Renold Couplings & Clutches

Catalogue

RENOLD | Couplings

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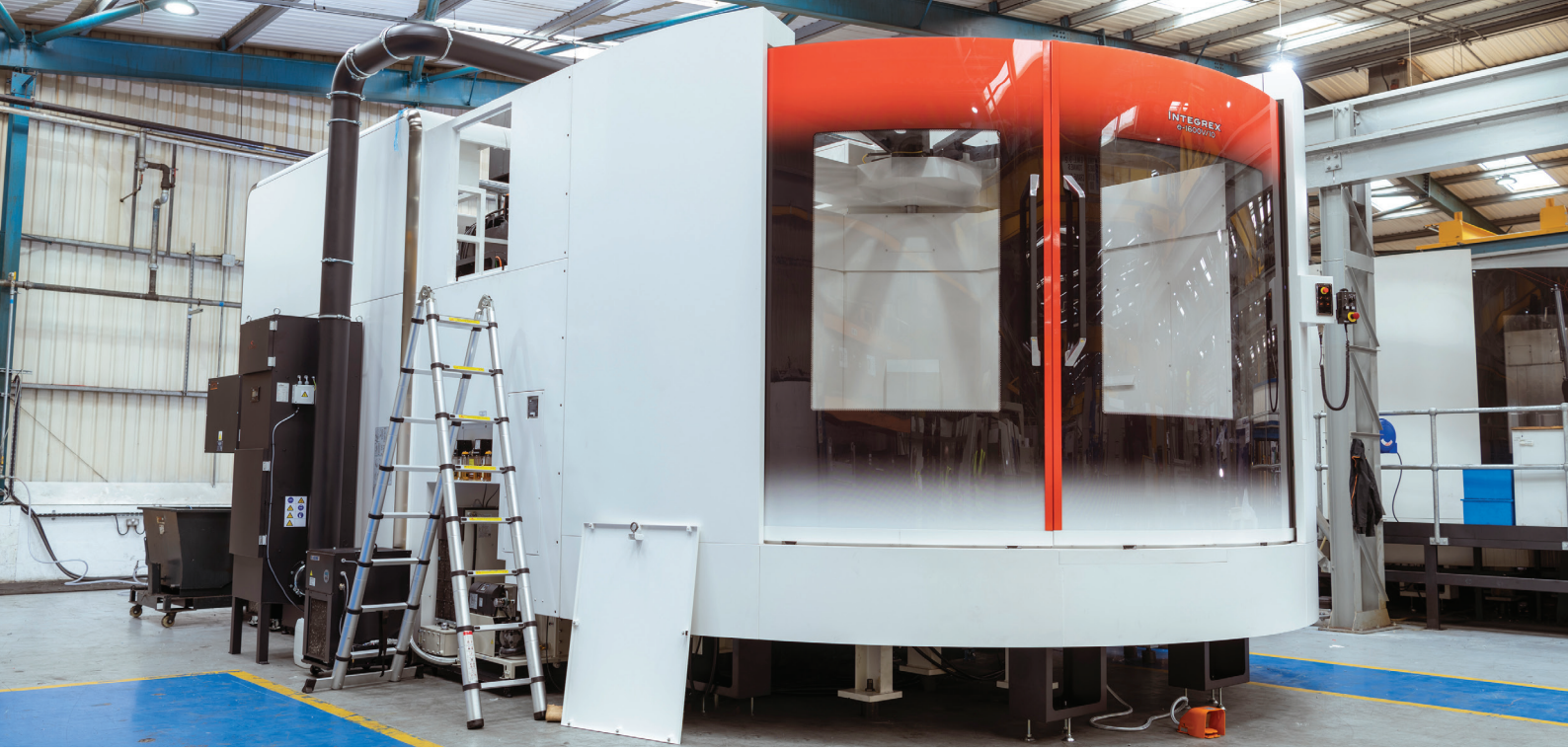


Innovation Everyday

Renold have been driving industry forward through innovation since 1879. Renold Couplings drives industry the world over, from marine, cranes and hoists to manufacture, mass transportation and the pulp and paper industry. Our couplings connect machines to machines through stock solutions and bespoke-crafted connections, all manufactured in our high-tech engineering factories.

Engineering capability

A team of in-house design engineers work to continuously improve the existing product range, introduce new products and deliver innovative new solutions to our customers' challenges.

British manufacturer

Since 1946 Renold Couplings have manufactured a full range of couplings and clutches.

Based in Cardiff, UK, we control the full design and manufacture process, bringing class leading quality and complete customer peace of mind.

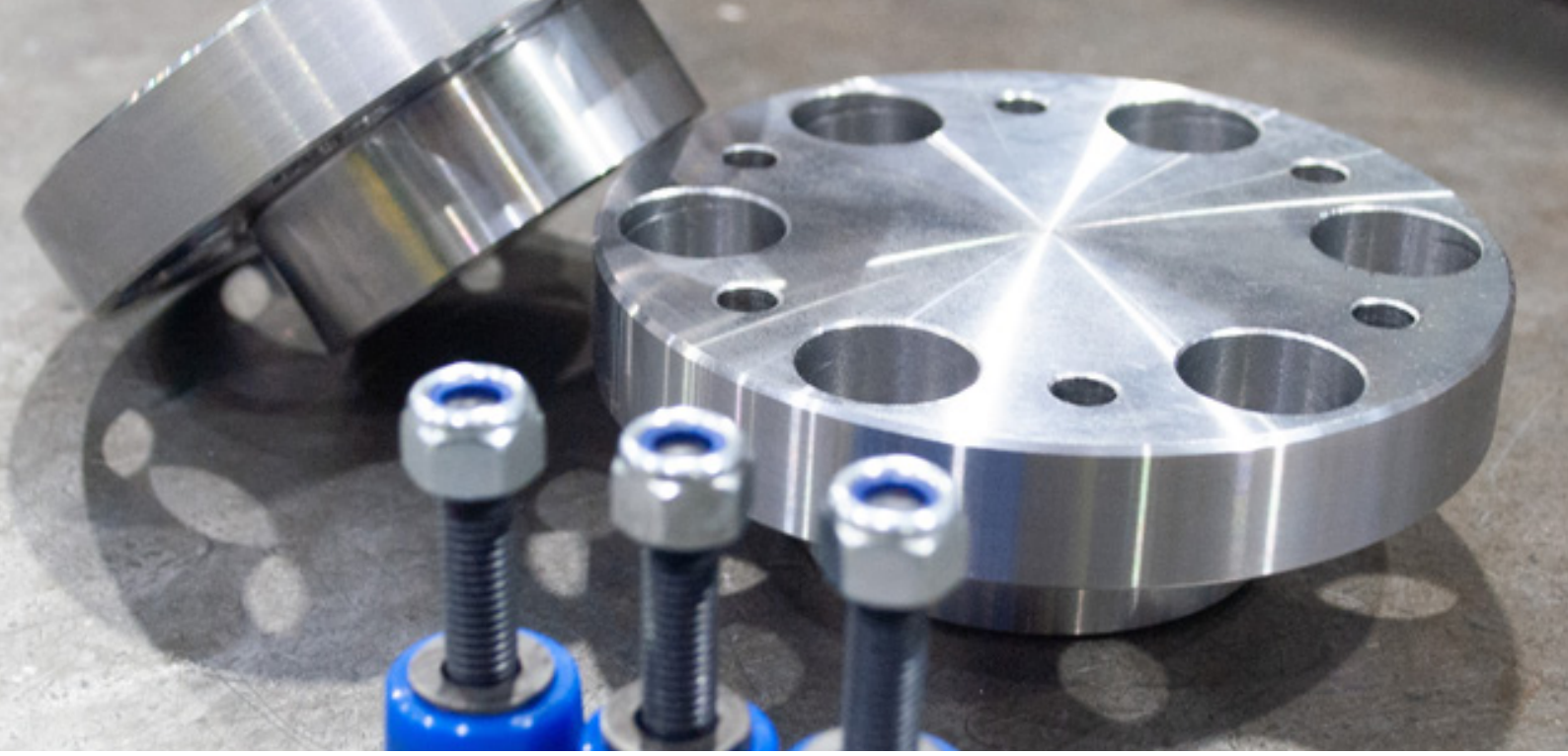
Worldwide support

With manufacturing facilities in 4 continents and support offices in over 30 countries, Renold Couplings can offer service that understands the requirements and challenges of your particular market.

Availability

Renold Couplings holds significant stock of standard items and component parts both in our UK facility and with our partners around the world.

Controlling the full manufacturing process, Renold Couplings can deliver responsive lead times for manufactured parts.

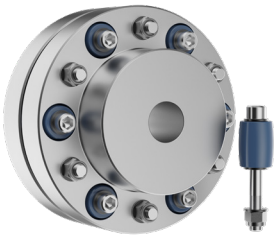


Pinflex

Pin and Buffer Coupling – compact, robust and adaptable.

Coupling capacity

- Maximum power @ 100RPM: 340kW
- Maximum torque: 32,500Nm



Standard range comprises

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

Applications

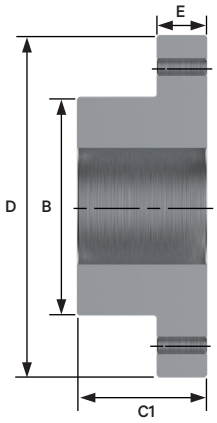
- Conveyors
- Escalators
- Mixers
- Pumps
- General Industrial Applications

Features and benefits

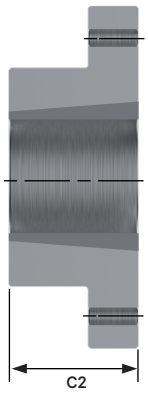
- Steel half bodies, strong yet compact
- Heavy duty pin and buffer coupling – for heavy shock load conditions
- Torsionally flexible – shock absorbing, extending machine life
- Maintenance free – minimum number of wearing parts
- Misalignment capabilities allowing flexibility in installation
- Common half bodies – minimalise stock holding
- Polyurethane buffers, reliable/flexible and temperature resistant
- Modular construction – available as coupling, brake drum, and shear pin designs
- Taper bores available for ease of maintenance

Pinflex coupling dimensions

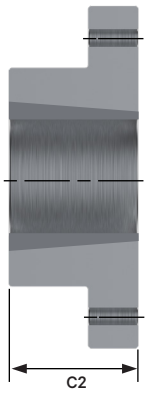
Type B



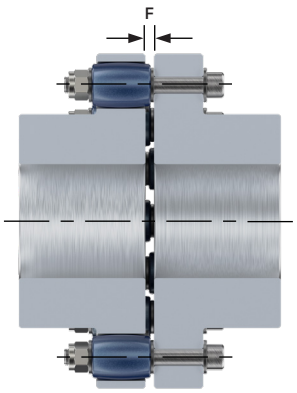
Type F



Type H



Assembled Pinflex Coupling



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	8807130/4	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	8807130/8	74.35	7100																
PF7# #12	8807130/12	111.53	10650																
PF7BB16	8807130/16	148.70	14200																
PF8# #4	8008150/4	64.70	6179	2200	175	75	N/A	N/A	N/A	245	150	130	380	60	7	168.8	2.33646	N/A	N/A
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																

Max angular misalignment 0.25°. Max offset misalignment 0.13mm.

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.

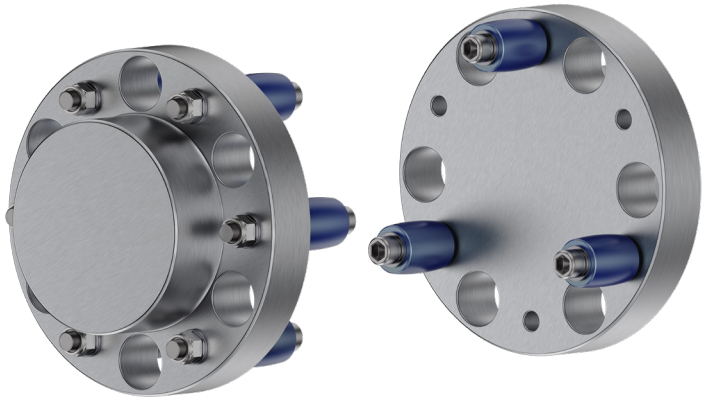
Component spares

Coupling size	Half body pilot bored		Half body F type		Half body H type		Pin and buffer set	
	Catalogue number	Product number	Catalogue number	Product number	Catalogue number	Product number	Product number	Number per set
PF1	PF1 B	10014378	PF1 F	10014379	PF1 H	10014380	10010144	3
PF2	PF2 B	10014381	PF2 F	10014382	PF2 H	10014383	10010145	3
PF3	PF3 B	10014384	PF3 F	10014385	PF3 H	10014386	10010145	3
PF4	PF4 B	10014387	PF4 F	10014388	PF4 H	10014389	10010146	1
PF5	PF5 B	10014390	PF5 F	10014391	PF5 H	10014392	10010146	1
PF6	PF6 B	10014393	PF6 F	10014394	PF6 H	10014395	10010147	1
PF7	PF7 B	10014396	PF7 F	10014397	PF7 H	10014398	10010147	1
PF8	PF8 B	10014399	N/A	N/A	N/A	N/A	10010148	1
PF9	PF9 B	10014401	N/A	N/A	N/A	N/A	10010148	1

Ordering code

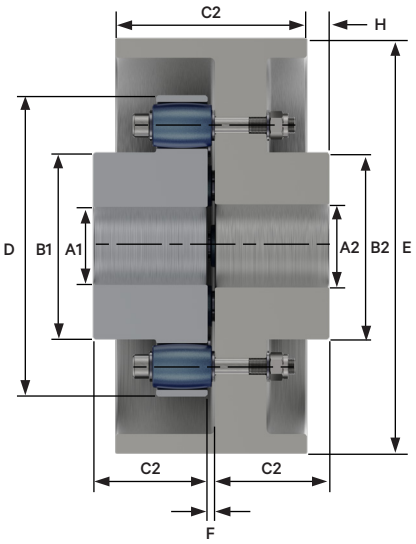
PF 3 # # 9

- PF — Pinflex
- 3 — Size
- # — Half body type: B – Plain bore, F – Taper bush, H – taper bush
- # — Half body type: B – Plain bore, F – Taper bush, H – taper bush
- 9 — No of pins



Pinflex brakedrum coupling

All the benefits of a Pinflex coupling designed within a brake drum to fit standard shoes.



Ordering code

PF BD 5 #

- PF — Pinflex
- BD — Brake drum
- 5 — Size
- # — M - Metric drum dia; B - Imperial drum dia

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

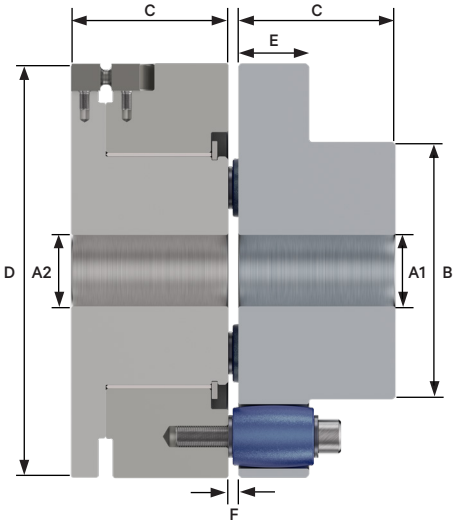
Coupling size	Product number	Dimensions								Number of pins per coupling	Pin & buffer set	
		B1 mm	B2 mm	C1 mm	C2 mm	D mm	F mm	H mm	WR³ kg m²	Mass kg		Part number	Number per set
PFBD1 #	8201042	70	70	44	44	125	4	-	0.0277	8.7	12	PFA	3
PFBD2 #	8202050	80	80	50	50	145	5	-	0.0696	14.3	12	PFB	3
PFBD3 #	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

Custom brake drum dimensions can be requested to fit non-standard brake shoes.
Disc brake couplings are also available – please consult Renold for further details.

Pinflex shearpin coupling

Providing powertrain protection by shearing at a set overload torque.

This coupling range is designed with a carefully calculated shearpin that is screwed into the shearpin halfbody. In a potentially damaging torque overload situation the pin shears, causing the coupling to spin freely and stop transmitting torque. To reset, a new shearpin is simply fitted in the place of the broken one. Please note that the shear torque of the coupling is driven by the application, and so the desired shear torque should be advised by the customer.



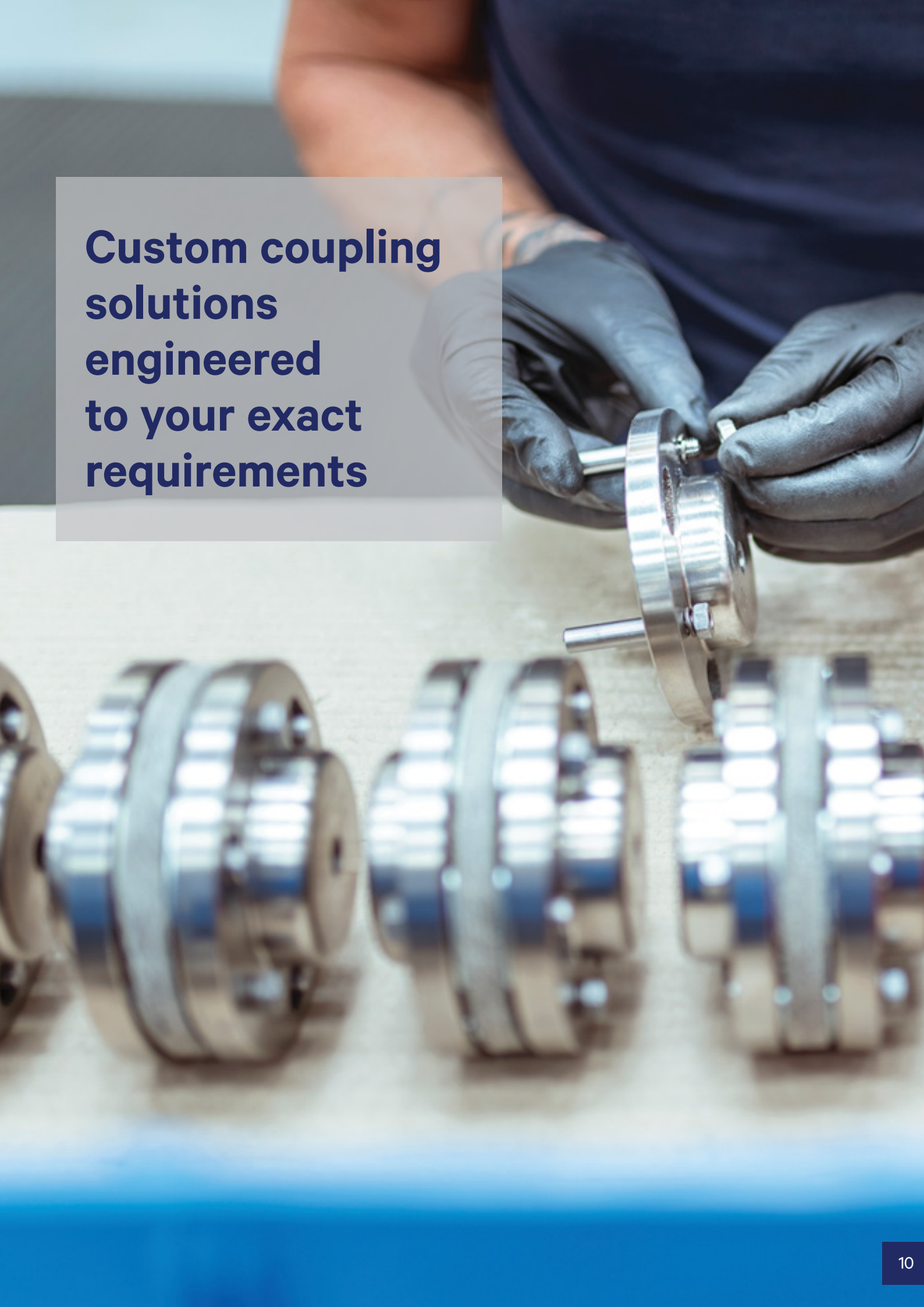
Ordering code

PF S 5 #

- PF — Pinflex
- S — Shear pin
- 5 — Size
- # — Shear torque between MaxM and MinM shown in Nm

Select coupling based on nominal torque using service factors from page 74. Then select required shear torque from table above.

Coupling size	Nominal torque	Shear torque		Speed max rpm	Bore A1		Bore A2		Dimensions						No. of pins
		Min Nm	Max mm		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



Custom coupling solutions engineered to your exact requirements

Gearflex

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

Coupling capacity

- Maximum power @ 100RPM: 50,485kW
- Maximum torque: 4,747,000Nm

Applications

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

Range options

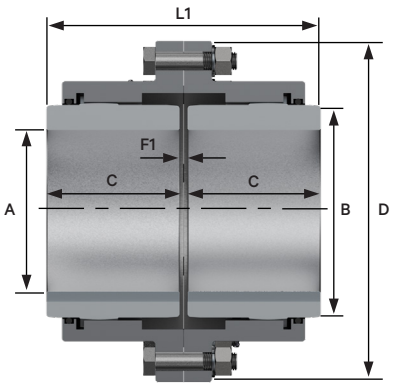
- A series AGMA standard double and single engagement
- B series heavy duty standard double and single engagement
- D series high misalignment double and single engagement
- V series vertical
- NTS high speed
- A series double engagement cardan shaft
- Brake disc/drum
- A series double engagement flanged spacer (DAFS)
- Dis-engaging
- Long hub
- Croft MB series
- Mill motor
- Shear pin
- Telescopic

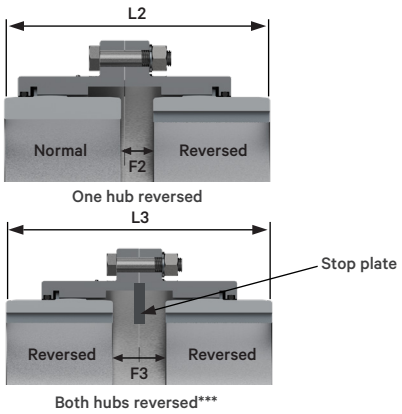
Features and benefits

- Heavy duty, long life, high strength all carbon steel coupling
- Maximised power capacity within a given space envelope through optimised tooth design
- Interchangeable design – AGMA standard series and flange fixing design
- High misalignment range available up to 6 degrees
- Suits all application requirements – single and double engagement types available
- Suitable for demanding applications – multiple design variations available

Gearflex A series double engagement type DA

A torque-dense gear coupling that provides radial offset capability in addition to axial and angular misalignment.
Features AGMA standard connecting flanges.





Coupling size	Product number	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	WR² kg m²	
GF10DA	6901108	29.8	2846	7100	46	14	60	43	116	3	5	6	89	90	92	4.2	0.006	1.2
GF15DA	6901158	56.4	5386	5400	57	20	76	49	152	3	8	13	102	106	111	7.7	0.020	1.5
GF20DA	6901208	96	9168	4800	78	27	102	62	178	3	14	25	127	138	149	15.0	0.044	2.0
GF25DA	6901258	155.2	14822	4250	90	27	117	77	213	5	12	19	159	166	173	25.4	0.105	2.3
GF30DA	6901308	256	24448	4000	110	39	143	91	240	5	23	42	187	206	224	36.7	0.188	3.0
GF35DA	6901358	392	37436	3600	127	55	165	106	279	6	27	48	219	240	260	60.8	0.436	3.5
GF40DA	6901408	624	59592	3290	145	55	191	121	318	6	32	57	248	273	298	90.7	0.822	4.0
GF45DA	6901458	862	82322	2920	165	55	216	135	346	8	37	65	278	306	335	122	1.305	4.5
GF50DA	6901508	1156	110398	2630	185	55	241	153	389	8	50	92	314	356	398	178	2.550	5.3
GF55DA	6901558	1714	163688	2320	205	55	267	175	425	8	53	98	359	404	449	235	3.780	6.0
GF60DA	6901608	2192	209336	2120	225	55	292	188	457	8	60	111	384	436	487	279	4.860	6.5
GF70DA	6901708	3280	313240	1830	260	55	343	221	527	9	71	133	451	513	575	443	10.350	7.8

Misalignment angle per half (degrees)	Rating factor
0.00	1.00
0.50	0.78
0.75	0.65
1.00	0.58
1.50	0.50

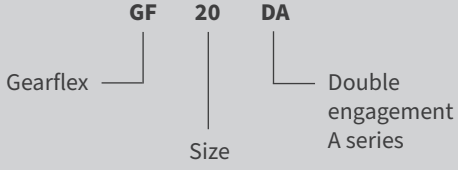
Catalogue ratings shown are nominal values at 0.00° misalignment. To determine the rating at an expected angular misalignment, use the corresponding factor in the table and multiply.

Example:

GF60DA at 0.00° = 209336 Nm

at 0.75° = 209336 x 0.65 = 136068 Nm

Ordering code

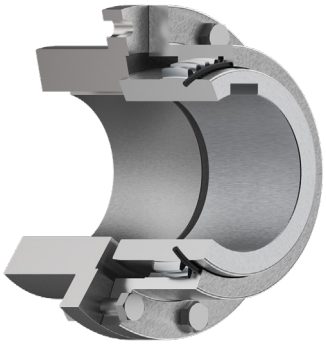


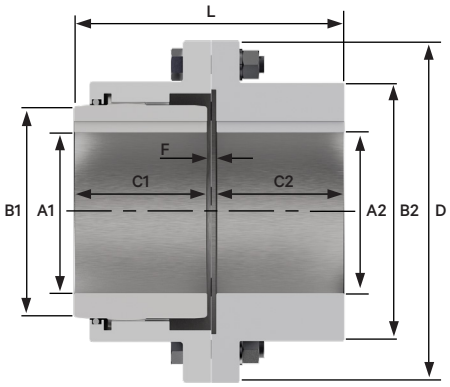
Long hub versions available, contact Renold for details.
Please refer to the Renold Couplings selection guide for keyway stress calculations.

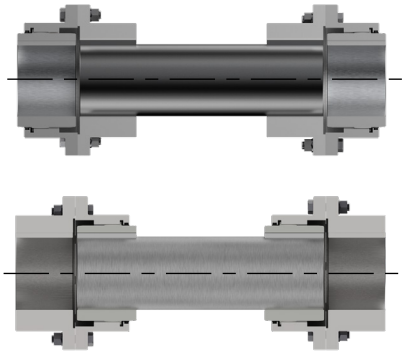
* Maximum Bore – The maximum bores shown are absolute maximums.
Under normal circumstances the boss to bore ratio should not be less than 1.5 for standard applications.
Consult Renold for overbore approval.
** Speed in excess of these shown may require additional balancing.
*** Hubs may be reversed to 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.

Gearflex A series single engagement type SA

The A series coupling but featuring only one gear hub to allow for axial and angular misalignment. Can also provide radial offset when two single engagement units are linked with a cardan shaft.







Coupling size	Product number	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	WR² kg m²
GF10SA	6908108	29.8	2846	7100	46	14	58	14	60	76	43	40	116	4	87	4.8	0.005
GF15SA	6908158	56.4	5386	5400	57	20	75	20	76	98	49	47	152	4	100	8.4	0.019
GF20SA	6908208	96	9168	4800	78	27	95	27	102	124	62	60	178	4	125	17.2	0.044
GF25SA	6908258	155.2	14822	4250	90	27	110	27	117	148	77	75	213	5	156	29.0	0.107
GF30SA	6908308	256	24448	4000	110	39	130	39	143	173	91	89	240	5	185	39.0	0.200
GF35SA	6908358	392	37436	3600	127	39	155	39	165	201	106	104	279	6	216	63.5	0.446
GF40SA	6908408	624	59592	3290	145	55	180	55	191	233	121	116	318	8	244	93.9	0.842
GF45SA	6908458	862	82322	2920	165	55	200	55	216	262	135	130	346	9	274	127	1.350
GF50SA	6908508	1156	110398	2630	185	55	225	55	241	294	153	148	389	9	310	186	2.800
GF55SA	6908558	1714	163688	2320	205	55	250	55	267	324	175	164	425	9	348	244	3.940
GF60SA	6908608	2192	209336	2120	225	55	265	55	292	349	188	182	457	10	380	299	5.130
GF70SA	6908708	3280	313240	1830	260	55	310	55	343	406	221	221	527	13	454	472	11.040

Misalignment angle per half (degrees)	Rating factor
0.00	1.00
0.50	0.78
0.75	0.65
1.00	0.58
1.50	0.50

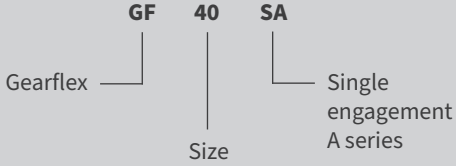
Catalogue ratings shown are nominal values at 0.00° misalignment. To determine the rating at an expected angular misalignment, use the corresponding factor in the table and multiply.

Example:

GF60DA at 0.00° = 209336 Nm

at 0.75° = 209336 x 0.65 = 136068 Nm

Ordering code

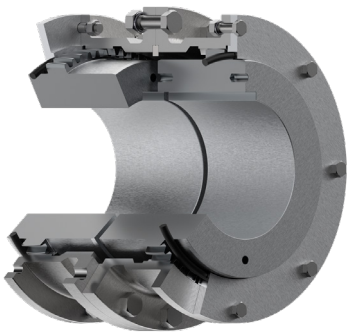


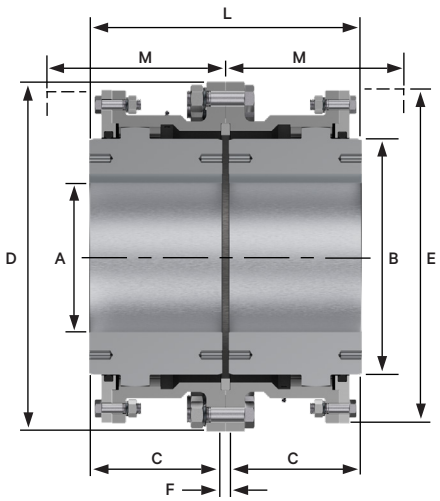
Long hub versions available, contact Renold for details.
Please refer to the Renold Couplings selection guide for keyway stress calculations.
Renold can supply cardan shaft or flanged spacer assemblies. Critical speeds must be checked, please contact Renold.

* 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.

Gearflex heavy duty B series double engagement type HDB

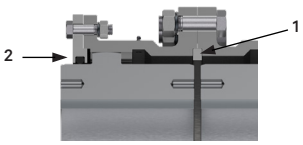
A larger range of gear couplings designed to cope with more extreme torque transmission. The double engagement provides radial offset capability in addition to axial and angular misalignment.





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	3101	296192	2000	275	115	360	203	533	508	10	416	232	448	3.6	0.75	15.8
GF9HDB	4261	406848	1900	305	140	400	228	584	559	12	468	261	609	4.2	0.75	19.1
GF10HDB	4771	455680	1800	360	140	470	254	660	628	12	520	293	871	4.8	0.75	19.1
GF11HDB	5845	558240	1600	370	150	483	280	711	680	12	572	318	1070	5.3	0.75	19.1
GF12HDB	7754	740480	1400	410	150	533	305	768	737	14	624	343	1391	5.7	0.75	19.1
GF14HDB	11570	1104960	1200	465	285	610	356	902	857	18	730	400	1767	6.9	0.75	19.1
GF16HDB	17893	1708800	1000	535	335	699	406	991	946	20	832	457	2560	8.4	0.75	19.1
GF18HDB	25650	2449600	700	605	360	787	457	1124	1073	25	939	520	3485	9.2	0.75	22.1
GF20HDB	36373	3473600	500	665	385	864	483	1230	1180	25	991	560	4463	9.6	0.75	22.1
GF22HDB	50094	4784000	400	720	410	940	483	1308	1257	25	991	560	5358	9.6	0.75	22.1
GF24HDB	59643	5696000	300	780	460	1016	483	1372	1321	25	991	560	6239	9.6	0.75	22.1
GF26HDB	79531	7595200	270	840	540	1092	559	1524	1486	28	1146	650	8985	10.6	0.75	22.1

Misalignment angle per half (degrees)	Rating factor
0.00	1.00
0.50	0.75
0.75	0.63

Catalogue ratings shown are nominal values at 0.00° misalignment.

To determine the rating at an expected angular misalignment, use the corresponding factor in the table and multiply.

Example:

GF20HDB at 0.00° = 3473600 Nm

at 0.75° = 3473600 x 0.63 = 2188368 Nm

Ordering code

GF 16 H DB

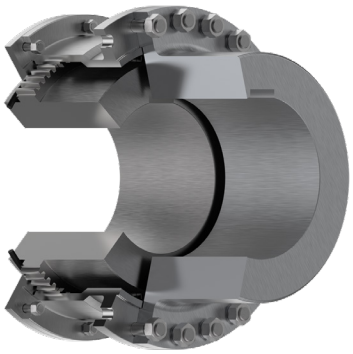
- GF — Gearflex
- 16 — Size
- H — Heavy duty
- DB — Double engagement B series

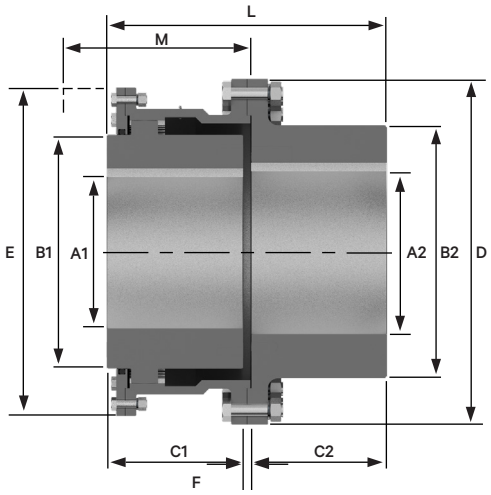
Long hub versions available, contact Renold for details.
Please refer to the Renold Couplings selection guide for keyway stress calculations.

* 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.

Gearflex heavy duty B series single engagement type HSB

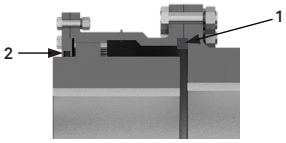
The high-torque B series coupling but featuring only one gear hub to allow for axial and angular misalignment. Can also provide radial offset when two single engagement units are linked with a cardan shaft.





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	3101	296192	2000	275	115	240	115	360	368	203	200	533	508	13	416	232	411	0.75	7.9
GF9HSB	4261	406848	1900	305	140	280	140	400	406	228	226	584	559	14	468	261	557	0.75	9.6
GF10HSB	4771	455680	1800	360	140	305	140	470	457	254	252	660	628	14	520	293	877	0.75	9.6
GF11HSB	5845	558240	1600	370	150	330	150	483	533	280	278	711	680	14	572	318	1051	0.75	9.6
GF12HSB	7754	740480	1400	410	150	356	150	533	584	305	302	768	737	16	623	343	1365	0.75	9.6
GF14HSB	11570	1104960	1200	465	285	430	190	610	660	356	354	902	857	21	731	400	1504	0.75	9.6
GF16HSB	17893	1708800	1000	535	335	480	215	699	711	406	405	991	946	21	832	458	2184	0.75	9.6
GF18HSB	25650	2449600	700	605	360	560	255	787	864	457	456	1124	1073	27	940	521	2947	0.75	11
GF20HSB	36373	3473600	500	665	385	610	280	864	940	483	481	1230	1181	27	991	560	3717	0.75	11
GF22HSB	50094	4784000	400	720	410	635	300	940	965	483	481	1308	1257	27	991	560	4436	0.75	11
GF24HSB	59643	5696000	300	780	460	660	330	1016	1016	483	481	1372	1321	27	991	560	5227	0.75	11
GF26HSB	79531	7595200	270	840	540	710	355	1092	1168	559	560	1524	1486	28	1147	650	7993	0.75	11

Misalignment angle per half (degrees)	Rating factor
0.00	1.00
0.50	0.75
0.75	0.63

Catalogue ratings shown are nominal values at 0.00° misalignment.

To determine the rating at an expected angular misalignment, use the corresponding factor in the table and multiply.

Example:

GF20HDB at 0.00° = 3473600 Nm

At 0.75° = 3473600 x 0.63 = 2188368 Nm

Ordering code

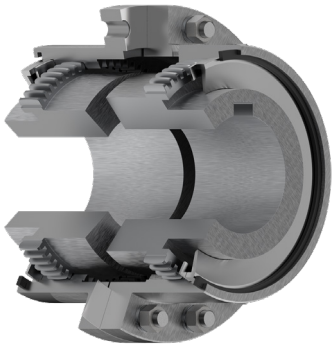
GF 20 H SB

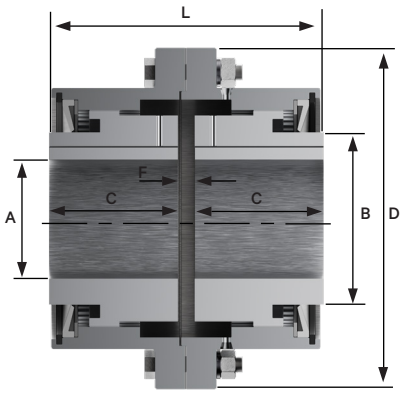
- GF — Gearflex
- 20 — Size
- H — Heavy duty
- SB — Single engagement B series

Long hub versions available, contact Renold for details.
Please refer to the Renold Couplings selection guide for keyway stress calculations.
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.

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 the standard misalignment of the Gearflex DA, such as oil field equipment and rolling mill drives.

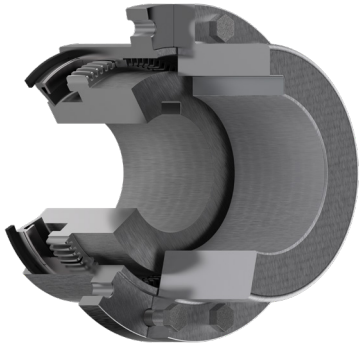
Induction hardened gear teeth and lip type seals handle up to 6° of misalignment.

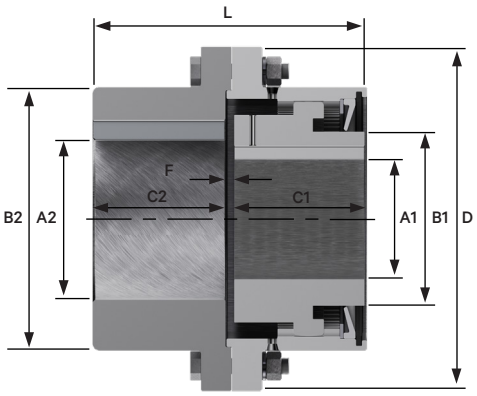
Coupling size	Torque nominal Nm	Bore A max* mm	Dimensions									Mass kg	WR² kg m²	Offset (parallel) misalignment at	
			B at 3.5° mm	B at 6° mm	C at 3.5° mm	C at 6° mm	D mm	F at 3.5° mm	F at 6° mm	L at 3.5° mm	L at 6° mm			3.5° mm	6° mm
GF 100DD	See table on page 12	27	44		36		89	5		76		1.9	0.002	2.34	
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		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

Ordering code

*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 ± 3.5° or ± 6°.
Gear Teeth are induction hardened.
Shrouded bolt flanges available if required.

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 bridles on auxiliary rolling mill equipment.

Coupling size	Torque nominal Nm	Bore		Dimensions											Mass kg	WR² kg m²	Offset (parallel) Misalignment at	
		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			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		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	See table on page 12	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

Ordering code

GF Gearflex

350 Size

DD Single engagement D series

* 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 ± 3.5° or ± 6°.
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.

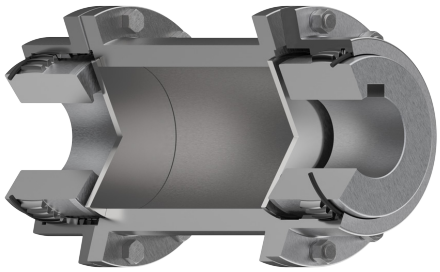
Gearflex High Misalignment D series

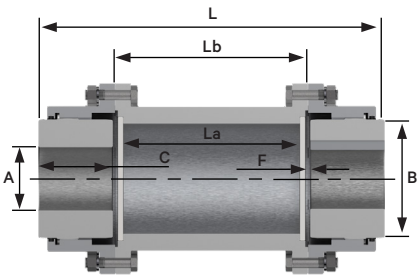
Gearflex D Series Gear Tooth Ratings – Nm*

Maximum misalignment		±3.5˚ per gear mesh			±6˚ 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

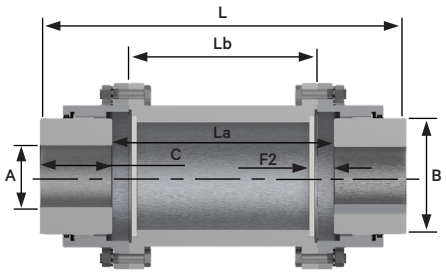
* Remember to apply appropriate service factors.

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	29.8	2846		46	14	60	43	116	1.5	3			75
GF15DAFS	56.4	5386		57	20	76	49	152	1.5	6.5			85
GF20DAFS	96	9168		78	27	102	62	178	1.5	12.5			95
GF25DAFS	155.2	14822		90	27	117	77	213	2.5	9.5			110
GF30DAFS	256	24448		110	39	143	91	240	2.5	21			110
GF35DAFS	392	37436	**	127	39	165	106	279	3	24	***	***	125
GF40DAFS	624	59592		145	55	191	121	318	3	28.5			125
GF45DAFS	862	82322		165	55	216	135	346	4	32.5			125
GF50DAFS	1156	110398		185	55	241	153	389	4	46			145
GF55DAFS	1714	163688		205	55	267	175	425	4	49			145
GF60DAFS	2192	209336		225	55	292	188	457	4	55.5			145
GF70DAFS	3280	313240		260	555	343	221	527	4.5	66.5			145

Misalignment angle per half (degrees)	Rating factor
0.00	1.00
0.50	0.78
0.75	0.65
1.00	0.58
1.50	0.50

Catalogue ratings shown are nominal values at 0.00° misalignment. To determine the rating at an expected angular misalignment, use the corresponding factor in the table and multiply.

Example:

GF60DA at 0.00° = 209336 Nm

At 0.75° = 209336 x 0.65 = 136068 Nm

Ordering code

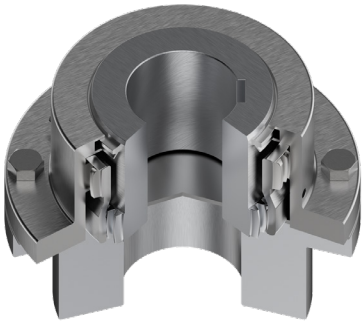
GF 20 DAFS #

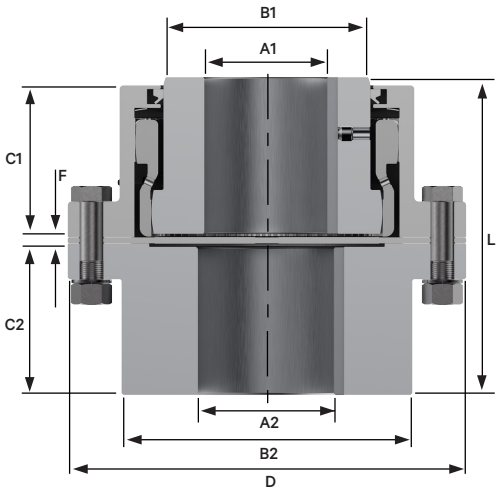
- GF — Gearflex
- 20 — Size
- DAFS — Double engagement A Series flanged spacer
- # — Distance between shaft ends (DBSE)

Long hub versions available. Contact Renold for details.
Please refer to the Renold Couplings selection guide for keyway stress calculations.
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 x F
Type B - Lb = La - 2 x F2

Gearflex Vertical Double Engagement type VA

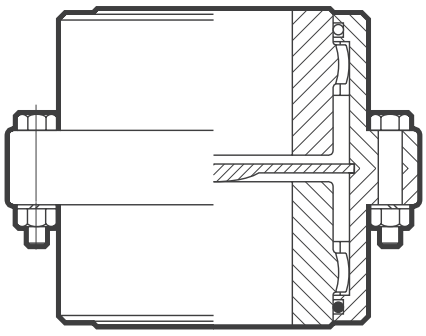




A geared coupling designed specifically for vertical operation. The double-geared flex-half matches the angular misalignment and parallel offset capabilities of a double engagement Gearflex, whilst the ability to retain lubrication in the upper half of the coupling reduces maintenance intervals without the need for specialised seals.

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	WR² kg m²	
GF15VA	29.8	2846	7100	46	14	75	20	60	98	49	47	152	8	104	9	0.019	0.8
GF20VA	56.4	5386	5400	57	20	95	27	76	124	62	60	178	8	130	17.5	0.044	1.0
GF25VA	96	9168	4800	78	27	110	27	102	148	77	75	213	9	161	30	0.107	1.2
GF30VA	155.2	14822	4250	90	27	130	39	117	173	91	89	240	10	190	40	0.200	1.4
GF35VA	256	24448	4000	110	39	155	39	143	201	106	104	279	12	222	64	0.446	1.7
GF40VA	392	37436	3600	127	39	180	55	165	233	121	116	318	13	250	94	0.842	2.0
GF45VA	624	59592	3290	145	55	200	55	191	262	135	130	346	17	282	128	1.350	2.3
GF50VA	862	82322	2920	165	55	225	55	216	294	153	148	389	17	318	187	2.800	2.6
GF55VA	1156	110398	2630	185	55	250	55	241	324	175	164	425	17	356	245	3.940	3.0
GF60VA	1714	163688	2320	205	55	265	55	267	349	188	182	457	20	390	300	5.130	3.4
GF70VA	2192	209336	2120	225	55	310	55	292	406	221	221	527	23	465	475	11.040	3.9

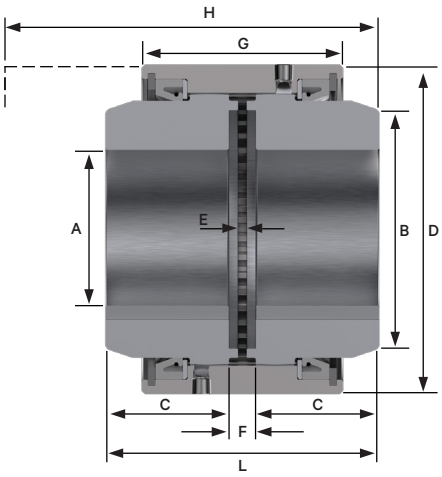
Ordering code

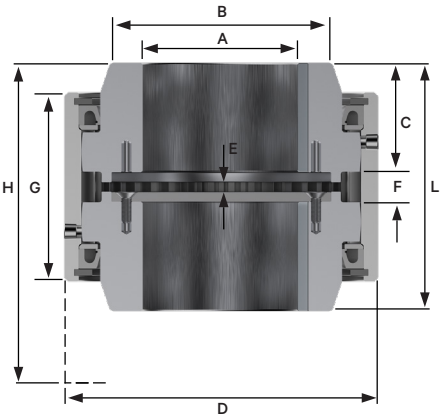


* Maximum Bore - The maximum bores shown are absolute maximums. Under normal circumstances the boss to bore ratio should not be less than 1.5 for standard applications. Consult Renold for overbore approval.
** Speed in excess of these shown may require additional balancing.

Gearflex high Speed double engagement type NTS

Reduced outer diameter to allow for higher operating speeds. Can also be used at lower speeds if a small space envelope is needed.





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 #	14	1336	10000	24	10	36	43	67	3	9	70	126	95	1.8	0.18	1.5
GF11NTS #	20	1910	10000	30	12	46	43	79	3	9	70	126	95	2.7	0.18	1.5
GF12NTS #	32	3056	10000	40	12	58	44	92	3	9	73	130	97	3.6	0.18	1.5
GF15NTS #	40	3820	10000	40	13	65	49	98	3	9	76	139	107	4.5	0.20	1.5
GF20NTS #	74	7124	10000	55	18	82	56	121	3	11	92	162	123	7.7	0.20	1.5
GF25NTS #	128	12224	10000	70	18	107	59	146	6	18	105	186	136	13	0.23	1.5
GF30NTS #	200	19100	8500	80	30	127	67	171	6	18	114	204	152	20	0.33	3
GF35NTS #	326	31140	7250	100	38	154	70	200	6	18	121	213	158	30	0.36	3
GF40NTS #	466	44500	6400	115	60	178	86	229	6	18	140	248	190	42	0.38	3
GF45NTS #	684	65320	5700	125	72	203	89	260	6	18	146	258	196	58	0.41	3
GF50NTS #	856	81740	5200	145	85	225	99	283	6	18	152	273	216	74	0.43	3
GF60NTS #	1734	165600	4500	165	85	263	114	324	6	18	184	321	246	120	0.46	3
GF65NTS #	2180	208446	4200	180	85	285	114	349	6	18	184	321	246	130	0.48	3
GF70NTS #	2510	240000	3900	190	85	304	124	375	6	18	191	337	266	175	0.48	3

Misalignment angle per half (degrees)	Rating factor
0.00	1.00
0.50	0.78
0.75	0.65
1.00	0.58
1.50	0.50

Catalogue ratings shown are nominal values at 0.00° misalignment.

To determine the rating at an expected angular misalignment, use the corresponding factor in the table and multiply.

Example:

GF50NTS at 0.00° = 81740 Nm

At 0.75° = 81740 x 0.65 = 53131 Nm

Ordering code

GF 60 NTS #

- GF – Gearflex
- 60 – Size
- NTS – NTS series
- # – H – Horizontal type, V – Vertical type

* 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.

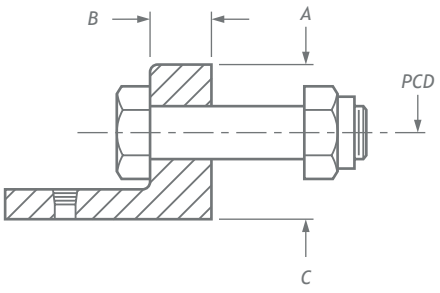
Gearflex Interchange Information

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	1½	2	2½	3	3½	4	4½	5	5½	6	7
Jaure	MT	No	52	62	78	98	112	132	156	174	190	210	233	275
Lovejoy/Sier Bath		Yes	1	1½	2	2½	3	3½	4	4½	5	5½	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

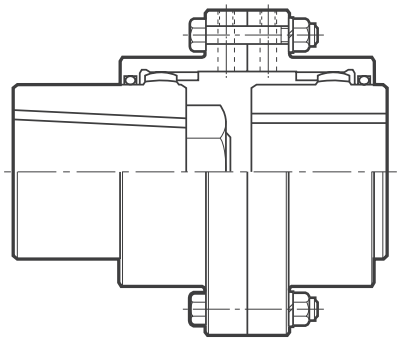
Coupling size	No of bolts	Bolts size inch	PCD mm	Outer dia (A) mm	Flange thickness (B) mm	Inner dia (C) mm
GF10	6	0.250”	95.25	116	14.3	70
GF15	8	0.375”	122.24	152	19	87
GF20	6	0.500”	149.23	178	19	113
GF25	6	0.625”	180.98	213	22.2	133
GF30	8	0.625	206.38	240	22,2	159
GF35	8	0.750”	241.3	279	28.6	186
GF40	8	0.750”	279.4	318	28.6	211
GF45	10	0.750”	304.8	346	28.6	240
GF50	8	0.875”	88.9	389	38.1	265
GF55	14	0.875”	368.3	425	38.1	298
GF60	14	0.875”	400.05	457	25.4	327
GF70	16	1	463.55	527	28.6	378

AGMA flange details - common dimensions

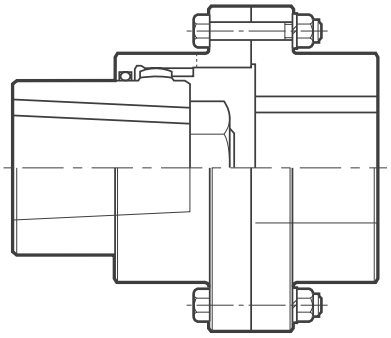


Adapted and custom gear couplings

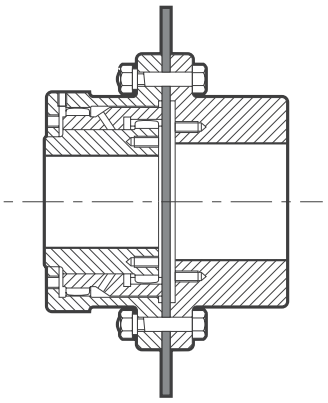
Mill motor gear



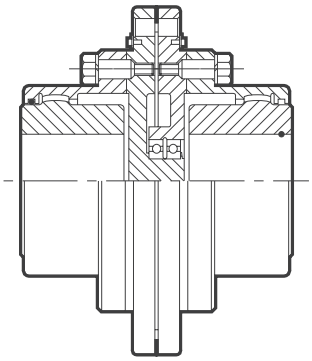
Mill motor gear



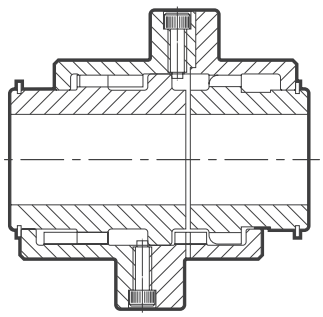
Disk brake gear coupling



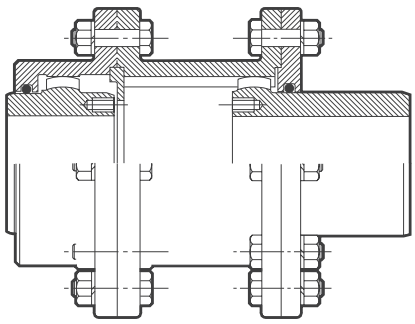
Shear pin gear coupling



Disengaging type gear coupling – standard series



Telescopic type gear coupling – standard series



Accessible sales team, weekly order updates, and a global sales network

Renoldflex

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

Coupling capacity

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

General details

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

Atex/API models available.

Standard range comprises

- Shaft to shaft
- Spacer type

Applications

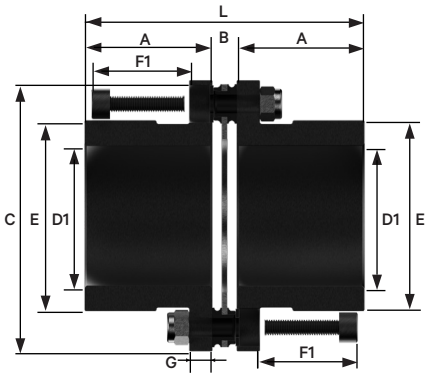
- Pumps
- Fans
- Blowers
- Material handling
- Servo motor drives
- Machine tools
- Presses
- Cranes
- Wind turbines
- General industrial applications

Features and benefits

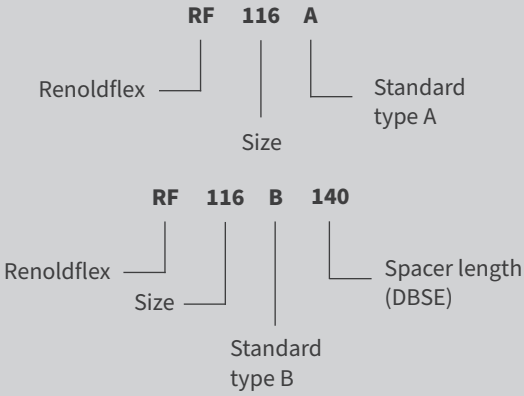
- Torsionally stiff – ideal for use on precision machines
- 100% maintenance free – long life with little wear
- Misalignment capabilities allowing flexibility in installation
- Zero backlash guarantees operational accuracy
- High operating temperatures, suitable for harsh operating environments and 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
- Multiple configurations – easily fits into your existing systems
- Large stock holding at Renold

Renoldflex

Type A



Ordering code



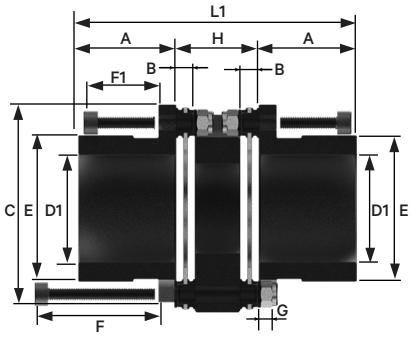
Catalogue number	A mm	B mm	C mm	Pilot bore D mm	Max bore D_1* mm	E mm	F_1 mm	G mm	Spacer length** H mm	L mm	L_1 mm	Coupling weights		
												Hub (pilot bore) kg	Disc packs kg	Spacer kg
40	17	2.9	40	6	15	26	15	4	16 26	36.9	50	Please consult Renold		
53	24.5	6.9	53	6	22	32.5	25	5	30 39	55.9	79 88	0.2 0.2	0.6 0.7	0.2 0.2
70	39.5	7.5	70.5	10	35	47	25	5	31.2 60 100 140	86.5	110.2 139 179 219	0.6 0.6 0.6 0.6	0.1 0.1 0.1 0.1	0.3 0.3 0.5 0.6
88	45	8.8	88.3	14	45	62.5	32	8	37.6 70 80 100 140	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
116	55	10.4	116.5	15	60	82	40	10	46.3 100 140 180	120.4	156.3 210 250 290	2.4 2.5 2.5 2.5	0.3 0.2 0.2 0.2	1.3 1.4 1.7 2.0
140	60	12	140.5	19	75	98	47	11	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
166	75	13	166.5	25	90	118	56	12	62.6 100 140 180	163	216.6 250 290 330	7.0 7.0 7.0	0.9 0.9 0.9	3.2 3.8 4.5
198	90	15	198.5	30	100	141	64	14	71.8 140 180	195	251.8 320 360	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 D_1 only for uniform load. For heavy duty class, maximum bore: $D_1 = \frac{E}{1.45}$

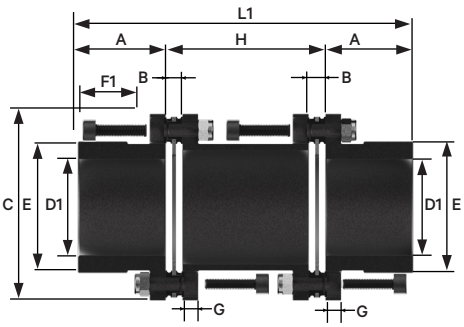
**Custom length spacers up to 300mm are available upon request.

Renoldflex

Type B H-MIN



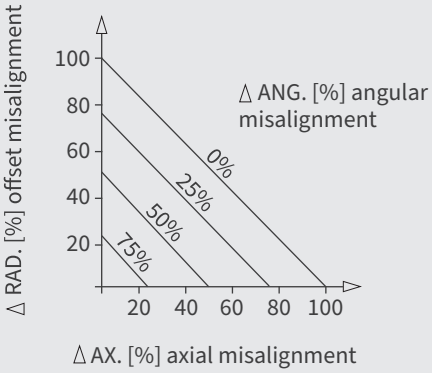
Type B



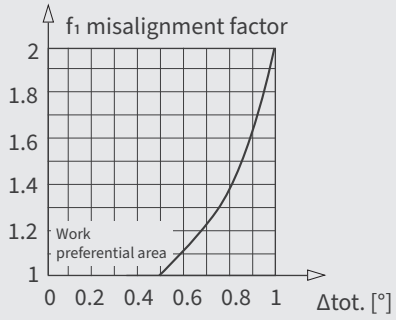
			Renoldflex type A Single disc pack				Renoldflex type B Double disc pack					Torsional stiffness ***		
Size	Nominal torque T* Nm	Max speed V** rpm	Misalignment			Inertia J kg m²	Spacer length H mm	Misalignment			Inertia J kg m²	Disc pack CK Nm/rad	Spacer CH 10^6 Nm mm/rad	C TOT Nm/rad
			Radial offset mm	Axial mm	Angular (*)			Radial offset mm	Axial mm	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 60 100 140	0.3 0.7 1.2 1.4	1.1	1.5	0.00071 0.00076 0.00081 0.00087	142464	11.8	71232 56065.02 47142.56 40670.11
88	320	6800	0	0.6	0.75	0.00164	37.6 70 80 100 140	0.4 0.8 0.9 1.2 1.7	1.2	1.5	0.00218 0.00252 0.00256 0.00265 0.00282	200260	51.6	100130 90889.35 89316.32 86328.13 80913.99
116	750	5400	0	0.8	0.75	0.00991	46.3 100 140 180	0.5 1.2 1.7 2.2	1.6	1.5	0.00795 0.00928 0.00986 0.01047	341665	130.4	170832.5 154769.46 147752.84 141344.84
140	1350	4600	0	1	0.75	0.01359	55 100 140 180	0.7 1.1 1.7 2.2	2.1	1.5	0.01824 0.02093 0.02179 0.02264	503858	236	233020.5 224165.39 215958.66
166	2400	3800	0	1.2	0.75	0.0345	62.6 100 140 180	0.7 1.1 1.7 2.2	2.5	1.5	0.05175 0.05379 0.05584	938363	576.1	442511.2 429319.64 416891.81
198	4000	3400	0	1.4	0.75	0.08368	71.8 140 180	0.7 1.6 2.2	2.8	1.5	0.12413 0.12736	1258733	959.8	587023.07 573004.37
238	6500	3000	0	1.7	0.75	0.22773	140 180	1.6 2.1	3.4	1.5	0.33419 0.34564	23.3 23.23	2.2 2.2	10.0 11.8
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	224 250 300	1.6 1.8 2.2	2.6	1	2.62 2.64 2.68	Please consult Renold		

For information on *, **, and ***, please refer to page 31.

[fig 02] misalignment diagram

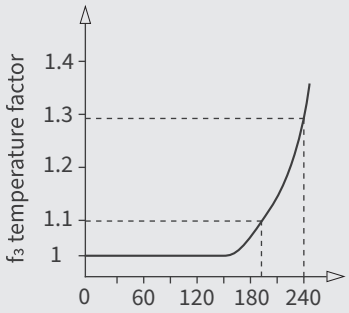


[fig 03] misalignment factor f_1



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

[fig 04] temperature factor f_2



For applications with temperatures over 80°C this must be stated on order.

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 Δax reduces the possibility for offset misalignment Δrad and angular misalignment Δang, which can be seen in [fig 02]. The combined total angular misalignment ΔTOT is a function of the angular misalignment Δang and offset misalignment Δrad of the shafts, according to the following formula:

$$\Delta TOT\ [°] = \frac{\Delta ang}{2} + \arctan \frac{\Delta rad}{(H-B)}$$

The values H and B [mm] are given in the overall dimensions table. The misalignment factor f_1 is a function of ΔTOT 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> Peak torque
- For reversing duty: T> 1.5 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 allows 1.75 times the nominal

** 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 Ck

The torsional angle of a single pack coupling

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

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

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

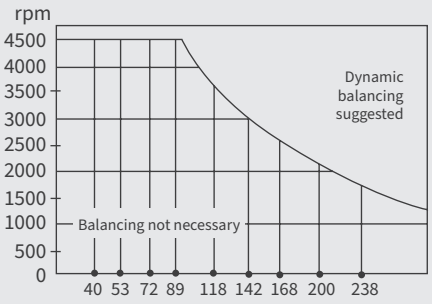
The torsional angle of a double pack coupling

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

T (Nm) – Transmitted torque

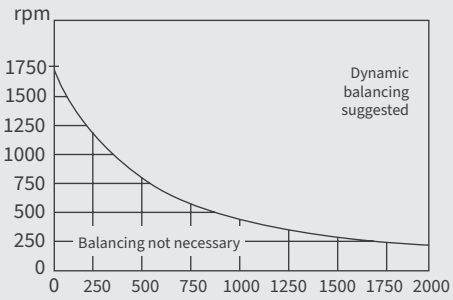
[fig 05] balancing

Renoldflex type A



[fig 06] balancing

Renoldflex type B



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].

Type E/F

- Spacer Assembly with reversed hubs inside spacer
- Allows radial misalignment whilst maintaining a shorter DBSE
- TYPE E – 1 reversed hub
- Type F – 2 reversed hubs
- Available with a variety of spacer lengths

Type N/P

- Clamping hub with radial screws
- TYPE N – single disc pack
- Type P – double disc pack with variety of spacer lengths
- Type Pmin – double disc pack with minimum spacer length

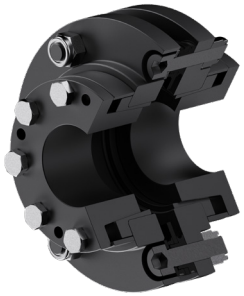
Type G/H

- 3-part shrink disc to clamp shaft to hub
- 2-part option also available
- TYPE G – single disc pack
- Type H – double disc pack with variety of spacer lengths
- Type Hmin – double disc pack with minimum spacer length

Type X/Y

- Split hubs with radial screws
- Allows seamless drop-in installation with no need to move equipment
- TYPE X – single disc pack
- Type Y – double disc pack with variety of spacer lengths
- Type Ymin – double disc pack with minimum spacer length

Type L/M



- Internal clamping element within hub
- TYPE L – single disc pack
- Type M – double disc pack with variety of spacer lengths
- Type Mmin – double disc pack with minimum spacer length

+

Additional configurations available with alternative installation methods

Please contact Renold Sales at Cardiff. sales@renold.com for further information.

RBI Flexible Coupling

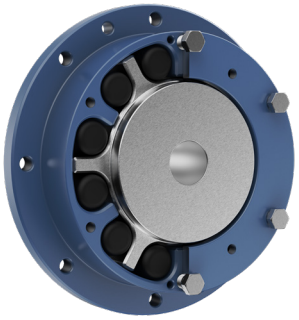
The RBI Coupling is a general purpose coupling for torques up to 60 kN.m. It needs no lubrication or adjustment and protects the system from vibration, extending the life of the entire driveline and resulting in the lowest lifetime costs for a coupling.

Coupling capacity

- Up to 62.5kNm torque
- Maximum 5,250rpm
- Up to 210mm bore

Applications

- Pumps
- Table roller drives
- Cranes and hoists
- Conveyors
- Fans
- Mixers
- Extruders
- Screens



Range options

- Shaft to shaft
- Shaft to shaft with increased shaft engagement

Construction details

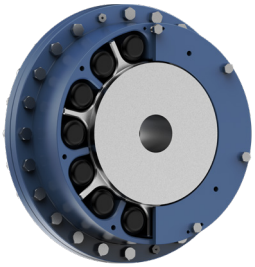
- Spheroidal graphite to BS 2789 Grade 420/12
- Separate rubber elements with SM80 shore hardness as standard. CM80 electrical insulation rubber blocks also available
- Rubber elements fully enclosed and compression-loaded for general-purpose applications. This cost-effective range is manufactured in SG iron and handles torques up to 62.5kNm

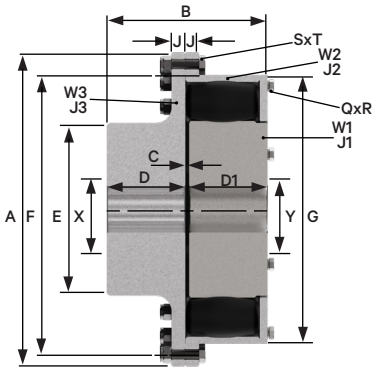
Features and benefits

- Torque-dense design reduces the coupling package size, weight and cost
- Low maintenance, lubrication-free solution requires minimal operational intervention, vastly reducing total cost of ownership
- Fail-safe design ensures continued operation in the unlikely event of rubber damage
- Torsional damping reduces vibratory driveline loads
- Severe shock load protection avoids driveline failure in transient over-torque events
- Compensates for axial and radial misalignment between driven and driving equipment
- Pre-compressed rubber blocks provide zero backlash and reduced torque amplifications

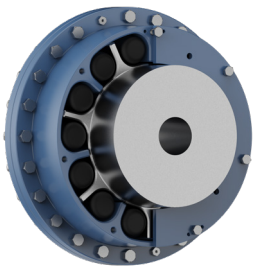
RBI Shaft to Shaft

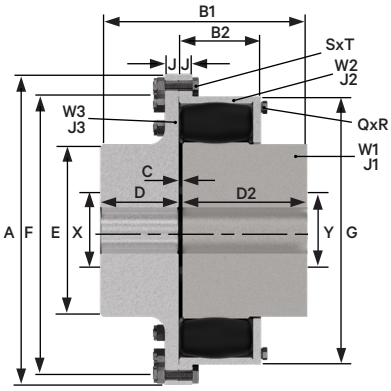
RBI 1.4 - 60 standard





RBI 1.4 - 60 long boss inner member





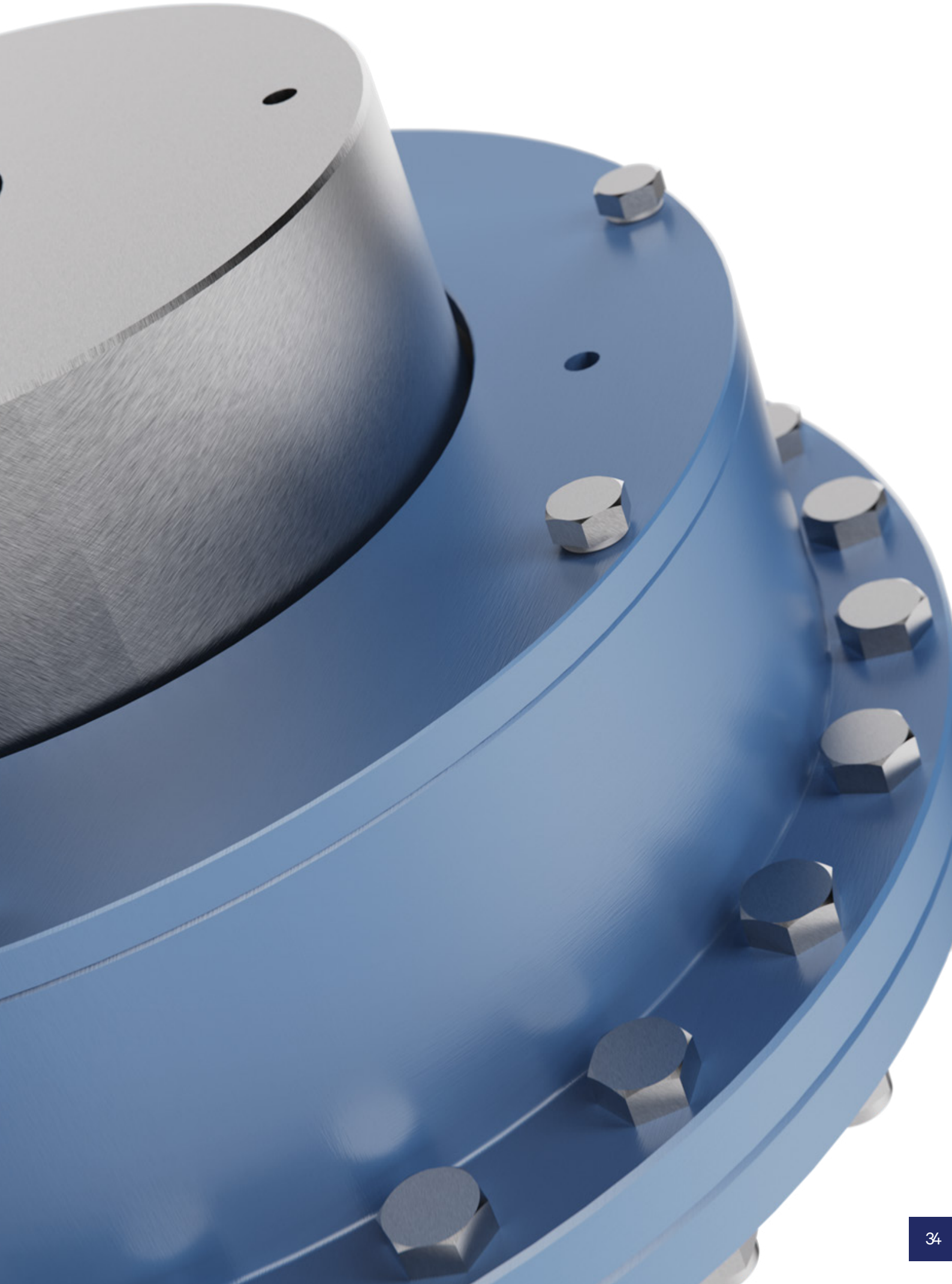
Dimensions, weight, inertia and alignment

Coupling size		1.4	2.1	2.6	4	8	12	23	40	60
Dimensions (mm)	A	200.0	222.2	238.1	260.3	308.0	358.8	466.7	508.0	571.5
	B	104.8	111.2	123.8	136.5	174.6	193.7	233.4	260.4	285.8
	C	3.2	3.2	3.2	3.2	3.2	3.2	4.8	6.4	6.4
	D	50.8	54.0	60.3	66.7	85.7	95.2	114.3	127.0	139.7
	D1	50.8	54.0	60.3	66.7	85.7	95.2	114.3	127.0	139.7
	E	79.4	95.2	101.6	120.6	152.4	184.1	222.2	279.4	330.2
	F	177.8	200.0	212.7	235.0	279.4	323.8	438.15	469.9	542.92
	G	156.5	178	186.5	210	251	295	362	435	501.5
	J	12.7	14.3	15.9	17.5	19.0	19.0	19.0	22.2	25.4
	Q	5	6	6	6	6	6	6	7	8
	R	M8	M8	M8	M10	M10	M12	M12	M12	M12
	S	6	10	6	8	8	18	16	22	22
	T	M8	M8	M10	M10	M12	M12	M12	M16	M16
	MAX.X	50	60	65	80	95	115	140	170	210
	MAX.Y	55	70	75	85	95	115	140	170	210
	MIN. X & Y	30	35	40	40	55	55	70	80	90
Rubber elements	Per cavity	1	1	1	1	1	1	1	1	1
	Per coupling	10	12	12	12	12	12	12	14	16
Maximum Speed[1] [rpm]		5250	4725	4410	4035	3410	2925	2250	2070	1820
Allowable misalignment[3]										
Radial (mm)		0.75	0.75	0.75	0.75	1.0	1.5	1.5	1.5	1.5
Axial (mm)		1.5	1.5	1.5	1.5	1.5	1.5	2.0	3.0	3.0
Conical (degree)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

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

2 Weights and inertias are based on the minimum bore size.

3 Installations should be initially aligned as accurately as possible. In order to allow for deterioration in alignment over time it is recommended that initial alignment should not exceed 25% of the above noted data. The forces on the driving and driven machinery should be calculated to ensure that these do not exceed the manufacturers allowances.



RBI Shaft to Shaft

Rubber grade	Temp$_{max}$ °C	S_t	Dynamic Magnifier (M_{30})	Relative Damping ψ30
SM80	100	5_t 100 0.58	4	1.57

Dimensions, weight, inertia and alignment

Coupling size		1.4	2.1	2.6	4	8	12	23	40	60
Nominal Torque Tkn (kN.m)		0.471	0.725	0.855	1.319	2.595	4.097	7.673	13.739	19.575
Maximum Torque Tkn (kN.m)		1.39	2.14	2.58	3.95	8.03	12.15	22.95	41.10	61.50
Vibratory Torque Tkn (kN.m)		0.183	0.282	0.333	0.513	1.008	1.593	2.984	5.342	7.613
Allowable dissipated heat at ambient temperature of 30°C Pkw (Watts)		100	138	154	173	228	250	302	410	520
Dynamic Torsional Stiffness CTdyn (MNm/rad)	At 0.10 Tkn	0.010	0.013	0.016	0.025	0.050	0.076	0.143	0.220	0.499
	At 0.25 Tkn	0.014	0.018	0.021	0.034	0.068	0.102	0.193	0.297	0.673
	At 0.50 Tkn	0.029	0.03	0.045	0.070	0.0141	0.214	0.405	0.621	1.326
	At 0.75 Tkn	0.062	0.080	0.096	0.148	0.301	0.456	0.861	1.320	2.533
	At 1.00 Tkn	0.107	0.137	0.166	0.254	0.517	0.782	1.477	2.268	4.153
Radial Stiffness - No Load (N/mm)		2136	2209	2504	2800	3680	4050	5008	5600	6170
Radial Stiffness - @ Tkn (N/mm)		6768	8365	9523	10577	14300	15340	19045	24800	31400
Axial Stiffness - No Load (N/mm)		177	198	245	258	319	342	413	516	683
Max. Axial Force - @ Tkn (N)		3250	4000	4400	4500	6500	7250	8750	11500	14500
Weight[2] (kg)	W1	2.82	4.04	5.29	7.49	12.82	23.39	35.88	62.81	102.09
	W2	4.00	5.05	6.38	8.14	13.29	18.41	33.98	43.87	59.00
	W3	4.06	5.82	7.42	10.44	18.03	27.37	47.43	75.39	113.32
	W4	4.21	6.42	8.67	11.85	19.43	35.27	53.8	95.50	162.79
Inertia[2] (kgm)	J1	0.0044	0.0084	0.0131	0.0233	0.0563	0.1399	0.3227	0.8489	1.9633
	J2	0.0232	0.0375	0.0546	0.0887	0.2000	0.2862	1.1035	1.9161	3.4391
	J3	0.0153	0.0270	0.0396	0.0644	0.1475	0.1896	0.7998	1.5120	2.9796
	J4	0.0059	0.0121	0.0193	0.0326	0.0770	0.1896	0.4347	1.1833	2.8953

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

2 Weights and inertias are based on the minimum bore size.

3 Installations should be initially aligned as accurately as possible. In order to allow for deterioration in alignment over time it is recommended that initial alignment should not exceed 25% of the above noted data. The forces on the driving and driven machinery should be calculated to ensure that these do not exceed the manufacturers allowances.

Spiderflex, Spiderjaw and Spiderwrap

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

The SpiderJaw and SpiderFlex both provide all the benefits of jaw couplings but are made to different dimensional standards. Please contact Renold for the relevant interchangeability information.

Coupling capacity

- Maximum power at 100RPM: 45kW
- Maximum torque: 4308Nm

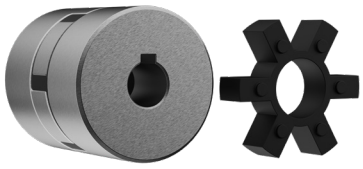
General details

Coupling materials available include:

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

Elements available include:

- Nitrile (standard)
- Urethane
- Hytrel
- Bronze



Standard range comprises

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

Applications

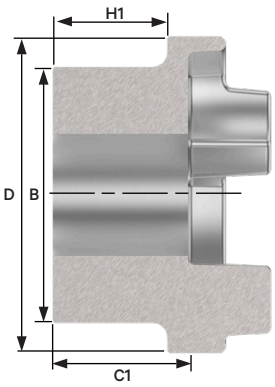
- Bulk handling
- Compressors
- Generator sets
- Metals manufacture
- Pumps
- Conveyor drives
- Paper converting
- Logging
- General industrial applications

Features and benefits

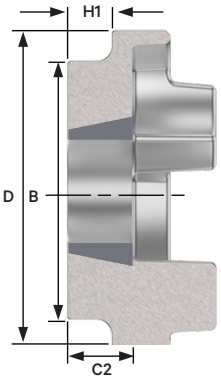
- Torsionally flexible – shock absorbing, extending machine life
- Maintenance free – minimum number of wearing parts
- Misalignment capabilities allowing flexibility in installation
- Spiderwrap allows external fitting of elastomeric element, minimising machinery downtime and ensuring continued process
- Cost effective – offering low cost product with a high quality design
- 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

Spiderflex

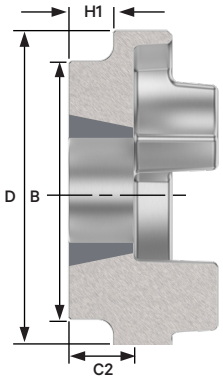
Type B



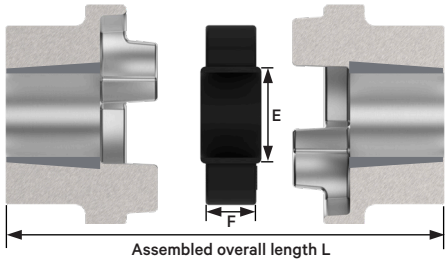
Type F



Type H



Assembled length



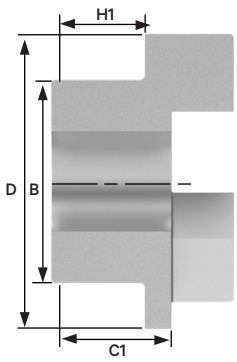
Renold ref	Power /100rpm kW	Torque nominal Nm	Speed max rpm	Type B		Type F & H			Max. misalignment		End float mm
				Bore dia		Bush size	Bore		Offset mm	Angular deg	
				Max	Min		Max	Min			
RSC70 # # #	0.33	32	7700	32	0	TB1008	25	9	0.3	0.5	+.2
RSC90 # # #	0.84	80	6300	42	0	TB1108	28	9	0.3	0.5	+.5
RSC110 # # #	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

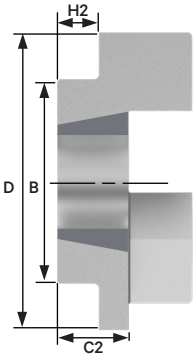
At speeds exceeding allowable maximum speed, consult Renold.
Both moment of inertia and coupling weight have been calculated assuming fitting of taper bush of medium bore size.
For information on torsional stiffness, consult Renold.

Spiderjaw

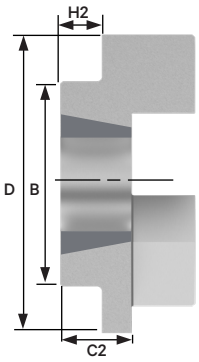
Type B



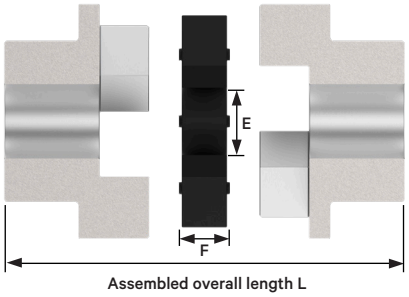
Type F



Type H



Assembled length



Renold spider ref	Renold ref	Power*1 /100rpm kW	Torque*1 nominal Nm	Speed max rpm	Type B		Type F & H			Dimensions							
					Bore		Bush size	Bore		B mm	C1 mm	C2 mm	D mm	E mm	F mm	H1 mm	H2 mm
					Max	Min		Max	Min								
	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
SPDR7150	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**

- SPDR — Spider
- 110 — Size
- HBDY — Half body
- CI — Material
  - SI - Sintered Iron (Sizes SPDR35 – SPDR75)
  - CI – Cast iron (Sizes SPDR95 – SPDR350)
  - AL – Aluminium (Sizes SPDR70 – SPDR110)

Element kit **SPDR 110 ELMT NI**

- SPDR — Spider
- 110 — Size
- ELMT — Element
- NI — Material
  - NI - Nitrile (All sizes)
  - UR - Urethane (Sizes SPDR50 – SPDR295)
  - Hy – Hytrel (Sizes SPDR50 – SPDR295)

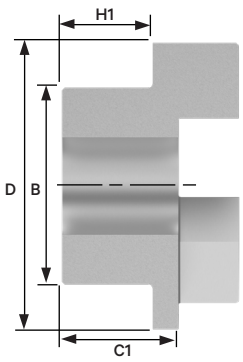
*1 Power and Torque values quoted are for Nitrile Rubber elements (NBR).
Urethane elements have around 1.5 times the torque capacity, but provide less damping effect.
Hytrel elements offer around 2.5 times the torque capacity but have even less damping effect and are best used for continuous load applications rather than cyclic or stop/start situations.

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

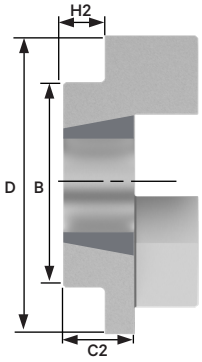
Spiderwrap

Spiderwrap allows external fitting of elastomeric element, minimising machinery downtime and ensuring continued process

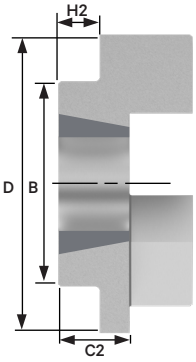
Type B



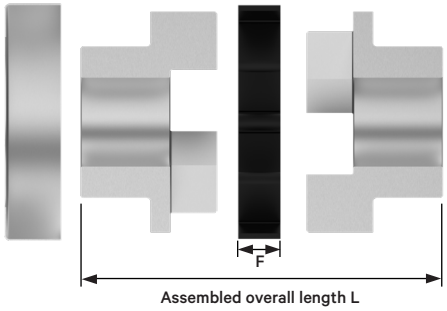
Type F



Type H



Assembled length



Renold spider ref	Renold ref	Power*1 /100rpm kW	Torque*1 nominal Nm	Speed max rpm	Type B		Type F & H			Dimensions							
					Bore		Bush size	Bore		B mm	C1 mm	C2 mm	D mm	E mm	F mm	H1 mm	H2 mm
					Max	Min		Max	Min								
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
SPDR7276	201	135	168
SPDR280	201	135	168
SPDR295	240.5	156.5	198.5
SPDR300	282	158	220
SPDR350	308	231	269.5

Coupling size	Spider flexible element
S11	644851
S15	644852
S21	644853
S30	644854
S37	644855

Ordering code

Half body **SPDR 110 HBDY CI**

- Spider
- Size
- Half body
- Material
  - CI – Cast iron (All sizes)
  - AL – Aluminium (Sizes SPDR95 – SPDR110)

Element kit **SPDR 110 ELMT NI**

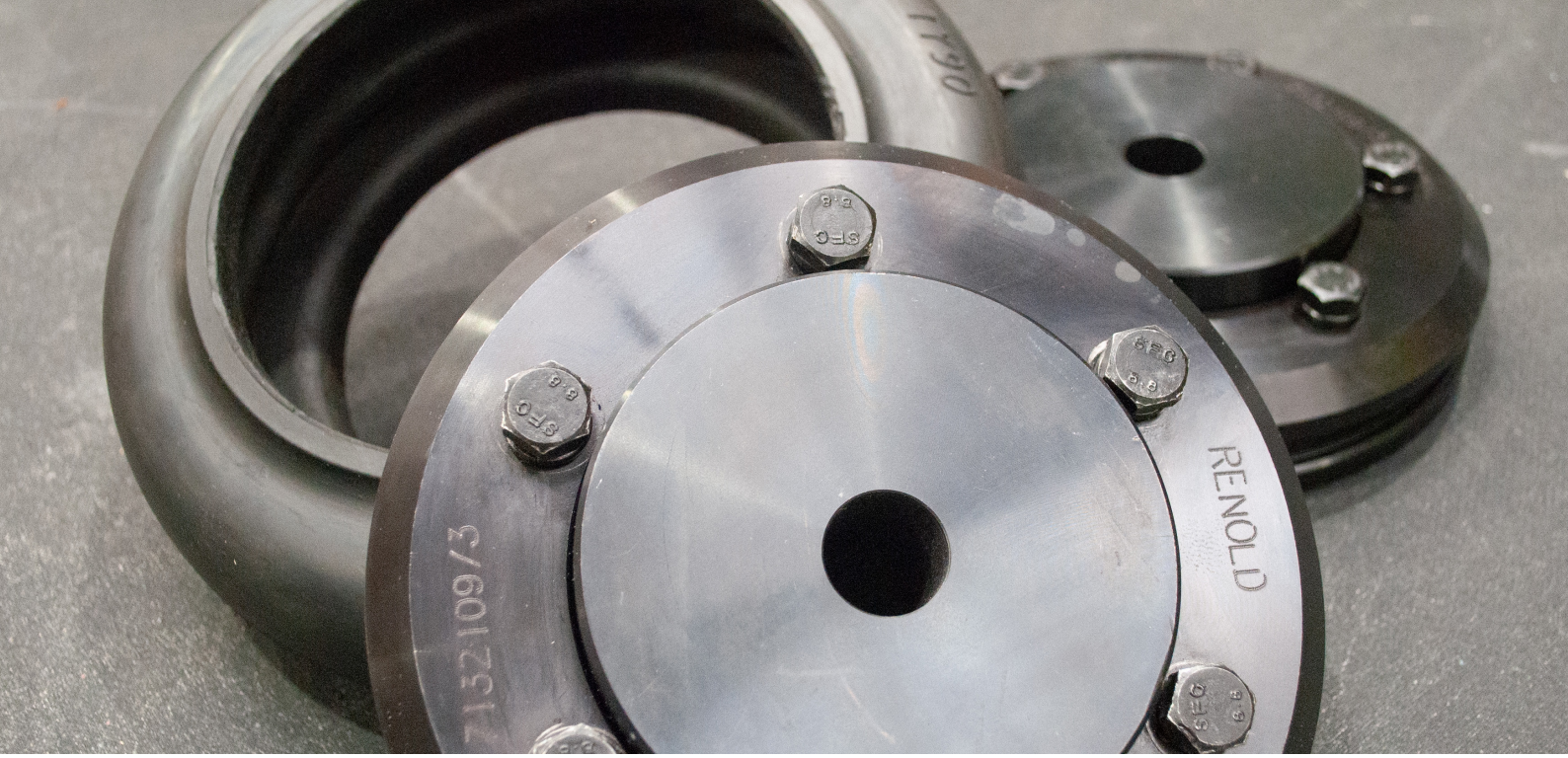
- Spider
- Size
- Element
- Material
  - NI - Nitrile (All sizes)
  - UR - Urethane (Sizes SPDR50 – SPDR295)
  - Hy – Hytrel (Sizes SPDR50 – SPDR295)

*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 shoud select two half bodies and one element. If in doubt refer to Renold Sales.

Designed and manufactured in-house by Renold



Tyreflex Flexible Coupling

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

Coupling capacity

- Maximum torque 6270 Nm
- Maximum power at 100rpm: 65.8 kW

Applications

- Compressors
- Generator sets
- Pumps

Range options

- Shaft to shaft
- Pump spacer type

Construction details

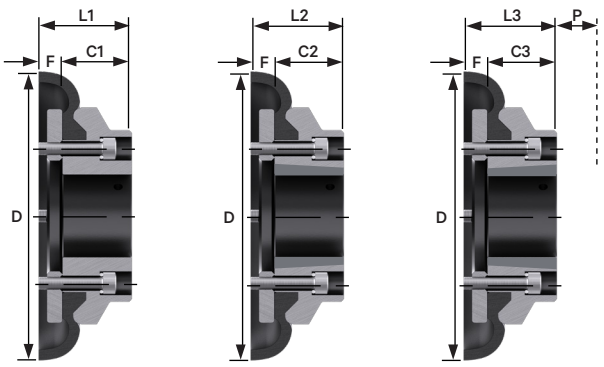
- Steel or S.G. iron half bodies
  Rubber tyres:
  Temp range -50°C to +50°C
  Chloroprene tyres:
  Temp range -15°C to +70°C

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 for ease of supply and customer peace of mind
- Pump spacer option for easy pump maintenance
- Taper bush bores available for ease of replacement
- Tyre element replacement requires no axial movement of hubs on driven or driving shafts

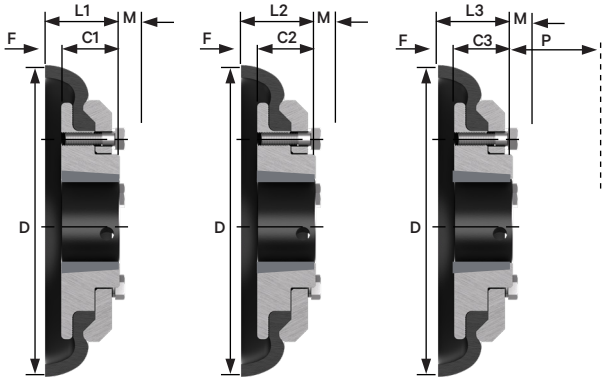
Tyreflex

TY40-TY60



Type B Type F Type H

TY70-TY180



Type B Type F Type H

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

TY40-TY60

The TY40-TY60 feature smaller clamping rings installed on the inside of the tyre element. The bored/keyed halfbodies are installed on the outside of the tyre element.

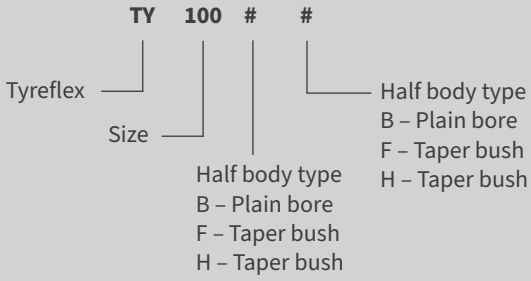
TY70-TY180

The TY70-TY180 feature larger clamping rings installed on the outside of the tyre element. The bored/keyed halfbodies are installed on the inside of the tyre element.

Component spares

Coupling size	Tyre flexible element		Half body unbored Type B		Half body 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

Ordering code



Hydrastart

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 at 1800rpm: 600kW
- Maximum torque: 3180Nm

Construction details

- Hydrastart couplings are constructed from LM23 Aluminium and EN8 steel
- All Hydrastarts use Viton O-rings and seals
- 7 different choices of recommended oil

Standard range comprises

- Shaft to shaft
- Shaft to brake drum
- Shaft to brake disk
- Shaft to vee pulley
- Drop-in Hydrastart

Applications

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

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
- Damps torsional vibration, reducing mechanical stress - extends machine life
- Delay fill version - extends acceleration time and reduces startup torque
- Can match load and speed on multi drives
- Energy saving through reduced current demand at start-up
- Coupling and Vee pulley types - design flexibility

Operating principles

The coupling is partially filled with hydraulic oil, with the volume of oil being used to precisely tune the acceleration of the driven equipment. The optimum oil fill is that which allows the driven equipment to smoothly accelerate from rest, therefore providing the best possible 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. As the oil changes direction and speed, its kinetic energy is transferred to the driven impeller. This transfer of momentum creates torque on the driven impeller and produces rotation of the output coupling.

The low resistance of the impeller at start up allows the motor to quickly accelerate to full speed without a high torque demand. The driven load accelerates smoothly to within a small percentage of the motor speed.

This speed difference is referred to as slip and is an inherent operating principle of a fluid coupling.

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

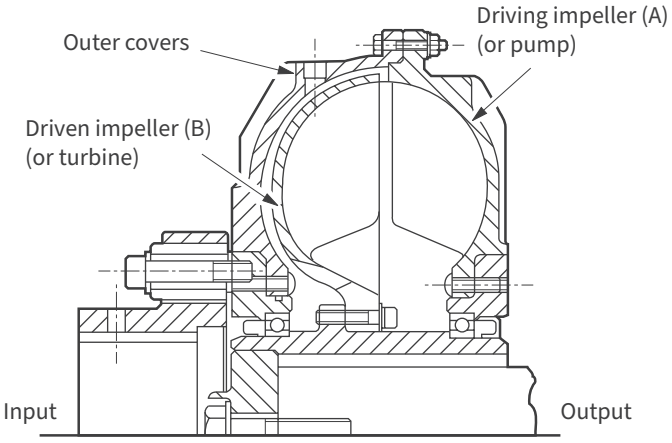
All hydraulic couplings can be driven in either directions of rotation.

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

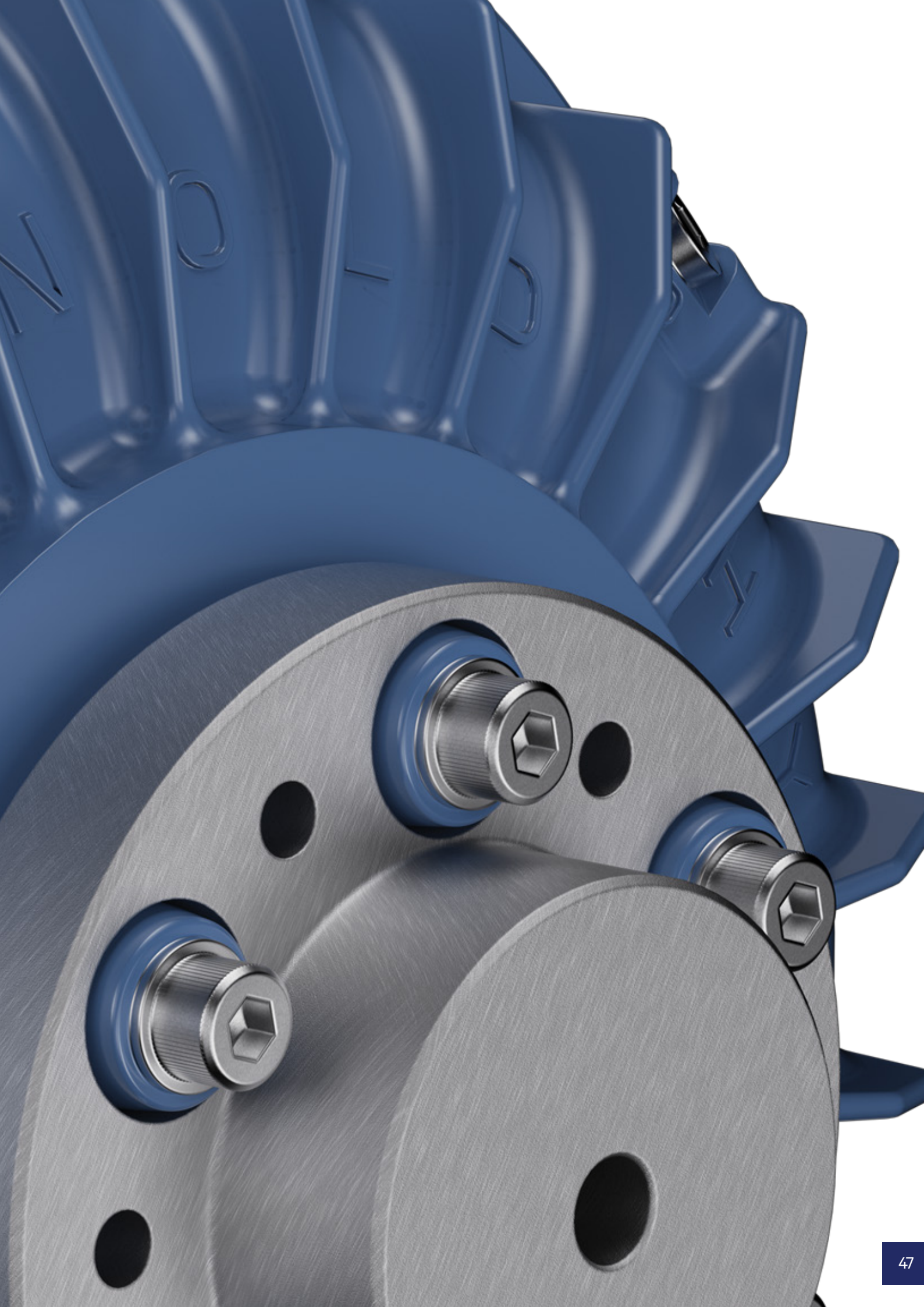
The standard drive arrangement allows the outer cover to be rotated whilst at rest to facilitate oil filling. However, if a brake drum or disc brake is fitted, the brake should be at the coupling output. See the standard available options page.

To calculate slip %

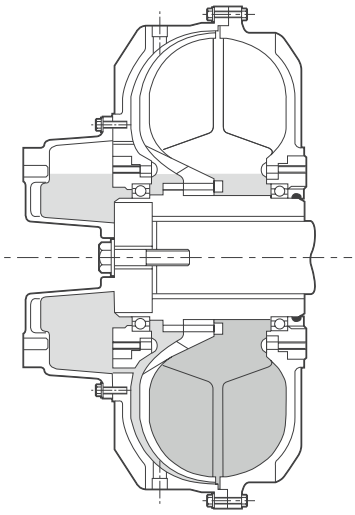
$$\frac{(\text{Input speed} - \text{output speed}) \times 100}{\text{Input speed}}$$



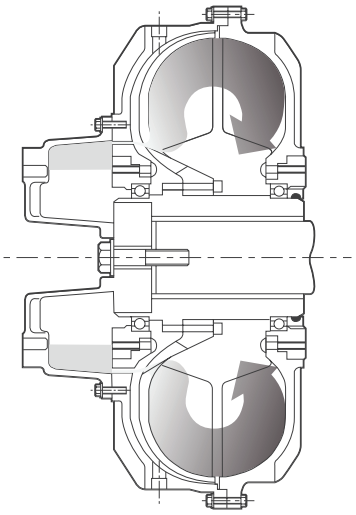
[Fig 07]



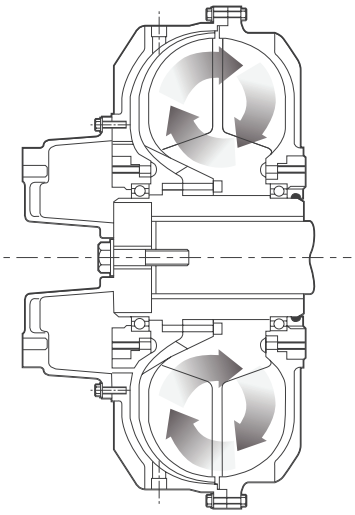
Delayed Fill



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



Accelerating
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
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.

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.

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

! 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.

! Renold recommend that the fluid coupling should always be operated within a guard. If the coupling is allowed to overheat, the hot oil will eject through the fusible plug.

'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% full load torque (FLT).
2. Motor will consume 6 times full load amps.
3. Increase in motor temperature.

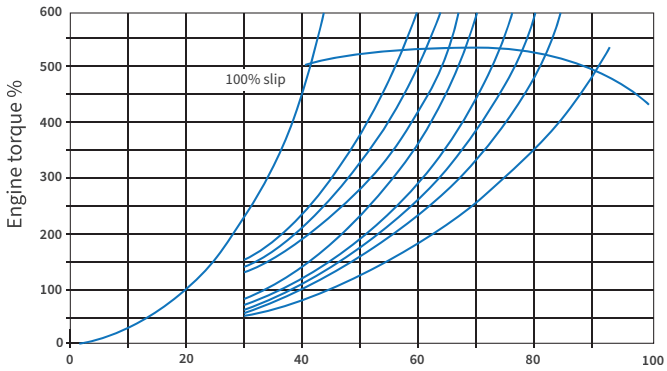
Star-delta starting reduces overheating. Starting torque in star connected winding is only 30% of FLT in delta connected winding. More complicated motors may be required, and star-delta starting is less suitable for systems requiring high starting torque.

A = Locked rotor torque

B = Stall torque 250/280%

C = Normal torque 100%

I = Amperage



[**fig 14**]

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.

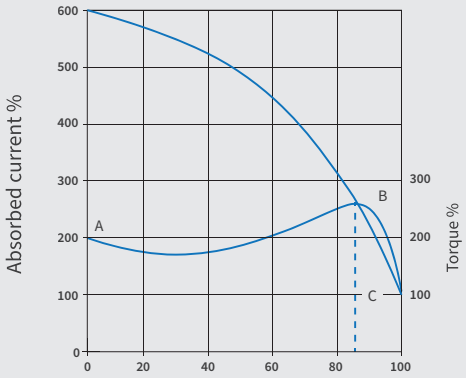
Hydrastart couplings fitted on diesel engines

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.

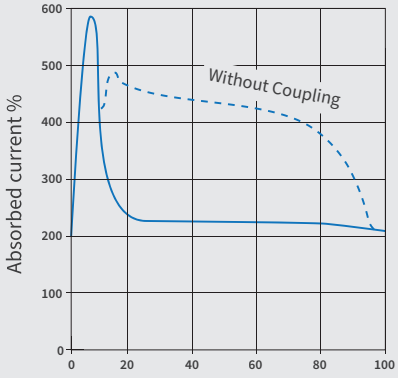
The horizontal curve represents the engine's torque curve whilst the vertical shows the torque capacity of the coupling for different slip values and speeds. As load on the driven shaft increases it demands torque, causing the coupling to slip at higher level.

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.

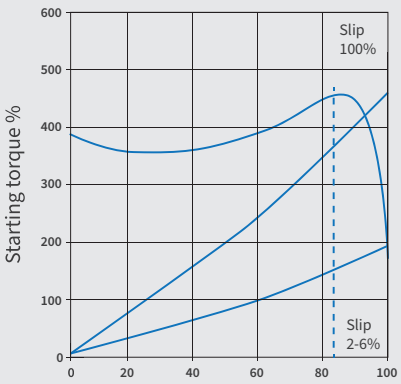
By using a fluid coupling, it permits an engine to develop maximum torque without stalling under load and promotes rapid acceleration to normal load speed.



[**fig 11**]

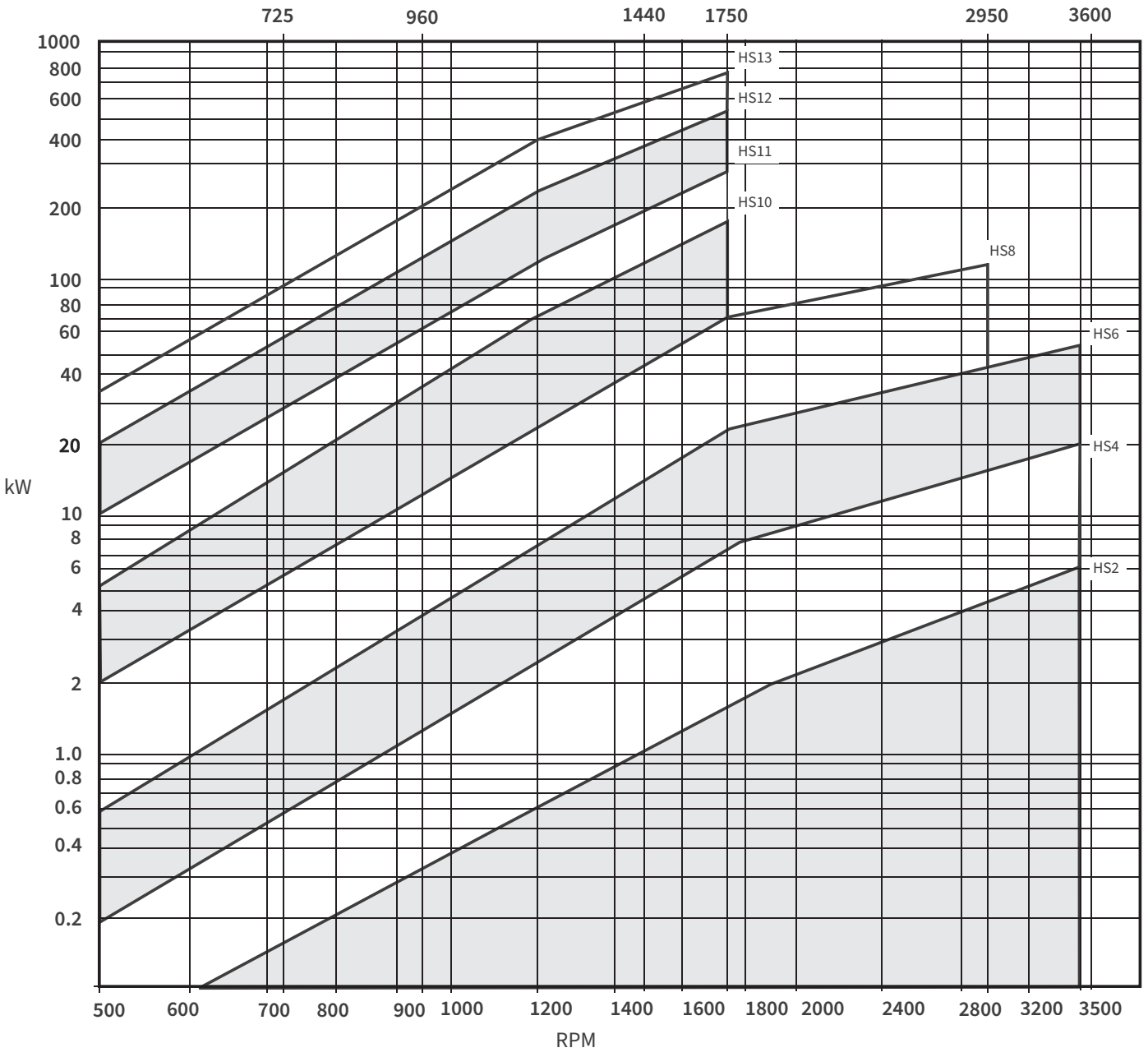


[**fig 12**]



[**fig 13**]

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 undersized electric motor.

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

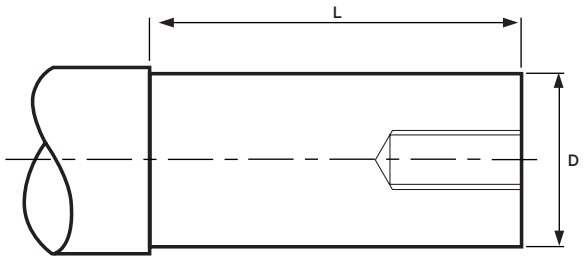
! It is the responsibility of the system designer to ensure that the application of the coupling does not endanger the other constituent components in the system. Service factors given are an initial selection guide.

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

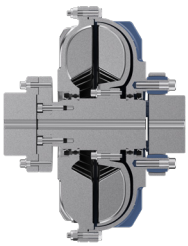
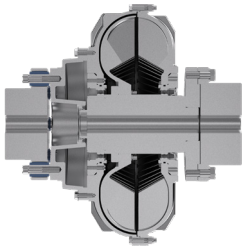
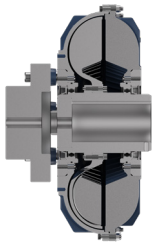
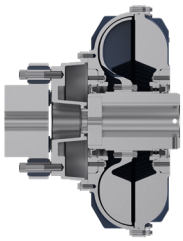
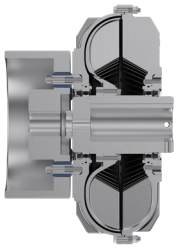
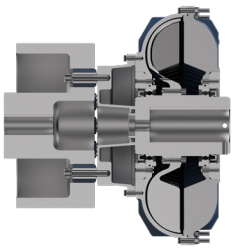
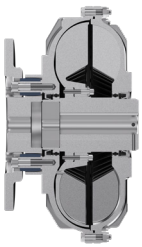
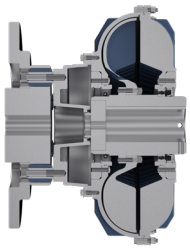
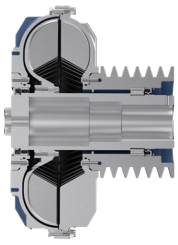
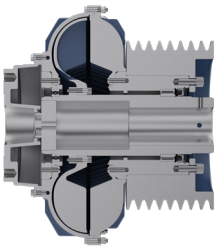
Motor shaft details



For selection requiring larger powers contact Renold.

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						
80	19	40				0.37	0.5		0.55	0.75	HS2	0.75	1	HS2
80	19	40				0.55	0.75		0.75	1		1.1	1.5	
90S	24	50				0.75	1	HS4	1.1	1.5		1.5	2	
90L	24	90				1.1	1.5		1.5	2		2.2	3	
100L	28	60	0.75	1		1.5	2		2.2	3	HS4	3	4	
100L	28	60	1.1	1.5	HS6				3	4				
112M	28	60	1.5	2		2.2	3	HS6	4	5.5		4	5.5	
132S	38	80	2.2	3		3	4		5.5	7.5		5.5	7.5	
132S	38	80				4	5.5					7.5	10	HS4
132M	38	80	3	4	HS8	5.5	7.5		7.5	10	HS6			
132M	38	80				7.5	10	HS8				11	15	
160M	42	110	4	5.5					11	15		15	20	
160M	42	110	5.5	7.5		11	15		15	20		18.5	25	
160L	42	110	7.5	10		15	20		18.5	25		22	30	HS6
180M	48	110				18.5	25		22	30				
180L	48	110	11	15		22	30		30	40	HS8	30	40	
200L	65	110	15	20								37	50	
200L	55	110				30	40		37	50				
225S	60	140	18.5	25	HS10			HS10				45	60	
225M	65	110				37	50		45	60				
225M	60	140	22	30								55	75	
250S	60	140				45	60	HS11	55	75				
250S	70	140	30	40								75	100	HS8
250M	60	140				55	75		75	100	HS10			
250M	70	140	37	50	HS12							90	125	
280S	65	140				75	100	HS12	90	125				
280S	80	170	45	60		90	125					110	150	
280M	65	140				110	150		110	150				
280M	80	170	55	75		132	175		132	175				
315S	85	170	75	100		150	200		150	200	HS11			
315M	85	170	90	125	HS13				185	250				
315L	85	170				132	175		200	270				
315L	85	170				150	200	HS13	225	300				
315L	85	170							250	335				
355S	100	210				185	250		280	375				
355S	100	210				200	270		315	420	HS12			
355M	100	210							355	475				
355L	100	210							375	503				
355L	100	210							400	536				
355L	100	210												

Standard available options

Non delay fill	Description	Delay fill
Type: HS.. ND 	**Drop-in** Coupling can be "dropped in" radially without the need to move machinery. Shaft to shaft fitment. **Refer to page Hydrastart Drop-in - dimensions (mm)**	**Type: HS.. SD** 
Type: HS..PF 	**Legacy coupling** Sleeve bored to suit motor shaft and incorporating Pinflex output coupling. Capable of accepting some misalignment. Flexible buffers can be replaced in situ. **Refer to page Pinflex coupling - dimensions (mm)**	**Type: HS..RPF** 
Type: HS..B 	**Brake drum options** Basic Pinflex coupling with the addition of a brake drum, metric or inch sizes.	**Type: HS..RB** 
Type: HS..K 	**Brake disc options** Basic Pinflex coupling with the addition of a brake disc, metric or inch sizes.	**Type: HS..RK** 
Type: HS..VP 	**Vee Pulley Mounting** Sleeve bored to suit motor shaft. Pulley is attached using external bolts and may easily be replaced. **Refer to page Hydrastart Pulley - dimensions (mm)**	**Type: HS..RVP** 

Type HSPF, HSB, HSK and HSVP may be used for vertical applications.
We can also supply different variants, 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. An alternative option available allows fusing at 183°C. Because oil is discharged whenthe 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

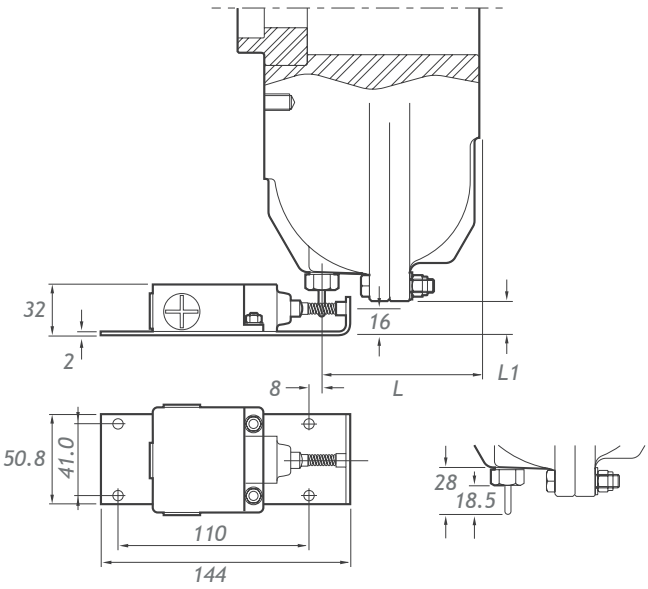
Operating principles

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.

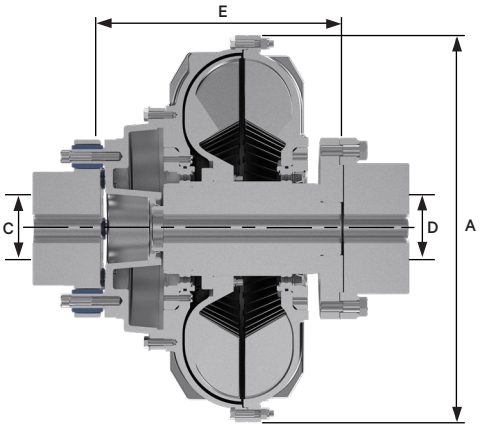
Electrical characteristics

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 Drop-in – dimensions (mm)



HS - TRC dimensions in mm

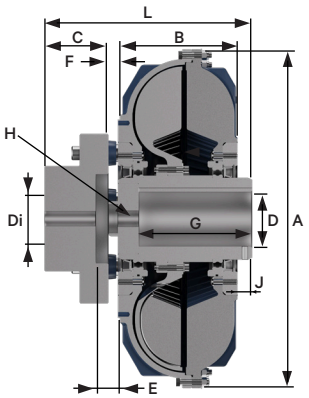
Size	A	C	D	E	Interchanges with Fluid drive FCU
HS2	279	42	35	159	7
HS4	286	42	35	165	8
HS4.5	286	48	48	194	9.25
HS6	345	48	48	210	10.5
HS6.5	345	60	60	232	11.5
HS8	422	60	60	262	12.75
HS8.5	422	80	70	287	14.5
HS10	511	80	70	335	16.25
HS10.5	511	85	83	354	17.75
HS11	580	85	83	390	20
HS12	669	110	100	457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

Hydrastart interchange fluid coupling

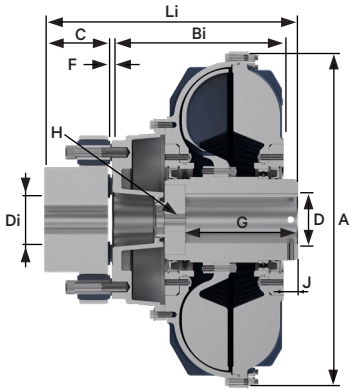
- Quick and easy installation – reducing time and cost of install and maintenance with no need to move machinery.
- Quick lead time – excellent stock holdings at Renold and with our worldwide distribution network.

Hydrastart Pinflex coupling – dimensions (mm)

HS.. PF Standard type size 2-13



HS.. RPF Delay fill type size 8-13

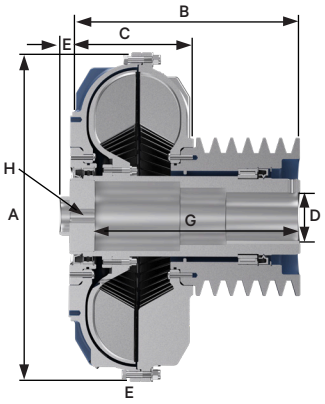


Size	A	B	Bi	C	D max	Di max	E	F	G*	H	J	L	Li	Pinflex Cplg Size	Weight kgs	WR² kgm²
HS2	229	90	-	44	29	50	13	4	80	0.625" 11 UNC	8	146	-	1	6.7	0.02
HS4	286	107	-	44	42	50	13	4	95	0.625" 11 UNC	7	162	-	1	10.9	0.06
HS6	345	130	-	50	52	55	16	5	114	0.75" 10 UNC	10	195	-	2	20.8	0.16
HS8	422	161	238	75	75	80	20	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

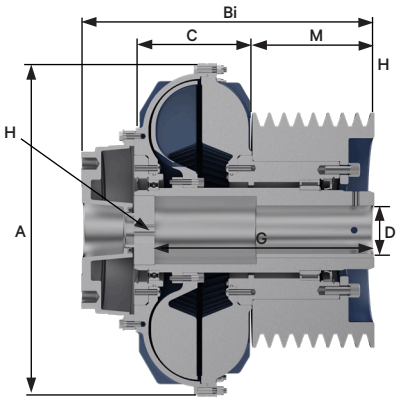
Figures in blue type relate to delay fill coupling only (sizes 8 and above).
*It may be necessary to use a spacer (not supplied by Renold) if shaft length is less than dimension 'G'.

Hydrastart pulley – dimensions (mm)

HS.. VP Standard type size 2-12



HS.. RVP Delay fill type size 8-12



Size	A	B	Bi	C	D max	E	G*	H	M	Weight kgs	WR² kgm²	Hydrastart size	Groove profile	Max no grooves	PCD min
												HS2VP	SPZ	3	106
								0.625"					SPA	2	110
HS2	229	141	-	90	27	13	123	11	UNC	51	4.40	0.02	SPB	1	116
												HS4VP	SPZ	5	140
								0.625"					SPA	4	144
HS4	286	173	-	107	38	13	154	11	UNC	66	9.30	0.05	SPB	3	150
												HS6VP	SPZ	6	162
													SPA	5	166
								0.75"					SPB	4	172
HS6	345	220	-	130	49	16	195	10	UNC	90	15.89	0.13	SPC	3	182
												HS8VP	SPZ	11	188
													SPA	9	192
								1.00"			41.40	0.45	SPB	7	198
HS8	422	310	387	161	75	20	267	8	UNC	149	44.10	0.48	SPC	5	208
												HS10VP	SPZ	13	245
													SPA	10	250
								1.00"			66.70	1.06	SPB	8	255
HS10	511	357	434	191	80	20	319	8	UNC	166	71.20	1.12	SPC	6	265
												HS11VP	SPZ	17	285
													SPA	13	289
								1.00"			104.10	2.12	SPB	10	295
HS11	580	418	509	205	95	20	382	8	UNC	213	110.30	2.21	SPC	8	305
												HS12VP	SPZ	17	330
													SPA	13	334
									1.25"	1	37.20	3.71	SPB	10	340
HS12	669	448	556	231	110	23	403	7	UNC	217	144.40	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 than dimension 'G'.
WR² value does not include the pulley.
Pulley details shown are limitations. For alternative options contact Renold.

Discflex

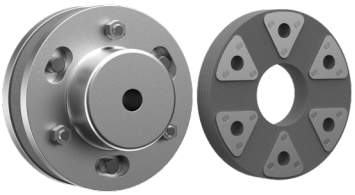
A general purpose and fail-safe, torsionally flexible coupling. The Discflex is offered with either urethane or fabric discs as the flexible element.

Coupling capacity

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

General details

- Cast iron half bodies
- **Urethane disc**
  Temp range -40 to 80°C
- **Fabric disc**
  Temp range -40 to +90°C



Standard range comprises

- Shaft to shaft

Applications

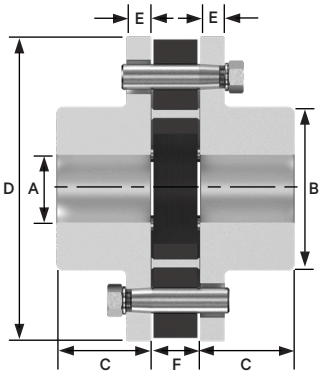
- Bottling machines
- Compressors
- Mixers
- Pumps
- Screens
- General industrial applications

Features and benefits

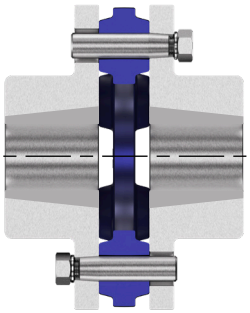
- Compact design, dimensionally small yet high power capacity
- Torsionally flexible – shock absorbing, extending machine life
- Maintenance free – minimum number of wearing parts
- Misalignment capabilities allowing flexible installation
- Alternative flexible elements available for wide design choice
- Optional fire retardant anti-static elements for use in flameproof environment
- Taper bush bores available for ease of maintenance

Discflex technical information

Type B – fabric disc
shown for reference



Type F – urethane disc
shown for reference



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											22	4.9	2.5
D52# # S #	2.25	215	2250	42	19	TB1215	32	11	72	41	133	13	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											28	20.8	3.8
D89# # S #	12	1146	1300	75	32	TB2525	60	19	121	70	225	18	40	21.0	3.8
D89# # W #	15	1433											47	21.7	3.8
D108# # NR	19	1791											47	40.0	4.6
D108# # SR	23	2149	1050	95	38	TB3030	75	35	155	83	274	22	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 misalignment, above these speeds consult our Sales Technical Staff.
Max angular misalignment 1°
Max offset misalignment 0.5mm

Discflex component spares

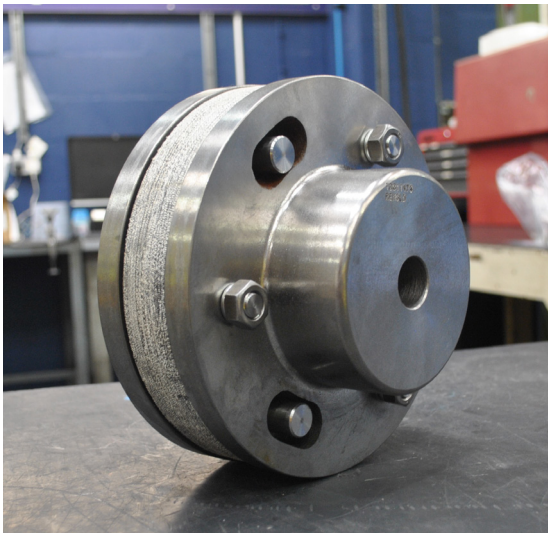
Coupling number	Product no 'BB' type	Product no 'FF' type	Polyurethane disc	Rubber/fabric disc	Pin assembly	Half body pilot bored	Half body taper bored
D41 ## NP	644763	644763/77	644733	-	644204	644205	644205/77
D41 ## NR	647263	647263/77	-	647233	644204	644205	644205/77
D52 ## NP	644766	644766/77	644736	-	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

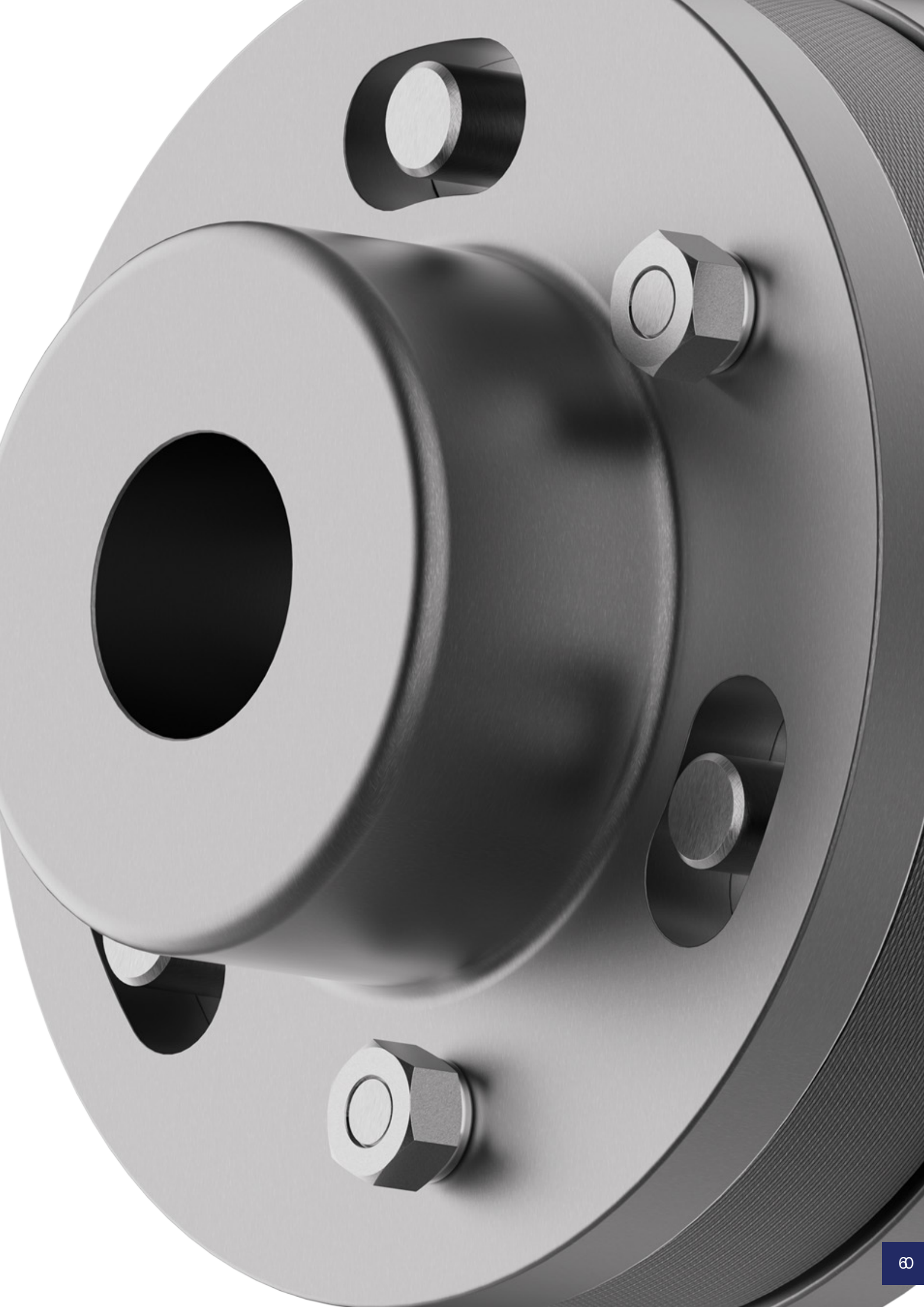
Ordering code

D 52 # # # #

- Discflex
- Size
- Half body type
  - B – Plain bore
  - F – Taper bush
- Half body type
  - B – Plain bore
  - F – Taper bush
- Disc size*
  - N – Narrow
  - S – Standard
  - W - Wide
- Buffer half type
  - P – Polyurethane
  - R – Rubber/fabric

* Disc size depending on torque transmitted





Chainflex

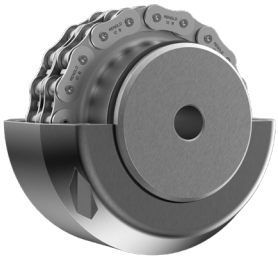
An all metal flexible yet torsionally stiff coupling, suitable for use in arduous working conditions.

Coupling capacity

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

General details

- Hardened steel sprockets
- Renold duplex chain
- Moulded cover



Standard range comprises

- Shaft to shaft
- Taper bush or parallel bored

Applications

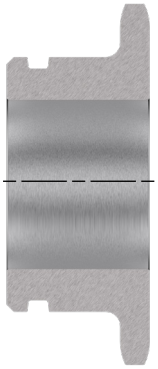
- Fans
- Feeders
- Kiln dryers
- Line shafts
- Pump drives

Features and benefits

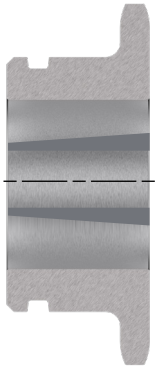
- Easy installation for ease of maintenance
- Custom sprockets to maximise misalignment capabilities
- Torsionally stiff for use as a positive drive connection
- Hardened teeth giving long life with high torque capacity
- All metal coupling for use in hostile environments
- Taper bush bores available 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

Chainflex

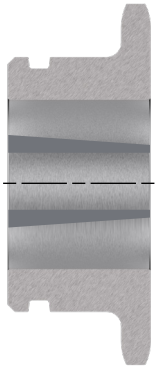
Type B

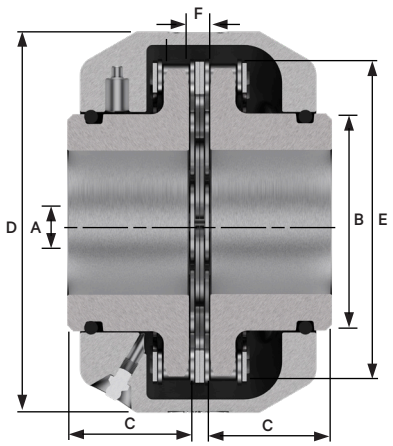


Type F



Type H





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

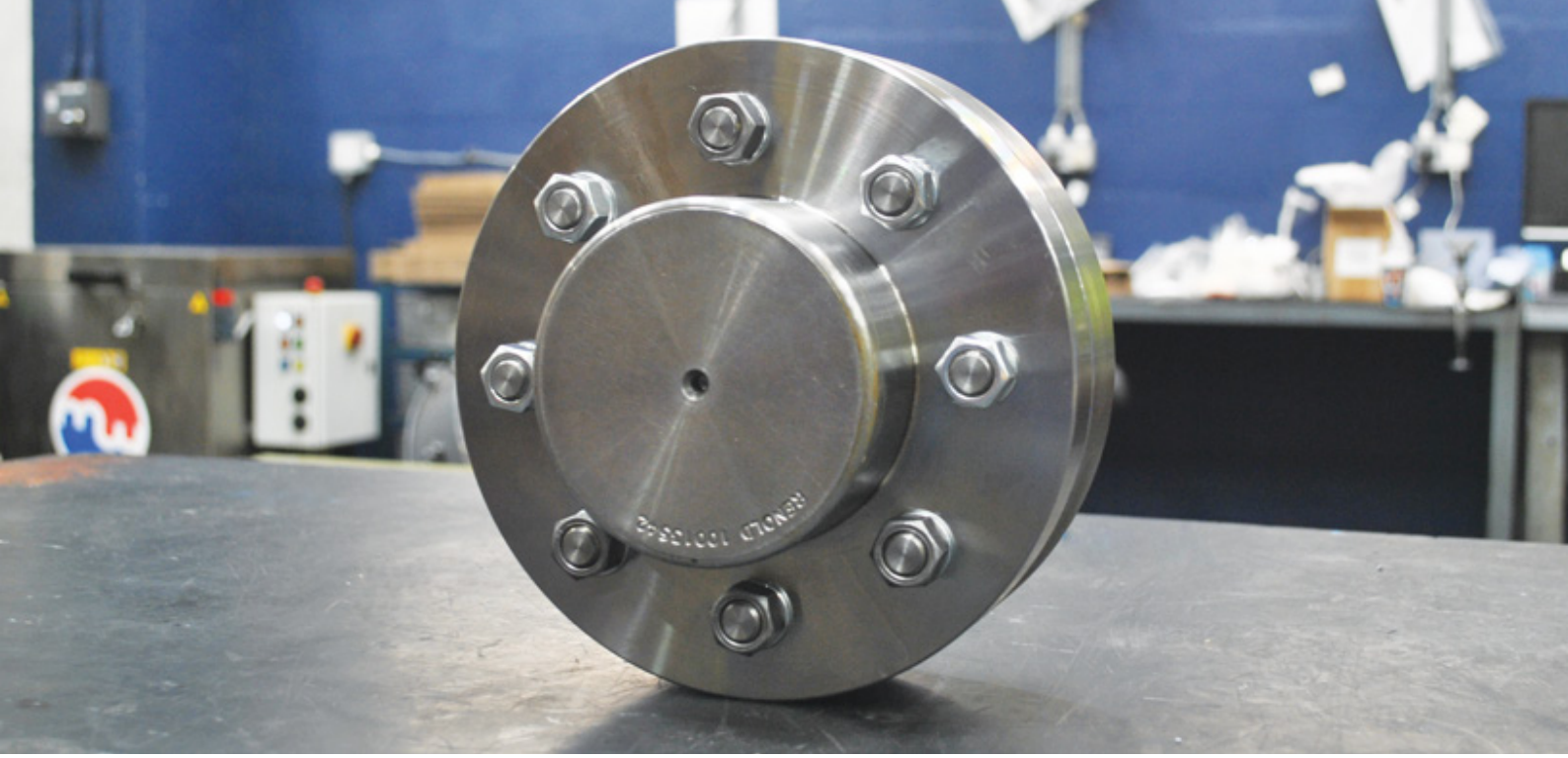
With cover		Without cover		Cover	Half body pilot bored	Half body taper bored F type	Half body taper bored H type	Chain with connectors
Coupling number	Product number	Coupling number	Product number					
C28BBK	642602	C28BB	642802	616602	642080	-	-	114500/96620
C33BBK	642603	C33BB	642803	616603	642081	-	-	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	C281FF	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

Ordering code

C 63 # # #

- Chainflex
- Size
- Half body type
  - B – Plain bore
  - F – Taper bush
  - H – Taper bush
- Half body type
  - B – Plain bore
  - F – Taper bush
  - H – Taper bush
- Supplied with or without cover
  - K – With cover
  - R – Rubber/ fabric

Max angular misalignment 1°



Crownpin

An established pin/buffer coupling, offering extended power capacity where its simplicity of construction and custom made buffers provide long life in arduous conditions.

Coupling capacity

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

General details

- Cast iron half bodies
- Neoprene buffers:
- Temp range - 30° to + 95°c

Standard range comprises

- Shaft to shaft
- Shear pin
- Brake drum

Applications

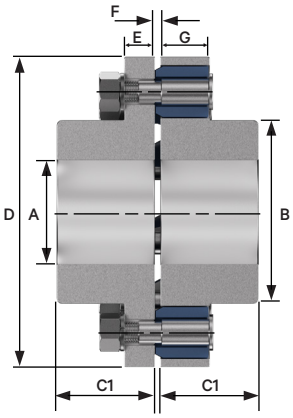
- Conveyors
- Cranes
- Fans
- Leisure rides
- Lifts
- Pumps
- Screens
- Washers
- General industrial applications

Features and benefits

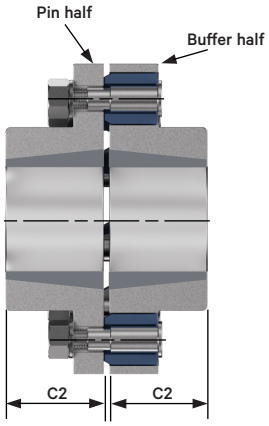
- Misalignment capabilities allowing flexible installation
- Maintenance free – minimum number of wearing parts
- Torsionally flexible – shock absorbing, extending machine life
- Heavy duty coupling suitable for shock load conditions
- Neoprene rubber buffers for robust flexibility

Crownpin

Type B



Type F



Ordering code

CP 77 # # 8

- CP – Crownpin
- 77 – Size
- # – Pin half type
  - B – Plain bore
  - F – Taper bush
- # – Buffer half type
  - B – Plain bore
  - F – Taper bush
- 8 – No of pins

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 Bore A		Bush size	Type F Bore		Dimensions								No of pins	Spare parts code
					Max	Min		Max	Min	B mm	C1 mm	C2 mm	D mm	E mm	F mm	G mm	Mass kg		
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

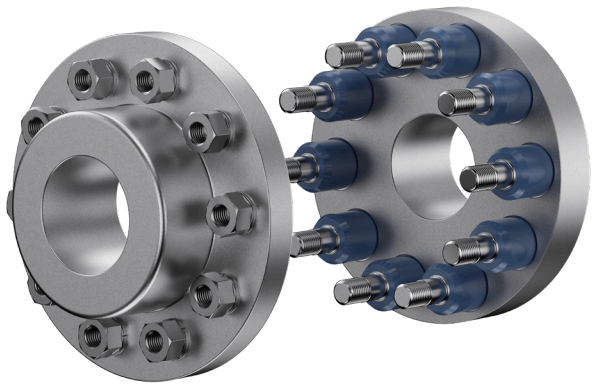
The following Crownpin components are recommended for high torque applications as they exceed the Pinflex range.

Catalogue number	Product number	Power/ 100rpm kW	Torque nominal Nm	Speed max rpm	Type B Bore A		Bush size	Type F Bore		Dimensions								No of pins	Spare parts code
					Max	Min		Max	Min	B mm	C1 mm	C2 mm	D mm	E mm	F mm	G mm	Mass kg		
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



Keyway dimensions

Metric (mm)

Keyways comply with BS4235: Part 1: 1972

Shaft dia.		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

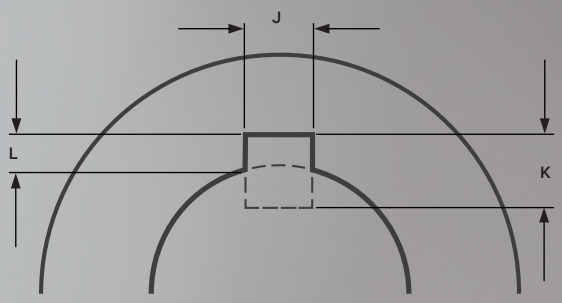
Imperial (inches)

Keyways comply with BS46: Part 1: 1958

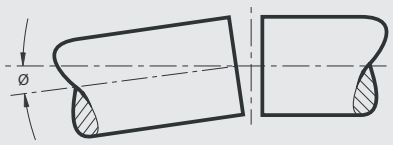
Shaft dia.		Keyway		
Over	Incl.	J	K	L
0.25	0.05	0.125	0.125	0.060
0.50	0.75	0.187	0.187	0.088
0.75	1.00	0.250	0.250	0.115
1.00	1.25	0.312	0.250	0.090
1.25	1.50	0.375	0.250	0.085
1.50	1.75	0.437	0.312	0.112
1.75	2.00	0.500	0.312	0.108
2.00	2.50	0.625	0.437	0.162
2.50	3.00	0.750	0.500	0.185
3.00	3.50	0.875	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

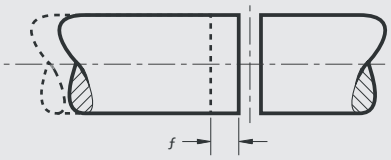
Parallel keyways are supplied unless customer states otherwise.



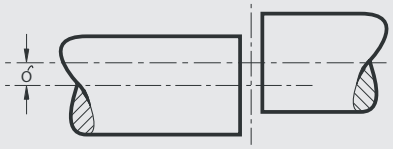
Selection procedure



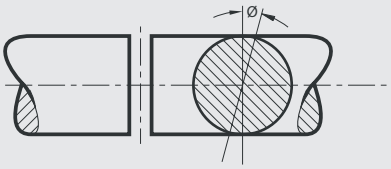
Angular



End float



Parallel offset



Torsional flexibility

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
(a) Normal
(b) Maximum
(c) Whether continuous or intermittent

Characteristics of the drive
(a) Type of prime mover and associated equipment
(b) Degree of impulsiveness of driven load

Speed in revolutions per minute
(a) At which normal power is transmitted
(b) At which maximum power is transmitted
(c) Maximum speed

Dimensions of shafts to be connected
(a) Actual diameter
(b) Length of shaft extension
(c) 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

1. Nominal power in kW to be transmitted = K
2. Select appropriate load classification from Table 1, denoted as either S, M or H
3. From Table 2, establish Service Factor(s) to be applied, taking into account hours of operation/day and prime mover = fD
4. From Table 3 select factor for the required frequency of starts/hr = fS
5. Selection Power Ks = K x fD x fS
6. Equivalent power at 100 RPM = $\frac{\text{Ks x 100}}{\text{RPM}}$
7. 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

Agitators	
Pure liquids	S
Liquids and solids	M
Liquids-variable density	M
Blowers	
Centrifugal	S
Lobe	M
Vane	S
Brewing and distilling	
Bottling machinery	S
Brew kettles - continuous duty	S
Cookers - continuous duty	S
Mash tubs - continuous duty	S
Scale hopper - frequent starts	M
Can filling machines	S
Cane knives (1)	M
Car dumpers	H
Car pullers	M
Clarifiers	S
Classifiers	M
Clay working machinery	
Brick press	H
Briquette machine	H
Clay working machinery	M
Pug mill	M
Compressors	
Centrifugal	S
Lobe	M
Reciprocating - multi-cylinder	M
Reciprocating - single cylinder	H
Conveyors - uniformly loaded or fed	
Apron	S
Assembly	S
Belt	S
Bucket	S
Chain	S
Flight	S
Oven	S
Screw	S
Conveyors - heavy duty not uniformly fed	
Apron	M
Assembly	M
Belt	M
Bucket	M
Chain	M
Flight	M
Live roll	*
Oven	M
Reciprocating	H
Screw	M
Shaker	H
Crane drives - not dry dock	
Main hoists	S
Bridge travel	*
Trolley travel	*
Crushers	
Ore	H
Stone	H
Sugar (1)	M
Dredgers	
Cable reels	M
Conveyors	M
Cutter head drives	H
Jig drives	H
Manoeuvring winches	M
Pumps	M
Screen drive	H
Stackers	M
Utility winches	M

Dry dock cranes	
Main hoist	(2)
Auxiliary hoist	(2)
Boom, luffing	(2)
Rotating, swing or slew	(3)
Tracking, drive wheels	(4)
Elevators	
Bucket - uniform load	S
Bucket - heavy load	M
Bucket - continuous	S
Centrifugal discharge	S
Escalators	S
Freight	M
Gravity discharge	S
Man lifts	*
Passenger	*
Extruders (plastic)	
Film	S
Sheet	S
Coating	S
Rods	S
Tubing	S
Blow moulders	M
Pre-plasticiers	M
Fans	
Centrifugal	S
Cooling towers	
- Induced draft	*
- Forced draft	*
Induced draft	M
Large, mine etc.	M
Large, industrial	M
Large, small diameter	S
Feeders	
Apron	M
Belt	M
Disc	S
Reciprocating	H
Screw	M
Food industry	
Beef slicer	M
Cereal cooker	S
Dough mixer	M
Meat grinder	M
Generators - not welding	S
Hammer mills	H
Hoists	
Heavy duty	H
Medium duty	M
Skip hoist	M
Laundry	
Washers - reversing	M
Tumblers	M
Line shafts	
Driving processing equipment	M
Lights	S
Other line shafts	S
Lumber Industry	
Barkers, hydraulic, mechanical	M
Burner conveyor	M
Chain saw and drag saw	H
Chain transfer	H
Craneway transfer	H
De-barking drum	H
Edger feed	M
Gang feed	M
Green chain	M
Live rolls	H
Long deck	H
Log haul - incline	H
Log haul - well type	H
Log turning device	H
Main log conveyor	H
Off bearing rolls	M

Planer feed chains	M
Planer floor chains	M
Planer tilting hoist	M
Re-saw merry-go-round conveyor	M
Roll cases	H
Slab conveyor	H
Small waste conveyor-belt	S
Small waste conveyor-chain	M
Sorting table	M
Tipple hoist conveyor	M
Tipple hoist drive	M
Transfer conveyors	M
Transfer rolls	M
Tray drive	M
Trimmer feed	M
Waste conveyor	M
Machine tools	
Bending roll	M
Punch press - gear driven	H
Notching press - belt drive	*
Plate planners	H
Tapping machine	H
Other maching tools	
- Main drives	M
- Auxiliary drives	S
Metal mills	
Drawn bench carriage and main drive	M
Pinch, dryer and scrubber rolls, reversing	*
Slitters	M
Table conveyors nonreversing group drives	M
Individual drives	H
Reversing	*
Wire drawing and flattening machine	M
Wire winding machine	M
Mills, rotary type	
Ball (1)	M
Cement kilns (1)	M
Dryers and coolers (1)	M
Kilns other than cement	M
Pebble	M
Rod, plain and wedge bar (1)	M
Tumbling barrels	H
Mixers	
Concrete mixers continuous	M
Concrete mixers intermittent	M
Constant density	S
Variable density	M
Oil industry	
Chillers	M
Oil well pumping	*
Paraffin filter press	M
Rotary kilns	M
Paper mills	
Agitators (mixers)	M
Barker - auxiliaries hydraulic	M
Barker - mechanical	H
Barking drum	H
Beater and pulper	M
Bleacher	S
Calenders	M
Calenders - super	H
Converting machine except cutters, platers	M
Conveyors	S
Couch	M
Cutters, platers	H
Cylinders	M
Dryers	M
Fell stretcher	M
Fell whipper	H
Jordans	M
Log haul	H

Presses	M
Pulp machine reel	M
Stock chest	M
Suction roll	M
Washers and thickeners	M
Winders	M
Printing presses	*
Pullers	
Barge haul	H
Pumps	
Centrifugal	S
Proportioning	M
Reciprocating	
- Single acting: 3 or more cylinders	M
- Double acting: 2 or more cylinders	M
- Single acting: 1 or 2 cylinders	*
- Double acting: single cylinders	*
Rotary - gear type	S
Rotary - lobe, vane	S
Rubber and plastics industries	
Crackers (1)	H
Laboratory equipment	M
Mixed mills (1)	H
Refiners (1)	M
Rubber calenders (1)	M
Rubber mill, 2 on line (1)	M
Rubber mill, 3 on line (1)	S
Sheeter (1)	M
Tyre building machines	*
Tyre and tube press openers	*
Tubers and strainers (1)	M
Warming mills (1)	M
Sand muller	M
Screens	
Air washing	S
Rotary, stone or gravel	M
Travel water intake	S
Sewage disposal equipment	
Bar screens	S
Chemical feeders	S
Collectors	S
Dewatering screws	M
Scum breakers	M
Slow or rapid mixers	M
Thickeners	M
Vacuum filters	M
Slab pushers	M
Steering gear	*
Stokers	S
Sugar industry	
Cane knives (1)	M
Crushers (1)	M
Mills (1)	M
Textile industry	
Batchers	M
Calenders	M
Cards	M
Dry cans	M
Dryers	M
Dyeing machinery	M
Looms	M
Mangles	M
Nappers	M
Pads	M
Range drives	*
Slashers	M
Soapers	M
Spinners	M
Tenter frames	M
Washers	M
Winders	M
Windlass	*

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

! 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.

Load Classification by Application

Table 2 Service Factor (f_D)

Prime mover Driven machinery characteristics (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 fD = 1.5

From Table 3 f_S = 1.2

Therefore selection kW is:-

$Ks = K \times f_D \times fS$

$= 7.5 \times 1.5 \times 1.2$

$= 13.5$ kW

Equivalent power at 100 RPM $= \frac{Ks \times 100}{RPM}$

$= \frac{13.5 \times 100}{1440}$

$= 13.5 \times 100$

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 x 9550 / RPM Nm
3. Force at key F = T_{KM} /r
4. Shaft Rad r. metres
5. Key area A = J x HUB length mm

(Obtain from relevant catalogue page)

6. Key stress fk = F/A N/mm2
7. If resultant stress is less than 70 N/mm² key stress is acceptable.

If resultant fk is greater than 70, consider either two keyways or extending hub length.

8. Example:

T_{KM} = 7.5 x 9550/1440 = 49.7Nm

r = 55/2 = 27.5mm ÷ 1000 = 0.0275m

F = 49.7/0.0275 = 1741N

A = 16 x 45 = 720mm²

fk = 1741/720 = 2.4M/mm²

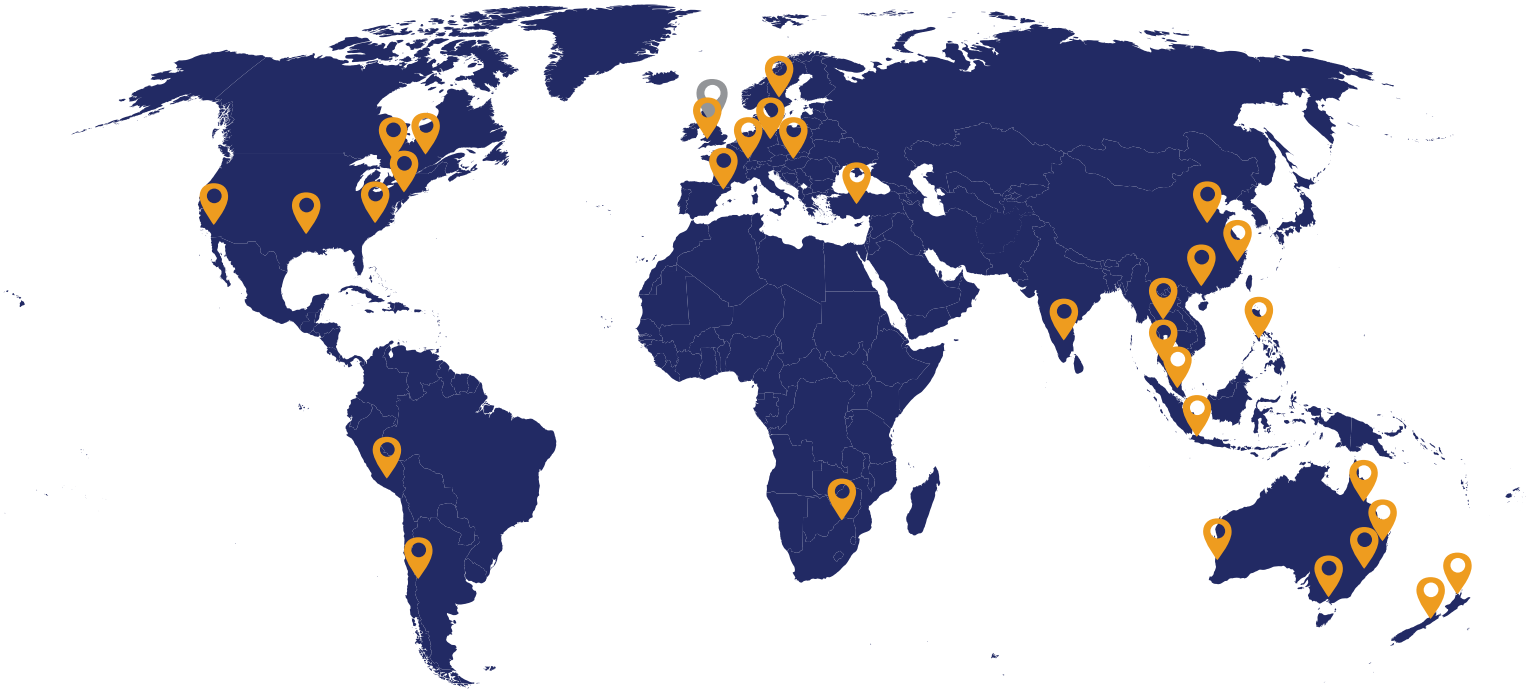
Selection is therefore good.

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

! 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.

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

Global services



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