	10.60	4-3V	109	1.06	9.00	9.50	3-C
51	2.25	4.00	9.00	5-A	110	1.05	4.75	5.00	6-3V
52	2.23	4.75	10.60	4-3V	111	1.04	5.00	5.20	5-B
52	2.21	5.60	12.40	3-B	116	1.00	5.00	5.00	5-3V
54	2.14	4.20	9.00	4-A	116	1.00	5.80	5.80	4-B
55	2.12	5.00	10.60	3-3V	119	0.97	6.40	6.20	4-B
55	2.12	5.20	11.00	3-B	119	0.97	5.80	5.60	5-B
56	2.07	5.80	12.00	3-A	122	0.95	5.60	5.30	6-3V
57	2.04	5.40	11.00	3-B	123	0.94	9.00	8.50	3-C
57	2.03	6.90	14.00	3-3V	123	0.94	5.30	5.00	6-3V
59	1.96	4.80	9.40	3-B	123	0.94	6.80	6.40	4-B
60	1.94	4.12	8.00	4-3V	124	0.93	5.40	5.00	6-B
61	1.90	5.80	11.00	3-B	126	0.92	6.50	6.00	5-3V
61	1.89	5.60	10.60	3-3V	127	0.91	6.60	6.00	5-B
62	1.88	5.00	9.40	3-B	129	0.90	6.20	5.60	5-B
64	1.81	5.20	9.40	3-B	129	0.90	5.30	4.75	6-3V
65	1.79	10.60	19.00	2-3V	129	0.90	5.80	5.20	5-B
66	1.75	8.00	14.00	2-3V	131	0.88	6.00	5.30	6-3V
66	1.74	5.40	9.40	3-B	131	0.88	5.20	4.60	6-B
67	1.72	6.40	11.00	3-B	133	0.87	6.90	6.00	5-3V
69	1.67	6.60	11.00	3-B	133	0.87	6.00	5.20	5-B
70	1.66	7.10	11.80	3-5V	136	0.85	11.00	9.40	3-B
70	1.65	5.20	8.60	4-B	136	0.85	6.60	5.60	5-B
71	1.62	6.80	11.00	3-B	136	0.85	5.60	4.75	6-3V
72	1.60	5.00	8.00	4-3V	138	0.84	6.40	5.40	5-B
73	1.59	5.40	8.60	4-B	138	0.84	7.40	6.20	4-B
74	1.57	6.00	9.40	3-B	139	0.83	6.00	5.00	6-3V
75	1.54	4.80	7.40	4-B	139	0.83	6.00	5.00	6-B

TXT 425 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
11	6.79	2.80	19.00	2-3V	48	1.49	7.40	11.00	2-B
11	6.79	2.80	19.00	2-3V	49	1.48	5.00	7.40	3-B
11	6.33	3.00	19.00	3-3V	49	1.46	4.12	6.00	4-3V
12	6.03	3.15	19.00	3-3V	50	1.43	5.60	8.00	3-3V
12	6.00	3.00	18.00	3-A	50	1.43	4.20	6.00	4-A
14	5.00	2.80	14.00	3-3V	51	1.42	4.80	6.80	3-B
14	5.00	3.00	15.00	3-A	52	1.38	5.00	6.90	3-3V
15	4.69	3.20	15.00	3-A	52	1.38	4.80	6.60	3-B
15	4.67	3.00	14.00	3-3V	53	1.36	4.12	5.60	4-3V
16	4.44	3.15	14.00	3-3V	53	1.36	5.00	6.80	3-B
16	4.41	3.40	15.00	3-A	55	1.31	5.20	6.80	3-B
17	4.29	4.20	18.00	2-A	55	1.30	5.00	6.50	3-3V
17	4.22	4.50	19.00	2-3V	56	1.29	4.12	5.30	4-3V
18	4.00	2.65	10.60	3-3V	56	1.29	4.80	6.20	3-B
18	4.00	3.00	12.00	3-A	57	1.27	7.40	9.40	2-B
19	3.84	3.65	14.00	2-3V	57	1.26	4.75	6.00	4-3V
19	3.75	3.20	12.00	3-A	58	1.24	5.00	6.20	3-B
20	3.53	3.00	10.60	4-3V	58	1.23	5.30	6.50	3-3V
20	3.53	3.00	10.60	4-A	59	1.21	4.12	5.00	4-3V
21	3.41	5.40	18.40	2-B	59	1.21	4.80	5.80	3-B
21	3.37	3.15	10.60	4-3V	60	1.20	5.00	6.00	3-3V
23	3.17	6.00	19.00	2-3V	60	1.20	5.00	6.00	3-B
23	3.08	5.00	15.40	2-B	60	1.19	5.40	6.40	3-B
24	2.94	3.60	10.60	3-A	61	1.18	4.50	5.30	4-3V
25	2.90	3.65	10.60	3-3V	62	1.16	7.40	8.60	2-B
25	2.85	5.40	15.40	2-B	62	1.15	4.12	4.75	4-3V
26	2.80	5.00	14.00	2-3V	64	1.13	4.80	5.40	3-B
26	2.79	3.80	10.60	3-A	64	1.12	5.00	5.60	3-3V
26	2.75	6.90	19.00	2-3V	65	1.11	4.50	5.00	4-3V
27	2.67	3.00	8.00	4-3V	65	1.11	5.40	6.00	3-B
27	2.65	4.00	10.60	3-A	66	1.09	4.12	4.50	4-3V
28	2.58	4.80	12.40	2-B	66	1.08	4.80	5.20	3-B
28	2.54	3.15	8.00	4-3V	67	1.07	5.60	6.00	4-3V
29	2.50	5.60	14.00	2-3V	68	1.06	6.20	6.60	3-B
29	2.48	5.00	12.40	2-B	68	1.06	5.00	5.30	4-3V
30	2.39	3.35	8.00	3-3V	68	1.06	6.40	6.80	3-B
30	2.38	5.20	12.40	2-B	69	1.04	5.00	5.20	4-B
31	2.28	3.60	8.20	4-A	70	1.03	6.20	6.40	3-B
32	2.23	4.75	10.60	3-3V	72	1.00	5.00	5.00	4-3V
32	2.21	4.80	10.60	3-A	72	1.00	6.20	6.20	3-B
33	2.19	3.65	8.00	4-3V	74	0.97	6.40	6.20	3-B
34	2.12	5.00	10.60	3-3V	75	0.96	5.00	4.80	4-B
34	2.12	5.00	10.60	3-A	76	0.94	6.40	6.00	3-B
35	2.06	3.35	6.90	4-3V	77	0.93	6.00	5.60	4-3V
35	2.04	4.60	9.40	3-B	78	0.92	4.50	4.12	5-3V
36	2.00	3.00	6.00	5-3V	78	0.92	5.20	4.80	4-B
36	2.00	6.20	12.40	2-B	79	0.91	6.60	6.00	3-B
37	1.94	4.12	8.00	3-3V	80	0.90	5.30	4.75	4-3V
37	1.94	6.40	12.40	2-B	81	0.89	5.60	5.00	4-B
38	1.88	6.60	12.40	2-B	82	0.88	6.00	5.30	4-3V
38	1.87	3.00	5.60	5-3V	82	0.88	5.20	4.60	4-B
39	1.82	6.80	12.40	2-B	82	0.88	6.60	5.80	3-B
40	1.78	4.50	8.00	3-3V	83	0.87	6.90	6.00	3-3V
41	1.77	6.20	11.00	2-B	83	0.86	5.80	5.00	4-B
41	1.75	8.00	14.00	2-3V	84	0.85	6.80	5.80	3-B
41	1.74	5.40	9.40	3-B	84	0.85	5.60	4.75	4-3V
43	1.67	4.12	6.90	4-3V	85	0.84	6.40	5.40	4-A
43	1.68	7.40	12.40	2-B	86	0.83	6.00	5.00	4-3V
44	1.63	6.50	10.60	3-3V					
44	1.62	5.80	9.40	3-B					
45	1.60	5.00	8.00	3-3V					
45	1.59	5.40	8.60	3-B					
46	1.55	5.80	9.00	3-A					
47	1.54	4.80	7.40	3-B					
48	1.51	5.30	8.00	3-3V					

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

All dimensions in inches unless otherwise stated.

Shaft Mounted Speed Reducer

Belt Drives for 1750 rpm motors

TXT 515 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
14	8.33	3.00	25.00	4-3V	66	1.71	4.80	8.20	6-A
14	8.26	4.60	38.00	3-B	68	1.68	4.75	8.00	6-3V
14	7.94	3.15	25.00	3-3V	68	1.68	7.40	12.40	3-B
15	7.46	3.35	25.00	3-3V	68	1.66	7.10	11.80	3-5V
17	6.85	3.65	25.00	3-3V	70	1.62	5.80	9.40	4-B
17	6.52	4.60	30.00	3-B	71	1.60	5.00	8.00	5-3V
19	6.03	3.15	19.00	3-3V	71	1.59	5.40	8.60	5-B
19	6.00	3.00	18.00	4-A	72	1.57	6.00	9.40	4-B
20	5.67	3.35	19.00	4-3V	74	1.54	6.90	10.60	4-3V
20	5.63	3.20	18.00	5-A	74	1.54	5.60	8.60	4-B
21	5.29	3.40	18.00	5-A	76	1.49	7.40	11.00	4-B
22	5.26	4.75	25.00	3-3V	77	1.48	8.00	11.80	3-5V
22	5.21	3.65	19.00	4-3V	77	1.47	6.40	9.40	4-B
22	5.21	4.80	25.00	3-B	78	1.46	5.60	8.20	6-A
24	4.74	3.80	18.00	4-A	78	1.45	4.75	6.90	8-3V
25	4.61	4.12	19.00	3-3V	80	1.42	6.60	9.40	4-B
25	4.50	4.00	18.00	4-A	81	1.40	11.00	15.40	3-B
26	4.44	3.15	14.00	5-3V	82	1.38	5.00	6.90	6-3V
26	4.31	5.80	25.00	3-B	82	1.38	6.80	9.40	4-B
26	4.29	4.20	18.00	5-A	84	1.36	5.00	6.80	6-B
27	4.22	4.50	19.00	4-3V	84	1.35	9.25	12.50	3-5V
28	4.00	4.75	19.00	3-3V	85	1.34	6.40	8.60	4-B
28	4.09	4.40	18.00	4-A	85	1.33	6.00	8.00	5-3V
30	3.80	5.00	19.00	3-3V	85	1.33	8.00	10.60	4-3V
30	3.75	4.80	18.00	4-A	86	1.32	9.40	12.40	3-B
31	3.68	5.00	18.40	3-B	88	1.29	8.00	10.30	3-5V
32	3.58	5.30	19.00	3-3V	88	1.29	7.00	9.00	5-A
32	3.54	5.20	18.40	3-B	89	1.27	7.10	9.00	3-5V
34	3.35	4.60	15.40	4-B	89	1.27	7.40	9.40	4-B
35	3.26	4.60	15.00	4-A	90	1.26	4.75	6.00	8-3V
36	3.13	4.80	15.00	4-A	90	1.26	6.80	8.60	5-B
37	3.11	4.50	14.00	4-3V	91	1.25	5.60	7.00	6-A
37	3.08	5.00	15.40	3-B	92	1.23	5.30	6.50	6-3V
39	2.92	6.50	19.00	3-3V	93	1.22	5.40	6.60	5-B
39	2.88	5.20	15.00	4-A	94	1.21	8.50	10.30	3-5V
40	2.85	5.40	15.40	4-B	94	1.21	5.60	6.80	6-B
41	2.80	5.00	14.00	4-3V	95	1.20	7.50	9.00	3-5V
42	2.70	4.60	12.40	5-B	95	1.19	6.20	7.40	5-B
43	2.64	5.30	14.00	4-3V	97	1.17	9.40	11.00	4-B
43	2.66	5.80	15.40	4-B	99	1.15	6.00	6.90	6-3V
44	2.58	4.80	12.40	4-B	100	1.14	5.60	6.40	6-B
46	2.48	6.20	15.40	3-B	101	1.13	5.30	6.00	8-3V
47	2.41	6.40	15.40	3-B	101	1.13	6.00	6.80	6-B
48	2.38	5.20	12.40	4-B	102	1.11	9.25	10.30	3-5V
48	2.36	4.50	10.60	5-3V	102	1.11	5.40	6.00	6-B
49	2.33	6.60	15.40	3-B	102	1.11	9.50	10.50	3-C
51	2.23	4.75	10.60	5-3V	103	1.10	6.20	6.80	5-B
51	2.21	5.60	12.40	4-B	104	1.09	8.50	9.25	3-5V
52	2.20	5.00	11.00	4-B	105	1.08	6.00	6.50	6-3V
53	2.14	5.80	12.40	4-B	105	1.08	12.00	13.00	3-C
54	2.12	5.00	10.60	4-3V	107	1.06	6.50	6.90	5-3V
54	2.12	5.20	11.00	4-B	107	1.06	6.20	6.60	5-B
55	2.07	5.80	12.00	4-A	110	1.03	6.20	6.40	5-B
57	2.00	5.30	10.60	4-3V	110	1.03	9.00	9.25	3-5V
57	2.00	6.20	12.40	3-B	117	0.97	9.25	9.00	3-5V
58	1.96	5.60	11.00	4-B	117	0.97	6.40	6.20	5-B
59	1.94	6.40	12.40	4-B	120	0.95	10.50	10.00	3-C
60	1.90	5.80	11.00	4-B	121	0.94	9.00	8.50	3-5V
60	1.89	5.60	10.60	5-3V	121	0.94	9.00	8.50	3-C
62	1.83	6.00	11.00	4-B	122	0.93	6.00	5.60	6-3V
63	1.79	10.60	19.00	3-3V	122	0.93	6.00	5.60	6-B
63	1.79	4.80	8.60	5-B	124	0.92	6.50	6.00	6-3V
65	1.75	8.00	14.00	3-3V	124	0.92	13.00	12.00	3-C
65	1.74	5.40	9.40	5-B	124	0.92	9.25	8.50	3-5V
66	1.72	6.40	11.00	4-B	125	0.91	9.40	8.60	4-B

TXT 525 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
10	6.79	2.80	19.00	3-3V	48	1.43	6.00	8.60	3-B
11	6.33	3.00	19.00	3-3V	49	1.39	6.20	8.60	3-B
11	6.00	3.00	18.00	3-A	50	1.38	5.00	6.90	4-3V
12	5.67	3.35	19.00	3-3V	50	1.38	4.80	6.60	4-B
12	5.63	3.20	18.00	4-A	50	1.37	4.75	6.50	5-3V
13	5.29	3.40	18.00	4-A	51	1.33	4.50	6.00	5-3V
13	5.21	3.65	19.00	3-3V	51	1.33	4.80	6.40	4-B
14	5.00	3.00	15.00	4-A	52	1.32	5.00	6.60	4-B
15	4.69	3.20	15.00	4-A	53	1.30	5.30	6.90	4-3V
15	4.67	3.00	14.00	4-3V	53	1.30	5.00	6.50	4-3V
15	4.44	3.15	14.00	4-3V	53	1.29	4.80	6.20	4-B
16	4.41	3.40	15.00	4-A	54	1.26	4.75	6.00	5-3V
16	4.18	3.35	14.00	3-3V	54	1.26	6.80	8.60	3-B
17	4.00	4.75	19.00	2-3V	55	1.25	4.80	6.00	4-B
17	3.95	3.80	15.00	3-A	56	1.23	5.60	6.90	4-3V
19	3.53	3.00	10.60	4-3V	57	1.21	4.80	5.80	4-B
19	3.53	3.00	10.60	4-A	57	1.20	5.00	6.00	4-3V
20	3.37	3.15	10.60	5-3V	58	1.19	5.40	6.40	4-B
20	3.35	4.60	15.40	3-B	59	1.16	7.40	8.60	3-B
21	3.33	3.60	12.00	4-A	60	1.15	6.00	6.90	4-3V
22	3.16	3.35	10.60	4-3V	60	1.14	5.60	6.40	4-B
22	3.16	3.80	12.00	4-A	61	1.13	5.30	6.00	5-3V
22	3.11	4.50	14.00	3-3V	61	1.13	7.10	8.00	3-5V
23	2.94	3.60	10.60	4-A	61	1.13	4.80	5.40	5-B
24	2.90	3.65	10.60	4-3V	62	1.11	5.60	6.20	4-B
24	2.88	6.40	18.40	2-B	63	1.09	8.60	9.40	3-B
24	2.80	5.00	14.00	3-3V	63	1.08	6.00	6.50	4-3V
25	2.70	4.60	12.40	3-B	64	1.07	5.80	6.20	4-B
26	2.67	3.00	8.00	5-3V	65	1.06	6.50	6.90	4-3V
26	2.65	4.00	10.60	4-A	65	1.06	7.10	7.50	3-5V
27	2.57	4.12	10.60	3-3V	65	1.06	8.50	9.00	3-C
27	2.50	5.60	14.00	3-3V	66	1.03	5.80	6.00	4-B
27	2.50	4.80	12.00	4-A	68	1.00	6.50	6.50	4-3V
28	2.48	5.00	12.40	3-B	68	1.00	5.80	5.80	4-B
29	2.38	5.20	12.40	3-B	71	0.97	6.00	5.80	4-B
29	2.36	4.50	10.60	4-3V	72	0.95	7.50	7.10	3-5V
31	2.20	5.00	11.00	3-B	73	0.94	9.00	8.50	3-C
32	2.12	5.00	10.60	3-3V	74	0.93	5.80	5.40	5-B
32	2.12	5.20	11.00	3-B	74	0.92	6.50	6.00	4-3V
33	2.07	5.80	12.00	3-A	75	0.91	6.60	6.00	4-B
34	2.04	5.40	11.00	3-B	76	0.90	6.00	5.40	4-B
34	2.00	5.30	10.60	3-3V	77	0.89	8.00	7.10	3-5V
35	1.96	4.80	9.40	3-B	77	0.89	7.40	6.60	4-B
35	1.94	4.12	8.00	4-3V	78	0.88	6.40	5.60	5-B
36	1.89	5.60	10.60	3-3V	79	0.87	8.60	7.50	3-5V
36	1.88	5.00	9.40	3-B	80	0.86	8.00	6.90	4-3V
37	1.83	5.80	10.60	3-A	80	0.86	7.40	6.40	4-B
38	1.79	4.80	8.60	3-B	81	0.85	11.00	9.40	3-B
38	1.78	4.50	8.00	4-3V					
39	1.75	8.00	14.00	2-3V					
39	1.74	5.40	9.40	3-B					
40	1.72	5.00	8.60	3-B					
41	1.68	4.75	8.00	4-3V					
41	1.68	7.40	12.40	2-B					
41	1.67	4.12	6.90	4-3V					
42	1.63	6.50	10.60	3-3V					
42	1.62	6.80	11.00	3-B					
44	1.57	6.00	9.40	3-B					
45	1.53	4.50	6.90	5-3V					
45	1.52	6.20	9.40	3-B					
45	1.51	5.30	8.00	4-3V					
46	1.48	5.00	7.40	4-B					
47	1.47	6.40	9.40	3-B					
48	1.44	4.50	6.50	5-3V					
48	1.43	5.60	8.00	4-3V					

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Shaft Mounted Speed Reducer

Belt Drives for 1750 rpm motors

TXT 615 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
10	11.17	3.00	33.50	4-3V	67	1.71	7.00	12.00	6-A
11	10.63	3.15	33.50	4-3V	68	1.67	7.50	12.50	3-5V
12	9.18	3.65	33.50	4-3V	68	1.67	6.60	11.00	5-B
14	8.33	3.00	25.00	5-3V	69	1.66	6.40	10.60	8-A
15	7.60	5.00	38.00	3-B	69	1.65	8.00	13.20	3-5V
15	7.46	3.35	25.00	4-3V	70	1.62	6.80	11.00	5-B
16	7.31	5.20	38.00	3-B	72	1.59	5.40	8.60	6-B
17	6.79	5.60	38.00	3-B	73	1.57	7.50	11.80	3-5V
18	6.25	4.80	30.00	4-B	73	1.57	6.00	9.40	5-B
20	5.77	5.20	30.00	3-B	73	1.56	8.00	12.50	3-5V
21	5.56	4.50	25.00	4-3V	74	1.54	6.90	10.60	5-3V
21	5.43	4.60	25.00	4-B	74	1.54	5.60	8.60	6-B
22	5.21	4.80	25.00	4-B	75	1.52	6.20	9.40	5-B
23	5.00	5.00	25.00	3-3V	76	1.51	5.30	8.00	8-3V
23	5.00	5.00	25.00	3-B	76	1.50	12.00	18.00	4-A
24	4.74	3.80	18.00	5-A	77	1.49	7.40	11.00	4-B
24	4.72	5.30	25.00	3-3V	77	1.48	8.00	11.80	3-5V
25	4.63	5.40	25.00	4-B	79	1.44	9.75	14.00	3-5V
26	4.46	5.60	25.00	4-3V	79	1.44	8.60	12.40	4-B
26	4.35	4.60	20.00	5-B	80	1.43	5.60	8.00	6-3V
27	4.22	4.50	19.00	5-3V	80	1.43	6.00	8.60	5-B
27	4.17	4.80	20.00	5-B	80	1.42	10.60	15.00	6-A
29	4.00	4.60	18.40	5-B	81	1.40	11.00	15.40	4-B
30	3.80	5.00	19.00	4-3V	82	1.39	8.50	11.80	3-5V
30	3.75	4.80	18.00	5-A	83	1.38	6.80	9.40	6-B
31	3.68	5.00	18.40	4-B	83	1.37	7.10	9.75	4-5V
32	3.62	6.90	25.00	3-3V	85	1.34	6.40	8.60	6-B
32	3.58	5.30	19.00	4-3V	86	1.33	6.00	8.00	8-3V
32	3.54	5.20	18.40	4-B	86	1.33	8.00	10.60	5-3V
33	3.41	5.40	18.40	4-B	86	1.33	9.00	12.00	6-A
34	3.39	5.60	19.00	4-3V	86	1.32	9.40	12.40	5-B
34	3.35	4.60	15.40	5-B	87	1.31	9.00	11.80	3-5V
35	3.29	5.60	18.40	4-B	88	1.30	7.50	9.75	4-5V
37	3.07	6.00	18.40	4-B	88	1.30	10.00	13.00	3-C
38	2.97	6.20	18.40	4-B	89	1.28	9.25	11.80	3-5V
39	2.96	5.20	15.40	5-B	89	1.28	8.60	11.00	5-B
39	2.95	4.75	14.00	6-3V	91	1.25	12.00	15.00	5-A
39	2.92	6.50	19.00	4-3V	92	1.24	12.40	15.40	4-B
40	2.88	6.40	18.40	4-B	93	1.23	7.50	9.25	4-5V
41	2.80	5.00	14.00	5-3V	93	1.23	6.50	8.00	8-3V
41	2.79	6.60	18.40	4-B	93	1.23	6.00	7.40	8-B
41	2.75	6.90	19.00	4-3V	94	1.21	9.00	10.90	3-5V
42	2.71	6.80	18.40	4-B	94	1.21	7.00	8.50	5-C
44	2.57	6.00	15.40	4-B	95	1.20	7.10	8.50	4-5V
45	2.53	9.50	24.00	3-C	95	1.20	10.00	12.00	3-C
46	2.50	5.60	14.00	5-3V	96	1.19	11.80	14.00	3-5V
46	2.49	7.40	18.40	4-B	96	1.19	8.00	9.50	4-C
47	2.41	6.40	15.40	5-B	98	1.16	6.90	8.00	6-3V
48	2.38	8.00	19.00	4-3V	98	1.16	7.40	8.60	5-B
48	2.38	5.20	12.40	6-B	98	1.16	6.40	7.40	6-B
49	2.33	6.00	14.00	5-3V	99	1.15	6.00	6.90	8-3V
49	2.33	6.60	15.40	4-B	100	1.14	9.00	10.30	3-5V
51	2.25	8.00	18.00	3-C	100	1.14	10.50	12.00	3-C
51	2.23	4.75	10.60	8-3V	101	1.13	7.10	8.00	4-5V
52	2.21	5.60	12.40	5-B	101	1.13	11.00	12.40	4-B
53	2.15	6.50	14.00	5-3V	103	1.11	9.00	10.00	4-C
53	2.14	5.80	12.40	5-B	105	1.09	8.60	9.40	5-B
54	2.12	5.00	10.60	6-3V	105	1.09	11.00	12.00	4-C
54	2.12	5.20	11.00	6-B	106	1.08	10.90	11.80	3-5V
55	2.07	6.00	12.40	5-B	106	1.08	13.00	14.00	3-C
56	2.04	5.40	11.00	5-B	107	1.07	14.00	15.00	3-5V
56	2.03	6.90	14.00	4-3V	107	1.07	7.50	8.00	5-C
58	1.96	5.60	11.00	6-B	108	1.06	8.00	8.50	4-5V
59	1.94	10.90	21.20	3-5V	109	1.05	10.00	10.50	4-C
59	1.94	6.40	12.40	5-B	111	1.03	9.00	9.25	4-5V
60	1.89	5.60	10.60	6-3V	114	1.00	10.60	10.60	5-3V
60	1.89	9.50	18.00	3-C	114	1.00	9.40	9.40	5-B
61	1.88	6.60	12.40	5-B	118	0.97	9.25	9.00	4-5V
61	1.87	7.50	14.00	3-5V	121	0.94	10.90	10.30	3-5V
62	1.83	6.00	11.00	6-B	121	0.94	6.80	6.40	8-B
63	1.82	6.80	12.40	5-B	121	0.94	8.00	7.50	5-5V
64	1.77	6.00	10.60	6-3V	121	0.94	8.00	7.50	5-C
64	1.77	6.20	11.00	5-B	123	0.93	14.00	13.00	3-C
66	1.73	9.25	16.00	3-5V	124	0.92	11.80	10.90	3-5V
66	1.72	6.40	11.00	5-B	124	0.92	7.40	6.80	8-B

TXT 625 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
10	6.85	3.65	25.00	3-3V	57	1.23	5.30	6.50	6-3V
11	6.52	4.60	30.00	3-B	57	1.22	5.40	6.60	5-V
12	6.03	3.15	19.00	3-3V	58	1.20	7.50	9.00	3-5V
12	5.67	3.35	19.00	4-3V	58	1.19	6.20	7.40	5-B
12	5.63	3.20	18.00	5-A	60	1.16	5.60	6.50	6-3V
14	5.00	5.00	25.00	3-3V	60	1.16	7.40	8.60	4-B
14	5.00	3.60	18.00	5-A	61	1.14	5.60	6.40	6-B
15	4.74	3.80	18.00	4-A	62	1.13	7.50	8.50	3-5V
15	4.61	4.12	19.00	3-3V	62	1.13	8.00	9.00	3-5V
16	4.29	4.20	18.00	4-A	62	1.13	11.00	12.40	3-B
17	4.18	3.35	14.00	4-3V	63	1.10	6.20	6.80	5-B
17	4.09	4.40	18.00	4-A	64	1.09	8.60	9.40	4-B
17	4.00	4.75	19.00	3-3V	64	1.08	6.00	6.50	6-3V
18	3.91	4.60	18.00	4-A	65	1.07	7.50	8.00	3-5V
18	3.80	5.00	19.00	3-3V	66	1.06	6.20	6.60	5-B
19	3.68	5.00	18.40	3-B	66	1.06	6.50	6.90	5-3V
19	3.58	5.30	19.00	3-3V	68	1.03	6.20	6.40	5-B
21	3.26	4.60	15.00	4-A	68	1.03	9.00	9.25	3-5V
22	3.13	4.80	15.00	4-A	68	1.03	6.40	6.60	5-B
22	3.11	4.50	14.00	4-3V	70	1.00	6.00	6.00	6-3V
23	3.08	5.00	15.40	3-B	70	1.00	11.00	11.00	3-B
24	2.96	5.20	15.40	3-B	72	0.97	9.25	9.00	3-5V
24	2.95	4.75	14.00	4-3V	72	0.97	6.40	6.20	5-B
24	2.92	6.50	19.00	3-3V	73	0.95	9.75	9.25	3-5V
25	2.80	5.00	14.00	3-3V	73	0.95	10.00	9.50	3-C
25	2.75	5.60	15.40	3-B	74	0.94	6.90	6.50	5-3V
26	2.66	5.80	15.40	4-B	74	0.94	6.40	6.00	5-B
26	2.64	5.30	14.00	4-3V	76	0.92	6.50	6.00	6-3V
27	2.58	4.80	12.40	4-B	76	0.92	9.25	8.50	3-5V
28	2.50	5.60	14.00	4-3V	76	0.91	6.80	6.20	5-B
28	2.48	6.20	15.40	3-B	76	0.91	6.60	6.00	5-B
30	2.33	6.00	14.00	4-3V	78	0.89	9.00	8.00	3-5V
30	2.29	4.80	11.00	4-B	78	0.89	7.40	6.60	5-B
31	2.26	6.80	15.40	3-B	78	0.89	8.00	7.10	3-5V
31	2.23	4.75	10.60	5-3V	79	0.88	6.80	6.00	5-B
32	2.20	5.00	11.00	4-B	79	0.88	8.00	7.00	4-C
32	2.15	6.50	14.00	3-3V	80	0.87	6.90	6.00	5-3V
33	2.12	5.00	10.60	4-3V					
33	2.12	5.20	11.00	4-B					
34	2.04	5.40	11.00	4-B					
34	2.03	6.90	14.00	3-3V					
36	1.96	4.80	9.40	5-B					
37	1.90	5.80	11.00	4-B					
37	1.89	5.60	10.60	5-3V					
38	1.83	6.00	11.00	4-B					
39	1.77	6.00	10.60	4-3V					
39	1.77	6.20	11.00	4-B					
40	1.75	8.00	14.00	3-3V					
40	1.72	5.00	8.60	5-B					
41	1.68	7.40	12.40	3-B					
42	1.66	7.10	11.80	3-5V					
43	1.62	5.80	9.40	4-B					
44	1.60	5.00	8.00	5-3V					
44	1.57	7.50	11.80	3-5V					
44	1.57	6.00	9.40	4-B					
45	1.54	6.90	10.60	4-3V					
45	1.54	5.60	8.60	4-B					
46	1.52	6.20	9.40	5-B					
46	1.51	5.30	8.00	6-3V					
48	1.45	4.75	6.90	8-3V					
48	1.44	8.60							

Shaft Mounted Speed Reducer

Belt Drives for 1750 rpm motors

TXT 715 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
10	11.17	3.00	33.50	5-3V	63	1.82	6.80	12.40	6-B
10	11.17	3.00	33.50	5-3V	65	1.78	9.00	16.00	4-C
14	8.26	4.60	38.00	4-B	66	1.75	8.00	14.00	6-3V
14	8.13	4.12	33.50	4-3V	67	1.71	7.00	12.00	6-C
16	7.31	5.20	38.00	3-B	68	1.70	12.50	21.20	3-5V
17	6.79	5.60	38.00	4-3V	68	1.68	9.50	16.00	4-C
17	6.79	5.60	38.00	4-B	69	1.67	11.00	18.40	5-B
18	6.32	5.30	33.50	4-3V	70	1.65	8.00	13.20	4-5V
18	6.25	4.80	30.00	5-B	70	1.64	9.75	16.00	3-5V
20	5.77	5.20	30.00	4-B	70	1.64	9.40	15.40	5-B
21	5.56	4.50	25.00	5-3V	72	1.60	7.50	12.00	5-C
21	5.43	4.60	25.00	5-B	73	1.57	7.00	11.00	6-C
22	5.26	4.75	25.00	5-3V	74	1.56	8.00	12.50	4-5V
22	5.17	5.80	30.00	5-B	75	1.54	6.90	10.60	8-3V
23	5.00	5.00	25.00	5-3V	75	1.54	13.00	20.00	3-C
23	5.00	5.00	25.00	5-B	76	1.51	9.25	14.00	4-5V
25	4.63	5.40	25.00	5-B	77	1.49	7.40	11.00	6-B
26	4.46	5.60	25.00	5-3V	78	1.48	8.00	11.80	4-5V
26	4.46	5.60	25.00	5-B	78	1.47	7.50	11.00	5-C
27	4.31	5.80	25.00	5-B	79	1.46	10.30	15.00	3-5V
28	4.17	6.00	25.00	4-3V	79	1.45	11.00	16.00	4-C
29	4.00	5.00	20.00	5-B	80	1.44	8.60	12.40	6-B
29	3.94	7.10	28.00	3-5V	80	1.43	9.25	13.20	4-5V
30	3.85	5.20	20.00	6-B	81	1.41	8.50	12.00	5-C
30	3.80	5.00	19.00	6-3V	82	1.40	11.00	15.40	5-B
31	3.68	5.00	18.40	6-B	83	1.39	8.50	11.80	4-5V
33	3.50	8.00	28.00	3-5V	84	1.37	9.50	13.00	5-C
33	3.45	5.80	20.00	5-B	84	1.36	8.00	10.90	5-5V
34	3.41	5.40	18.40	8-B	84	1.36	11.80	16.00	3-5V
34	3.39	5.60	19.00	6-3V	86	1.33	7.50	10.00	6-C
35	3.29	8.50	28.00	3-5V	88	1.31	8.00	10.50	5-C
35	3.29	5.60	18.40	6-B	88	1.30	7.50	9.75	5-5V
36	3.19	9.40	30.00	4-B	89	1.29	8.50	11.00	5-C
36	3.17	6.00	19.00	6-3V	90	1.28	9.75	12.50	4-5V
38	3.03	6.60	20.00	5-B	90	1.27	7.50	9.50	6-C
38	2.99	7.10	21.20	4-5V	93	1.24	12.40	15.40	5-B
39	2.94	6.80	20.00	5-B	93	1.24	8.50	10.50	5-C
39	2.92	6.50	19.00	5-3V	93	1.23	7.50	9.25	5-5V
41	2.79	6.60	18.40	5-B	94	1.22	8.00	9.75	5-5V
42	2.75	6.90	19.00	5-3V	94	1.22	9.00	11.00	5-C
42	2.71	6.80	18.40	5-B	95	1.21	9.00	10.90	4-5V
43	2.70	7.40	20.00	5-B	96	1.20	7.50	9.00	5-5V
44	2.64	5.30	14.00	8-3V	96	1.20	10.00	12.00	4-C
46	2.50	5.60	14.00	6-3V	97	1.18	9.25	10.90	4-5V
46	2.48	6.20	15.40	5-B	97	1.18	11.00	13.00	4-C
47	2.42	12.40	30.00	3-B	98	1.17	9.40	11.00	6-B
48	2.41	6.40	15.40	5-B	101	1.14	9.00	10.30	4-5V
48	2.38	8.00	19.00	4-3V	101	1.14	10.50	12.00	4-C
50	2.29	9.25	21.20	3-5V	102	1.13	7.50	8.50	5-5V
50	2.29	10.50	24.00	3-C	102	1.13	11.00	12.40	5-B
51	2.26	6.80	15.40	6-B	103	1.12	12.50	14.00	3-5V
51	2.25	7.10	16.00	4-5V	103	1.12	11.80	13.20	3-5V
52	2.20	8.20	18.00	8-A	103	1.12	8.50	9.50	5-C
53	2.18	11.00	24.00	3-C	104	1.11	9.50	10.50	5-C
53	2.15	6.50	14.00	8-3V	105	1.09	11.00	12.00	5-C
55	2.08	7.40	15.40	6-B	106	1.08	13.00	14.00	4-C
56	2.07	6.00	12.40	8-B	107	1.07	14.00	15.00	3-5V
57	2.03	6.90	14.00	6-3V	108	1.06	10.30	10.90	4-5V
58	1.97	7.10	14.00	4-5V	109	1.05	9.25	9.75	5-5V
59	1.94	10.90	21.20	3-5V	109	1.05	10.00	10.50	5-C
59	1.94	6.40	12.40	6-B	109	1.05	10.50	11.00	5-C
60	1.90	10.50	20.00	3-C	112	1.03	9.00	9.25	5-5V
61	1.88	8.50	16.00	3-5V	115	1.00	10.30	10.30	4-5V
61	1.88	8.50	16.00	4-C	115	1.00	11.00	11.00	6-B
62	1.86	7.00	13.00	5-C	118	0.97	9.25	9.00	5-5V

TXT 725 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
10	7.31	5.20	38.00	3-B	49	1.45	7.50	10.90	3-5V
10	6.85	3.65	25.00	4-3V	49	1.44	8.60	12.40	4-B
11	6.52	4.60	30.00	4-B	49	1.43	9.25	13.20	3-5V
12	6.07	4.12	25.00	4-3V	49	1.43	6.00	8.60	8-B
12	6.00	5.00	30.00	3-B	50	1.40	11.00	15.40	4-B
13	5.43	4.60	25.00	4-B	51	1.39	8.50	11.80	3-5V
13	5.26	4.75	25.00	3-3V	51	1.37	7.10	9.75	4-5V
14	5.00	5.00	25.00	3-3V	52	1.36	7.00	9.50	5-C
14	5.00	5.00	25.00	3-B	53	1.34	6.40	8.60	6-B
15	4.74	3.80	18.00	5-A	53	1.33	6.00	8.00	8-3V
15	4.61	4.12	19.00	4-3V	53	1.33	8.00	10.60	5-3V
16	4.50	4.00	18.00	5-A	53	1.32	9.40	12.40	5-B
16	4.46	5.60	25.00	3-3V	55	1.28	9.25	11.80	3-5V
17	4.22	4.50	19.00	5-3V	55	1.27	7.40	9.40	5-B
17	4.17	4.80	20.00	5-B	57	1.24	12.40	15.40	4-B
18	4.00	4.75	19.00	4-3V	57	1.23	6.50	8.00	8-3V
18	4.00	4.60	18.40	5-B	57	1.23	6.00	7.40	8-B
20	3.58	5.30	19.00	4-3V	58	1.21	9.00	10.90	3-5V
20	3.54	5.20	18.40	4-B	59	1.20	10.00	12.00	3-C
21	3.41	5.40	18.40	4-B	60	1.18	9.25	10.90	3-5V
21	3.39	5.60	19.00	4-3V	60	1.18	9.00	10.60	6-A
21	3.29	5.60	18.40	4-B	61	1.16	6.90	8.00	6-3V
22	3.17	6.00	19.00	4-3V	61	1.16	7.40	8.60	5-B
23	3.13	8.00	25.00	3-3V	61	1.16	6.40	7.40	6-B
23	3.07	6.00	18.40	4-B	61	1.15	6.00	6.90	8-3V
24	2.97	6.20	18.40	4-B	62	1.13	7.10	8.00	4-5V
24	2.92	6.50	19.00	4-3V	62	1.13	11.00	12.40	4-B
24	2.88	6.40	18.40	4-B	63	1.12	8.50	9.50	4-C
25	2.80	5.00	14.00	5-3V	63	1.11	9.25	10.30	3-5V
25	2.79	6.60	18.40	4-B	65	1.09	8.50	9.25	4-5V
26	2.75	6.90	19.00	4-3V	65	1.09	8.60	9.40	6-B
26	2.66	5.80	15.40	4-B	66	1.07	7.50	8.00	5-C
27	2.64	5.30	14.00	5-3V	66	1.06	10.30	10.90	3-5V
30	2.33	6.00	14.00	5-3V	67	1.05	9.50	10.00	4-C
30	2.33	6.60	15.40	4-B	68	1.03	9.00	9.25	4-5V
31	2.26	6.80	15.40	4-B	70	1.00	10.60	10.60	5-3V
31	2.25	7.10	16.00	3-5V	70	1.00	9.40	9.40	5-B
32	2.23	4.75	10.60	8-3V	73	0.97	9.25	9.00	4-5V
32	2.21	5.60	12.40	5-B	74	0.95	9.50	9.00	4-C
33	2.14	5.80	12.40	5-B	75	0.94	10.90	10.30	3-5V
33	2.12	5.00	10.60	6-3V	75	0.94	8.50	8.00	4-5V
34	2.07	6.00	12.40	5-B					
35	2.03	6.90	14.00	4-3V					
35	2.04	5.40	11.00	5-B					
35	2.00	6.20	12.40	5-B					
36	1.97	7.10	14.00	3-5V					
37	1.88	6.60	12.40	5-B					
38	1.87	7.50	14.00	3-5V					
39	1.82	6.80	12.40	5-B					
40	1.77	6.00	10.60	6-3V					
40	1.77	6.20	11.00	5-B					
40	1.75	8.00	14.00	4-3V					
41	1.72	6.40	11.00	5-B					
42	1.68	7.40	12.40	5-B					
42	1.67	7.50	12.50	3-5V					
42	1.67	6.60	11.00	5-B					
43	1.65	8.00	13.20	3-5V					
43	1.63	6.50	10.60	5-3V					
43	1.62	6.80	11.00	5-B					
45	1.57	7.50	11.80	3-5V					
45	1.57	6.00	9.40	5-B					
46	1.52	6.20	9.40	5-B					
47	1.51	5.30	8.00	8-3V					
47	1.49	7.40	11.00	4-B					
48	1.48	8.00	11.80	3-5V					

All dimensions in inches unless otherwise stated.

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Shaft Mounted Speed Reducer

Belt Drives for 1750 rpm motors

TXT 815 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
14	8.26	4.60	38.00	5-B	62	1.88	8.50	16.00	4-5V
15	7.60	5.00	38.00	4-B	63	1.85	13.00	24.00	4-C
16	7.44	4.50	33.50	4-3V	64	1.80	11.80	21.20	3-5V
16	7.31	5.20	38.00	4-B	64	1.80	10.00	18.00	4-C
16	7.05	4.75	33.50	4-3V	65	1.79	10.60	19.00	6-3V
18	6.33	6.00	38.00	4-B	65	1.79	8.60	15.40	8-B
18	6.32	5.30	33.50	5-3V	66	1.75	8.00	14.00	8-3V
19	6.00	5.00	30.00	5-B	66	1.75	8.00	14.00	6-C
19	5.98	5.60	33.50	4-3V	68	1.71	10.50	18.00	5-C
20	5.77	5.20	30.00	5-B	68	1.70	12.50	21.20	4-5V
21	5.58	6.00	33.50	5-3V	69	1.67	9.00	15.00	5-5V
21	5.56	5.40	30.00	6-B	69	1.67	11.00	18.40	6-B
22	5.26	4.75	25.00	6-3V	69	1.67	12.00	20.00	4-C
22	5.17	5.80	30.00	5-B	71	1.64	9.75	16.00	4-5V
24	4.81	5.20	25.00	6-B	71	1.64	9.40	15.40	8-B
25	4.72	5.30	25.00	6-3V	72	1.62	9.25	15.00	5-5V
25	4.63	5.40	25.00	6-B	73	1.60	10.00	16.00	5-C
26	4.46	5.60	25.00	6-3V	75	1.55	10.30	16.00	4-5V
26	4.46	5.60	25.00	6-B	75	1.54	9.75	15.00	5-5V
27	4.29	7.00	30.00	4-C	75	1.54	13.00	20.00	4-C
29	4.05	7.40	30.00	5-B	76	1.52	10.50	16.00	5-C
29	3.94	7.10	28.00	3-5V	77	1.51	9.25	14.00	5-5V
30	3.91	6.40	25.00	5-B	77	1.50	12.00	18.00	4-C
30	3.85	6.50	25.00	5-3V	78	1.48	12.40	18.40	6-B
31	3.79	6.60	25.00	5-B	80	1.45	11.00	16.00	5-C
31	3.73	7.50	28.00	3-5V	81	1.44	9.75	14.00	4-5V
32	3.58	5.30	19.00	8-3V	81	1.43	14.00	20.00	4-C
33	3.57	5.60	20.00	6-B	83	1.40	11.00	15.40	6-B
34	3.38	7.40	25.00	6-B	83	1.39	9.00	12.50	5-5V
35	3.33	6.00	20.00	8-B	84	1.38	10.90	15.00	4-5V
35	3.29	8.50	28.00	3-5V	84	1.38	13.00	18.00	4-C
36	3.19	9.40	30.00	5-B	86	1.35	9.25	12.50	5-5V
37	3.17	6.00	19.00	8-3V	87	1.33	12.00	16.00	4-C
37	3.13	8.00	25.00	5-3V	88	1.32	10.60	14.00	8-3V
37	3.13	6.40	20.00	8-B	88	1.32	9.40	12.40	8-B
38	3.07	6.00	18.40	8-B	89	1.30	10.00	13.00	5-C
39	2.99	7.10	21.20	4-5V	90	1.29	14.00	18.00	4-C
40	2.88	6.40	18.40	8-B	91	1.28	10.30	13.20	4-5V
40	2.87	9.75	28.00	3-5V	92	1.26	9.50	12.00	5-C
41	2.86	7.00	20.00	5-C	94	1.24	12.40	15.40	6-B
41	2.83	7.50	21.20	4-5V	94	1.24	10.50	13.00	5-C
42	2.75	6.90	19.00	6-3V	96	1.21	10.30	12.50	5-5V
43	2.70	7.40	20.00	8-B	96	1.21	9.00	10.90	6-5V
43	2.67	7.50	20.00	5-C	96	1.21	12.00	14.50	5-D
44	2.65	8.00	21.20	4-5V	97	1.20	12.50	15.00	4-5V
46	2.50	8.00	20.00	5-C	98	1.19	13.00	15.50	5-D
47	2.49	8.50	21.20	4-5V	99	1.17	12.00	14.00	5-C
47	2.49	7.40	18.40	8-B	101	1.15	10.30	11.80	5-5V
48	2.40	7.50	18.00	5-C	101	1.15	13.00	15.00	5-D
49	2.38	8.00	19.00	6-3V	102	1.14	13.20	15.00	4-5V
49	2.35	8.50	20.00	5-C	102	1.14	10.50	12.00	6-C
51	2.27	11.00	25.00	5-B	103	1.13	11.00	12.40	10-B
52	2.25	7.10	16.00	5-5V	106	1.09	11.00	12.00	6-C
52	2.24	12.50	28.00	3-5V	107	1.08	10.90	11.80	5-5V
52	2.22	9.00	20.00	4-C	107	1.08	12.00	13.00	6-C
53	2.18	11.00	24.00	4-C	107	1.08	13.00	14.00	5-C
53	2.17	9.75	21.20	4-5V	108	1.07	14.00	15.00	4-5V
54	2.14	8.60	18.40	8-B	109	1.06	13.20	14.00	4-5V
54	2.13	7.50	16.00	5-5V	109	1.06	12.50	13.20	4-5V
54	2.13	9.40	20.00	6-B	111	1.05	10.50	11.00	6-C
57	2.02	12.40	25.00	5-B	112	1.04	13.00	13.50	5-D
58	2.00	7.50	15.00	5-5V	113	1.03	9.00	9.25	6-5V
59	1.96	9.40	18.40	6-B	116	1.00	14.00	14.00	8-3V
60	1.94	10.90	21.20	4-5V	116	1.00	10.50	10.50	6-C
61	1.90	10.50	20.00	4-C	120	0.97	9.25	9.00	6-5V

TXT 825 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
10	7.31	5.20	38.00	3-B	48	1.49	7.40	11.00	6-B
11	6.52	4.60	30.00	4-B	48	1.48	8.00	11.80	4-5V
12	6.07	4.12	25.00	4-3V	49	1.44	9.75	14.00	3-5V
12	6.00	5.00	30.00	3-B	49	1.44	8.60	12.40	6-B
13	5.43	4.60	25.00	5-B	50	1.43	9.25	13.20	4-5V
14	5.26	4.75	25.00	4-3V	50	1.41	8.50	12.00	4-C
14	5.00	5.00	25.00	4-3V	51	1.40	11.00	15.40	5-B
14	5.00	5.00	25.00	4-B	51	1.39	8.50	11.80	4-5V
16	4.46	5.60	25.00	4-3V	52	1.36	8.00	10.90	4-5V
16	4.35	4.60	20.00	5-B	52	1.36	7.00	9.50	6-C
17	4.17	6.00	25.00	4-3V	53	1.33	7.50	10.00	6-C
17	4.17	6.00	25.00	4-B	53	1.33	8.00	10.60	8-3V
18	4.00	4.75	19.00	5-3V	54	1.32	9.40	12.40	6-B
18	4.00	5.00	20.00	5-B	55	1.30	10.00	13.00	4-C
19	3.80	5.00	19.00	4-3V	56	1.28	12.50	16.00	3-5V
19	3.68	5.00	18.40	5-B	56	1.28	9.25	11.80	4-5V
20	3.58	5.30	19.00	5-3V	56	1.28	8.60	11.00	6-B
20	3.54	5.20	18.40	5-B	57	1.24	12.40	15.40	5-B
21	3.41	5.40	18.40	6-B	57	1.24	8.50	10.50	5-C
21	3.39	5.60	19.00	5-3V	58	1.23	7.50	9.25	5-5V
22	3.29	5.60	18.40	5-B	58	1.22	8.00	9.75	5-5V
22	3.17	6.00	19.00	5-3V	59	1.21	9.00	10.90	4-5V
23	3.13	8.00	25.00	4-3V	59	1.20	10.00	12.00	4-C
23	3.07	6.00	18.40	5-B	60	1.18	9.25	10.90	4-5V
24	2.97	6.20	18.40	5-B	60	1.18	8.50	10.00	5-C
24	2.92	6.50	19.00	5-3V	62	1.14	9.00	10.30	4-5V
25	2.88	6.40	18.40	5-B	62	1.14	10.50	12.00	4-C
25	2.80	5.00	14.00	6-3V	63	1.13	11.00	12.40	5-B
26	2.75	6.90	19.00	5-3V	63	1.12	11.80	13.20	3-5V
26	2.71	6.80	18.40	5-B	63	1.12	8.50	9.50	5-C
27	2.66	9.40	25.00	4-B	64	1.11	9.25	10.30	4-5V
27	2.64	5.30	14.00	8-3V	65	1.09	8.50	9.25	5-5V
28	2.57	6.00	15.40	6-B	65	1.09	8.60	9.40	8-B
28	2.50	5.60	14.00	6-3V	66	1.08	9.00	9.75	4-5V
29	2.48	6.20	15.40	5-B	66	1.08	12.00	13.00	4-C
29	2.41	6.40	15.40	5-B	67	1.06	11.80	12.50	3-5V
30	2.38	8.00	19.00	4-3V	67	1.06	8.50	9.00	5-C
32	2.21	5.60	12.40	6-B	68	1.05	10.00	10.50	5-C
33	2.15	6.50	14.00	5-3V	69	1.03	9.00	9.25	5-5V
33	2.14	8.60	18.40	4-B	71	1.00	10.30	10.30	4-5V
34	2.08	7.40	15.40	6-B	71	1.00	11.00	11.00	6-B
35	2.06	10.30	21.20	3-5V	73	0.97	9.25	9.00	5-5V
35	2.03	6.90	14.00	6-3V	75	0.95	11.00	10.50	5-C
35	2.02	12.40	25.00	4-B	75	0.95	10.00	9.50	5-C
36	1.97	7.10	14.00	4-5V	76	0.94	10.90	10.30	4-5V
36	1.96	9.40	18.40	5-B					
37	1.94	6.40	12.40	5-B					
38	1.88	8.50	16.00	3-5V					
38	1.86	7.00	13.00	5-C					
39	1.82	6.80	12.40	6-B					
39	1.80	11.80	21.20	3-5V					
40	1.79	8.60	15.40	5-B					
40	1.77	6.00	10.60	8-3V					
41	1.75	8.00	14.00	5-3V					
41	1.72	6.40	11.00	6-B					
43	1.67	9.00	15.00	3-5V					
43	1.67	11.00	18.40	4-B					
43	1.64	9.75	16.00	3-5V					
43	1.64	9.40	15.40	5-B					
44	1.62	9.25	15.00	4-5V					
44	1.60	7.50	12.00	5-C					
45	1.57	7.00	11.00	6-C					
46	1.56	8.00	12.50	4-5V					
47	1.51	9.25	14.00	4-5V					
47	1.50	12.00	18.00	6-A					

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All dimensions in inches unless otherwise stated.

Shaft Mounted Speed Reducer

Belt Drives for 1750 rpm motors

TXT 915 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
16	7.04	5.40	38.00	8-B	65	1.78	9.00	16.00	6-5V
17	6.79	5.60	38.00	6-B	67	1.73	9.25	16.00	6-5V
18	6.33	6.00	38.00	6-B	68	1.71	10.50	18.00	6-C
18	6.32	5.30	33.50	6-3V	68	1.70	12.50	21.20	4-5V
19	5.98	5.60	33.50	6-3V	69	1.67	9.00	15.00	6-5V
19	5.94	6.40	38.00	5-B	69	1.67	12.00	20.00	5-C
20	5.76	6.60	38.00	5-B	71	1.64	9.75	16.00	5-5V
21	5.59	6.80	38.00	6-B	71	1.64	11.00	15.00	6-C
21	5.58	6.00	33.50	8-3V	71	1.62	9.25	15.00	6-5V
22	5.15	6.50	33.50	6-3V	72	1.61	13.20	21.20	4-5V
23	5.00	7.50	37.50	4-5V	72	1.61	12.40	20.00	10-B
23	5.00	6.00	30.00	8-B	75	1.55	10.30	16.00	5-5V
24	4.86	6.90	33.50	6-3V	75	1.54	9.75	15.00	6-5V
24	4.80	7.50	36.00	5-C	75	1.54	13.00	20.00	5-C
25	4.69	6.40	30.00	8-B	77	1.51	14.00	21.20	5-5V
26	4.41	6.80	30.00	6-B	77	1.50	12.00	18.00	6-C
27	4.29	7.00	30.00	6-C	78	1.48	12.40	18.40	10-B
28	4.19	8.00	33.50	6-3C	79	1.47	10.90	16.00	6-5V
29	4.05	7.40	30.00	8-B	81	1.43	14.00	20.00	6-C
29	3.94	7.10	28.00	5-5V	84	1.38	10.90	15.00	6-5V
31	3.75	8.00	30.00	5-C	84	1.38	13.00	18.00	6-C
31	3.73	7.50	28.00	4-5V	85	1.36	11.80	16.00	5-5V
32	3.62	6.90	25.00	3-5V	87	1.33	12.00	16.00	6-C
32	3.60	10.00	36.00	4-C	90	1.29	14.00	18.00	6-C
33	3.53	8.50	30.00	5-C	90	1.28	12.50	16.00	5-5V
33	3.50	8.00	28.00	5-5V	91	1.27	11.80	15.00	5-5V
34	3.43	10.50	36.00	4-C	96	1.21	10.90	13.20	6-5V
35	3.33	9.00	30.00	5-C	96	1.20	12.50	15.00	6-5V
35	3.29	8.50	28.00	4-5V	97	1.19	11.80	14.00	6-5V
36	3.19	9.40	30.00	6-B	102	1.14	14.00	16.00	5-5V
37	3.16	9.50	30.00	5-C	102	1.14	13.20	15.00	6-5V
37	3.13	8.00	25.00	3-5V	103	1.12	11.80	13.20	6-5V
38	3.06	12.40	38.00	5-B	107	1.08	10.90	11.80	6-5V
38	3.03	9.25	28.00	4-5V	108	1.07	14.00	15.00	5-5V
39	3.00	8.00	24.00	6-C	109	1.06	11.80	12.50	6-5V
40	2.91	8.60	25.00	6-B	109	1.06	12.50	13.20	6-5V
40	2.87	9.75	28.00	4-5V	116	1.00	11.80	11.80	6-5V
40	2.86	10.50	30.00	5-C					
41	2.84	13.20	37.50	4-5V					
42	2.73	11.00	30.00	6-B					
43	2.72	10.30	28.00	4-5V					
44	2.66	9.40	25.00	10-B					
45	2.57	10.90	28.00	4-5V					
45	2.57	14.00	36.00	4-C					
46	2.53	9.50	24.00	6-C					
48	2.40	10.00	24.00	5-C					
49	2.36	10.60	25.00	3-5V					
50	2.31	13.00	30.00	4-C					
51	2.29	9.25	21.20	5-5V					
51	2.29	10.50	24.00	5-C					
52	2.24	12.50	28.00	4-5V					
53	2.18	11.00	24.00	5-C					
53	2.17	9.75	21.20	4-5V					
54	2.13	9.40	20.00	6-B					
55	2.12	13.20	28.00	4-5V					
55	2.11	9.50	20.00	5-C					
56	2.06	10.30	21.20	4-5V					
57	2.02	12.40	25.00	6-B					
58	2.00	14.00	28.00	3-5V					
58	2.00	10.00	20.00	5-C					
60	1.94	10.90	21.20	5-5V					
61	1.90	10.50	20.00	6-C					
63	1.85	13.00	24.00	5-C					
64	1.82	11.00	20.00	6-C					
65	1.79	10.60	19.00	4-5V					

TXT 926 Driven by 1750 rpm Motors									
Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size	Out-put rpm	V-belt Drive Ratio	Sheave Diameters		Qty. & Belt Size
		Motor	Reducer				Motor	Reducer	
10	7.05	4.75	33.50	5-3V	45	1.51	9.25	14.00	5-5V
10	7.04	5.40	38.00	5-B	45	1.50	12.00	18.00	4-C
11	6.00	5.00	30.00	5-B	46	1.48	12.40	18.40	6-B
11	5.98	5.60	33.50	4-3V	46	1.47	10.90	16.00	4-5V
12	5.77	5.20	30.00	6-B	47	1.45	11.00	16.00	5-C
12	5.58	6.00	33.50	5-3V	47	1.44	9.75	14.00	4-5V
13	5.26	4.75	25.00	6-3V	48	1.43	9.25	13.20	5-5V
13	5.17	5.80	30.00	5-B	48	1.43	14.00	20.00	4-C
14	5.00	5.00	25.00	6-3V	49	1.40	11.00	15.40	6-B
14	4.81	5.20	25.00	6-B	49	1.38	14.00	19.00	5-3V
15	4.46	5.60	25.00	6-3V	50	1.37	9.50	13.00	5-C
15	4.46	5.60	25.00	6-B	50	1.36	14.00	19.00	5-3V
16	4.17	6.00	25.00	6-3V	51	1.33	12.00	16.00	4-C
16	4.17	6.00	25.00	6-B	52	1.32	10.60	14.00	6-3V
17	3.94	7.10	28.00	3-5V	52	1.32	9.40	12.40	8-B
17	3.91	6.40	25.00	5-B	53	1.29	14.00	18.00	4-C
18	3.85	6.50	25.00	5-3V	53	1.28	10.30	13.20	4-5V
18	3.79	6.60	25.00	5-B	54	1.27	11.80	15.00	4-5V
19	3.58	5.30	19.00	6-3V	54	1.26	9.50	12.00	5-C
19	3.57	5.60	20.00	6-B	55	1.24	12.40	15.40	6-B
20	3.41	5.40	18.40	6-B	56	1.21	10.30	12.50	4-5V
20	3.39	5.60	19.00	6-3V	57	1.20	10.00	12.00	5-C
21	3.19	9.40	30.00	5-B	57	1.19	11.80	14.00	4-5V
22	3.13	8.00	25.00	5-3V	58	1.18	9.25	10.90	5-5V
22	3.07	6.00	18.40	6-B	58	1.17	9.40	11.00	6-B
23	2.94	6.80	20.00	6-B	59	1.15	10.30	11.80	5-5V
23	2.92	6.50	19.00	6-3V	59	1.15	13.00	15.00	5-D
24	2.88	6.40	18.40	6-B	60	1.14	9.00	10.30	6-5V
24	2.83	7.50	21.20	4-5V	60	1.14	10.50	12.00	6-C
25	2.75	6.90	19.00	6-3V	60	1.13	11.00	12.40	8-B
25	2.71	6.80	18.40	6-B	61	1.12	12.50	14.00	4-5V
26	2.66	9.40	25.00	5-B	63	1.08	10.90	11.80	5-5V
26	2.65	8.00	21.20	4-5V	63	1.08	13.00	14.00	5-C
27	2.49	8.50	21.20	4-5V	64	1.07	13.50	14.50	5-D
27	2.49	7.40	18.40	6-B	64	1.06	10.30	10.90	5-5V
28	2.40	7.50	18.00	5-C	64	1.06	12.50	13.20	4-5V
29	2.38	8.00	19.00	6-3V	65	1.05	10.50	11.00	6-C
29	2.33	8.60	20.00	6-B	66	1.04	13.00	13.50	5-D
30	2.27	11.00	25.00	5-B	66	1.03	9.00	9.25	6-5V
30	2.25	7.10	16.00	5-5V	68	1.00	14.00	14.00	6-5V
31	2.22	9.00	20.00	4-C	68	1.00	10.50	10.50	6-C
31	2.17	9.75	21.20	3-5V	70	0.97	9.25	9.00	6-5V
32	2.14	8.60	18.40	6-B	72	0.95	11.00	10.50	6-C
32	2.13	7.50	16.00	4-5V	72	0.95	13.20	12.50	4-5V
33	2.08	7.40	15.40	3-B	72	0.95	10.50	10.00	6-C
33	2.06	10.30	21.20	4-5V	73	0.93	14.00	13.00	5-C
34	2.02	12.40	25.00	5-B	74	0.92	9.25	8.50	6-5V
34	2.00	7.50	15.00	5-5V	74	0.92	13.00	12.00	5-C
35	1.96	9.40	18.40	6-B	75	0.91	11.00	10.00	6-C
35	1.94	10.90	21.20	4-5V					
36	1.90	10.50	20.00	4-C					
36	1.88	8.50	16.00	4-5V					
38	1.79	10.60	19.00	6-3V					
38	1.79	8.60	15.40	6-B					
39	1.75	8.00	14.00	6-3V					
39	1.73	7.50	13.00	6-C					
40	1.71	10.50	18.00	4-C					
40	1.70	12.50	21.20	3-5V					
41	1.67	11.00	18.40	6-B					
42	1.64	9.75	16.00	4-5V					
42	1.64	9.40	15.40	6-B					
42	1.62	9.25	15.00	5-5V					
43	1.60	10.00	16.00	5-C					
44	1.55	10.30	16.00	4-5V					
44	1.54	13.00	20.00	4-C					

All dimensions in inches unless otherwise stated.

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Shaft Mounted Speed Reducer

TXT SMSR Dimensions

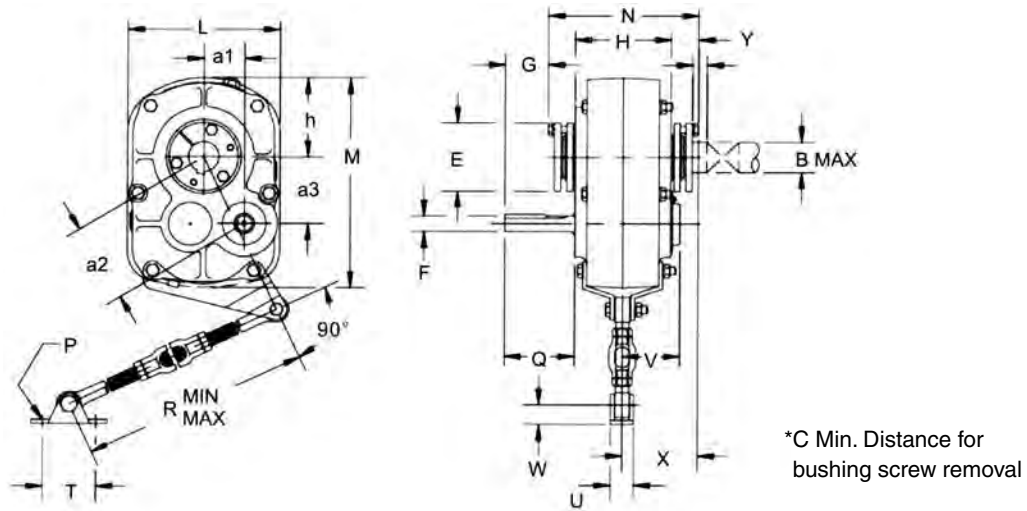


Table 5 TXT Reducer Dimensions

Size	Bmax	AGMA Size	L M	N	F Input shaft keyway	C	E G	W U	X V	Q Y	H	a1 a2	a3 h	R ^{min} R ^{max}	P T
TXT 2	1.15/16"	115	8.38 11.41	7.32	1.13 0.25 x 0.13 x 2.50	1.25	4.06 2.22	1.06 1.25	3.68 2.89	3.59 1.40	4.56	2.14 4.32	3.75 4.09	26.94 32.94	0.44 3.00
TXT 3	2.3/16"	203	9.25 12.88	9.22	1.25 0.25 x 0.13 x 2.88	1.50	4.38 2.34	1.06 1.25	4.52 3.30	4.34 1.59	5.63	2.33 4.78	4.17 4.84	26.94 32.94	0.44 3.00
TXT 4	2.7/16"	207	10.38 15.13	9.98	1.44 0.38 x 0.19 x 4.06	1.75	4.81 3.44	1.75 1.44	4.79 3.41	5.57 1.72	6.13	2.76 5.53	4.79 5.50	29.19 35.19	0.50 4.00
TXT 5	2.15/16"	215	13.13 18.31	10.52	1.94 0.5 x 0.25 x 4.50	1.81	5.63 3.44	1.75 1.44	5.05 4.45	5.74 1.91	6.31	3.04 6.43	5.67 6.56	29.19 35.19	0.50 4.00
TXT 6	3.7/16"	307	15.13 21.31	11.53	2.19 0.5 x 0.25 x 4.50	1.81	6.13 3.73	2.00 2.75	5.73 4.57	6.08 2.30	6.88	4.09 7.88	6.73 7.56	29.19 35.19	0.63 4.75
TXT 7	3.15/16"	315	18.75 25.94	12.85	2.44 0.63 x 0.31 x 4.75	2.06	7.25 3.75	2.00 2.75	6.38 4.69	6.35 2.50	7.75	5.11 9.74	8.30 9.38	29.44 35.44	0.63 4.75
TXT 8	4.7/16"	407	20.25 28.25	14.03	2.44 0.63 x 0.31 x 5.38	2.06	7.75 4.31	3.13 4.00	7.04 5.85	7.11 2.86	8.37	6.03 11.25	9.50 10.13	30.00 36.00	0.75 7.00
TXT 9	4.15/16"	415	22.63 31.69	14.12	2.44 0.63 x 0.31 x 7.75	2.44	8.75 6.63	3.13 4.00	7.04 5.66	9.65 2.98	8.12	6.59 12.66	10.81 11.31	30.00 36.00	0.75 7.00

TXT Shaft Mounted Reducers can be provided for metric input shafts and output straight bore hubs according to ISO standards.

Table 6 Metric input Shaft and Output Straight Bore Hub (mm)

Size	TXT 2	TXT 3	TXT 4	TXT 5	TXT 6	TXT 7	TXT 8	TXT 9
Input Shaft F(h6)	28	30	35	48	55	60	60	60
Output Bore Hub B(F7)	45	55	60	75	85	100	110	125

Shaft Mounted Speed Reducer

Table 7 TXT Output Hub Bushings

Note, taper bushed reducers require bushing for all bore sizes.

Size	Bore Size	Shaft Keyseat Required	Weight (lb.)	Size	Bore Size	Shaft Keyseat Required	Weight (lb.)	
TXT 215 & 225	1-1/8	1/4 x 1/8 x 6-11/16	3.8	TXT 515 & 525	2	1/2 x 1/4 x 9-3/8	10.2	
	1-3/16	1/4 x 1/8 x 6-11/16	3.6		2-3/16	1/2 x 1/4 x 9-3/8	10	
	1-1/4	1/4 x 1/8 x 6-11/16	3.6		2-1/4	1/2 x 1/4 x 9-3/8	9.2	
	1-5/16	5/16 x 5/32 x 6-11/16	3.6		2-7/16	5/8 x 5/16 x 9-3/8	8.5	
	1-3/8	5/16 x 5/32 x 6-11/16	3.6		2-1/2	5/8 x 5/16 x 9-3/8	8.5	
	1-7/16	3/8 x 3/16 x 6-11/16	4		2-11/16	5/8 x 5/16 x 9-3/8	7.9	
	1-1/2	3/8 x 3/16 x 6-11/16	3.8		2-15/16	3/4 x 3/8 x 9-3/8	7.8	
	1-5/8	3/8 x 3/16 x 6-11/16	3.2		TXT 615 & 625	2-3/16	1/2 x 1/4 x 10-11/16	15.3
	1-1/16	3/8 x 3/16 x 6-11/16	3.4	2-1/4		1/2 x 1/4 x 10-11/16	14.9	
	1-3/4	3/8 x 3/16 x 6-11/16	3.3	2-7/16		5/8 x 5/16 x 10-11/16	14.4	
	1-15/16	1/2 x 1/4 x 6-11/16	2.9	2-1/2		5/8 x 5/16 x 10-11/16	14	
	TXT 315 & 325	1-5/16	5/16 x 5/32 x 8-1/16	5.8		2-11/16	5/8 x 5/16 x 10-11/16	12.9
1-3/8		5/16 x 5/32 x 8-1/16	5.8	2-7/8		3/4 x 3/8 x 10-11/16	12.2	
1-7/16		3/8 x 3/16 x 8-1/16	5.6	2-15/16		3/4 x 3/8 x 10-11/16	11.6	
1-1/2		3/8 x 3/16 x 8-1/16	5.4	3		3/4 x 3/8 x 10-11/16	11.3	
1-5/8		3/8 x 3/16 x 8-1/16	4.8	3-7/16	7/8 x 7/16 x 10-11/16	9		
1-11/16		3/8 x 3/16 x 8-1/16	4.8	TXT 715 & 725	2-7/16	5/8 x 5/16 x 11-27/32	24.2	
1-3/4		3/8 x 3/16 x 8-1/16	4.8		2-1/2	5/8 x 5/16 x 11-27/32	23.3	
1-7/8		1/2 x 1/4 x 8-1/16	4.3		2-11/16	5/8 x 5/16 x 11-27/32	23	
1-15/16		1/2 x 1/4 x 8-1/16	4.4		2-13/16	3/4 x 3/8 x 11-27/32	22.8	
2		1/2 x 1/4 x 8-1/16	4.1		2-7/8	3/4 x 3/8 x 11-27/32	21.5	
2-3/16	1/2 x 1/4 x 8-1/16	3.7	2-15/16		3/4 x 3/8 x 11-27/32	21.3		
TXT 415 & 425	1-7/16	3/8 x 3/16 x 9-1/32	8.8		3	3/4 x 3/8 x 11-27/32	20.1	
	1-1/2	3/8 x 3/16 x 9-1/32	8.3		3-3/16	3/4 x 3/8 x 11-27/32	19.2	
	1-5/8	3/8 x 3/16 x 9-1/32	8.3	3-7/16	7/8 x 7/16 x 11-27/32	16.9		
	1-11/16	3/8 x 3/16 x 9-1/32	8.3	3-15/16	1 x 1/2 x 11-27/32	13.8		
	1-3/4	3/8 x 3/16 x 9-1/32	8	TXT 815 & 825	2-15/16	3/4 x 3/8 x 13-1/16	29	
	1-7/8	1/2 x 1/4 x 9-1/32	8		3-3/16	3/4 x 3/8 x 13-1/16	25.8	
	1-15/16	1/2 x 1/4 x 9-1/32	7.4		3-7/16	7/8 x 7/16 x 13-1/16	25	
	2	1/2 x 1/4 x 9-1/32	7.1		3-15/16	1 x 1/2 x 13-1/16	20	
	2-1/8	1/2 x 1/4 x 9-1/32	7		4-3/16	1 x 1/2 x 13-1/16	17	
	2-3/16	1/2 x 1/4 x 9-1/32	6.7		4-7/16	1 x 1/2 x 13-1/16	15	
	2-1/4	1/2 x 1/4 x 9-1/32	6.3		TXT 915 & 926	3-7/16	7/8 x 7/16 x 12-15/16	36
	2-7/16	5/8 x 5/16 x 9-1/32	5.8			3-15/16	1 x 1/2 x 12-15/16	32.4
TXT 515 & 525	1-7/8	1/2 x 1/4 x 9-3/8	10.3	4-7/16		1 x 1/2 x 12-15/16	27	
	1-15/16	1/2 x 1/4 x 9-3/8	10.3	4-15/16		1-1/4 x 5/8 x 12-15/16	22	

Note: All the above bushings are standard. When ordering the reducer, please determine the output bushing's bore diameter. The shaft key is also supplied. Check the driven shaft and key for strength.

Shaft Mounted Speed Reducer

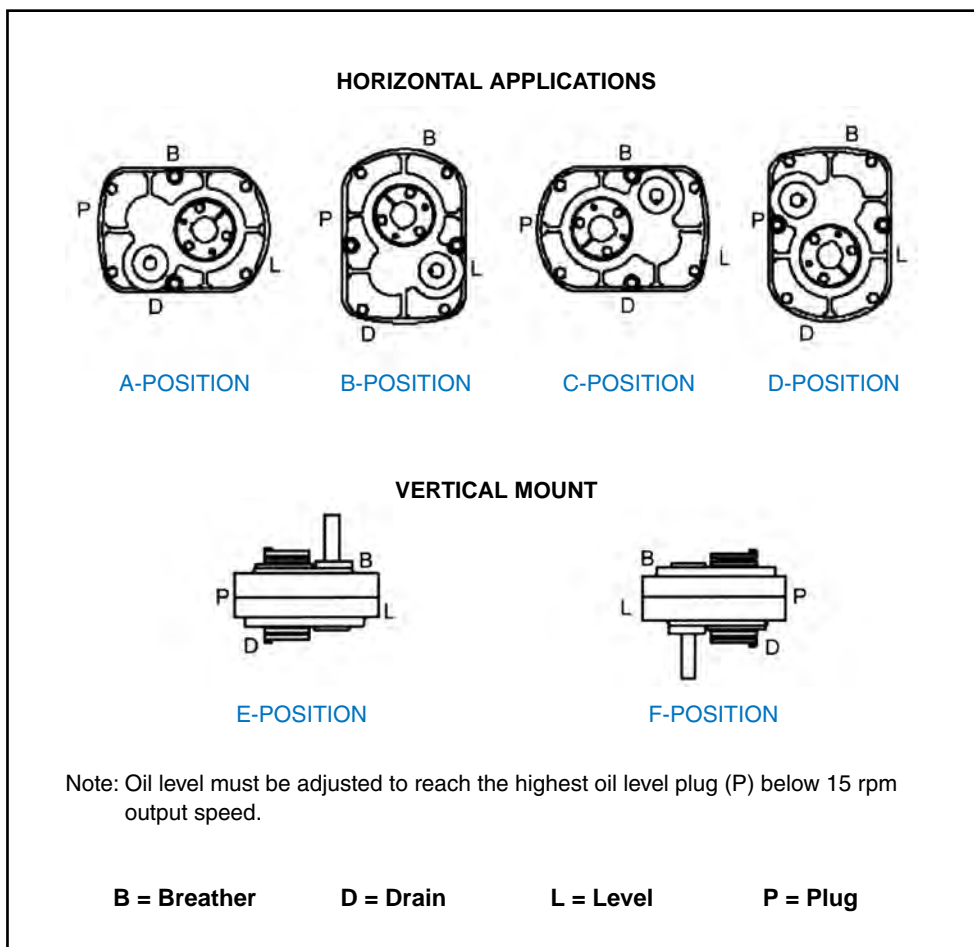
TXT SMSR Installation

Satisfactory performance depends on correct installation, lubrication and maintenance. Therefore it is important that the instructions in this manual are followed carefully.

1. Use eyebolts or lifting lugs to lift reducer.
2. Determine the running positions of the reducer. (See Fig. 1) Note that the reducer supplied with 4 plugs around the sides. These plugs must be arranged relative to the running positions as follows: the bottom one is drain plug, please replace this plug with a magnetic plug. Throw away the tape that covers the filter plug in shipment and install it in topmost hole. For the 2 remaining plugs on the sides of the reducer, the lowest one is the minimum oil level plug.

The running position of the reducer is not limited to the four positions shown in Fig. 1. However, if the running position is over 20° in position “B” & “D” or 5° in position “A” or “C”, either way from sketches, the oil level plug cannot be used safely to check the oil level, unless during the checking, the torque arm is disconnected and the reducer is swung to within 20° for position “A” & “C” or 5° for position “B” & “D” of the positions shown in Fig. 1. Because of the many possible positions of the reducer, it may be necessary or desirable to make special adaptations using the lubrication filling holes furnished along with other standard pipe fittings, stand pipes and oil level gauges as required.

Fig. 1 - Mounting Positions



Shaft Mounted Speed Reducer

TXT SMSR Installation (continued)

3. Mount reducer on driven shaft as follows:

To ensure that the drive is not unexpectedly started, turn off lock out or tag power source before proceeding. Failure to observe these precautions could result in bodily injury.

- (1) Install sheave on gearbox input shaft as close to the reducer as possible, and mount reducer on driven shaft as close to the bearing as is practical (keep minimum distance sufficient for removal of bushing screws, see Fig.2). Failure to do this will cause excess loads in the input shaft bearings and output bearings and could cause their premature failure.
- (2) Install motor and belt drive with the belt pull at approximately 90° to the center line between driven and input shafts (see Fig.3). This will permit tensioning of the belt drive with the torque arm which should preferably be in tension. If the output hub runs anti-clockwise, the torque arm should be positioned to the right (see Fig.4).
- (3) Install torque-arm fulcrum on a rigid support so that the torque arm will be at approximately right angles to the center line through the driven shaft and the torque arm case bolt (see Fig.5). Make sure there is sufficient take up in the turnbuckle for belt tension adjustment.

Fig. 2

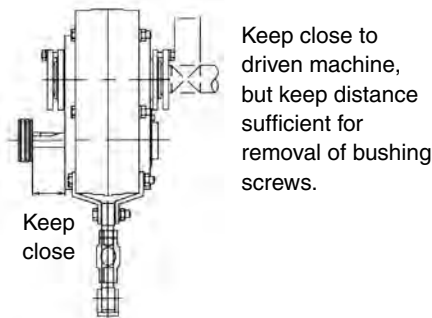


Fig. 3

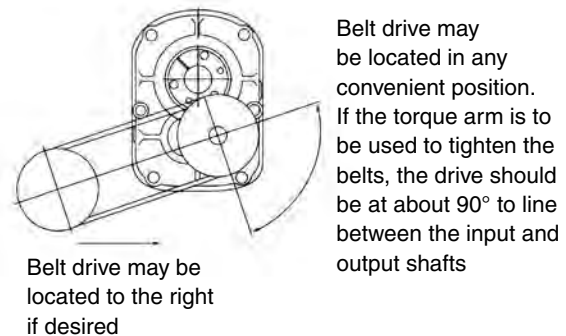


Fig. 4

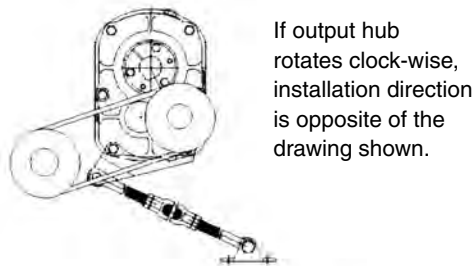
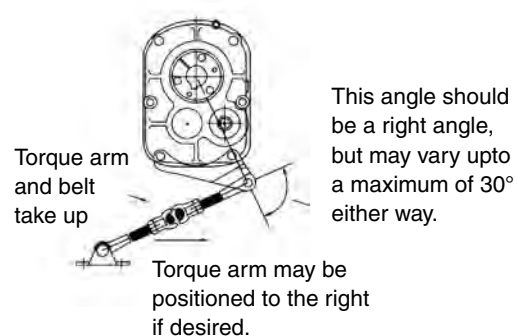


Fig. 5



Shaft Mounted Speed Reducer

Lubrication

IMPORTANT: Because Shaft Mounted Reducers are dispatched without oil. It is necessary to fill the gearbox with the correct amount of oil before running. Use a high-grade petroleum base rust and oxidation inhibited (R&O) gear oil. Follow instructions on reducer warning tags, and in the installation manual.

After the first 100 hours running, drain reducer and flush with kerosene, clean the drain plug and refill to proper level with new lubricant. Under average industrial operating conditions, the lubricant should be changed every 2500 hours of operating or every 6 months.

CAUTION: Extreme pressure (EP) lubricants are not recommended for average operating conditions. Failure to observe this precaution could result in bodily injury.

CAUTION: Too much oil will cause overheating and too little will result in gear failure. Check oil level regularly. Failure to observe this precaution could result in bodily injury.

Under extreme operating conditions, such as rapid rise and fall of temperature, dust, dirt, chemical particles, chemical fumes, or oil sump temperature above 200°F, the oil should be changed every 1 to 3 months, depending on severity of conditions.

CAUTION: Do not use EP oils containing slippery additives such as graphite or molybdenum disulfide in the reducer when backstop is used. These additives will destroy sprag action.

Table 8 Oil Quantities (Approximate Capacity in Quarts)

Mounting Position	Size							
	TXT 2	TXT 3	TXT 4	TXT 5	TXT 6	TXT 7	TXT 8	TXT 9
A	0.875	1.5	1.875	3.25	4.25	6.5	8.5	13
B	1	1.5	2.25	4	5	8	11	13
C	0.625	0.75	1.25	3.25	4.25	7.25	10.5	12.5
D	1	2.25	1.75	4	5	9.25	8.5	14.25
E	1.625	2.625	3.375	7	8.625	15.375	19.125	25.375
F	1.75	3	4.25	8.625	9.125	16.375	19.125	25.375

Note: Mounting position refer to Figure 1 on page 397.

If reducer position is to vary from those show in Figure 1, either more or less oil may be required, consult Challenge.

If output is less than 15rpm, the oil level must be adjusted to reach the highest oil level plug (P).

If the mounting position is "B" or "D" and backstop is used, consult Challenge for the correct oil level.

Table 9 Mineral oil (TXT2 to TXT9)

	Environment Temperature		15:1 and 25:1 Ratio Gearboxes		
	°C	°F	0-20 rpm	21-50 rpm	51-120 rpm
ISO Viscosity Grade	-10°C to +5°C	14°F to 40°F	150	150	100
	6°C to 25°C	43°F to 77°F	680	460	320
	26°C to 40°C	79°F to 104°F	800	800	460

Table 10 Manufactures and Types

B.P. ENERGOL GR-XP	CASTROL ALPHA ZN OR SP	MOBIL MOBILGEAR OIL	SHELL OMALA	TEXACO MEROPE	DARMEX 9140 NMNND	Suitable for all ambient temperatures and all input speeds
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Note: Do not use E.P. mineral oils other than those recommended when using a backstop.

Shaft Mounted Speed Reducer

Table 11 Maximum input speeds, driven speeds, actual ratio and weights for TXT reducers.

Size	Nominal Ratio 15:1			Nominal Ratio 25:1			Weight lbs
	Actual Ratio	Maximum Input rpm	Maximum Output rpm	Actual Ratio	Maximum Input rpm	Maximum Output rpm	
TXT 2	14.04	1974	140	23.37	1994	85	58
TXT 3	14.87	2083	140	24.75	2100	85	98
TXT 4	15.13	2118	140	24.38	2072	85	139
TXT 5	15.40	1925	125	25.56	2044	80	207
TXT 6	15.34	1916	125	25.14	2010	80	285
TXT 7	15.23	1827	120	24.84	1863	75	462
TXT 8	15.08	1809	120	24.62	1847	75	633
TXT 9	15.12	1814	120	25.66	1925	75	760

Table 12 TXT reducer's output shaft overhung load ratings

Size	Shaft Size	Overhung Load (lbs) at Various RPM's										
		10	20	30	50	80	100	120	140	160	180	200
TXT 2	1-7/16	2000	1510	1270	1010	840	820	720	720	710	710	700
	1-15/16	1750	1320	1110	890	730	710	630	630	620	620	610
TXT 3	1-15/16	5400	4250	3680	3050	2620	2440	2310	2210	2110	2040	1980
	2-3/16	5240	5120	3570	2960	2540	2370	2240	2140	2050	1980	1920
TXT 4	2-3/16	6520	5180	4510	3800	3230	3000	2830	2710	2600	2510	2430
	2-7/16	6360	5060	4410	3710	3160	2930	2770	2640	2530	2450	2370
TXT 5	2-7/16	7460	5860	5080	4280	3690	3450	3270	3110	2980	2880	2790
	2-15/16	7060	5540	4800	4040	3490	3260	3090	2940	2820	2720	2640
TXT 6	2-15/16	9100	7100	6100	5000	4100	4050	3700	3550	3400	3300	3200
	3-7/16	8200	6400	5500	4500	3700	3650	3400	3300	3250	3200	3150
TXT 7	3-7/16	11400	9500	7300	5950	4750	5050	4500	4300	4250	4200	4150

Table 13 NEMA Motor Information (1750rpm)

Horse Power	NEMA Motor Frame	Shaft Diameter	Minimum Sheave Diameter
1	143T	7/8	2.2
1-1/2	145T	7/8	2.4
2	145T	7/8	2.4
3	182T	1-1/8	2.4
5	184T	1-1/8	3.0
7-1/2	213T	1-3/8	3.0
10	215T	1-3/8	3.8
15	254T	1-5/8	4.4
20	256T	1-5/8	4.4
25	284T	1-7/8	4.4
30	286T	1-7/8	5.2
40	324T	2-1/8	6.0
50	326T	2-1/8	6.8
60	364T	2-3/8	7.4
75	365T	2-3/8	8.6
100	405T	2-7/8	8.6
125	444T	3-3/8	10.5
150	445T	3-3/8	10.5
200	447T	3-3/8	13.2

Table 14 Minimum Sheave Diameters for TXT Reducers

Reducer Size	Shaft Diameter	Minimum Sheave Diameter
TXT 2	1-1/8	3.0
TXT 3	1-1/4	4.0
TXT 4	1-7/16	4.6
TXT 5	1-15/16	5.4
TXT 6	2-3/16	6.2
TXT 7	2-7/16	6.2
TXT 8	2-7/16	6.2
TXT 9	2-7/16	8.0

All dimensions in inches unless otherwise stated.

Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Shaft Mounted Speed Reducer

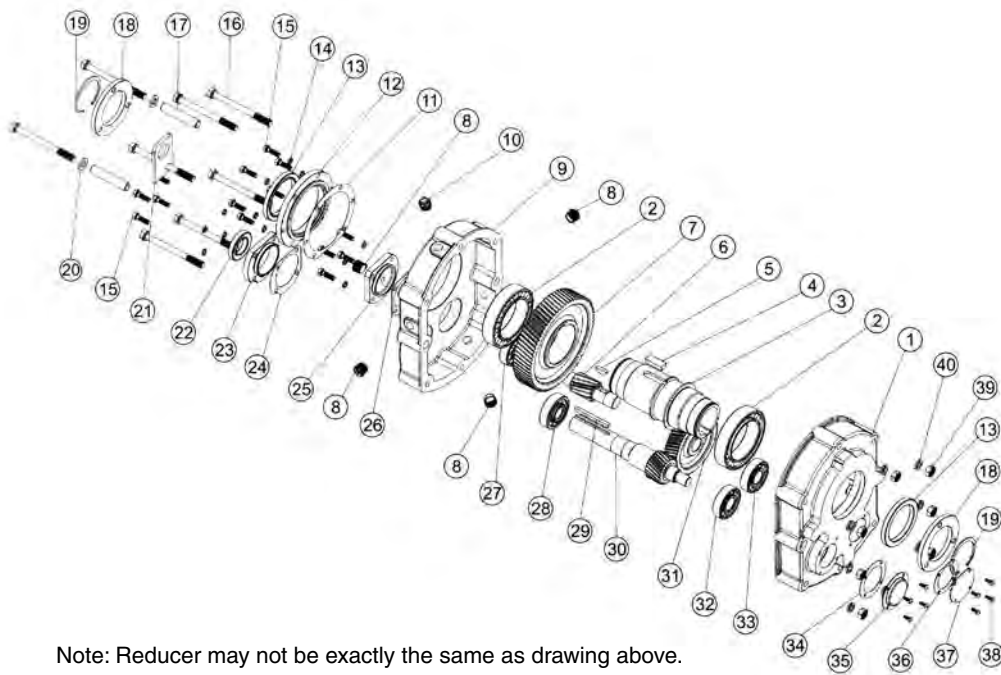
Exploded view of a TXT reducer

When ordering parts for reducer, please specify

- | | |
|--------------------------|----------------------|
| 1. Reducer Size Number | 4. Part Name |
| 2. Reducer Ratio | 5. Code Number |
| 3. Reducer Serial Number | 6. Quantity Required |

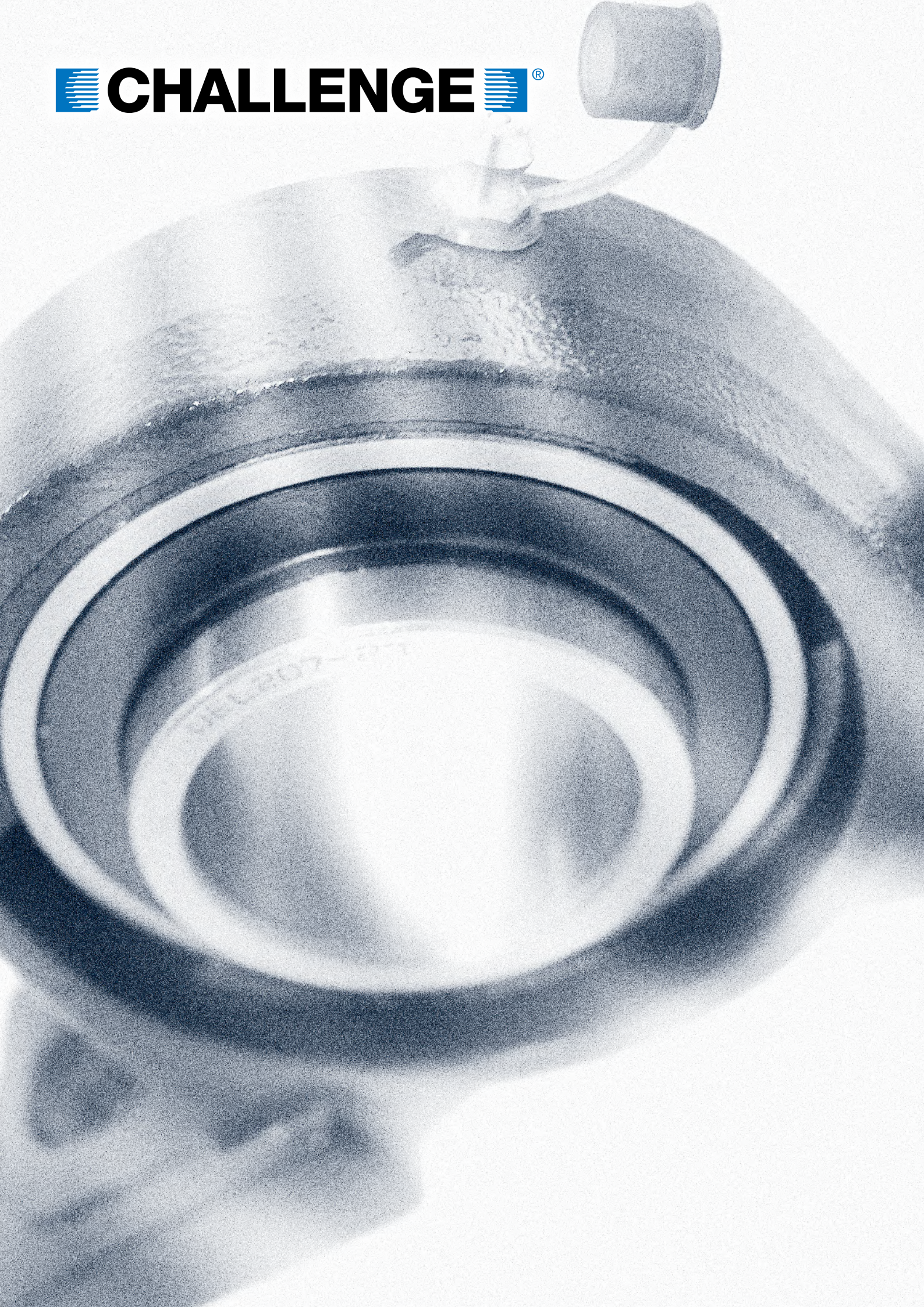
No.	Part Name
1	Right hand gear case
2	Output hub bearing
3	Output hub
4	2nd reduction gear key
5	1st reduction gear key
6	Intermediate pinion
7	2nd reduction gear
8	Oil pipe plug
9	Left hand gear case
10	Breather plug
11	Output hub bearing cover gasket
12	Output hub bearing cover
13	Output hub oilseal
14	Cover lock washer
15	Cover bolt
16	Case bolt
17	Hollow dowel
18	Output hub collar
19	Output hub circlip
20	Case plain washer
21	Lifting eye

No.	Part Name
22	Input shaft oilseal
23	Input shaft bearing cover
24	Bearing cover gasket
25	Intermediate bearing cover
26	Bearing cover gasket
27	Intermediate pinion bearing (input side)
28	Input shaft bearing (input side)
29	Input shaft square key
30	Input shaft & pinion
31	1st reduction gear
32	Input shaft bearing (output side)
33	Intermediate pinion bearing (output side)
34	Backstop cover gasket
35	Backstop cover
36	Intermediate cover gasket
37	Intermediate pinion cover
38	Cross recessed screw
39	Case nut
40	Case lock washer
41	Adaptor for torque arm (not shown)
42	Torque arm (not shown)

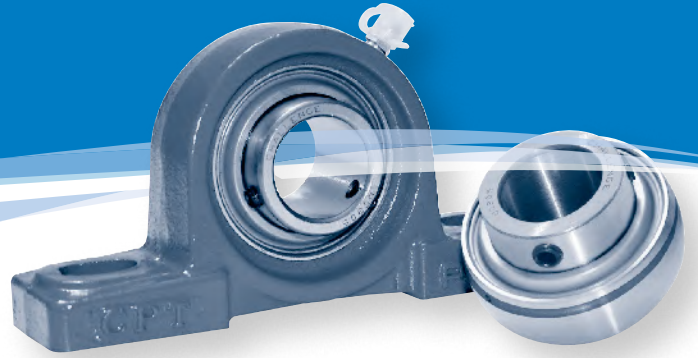


Note: Reducer may not be exactly the same as drawing above.
Spare parts may vary for each reducer.

 **CHALLENGE**  [®]



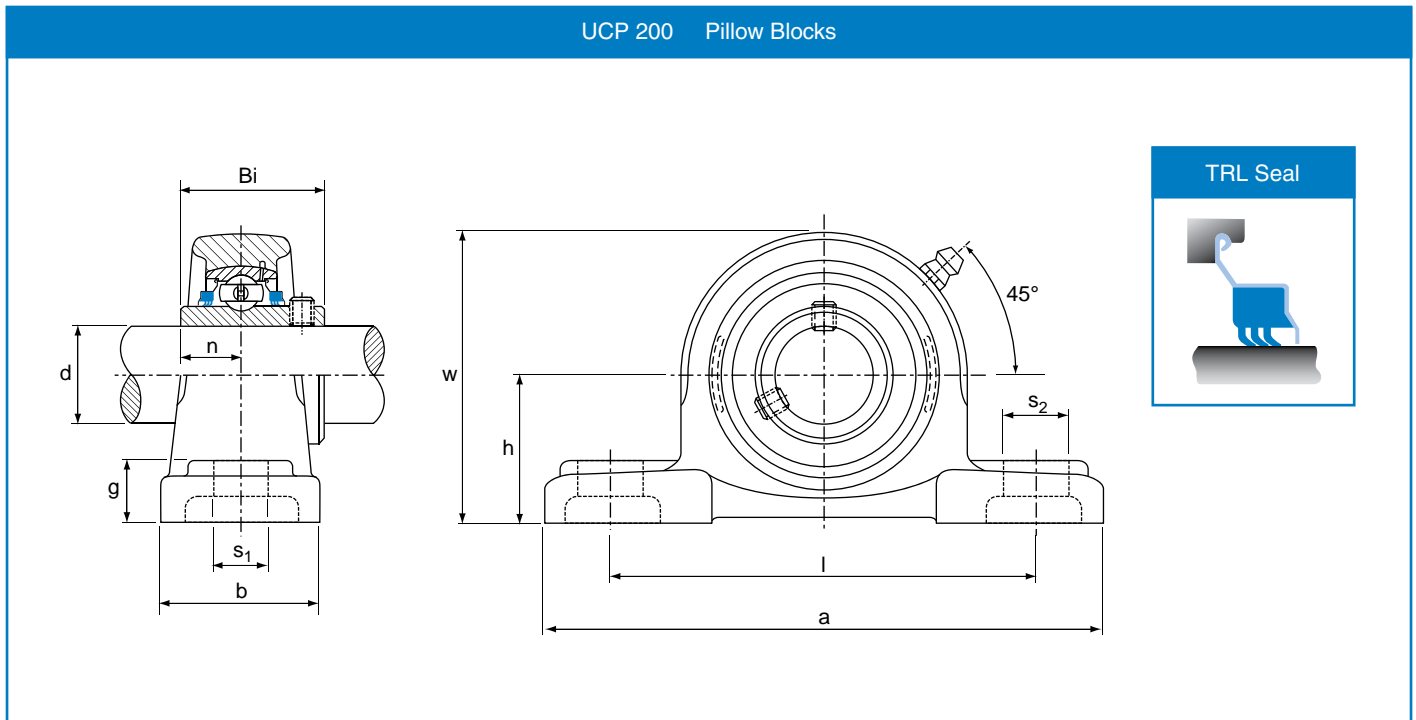
Bearing Units



Features

- Triple lipped seals with shields as standard
- Sealed units for longer life
- Supplied with a grease nipple
- Pillow blocks (UCP)
- 2 bolt flange units (UCFL)
- 4 bolt flange units (UCF)
- Take-Up units (UCT)
- Bearing inserts also available (UC)
- Self aligning
- Fully interchangeable with other makes

Pillow Blocks

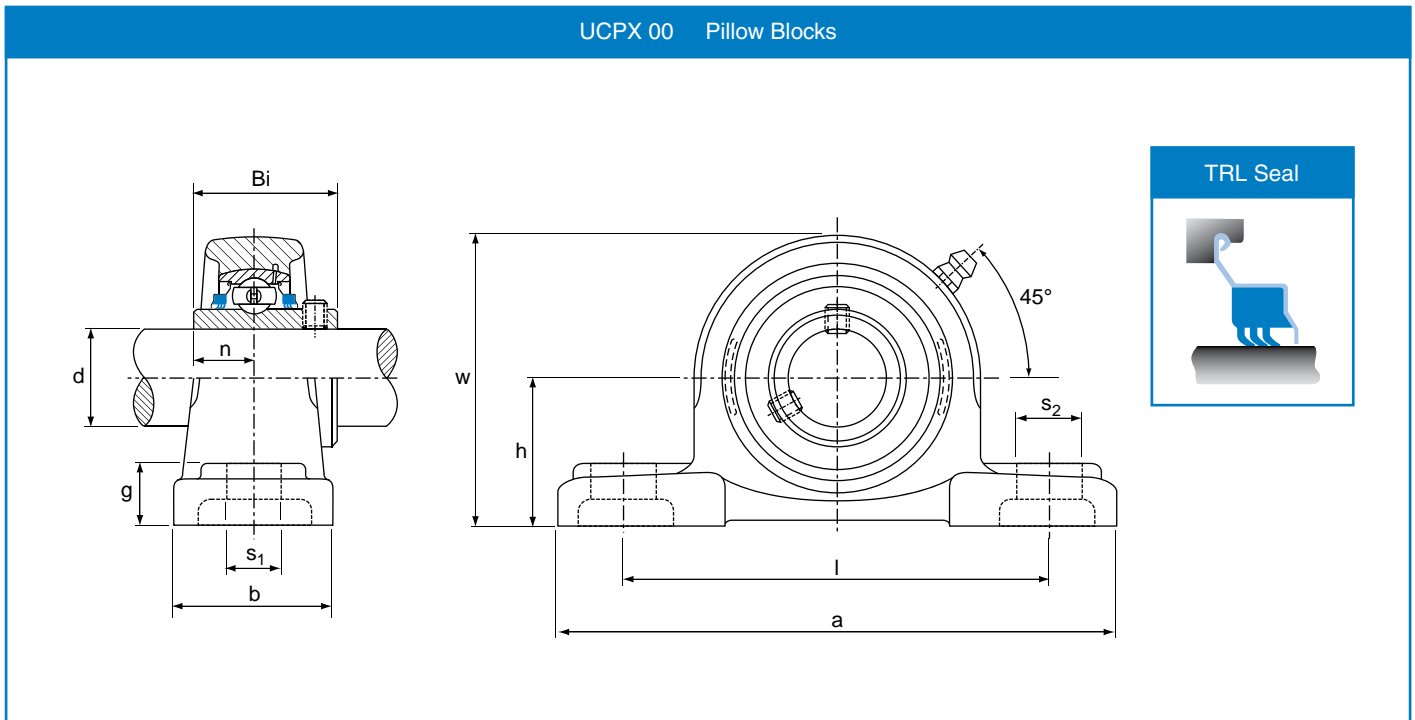


UCP 200 Pillow Blocks (Normal Duty)

Bearing Unit	Shaft Dia.		h	a	l	b	s ₂	s ₁	g	w	Bi	n	Bolt Size		Insert No.	Housing No.	Weight kg
	d inch	d mm											inch	mm			
UCP 204 UCP 204-12	3/4"	20	33.3	127	95	38	19	13	14	65	31.0	12.7	3/8	M10	UC 204 UC 204-12	P204	0.65
UCP 205 UCP 205-16	1"	25	36.5	140	105	38	19	13	15	71	34.1	14.3	3/8	M10	UC 205 UC 205-16	P205	0.79
UCP 206 UCP 206-18	1.1/8"	30	42.9	165	121	48	20	17	17	84	38.1	15.9	1/2	M14	UC 206 UC 206-18	P206	0.79
UCP 207 UCP 207-20 UCP 207-22	1.1/4" 1.3/8"	35	47.6	167	127	48	20	17	18	93	42.9	17.5	1/2	M14	UC 207 UC 207-20 UC 207-22	P207	1.60
UCP 208 UCP 208-24	1.1/2"	40	49.2	184	137	54	20	17	18	100	49.2	19.0	1/2	M14	UC 208 UC 208-24	P208	2.00
UCP 209 UCP 209-28	1.3/4"	45	54.0	190	146	54	20	17	20	106	49.2	19.0	1/2	M14	UC 209 UC 209-28	P209	2.20
UCP 210 UCP 210-32	2"	50	57.2	206	159	60	23	20	21	113	51.6	19.0	5/8	M16	UC 210 UC 210-32	P210	2.80
UCP 211 UCP 211-32	2"	55	63.5	219	171	60	23	20	23	125	55.6	22.2	5/8	M16	UC 211 UC 211-32	P211	3.40
UCP 212 UCP 212-36	2.1/4"	60	69.8	241	184	70	23	20	25	138	65.1	25.4	5/8	M16	UC 212 UC 212-36	P212	4.80
UCP 213 UCP 213-40	2.1/2"	65	76.2	265	203	70	28	25	27	150	65.1	25.4	3/4	M20	UC 213 UC 213-40	P213	5.70
UCP 214 UCP 214-44	2.3/4"	70	79.4	266	210	72	28	25	27	156	74.6	30.2	3/4	M20	UC 214 UC 214-44	P214	7.00
UCP 215 UCP 215-48	3"	75	82.6	275	217	74	28	25	28	162	77.8	33.3	3/4	M20	UC 215 UC 215-48	P215	7.60
UCP 216		80	88.9	292	232	78	28	25	30	174	82.6	33.3		M20	UC 216	P216	9.00

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Pillow Blocks

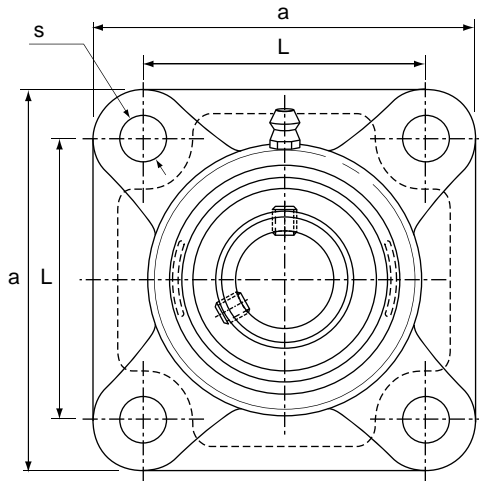
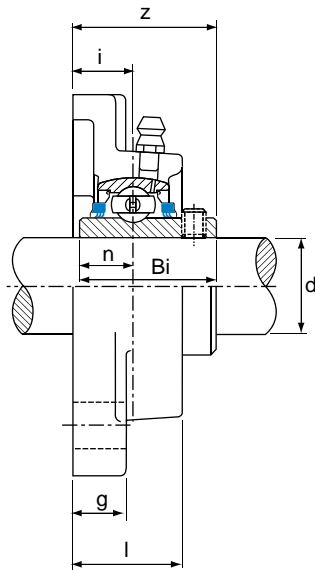


UCPX 00 Pillow Block (Medium Duty)

Bearing Unit	Shaft Dia.		h	a	l	b	s ₂	s ₁	g	w	Bi	n	Bolt Size		Insert No.	Housing No.	Weight kg
	d inch	d mm											inch	mm			
UCPX 05 UCPX 05-16	1"	25	44.4	159	119	51	25	17	18	85	38.1	15.9	1/2"	M14	UCX 05 UCX 05-16	PX 05	1.50
UCPX 06 UCPX 06-20	1.1/4"	30	47.6	175	127	57	25	17	20	94	42.9	17.5	1/2"	M14	UCX 06 UCX 06-20	PX 06	2.00
UCPX 07 UCPX 07-20 UCPX 07-22	1.1/4" 1.3/8"	35	54.0	203	144	57	30	17	22	105	49.2	19.0	1/2"	M14	UCX 07 UCX 07-20 UCX 07-22	PX 07	2.70
UCPX 08 UCPX 08-24	1.1/2"	40	58.7	222	156	67	32	20	26	113	49.2	19.0	5/8"	M16	UCX 08 UCX 08-24	PX 08	3.50
UCPX 09 UCPX 09-28	1.3/4"	45	58.7	222	156	67	33	20	26	116	51.6	19.0	5/8"	M16	UCX 09 UCX 09-28	PX 09	3.60
UCPX 10 UCPX 10-32	2"	50	63.5	241	171	73	36	20	27	126	55.6	22.2	5/8"	M16	UCX 10 UCX 10-32	PX 10	4.40
UCPX 11 UCPX 11-36	2.1/4"	55	69.8	260	184	79	36	25	30	139	65.1	25.4	3/4"	M20	UCX 11 UCX 11-36	PX 11	6.30
UCPX 12 UCPX 12-36	2.1/4"	60	76.2	286	203	83	41	25	32	152	65.1	25.4	3/4"	M20	UCX 12 UCX 12-36	PX 12	7.40
UCPX 13 UCPX 13-40	2.1/2"	65	76.2	286	203	83	41	25	32	154	74.6	30.2	3/4"	M20	UCX 13 UCX 13-40	PX 13	7.70
UCPX 14 UCPX 14-44	2.3/4"	70	88.9	330	229	89	50	27	35	171	77.8	33.3	7/8"	M22	UCX 14 UCX 14-44	PX 14	10.60
UCPX 15 UCPX 15-48	3"	75	88.9	330	229	89	50	27	35	175	82.6	33.3	7/8"	M22	UCX 15 UCX 15-48	PX 15	11.10
UCPX 16		80	101.6	381	283	102	54	27	42	196	85.7	34.1		M22	UCX 16	PX 16	16.20

Flange Units

UCF 200 4 Hole Flange Units



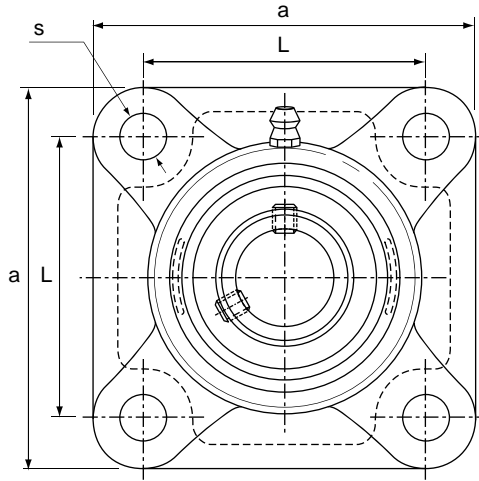
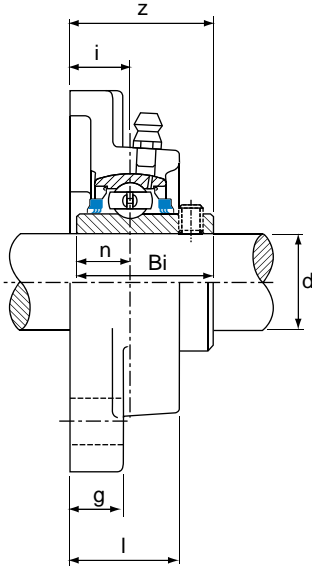
UCF 200 4 Hole Flange Units (Normal Duty)

Bearing Unit	Shaft Dia.		a	L	i	g	l	s	z	Bi	n	Bolt Size		Insert No.	Housing No.	Weight kg
	d inch	d mm										inch	mm			
UCF 204	3/4"	20	86	64	15	12	25.5	12	33.3	31.0	12.7	3/8"	M10	UC 204	F 204	0.6
UCF 204-12		UC 204-12														
UCF 205	1"	25	95	70	16	14	27	12	35.8	34.1	14.3	3/8"	M10	UC 205	F 205	0.8
UCF 205-16		UC 205-16														
UCF 206	1.1/8"	30	108	83	18	14	31	12	40.2	38.1	15.9	3/8"	M10	UC 206	F 206	1.1
UCF 206-18		UC 206-18														
UCF 207	1.1/4"	35	117	92	19	16	34	14	44.4	42.9	17.5	7/16"	M12	UC 207	F 207	1.5
UCF 207-20		UC 207-20														
UCF 207-22		1.3/8"											UC 207-22			
UCF 208	1.1/2"	40	130	102	21	16	36	16	51.2	49.2	19.0	1/2"	M14	UC 208	F 208	1.9
UCF 208-24		UC 208-24														
UCF 209	1.3/4"	45	137	105	22	18	38	16	52.2	49.2	19.0	1/2"	M14	UC 209	F 209	2.3
UCF 209-28		UC 209-28														
UCF 210	2"	50	143	111	22	18	40	16	54.6	51.6	19.0	1/2"	M14	UC 210	F 210	2.5
UCF 210-32		UC 210-32														
UCF 211	2"	55	162	130	25	20	43	19	58.4	55.6	22.2	5/8"	M16	UC 211	F 211	3.4
UCF 211-32		UC 211-32														
UCF 212	2.1/4"	60	175	143	29	20	48	19	68.7	65.1	25.4	5/8"	M16	UC 212	F 212	4.4
UCF 212-36		UC 212-36														
UCF 213	2.1/2"	65	187	149	30	22	50	19	69.7	65.1	25.4	5/8"	M16	UC 213	F 213	5.3
UCF 213-40		UC 213-40														
UCF 214	2.3/4"	70	193	152	31	22	54	19	75.4	74.6	30.2	5/8"	M16	UC 214	F 214	6.0
UCF 214-44		UC 214-44														
UCF 215	3"	75	200	159	34	22	56	19	78.5	77.8	33.3	5/8"	M16	UC 215	F 215	6.6
UCF 215-48		UC 215-48														
UCF 216		80	208	165	34	22	58	23	83.3	82.6	33.3		M20	UC 216	F 216	7.5

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Flange Units

UCFX 00 4 Hole Flange Units

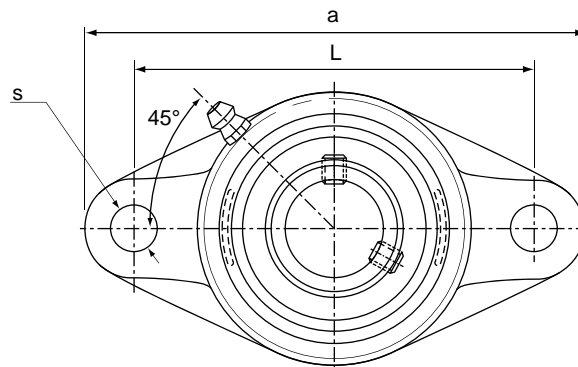
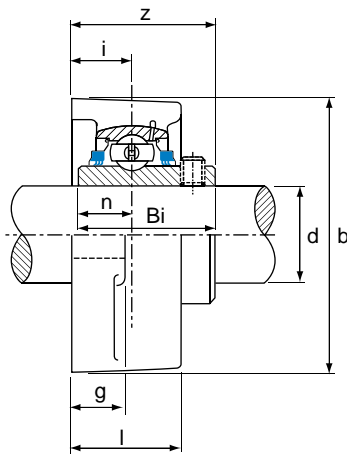


UCFX 00 4 Hole Flange Units (Medium Duty)

Bearing Unit	Shaft Dia.		a	L	i	g	l	s	z	Bi	n	Bolt Size		Insert No.	Housing No.	Weight kg
	d inch	d mm										inch	mm			
UCFX 05 UCFX 05-16	1"	25	108	83	18	13	30	12	40.2	38.1	15.9	3/8"	M10	UCX 05 UCX 05-16	FX 05	1.1
UCFX 06 UCFX 06-20	1.1/4"	30	117	92	19	14	34	16	44.4	42.9	17.5	1/2"	M14	UCX 06 UCX 06-20	FX 06	1.4
UCFX 07 UCFX 07-20 UCFX 07-22	1.1/4" 1.3/8"	35	130	102	21	14	38	16	51.2	49.2	19.0	1/2"	M14	UCX 07 UCX 07-20 UCX 07-22	FX 07	1.9
UCFX 08 UCFX 08-24	1.1/2"	40	137	105	22	14	40	19	52.2	49.2	19.0	5/8"	M16	UCX 08 UCX 08-24	FX 08	2.1
UCFX 09 UCFX 09-28	1.3/4"	45	143	111	23	14	40	19	55.6	51.6	19.0	5/8"	M16	UCX 09 UCX 09-28	FX 09	2.5
UCFX 10 UCFX 10-32	2"	50	162	130	26	20	44	19	59.4	55.6	22.2	5/8"	M16	UCX 10 UCX 10-32	FX 10	3.6
UCFX 11 UCFX 11-36	2.1/4"	55	175	143	29	20	49	19	68.7	65.1	25.4	5/8"	M16	UCX 11 UCX 11-36	FX 11	4.7
UCFX 12 UCFX 12-36	2.1/4"	60	187	149	34	21	59	19	73.7	65.1	25.4	5/8"	M16	UCX 12 UCX 12-36	FX 12	5.5
UCFX 13 UCFX 13-40	2.1/2"	65	187	149	34	21	59	19	78.4	74.6	30.2	5/8"	M16	UCX 13 UCX 13-40	FX 13	5.9
UCFX 14 UCFX 14-44	2.3/4"	70	197	152	37	24	60	23	81.5	77.8	33.3	3/4"	M20	UCX 14 UCX 14-44	FX 14	7.3
UCFX 15 UCFX 15-48	3"	75	197	152	40	24	68	23	89.3	82.6	33.3	3/4"	M20	UCX 15 UCX 15-48	FX 15	8.0
UCFX 16		80	214	171	40	24	70	23	91.6	85.7	34.1		M20	UCX 16	FX 16	9.8

Flange Units

UCFL 200 2 Hole Flange Units

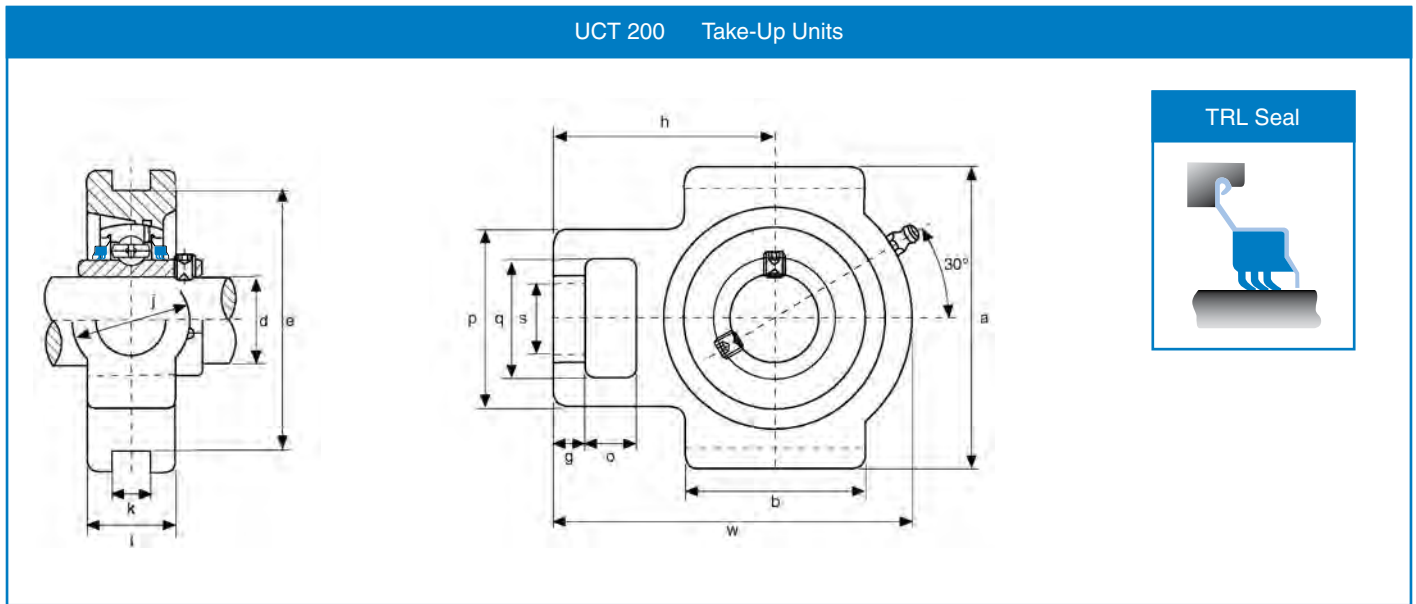


UCFL 200 2 Hole Flange Units (Normal Duty)

Bearing Unit	Shaft Dia.		a	L	i	g	l	s	b	z	Bi	n	Bolt Size		Insert No.	Housing No.	Weight kg
	d inch	d mm											inch	mm			
UCFL 204	3/4"	20	113	90	15	11	25.5	12	60	33.3	31.0	12.7	3/8"	M10	UC 204	FL 204	0.5
UCFL 204-12																	
UCFL 205	1"	25	130	99	16	13	27	16	68	35.8	34.1	14.3	1/2"	M14	UC 205	FL 205	0.6
UCFL 205-16																	
UCFL 206	1.1/4"	30	148	117	18	13	31	16	80	40.2	38.1	15.9	1/2"	M14	UC 206	FL 206	0.9
UCFL 206-20																	
UCFL 207	1.1/4"	35	161	130	19	14	34	16	90	44.4	42.9	17.5	1/2"	M14	UC 207	FL 207	1.2
UCFL 207-20																	
UCFL 207-22	1.3/8"																
UCFL 208	1.1/2"	40	175	144	21	14	36	16	100	51.2	49.2	19.0	1/2"	M14	UC 208	FL 208	1.6
UCFL 208-24																	
UCFL 209	1.3/4"	45	188	148	22	15	38	19	108	52.2	49.2	19.0	5/8"	M16	UC 209	FL 209	1.9
UCFL 209-28																	
UCFL 210	2"	50	197	157	22	15	40	19	115	54.6	51.6	19.0	5/8"	M16	UC 210	FL 210	2.2
UCFL 210-32																	
UCFL 211	2"	55	224	184	25	18	43	19	130	58.4	55.6	22.2	5/8"	M16	UC 211	FL 211	3.2
UCFL 211-32																	
UCFL 212	2.1/4"	60	250	202	29	18	48	23	140	68.7	65.1	25.4	3/4"	M20	UC 212	FL 212	4.1
UCFL 212-36																	
UCFL 213	2.1/2"	65	258	210	30	22	50	23	155	69.7	65.1	25.4	3/4"	M20	UC 213	FL 213	5.1
UCFL 213-40																	
UCFL 214	2.3/4"	70	265	216	31	22	54	23	160	75.4	74.6	30.2	3/4"	M20	UC 214	FL 214	5.9
UCFL 214-44																	
UCFL 215	3"	75	275	225	34	22	56	23	165	78.5	77.8	33.3	3/4"	M20	UC 215	FL 215	6.4
UCFL 215-48																	

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Take-Up Units

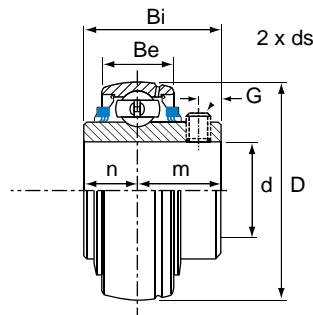


UCT 200 Take-Up Units (Normal Duty)

Bearing Unit	Shaft Dia.		o	g	p	q	s	b	k	e	a	w	j	l	h	Insert No.	Housing No.	Weight kg
	d inch	d																
UCT204 UCT204-12	3/4"	20	16	10	51	32	19	51	12	76	89	94	32	24	61	UC 204 UC 204-12	T204	0.74
UCT205 UCT205-16	1"	25	16	10	51	32	19	51	12	76	89	97	32	24	62	UC205 UC 205-16	T205	0.80
UCT206 UCT206-20	1.1/4"	30	16	10	56	37	22	57	12	89	102	113	37	28	70	UC 206 UC 206-20	T206	1.16
UCT207 UCT207-20 UCT207-22	1.1/4" 1.3/8"	35	16	13	64	37	22	64	12	89	102	129	37	30	78	UC 207 UC 207-20 UC 207-22	T207	1.56
UCT208 UCT208-24	1.1/2"	40	19	16	83	49	29	83	16	102	114	144	49	33	89	UC 208 UC 208-24	T208	2.32
UCT209 UCT209-28	1.3/4"	45	19	16	83	49	29	83	16	102	117	144	49	35	87	UC 209 UC 209-28	T209	2.28
UCT210 UCT210-32	2"	50	19	16	83	49	29	86	16	102	117	149	49	35	90	UC 210 UC 210-32	T210	2.44
UCT211 UCT211-32 UCT211-34	2" 2.1/8"	55	25	19	102	64	35	95	22	130	146	171	64	41	106	UC 211 UC 211-32 UC 211-34	T211	3.78
UCT212 UCT212-36	2.1/4"	60	32	19	102	64	35	102	22	130	146	194	64	46	119	UC 212 UC 212-36	T212	4.72

Inserts

UC 200 Inserts



UC 200 Inserts with Set Screws (Normal Duty)

Bearing Unit	Shaft Dia.		D	Bi	Be	n	m	G	ds		Load Rating (kg)		Weight kg		
	d inch	d mm							inch	mm	Dynamic	Static			
UC 204	3/4"	20	47	31.0	17	12.7	18.3	5	1/4" - 28UNF	M6 x 0.75	1000	630	0.16		
UC 204-12		25												0.16	
UC 205	1"	25	52	34.1	17	14.3	19.8	5	1/4" - 28UNF	M6 x 0.75	1100	710	0.20		
UC 205-16		30												0.20	
UC 206	1.1/4"	30	62	38.1	19	15.9	22.2	5	1/4" - 28UNF	M6 x 0.75	1520	1020	0.32		
UC 206-20		35												0.32	
UC 207	1.1/4"	35	72	42.9	20	17.5	25.4	7	5/16" - 24UNF	M8 x 1.0	2010	1390	0.48		
UC 207-20														77	0.54
UC 207-22														1.3/8"	72
UC 208	1.1/2"	40	80	49.2	22	19.0	30.2	8.0	5/16" - 24UNF	M8 x 1.0	2560	1810	0.64		
UC 208-24		45												0.68	
UC 209	1.3/4"	45	85	49.2	22	19.0	30.2	8.0	5/16" - 24UNF	M8 x 1.0	2560	1810	0.68		
UC 209-28		50												0.70	
UC 210	2"	50	90	51.6	24	19.0	32.6	10.0	3/8" - 24UNF	M10x1.25	2750	2020	0.82		
UC 210-32		55												0.80	
UC 211	2"	55	100	55.6	25	22.2	33.4	10.0	3/8" - 24UNF	M10x1.25	3400	2550	1.11		
UC 211-32		60												1.26	
UC 212	2.1/4"	60	110	65.1	27	25.4	39.7	10.0	3/8" - 24UNF	M10x1.25	4100	3150	1.54		
UC 212-36		65												1.67	
UC 213	2.1/2"	65	120	65.1	30	25.4	39.7	10.0	3/8" - 24UNF	M10x1.25	4480	3470	1.86		
UC 213-40		70												1.94	
UC 214	2.3/4"	70	125	74.6	30	30.2	44.4	12.0	7/16" - 20UNF	M12x1.50	4870	3810	2.05		
UC 214-44		75												2.06	
UC 215	3"	75	130	77.8	32	33.3	44.5	12.0	7/16" - 20UNF	M12x1.50	5190	4190	2.12		
UC 215-48		80												2.21	
UC 216	3.1/2"	80	140	82.6	33	33.3	49.3	12	1/2" - 20UNF	M12x1.50	5700	4550	2.79		
UC 218-56		160												4.46	

Bearing Speeds

The maximum rotational speed of a grease lubricated ball bearing is related to the fit between shaft and bearing.

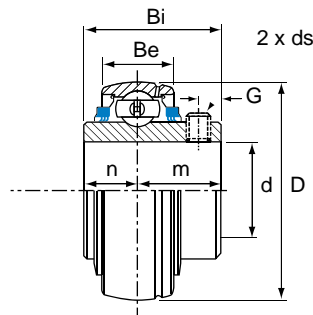
Under normal operating conditions the fit between the bearing and shaft should be h7. The maximum permissible bearing speeds are shown on the right.

A looser fit, allowing lower speeds is recommended for lighter loads and a tighter fit allowing higher speeds is recommended for heavier loads

Bearing No.	Max Speed rev/min	Bearing No.	Max Speed rev/min
201	4500	210	1800
202	4500	211	1600
203	4500	212	1500
204	4000	213	1400
205	3400	214	1300
206	2800	215	1200
207	2400	216	1100
208	2200	217	1000
209	1900	218	950

- Working temperatures -30°C to +120°C
- Grease nipple thread sizes:
 - 201 - 209 = M6
 - 210 - 215 = M8
 - 216 - 218 = M10

UCX 00 Inserts



UCX 00 Inserts with Set Screws (Medium Duty)

Bearing Unit	Shaft Dia.		D	Bi	Be	n	m	G	ds		Load Rating (kg)		Weight kg
	d inch	d mm							inch	mm	Dynamic	Static	
UCX05	1"	25	62	38.1	19	15.9	22.2	5	1/4" - 28UNF	M6 x 0.75	1520	1020	0.39
UCX05-16		30								0.38			
UCX06	1.1/4"	30	72	42.9	20	17.5	25.4	6.5	1/4" - 28UNF	M6 x 0.75	2010	1390	0.58
UCX06-20		35								0.55			
UCX07	1.1/4"	35	80	49.2	22	19.0	30.2	8.0	5/16" - 24UNF	M8 x 1.0	2560	1810	0.72
UCX07-20													1.3/8"
UCX07-22	1.3/8"	35	80	49.2	22	19.0	30.2	8.0	5/16" - 24UNF	M8 x 1.0	2560	1810	0.72
UCX08	1.1/2"	40	85	49.2	22	19.0	30.2	8.0	5/16" - 24UNF	M8 x 1.0	2650	1910	0.83
UCX08-24		45											0.87
UCX09	1.3/4"	45	90	51.6	24	19.0	32.6	10.0	5/16" - 24UNF	M8 x 1.0	2750	2020	0.95
UCX09-28		50											0.97
UCX10	2"	50	100	55.6	25	22.2	33.4	10.0	3/8" - 24UNF	M10x1.25	3400	2550	1.29
UCX10-32		55											1.26
UCX11	2.1/4"	55	110	65.1	27	25.4	39.7	10.0	3/8" - 24UNF	M10x1.25	4100	3150	1.80
UCX11-36		60											1.70
UCX12	2.3/8"	60	120	65.1	30	25.4	39.7	10.0	3/8" - 24UNF	M10x1.25	4480	3470	2.05
UCX12-38		65											2.03
UCX13	2.1/2"	65	125	74.6	30	30.2	44.4	12.0	3/8" - 24UNF	M10x1.25	4870	3810	2.52
UCX13-40		70											2.61
UCX14	2.3/4"	70	130	77.8	32	33.3	44.5	12.0	7/16" - 20UNF	M12x1.50	5190	4190	2.74
UCX14-44		75											2.75
UCX15	3"	75	140	82.6	33	33.3	49.3	12.0	7/16" - 20UNF	M12x1.50	5700	4550	3.41
UCX15-48		80											3.32

Bearing Speeds

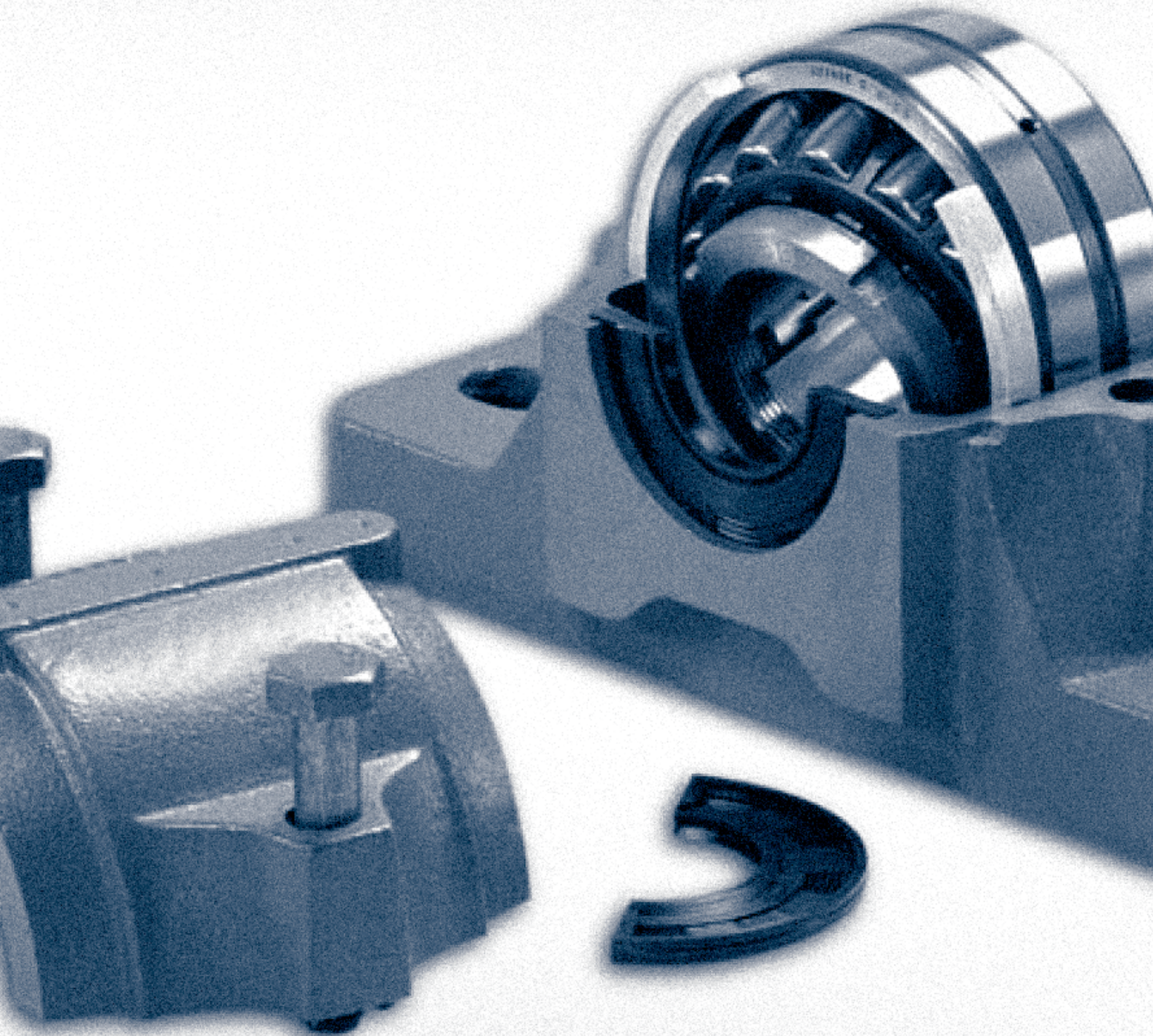
The maximum rotational speed of a grease lubricated ball bearing is related to the fit between shaft and bearing.

Under normal operating conditions the fit between the bearing and shaft should be h7. The maximum permissible bearing speeds are shown on the right.

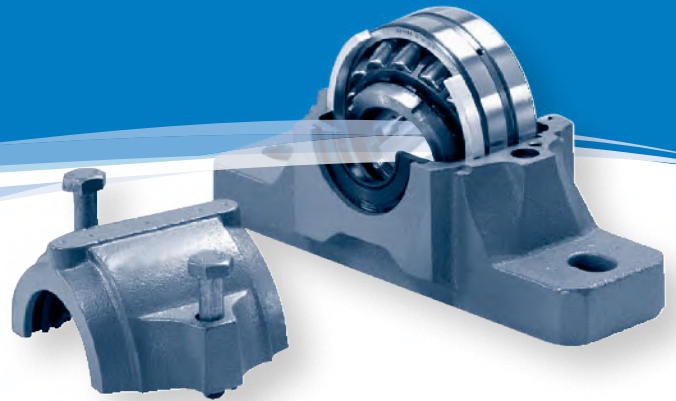
A looser fit, allowing lower speeds is recommended for lighter loads and a tighter fit allowing higher speeds is recommended for heavier loads

Bearing No.	Max Speed rev/min	Bearing No.	Max Speed rev/min
201	4500	210	1800
202	4500	211	1600
203	4500	212	1500
204	4000	213	1400
205	3400	214	1300
206	2800	215	1200
207	2400	216	1100
208	2200	217	1000
209	1900	218	950

 **CHALLENGE** ®



Plummer Blocks



Features

- Produced from high grade GG 20 cast iron
- Conform to ISO standards
- Available with:
 - Taper bore ball bearings (single and double)
 - Spherical roller bearings
- Robust design giving high strength and rigidity
- High load carrying capacity
- Nitrile rubber (NBR) seals:
 - V Ring Seal
 - Double Lip Seal
- Simple installation
- Sealed end covers available
- Supplied with grease nipple

General Information

Applications

CHALLENGE Plummer blocks can be used in a wide variety of applications including :-

- belt drives
- fans of all varieties
- fluid machinery
- hammer and impact mills
- material handling
- metal working
- mining and construction
- mining ventilator
- paper and pulp machinery
- power supply generators
- power transmission applications

Materials

Housing

Produced from GG20 high grade cast iron

Seals

Nitrile (NBR) seals: - V Ring Seal
- Double Lip Seal

Locating ring

Aluminium

End cover

NBR seal with a mild steel plate

Bearings

All CHALLENGE Plummer Blocks will accept taper bored self aligning ball bearings and spherical roller bearings.

General Information

Seals

CHALLENGE Plummer Blocks use V Ring or Double Lip Seals made from acrylonitrile Butadiene Rubber, commonly called NBR or Nitrile.

The complete seal is made up of two equal halves and can be easily inserted into the annular groove of the housing.

The seal has two lips making close contact with the shaft surface.

During lubrication, grease should be added into the void between the two lips.

Care must be taken not to damage the seal lips when installing or seal leakage will occur.

Lubrication

CHALLENGE Plummer Blocks are preferably grease lubricated. CHALLENGE recommend a lithium based grease.

In larger housings, it is possible to oil lubricate. Consult CHALLENGE for further information.

Prior to installation, lubrication should be added and checked during routine maintenance.

After installation, lubrication should fill approximately 33% of the inner body of the housing base.

After six months of running, it is advisable to purge the old lubricant and refill with new.

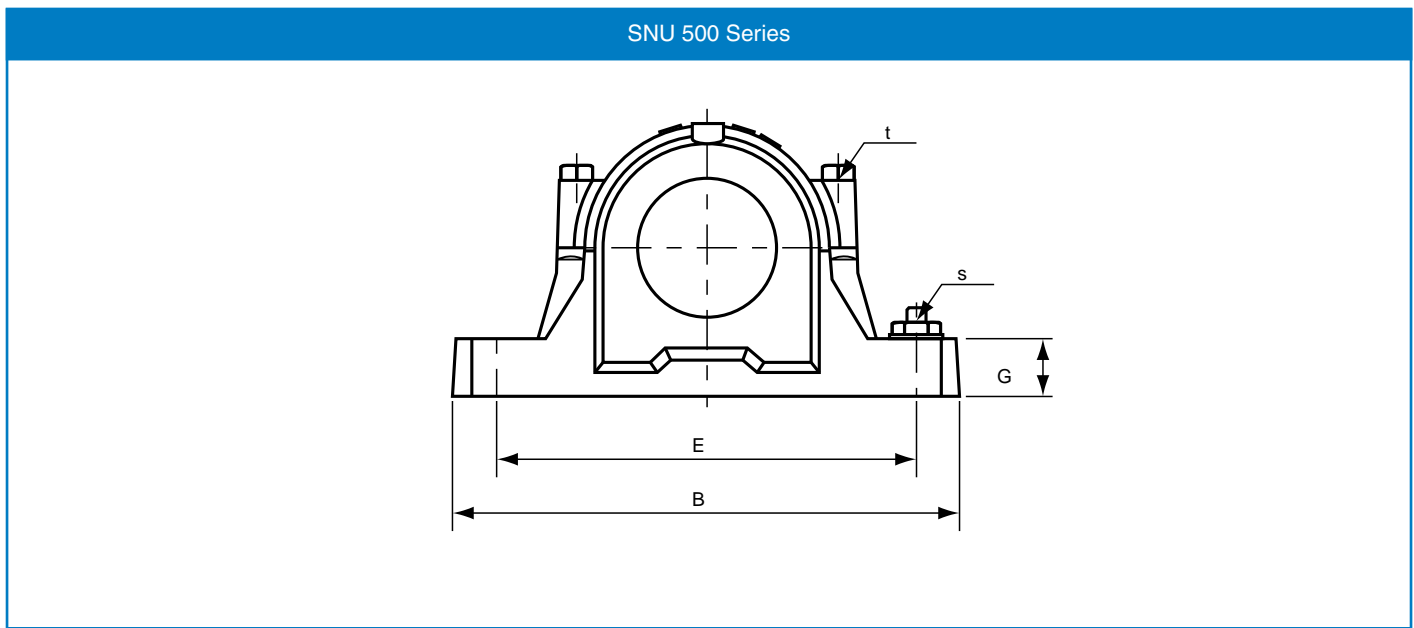
If the application is a combination of high temperature with high speed and heavy loads then the lubricant should be changed more frequently.

When choosing a suitable grease, a normal temperature range would be -30°C to +120°C.

End Covers

The Plummer Block end covers are made from Nitrile (NBR) rubber with a mild steel plate.

SNU 500 Series

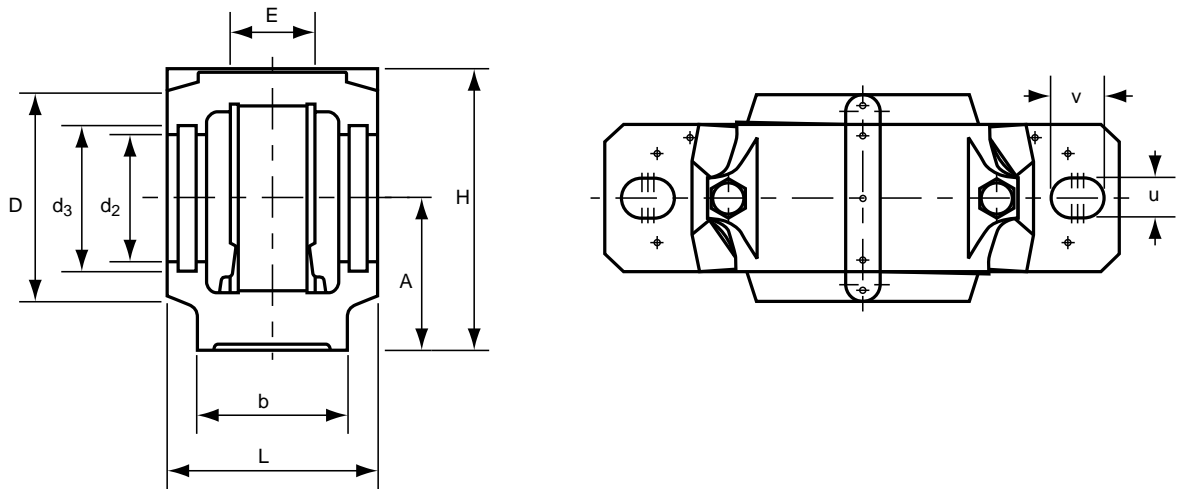


Housing Size	Shaft Diameter d	Plummer Block Housing Dimensions												
		D (H8)	B	b	G	F (H13)	A (h13)	L	H	E	d2 (H12)	d3 (H13)	f	u
SNU 507	30	72	185	52	22	34	50	82	92	150	46.5	54.5	5	15
SNU 508	35	80	205	60	25	39	60	85	106	170	51.5	59.5	5	15
SNU 509	40	85	205	60	25	30	60	85	108	170	56.5	64.5	5	15
SNU 510	45	90	205	60	25	41	60	90	112	170	62.0	70.5	5	15
SNU 511	50	100	255	70	28	44	70	95	126	210	67.0	75.5	5	18
SNU 512	55	110	255	70	30	48	70	105	132	210	72.0	80.5	5	18
SNU 513	60	120	275	80	30	51	80	110	147	230	77.0	85.5	5	18
SNU 515	65	130	280	80	30	56	80	115	153	230	87.0	95.5	5	18
SNU 516	70	140	315	90	32	58	95	120	174	260	92.5	101.0	5	22
SNU 517	75	150	320	90	32	61	95	125	180	260	97.5	106.0	5	22
SNU 518	80	160	345	100	35	65	100	140	190	290	105.0	111.0	5	22
SNU 519	85	170	345	100	35	68	112	145	208.5	290	131.0	141.0	6	22
SNU 520	90	180	380	110	40	70	112	160	214.5	320	137.5	147.5	6	26
SNU 522	100	200	410	120	45	80	125	175	238.5	350	147.5	157.5	6	26
SNU 524	110	215	410	120	45	86	140	185	271	350	157.5	167.5	6	26

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SNU 500 Series

SNU 500 Series



Plummer Block Housing Dimensions				Options								Housing Size
v	s	t	Weight kg	Bearing Number		Adapter Sleeve	Locating Ring Number Qty		V Ring Seal	Double Lip Seal	End Cover	
20	M 12	M 10	2.0	1207K 2207K	22207K	H 207 H 307	SR 72 x 8.5 SR 72 x 5.5	2 2	U 507	TSNG 507	507 UA	SNU 507
20	M 12	M 10	2.7	1208K 2208K	22208K	H 208 H 308	SR 80 x 10.5 SR 80 x 8	2 2	U 508	TSNG 508	508 UA	SNU 508
20	M 12	M 10	2.8	1209K 2209K	22209K	H 209 H 309	SR 85 x 5.5 SR 85 x 7	2 1	U 509	TSNG 509	509 UA	SNU 509
20	M 12	M 10	2.9	1210K 2210K	22210K	H 210 H 310	SR 90 x 10.5 SR 90 x 9	2 2	U 510	TSNG 510	511 NA - 510 UA	SNU 510
24	M 16	M 12	4.5	1211K 2211K	22211K	H 211 H 311	SR 100 x 11.5 SR 100 x 9.5	2 2	U 511	TSNG 511	512 NA - 511 UA	SNU 511
24	M 16	M 12	5.0	1212K 2212K	22212K	H 212 H 312	SR 110 x 13 SR 110 x 10	2 2	U 512	TSNG 512	513 NA - 512 UA	SNU 512
24	M 16	M 12	6.3	1213K 2213K	22213K	H 213 H 313	SR 120 x 14 SR 120 x 10	2 2	U 513	TSNG 513	515 NA - 513 UA	SNU 513
24	M 16	M 12	6.6	1215K 2215K	22215K	H 215 H 315	SR 130 x 15.5 SR 130 x 12.5	2 2	U 515	TSNG 515	517 NA - 515 UA	SNU 515
28	M 20	M 16	9.4	1216K 2216K	22216K	H 216 H 316	SR 140 x 16 SR 140 x 12.5	2 2	U 516	TSNG 516	518 NA - 516 UA	SNU 516
28	M 20	M 16	9.8	1217K 2217K	22217K	H 217 H 317	SR 150 x 16.5 SR 150 x 12.5	2 2	U 517	TSNG 517	519 NA - 517 UA	SNU 517
28	M 20	M 16	12.3	1218K 2218K	22218K 23218K	H 218 H 318 H 2318	SR 160 x 17.5 SR 160 x 12.5 SR 160 x 12.5	2 2 1	U 518	TSNG 518	520 NA - 518 UA	SNU 518
28	M 20	M 16	13.5	1219K 2219K	22219K	H 219 H 319	SR 170 x 18 SR 170 x 12.5	2 2	U 519	TSNG 519	526 NA - 519 UA	SNU 519
32	M 24	M 20	16.6	1220K 2220K	22220K 23220K	H 220 H 320 H 2320	SR 180 x 18 SR 180 x 12 SR 180 x 9.7	2 2 1	U 520	TSNG 520	520 UA	SNU 520
32	M 24	M 20	20.4	1222K 2222K	22222K 23222K	H 222 H 322 H 2322	SR 200 x 21 SR 200 x 13.5 SR 200 x 10.2	2 2 1	U 522	TSNG 522	528 NA - 522 UA	SNU 522
32	M 24	M 20	25.0		22224K 23224K	H 3124 H 2324	SR 215 x 14 SR 215 x 10	2 1	U 524	TSNG 524	530 NA - 524 UA	SNU 524

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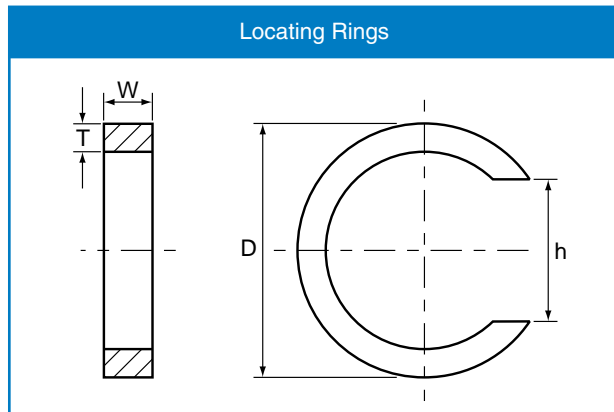
Technical Information

Grease nipple hole dimensions

Plummer block housing number	Grease nipple hole size
SNU 507 – SNU 510	M 6
SNU 511 – SNU 520	1/8" – 27 NTP
SNU 522 – SNU 524	1/4" – 18 NTP

Locating Rings

When location rings are installed, use a ring on both sides of the bearings. If only one locating ring is used, it should be fitted on the sleeve nut side of the bearing.



Plummer block housing number	D	T	W	h
SNU 507	72	4	5.5 7.0* 7.5* 8.5	47
SNU 508	80	5	8.0 9.0* 10.5	52
SNU 509	85	5	5.5 7.0	57
SNU 510	90	5	8.0* 9.0 10.5	62
SNU 511	100	5	8.0* 9.5 11.5	68
SNU 512	110	5	8.0* 10.0 10.5* 13.0	73
SNU 513	120	5	8.0* 10.0 11.0* 14.0	78
SNU 515	130	5	10.0* 12.5 15.5	88
SNU 516	140	7.5	10.0* 12.5 16.0	93
SNU 517	150	7.5	12.5 16.5	98
SNU 518	160	7.5	10.0* 12.5 14.0* 17.5	105
SNU 519	170	7.5	10.0* 12.5 14.5* 18.0	112
SNU 520	180	7.5	9.7 10.0* 12.0 14.5* 18.0	120
SNU 522	200	10	10.2 13.0* 13.5 21.0	130
SNU 524	215	10	10.0 13.0* 14.0	140

* special

Technical Information

Permitted Loading Capacity

The permitted loading capacity for CHALLENGE SNU series Plummer Block Housings is dependent upon a number of factors relating to the loading sustained and the strength capacity of the securing cap headed bolts.

For most circumstances, the Plummer Block Housing is subjected to axial loads. When the loads are from other directions, a check should be carried out to ascertain that the capacity of the cap headed bolts is sufficient for the subjected loads.

Under good engineering practice a breaking safety factor of 3 is used on bolts. Whereas CHALLENGE use a breaking safety factor of 6 on the Plummer Block Housing.

See the table Permitted Loading Capacity for the housing breaking load capacity in different directions and the maximum load capacity of the bolts.

Permitted Loading Capacity											
Housing size	Breaking load for load direction kN						Maximum load of 2 bolts for load direction kN			Bolt size	Recommended tightening torque Nm
	Pa	P55 °	P90 °	P120 °	P150 °	P180 °	P120 °	P150 °	P180 °		
SNU 507	60	180	110	80	75	90	60	35	30	M 10 x 50	40
SNU 508	67	200	120	90	80	100	60	35	30	M 10 x 50	40
SNU 509	70	210	130	95	85	105	60	35	30	M 10 x 50	40
SNU 510	80	240	145	110	95	120	60	35	30	M 10 x 50	40
SNU 511	87	260	155	120	105	130	90	52	45	M 12 x 60	80
SNU 512	93	280	170	125	110	140	90	52	45	M 12 x 60	80
SNU 513	103	310	185	140	125	155	90	52	45	M 12 x 65	80
SNU 515	123	370	220	165	150	185	90	52	45	M 12 x 65	80
SNU 516	130	390	235	175	155	195	90	52	45	M 12 x 70	80
SNU 517	147	440	270	200	175	220	90	52	45	M 12 x 80	80
SNU 518	173	520	310	235	210	260	170	98	85	M 16 x 90	160
SNU 519	180	540	330	245	215	270	170	98	85	M 16 x 90	160
SNU 520	190	570	340	255	230	285	260	150	130	M 20 x 100	200
SNU 522	207	620	370	280	250	310	260	150	130	M 20 x 100	200
SNU 524	243	730	440	330	295	365	260	150	130	M 20 x 100	200

 **CHALLENGE**  [®]





Features

Metric sizes

1600, 6000, 6200, 6300, 6800 and 6900 series

Imperial (inch) sizes

Popular R series are held in stock

Tapered roller

Available in both metric and imperial (inch) sizes

- Gcr15 high carbon chromium bearing steel is the standard material for bearing rings and balls
- Stainless steel shields are available
- Seals are Buna Nitrile and fluorocarbon, silicon and Teflon seals are available for special applications
- Retainers for corrosive environment, misalignment or high speed applications are available in stainless steel, nylon or phenolic resins

General Information

Lubrication

Challenge bearings are supplied with a low noise bearing grease thickened by lithium and calcium 12 - hydroxystearate, made from deeply refined mineral oil with rust inhibitors and anti oxidants.

This grease has excellent noise reducing ability, mechanical stability and does not contain any heavy metal or nitrate that will harm health or pollute the environment.

Temperature range -20 to +120 degrees centigrade.

Upon request ball bearings can be lubricated with other greases or oil, Contact: technicalsupport@challengeproduction.com for specific applications.

Materials

Rings & Balls

Gcr15 high carbon chromium bearing steel is the standard material for precision bearing rings and balls.

Retainers

The retainer is normally made of H62 copper sheet or 08F cold rolled steel belt, however, in cases of corrosive environment, misalignment, or high speed operation, stainless steel, nylon, or phenolic resins can be used upon request.

Shields & Seals

Shields are made of steel as standard, and the optional AISI-300 stainless is available, when required.

Buna Nitril is the standard material used for the seals. Fluorocarbon, silicone, and Teflon seals are available for high temperature applications, upon request.

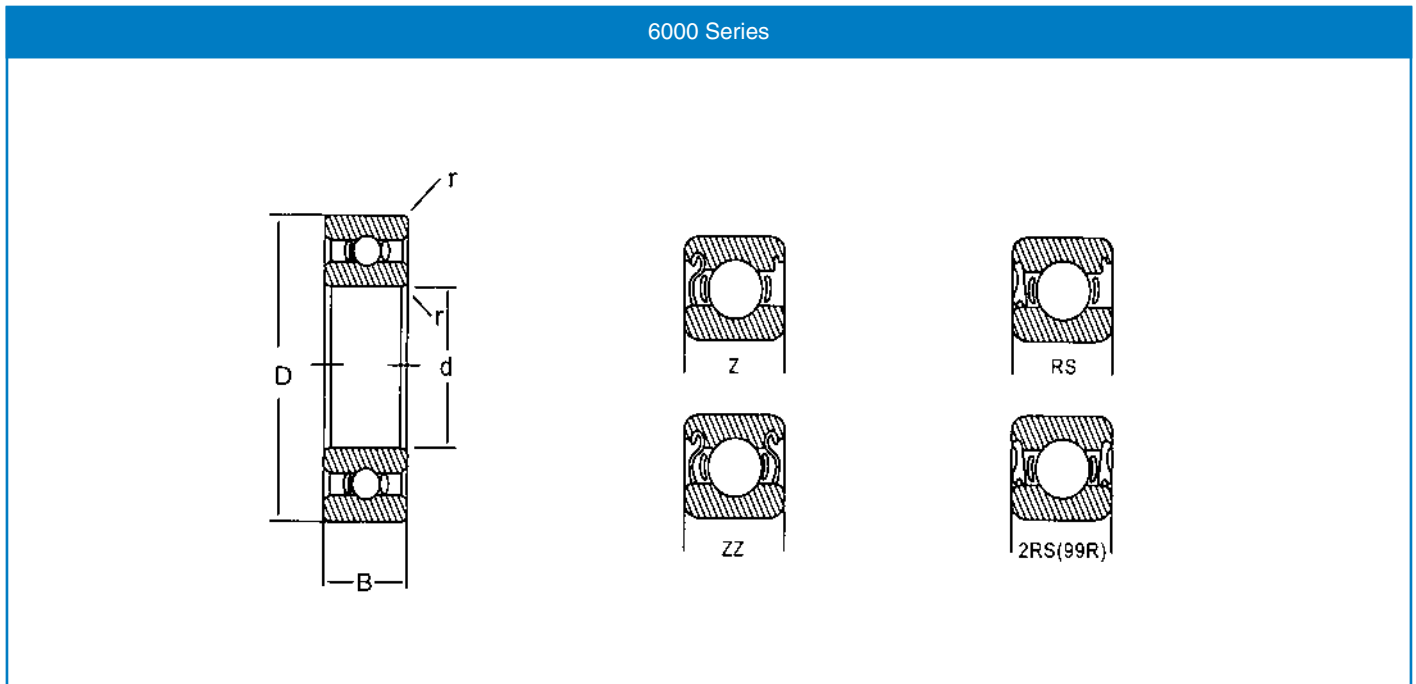
Rust Resistance

Under normal operating conditions, the rust resisting period is six months. After this period, the product should be checked and rust protected again if necessary, so as to prevent rust from occurring.

Packing

Generally the bearings are packed into plastic pipes or small boxes and then packed into a carton. If required, special packaging can be accommodated and must be specified prior to order.

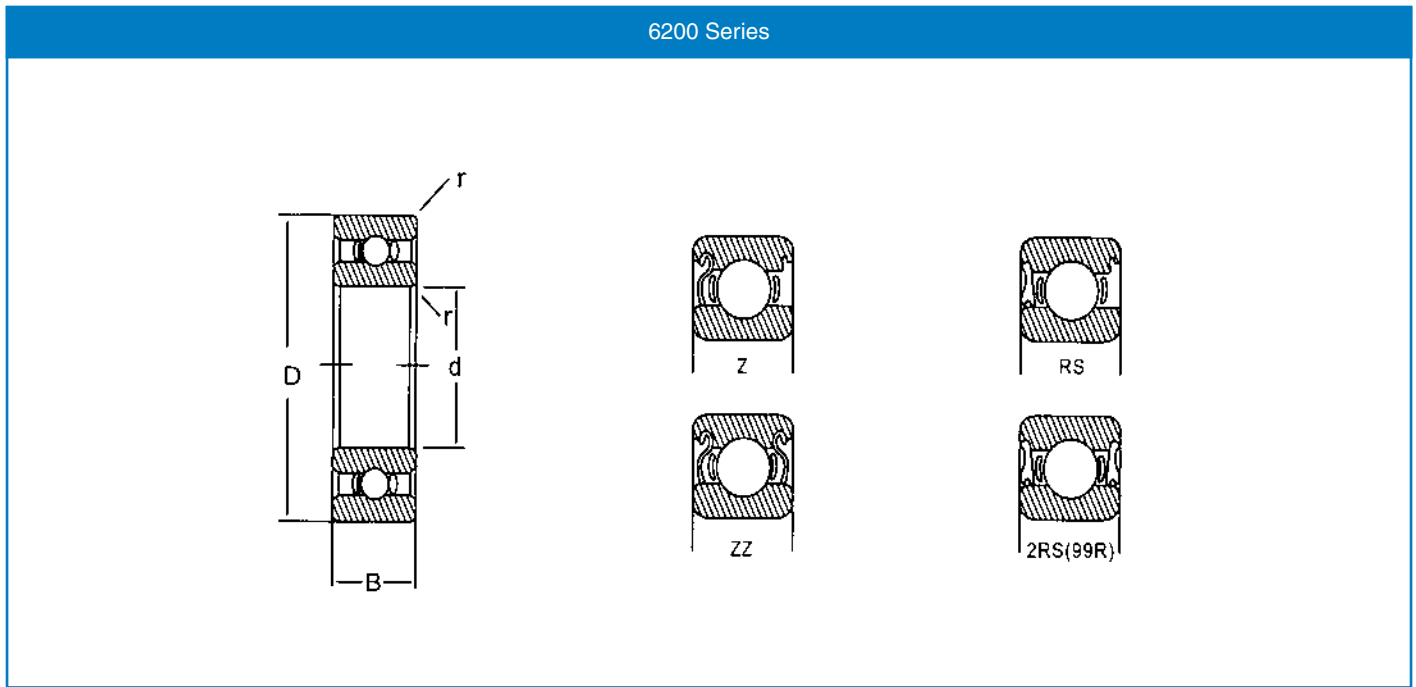
6000 Series



6000 Series

Bearing Number	Dimensions				Basic Load Rating kN		Max Runout Speed rev/min		Weight each kg
	Bore d	Outside Dia. D	Width B	Chamfer r min	Dynamic Cr	Static Cor	Grease	Oil	
6000 Series									
605	5	14	5	0.2	1.05	0.50	32000	40000	0.0045
606	6	17	6	0.3	1.95	0.72	30000	38000	0.0057
607	7	19	6	0.3	2.88	1.08	28000	36000	0.0071
608	8	22	7	0.3	3.32	1.38	26000	34000	0.011
609	9	24	7	0.3	3.35	1.40	22000	30000	0.014
6000	10	26	8	0.3	4.58	1.98	20000	28000	0.018
6001	12	28	8	0.3	5.10	2.38	19000	26000	0.021
6002	15	32	9	0.3	5.58	2.85	18000	24000	0.026
6003	17	35	10	0.3	6.00	3.25	17000	22000	0.036
6004	20	42	12	0.6	9.38	5.02	15000	19000	0.069
6005	25	47	12	0.6	10.10	5.85	13000	17000	0.075
6006	30	55	13	1.0	10.18	6.91	10000	14000	0.116
6007	35	62	14	1.0	12.46	8.65	9000	12000	0.155
6008	40	68	15	1.0	13.09	9.44	8500	11000	0.185
6009	45	75	16	1.0	21.00	15.10	7200	9000	0.231
6010	50	80	16	1.0	21.80	16.60	6400	7800	0.250
6011	55	90	18	1.1	28.30	21.20	5700	7000	0.362
6012	60	95	18	1.1	29.50	23.20	5000	6300	0.385
6013	65	100	18	1.1	30.50	25.20	5300	6300	0.421
6014	70	110	20	1.1	38.10	30.90	5000	5900	0.604
6015	75	115	20	1.1	39.70	33.50	4700	5600	0.649

6200 Series

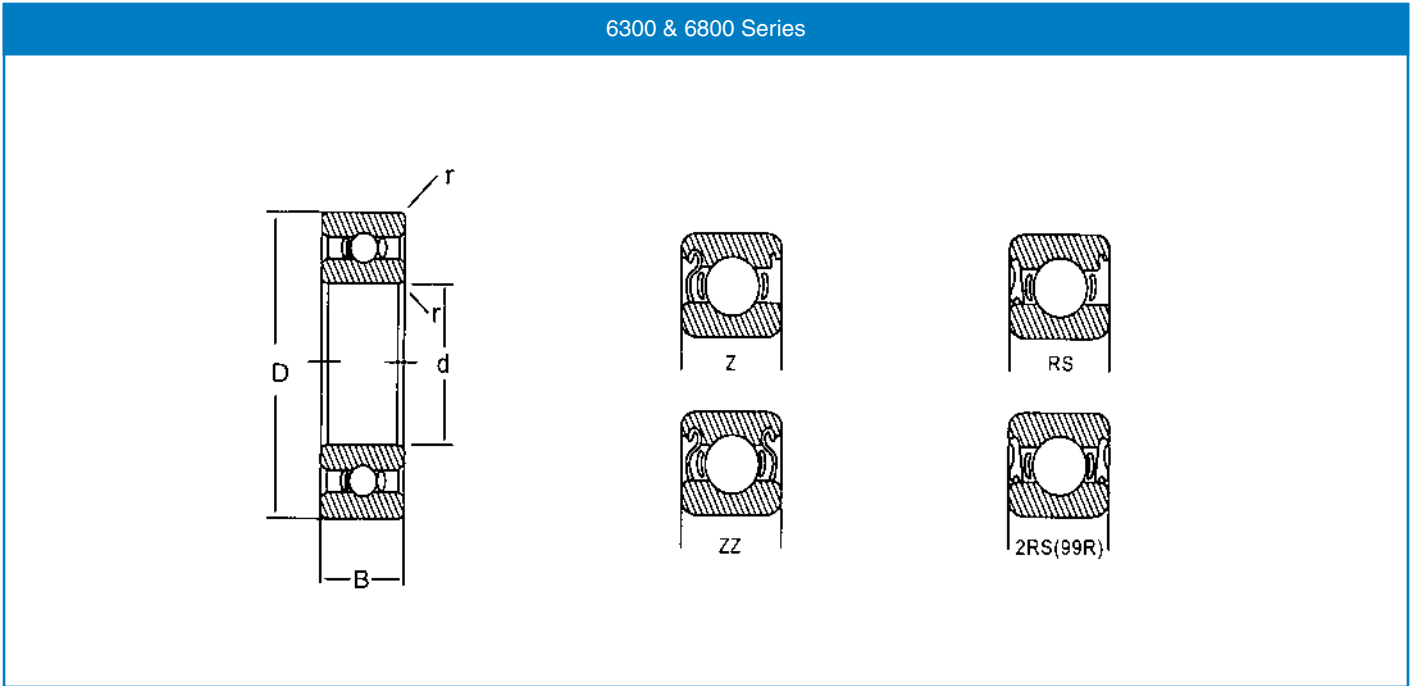


6200 Series

Bearing Number	Dimensions				Basic Load Rating kN		Max Runout Speed rev/min		Weight each kg
	Bore d	Outside Dia. D	Width B	Chamfer r min	Dynamic Cr	Static Cor	Grease	Oil	
6200 series									
623	3	10	4	0.15	0.50	0.22	38000	48000	0.0015
624	4	13	5	0.2	1.15	0.45	36000	45000	0.0032
625	5	16	5	0.3	1.88	0.68	32000	40000	0.0048
626	6	19	6	0.3	2.80	1.05	28000	36000	0.0075
627	7	22	7	0.3	3.28	1.35	26000	34000	0.012
628	8	24	8	0.3	3.35	1.40	24000	32000	0.017
629	9	26	8	0.3	4.45	1.95	22000	30000	0.019
6200	10	30	9	0.6	5.10	2.38	19000	26000	0.028
6201	12	32	10	0.6	6.82	3.05	18000	24000	0.034
6202	15	35	11	0.6	7.65	3.72	17000	22000	0.043
6203	17	40	12	0.6	9.58	4.47	16000	20000	0.062
6204	20	47	14	1.0	9.87	6.18	14000	18000	0.102
6205	25	52	15	1.0	10.75	10.02	12000	16000	0.120
6206	30	62	16	1.0	14.96	13.65	9500	13000	0.190
6207	35	72	17	1.1	19.74	15.92	8500	11000	0.270
6208	40	80	18	1.1	22.70	17.70	8000	10000	0.370
6209	45	85	19	1.1	32.50	20.40	7800	9200	0.416
6210	50	90	20	1.1	35.00	23.20	7100	8300	0.462
6211	55	100	21	1.5	43.50	29.20	6400	7600	0.602
6212	60	110	22	1.5	52.50	36.00	6000	7000	0.789
6213	65	120	23	1.5	57.20	40.00	4400	5300	0.990
6214	60	125	24	1.5	62.20	44.10	4200	5000	1.070
6215	75	130	25	1.5	67.40	49.30	4000	4600	1.180

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6300 & 6800 Series



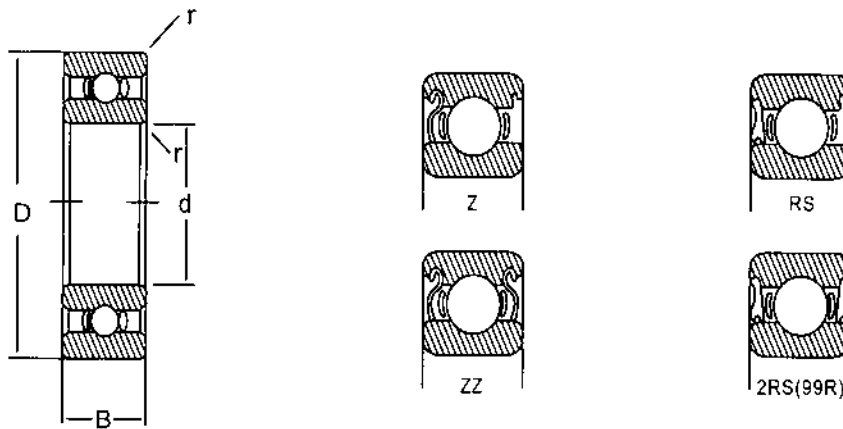
6300 & 6800 Series

Bearing Number	Dimensions				Basic Load Rating kN		Max Runout Speed rev/min		Weight each kg
	Bore d	Outside Dia. D	Width B	Chamfer r min	Dynamic Cr	Static Cor	Grease	Oil	
6300 Series									
6300	10	35	11	0.6	7.65	3.48	20000	26000	0.054
6301	12	37	12	1.0	9.72	5.08	17000	22000	0.058
6302	15	42	13	1.0	11.50	5.42	16000	20000	0.082
6303	17	47	14	1.0	10.68	6.66	15000	19000	0.110
6304	20	52	15	1.1	12.25	7.79	13000	17000	0.140
6305	25	62	17	1.1	17.25	11.37	10000	14000	0.220
6306	30	72	19	1.1	21.66	14.80	9000	12000	0.330
6307	35	80	21	1.5	25.68	17.54	8000	10000	0.410
6308	40	90	23	1.5	31.36	22.25	7000	9000	0.600
6309	45	100	25	1.5	52.80	31.70	5600	6700	0.814
6310	50	110	27	2.0	61.80	37.90	5000	5800	1.070
6311	55	120	29	2.0	71.50	44.60	4400	5300	1.370
6312	60	130	31	2.1	81.80	51.90	4200	5000	1.730
6313	65	140	33	2.1	92.70	59.70	4000	4600	2.080
6800 Series									
685	5	11	3	0.15	0.55	0.25	35000	45000	0.0011
686	6	13	3.5	0.15	0.33	0.40	33000	42000	0.0019
687	7	14	3.5	0.15	0.90	0.46	31000	40000	0.0021
688	8	16	4	0.2	1.38	0.71	29000	38000	0.0031
689	9	17	4	0.2	1.38	0.71	28000	36000	0.0032
6800	10	19	5	0.3	1.40	0.75	26000	34000	0.005
6801	12	21	5	0.3	1.40	0.90	22000	30000	0.007
6802	15	24	5	0.3	1.92	1.18	20000	28000	0.008
6803	17	26	5	0.3	2.18	1.28	19000	26000	0.019
6804	20	32	7	0.3	3.45	2.25	17000	22000	0.042
6805	25	37	7	0.3	3.70	2.65	15000	19000	0.048

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6900 & 1600 Series

6900 & 1600 Series

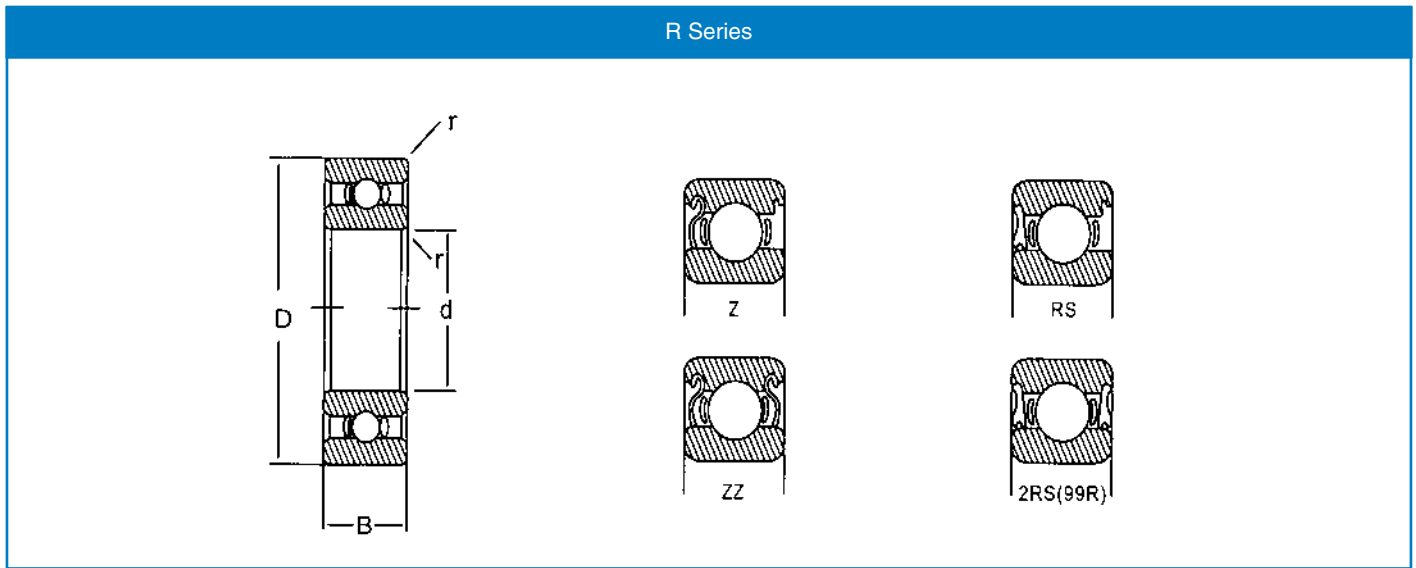


6900 & 1600 Series

Bearing Number	Dimensions				Basic Load Rating kN		Max Runout Speed rev/min		Weight each kg
	Bore d	Outside Dia. D	Width B	Chamfer r min	Dynamic Cr	Static Cor	Grease	Oil	
6900 Series									
695	5	13	4	0.2	1.08	0.42	34000	43000	0.0024
696	6	15	5	0.2	1.48	0.60	32000	40000	0.0038
697	7	17	5	0.3	2.02	0.80	30000	38000	0.0052
698	8	19	6	0.3	2.25	0.92	28000	36000	0.0073
699	9	20	6	0.3	3.30	1.40	25000	34000	0.0082
6900	10	22	6	0.3	3.30	1.40	25000	32000	0.009
6901	12	24	6	0.3	3.38	1.48	20000	28000	0.011
6902	15	28	7	0	4.00	2.02	19000	26000	0.016
6903	17	30	7	3	4.30	2.32	18000	24000	0.018
6904	20	37	9	0.3	6.55	3.60	17000	22000	0.036
6905	25	42	9	0.3	7.05	4.55	14000	18000	0.042
6906	30	47	9	0.3	7.25	5.00	12000	16000	0.048
1600 Series									
16001	12	28	7	0.3	5.08	2.38	28000	32000	0.019
16002	15	32	8	0.3	5.60	2.55	24000	28000	1.025
16003	17	35	8	0.3	6.82	3.38	22000	26000	0.027
16004	20	42	8	0.3	7.90	4.45	18000	20000	0.050
16005	25	47	8	0.3	8.42	5.15	15000	18000	0.060
16006	30	55	9	0.3	11.20	6.25	13000	15000	0.085
16007	35	62	9	0.3	11.50	8.80	11000	13000	0.100

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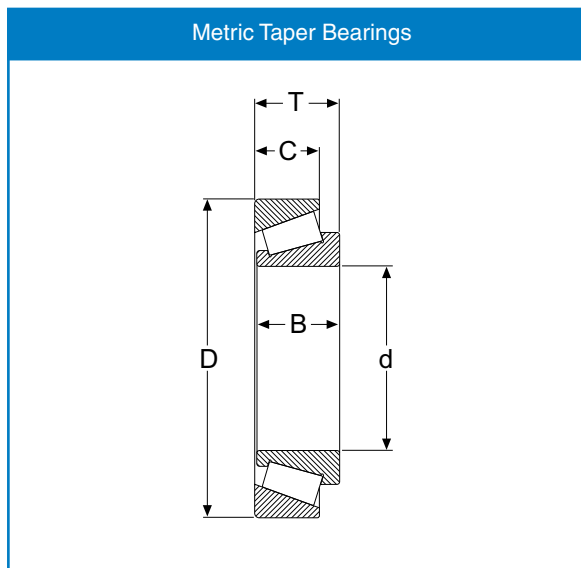
R Series



R Series

Bearing Number	Dimensions				Basic Load Rating kN		Max Runout Speed rev/min		Weight each kg
	Bore d	Outside Dia. D	Width B	Chamfer r min	Dynamic Cr	Static Cor	Grease	Oil	
R Series									
R3	4.763	12.70	3.967	0.3	0.89	0.42	-	-	0.0015
R168	6.35	9.525	3.175	0.1	0.27	0.14	268	136	0.0032
R188	6.35	12.70	3.175	0.15	0.83	0.37	830	370	0.0048
R4	6.35	15.875	4.978	0.30	1.14	0.56	1136	558	0.0075
R4A	6.35	19.05	5.556	0.40	2.18	1.16	2175	1163	0.012
R6	9.525	22.225	5.556	0.40	2.56	1.35	2560	1350	0.017
R6ZZ	9.525	22.225	7.142	0.40	2.56	1.35	2560	1350	0.019
R8	12.70	28.575	6.350	0.40	3.93	2.23	3930	2230	0.028
R8ZZ	12.70	28.575	9.535	0.40	3.93	2.23	3930	2230	0.034
R10	15.875	34.925	7.142	0.60	4.62	2.79	4620	2790	0.043
R12	19.05	41.275	7.938	0.60	7.24	4.46	7240	4463	0.062
R14	22.225	47.625	9.525	0.60	7.74	4.96	7740	4960	0.102
R16	25.4	50.80	9.525	0.60	7.74	5.16	7740	5160	0.120
R18	28.575	53.975	12.7	0.7874	8.24	5.18	-	-	0.190
R20	31.75	57.15	12.7	0.7874	8.61	6.47	-	-	0.270
R22	34.925	63.5	14.2875	0.7874	-	-	-	-	0.370
R24	38.1	66.675	14.2900	0.7874	-	-	-	-	0.416

Metric Taper Bearings

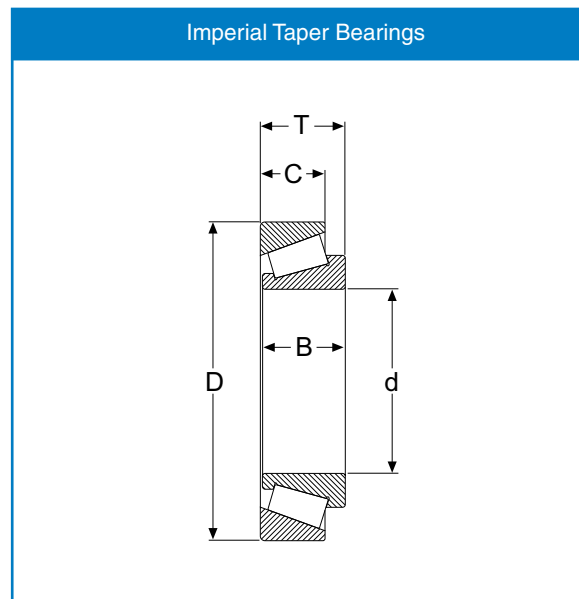


Bearing Number	Bore d	Outside Dia. D	Complete Width T	Cone Width B	Cup Width C	Weight kg
30203	17	40	13.25	12	11	0.08
32203	17	40	17.25	16	14	0.10
30303	17	47	15.25	14	12	0.13
32004	20	42	15.00	15	12	0.11
30204	20	47	15.25	14	12	0.13
30304	20	52	16.25	15	13	0.18
32204	20	47	19.25	18	15	0.17
32304	20	52	22.25	21	18	0.25
32005	25	47	15.00	15	11.5	0.12
30205	25	52	16.25	15	13	0.16
30305	25	62	18.25	17	15	0.27
32205	25	52	19.25	18	16	0.18
32305	25	62	25.25	24	20	0.38
32006	30	55	17.00	17	13	0.17
30206	30	62	17.25	16	14	0.22
30306	30	72	20.75	19	16	0.45
32206	30	62	21.27	20	17	0.28
32306	30	72	28.75	27	23	0.59
33206	30	62	25.00	25	19.5	0.35
32007	35	62	18.00	18	14	0.23
30207	35	72	18.25	17	15	0.32
30307	35	80	22.75	21	18	0.53
32207	35	72	24.25	23	19	0.43
32307	35	80	32.75	31	25	0.83
33207	35	72	28.00	28	22	0.59
32008	40	68	19.00	19	14.5	0.29
30208	40	80	19.75	18	16	0.43
30308	40	90	25.25	23	20	0.77
32208	40	80	24.75	23	19	0.56
32308	40	90	35.25	33	27	1.2
33208	40	80	32.00	32	25	0.74

Bearing Number	Bore d	Outside Dia. D	Complete Width T	Cone Width B	Cup Width C	Weight kg
32009	45	75	20.00	20	15.5	0.33
30209	45	85	20.75	19	16	0.5
30309	45	100	27.25	25	22	0.96
32209	45	85	24.75	23	19	0.57
32309	45	100	38.25	36	30	1.5
33209	45	85	32.00	32	25	0.79
32010	50	80	20.00	20	15.5	0.42
30210	50	90	21.75	20	17	0.54
30310	50	110	29.25	27	23	1.3
32210	50	90	24.75	23	19	0.6
32310	50	110	42.25	40	33	1.9
33210	50	90	32.00	32	24.5	0.85
32011	55	90	23.00	23	17.5	0.58
30211	55	100	22.75	21	18	0.7
30311	55	120	31.50	29	25	1.8
32211	55	100	26.75	25	21	1.21
32311	55	120	45.50	43	35	2.55
32012	60	95	23.00	23	17.5	0.63
30212	60	110	23.75	22	19	0.92
30312	60	130	33.50	31	26	2.1
32212	60	110	29.75	28	24	1.14
32312	60	130	48.50	46	37	3.15
32013	65	100	23.00	23	17.5	0.62
33113	65	110	34.00	34	26.5	0.62
30213	65	120	24.75	23	20	1.1
32213	65	120	32.75	31	27	1.59
32313	65	140	51.00	48	39	3.82
32014	70	110	25.00	25	19	0.97
32214	70	125	33.25	31	27	1.7
32215	75	130	33.25	21	27	1.93
32216	80	140	35.25	33	28	2.18

All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused.

Imperial Taper Bearings



Bearing Number	Bore d	Outside Dia. D	Complete Width T	Cone Width B	Cup Width C	Weight kg
11749/11710	17.46	39.88	13.84	14.61	10.67	0.083
09067/09195	19.05	45.24	16.64	15.49	12.07	0.180
11949/11910	19.05	45.24	15.49	16.64	12.07	0.125
12649/12610	21.43	50.01	17.53	18.23	13.97	0.172
44643/44610	25.40	50.29	14.22	14.73	10.67	0.118
84548/84510	25.40	57.15	19.43	19.43	14.73	0.254
44649/44610	26.99	50.29	14.22	14.73	10.67	0.108
45449/45410	29.00	50.29	14.73	14.22	10.67	0.104
86649/86610	30.16	64.29	21.43	21.43	16.67	0.339
15123/15245	31.75	62.00	18.16	19.05	14.29	0.237
2580/2523	31.75	69.85	25.36	23.81	19.05	0.451
67048/67010	31.75	59.93	15.88	11.81	16.76	0.186
48548/48510	34.93	65.09	18.03	18.29	13.97	0.259
88649/88610	34.93	72.23	25.40	25.40	19.84	0.483
68149/68110	35.00	59.13	15.88	16.76	11.94	0.173
68149/68111	35.00	59.98	15.88	16.76	11.94	0.174
29748/29710	38.10	65.09	18.03	18.29	13.97	0.233
29749/29710	38.10	65.09	18.03	18.29	13.97	0.236
18590/18520	41.28	73.03	16.67	17.46	12.70	0.288
501349/501310	41.28	73.43	19.56	19.81	14.73	0.337
25580/25520	44.45	82.93	23.81	25.40	19.05	0.558
25580/25522	44.45	83.06	23.81	25.40	19.05	0.553
102949/102910	45.24	73.43	19.56	19.81	15.75	0.316
25590/25520	45.62	82.93	23.81	25.40	19.05	0.538
104948/104910	50.00	82.00	21.50	21.50	17.00	0.419
3780/3720	50.80	93.26	30.16	30.30	23.81	0.854
506849/506810	55.00	90.00	23.00	23.00	18.50	0.558

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Tel: +86 574 8833 4378 Fax: +86 574 8833 4379
Email: ningbo.sales@challengeproduction.com

CHALLENGE GROUP OF COMPANIES TERMS OF SALE

These Terms do not apply if you deal as a Consumer Your statutory rights are not affected by these conditions

1. DEFINITIONS

In these Terms of Sale the following meanings shall apply:

"We" and "Us"	means	CHALLENGE WORLDWIDE Plc
"You"	means	the person seeking to purchase Goods from Us.
"the Goods"	means	the goods or where the context permits the services to be supplied by Us.
"Company Signatory"	means	a person authorised by Us.
"the Terms"	means	the terms set out in this document and special terms agreed in writing between a Company Signatory and You or on Buyer's order.
"the Contract"	means	the contract for the supply of Goods incorporating these Terms.
"Consumer"	means	any natural person acting for purposes outside their trade, business or profession.
"the Defect"	means	the condition and/or any attribute of the Goods and/or any other circumstances which but for the effect of these Terms would have entitled You to damages.

2. THE CONTRACT

- All orders are accepted by Us only under these Terms and they may not be altered other than with the written agreement of a Company Signatory. Any contrary or additional terms unless so agreed are excluded.
- Quotations are invitations to treat only.
- Orders may be cancelled only with the written agreement of a Company Signatory and You will indemnify Us against all costs claims losses or expenses incurred as a result of that cancellation.
- You shall be responsible to Us for ensuring the accuracy of the terms of any order including any applicable design drawing or specification provided to Us by You and for giving Us any necessary information relating to the Goods within a sufficient time to enable Us to perform the Contract in accordance with its Terms.
- It is Your responsibility to be fully conversant with the nature and performance of the Goods, including any harmful effects their use may have.
- Without prejudice to Clause 2.5.4 of these Terms while We take every precaution in the preparation of our catalogues technical circulars price lists and other literature these documents are for your general guidance only and statements included in these documents (in the absence of fraud on our part) shall not constitute representations by Us and We shall not be bound by them.
- We undertake to comply with the Safety Legislation including, but not limited to the provision of any available information relating to the safety of the Goods to secure so far as reasonable practicable the health and safety of the users of the Goods.
- You will comply with the Safety Legislation and agrees to indemnify and keep indemnified Us against Your failure to comply with the Safety Legislation. In particular, You shall indemnify Us against any and all claims or proceedings resulting from any injury, loss or damage caused by a failure to use the Goods in accordance with Our instructions whether such failure is on the part of the Your employees, contractors or agents or a third party to whom You have supplied the Goods.
- We shall not be liable in respect of any misrepresentation made by Us or our employees or agents to You or your employees or agents as to the condition of the Goods their fitness for any purpose or as to quantity or measurements unless the representation is:
 - made or confirmed in writing by a Company Signatory; and/or
 - fraudulent
- For the avoidance of doubt our liability for damages for misrepresentation (other than fraudulent) is excluded or limited by Clause 8 of these Terms.

3. PRICE

- The price of the Goods shall be as published in our price list current at the date of delivery of the Goods. The price is exclusive of VAT which shall be due at the rate ruling on the date of a VAT invoice.
- Prices listed or quoted are based on costs prevailing at the time when they are given or agreed. We shall be entitled to adjust the price of the Goods as at the time of delivery by such amount as may be necessary to cover any increase sustained by Us after the date of acceptance of your order and any direct or indirect costs of making obtaining handling or supplying the Goods.
- Prices listed or quoted are applicable to the quantity specified and on the information provided by You at the time of order. In the event of orders being placed for lesser quantities or if there is any change in specifications, delivery dates, or delay is caused by our instructions or lack of instructions we shall be entitled to adjust the price of the Goods as ordered to take account of the variations.
- We shall have the option of supplying any Goods ordered by You in imperial measurements in the nearest equivalent metric measurements and the Goods may be charged in metric measure allowing for conversions.

4. PAYMENT

- Unless other credit terms have been agreed in writing with a Company Signatory all accounts are due for payment on the last day of the month following the month in which the Goods are delivered.
- Late payments will incur interest at the rate of 5% per annum above the base rate of Barclays Bank Plc in force from time to time from the due date until the date of payment after as well as before judgement.
- Credit facilities may be withdrawn or reduced at any time in our sole discretion.
- Even if We have previously agreed to give You credit we reserve the right to refuse to execute any order or contract if the arrangements for payment or your credit rating is not satisfactory to Us. In our discretion We may require security satisfactory to Us or payment for each consignment when it is available and before it is despatched in which case delivery will not be effected until We are in receipt of security or cleared funds as requested by Us.
- In the case of short delivery You will remain liable to pay the full invoice price of all goods delivered or available for delivery.
- You may not withhold payment of any invoice or other amount due to Us by reason of any right of set off or counterclaim which You may have or allege to have for any reason whatever.
- We shall be entitled at all times to set off any debt or claim of whatever nature which We may have against You against any sums due from Us to You.

5. DELIVERY

- Delivery will be effected when the Goods leave our premises whether carried by Us or an independent carrier or the premises of our suppliers when the Goods are delivered direct from suppliers.
- Delivery dates are given in good faith but are estimates only.
- Time for delivery shall not be of the essence of the Contract.
- For the avoidance of doubt and without detracting from any other provisions of these Terms We shall not be liable for any damages whatsoever whether direct or indirect (including for the avoidance of doubt any liability to any third party) resulting from any delay in delivery of the Goods or failure to deliver the Goods in a reasonable time whether such delay or failure is caused by our negligence or otherwise howsoever.
- We reserve the right to make delivery by instalments and tender a separate invoice in respect of each instalment. Our failure to deliver any one or more instalments or any claim by You in respect of any one or more instalments shall not entitle You to treat the Contract as a whole as repudiated.
- The price agreed includes our normal delivery charges but We may make an additional charge if We incur further costs or expense such as (but not limited to) those caused by delivery of less than a full load; complying with your request for delivery outside our normal delivery pattern or trading hours or by instalments; orders of small value which are not economical for us to deliver free.
- You must provide the necessary labour for unloading the Goods and unloading is to be completed with reasonable speed. If our delivery vehicle is kept waiting for an unreasonable time or is obliged to return without completing delivery or if We provide additional staff to unload Goods an additional charge will be made.
- You may collect Goods from Us during our trading hours. If they are not collected within 14 days from when We notify You that they are available a storage charge will be payable before the Goods are released.
- If you fail to take delivery accept or collect the Goods within the agreed time in our discretion We may make an additional charge, invoice You for the Goods or treat the contract as repudiated and in any case recover our losses from You.
- If You collect Goods from Us You are solely responsible for the size weight and positioning of the load on the vehicle and shall indemnify Us in respect of all costs claims losses or expenses We may incur as a result of your collecting the Goods including any resulting from our negligence.

6. INSPECTION

- You shall inspect the Goods at the place and time of unloading or collection but nothing in these Terms shall require You to break packaging and/or unpack Goods which are intended to be stored before use.
- You must advise Us by telephone immediately and give Us written notice within three working days of unloading of any claim for short delivery.
- If you do not give Us that notice within that time the Goods will be deemed to have been delivered in the quantities shown in the delivery documents.
- You shall not be entitled and irrevocably and unconditionally waive any right to reject the Goods or claim any damages whatsoever for short delivery howsoever caused.
- Our liability for short delivery is limited to make good the shortage.
- Where it is or would have been apparent on a reasonable inspection that the goods are not in conformity with the Contract or (where the Contract is a contract for sale by sample) that the bulk does not compare with the sample You must advise Us by telephone immediately and give us written notice within three working days of inspection.
- If you fail to give Us that notice within that time the Goods will be deemed to have been accepted and You shall not be entitled and irrevocably and unconditionally waive any right to reject the Goods.
- If you fail to give Us that notice within that time Clause 8 shall have effect.

7. TITLE AND RISK

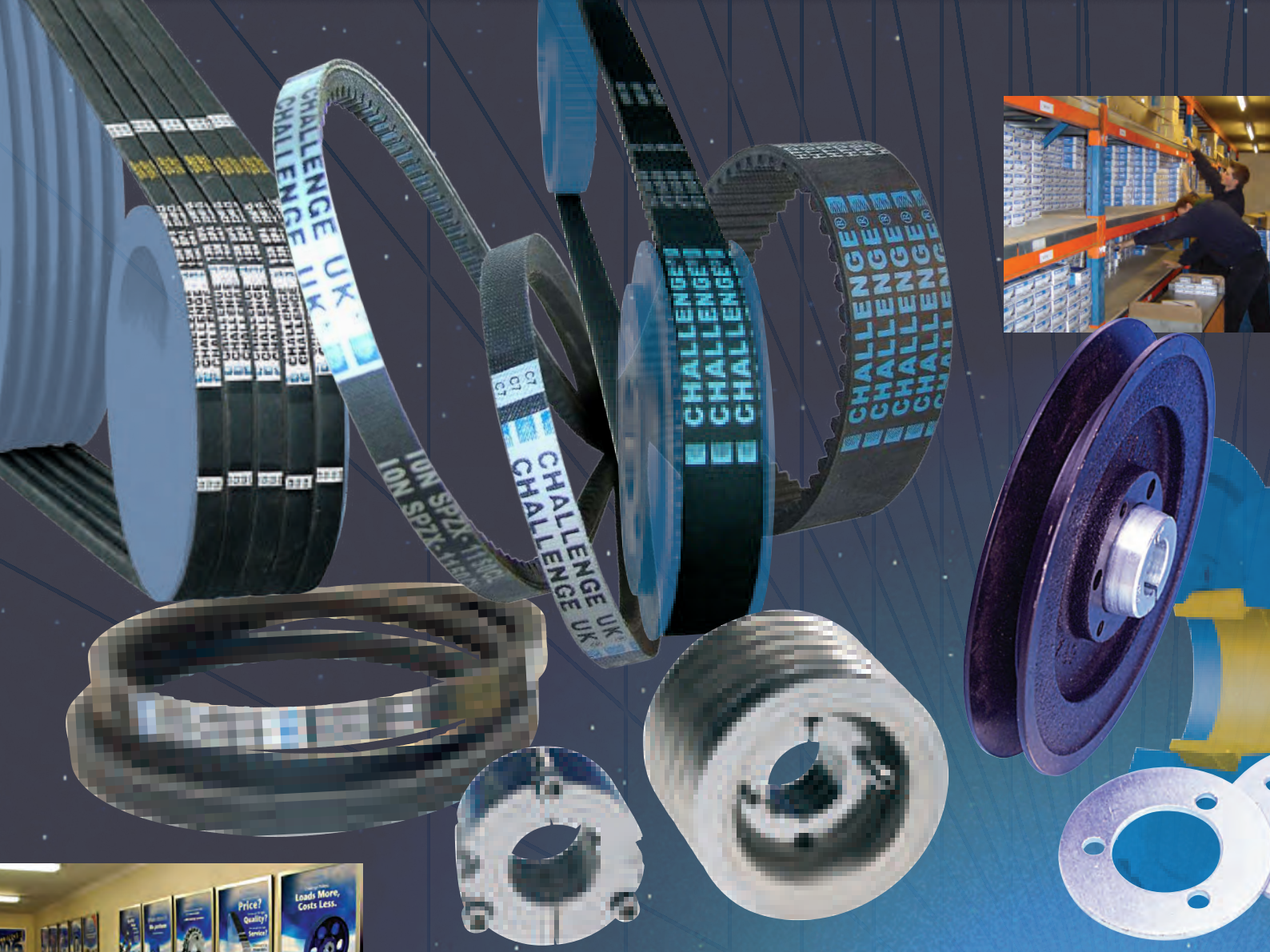
- Risk in the Goods shall pass to You when the Goods are delivered.
- The property in the Goods shall remain with Us until You pay all sums due to Us whether in respect of this Contract or otherwise.
- Until title passes:-
 - You shall hold the Goods as our fiduciary agent and bailee.
 - The Goods shall be stored separately from any other goods and You shall not interfere with any identification marks labels batch numbers or serial numbers on the Goods.
 - We agree that You may use or agree to use the Goods as principal and not as our agents in the ordinary course of your business subject to the express condition that at our direction the entire proceeds of any sale or insurance proceeds received in respect of the goods are held in trust for Us and not mixed with any other monies or paid into an overdraft bank account and shall at all times be identifiable as our money.
- We shall be entitled at any time to recover any or all of the Goods in your possession to which We have title and for that purpose We or our employees or agents may with such transport as is necessary enter upon any premises occupied by You or to which You have access and where the Goods may be or are believed to be situated.

8. LIABILITIES

- Nothing in these Terms shall exclude or restrict our liability for death or personal injury resulting from our negligence or our liability for fraudulent misrepresentation.
- Subject to Clause 8.1 these Terms shall not be liable by reason of any misrepresentation (unless fraudulent) or any breach of warranty condition or other term express or implied or any breach of duty (common law or statutory) or negligence for any damages whatsoever. Instead of liability in damages We undertake liability under Clause 8.3 below.
- Where but for the effect of Clause 8.2 of these Terms You would have been entitled to damages against Us We shall not be liable to pay damages but subject to the conditions set out in Clause 8.4 below shall in our sole discretion either repair the Goods at our own expense or supply replacement Goods free of charge or refund all (or where appropriate part) of the price paid for the relevant Goods.
- We will not be liable under Clause 8.3:
 - If the Defect arises from fair wear and tear.
 - If the Defect arises from wilful damage negligence abnormal working conditions mis-use alteration or repair of the Goods failure to follow British Standard or industry instructions relevant to the

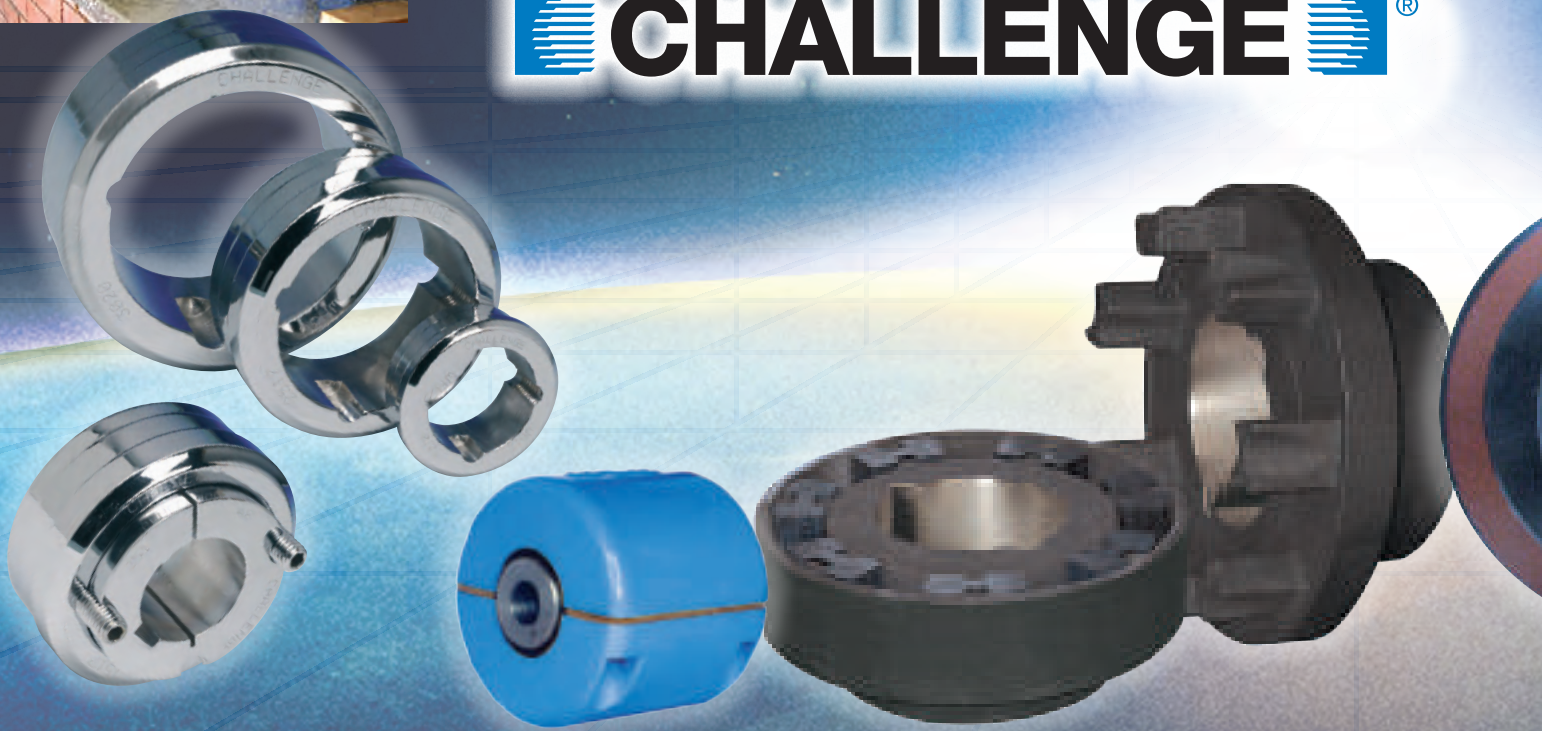
Goods or storage of the Goods in unsuitable conditions (but this sub-clause shall not apply to any act or omission on our part)

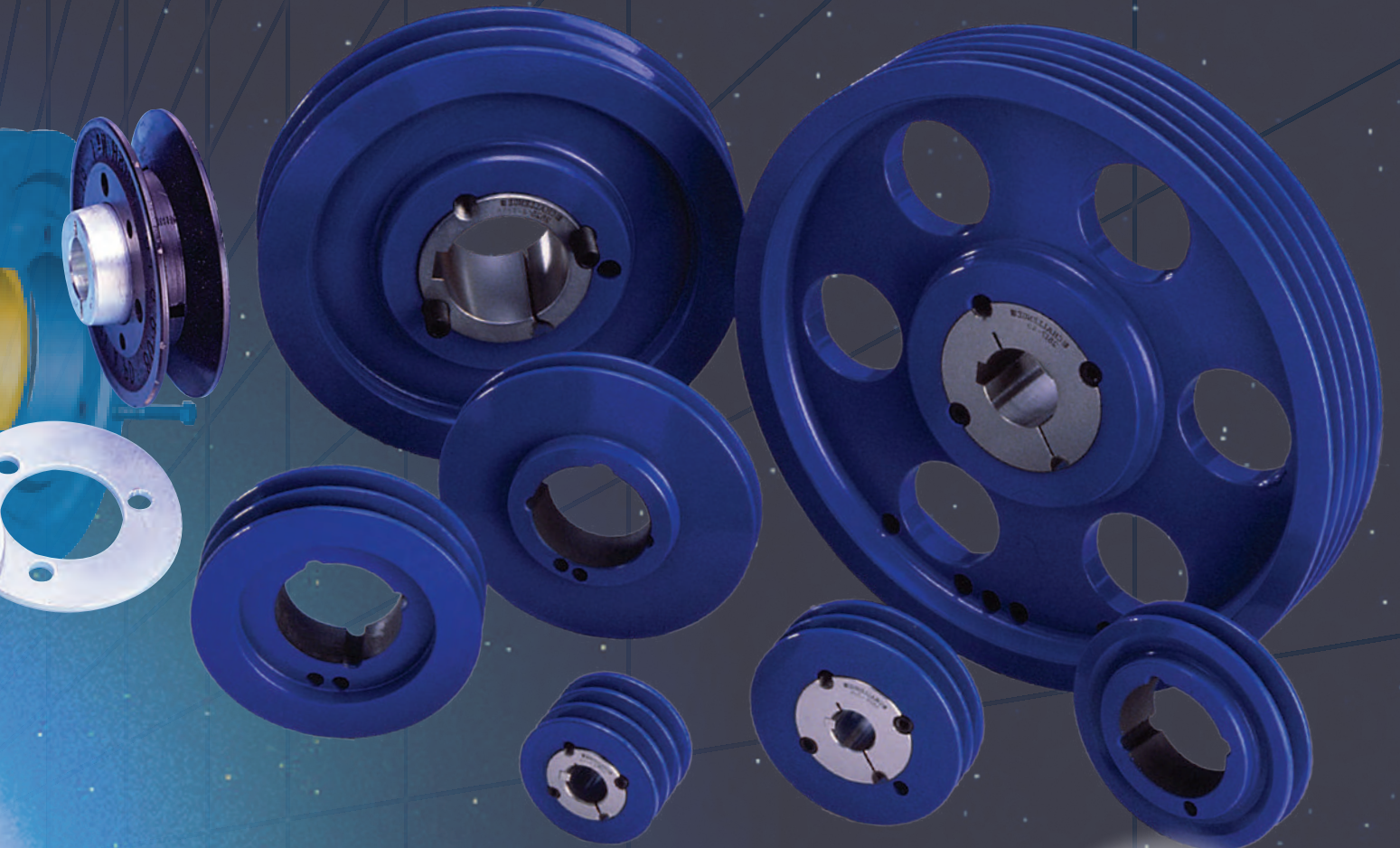
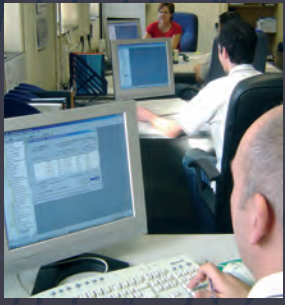
- Unless after discovery of the Defect we are given a reasonable opportunity to inspect the Goods before they are used or in any way interfered with. For the avoidance of doubt We acknowledge that the costs of suspending works are relevant to the determination of what is a reasonable opportunity and this sub-clause shall not apply to any works affecting the Goods which it may be reasonably necessary to carry out in the interests of safety and/or as emergency measures.
- If the Defect would have been apparent on a reasonable inspection under Clause 6.1 of these Terms at the time of unloading unless You advise Us by telephone immediately and written notice of any claim is given to Us within three working days of the time of unloading; or in any other case.
- The Defect is discovered within four months from the date of delivery and We are given written notice of the Defect within three working days of it being discovered.
- If the Goods are manufactured processed or milled by Us to the design quantity measure or specification of You or your agents then;
 - Subject to Clause 8.1 of these Terms We shall not be under any liability for damages whatsoever or under Clause 8.3 of these Terms as the case may be except in the event of:
 - Fraudulent misrepresentation.
 - Misrepresentation where the representation was made or confirmed in writing by a Company Signatory.
 - Non-compliance with such design quantity measurement or specification.
 - Breach of a written warranty signed by a Company Signatory that the Goods are fit for that purpose; or
 - Claim maintainable against Us pursuant to Clause 8.1 of these Terms.
 - You will unconditionally fully and effectively indemnify Us against all loss damages costs on an indemnity basis and expenses awarded against or incurred by Us in connection with or paid or agreed to be paid by Us in settlement of any claim for infringement of any patents copyright design trademark or any other industrial or intellectual property rights of any other person.
 - You will further unconditionally fully and effectively indemnify Us against all loss damages costs on an indemnity basis and expenses awarded against or incurred by Us in connection with or paid or agreed to be paid by Us in settlement of any other claim arising from any such manufacturing processing or milling including but not limited to any Defect in the Goods. This indemnity will be reduced in proportion to the extent that such loss damage costs and expenses are due to our negligence.
 - You will unconditionally fully and effectively indemnify Us against all loss damages costs on an indemnity basis and expenses awarded against or incurred by Us in connection with or paid or agreed to be paid by Us in settlement of any claim by any third party arising from the supply or use of the Goods. This indemnity will be reduced in proportion to the extent that such loss damage costs and expenses are due to our negligence.
 - Without prejudice to any other provisions in these Terms in any event our total liability for any one claim or for the total of all claims arising from any one act of default on our part (whether arising from our negligence or otherwise) shall not exceed the purpose price of the goods the subject matter of any claim.
- NON PAYMENT/INSOLVENCY
 - "Insolvent" means You becoming unable to pay your debts within the meaning of Section 123 of the Insolvency Act 1986; the levying or the threat of execution or distress on any of your property; the appointment of a receiver or administrative receiver over all or any part of your property; a proposal for a voluntary arrangement or compromise between You and your creditors whether pursuant to the Insolvency Act 1986 or otherwise; the passing of a resolution for voluntary winding-up or summoning a meeting to pass such a resolution otherwise than for the purposes of a bona fide amalgamation or reconstruction; the presentation of a petition for your winding-up or for an administration order in relation to You; if You suffer any analogous step or proceedings under foreign law or You ceasing or threatening to cease to carry on your business.
 - If you fail to pay the price for any Goods on the due date or fail to pay any sum due to Us under any contract on the due date or You become insolvent or if You are a Limited Company or partnership and there is a material change in your constitution or You commit a material breach of this Contract and fail to remedy that breach all sums outstanding between You and Us shall become immediately payable and We shall be entitled to do any one or more of the following (without prejudice to any other right or remedy We may have)
 - Require payment in cleared funds in advance of further deliveries.
 - Cancel or suspend any further deliveries to You under any contract without liability on our part.
 - Without prejudice to the generality of Clause 7 of these Terms exercise any of our rights pursuant to that clause.
 - If we reasonably incur third party costs such as tracing or debt collection agency costs or seek legal advice or take legal proceedings to enforce our rights as a result of your breach of this Contract including but not limited to recovery of any sums due, you will reimburse us such reasonable agency costs or legal costs incurred on an indemnity basis.
- GENERAL
 - This Contract shall be governed and interpreted according to the law of England and Wales and You agree to submit to the non-exclusive jurisdiction of the English Courts.
 - We shall not be liable for any delay or failure to perform any of our obligations in relation to the Goods due to any cause beyond our reasonable control including industrial action.
 - The waiver by Us of any breach or default of these Terms shall not be construed as a continued waiver of that breach nor as a waiver of any subsequent breach of the same or any other provision.
 - If any clause or sub-clause of these Terms is held by a competent authority to be invalid or unenforceable the validity of the other clauses and sub-clauses of these Terms shall not be affected and they shall remain in full force and effect.
 - We may assign novate or sub-contract all or part of this Contract and You shall be deemed to consent to any novation. This Contract is personal to You and it may not be assigned.
 - Nothing in this Contract is intended to or will grant any right to any third party to enforce any terms of this contract whether express or implied.



Never a problem, always a...

CHALLENGE®





Challenge Group Companies



AUSTRALIA

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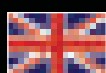
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Full contact details can be found before contents and also on page 432.

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