

RENOLD

Couplings



SPIDERFLEX

SPIDERJAW/WRAP

PINFLEX

CROWNPIN

TYREFLEX

DISCFLEX

CHAINFLEX

PM

RBI

GEARFLEX

HYDRASTART

FREEWHEELS

RBI Couplings

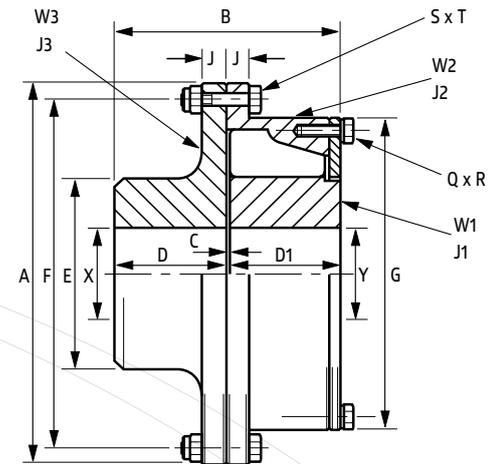
RBI shaft to shaft

Features

- Can accommodate a wide range of shaft diameters
- Easy disconnection of the outer member and driving flange
- Coupling available with limited end float

Benefits

- Allows the optimum coupling to be selected
- Allows the driving and driven machines to be disconnected
- Provides axial location for armatures with axial float



Coupling Size		RBI 1.4	RBI 2.1	RBI 2.6	RBI 4	RBI 8	RBI 12	RBI 23	RBI 40	RBI 60
INERTIA (3) (kgm ²)	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	0.20	0.3674	1.1035	1.9161	3.4391
	J3	0.0153	0.027	0.0396	0.0644	0.1475	0.2862	0.7998	1.512	2.9796

Dimensions, Weight and Alignment

Coupling Size		RBI 1.4	RBI 2.1	RBI 2.6	RBI 4	RBI 8	RBI 12	RBI 23	RBI 40	RBI 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	Per Cavity	1	1	1	1	1	1	1	1	1
Elements	Per Coupling	10	12	12	12	12	12	12	14	16
Maximum Speed (rpm) ¹		5250	4725	4410	4035	3410	2925	2250	2070	1820
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
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
Angular (degree)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

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

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

³Installations 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.

BESPOKE SERVICES

The RBI Coupling can be adapted to meet customer requirements, as can be seen from some of the design variations shown alongside. For a more comprehensive list, contact Renold Couplings.

General purpose, cost effective range, which is manufactured in SG iron for torques up to 60kN.m.



The Standard Range Comprises

Shaft to shaft
Shaft to shaft with increased shaft engagement

Applications

Rubber processing and plastics industry
Fluid transmission industry
Material Handling
Cranes & Hoists
Metal manufacture
Bulk handling
Pulp and paper industry
General purpose industrial applications

Benefits

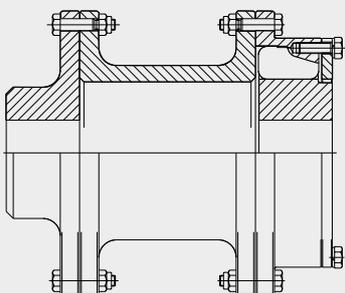
Ensuring continuous operation of the driveline in the unlikely event of rubber damage
Achieving low vibratory loads in the driveline components by selection of optimum stiffness characteristics
With no lubrication or adjustment required resulting in low lifetime costs
Avoiding failure of the driveline under short circuit and other transient conditions
Allows axial and radial misalignment between the driving and driven machines
Eliminating torque amplifications through pre-compression of the rubber elements

Features

Intrinsically fail safe
Control of resonant torsional vibration
Maintenance free
Severe shock load protection
Misalignment capability
Zero backlash
Low cost

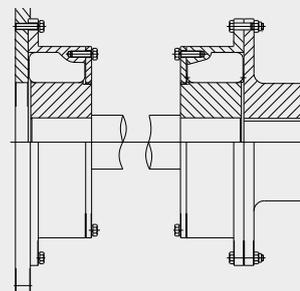
Construction Details

Spheroidal graphite to BS EN 1563:2011 Grade 400-15
Separate rubber elements with a standard SM80 shore hardness
Rubber elements which are totally enclosed and loaded in compression



Spacer Coupling

Used to increase distance between shaft ends and allow easy access to driven and driving machines.



Cardan Shaft Coupling

Used to increase the distance between shaft ends and give a higher misalignment capability.

RBI shaft to shaft

With increased shaft engagement (Optional)

Features

Long Boss Inner Member

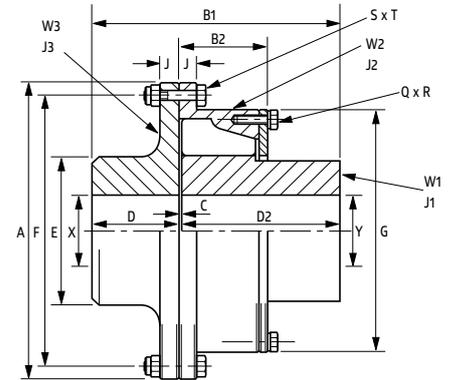
Benefits

Allows small diameter long length shafts to be used

Reduces key stress

Allows increased distances between shaft ends

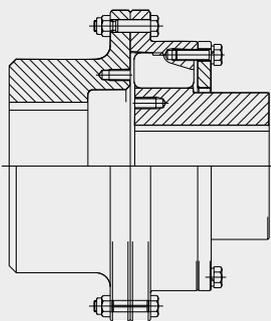
Full shaft engagement avoids the need for spacer collars



Coupling Size		RBI 1.4	RBI 2.1	RBI 2.6	RBI 4	RBI 8	RBI 12	RBI 23	RBI 40	RBI 60
INERTIA ³ (kgm ²)	J1	0.0059	0.0121	0.0193	0.0326	0.0770	0.1896	0.4347	1.1833	2.8953
	J2	0.0232	0.0375	0.0546	0.0887	0.2000	0.3674	1.1035	1.9161	3.4391
	J3	0.0153	0.0270	0.0396	0.0644	0.1475	0.2862	0.7998	1.5120	2.9796

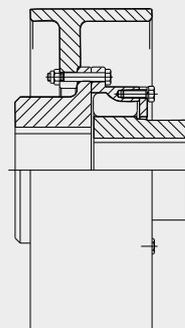
Coupling Size	RBI 1.4	RBI 2.1	RBI 2.6	RBI 4	RBI 8	RBI 12	RBI 23	RBI 40	RBI 60
Nominal Torque Tkn (kN.m)	0.471	0.725	0.855	1.319	2.595	4.097	7.673	13.739	19.575
Maximum Torque Tkn (kN.m)	1.39	2.14	2.58	3.95	8.03	12.15	22.95	41.10	61.50
Vibratory Torque Tkn (kN.m)	0.183	0.282	0.333	0.513	1.008	1.593	2.984	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 CTdym (MNm/rad)									
@0.10 Tkn	0.010	0.013	0.016	0.025	0.050	0.076	0.143	0.220	0.499
@0.25 Tkn	0.014	0.018	0.021	0.034	0.068	0.102	0.193	0.297	0.673
@0.5 Tkn	0.029	0.037	0.045	0.070	0.141	0.214	0.405	0.621	1.326
@0.75 Tkn	0.062	0.080	0.096	0.148	0.301	0.456	0.861	1.320	2.533
@1.0 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

Rubber Grade	Temp _{r max} °C	S _t	Dynamic Magnifier (M ₃₀)	Relative Damping Ψ 30
SM80	100	S _t 100 0.58	4	1.57



Coupling with long boss inner member

Coupling with long boss inner member and large boss driving flange to increase shaft engagement and to accept larger shafts.



Brake Drum Coupling

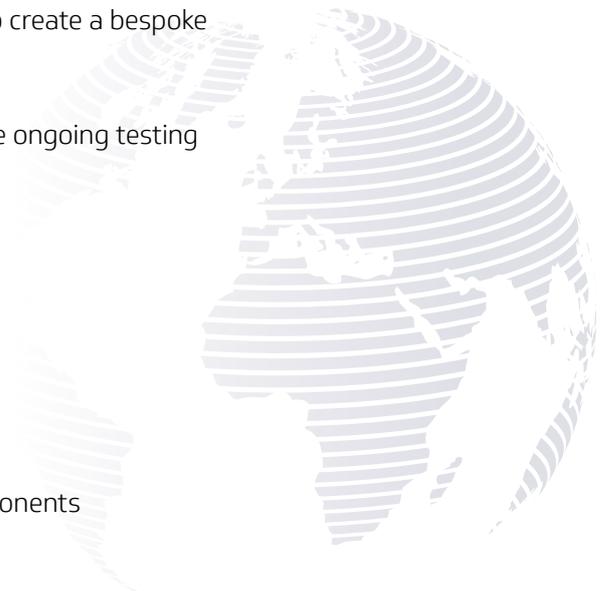
Coupling with brake drum for use on cranes, fans and conveyor drives, (brake disk couplings are available).

RBI custom engineering

Should you require a custom coupling to meet a specific requirement, our experienced team of engineers will work alongside you to create a bespoke offering to meet your needs.

Our team are supported by substantial facilities to enable ongoing testing and development, which includes the capability for:

- Measurement of torsional stiffness up to 220 kN.m
- Full scale axial and radial stiffness measurement
- Misalignment testing of couplings up to 2m diameter
- Static and dynamic balancing
- 3D stp and AutoCAD files
- Finite element analysis of both metal and rubber components
- Torsional vibration calculations
- Transient analysis



RENOLD

Couplings

A global power transmission group serving global markets through an international network.

For your local Renold sales and service location visit www.renold.com



BRORBI/04.18/EN

A business of Renold Power Transmissions Ltd.