

Ball Bearing Freewheels

These sprag freewheels with integrated ball bearings in premium quality can be used as indexing freewheels, backstops or overrunning clutches. They are installed in housings provided by the customer.

Design BB: Standard freewheels without keyways. Sealed on the sprag side with a z-washer. On the bearing side, the freewheel closes with the bearing cage. The BB design has the same dimensions as ball bearing series 62.

Design BB-2GD: As design BB, but 5mm wider and with lip seal on both sides against dust and splash water.

Version 1KK: With keyway on inner ring according to DIN 6885-3.

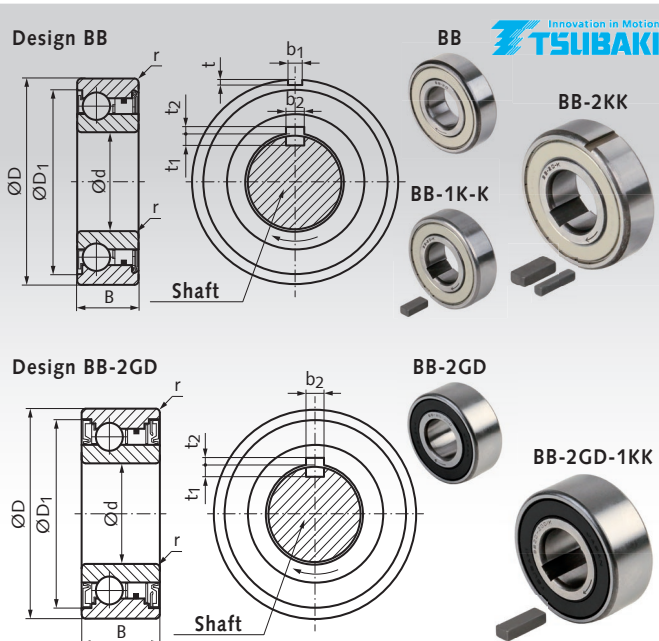
Version 2KK: With keyway on inner ring according to DIN 6885-3. and additionally with groove on the outer ring.

The keys of the 1KK / 2KK versions are included in the delivery. Please refer to the footnotes for the keyways.

Lubrication: The freewheels are filled with grease for normal operating conditions and are maintenance-free. Do not use greases or lubricants with EP additives.

Temperature range: -30°C to + 100°C.

Other versions on request.



Ordering Details: e.g. Product No., quantity

d mm	Product No. BB	Weight approx. g	Product No. BB-1KK	Weight approx. g	Product No. BB-2KK	Weight approx. g	Product No. BB-2GD	Weight approx. g	Product No. BB-2GD-1KK	Weight approx. g
15	BB15	50	BB15-1K-K	50	BB15-2K-K	50	BB15-2GD	70	BB15-2GD1K-K	70
17	BB17	80	BB17-1K-K	80	BB17-2K-K	80	BB17-2GD	100	BB17-2GD1K-K	100
20	BB20	120	BB20-1K-K	120	BB20-2K-K	120	BB20-2GD	150	BB20-2GD1K-K	150
25	BB25	150	BB25-1K-K	150	BB25-2K-K	150	BB25-2GD	200	BB25-2GD1K-K	200
30	BB30	230	BB30-1K-K	230	BB30-2K-K	230	BB30-2GD	280	BB30-2GD1K-K	280
35	BB35	320	BB35-1K-K	320	BB35-2K-K	320	BB35-2GD	410	BB35-2GD1K-K	410
40	BB40	400	BB40-1K-K	400	BB40-2K-K	400	BB40-2GD	600	BB40-2GD1K-K	600

d mm	D mm	Design BB		Design BB-2GD		r mm	b ₁ ^{JS9} mm	t mm	b ₂ ^{JS10} mm	t ₁ mm	t ₂ mm	Keyway inner race b x h x l ⁽⁴⁾ mm	Keyway outer race b x h x l mm
15	35	32,6	11	32,45	16	0,6	2	0,6	5	1,9	1,2	5 x 3 x 11 (16)	2 x 2 x 11
17	40	36,1	12	36,45	17	0,6	2	1,0	5	1,9	1,2	5 x 3 x 12 (17)	2 x 2 x 12
20	47	41,7	14	42,35	19	1,0	3	1,5	6	2,5	1,6	6 x 4 x 14 (19)	3 x 3 x 14
25	52	47,1	15	47,05	20	1,0	6	2,0	8	3,6 ¹⁾	1,5 ¹⁾	8 x 5 x 15 (20)	6 x 4 x 15
30	62	56,6	16	55,6	21	1,0	6	2,0	8	3,1	2,0	8 x 5 x 16 (21)	6 x 4 x 16
35	72	64,0	17	64,6	22	1,1	8	2,5	10	3,7	2,4	10 x 6 x 17 (22)	8 x 5 x 17
40	80	71,0	22 ²⁾	71,6	27	1,1	10	3,0	12	5,0 ³⁾	3,3 ³⁾	12 x 8 x 22 (27)	10 x 6 x 22

d mm	Torque Nm	Drag Torque		max. Overrunning		Load ratings radial	
		Design BB Nm	Design BB-2GD Nm	Inner race min ⁻¹	Outer race min ⁻¹	dyn. C N	stat. C ₀ N
15	29	0,010	0,040	3600	2000	5950	3230
17	43	0,010	0,050	3500	1900	7000	3700
20	61	0,014	0,055	3000	1600	8500	4900
25	78	0,017	0,055	2500	1400	10700	6300
30	140	0,030	0,058	2000	1100	11900	7900
35	173	0,034	0,060	1800	1000	13500	9700
40	260	0,040	0,080	1800	900	14500	11700

¹⁾ The keyway depth t₂ is 0,5mm shallower than specified in DIN 6885-3. When using a DIN parallel keyway t₁ must be manufactured correspondingly deeper than specified in the DIN standard.

²⁾ The dimension B does not correspond to the ball bearing 6208 with the dimensions 40 x 80 x 18mm.

³⁾ Contrary to the above specifications, the keyway is according to DIN 6885-1.

⁴⁾ Values in (): Length keyway Design BB-2GD.

Mounting Tolerances

Shaft tolerance			Housing tolerance		
d mm	BB/BB-2GD mm	1KK/2KK mm	D mm	BB/BB-2GD/1KK mm	2KK mm
15	+0,023	-0,008	35		-0,002
17	+0,012	-0,028	40	-0,012	-0,018
20			47	-0,028	
25	+0,028	-0,010	52		-0,003
30	+0,015	-0,031	62	-0,014	-0,022
35	+0,033	-0,012	72	-0,033	-0,006
40	+0,017	-0,037	80		-0,025

Note

The ball bearing freewheels are designed for press fits. Make sure that the outer ring of the freewheel is pressed into a stable housing. Use suitable tools for installation.

The marking arrow on the inner ring indicates the direction of engagement.

The ball bearing freewheels are interchangeable with other fabricate makes of the same size.