

# *HTB-GS, DCB-GS and RB*

## *Hi-Tec Generator and Pump Set Couplings*



**RENOLD**  
Superior Coupling Technology

[www.renold.com](http://www.renold.com)



# Introduction

## Over 50 years of experience

Renold Hi-Tec Couplings has been a world leader in the design and manufacture of torsionally flexible couplings for over 50 years.

## Commitment to Quality and the Environment

Having gained both EN ISO 9001:2008 and EN ISO 14001:2004, Renold Hi-Tec Couplings can demonstrate their commitment to both quality and the environment.



## World Class Manufacturing

Continual investment is being made to apply the latest machining and tooling technology. The application of lean manufacturing techniques in an integrated cellular manufacturing environment establishes efficient working practices.

## Engineering Support

The experienced engineers at Renold Hi-Tec Couplings are supported by substantial facilities to enable the ongoing test and development of product. This includes the capability for:

- Measurement of torsional stiffness up to 220 kNm
- Full scale axial and radial stiffness measurement
- Misalignment testing of couplings up to 2 metres diameter
- Static and dynamic balancing
- 3D solid model CAD
- Finite element analysis

## TVA Service

Our resident torsional analysts are able to provide a full Torsional Vibration Analysis service to investigate a customer's driveline and report on the system performance. This service, together with the facility for transient analysis, is available to anyone and is not subject to purchase of a Renold Hi-Tec product.

## Marine Survey Society Approvals

Renold Hi-Tec Couplings work with all major marine survey societies to ensure their products meet the strict performance requirements.



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- (b) Guidance on safe and proper use, provided that full disclosure is made of the precise details of the intended, or existing, application.

All relevant information must be passed on to the persons engaged in, likely to be affected by and those responsible for the use of the product.

Nothing contained in this publication shall constitute a part of any contract, express or implied.

## Product Performance

The performance levels and tolerances of our product stated in this catalogue (including without limitation, serviceability, wearlife, resistance to fatigue, corrosion protection) have been verified in a programme of testing and quality control in accordance with Renold, Independent and or International standard recommendations.

No representation warranty or condition is given that our products shall meet the stated performance levels or tolerances for any given application outside the controlled

environment required by such tests and customers must check the performance levels and tolerances for their own specific application and environment.

## Guidance Notes

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# HTB-GS Flexible Coupling

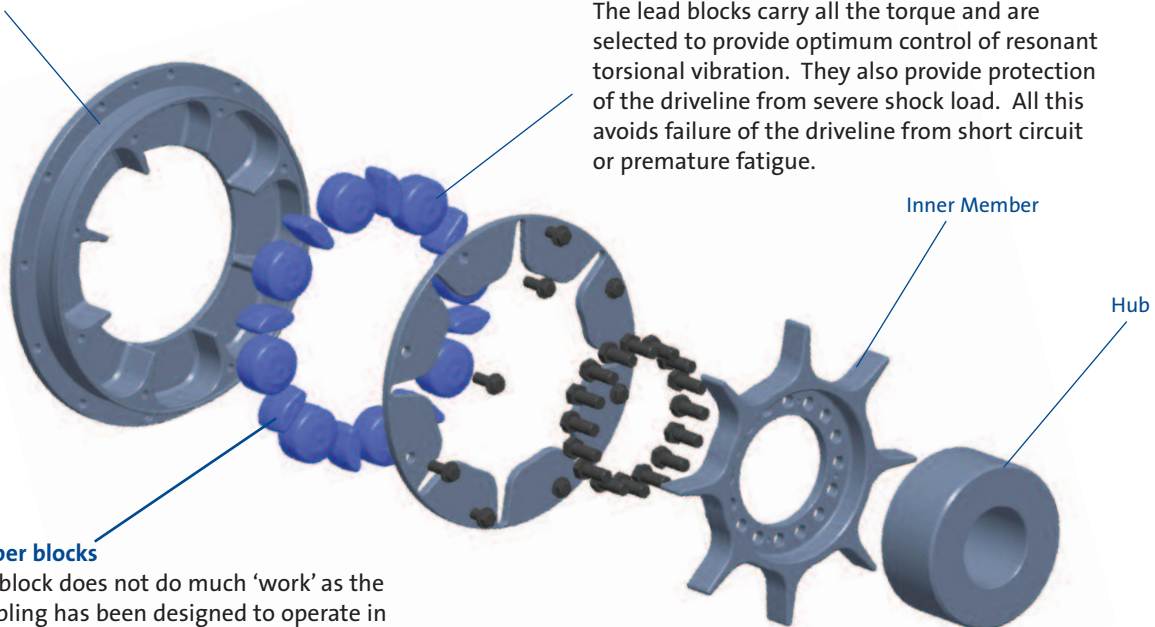
The HTB-GS range of flexible couplings is a second generation coupling derived from Renold Hi-Tec Couplings' existing HTB range.

HTB-GS couplings have low weight and inertia yet retain the unrivalled quality and endurance features of the standard HTB.

### Failsafe Design

The intrinsically failsafe design ensures continuous operation of the driveline in the unlikely event of rubber damage.

### Outer Member



### Trailing rubber blocks

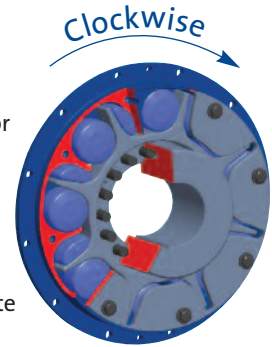
The trailing block does not do much 'work' as the HTB-GS coupling has been designed to operate in one direction. Therefore it is much smaller than the driving block which has enabled the overall size of the coupling to be reduced. The resulting decrease in weight and inertia decreases the bending moments on the drive shaft.

### Features

- Same metal and rubber components can operate in both clockwise and anti-clockwise direction
- Unique blind assembly
- High temperature capability (up to 200°C)
- Severe shock load protection
- Intrinsically fail safe
- Maintenance free

### Coupling rotation

The HTB-GS coupling is designed to operate in either a clockwise or anti-clockwise direction. It is important, therefore, to establish which direction the coupling will operate at the specification stage. The coupling shown here is designed to operate in a clockwise direction.



### Driving rubber blocks

The lead blocks carry all the torque and are selected to provide optimum control of resonant torsional vibration. They also provide protection of the driveline from severe shock load. All this avoids failure of the driveline from short circuit or premature fatigue.

### Benefits

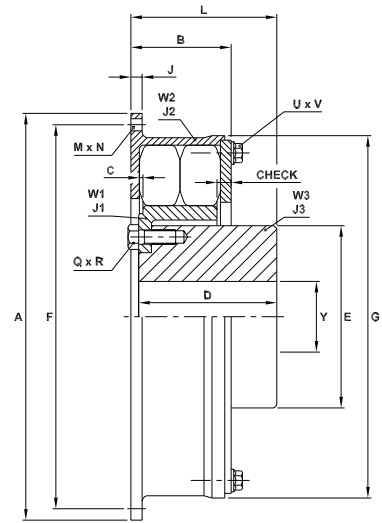
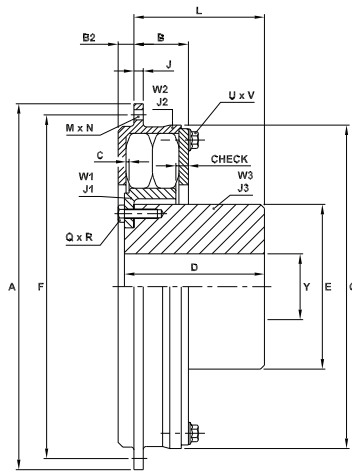
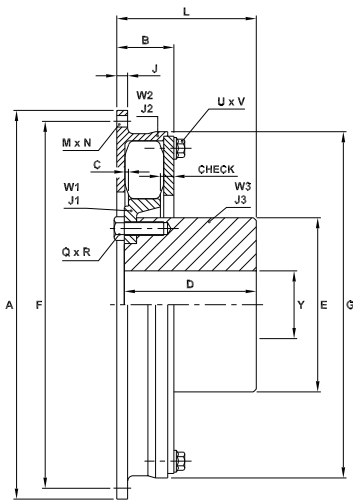
- Interchangeable metal and rubber components for clockwise and anti-clockwise operation
- Allows easy assembly for applications in bell housing
- Allows operation in bell housing where ambient temperatures can be high
- Avoid failure of the driveline under short circuit and other transient conditions
- Ensuring continuous operation of the driveline in the unlikely event of rubber damage
- No lubrication or adjustment required resulting in low running costs

# HTB-GS Standard SAE Flywheel to Shaft

HTB-GS1600 - HTB-GS13300

HTB-GS6001

HTB-GS16000 - HTB-GS53300



## Dimensions, Weight, Inertia and Alignment

Coupling Size		1600		4000		6001		8000		13300	16000		26600	40001	53300	
		SAE11.5	SAE14	SAE14	SAE18	SAE14	SAE18	SAE18	SAE21	SAE21	SAE18	SAE21	SAE21	SAE21	SAE24	-
Dimensions [mm]	A	352.4	466.7	466.7	571.5	466.7	571.5	571.5	673.1	673.1	571.5	673.1	673.1	733.4	860.0	
	B	50	50	67	67	69.5	69.5	84	84	103	141	141	173	213	215	
	B2	-	-	-	-	20	20	-	-	-	-	-	-	-	-	
	C	4	4	4	4	4	4	5	5	4	5	5	4	7	7	
	D	100	100	112	112	128	128	194	194	166	194	194	236	278	276	
	E	156	156	210	210	210	210	256	256	308	256	256	308	346	416	
	F	333.38	438.15	438.15	542.92	438.15	542.92	542.92	641.35	641.35	542.92	641.35	641.35	692.2	820.0	
	G	309	309	416	416	416	416	509	509	595	509	509	595	650	783	
	J	10	10	12	12	12	12	16	16	20	16	16	20	20	22	
	L	106	106	120	120	136	136	205	205	180	205	205	252	300	300	
	M	16	16	16	12	16	12	12	24	24	24	24	36	36	32	
	N	Ø10.5	Ø13.5	Ø13.5	Ø17	Ø13.5	Ø17	Ø17	Ø17	Ø17	Ø17	Ø17	Ø17	Ø17	Ø22	Ø21
	Q	12	12	12	12	16	16	12	12	16	12	12	12	24	16	
	R	M12	M12	M16	M16	M16	M16	M20	M20	M24	M20	M20	M24	M24	M24	
	U	8	8	8	8	8	8	8	8	8	8	8	8	8	8	
	V	M12	M12	M14	M14	M14	M14	M16	M16	M20	M16	M16	M20	M24	M24	
	Y (MAX)	85	85	115	115	115	115	150	150	170	150	150	170	215	220	
Y (MIN)	40	40	50	50	50	50	60	60	60	60	60	60	90	110		
CHECK	13	13	16	16	16	16	20	20	22	20	20	22	25	25		
Rubber Driving Elements	Per Cavity	1	1	1	1	2	2	1	1	1	2	2	2	2	2	
	Per Coupling	8	8	8	8	16	16	8	8	8	16	16	16	16	16	
Maximum Speed [rpm]		3730	3730	2820	2300	2820	2300	2300	1950	1950	2300	1950	1950	1850	1500	
Weight [kg]	W1	3.20	3.20	7.55	7.55	11.54	11.54	15.37	15.37	29.18	32.02	32.02	54.91	68.97	103.21	
	W2	11.14	16.58	25.15	32.76	29.71	37.28	45.56	57.15	77.39	62.51	74.1	105.04	147.31	213.48	
	W3	13.50	13.50	27.54	27.54	31.78	31.78	46.55	46.55	74.87	49.01	49.01	121.83	185.72	277.64	
Inertia [kg m²]	J1	0.028	0.028	0.128	0.128	0.201	0.201	0.380	0.380	1.040	0.870	0.870	2.090	3.19	6.889	
	J2	0.213	0.444	0.859	1.372	1.016	1.528	2.370	3.490	5.480	3.260	4.380	7.420	12.57	25.72	
	J3	0.043	0.043	0.156	0.156	0.181	0.181	0.510	0.510	1.030	0.530	0.530	1.470	2.91	6.0	
Allowable Misalignment Radial [mm]	Align	0.25	0.25	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
	Max	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Axial [mm]	Align	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Max	2	2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Conical [degree]		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		

# HTB-GS Technical Data

## 1.1 Torque Capacity - Diesel Engine Drives

The HTB-GS Coupling is selected on the “Nominal Torque  $T_{KN}$ ” without service factors for Diesel Drive applications.

The full torque capacity of the coupling for transient vibration whilst passing through major criticals on run up, is published as the maximum torque  $T_{KMAX}$ .

$$(T_{KMAX} = 3 \times T_{KN}).$$

There is additional torque capacity built within the coupling for short circuit and shock torques, which is  $3 \times T_{KMAX}$ .

The published “Vibratory Torque  $T_{KW}$ ”, relates to the amplitude of the permissible torque fluctuation. The vibratory torque values shown in the technical data are at the frequency of 10Hz. The allowable vibratory torque at higher or lower frequencies  $f_e = T_{KW} \sqrt{\frac{10\text{Hz}}{f_e}}$

The measure used for acceptability of the coupling under vibratory torque, is published as “Allowable dissipated heat at ambient temperature 30°C”.

## 1.2 Transient Torques

Prediction of transient torques in marine drives can be complex. Normal installations are well provided for by selecting couplings based on the “Nominal Torque  $T_{KN}$ ”. Transients, such as start up and clutch manoeuvre, are usually within the “Maximum Torque  $T_{KMAX}$ ” for the coupling.

Care needs to be taken in the design of couplings with shaft brakes, to ensure coupling torques are not increased by severe deceleration.

Sudden torque applications of propulsion devices such as thrusters or waterjets, need to be considered when designing the coupling connection.

## 2.0 Stiffness Properties

The Renold Hi-Tec Coupling remains fully flexible under all torque conditions. The HTB series is a non-bonded type operating with the Rubber-in-Compression principle.

## 2.1 Axial Stiffness

When subject to axial misalignment, the coupling will have an axial resistance which gradually reduces due to the effect of vibratory torque.

The axial stiffness of the coupling is torque dependent, and variation is as shown in the technical data on page 8.

## 2.2 Radial Stiffness

The radial stiffness of the coupling is torque dependent, and is as shown in the technical data on page 8.

## 2.3 Torsional Stiffness

The torsional stiffness of the coupling is dependent upon applied torque and temperature as shown in the technical data on page 8.

## 2.4 Prediction of the System Torsional Vibration Characteristics

An adequate prediction of the system’s torsional vibration characteristics, can be made by the following method:

- 2.4.1** Use the torsional stiffness as shown in the technical data, which is based upon data measured at a 30°C ambient temperature.
- 2.4.2** Repeat the calculation 2.4.1, but using the maximum temperature correction factor  $S_{t100}$  ( $S_{t200}$  for Si70 rubber), and dynamic magnifier correction factor,  $M_{100}$  ( $M_{200}$  for Si70 rubber), for the selected rubber. Use tables on page 7 to adjust values for both torsional stiffness and dynamic magnifier. ie.  $C_{T100} = C_{Tdyn} \times S_{t100}$
- 2.4.3** Review calculations 2.4.1 and 2.4.2 and if the speed range is clear of criticals which do not exceed the allowable heat dissipation value as published in the catalogue, then the coupling is considered suitable for the application with respect to the torsional vibration characteristics. If there is a critical in the speed range, then actual temperature of the coupling will need to be calculated at this speed.

## HTB-GS Technical data

Rubber Grade	Temp <sub>max</sub> °C	S <sub>t</sub>
Si70	200	S <sub>t200</sub> = 0.48
NM45	100	S <sub>t100</sub> = 0.90
SM50	100	S <sub>t100</sub> = 0.85
SM60	100	S <sub>t100</sub> = 0.75
SM70	100	S <sub>t100</sub> = 0.63
SM80	100	S <sub>t100</sub> = 0.58
<b>Si70 is considered "standard"</b>		

Rubber Grade	Dynamic Magnifier at 30°C (M <sub>30</sub> )	Dynamic Magnifier at 100°C (M <sub>100</sub> )
Si70	7.5	M <sub>200</sub> = 15.63
NM45	15	16.7
SM50	10	11.8
SM60	8	10.7
SM70	6	9.5
SM80	4	6.9
<b>Si70 is considered "standard"</b>		

### 2.5 Prediction of the actual coupling temperature and torsional stiffness

**2.5.1** Use the torsional stiffness as published in the catalogue, this is based upon data measured at 30°C and the dynamic magnifier at 30°C. (M<sub>30</sub>)

**2.5.2** Compare the synthesis value of the calculated heat load in the coupling (P<sub>k</sub>) at the speed of interest, to the "Allowable Heat Dissipation" (P<sub>kW</sub>).

The coupling temperature rise  

$$^{\circ}\text{C} = \text{Temp}_{\text{coup}} = \left( \frac{P_k}{P_{kW}} \right) \times 70 \text{ (170 for Si70 rubber)}$$

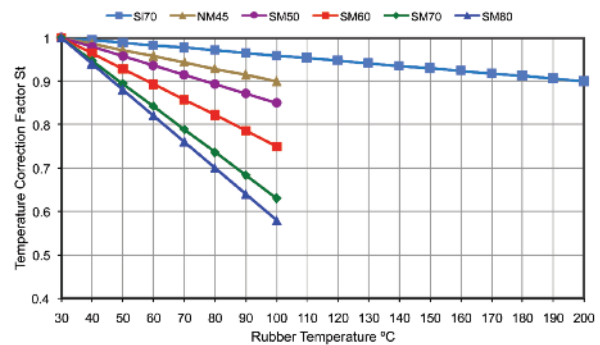
The coupling temperature =  $\vartheta$

$$\vartheta = \text{Temp}_{\text{coup}} + \text{Ambient Temp.}$$

**2.5.3** Calculate the temperature correction factor, S<sub>t</sub>, from 2.6 (if the coupling temperature > 100°C (200°C for Si70 rubber), then use S<sub>t100</sub> (S<sub>t200</sub> for Si70 rubber). Calculate the dynamic Magnifier as per 2.7. Repeat the calculation with the new value of coupling stiffness and dynamic magnifier.

**2.5.4** Calculate the coupling temperature as per 2.5. Repeat calculation until the coupling temperature agrees with the correction factors for torsional stiffness and dynamic magnifier used in the calculation.

### 2.6 Temperature Correction Factor



### 2.7 Dynamic Magnifier Correction Factor

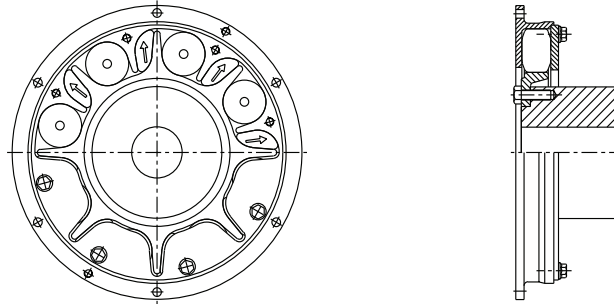
The Dynamic Magnifier of the rubber is subject to temperature variation in the same way as the torsional stiffness.

$$M_T = \frac{M_{30}}{S_t} \quad \Psi_T = \Psi_{30} \times S_t$$

Rubber Grade	Dynamic Magnifier (M <sub>30</sub> )	Relative Damping $\Psi_{30}$
Si70	7.5	0.83
NM45	15	0.42
SM50	10	0.63
SM60	8	0.78
SM70	6	1.05
SM80	4	1.57
<b>Si70 is considered "standard"</b>		

# HTB-GS Technical Data

## End view



COUPLING SIZE	1600		4000		6001		8000		13300	16000		26600	40001	53300		
	SAE11.5	SAE14	SAE14	SAE18	SAE14	SAE18	SAE18	SAE21	SAE21	SAE18	SAE21	SAE21	SAE24	-		
Nominal Torque $T_{KN}$ (kNm)	1.6	1.6	4	4	6	6	8	8	13.3	16	16	26.7	40	53.3		
Maximum Torque $T_{Kmax}$ (kNm)	4.8	4.8	12	12	18	18	24	24	40	48	48	80	120	160		
Vibratory Torque $T_{KW}$ (kNm)	0.5	0.5	1.3	1.3	2	2	2.7	2.7	4.4	5.3	5.3	8.9	13.3	17.8		
<b>HTB-GS Blocks</b>																
Dynamic Torsional Stiffness $C_{Tdyn}$ (MNm/rad)																
10% Nominal Torque	Si70	0.018	0.018	0.048	0.048	0.070	0.070	0.088	0.088	0.158	0.175	0.175	0.316	0.429	0.684	
	NM45	0.028	0.028	0.077	0.077	0.112	0.112	0.140	0.140	0.253	0.281	0.281	0.505	0.682	1.094	
	SM50	0.033	0.033	0.090	0.090	0.131	0.131	0.164	0.164	0.295	0.327	0.327	0.589	0.800	1.277	
	SM60	0.040	0.040	0.109	0.109	0.159	0.159	0.199	0.199	0.358	0.397	0.397	0.715	0.970	1.550	
	SM70	0.065	0.065	0.180	0.180	0.262	0.262	0.327	0.327	0.589	0.655	0.655	1.178	1.594	2.553	
	SM80	0.099	0.099	0.273	0.273	0.397	0.397	0.497	0.497	0.894	0.994	0.994	1.789	2.422	3.875	
25% Nominal Torque	Si70	0.019	0.019	0.049	0.049	0.076	0.076	0.094	0.094	0.169	0.189	0.189	0.337	0.458	0.729	
	NM45	0.027	0.027	0.068	0.068	0.104	0.104	0.129	0.129	0.233	0.260	0.260	0.464	0.629	1.003	
	SM50	0.028	0.028	0.070	0.070	0.108	0.108	0.133	0.133	0.242	0.269	0.269	0.481	0.648	1.039	
	SM60	0.030	0.030	0.077	0.077	0.118	0.118	0.145	0.145	0.263	0.293	0.293	0.523	0.707	1.130	
	SM70	0.046	0.046	0.117	0.117	0.180	0.180	0.222	0.222	0.403	0.449	0.449	0.801	1.082	1.732	
	SM80	0.059	0.059	0.150	0.150	0.230	0.230	0.283	0.283	0.513	0.571	0.571	1.020	1.379	2.206	
50% Nominal Torque	Si70	0.036	0.036	0.093	0.093	0.142	0.142	0.173	0.173	0.310	0.346	0.346	0.619	0.843	1.350	
	NM45	0.039	0.039	0.100	0.100	0.153	0.153	0.186	0.186	0.333	0.372	0.372	0.665	0.907	1.450	
	SM50	0.041	0.041	0.106	0.106	0.162	0.162	0.198	0.198	0.355	0.396	0.396	0.708	0.965	1.543	
	SM60	0.045	0.045	0.117	0.117	0.180	0.180	0.219	0.219	0.393	0.438	0.438	0.785	1.019	1.710	
	SM70	0.062	0.062	0.161	0.161	0.246	0.246	0.300	0.300	0.538	0.600	0.600	1.074	1.462	2.340	
	SM80	0.084	0.084	0.216	0.216	0.332	0.332	0.404	0.404	0.724	0.808	0.808	1.445	1.969	3.150	
75% Nominal Torque	Si70	0.061	0.061	0.156	0.156	0.233	0.233	0.294	0.294	0.527	0.589	0.589	1.055	1.433	2.293	
	NM45	0.054	0.054	0.138	0.138	0.205	0.205	0.260	0.260	0.465	0.520	0.520	0.931	1.267	2.025	
	SM50	0.060	0.060	0.152	0.152	0.227	0.227	0.287	0.287	0.514	0.575	0.575	1.029	1.399	2.237	
	SM60	0.072	0.072	0.183	0.183	0.272	0.272	0.344	0.344	0.617	0.690	0.690	1.235	1.677	2.685	
	SM70	0.089	0.089	0.227	0.227	0.338	0.338	0.427	0.427	0.766	0.857	0.857	1.533	2.081	3.334	
	SM80	0.135	0.135	0.344	0.344	0.512	0.512	0.647	0.647	1.159	1.296	1.296	2.320	3.153	5.045	
100% Nominal Torque	Si70	0.104	0.104	0.250	0.250	0.372	0.372	0.471	0.471	0.843	0.941	0.941	1.686	2.296	3.665	
	NM45	0.081	0.081	0.193	0.193	0.288	0.288	0.364	0.364	0.652	0.727	0.727	1.303	1.267	2.834	
	SM50	0.093	0.093	0.224	0.224	0.333	0.333	0.422	0.422	0.755	0.842	0.842	1.509	2.399	3.282	
	SM60	0.118	0.118	0.283	0.283	0.422	0.422	0.534	0.534	0.956	1.067	1.067	1.912	2.603	4.157	
	SM70	0.138	0.138	0.329	0.329	0.491	0.491	0.621	0.621	1.112	1.241	1.241	2.224	3.027	4.836	
	SM80	0.229	0.229	0.549	0.549	0.818	0.818	1.036	1.036	1.854	2.070	2.070	3.708	5.049	8.063	
Allowable Heat Loading @ 30°C [W] $P_{KW}$	Si70	605	605	840	840	1065	1065	1180	1180	1450	1560	1560	2000	2250	2525	
	NM45	195	195	300	300	365	365	420	420	540	590	590	750	910	1050	
	SM50	195	195	300	300	365	365	420	420	540	590	590	750	910	1050	
	SM60	195	195	300	300	365	365	420	420	540	590	590	750	910	1050	
	SM70	205	205	320	320	390	390	450	450	575	630	630	805	980	1135	
	SM80	220	220	345	345	420	420	490	490	635	700	700	890	1100	1265	
Radial Stiffness (1)	No Load [N/mm]	Si70	797	797	1089	1089	1610	1610	1380	1380	1595	2760	2760	3189	4177	3726
	@ $T_{KN}$ [N/mm]	Si70	2538	2538	3488	3488	5152	5152	4408	4408	5098	8801	8801	10181	13387	11883
Axial Stiffness (1)	No Load [N/mm]	Si70	299	299	422	422	790	790	529	529	636	1503	1503	1763	2407	4063
	@ $T_{KN}$ [N/mm]	Si70	1288	1288	1809	1809	3389	3389	2285	2285	2745	6486	6486	7314	10399	13125

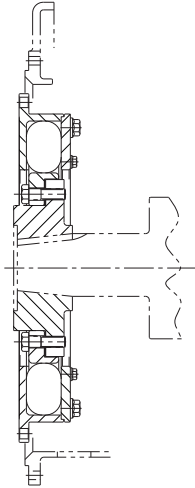
(1) Radial and axial stiffness values for other grades are available on request



## HTB-GS Design Variations

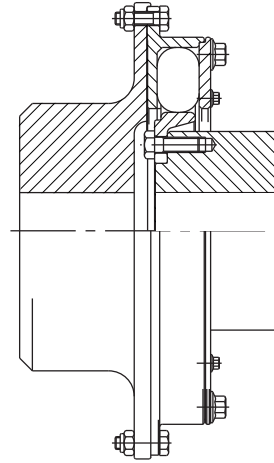
The HTB-GS coupling can be adapted to meet customer requirements as can be seen from some of the design variations below. For a more comprehensive list contact Renold Hi-Tec.

### Coupling to Suit Existing Hub



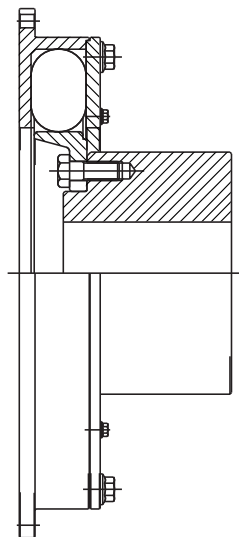
Existing hub fitment. Coupling inner member designed to suit existing hub design.

### Shaft to Shaft Coupling



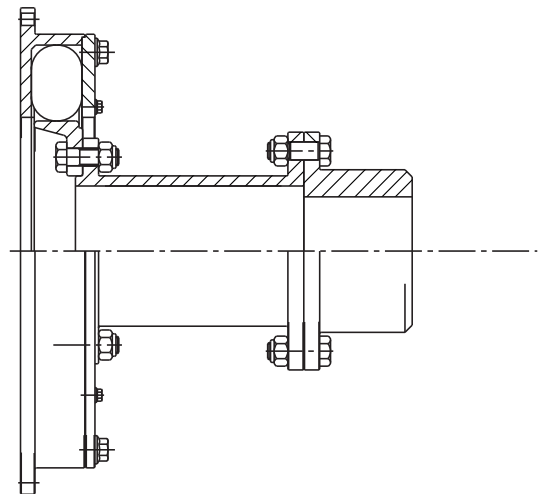
Shaft to Shaft Coupling. Designed for use on electric motor drives and power take off applications.

### Reversed Inner Member Coupling



Coupling with reversed inner member to increase distance between flywheel face and shaft end.

### Spacer Coupling



Spacer coupling. Used to increase the distance between shaft ends and allow easy access to driven and driving machine.

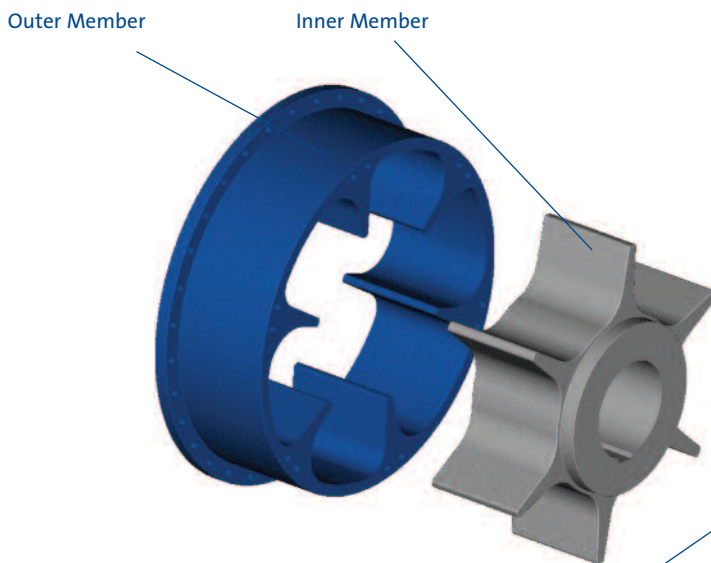
# DCB-GS Flexible Coupling

The DCB-GS range of flexible couplings is a second generation coupling derived from Renold Hi-Tec Couplings' existing DCB range.

DCB-GS couplings have low weight and inertia yet retain the unrivalled quality and endurance features of the standard DCB.

### Failsafe Design

The intrinsically failsafe design ensures continuous operation of the driveline area in the unlikely event of rubber damage.

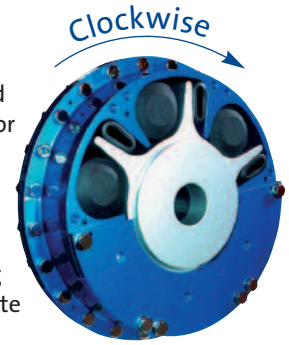


### Rubber tubes

The trailing block does not do much 'work' as the DCB-GS coupling has been designed to operate in one direction. Therefore the block has been replaced by a tube, which has enabled the overall size of the coupling to be reduced. The resulting decrease in weight and inertia decreases the bending moments on the drive shaft.

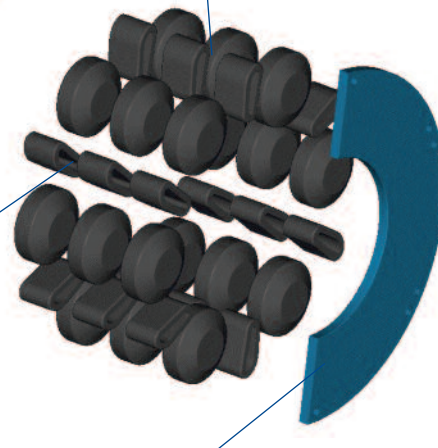
### Coupling rotation

The DCB-GS coupling is designed to operate in either a clockwise or anti-clockwise direction. It is important, therefore, to establish which direction the coupling will operate at the specification stage. The coupling shown here is designed to operate in a clockwise direction.



### Rubber blocks

The lead blocks carry all the torque and are selected to provide optimum control of resonant torsional vibration. They also provide protection of the driveline from severe shock load. All this avoids failure of the driveline from short circuit or premature fatigue.



Split Cover (Half removed)

### Other features

#### Noise Attenuation

As there is no metal contact, the coupling design provides excellent noise attenuation giving quiet running in sensitive applications.

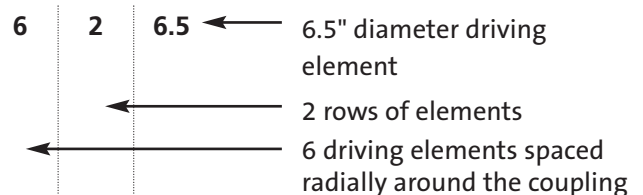
#### Misalignment

The flexibility of the rubber allows axial and radial misalignment between the driving and driven machine.

### The Standard Range Comprises

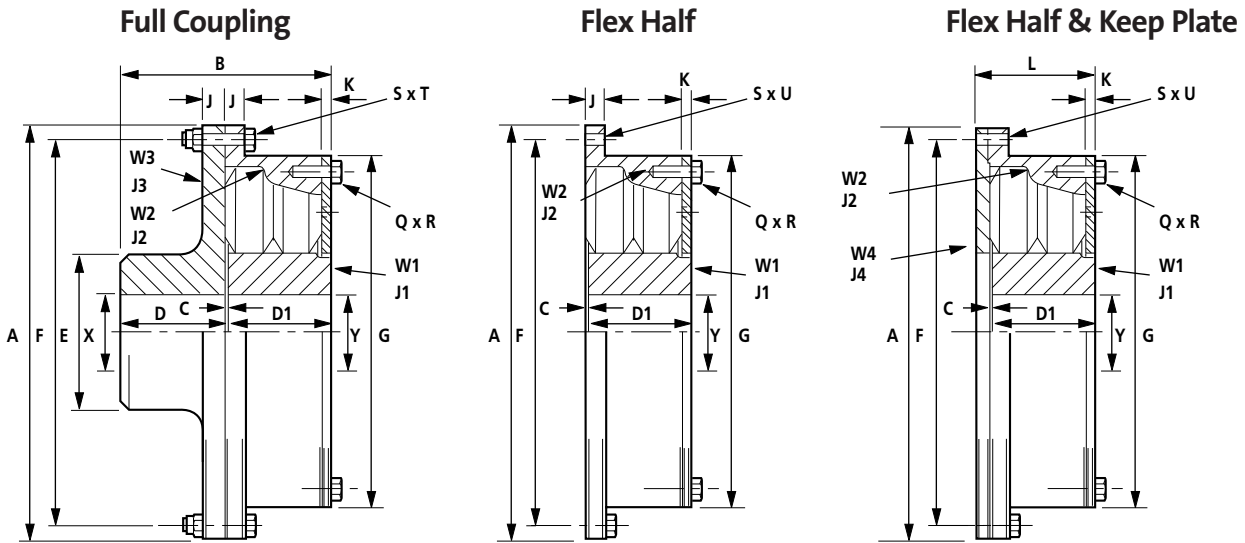
- Flywheel to shaft
- Flywheel to flange
- Shaft to shaft

### DCB-GS Construction Details



- Couplings are available as standard with up to five rows of elements
- Inner and outer members available in Steel to BS3100 Grade A4 or S.G. Iron to BS2789 Grade 420/12.

# DCB-GS Flexible Coupling - Dimensional Data



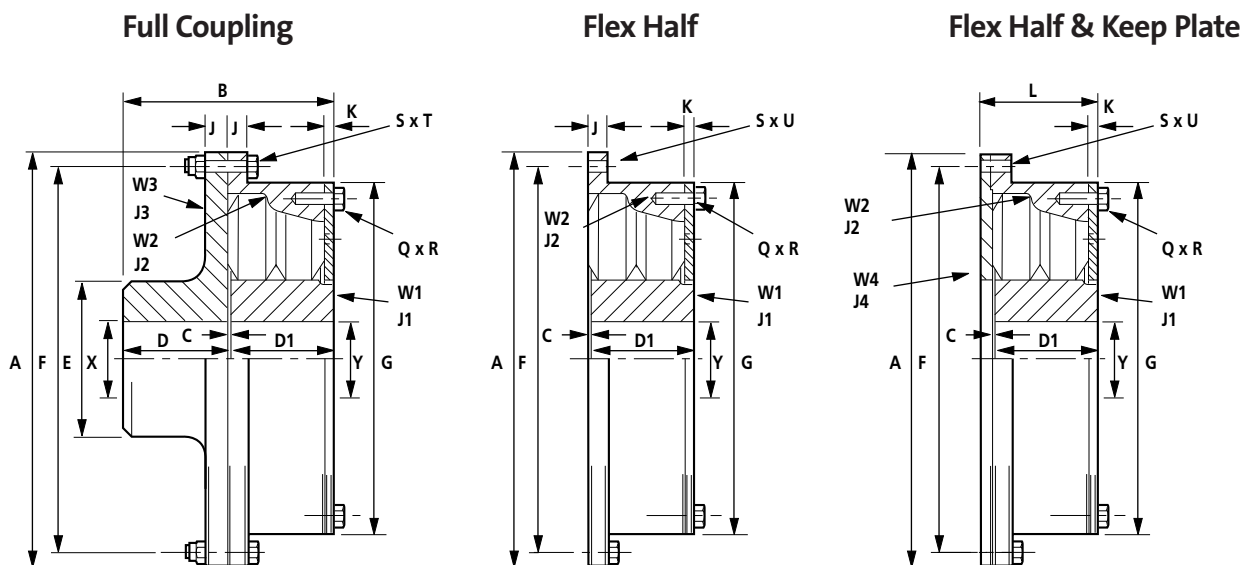
## Dimensions, Weight, Inertia and Alignment

COUPLING SIZE		612.5	622.5	632.5	642.5	652.5	613.5	623.5	633.5	643.5	653.5	614.5	624.5
PREFERRED SIZE													*
DIMENSIONS (mm)	A	344	344	344	344	344	470	470	470	470	470	604	604
	B	110	142	206	237	301	153	198	287	331	420	189	247
	C	3	3	3	3	3	4	4	4	4	4	6	6
	D	70	70	101	101	133	97	97	141	141	186	120	120
	D1	38	70	101	133	165	52	97	141	186	230	63	120
	E	152	152	152	152	152	214	214	214	214	214	275	275
	F	322	322	322	322	322	444	444	444	444	444	568	568
	G	296	296	296	296	296	414	414	414	414	414	532	532
	J	10	10	10	10	10	13.50	13.50	13.50	13.50	13.50	17	17
	K	9	9	9	9	9	12	12	12	12	12	12	12
	L	53	85	116	148	180	68	113	157	202	246	81	138
	Q	12	12	12	12	12	12	12	12	12	12	12	12
	R	M10	M10	M10	M10	M10	M14	M14	M14	M14	M14	M18	M18
	S	12	12	24	24	24	16	16	32	32	32	12	12
T	M10	M10	M10	M10	M10	M12	M12	M12	M12	M12	M16	M16	
U	11	11	11	11	11	13	13	13	13	13	17	17	
	MAX. X	95	95	95	95	95	134	134	134	134	134	171	171
	MAX. Y	95	95	95	95	95	134	134	134	134	134	171	171
MAXIMUM SPEED (rpm) (1)		3940	3940	3940	3940	3940	2815	2815	2815	2815	2815	2190	2190
WEIGHT (kg)	W1	4.44	8.98	13.36	17.87	22.37	12.05	24.44	36.58	48.98	61.12	24.64	50.79
	W2	9.14	13.02	16.76	20.61	24.46	23.57	34.10	44.38	54.87	65.15	45.20	67.30
	W3	11.32	11.32	13.86	13.86	16.48	29.84	29.84	36.96	36.96	44.24	61.44	61.44
	W4	6.63	6.63	6.63	6.63	6.63	12.20	12.20	12.20	12.20	12.20	20.15	20.15
INERTIA (kgm <sup>2</sup> )	J1	0.03	0.06	0.09	0.12	0.15	0.15	0.31	0.48	0.64	0.80	0.51	1.08
	J2	0.16	0.23	0.29	0.36	0.43	0.79	1.15	1.49	1.85	2.20	2.56	3.79
	J3	0.12	0.12	0.13	0.13	0.14	0.59	0.59	0.64	0.64	0.70	2.01	2.01
	J4	0.12	0.12	0.12	0.12	0.12	0.41	0.41	0.41	0.41	0.41	1.11	1.11
ALLOWED MISALIGNMENT (3)	RADIAL (mm)	1.5	1.5	1.5	1.5	1.5	2	2	2	2	2	2.5	2.5
	AXIAL (mm)	1.5	1.5	1.5	1.5	1.5	2	2	2	2	2	2.5	2.5
	CONICAL (degree)	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
OPTION FOR SAE FLYWHEEL		11.5, 14	11.5, 14	11.5, 14	11.5, 14	11.5, 14	14, 18	14, 18	14, 18	14, 18	14, 18	21, 24	21, 24

- (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 maximum 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 allowables.



# DCB-GS Flexible Coupling - Dimensional Data

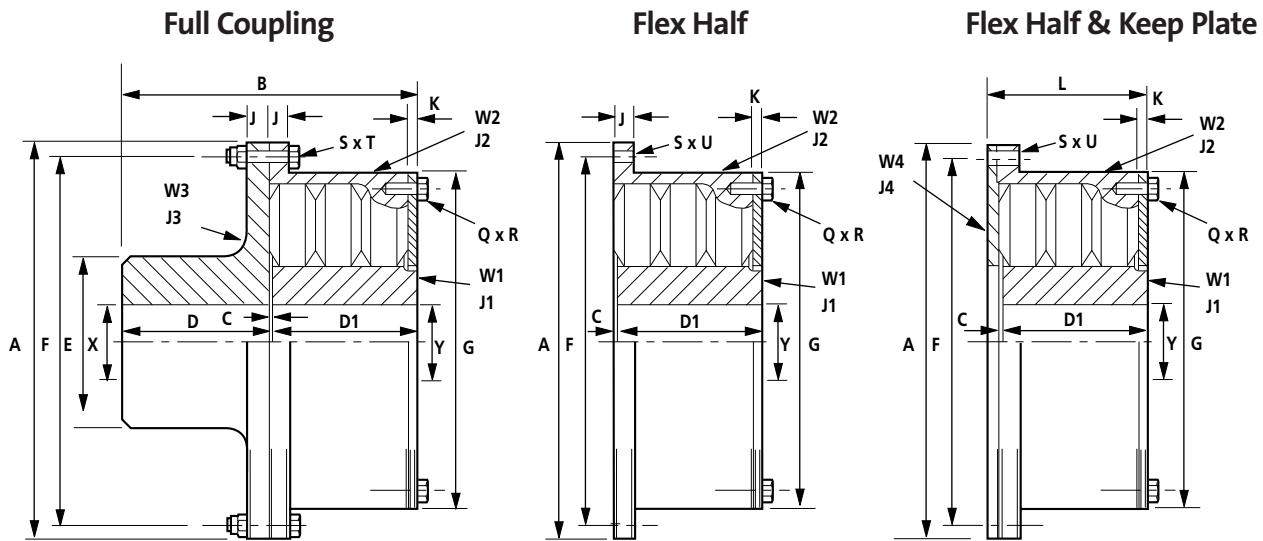


## Dimensions, Weight, Inertia and Alignment

COUPLING SIZE		634.5	644.5	654.5	615.5	625.5	635.5	645.5	655.5	616.5	626.5	636.5	646.5
PREFERRED SIZE			*			*		*			*		*
DIMENSIONS (mm)	A	604	604	604	740	740	740	740	740	872	872	872	872
	B	361	418	532	237	307	447	516	656	282	364	529	612
	C	6	6	6	6.50	6.50	6.50	6.50	6.50	8	8	8	8
	D	177	177	235	150	150	220	220	290	178	178	261	261
	D1	177	235	292	80	150	220	290	360	96	178	261	343
	E	275	275	275	336	336	336	336	336	396	396	396	396
	F	568	568	568	696	696	696	696	69	825	825	825	825
	G	532	532	532	650	650	650	650	650	770	770	770	770
	J	17	17	17	21	21	21	21	21	25	25	25	25
	K	12	12	12	17	17	17	17	17	21	21	21	21
	L	195	253	310	103	173	243	312	382	125	207	290	372
	Q	12	12	12	12	12	12	12	12	12	12	12	12
	R	M18	M18	M18	M20	M20	M20	M20	M20	M24	M24	M24	M24
	S	24	24	24	16	16	32	32	32	16	16	32	32
	T	M16	M16	M16	M20	M20	M20	M20	M20	M24	M24	M24	M24
	U	17	17	17	21	21	21	21	21	25	25	25	25
	MAX. X	171	171	171	210	210	210	210	210	247	247	247	247
MAX. Y	171	171	171	210	210	210	210	210	247	247	247	247	
MAXIMUM SPEED (rpm)	(1)	2190	2190	2190	1795	1795	1795	1795	1795	1515	1515	1515	1515
WEIGHT (kg)	W1	76.94	103.51	129.66	46.00	93.65	141.31	188.96	236.61	77.70	156.63	236.45	315.38
	W2	89.37	111.78	133.84	94.26	135.32	176.31	217.31	258.29	148.56	216.31	284.79	352.54
	W3	76.81	76.81	92.45	114.42	114.42	142.40	142.40	170.39	188.43	188.43	234.65	234.65
	W4	20.15	20.15	20.15	41.65	41.65	41.65	41.65	41.65	73.55	73.55	73.55	73.55
INERTIA (kgm <sup>2</sup> )	J1	1.66	2.24	2.81	1.41	2.96	4.52	6.08	7.63	3.34	6.95	10.61	14.23
	J2	5.02	6.27	7.50	7.85	11.28	14.70	18.12	21.54	17.35	25.28	33.30	41.23
	J3	2.21	2.21	2.41	5.59	5.59	6.14	6.14	6.69	12.81	12.81	14.07	14.07
	J4	1.11	1.11	1.11	3.43	3.43	3.43	3.43	3.43	8.43	8.43	8.43	8.43
ALLOWED MISALIGNMENT (3)	RADIAL (mm)	2.5	2.5	2.5	3	3	3	3	3	3.5	3.5	3.5	3.5
	AXIAL (mm)	2.5	2.5	2.5	3	3	3	3	3	3.5	3.5	3.5	3.5
	CONICAL (degree)	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
OPTION FOR SAE FLYWHEEL		21, 24	21, 24	21, 24	24	24	24	24	24	-	-	-	-

- (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 maximum 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 allowables.

# DCB-GS Flexible Coupling - Dimensional Data

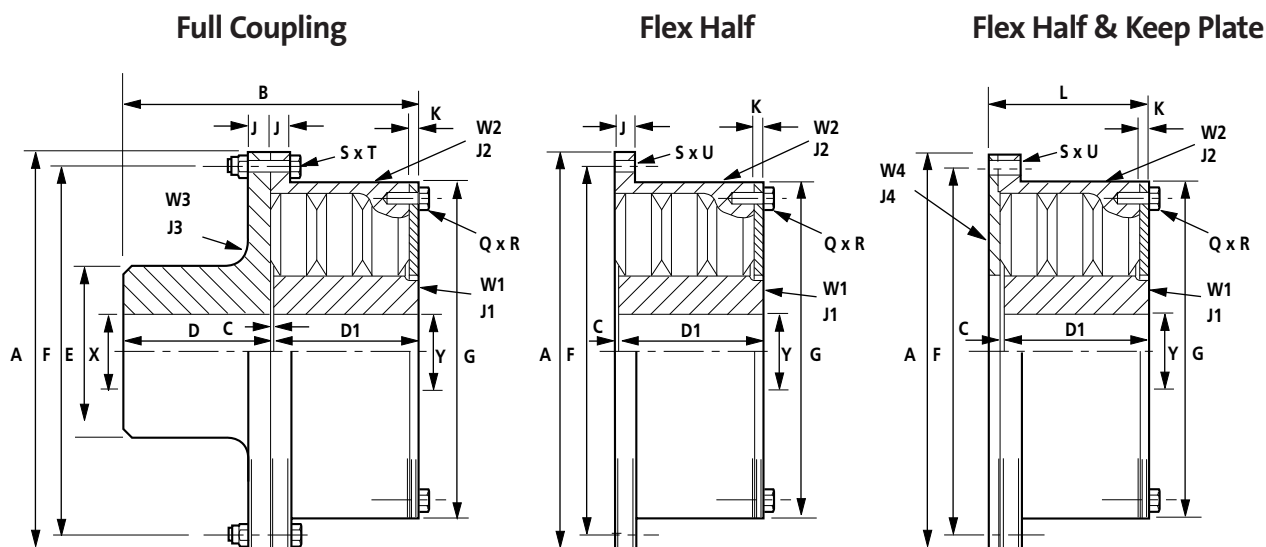


## Dimensions, Weight, Inertia and Alignment

COUPLING SIZE		656.5	617.5	627.5	637.5	647.5	657.5	618.0	628.0	638.0	648.0	658.0	618.5	
PREFERRED SIZE				*	*				*	*	*			
DIMENSIONS (mm)	A	872	1006	1006	1006	1006	1006	1074	1074	1074	1074	1074	1140	
	B	777	319	414	605	700	890	348	449	653	754	957	366	
	C	8	9	9	9	9	9	9	9	9	9	9	9	10
	D	343	203	203	298	298	393	220	220	322	322	423	232	
	D1	426	107	203	298	393	488	119	220	322	423	525	124	
	E	396	457	457	457	457	457	488	488	488	488	488	488	518
	F	825	947	947	947	947	947	1010	1010	1010	1010	1010	1010	1074
	G	770	888	888	888	888	888	946	946	946	946	946	946	1005
	J	25	28	28	28	28	28	30	30	30	30	30	30	32
	K	21	21	21	21	21	21	26	26	26	26	26	26	26
	L	455	137	233	328	423	518	153	254	356	457	559	159	
	Q	12	12	12	12	12	12	12	12	12	12	12	12	12
	R	M24	M30	M30	M30	M30	M30	M30	M30	M30	M30	M30	M30	M36
	S	32	12	24	24	24	24	16	16	32	32	32	32	16
T	M24	M30	M30	M30	M30	M30	M30	M30	M30	M30	M30	M30	M30	
U	25	31	31	31	31	31	31	31	31	31	31	31	31	
MAX. X	247	286	286	286	286	286	305	305	305	305	305	305	324	
MAX. Y	247	286	286	286	286	286	305	305	305	305	305	305	324	
MAXIMUM SPEED (rpm) (1)		1515	1315	1315	1315	1315	1315	1230	1230	1230	1230	1230	1160	
WEIGHT (kg)	W1	395.19	116.49	238.31	358.97	479.62	600.28	146.76	294.11	442.76	590.14	738.83	171.82	
	W2	421.03	214.55	319.73	424.25	528.77	647.94	272.12	397.06	523.11	648.06	774.11	318.20	
	W3	280.31	285.18	285.18	355.33	355.33	425.48	348.92	348.92	434.97	434.97	520.13	416.05	
	W4	73.55	97.56	97.56	97.56	97.56	97.56	129.96	129.96	129.96	129.96	129.96	129.96	149.54
INERTIA (kgm <sup>2</sup> )	J1	17.89	6.69	14.10	21.45	28.79	36.14	9.60	19.87	30.23	40.50	50.86	12.63	
	J2	49.25	33.67	50.04	66.31	82.59	98.86	48.35	90.42	92.69	114.80	137.00	64.06	
	J3	15.31	25.64	25.64	28.19	28.19	30.73	35.66	35.66	39.23	39.23	42.75	48.13	
	J4	8.43	14.92	14.92	14.92	14.92	14.92	22.92	22.92	22.92	22.92	22.92	29.32	
ALLOWED MISALIGNMENT (3)	RADIAL (mm)	3.5	3.5	3.5	3.5	3.5	3.5	4	4	4	4	4	4.5	
AXIAL (mm)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4	4	4	4	4	4.5	
CONICAL (degree)	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
OPTION FOR SAE FLYWHEEL		-	-	-	-	-	-	-	-	-	-	-	-	

- (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 maximum 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 allowables.

# DCB-GS Flexible Coupling - Dimensional Data



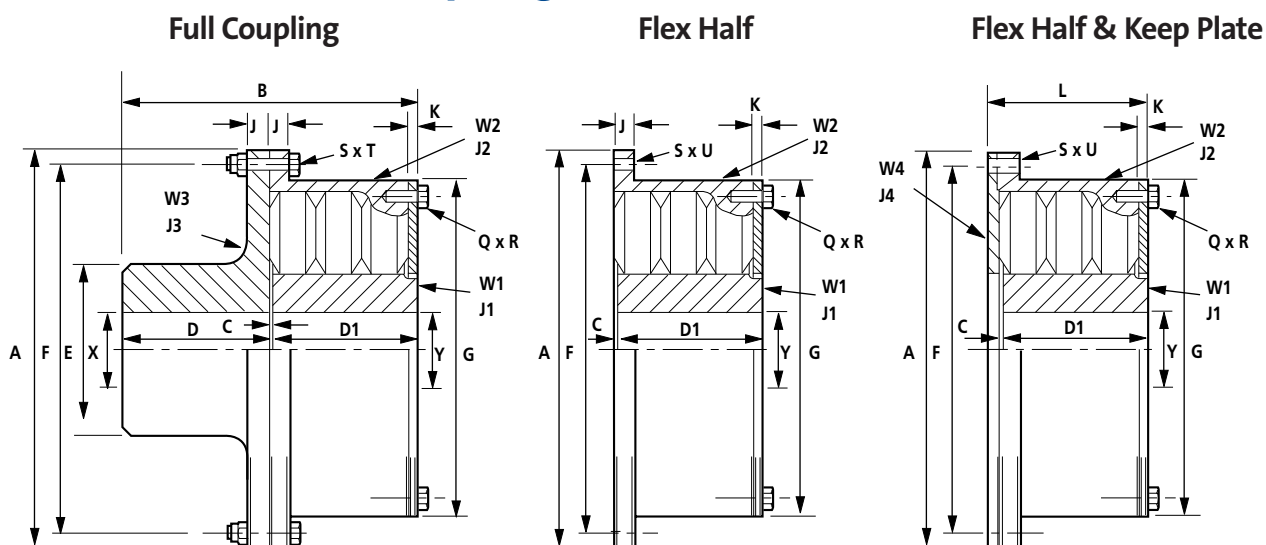
## Dimensions, Weight, Inertia and Alignment

COUPLING SIZE		628.5	638.5	648.5	658.5	619.5	629.5	639.5	649.5	659.5	6111.0	6211.0	6311.0	
PREFERRED SIZE			*	*	*				*					
DIMENSIONS (mm)	A	1140	1140	1140	1140	1275	1275	1275	1275	1275	1476	1476	1476	
	B	474	690	798	1014	411	532	773	894	1135	476	616	895	
	C	10	10	10	10	11	11	11	11	11	13	13	13	
	D	232	340	340	448	260	260	381	381	502	301	301	441	
	D1	232	340	448	556	140	260	381	502	622	162	301	441	
	E	518	518	518	518	580	580	580	580	580	670	670	670	
	F	1074	1074	1074	1074	1202	1202	1202	1202	1202	1390	1390	1390	
	G	1005	1005	1005	1005	1124	1124	1124	1124	1124	1300	1300	1300	
	J	32	32	32	32	36	36	36	36	36	41	41.50	41.50	
	K	26	26	26	26	30	30	30	30	30	35	35	35	
	L	267	375	483	591	181	301	422	543	663	210	349	489	
	Q	12	12	12	12	12	12	12	12	12	12	12	12	
	R	M36	M36	M36	M36	M36	M36	M36	M36	M36	M36	M42	M42	M42
	S	16	32	32	32	12	12	24	24	24	16	16	32	
T	M30	M30	M30	M30	M36	M36	M36	M36	M36	M42	M42	M42		
U	31	31	31	37	37	37	37	37	37	43	43	43		
MAX. X		324	324	324	324	362	362	362	362	362	419	419	419	
MAX. Y		324	324	324	324	362	362	362	362	362	419	419	419	
MAXIMUM SPEED (rpm) (1)		1160	1160	1160	1160	1040	1040	1040	1040	1040	900	900	900	
WEIGHT (kg)	W1	347.90	523.99	700.08	876.17	246.09	495.67	747.16	998.64	1248.00	374.50	754.00	1136.00	
	W2	468.59	618.99	769.38	919.77	455.99	665.46	876.92	1088.00	1298.00	712.90	1034.00	1356.00	
	W3	416.05	518.58	518.58	621.11	584.51	584.51	728.93	728.93	873.34	903.63	903.63	1126.00	
	W4	149.54	149.54	149.54	149.54	224.62	224.62	224.62	224.62	224.62	351.65	351.65	351.65	
INERTIA (kgm <sup>2</sup> ) (2)	J1	26.38	40.13	53.89	67.64	23.08	48.01	73.13	98.24	123.20	46.00	95.61	145.50	
	J2	94.04	124.00	154.00	184.00	113.80	166.10	218.80	271.50	323.90	236.40	343.50	451.30	
	J3	48.13	52.92	52.92	57.70	84.65	84.65	93.09	92.09	101.50	175.30	175.30	192.60	
	J4	29.32	29.32	29.32	29.32	55.08	55.08	55.08	55.08	55.08	115.50	115.50	115.50	
ALLOWED MISALIGNMENT (3)	RADIAL (mm)	4.5	4.5	4.5	4.5	5	5	5	5	5	6	6	6	
AXIAL (mm)		4.5	4.5	4.5	4.5	5	5	5	5	5	6	6	6	
CONICAL (degree)		0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
OPTION FOR SAE FLYWHEEL		-	-	-	-	-	-	-	-	-	-	-	-	

- (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 maximum 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 allowables.



# DCB-GS Flexible Coupling - Dimensional Data



## Dimensions, Weight, Inertia and Alignment

COUPLING SIZE		6411.0	6511.0	6113.0	6213.0	6313.0	6413.0	6513.0	6115.0	6215.0	6315.0	6415.0	6515.0
PREFERRED SIZE		*											
DIMENSION (mm)	A	1476	1476	1750	1750	1750	1750	1750	2012	2012	2012	2012	2012
	B	1035	1314	560	725	1056	1221	1551	642	832	1213	1404	1785
	C	13	13	15	15	15	15	15	18	18	18	18	18
	D	441	581	355	355	520	520	685	407	407	598	598	788
	D1	581	721	190	355	520	685	851	217	407	598	788	979
	E	670	670	793	793	793	793	793	914	914	914	914	914
	F	1390	139	1645	1645	1645	1645	1645	1900	1900	1900	1900	1900
	G	1300	1300	1537	1537	1537	1537	1537	1774	1774	1774	1774	1744
	J	41.50	41.50	49	49	49	49	49	56.50	56.50	56.50	56.50	56.50
	K	35	35	40	40	40	40	40	44	44	44	44	44
	L	629	769	244	409	574	739	905	279	469	660	850	1041
	Q	12	12	12	12	12	12	12	12	12	12	12	12
	R	M42	M42	M48	M48	M48	M48	M48	M48	M56	M56	M56	M56
	S	32	32	24	24	48	48	48	24	24	48	48	48
	T	M42	M42	M42	M42	M42	M42	M42	M42	M42	M42	M42	M42
	U	43	43	43	43	43	43	43	43	43	43	43	43
MAX. X		419	419	495	495	495	495	495	571	571	571	571	
MAX. Y		419	419	495	495	495	495	495	571	571	571	571	
MAXIMUM SPEED (rpm) (1)		900	900	760	760	760	760	760	660	660	660	660	660
WEIGHT (kg)	W1	1518.00	1900.00	615.48	1243.00	1871.00	2498.00	3129.00	944.88	1913.00	2886.00	3854.00	4827.00
	W2	1679.00	2002.00	1162.00	1701.00	2240.00	2780.00	3322.00	1746.00	2573.00	3405.00	4232.00	5064.00
	W3	1126.00	1348.00	1499.00	1499.00	1867.00	1867.00	2235.00	2289.00	2289.00	2854.00	2854.00	3417.00
	W4	351.65	351.65	550.37	550.37	550.37	550.37	550.37	819.91	819.91	819.91	819.91	819.91
INERTIA (kgm <sup>2</sup> )	J1	195.40	245.30	105.50	219.90	334.20	448.50	563.40	217.20	453.00	689.90	925.70	1163.00
	J2	559.00	666.80	545.10	796.40	1048.00	1300.00	1553.00	1091.00	1605.00	2121.00	2635.00	3152.00
	J3	192.60	210.00	408.50	408.50	448.70	448.70	488.90	825.40	825.40	907.50	907.50	989.10
	J4	115.50	115.50	254.10	254.10	254.10	254.10	254.10	501.00	501.00	501.00	501.00	501.00
ALLOWED MISALIGNMENT (3)	RADIAL (mm)	6	6	8	8	8	8	8	10	10	10	10	10
	AXIAL (mm)	6	6	8	8	8	8	8	10	10	10	10	10
	CONICAL (degree)	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
OPTION FOR SAE FLYWHEEL		-	-	-	-	-	-	-	-	-	-	-	-

(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 maximum 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 allowables.

# DCB-GS Flexible Coupling - Technical Data

## 1.0 Torque Capacity - Diesel Engine Drives

The DCB-GS Coupling is selected on the Nominal Torque (TKN) rating without service factors.

The full torque capacity of the coupling for transient vibration whilst passing through major criticals on run up is published as the Maximum Torque (TKmax).  $TK_{max} = 3 \times TKN$

There is additional torque capacity built into the coupling for short circuit torques.

The published Vibratory Torque (TKW) relates to the amplitude of the permissible continuous torque fluctuation. The vibratory torque values shown in the Technical Data are at a frequency of 10Hz. The measure of acceptability of the coupling for vibrating drives is published as 'Allowable Dissipated Heat at Ambient Temperature 30°C'.

### 1.1 Transient Torques

Prediction of transient torques in marine drives can be complex. Normal installations are well provided for by selecting couplings based on the Nominal Torque (TKN).

Transients such as start up and clutch manoeuvre, are usually within the Maximum Torque rating (TKmax) for the coupling.

Care needs to be taken in the design of couplings with shaft brakes to ensure coupling torques are not increased by severe deceleration.

Sudden torque applications of propulsion devices, such as thrusters or waterjets, need to be considered when designing the coupling connection.

### 2.0 Stiffness Properties

The Renold Hi-Tec Coupling remains fully flexible under all torque conditions. The DCB-GS series is a non-bonded type operating under the Rubber-in-Compression principle.

#### 2.1 Axial Stiffness

When subject to axial misalignment, the coupling will have an axial resistance which gradually reduces due to the effect of vibratory torque.

The axial stiffness of the coupling is torque dependent. The variation can be found in the Technical Data shown on pages 17-21.

#### 2.2 Radial Stiffness

The radial stiffness of the coupling is torque dependent, and is as shown in the Technical Data on pages 17-21 of this catalogue.

#### 2.3 Torsional Stiffness and Dynamic Magnifier

The torsional stiffness and dynamic magnifier of the coupling is dependent upon applied torque, rubber temperature, vibratory torque and frequency. In order to simplify the determination of the torsional stiffness and dynamic magnifier of the coupling with these variables a computer programme has been produced to calculate these values. This program is accessible through the Renold website [www.renold.com](http://www.renold.com). The program is located under 'Useful Tools'. From the home page go to 'Support' and then 'International Links and Tools' from the drop down menu. The program 'DCB-GS Torsional Stiffness' is located in 'Useful Tools'. The program is password protected and you will need to contact the Renold Hi-Tec Sales office to be issued with a password.

## 2.4 Prediction of the System Torsional Vibration Characteristics

A simple verification of the system's torsional vibration characteristic can be made by analysis at the extremes of the coupling allowable temperature to ensure that within this range there are no criticals which exceed the allowable heat dissipation values.

**2.4.1** Using the computer programme establish the torsional stiffness and dynamic magnifier of the coupling at 30°C rubber temperature, by entering the application torque and a frequency of 10 Hz.

**2.4.2** Analyse the torsional system to determine criticals within the speed range.

**2.4.3** Repeat the analysis after using the computer programme again for stiffness and magnifier, but with a rubber temperature of 100°C.

**2.4.4** Review the analysis and if the speed range is clear of criticals which exceed the heat dissipation values published in the technical data then the coupling can be considered suitable for the application, with respect to the torsional vibration characteristics.

If there is a critical within the speed range, then the actual rubber temperature, vibratory torque and frequency should be calculated at this speed.

## 2.5 Prediction of the Actual Coupling Torsional Stiffness and Dynamic Magnifier.

**2.5.1** Analyse the torsional system using as a starting point the torsional stiffness and dynamic magnifier as published in the catalogue. This is based on data measured at 30°C.

**2.5.2** Compare the synthesis value of the calculated heat load in the coupling (PK) at the speed of interest, to the 'Allowable Heat Dissipation' (PKW)

**The rise in rubber temperature**

$$^{\circ}\text{C} = \text{Temp}_{\text{coup}} = \left( \frac{PK}{PKW} \right) \times 70 \text{ (170 for Si70 rubber)}$$

**The rubber temperature =  $\vartheta$**

$$\vartheta = \text{Temp}_{\text{coup}} + \text{Ambient Temp.}$$

**2.5.3** Enter the calculated vibratory torque, frequency and rubber temperature ( $\vartheta$ ) into the program and calculate the new value for torsional stiffness and dynamic magnifier.

**2.5.4** Recalculate the vibratory torque, frequency, and rubber temperature as

**2.5.5** Repeat the calculations until the coupling rubber temperature becomes almost constant after each calculation.

### 2.6 Silicon rubber

Couplings fitted with Si70 rubber are unlikely to reach the maximum allowable temperature of 200°C unless in a high ambient temperature or subject to extreme levels of vibratory torque. The vibratory torque must not exceed the rated values stated in the Technical Data.

For couplings supplied to DNV survey the maximum allowable temperature is 150°C and maximum heat load for Si70 is 70% of that stated in the technical data.

# DCB-GS Flexible Coupling - Technical Data

## Rated Torque and Stiffness

COUPLING SIZE		612.5	622.5	632.5	642.5	652.5	613.5	623.5	633.5	643.5	653.5	614.5	624.5	
PREFERRED SIZE													*	
NOMINAL TORQUE T <sub>KN</sub> kNm		0.8	1.6	2.4	3.1	3.9	2.2	4.3	6.5	8.6	10.8	4.6	9.1	
MAXIMUM TORQUE T <sub>Kmax</sub> kNm		2.4	4.7	7.1	9.4	11.8	6.5	12.9	19.4	25.8	32.3	13.7	27.4	
ALLOWABLE VIBRATORY TORQUE T <sub>Kw±Nm</sub> (4)		0.3	0.6	0.9	1.2	1.5	0.8	1.6	2.4	3.2	4.0	1.7	3.4	
ALLOWABLE DISSIPATED HEAT AT 30°C AMBIENT (W)	NM45	68	136	204	272	340	101	202	303	403	504	136	272	
	SM50	91	181	272	363	453	124	249	373	497	622	158	316	
	SM60	100	200	300	401	501	135	269	404	539	674	169	337	
	SM70	98	196	294	393	491	136	272	408	544	680	174	348	
	SM80	106	213	319	425	531	149	297	446	595	744	192	384	
	Si70 (3)	230	459	689	917	1147	307	616	923	1231	1539	384	769	
DYNAMIC TORSIONAL STIFFNESS C <sub>tdyn</sub> (MNm/rad) (1)	@ 0.10 T <sub>KN</sub>	NM45	0.006	0.012	0.018	0.024	0.030	0.017	0.033	0.050	0.067	0.083	0.142	0.283
		SM50	0.007	0.013	0.020	0.027	0.033	0.018	0.036	0.055	0.073	0.091	0.155	0.309
		SM60	0.007	0.014	0.021	0.028	0.035	0.019	0.038	0.057	0.076	0.095	0.162	0.324
		SM70	0.010	0.020	0.031	0.041	0.051	0.028	0.056	0.084	0.113	0.141	0.239	0.478
		SM80	0.011	0.022	0.032	0.043	0.054	0.030	0.059	0.089	0.119	0.149	0.252	0.505
		Si70	0.007	0.014	0.020	0.027	0.034	0.019	0.037	0.056	0.075	0.093	0.159	0.318
	@ 0.25 T <sub>KN</sub>	NM45	0.008	0.016	0.024	0.032	0.040	0.022	0.044	0.067	0.089	0.111	0.188	0.377
		SM50	0.009	0.018	0.027	0.036	0.046	0.025	0.050	0.075	0.100	0.125	0.212	0.425
		SM60	0.010	0.020	0.030	0.040	0.050	0.028	0.055	0.083	0.110	0.138	0.234	0.467
		SM70	0.015	0.029	0.044	0.058	0.073	0.040	0.080	0.120	0.160	0.199	0.339	0.677
		SM80	0.017	0.035	0.052	0.069	0.087	0.048	0.095	0.143	0.190	0.238	0.404	0.809
		Si70	0.008	0.017	0.025	0.033	0.042	0.023	0.046	0.068	0.091	0.114	0.194	0.388
	@ 0.50 T <sub>KN</sub>	NM45	0.011	0.023	0.034	0.046	0.057	0.031	0.063	0.094	0.126	0.157	0.266	0.533
		SM50	0.013	0.026	0.040	0.053	0.066	0.036	0.073	0.109	0.145	0.182	0.309	0.618
		SM60	0.015	0.030	0.045	0.061	0.076	0.042	0.083	0.125	0.166	0.208	0.353	0.707
		SM70	0.020	0.041	0.061	0.081	0.102	0.056	0.112	0.168	0.224	0.280	0.475	0.950
		SM80	0.029	0.058	0.087	0.116	0.145	0.080	0.160	0.240	0.319	0.399	0.678	1.356
		Si70	0.012	0.025	0.037	0.050	0.062	0.034	0.069	0.103	0.137	0.172	0.292	0.583
	@ 0.75 T <sub>KN</sub>	NM45	0.015	0.030	0.044	0.059	0.074	0.041	0.081	0.122	0.162	0.203	0.345	0.689
		SM50	0.017	0.035	0.052	0.069	0.087	0.048	0.095	0.143	0.191	0.238	0.405	0.810
		SM60	0.020	0.041	0.061	0.081	0.101	0.056	0.111	0.167	0.223	0.278	0.473	0.945
		SM70	0.026	0.052	0.079	0.105	0.131	0.072	0.144	0.216	0.288	0.360	0.611	1.222
		SM80	0.041	0.082	0.122	0.163	0.204	0.112	0.224	0.336	0.448	0.561	0.952	1.904
		Si70	0.019	0.038	0.056	0.075	0.094	0.052	0.103	0.155	0.207	0.259	0.439	0.879
@ 1.0 T <sub>KN</sub>	NM45	0.018	0.036	0.054	0.072	0.091	0.050	0.099	0.149	0.199	0.249	0.422	0.845	
	SM50	0.021	0.043	0.064	0.086	0.107	0.059	0.118	0.177	0.236	0.295	0.501	1.003	
	SM60	0.025	0.051	0.076	0.102	0.127	0.070	0.140	0.209	0.279	0.349	0.592	1.185	
	SM70	0.032	0.064	0.096	0.128	0.160	0.088	0.176	0.264	0.352	0.440	0.747	1.494	
	SM80	0.053	0.105	0.158	0.210	0.263	0.144	0.289	0.433	0.577	0.722	1.226	2.452	
	Si70	0.027	0.055	0.082	0.109	0.136	0.075	0.150	0.225	0.300	0.375	0.637	1.274	
RADIAL STIFFNESS NO LOAD N/mm	NM45	648	1296	1944	2592	3240	908	1817	2725	3633	4542	1166	2333	
	SM50	649	1299	1948	2597	3247	910	1820	2731	3641	4551	1169	2337	
	SM60	764	1527	2291	3054	3818	1070	2141	3211	4282	5352	1375	2749	
	SM70	1279	2559	3838	5117	6397	1793	3587	5380	7174	8967	2303	4606	
	SM80	1539	3077	4616	6154	7693	2157	4314	6471	8627	10784	2769	5539	
	Si70	816	1631	2447	3262	4078	1143	2287	3430	4573	5717	1468	2936	
RADIAL STIFFNESS @ T <sub>KN</sub> N/mm	NM45	539	1077	1616	2154	2693	755	1510	2265	3020	3775	969	1939	
	SM50	535	1069	1604	2139	2673	750	1499	2249	2998	3748	962	1925	
	SM60	713	1425	2138	2851	3564	999	1998	2997	3997	4996	1283	2566	
	SM70	891	1782	2673	3564	4455	1249	2498	3747	4996	6245	1604	3208	
	SM80	1247	2493	3740	4987	6234	1748	3495	5243	6991	8739	2244	4488	
	Si70	762	1525	2287	3050	3812	1069	2138	3207	4275	5344	1372	2745	
AXIAL STIFFNESS N/mm	NM45	918	1835	2753	3671	4588	1286	2573	3859	5145	6431	1652	3304	
	SM50	918	1835	2753	3671	4588	1286	2573	3859	5145	6431	1652	3304	
	SM60	918	1835	2753	3671	4588	1286	2573	3859	5145	6431	1652	3304	
	SM70	918	1835	2753	3671	4588	1286	2573	3859	5145	6431	1652	3304	
	SM80	918	1835	2753	3671	4588	1286	2573	3859	5145	6431	1652	3304	
	Si70	684	1368	2052	2736	3420	959	1917	2876	3835	4794	1231	2462	
MAXIMUM AXIAL LOAD AT POINT OF SLIP @ T <sub>KN</sub> (2)	NM45	906	1117	1482	1885	2304	1271	1565	2077	2643	3230	1631	2010	
	SM50	1245	1534	2035	2590	3165	1745	2150	2853	3630	4437	2241	2761	
	SM60	1594	1963	2605	3315	4052	2234	2752	3652	4646	5679	2868	3534	
	SM70	1992	2454	3256	4144	5065	2793	3440	4565	5808	7099	3585	4418	
	SM80	2291	2822	3745	4765	5824	3211	3956	5249	6679	8164	4123	5080	
	Si70	677	834	1107	1409	1722	949	1170	1552	1975	2414	1219	1502	

(1) These values should be corrected for rubber temperatures as shown in the technical data section.

(2) The coupling will slip axially when the maximum axial force is exceeded.

(3) For DNV survey use 70% of these values.

(4) At 10Hz only, allowable vibratory torque at higher or lower frequencies  $f_e = T_{kw} \sqrt{\frac{10Hz}{f_e}}$



# DCB-GS Flexible Coupling - Technical Data

## Rated Torque and Stiffness

COUPLING SIZE		634.5	644.5	654.5	615.5	625.5	635.5	645.5	655.5	616.5	626.5	636.5	646.5	
PREFERRED SIZE		*			*			*		*			*	
NOMINAL TORQUE T <sub>KN</sub> kNm		13.7	18.3	22.8	8.3	16.7	25.0	33.4	41.7	13.8	27.5	41.3	55.1	
MAXIMUM TORQUE T <sub>Kmax</sub> kNm		41.1	54.8	68.5	25.0	50.1	75.1	100.1	125.1	41.3	82.5	123.9	165.2	
ALLOWABLE VIBRATORY TORQUE T <sub>Kv±Nm</sub> (4)		5.1	6.9	8.6	3.1	6.3	9.4	12.5	15.6	5.2	10.3	15.5	20.6	
ALLOWABLE	NM45	408	544	680	174	347	521	694	868	212	424	635	847	
	SM50	474	632	790	192	384	576	768	960	225	450	676	901	
	SM60	506	675	844	202	405	607	810	1012	235	470	705	940	
	SM70	523	697	871	213	426	638	851	1064	251	502	753	1004	
	SM80	576	768	960	236	472	708	944	1180	280	559	839	1118	
	Si70 (3)	1153	1537	1921	460	921	1381	1841	2301	534	1067	1601	2136	
	HEAT AT 30°C AMBIENT (W)													
DYNAMIC TORSIONAL STIFFNESS C <sub>tdyn</sub> (Nmm/rad) (1)	@ 0.10 T <sub>KN</sub>	NM45	0.425	0.567	0.708	0.065	0.129	0.194	0.259	0.323	0.107	0.213	0.320	0.427
		SM50	0.464	0.619	0.774	0.071	0.141	0.212	0.282	0.353	0.117	0.233	0.350	0.466
		SM60	0.485	0.647	0.809	0.074	0.148	0.222	0.295	0.369	0.122	0.244	0.366	0.487
		SM70	0.717	0.956	1.195	0.109	0.218	0.327	0.436	0.546	0.180	0.360	0.540	0.720
		SM80	0.757	1.009	1.262	0.115	0.230	0.346	0.461	0.576	0.190	0.380	0.570	0.760
		Si70	0.476	0.635	0.794	0.072	0.145	0.217	0.290	0.362	0.120	0.239	0.359	0.478
	@ 0.25 T <sub>KN</sub>	NM45	0.565	0.754	0.942	0.086	0.172	0.258	0.344	0.430	0.142	0.284	0.426	0.568
		SM50	0.637	0.850	1.062	0.097	0.194	0.291	0.388	0.485	0.160	0.320	0.480	0.640
		SM60	0.701	0.935	1.169	0.107	0.213	0.320	0.427	0.533	0.176	0.352	0.528	0.704
		SM70	1.016	1.355	1.693	0.155	0.309	0.464	0.618	0.773	0.255	0.510	0.765	1.020
		SM80	1.213	1.617	2.021	0.185	0.369	0.554	0.738	0.923	0.304	0.609	0.913	1.218
		Si70	0.582	0.776	0.969	0.089	0.177	0.266	0.354	0.443	0.146	0.292	0.438	0.584
	@ 0.50 T <sub>KN</sub>	NM45	0.799	1.066	1.332	0.122	0.243	0.365	0.487	0.608	0.201	0.401	0.602	0.803
		SM50	0.926	1.235	1.544	0.141	0.282	0.423	0.564	0.705	0.233	0.465	0.698	0.930
		SM60	1.060	1.413	1.766	0.161	0.323	0.484	0.645	0.806	0.266	0.532	0.798	1.064
		SM70	1.424	1.899	2.374	0.217	0.433	0.650	0.867	1.084	0.358	0.715	1.073	1.430
		SM80	2.035	2.713	3.391	0.310	0.619	0.929	1.238	1.548	0.511	1.021	1.532	2.043
		Si70	0.875	1.166	1.458	0.133	0.266	0.399	0.532	0.665	0.220	0.439	0.659	0.878
	@ 0.75 T <sub>KN</sub>	NM45	1.034	1.378	1.723	0.157	0.315	0.472	0.629	0.786	0.259	0.519	0.778	1.038
		SM50	1.215	1.620	2.025	0.185	0.370	0.555	0.740	0.924	0.305	0.610	0.915	1.220
		SM60	1.418	1.890	2.363	0.216	0.431	0.647	0.863	1.079	0.356	0.712	1.068	1.423
		SM70	1.833	2.444	3.055	0.279	0.558	0.837	1.115	1.394	0.460	0.920	1.380	1.840
		SM80	2.856	3.808	4.760	0.435	0.869	1.304	1.738	2.173	0.717	1.434	2.151	2.868
		Si70	1.318	1.757	2.197	0.201	0.401	0.602	0.802	1.003	0.331	0.662	0.992	1.323
@ 1.0 T <sub>KN</sub>	NM45	1.267	1.689	2.112	0.193	0.386	0.578	0.771	0.144	0.318	0.636	0.954	1.272	
	SM50	1.504	2.005	2.507	0.229	0.458	0.687	0.915	1.144	0.378	0.755	1.133	1.510	
	SM60	1.777	2.369	2.962	0.270	0.541	0.811	1.081	1.352	0.446	0.892	1.338	1.784	
	SM70	2.241	2.988	3.735	0.341	0.682	1.023	1.364	1.705	0.563	1.125	1.688	2.250	
	SM80	3.678	4.904	6.130	0.560	1.119	1.679	2.239	2.798	0.923	1.846	2.769	3.693	
	Si70	1.910	2.547	3.184	0.291	0.581	0.872	1.163	1.453	0.480	0.959	1.439	1.918	
RADIAL STIFFNESS NO LOAD N/mm	NM45	3499	4665	5832	1426	2851	4277	5702	7128	1684	3367	5051	6734	
	SM50	3506	4675	5844	1429	2857	4286	5714	7143	1687	3374	5061	6748	
	SM60	4124	5498	6873	1680	3360	5040	6720	8400	1984	3968	5952	7936	
	SM70	6909	9211	11514	2815	5629	8444	11259	14074	3324	6648	9972	13296	
	SM80	8308	11078	13847	3385	6770	10155	13540	16925	3998	7995	11993	15990	
	Si70	4404	5872	7340	1794	3589	5383	7177	8972	2119	4238	6357	8476	
RADIAL STIFFNESS @ T <sub>KN</sub> N/mm	NM45	2908	3878	4847	1185	2370	3555	4740	5925	1399	2799	4198	5597	
	SM50	2887	3850	4812	1176	2353	3529	4705	5882	1389	2778	4167	5557	
	SM60	3849	5132	6415	1568	3136	4704	6272	7841	1852	3704	5555	7407	
	SM70	4812	6415	8019	1960	3921	5881	7842	9802	2315	4630	6945	9260	
	SM80	6732	8976	11220	2743	5486	8229	10972	13715	3239	6478	9718	12957	
	Si70	4117	5490	6862	1678	3355	5033	6710	8388	1981	3962	5943	7924	
AXIAL STIFFNESS N/mm	NM45	4956	6607	8259	2019	4038	6057	8076	10095	2384	4769	7153	9538	
	SM50	4956	6607	8259	2019	4038	6057	8076	10095	2384	4769	7153	9538	
	SM60	4956	6607	8259	2019	4038	6057	8076	10095	2384	4769	7153	9538	
	SM70	4956	6607	8259	2019	4038	6057	8076	10095	2384	4769	7153	9538	
	SM80	4956	6607	8259	2019	4038	6057	8076	10095	2384	4769	7153	9538	
	Si70	3694	4925	6156	1505	3010	4515	6020	7524	1777	3555	5332	7109	
MAXIMUM AXIAL LOAD AT POINT OF SLIP @ T <sub>KN</sub> (2)	NM45	2667	3394	4148	1994	2457	3260	4148	5070	2355	2901	3850	4899	
	SM50	3663	4662	5698	2739	3375	4478	5698	6964	3234	3985	5288	6729	
	SM60	4689	5967	7293	3506	4320	5732	7293	8914	4140	5101	6769	8613	
	SM70	5862	7458	9117	4382	5399	7164	9116	11143	5175	6377	8461	10766	
	SM80	6741	8577	10484	5040	6209	8239	10484	12814	5951	7333	9730	12381	
	Si70	1993	2536	3100	1490	1836	2436	3100	3789	1760	2168	2877	3661	

(1) These values should be corrected for rubber temperatures as shown in the technical data section.

(2) The coupling will slip axially when the maximum axial force is exceeded.

(3) For DNV survey use 70% of these values.

(4) At 10Hz only, allowable vibratory torque at higher or lower frequencies  $f_e = T_{kv} \sqrt{\frac{10\text{Hz}}{f_e}}$

# DCB-GS Flexible Coupling - Technical Data

## Rated Torque and Stiffness

COUPLING SIZE		656.5	617.5	627.5	637.5	647.5	657.5	618.0	628.0	638.0	648.0	658.0	618.5	
PREFERRED SIZE				*	*				*	*	*			
NOMINAL TORQUE TKN kNm		68.8	21.2	42.3	63.5	84.6	105.8	25.7	51.3	77.0	102.7	128.4	30.8	
MAXIMUM TORQUE TKmax kNm		206.4	63.5	126.9	190.4	253.9	317.3	77.0	154.0	231.1	308.1	385.1	92.4	
ALLOWABLE VIBRATORY TORQUE TKW±Nm (4)		25.8	7.9	15.9	23.8	31.7	39.7	9.6	19.3	28.9	38.5	48.1	11.5	
ALLOWABLE DISSIPATED HEAT AT 30°C AMBIENT (W)	NM45	1059	252	503	755	1007	1258	272	544	815	1087	1359	292	
	SM50	1126	258	517	775	1034	1292	275	550	825	1100	1375	291	
	SM60	1175	267	535	802	1070	1337	283	567	850	1134	1417	299	
	SM70	1254	289	578	868	1157	1446	308	616	925	1233	1541	327	
	SM80	1398	324	647	971	1294	1618	346	691	1037	1382	1728	368	
	Si70 (3)	2670	607	1213	1820	2427	3034	643	1284	1927	2570	3213	679	
DYNAMIC TORSIONAL STIFFNESS Ctdyn (MINm/rad) (1)	@ 0.10 TKN	NM45	0.533	0.164	0.328	0.492	0.656	0.820	0.199	0.398	0.597	0.796	0.995	0.239
		SM50	0.583	0.179	0.358	0.537	0.716	0.895	0.217	0.435	0.652	0.869	1.087	0.261
		SM60	0.609	0.187	0.375	0.562	0.749	0.936	0.227	0.455	0.682	0.909	1.137	0.273
		SM70	0.900	0.277	0.553	0.830	1.107	1.383	0.336	0.672	1.007	1.343	1.679	0.403
		SM80	0.950	0.292	0.584	0.876	1.168	1.460	0.354	0.709	1.063	1.418	1.772	0.425
		Si70	0.598	0.184	0.368	0.551	0.735	0.919	0.223	0.446	0.669	0.892	1.115	0.268
	@ 0.25 TKN	NM45	0.710	0.218	0.436	0.654	0.872	1.091	0.265	0.529	0.794	1.059	1.324	0.318
		SM50	0.800	0.246	0.492	0.738	0.984	1.230	0.298	0.597	0.895	1.194	1.492	0.358
		SM60	0.880	0.271	0.541	0.812	1.082	1.353	0.328	0.657	0.985	1.313	1.642	0.394
		SM70	1.275	0.392	0.784	1.176	1.568	1.960	0.476	0.951	1.427	1.903	2.379	0.571
		SM80	1.522	0.468	0.936	1.404	1.872	2.339	0.568	1.136	1.704	2.271	2.839	0.681
		Si70	0.730	0.224	0.449	0.673	0.898	1.122	0.272	0.545	0.817	1.089	1.362	0.327
	@ 0.50 TKN	NM45	1.003	0.308	0.617	0.925	1.234	1.542	0.374	0.749	1.123	1.497	1.872	0.449
		SM50	1.163	0.357	0.715	1.072	1.430	1.787	0.434	0.867	1.301	1.735	2.169	0.520
		SM60	1.330	0.409	0.818	1.227	1.635	2.044	0.496	0.992	1.489	1.985	2.481	0.595
		SM70	1.788	0.550	1.099	1.649	2.198	2.748	0.667	1.334	2.001	2.668	3.335	0.800
		SM80	2.553	0.785	1.570	2.355	3.140	3.925	0.953	1.905	2.858	3.810	4.763	1.143
		Si70	1.098	0.337	0.675	1.012	1.350	1.687	0.410	0.819	1.229	1.638	2.048	0.491
	@ 0.75 TKN	NM45	1.297	0.399	0.797	1.196	1.595	1.994	0.484	0.968	1.452	1.936	2.420	0.580
		SM50	1.525	0.469	0.938	1.406	1.875	2.344	0.569	1.138	1.707	2.276	2.845	0.682
		SM60	1.779	0.547	1.094	1.641	2.188	2.735	0.664	1.328	1.992	2.655	3.319	0.796
		SM70	2.300	0.707	1.414	2.121	2.828	3.535	0.858	1.716	2.574	3.433	4.291	1.029
		SM80	3.585	1.102	2.204	3.306	4.408	5.510	1.337	2.675	4.012	5.349	6.687	1.604
		Si70	1.654	0.508	1.017	1.525	2.034	2.542	0.617	1.234	1.851	2.468	3.086	0.740
@ 1.0 TKN	NM45	1.590	0.489	0.978	1.466	1.955	2.444	0.593	1.186	1.780	2.373	2.966	0.712	
	SM50	1.888	0.580	1.161	1.741	2.321	2.901	0.704	1.408	2.113	2.817	3.521	0.845	
	SM60	2.230	0.686	1.371	2.057	2.742	3.428	0.832	1.664	2.496	3.328	4.160	0.998	
	SM70	2.813	0.865	1.729	2.594	3.459	4.323	1.049	2.099	3.148	4.197	5.247	1.259	
	SM80	4.616	1.419	2.838	4.257	5.676	7.095	1.722	3.444	5.166	6.889	8.611	2.066	
	Si70	2.398	0.737	1.474	2.211	2.948	3.685	0.895	1.789	2.684	3.578	4.473	1.073	
RADIAL STIFFNESS NO LOAD N/mm	NM45	8418	1944	3888	5832	7775	9719	2073	4147	6220	8294	10367	2203	
	SM50	8435	1948	3896	5844	7792	9740	2078	4156	6233	8311	10389	2208	
	SM60	9920	2291	4582	6873	9163	11454	2444	4887	7331	9774	12218	2596	
	SM70	16620	3838	7676	11514	15352	19190	4094	8188	12282	16376	20470	4350	
	SM80	19988	4616	9232	13847	18463	23079	4923	9847	14770	19694	24617	5231	
	Si70	10595	2447	4893	7340	9787	12234	2610	5220	7830	10439	13049	2773	
RADIAL STIFFNESS @ TKN N/mm	NM45	6996	1616	3231	4847	6463	8078	1723	3447	5170	6894	8617	1831	
	SM50	6946	1604	3208	4812	6416	8020	1711	3422	5133	6844	8555	1818	
	SM60	9259	2138	4276	6415	8553	10691	2281	4562	6842	9123	11404	2423	
	SM70	11575	2673	5346	8019	10692	13366	2851	5703	8554	11405	14257	3030	
	SM80	16196	3740	7480	11220	14961	18701	3990	7979	11969	15958	19948	4239	
	Si70	9905	2287	4575	6862	9150	11437	2440	4880	7320	9760	12200	2592	
AXIAL STIFFNESS N/mm	NM45	11922	2753	5506	8259	11012	13765	2937	5873	8810	11746	14683	3120	
	SM50	11922	2753	5506	8259	11012	13765	2937	5873	8810	11746	14683	3120	
	SM60	11922	2753	5506	8259	11012	13765	2937	5873	8810	11746	14683	3120	
	SM70	11922	2753	5506	8259	11012	13765	2937	5873	8810	11746	14683	3120	
	SM80	11922	2753	5506	8259	11012	13765	2937	5873	8810	11746	14683	3120	
	Si70	8886	2052	4104	6156	8208	10260	2189	4378	6566	8755	10944	2326	
MAXIMUM AXIAL LOAD AT POINT OF SLIP @ TKN (2)	NM45	5988	2719	3350	4445	5656	6913	2900	3573	4741	6033	7374	3081	
	SM50	8225	3735	4602	6106	7769	9496	3984	4908	6513	8287	10129	4233	
	SM60	10528	4781	5890	7815	9945	12155	5099	6283	8336	10608	12966	5418	
	SM70	13160	5976	7363	9769	12431	15194	6374	7853	10420	13259	16207	6773	
	SM80	15134	6872	8467	11235	14295	17473	7330	9031	11984	15248	18638	7788	
	Si70 1	4474	2032	2503	3322	4226	5166	2167	2670	3543	4508	5510	2303	

(1) These values should be corrected for rubber temperatures as shown in the technical data section.

(2) The coupling will slip axially when the maximum axial force is exceeded.

(3) For DNV survey use 70% of these values.

(4) At 10Hz only, allowable vibratory torque at higher or lower frequencies  $f_e = Tkw \sqrt{\frac{10\text{Hz}}{f_e}}$

# DCB-GS Flexible Coupling - Technical Data

## Rated Torque and Stiffness

COUPLING SIZE		628.5	638.5	648.5	658.5	619.5	629.5	639.5	649.5	659.5	6111.0	6211.0	6311.0	
PREFERRED SIZE			*	*	*				*					
NOMINAL TORQUE TKN kNm		61.6	92.4	123.2	154.0	43.0	86.0	129.0	172.0	215.0	67.0	133.0	200.0	
MAXIMUM TORQUE TKmax kNm		184.8	277.2	369.5	461.9	129.0	258.0	387.1	516.1	645.1	200.0	400.0	601.0	
ALLOWABLE VIBRATORY TORQUE TKw±Nm (4)		23.1	34.6	46.2	57.7	16.1	32.3	48.4	64.5	80.6	25.0	50.0	75.0	
ALLOWABLE DISSIPATED HEAT AT 30°C AMBIENT (W)	NM45	585	877	1170	1462	334	668	1003	1337	1671	398	796	1194	
	SM50	583	874	1166	1457	324	649	973	1297	1622	373	746	1119	
	SM60	599	898	1198	1497	331	662	993	1324	1655	377	754	1132	
	SM70	655	982	1310	1637	365	731	1096	1462	1827	422	844	1266	
	SM80	735	1103	1471	1838	412	824	1236	1647	2059	478	955	1433	
	Si70 (3)	1357	2036	2713	3391	749	1499	2247	2996	3746	853	1706	2557	
DYNAMIC TORSIONAL STIFFNESS Ctdyn (Nmm/rad) (1)	@ 0.10 TKN	NM45	0.477	0.716	0.955	1.193	0.333	0.668	1.005	1.343	1.683	0.517	1.034	1.552
		SM50	0.521	0.782	1.043	1.303	0.364	0.730	1.097	1.146	1.838	0.565	1.130	1.695
		SM60	0.545	0.818	1.091	1.363	0.381	0.763	1.148	1.534	1.922	0.591	1.182	1.773
		SM70	0.806	1.208	1.611	2.014	0.562	1.128	1.696	2.266	2.840	0.873	1.746	2.619
		SM80	0.850	1.275	1.701	2.126	0.594	1.190	1.790	2.392	2.998	0.921	1.843	2.764
		Si70	0.535	0.803	1.070	1.338	0.374	0.749	1.126	1.505	1.886	0.580	1.160	1.739
	@ 0.25 TKN	NM45	0.635	0.953	1.270	1.588	0.443	0.889	1.337	1.787	2.239	0.688	1.376	2.065
		SM50	0.716	1.074	1.432	1.790	0.500	1.002	1.507	2.015	2.524	0.776	1.552	2.328
		SM60	0.788	1.181	1.575	1.969	0.550	1.103	1.658	2.216	2.777	0.854	1.707	2.561
		SM70	1.141	1.712	2.282	2.853	0.797	1.598	2.402	3.211	4.023	1.237	2.473	3.710
		SM80	1.362	2.043	2.724	3.406	0.951	1.907	2.868	3.833	4.803	1.476	2.953	4.429
		Si70	0.653	0.980	1.307	1.633	0.456	0.915	1.375	1.838	2.303	0.708	1.416	2.124
	@ 0.50 TKN	NM45	0.898	1.347	1.796	2.245	0.627	1.257	1.890	2.526	3.166	0.973	1.946	2.919
		SM50	1.040	1.561	2.081	2.601	0.727	1.457	2.190	2.927	3.668	1.128	2.255	3.383
		SM60	1.190	1.786	2.381	2.976	0.831	1.667	2.506	3.349	4.197	1.290	2.580	3.870
		SM70	1.600	2.400	3.200	4.000	1.117	2.240	3.368	4.501	5.640	1.734	3.468	5.201
		SM80	2.285	3.428	4.570	5.713	1.596	3.199	4.811	6.430	8.057	2.477	4.953	7.430
		Si70	0.983	1.474	1.965	2.456	0.686	1.376	2.068	2.764	3.464	1.065	2.130	3.194
	@ 0.75 TKN	NM45	1.161	1.741	2.322	2.902	0.811	1.625	2.444	3.266	4.093	1.258	2.516	3.774
		SM50	1.365	2.047	2.730	3.412	0.953	1.911	2.873	3.840	4.812	1.479	2.958	4.438
		SM60	1.592	2.389	3.185	3.981	1.112	2.229	3.352	4.481	5.614	1.726	3.452	5.177
		SM70	2.059	3.088	4.117	5.146	1.437	2.882	4.333	5.792	7.257	2.231	4.462	6.693
		SM80	3.208	4.812	6.417	8.021	2.240	4.491	6.754	9.027	11.311	3.477	6.954	10.430
		Si70	1.480	2.221	2.961	3.701	1.034	2.073	3.116	4.165	5.219	1.604	3.209	4.813
@ 1.0 TKN	NM45	1.423	2.135	2.846	3.558	0.994	1.992	2.996	4.004	5.017	1.542	3.084	4.627	
	SM50	1.689	2.534	3.379	4.223	1.180	2.365	3.556	4.753	5.956	1.831	3.662	5.492	
	SM60	1.996	2.994	3.992	4.990	1.394	2.794	4.202	5.616	7.037	2.163	4.326	6.489	
	SM70	2.517	3.776	5.035	6.293	1.758	3.524	5.299	7.083	8.875	2.728	5.456	8.184	
	SM80	4.131	6.197	8.263	10.328	2.885	5.784	8.697	11.624	14.565	4.477	8.954	13.431	
	Si70	2.146	3.219	4.292	5.365	1.498	3.004	4.517	6.037	7.565	2.325	4.651	6.976	
RADIAL STIFFNESS NO LOAD N/mm	NM45	4406	6609	8812	11015	2463	4926	7390	9853	12316	2851	5702	8553	
	SM50	4415	6623	8831	11038	2468	4937	7405	9873	12342	2857	5714	8571	
	SM60	5193	7789	10385	12981	2903	5806	8709	11612	14515	3360	6720	10080	
	SM70	8700	13050	17399	21749	4864	9727	14591	19454	24318	5629	11259	16888	
	SM80	10462	15694	20925	26156	5849	11698	17547	23396	29245	6770	13540	20310	
	Si70	5546	8319	11092	13865	3100	6201	9301	12402	15502	3589	7177	10766	
RADIAL STIFFNESS @ TKN N/mm	NM45	3662	5493	7324	9156	2047	4095	6142	8189	10237	2370	4740	7109	
	SM50	3636	5454	7272	9089	2033	4065	6098	8130	10163	2353	4705	7058	
	SM60	4847	7270	9693	12117	2709	5419	8128	10838	13547	3136	6272	9409	
	SM70	6059	9089	12118	15148	3387	6775	10162	13549	16936	3921	7842	11762	
	SM80	8478	12717	16955	21194	4739	9479	14218	18958	23697	5486	10972	16458	
	Si70	5185	7777	10370	12962	2899	5797	8696	11594	14493	3355	6710	10065	
AXIAL STIFFNESS N/mm	NM45	6240	9360	12481	15601	3488	6977	10465	13954	17442	4038	8076	12114	
	SM50	6240	9360	12481	15601	3488	6977	10465	13954	17442	4038	8076	12114	
	SM60	6240	9360	12481	15601	3488	6977	10465	13954	17442	4038	8076	12114	
	SM70	6240	9360	12481	15601	3488	6977	10465	13954	17442	4038	8076	12114	
	SM80	6240	9360	12481	15601	3488	6977	10465	13954	17442	4038	8076	12114	
	Si70	4651	6977	9302	11628	2600	5200	7800	10401	13001	3010	6020	9029	
MAXIMUM AXIAL LOAD AT POINT OF SLIP @ TKN (2)	NM45	3797	5038	6410	7835	3445	4245	5632	7167	8760	3988	4914	6520	
	SM50	5215	6920	8805	10763	4733	5831	7737	9845	12033	5478	6749	8955	
	SM60	6675	8857	11271	13776	6058	7464	9903	12601	15402	7012	8639	11463	
	SM70	8344	11072	14088	17220	7572	9330	12379	15751	19253	8765	10799	14329	
	SM80	9596	12733	16201	19803	8708	10729	14236	18114	22141	10080	12419	16478	
	Si70	2837	3764	4790	5855	2575	3172	4209	5355	6546	2980	3672	4872	

(1) These values should be corrected for rubber temperatures as shown in the technical data section.  
 (2) The coupling will slip axially when the maximum axial force is exceeded.  
 (3) For DNV survey use 70% of these values.  
 (4) At 10Hz only, allowable vibratory torque at higher or lower frequencies  $f_e = T_{KN} \sqrt{\frac{10\text{Hz}}{f_e}}$



# DCB-GS Flexible Coupling - Technical Data

## Rated Torque and Stiffness

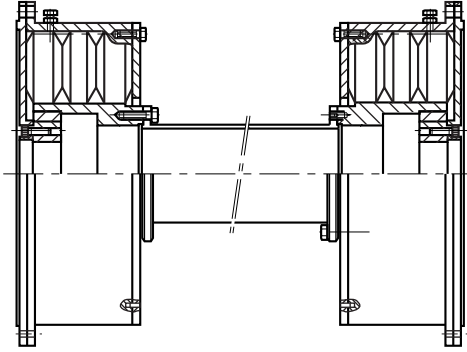
COUPLING SIZE		6411.0	6511.0	6113.0	6213.0	6313.0	6413.0	6513.0	6115.0	6215.0	6315.0	6415.0	6515.0	
PREFERRED SIZE		*												
NOMINAL TORQUE TKN kNm		267	334	110	220	331	441	551	169	338	508	677	846	
MAXIMUM TORQUE TKmax kNm		801	1001	331	661	992	1322	1653	508	1015	1523	2031	2539	
ALLOWABLE VIBRATORY TORQUE TKW±Nm (4)		100	125	41	83	124	165	207	63	127	190	254	317	
ALLOWABLE DISSIPATED HEAT AT 30°C AMBIENT (W)	NM45	1592	1989	487	973	1460	1947	2433	578	1156	1733	2311	2889	
	SM50	1492	1865	438	876	1314	1752	2190	503	1005	1508	2010	2513	
	SM60	1509	1886	439	877	1316	1755	2193	499	998	1497	1996	2495	
	SM70	1688	2110	498	997	1495	1993	2492	574	1148	1723	2297	2871	
	SM80	1911	2388	567	1134	1700	2267	2834	656	1312	1968	2624	3280	
	Si70 (3)	3410	4263	990	1980	2970	3960	4950	1124	2250	3374	4499	5624	
	DYNAMIC TORSIONAL STIFFNESS Ctdyn (MNm/rad) (1)	@ 0.10 TKN	NM45	2.069	2.586	0.854	1.707	2.561	3.415	4.269	1.311	2.623	3.934	5.246
SM50			2.260	2.825	0.933	1.865	2.798	3.730	4.663	1.433	2.865	4.298	5.730	7.163
SM60			2.364	2.955	0.976	1.951	2.926	3.902	4.877	1.498	2.997	4.495	5.994	7.492
SM70			3.492	4.365	1.441	2.882	4.323	5.763	7.204	2.213	4.427	6.640	8.854	11.067
SM80			3.686	4.607	1.521	3.042	4.563	6.084	7.605	2.336	4.673	7.009	9.346	11.682
Si70			2.319	2.899	0.957	1.914	2.871	3.828	4.785	1.470	2.940	4.410	5.880	7.350
@ 0.25 TKN		NM45	2.753	3.441	1.136	2.272	3.408	4.544	5.679	1.745	3.490	5.235	6.980	8.725
		SM50	3.104	3.880	1.281	2.562	3.842	5.123	6.404	1.968	3.935	5.903	7.870	9.838
		SM60	3.414	4.268	1.409	2.818	4.227	5.635	7.044	2.164	4.329	6.493	8.657	10.821
		SM70	4.947	6.183	2.041	4.082	6.124	8.165	10.206	3.136	6.271	9.407	12.543	15.679
		SM80	5.905	7.381	2.437	4.873	7.310	9.747	12.183	3.743	7.486	11.230	14.973	18.716
		Si70	2.832	3.540	1.169	2.337	3.506	4.675	5.844	1.795	3.591	5.386	7.181	8.977
@ 0.50 TKN		NM45	3.892	4.866	1.606	3.212	4.819	6.425	8.031	2.467	4.935	7.402	9.870	12.337
		SM50	4.510	5.638	1.861	3.722	5.583	7.445	9.306	2.859	5.718	8.577	11.436	14.295
		SM60	5.160	6.450	2.129	4.259	6.388	8.517	10.646	3.271	6.542	9.813	13.084	16.355
		SM70	6.935	8.669	2.862	5.723	8.585	11.447	14.309	4.396	8.792	13.188	17.585	21.981
		SM80	9.906	12.383	4.088	8.175	12.263	16.351	20.438	6.279	12.559	18.838	25.118	31.397
		Si70	4.259	5.324	1.757	3.515	5.272	7.030	8.787	2.700	5.400	8.099	10.799	13.499
@ 0.75 TKN		NM45	5.032	6.290	2.076	4.153	6.229	8.306	10.382	3.190	6.380	9.569	12.759	15.949
		SM50	5.917	7.396	2.441	4.883	7.324	9.766	12.207	3.751	7.501	11.252	15.002	18.753
		SM60	6.903	8.629	2.849	5.697	8.546	11.394	14.243	4.376	8.752	13.128	17.503	21.879
		SM70	8.924	11.154	3.682	7.364	11.047	14.729	18.411	5.657	11.313	16.970	22.626	28.283
		SM80	13.907	17.384	5.739	11.477	17.216	22.955	28.693	8.816	17.631	26.447	35.263	44.078
		Si70	6.417	8.021	2.648	5.296	7.944	10.592	13.240	4.068	8.136	12.203	16.271	20.339
@ 1.0 TKN		NM45	6.169	7.711	2.546	5.091	7.637	10.182	12.728	3.910	7.821	11.731	15.642	19.552
		SM50	7.323	9.154	3.022	6.044	9.065	12.087	15.109	4.642	9.284	13.926	18.568	23.210
		SM60	8.652	10.815	3.570	7.140	10.710	14.281	17.851	5.484	10.969	16.453	21.938	27.422
		SM70	10.912	13.640	4.503	9.005	13.508	18.011	22.514	6.917	13.834	20.751	27.668	34.585
	SM80	17.908	22.385	7.390	14.779	22.169	29.559	36.948	11.352	22.704	34.056	45.408	56.760	
	Si70	9.302	11.627	3.838	7.677	11.515	15.353	19.192	5.896	11.793	17.689	23.586	29.482	
RADIAL STIFFNESS NO LOAD N/mm	NM45	11405	14256	3369	6739	10108	13478	16847	3888	7775	11663	15551	19439	
	SM50	11428	14285	3376	6753	10129	13506	16882	3896	7792	11687	15583	19479	
	SM60	13440	16800	3971	7942	11912	15883	19854	4582	9163	13745	18327	22909	
	SM70	22518	28147	6653	13305	19958	26611	33264	7676	15352	23029	30705	38381	
	SM80	27080	33851	8001	16001	24002	32003	40003	9232	18463	27695	36926	46158	
	Si70	14355	17944	4241	8482	12723	16964	21205	4893	9787	14680	19574	24467	
RADIAL STIFFNESS @ TKN N/mm	NM45	9479	11849	2801	5601	8402	11202	14003	3231	6463	9694	12926	16157	
	SM50	9411	11763	2780	5561	8341	11121	13901	3208	6416	9624	12832	16040	
	SM60	12545	15681	3706	7412	11119	14825	18531	4276	8553	12829	17106	21382	
	SM70	15683	19604	4633	9267	13900	18534	23167	5346	10692	16039	21385	26731	
	SM80	21943	27429	6483	12966	19449	25932	32415	7480	14961	22441	29921	37402	
	Si70	13420	16775	3965	7930	11895	15859	19824	4575	9150	13724	18299	22874	
AXIAL STIFFNESS N/mm	NM45	16152	20190	4772	9544	14316	19088	23860	5506	11012	16518	22024	27531	
	SM50	16152	20190	4772	9544	14316	19088	23860	5506	11012	16518	22024	27531	
	SM60	16152	20190	4772	9544	14316	19088	23860	5506	11012	16518	22024	27531	
	SM70	16152	20190	4772	9544	14316	19088	23860	5506	11012	16518	22024	27531	
	SM80	16152	20190	4772	9544	14316	19088	23860	5506	11012	16518	22024	27531	
	Si70	12039	15049	3557	7114	10670	14227	17784	4104	8208	12312	16416	20520	
MAXIMUM AXIAL LOAD AT POINT OF SLIP @ TKN (2)	NM45	8296	10140	4713	5807	7705	9804	11983	5438	6700	8890	11312	13827	
	SM50	11395	13929	6474	7976	10583	13467	16460	7470	9203	12211	15538	18993	
	SM60	14586	17829	8286	10209	13547	17237	21069	9561	11780	15631	19889	24311	
	SM70	18233	22286	10358	12762	16933	21547	26337	11951	14725	19538	24861	30388	
	SM80	20967	25629	11912	14676	19473	24779	30287	13744	16934	22469	28591	34947	
	Si70	6199	7577	3522	4339	5757	7326	8954	4064	5007	6643	8453	10332	

(1) These values should be corrected for rubber temperatures as shown in the technical data section.  
 (2) The coupling will slip axially when the maximum axial force is exceeded.  
 (3) For DNV survey use 70% of these values.  
 (4) At 10Hz only, allowable vibratory torque at higher or lower frequencies  $f_e = Tkw \sqrt{\frac{10\text{Hz}}{f_e}}$

# DCB-GS Flexible Coupling - Technical Data

The DCB-GS coupling can be adapted to meet customer requirements. Typical examples can be seen from the design variations shown below. For a more comprehensive selection contact Renold Hi-Tec Couplings.

## Cardan Shaft Coupling



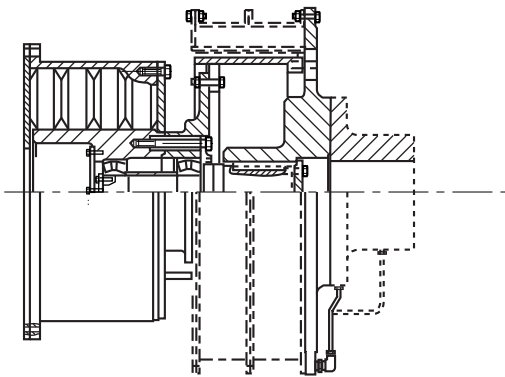
Cardan shaft coupling to give high misalignment capability, low axial and angular stiffness and high noise attenuation.

## Universal Joint Shaft Coupling



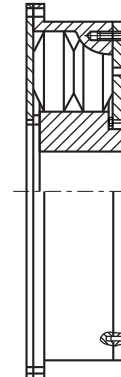
Coupling for use with a universal joint shaft. The coupling has radial and axial bearings to accept the sinusoidal loads from the universal joint shaft.

## Clutch Coupling



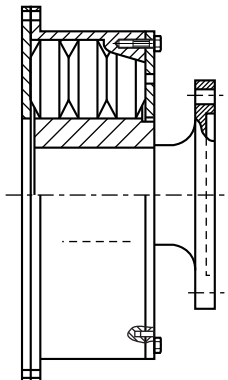
Clutch coupling to allow the drive to be engaged and disengaged.

## Limited End Float Coupling



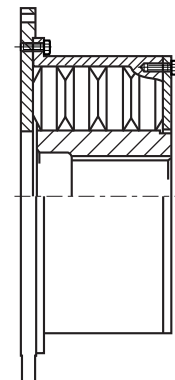
Limited end float coupling for use on applications where axial restraint is required, such as alternators with sleeve bearings.

## Stub Shaft Coupling



Stub shaft coupling for flywheel to flange application or where increased distance between the driving and driven machines is required.

## Adaptor Plate Coupling



Adaptor plate coupling for adapting a standard DCB-GS coupling to meet customer requirements.

## RB Flexible Coupling



### 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 2789 Grade 420/12
- Separate rubber elements with a choice of grade and hardness with SM70 shore hardness being the standard
- Rubber elements which are totally enclosed and loaded in compression

General purpose, cost effective range, which is manufactured in SG iron for torques up to 41kNm.

### The Standard Range Comprises

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

### Applications

- Generator sets
- Pump sets
- Compressors
- Wind turbines
- Metal manufacture
- Bulk handling
- Pulp and paper industry
- General purpose industrial applications

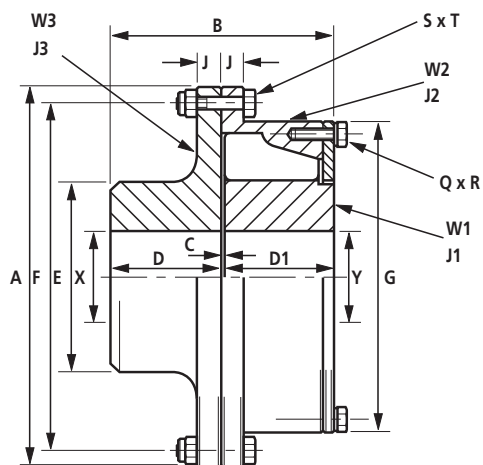
### Benefits

- 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 running 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.
- The RB Coupling gives the lowest lifetime cost.



## RB Shaft to Shaft

### Rigid half / Flex half



### 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

### Dimensions, Weight, Inertia and Alignment

COUPLING SIZE		0.12	0.2	0.24	0.37	0.73	1.15	2.15	3.86	5.5
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	6	6	8	8	10	16	12	12
	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 (rpm)	(1)	5250	4725	4410	4035	3410	2925	2250	2070	1820
WEIGHT (3) (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
INERTIA (3) (kg m <sup>2</sup> )	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
ALLOWABLE MISALIGNMENT (2)										
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.

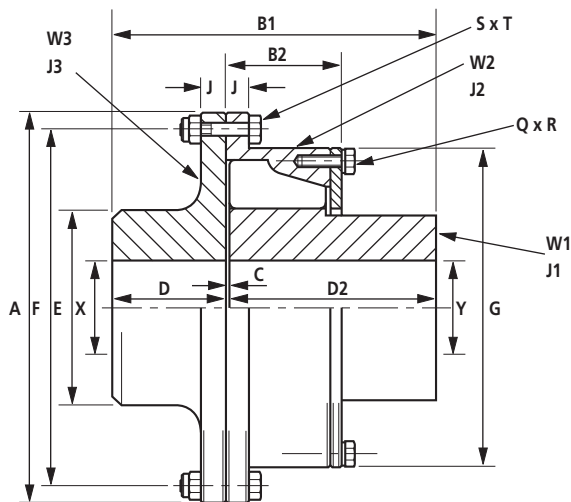
(2) Installations should be initially aligned as accurately as possible. In order to allow for deterioration in alignment over time, it is recommended that initial alignment should not exceed 25% of the above noted data. The forces on the driving and driven machinery should be calculated to ensure that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

(3) Weights and inertias are based on the minimum bore size.



# RB Shaft to Shaft with Increase Shaft Engagement

## Rigid half / Flex half



## 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

## Dimensions, Weight, Inertia and Alignment

COUPLING SIZE		0.12	0.2	0.24	0.37	0.73	1.15	2.15	3.86	5.5
DIMENSIONS (mm)	A	200.0	222.2	238.1	260.3	308.0	358.8	466.7	508.0	571.5
	B1	139.0	152.2	173.5	189.9	233.9	268.4	309.1	343.4	386.1
	B2	54.0	57.2	63.5	69.8	88.9	98.4	119.0	133.4	146.0
	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
	D2	85	95	110	120	145	170	190	210	240
	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	6	6	8	8	10	16	12	12
	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 (rpm)	(1)	5250	4725	4410	4035	3410	2925	2250	2070	1820
WEIGHT (3) (kg)	W1	4.21	6.42	8.67	11.85	19.43	35.28	53.81	95.50	162.79
	W2	4.0	5.05	6.38	8.14	13.29	18.41	33.98	43.87	59.0
	W3	4.06	5.82	7.42	10.44	18.03	27.37	47.43	75.39	113.32
INERTIA (3) (kg m <sup>2</sup> )	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
ALLOWABLE MISALIGNMENT (2)										
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

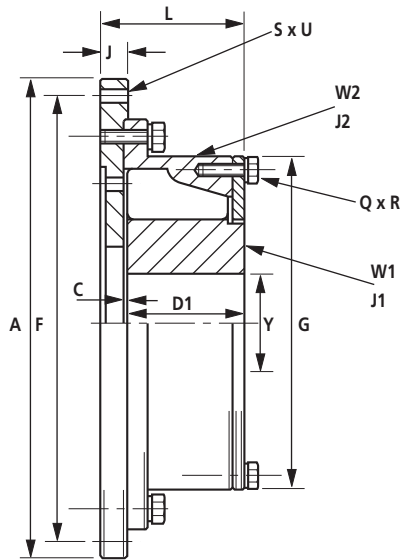
(1) For operation above 80% of the declared maximum coupling speed, it is recommended that the coupling is dynamically balanced.

(2) 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 allowables.

(3) Weights and inertias are based on the minimum bore size.

## RB Standard SAE Flywheel to Shaft

0.24 to 1.15



### Features

- Wide range of adaptor plates
- Choice of rubber compound and hardness
- Short axial length

### Benefits

- Allows the coupling to be adapted to suit most engine flywheels
- Allows control of the torsional vibration system
- Allows the coupling to fit in bell housed applications

### Dimensions, Weight, Inertia and Alignment

COUPLING SIZE		0.24		0.37		0.73		1.15	
		SAE 10	SAE 11.5	SAE 11.5	SAE 14	SAE 11.5	SAE 14	SAE 14	SAE 18
DIMENSIONS (mm)	A	314.3	352.4	352.4	466.7	352.4	466.7	466.7	571.5
	C	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
	D1	60.3	60.3	66.7	66.7	85.7	85.7	95.2	95.2
	F	295.27	333.38	333.38	438.15	333.38	438.15	438.15	542.92
	G	186.5	186.5	210	210	251	251	295	295
	J	20	20	20	20	20	20	20	28
	L	79.5	79.5	85.8	85.8	104.9	104.9	114.4	122.4
	Q	6	6	6	6	6	6	6	6
	R	M8	M8	M10	M10	M10	M10	M12	M12
	S	8	8	8	8	8	8	8	6
	U	10.5	10.5	10.5	13.5	10.5	13.5	13.5	16.7
	MAX. Y	75	75	85	85	95	95	115	115
	MIN. Y	40	40	40	40	55	55	55	55
RUBBER ELEMENTS	PER CAVITY	1	1	1	1	1	1	1	1
	PER COUPLING	12	12	12	12	12	12	12	12
MAXIMUM SPEED (rpm)	(1)	3710	3305	3305	2500	3310	2500	2500	2040
WEIGHT (3) (kg)	W1	5.29	5.29	7.49	7.49	12.82	12.82	23.39	23.39
	W2	15.71	17.1	19.96	28.76	24.01	35.31	39.03	61.0
INERTIA (3) (kg m <sup>2</sup> )	J1	0.0131	0.0131	0.0233	0.0233	0.0563	0.0563	0.1399	0.1399
	J2	0.1922	0.2546	0.3087	0.7487	0.4000	0.8900	1.0274	2.3974
ALLOWABLE MISALIGNMENT (2)									
RADIAL (mm)		0.75	0.75	0.75	0.75	1.0	1.0	1.5	1.5
AXIAL (mm)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
CONICAL (degree)		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.

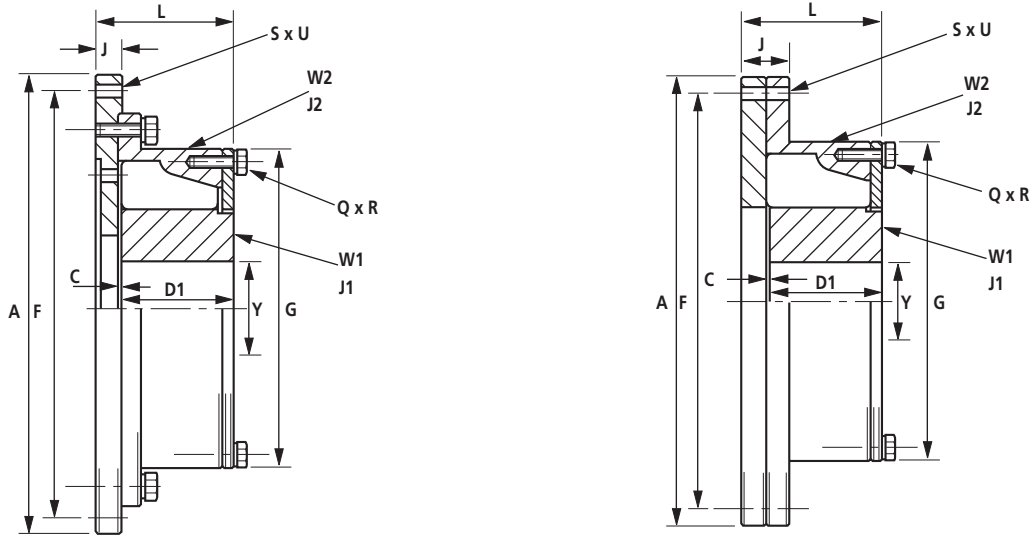
(2) Installations should be initially aligned as accurately as possible. In order to allow for deterioration in alignment over time, it is recommended that initial alignment should not exceed 25% of the above noted data. The forces on the driving and driven machinery should be calculated to ensure that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

(3) Weights and inertias are based on the minimum bore size.

# RB Standard SAE Flywheel to Shaft

2.15 - 5.5

Keep Plate (2.15 SAE 14 and 5.5 SAE 18)



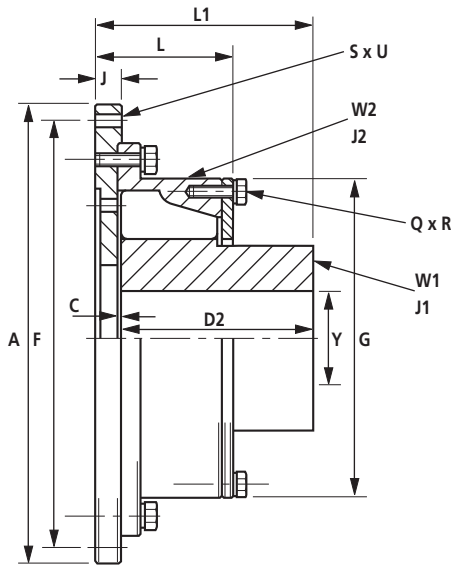
## Dimensions, Weight, Inertia and Alignment

COUPLING SIZE		2.15			3.86			5.5		
		SAE 14	SAE 18	SAE 21	SAE 18	SAE 21	SAE 24	SAE 18	SAE 21	SAE 24
DIMENSIONS (mm)	A	466.7	571.5	673.1	571.5	673.1	733.4	571.5	673.1	733.4
	C	4.8	4.8	4.8	6.4	6.4	6.4	6.4	6.4	6.4
	D1	114.3	114.3	114.3	127.0	127.0	127.0	139.7	139.7	139.7
	F	438.15	542.92	641.35	542.92	641.35	692.15	542.92	641.35	692.15
	G	362.0	362.0	362.0	435.0	435.0	435.0	501.5	501.5	501.5
	J	35.0	28.0	28.0	28.0	31.0	31.0	41.4	28.0	31.0
	L	135.05	143.0	143.0	157.35	160.35	160.35	162.05	170.0	173.05
	Q	6	6	6	7	7	7	8	8	8
	R	M12	M12	M12	M12	M12	M12	M12	M12	M12
	S	8	6	12	6	12	12	6	12	12
	U	13.2	16.7	16.7	16.7	16.7	22	16.7	16.7	22
	MAX. Y	140	140	140	170	170	170	210	210	210
	MIN. Y	70	70	70	80	80	80	90	90	90
RUBBER ELEMENTS	PER CAVITY	1	1	1	1	1	1	1	1	1
	PER COUPLING	12	12	12	14	14	14	16	16	16
MAXIMUM SPEED (rpm)	(1)	2500	2040	1800	2040	1800	1590	2040	1800	1590
WEIGHT (3) (kg)	W1	35.88	35.88	35.88	62.81	62.81	62.81	102.09	102.09	102.09
	W2	50.42	79.17	92.19	86.46	110.35	120.33	79.14	117.21	135.46
INERTIA (3) (kg m <sup>2</sup> )	J1	0.3227	0.3227	0.3227	0.8489	0.8489	0.8489	1.9633	1.9633	1.9633
	J2	1.6535	3.2935	4.9935	3.9461	6.4661	8.1461	4.5684	7.3291	9.6691
ALLOWABLE MISALIGNMENT (2)										
	RADIAL (mm)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	AXIAL (mm)	2.0	2.0	2.0	3.0	3.0	3.0	3.0	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) 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 allowables.
- (3) Weights and inertias are based on the minimum bore size.

# RB Standard SAE Flywheel to Shaft with Increased Shaft Engagement

0.24 - 1.15



### Features

- Long Boss Inner Members

### Benefits

- Allows small diameter long length shafts to be used
- Reduces key stress
- Allows increased distance between shaft end and flywheel
- Full shaft engagement avoids the need for spacer collars

### Dimensions, Weight, Inertia and Alignment

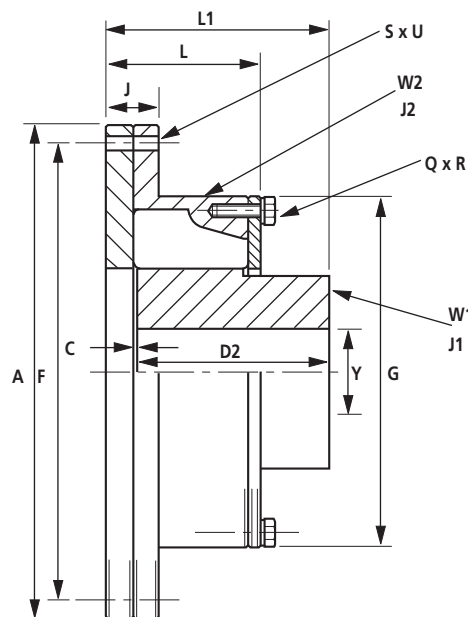
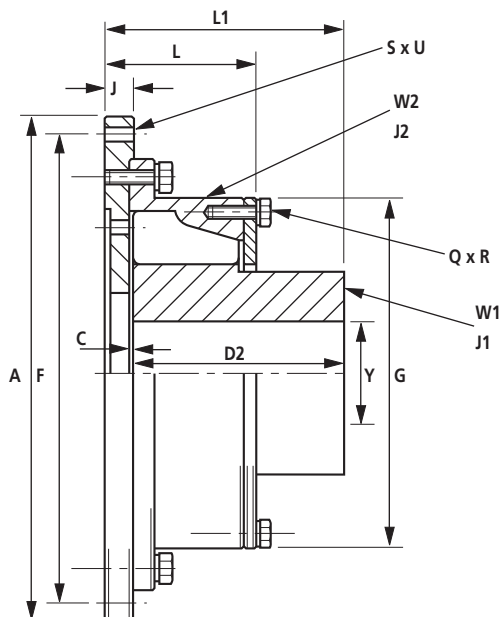
COUPLING SIZE		0.24		0.37		0.73		1.15	
		SAE 10	SAE 11.5	SAE 11.5	SAE 14	SAE 11.5	SAE 14	SAE 14	SAE 18
DIMENSIONS (mm)	A	314.3	352.4	352.4	466.7	352.4	466.7	466.7	571.5
	C	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
	D2	110	110	120	120	145	145	170	170
	F	295.27	333.38	333.38	438.15	333.38	438.15	438.15	542.92
	G	186.5	186.5	210	210	251	251	295	295
	J	20	20	20	20	20	20	20	28
	L	79.5	79.5	85.8	85.8	104.9	104.9	114.4	122.4
	L1	129.2	129.2	139.1	139.1	164.2	164.2	189.2	197.2
	Q	6	6	6	6	6	6	6	6
	R	M8	M8	M10	M10	M10	M10	M12	M12
	S	8	8	8	8	8	8	8	6
	U	10.5	10.5	10.5	13.5	10.5	13.5	13.5	16.7
	MAX. Y	75	75	85	85	95	95	115	115
	MIN. Y	40	40	40	40	55	55	55	55
RUBBER ELEMENTS	PER CAVITY	1	1	1	1	1	1	1	1
	PER COUPLING	12	12	12	12	12	12	12	12
MAXIMUM SPEED (rpm)	(1)	3710	3305	3305	2500	3305	2500	2500	2040
WEIGHT (3) (kg)	W1	8.67	8.67	11.85	11.85	19.43	19.43	35.28	35.28
	W2	15.71	17.10	19.96	28.76	24.01	35.31	39.03	61.00
INERTIA (3) (kg m <sup>2</sup> )	J1	0.0193	0.0193	0.0326	0.0326	0.0770	0.0770	0.1896	0.1896
	J2	0.1922	0.2546	0.3087	0.7487	0.4000	0.8900	1.0274	2.3974
ALLOWABLE MISALIGNMENT (2)									
RADIAL (mm)		0.75	0.75	0.75	0.75	1.0	1.0	1.5	1.5
AXIAL (mm)		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
CONICAL (degree)		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) 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 allowables.
- (3) Weights and inertias are based on the minimum bore size.

## RB Standard SAE Flywheel to Shaft with Increased Shaft Engagement

2.15 - 5.5

Keep Plate (2.15 SAE 14 and 5.5 SAE 18)



### Dimensions, Weight, Inertia and Alignment

COUPLING SIZE		2.15			3.86			5.5		
		SAE 14	SAE 18	SAE 21	SAE 18	SAE 21	SAE 24	SAE 18	SAE 21	SAE 24
DIMENSIONS (mm)	A	466.7	571.5	673.1	571.5	673.1	733.4	571.5	673.1	733.4
	C	4.8	4.8	4.8	6.4	6.4	6.4	6.4	6.4	6.4
	D2	190	190	190	210	210	210	240	240	240
	F	438.15	542.92	641.35	542.92	641.35	692.15	542.92	641.35	692.15
	G	362.0	362.0	362.0	435.0	435.0	435.0	501.5	501.5	501.5
	J	35.0	28.0	28.0	28.0	31.0	31.0	41.4	28.0	31.0
	L	135.0	143.0	143.0	157.4	160.4	160.4	162.05	170.0	173.0
	L1	210.7	219.7	219.7	240.4	243.4	243.4	262.4	271.3	273.3
	Q	6	6	6	7	7	7	8	8	8
	R	M12	M12	M12	M12	M12	M12	M12	M12	M12
	S	8	6	12	6	12	12	6	12	12
	U	13.5	16.7	16.7	16.7	16.7	22	16.7	16.7	22
	MAX. Y	140	140	140	170	170	170	210	210	210
	MIN. Y	70	70	70	80	80	80	90	90	90
RUBBER ELEMENTS	PER CAVITY	1	1	1	1	1	1	1	1	
	PER COUPLING	12	12	12	14	14	14	16	16	
MAXIMUM SPEED (rpm)	(1)	2500	2040	1800	2040	1800	1590	2040	1800	
WEIGHT (3) (kg)	W1	53.81	53.81	53.81	95.50	95.50	95.50	162.79	162.79	162.79
	W2	50.42	79.17	92.19	86.46	110.35	120.33	79.14	117.21	135.46
INERTIA (3) (kg m <sup>2</sup> )	J1	0.4347	0.4347	0.4347	1.1833	1.1833	1.1833	2.8953	2.8953	2.8953
	J2	1.6535	3.2935	4.9935	3.9461	6.4661	8.1461	4.5684	7.3291	9.6691
ALLOWABLE MISALIGNMENT (2)										
	RADIAL (mm)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	AXIAL (mm)	2.0	2.0	2.0	3.0	3.0	3.0	3.0	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) 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 allowables.
- (3) Weights and inertias are based on the minimum bore size.



## RB Technical Data

### 1.1 Torque Capacity - Diesel Engine Drives

The RB Coupling is selected on the “Nominal Torque  $T_{KN}$ ” without service factors for Diesel Drive applications.

The full torque capacity of the coupling for transient vibration whilst passing through major criticals on run up, is published as the maximum torque.

$$(T_{KMAX} = 3 \times T_{KN}).$$

There is additional torque capacity built within the coupling for short circuit and shock torques, which is  $3 \times T_{KMAX}$ .

The published “Vibratory Torque  $T_{KW}$ ”, relates to the amplitude of the permissible torque fluctuation. The vibratory torque values shown in the technical data are at the frequency of 10Hz. The allowable vibratory torque at higher or lower frequencies  $f_e = T_{KW} \sqrt{\frac{10\text{Hz}}{f_e}}$

The measure used for acceptability of the coupling under vibratory torque, is published as “Allowable dissipated heat at ambient temperature 30°C”.

### 1.2 Industrial Drives

For industrial Electrical Motor Applications refer to the “Selection Procedures”, and base the selection on  $T_{KMAX}$  with the appropriate service factors.

The service factors used in the “Selection Procedures” are based upon 50 years’ experience of drives and their shock frequency/amplitude. The stated  $T_{KMAX}$  quoted should not be exceeded by design, without reference to Renold Hi-Tec Couplings.

Care should be taken in the design of couplings with shaft brakes, to ensure that coupling torques are not increased by severe deceleration.

### 2.0 Stiffness Properties

The Renold Hi-Tec Coupling remains fully flexible under all torque conditions. The RB series is a non-bonded type operating with the Rubber-in-Compression principle.

### 2.1 Axial Stiffness

When subject to axial misalignment, the coupling will have an axial resistance which gradually reduces due to the effect of vibratory torque.

Given sufficient axial force, as shown in the technical data, the coupling will slip to its new position immediately.

### 2.2 Radial Stiffness

The radial stiffness of the coupling is torque dependent, and is as shown in the technical data.

### 2.3 Torsional Stiffness

The torsional stiffness of the coupling is dependent upon applied torque (see technical data) and temperature.

### 2.4 Prediction of the System Torsional Vibration Characteristics

An adequate prediction of the system’s torsional vibration characteristics, can be made by the following method:

- 2.4.1 Use the torsional stiffness as shown in the technical data, which is based upon data measured at a 30°C ambient temperature ( $C_{Tdyn}$ ).
- 2.4.2 Repeat the calculation 2.4.1, but using the maximum temperature correction factor  $S_{t100}$ , and dynamic magnifier correction factor,  $M_{100}$ , for the selected rubber. Use tables on page 28 to adjust values for both torsional stiffness and dynamic magnifier.  
ie.  $C_{T100} = C_{Tdyn} \times S_{t100}$
- 2.4.3 Review calculations 2.4.1 and 2.4.2 and if the speed range is clear of criticals which do not exceed the allowable heat dissipation value as published in the catalogue, then the coupling is considered suitable for the application with respect to the torsional vibration characteristics. If there is a critical in the speed range, then actual temperature of the coupling will need to be calculated at this speed.

## RB Technical Data

Rubber Grade	Temp <sub>max</sub> °C	S <sub>t</sub>
Si70	200	S <sub>t200</sub> = 0.48
SM 60	100	S <sub>t100</sub> = 0.75
SM 70	100	S <sub>t100</sub> = 0.63
SM 80	100	S <sub>t100</sub> = 0.58
<b>SM 70 is considered "standard"</b>		

Rubber Grade	Dynamic Magnifier at 30°C (M <sub>30</sub> )	Dynamic Magnifier at 100°C (M <sub>100</sub> )
SM 60	8	10.7
SM 70	6	9.5
SM 80	4	6.9
Si70	7.5	M <sub>200</sub> =15.63
<b>SM 70 is considered "standard"</b>		

### 2.5 Prediction of the actual coupling temperature and torsional stiffness

**2.5.1** Use the torsional stiffness as published in the catalogue, this is based upon data measured at 30°C and the dynamic magnifier at 30°C. (M<sub>30</sub>)

**2.5.2** Compare the synthesis value of the calculated heat load in the coupling (P<sub>k</sub>) at the speed of interest, to the "Allowable Heat Dissipation" (P<sub>kw</sub>).

The coupling temperature rise

$$^{\circ}\text{C} = \text{Temp}_{\text{coup}} = \left( \frac{P_k}{P_{kw}} \right) \times 70$$

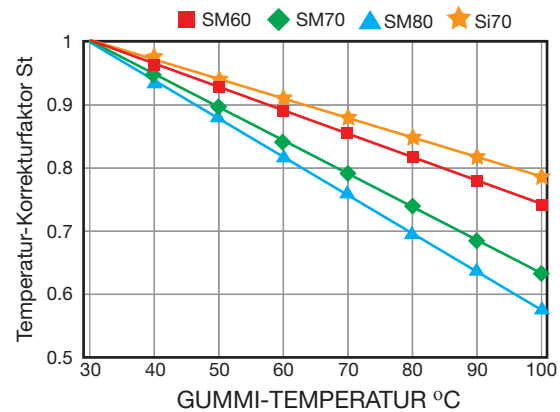
The coupling temperature =  $\vartheta$

$$\vartheta = \text{Temp}_{\text{coup}} + \text{Ambient Temp.}$$

**2.5.3** Calculate the temperature correction factor, S<sub>t</sub>, from 2.6 (if the coupling temperature > 100°C, then use S<sub>t100</sub>). Calculate the dynamic Magnifier as per 2.7. Repeat the calculation with the new value of coupling stiffness and dynamic magnifier.

**2.5.4** Calculate the coupling temperature as per 2.5. Repeat calculation until the coupling temperature agrees with the correction factors for torsional stiffness and dynamic magnifier used in the calculation.

### 2.6 Temperature Correction Factor



### 2.7 Dynamic Magnifier Correction Factor

The Dynamic Magnifier of the rubber is subject to temperature variation in the same way as the torsional stiffness.

$$M_T = \frac{M_{30}}{S_t}$$

$$\Psi_T = \Psi_{30} \times S_t$$

Rubber Grade	Dynamic Magnifier (M <sub>30</sub> )	Relative Damping $\Psi_{30}$
SM 60	8	0.78
SM 70	6	1.05
SM 80	4	1.57
Si70	7.5	0.83
<b>SM 70 is considered "standard"</b>		

## RB Technical Data

COUPLING SIZE		0.12	0.2	0.24	0.37	0.73	1.15	2.15	3.86	5.5
NOMINAL TORQUE $T_{KN}$ (kNm)		0.314	0.483	0.57	0.879	1.73	2.731	5.115	9.159	13.05
MAXIMUM TORQUE $T_{Kmax}$ (kNm)		0.925	1.425	1.72	2.635	5.35	8.1	15.303	27.4	41.0
VIBRATORY TORQUE $T_{KW}$ (kNm)		0.122	0.188	0.222	0.342	0.672	1.062	1.989	3.561	5.075
ALLOWABLE DISSIPATED HEAT AT AMBIENT TEMP 30°C $P_{KW}$ (W) $P_{KW}$	Si70	252	315	346	392	513	575	710	926	1144
	SM60	90	112	125	140	185	204	246	336	426
	SM70	98	123	138	155	204	224	270	369	465
	SM80	100	138	154	173	228	250	302	410	520
DYNAMIC TORSIONAL STIFFNESS $C_{Tdyn}$ (MNm/rad)										
@0.25 $T_{KN}$	Si70	0.004	0.006	0.006	0.010	0.021	0.031	0.060	0.091	0.119
	SM60	0.007	0.009	0.010	0.016	0.032	0.049	0.093	0.142	0.186
	SM70	0.011	0.014	0.017	0.026	0.052	0.079	0.150	0.230	0.300
	SM80	0.016	0.021	0.025	0.039	0.079	0.119	0.225	0.346	0.453
@0.5 $T_{KN}$	Si70	0.013	0.017	0.020	0.030	0.062	0.093	0.176	0.271	0.355
	SM60	0.016	0.021	0.025	0.038	0.078	0.118	0.223	0.343	0.449
	SM70	0.022	0.028	0.034	0.052	0.105	0.159	0.300	0.460	0.602
	SM80	0.026	0.033	0.040	0.062	0.125	0.189	0.358	0.549	0.719
@0.75 $T_{KN}$	Si70	0.030	0.038	0.046	0.070	0.142	0.215	0.407	0.625	0.818
	SM60	0.035	0.045	0.054	0.082	0.167	0.253	0.479	0.735	0.962
	SM70	0.043	0.055	0.066	0.101	0.205	0.310	0.586	0.900	1.178
	SM80	0.049	0.063	0.076	0.117	0.238	0.360	0.680	1.043	1.366
@1.0 $T_{KN}$	Si70	0.050	0.064	0.077	0.118	0.240	0.363	0.686	1.053	1.379
	SM60	0.057	0.073	0.088	0.134	0.273	0.413	0.780	1.197	1.567
	SM70	0.066	0.085	0.103	0.157	0.319	0.483	0.912	1.400	1.833
	SM80	0.078	0.100	0.121	0.185	0.377	0.570	1.077	1.653	2.164
RADIAL STIFFNESS NO LOAD (N/mm)	Si70	1153	1424	1622	1801	2391	2610	3243	4226	5343
	SM60	1020	1260	1435	1594	2116	2310	2870	3740	4728
	SM70	1255	1550	1765	1962	2586	2845	3530	4600	5810
	SM80	1728	2135	2430	2700	3654	3915	4860	6330	8008
RADIAL STIFFNESS @ $T_{KN}$ (N/mm)	Si70	2096	2594	2948	3335	4335	4754	5904	7690	9726
	SM60	2046	2536	2880	3207	4250	4650	5780	7520	9510
	SM70	2134	2638	3000	3435	4396	4835	6000	7820	9890
	SM80	2310	2855	3250	3610	4885	5235	6500	8465	10700
AXIAL STIFFNESS NO LOAD (N/mm)	Si70	788	962	1077	1225	1589	1780	2202	2886	3663
	SM60	1030	1250	1400	1600	2095	2310	2850	3700	4700
	SM70	1100	1350	1510	1710	2200	2500	3100	4100	5200
	SM80	2940	3690	4060	4620	6060	6700	8220	10760	13580
MAX AXIAL FORCE (1) @ $T_{KN}$ (N)	Si70	540	675	750	850	1100	1230	1500	1950	2500
	SM60	1080	1350	1500	1700	2200	2460	3000	3900	5000
	SM70	1150	1440	1600	1800	2360	2600	3200	4100	5300
	SM80	1300	1600	1760	2000	2600	2900	3500	4600	5800

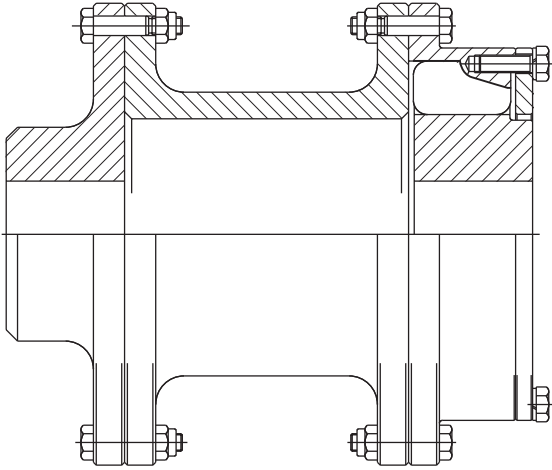
**NB.** SM70 is supplied as standard rubber grade with options of rubber grades SM60 or SM80, if these are considered a better solution to a dynamic application problem. It should be noted that for operation above 80% of the declared maximum coupling speed, the coupling should be dynamically balanced.

(1) The Renold Hi-Tec Coupling will “slip” axially when the maximum axial force is reached.

## RB Design Variations

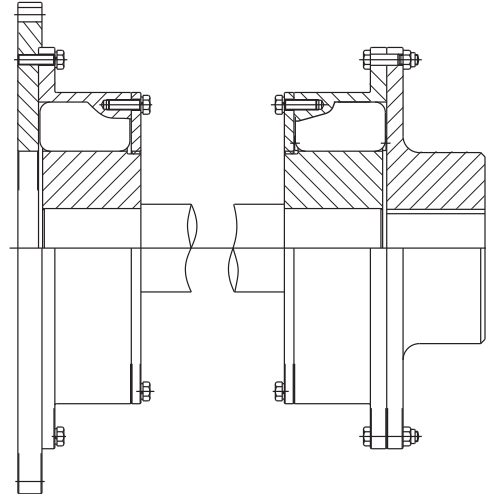
The RB Coupling can be adapted to meet customer requirements, as can be seen from some of the design variations shown below. For a more comprehensive list, contact Renold Hi-Tec.

### Spacer Coupling



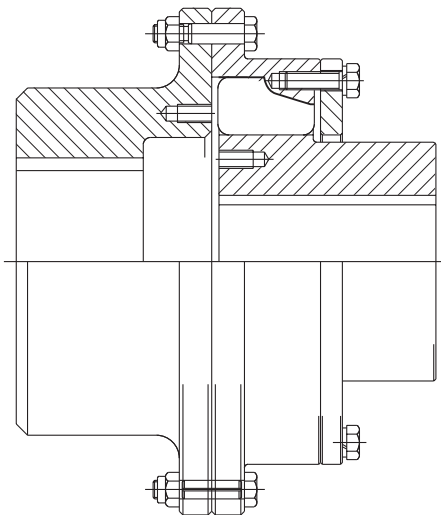
Spacer Coupling. Used to increase distance between shaft ends and allow easy access to driven and driving machines.

### Cardan Shaft Coupling



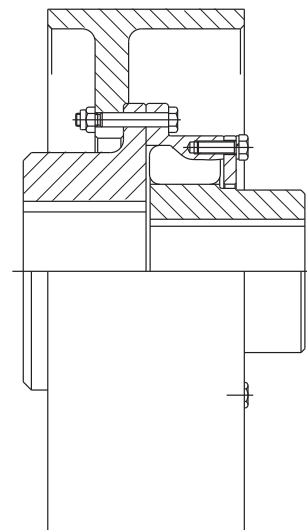
Cardan Shaft Coupling. Used to increase the distance between shaft ends and give a higher misalignment capability.

### Coupling with Long Boss Inner Member



Coupling with long boss inner member and large boss driving flange for use on vertical applications.

### Brake Drum Coupling



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

## Gears and Coupling Product Range

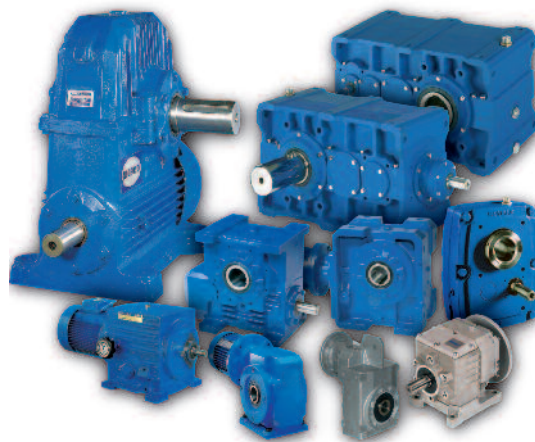
### Gear Units

The Renold gearbox range is diverse, covering worm gears, helical and bevel helical drives and mechanical variable speed. Renold is expert in package drives and special bespoke engineered solutions, working closely with customers to fulfil their specific applicational requirements, including: mass transit, materials handling, power generation.

Tel: +44 (0) 1706 751000

Fax: +44 (0) 1706 751001

Email: [gears.sales@renold.com](mailto:gears.sales@renold.com).



### Open Gears

Renold is expert in producing high quality, custom made worms and worm wheels to either commercial or precision grades for a wide variety of applications. Custom made commercial worm gears can be manufactured to customer's drawings or reverse engineered. High precision worm gears, which includes dual lead, are manufactured to the highest industry tolerance ensuring peak performance and smoothness of transmission.

Tel: +44 (0) 1706 751000

Fax: +44 (0) 1706 751001

Email: [gears.sales@renold.com](mailto:gears.sales@renold.com)

### Hi-Tec Couplings

Renold Hi-Tec Couplings product range is comprised of both rubber in compression and rubber in shear couplings for damping and tuning torsional vibrations in power drive lines, they have been developed over 50 years to satisfy industry needs for the complete range of diesel and electronic motor drives. Our design capability and innovation is recognised by customers around the world and is utilised in customising couplings to meet customer's specific requirements. Renold Hi-Tec Couplings deliver the durability, reliability and long life that customers demand.

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# Gears and Coupling Product Range

## Couplings

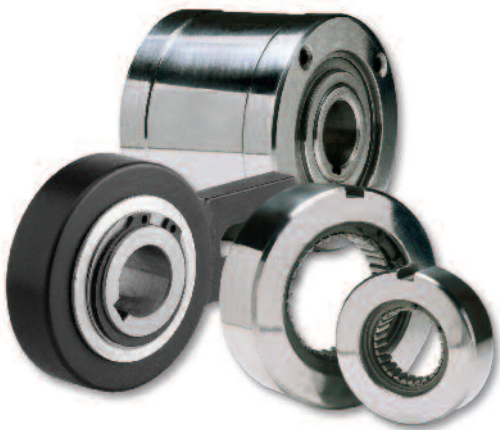
Renold Couplings manufactures specialist and industrial couplings. These include, Hydrastart fluid couplings, Gearflex gear couplings, Renoldflex torsionally rigid couplings and elastomeric couplings that include the Pinflex and Crownpin pin and bush couplings and the Discflex coupling range. Popular industrial products include the Spiderflex, Tyreflex and Chainflex couplings.

This wide and varied portfolio offers torque transmission capability from 107 Nm through to 4,747,000 Nm. Renold Couplings has the coupling solution for a wide range of demanding applications.

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## Ajax Mill Products

Renold mill products consist of Gear spindles, Universal joint drive shafts and Gear Couplings. Renold Gear Spindles are designed to meet specific customer and application needs. Material, heat treatment, and gear geometry are selected for the specific requirements of each application. Three dimensional modeling and Finite Element Analysis (FEA) are used to further enhance the design process and to assure the best possible design solution.

Universal Joint drive shafts are available in both English and Metric sizes and offer a broad range of options and sizes up to and including 1.5 meter diameter.

Gear Couplings are offered in sizes ranging from AGMA size 1 through size 30 providing torque capabilities from 12,700 in-lb (1435 Nm) up to 51,000,000 in-lb (5,762,224 Nm).

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## Freewheel Clutches

The Renold range of Freewheel Clutches feature both Sprag and Roller Ramp technology. Sprag Clutches are used in a wide range of safety critical applications. Typical examples of these are safety backstops on inclined bucket conveyor systems and holdbacks that can protect riders on some of the worlds most thrilling roller coasters.

The Trapped Roller range (roller ramp technology), are directly interchangeable with freewheels available in the market today. These high quality freewheel products deliver Backstopping, Overrunning and Indexing capabilities for a wide range of customer applications.

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 Superior Coupling Technology