

# Metric Series Ball Bearings (BB Series)

## Drop-in Replacements for Cross-Roller Bearings



Kaydon BB Metric Series four-point contact ball bearings are dimensionally interchangeable with cross-roller bearings.

### BB Series Bearings Are Available to Match the Bores and Widths of Common Cross-Roller Bearings.

When factors such as cost, availability, corrosion resistance, tighter tolerances, torque, seal/shield options, and temperature resistance are important in your application, it pays to consider BB Series four-point contact metric ball bearings as an alternative to cross-roller bearings. The additional design flexibility they offer can often help you achieve your design objectives with optimum performance and economy.

Additional features not commonly available in standard cross-roller bearings include a protective package for corrosion resistance, custom sealing for extreme environments, application-specific lubrication and temperature capability.

### Optimize Your Design Options

With additional features not commonly available in standard cross-roller bearings, BB Series bearings provide greater design flexibility.

**Endurakote Plating**—For applications requiring superior corrosion resistance we offer our proprietary Endurakote plating. This thin, dense chrome plating gives AISI 52100 bearing material corrosion resistance equal to or better than that of AISI 440C stainless steel. Unlike many traditional chrome platings, the extremely hard surface of Endurakote plating doesn't peel and flake from the bearing race under stress, so corrosion resistance is retained and surface wear is minimized. The performance of Endurakote plating has been proven in critical military, aerospace, and deep space applications.

**Seals/Shields**—Standard industry seals are generally available from nitrile rubber. Kaydon can also provide custom seals manufactured from silicone or Viton® materials for applications where high temperature or extreme environments are likely to be encountered.

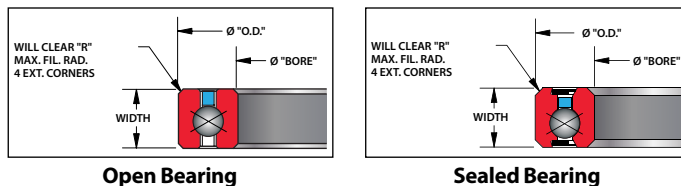
**Temperature Capability**—Standard cross-roller bearings have a maximum full capacity operating temperature of only 212°F. In contrast, Kaydon bearings can operate at higher temperatures due to our heat treating procedures.

**Lubrication Options**—Kaydon offers a full range of lubricants, allowing you to optimize bearing performance in a range of applications with special requirements for moisture resistance, hot or cold temperatures, vacuum, and low torque.

**Separators**—The common roller spacer for many cross-roller bearings is a non-metallic composite. High temperature and/or horizontal axis applications, however, require non-standard materials or a non-standard separator design. Kaydon four-point contact ball bearings are available with separator options to meet a wide range of applications.

**Internal Fitup**—Kaydon can help you optimize internal fitup of our BB Series four-point contact ball bearings to provide the desired operating performance. Pre-loaded bearings are recommended for greater stiffness, and diametral clearance is recommended for lower torque applications.

## Metric Series Ball Bearings - BB Series (continued)



### All dimensions in millimeters

(Reali-Slim replacements for RB Series standard cross-roller bearings)

Model Number	KAYDON Part No.	Approx. Weight (kg)	Bore (nominal +0)	O.D. (nominal +0)	Width (nominal +0)	"R"	Dynamic Capacity		
							Radial (N)	Axial (N)	Moment (N-m)
BB3010	39318001	0.1	30-0.01	55-0.013	10-0.12	1	4874	6619	78
BB3510	39319001	0.11	35-0.012	60-0.013	10-0.12	1	5031	6953	90
BB4010	39320001	0.12	40-0.012	65-0.013	10-0.12	1	5423	7610	107
BB4510	39321001	0.13	45-0.012	70-0.013	10-0.12	1	5796	8228	125
BB5013	39322001	0.24	50-0.012	80-0.013	13-0.12	1	9297	12955	227
BB6013	39323001	0.3	60-0.015	90-0.013	13-0.12	1	9905	14082	279
BB7013	39324001	0.31	70-0.015	100-0.015	13-0.12	1	10866	15700	346
BB8016	39325001	0.62	80-0.015	120-0.015	16-0.12	1	16465	23703	618
BB9016	39326001	0.73	90-0.02	130-0.015	16-0.12	1.5	17387	25340	718
BB10020	39327001	1.21	100-0.02	150-0.015	20-0.12	1.5	23487	34127	1102
BB11015	39328001	0.66	110-0.02	145-0.018	15-0.12	1	13631	20565	652
BB11020	39329001	1.36	110-0.02	160-0.02	20-0.12	1.5	24752	36481	1300
BB12025	39330001	2.13	120-0.02	180-0.02	25-0.12	2	39040	56339	2197
BB13025	39331001	2.27	130-0.025	190-0.025	25-0.12	2	40188	58526	2412
BB14025	39332001	2.5	140-0.025	200-0.025	25-0.12	2	42747	62782	2726
BB15013	39333001	0.61	150-0.025	180-0.025	13-0.12	1	15593	24075	965
BB15025	39334001	2.72	150-0.025	210-0.025	25-0.12	2	43816	64861	2959
BB15030	39335001	4.54	150-0.025	230-0.025	30-0.12	2	62792	91447	4475
BB20025	39336001	3.4	200-0.03	260-0.03	25-0.12	2.5	50220	76688	4333
BB20030	39337001	5.72	200-0.03	280-0.03	30-0.12	2.5	71471	107677	6435
BB20035	39338001	8.17	200-0.03	295-0.03	35-0.12	2.5	91859	136518	8529
BB25025	39339001	4.09	250-0.03	310-0.035	25-0.12	3	56074	87662	5891
BB25030	39340001	7.04	250-0.03	330-0.035	30-0.12	3	79434	122769	8641
BB25040	39341001	9.08	250-0.03	355-0.035	40-0.12	3	101244	155063	11489
BB30025	39342001	4.99	300-0.035	360-0.035	25-0.12	3	60438	96311	7482
BB30035	39343001	11.8	300-0.035	395-0.035	35-0.12	3	110452	172548	14399
BB30040	39344001	15.44	300-0.035	405-0.035	40-0.12	3	110227	172548	14576
BB40035	39345001	12.03	400-0.04	480-0.04	35-0.25	3.5	124554	201213	20560
BB40040	39346001	20.66	400-0.04	510-0.04	40-0.25	3.5	126388	205145	21572
BB50040	39347001	22.7	500-0.045	600-0.045	40-0.25	3.5	141029	235320	29099
BB50050	39348001	38.05	500-0.045	625-0.045	50-0.25	3.5	142736	238959	30120
BB60040	39349001	27.24	600-0.045	700-0.045	40-0.2	4	154053	263671	37565
BB70045	39350001	44.95	700-0.045	815-0.045	45-0.25	4	165605	290610	47062
BB80070	39351001	98.52	800-0.05	950-0.05	70-0.25	5	263269	468748	86420
BB90070	39352001	109.87	900-0.05	1050-0.05	70-0.25	5	277597	504827	101535

Note 1: Capacities listed are not simultaneous. For combined loading see discussion of [Bearing Selection](#) and [Load Analysis](#). Dynamic capacities are based upon 1 million revolutions of  $L_{10}$  life. Published capacities do not apply to hybrid series bearings P, X, and Y - contact Kaydon product engineering for values.

Note 2: Standard bearings are supplied without seals and shields, and they are assembled with a light clearance. Alternate features can be obtained by adding the following suffix letter to the basic part number.

- U = single seal                      CO = standard clearance                      CCO = preload                      TT = double shield
- UU = double seal                      CI = greater than standard clearance                      T = single shield                      Check for availability.

## Metric Series Ball Bearings - BB Series (continued)

### All dimensions in millimeters

Model Number	Bore (nominal +0)	O.D. (nominal +0)	Width (nominal +0)	Standard Diametral Clearance	Radial and Axial Runout	
					Inner	Outer
<b>BB3010</b>	30 -0.01	55 -0.013	10 -0.12	0.025-0.038	0.010	0.010
<b>BB3510</b>	35 -0.012	60 -0.013	10 -0.12	0.03-0.043	0.010	0.010
<b>BB4010</b>	40 -0.012	65 -0.013	10 -0.12	0.03-0.043	0.013	0.013
<b>BB4510</b>	45 -0.012	70 -0.013	10 -0.12	0.03-0.043	0.013	0.013
<b>BB5013</b>	50 -0.012	80 -0.013	13 -0.12	0.03-0.056	0.013	0.013
<b>BB6013</b>	60 -0.015	90 -0.013	13 -0.12	0.03-0.056	0.013	0.013
<b>BB7013</b>	70 -0.015	100 -0.015	13 -0.12	0.03-0.056	0.015	0.015
<b>BB8016</b>	80 -0.015	120 -0.015	16 -0.12	0.03-0.056	0.015	0.015
<b>BB9016</b>	90 -0.02	130 -0.015	16 -0.12	0.041-0.066	0.015	0.015
<b>BB10020</b>	100 -0.02	150 -0.015	20 -0.12	0.041-0.066	0.015	0.015
<b>BB11015</b>	110 -0.02	145 -0.018	15 -0.12	0.041-0.066	0.015	0.020
<b>BB11020</b>	110 -0.02	160 -0.02	20 -0.12	0.041-0.066	0.015	0.020
<b>BB12025</b>	120 -0.02	180 -0.02	25 -0.12	0.05-0.08	0.020	0.020
<b>BB13025</b>	130 -0.025	190 -0.025	25 -0.12	0.05-0.08	0.025	0.025
<b>BB14025</b>	140 -0.025	200 -0.025	25 -0.12	0.05-0.08	0.025	0.025
<b>BB15013</b>	150 -0.025	180 -0.025	13 0.23	0.05-0.08	0.025	0.025
<b>BB15025</b>	150 -0.025	210 -0.025	25 -0.12	0.05-0.08	0.025	0.025
<b>BB15030</b>	150 -0.025	230 -0.025	30 -0.12	0.05-0.08	0.025	0.025
<b>BB20025</b>	200 -0.03	260 -0.03	25 -0.12	0.06-0.09	0.030	0.030
<b>BB20030</b>	200 -0.03	280 -0.03	30 -0.12	0.06-0.09	0.030	0.030
<b>BB20035</b>	200 -0.03	295 -0.03	35 -0.12	0.06-0.09	0.030	0.030
<b>BB25025</b>	250 -0.03	310 -0.035	25 -0.12	0.07-0.1	0.035	0.035
<b>BB25030</b>	250 -0.03	330 -0.035	30 -0.12	0.07-0.1	0.035	0.035
<b>BB25040</b>	250 -0.03	355 -0.035	40 0.12	0.07-0.1	0.035	0.035
<b>BB30025</b>	300 -0.035	360 -0.035	25 -0.12	0.07-0.1	0.035	0.035
<b>BB30035</b>	300 -0.035	395 -0.035	35 -0.12	0.07-0.1	0.035	0.035
<b>BB30040</b>	300 -0.035	405 -0.035	40 -0.12	0.07-0.1	0.035	0.035
<b>BB40035</b>	400 -0.04	480 -0.04	35 -0.25	0.08-0.11	0.040	0.040
<b>BB40040</b>	400 -0.04	510 -0.04	40 -0.2	0.08-0.11	0.040	0.040
<b>BB50040</b>	500 -0.045	600 -0.045	40 -0.25	0.09-0.12	0.045	0.045
<b>BB50050</b>	500 -0.045	625 -0.045	50 -0.25	0.09-0.12	0.045	0.045
<b>BB60040</b>	600 -0.045	700 -0.045	40 -0.25	0.09-0.12	0.045	0.045
<b>BB70045</b>	700 -0.045	815 -0.045	45 -0.25	0.09-0.12	0.045	0.045
<b>BB80070</b>	800 -0.05	950 -0.05	70 -0.25	0.09-0.12	0.050	0.050
<b>BB90070</b>	900 -0.05	1050 -0.05	70 -0.25	0.1-0.13	0.050	0.050

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**Need Service Fast?**  
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