

Couplings

Resilient and Soft Start Couplings



RENOLD
Superior Coupling Technology

www.renold.com

RENOLD
Superior Coupling Technology



www.renold.com

Contents

	<i>Page No</i>
Renold Gears	02
Renold Couplings	03
Typical Applications	04
The Renold Collection	06
Coupling Comparison Chart	08
Coupling Selection Guide	10
Load Classification by Application	12
Service Factors and Selection	13
Keyway and Keyway Dimensions	14
Taper Bushes	15
Spiderflex	16
Spiderjaw and Spiderwrap	19
Pinflex	22
Crownpin	27
Tyreflex	30
Discflex	33
Chainflex	36
Rigid	38
Gearflex	39
Renoldflex	53
Hydrastart	58
Terms and Conditions	70
Renold Chain	inside back cover

RENOLD

Strength through Service

Renold Gears has been manufacturing high quality, high specification gear units for over 100 years and has always been at the leading edge of gear technology with innovative products and power transmission solutions.



Interchangeability

Many of the products from Renold Gears are dimensionally interchangeable with other manufacturers gear units, allowing a trouble free replacement of gearboxes, in most cases upgrading the capacity through state of the art technology and materials.

Custom Made

Renold Gears is unique in it's ability to offer custom made products designed to meet customers exacting requirements without compromise on availability and cost. From complete package solutions to individual precision replacement gears, all can be tailor made to meet specific applicational requirements.

Available

The most popular ranges of gearboxes are available from local distribution stock, backed up by extensive stocks from our manufacturing plant in the UK.

RENOLD

Superior Gear Technology

www.renold.com

Renold Couplings



Renold have been manufacturing flexible and rigid couplings, sprag and air clutches for over 50 years. The Renold Couplings factories are based in three global locations - Cardiff, Wales; Halifax, England and Westfield, New York, USA.

Renold Clutches and Couplings, Cardiff, Wales

In 1991 the company moved to a purpose-built factory in Wentloog, Cardiff, in which state-of-the-art machining and inspection facilities are to be found, all supporting a high level of personal customer care.

Service Excellence and Care

Renold offers a unique level of service excellence and customer care. Our experienced applications engineers will select the optimum solution, with the aid of the latest computer and design technology.

Specialist Solutions and Innovations

Renold is recognised throughout the industry for its capability to create specific solutions to customers unique requirements. International companies and industries, from steel to food processing to escalators to textile machinery, have chosen Renold to solve their problems.

Leading edge technology

Renold provides practical cost effective solutions with a commitment to value through quality. This is achieved by the continuous investment in people, process technology and manufacturing.

Consistent Reliability

Renold's 100 years of experience in the design and manufacturing of power

Renold Hi-Tec Couplings, Halifax, England

The Halifax factory (formally Holset Engineering Ltd.) became a member of Renold plc in 1996. The operation also includes the latest machining and tooling technology with integrated cellular manufacturing and complete testing and balancing capabilities.

transmission products to the highest specifications, with proven performance in diverse industries world-wide, underwrites the guaranteed quality and the assurance of reliability.

Renold Clutches & Couplings is BS EN ISO 9001:2000 approved. All products are designed and manufactured to this Quality Assurance System.



Renold Ajax, Westfield, New York, USA.

The company designs and manufactures custom gear spindles and gear couplings for the primary metals industry.

Testing

Although each of our factories manufacturing and testing demands vary, the following capabilities are available if the application demands it:

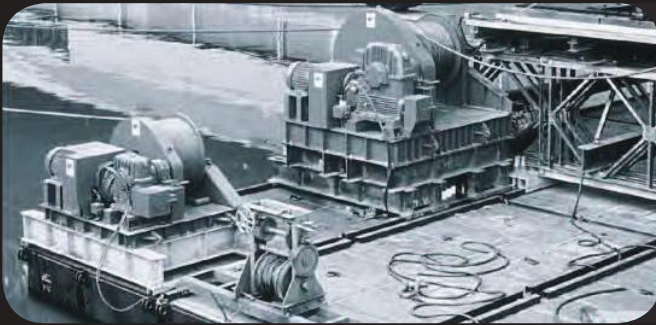
- Full scale radial and axial stiffness measurement.
- Torsional vibration analysis.
- Misalignment testing of couplings up to 2 metres diameter.
- Measurements of torsional stiffness up to 220 KNM.
- Static and dynamic balancing capabilities.
- Noise attenuation testing.
- Transient and finite element analysis.



The **RENOLD** organisation stretches worldwide: • Over 20 National Sales Companies • More than 70 Overseas Distributors
Offering the comprehensive **RENOLD** range of power transmission products directly or through local distributor networks

www.renold.com

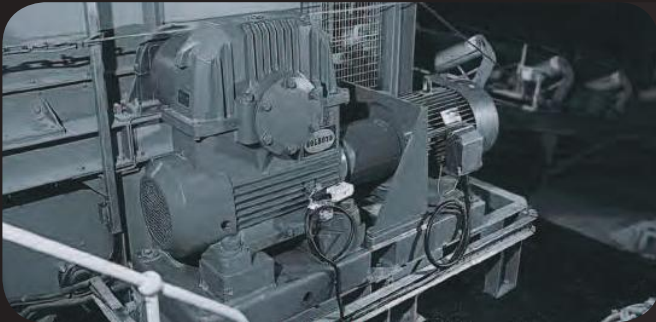
Typical Applications



Hydrastart

A fluid coupling suitable for soft starting high inertia machinery with reduced current demand, controlled acceleration and torque with drive overload protection.

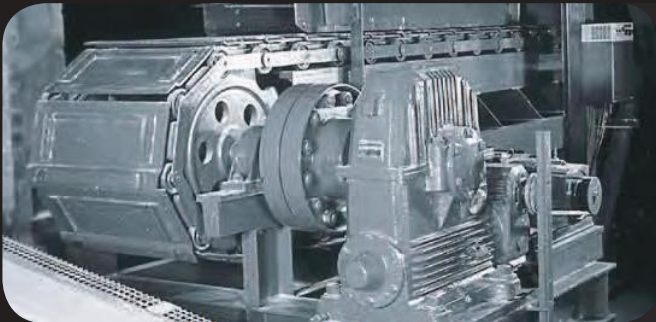
- Conveyors
- Ball Mills
- Centrifuges
- Rotary Kilns
- Fans



Pinflex

A robust general purpose pin/buffer coupling, providing reliable fail safe transmission of torque and misalignment capability.

- Pumps
- Compressors
- Conveyors



Crown Pin

An established pin/buffer coupling offering extended power capacity where the demand for long life and simplicity of construction make it suitable for working in arduous conditions.

- Conveyors
- Pumps
- Cranes
- Washers
- Screens
- General Industrial Applications



Spider Couplings

Relatively low power but highly flexible coupling with halfbodies in either cast iron or bronze, making suitable for use in the food or chemical/pharmaceutical industries.

- Pumps
- Mixers
- Lube Systems



Gearflex

Heavy duty all metal couplings giving maximum power capacity within minimum space envelope and excellent misalignment capacity.

- Steelworks
- Quarries
- Mining

Typical Applications



Discflex

A general purpose, fail safe, torsionally flexible coupling offering the option of either urethane or reinforced rubber disc.

- Pumps
- Compressors
- Conveyors
- Mixers



Spiderflex

A medium powered, torsionally flexible coupling, combining shock absorbing and misalignment. Used in the widest range of industries and applications.



Tyreflex

A range of highly flexible couplings offering excellent misalignment capacity and suitable to absorb both shock loads and vibrations.

- Pumps
- Compressors
- Diesel engines
- Roller tables



Renoldflex

Renoldflex is a torsionally rigid coupling (TRC) that utilises a stainless steel spring disc pack to provide a positive "backlash free" drive.

- Pumps
- Compressors
- Packaging machines
- High temp boiler feeds
- Wind Turbines
- Petrochemical pump installations
- High speed general installations



Coupling customisation

Renold is able to offer a full customisation service across its complete range of coupling and clutch products.

The **RENOLD** Collection

Spiderflex Coupling



Max power / 100 rpm (kW)	33 kW
Max weight	63 kg
Max shaft size	115 mm
Max speed (rpm)	7,700 rpm
Max outer diameter	275 mm
Max torque (Nm)	3,150 Nm

www.renold.com
RENOLD
Superior Coupling Technology

Page 16

SpiderJaw Coupling



Max power / 100 rpm (kW)	45 kW
Max weight	84 kg
Max shaft size	115 mm
Max speed (rpm)	31,000 rpm
Max outer diameter	305 mm
Max torque (Nm)	4,308 Nm

www.renold.com
RENOLD
Superior Coupling Technology

Page 19

SpiderWrap Coupling



Max power / 100 rpm (kW)	45 kW
Max weight	84 kg
Max shaft size	115 mm
Max speed (rpm)	9,000 rpm
Max outer diameter	323 mm
Max torque (Nm)	4,308 Nm

www.renold.com
RENOLD
Superior Coupling Technology

Page 19

Pinflex Coupling



Max power / 100 rpm (kW)	340 kW
Max weight	423 kg
Max shaft size	260 mm
Max speed (rpm)	6,800 rpm
Max outer diameter	490 mm
Max torque (Nm)	32,500 Nm

www.renold.com
RENOLD
Superior Coupling Technology

Page 22

Crownpin Coupling



Max power / 100 rpm (kW)	2,607 kW
Max weight	2,250 kg
Max shaft size	300 mm
Max speed (rpm)	6,210 rpm
Max outer diameter	1,220 mm
Max torque (Nm)	249,400 Nm

www.renold.com
RENOLD
Superior Coupling Technology

Page 27

Tyreflex Coupling



Max power / 100 rpm (kW)	66 kW
Max weight	49 kg
Max shaft size	150 mm
Max speed (rpm)	4,500 rpm
Max outer diameter	470 mm
Max torque (Nm)	6,270 Nm

www.renold.com
RENOLD
Superior Coupling Technology

Page 30

Discflex Coupling



Max power / 100 rpm (kW)	45 kW
Max weight	67 kg
Max shaft size	110 mm
Max speed (rpm)	2,900 rpm
Max outer diameter	324 mm
Max torque (Nm)	4,298 Nm

www.renold.com
RENOLD
Superior Coupling Technology

Page 33

Chainflex Coupling



Max power / 100 rpm (kW)	90 kW
Max weight	85 kg
Max shaft size	140 mm
Max speed (rpm)	3,500 rpm
Max outer diameter	357 mm
Max torque (Nm)	8,595 Nm

www.renold.com
RENOLD
Superior Coupling Technology

Page 36

The **RENOLD** Collection

Rigid Coupling



Max power / 100 rpm (kW)	1,640 kW
Max weight	501 kg
Max shaft size	290 mm
Max speed (rpm)	7,100 rpm
Max outer diameter	527 mm
Max torque (Nm)	156,620 Nm

www.renold.com **RENOLD**
Superior Coupling Technology

Page 38

Renoldflex



Max power / 100 rpm (kW)	482 kW
Max weight	N/A
Max shaft size	180 mm
Max speed (rpm)	1,200 rpm
Max outer diameter	345 mm
Max torque (Nm)	46,000 Nm

www.renold.com **RENOLD**
Superior Coupling Technology

Page 53

A Series Gear Coupling



Max power / 100 rpm (kW)	1,640 kW
Max weight	443 kg
Max shaft size	260 mm
Max speed (rpm)	7,100 rpm
Max outer diameter	527 mm
Max torque (Nm)	156,620 Nm

www.renold.com **RENOLD**
Superior Coupling Technology

Page 42

D Series Gear Coupling



Max power / 100 rpm (kW)	2,209 kW
Max weight	374 kg
Max shaft size	197 mm
Max speed (rpm)	N/A
Max outer diameter	518 mm
Max torque (Nm)	211,000 Nm

www.renold.com **RENOLD**
Superior Coupling Technology

Page 46

Croft MB Gear Coupling



Max power / 100 rpm (kW)	565 kW
Max weight	560 kg
Max shaft size	220 mm
Max speed (rpm)	3,730 rpm
Max outer diameter	930 mm
Max torque (Nm)	54,000 Nm

www.renold.com **RENOLD**
Superior Coupling Technology

Hydrastart Coupling



Max power / 100 rpm (kW)	39.1 kW
Max weight	207 kg
Max shaft size	127 mm
Max speed (rpm)	3,500 rpm
Max outer diameter	751 mm
Max torque (Nm)	N/A

www.renold.com **RENOLD**
Superior Coupling Technology

Page 58

Hydrastart Drop-in Coupling



Max power / 100 rpm (kW)	39.1 kW
Max weight	N/A
Max shaft size	110 mm
Max speed (rpm)	2,500 rpm
Max outer diameter	751 mm
Max torque (Nm)	N/A

www.renold.com **RENOLD**
Superior Coupling Technology

Page 70

Coupling Comparison Chart

	Coupling Type	Characteristics						Max misalignment capabilities*		
		Shockloading absorption	Vibration/ Damping	Maintenance free	Backlash free	Soft start	Spacer version	Axial (mm)	Angular (degrees)	Offset (parallel) (mm)
Torsionally Flexible	Spiderflex (RSC)							+1.7	2.5	0.5
	SpiderJaw (SC)							+0.5	1	0.4
	SpiderWrap (SC)							+0.5	1	0.4
	Pinflex (PF)							+/-2	0.25	0.13
	Crownpin (CP)							+/-1.5	0.15	0.18
	Tyreflex (TY)							+/-6	4	4.8
	Discflex (D)							5.3	1	0.5
Metal To Metal	Chainflex (CF)							4.6	1	0.5
	Gearflex A Series							Please consult Renold	1.5	7.8
	Gearflex HD series							22.1	0.75	10.6
	Gearflex NTS Series							3	1.5	0.48
	Gearflex D Series							Please consult Renold	6	25.2
Rigid	Rigid (RC)							N/A	N/A	N/A
Torsionally Rigid	Renoldflex							+/-2.6	2	Please consult Renold
Fluid	Hydrastart							Please consult Renold	Please consult Renold	Please consult Renold

* Misalignment figures are the MAXIMUM for the each coupling range.

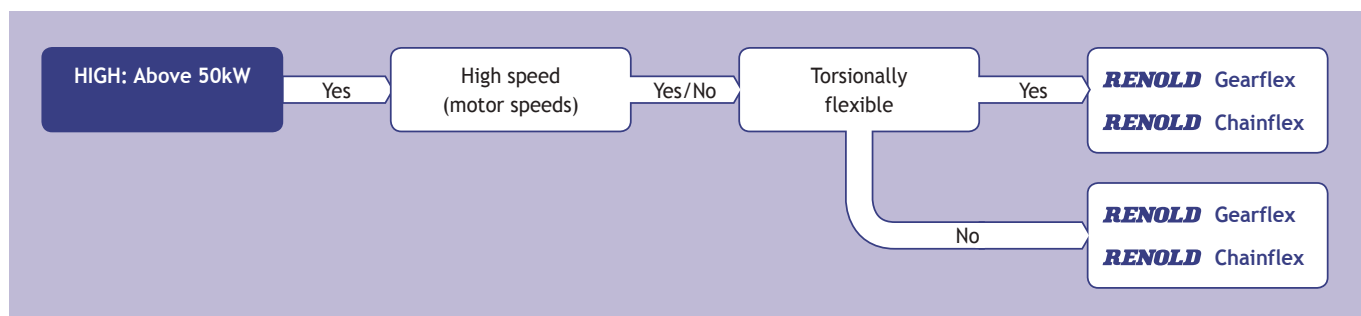
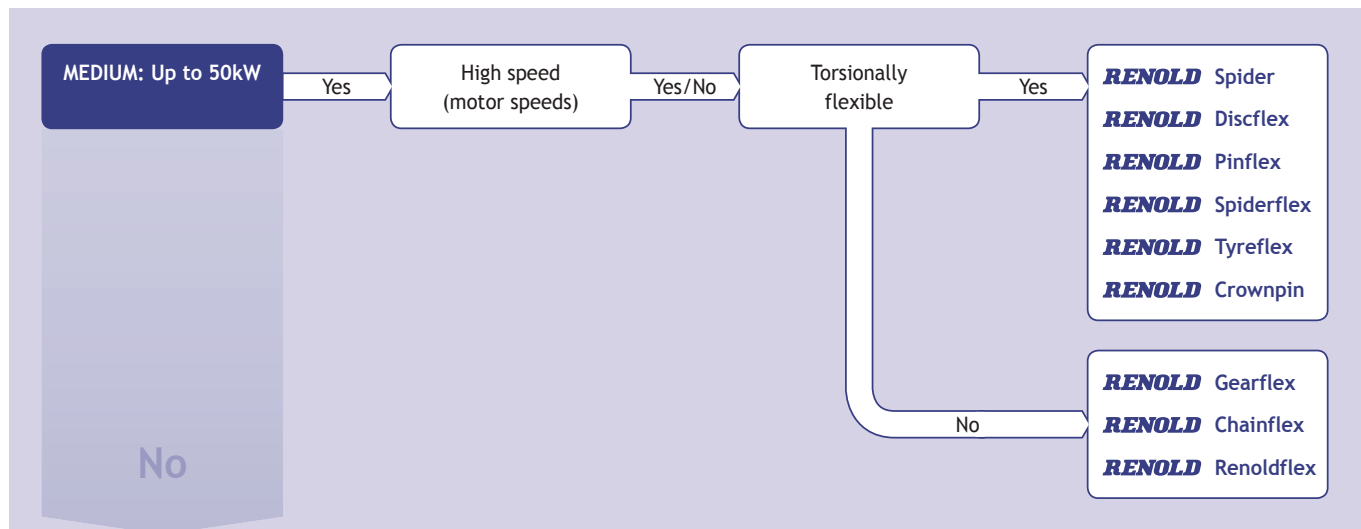
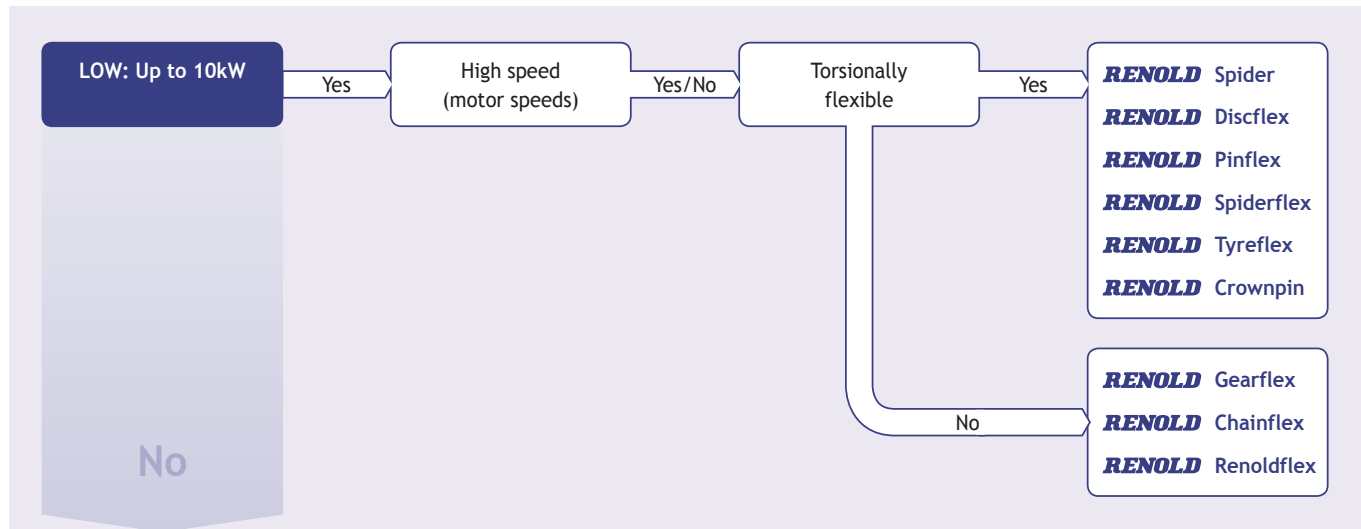
Resilient and Soft Start Couplings

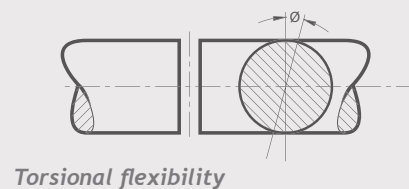
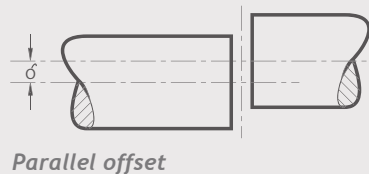
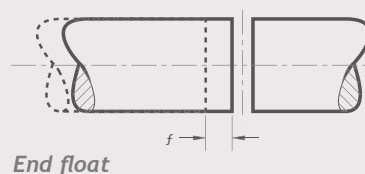
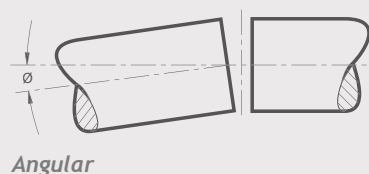
Coupling Comparison Chart

Nominal torque range (Nm)						Max shaft diameter	Taper lock (mm)	Speed range		
Light duty		Medium duty		Heavy duty				1,000 rpm	10,000 rpm	100,000 rpm
100	1,000	10,000	100,000	1,000,000	10,000,000	Bore and key (mm)				
32 - 3,150Nm						115	90	Up to 7,700rpm		
0.4 - 4,308Nm						115	75	Up to 31,000rpm		
21.1 - 4,308Nm						115	75	Up to 9,000rpm		
194 - 32,500Nm						260	125	Up to 6,800rpm		
23,490 - 249,400Nm						300	100	Up to 6,210rpm		
25 - 6,270Nm						150	125	Up to 4,500rpm		
72 - 4,298Nm						110	90	Up to 2,900rpm		
52 - 8,595Nm						140	60	Up to 3,500rpm		
1,432 - 156,620Nm						260		Up to 7,100rpm		
185,120 - 4,747,000Nm						840		Up to 2,000rpm		
668 - 120,000Nm						190		Up to 10,000rpm		
294 - 210,938Nm						197		Please consult Renold		
1,432 - 156,620Nm						290	125	Up to 12,000rpm		
18 - 46,000Nm						180		Up to 12,000rpm		
Please consult Renold						150		Up to 3,500rpm		

Coupling Selection Guide

DRIVE POWER





Flexible Couplings should be used to accommodate any combination of misalignment conditions described below.

At installation all couplings should be aligned as near to perfect as possible.

1. Angular

Angular misalignment is present when the shaft axes are inclined one to the other. Its magnitude can be measured at the coupling faces.

2. Parallel Offset

Axial misalignment is present when the axes of the driving and driven shafts are parallel but laterally displaced.

3. End float (axial)

End float is the ability to accommodate a relative axial displacement of the connected shafts; achieved by sliding members or flexing of resilient components.

4. Torsional flexibility

Torsional flexibility is a design feature necessary to permit shock and impulsive loadings to be suitably dampened. It is achieved by the provision of a flexible medium such as rubber, springs, etc., between the two halves of the coupling.

Selection

In order to select the correct type and size of coupling, the following basic information should be known:

Power to be transmitted

- Normal.
- Maximum.
- Whether continuous or intermittent.

Characteristics of the drive

- Type of prime mover and associated equipment.
- Degree of impulsiveness of driven load.

Speed in revolutions per minute

- At which normal power is transmitted.
- At which maximum power is transmitted.
- Maximum speed.

Dimensions of shafts to be connected

- Actual diameter.
- Length of shaft extension.
- Full keyway particulars.

Selection

When the input drive is not steady (i.e. not from an electric motor), and/or the driven load is impulsive, the actual power is multiplied by a Service Factor from the Table 2 (page 13).

Selection Procedure

- Nominal power in kW to be transmitted = K .
- Select appropriate load classification from Table 1, denoted as either S, M or H.
- From Table 2, establish Service Factor(s) to be applied, taking into account hours of operation/day and prime mover = fD .
- From Table 3 select factor for the required frequency of starts/hr = fS .
- Selection Power $K_s = K \times fD \times fS$
- Equivalent power at 100 RPM = $\frac{K_s \times 100}{\text{RPM}}$
- Check that coupling selected will accept the required shaft diameters. Should shaft diameter exceed maximum permissible, then re-select using next larger size of coupling.

Load Classification by Application

Table 1

Agitators		Dry dock cranes		Planer feed chains	M	Presses	M
Pure liquids	S	Main hoist	(2)	Planer floor chains	M	Pulp machine reel	M
Liquids and solids	M	Auxiliary hoist	(2)	Planer tilting hoist	M	Stock chest	M
Liquids - variable density	M	Boom, luffing	(2)	Re-saw merry-go-round conveyor	M	Suction roll	M
Blowers		Rotating, swing or slew	(3)	Roll cases	H	Washers and thickeners	M
Centrifugal	S	Tracking, drive wheels	(4)	Slab conveyor	H	Winders	M
Lobe	M	Elevators		Small waste conveyor-belt	S	Printing presses	*
Vane	S	Bucket - uniform load	S	Small waste conveyor-chain	M	Pullers	
Brewing and distilling		Bucket - heavy load	M	Sorting table	M	Barge haul	H
Bottling machinery	S	Bucket - continuous	S	Tipple hoist conveyor	M	Pumps	
Brew kettles - continuous duty	S	Centrifugal discharge	S	Tipple hoist drive	M	Centrifugal	S
Cookers - continuous duty	S	Escalators	M	Transfer conveyors	M	Proportioning	M
Mash tubs - continuous duty	S	Freight	M	Transfer rolls	M	Reciprocating	
Scale hopper - frequent starts	M	Gravity discharge	S	Tray drive	M	single acting: 3 or more cylinders	M
Can filling machines		Man lifts	*	Trimmer feed	M	double acting: 2 or more cylinders	M
Cane knives (1)	M	Passenger	*	Waste conveyor	M	single acting: 1 or 2 cylinders	*
Car dumpers	H	Extruders (plastic)		Machine tools		double acting: single cylinder	*
Car pullers	M	Film	S	Bending roll	M	Rotary - gear type	S
Clarifiers	S	Sheet	S	Punch press - gear driven	H	Rotary - lobe, vane	S
Classifiers	M	Coating	S	Notching press - belt drive	*	Rubber and plastics industries	
Clay working machinery		Rods	S	Plate planners	H	Crackers (1)	H
Brick press	H	Tubing	S	Tapping machine	H	Laboratory equipment	M
Briquette machine	H	Blow moulders	M	Other machine tools		Mixed mills (1)	H
Clay working machinery	M	Pre-plasticizers	M	Main drives	M	Refiners (1)	M
Pug mill	M	Fans		Auxiliary drives	S	Rubber calenders (1)	M
Compressors		Centrifugal	S	Metal mills		Rubber mill, 2 on line (1)	M
Centrifugal	S	Cooling towers		Drawn bench carriage and main drive	M	Rubber mill, 3 on line (1)	S
Lobe	M	Induced draft	*	Pinch, dryer and scrubber rolls, reversing	*	Sheeter (1)	M
Reciprocating - multi-cylinder	M	Forced draft	*	Slitters	M	Tyre building machines	*
Reciprocating - single cylinder	H	Induced draft	M	Table conveyors nonreversing group drives	M	Tyre and tube press openers	*
Conveyors - uniformly loaded or fed		Large, mine etc.	M	Individual drives	H	Tubers and strainers (1)	M
Apron	S	Large, industrial	M	Reversing	*	Warming mills (1)	M
Assembly	S	Light, small diameter	S	Wire drawing and flattening machine	M	Sand muller	M
Belt	S	Feeders		Wire winding machine	M	Screens	
Bucket	S	Apron	M	Mills, rotary type		Air washing	S
Chain	S	Belt	M	Ball (1)	M	Rotary, stone or gravel	M
Flight	S	Disc	S	Cement kilns (1)	M	Travelling water intake	S
Oven	S	Reciprocating	H	Dryers and coolers (1)	M	Sewage disposal equipment	
Screw	S	Screw	M	Kilns other than cement	M	Bar screens	S
Conveyors - heavy duty not uniformly fed		Food industry		Pebble (1)	M	Chemical feeders	S
Apron	M	Cereal cooker	S	Rod, plain & wedge bar (1)	M	Collectors	S
Assembly	M	Dough mixer	M	Tumbling barrels	H	Dewatering screws	M
Belt	M	Meat grinder	M	Mixers		Scum breakers	M
Bucket	M	Generators - not welding		Concrete mixers continuous	M	Slow or rapid mixers	M
Chain	M	Hammer mills	H	Concrete mixers intermittent	M	Thickeners	M
Flight	M	Hoists		Constant density	S	Vacuum filters	M
Live roll	*	Heavy duty	H	Variable density	M	Slab pushers	M
Oven	M	Medium duty	M	Oil industry		Steering gear	*
Reciprocating	H	Skip hoist	M	Chillers	M	Stokers	S
Screw	M	Laundry		Oil well pumping	*	Sugar industry	
Shaker	H	Washers - reversing	M	Paraffin filter press	M	Cane knives (1)	M
Crane Drives - not dry dock		Tumblers	M	Rotary kilns	M	Crushers (1)	M
Main hoists	S	Line shafts		Paper mills		Mills (1)	M
Bridge travel	*	Driving processing equipment	M	Agitators (mixers)	M	Textile industry	
Trolley travel	*	Light	S	Barker - auxiliaries hydraulic	M	Batchers	M
Crushers		Other line shafts	S	Barker - mechanical	H	Calenders	M
Ore	H	Lumber industry		Barking drum	H	Cards	M
Stone	H	Barkers, hydraulic, mechanical	M	Beater and pulper	M	Dry cans	M
Sugar (1)	M	Burner conveyor	M	Bleacher	S	Dryers	M
Dredges		Chain saw and drag saw	H	Calenders	M	Dyeing machinery	M
Cable reels	M	Chain transfer	H	Calenders - super	H	Looms	M
Conveyors	M	Craneway transfer	H	Converting machine except cutters, platers	M	Mangles	M
Cutter head drives	H	De-barking drum	H	Conveyors	S	Nappers	M
Jig drives	H	Edger feed	M	Couch	M	Pads	M
Manoeuvring winches	M	Gang feed	M	Cutters, platers	H	Range drives	*
Pumps	M	Green chain	M	Cylinders	M	Slashers	M
Screen drive	H	Live rolls	H	Dryers	M	Soapers	M
Stackers	M	Log deck	H	Fell stretcher	M	Spinners	M
Utility winches	M	Log haul - incline	H	Fell whipper	H	Tenter frames	M
		Log haul - well type	H	Jordans	M	Washers	M
		Log turning device	H	Log haul	H	Winders	M
		Main log conveyor	M			Windlass	*
		Off bearing rolls	M				

Key

- S = Steady
M = Medium Impulsive
H = Highly Impulsive
* = Refer to Renold

- (1) = Select on 24 hours per day service factor only.
(2) = Use service factor of 1.00 for any duration of service.
(3) = Use service factor of 1.25 for any duration of service.
(4) = Use service factor of 1.50 for any duration of service.

Note

Machinery characteristics and service factors listed in this catalogue are a guide only. Some applications (e.g. constant power) may require special considerations. Please consult Renold.

Service Factors and Selection

Table 2 Service Factor (f_D)

Prime mover (Drive input)	Driven machinery characteristics			
	Duration service hours/day	Steady load	Medium impulsive	Highly impulsive
Electric, air & hydraulic Motors or steam turbine (Steady input)	Intermittent - 3hrs/day max	0.90	1.00	1.50
	3 - 10	1.00	1.25	1.75
	over 10	1.25	1.50	2.00
Multi-cylinder I.C. engine (Medium impulsive input)	Intermittent - 3hrs/day max	1.00	1.25	1.75
	3 - 10	1.25	1.50	2.00
	over 10	1.50	1.75	2.25
Single-cylinder I.C. engine (Highly impulsive input)	Intermittent - 3hrs/day max	1.25	1.50	2.00
	3 - 10	1.50	1.75	2.25
	over 10	1.75	2.00	2.50

Table 3 Factor for Starts/Hour(f_S)

No of starts per hour	0-1	1-30	30-60	60-
Factor	1,0	1,2	1,3	1,5

Example of Selection

Coupling is required to transmit 7.5kW at 1440 RPM to connect an electric motor to a gear box driving a chain conveyor running for 18 hours/day and starting 15 times/hour. Shaft diameters /55mm respectively.

$$K = 7.5kW$$

From Table 1 Load Classification = M (medium impulsive)

From Table 2 Service Factor $f_D = 1.5$

From Table 3 $f_S = 1.2$

Therefore selection kW is:-

$$\begin{aligned} K_s &= K \times f_D \times f_S \\ &= 7.5 \times 1.5 \times 1.2 \\ &= 13.5 \text{ kW} \end{aligned}$$

$$\begin{aligned} \text{Equivalent power at 100 RPM} &= \frac{K_s \times 100}{\text{RPM}} \\ &= \frac{13.5 \times 100}{1440} \\ &= 0.9375kW @ 100RPM \end{aligned}$$

From page 17 selection is RSC110 (644911)
(maximum bore 55 mm).

Key Stress

1. Permissible key stress = 70N/mm²
2. Nominal torque $T_{KM} = K \times 9550 / \text{RPM Nm}$
3. Force at key $F = T_{KM} / r$
4. Shaft Rad r. metres
5. Key area $A = J \times \text{HUB length mm}$
(Obtain from relevant catalogue page).
6. Key stress $f_k = F/A \text{ N/mm}^2$
7. If resultant stress is less than 70 N/mm² key stress is acceptable.
If resultant f_k is greater than 70, consider either two keyways or extending hub length.
8. Example:

$$\begin{aligned} T_{KM} &= 7.5 \times 9550 / 1440 = 49.7Nm \\ r &= 55/2 = 27.5mm \div 1000 = 0.0275m \\ F &= 49.7 / 0.0275 = 1741N \\ A &= 16 \times 45 = 720mm^2 \\ f_k &= 1741 / 720 = 2.4M/mm^2 \end{aligned}$$

Selection is therefore good.

For operation above 80% of the declared maximum coupling speed it is recommended that the coupling is dynamically balanced.



WARNING

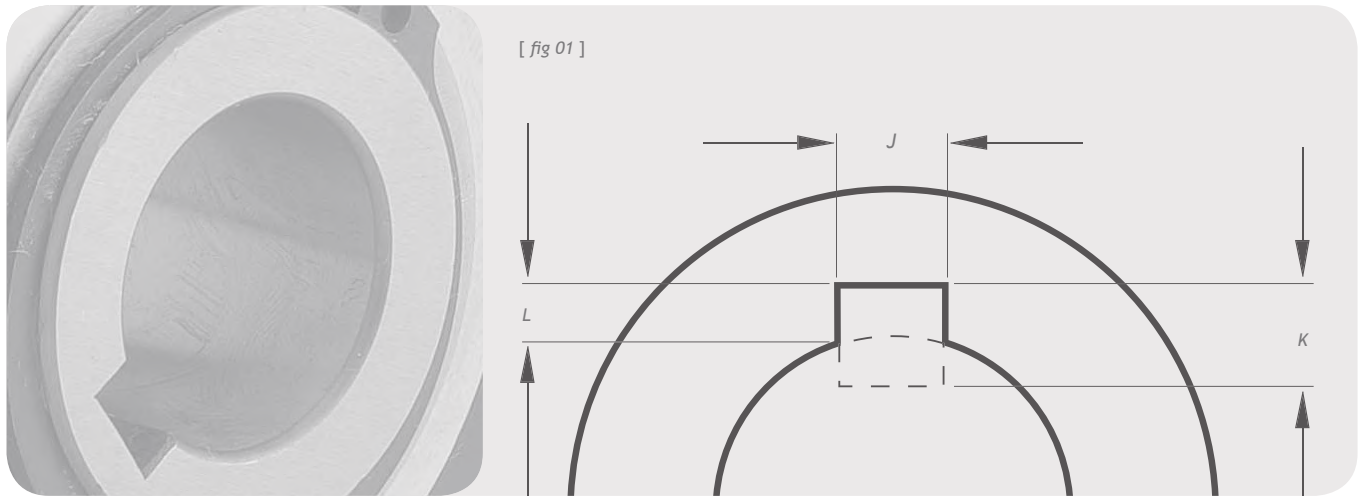
It is the responsibility of the system designer to ensure that the application of the coupling does not endanger the other constituent components in the system. Service factors given are an initial selection guide.



WARNING

Rotating equipment must be provided with a suitable guard before operating or injury may result.

Key and Keyway Dimensions



Metric (mm)

Keyways comply with BS4235: Part 1: 1972

Shaft dia.		Key & keyway		
Over	Incl.	J	K	L
6	8	2	2	1.0
8	10	3	3	1.4
10	12	4	4	1.8
12	17	5	5	2.3
17	22	6	6	2.8
22	30	8	7	3.3
30	38	10	8	3.3
38	44	12	8	3.3
44	50	14	9	3.8
50	58	16	10	4.3
58	65	18	11	4.4
65	75	20	12	4.9
75	85	22	14	5.4
85	95	25	14	5.4
95	110	28	16	6.4
110	130	32	18	7.4
130	150	36	20	8.4
150	170	40	22	9.4
170	200	45	25	10.4
200	230	50	28	11.4

Imperial (inches)

Keyways comply with BS46: Part 1: 1958

Shaft dia.		Key & keyway		
Over	Incl.	J	K	L
0.25	0.05	0.125	0.125	0.060
0.50	0.75	0.187	0.187	0.088
0.75	1.00	0.250	0.250	0.115
1.00	1.25	0.312	0.250	0.090
1.25	1.50	0.375	0.250	0.085
1.50	1.75	0.437	0.312	0.112
1.75	2.00	0.500	0.312	0.108
2.00	2.50	0.625	0.437	0.162
2.50	3.00	0.750	0.500	0.185
3.00	3.50	0.875	0.625	0.245
3.50	4.00	1.000	0.750	0.293
4.00	5.00	1.250	0.875	0.340
5.00	6.00	1.500	1.000	0.384

Keyway dimensions [fig 01]

Parallel keyways are supplied unless customer states otherwise.

Taper Bushes



Metric range

Bush no.	Range of bores (mm)															
TB 1008	9	10	-	12	14	16	18	19	20	22	24*	25*				
TB 1108	9	10	11	12	14	15	16	18	19	20	22	24	25	28*		
TB 1210	11	12	14	16	18	19	20	22	24	25	28*	30*	32*			
TB 1215	11	12	14	16	18	19	20	22	24	25	28	30	32*			
TB 1610	14	16	18	19	20	22	24	25	28	30	32	35	38	40	42	
TB 1615	14	16	18	19	20	22	24	25	28	30	32	35	38	40*	42*	
TB 2012	14	16	18	19	20	22	24	25	28	30	32	35	38	40	42	44
TB 2017	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50*
TB 2517	16	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48
TB 2525	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55
TB 3020	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70	75
TB 3030	35	38	40	42	45	48	50	55	60	65	70	75				
TB 3525	35	38	40	42	45	48	50	55	60	65	70	75	80	85	90	95
TB 3535	35	38	40	42	45	48	50	55	60	65	70	75	80	85	90	
TB 4030	40	42	45	48	50	55	60	65	70	75	80	85	90	95	100	
TB 4040	40	42	45	48	50	55	60	65	70	75	80	85	90	95	100	
TB 4535	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	
TB 5050	70	75	80	85	90	95	100	105	110	115	120	125				

Imperial range

Bush no.	Range of bores (inches)															
TB 1008	0.375	0.437	0.50	0.625	0.75	1.00*										
TB 1108	0.375	0.50	0.625	0.75	0.875	1.00	1.125*									
TB 1210	-	0.50	-	0.625	-	0.75	-	-	-	1.00	-	-	1.25			
TB 1215	-	0.50	0.562	0.625	-	0.75	-	0.875	-	1.00	-	-	1.125			
TB 1610	0.50	-	0.625	-	0.75	-	0.875	-	1.00	-	1.125	1.25	-	-	-	1.50
TB 1615	0.50	-	0.625	-	0.75	-	0.875	-	1.00	-	1.125	1.25	-	1.375	1.437	1.50
TB 2012	0.50	0.625	0.75	0.875	1.00	-	1.125	-	1.25	-	1.375	1.50	1.625	1.75	1.87	2.0
TB 2017	0.75	0.812	0.875	0.937	1.00	-	1.125	-	1.25	-	1.375	1.50	1.625	1.75	1.875	2.00
TB 2517	0.75	0.875	-	1.00	-	1.125	-	1.25	-	1.375	1.437	1.625	1.75	1.875	2.00	2.125
TB 2525	-	-	1.00	-	1.125	-	1.25	-	1.375	-	1.50	1.75	1.875	2.00	2.125	2.25
TB 3020	1.25	-	1.375	-	1.50	1.625	1.75	1.875	2.00	2.125	2.25	2.50	2.625	2.75	2.875	3.00
TB 3030	-	-	1.375	-	1.50	1.625	1.75	1.875	2.00	2.125	2.25	2.50	2.625	2.75	2.875	3.00
TB 3525	1.50	1.625	1.75	1.875	2.00	2.125	2.25	2.375	2.50	2.625	2.75	3.00	3.125	3.25	3.50	3.75*
TB 3535	1.50	1.625	1.75	1.875	2.00	2.125	2.25	2.375	2.50	2.625	2.75	3.00	3.125	3.25	3.50	
TB 4030	1.75	1.875	2.00	2.125	2.25	2.375	2.50	2.625	2.75	2.875	3.00	3.125	3.25	3.375	3.50	
TB 4040	1.75	1.875	2.00	2.125	2.25	2.375	2.50	2.625	2.75	2.875	3.00	3.25	3.375	3.50	3.625	3.75*
TB 4535	2.25	2.375	2.50	2.625	2.75	2.875	3.00	3.125	3.25	3.375	3.50	3.75	4.00	4.25	4.50	4.75
TB 5050	2.75	2.875	3.00	3.25	3.375	3.50	3.75	4.00	4.25	4.50	5.00					

*Shallow key Depth. N.B. When ordering specify both bush number and bore size required.

Spiderflex



A medium power torsionally flexible coupling combining shock absorbing and misalignment capacity, used in the widest range of industries and applications.

Coupling capacity

- Maximum power @ 100rpm: 33kW
- Maximum torque: 3150Nm

Features and benefits

- Torsionally flexible - shock absorbing, extending machine life
- Maintenance free - minimum number of wearing parts
- Misalignment capabilities allowing flexibility in installation
- Cost effective - offering a low cost product with high quality design
- Dimensionally similar to other spider couplings - interchangeable
- Optional fire retardant anti-static elements for use in flameproof environment

- Taper bush bores available for ease of maintenance
- Compact design - small, with high torque capacity

Standard range comprises

- Shaft to shaft
- Flywheel to shaft
- Taper bush or parallel bore

Applications

- Bulk handling
- Compressors
- Generator sets
- Metal manufacture
- Pumps
- General industrial applications

General details

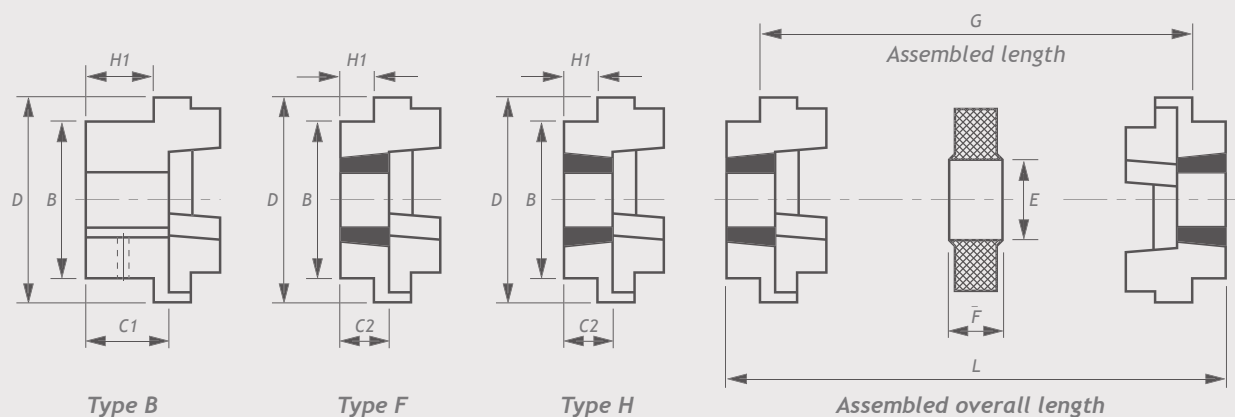
- Cast iron half bodies grade G220
- Standard element shore hardness A90
Temp range -30 to +100°C
- FRAS element shore hardness A78
Temp range -30 to +95°C



Can be certified for use in potentially explosive atmospheres containing gas or dust, according to ATEX directive 94/9/EC.

The couplings are classified for equipment group II, categories 2 and 3.

Contact Renold for further details.



Coupling size	Power /100rpm kW	Torque nominal Nm	Speed max rpm	Type B		Type F & H			Max. misalignment		End float mm
				Bore dia		Bush size	Bore		Offset mm	Angular deg	
				Max	Min		Max	Min			
RSC70 ###	0.33	32	7700	32	0	TB1008	25	9	0.3	0.5	+2
RSC90 ###	0.84	80	6300	42	0	TB1108	28	9	0.3	0.5	+5
RSC110 ###	1.68	160	5000	55	0	TB1610	42	14	0.3	1	+6
RSC130 ###	3.30	315	4100	60	0	TB1610	42	14	0.4	1	+8
RSC150 ###	6.28	600	3600	70	0	TB2012	50	14	0.4	1.5	+9
RSC180 ###	9.95	950	3000	80	0	TB2517	60	16	0.4	1.5	+1.1
RSC230 ###	21	2000	2600	100	48	TB3020	75	25	0.5	2	+1.3
RSC280 ###	33	3150	2200	115	60	TB3525	90	35	0.5	2.5	+1.7

Coupling size	Dimensions									Assembled overall length L		
	B mm	C1 mm	C2 mm	D mm	E mm	F mm	G mm	H1 mm	H2 mm	With half body combinations:		
										BB	FF, FH, HH	FB, HB
RSC70 ###	61	23.5	23.5	69	31	18	25	20	20.0	65	65	65
RSC90 ###	70	30.0	23.5	85	32	22.5	30.5	26	19.5	83	70	77
RSC110 ###	100	45.0	26.5	112	45	29	45	37	18.5	119	82	101
RSC130 ###	105	55.5	26.5	139	50	36	53	47	18.0	147	89	118
RSC150 ###	115	60.0	33.5	150	62	40	60	50	23.5	160	107	134
RSC180 ###	125	70.0	46.4	180	77	49	73	73	34.5	189	142	166
RSC230 ###	155	90.0	52.5	225	99	59.5	85.5	85.5	39.5	240	164	202
RSC280 ###	206	105.5	66.5	275	119	74.5	105.5	105.5	51.0	285	207	246

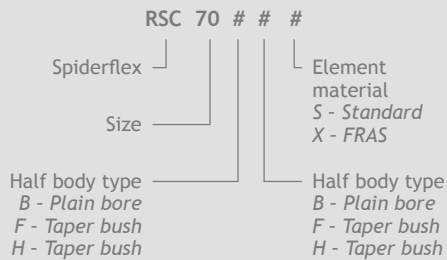
1. At speeds exceeding allowable maximum speed, consult Renold.

2. Both moment of inertia and coupling weight have been calculated assuming fitting of taper bush of medium bore size.

3. For information on torsional stiffness, consult Renold.

Spiderflex

Ordering code



Specials available, eg Shear Pin, Extended Boss, Flywheel Flange, Spacer.
Please contact Renold for details.



Coupling size	Coupling	Coupling Inertia WR^2	
	Mass Kg	Type B $KG\ m^2$	Type F&H $KG\ m^2$
RSC70	1.00	0.00078	0.00085
RSC90	1.17	0.00108	0.00115
RSC110	5.00	0.00344	0.00400
RSC130	5.46	0.00850	0.00780
RSC150	7.11	0.02112	0.01810
RSC180	16.60	0.04820	0.04340
RSC230	26.00	0.14052	0.12068
RSC280	50.00	0.54790	0.44653

Component Spares

Spider flexible element	Product number	Half body unbored Type B	Product number	Half body taper bored Type F	Product number	Half body taper bored Type H	Product number
RSC70 EL	644907/2	RSC70 B	644907/1	RSC70 F	644907/177	RSC70 H	644907/188
RSC90 EL	644909/2	RSC90 B	644909/1	RSC90 F	644909/177	RSC90 H	644909/188
RSC110 EL	644911/2	RSC110 B	644911/1	RSC110 F	644911/177	RSC110 H	644911/188
RSC130 EL	644913/2	RSC130 B	644913/1	RSC130 F	644913/177	RSC130 H	644913/188
RSC150 EL	644915/2	RSC150 B	644915/1	RSC150 F	644915/177	RSC150 H	644915/188
RSC180 EL	644918/2	RSC180 B	644918/1	RSC180 F	644918/177	RSC180 H	644918/188
RSC230 EL	644923/2	RSC230 B	644923/1	RSC230 F	644923/177	RSC230 H	644923/188
RSC280 EL	644928/2	RSC280 B	644928/1	RSC280 F	644928/177	RSC280 H	644928/188

Spiderjaw and Spiderwrap



A medium power torsionally flexible coupling combining shock absorbing and misalignment capacity, used in the widest range of industries and applications

Coupling capacity

- Maximum power @ 100rpm: 45kW
- Maximum torque: 4308Nm

Features and benefits

- Torsionally flexible - shock absorbing, extending machine life
- Maintenance free - minimum number of wearing parts
- Misalignment capabilities allowing flexibility in installation
- Jaw Wrap allows external wrap fitting of elastomeric element
- Cost effective - offering low cost product with a high quality design
- Jaw Wrap ensures machinery downtime kept to a minimum so ensuring continued process
- Dimensionally interchangeable with other Spider Jaw Couplings - Lovejoy, Browning & Fenner

- Taper bush bores available for ease of maintenance
- Compact design - small, with high torque capacity

Standard range comprises

- Shaft to shaft
- Taper bush
- Pilot bored
- Bored and keywayed to customers requirements

Applications

- Bulk handling
- Compressors
- Generator sets
- Metals manufacture
- Pumps
- Conveyor drives
- Paper converting

- Logging
- General industrial applications

General details

Coupling materials available include:

- Cast iron half bodies
- Sintered iron half bodies
- Aluminium half bodies

Elements available include:

- Nitrile (standard)
- Urethane
- Hytrel
- Bronze

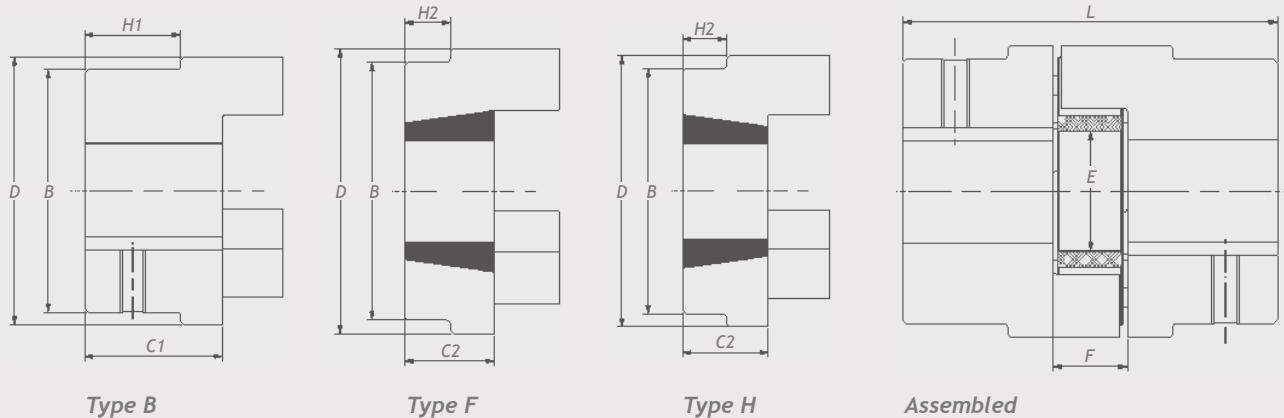


Can be certified for use in potentially explosive atmospheres containing gas or dust, according to ATEX directive 94/9/EC.

The couplings are classified for equipment group 2 category 2 GD equipment.

Contact Renold for further details.

Spiderjaw



Renold Spider Ref	Renold Ref	Power*1 /100rpm kW	Torque*1 Nominal Nm	Speed Max rpm	Type B Bore		Type F&H			Dimensions							
					Max	Min	Bush Size	Bore		B mm	C1 mm	C2 mm	D mm	E mm	F mm	H1 mm	H2 mm
	SPDR35	0.004	0.4	31000	10	4	-	-	-	-	6.6	-	16	-	7	-	-
S11	SPDR50	0.03	2.8	18000	16	6	-	-	-	-	15	-	27.4	-	12.4	-	-
S15	SPDR70	0.05	4.9	14000	20	8	-	-	-	-	19	-	34.5	-	12.9	-	-
	SPDR75	0.10	9.8	11000	22	8	-	-	-	-	21	-	44.5	18	13.2	-	-
S21	SPDR95	0.22	21.1	9000	28	12	-	-	-	49	25	-	54	22	13.5	13	-
	SPDR99	0.37	35.1	7000	30	12	1008	25	-	51	27	23.5	65	26.2	17.7	14	10.5
S30	SPDR100	0.49	46.4	7000	35	12	1108	28	-	57	35	23.5	65	26.2	17.7	22	10.5
	SPDR110	0.93	89	6000	42	16	1210	32	-	76	43	26.5	85	34.5	21.4	30	13.5
S37	SPDR150	1.49	141	5000	48	16	1210	32	-	80	45	26.5	96	31.8	25.2	30	11.5
	SPDR190	2.01	190	4400	60	20	1610	42	-	102	54	26.5	115	35	25.8	38	10.5
	SPDR225	2.76	265	4000	65	20	2012	50	-	111	64	33.5	127	45	26.2	48	17.5
	SPDR226	3.43	327	3700	70	28	2012	50	-	119	69.5	33.5	137	45	39.5	54	18
	SPDR276	5.60	532	3300	75	28	2517	60	-	127	79.5	46.5	157	45	42	61	28
	SPDR280	8.20	782	2800	80	32	2517	60	-	140	79.5	46.5	192	55	42	63	30
	SPDR295	13.40	1279	2300	95	32	3020	75	-	162	94.5	52.5	237	67.9	51.5	75	33
	SPDR300	31.90	3047	2100	105	38	3020	75	-	180	114.5	52.5	254	73	53	92	30
	SPDR350	45.00	4308	1800	115	45	-	-	-	200	127.5	89	305	87.5	53	103	64.5

Renold Ref	Assembled overall length L		
	With half body combinations		
	BB	FF, FH, HH	FB, HB
SPDR35	20.2	-	-
SPDR50	42.4	-	-
SPDR70	50.9	-	-
SPDR75	55.2	-	-
SPDR95	63.5	-	-
SPDR99	71.7	64.7	68.2
SPDR100	87.7	64.7	76.2
SPDR110	107.4	74.4	90.9
SPDR150	115.2	78.2	96.7
SPDR190	133.8	78.8	106.3
SPDR225	154.2	93.2	123.7
SPDR226	178.5	106.5	142.5
SPDR276	201	135	168
SPDR280	201	135	168
SPDR295	240.5	156.5	198.5
SPDR300	282	158	220
SPDR350	308	231	269.5

Ordering code

Half Body SPDR 110 HBDY CI

Spider _____
 Size _____
 Half Body _____
 Material
 SI - Sintered Iron (Sizes SPDR35 - SPDR75)
 CI - Cast iron (Sizes SPDR95 - SPDR350)
 AL - Aluminium (Sizes SPDR70 - SPDR110)

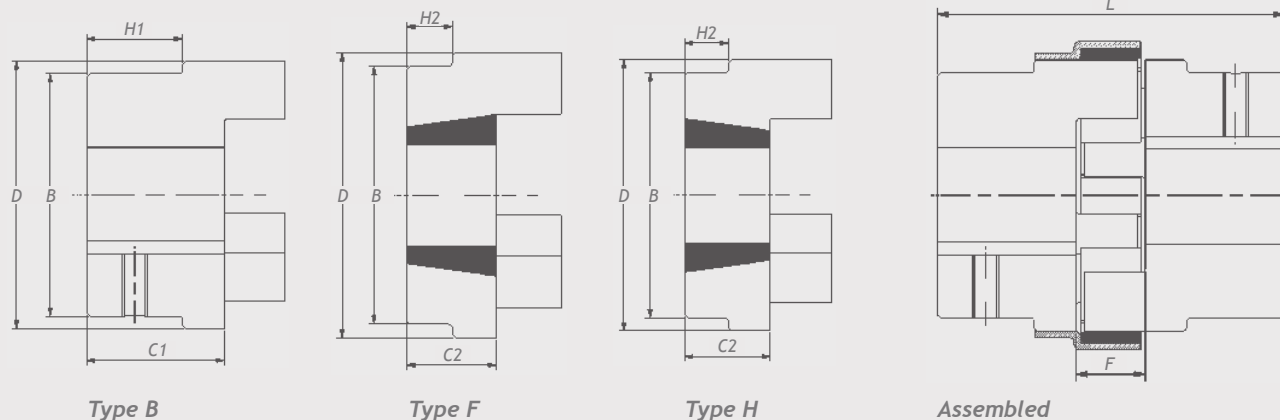
Element Kit SPDR 110 ELMT NI

Spider _____
 Size _____
 Element _____
 Material
 NI - Nitrile (All sizes)
 UR - Urethane (Available for sizes SPDR50 - SPDR295)
 Hy - Hytrel (Available for sizes SPDR50 - SPDR295)

*1 Power and Torque values quoted are for Nitrile Rubber elements (NBR).

Urethane elements have around 1.5 times the torque capacity, but provide less damping effect. Hytrel elements offer around 2.5 times the torque capacity but have even less damping effect and are best used for continuous load applications rather than cyclic or stop/start situations.

Please contact Renold technical department for more information on these alternative element materials.



Renold Spider Ref	Renold Ref	Power*1 /100rpm kW	Torque*1 Nominal Nm	Speed Max rpm	Type B Bore		Type F&H			Dimensions							
							Bush Size	Bore		B mm	C1 mm	C2 mm	D mm	E mm	F mm	H1 mm	H2 mm
S21	SPDR95	0.220	21.1	9000	28	12	-	-	-	49	25	-	65	22	13.5	13	-
	SPDR99	0.37	35.1	7000	30	12	1008	25	-	51	27	23.5	78	26.2	17.7	14	10.5
S30	SPDR100	0.49	46.4	7000	35	12	1108	28	-	57	35	23.5	78	26.2	17.7	22	10.5
	SPDR110	0.93	89	6000	42	16	1210	32	-	76	43	26.5	96	34.5	21.4	30	13.5
S37	SPDR150	1.49	141	5000	48	16	1210	32	-	80	45	26.5	111	31.8	25.2	30	11.5
	SPDR190	2.01	190	4400	60	20	1610	42	-	102	54	26.5	129	35	25.8	38	10.5
	SPDR225	2.76	265	4000	65	20	2012	50	-	111	64	33.5	142	45	26.2	48	17.5
	SPDR226	3.43	327	3700	70	28	2012	50	-	119	69.5	33.5	153	45	39.5	54	18
	SPDR276	5.60	532	3300	75	28	2517	60	-	127	79.5	46.5	173	45	42	61	28
	SPDR280	8.20	782	2800	80	32	2517	60	-	140	79.5	46.5	208	55	42	63	30
	SPDR295	13.40	1279	2300	95	32	3020	75	-	162	94.5	52.5	253	67.9	51.5	75	33
	SPDR300	31.90	3047	2100	105	38	3020	75	-	180	114.5	52.5	272	73	53	92	30
	SPDR350	45.00	4308	1800	115	45	-	-	-	200	127.5	89	323	87.5	53	103	64.5

Renold Ref	Assembled overall length L		
	With half body combinations		
	BB	FF, FH, HH	FB, HB
SPDR95	63.5	-	-
SPDR99	71.7	64.7	68.2
SPDR100	87.7	64.7	76.2
SPDR110	107.4	74.4	90.9
SPDR150	115.2	78.2	96.7
SPDR190	133.8	78.8	106.3
SPDR225	154.2	93.2	123.7
SPDR226	178.5	106.5	142.5
SPDR276	201	135	168
SPDR280	201	135	168
SPDR295	240.5	156.5	198.5
SPDR300	282	158	220
SPDR350	308	231	269.5

Ordering code

Half Body SPDR 110 HBDY CI

Spider
Size
Half Body

Material
CI - Cast iron (All sizes)
AL - Aluminium (Available for sizes SPDR95 - SPDR110)

Element Kit SPDR 110 ELMT NI

Spider
Size
Element

Material
NI - Nitrile (All sizes)
UR - Urethane (Available for sizes SPDR50 - SPDR295)
Hy - Hytrel (Available for sizes SPDR50 - SPDR295)

Legacy Spider Spares

Coupling Size	Spider Flexible Element
S11	644851
S15	644852
S21	644853
S30	644854
S37	644855

*1 Power and Torque values quoted are for Nitrile Rubber elements (NBR).

Urethane elements have 1.5 times the torque capacity, but provide less damping effect.

Hytrel elements offer 2.5 times the torque capacity but have even less damping effect and are best used for continuous load applications rather than cyclic or stop/start situations.

Please contact Renold technical department for more information on these alternative element materials.

Statement:

When ordering a complete coupling you should select two half bodies and one element. If in doubt refer to Renold Sales.

Pinflex



A robust, general purpose pin/buffer coupling providing reliable fail safe transmission of torque and misalignment capability.

Coupling capacity

- Maximum power @ 100RPM: 340kW
- Maximum torque: 32500Nm

Features and benefits

- Steel half bodies, strong yet compact.
- Heavy duty pin and buffer coupling - for heavy shock load conditions.
- Torsionally flexible - shock absorbing, extending machine life.
- Maintenance free - minimum number of wearing parts.
- Misalignment capabilities allowing flexibility in installation.

- Common half bodies - minimise stock holding.
- Polyurethane buffers, reliable/flexible and temperature resistant.
- Modular construction - available as coupling, brakedrum and shear pin designs.
- Taper bores available for ease of maintenance.
- Potential energy saving when used to replace older cast iron pin and bush couplings.

Standard range comprises

- Shaft to Shaft
- Shear Pin
- Brake Drum/Disc

Applications

- Conveyors
- Escalators
- Mixers
- Pumps
- General Industrial Applications

Construction details

Steel Half Bodies

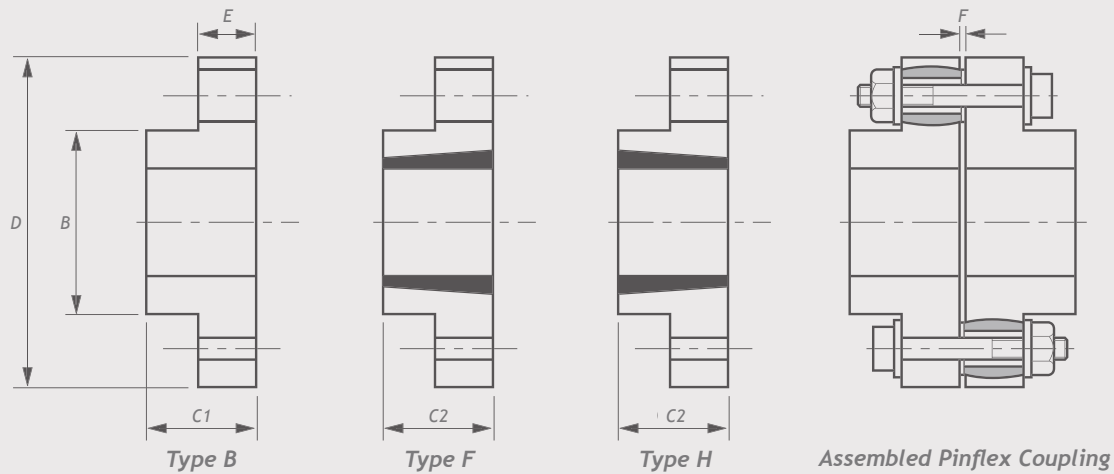
Urethane Buffer: Temp Range -40°C to +80°C



Can be certified for use in potentially explosive atmospheres containing gas or dust, according to ATEX directive 94/9/EC.

The couplings are classified for equipment group II, categories 2 and 3.

Contact Renold for further details.



Catalogue number	Product number	Power/ 100rpm kW	Torque nominal Nm	Speed max rpm	Type B		Type F & H			Dimensions						Type B		Type F & H	
					Bore		Bush size	Bore		B mm	C1 mm	C2 mm	D mm	E mm	F mm	Mass* kg	WR2* kg m²	Mass* kg	WR2* kg m²
					Max	Min		Max	Min										
PF1# #3	8001042/3	2.03	194	6800	50	0	TB1215	32	11	70	44	40	125	20	4	5.2	0.00828	5.0	0.00813
PF1# #6	8001042/6	4.05	387																
PF1BB9	8001042/9	6.08	581																
PF1BB12	8001042/12	8.1	774																
PF2# #3	8002050/3	3.59	343	5900	55	0	TB1615	42	14	80	50	40	145	25	5	8.3	0.01843	7.6	0.01780
PF2# #6	8002050/6	7.18	685																
PF2BB9	8002050/9	10.76	1028																
PF2BB12	8002050/12	14.35	1370																
PF3# #3	8003060/3	4.24	405	5200	72	0	TB2017	50	18	100	60	47	165	25	5	13.8	0.03335	12.1	0.03143
PF3# #6	8003060/6	8.48	810																
PF3BB9	8003060/9	12.71	1214																
PF3BB12	8003060/12	16.96	1620																
PF4# #3	8004075/3	8.32	795	4400	80	0	TB2525	60	19	113	75	65	195	35	6	22.0	0.08470	20.3	0.08195
PF4# #6	8004075/6	16.65	1590																
PF4BB9	8004075/9	24.97	2384																
PF4BB12	8004075/12	33.29	3179																
PF5# #4	8005090/4	13.94	1331	3600	110	0	TB3030	75	35	150	89	80	235	35	6	37.8	0.19972	35.3	0.19274
PF5# #8	8005090/8	27.88	2662																
PF5# #12	8005090/12	41.82	3994																
PF5BB16	8005090/16	55.76	5325																
PF6# #3	8006110/3	24.70	2359	2900	130	55	TB3535	90	35	180	110	91	290	50	7	73.2	0.61140	65.2	0.58086
PF6# #6	8006110/6	49.40	4717																
PF6# #9	8006110/9	74.10	7076																
PF6BB12	8006110/12	98.80	9435																
PF7# #4	8007130/4	37.18	3550	2600	150	65	TB4040	100	40	210	130	105	320	50	7	103.0	0.99756	88.5	0.92310
PF7# #8	8007130/8	74.35	7100																
PF7# #12	8007130/12	111.53	10650																
PF7BB16	8007130/16	148.70	14200																
PF8# #4	8008150/4	64.70	6179	2200	175	75	TB5050	125	70	245	150	130	380	60	7	168.8	2.33646	154.1	2.22610
PF8# #8	8008150/8	129.40	12357																
PF8# #12	8008150/12	194.10	18536																
PF8BB16	8008150/16	258.80	24714																
PF9BB4	8009240/4	85.00	8130	1700	260	75	N/A	N/A	N/A	355	220	-	490	60	7	423.0	9.19000	N/A	N/A
PF9BB8	8009240/8	170.00	16255																
PF9BB12	8009240/12	255.00	24385																
PF9BB16	8009240/16	340.00	32500																

NOTE: Maximum power and torques for taper bore options are limited by the taper bush capacity.

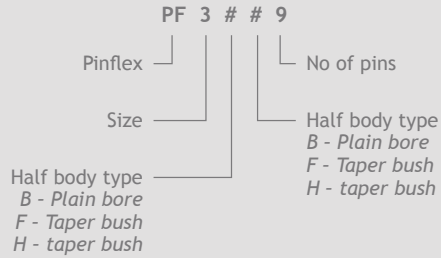
* Values are for couplings with no bore and a full set of pin assemblies.

Disc Brake Drum version also available - consult Renold for details.

Max angular misalignment 0.25°

Max offset misalignment 0.13mm

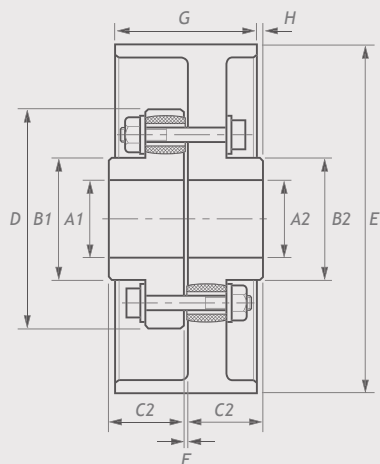
Ordering code



Component Spares

Coupling size	Half body pilot bored		Half body F type		Half body H type		Pin and buffer set		Coupling Size
	Catalogue number	Product number	Catalogue number	Product number	Catalogue number	Product number	Product number	Number per set	
PF1	PF1 B	8001042	PF1 F	8001042/77	PF1 H	8001042/88	800 0008	3	PF1
PF2	PF2 B	8002050	PF2 F	8002050/77	PF2 H	8002050/88	800 0010	3	PF2
PF3	PF3 B	8003060	PF3 F	8003060/77	PF3 H	8003060/88	800 0010	3	PF3
PF4	PF4 B	8004075	PF4 F	8004075/77	PF4 H	8004075/88	800 0012	1	PF4
PF5	PF5 B	8005090	PF5 F	8005090/77	PF5 H	8005090/88	800 0012	1	PF5
PF6	PF6 B	8006110	PF6 F	8006110/77	PF6 H	8006110/88	800 0016	1	PF6
PF7	PF7 B	8007130	PF7 F	8007130/77	PF7 H	8007130/88	800 0016	1	PF7
PF8	PF8 B	8008150	PF8 F	8008150/77	PF8 H	8008150/88	800 0020	1	PF8
PF9	PF9 B	8009240	N/A	N/A	N/A	N/A	800 0020	1	PF9

Pinflex Brakedrum Coupling



Ordering code

PF BD 5 #

Pinflex ——— M - Metric drum dia
B - Imperial drum dia

Brake drum ———

Size ———

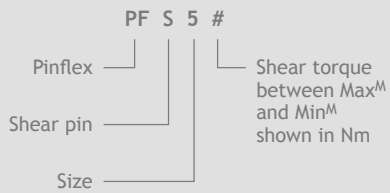
Disc brake version also available
- consult Renold for details

Coupling size	Product number	Power /100rpm kW	Torque nominal Nm	Speed max rpm	Bore		Drum dimensions		
					A1 max mm	A2 max mm	Dia E mm	Width G mm	Dia E inch
PFBD1 #	8101042	8.1	774	3600	50	45	160	92	6
PFBD2 #	8102050	14.35	1370	2850	55	50	200	105	8
PFBD3 #	8103060	16.96	1620	2300	72	60	250	124	10
PFBD4 #	8104075	33.29	3179	1900	80	75	315	140	12
PFBD5 #	8105090	55.76	5325	1400	110	90	400	184	16
PFBD6 #	8106110	98.8	9435	1400	130	110	400	184	16
PFBD7 #	8107130	148.7	14200	1100	150	130	500	241	20
PFBD8 #	8108150	258.8	24714	900	175	150	630	267	24

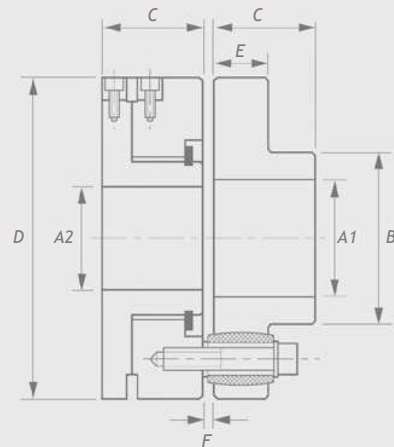
Coupling size	Product number	Dimensions									Number of pins per coupling	Pin & buffer set	
		B1 mm	B2 mm	C1 mm	C2 mm	D mm	F mm	H mm	WR ³ kg m ²	Mass kg		Part number	Number per set
PFBD1 #	8201042	70	70	44	44	125	4	-	0.0277	8.7	12	PFA	3
PFBD2 #	8202050	80	80	50	50	145	5	-	0.0696	14.3	12	PFB	3
PFBD3 #	8203060	100	100	60	60	165	5	-	0.1801	24.2	12	PFB	3
PFBD4 #	8204075	113	113	75	75	195	6	-	0.5487	49.0	12	PFC	1
PFBD5 #	8205090	150	150	90	90	235	6	-	1.6548	82.2	16	PFC	1
PFBD6 #	8206110	180	180	110	110	290	7	22	2.0706	114.1	12	PFD	1
PFBD7 #	8207130	210	210	130	130	320	7	13	5.2192	199.7	16	PFD	1
PFBD8 #	8208150	245	245	150	150	380	7	20	13.566	303.4	16	PFE	1

Pinflex Shearpin Coupling

Ordering code



Select coupling based on nominal torque using service factors from page 13. Then select required shear torque from table below.



Coupling size	Nominal torque	Shear torque		Speed max rpm	Bore A1		Bore A2		Dimensions						No. of pins
		Min Nm	Max Nm		Max mm	Min mm	Max mm	Min mm	B mm	C kg	D mm	E mm	F mm	Mass kg	
PFS1 #	387	194	774	6800	50	-	40	-	70	44	125	20	4	6.3	6
PFS2 #	685	220	1370	5900	55	-	47	-	80	50	145	25	5	10.1	6
PFS3 #	810	350	1620	5200	72	-	57	-	100	60	165	25	5	15.3	6
PFS4 #	1590	425	3180	4400	80	-	63	-	113	75	195	35	6	27.3	6
PFS5 #	2662	520	5324	3600	110	-	93	-	150	89	235	35	6	47.3	8
PFS6 #	4717	1100	9434	2900	130	55	107	55	180	110	290	50	7	89.8	6
PFS7 #	7100	2750	14200	2600	150	65	120	65	210	130	320	50	7	129	8
PFS8 #	12357	5900	24714	2200	175	75	147	75	245	150	380	60	7	212	8
PFS9 #	16255	8130	32510	1700	260	75	200	75	355	220	490	60	7	513	8



An established pin/buffer coupling, offering extended power capacity where the demand for long life and simplicity of construction make it suitable for working in arduous conditions.

Coupling capacity

- Maximum power @ 100RPM: 2611kW
- Maximum torque: 249,400Nm

Features and benefits

- Heavy duty coupling suitable for shock load conditions.
- Neoprene rubber buffers for robust flexibility.
- Torsionally flexible - shock absorbing, extending machine life.
- Maintenance free - minimum number of wearing parts.
- Misalignment capabilities allowing flexibility installation.

Standard range comprises

- Shaft to Shaft
- Shear Pin
- Brake Drum

Applications

- Conveyors
- Cranes
- Fans
- Leisure Rides
- Lifts
- Pumps
- Screens
- Washers
- General Industrial Applications

Construction details

Cast Iron Half Bodies
Neoprene Buffers:
Temp range - 30° to + 95°c

Crownpin

Ordering code

CP 77 # # 8

Crownpin

Size

Pin half type
B - Plain bore
F - Taper bush

No of pins

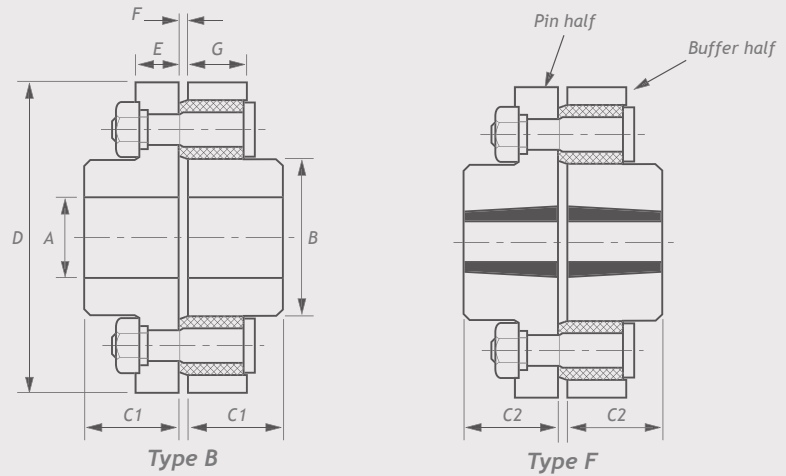
Buffer half type
B - Plain bore
F - Taper bush

Max angular misalignment 0.15°

Max offset misalignment:-

CP36 to CP135 - 0.13mm

CP150 to CP480 - 0.18mm



Renold continue to supply the following components as spares and replacement parts but recommend Pinflex for new applications.

Catalogue number	Product number	Power/ 100rpm kW	Torque nominal Nm	Speed max rpm	Type B		Bush size	Type F		Dimensions								No of Pins	Spare Parts Code
					Bore A			Bore		B mm	C1 mm	C2 mm	D mm	E mm	F mm	G mm	Mass kg		
					Max	Min		Max	Min										
CP36BB3	7032303	0.37	35	6210	20	0	N/A	-	-	37	32	-	94	15	2.4	23	1.9	3	A
CP48BB4	7032105	0.74	71	4760	35	0	N/A	-	-	62	38	-	122	15	2.4	23	3.7	4	A
CP48BB8	7032305	1.48	142	4760	35	0	N/A	-	-	62	38	-	122	15	2.4	23	3.7	8	A
CP57# #4	7032106	1.85	177	3980	45	0	TB1215	32	11	73	45	38	146	19	2.4	29	6.6	4	B
CP57# #8	7032306	3.7	354	3980	45	0	TB1215	32	11	73	45	38	146	19	2.4	29	6.6	8	B
CP65# #8	7032307	5.21	497	3520	50	0	TB1615	42	14	83	51	38	165	22	3.2	35	10	8	C
CP77# #8	7032308	7.45	711	2950	65	0	TB2017	50	18	103	60	45	197	22	3.2	35	15	8	D
CP91# #4	7032309	10.44	997	2510	75	38	TB2525	60	19	121	70	64	232	29	4.8	46	30	4	E
CP91# #8	7032309	20.9	1995	2510	75	38	TB2525	60	19	121	70	64	232	29	4.8	46	30	8	E
CP106# #10	7032310	32.8	3134	2510	90	38	TB3030	75	35	156	83	76	270	29	4.8	46	45	10	E
CP120# #8	7032312	41.8	3990	1900	95	45	TB3535	90	35	165	95	89	305	33	6.4	54	63	8	F
CP135# #10	7032313	62.7	5984	1690	115	50	TB4040	100	40	203	108	102	343	33	6.4	54	90	10	F
CP150BB10	7032315	97	9262	1520	120	60	N/A	-	-	222	121	-	381	40	6.4	65	130	10	G
CP165BB10	7032316	112	10690	1380	140	65	N/A	-	-	254	133	-	419	40	6.4	65	168	10	G
CP180BB10	7032318	164	15660	1270	145	70	N/A	-	-	267	146	-	457	48	7.9	71	218	10	H
CP210BB12	7032321	246	23490	1090	150	70	N/A	-	-	279	172	-	533	48	7.9	71	295	12	H

The following Crownpin components are recommended for high torque applications as they exceed the Pinflex range.

Catalogue number	Product number	Power/ 100rpm kW	Torque nominal Nm	Speed max rpm	Type B		Bush size	Type F		Dimensions								No of Pins	Spare Parts Code
					Bore A			Bore		B mm	C1 mm	C2 mm	D mm	E mm	F mm	G mm	Mass kg		
					Max	Min		Max	Min										
CP240BB12	7032324	373	35620	950	180	85	N/A	-	-	330	197	-	609	56	8.7	83	450	12	K
CP270BB14	7032327	496	46990	840	200	85	N/A	-	-	368	216	-	686	56	8.7	83	587	14	K
CP300BB14	7032330	746	71240	760	230	95	N/A	-	-	406	229	-	762	67	9.5	102	825	14	L
CP360BB18	7032336	1194	114000	630	250	95	N/A	-	-	470	254	-	914	67	9.5	102	1160	18	L
CP420BB16	7032342	1716	163900	540	280	110	N/A	-	-	482	279	-	1067	83	12.7	127	1700	16	M
CP480BB20	7032348	2611	249400	470	300	110	N/A	-	-	533	305	-	1220	83	12.7	127	2250	20	M

Other pin configurations are available - please consult Renold.



Component Spares

Coupling number	Product number	Pin half body		Buffer half body		Pin & nut	Neoprene buffer
		Pilot bored	Taper bored	Pilot bored	Taper bored		
CP36BB3	7032303	7032303/1	N/A	7032303/2	N/A	7030003/60	7030003/3
CP48BB4	7032105	7032105/1	N/A	7032105/2	N/A	7030003/60	7030003/3
CP48BB8	7032305	7032305/1	N/A	7032305/2	N/A	7030003/60	7030003/3
CP57##4	7032106	7032106/1	7032106/177	7032106/2	7032106/277	7030006/60	7030006/3
CP57##8	7032306	7032306/1	7032306/177	7032306/2	7032306/277	7030006/60	7030006/3
CP65##8	7032307	7032307/1	7032307/177	7032307/2	7032307/277	7030007/60	7030007/3
CP77##8	7032308	7032308/1	7032308/177	7032308/2	7032308/277	7030008/60	7030008/3
CP91##4	7032109	7032109/1	7032109/177	7032109/2	7032109/277	7030009/60	7030009/3
CP91##8	7032309	7032309/1	7032309/177	7032309/2	7032309/277	7030009/60	7030009/3
CP106##10	7032310	7032310/1	7032310/177	7032310/2	7032310/277	7030009/60	7030009/3
CP120##8	7032312	7032312/1	7032312/177	7032312/2	7032312/277	7030012/60	7030012/3
CP135##10	7032313	7032313/1	7032313/177	7032313/2	7032313/277	7030012/60	7030012/3
CP150BB10	7032315	7032315/1	N/A	7032315/2	N/A	7030015/60	7030015/3
CP165BB10	7032316	7032316/1	N/A	7032316/2	N/A	7030015/60	7030015/3
CP180BB10	7032318	7032318/1	N/A	7032318/2	N/A	7030018/60	7030018/3
CP210BB12	7032321	7032321/1	N/A	7032321/2	N/A	7030018/60	7030018/3
CP240BB12	7032324	7032324/1	N/A	7032324/2	N/A	7030024/60	7030024/3
CP270BB14	7032327	7032327/1	N/A	7032327/2	N/A	7030024/60	7030024/3
CP300BB14	7032330	7032330/1	N/A	7032330/2	N/A	7030030/60	7030030/3
CP360BB18	7032336	7032336/1	N/A	7032336/2	N/A	7030030/60	7030030/3
CP420BB16	7032342	7032342/1	N/A	7032342/2	N/A	7030042/60	7030042/3
CP480BB20	7032348	7032348/1	N/A	7032348/2	N/A	7030042/60	7030042/3

Tyreflex



A range of highly flexible couplings offering excellent misalignment capacity and suitable to absorb both shock loads and vibrations.

Coupling capacity

- Maximum power @ 100RPM: 65.8 kW
- Maximum torque: 6270 Nm

Features and benefits

- High misalignment capabilities - high flexibility.
- Shock absorbing - extending machine life.
- Maintenance free - minimum number of wearing parts.
- Fire retardant, anti-static elements available for use in a flameproof environment.
- Interchangeability means no re-engineering.

- Pump spacer option for easy pump maintenance.
- Taper bush bores available for ease of replacement.
- Easy replacement of tyre element without any need to move hubs axially on driven or driving shafts.

Standard range comprises

- Shaft to Shaft
- Pump Spacer Type

Applications

- Compressors
- Generator Sets
- Pumps

- Roller Table Drives
- General Industrial Applications

Construction details

Steel or S.G. Iron Half Bodies

Rubber Tyres:

Temp Range -50°C to +50°C

Chloroprene Tyres:

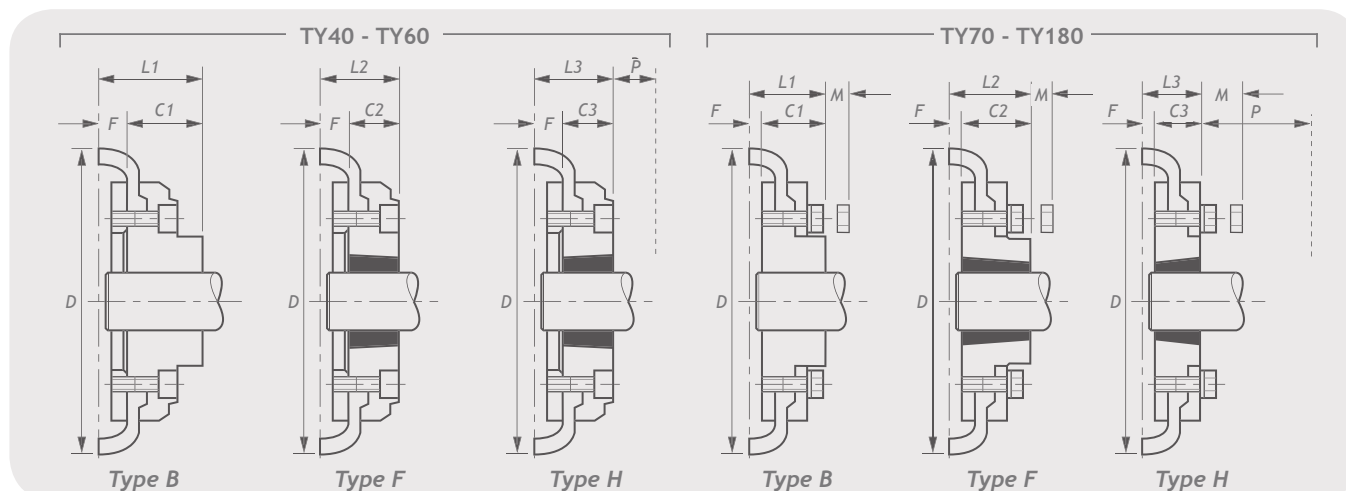
Temp Range -15°C to +70°C



Can be certified for use in potentially explosive atmospheres containing gas or dust, according to ATEX directive 94/9/EC.

The couplings are classified for equipment group II, categories 2 and 3.

Contact Renold for further details.



Coupling size	Power /100rpm kW	Torque nominal Nm	Speed max rpm	Type B		Type F			Type H			Max misalignment		End float mm	Torsional stiffness Nm° at 20°C
				Bore		Bush size	Bore		Bush size	Bore		Offset mm	Angular deg		
				Max	Min		Max	Min		Max	Min				
TY40 # #	0.26	25	4500	30	12	TB1008	25	9	TB1008	25	9	1.1	4	±1.3	6
TY50 # #	0.69	66	4500	38	15	TB1210	32	11	TB1210	32	11	1.3	4	±1.7	12.5
TY60 # #	1.33	127	4000	45	18	TB1610	42	14	TB1610	42	14	1.6	4	±2.0	32
TY70 # #	2.62	250	3600	50	22	TB2012	50	14	TB1610	42	14	1.9	4	±2.3	60
TY80 # #	3.93	375	3100	60	25	TB2517	60	16	TB2012	50	14	2.1	4	±2.6	63
TY90 # #	5.24	500	3000	70	28	TB2517	60	16	TB2517	60	16	2.4	4	±3.0	91
TY100 # #	7.07	675	2600	80	32	TB3020	75	25	TB2517	60	16	2.6	4	±3.3	126
TY110 # #	9.2	875	2300	95	30	TB3020	75	25	TB3020	75	25	2.9	4	±3.7	178
TY120 # #	13.9	1300	2050	110	38	TB3525	100	35	TB3020	75	25	3.2	4	±4.0	296
TY140 # #	24.3	2320	1800	130	75	TB3525	100	35	TB3525	100	35	3.7	4	±4.6	470
TY160 # #	39.4	3770	1600	140	85	TB4030	100	40	TB4030	100	40	4.2	4	±5.3	776
TY180 # #	65.8	6270	1500	150	85	TB4535	125	55	TB4535	125	55	4.8	4	±6.0	1370

Coupling size	Dimensions										Type B mass* kg	Type F mass* kg	Type H mass* kg
	C1 mm	C2 mm	C3 mm	D mm	F mm	L1 mm	L2 mm	L3 mm	M mm	P mm			
TY40 #	22	22	22	104	11	33.5	33.5	33.5	N/A	29	1.05	1.05	1.05
TY50 #	32	25	25	133	12.5	45	38	38	N/A	38	1.5	1.5	1.5
TY60 #	38	25	25	165	16.5	55	42	42	N/A	38	2.35	2.35	2.35
TY70 #	35	32	25	187	11.5	47	44	42	13	38	3.45	3.45	3.45
TY80 #	42	45	32	211	12.5	55	58	45	16	42	5	5	5
TY90 #	49	45	45	235	13.5	63	59	59	16	48	7.25	7.25	7.25
TY100 #	56	51	45	254	13.5	70	65	59	16	48	10	10	10
TY110 #	63	51	51	279	12.5	76	63.5	63.5	16	55	12.5	11.7	11.7
TY120 #	70	65	51	314	14.5	84.5	78.5	65.5	16	67	16.9	16.5	15.9
TY140 #	94	65	65	359	16	110.5	81	81	17	67	22.2	22.3	22.3
TY160 #	102	77	77	402	15	117	92	92	19	80	35.8	33.5	32.5
TY180 #	114	89	89	470	23	137	112	112	19	89	49.1	42.2	42.2

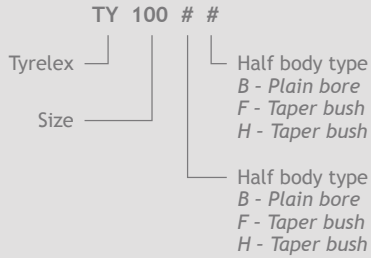
NOTE: M is distance by which clamping screws need to be withdrawn to release tyres.

P is wrench clearance for taper bush screws when large end is outboard Type H.

*Mass is for single hub assembly and half tyre.

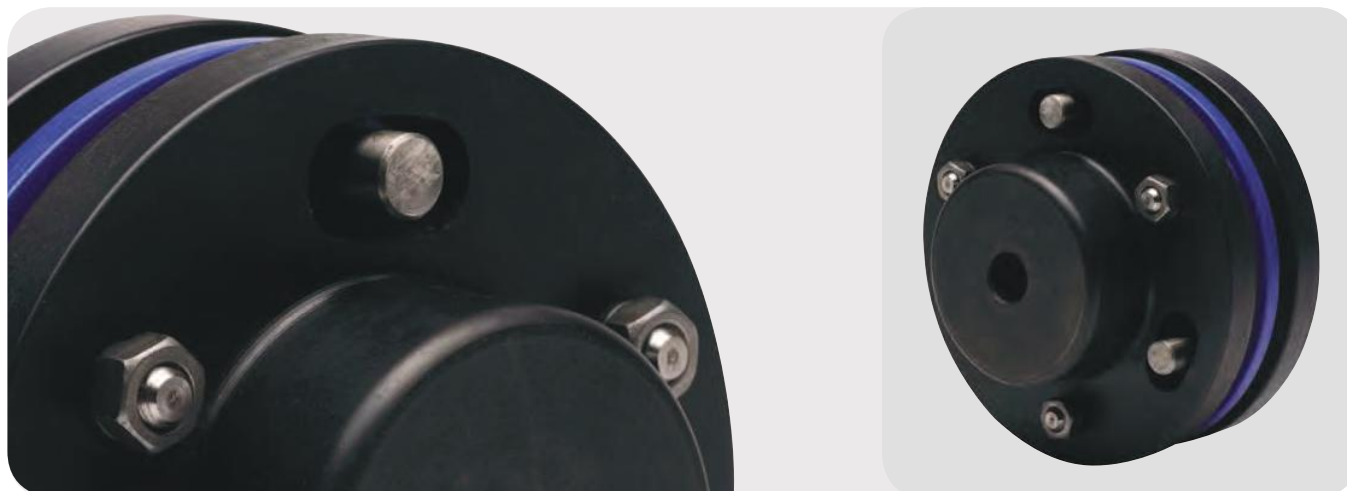
Tyreflex

Ordering code



Component Spares

Coupling size	Tyre flexible element		Half body unbored Type B		Half body taper bored Type F		Half body taper bored Type H	
	Catalogue no	Product no	Catalogue no	Product no	Catalogue no	Product no	Catalogue no	Product no
TY40 # #	TY40	7131104/1	TY40 B	7131104/HB02	TY40 F	7131104/HB77	TY40 H	7131104/HB88
TY50 # #	TY50	7131105/1	TY50 B	7131105/HB02	TY50 F	7131105/HB77	TY50 H	7131105/HB88
TY60 # #	TY60	7131106/1	TY60 B	7131106/HB02	TY60 F	7131106/HB77	TY60 H	7131106/HB88
TY70 # #	TY70	7132107/1	TY70 B	7132107/HB02	TY70 F	713107/HB77	TY70 H	7132107/HB88
TY80 # #	TY80	7132108/1	TY80 B	7132108/HB02	TY80 F	7132108/HB77	TY80 H	7132108/HB88
TY90 # #	TY90	7132109/1	TY90 B	7132109/HB02	TY90 F	7132109/HB77	TY90 H	7132109/HB88
TY100 # #	TY100	7132110/1	TY100 B	7132110/HB02	TY100 F	7132110/HB77	TY100 H	7132110/HB88
TY110 # #	TY110	7132111/1	TY110 B	7132111/HB02	TY110 F	7132111/HB77	TY110 H	7132111/HB88
TY120 # #	TY120	7132112/1	TY120 B	7132112/HB02	TY120 F	7132112/HB77	TY120 H	7132112/HB88
TY140 # #	TY140	7132114/1	TY140 B	7132114/HB02	TY140 F	7132114/HB77	TY140 H	7132114/HB88
TY160 # #	TY160	7132116/1	TY160 B	7132116/HB02	TY160 F	7132116/HB77	TY160 H	7132116/HB88
TY180 # #	TY180	7132118/1	TY180 B	7132118/HB02	TY180 F	7132118/HB77	TY180 H	7132118/HB88



A general purpose fail safe, torsionally flexible coupling, offering the option of either urethane or reinforced rubber disc, as the flexible element.

Coupling capacity

- Maximum power @ 100RPM: 45kW
- Maximum torque: 4298Nm

Features and benefits

- Compact design, dimensionally small yet high power capacity.
- Torsionally flexible - shock absorbing, extending machine life.
- Maintenance free - minimum number of wearing parts.
- Misalignment capabilities allowing flexibility installation.
- Alternative flexible elements available for wide design choice.

- Optional fire retardant anti-static elements for use in flameproof environment.
- Taper bush bores available for ease of maintenance.

Standard range comprises

- Shaft to Shaft

Applications

- Bottling Machines
- Compressors
- Mixers
- Pumps
- Screens
- General Industrial Applications

Construction details

Cast Iron Half Bodies

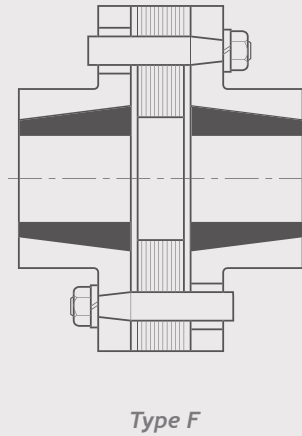
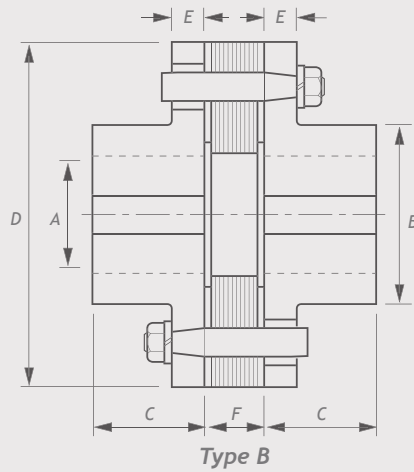
Urethane Disc

Temp Range -40 to +80°C

Rubber Reinforced Disc

Temp Range -40 to +90°C

Discflex

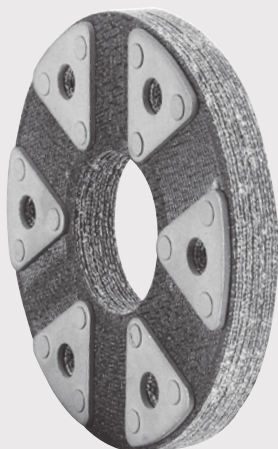


Catalogue number	Power/ 100rpm kW	Torque nominal Nm	Speed max* rpm	Type B		Type F			Dimensions						End float mm
				Bore		Bush size	Bore		B mm	C mm	D mm	E mm	F mm	Mass kg	
				Max	Min		Max	Min							
D41# # N #	0.75	72	2900	32	12	TB1008	25	9	58	25	104	11	16	2.1	1.8
D52# # N #	1.5	143	2250	42	19	TB1215	32	11	72	41	133	13	22	4.9	2.5
D52# # S #	2.25	215											26	5.0	2.5
D52# #W #	3	287											31	5.1	2.5
D71# # N #	3.75	358											23	11.0	3
D71# # S #	5.25	501	1650	60	28	TB2017	50	18	102	48	181	16	27	11.1	3
D71# #W #	7.5	716											32	11.2	3
D89# # N #	9	860	1300	75	32	TB2525	60	19	121	70	225	18	28	20.8	3.8
D89# # S #	12	1146											40	21.0	3.8
D89# #W #	15	1433											47	21.7	3.8
D108# # NR	19	1791	1050	95	38	TB3030	75	35	155	83	274	22	47	40.0	4.6
D108# # SR	23	2149											51	40.0	4.6
D108# #WR	26	2507											63	41.0	4.6
D127# # NR	30	2865											53	65.0	5.3
D127# # SR	38	3581	900	110	55	TB3535	90	35	185	95	324	25	61	66.0	5.3
D127# #WR	45	4298											73	67.0	5.3

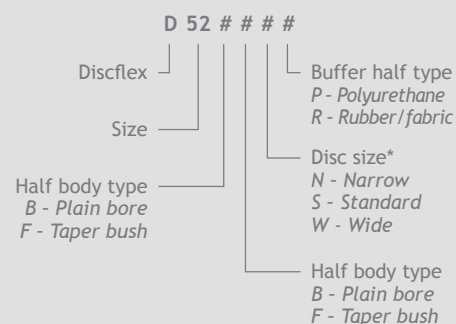
* Normal maximum speeds with 1° max. angular malalignment, above these speeds consult our Sales Technical Staff.

Max angular misalignment 1°

Max offset misalignment 0.5mm



Ordering code



* Disc size depending on torque transmitted.

Component Spares

Coupling number	Product no 'BB' type	Product no 'FF' type	Polyurethane disc	Rubber/fabric disc	Pin assembly	Half body pilot bored	Half body taped bored
D41 ## NP	644763	644763/77	644733	-	644204	644205	644205/77
D41 ## NR	647263	647263/77	-	647233	644204	644205	644205/77
D52 ## NP	644766	644766/77	644736	-	644207	644208	644208/77
D52 ## NR	647266	647266/77	-	647236	644207	644208	644208/77
D52 ## SP	644767	644767/77	644737	-	644207	644208	644208/77
D52 ## SR	647267	647267/77	-	647237	644207	644208	644208/77
D52 ## WP	644768	644768/77	644738	-	644207	644208	644208/77
D52 ## WR	647268	647268/77	-	647238	644207	644208	644208/77
D71 ## NP	644769	644769/77	644739	-	644210	644211	644211/77
D71 ## NR	647269	647269/77	-	647239	644210	644211	644211/77
D71 ## SP	644770	644770/77	644740	-	644210	644211	644211/77
D71 ## SR	647270	647270/77	-	647240	644210	644211	644211/77
D71 ## WP	644771	644771/77	644741	-	644210	644211	644211/77
D71 ## WR	647271	647271/77	-	647241	644210	644211	644211/77
D89 ## NP	644772	644772/77	644742	-	644213	644214	644214/77
D89 ## NR	647272	647272/77	-	647242	644213	644214	644214/77
D89 ## SP	644773	644773/77	644743	-	644213	644214	644214/77
D89 ## SR	647273	647273/77	-	647243	644213	644214	644214/77
D89 ## WP	644774	644774/77	644744	-	644213	644214	644214/77
D89 ## WR	647274	647274/77	-	647244	644213	644214	644214/77
D108 ## NR	647275	647275/77	-	647245	644216	644217	644217/77
D108 ## SR	647276	647276/77	-	647246	644216	644217	644217/77
D108 ##WR	647277	647277/77	-	647247	644216	644217	644217/77
D127 ## NR	647278	647278/77	-	647248	644219	644220	644220/77
D127 ## SR	647279	647279/77	-	647249	644219	644220	644220/77
D127 ##WR	647280	647280/77	-	647250	644219	644220	644220/77

Chainflex



An all metal flexible yet torsionally stiff coupling, suitable for use in arduous working conditions.

Coupling capacity

- Maximum power @ 100RPM: 90kW
- Maximum torque: 8595Nm

Features and benefits

- Torsionally stiff for use as a positive drive connection.
- Easy installation for ease of maintenance
- Misalignment capabilities allowing flexibility in installation.
- Hardened teeth giving long life with high torque capacity.

- All metal coupling for use in hostile environments.
- Taper bush bores available for ease of maintenance.
- Easy removal of chain for high speed disconnection of driven and driving machines.
- Precision moulded plastic cover with seals for lubrication retention and dust protection.

Standard range comprises

- Shaft to Shaft
- Taper Bush or Parallel Bored

Applications

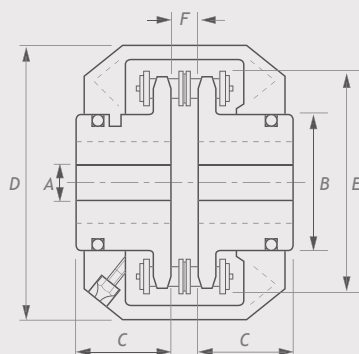
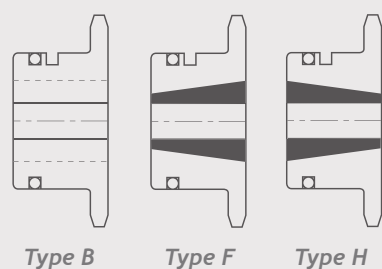
- Fans
- Feeders
- Kiln Dryers
- Line Shafts
- Pump Drives

Construction details

Hardened Steel Sprockets

Renold Duplex Chain

Moulded Cover



Ordering code

Chainflex C 63 # # #

Size

Half body type
B - Plain bore
F - Taper bush
H - Taper bush

Supplied with or without cover
K - With cover
R - Rubber/fabric

Half body type
B - Plain bore
F - Taper bush
H - Taper bush

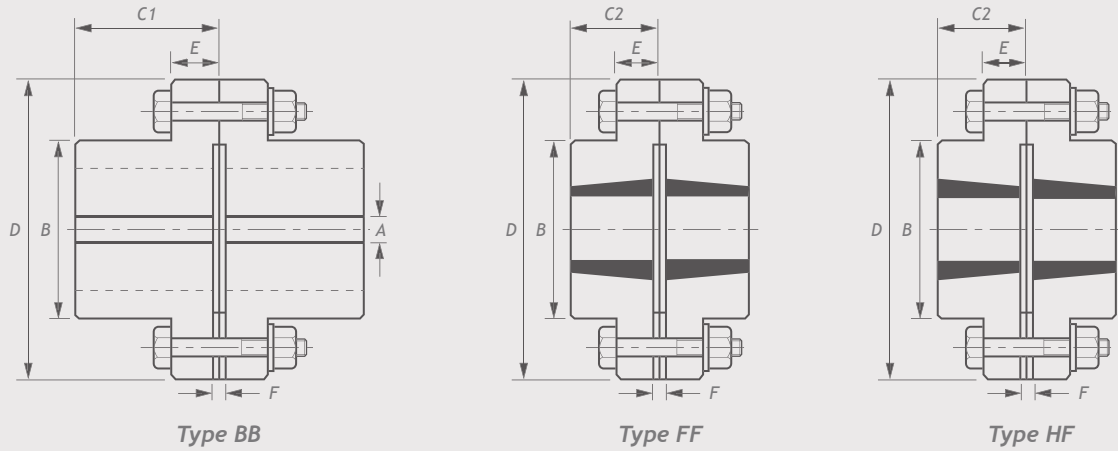
Max angular misalignment 1°

Coupling size with cover	Power/ 100rpm kW	Torque nominal Nm	Speed max rpm	Type B		Type F & H			Dimensions						Offset Max mm	End float mm
				Bore		Bush size	Bore		B mm	C mm	D mm	E mm	F mm	Mass kg		
				Max	Min		Max	Min								
C28BB K	0.55	52.5	3500	25	12	N/A	-	-	42	21	72	62	3	0.5	0.25	0.7
C33BB K	1	95.5	3000	30	12	N/A	-	-	50	25	83	74	5.1	1.0	0.25	1.0
C43 # # K	2.25	215	2250	40	14	TB1008	28	9	59	32	108	99	6.9	2.1	0.25	1.3
C63 # # K	7.5	716	1500	60	19	TB1615	42	14	91	51	159	148	8.9	7.1	0.30	2.0
C81 # # K	17.5	1671	1200	80	24	TB2525	60	19	117	63	206	197	16.2	16	0.38	2.5
C101BB K	33.5	3200	960	100	32	N/A	-	-	144	76	258	245	18.8	30	0.38	3.3
C122BB K	60	5730	750	130	50	N/A	-	-	182	101	311	295	25.1	61	0.50	3.8
C140BB K	90	8595	700	140	55	N/A	-	-	195	114	357	343	31.2	85	0.50	4.6

Component Spares

With cover		Without cover		Cover	Half body pilot bored	Half body taper bored F type	Half body taper bored H type	Chain with connectors
Coupling number	Product number	Coupling number	Product number					
C28BBK	642602	C28BB	642802	616602	642080	-	-	114500/96620
C33BBK	642603	C33BB	642803	616603	642081	-	-	114038/96620
C43BBK	642604	C43BB	642804	616604	642082	-	-	114046/96620
C43FFK	642604/77	C43FF	642804/77	616604	-	642082/77	642082/88	114046/96620
C63BBK	642606	C63BB	642806	616606	642084	-	-	114066/96620
C63FFK	642606/77	C63FF	642806/77	616606	-	642084/77	642084/88	114066/96620
C81BBK	642608	C81BB	642808	616608	642086	-	-	114088/96620
C81FFK	642608/77	C81FF	642808/77	616608	-	642086/77	642086/88	114088/96620
C101BBK	642610	C101BB	642810	616610	642088	-	-	114106/96620
C122BBK	642612	C122BB	642812	616612	642090	-	-	114127/96620
C140BBK	642614	C140BB	642814	616614	642092	-	-	114147/96620

Rigid



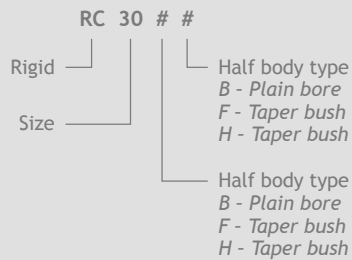
Coupling size	B type		F & H type*			Dimensions						B type weight kg	F & H type weight kg
	Bore dia A		Bush size	Bore		B mm	C1 mm	C2 mm	D mm	E mm	F mm		
	Max	Min		Max	Min								
RC10 ##	54	14	TB1615	42	14	76	42	42	116	14	5	5.4	2.0
RC15 ##	70	20	TB2012	50	14	98	49	35	152	19	5	9.1	5.3
RC20 ##	90	27	TB2517	60	16	124	62	47	178	19	5	19.4	8.3
RC25 ##	105	27	TB3030	75	35	148	77	79	213	22	5	32.6	16.6
RC30 ##	125	39	TB3535	90	35	173	91	91	240	22	5	41.3	22.7
RC35 ##	145	39	TB4040	100	40	201	106	106	279	29	5	66.2	37.1
RC40 ##	170	55	TB4545	110	55	233	121	121	318	29	10	97.1	47.8
RC45 ##	190	55	TB5050	125	70	262	135	135	346	29	10	132	77.05
RC50BB	210	55	N/A	-	-	294	153	-	389	38	10	194	-
RC55BB	230	55	N/A	-	-	324	168	-	425	38	10	253	-
RC60BB	250	55	N/A	-	-	349	188	-	457	25	13	319	-
RC70BB	290	55	N/A	-	-	406	229	-	527	29	16	501	-

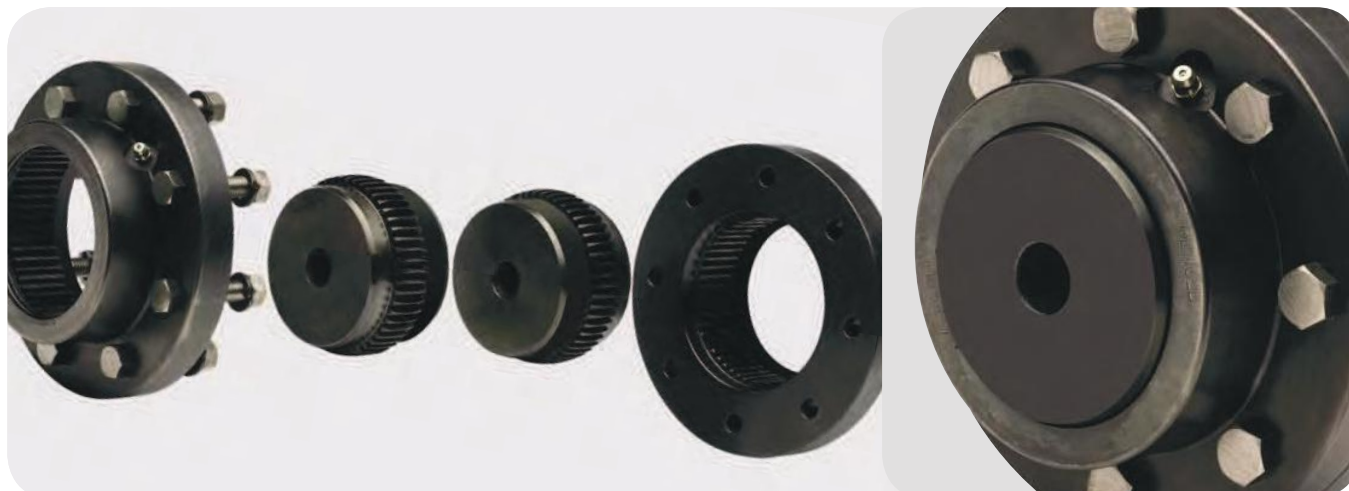
Larger sizes are available.

* NOTE: Torque transmitted by F & H types is limited by the torque capacity of the taper bush.

NOTE: When connecting vertical shafts use type BB with keep plates or type FF. Type HF must not be used.

Ordering code





Renold Gearflex consists of both standard ranges and customised special all metal couplings, giving maximum power capacity within minimum space envelope and excellent misalignment capacity.

Coupling capacity

- Maximum power @ 100RPM: 50485kW
- Maximum torque: 4747000Nm

Features and benefits

- All carbon steel heavy duty gear coupling for strength in application, combined with long life.
- AGMA standard (DA/SA ranges) - interchangeable and cost effective.
- Single and double engagement types available, suiting all applicational requirements.
- Crowned and barrelled teeth for optimum contact and long life.
- Customised options available for all gearflex ranges to give design suitability for demanding applications.
- High misalignment up to 6°

Range options

- A series AGMA standard double and single engagement
- B series heavy duty standard double and single engagement
- D series high misalignment double and single engagement
- V series vertical
- NTS high speed
- A series double engagement flanged spacer (DAFS)
- A series double engagement carbon shaft
- Brake Disc/Drum
- Dis-engaging
- Long Hub
- Croft MB Series
- Mill Motor
- Shear Pin
- Telescopic

Applications

- Crane drives
- Mining
- Steelworks
- General heavy industrial applications

Construction details

Medium carbon steel half bodies and inner hubs.

'O' Ring sealing (A series)

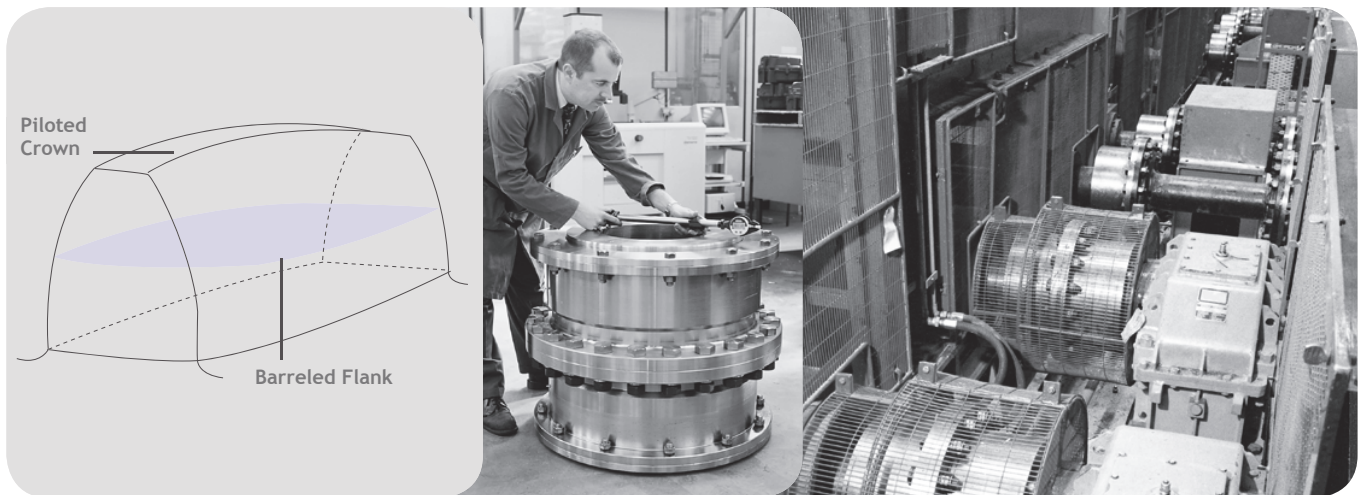
Lip seals (D series)



Standard Gearflex products DA, HDB, SA, HSB and NTS can be certified for use in potentially explosive atmospheres containing gas or dust, according to ATEX directive 94/9/EC. The couplings are classified for equipment group II, categories 2 and 3.

Special conditions apply. Contact Renold for further details, or for consideration of ATEX certification of other Gearflex products.

Gearflex



Misalignment capabilities:

Double Engagement types

- Parallel Offset
- Angular
- Axial (End Float)

Single Engagement types

- Angular
- Axial (End Float)

Designed to meet the demands of today's wide ranging applications and manufactured to Renolds high standards.

Renold Gearflex Couplings feature an increased tooth capacity from optimised design, providing maximised power capacity within a given space envelope.

Contact us for more information on how we can deliver a cost effective solution to your application.

RENOLD Clutches & Couplings have the design and manufacturing capability to engineer a shaft coupling to suit customers special design application requirements.

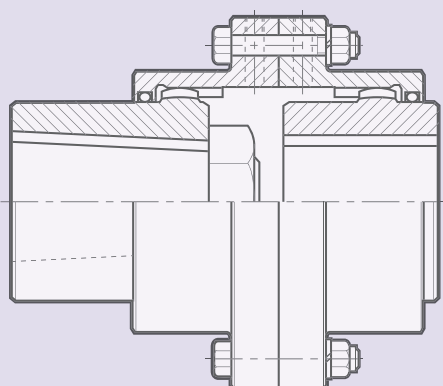
Note: Croft MB series are also readily available in all variants. For details contact Renold.

When used in conjunction with a cardan shaft, two single engagement couplings will accept offset misalignment.

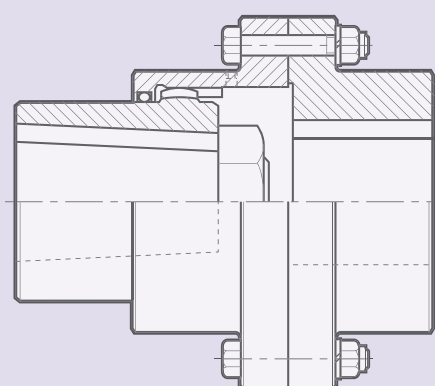
The amount will be dependant upon the cardan shaft length.



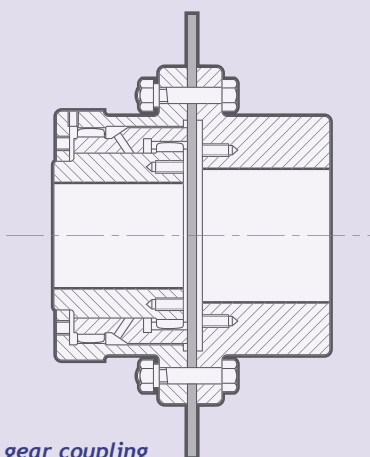
Adapted and Custom Gear Couplings



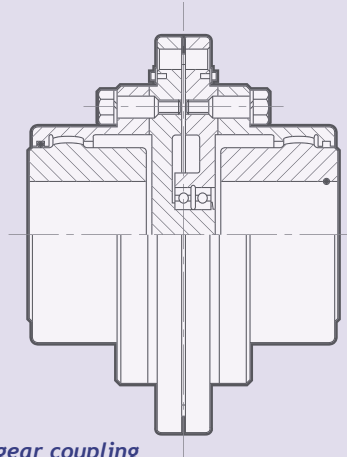
Mill motor gear



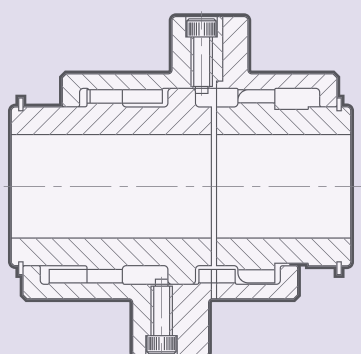
Disk brake gear coupling



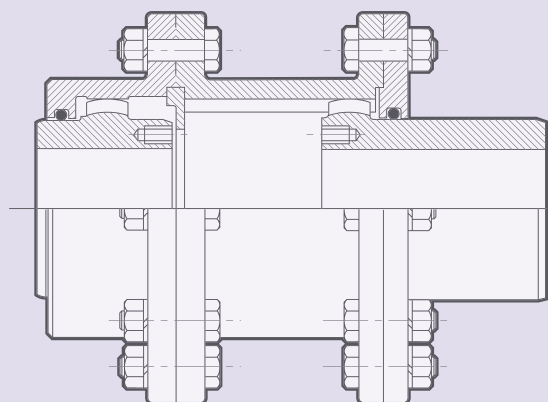
Shear pin gear coupling



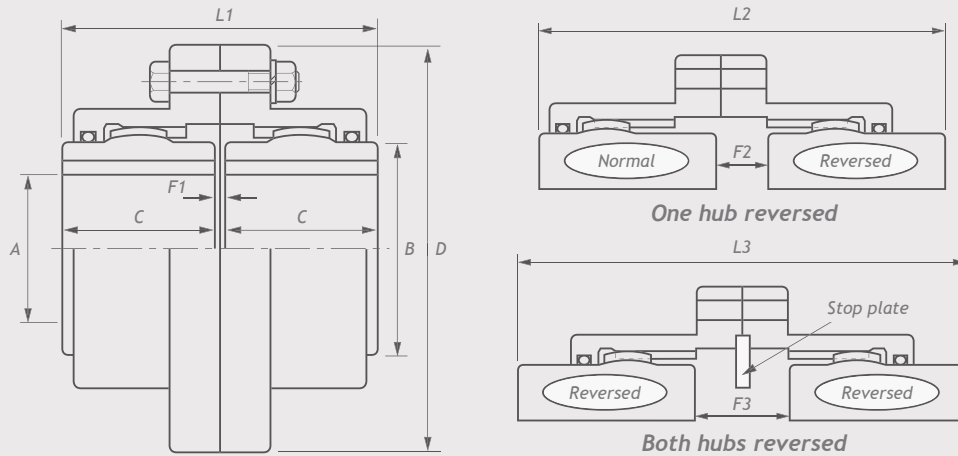
Disengaging type gear coupling - standard series



Telescopic type gear coupling - standard series



Gearflex A series Double Engagement type DA



Coupling size	Product no	Power /100rpm kW	Torque nominal Nm	Speed max** rpm	Bore A		Dimensions												Offset max mm
					Max mm	Min mm	B mm	C mm	D mm	F1 mm	F2 mm	F3 mm	L1 mm	L2 mm	L3 mm	Mass kg	WR ² kg m ²		
GF10DA	6901108	14.9	1423	7100	46	14	60	43	116	3	5	6	89	90	92	4.2	0.006	1.2	
GF15DA	6901158	28.2	2693	5400	57	20	76	49	152	3	8	13	102	106	111	7.7	0.020	1.5	
GF20DA	6901208	48	4584	4800	78	27	102	62	178	3	14	25	127	138	149	15.0	0.044	2.0	
GF25DA	6901258	77.6	7411	4250	90	27	117	77	213	5	12	19	159	166	173	25.4	0.105	2.3	
GF30DA	6901308	128	12224	4000	110	39	143	91	240	5	23	42	187	206	224	36.7	0.188	3.0	
GF35DA	6901358	196	18718	3600	127	39	165	106	279	6	27	48	219	240	260	60.8	0.436	3.5	
GF40DA	6901408	312	29796	3290	145	55	191	121	318	6	32	57	248	273	298	90.7	0.822	4.0	
GF45DA	6901458	431	41161	2920	165	55	216	135	346	8	37	65	278	306	335	122	1.305	4.5	
GF50DA	6901508	578	55199	2630	185	55	241	153	389	8	50	92	314	356	398	178	2.550	5.3	
GF55DA	6901558	857	81844	2320	205	55	267	175	425	8	53	98	359	404	449	235	3.780	6.0	
GF60DA	6901608	1096	104668	2120	225	55	292	188	457	8	60	111	384	436	487	279	4.860	6.5	
GF70DA	6901708	1640	156620	1830	260	55	343	221	527	9	71	133	451	513	575	443	10.350	7.8	

Misalignment angle per half (degrees)	Rating factor
1.50	1.00
1.00	1.15
0.75	1.30
0.50	1.55
0.00	2.00

Catalogue ratings shown are nominal values at 1.50 degrees.

For values at misalignments less than 1.50 degrees:-

Multiply nominal catalogue values by factor in table left.

e.g.

GF60DA at 1.50° = 104668 Nm

at 0.75° = 104668 x 1.30:-

GF60DA at 0.75° = 136068 Nm

Long hub versions available. Contact Renold for details.
See key stress calculations on page 13.

* Maximum Bore - The maximum bores shown are absolute maximums.
Under normal circumstances the boss to bore ratio should not be less than 1.5 for standard applications.
Consult Renold for overbore approval.

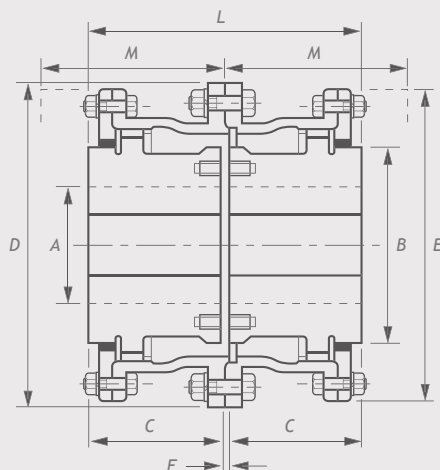
** Speed in excess of these shown may require additional balancing.

*** Hubs may be reversed to increase DBSE (F2 + F3 above). If axial movement is allowed with both hubs reversed, a stop plate should be fitted to prevent hubs disengaging from outers.

Ordering code

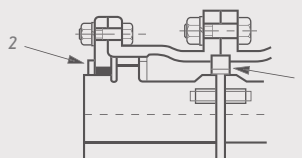
GF 20 DA
 Gearflex ——— Double engagement
 Size ——— A series

Gearflex Heavy Duty B series Double Engagement type HDB



Options

1. Loose spigot ring
2. Bolt on end plates



Coupling size	Power /100rpm kW	Torque nominal Nm	Speed max** rpm	Bore A		Dimensions								Max misalignment		Offset float mm
				Max* mm	Min mm	B mm	C mm	D mm	E mm	F mm	L mm	M mm	Mass kg	Offset mm	Angular deg	
GF8HDB	1938	185120	2000	275	115	360	203	533	508	10	416	232	448	3.6	0.75	15.8
GF9HDB	2663	254280	1900	305	140	400	228	584	559	12	468	261	609	4.2	0.75	19.1
GF10HDB	2982	284800	1800	360	140	470	254	660	628	12	520	293	871	4.8	0.75	19.1
GF11HDB	3653	348900	1600	370	150	483	280	711	680	12	572	318	1070	5.3	0.75	19.1
GF12HDB	4846	462800	1400	410	150	533	305	768	737	14	624	343	1391	5.7	0.75	19.1
GF14HDB	7231	690600	1200	465	285	610	356	902	857	18	730	400	1767	6.9	0.75	19.1
GF16HDB	11183	1068000	1000	535	335	699	406	991	946	20	832	457	2560	8.4	0.75	19.1
GF18HDB	16031	1531000	700	605	360	787	457	1124	1073	25	939	520	3485	9.2	0.75	22.1
GF20HDB	22733	2171000	500	665	385	864	483	1230	1180	25	991	560	4463	9.6	0.75	22.1
GF22HDB	31309	2990000	400	720	410	940	483	1308	1257	25	991	560	5358	9.6	0.75	22.1
GF24HDB	37277	3560000	300	780	460	1016	483	1372	1321	25	991	560	6239	9.6	0.75	22.1
GF26HDB	49707	4747000	270	840	540	1092	559	1524	1486	28	1146	650	8985	10.6	0.75	22.1

Misalignment angle per half (degrees)	Rating factor
0.75	1.00
0.50	1.20
0.00	1.60

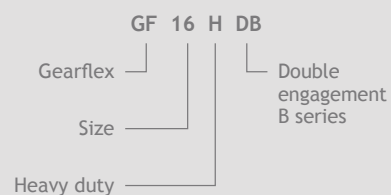
Catalogue ratings shown are nominal values at 0.75 degrees.
For values at misalignments less than 0.75 degrees:-
Multiply nominal catalogue values by factor in table left.

Long hub versions available contact Renold for details.
See key stress calculations on page 13.

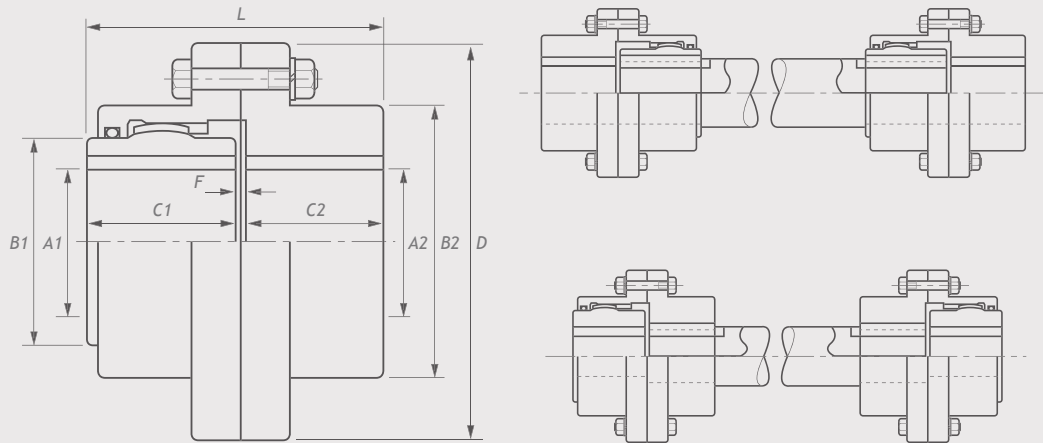
* Maximum Bore - The maximum bores shown are absolute maximums. Under normal circumstances the boss to bore ratio should not be less than 1.5 for standard applications. Consult Renold for overbore approval.

** Speed in excess of these shown may require additional balancing.

Ordering code



Gearflex A series Single Engagement type SA



Coupling size	Product no	Power /100rpm kW	Torque nominal Nm	Speed max** rpm	Bore A1		Bore A2		Dimensions								
					Max* mm	Min mm	Max mm	Min mm	B1 mm	B2 mm	C1 mm	C2 mm	D mm	F mm	L mm	Mass kg	WR ² kg m ²
GF10SA	6908108	14.9	1423	7100	46	14	58	14	60	76	43	40	116	4	87	4.8	0.005
GF15SA	6908158	28.2	2693	5400	57	20	75	20	76	98	49	47	152	4	100	8.4	0.019
GF20SA	6908208	48	4584	4800	78	27	95	27	102	124	62	60	178	4	125	17.2	0.044
GF25SA	6908258	77.6	7411	4250	90	27	110	27	117	148	77	75	213	5	156	29.0	0.107
GF30SA	6908308	128	12224	4000	110	39	130	39	143	173	91	89	240	5	185	39.0	0.200
GF35SA	6908358	196	18718	3600	127	39	155	39	165	201	106	104	279	6	216	63.5	0.446
GF40SA	6908408	312	29796	3290	145	55	180	55	191	233	121	116	318	8	244	93.9	0.842
GF45SA	6908458	431	41161	2920	165	55	200	55	216	262	135	130	346	9	274	127	1.350
GF50SA	6908508	578	55199	2630	185	55	225	55	241	294	153	148	389	9	310	186	2.800
GF55SA	6908558	857	81844	2320	205	55	250	55	267	324	175	164	425	9	348	244	3.940
GF60SA	6908608	1096	104668	2120	225	55	265	55	292	349	188	182	457	10	380	299	5.130
GF70SA	6908708	1640	156620	1830	260	55	310	55	343	406	221	221	527	13	454	472	11.040

Misalignment angle gear half (degrees)	Rating factor
1.50	1.00
1.00	1.15
0.75	1.30
0.50	1.55
0.00	2.00

Catalogue ratings shown are nominal values at 1.50 degrees.
For values at misalignments less than 1.50 degrees:-
Multiply nominal catalogue values by factor in table left.

Long hub versions available. Contact Renold for details. See key stress calculations on page 13. Renold can supply cardan shaft or flanged spacer assemblies. Critical speeds must be checked, please contact Renold.

* Maximum Bore - The maximum bores shown are absolute maximums. Under normal circumstances the boss to bore ratio should not be less than 1.5 for standard applications. Consult Renold for overbore approval.

** Speed in excess of these shown may require additional balancing.

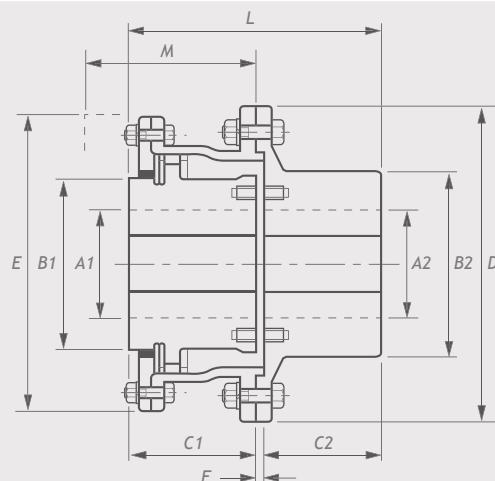
Ordering code

GF 40 SA

Gearflex ——— | ——— Single engagement A series

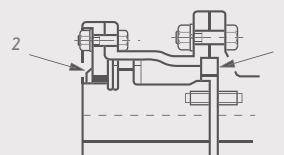
Size ——— | ———

Gearflex Heavy Duty B series Single Engagement type HSB



Options

1. Loose spigot ring
2. Bolt on end plates



Coupling size	Power /100rpm kW	Torque nominal Nm	Speed max** rpm	Bore A1		Bore A2		Dimensions										Max angular misalignment deg	End float mm
				Max* mm	Min mm	Max mm	Min mm	B1 mm	B2 mm	C1 mm	C2 mm	D mm	E mm	F mm	L mm	M mm	Mass kg		
GF8HSB	1938	185120	2000	275	115	240	115	360	368	203	200	533	508	13	416	232	411	0.75	7.9
GF9HSB	2663	254280	1900	305	140	280	140	400	406	228	226	584	559	14	468	261	557	0.75	9.6
GF10HSB	2982	284800	1800	360	140	305	140	470	457	254	252	660	628	14	520	293	877	0.75	9.6
GF11HSB	3653	348900	1600	370	150	330	150	483	533	280	278	711	680	14	572	318	1051	0.75	9.6
GF12HSB	4846	462800	1400	410	150	356	150	533	584	305	302	768	737	16	623	343	1365	0.75	9.6
GF14HSB	7231	690600	1200	465	285	430	190	610	660	356	354	902	857	21	731	400	1504	0.75	9.6
GF16HSB	11183	1068000	1000	535	335	480	215	699	711	406	405	991	946	21	832	458	2184	0.75	9.6
GF18HSB	16031	1531000	700	605	360	560	255	787	864	457	456	1124	1073	27	940	521	2947	0.75	11
GF20HSB	22733	2171000	500	665	385	610	280	864	940	483	481	1230	1181	27	991	560	3717	0.75	11
GF22HSB	31309	2990000	400	720	410	635	300	940	965	483	481	1308	1257	27	991	560	4436	0.75	11
GF24HSB	37277	3560000	300	780	460	660	330	1016	1016	483	481	1372	1321	27	991	560	5227	0.75	11
GF26HSB	49707	4747000	270	840	540	710	355	1092	1168	559	560	1524	1486	28	1147	650	7993	0.75	11

Misalignment angle gear half (degrees)	Rating factor
0.75	1.00
0.50	1.20
0.00	1.60

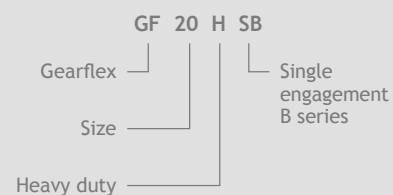
Catalogue ratings shown are nominal values at 0.75 degrees.
For values at misalignments less than 0.75 degrees:-
Multiply nominal catalogue values by factor in table left.

Long hub versions available. Contact Renold for details. See key stress calculations on Page 13. Renold can supply cardan shaft or torque tube assemblies. Critical speeds must be checked, please contact Renold.

* Maximum Bore - The maximum bores shown are absolute maximums. Under normal circumstances the boss to bore ratio should not be less than 1.5 for standard applications. Consult Renold for overbore approval.

** Speed in excess of these shown may require additional balancing.

Ordering code

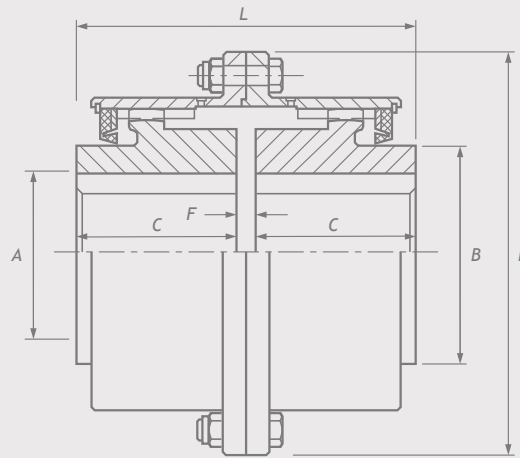


Gearflex High Misalignment D series Double Engagement type DD

D Series Double Engagement couplings accommodate offset, angular or combined misalignment.

Universally used for connecting industrial applications that are subject to higher than standard misalignment of the Gearflex DA, such as oil field equipment and rolling mill drives.

Induction hardened gear teeth and lip type seals handle up to 6° of misalignment.



Coupling size	Torque rating Nm	Bore A Max* mm	Dimensions									Mass kg	WR ² kg m ²	Offset (parallel)	
			B at 3.5° mm	B at 6° mm	C at 3.5° mm	C at 6° mm	D mm	F t 3.5° mm	F at 6° mm	L at 3.5° mm	L at 6° mm			misalignment at	
														3.5° mm	6° mm
GF 100DD		27	44		36		89	5		76		1.9	0.002	2.34	
GF 150DD		41	58	58	56	52.3	152	6	9.5	118	115	8.2	0.018	4.06	6.68
GF 200DD		54	73	73	70	65	176	8	13	148	148	12.2	0.037	5.13	8.33
GF 250DD	See table on page 46	67	94	92	78	73	203	10	14	165	160	22.7	0.074	5.79	9.50
GF 300DD		80	111	109	93	87	229	11	17	197	192	30.5	0.143	6.96	11.40
GF 350DD		92	127	125	99	94	272	13	18	211	205	47.3	0.325	7.82	12.70
GF 400DD		105	143	140	113	106	295	14	21	240	233	65	0.503	8.61	14.00
GF 450DD		118	164	162	122	114	324	16	24	260	252	87.7	0.808	9.50	15.34
GF 500DD		134	189	186	135	127	375	16	24	286	278	134	2.209	10.44	16.99
GF 550DD		152	219	214	152	145	416	21	28	325	318	185	2.9	12.40	19.84
GF 600DD		171	235	232	178	168	457	22	32	378	368	249	4.214	13.94	22.66
GF 700DD		197	279	273	203	194	518	27	35	433	422	374	8.545	15.60	25.17

* Maximum Bore - The maximum bores shown are absolute maximums.

Under normal circumstances the boss to bore ratio should not be less than 1.5 for standard applications. Consult Renold for overbore approval.

Max speed dependent on misalignment requirement, please consult Renold.

Specify misalignment angle $\pm 3.5^\circ$ or $\pm 6^\circ$.

Gear Teeth are induction hardened.

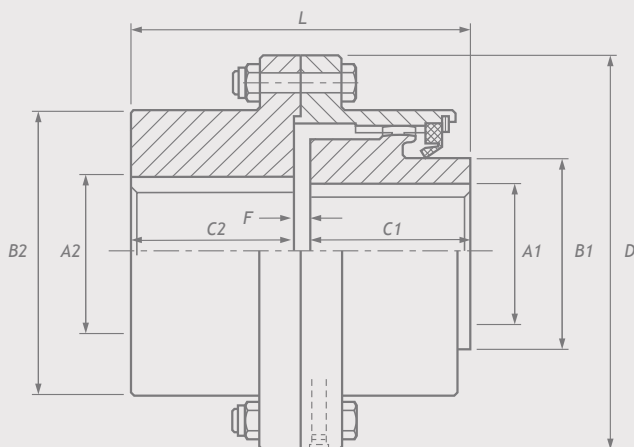
Shrouded bolt flanges available if required.

Ordering code

GF 350 DD

Gearflex — Double engagement D series — Size

Gearflex High Misalignment D series Single Engagement type SD



D Series Single Engagement couplings are commonly used in pairs with a floating shaft to connect widely separated equipment, accommodating offset, angular or combined misalignment.

Universally used for pinch roll, shear drives and tension bridges on auxiliary rolling mill equipment.

Coupling size	Torque rating Nm	Bore		Dimensions										Mass kg	WR ² kg m ²	Offset (parallel)		
		A1 Max* mm	A2 Max* mm	B1 at 3.5° mm	B1 at 6° mm	B2 mm	C1 at 3.5° mm	C1 at 6° mm	C2 mm	D mm	F at 3.5° mm	F at 6° mm	L at 3.5° mm			L at 6° mm	misalignment at	
																	3.5° mm	6° mm
GF 100SD		27	43	44		64	36		35	89	5		76		2.27	0.002	2.34	
GF 150SD		41	70	58	58	100	56	52.3	58	152	6	9.5	118	115	9.91	0.19	4.06	6.68
GF 200SD		54	83	73	73	121	70	65	71	176	8	13	148	148	14.5	0.058	5.13	8.33
GF 250SD	See table on page 46	67	96	94	92	140	78	73	78	203	10	14	165	160	24.1	0.098	5.79	9.50
GF 300SD		79	116	111	109	165	93	87	94	229	11	17	197	192	35	0.162	6.96	11.40
GF 350SD		92	135	127	125	194	99	94	103	272	13	18	211	205	53.6	0.351	7.82	12.70
GF 400SD		105	153	143	140	221	113	106	115	295	14	21	240	233	72.7	0.579	8.61	14.00
GF 450SD		118	165	164	162	248	122	114	125	324	16	24	260	252	96.8	0.878	9.50	15.34
GF 500SD		133	190	189	186	276	135	127	137	375	16	24	286	278	146.4	2.119	10.44	16.99
GF 550SD		152	215	219	214	314	152	145	160	416	21	28	325	318	206.8	3.248	12.40	19.84
GF 600SD		171	241	235	232	349	178	168	184	457	22	32	378	368	274.5	4.887	13.94	22.66
GF 700SD		197	225	279	273	403	203	194	216	518	27	35	433	422	422.7	9.716	15.60	25.17

* Maximum Bore - The maximum bores shown are absolute maximums. Under normal circumstances the boss to bore ratio should not be less than 1.5 for standard applications. Consult Renold for overbore approval.

Specify misalignment angle $\pm 3.5^\circ$ or $\pm 6^\circ$.

Gear Teeth are induction hardened.

Shrouded bolt flanges available if required.

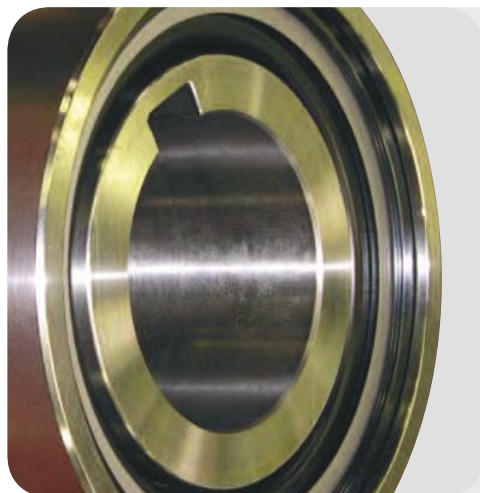
Offset capacity is dependant on shaft length, please consult Renold for max permissible speeds.

Ordering code

GF 350 SD

Gearflex — Single engagement D series — Size

Gearflex High Misalignment D series

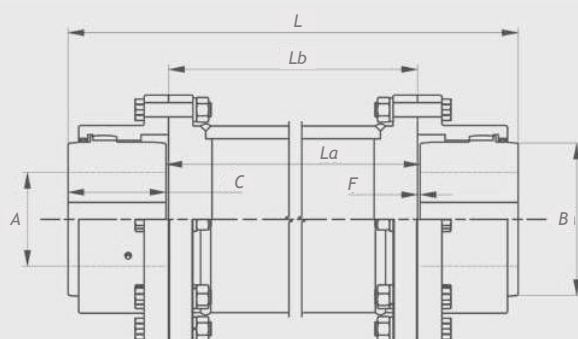


Gearflex D Series Gear Tooth Ratings - Nm*

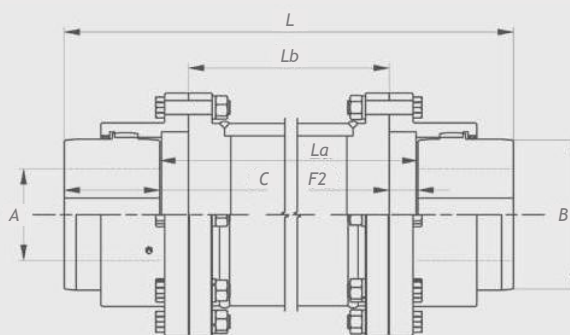
Maximum misalignment		$\pm 3.5^\circ$ per gear mesh			$\pm 6^\circ$ per gear mesh					
Operating Angle		1°	2°	3°	1°	2°	3°	4°	5°	6°
Coupling Spindle Size	100	847	599	429						
	150	2706	1853	1300	1684	1198	847	599	441	294
	200	4102	2927	2056	2667	1898	1333	949	712	475
	250	9605	6859	4814	5446	3887	2723	1944	1446	972
	300	14237	10169	7141	8056	5763	4045	2881	2147	1435
	350	24237	17322	12158	13774	9853	6915	4915	3684	2463
	400	32373	23130	16237	18395	13141	9232	6576	4915	3288
	450	58452	41763	29322	35379	25277	17751	12633	9446	6316
	500	73198	52294	36723	44305	31650	22226	15819	11830	7910
	550	96633	69040	48475	58486	33480	29333	20881	15616	10441
	600	154972	110734	77751	94169	67288	47243	33627	25152	16814
	700	210938	150712	105830	128181	91593	64305	45774	34237	22893

* Remember to apply appropriate service factors.

Gearflex A series Double Engagement Flanged Spacer type DAFS



Type A



Type B (Hubs reversed)

Coupling size	Power /100rpm kW	Torque nominal Nm	Speed max** rpm	Bore A1		Dimensions							
				Max* mm	Min mm	B mm	C mm	D mm	F mm	F2 mm	La mm	Lb mm	Lb min mm
GF10DAFS	14.9	1423		46	14	60	43	116	1.5	3			75
GF15DAFS	28.2	2693		57	20	76	49	152	1.5	6.5			85
GF20DAFS	48	4584		78	27	102	62	178	1.5	12.5			95
GF25DAFS	77.6	7411		90	27	117	77	213	2.5	9.5			110
GF30DAFS	128	12224		110	39	143	91	240	2.5	21			110
GF35DAFS	196	18718	**	127	39	165	106	279	3	24	***	***	125
GF40DAFS	312	29796		145	55	191	121	318	3	28.5			125
GF45DAFS	431	41161		165	55	216	135	346	4	32.5			125
GF50DAFS	578	55199		185	55	241	153	389	4	46			145
GF55DAFS	857	81844		205	55	267	175	425	4	49			145
GF60DAFS	1096	104668		225	55	292	188	457	4	55.5			145
GF70DAFS	1640	156620		260	555	343	221	527	4.5	66.5			145

Long hub versions available. Contact Renold for details. See key stress calculations on Page 13.
Renold can also supply cardan shaft assemblies.

* Maximum Bore - The maximum bores shown are absolute maximums. Under normal circumstances the boss to bore ratio should not be less than 1.5 for standard applications. Consult Renold for overbore approval.

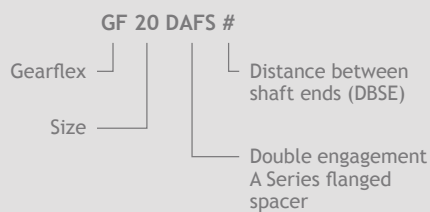
** Speed max rpm dependant on length of spacer, please consult Renold.

*** For all orders please state length of spacer and speed required.

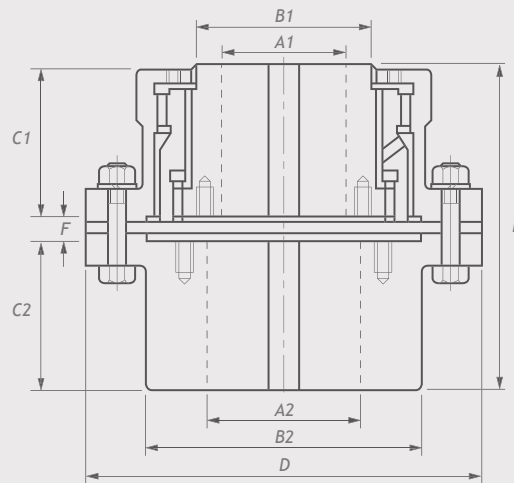
Type A - $Lb = La - 2 \times F$

Type B - $Lb = La - 2 \times F2$

Ordering code



Gearflex Vertical Double Engagement type VA



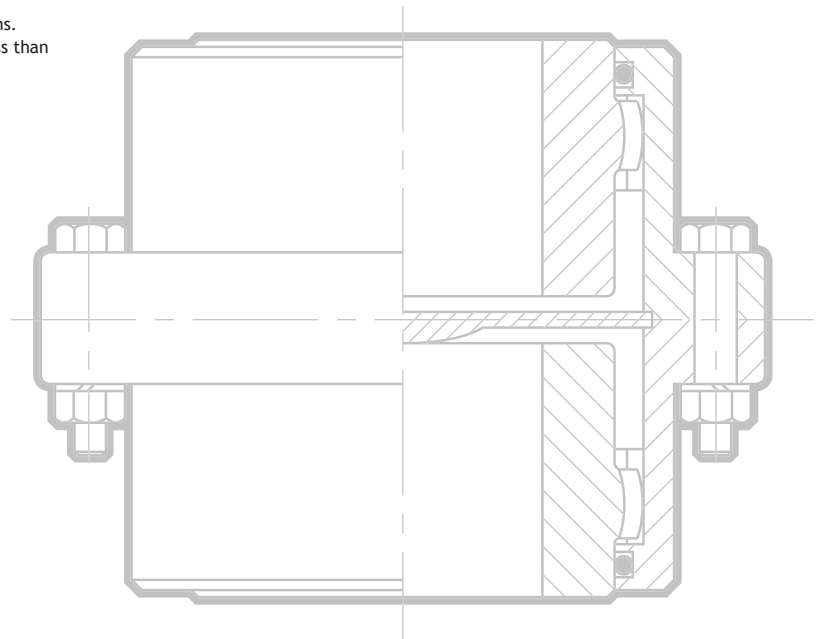
Coupling size	Power /100rpm kW	Torque nominal Nm	Speed max** rpm	Bore A1		Bore A2		Dimensions										Offset Max mm
				Max* mm	Min mm	Max mm	Min mm	B1 mm	B2 mm	C1 mm	C2 mm	D mm	F mm	L mm	Mass kg	WR ² kg m ²		
GF15VA	14.9	1423	7100	46	14	75	20	60	98	49	47	152	8	104	9	0.019	0.8	
GF20VA	28.2	2693	5400	57	20	95	27	76	124	62	60	178	8	130	17.5	0.044	1.0	
GF25VA	48	4584	4800	78	27	110	27	102	148	77	75	213	9	161	30	0.107	1.2	
GF30VA	77.6	7411	4250	90	27	130	39	117	173	91	89	240	10	190	40	0.200	1.4	
GF35VA	128	12224	4000	110	39	155	39	143	201	106	104	279	12	222	64	0.446	1.7	
GF40VA	196	18718	3600	127	39	180	55	165	233	121	116	318	13	250	94	0.842	2.0	
GF45VA	312	29796	3290	145	55	200	55	191	262	135	130	346	17	282	128	1.350	2.3	
GF50VA	431	41161	2920	165	55	225	55	216	294	153	148	389	17	318	187	2.800	2.6	
GF55VA	578	55199	2630	185	55	250	55	241	324	175	164	425	17	356	245	3.940	3.0	
GF60VA	857	81844	2320	205	55	265	55	267	349	188	182	457	20	390	300	5.130	3.4	
GF70VA	1096	104668	2120	225	55	310	55	292	406	221	221	527	23	465	475	11.040	3.9	

* Maximum Bore - The maximum bores shown are absolute maximums. Under normal circumstances the boss to bore ratio should not be less than 1.5 for standard applications. Consult Renold for overbore approval.

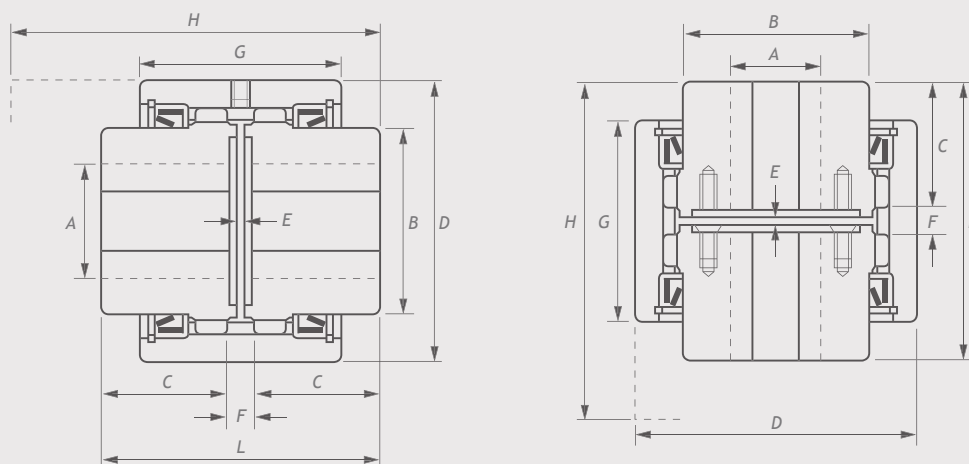
** Speed in excess of these shown may require additional balancing.

Ordering code

GF 25 VA
 Gearflex ——— Vertical A series
 Size ———



Gearflex High Speed Double Engagement type NTS



Coupling size	Power /100rpm kW	Torque nominal Nm	Speed max** rpm	Bore A		Dimensions										Offset max mm	End float mm
				Max* mm	Min mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	L mm	Mass kg			
GF10NTS #	7	668	10000	24	10	36	43	67	3	9	70	126	95	1.8	0.18	1.5	
GF11NTS #	10	955	10000	30	12	46	43	79	3	9	70	126	95	2.7	0.18	1.5	
GF12NTS #	16	1528	10000	40	12	58	44	92	3	9	73	130	97	3.6	0.18	1.5	
GF15NTS #	20	1910	10000	40	13	65	49	98	3	9	76	139	107	4.5	0.20	1.5	
GF20NTS #	37	3562	10000	55	18	82	56	121	3	11	92	162	123	7.7	0.20	1.5	
GF25NTS #	64	6112	10000	70	18	107	59	146	6	18	105	186	136	13	0.23	1.5	
GF30NTS #	100	9550	8500	80	30	127	67	171	6	18	114	204	152	20	0.33	3	
GF35NTS #	163	15570	7250	100	38	154	70	200	6	18	121	213	158	30	0.36	3	
GF40NTS #	233	22250	6400	115	60	178	86	229	6	18	140	248	190	42	0.38	3	
GF45NTS #	342	32660	5700	125	72	203	89	260	6	18	146	258	196	58	0.41	3	
GF50NTS #	428	40870	5200	145	85	225	99	283	6	18	152	273	216	74	0.43	3	
GF60NTS #	867	82800	4500	165	85	263	114	324	6	18	184	321	246	120	0.46	3	
GF65NTS #	1090	104223	4200	180	85	285	114	349	6	18	184	321	246	130	0.48	3	
GF70NTS #	1255	120000	3900	190	85	304	124	375	6	18	191	337	266	175	0.48	3	

Misalignment angle (degrees)	Rating factor
1.50	1.00
1.00	1.15
0.75	1.30
0.50	1.55
0.00	2.00

* Maximum Bore - The maximum bores shown are absolute maximums. Under normal circumstances the boss to bore ratio should not be less than 1.5 for standard applications. Consult Renold for overbore approval.

** Speed in excess of these shown may require additional balancing.

Catalogue ratings shown are nominal values at 1.50 degrees. For values at misalignments less than 1.50 degrees:- Multiply nominal catalogue values by factor in table left.

Ordering code

GF 60 NTS #
 Gearflex ——— |
 Size ——— |
 H - Horizontal Type
 V - Vertical Type
 NTS series

Gearflex Interchange Information

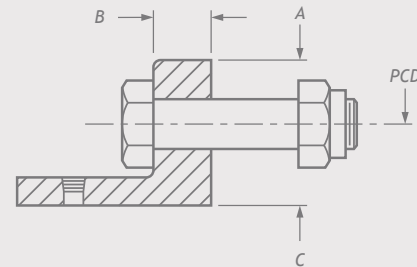


Interchangeability to AGMA Standard

Manufacturer	Coupling range	AGMA standard	Coupling Sizes											
Renold	Gearflex DA	Yes	10	15	20	25	30	35	40	45	50	55	60	70
Falk/Rexnord	Lifelign G20	Yes	1010G	1015G	1020G	1025G	1030G	1035G	1040G	1045G	1050G	1055G	1060G	1070G
Flender	Zapex ZIN	Yes	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	7
Bibby	FD AGMA	Yes	10	15	20	25	30	35	40	45	50	55	60	70
David Brown	Series X G20	Yes	1010G	1015G	1020G	1025G	1030G	1035G	1040G	1045G	1050G	1055G	1060G	1070G
Maina	AGMA N	Yes	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	7
Maina	GO-A	No	0	1	2	3	4	5	6	7	8	9	10	11
Kopflex	Series H	Yes	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	7
Jaure	MT	No	52	62	78	98	112	132	156	174	190	210	233	275
Lovejoy/Sier Bath		Yes	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	7
Esco	FST	No	45	60	75	95	110	130	155	175	195	215	240	275
CMD	Senior	No	50	68	80	100	115	135	150	170	190	215	230	250
Renk	LBk	No	32 or 38	48	60	70 or 80	90	110	125	140	160	180 or 190	200	225

Coupling size	No of bolts	Bolt size inch	PCD mm	Outer dia (A) mm	Flange thickness (B) mm	Inner dia (C) mm
GF10	6	0.250"	95.25	116	14.3	70
GF15	8	0.375"	122.24	152	19	87
GF20	6	0.500"	149.23	178	19	113
GF25	6	0.625"	180.98	213	22.2	133
GF30	8	0.625"	206.38	240	22.2	159
GF35	8	0.750"	241.3	279	28.6	186
GF40	8	0.750"	279.4	318	28.6	211
GF45	10	0.750"	304.8	346	28.6	240
GF50	8	0.875"	388.9	389	38.1	265
GF55	14	0.875"	468.3	425	38.1	298
GF60	14	0.875"	500.05	457	25.4	327
GF70	16	1	563.55	527	28.6	378

AGMA flange details - common dimensions





A torsionally stiff, backlash free coupling with misalignment capacity. Designed for use at high speeds and in high temperatures.

Torsionally rigid steel coupling

Renoldflex is a range of couplings that utilizes a stainless spring steel disc pack to provide a positive 'backlash free' drive.

The coupling consists of two carbon steel hubs that are connected to the disc packs with a system of micrometric precision bushings and high tensile steel screws. This construction provides a backlash free and torsionally rigid drive with the additional benefit of a 100% steel construction.

The Renoldflex range of couplings is based upon a modular component assembly; therefore it can be easily adapted to suit a wide variety of applications and design situations:

Coupling capacity

- Maximum power @ 100rpm: 482kW
- Maximum torque: 46000Nm (Using HTT flexible elements)

Features and benefits

- Torsionally stiff - ideal for use on precision machines
- 100% maintenance free - long life with little wear
- Misalignment capabilities allowing flexibility in installation
- Zero backlash guarantees operational accuracy

- High operating temperatures, suitable for harsh operating environments and temperatures up to 240°C
- Taper bored and cone clamp hubs also available
- High transmissible torque (HTT) flexible elements available from size 70 up
- High operating speeds

Standard range comprises

- Shaft to Shaft
- Spacer type

The Renoldflex type A uses a single disc pack and two hubs. It permits both axial and angular misalignments. This arrangement guarantees the highest torsional stiffness for this range of couplings. A special vertical support can be produced to allow for vertical or inclined mounting of the type A arrangement.

The Renoldflex type B uses two disc packs, two hubs and a spacer. It permits axial, angular and radial misalignments. The spacer component can be supplied in several lengths to allow for different axial dimensions.

Applications

- Pumps
- Fans
- Blowers
- Material handling
- Servo motor drives
- Machine tools
- Presses
- Cranes
- Wind turbines
- General industrial applications

General details

- 100% steel construction
- Steel hubs
- Stainless steel laminated flexible elements



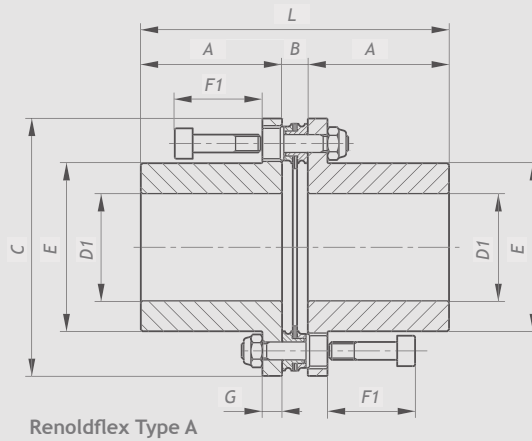
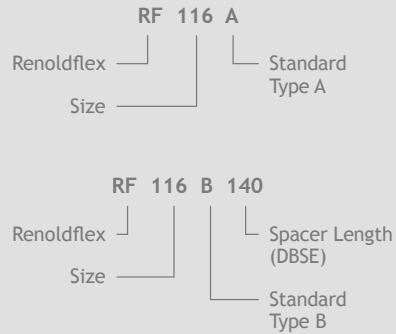
Can be certified for use in potentially explosive atmospheres containing gas or dust, according to ATEX directive 94/9/EC.

The couplings are classified for equipment group II, categories 2 and 3.

Contact Renold for further details.

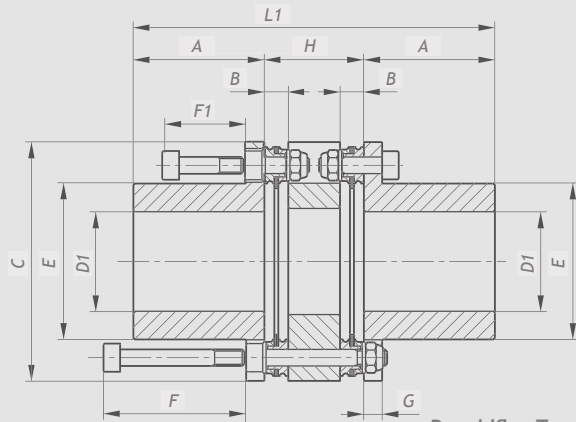
Renoldflex

Ordering code

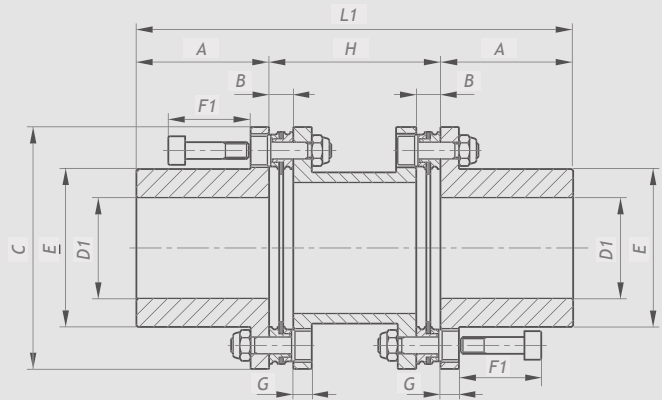


Coupling size	A mm	B mm	C mm	Pilot bore D mm	Max bore D ₁ * mm	E mm	F ₁ mm	G mm	Spacer length		L mm	L ₁ mm	Coupling weights		
									H mm				Hub (pilot bore) kg	Disc packs kg	Spacer kg
40	17	2.9	40	6	15	26	15	4	16 26		36.9	50	Please consult Renold		
53	24.5	6.9	53	6	22	32.5	25	5	30 39		55.9	79 88	0.2 0.2	0.6 0.7	0.2 0.2
									31.2			110.2	0.6	0.1	0.3
									60 100 140			139 179 219	0.6 0.6 0.6	0.1 0.1 0.1	0.3 0.5 0.6
70	39.5	7.5	70.5	10	35	47	25	5			86.5				
88	45	8.8	88.3	14	45	62.5	32	8	37.6 70 80 100 140	Available up to 3000mm upon request	98.8	127.6 160 170 190 230	1.2 1.2 1.2 1.2 1.2	0.1 0.2 0.2 0.2 0.2	0.6 0.7 0.7 0.8 1.1
									46.3			156.3	2.4	0.3	1.3
									100 140 180			210 250 290	2.5 2.5 2.5	0.2 0.2 0.2	1.4 1.7 2.0
									55 100 140 180		132	175 220 260 300	3.7 3.9 3.9 3.9	0.4 0.4 0.4 0.4	2.3 2.1 2.6 3.0
									62.6			216.6			
166	75	13	166.5	25	90	118	56	12	100 140 180		163	250 290 330	7.0 7.0 7.0	0.9 0.9 0.9	3.2 3.8 4.5
									71.8			251.8			
									140 180			320 360	11.8 11.8	1.4 1.4	5.2 6.0
238	125	20.8	238	39	120	169	81	16	140 180		270.8	392.4 432.4	23.3 23.23	2.2 2.2	10.0 11.8
295	160	28	295	59	150	205	112	22	200 250		348	520	Please consult Renold		
345	200	32	345	79	180	254	133	26	224 250		432.2	624 650	Please consult Renold		

*Use maximum bore D₁ only for uniform load. For heavy duty class, maximum bore: $D_1 = \frac{E}{1.45}$



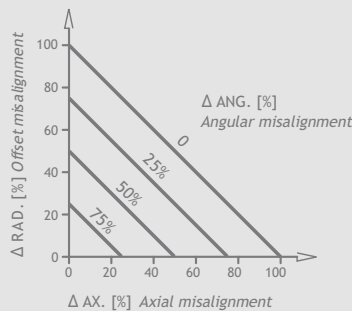
Renoldflex Type B H-MIN



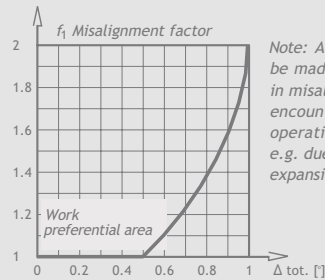
Renoldflex Type B

			RENOLDFLEX TYPE A Single disc pack				RENOLDFLEX TYPE B Double disc pack					TORSIONAL STIFFNESS***			
Size	Nominal Torque T* Nm	Max Speed V** rpm	Misalignment			Inertia J kg m ²	Spacer length H mm		Misalignment			Inertia J kg m ²	Disc pack C _K Nm/rad	Spacer C _H 10 ⁶ Nm mm/rad	C _{TOT} Nm/rad
			Δ radial offset mm	Δ axial ±mm	Δ angular [°]				Δ radial offset mm	Δ axial ±mm	Δ angular [°]				
40	18	12000	0	0.4	0.75	0.00002	16 26		0.2 0.3	0.8	1.75	0.00005 0.00004	Please consult Renold		
53	75	10000	0	0.4	0.75	0.00011	30 39		0.3 0.4	0.8	1.5	0.00016 0.00019	113406	4.1	56703 41988.45
70	170	8400	0	0.5	0.75	0.00049	31.2		0.3			0.00071	142464	11.8	56065.02 47142.56 40670.11
							60		0.7		0.00076				
							100		1.2	1.1	0.00081				
							140		1.4	1.5	0.00087				
88	320	6800	0	0.6	0.75	0.00164	37.6	up to 3000mm upon request	0.4			0.00218	200260	51.6	100130 90889.35 89316.32 86328.13 80913.99
							70			0.8		0.00252			
							80			0.9	1.2	0.00256			
							100			1.2	1.5	0.00265			
							140			1.7		0.00282			
116	750	5400	0	0.8	0.75	0.00991	46.3		0.5			0.00795	341665	130.4	170832.5 154769.46 147752.84 141344.84
							100		1.2		0.00928				
							140		1.7	1.6	0.00986				
							180		2.2	1.5	0.01047				
140	1350	4600	0	1	0.75	0.01359	55		0.7			0.01824	503858	236	233020.5 224165.39 215958.66
							100		1.1	2.1	0.02093				
							140		1.7	1.5	0.02179				
							180		2.2		0.02264				
166	2400	3800	0	1.2	0.75	0.0345	62.6	Available up to 3000mm upon request	0.7			0.05175	938363	576.1	442511.2 429319.64 416891.81
							100			1.1	2.5	0.05379			
							140			1.7	1.5	0.05584			
							180			2.2					
198	4000	3400	0	1.4	0.75	0.08368	71.8		0.7				1258733	959.8	587023.07 573004.37
							140		1.6	2.8	0.12413				
							180		2.2	1.5	0.12736				
238	6500	3000	0	1.7	0.75	0.22773	140 180		1.6 2.1	3.4	1.5	0.33419 0.34564	2268097	1807	1068089.47 1043419.61
295	21000	2500	0	1.1	0.5	0.7	200 250		1.4 1.8	2.2	1	1.07 1.1	Please consult Renold		
345	36000	2100	0	1.3	0.5	1.75	224	Available up to 3000mm upon request	1.6			2.62	Please consult Renold		
							250			1.8	2.6	2.64			
							300			2.2	1	2.68			

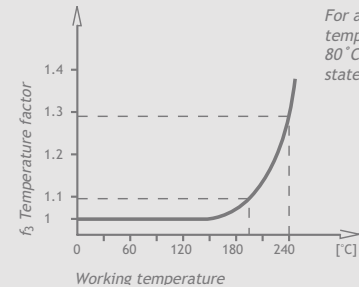
Renoldflex



[fig 02] Misalignment diagram

[fig 03] Misalignment factor f_1

Note: Allowance should be made for change in misalignment encountered during operation, e.g. due to thermal expansion.

[fig 04] Temperature factor f_2

Renoldflex coupling size selection

In order to select the most suitable sized coupling, a number of service factors must be taken into consideration. These service factors make adjustments to the design torque (T) of an application to take into account factors such as misalignment, load classification, driver classification as well as high ambient temperatures to produce a selection torque (T_s , where $T_s = T \times f_s$). The most suitable coupling is then selected by comparing the selection torque (T_s) and the couplings nominal torque (T_N). Please note - it is important to ensure that the coupling selected will accept the required shaft diameters. Should shaft diameter exceed the maximum permissible then a larger coupling should be selected.

The total service factor $f_s = f_1 \times f_2 \times f_3$; where f_1 is the misalignment factor, f_2 is the load classification factor and f_3 is the temperature factor. Note; the load classification factor is weighted depending upon the prime mover classification. These service factors are defined below:

Misalignment factor f_1

The maximum misalignments quoted within the technical data for the Renoldflex coupling range cannot be present at the same time. Therefore, the presence of any axial misalignment Δ_{ax} reduces the possibility for offset misalignment Δ_{rad} and angular misalignment Δ_{ang} , which can be seen in [fig 02]. The combined total angular misalignment Δ_{TOT} is a function of the angular misalignment Δ_{ang} and offset misalignment Δ_{rad} of the shafts, according to the following formula:

$$\Delta_{TOT} [^\circ] = \frac{\Delta_{ang}}{2} + \arctan \frac{\Delta_{rad}}{(H-B)}$$

The values H and B [mm] are given in the overall dimensions table. The misalignment factor f_1 is a function of Δ_{TOT} as shown in [fig 03].

Load factor f_2

The following load factors apply for machines operated by electric or hydraulic motors as well as steam or gas turbines.

OPERATING MACHINE	load factor f_2
Blowers: low inertia	1.1
Blowers: high inertia, cooling towers	2.0
Centrifugal pumps: low inertia and light liquids	1.1
Centrifugal pumps: high inertia or semi-liquid materials	1.75
Conveyors	1.5
Elevators and cranes	2.0
Gear pumps	1.5
Machine tools: auxiliary drives	1.1
Machine tools: main drives	1.75
Mills	2.5
Paper machines and textile machines	2.0
Presses	3.0
Reciprocating pumps	2.5
Woodworking machines	1.5

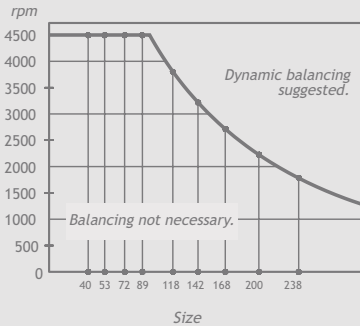
For machines operated by alternative prime movers the load factor f_2 must be adjusted as follows:

- f_2+1 for machines operated by IC engines with 4 or 5 pistons.
- $f_2+0.5$ for machines operated by IC engines with 6 pistons, hydraulic turbines or with a start torque >2 .
- The following must be taken into account with regard to repetitive high peak torque applications:
 - For non reversing duty: $T > \text{Peak torque}$
 - For reversing duty: $T > 1.5 \text{ Peak torque}$.

Temperature factor f_3

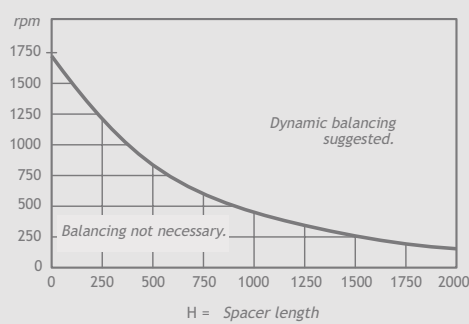
Renoldflex couplings are unaffected by temperatures up to 160 °C. For applications with higher temperatures, the temperature factor f_3 seen in [fig 04] must be taken into consideration.

Renoldflex Type A



[fig 05] Balancing

Renoldflex Type B



[fig 06] Balancing

Balancing; Renoldflex standard elements are balanced to grade G6.3 - BS ISO 1940-1:2003. Additional balancing is recommended for applications over the speed curves in [fig 05] and [fig 06].

* Renoldflex allows 1.75 times the nominal torque for short periods of time.

** See [fig 05] & [fig 06].

*** The torsional stiffness of a single pack complete coupling can be approximated to the torsional stiffness of 1 disc pack C_k

The torsional angle of a single pack coupling

$$[\text{°}] = \frac{180}{\pi} \frac{T}{C_k}$$

The torsional stiffness of a complete double pack coupling can be approximated to:

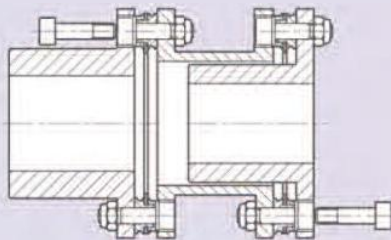
$$C_{TOT} = \frac{1}{\frac{2}{C_k} + \frac{H-2B}{C_h}} \quad H, B - \text{see catalogue overall dims}$$

The torsional angle of a double pack coupling

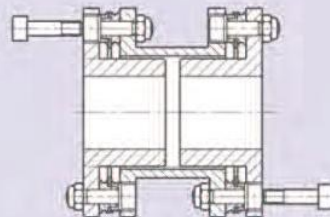
$$[\text{°}] = \frac{180}{\pi} \frac{T}{C_k}$$

T (Nm) - Transmitted torque

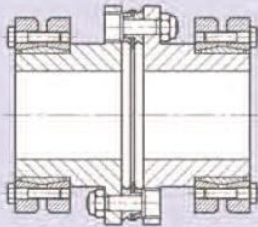
Other Renoldflex Types available (Please consult Renold)



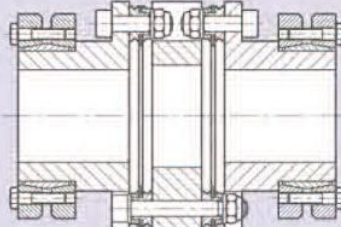
Type E



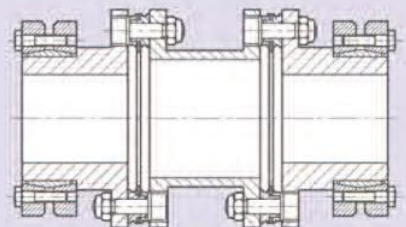
Type F



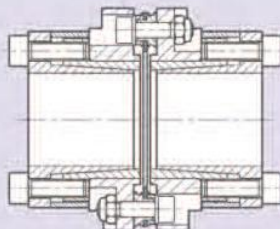
Type G



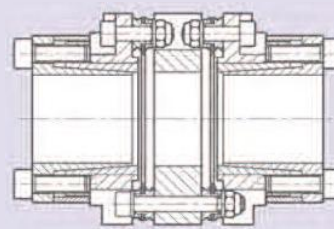
Type HH min



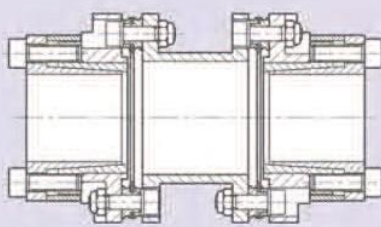
Type H



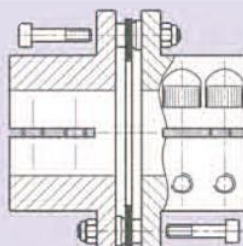
Type L



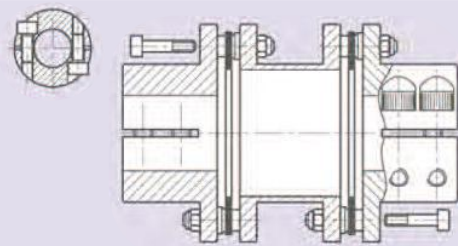
Type MM min



Type M

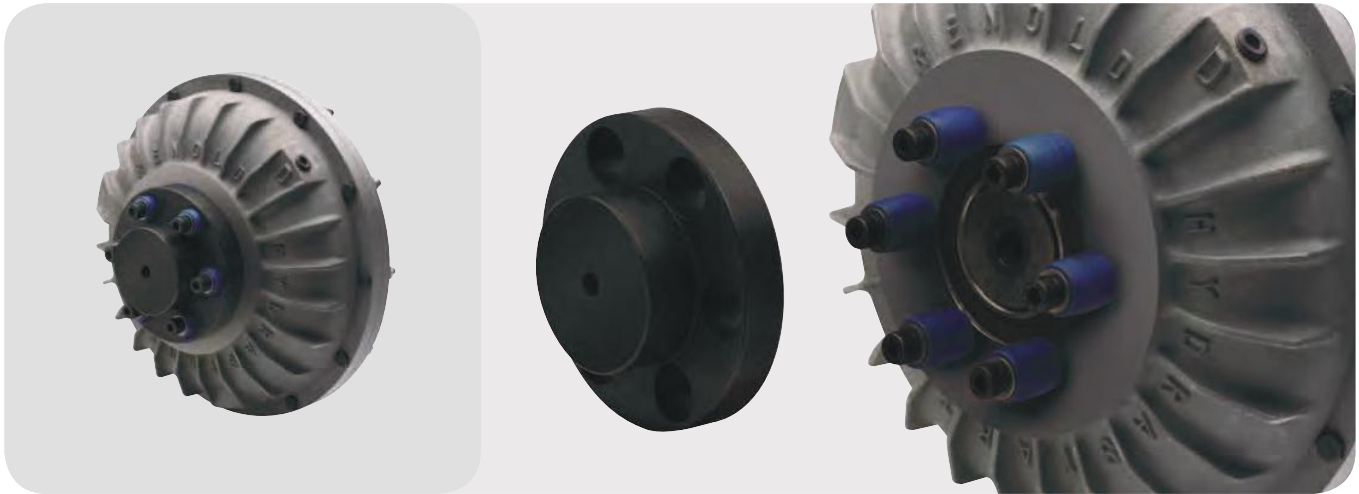


Type N



Type P

Hydrastart Fluid Coupling



A fluid coupling suitable for soft starting high inertia machinery with reduced current demand, controlled acceleration and torque with motor overload protection.

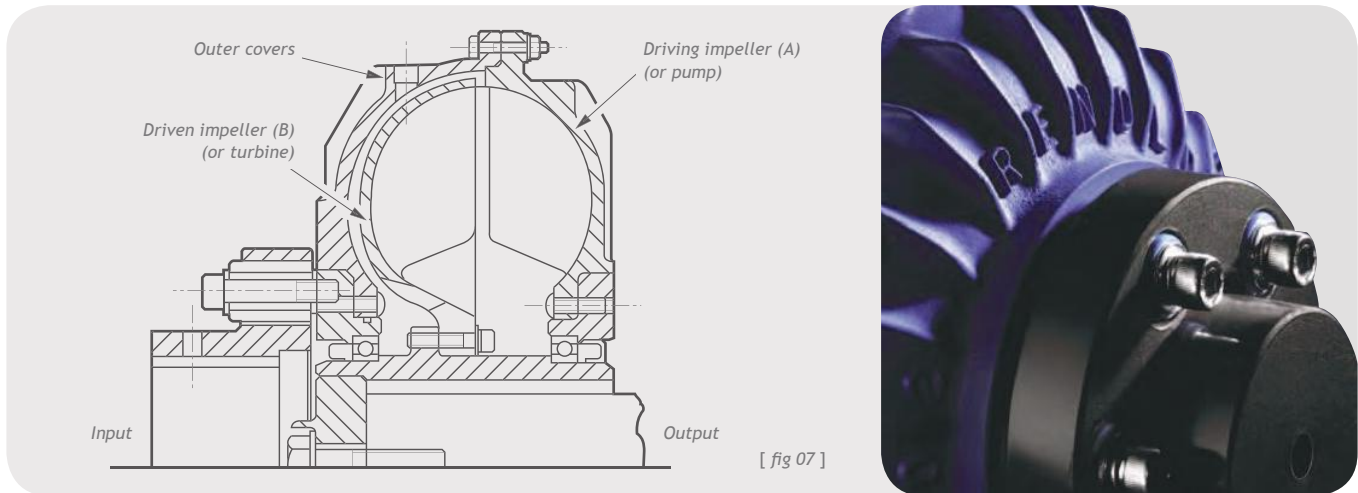
Coupling capacity

- Maximum power @ 1500RPM 600kW
- Maximum torque: 3500RPM

Features and benefits

- High inertia controlled torque to 700 kW.
- Soft start - motor starts on low load.
- Allows use of standard squirrel cage motors.
- Overload protection - fusible plug safeguards equipment.
- Dampens torsional vibration, reducing mechanical stress - extends machine life.
- Delay fill version - extends acceleration time and reduces start-up torque.
- Can match load and speed on multi drives.
- Energy saving through reduced current demand at start-up.
- Coupling and V pulley types - design flexibility.

Operating Principles



The coupling is partially filled with hydraulic oil to a level suitable for the absorbed power of the application and the acceleration characteristics of the driven machinery. The optimum oil fill is that which just allows the driven machine to accelerate from rest, thus providing the best drive overload protection.

Power is supplied to the input side of the coupling by either an electric motor or diesel engine. This causes the driving impeller (A) [fig 07] to be rotated at motor speed, oil is thrown outwards by centrifugal force. The flow of oil is directed across the blades of the impeller towards the opposing turbine (B). Kinetic energy is absorbed by the turbine and translated into torque, which is always equal to the input torque and produces rotation of the output member (in the same direction as the driver).

The low resistance of the impeller at start up allows the motor to quickly accelerate to full speed. The driven load accelerates smoothly to within a small percentage of the motor speed.

This speed difference is referred to as slip and must always be present for the successful operation of a fluid coupling.

Typical values of slip will vary between 2% (large power) and 6% (small power).

All hydraulic couplings can be driven in either directions of rotation.

The input and output positions shown are standard, but the input can be from either side of the coupling.

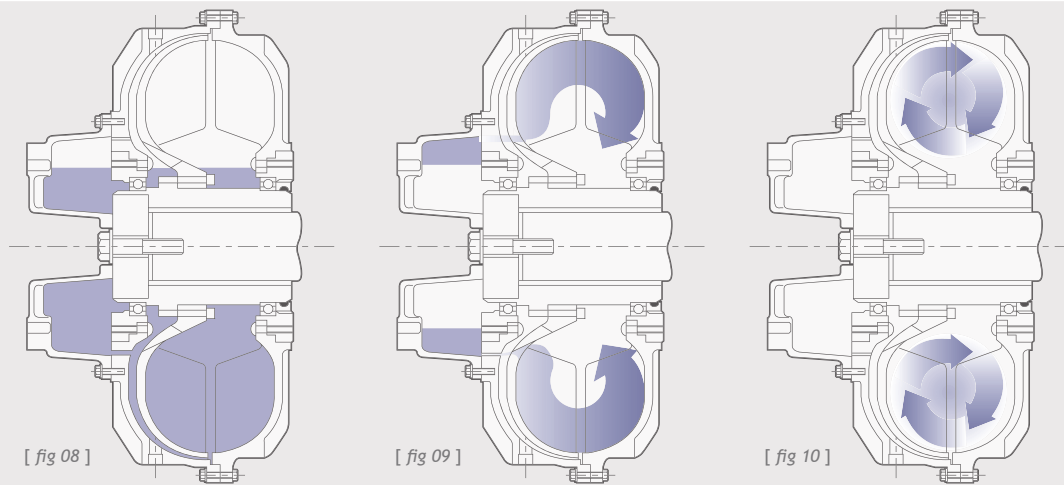
The standard drive arrangement allows the outer cover to be rotated whilst at rest to facilitate oil filling.

However, if a brake drum or disc brake is fitted, the brake should be at the coupling output. See page 67.

To calculate slip %

$$\frac{(\text{Input speed} - \text{output speed}) \times 100}{\text{Input speed}}$$

Delayed Fill



Hydrastart Delayed Fill Chamber (Type HS...R)

HydraStart (constant fill) hydraulic couplings having a maximum oil fill will limit the starting torque to approximately 200% of nominal torque. It is possible to reduce this figure by reducing the quantity of oil in the circuit.

The disadvantage of this method is that it produces increased slip and higher operating temperatures. To overcome these

problems a delay fill chamber is available on sizes HS8 and above.

This chamber is a modular option and allows a calibrated oil feed into the working circuit. In this way, starting torque can be reduced whilst minimising slip under normal running.

At rest [fig 08]

With the drive at rest, oil drains from the working circuit into the delay chamber.

Accelerating [fig 09]

At start up the coupling will transmit limited torque, allowing the motor to reach rated speed quickly. Oil flows from the chamber to the working circuit proportionally to the speed.

Running [fig 10]

When the coupling achieves its rated speed, almost all of the oil is in the working circuit and the torque is transmitted at the minimum slip value.



CAUTION

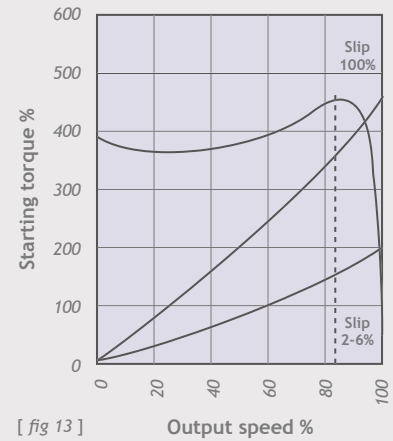
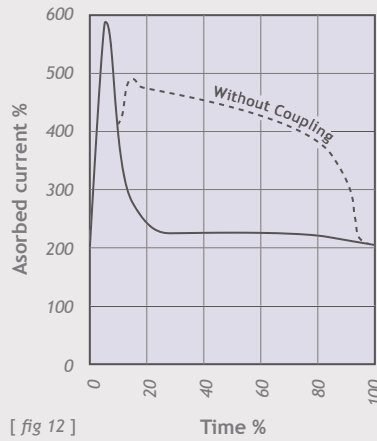
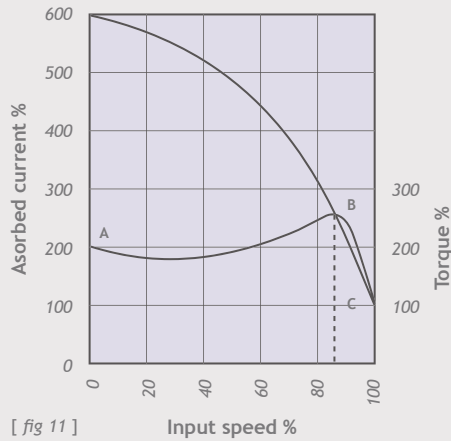
The outer case of the Hydrastart coupling can become hot during operation. Do not touch the coupling or a burn may result.



CAUTION

Do not attempt to change the coupling oil during or soon after operation has ceased, as the oil may be hot and could cause burns.

'Soft' Starting



Effect of starting on electric motors

If a machine is driven by a squirrel cage motor without the use of a HydraStart fluid coupling, the following conditions arise [fig 11].

1. Motor will pull out 250/280% FLT.
2. Motor will consume 6 times FL amps.
3. Increase in motor temperature.

Star-delta starting reduces overheating. However, the starting torque in star is only 30% that in delta and it is often necessary to use larger or more complicated wound motors, particularly with high inertia machinery.

A = Locked rotor torque
B = Stall torque 250/280%
C = Normal torque 100%
I = Amperage

Effect of starting of electric motors when fitted with HydraStart Couplings

When a drive includes a HydraStart coupling the motor starts on low load, with only an instantaneous current peak at switch on [fig 12]. At start up all the motor torque is available to accelerate the motor rotor and coupling impeller (pump).

The driven impeller (turbine) increases speed smoothly from zero rpm until the 100% slip curve intersects the motor torque curve at approximately 85% motor speed [fig 13]. When the torque developed by the HydraStart coupling matches the resisting torque of the driven machine, acceleration of the load commences and continues up to running speed which will be between 94% and 98% of the driving speed depending on the coupling size.

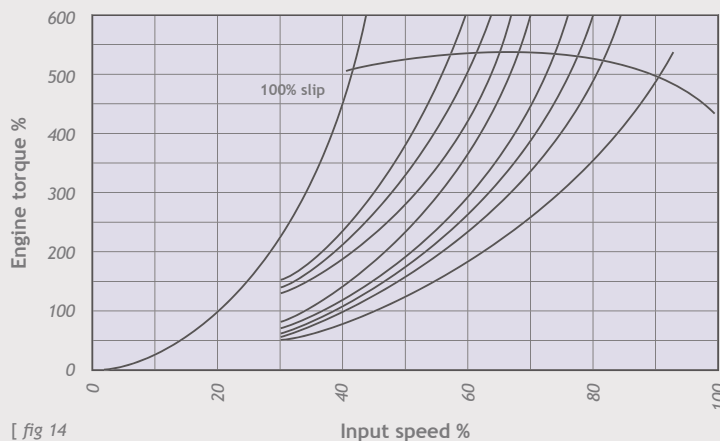
HydraStart couplings fitted on diesel engines

HydraStart fluid couplings can be used with all types of industrial machinery driven by internal combustion engines. [fig 14] shows typical engine and coupling performance curves.

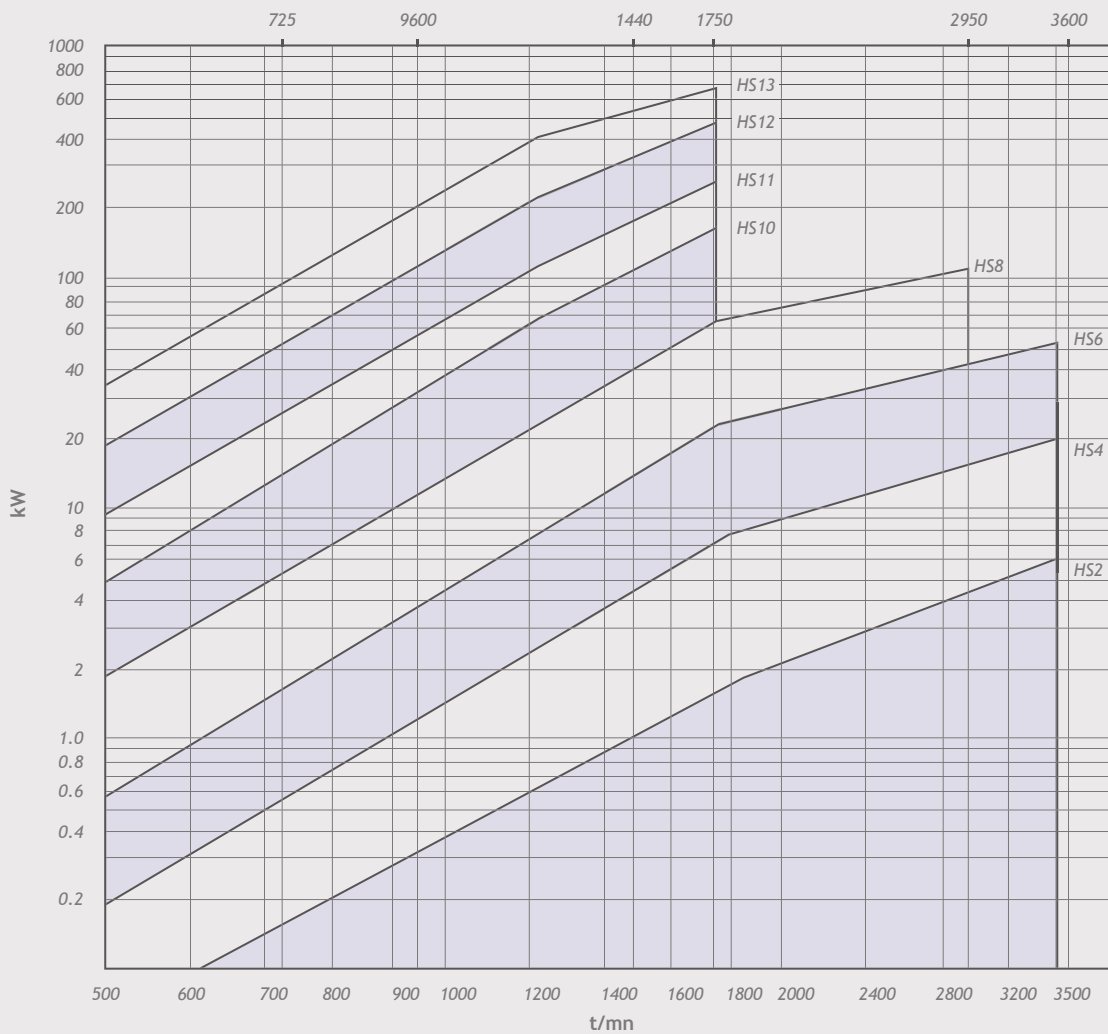
The horizontal curve represents the engine's torque curve whilst the vertical shows the torque capacity of the coupling for different slip values and speeds. As load on the driven shaft increases it demands torque, causing the coupling to slip at higher level.

If still greater loads are demanded then the coupling will eventually slip at 100%. Note this does not happen until the engine has developed peak torque.

Thus by using a fluid coupling, it permits an engine to develop maximum torque without stalling under load and promotes rapid acceleration to normal load speed.



Hydrastart Selection Chart



Larger coupling sizes are available up to 2000kW at 1400 RPM

This chart may be used for the selection of coupling size. If your selection falls on a dividing line, always select the next largest size and use reduced oil fill.

Hydrastart couplings can be used for up to five equi-spaced starts per hour.

Applications requiring more than five starts an hour should always be referred to Renold.

NOTE: Hydraulic couplings will not compensate for an under-sized electric motor.



WARNING

Rotating equipment must be provided with a suitable guard before operating or injury may result.



WARNING

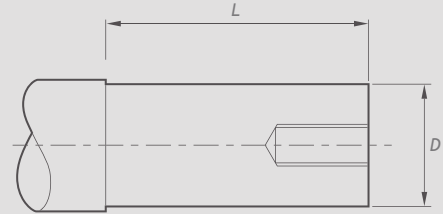
It is the responsibility of the system designer to ensure that the application of the coupling does not endanger the other constituent components in the system. Service factors given are an initial selection guide.

Coupling Rating Tables

Maximum rating table

Coupling ref	Motor speed / kW				
	750	1000	1200	1500	1800
HS2	0.13	0.37	0.56	1.1	1.7
HS4	0.56	1.34	2.4	4.5	7.4
HS6	1.7	4.0	7.5	15	24
HS8	5.5	13	23	45	65
HS10	15	37	65	110	155
HS11	27	63	116	200	273
HS12	54	125	234	400	502
HS13	97	200	350	587	694

For selection requiring larger powers contact Renold.

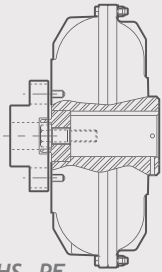


Motor shaft details

Motor			750 rpm			1000 rpm			1500 rpm			3000 rpm		
Frame Size	Shaft details		Power		Hydrastart Size	Power		Hydrastart Size	Power		Hydrastart Size	Power		Hydrastart Size
	D (mm)	L (mm)	kW	HP		kW	HP		kW	HP		kW	HP	
80	19	40				0.25	0.33	HS2	0.55	0.75		0.75	1	
80	19	40				0.37	0.5		0.75	1	HS2	1.1	1.5	
80	19	40				0.55	0.75		1.1	1.5		1.5	2	HS2
90S	24	50				0.75	1	HS4	1.5	2		2.2	3	
90L	24	90				1.1	1.5		2.2	3	HS4	3	4	
100L	28	60	0.75	1		1.5	2		3	4		4	5.5	
100L	28	60	1.1	1.5	HS6	2.2	3	HS6	4	5.5		5.5	7.5	
112M	28	60	1.5	2		3	4		5.5	7.5		7.5	10	
132S	38	80	2.2	3		4	5.5		7.5	10	HS6			HS4
132S	38	80				5.5	7.5		11	15				
132M	38	80	3	4	HSA	7.5	10	HSA	15	20		11	15	
132M	38	80				11	15		18.5	25		15	20	
160M	42	110	4	5.5		15	20		22	30		18.5	25	
160M	42	110	5.5	7.5		18.5	25	HS10	30	40	HSA	22	30	HS6
160L	42	110	7.5	10		22	30		37	50		30	40	
180M	48	110				30	40		45	60		37	50	
180L	48	110	11	15		37	50		55	75	HS10	45	60	
200L	65	110	15	20		45	60	HS11	75	100		55	75	
200L	55	110				55	75		90	125		75	100	HSA
225S	60	140	18.5	25	HS10	75	100	HS12	110	150	HS11	90	125	
225M	65	110	22	30		90	125	HS13	132	175		110	150	
225M	60	140				132	175		150	200				
250S	60	140				150	200	HS13	185	250				
250S	70	140	30	40		185	250		200	270				
250M	60	140				200	270		225	300	HS12			
250M	70	140	37	50	HS12				250	335				
280S	65	140							280	375				
280S	80	170	45	60					315	420				
280M	65	140							355	475				
280M	80	170	55	75					375	503				
315S	85	170	75	100					400	536				
315M	85	170	90	125	HS13									
315L	85	170												
315L	85	170												
315L	85	170												
355S	100	210												
355S	100	210												
355M	100	210												
355L	100	210												
355L	100	210												
355L	100	210												

Standard Available Options

Non delay fill



Type: HS..PF

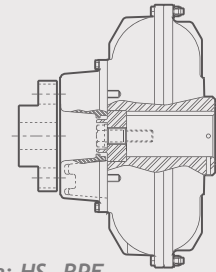
Description

Basic coupling

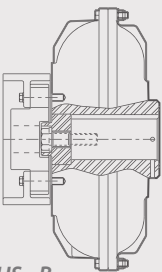
Sleeve bored to suit motor shaft and incorporating Pinflex output coupling. Capable of accepting some misalignment. Flexible buffers can be replaced in situ.

Page 66

Delay fill



Type: HS..RPF

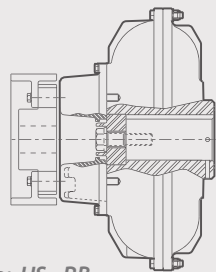


Type: HS..B

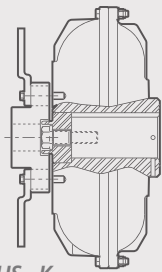
Brake drum options

Basic Pinflex coupling with the addition of a brake drum, metric or inch sizes.

Page 67



Type: HS..RB

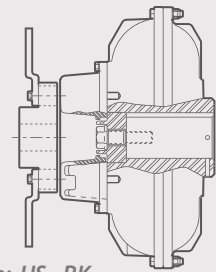


Type: HS..K

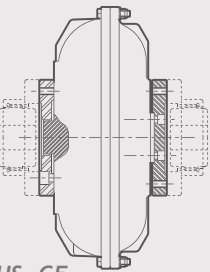
Brake disc options

Basic Pinflex coupling with the addition of a brake disc, metric or inch sizes.

Page 67



Type: HS..RK

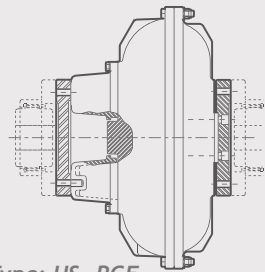


Type: HS..GF

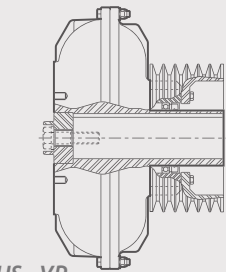
Basic coupling incorporating two Flexible Gear half couplings

Capable of accepting some misalignment and allowing removal of HydraStart coupling without displacing either motor or driven shaft. Brake drum or disc options available.

Page 68



Type: HS..RGF

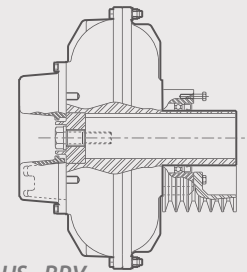


Type: HS..VP

Vee Pulley Mounting

Sleeve bored to suit motor shaft. Pulley is attached using external bolts and may easily be replaced.

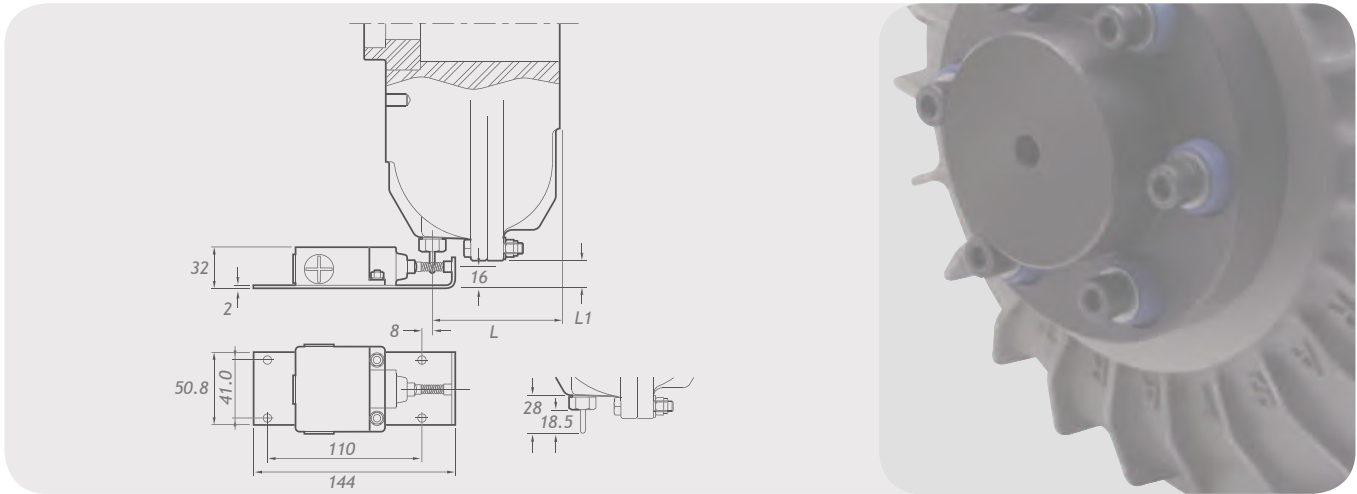
Page 69



Type: HS..RPV

Type HSPF, HSB, HSK and HSVP may be used for vertical applications. Please contact Renold for details.

Overload Protection



When a hydraulic coupling experiences overload there is a correspondingly high slip value accompanied by a rise in the oil temperature. To prevent damage to the drive there are three options available.

1. Fusible plug

This is fitted as standard on all HydraStart couplings sizes 4 and above. The standard plug is set to fuse at 138°C. Another option available allows fusing at 183°C. Because oil is discharged when the plug fuses it is advisable to correctly guard couplings using this type of device.

2. Thermal trigger

Fitted as an option on HydraStart couplings sizes 6 and above, this device prevents oil being discharged from the coupling at overload. As with the fusible plug, two melt temperatures are offered. When melt point is reached a pin is released which engages with a limit switch. The signal from this switch can operate an alarm or switch off the electric motor to protect the drive. After the cause of the overload has been removed the drive can be restarted after replacing the thermal trigger.

3. Non-contact sensor

Non-contact speed and heat sensors can be supplied which shut down the drive in the event of overload. Please contact Renold for more information.

HydraStart thermal trigger

Size	A	L	Li
HS6	345	93.7	21.5
HS8	422	123.2	20.0
HS10	511	146.1	16.0
HS11	580	144.5	10.5
HS12	669	173.3	10.5

Operating principles

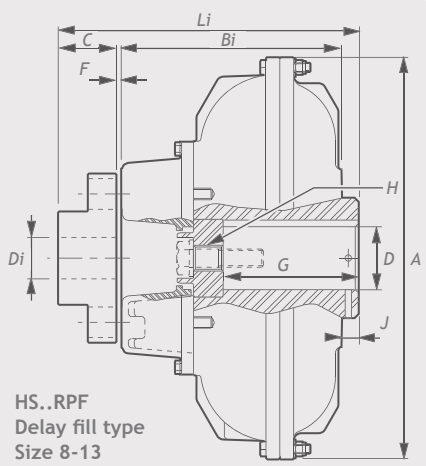
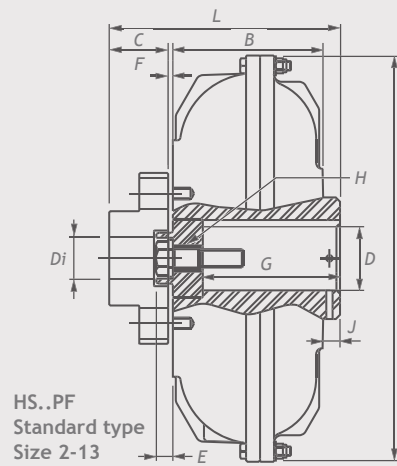
This device will trigger the limit switch if the oil temperature reaches a predetermined level without loss of oil from the coupling. Fusible trigger plug 117°C alternatively 138°C.

Electrical characteristics

2-Pole 1N/C + 1N/O, conforms to IEC 529 IP 66, contact type XCK rating 500V AC-15

3-20mm ISO Cable Entries.

Hydrastart Pinflex Coupling - Dimensions (mm)

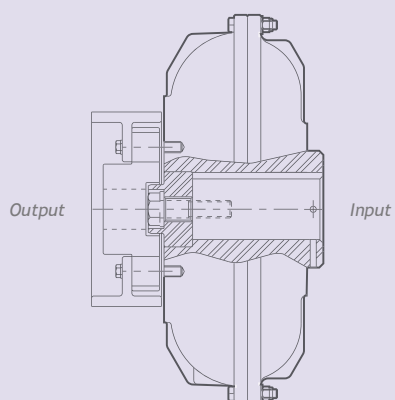


Size	A	B	Bi	C	D Max	Di Max	E	F	G*	H	J	L	Li	Pinflex Cplg Size	Weight kgs	WR ² kgm ²
HS2	229	90	-	44	29	50	13	4	80	0.625" 11 UNC	8	146	-	1	6.7	0.02
HS4	286	107	-	44	42	50	13	4	95	0.625" 11 UNC	7	162	-	1	10.9	0.06
HS6	345	130	-	50	52	55	16	5	114	0.75" 10 UNC	10	195	-	2	20.8	0.16
HS8	422	161	238	75	75	80	20	6	137	1.00" 8 UNC	19	261	338	4	41.2 43.9	0.46 0.49
HS10	511	191	268	89	85	110	20	6	178	1.00" 8 UNC	25	311	388	5	65.2 69.7	1.05 1.11
HS11	580	205	296	110	102	130	20	7	195	1.00" 8 UNC	25	347	438	6	107.4 113.6	2.17 2.26
HS12	669	231	339	110	115	130	23	7	211	1.25" 7 UNC	25	374	482	6	131.7 138.9	3.67 3.78
HS13	751	292	402	130	127	150	23	7	267	1.25" 7 UNC	25	454	564	7	199 207	6.80 7.07

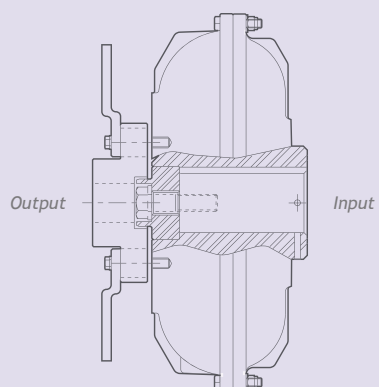
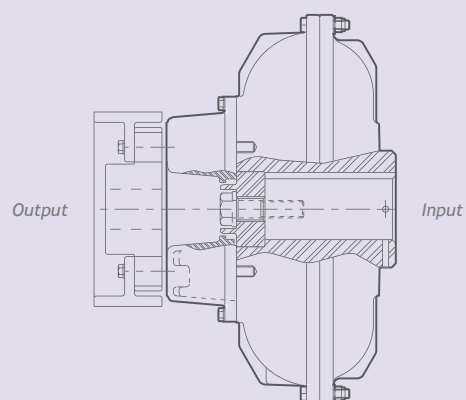
Figures in blue type relate to delay fill coupling only (sizes 8 and above).

* It may be necessary to use a spacer (not supplied by Renold) if shaft length is less than dimension 'G'.

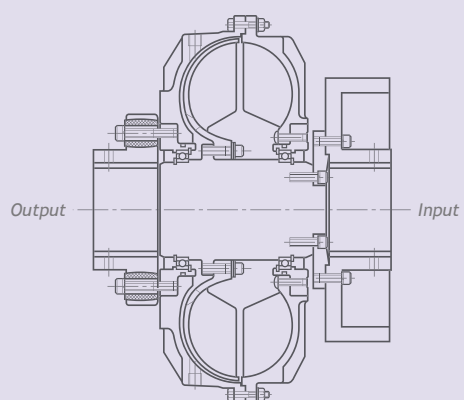
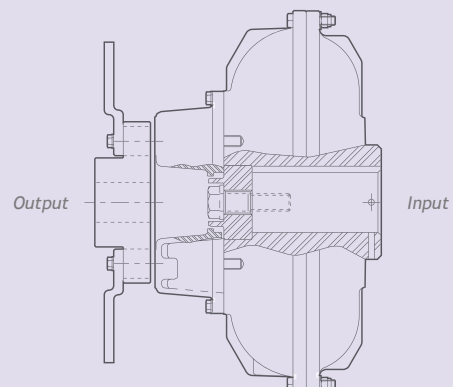
Hydrastart Pinflex Coupling - With Brake Attachment



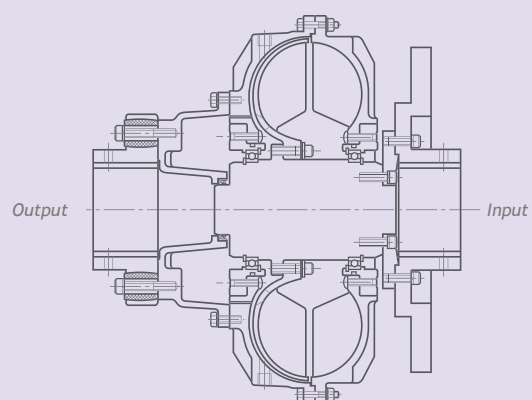
Hydrastart Pinflex Coupling and brake drum



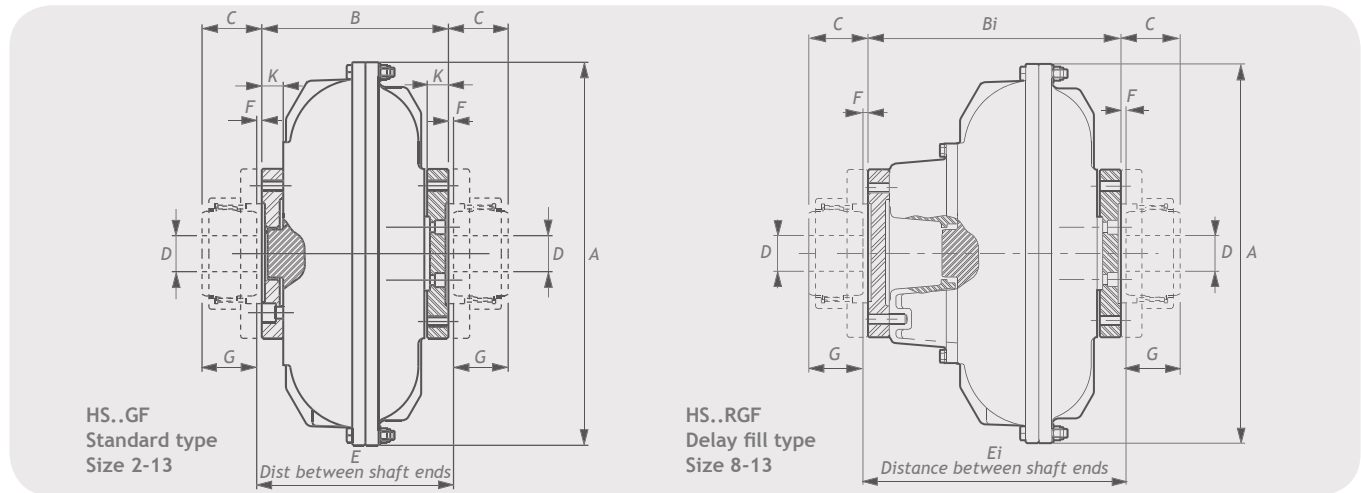
Hydrastart Pinflex Coupling and brake disc



Hydrastart Pinflex/Rigid Coupling and brake drum/disc



Hydrastart Gearflex Coupling - Dimensions (mm)

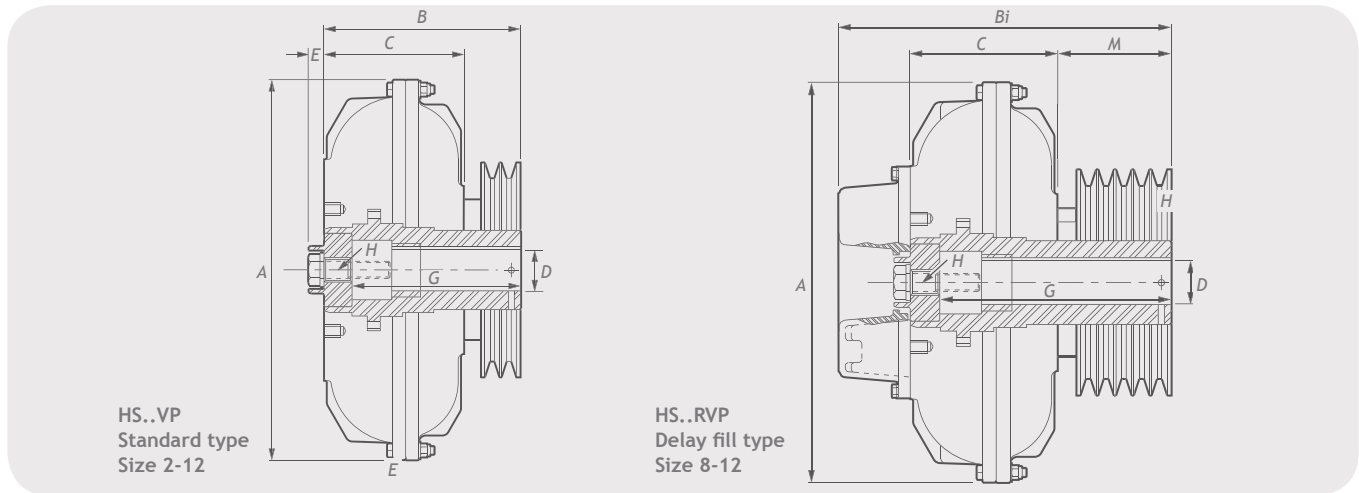


Size	A	B	Bi	C	D Max	E	Ei	F	G	K	Gearflex Cplg Size	Weight kgs	WR ² kgm ²
HS2	229	128		45	44	132		2	43	19	1	7.80	0.03
HS4	286	145		45	44	148		2	43	19	1	12.10	0.06
HS6	345	168		51	58	171		2	49	19	1.5	19.60	0.15
HS8	422	223	300	64	76	226	306	2	62	29	2	44.20 47.00	0.49 0.51
												69.00	1.12
HS10	511	252	329	94	110	257	335	3	91	29	3	73.50	1.18
												100.70	2.13
HS11	580	267	358	94	110	272	363	3	91	29	3	106.80	2.22
												130.30	3.69
HS12	669	297	405	110	120	303	408	3	106	31	3.5	137.50	3.81
HS13	Details on request												

Figures in blue type relate to delay fill coupling only (sizes 8 and above).

WR² value does not include gear coupling halves.

Hydrastart Pulley - Dimensions (mm)



Size	A	B	Bi	C	D max	E	G*	H	M	Weight kgs	WR ² kgm ²	Hydrastart size	Groove profile	Max no grooves	PCD min
HS2	229	141		90	27	13	123	0.625" 11	UNC	51	4.40	HS2VP	SPZ	3	106
												0.02	SPA	2	110
													SPB	1	116
HS4	286	173		107	38	13	154	0.625" 11	UNC	66	9.30	HS4VP	SPZ	5	140
												0.05	SPA	4	144
													SPB	3	150
HS6	345	220		130	49	16	195	0.75" 10	UNC	90	15.89	HS6VP	SPZ	6	162
												0.13	SPA	5	166
													SPB	4	172
													SPC	3	182
HS8	422	310	387	161	75	20	267	1.00" 8	UNC	149	41.40 44.10	HS8VP	SPZ	11	188
												0.45	SPA	9	192
													SPB	7	198
												0.48	SPC	5	208
HS10	511	357	434	191	80	20	319	1.00" 8	UNC	166	66.70 71.20	HS10VP	SPZ	13	245
												1.06	SPA	10	250
													SPB	8	255
												1.12	SPC	6	265
HS11	580	418	509	205	95	20	382	1.00" 8	UNC	213	104.10 110.30	HS11VP	SPZ	17	285
												2.12	SPA	13	289
													SPB	10	295
												2.21	SPC	8	305
HS12	669	448	556	231	110	23	403	1.25" 7	UNC	1	37.20 144.40	HS12VP	SPZ	17	330
												3.71	SPA	13	334
													SPB	10	340
												3.83	SPC	8	350

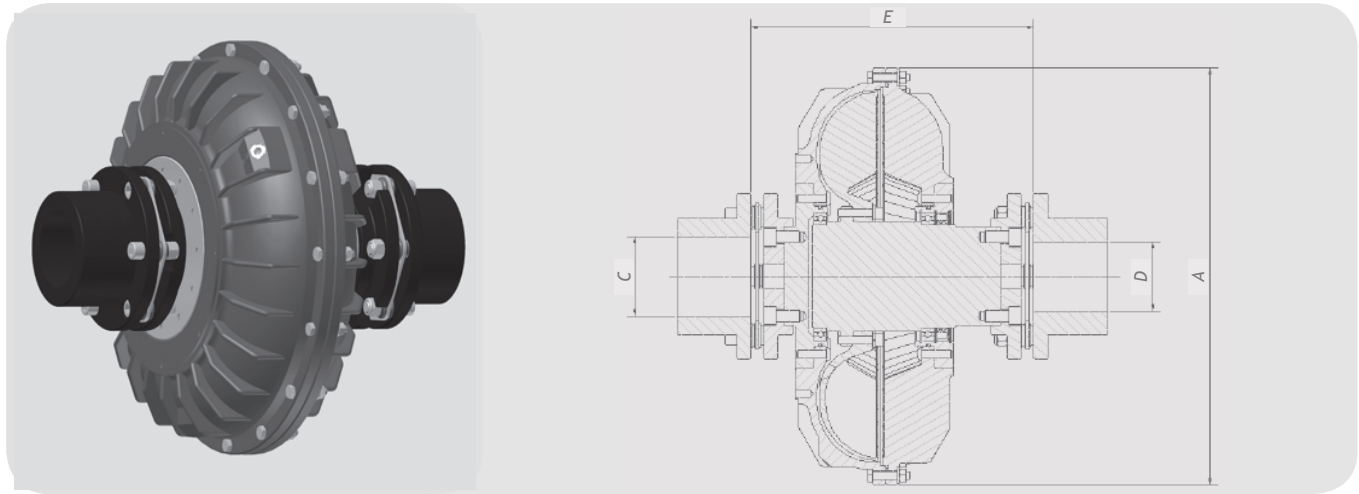
Figures in blue type relate to delay fill coupling only (sizes 8 and above).

*It may be necessary to use a spacer (not supplied by Renold) if the shaft length is

WR² value does not include the pulley.

Pulley details shown are limitations. For alternative options contact Renold.

Hydrastart Drop-in



HS - TRC dimensions in mm

Size	A	C	D	E	Interchanges with Fluid drive FCU
HS2	279	42	35	159	7
HS4	286	42	35	165	8
HS4.5	286	48	48	194	9.25
HS6	345	48	48	210	10.5
HS6.5	345	60	60	232	11.5
HS8	422	60	60	262	12.75
HS8.5	422	80	70	287	14.5
HS10	511	80	70	335	16.25
HS10.5	511	85	83	354	17.75
HS11	580	85	83	390	20
HS12	669	110	100	457	23
HS13	751	110	100	492	26

Hydrastart interchange fluid coupling

- Interchangeable with competitors range.
- 'Drop-in' dimensions, no re-engineering needed.
- Short lead time.
- Renoldflex maintenance free steel membrane coupling.



Notes

Terms and Conditions

- In the interests of safety, customers are reminded that when purchasing any technical product for use at work (or otherwise), any additional or up-to-date information and guidance, which it has not been possible to include in the publication, should be obtained by you from your local sales office in relation to the suitability and the safe and proper use of the product. All relevant information and guidance must be passed on by you to the person engaged in, or likely to be affected by or responsible for the use of the product.
- The performance levels and tolerances of our product stated in this catalogue (including without limitation, serviceability, wearlife, resistance to fatigue, corrosion protection) have been verified in a programme of testing and quality control in accordance with Renold, independent and/or international standard recommendations. No representations or warranties are given that our product shall meet the stated performance levels or tolerances for any given application outside the performance levels and tolerances for the product's own specific application and environment and the information contained in this document will not form part of the contractual description of the product nor will it form part of any contract between Renold and the customer.
- Whilst all reasonable care in compiling the information contained in this catalogue is taken, no responsibility is accepted for omissions or errors.
- All information contained in this catalogue is subject to change without notice.
- The illustrations used in this catalogue represent the type of product described but the goods supplied may vary in some detail from those illustrated.
- The right is reserved to make modifications to the product to meet manufacturing conditions and/or developments (for example in design or materials).
- Product is supplied by Renold companies or representatives around the world on the standard terms and conditions of sale of the company or representative from which the product is purchased.
- Copyright Renold Power Transmission Limited 2001. All rights reserved.
- Under no circumstances will the information in this catalogue constitute an offer to sell the product.

The best range of solution chain products available anywhere



RENOLD Synergy™

- High performance
- Superior wear life
- Outstanding fatigue resistance



RENOLD Syno™

- Maintenance free
- Self-lubricating chain
- Food industry-approved lubricant



RENOLD

- Best premium chain
- Leading performance
- Solid bush / solid roller / end softened pin



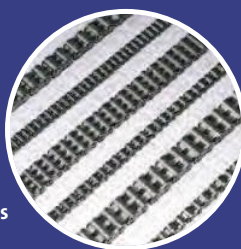
Hydro-Service™

- Superior corrosion resistant coating
- Alternative choice to stainless steel chain
- Will not chip or peel
- Hexavalent chrome-free



Steel Pin Bush Roller Chain

- Manufactured to international stds
- Full range of pitch alternatives
- Breaking loads 13 to 900 kN as std
- Attachments to suit varied applications



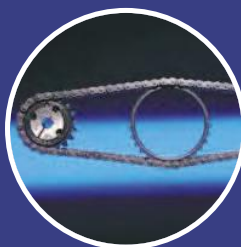
Leaf Chain

- Comprehensive ranges used worldwide for safety critical lifting applications
- 100 years experience in developing and maintaining lifting chain



Steel Knuckle Chain

- Heavy duty, detachable elevator chains
- Integral K type attachments
- Breaking loads from 642kN to 1724kN
- Sealed joint to extend chain life



Roll-Ring™

- Revolutionary chain tensioner
- Installed in seconds and self adjusting
- Maintenance free
- Also acts as noise damper



Customised Engineering Chain

- Wide range to suit specialised applications using high specification materials and treatment processes
- Designed in close collaboration with customer



Smartlink™

- Load monitoring technology
- Technical reports & data logging

RENOLD
Superior Chain Technology

AUSTRALIA

Melbourne (Victoria)
Tel + 61 (03) 9262 3333
Fax + 61 (03) 9561 8561
Also at: Sydney, Brisbane, Adelaide,
Perth, Newcastle, Wollongong, Townsville,
Tasmania
vicbrch@renold.com.au

AUSTRIA

Vienna
Tel + 43 (0) 1 3303484 0
Fax + 43 (0) 1 3303484 5
office@renold.at

BELGIUM

Gent
Tel + 32 (0) 9 242 95 50
Fax + 32 (0) 9 242 95 69
info@renold.be

CANADA

Montreal
Tel + 1 514 367 1764
Fax + 1 514 367 4993
inquiry@renoldcanada.com

CHINA

Shanghai
Tel + 86 21 50462696
Fax + 1 86 21 50462695
sales@renold.cn

CZECH REPUBLIC

Zlin
Tel + 42 (0) 606 727 811
Fax + 42 (0) 577 240 324
Renold.zlin@volny.cz

DENMARK

Hvidovre (Copenhagen)
Tel + 45 4345 2611
Fax + 45 4345 6592
infor@renold.com

FRANCE

Seclin
Tel + 33 (0) 320 16 29 29
Fax + 33 (0) 320 16 29 00
contact@brampton-renold.com

GERMANY

Mechernich
Tel + 49 (0) 2256 95 90 74
Fax + 49 (0) 2256 95 91 69
Renold.deutschland@renold.com

HUNGARY

Budapest
Tel + 36 30 228 3269
Fax + 36 1 287 808
peter.toka@renold.com

INDIA

Coimbatore
Tel + 91 422 4226800
Fax + 91 2532358
marketing@renold.in

MALAYSIA

Shah Alam
Tel + 603 5122 7880
Fax + 603 5122 7881
Also at: Johar Bharu, Ipoh, Butterworth
and Sabah

NETHERLANDS

Amsterdam
Tel + 31 206 146661
Fax + 31 206 146391

NEW ZEALAND

Auckland
Tel + 64 (0) 9 828 5018
Fax + 64 (0) 9 828 5019
aksales@renold.co.nz

SINGAPORE

Singapore
Tel + 65 6760 2422
Fax + 65 6760 1507
sales@renold.sg

SOUTH AFRICA

Benoni
Tel + 27 (0) 11 747 9500
Fax + 27 (0) 11 747 9501
Also at: Durban, Cape Town, Port
Elizabeth, Witbank

SPAIN

Barcelona
Tel + 34 93 6380558
Fax + 34 93 6380737
renold@renold-hitec.com

SWEDEN

Hvidovre (Copenhagen)
Tel + 45 4345 2611
Fax + 45 4345 6592
infor@renold.com

SWITZERLAND

Dubendorf (Zurich)
Tel + 41 (0) 1 824 8484
Fax + 41 (0) 1 824 8411
Also at: Crissier (Lausanne)

UK

Renold Clutches & Couplings
Cardiff
Tel + 44 (0) 29 20792737
Fax + 44 (0) 29 20791360
couplings@cc.renold.com

Renold Hi-Tec Couplings

Halifax
Tel + 44 (0) 1422 255000
Fax + 44 (0) 1422 320273
couplings@hi-tec.renold.com

Renold Gears

Milnrow
Tel + 44 (0) 1706 751000
Fax + 44 (0) 1706 751001
gears.sales@renold.com

USA

Renold Ajax
Westfield, New York State
Tel +1 716 326 3121
Fax + 1 716 326 8229
ainfo@renoldajax.com

WEB

www.renold.com

E-MAIL

enquiry@renold.com

For other country distributors please
contact Renold UK or visit the renold
website.

Whilst all reasonable care in compiling
the information contained in this brochure
is taken, no responsibility is accepted for
printing errors. All information contained
in this brochure is subject to change after
the date of publication.