



Aerospace Bearings - Rolling Element



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AEROSPACE BEARINGS

Rolling Element Bearings

Airframe Control Ball Bearings

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Descriptions

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Descriptions

AIRFRAME CONTROL BALL BEARINGS

__PART NUMBER DESIGNATIONS AND OPTIONS

__SINGLE ROW

__STANDARD

[B500DD \(MS27646\)](#) – Extra Light Duty

[B500](#) – Extra Light Duty, Open

[KP \(MS27640\)](#) – Heavy Duty

[KP-A \(MS27441\)](#) – Intermediate Duty

[KP-B \(MS27642\)](#) – Extra Light Duty

[P \(MS21443\)](#) - Pulley Type

[AW-AK \(MS27649\)](#) – Intermediate Duty, Stainless Steel

__PRECISION

[MB500DD \(MS21428\)](#) - Extra Light Duty, Precision

[MB500](#) - Extra Light Duty, Open, Precision

[MKP \(MS27640-R\)](#) - Heavy Duty, Precision

[MKP-A \(MS27641-R\)](#) - Intermediate Duty, Precision

[MKP-B \(MS27642-S\)](#) - Extra Light Duty, Precision

__SELF-ALIGNED

[KP-BS \(MS27648\)](#)– Extra Light Duty, Externally Self-Aligning

[MKP-BS](#) - Extra Light Duty, Externally Self-Aligning, Precision

[KSP, KSP-A \(MS27645\)](#) – Light and Heavy Duty, Internally Self-Aligning

__DOUBLE ROW

__STANDARD

[DP, DPW \(MS27644\)](#) - Double Row, Heavy Duty

[DW, GDW \(MS27647\)](#) – Extra Wide, Double Row,
Intermediate Duty

[PD5K \(MS21443-5B\)](#) - Double Row, Pulley Type

__SELF-ALIGNED

[DSP \(MS27643\)](#) - Double Row, Heavy Duty, Internally Self-Aligning

AIRFRAME CONTROL NEEDLE ROLLER BEARINGS

__PART NUMBER DESIGNATIONS AND OPTIONS

__SINGLE ROW

_____STANDARD

_____ ATF (MS21438) – Needle, Single Row, Heavy Duty, Track
Roller, Sealed

SELF-ALIGNED

| _____ DSRP, GDSRP – Roller, Single Row, Heavy Duty,
Self-Aligning

DOUBLE ROW

____STANDARD

| _____ ATL (MS21439) - Needle, Double Row, Heavy Duty, Track
Roller, Sealed

AIRFRAME CONTROL BALL BEARING ROD ENDS

__PART NUMBER DESIGNATIONS AND OPTIONS

__SINGLE ROW

|____ROLLER

Available soon

DOUBLE ROW

|____BALL

REP M (MS21151) - Rod End Ball Bearing, External Thread

REP F (MS21153) - Rod End Ball Bearing, Internal Thread

REP S (MS21150) - Rod End Ball Bearing, Solid Shank

REP H (MS21152) - Rod End Ball Bearing, Hollow Shank

_____ROLLER

Available soon

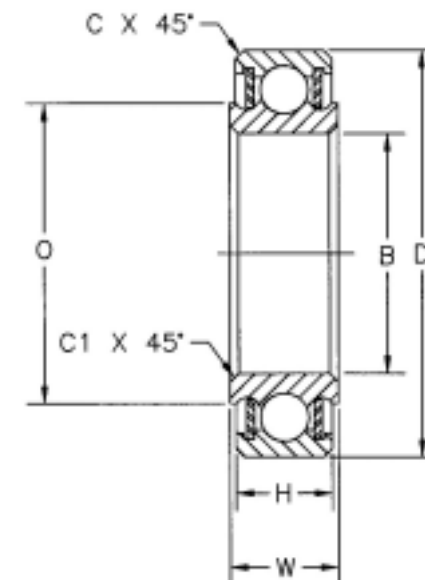
B500D D Series

Extra Light

Torque Tube Type

AS27646 • AS7949 (formerly MIL-B-7949)

- Single row, ball.
- Teflon coated glass fabric shields.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- This series is dimensionally interchangeable with the unshielded B500 series
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	MS27646 Dash No.	Bore B +0.0007 -0.0007	O.D. D +0.0000 -0.0010	Width W +0.000 -0.005	Width H +0.000 -0.005	O Approx.	C1	C	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(3)
B538DD	-38	0.6250	1.0625	0.281	0.250	0.777	0.015	0.015	0.03	3280	1500	1990
B539DD	-39	0.7500	1.1875	0.281	0.250	0.895	0.015	0.015	0.04	3750	1700	2050
B540DD	-40	0.8750	1.3125	0.281	0.250	1.016	0.015	0.015	0.05	4220	1900	2110
B541DD	-41	1.0625	1.5000	0.281	0.250	1.216	0.015	0.015	0.06	5000	2200	2170
B542DD	-42	1.3125	1.7500	0.281	0.250	1.451	0.015	0.015	0.09	5950	2700	2220
B543DD	-43	1.5625	2.0000	0.281	0.250	1.702	0.015	0.015	0.10	6880	3200	2260
B544DD	-44	1.8125 (1)	2.2500 (2)	0.281	0.250	1.970	0.015	0.015	0.11	7980	3600	2300
B545DD	-45	2.0625 (1)	2.6250 (2)	0.281	0.250	2.286	0.015	0.015	0.15	9220	4000	2340
B546DD	-46	2.3125 (1)	2.8750 (2)	0.281	0.250	2.527	0.015	0.015	0.17	10150	4400	2360

All dimensions are in inches.

(1) +0.0010, -0.0010

(2) +0.0000, -0.0015

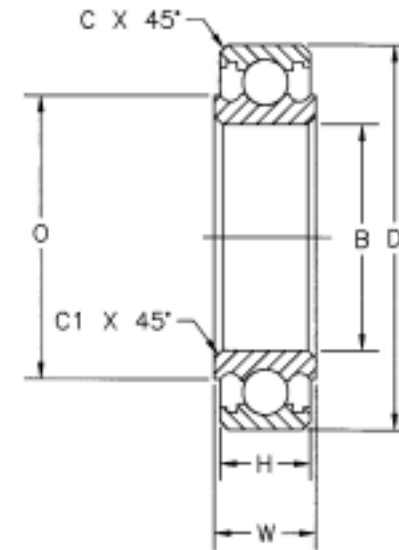
(3) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

B500 Series

Extra Light

Torque Tube Type

- Single row, ball.
- This series is made of bearing quality chromium-alloy, high carbon steel and is not cadmium plated.
- Open type. No seals or shields.
- Prepacked with a preservative.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	Bore B +0.0007 -0.0007	O.D. D +0.0000 -0.0010	Width W +0.000 -0.005	Width H +0.000 -0.005	O Approx.	C ₁	C	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(3)
B538	0.6250	1.0625	0.281	0.250	0.777	0.015	0.015	0.02	3280	1500	1990
B539	0.7500	1.1875	0.281	0.250	0.895	0.015	0.015	0.03	3750	1700	2050
B540	0.8750	1.3125	0.281	0.250	1.016	0.015	0.015	0.04	4220	1900	2110
B541	1.0625	1.5000	0.281	0.250	1.216	0.015	0.015	0.05	5000	2200	2170
B542	1.3125	1.7500	0.281	0.250	1.451	0.015	0.015	0.07	5950	2700	2220
B543	1.5625	2.0000	0.281	0.250	1.702	0.015	0.015	0.08	6880	3200	2260
B544	1.8125 (1)	2.2500 (2)	0.281	0.250	1.970	0.015	0.015	0.09	7980	3600	2300
B545	2.0625 (1)	2.6250 (2)	0.281	0.250	2.286	0.015	0.015	0.13	9220	4000	2340
B546	2.3125 (1)	2.8750 (2)	0.281	0.250	2.527	0.015	0.015	0.15	10150	4400	2360

All dimensions are in inches.

(1) +0.0010, -0.0010

(2) +0.0000, -0.0015

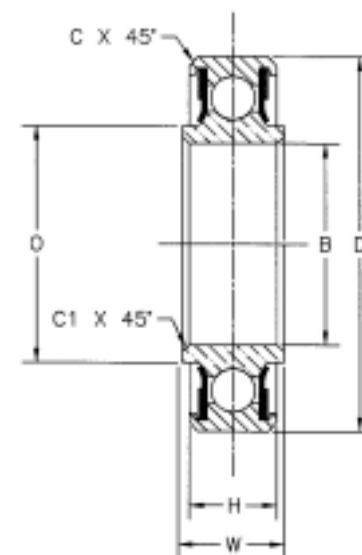
(3) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

KP Series

Radial Bearing

AS27640 • AS7949 (formerly MIL-B-7949)

- Single row, ball, heavy duty.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	MS27640 Dash No.	Bore B +0.0000 -0.0005	O.D. D +0.0000 -0.0005	Width W +0.000 -0.005	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(2)
KP3L (1)	-3A	0.1900	0.6250	0.245	0.203	0.280	0.005	0.010	0.01	1560	700	1520
KP3	-3	0.1900	0.7774	0.297	0.270	0.331	0.005	0.022	0.03	1880	900	1700
KP4	-4	0.2500	0.9014	0.484	0.335	0.387	0.005	0.032	0.04	2680	1200	2410
KP5	-5	0.3125	1.2500	0.558	0.375	0.469	0.015	0.032	0.09	5620	2500	4900
KP6	-6	0.3750	1.4375	0.620	0.469	0.591	0.015	0.032	0.15	7910	3500	6540
KP8	-8	0.5000	1.6875	0.620	0.500	0.752	0.015	0.044	0.21	11810	5200	9320
KP10	-10	0.6250	1.9375	0.620	0.500	0.850	0.015	0.044	0.28	14100	6200	11000

All dimensions are in inches.

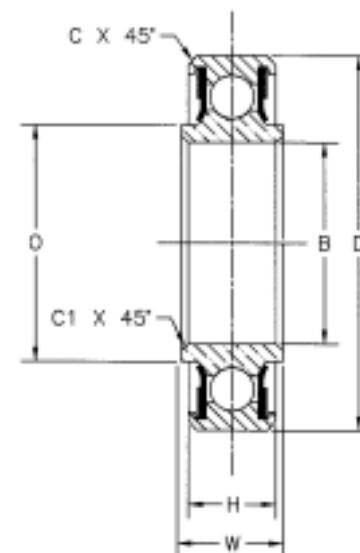
- (1) Bonded PTFE Seals.
- (2) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

KP-A Series

Radial Bearing

AS27641 • AS7949 (formerly MIL-B-7949)

- Single row, ball, deep groove.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	MS27641 Dash No.	Bore B +0.0000 -0.0005	O.D. D +0.0000 -0.0005	Width W +0.000 -0.005	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(2)
KP3AL (1)	-	0.1900	0.5000	0.237	0.196	0.258	0.005	0.012	0.01	970	430	962
KP3A	-3	0.1900	0.6250	0.297	0.234	0.270	0.005	0.016	0.01	1560	700	1500
KP4A	-4	0.2500	0.7500	0.281	0.219	0.349	0.005	0.016	0.02	1880	900	1690
KP5A	-5	0.3125	0.8125	0.297	0.234	0.428	0.015	0.016	0.02	2190	1000	1820
KP6A	-6	0.3750	0.8750	0.313	0.250	0.505	0.015	0.016	0.03	2500	1100	1920
KP8A	-8	0.5000	1.1250	0.375	0.313	0.635	0.015	0.016	0.05	3910	1700	2870
KP10A	-10	0.6250	1.3750	0.406	0.344	0.760	0.015	0.032	0.08	6700	3000	4980
KP12A	-12	0.7500	1.6250	0.437	0.375	0.955	0.015	0.032	0.13	8790	3900	5980
KP16A	-16	1.0000	2.0000	0.500	0.438	1.262	0.015	0.032	0.22	11900	5200	7070
KP20A	-20	1.2500	2.2500	0.500	0.438	1.512	0.015	0.032	0.26	13800	6100	7400

All dimensions are in inches.

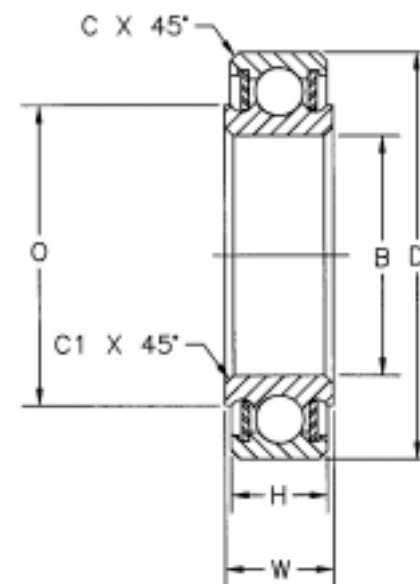
- (1) Not MS27641
- (2) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

KP-B Series

Radial Torque Tube Bearing

AS27642 • AS7949 (formerly MIL-B-7949)

- Single row, ball.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	MS27642 Dash No.	Bore B +0.0000 -0.0010	O.D. D +0.0000 -0.0010	Width W +0.000 -0.005	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(2)
KP16B	-16	1.0000 (1)	1.7500 (1)	0.437	0.375	1.184	0.024	0.024	0.14	8090	3600	4260
KP21B	-21	1.3130	2.0625	0.437	0.375	1.478	0.024	0.024	0.16	9840	4400	4590
KP23B	-23	1.4380	2.1875	0.437	0.375	1.605	0.024	0.024	0.17	10500	4700	4650
KP25B	-25	1.5630	2.3125	0.437	0.375	1.720	0.024	0.024	0.19	11300	5000	4680
KP29B	-29	1.8130	2.5625	0.437	0.375	1.960	0.024	0.024	0.21	12700	5600	4760
KP33B	-33	2.0630	2.8125	0.437	0.375	2.262	0.024	0.024	0.23	14400	6400	4820
KP37B	-37	2.3130	3.0625	0.437	0.375	2.500	0.024	0.024	0.26	15800	7000	4880
KP47B	-47	2.9380	3.8750	0.531	0.469	3.120	0.039	0.039	0.49	24700	10900	6600
KP49B	-49	3.0630	4.0000	0.531	0.469	3.255	0.039	0.039	0.53	27500	12100	8150
KP52B	-52	3.2500	4.1875	0.531	0.469	3.440	0.039	0.039	0.65	28700	12600	8210
KP56B	-56	3.5000	4.4375	0.531	0.469	3.736	0.039	0.039	0.70	31200	13700	8240
KP60B	-60	3.7500	4.6875	0.531	0.469	4.014	0.039	0.039	0.74	33100	14600	8290

All dimensions are in inches.

(1) +0.0000, -0.0005

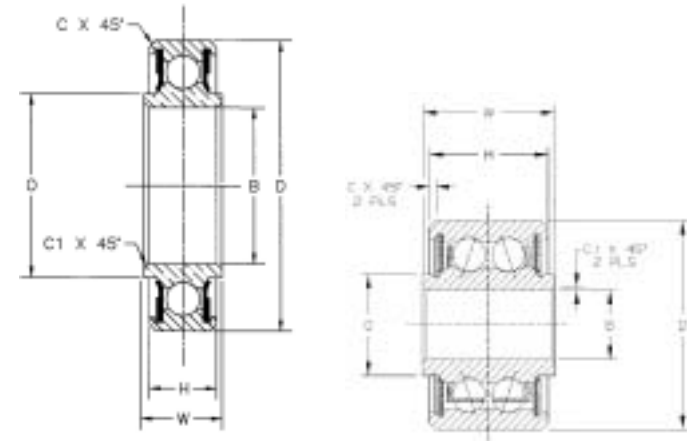
(2) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

P Series

Pulley Type Ball Bearings

AS21443 · AS7949 (formerly MIL-B-7949)

- Single row ball bearings (except PD5K that is double row)
- Caged type (except P8 that is full type)
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore caps and seals.
- For MIL-P-7034 Pulleys.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



P8

PD5K

Base Part Number	MS21443 Dash No.	Bore B +0.0000 -0.0005	O.D. D +0.0000 -0.0005	Width W +0.000 -0.005	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs. (2)
KP3K	-3B	0.1900	0.7774	0.297	0.270	0.332	0.005	0.024	0.02	1090	600	1090
KP3AK	-3A	0.1900	0.6250	0.297	0.234	0.297	0.005	0.016	0.01	705	385	705
KP3AK-2	-	0.1900	0.6250	0.625	0.234	0.297	0.005	0.016	0.02	705	385	705
W4AK	-4A	0.2500	0.7500	0.438	0.312	0.372	0.005	0.016	0.03	1090	600	1090
KP4K	-4C	0.2500	0.9014	0.484	0.335	0.390	0.005	0.034	0.04	1710	800	1710
P4K	-4B	0.2500	0.8750	0.438	0.375	0.423	0.005	0.022	0.04	1710	800	1710
P5K	-5A	0.3125	0.8750	0.625	0.375	0.455	0.005	0.022	0.04	1710	800	1710
PD5K	-5B	0.3125	0.9375	0.625	0.563	0.455	0.005	0.022	0.07	3420	1030	3250
P8 (1)	-8	0.5000	1.6875	0.750	0.563	0.768	0.005	0.032	0.24	11800	5200	9320
P10K	-10	0.6250	1.1875	0.438	0.375	0.769	0.005	0.022	0.06	2440	1100	2420

All dimensions are in inches.

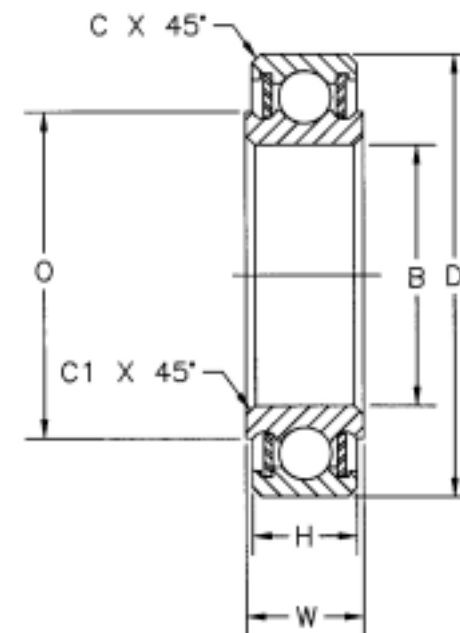
- (1) Full complement type. Not caged.
- (2) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

AW-AK Series

Radial Bearing Stainless Steel

AS27649 • AS7949 (formerly MIL-B-7949)

- Single row, ball, deep groove.
- Made of 440C stainless steel.
- Equipped with PTFE Seals.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	MS27649 Dash No.	Bore B +0.0000 -0.0005	O.D. D +0.0000 -0.0005	Width W +0.000 -0.025	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(1)
AW3AK	-3	0.1900	0.6250	0.406	0.312	0.317	0.005	0.016	0.018	750	350	750
AW4AK	-4	0.2500	0.7500	0.438	0.312	0.415	0.005	0.016	0.028	880	410	840
AW5AK	-5	0.3125	0.8125	0.469	0.344	0.462	0.015	0.016	0.033	1370	640	1230
AW6AK	-6	0.3750	0.8750	0.469	0.344	0.520	0.015	0.016	0.034	1370	640	1250
AW8AK	-8	0.5000	1.1250	0.562	0.438	0.681	0.015	0.016	0.075	2250	1050	1840
AW10AK	-10	0.6250	1.3750	0.594	0.469	0.848	0.015	0.032	0.119	3060	1430	2440
AW12AK	-12	0.7500	1.6250	0.656	0.531	1.052	0.015	0.032	0.189	4000	1870	3120
AW16AK	-16	1.0000	2.0000	0.688	0.562	1.334	0.015	0.032	0.296	5000	2340	3370
AW20AK	-20	1.2500	2.2500	0.688	0.562	1.615	0.015	0.032	0.355	6000	2800	3560

All dimensions are in inches.

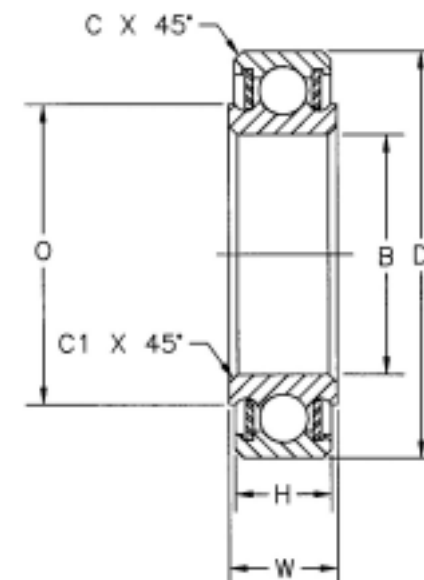
(1) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

MB500DD Precision Series

Extra Light Torque Tube Type

AS21428 • AS7949 (formerly MIL-B-7949)

- Single row, ball.
- Teflon coated glass fabric shields.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- This series is dimensionally interchangeable with the unshielded MB500 series
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	MS21428 Dash No.	Bore B +0.0000 -0.0005	O.D. D +0.0000 -0.0005	Width W +0.0000 -0.0025	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(3)
MB538DD	-38	0.6250	1.0625	0.2810	0.250	0.777	0.015	0.015	0.03	3280	1500	1990
MB539DD	-39	0.7500	1.1875	0.2810	0.250	0.895	0.015	0.015	0.04	3750	1700	2050
MB540DD	-40	0.8750	1.3125	0.2810	0.250	1.016	0.015	0.015	0.05	4220	1900	2110
MB541DD	-41	1.0625	1.5000	0.2810	0.250	1.216	0.015	0.015	0.06	5000	2200	2170
MB542DD	-42	1.3125	1.7500	0.2810	0.250	1.451	0.015	0.015	0.09	5950	2700	2220
MB543DD	-43	1.5625	2.0000	0.2810	0.250	1.702	0.015	0.015	0.10	6880	3200	2260
MB544DD	-44	1.8125 (1)	2.2500 (2)	0.2810	0.250	1.970	0.015	0.015	0.11	7980	3600	2300
MB545DD	-45	2.0625 (1)	2.6250 (2)	0.2810	0.250	2.286	0.015	0.015	0.15	9220	4000	2340
MB546DD	-46	2.3125 (1)	2.8750 (2)	0.2810	0.250	2.527	0.015	0.015	0.17	10150	4400	2360

All dimensions are in inches.

(1) +0.0000, -0.0008

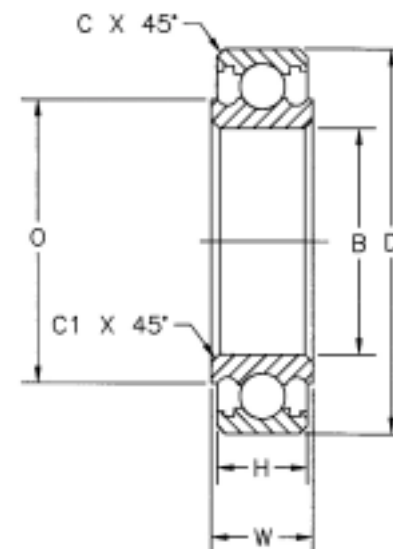
(2) +0.0000, -0.0007

(3) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

MB500 Precision Series

Extra Light Torque Tube Type

- Single row, ball.
- This series is made of bearing quality chromium-alloy, high carbon steel and is not cadmium plated.
- Open type. No seals or shields.
- Pre-packed with a preservative.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	Bore B +0.0000 -0.0005	O.D. D +0.0000 -0.0005	Width W +0.0000 -0.0025	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(3)
MB538	0.6250	1.0625	0.281	0.250	0.777	0.015	0.015	0.02	3280	1500	1990
MB539	0.7500	1.1875	0.281	0.250	0.895	0.015	0.015	0.03	3750	1700	2050
MB540	0.8750	1.3125	0.281	0.250	1.016	0.015	0.015	0.04	4220	1900	2110
MB541	1.0625	1.5000	0.281	0.250	1.216	0.015	0.015	0.05	5000	2200	2170
MB542	1.3125	1.7500	0.281	0.250	1.451	0.015	0.015	0.07	5950	2700	2220
MB543	1.5625	2.0000	0.281	0.250	1.702	0.015	0.015	0.08	6880	3200	2260
MB544	1.8125 (1)	2.2500 (2)	0.281	0.250	1.970	0.015	0.015	0.09	7980	3600	2300
MB545	2.0625 (1)	2.6250 (2)	0.281	0.250	2.286	0.015	0.015	0.13	9220	4000	2340
MB546	2.3125 (1)	2.8750 (2)	0.281	0.250	2.527	0.015	0.015	0.15	10150	4400	2360

All dimensions are in inches.

(1) +0.0000, -0.0008

(2) +0.0000, -0.0007

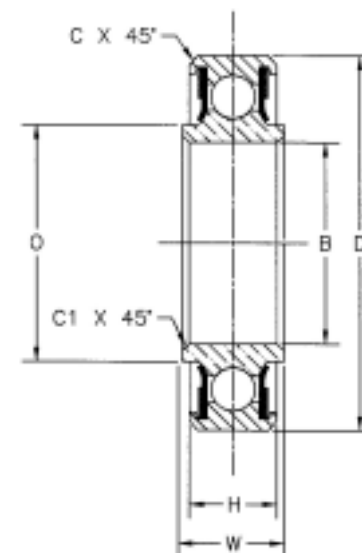
(3) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

MKP Precision Series

Radial Bearing

AS27640-R • AS7949 (formerly MIL-B-7949)

- Single row, ball, heavy duty.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- Reduced “B”, “D”, “W” tolerances
- Reduced radial internal clearance
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	MS27640 Dash No.	Bore B +0.0000 -0.0003	O.D. D +0.0000 -0.0004	Width W +0.0000 -0.0025	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(1)
MKP3	-3R	0.1900	0.7774	0.2970	0.270	0.331	0.005	0.022	0.03	1880	900	1700
MKP4	-4R	0.2500	0.9014	0.4840	0.335	0.387	0.005	0.032	0.04	2680	1200	2410
MKP5	-5R	0.3125	1.2500	0.5580	0.375	0.469	0.015	0.032	0.09	5620	2500	4900
MKP6	-6R	0.3750	1.4375	0.6200	0.469	0.591	0.015	0.032	0.15	7910	3500	6540
MKP8	-8R	0.5000	1.6875	0.6200	0.500	0.752	0.015	0.044	0.21	11810	5200	9320
MKP10	-10R	0.6250	1.9375	0.6200	0.500	0.850	0.015	0.044	0.28	14100	6200	11000

All dimensions are in inches.

(1) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

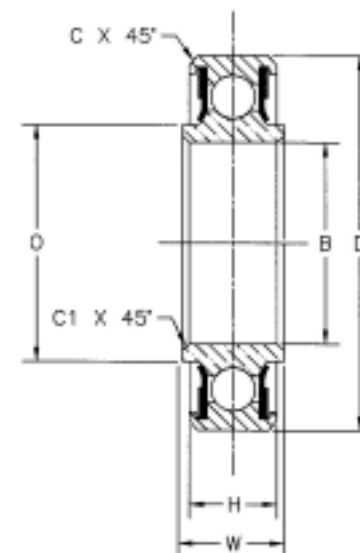
MKP-A Precision Series

Radial Bearing

AS27641-R• AS7949 (formerly MIL-B-7949)

- Single row, ball, deep groove.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- Reduced “B”, “D”, “W” tolerances
- Reduced radial internal clearance
- For complete part number, lubrication code and other specifications see

[Part Number Designations and Options](#)



Base Part Number	MS27641 Dash No.	Bore B +0.0000 -0.0003	O.D. D +0.0000 -0.0004	Width W +0.0000 -0.0025	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(2)
MKP3AL ⁽¹⁾	-	0.1900	0.5000	0.2370	0.196	0.258	0.005	0.012	0.01	970	430	962
MKP3A	-3R	0.1900	0.6250	0.2970	0.234	0.270	0.005	0.016	0.01	1560	700	1500
MKP4A	-4R	0.2500	0.7500	0.2810	0.219	0.349	0.005	0.016	0.02	1880	900	1690
MKP5A	-5R	0.3125	0.8125	0.2970	0.234	0.428	0.015	0.016	0.02	2190	1000	1820
MKP6A	-6R	0.3750	0.8750	0.3130	0.250	0.505	0.015	0.016	0.03	2500	1100	1920
MKP8A	-8R	0.5000	1.1250	0.3750	0.313	0.635	0.015	0.016	0.05	3910	1700	2870
MKP10A	-10R	0.6250	1.3750	0.4060	0.344	0.760	0.015	0.032	0.08	6700	3000	4980
MKP12A	-12R	0.7500	1.6250	0.4370	0.375	0.955	0.015	0.032	0.13	8790	3900	5980
MKP16A	-16R	1.0000	2.0000	0.5000	0.438	1.262	0.015	0.032	0.22	11900	5200	7070
MKP20A	-20R	1.2500	2.2500	0.5000	0.438	1.512	0.015	0.032	0.26	13800	6100	7400

All dimensions are in inches.

- (1) Not MS27641
- (2) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

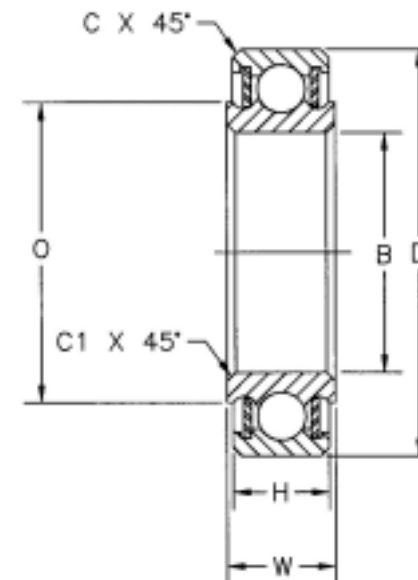
MKP-B Precision Series

Radial Torque Tube Bearing

[MAIN MENU](#)

AS27642-S • AS7949 (formerly MIL-B-7949)

- Single row, ball.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- Reduced “B”, “D”, “W” tolerances
- Reduced radial internal clearance
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	MS27642-S Dash No.	Bore B +0.0000 -0.0005	O.D. D +0.0000 -0.0010	Width W +0.0000 -0.0025	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(2)
MKP16B	-16S	1.0000	1.7500 (1)	0.4370	0.375	1.184	0.024	0.024	0.14	8090	3600	4260
MKP21B	-21S	1.3125	2.0625	0.4370	0.375	1.478	0.024	0.024	0.16	9840	4400	4590
MKP23B	-23S	1.4375	2.1875	0.4370	0.375	1.605	0.024	0.024	0.17	10500	4700	4650
MKP25B	-25S	1.5625	2.3125	0.4370	0.375	1.720	0.024	0.024	0.19	11300	5000	4680
MKP29B	-29S	1.8125	2.5625	0.4370	0.375	1.960	0.024	0.024	0.21	12700	5600	4760
MKP33B	-33S	2.0625	2.8125	0.4370	0.375	2.262	0.024	0.024	0.23	14400	6400	4820
MKP37B	-37S	2.3125	3.0625	0.4370	0.375	2.500	0.024	0.024	0.26	15800	7000	4880
MKP47B	-47S	2.9375	3.8750	0.5310	0.469	3.120	0.039	0.039	0.49	24700	10900	6600
MKP49B	-49S	3.0625	4.0000	0.5310	0.469	3.255	0.039	0.039	0.53	27500	12100	8150

All dimensions are in inches.

(1) +0.0000, -0.0005

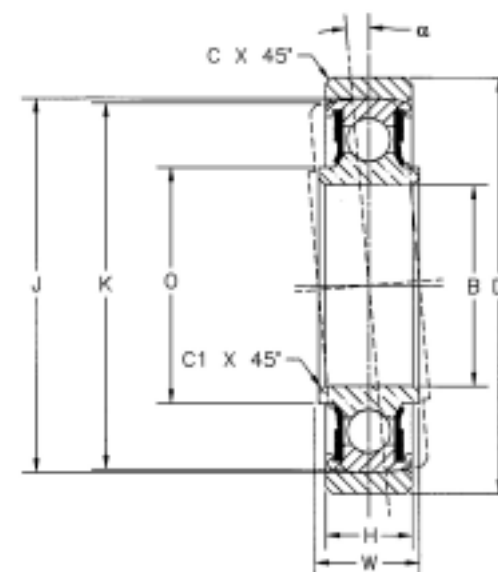
(2) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

KP-BS Series

Self-Aligning Radial Torque Tube Bearing

AS27648 • AS7949 (formerly MIL-B-7949)

- Single row, ball, external self-aligning.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	MS27648 Dash No.	Bore B +0.0000 -0.0010	O.D. D +0.0000 -0.0010	Width W +0.000 -0.005	Width H +0.000 -0.005	O Approx.	C ₁ +0.015 -0.000	C +0.015 -0.000	To Sharp Corner K (Ref.)	Mis-alignment Either Direction	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.
KP16BS	-16	1.0000 (1)	1.9375	0.437	0.375	1.184	0.024	0.024	1.709	7°25'	0.18	8090	1600
KP21BS	-21	1.3130	2.2500	0.437	0.375	1.478	0.024	0.024	2.028	6°30'	0.20	9840	2000
KP23BS	-23	1.4380	2.3750	0.437	0.375	1.605	0.024	0.024	2.155	6°	0.22	10500	2200
KP25BS	-25	1.5630	2.5000	0.437	0.375	1.720	0.024	0.024	2.282	5°45'	0.25	11300	2300
KP29BS	-29	1.8130	2.7500	0.437	0.375	1.960	0.024	0.024	2.535	5°	0.27	12700	2600
KP33BS	-33	2.0630	3.0000	0.437	0.375	2.262	0.024	0.024	2.787	5°	0.30	14400	2900
KP37BS	-37	2.3130	3.2500	0.437	0.375	2.500	0.024	0.024	3.039	4°30'	0.33	15800	3200
KP47BS	-47	2.9380	4.1250	0.531	0.469	3.120	0.039	0.039	3.846	4°30'	0.64	24700	5000
KP48BS	-48	3.0000	4.2500	0.531	0.469	3.255	0.039	0.039	3.972	4°	0.69	27500	5500
KP49BS	-49	3.0625	4.2500	0.531	0.469	3.255	0.039	0.039	3.972	4°	0.69	27500	5500

All dimensions are in inches.

(1) +0.0000, -0.0005

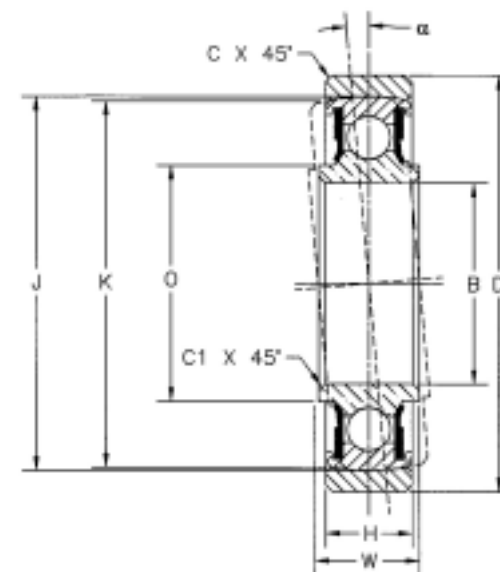
(2) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

MKP-BS Precision Series

Self-Aligning

Radial Torque Tube Bearing

- Single row, ball, external self-aligning.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- Reduced “B”, “D”, “W” tolerances
- Reduced radial internal clearance
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	Bore B +0.0000 -0.0005	O.D. D +0.0000 -0.0010	Width W +0.0000 -0.0025	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	To Sharp Corner K (Ref.)	Mis-alignment Either Direction	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(2)
MKP16BS	1.0000	1.9375	0.4370	0.375	1.184	0.024	0.024	1.709	7°25'	0.18	8090	1600	4260
MKP21BS	1.3125	2.2500	0.4370	0.375	1.478	0.024	0.024	2.028	6°30'	0.20	9840	2000	4590
MKP23BS	1.4375	2.3750	0.4370	0.375	1.605	0.024	0.024	2.155	6°	0.22	10500	2200	4650
MKP25BS	1.5625	2.5000	0.4370	0.375	1.720	0.024	0.024	2.282	5°45'	0.25	11300	2300	4680
MKP29BS	1.8125	2.7500	0.4370	0.375	1.960	0.024	0.024	2.535	5°	0.27	12700	2600	4760
MKP33BS	2.0625	3.0000	0.4370	0.375	2.262	0.024	0.024	2.787	5°	0.30	14400	2900	4820
MKP37BS	2.3125	3.2500	0.4370	0.375	2.500	0.024	0.024	3.039	4°30'	0.33	15800	3200	4880
MKP47BS	2.9375	4.1250	0.5310	0.469	3.120	0.039	0.039	3.846	4°30'	0.64	24700	5000	6600
MKP48BS	3.0000	4.2500	0.5310	0.469	3.255	0.039	0.039	3.972	4°	0.69	27500	5500	8150
MKP49BS	3.0625	4.2500	0.5310	0.469	3.255	0.039	0.039	3.972	4°	0.69	27500	5500	8150

All dimensions are in inches.

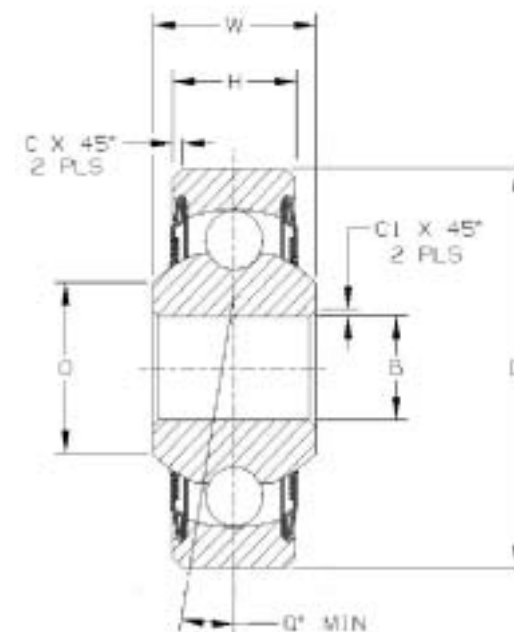
- (1) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

KSP, KSP-A Series

Internal Self-Aligning Type

AS27645 • AS7949 (formerly MIL-B-7949)

- Single row, ball bearing, internal self-aligning.
- Equipped with bonded PTFE seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	MS27645 Dash No.	Bore B +0.0000 -0.0005	O.D. D +0.0000 -0.0005	Width W +0.000 -0.005	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Mis-alignment Either Direction	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(1)
KSP3L	-3A	0.1900	0.6250	0.245	0.203	0.256	0.005	0.016	10°	0.01	550	100	550
KSP4A	-4A	0.2500	0.7500	0.281	0.219	0.328	0.005	0.016	8°	0.02	900	200	900
KSP5A	-5A	0.3125	0.8125	0.297	0.234	0.389	0.015	0.016	8°	0.02	1000	200	950
KSP6A	-6A	0.3750	0.8750	0.313	0.250	0.462	0.016	0.016	8°	0.03	1120	200	1120
KSP3	-3	0.1900	0.7774	0.297	0.270	0.297	0.005	0.022	10°	0.03	900	200	900
KSP4	-4	0.2500	0.9014	0.484	0.335	0.396	0.005	0.032	10°	0.04	1410	300	1230
KSP5	-5	0.3125	1.2500	0.558	0.375	0.567	0.015	0.032	10°	0.10	2190	300	2190
KSP6	-6	0.3750	1.4375	0.620	0.469	0.612	0.015	0.032	10°	0.15	2980	400	2980
KSP8	-8	0.5000	1.6875	0.620	0.500	0.796	0.015	0.044	10°	0.23	3670	500	3670
KSP10	-10	0.6250	1.9375	0.813	0.625	0.922	0.015	0.044	10°	0.37	5320	600	4980

All dimensions are in inches.

- (1) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

DP, DP-W Series

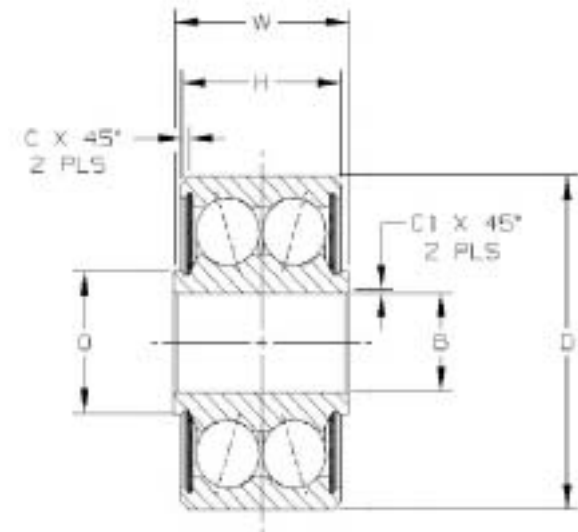
Radial Bearing

Double Row

AS27644 · AS7949 (formerly MIL-B-7949) (DP series only)

- Double row, ball.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- DP series is DF mounted.
- DP-W series is DB mounted for use where high moment rigidity is required.
- For complete part number, lubrication code and other specifications see

[Part Number Designations and Options](#)



DP

Base Part Number	MS27644 Dash No.	Bore B +0.0000 -0.0005	O.D. D +0.0000 -0.0005	Width W +0.000 -0.005	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(1)
DP3	-3	0.1900	0.7774	0.495	0.473	0.302	0.005	0.018	0.04	2950	1700	2950
DP4	-4	0.2500	0.9014	0.620	0.491	0.410	0.005	0.032	0.06	5370	1800	3550
DP5	-5	0.3125	1.2500	0.745	0.687	0.469	0.015	0.032	0.17	11000	4000	7360
DP6	-6	0.3750	1.4375	0.870	0.794	0.551	0.015	0.032	0.26	15760	5300	9690
DP8	-8	0.5000	1.6875	0.932	0.856	0.735	0.015	0.044	0.38	23600	7800	14100
DP10	-10	0.6250	1.9375	0.995	0.920	0.890	0.015	0.044	0.53	28400	9400	15300
DP3W	-	0.1900	0.7774	0.495	0.473	0.297	0.005	0.018	0.04	2950	1450	2950
DP4W	-	0.2500	0.9014	0.620	0.491	0.405	0.005	0.032	0.06	5370	1800	3550
DP5W	-	0.3125	1.2500	0.745	0.687	0.548	0.015	0.032	0.17	11000	4000	7360
DP6W	-	0.3750	1.4375	0.870	0.794	0.603	0.015	0.032	0.26	15760	5300	9690
DP8W	-	0.5000	1.6875	0.932	0.856	0.730	0.015	0.044	0.38	23600	7800	14100
DP10W	-	0.6250	1.9375	0.995	0.920	0.945	0.015	0.044	0.53	28400	9400	15300

All dimensions are in inches.

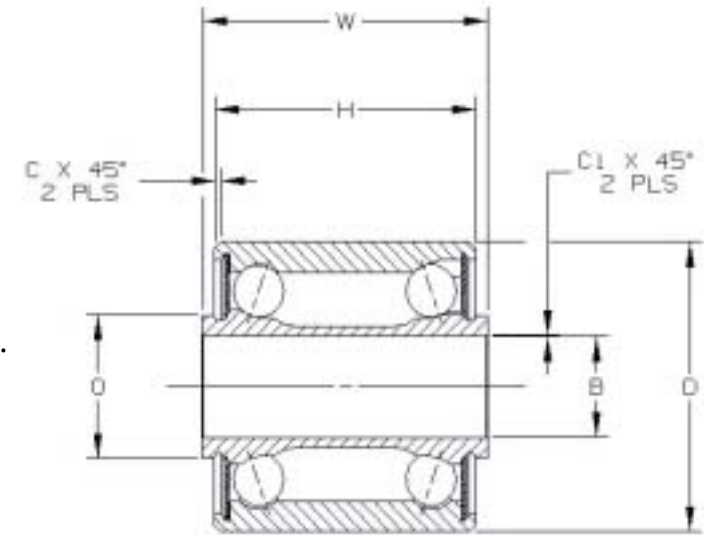
(1) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

DW, GDW Series

Extra Wide Type, DB Mounted

AS27647 • AS7949 (formerly MIL-B-7949)

- Extra wide, double row, ball.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- The GDW series is dimensionally interchangeable with the DW series. However the GDW series has grooves and holes on the outer ring to allow for re-lubrication.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



DW

Base Part Number	MS27647 Dash No.	Bore B +0.0000 -0.0005	O.D. D +0.0000 -0.0005	Width W +0.000 -0.005	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(2)
DW4K2 (1)	-4A	0.2500	0.6250	0.562	0.500	0.339	0.005	0.016	0.025	1400	500	1050
DW4K (1)	-4	0.2500	0.7500	0.875	0.750	0.380	0.005	0.016	0.040	2770	900	2070
DW4	-	0.2500	0.7500	0.875	0.750	0.375	0.005	0.016	0.060	3750	1240	2650
DW5	-5	0.3125	0.8750	0.938	0.813	0.469	0.005	0.016	0.070	5140	1600	2600
DW6	-6	0.3750	1.0625	1.188	1.063	0.573	0.005	0.016	0.120	8440	2600	4220
DW8	-8	0.5000	1.4375	1.500	1.375	0.712	0.005	0.032	0.290	15520	4700	7610

To specify lubrication holes and groove on the outer ring:

For RBC part number add prefix “G” to part number (i.e. DW5 becomes GDW5)

For MS part number add surfix “G” to part number (i.e. MS27647-5 becomes MS27647-5G)

All dimensions are in inches.

(1) Caged type

(2) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

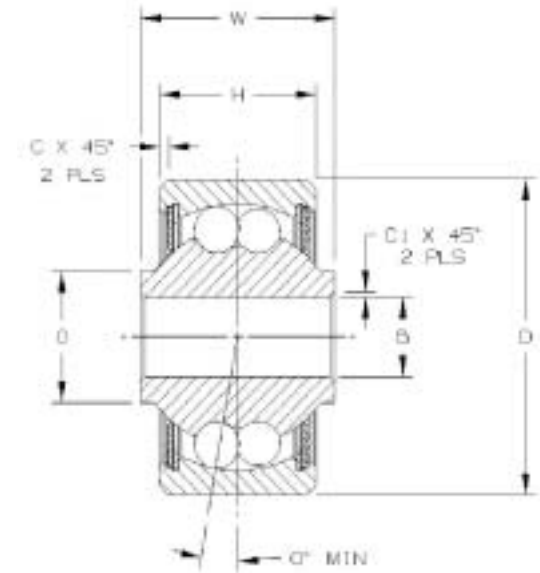
DSP Series

Internal Self-Aligning Type

Double Row Ball Bearing

AS27643 • AS7949 (formerly MIL-B-7949)

- Double row, ball, internal self-aligning.
- Equipped with bonded PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



Base Part Number	MS27643 Dash No.	Bore B +0.0000 -0.0005	O.D. D +0.0000 -0.0005	Width W +0.000 -0.005	Width H +0.000 -0.005	O Approx.	C1 +0.015 -0.000	C +0.015 -0.000	Mis- alignment Either Direction	Wt. Approx. lbs.	Static Radial Limit Load Rating lbs.	Static Thrust Limit Load Rating lbs.	Dynamic Radial Load Rating lbs.(1)
DSP3	-3	0.1900	0.7774	0.500	0.392	0.304	0.005	0.022	10°	0.04	1420	200	1420
DSP4	-4	0.2500	0.9014	0.687	0.464	0.430	0.005	0.032	10°	0.06	1780	300	1780
DSP5	-5	0.3125	1.2500	0.812	0.656	0.515	0.015	0.032	10°	0.16	3740	600	3740
DSP6	-6	0.3750	1.4375	0.937	0.750	0.564	0.015	0.032	10°	0.24	5100	800	4980
DSP8	-8	0.5000	1.6875	1.000	0.812	0.775	0.015	0.044	10°	0.36	7120	1000	6340
DSP10	-10	0.6250	1.9375	1.125	0.937	0.869	0.015	0.044	10°	0.53	9000	1300	7780

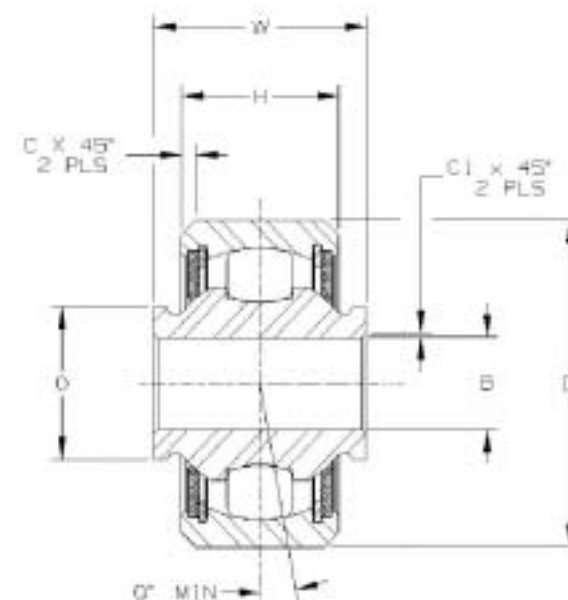
All dimensions are in inches.

- (1) Dynamic Radial Load Rating for load fixed with respect to outer race. Please call for other applications.

DSRP, GDSRP Series

Internal Self-Aligning Roller Type

- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- The GDSRP series is dimensionally interchangeable with the DSRP series. However the GDSRP series has grooves and holes on the outer ring to allow for re-lubrication.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



DSRP

RBC BASE PART NUMBER		Bore B	O.D. D	Width W	Width H	O	C1	C	Mis- alignment Either Direction	Rollers	Roller Dia.	Wt. Approx. lbs.	Radial Limit Load Rating lbs.(1)
DSRP Series	GDSRP Series	+0.0000 -0.0005	+0.0000 -0.0005	+0.000 -0.005	+0.000 -0.005	Approx.	+0.015 -0.000	+0.015 -0.000					
DSRP4	GDSRP4	0.2500	0.9014	0.625	0.464	0.404	0.005	0.032	10°	12	0.1514	0.06	3025
DSRP5	GDSRP5	0.3125	1.2500	0.812	0.656	0.515	0.015	0.032	10°	11	0.2303	0.16	7350
DSRP6	GDSRP6	0.3750	1.4375	0.937	0.750	0.564	0.015	0.032	10°	11	0.2681	0.24	9600
DSRP8	GDSRP8	0.5000	1.6875	1.000	0.812	0.775	0.015	0.044	10°	12	0.3023	0.36	12500
DSRP10	GDSRP10	0.6250	1.9375	1.125	0.937	0.869	0.015	0.044	10°	14	0.3016	0.55	17700
DSRP12	GDSRP12	0.7500	2.3750	1.312	1.125	1.150	0.015	0.044	10°	13	0.3900	1.05	26900

To specify lubrication holes and groove on the outer ring add prefix “G” to part number (i.e. DSRP5 becomes GDSRP5)

All dimensions are in inches.

- (1) Thrust limit load rating is 30% of the radial limit load rating. Dynamic Radial Load Rating is 82% of radial limit load rating.
Please contact RBC Bearings for more information.

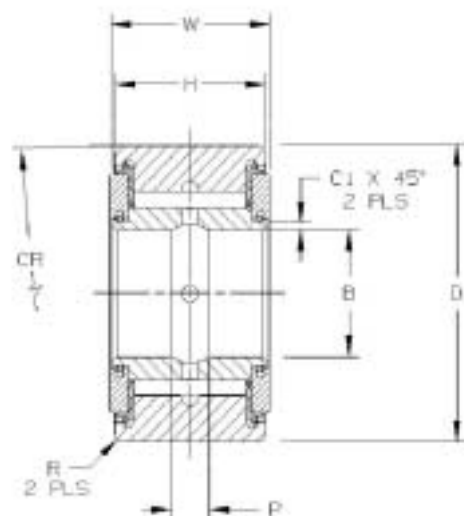
ATF Series

Single Row Needle Roller Type

AS21438 • AS39901 (formerly MIL-B-3990)

- Crowned outer ring.
- Sealed.
- Grooves and holes for lubrication on inner ring.
- Outer ring O.D. and side faces are chrome plated.
- Inner ring is black oxide.
- Washers are cadmium plated.
- For complete part number, lubrication code and other specification

[Part Number Designations and Options](#)



BEARING DIMENSIONS

RBC Base Part Number	MS Part Number	B Bore		D OD + 0.001 - 0.001	W Overall Width + 0.000 - 0.010	H Outer Ring Width + 0.000 - 0.005	C1 Shaft Fillet (max.)	CR Crown Radius (ref.)	P Inner Ring Groove Width
		max.	min.						
ATF-3	MS21438-103	0.1900	0.1893	0.7500	0.312	0.270	0.022	11	0.094
ATF-4	MS21438-104	0.2500	0.2493	0.8750	0.375	0.335	0.022	11	0.125
ATF-6	MS21438-106	0.3750	0.3743	1.0625	0.500	0.445	0.022	11	0.188
ATF-8	MS21438-108	0.5000	0.4993	1.3125	0.625	0.570	0.032	13	0.188
ATF-10	MS21438-110	0.6250	0.6243	1.5000	0.750	0.695	0.032	18	0.250
ATF-12	MS21438-112	0.7500	0.7493	1.7500	1.000	0.940	0.032	31	0.250
ATF-14	MS21438-114	0.8750	0.8743	2.0000	1.125	1.065	0.032	36	0.250
ATF-20	MS21438-120	1.2500	1.2493	2.5000	1.250	1.190	0.032	61	0.375
ATF-24	MS21438-124	1.5000	1.4993	3.0000	1.500	1.440	0.032	61	0.375

MOUNTING DIMENSIONS

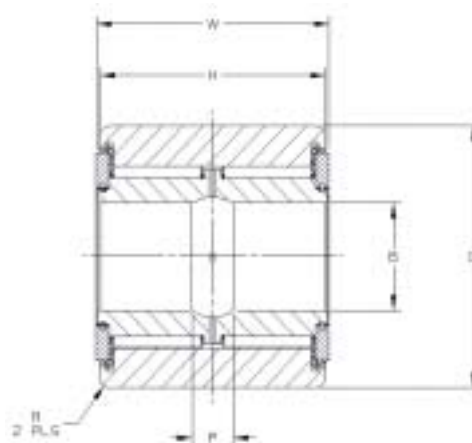
RBC Base Part Number	MS Part Number	T Track Contact Width (min.)	Mass (appr.) lbs	S Shaft Diameter				Da Clamping Diameter (min.)	Clamping Force (max.) lbf	Bearing Capacity	
				Transition Fits (loose range)		Transition Fits (tight range)				as a Track Roller lbf	Limit Load Rating lbf
				max	min	max	min				
ATF-3	MS21438-103	-	0.030	0.1894	0.1889	0.1902	0.1897	0.438	480	900	1200
ATF-4	MS21438-104	-	0.051	0.2494	0.2489	0.2502	0.2497	0.516	870	1430	1910
ATF-6	MS21438-106	-	0.103	0.3744	0.3739	0.3752	0.3747	0.672	2100	2700	3600
ATF-8	MS21438-108	-	0.187	0.4994	0.4989	0.5002	0.4997	0.844	3840	4300	5780
ATF-10	MS21438-110	-	0.279	0.6244	0.6239	0.6252	0.6247	0.953	6150	6400	8530
ATF-12	MS21438-112	-	0.520	0.7494	0.7489	0.7502	0.7497	1.109	8950	10700	14200
ATF-14	MS21438-114	-	0.749	0.8744	0.8739	0.8752	0.8747	1.219	12200	14400	19300
ATF-20	MS21438-120	-	1.160	1.2494	1.2488	1.2503	1.2497	1.625	25800	18900	25300
ATF-24	MS21438-124	-	2.360	1.4994	1.4988	1.5003	1.4997	2.000	25800	28400	37900

ATL Series

Double Row Needle Roller Type

AS21439 • AS39901 (formerly MIL-B-3990)

- Sealed.
- Grooves and holes for lubrication on inner ring.
- Outer ring O.D. and side faces are chrome plated.
- Inner ring is black oxide.
- Washers are cadmium plated.
- For complete part number, lubrication code and other specifications see [Part Number Designations and Options](#)



BEARING DIMENSIONS

RBC Base Part Number	MS Part Number	B Bore		D OD + 0.001 - 0.001	W Overall Width + 0.000 - 0.010	H Outer Ring Width + 0.000 - 0.005	C1 Shaft Fillet (max.)	CR Crown Radius (ref.)	P Inner Ring Groove Width
		max.	min.						
ATL-6	MS21439-106	0.3750	0.3743	1.1250	1.000	0.940	0.022	-	0.188
ATL-8	MS21439-108	0.5000	0.4993	1.3750	1.250	1.190	0.032	-	0.250
ATL-10	MS21439-110	0.6250	0.6243	1.6250	1.500	1.440	0.032	-	0.375
ATL-12	MS21439-112	0.7500	0.7493	1.8750	1.750	1.690	0.032	-	0.375
ATL-14	MS21439-114	0.8750	0.8743	2.1250	2.000	1.940	0.032	-	0.375
ATL-16	MS21439-116	1.0000	0.9993	2.3750	2.250	2.190	0.032	-	0.375
ATL-20	MS21439-120	1.2500	1.2493	2.7500	2.500	2.440	0.032	-	0.375
ATL-24	MS21439-124	1.5000	1.4993	3.0000	2.750	2.690	0.032	-	0.375
ATL-28	MS21439-128	1.7500	1.7493	3.4375	3.000	2.940	0.032	-	0.375
ATL-32	MS21439-132	2.0000	1.9993	3.8750	3.000	2.940	0.032	-	0.375

MOUNTING DIMENSIONS

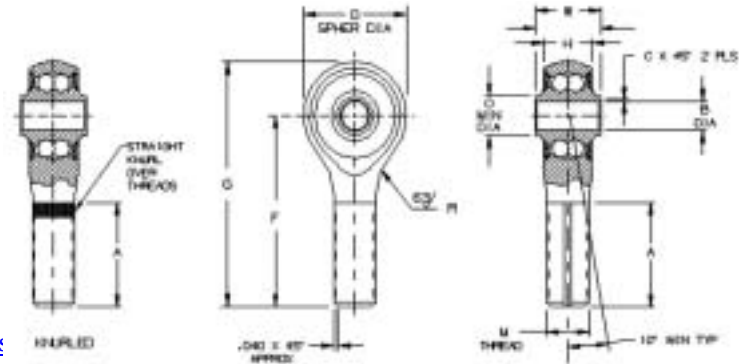
RBC Base Part Number	MS Part Number	T Track Contact Width (min.)	Mass (appr.) lbs	S				Da Clamping Diameter (min.)	Clamping Force (max.) lbf	Bearing Capacity	
				Shaft Diameter						as a Track Roller	Limit Load Rating
				Transition Fits (loose range)		Transition Fits (tight range)					
				max	min	max	min				
ATL-6	MS21439-106	0.815	0.239	0.3744	0.3739	0.3752	0.3747	0.672	2100	5370	7130
ATL-8	MS21439-108	1.065	0.437	0.4994	0.4989	0.5002	0.4997	0.891	3840	9370	12500
ATL-10	MS21439-110	1.315	0.728	0.6244	0.6239	0.6252	0.6247	1.109	6150	15000	19900
ATL-12	MS21439-112	1.565	1.130	0.7494	0.7489	0.7502	0.7497	1.281	8950	21400	28500
ATL-14	MS21439-114	1.895	1.630	0.8744	0.8739	0.8752	0.8747	1.469	12200	28900	38500
ATL-16	MS21439-116	2.045	2.310	0.9994	0.9989	1.0002	0.9997	1.578	16300	33600	44900
ATL-20	MS21439-120	2.225	3.260	1.2494	1.2488	1.2503	1.2497	1.844	25800	44600	59500
ATL-24	MS21439-124	2.475	4.330	1.4994	1.4988	1.5003	1.4997	1.984	25800	53600	71300
ATL-28	MS21439-128	2.685	6.090	1.7494	1.7488	1.7503	1.7497	2.281	25800	69000	92000
ATL-32	MS21439-132	2.685	7.350	1.9994	1.9987	2.0003	1.9996	2.562	25800	76600	102000

REP-M Series

Rod End External Thread Type

AS21151 • AS6039 (formerly MIL-B-6039)

- Ball, double row, self-aligning, precision, external threads.
- Radial play 0.0004" max. Axial play 0.003" max.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- For lubrication and other specifications see [Airframe Control Ball Bearing Rod End part number designation:](#)
- Outer shank has a 90 KSI minimum tensile strength



PART NUMBERS			Bore B	Head Diameter D	Inner Shoulder Diameter O	Head Width H	Inner Ring Width W	Bore to Centerline Height F	Overall Height G	Thread Length A	Thread Size M	Shank Radius R	Bore Chamfer C	Weight	Static Radial Limit Load Rating
RBC Part Number	MS21151 Dash No.	BACB10AD Suffix	+0.0000 0.0003	±0.010	Min	+0.010 -0.010	±0.010	±0.010	Ref.	±0.031	UNJF-3A Threads per Mil-S-8879	Nom	+0.015 -0.000	Approx. (lbs)	lbs
REP3M3-2F	-2	-	0.1900	0.781	0.276	0.328	0.437	1.375	1.766	0.750	0.1900-32RH	0.422	0.005	0.04	1000
REP3M3-2J	-2G	1		0.781	0.276	0.328	0.437	1.375	1.766	0.750	0.1900-32LH	0.422		0.04	1000
REP3ML3-1F	-1	-		0.781	0.276	0.328	0.437	1.375	1.766	0.750	0.1900-32LH	0.422		0.04	1000
REP3ML3-1J	-1G	1L		0.781	0.276	0.328	0.437	1.375	1.766	0.750	0.1900-32LH	0.422		0.04	1000
REP3M6-3F	-3	-		0.969	0.299	0.407	0.500	2.031	2.516	1.313	0.3750-24RH	0.500		0.12	1200
REP3MK6-3F	-3C	-		0.969	0.299	0.407	0.500	2.031	2.516	1.313	0.3750-24LH	0.500		0.12	1200
REP3MK6-3J	-3CG	4K		0.969	0.299	0.407	0.500	2.031	2.516	1.313	0.3750-24LH	0.500		0.12	1200
REP3M6-3J	-3G	4		0.969	0.299	0.407	0.500	2.031	2.516	1.313	0.3750-24LH	0.500		0.12	1200
REP3MKL6-3F	-	4LKG		0.969	0.299	0.407	0.500	2.031	2.516	1.313	0.3750-24LH	0.500		0.12	1200
REP3M6-4F	-4	-		0.781	0.276	0.328	0.437	1.375	1.766	0.750	0.3750-24RH	0.390		0.05	1000
REP3MK6-4F	-4C	-		0.781	0.276	0.328	0.437	1.375	1.766	0.750	0.3750-24RH	0.390		0.05	1000
REP3MK6-4J	-4CG	3K		0.781	0.276	0.328	0.437	1.375	1.766	0.750	0.3750-24LH	0.390		0.05	1000
REP3M6-4J	-4G	3		0.781	0.276	0.328	0.437	1.375	1.766	0.750	0.3750-24LH	0.390		0.05	1000
REP3ML6-5F	-5	-		0.781	0.276	0.328	0.437	1.375	1.766	0.750	0.3750-24LH	0.390		0.05	1000
REP3MKL6-5J	-5CG	3LK		0.781	0.276	0.328	0.437	1.375	1.766	0.750	0.3750-24LH	0.390		0.05	1000
REP3ML6-5J	-5G	3L		0.781	0.276	0.328	0.437	1.375	1.766	0.750	0.3750-24LH	0.390		0.05	1000
REP3M4-6F	-6	-	0.2500	0.781	0.307	0.438	0.500	1.812	2.203	0.938	0.2500-28RH	0.562	0.005	0.10	1720
REP3MK4-6J	-6CG	2K		0.781	0.307	0.438	0.500	1.812	2.203	0.938	0.2500-28RH	0.562		0.10	1720
REP3M4-6J	-6G	2		0.781	0.307	0.438	0.500	1.812	2.203	0.938	0.2500-28RH	0.562		0.10	1720
REP3M4-7F	-7	-		0.781	0.276	0.328	0.437	1.563	1.953	1.000	0.2500-28RH	0.344		0.05	1720
REP3MK4-7F	-7C	-		0.781	0.276	0.328	0.437	1.563	1.953	1.000	0.2500-28RH	0.344		0.05	1720
REP3M4-7J	-7G	-		0.781	0.276	0.328	0.437	1.563	1.953	1.000	0.2500-28RH	0.344		0.05	1720
REP4M6-8F	-8	5G		0.938	0.340	0.438	0.593	1.875	2.344	1.125	0.3750-24RH	0.469		0.10	1720
REP4MK6-8F	-8C	5KG		0.938	0.340	0.438	0.593	1.875	2.344	1.125	0.3750-24RH	0.469		0.10	1720
REP4MK6-8J	-8CG	5K		0.938	0.340	0.438	0.593	1.875	2.344	1.125	0.3750-24RH	0.469		0.10	1720
REP4M6-8J	-8G	5		0.938	0.340	0.438	0.593	1.875	2.344	1.125	0.3750-24RH	0.469		0.10	1720
REP4M6-005AJ	-	5A		0.938	0.340	0.438	0.593	1.500	1.969	0.750	0.3750-24RH (1)	0.469		0.09	1720
REP4ML6-9F	-9	-		0.938	0.340	0.438	0.593	1.875	2.344	1.125	0.3750-24LH	0.469		0.10	1720
REP4MKL6-9F	-9C	-		0.938	0.340	0.438	0.593	1.875	2.344	1.125	0.3750-24LH	0.469		0.10	1720
REP4MKL6-9J	-9CG	5LK		0.938	0.340	0.438	0.593	1.875	2.344	1.125	0.3750-24LH	0.469		0.10	1720
REP4ML6-9J	-9G	5L		0.938	0.340	0.438	0.593	1.875	2.344	1.125	0.3750-24LH	0.469		0.10	1720
REP4M6-012J	-	12	0.3125	0.938	0.340	0.438	0.593	2.156	2.625	1.312	0.3750-24RH	0.500	0.015	0.12	2920
REP4MK6-012J	-	12K		0.938	0.340	0.438	0.593	2.156	2.625	1.312	0.3750-24RH	0.500		0.12	2920
REP4M7-013J	-	13		0.938	0.340	0.438	0.593	2.156	2.625	1.312	0.4375-20RH	0.500		0.12	2920
REP4M7-013J	-	13K		0.938	0.340	0.438	0.593	2.156	2.625	1.312	0.4375-20RH	0.500		0.12	2920
REP5M6-10F	-10	6G		1.250	0.501	0.656	0.870	2.438	3.062	1.563	0.3750-24RH	0.500		0.24	2920
REP5MK6-10J	-10CG	6K		1.250	0.501	0.656	0.870	2.438	3.062	1.563	0.3750-24RH	0.500		0.24	2920
REP5M6-10J	-10G	6		1.250	0.501	0.656	0.870	2.438	3.062	1.563	0.3750-24RH	0.500		0.24	2920
REP5M6-006AJ	-	6A		1.250	0.501	0.656	0.870	1.625	2.250	0.750	0.3750-24RH (1)	0.500		0.20	2920
REP5M7-11F	-11	-		1.250	0.501	0.656	0.870	2.438	3.062	1.563	0.4375-20RH	0.500		0.24	2920
REP5MK7-11F	-11C	-		1.250	0.501	0.656	0.870	2.438	3.062	1.563	0.4375-20RH	0.500		0.24	2920
REP5MK7-11J	-11CG	7K		1.250	0.501	0.656	0.870	2.438	3.062	1.563	0.4375-20RH	0.500		0.24	2920
REP5M7-11J	-11G	7		1.250	0.501	0.656	0.870	2.438	3.062	1.563	0.4375-20RH	0.500		0.24	2920
REP5M10-12F	-12	-		1.250	0.501	0.656	0.870	2.438	3.062	1.563	0.6250-18RH	0.500		0.71	7090
REP5MK10-12F	-12C	-		1.250	0.501	0.656	0.870	2.438	3.062	1.563	0.6250-18RH	0.500		0.71	7090
REP5MK10-12J	-12CG	8K		1.250	0.501	0.656	0.870	2.438	3.062	1.563	0.6250-18RH	0.500		0.71	7090
REP5M10-12J	-12G	8	0.5000	1.875	0.683	0.844	1.000	3.031	3.969	1.750	0.6250-18RH	0.500	0.015	0.56	6900
REP8M10-009J	-	9		1.875	0.683	0.844	1.000	3.031	3.969	1.750	0.6250-18RH	0.500	0.015	0.56	6900
REP8MK10-009J	-	9K		1.875	0.683	0.844	1.000	3.031	3.969	1.750	0.6250-18RH	0.500	0.015	0.56	6900
REP8MK10-009J	-	9LK		1.875	0.683	0.844	1.000	3.031	3.969	1.750	0.6250-18RH	0.500	0.015	0.56	6900
REP8ML10-009J	-	9L	0.6250	2.000	0.875	0.938	1.125	2.750	3.750	1.500	0.6250-18RH	0.500	0.015	0.71	7090
REP10M10-13F	-13	-		2.000	0.875	0.938	1.125	2.750	3.750	1.500	0.6250-18RH	0.500	0.015	0.71	7090
REP10MK10-13F	-13C	-		2.000	0.875	0.938	1.125	2.750	3.750	1.500	0.6250-18RH	0.500	0.015	0.71	7090
REP10MK10-13J	-13CG	10K		2.000	0.875	0.938	1.125	2.750	3.750	1.500	0.6250-18RH	0.500	0.015	0.71	7090
REP10M10-13J	-13G	10		2.000	0.875	0.938	1.125	2.750	3.750	1.500	0.6250-18RH	0.500	0.015	0.71	7090

All Dimensions are in inches

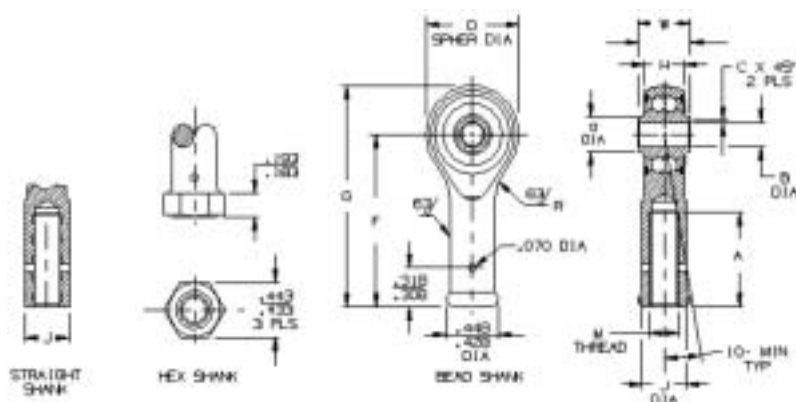
(1) Knurled Threads

REP-F Series

Rod End Internal Thread Type

AS21153 • AS6039 (formerly MIL-B-6039)

- Ball, double row, self-aligning, precision, internal threads.
- Radial play 0.0004" max. Axial play 0.003" max.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- For lubrication and other specifications see [Airframe Control Ball Bearing Rod End part number designations](#)
- Outer shank has a 90 KSI minimum tensile strength



PART NUMBERS			Bore B	Head Diameter D	Inner Shoulder Diameter O	Head Width H	Inner Ring Width W	Bore to Centerline Height F	Overall Height G	Shank Diameter OD J	Thread Length A	Thread Size M UNJF-3A Threads per Mil-S-8879	Shank Radius R	Bore Chamfer C +0.015 -0.000	Hex or Bead	Weight	Static Radial Limit Load Rating
RBC Part Number	MS21153 Dash No.	BACB10AE Suffix															
REP3F4-1F	1	-	0.1900	0.781	0.276	0.328	0.437	1.375	1.766	0.375	0.750	0.2500-28RH	0.390	0.005	Bead 0.438	0.05	1000
REP3F4-1J	1G	1															
REP3FK4-1F	1C	-															
REP3FK4-1J	1CG	-															
REP3FL4-5F	5	-															
REP3FL4-5J	5G	1L															
REP3FKL4-5F	5C	-															
REP3FKL4-5J	5CG	-															
REP3F4-3F	3	-															
REP3F4-3J	3G	2															
REP3FK4-3F	3C	-															
REP3FK4-3J	3CG	-															
REP3FL4-4F	4	-															
REP3FL4-4J	4G	2L															
REP3FKL4-4F	4C	-															
REP3FKL4-4J	4CG	-															
REP3F5-2F	2	-															
REP3F5-2J	2G	3															
REP3FK5-2F	2C	-															
REP3FK5-2J	2CG	-															
REP4F5-6F	6	-															
REP4F5-6J	6G	4															
REP4FK5-6F	6C	-															
REP4FK5-6J	6CG	-															
REP4FL5-7F	7	-															
REP4FL5-7J	7G	4L															
REP4FKL5-7F	7C	-															
REP4FKL5-7J	7CG	-															
REP4F6-GA	-	-															
REP4F7-8F	8	-															
REP4F7-8J	8G	5															
REP4FK7-8F	8C	-															
REP4FK7-8J	8CG	-															
REP4FKL7-9F	9C	-															
REP4FKL7-9J	9CG	-															
REP4FL7-9F	9	-															
REP4FL7-9J	9G	5L															
REP5F5-10F	10	-															
REP5F5-10J	10G	6															
REP5FK5-10F	10C	-															
REP5FK5-10J	10CG	-															
REP5FL5-11F	11	-															
REP5FL5-11J	11G	7															
REP5FKL5-11F	11C	-															
REP5FKL5-11J	11CG	-															

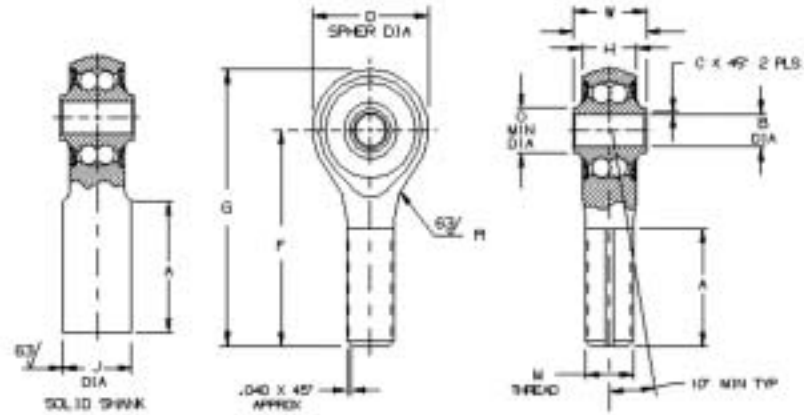
All Dimensions are in inches

REP-S Series

Rod End Solid Shank Type

AS21150 • AS6039 (formerly MIL-B-6039)

- Ball, double row, self-aligning, precision, solid shank.
- Radial play 0.0004" max. Axial play 0.003" max.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- For lubrication and other specifications see [Airframe Control Ball Bearing Rod End part number designations](#)
- Outer shank has a 90 KSI minimum tensile strength



PART NUMBERS			Bore B	Head Diameter D	Inner Shoulder Diameter O	Head Width H	Inner Ring Width W	Bore to Centerline Height F	Overall Height G	Shank Diameter OD J	Shank Radius R	Bore Chamfer C	Weight	Static Radial Limit Load
RBC Part Number	MS21150 Dash No.	BACB10AD Suffix	+0.0000 0.0003	±0.010	Min	+0.010 -0.010	±0.010	±0.010	Ref.	+0.000 -0.002	Nom	+0.015 -0.000	Approx. (lbs)	lbs
REP3S7-1F	-1	-	0.1900	0.781	0.276	0.328	0.437	1.375	1.766	0.430	0.390	0.005	0.07	1000
REP3S7-1J	-1G	-												
REP4S10-2F	-2	-	0.2500	0.938	0.340	0.438	0.593	1.875	2.344	0.625	0.500	0.005	0.16	1720
REP4S10-2J	-2G	11												

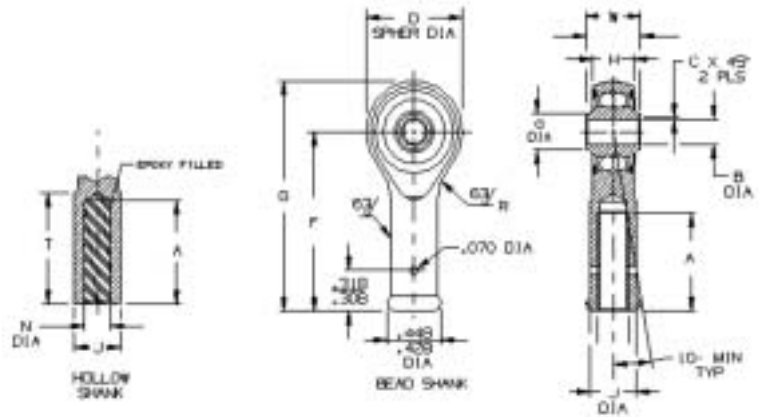
All Dimensions are in inches

REP-H Series

Rod End Hollow Shank Type

AS21152 • AS6039 (formerly MIL-B-6039)

- Ball, double row, self-aligning, precision, hollow shank.
- Radial play 0.0004" max. Axial play 0.003" max.
- Equipped with PTFE Seals.
- Exposed surfaces are cadmium plated except inner ring bore, caps and seals.
- For lubrication and other specifications see [Airframe Control Ball Bearing Rod End part number designations](#)
- Outer shank has a 90 KSI minimum tensile strength



PART NUMBERS			Bore B	Head Diameter D	Inner Shoulder Diameter O	Head Width H	Inner Ring Width W	Bore to Centerline Height F	Overall Height G	Shank Diameter OD J	Shank Hole Length A	Shank Hole Size N	Shank Radius R	Bore Chamfer C	Weight	Static Radial Limit Load
RBC Part Number	MS21152 Dash No.	BACB10AE Suffix	+0.0000 - 0.0003	±0.010	Min	+0.010 -0.010	±0.010	±0.010	Ref.	+0.000 -0.002	±0.031	±0.010	Nom	+0.015 -0.000	Approx. (lbs)	lbs
REP3H4-1F	1	-	0.1900	0.781	0.276	0.328	0.437	1.375	1.766	0.430	0.875	0.272	0.390	0.005	0.05	1000
REP3H4-1J	1G	8														
REP4H8-3F	3	-	0.2500	0.938	0.340	0.438	0.593	1.625	2.093	0.625	0.875	0.515	0.469	0.005	0.08	1720
REP4H8-3J	3G	10													0.12	
REP4H5-4F	4	-													0.09	
REP4H5-4J	4G	-													0.12	
REP4H8-5F	5	-													0.09	
REP4H8-5J	5G	-													0.12	
REP4H6-2F	2	-	0.3125	1.250	0.501	0.656	0.870	2.438	3.062	0.625	1.125	0.500	0.500	0.015	0.15	2920
REP4H6-2J	2G	9														
REP5H8-011J	-	11	0.3125	1.250	0.501	0.656	0.870	2.438	3.062	0.625	1.125	0.500	0.500	0.015	0.15	2920

All Dimensions are in inches

Grease Specs

RBC Current	Mil-G-81322	Mil-G-23827	BMS3-24	BMS3-33	BMS3-34
"F"	Mobil 28				
"G"		Aeroshell 7			
"J"	-	Aeroshell 33		Aeroshell 33	
"H"	-		Aeroshell 16		
"M"	-				Aeroplex 444

Note: Boeing will specify BMS3-34 with all the new premium stainless steel bearings (XD15)

Radial Play Table

	Bearing Series	Radial Play (inches)
Standard Series	KP, KP-A	0.0004
	DP, DSP, DW	0.0010
	DSRP, GDSRP	
	KSP	0.0000
	KSP-A	0.0010
	KP16B thru KP49B KP16BS thru KP49BS	0.0003 0.0010
Precision Series	KP52B and up KP52BS and up	0.0003 0.0015
	B500(DD)	0.0008 0.0018
	MKP, MKP-A	
	MKSP, MKSP-A	0.0001 0.0005
	MDP, MDSP	
	MDW, MDSRP	
	MKP-B	0.0001
	MKP-BS	0.0005
	MB500(DD)	0.0001 0.0005



The diagram illustrates the Seal Part Numbering System, showing how a part number is constructed from various options. The part number is broken down into its constituent parts, each with a specific meaning defined in a legend.

Part Number Breakdown:

- Material type:** A (440C steel), M (52100 steel), Blank=Standard
- Precision type:** Blank=Standard, M=Precision
- Bore size, (4/16"):** 16
- Blank= Standard**
- S= Externally self-aligning**
- K= Cage**
- Finish:** Blank= Unplated, C= Cadmium plate, Z= Zinc Nickel plate, P= Passivated, (440C)
- Grease Options:** F = MIL-G-81322, H = BMS 3-24, J = BMS 3-33 & MIL-G-23827
- Radial internal clearance:** N= Standard, R= Reduced
- Series designation:** Blank= Heavy duty type (KP, KSP, DSP, DP, (G)DW), A= Intermediate duty type (KSP-A & KP-A only), B= Extra light duty, Torque tube type (KP-B & KP-BS only)
- Seal Options:** B500= Torque tube, B500DD= Torque tube, double shield, KP= Single row, contact seals, KSP= Single, self-aligning, contact seals, D= Double row, (G)DW= Double row rigid, DSP= Double row, self-aligning, contact seals, DP= Double row, pulleys, contact seals

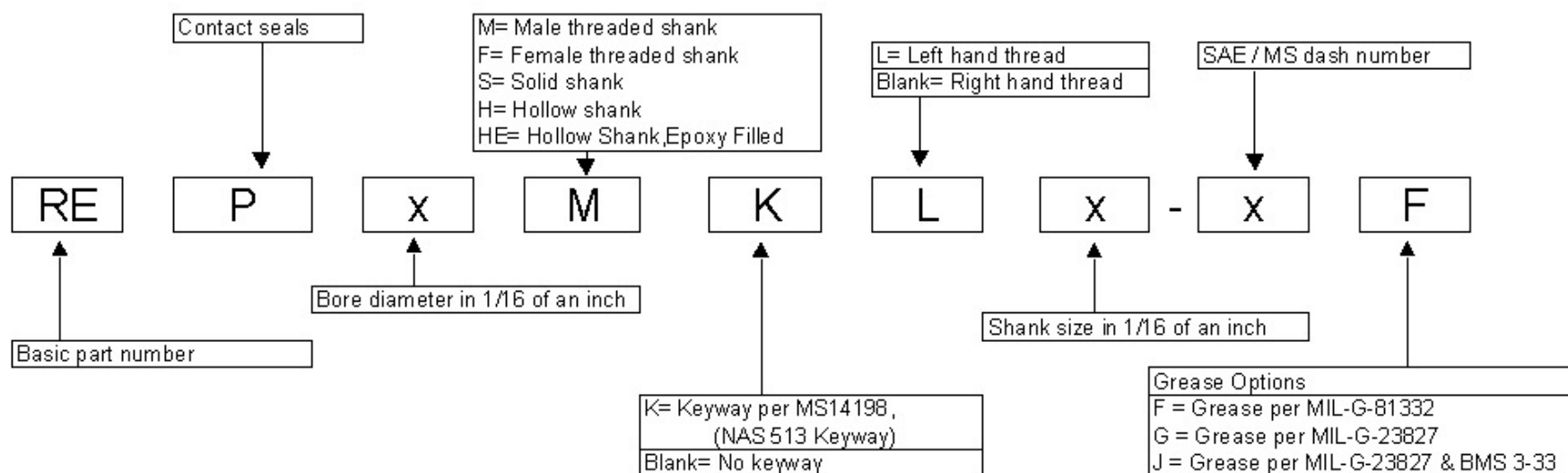
Example Part Number: A M KP 16 B S N F C

AS7949 (MIL-B-7949) / RBC Interchange	
<u>AS series</u>	<u>RBC series</u>
AS27640	KP series
AS27641	KP-A series
AS27642	KP-B series
AS27643	DSP series
AS27644	DP series
AS27645	KSP series

AS7949 (MIL-B7949) / RBC Interchange	
<u>AS series</u>	<u>RBC Series</u>
AS27646	B500DD series
AS27647	(G)DW series
AS27648	KP-BS series
AS27649	AW-AK series
AS21428	MB500DD series



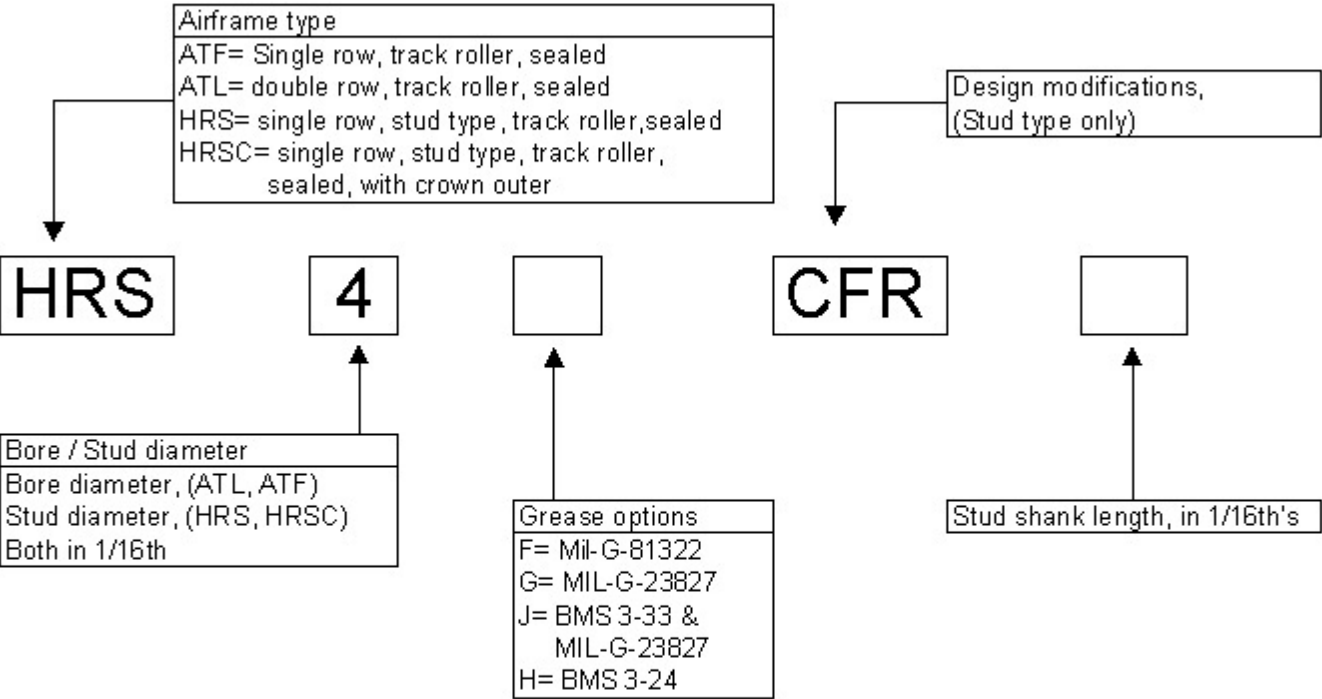
AIRFRAME CONTROL BALL BEARING ROD END PART NUMBERS



SAE - AS6039 (MIL-B-6039) / RBC Interchange	
<u>AS series</u>	<u>RBC series</u>
AS21150	REP -S
AS21151	REP -M
AS21152	REP -H
AS21153	REP -F



AIRFRAME CONTROL NEEDLE ROLLER BEARING PART NUMBERS



SAE Part Number	RBC Interchange
<i><u>AS series</u></i>	<i><u>RBC series</u></i>
AS21438	ATL
AS21439	ATF
AS21432	HRS
AS21447	HRSC

Innovation. Commitment. Quality.

RBC has been producing bearings in the USA since 1919. In addition to unique custom bearings, RBC offers a full line of standard industrial and aerospace bearings, including:



Spherical Plain Bearings

Radial, angular contact, extended inner ring, high misalignment. **QuadLube®**, **ImpactTuff®**, **SpreadLock® Seal**, **CrossLube®** bearings, and self-lubricating bearings. Available in inch and metric sizes.



Rod Ends

Commercial and industrial, precision, Mil-Spec series, self-lubricating, and aircraft. **Heim Unibal®** and **Spherco®** brands. Available in inch and metric sizes.



Thin Section Ball Bearings

Standard cross sections to one inch. Sizes to 40 inches. Stainless steel and other materials are available. Seals are available on all sizes and standard cross sections.



Ball Bearings

Precision ground, semiground, unground. High loads, long life, smooth operation. **Nice** brand is offered in caged and full complement configurations.



Self-Lubricating Bearings

Radial, thrust, rod ends, spherical bearings, high temperature, high loads. Available in inch and metric sizes. **Fiberglide®**.



Cam Followers

Standard stud, heavy stud, yoke type, caged roller followers. Patented **RBC Roller®** cylindrical roller cam followers, **HexLube®** universal cam followers, airframe track rollers.



Airframe Control Bearings

Ball bearing types, self-lubricating types, needle roller track rollers.



Needle Roller Bearings

Pitchlign® caged heavy duty needle roller bearings, inner rings, **TJ TandemRoller®** bearings for long life.



Pins and shafts

Bremen and **Miller** pins, needle rollers, shafts, and rollers.



Tapered Roller Bearings

Tyson® brand case-hardened in many sizes. Used in Class 8 heavy truck and trailer wheel bearings, gearboxes, and final drive transmissions.



Ball Screws

Precision ground, rolled, ball splines. Long life, low wear, high accuracy. **QuickTurn™ Ball Screw Repair Service**.



Specials

RBC manufactures many specialty bearings for the aerospace, oil and energy, semiconductor equipment, packaging, heavy truck, and other industries.