REIBO

Torsionally flexible pin-type coupling

General

REIBO couplings are torsionally flexible pin-type couplings which compensate for radial, axial and angular shaft displacements. **REIBO** couplings are designed for a positive (fail safe) torque transmission and for absorbing vibrations and torque surges.

The two coupling hubs are of identical design. Due to the alternate arrangement of the locating bores for the pin and buffer element, a maximum number of pins and buffers can be accommodated. Restoring forces generated by angular or radial displacement are minimized by the crowned buffers. Axial float is achieved through movement between the pin and the buffer element.

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

Salient features of the REIBO couplings

- Compensation of axial, radial and angular misalignments
- Shock load and vibration absorbing capability
- Fail safe operation
- Ease of assembly and ease of alignment
- Plug-in mounting facility
- No maintenance required
- Available in different types or as special designs

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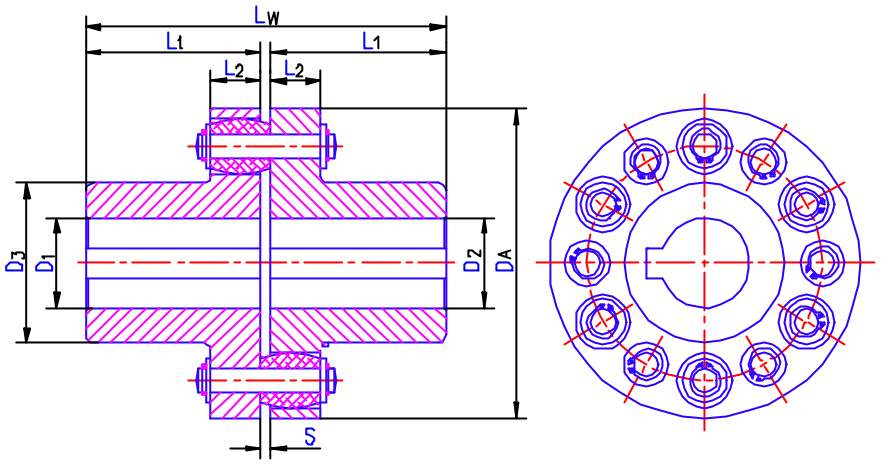
Technical details



Coupling size	Nominal torque *) T_{KN} [Nm]	Speed n [rpm]	D_1/D_2 preb. [mm]	D_1/D_2 max [mm]	D_A [mm]	D_3 [mm]	L_W [mm]	L_1 [mm]	L_2 [mm]	S [mm]	No. of pins [-]	Moment of inertia J [kgm²]	Weight m [kg]
RB 120 W	350	5700	-	45	120	71	143	70	20	3	10	0.005	6
RB 140 W	600	4900	-	55	140	85	163	80	20	3	14	0.015	9
RB 160 W	900	4200	-	60	160	102	183	90	20	3	16	0.028	14
RB 180 W	1300	3800	-	65	180	103	204	100	25	4	12	0.043	17
RB 200 W	1800	3400	-	70	200	118	234	115	25	4	14	0.088	27
RB 225 W	2600	3000	40	90	225	145	264	130	25	4	16	0.230	47
RB 250 W	4600	2700	45	90	250	147	305	150	38	5	14	0.323	55
RB 300 W	6500	2200	50	110	300	182	365	180	38	5	16	0.718	85
RB 350 W	10500	2000	60	120	350	200	406	200	60	6	12	1.333	130
RB 400 W	14500	1700	70	140	400	232	446	220	60	6	14	3.078	190
RB 450 W	21000	1500	75	150	445	253	487	240	72	7	12	5.325	260
RB 500 W	28000	1400	75	180	495	288	527	260	72	7	14	9.125	350
RB 550 W	36000	1200	80	200	545	322	567	280	72	7	16	15.00	450
RB 630 W	75000	1100	130	230	625	375	567	280	90	7	14	28.00	710
RB 680 W	95000	1000	150	270	680	405	567	280	90	7	16	40.75	980
RB 800 W	146000	800	130	260	795	420	607	300	90	7	20	55.00	1100
RB 900 W	200000	700	200	280	900	448	607	300	90	7	22	67.08	1250
RB 1100 W	350000	600	280	340	1100	550	807	400	100	7	28	113.00	2520

*) $T_{Kmax} = 1.8\ T_{KN}$

Selection of the proper coupling size

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

1. Calculate the **driving torque T_{AN}**:

$$T_{AN}\,[Nm] = 9550\,\frac{P\,[kW]}{n\,[r.p.m.]}$$

2. Determine the **nominal torque capacity T_{KN}** of the coupling based on the driving torque T_{AN} with reference to the service factors.

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

3. The **maximum torque capacity T_{Kmax}** of the coupling shall be at least equal to the highest torque T_{max} encountered in operation.

$$T_{Kmax} \geq T_{max}$$

Service factors

Load classification factor S_m

Prime mover	Load classification of the driven machine U	M	H
Electric motors, turbines, hydraulic motors	1.25	1.6	2.0
Combustion engines ≥ 4 cylinders cyclic variation ≥ 1 : 100	1.5	2.0	2.5

U = uniform / M = medium / H = heavy shock load

Temperature factor S_t

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

Starting factor S_z

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

Calculation example

A coupling shall be installed between an electric motor (P = 160 kW at n = 980 rpm) and the gearbox of a belt conveyor drive.

Uniform load	= U	:	S_m = 1.25
Ambient temperature	40 °C	:	S_t = 1.1
Starting frequency	30/h	:	S_z = 1.0

$$T_{AN} = 9550 \frac{160\ kW}{980\ r.p.m.} = 1559\ Nm$$

T_{KN} = T_{AN} x S_m x S_t x S_z
= 1559 Nm x 1.25 x 1.1 x 1.0 = 2144 Nm

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