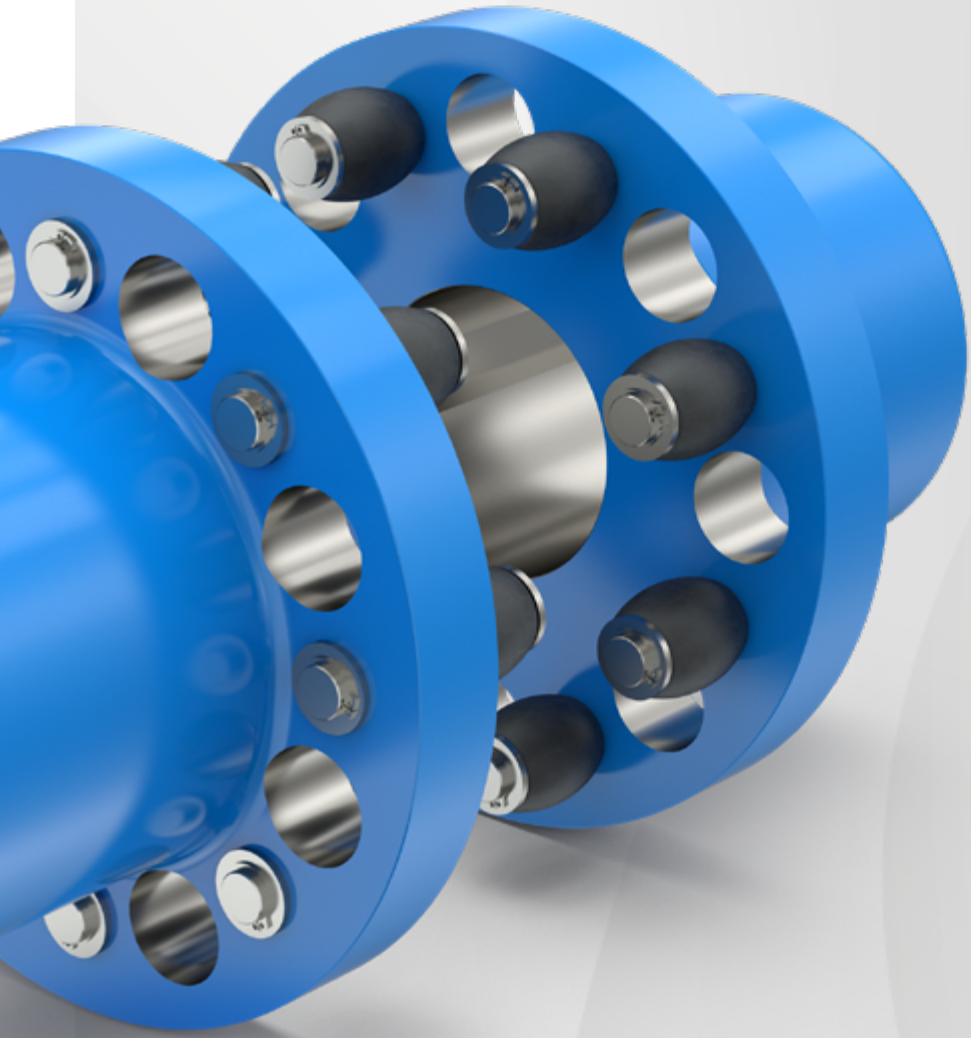
D2C
Designed to Customer

Reich



REIBO

Flexible pin-type coupling

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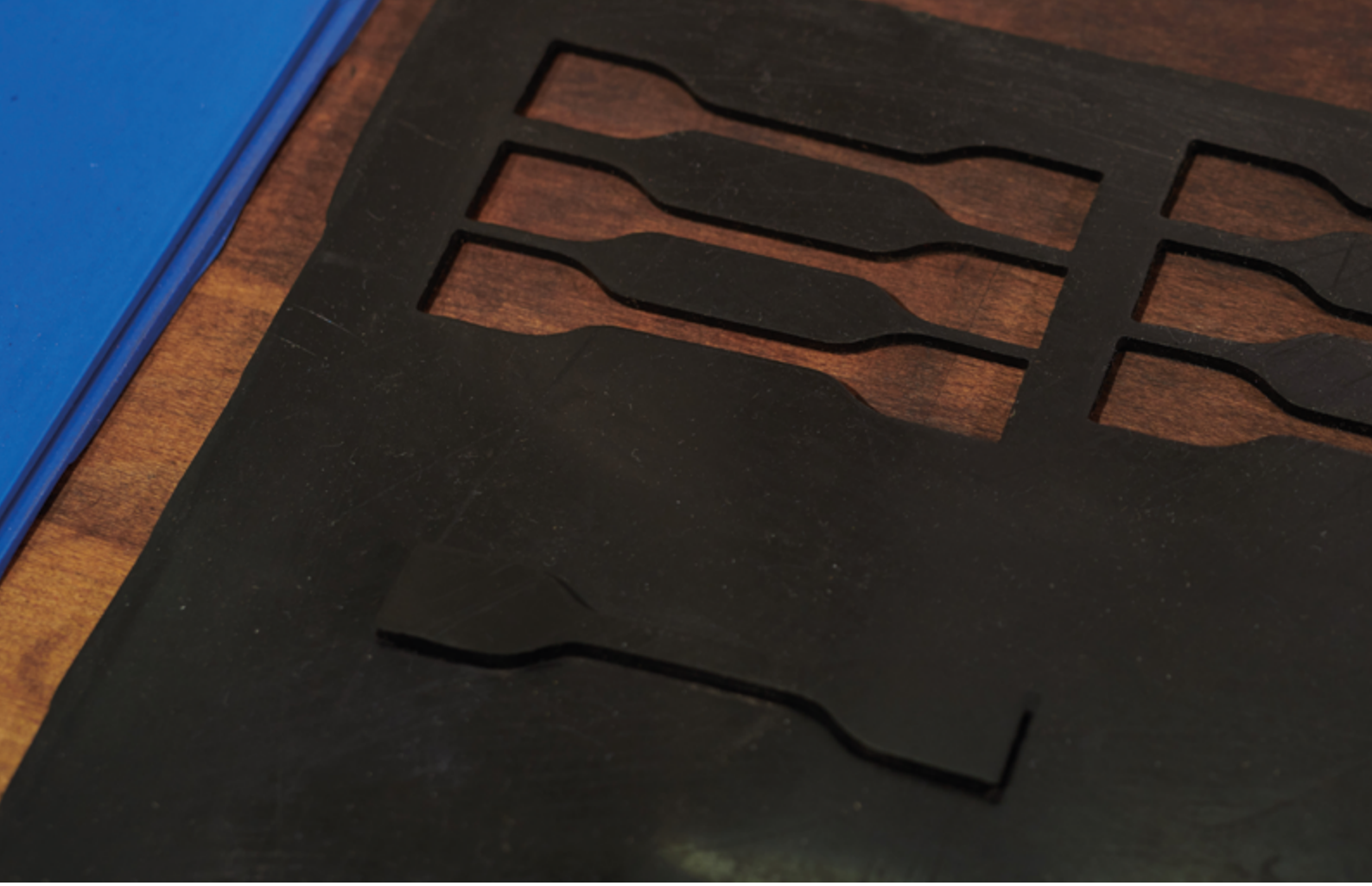

D2C – Designed to Customer

The guiding principle of Designed to Customer is the recipe for success behind REICH. In addition to the catalogue products, we supply our customers with couplings developed to their specific requirements. The designs are mainly based on modular components to provide effective and efficient customer solutions. The special nature of our close cooperation with our partners ranges from consulting, development, design, manufacture and integration into existing environments, to customer-specific production, logistics concepts and after-sales service – on a worldwide scale.
This customer-oriented concept applies to both standard products and production in small batch sizes.

The company policy at REICH embraces, first and foremost, principles such as customer satisfaction, flexibility, quality, prompt delivery and adaptability to the requirements of our customers.

REICH supplies not only a coupling, but a solution:
Designed to Customer – SIMPLY **POWERFUL.**

D2C
Designed to Customer

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Flexible Pin-type Coupling

REIBO couplings are torsionally flexible pin-type couplings which compensate for radial, axial and angular shaft displacements. They are designed for positive torque transmission, making themimpact-resistant. At the same time, they absorb vibrations and torque impulses.

The two coupling hubs are of identical design. The alternating arrangement of the locating bores for pins and buffer elements maximises the number of pins and buffer elements that can be accommodated. The buffer elements are crowned, which reduces the restoring forces that occur as a result of radial or angular misalignments. The axial float is achieved through the relative movement between the pin and the buffer element.

The REIBO coupling series comprises 18 sizes for a nominal torque range from 350 to 350 000 Nm. Designs for higher torques are available on request.

As part of our D2C concept, we offer special versions of the RB...WBT models with integrated brake drums as well as RB...WBS models with integrated brake discs. In both versions, the braking component is incorporated in the coupling hub , ensuring that the coupling and braking functions work together reliably in a compact design. This minimises the space required for installation while ensuring a direct flow of force between the drive and output sides. Technical documentation, measurement tables and detailed drawings are provided following consultation.

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Nominal torques from 350 Nm to 350 000 Nm

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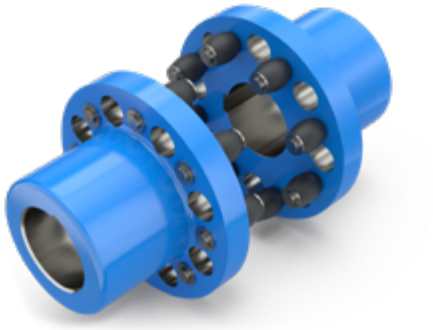
advantages and uses

Key features and benefits of the REIBO coupling:

➜ Compensation of axial, radial and angular misalignments	➜ Your system achieves a high level of operational stability with reduced loads, thereby increasing your productivity.
➜ Damping of impacts and vibrations Quiet operation	➜ Increased productivity of your system through extended maintenance intervals
➜ Fail-safe	➜ Emergency operation can be provided for your machine or system. This prevents sudden shutdowns.
➜ Ease of assembly thanks to the plug-in axial design	➜ Fast installation, short repair times resulting in high economic efficiency
➜ Maintenance-free	➜ Little effort during the period of use You have fewer downtimes. Less maintenance means optimised operating costs
➜ Suited for ambient temperatures from -40 °C to +80 °C	➜ Global use possible under the toughest conditions
➜ Torque transmission up to 350 kNm	➜ Operational reliability with high torque transmission capacity Protection of connected components
➜ Reduced restoring forces due to crowned buffers	➜ Long service life due to protection of bearings in input and output, lower life cycle costs (LCC)
➜ Standard version shaft-hub connection designed as a key connection or cylindrical shaft according to standard	➜ Precision-fit and cost-effective solution (flexible and simple integration into the drive train)
➜ Available with brake drum or brake disc	➜ 2 in 1 function All from a single source
➜ Modular type using various standard designs or customised adaptations	➜ Optimum cost-benefit ratio Favourable investment costs, high cost-efficiency

REIBO

General Technical Data



Standard design

The torques specified for T_{KN} or $T_{K\,max}$ correspond to the definition for “Flexible Shaft Couplings DIN 740 Part 2”.

Coupling size	Technical details for the standard element version				Maximum shaft displacement [3] up to the specified speed			
	Nominal torque	Maximum torque	Relative damping [1]	max. speed [2]	Axial	Radial	Angular	at
	T_{KN} [Nm]	$T_{K\,max}$ [Nm]	Ψ -	n_{max} [min^{-1}]	ΔK_a [mm]	ΔK_r [mm]	ΔK_w [mm]	n [min^{-1}]
RB 120	350	800	1.2	8750	1.0	0.2	0.3	1000
RB 140	600	1380	1.2	7500	1.0	0.2	0.4	1000
RB 160	900	2070	1.2	6550	1.0	0.2	0.4	1000
RB 180	1300	3000	1.2	5850	1.3	0.2	0.5	1000
RB 200	1800	4150	1.2	5250	1.3	0.3	0.5	1000
RB 225	2600	6000	1.2	4650	1.3	0.3	0.6	1000
RB 250	4600	10600	1.2	4200	1.7	0.3	0.7	1000
RB 300	6500	15000	1.2	3500	1.7	0.3	0.8	1000
RB 350	10500	24000	1.2	3000	2.0	0.4	0.9	500
RB 400	14500	33400	1.2	2650	2.0	0.4	1.1	500
RB 450	21000	48300	1.2	2350	2.3	0.5	1.2	500
RB 500	28000	64400	1.2	2100	2.3	0.5	1.4	500
RB 550	36000	83000	1.2	1900	2.3	0.6	1.5	500
RB 630	75000	172500	1.2	1650	2.3	0.6	1.7	500
RB 680	95000	218500	1.2	1550	2.3	0.7	1.8	500
RB 800	146000	336000	1.2	1300	2.3	0.8	2.2	300
RB 900	200000	460000	1.2	1150	2.3	0.9	2.4	300
RB 1100	350000	800000	1.2	950	2.3	1.1	3.0	300

1) Dynamic torsional stiffness on request

2) Max. speeds refer to standard steel couplings.

3) For the recommended alignment tolerances see page 9

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Selection of the Coupling Size

The coupling size should be selected to ensure that the permissible coupling load is not exceeded in any operating condition encountered. For drives which are not subject to periodically recurring fatigue torques the coupling design may be selected based on the driving torque with reference to the corresponding service factors.

In selecting the coupling size, the following must be observed:

The **nominal torque of the coupling T_{KN}** must be taken into account at every temperature and operating load of the coupling while observing the service factors S (e.g: temperature factor S_t) must be at least equal to the maximum nominal torque on the drive side T_{AN}; the temperature in the immediate vicinity of the coupling must be taken into account.

$$T_{KN} \geq T_{AN} \cdot S_m \cdot S_t \cdot S_z$$

The **nominal torque on the drive side T_{AN}** is calculated with the driving power P_{AN} and the coupling speed n_{AN}.

$$T_{AN}\,[Nm] = 9\,550 \frac{P_{AN}\,[kW]}{n_{AN}\,[min^{-1}]}$$

The **maximum torque capacity of the coupling, $T_{K\ max}$** must be at least equal to the highest torque T_{max} encountered in operation while taking the temperature factor S_t into account.

$$T_{K\,max} \geq T_{max} \cdot S_t$$

General Technical Information

The technical data applies only to the complete coupling or the corresponding coupling elements. It is the customer/user's responsibility to ensure that there are no inadmissible loads acting on any of the components. In particular, existing connections, e.g. bolted connections, must be checked with regard to the torques to be transmitted. If necessary, further measures, such as additional reinforcement with pins, may be necessary. It is the customer/user's responsibility to make sure the dimensioning of the shaft and keyed or other connection, e.g. shrinking or clamping connection, is correct. All components that can rust are protected against corrosion as standard.

REICH have an extensive range of couplings and coupling systems to cover nearly every drive configuration. Customised solutions can be developed and manufactured even in small batches or as prototypes. In addition calculation programs are available for all necessary dimensioning.

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Service Factors

Load classification S_m

Prime mover	Load classification of the driven machine		
	G (uniform load)	M (medium load)	S (heavy load)
Electric motors, turbines, hydraulic motors	1.25	1.6	2.0
Engines ≥4 cylinders degree of uniformity ≥1:100	1.5	2.0	2.5

Start-up factor S_z

starting frequency per hour or daily period of operation	30 < 3 h	60 < 10 h	120 < 24 h	>240 -
S_z	1.0	1.25	1.5	on request

Temperature factor S_t

Ambient temperature	-25 °C +30 °C	+40 °C	+60 °C	+80 °C	> +80 °C
S_t	1.0	1.1	1.3	1.6	on request

Calculation example

A coupling is required between an electric motor **(P = 160 kW at n = 980 min^{-1})** and a gearbox of a belt conveyor drive.

Operation is uniform = G : S_m = 1.25
Ambient temperature 40 °C : S_t = 1.1
Starting frequency 30/h : S_z = 1.0

$$T_{AN} = 9550 \frac{160\ kW}{980\ min^{-1}} = 1559\ Nm$$

$$T_{KN} \geq T_{AN} \cdot S_m \cdot S_t \cdot S_z$$
$$T_{KN} \geq 1559\ Nm \cdot 1.25 \cdot 1.1 \cdot 1{,}0 = 2144\ Nm$$

Selected coupling: RB 225 W with T_{KN} = 2600 Nm

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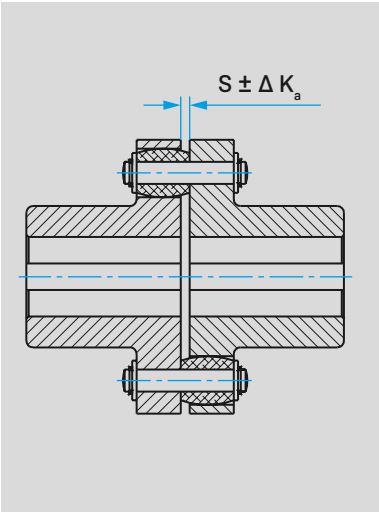
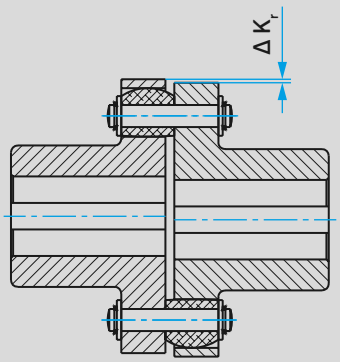
Permissible shaft displacement

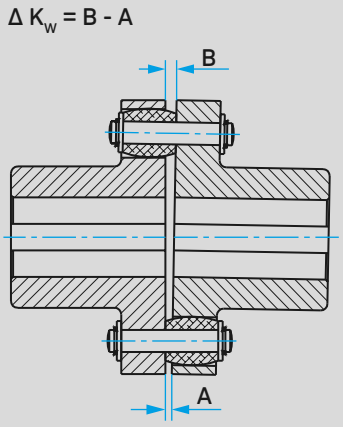
The Δ K values specified for the maximum permissible shaft displacement (table page 6) are reference values only. The compensating capability of the coupling depends on the rotational speed and the coupling load. The displacement values must be reduced at higher speeds as shown by way of example in the table. As precise alignment of the coupling extends the service life of the flexible elements, the Δ K values should not be fully utilised to their maximum during alignment. It is recommended to use only a maximum of 20% of the permissible value during installation. Maximum shaft misalignment must not occur simultaneously in all directions during operation ($\Delta K_a + \Delta K_r + \Delta K_w \leq 100\%$).



Axial displacement



Radial displacement



Angular displacement

i Δ K_a, Δ K_r, Δ K_w see “General Technical Data”, page 6

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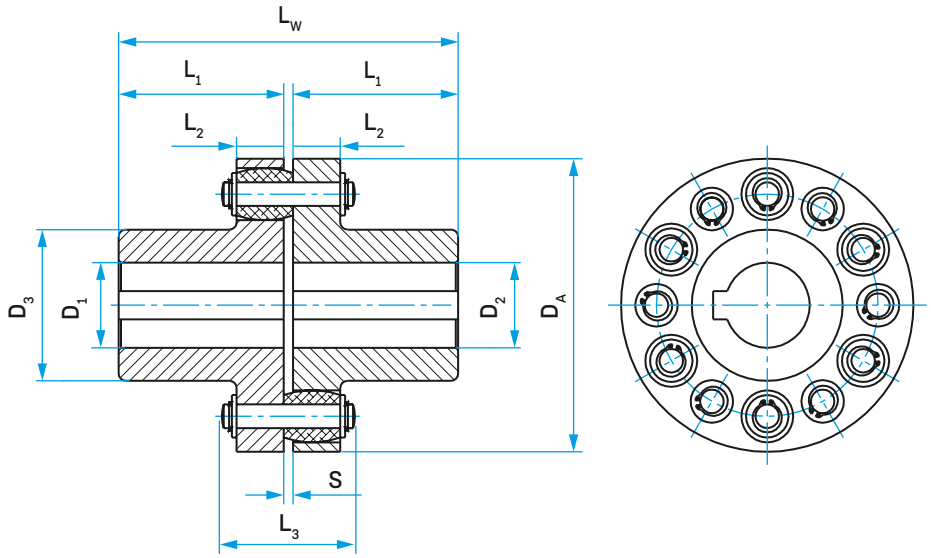
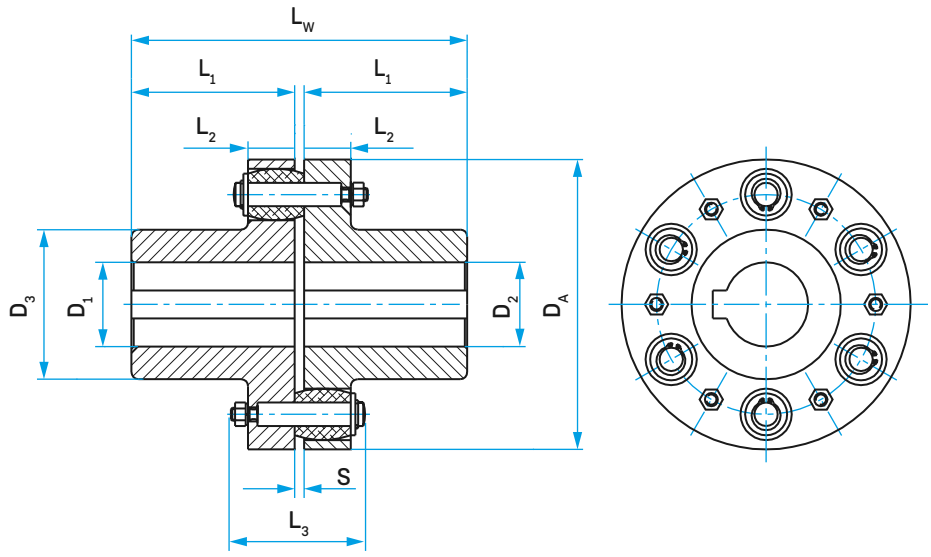
Type RB...W and RB...WE



Standard type RB...W
pin with circlip



Type RB...WE
pin with nut

Coupling details

Coupling size	D_1/D_2 max. [mm]	D_A [mm]	D_3 [mm]	L_W [mm]	L_1 [mm]	L_2 [mm]	L_3 [mm]	S [mm]	Number of pins –	Moment of inertia J [kgm²]	Mass m [kg]
RB 120	50	120	71	113	55	20	60	3	10	0.007	3.7
RB 140	60	140	85	133	65	20	60	3	14	0.013	5.5
RB 160	75	160	102	173	85	20	60	3	16	0.025	8.1
RB 180	75	180	103	174	85	25	80	4	12	0.042	10.9
RB 200	85	200	116	194	95	25	80	4	14	0.068	14.6
RB 225	105	225	145	234	115	25	80	4	16	0.128	21.7
RB 250	105	250	147	235	115	38	110	5	14	0.236	31.0
RB 300	130	300	182	295	145	38	110	5	16	0.546	51.8
RB 350	145	350	200	326	160	60	160	6	12	1.345	87.7
RB 400	165	400	232	366	180	60	160	6	14	2.420	124.8
RB 450	180	445	253	407	200	72	190	7	12	4.270	176.3
RB 500	205	495	288	457	225	72	190	7	14	6.840	233.0
RB 550	230	545	322	517	255	72	190	7	16	10.49	303.4
RB 630	270	625	375	597	295	90	260	7	14	22.13	476.4
RB 680	290	680	405	647	320	90	260	7	16	31.76	592.5
RB 800	300	795	420	667	330	90	260	7	20	55.79	789.4
RB 900	320	895	448	707	350	90	260	7	22	91.60	1026.0
RB 1100	395	1100	550	877	435	100	260	7	28	230.99	1782.3

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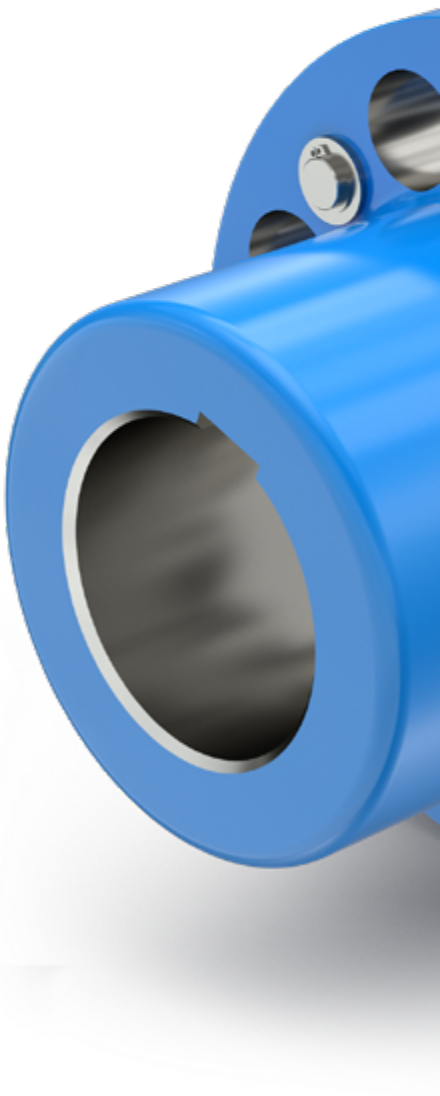

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