BB SERIES CAM CLUTCH

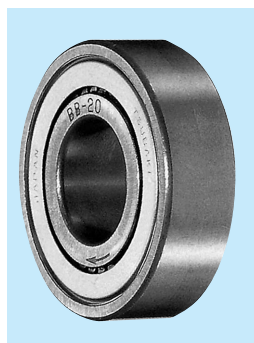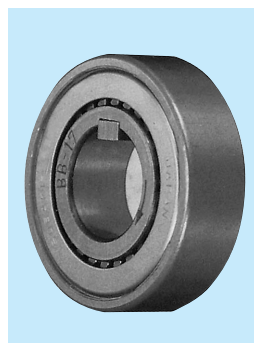|				
BB series	**BB-1K-K series**	**BB-2K-K series**	**BB-2GD series**	**BB-2GD 1K-K series**
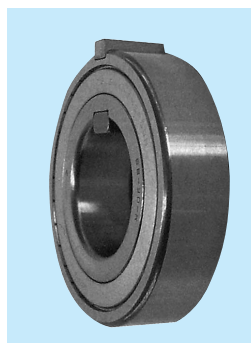
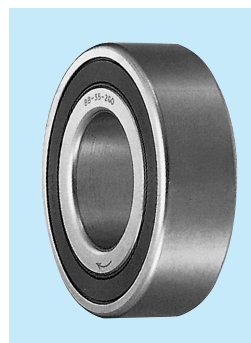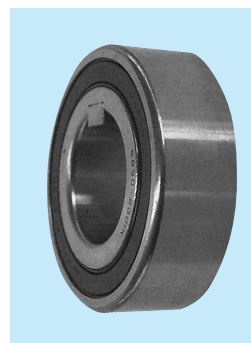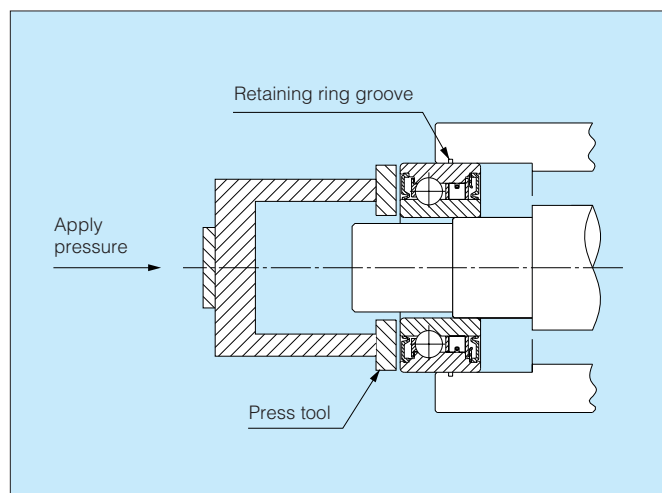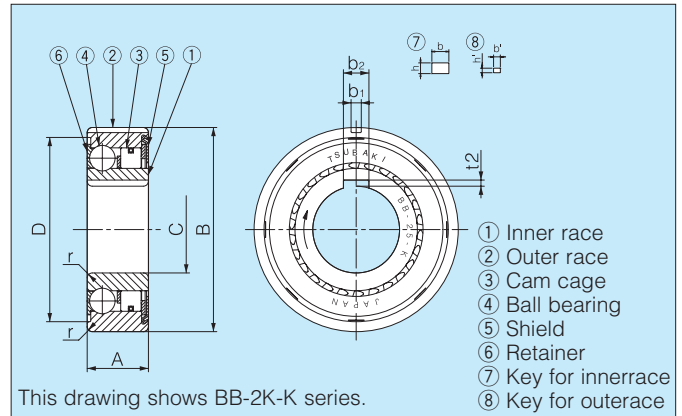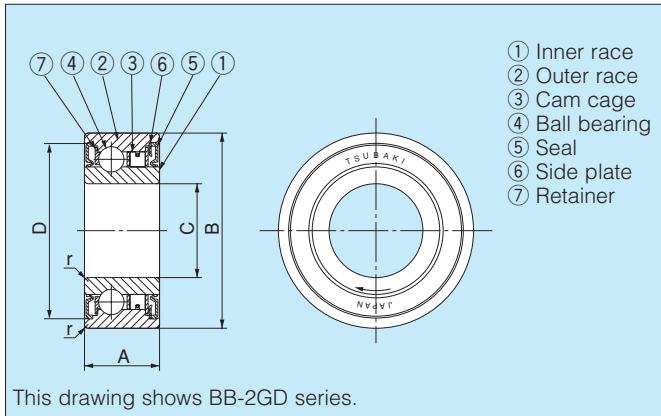## General information of Installation and usage for BB series Cam Clutch

1. BB series Cam Clutch is designed for press fit installation.
2. BB-1K-K and BB-2GD 1K-K series have a keyway on the inner race. Keyways, except size 25 are manufactured to DIN 6885. 3, BB40-1K-K and BB40-2GD 1K-K are manufactured to DIN 6885. 1.
3. BB-2K-K series has a keyway on both the inner and outer race.
   "-K" means keys shipped together with Cam Clutch.
4. Correct interference dimensions at the shaft and the housing must be maintained to obtain maximum bearing and clutch performance.
5. Refer to the table on next page for tolerance of the shaft and housing for each series.
6. BB, BB-1K and BB-2K Clutches, bearing supported and delivered with grease have dust seal protection against particles of 0.25mm and over, whereas BB-2GD and BB-2GD-1K clutches, 5mm wider than standard BB series, have special lip seals for effective protection against any dust.
7. The arrow on the inner race shows the direction of inner race engaging.
8. To install the clutch, use a press tool of the appropriate diameter to apply even pressure over the entire face of the inner and outer race.
9. Do not hammer or apply other shock to the clutch.
10. Make sure the housing has enough strength to withstand the pressure required for the press fitting installation of the Clutch.
11. Operating temperature range: –30°C to +100°C (Consult us for the temperature that exceeds this range).

Lubrication
1. Since grease is already applied before delivery, there is no need to apply grease before use.
2. If the clutch is used with an oil lubricant, the oil lubrication should be applied inside the unit always.
3. Do not use greases or lubricants with EP additives.

BB SERIES CAM CLUTCH BB, BB-1K-K, BB-2K-K, BB-2GD, BB-2GD 1K-K

① Inner race
② Outer race
③ Cam cage
④ Ball bearing
⑤ Seal
⑥ Side plate
⑦ Retainer

This drawing shows BB-2GD series.

① Inner race
② Outer race
③ Cam cage
④ Ball bearing
⑤ Shield
⑥ Retainer
⑦ Key for innerrace
⑧ Key for outerace

This drawing shows BB-2K-K series.

Dimensions and Capacities

Dimensions in mm

Model	Torque Capacity (N·m)	Max. Overrunning Inner Race (r/min)	Outer Race (r/min)	Drag Torque BB BB-1K-K BB-2K-K (N·m)	Drag Torque BB-2GD BB-2GD 1K-K (N·m)	A BB BB-1K-K BB-2K-K	A BB-2GD BB-2GD 1K-K	B	C	D BB BB-1K-K BB-2K-K	D BB-2GD BB-2GD 1K-K	r	Weight BB BB-1K-K BB-2K-K (g)	Weight BB-2GD BB-2GD 1K-K (g)	Cr (N)	Cor (N)
BB15	29	3600	2000	0.010	0.040	11	16	35	15	32.6	32.45	0.6	50	70	5950	3230
BB17	43	3500	1900	0.010	0.050	12	17	40	17	36.1	36.45	0.6	80	100	7000	3700
BB20	61	3000	1600	0.014	0.055	14	19	47	20	41.7	42.35	1.0	120	150	8500	4900
BB25	78	2500	1400	0.017	0.055	15	20	52	25	47.1	47.05	1.0	150	200	10700	6300
BB30	140	2000	1100	0.030	0.058	16	21	62	30	56.6	55.60	1.0	230	280	11900	7900
BB35	173	1800	1000	0.034	0.060	17	22	72	35	64.0	64.60	1.1	320	410	13500	9700
BB40	260	1800	900	0.040	0.080	22	27	80	40	71.0	71.60	1.1	400	600	14500	11700

Note: Model No. marked on the inner race is only "K" for both "1K" and "2K". (Example: the mark "BB25-K" for both BB25-1K and BB25-2K)

Tolerance for Shaft and Housing

Dimensions in mm

Model	Model	Shaft Dia.	Housing Dia.
BB15	BB15-2GD	$15^{+0.023}_{+0.012}$	$35^{-0.012}_{-0.028}$
BB17	BB17-2GD	$17^{+0.023}_{+0.012}$	$40^{-0.012}_{-0.028}$
BB20	BB20-2GD	$20^{+0.028}_{+0.015}$	$47^{-0.012}_{-0.028}$
BB25	BB25-2GD	$25^{+0.028}_{+0.015}$	$52^{-0.014}_{-0.033}$
BB30	BB30-2GD	$30^{+0.028}_{+0.015}$	$62^{-0.014}_{-0.033}$
BB35	BB35-2GD	$35^{+0.033}_{+0.017}$	$72^{-0.014}_{-0.033}$
BB40	BB40-2GD	$40^{+0.033}_{+0.017}$	$80^{-0.014}_{-0.033}$

Model	Model	Shaft Dia.	Housing Dia.
BB15-1K-K	BB15-2GD 1K-K	$15^{-0.008}_{-0.028}$	$35^{-0.012}_{-0.028}$
BB17-1K-K	BB17-2GD 1K-K	$17^{-0.008}_{-0.028}$	$40^{-0.012}_{-0.028}$
BB20-1K-K	BB20-2GD 1K-K	$20^{-0.010}_{-0.031}$	$47^{-0.012}_{-0.028}$
BB25-1K-K	BB25-2GD 1K-K	$25^{-0.010}_{-0.031}$	$52^{-0.014}_{-0.033}$
BB30-1K-K	BB30-2GD 1K-K	$30^{-0.010}_{-0.031}$	$62^{-0.014}_{-0.033}$
BB35-1K-K	BB35-2GD 1K-K	$35^{-0.012}_{-0.037}$	$72^{-0.014}_{-0.033}$
BB40-1K-K	BB40-2GD 1K-K	$40^{-0.012}_{-0.037}$	$80^{-0.014}_{-0.033}$

Model	Shaft Dia.	Housing Dia.
BB15-2K-K	$15^{-0.008}_{-0.028}$	$35^{-0.002}_{-0.018}$
BB17-2K-K	$17^{-0.008}_{-0.028}$	$40^{-0.002}_{-0.018}$
BB20-2K-K	$20^{-0.010}_{-0.031}$	$47^{-0.003}_{-0.022}$
BB25-2K-K	$25^{-0.010}_{-0.031}$	$52^{-0.003}_{-0.022}$
BB30-2K-K	$30^{-0.010}_{-0.031}$	$62^{-0.003}_{-0.022}$
BB35-2K-K	$35^{-0.012}_{-0.037}$	$72^{-0.006}_{-0.025}$
BB40-2K-K	$40^{-0.012}_{-0.037}$	$80^{-0.006}_{-0.025}$

Dimensions of keyways and keys

Dimensions in mm

Model		b_2 js10	t_1	t_2	b_1 js9	t_3	t_4	Inner race Key b × h × length	Outer race Key b' × h' × length
BB15-1K-K	BB15-2GD 1K-K	5.0	$1.9^{+0.1}_{0}$	$1.2^{+0.3}_{0}$	—	—	—	—	—
BB15-2K-K	—				2.0	$0.6^{0}_{+0.1}$	$1.6^{+0.3}_{0}$	5 × 3 × 11	2 × 2 × 11
BB17-1K-K	BB17-2GD 1K-K	5.0	$1.9^{+0.1}_{0}$	$1.2^{+0.3}_{0}$	—	—	—	—	—
BB17-2K-K	—				2.0	$1.0^{0}_{+0.1}$	$1.2^{+0.3}_{0}$	5 × 3 × 12	2 × 2 × 12
BB20-1K-K	BB20-2GD 1K-K	6.0	$2.5^{+0.1}_{0}$	$1.6^{+0.3}_{0}$	—	—	—	—	—
BB20-2K-K	—				3.0	$1.5^{0}_{+0.1}$	$1.8^{+0.3}_{0}$	6 × 4 × 14	3 × 3 × 14
BB25-1K-K	BB25-2GD 1K-K	8.0	$3.6^{+0.1}_{0}$	$1.5^{+0.3}_{0}$	—	—	—	—	—
BB25-2K-K	—				6.0	$2.0^{0}_{+0.1}$	$2.3^{+0.3}_{0}$	8 × 5 × 15	6 × 4 × 15
BB30-1K-K	BB30-2GD 1K-K	8.0	$3.1^{+0.2}_{0}$	$2.0^{+0.3}_{0}$	—	—	—	—	—
BB30-2K-K	—				6.0	$2.0^{0}_{+0.1}$	$2.3^{+0.3}_{0}$	8 × 5 × 16	6 × 4 × 16
BB35-1K-K	BB35-2GD 1K-K	10.0	$3.7^{+0.2}_{0}$	$2.4^{+0.3}_{0}$	—	—	—	—	—
BB35-2K-K	—				8.0	$2.5^{0}_{+0.1}$	$2.8^{+0.3}_{0}$	10 × 6 × 17	8 × 5 × 17
BB40-1K-K	BB40-2GD 1K-K	12.0	$5.0^{+0.2}_{0}$	$3.3^{+0.3}_{0}$	—	—	—	—	—
BB40-2K-K	—				10.0	$3.0^{0}_{+0.2}$	$3.3^{+0.3}_{0}$	12 × 8 × 22	10 × 6 × 22

『Shaft』

『Housing』
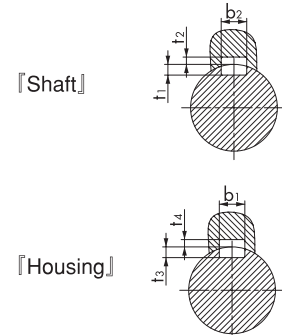
Note: The dimension of t_2 for BB25-1K-K, BB25-2K-K and BB25-2GD 1K-K is 0.5 mm shallow compared to DIN 6885. 3.
Process the keyway on the shaft 0.5 mm deeply to use DIN standard key.
All other models are dimensionally interchangeable with competitors.