

Thin Section Deep Groove Ball Bearings

TIMKEN
Where You Turn

High Precision for Radial, Thrust and Combination Loads

For the demanding environment of satellite applications, performance and reliability are critical. Solar array panels require precise positioning control with minimal vibration and starting torque. Timken® deep groove ball bearings provide the necessary design and accuracy to enable smooth mechanism operation. In addition, the low-profile design is ideal for smaller, lighter applications – saving space and weight.

Modern guidance systems require a highly accurate detection of positioning. The high tolerances of standard Timken deep groove ball bearings help meet the exacting specifications of these systems, enhancing overall success.

Deep-groove construction fulfills multiple application requirements. This series is designed for moderate speeds and loads in any direction. Numerous size, material and separator options are available to match specific customer needs.

Timken's advanced thin section bearing technology gives designers of precision equipment robust solutions for compact space requirements and similar challenges.

Thin Section Features

Precision tolerances – meet ABEC 5 or 7 (ISO P5 or P4) standards for better fit with high running accuracy and consistent operation.

Material selection – performance options of 440C stainless steel or 52100 chrome steel offer corrosion resistance in challenging environments.

Superfinished raceways – provide a smooth surface finish of $< 0.08 \mu\text{m}$ ($3 \mu\text{in}$) Ra to reduce internal friction and vibration.

High-quality ball complement – delivers smooth rolling performance with Grade 5 or better balls optimized for minimum non-repeatable runout and low torque.

Broad size range – provides unique thin section designs and superior performance up to 300 mm (12 in.) outside diameter in standard product.

Compact size – saves weight and space for both bearing and mating components, helping to reduce overall envelope dimensions.

Duplexing capability – preloaded pairs further increase capacity and stiffness.

Low torque design – minimizes friction and helps to reduce energy input requirements.

Superior Timken quality – More than a century of bearing expertise and continual technological advances.

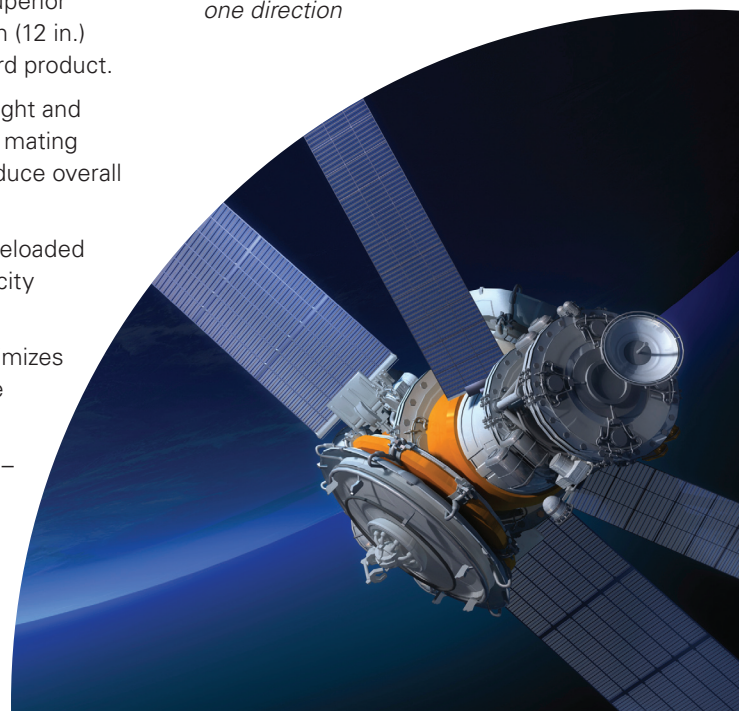


Typical Applications

- Radar Systems
- Satellites
- Medical Equipment
- Space Vehicles

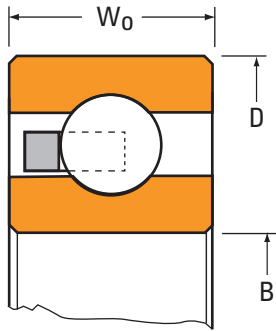
Also Available – Thin Section Angular Contact Ball Bearings

- increased axial stiffness and capacity
- higher thrust capacity in one direction



THIN SECTION BALL BEARINGS

Deep Groove Bearings



Standard thin section deep groove bearings are available with the following to meet your application requirements:

Materials

- 440C stainless steel
- 52100 chrome steel

Separators

- One-piece snap type phenolic retainer (up to chassis size 80-96)
- PTFE spacers

Tolerances

- ABEC 5 (ISO P5)
- ABEC 7 (ISO P4)

Preload

- None

Mountings/Sets

- Matched bearing sets available

To learn about additional custom options, contact your Timken sales representative.

Chassis	B Bore	D O.D.	W ₀ Width	Load Ratings				Approx. Weight
				Radial		Thrust		
	mm/in.	mm/in.	mm/in.	Static kg/lbs	Dyn. kg/lbs	Static kg/lbs	Dyn. kg/lbs	g/oz.
64-80	101.60 4.000	127.00 5.000	12.70 0.500	1371 3023	1244 2743	1048 2311	1404 3095	273.0 9.6
68-76	107.95 4.25	120.65 4.75	6.35 0.25	736 1623	470 1036	506 1115	532 1172	68.5 2.4
68-78	107.95 4.25	123.83 4.875	7.94 0.3125	931 2053	655 1443	664 1463	742 1636	108.6 3.8
68-80	107.95 4.250	127.00 5.000	9.53 0.375	1103 2433	845 1863	808 1781	951 2097	158.2 5.6
68-84	107.95 4.250	133.35 5.250	12.70 0.500	1473 3270	1287 2838	1129 2490	1453 3204	288.8 10.2
72-80	114.30 4.500	127.00 5.000	6.35 0.250	780 1720	480 1058	535 1180	543 1197	72.3 2.6
72-82	114.30 4.500	130.18 5.125	7.94 0.3125	977 2154	664 1464	695 1531	753 1660	114.5 4.0
72-84	114.30 4.500	133.35 5.250	9.53 0.375	1169 2576	863 1902	853 1880	971 2141	166.8 5.9
72-88	114.30 4.500	139.70 5.500	12.70 0.500	1543 3401	1299 2864	1170 2580	1466 3233	303.6 10.7
76-84	120.65 4.750	133.35 5.250	6.35 0.250	825 1818	490 1080	565 1245	554 1222	76.1 2.7
76-86	120.65 4.750	136.53 5.375	7.94 0.3125	1023 2255	674 1485	726 1600	764 1684	120.3 4.2
76-88	120.65 4.750	139.70 5.500	9.53 0.375	1234 2720	880 1940	898 1980	991 2184	175.5 6.2
76-92	120.65 4.750	146.05 5.750	12.70 0.500	1602 3532	1310 2889	1211 2670	1480 3262	318.4 11.2
76-100	120.65 4.750	158.75 6.250	19.05 0.750	2420 5335	2359 5200	1925 4245	2659 5861	749.1 26.4
80-88	127.00 5.000	139.70 5.500	6.35 0.250	854 1884	494 1088	584 1288	559 1232	79.8 2.8
80-90	127.00 5.000	142.88 5.625	7.94 0.3125	1091 2405	692 1526	772 1702	785 1730	126.5 4.5
80-92	127.00 5.000	146.05 5.750	9.53 0.375	1268 2795	882 1945	921 2030	993 2190	183.6 6.5
80-96	127.00 5.000	152.40 6.000	12.70 0.500	1715 3780	1350 2976	1292 2849	1525 3361	334.2 11.8
80-104	127.00 5.000	165.10 6.500	19.05 0.750	2547 5615	2404 5299	2018 4449	2710 5975	783.5 27.6
88-96	139.70 5.500	152.40 6.000	6.35 0.250	943 2079	512 1129	643 1417	579 1277	87.5 3.1
88-98	139.70 5.500	155.58 6.125	7.94 0.3125	1183 2607	709 1564	834 1839	805 1774	138.2 4.9
88-100	139.70 5.500	158.75 6.250	9.53 0.375	1429 3150	928 2046	1034 2279	1045 2304	201.3 7.1
88-104	139.70 5.500	165.10 6.500	12.70 0.500	1886 4159	1397 3080	1414 3118	1579 3481	364.8 12.9
88-112	139.70 5.500	177.80 7.000	19.05 0.750	2802 6177	2490 5489	2203 4858	2809 6192	852.4 30.1
96-104	152.40 6.000	165.10 6.500	6.35 0.250	1031 2274	529 1167	701 1546	599 1321	95.1 3.4
96-106	152.40 6.000	168.28 6.625	7.94 0.3125	1296 2858	734 1619	912 2010	833 1837	150.2 5.3
96-108	152.40 6.000	171.45 6.750	9.53 0.375	1559 3437	958 2111	1124 2478	1079 2378	218.5 7.7
96-112	152.40 6.000	177.80 7.000	12.70 0.500	2058 4538	1442 3179	1536 3387	1630 3593	395.4 13.9
96-120	152.40 6.000	190.50 7.500	19.05 0.750	3057 6739	2571 5667	2389 5267	2901 6395	921.2 32.5
104-112	165.10 6.500	177.80 7.000	6.35 0.250	1120 2469	546 1203	760 1676	618 1362	102.8 3.6
104-114	165.10 6.500	180.98 7.125	7.94 0.3125	1410 3109	758 1671	990 2181	860 1895	162.3 5.7
104-116	165.10 6.500	184.15 7.250	9.53 0.375	1689 3724	986 2173	1214 2677	1110 2448	235.7 8.3
104-120	165.10 6.500	190.50 7.500	12.70 0.500	2230 4917	1485 3273	1658 3656	1678 3700	426.0 15.0
104-128	165.10 6.500	203.20 8.000	19.05 0.750	3312 7301	2647 5836	2574 5676	2988 6587	990.1 34.9
112-120	177.80 7.000	190.50 7.500	6.35 0.250	1208 2664	561 1237	819 1805	635 1401	110.4 3.9
112-122	177.80 7.000	193.68 7.625	7.94 0.3125	1524 3360	780 1720	1067 2353	885 1952	174.3 6.1
112-124	177.80 7.000	196.85 7.750	9.53 0.375	1820 4011	1012 2232	1305 2876	1141 2515	252.9 8.9
112-128	177.80 7.000	203.20 8.000	12.70 0.500	2402 5296	1525 3362	1780 3925	1724 3801	456.7 16.1
112-136	177.80 7.000	215.90 8.500	19.05 0.750	3567 7864	2719 5995	2760 6084	3071 6770	1059.0 37.4

Chassis	B Bore	D O.D.	W ₀ Width	Load Ratings				Approx. Weight
				Radial		Thrust		
	mm/in.	mm/in.	mm/in.	Static kg/lbs	Dyn. kg/lbs	Static kg/lbs	Dyn. kg/lbs	g/oz.
120-128	190.50 7.500	203.20 8.000	6.35 0.250	1297 2859	576 1270	576 1934	652 1438	118.1 4.2
120-130	190.50 7.500	206.38 8.125	7.94 0.3125	1616 3562	794 1751	1129 2489	901 1987	186.0 6.6
120-132	190.50 7.500	209.55 8.250	9.53 0.375	1918 4229	1027 2264	1277 3026	1157 2551	269.7 9.5
120-136	190.50 7.500	215.90 8.500	12.70 0.500	2574 5675	1563 3447	1902 4194	1768 3898	487.3 17.2
120-144	190.50 7.500	228.60 9.000	19.05 0.750	3822 8427	2789 6148	2945 6493	3150 6944	1127.8 39.8
128-136	203.20 8.000	215.90 8.500	6.35 0.250	1385 3054	590 1301	936 2063	669 1474	125.8 4.4
128-138	203.20 8.000	219.08 8.625	7.94 0.3125	1707 3764	808 1781	1191 2626	917 2022	197.8 7.0
128-140	203.20 8.000	222.25 8.750	9.53 0.375	2049 4516	1052 2319	1463 3225	1186 2614	287.0 10.1
128-144	203.20 8.000	228.60 9.000	12.70 0.500	2746 6054	1600 3528	2024 4463	1810 3991	517.9 18.3
128-152	203.20 8.000	241.30 9.500	19.05 0.750	4078 8990	2855 6294	3131 6902	3225 7111	1196.7 42.2
144-152	228.60 9.000	241.30 9.500	6.35 0.250	1548 3412	613 1351	1043 2301	694 1531	140.9 5.0
144-154	228.60 9.000	244.48 9.625	7.94 0.3125	1935 4265	847 1867	1346 2969	962 2120	221.8 7.8
144-156	228.60 9.000	247.65 9.750	9.53 0.375	2309 5091	1099 2422	1643 3623	1239 2731	321.4 11.3
144-160	228.60 9.000	254.00 10.000	12.70 0.500	3090 6813	1670 3682	2269 5001	1890 4166	579.1 20.4
144-168	228.60 9.000	266.70 10.500	19.05 0.750	4589 10116	2979 6569	3502 7720	3367 7424	1334.4 47.1
160-168	254.00 10.000	266.70 10.500	6.35 0.250	1725 3802	638 1407	1161 2559	723 1594	156.3 5.5
160-170	254.00 10.000	269.88 10.625	7.94 0.3125	2140 4718	877 1934	1486 3276	996 2196	245.6 8.7
160-172	254.00 10.000	273.05 10.750	9.53 0.375	2601 5735	1152 2540	1847 4071	1299 2864	356.3 12.6
160-176	254.00 10.000	279.40 11.000	12.70 0.500	3379 7450	1716 3783	2472 5450	1942 4282	639.3 22.5
160-184	254.00 10.000	292.10 11.500	19.05 0.750	5100 11243	3095 6824	3873 8538	3500 7716	1472.1 51.9
176-184	279.40 11.000	292.10 11.500	6.35 0.250	1902 4193	662 1458	1278 2818	750 1653	171.6 6.1
176-186	279.40 11.000	295.28 11.625	7.94 0.3125	2346 5171	906 1997	1626 3584	1029 2268	269.3 9.5
176-188	279.40 11.000	298.45 11.750	9.53 0.375	2830 6240	1184 2609	2005 4420	1335 2943	390.3 13.8
176-192	279.40 11.000	304.80 12.000	12.70 0.500	3723 8208	1778 3920	4716 5988	2013 4438	700.5 24.7

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- Seals • Remanufacture and Repair •
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