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REV.
E

AS27640™

FEDERAL SUPPLY CLASS
3110

RATIONALE

ADDED 302 PER ASTM A313 AS A MATERIAL OPTION FOR SEAL RETAINERS.

NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS7949.

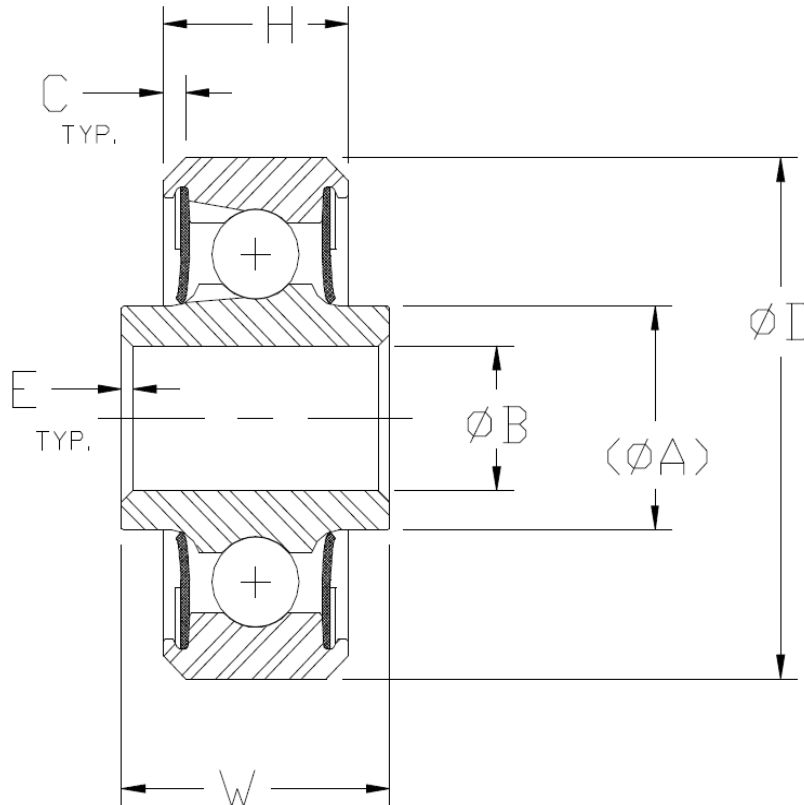
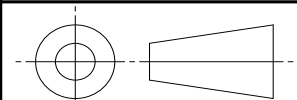


FIGURE 1 - PART CONFIGURATION

For more information on this standard, visit
<https://www.sae.org/standards/content/AS27640E>

THIRD ANGLE PROJECTION



CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS7949



AEROSPACE STANDARD

BEARING, BALL, AIRFRAME,
ANTI-FRICTION, HEAVY DUTY

AS27640™
SHEET 1 OF 3

REV.
E

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TABLE 1 - DIMENSIONS AND LOADS

MS DASH NO.	øB BORE + .0000 - .0005	øD OUTSIDE DIAMETER + .0000 - .0005	W WIDTH INNER RING + .000 - .005	H WIDTH OUTER RING + .000 - .005	(øA) SHOULDER DIAMETER INNER RING (REF)	E 4/ CORNER CHAMFER X 45°		C 3/ OUTER RING OD + .015 - .000	RADIAL LIMIT LOAD RATING (LB)	THRUST LIMIT LOAD RATING (LB)	5/ RADIAL LOAD RATING (LB) FOR AVERAGE LIFE OF 10000 COMPLETE 90° CYCLES		WEIGHT POUNDS (APPROX)	Z/ MAXIMUM STARTING TORQUE (IN-OZ)
						INNER RING BORE + .015 - .000	OUTER RING OD + .015 - .000				CASE I	CASE II		
-3A	.1900	.6250	.245	.203	.280	.005	.010		1560	700	1520	1260	.01	1
-3	.1900	.7774	.297	.270	.331	.005	.022		1880	900	1700	1450	.03	1
-4	.2500	.9014	.484	.335	.390	.005	.032		2680	1200	2410	2030	.04	1
-5	.3125	1.2500	.558	.375	.469	.015	.032		5620	2500	4900	3970	.09	1
-6	.3750	1.4375	.620	.469	.591	.015	.032		7910	3500	6540	5410	.15	2
-8	.5000	1.6875	.620	.500	.768	.015	.044		11800	5200	9320	7700	.21	3
-10	.6250	1.9375	.620	.500	.850	.015	.044		14100	6200	11000	9060	.28	4

1/ ALL DIMENSIONS TO BE MET AFTER PLATING.

2/ OUT-OF-ROUND TOLERANCES: BORE: +.0002, -.0007; OUTER DIA: +.0005, -.0010.

3/ A RADIUS GIVING APPROXIMATELY THE SAME GRIP FOR STAKING THE BEARING IN THE HOUSING WILL BE ACCEPTABLE.

4/ A RADIUS GIVING APPROXIMATELY THE SAME FILLET CLEARANCE WILL BE ACCEPTABLE.

5/ CASE I - LOAD FIXED WITH RESPECT TO OUTER RING.

CASE II - LOAD FIXED WITH RESPECT TO INNER RING.

6/ THESE RATINGS ARE FOR OPERATION UP TO 250 °F. FOR OPERATION UP TO 350 °F, THE RATINGS SHALL BE REDUCED BY 20%.

7/ SPECIFIED LIMITS ARE FOR BEARINGS LUBRICATED WITH MIL-PRF-81322 GREASE. FOR BEARINGS LUBRICATED WITH MIL-PRF-23827

TYPE I GREASE, THE TORQUE LIMIT SHALL BE THE SPECIFIED VALUE IN THE TABLE MULTIPLIED BY 1.2.

REQUIREMENTS:

1. MATERIAL: RINGS AND BALLS: 52100 STEEL PER AMS6440 OR AMS6444

SEALS: POLYTETRAFLUOROETHYLENE (PTFE) PER AMS3652

SEAL RETAINERS: 301 CRES PER AMS5519

302 CRES PER AMS5515, AMS5516, AMS5906, OR ASTM A313

304 CRES PER AMS5513 OR AMS5913

430 CRES PER AMS5503

2. LUBRICANT: MIL-PRF-81322 OR MIL-PRF-23827 TYPE I. ALL BEARINGS SHALL BE PACKED WITH AN 80% MINIMUM GREASE FILL CONFORMING TO MIL-PRF-81322 UNLESS OTHERWISE SPECIFIED. IF MIL-PRF-23827 TYPE I IS REQUIRED, ADD THE DESIGNATOR "G" AFTER THE MS27640 DASH NUMBER. MIL-PRF-23827 TYPE I SHALL NOT BE USED FOR OPERATION WHERE TEMPERATURES EXCEED 250 °F.

3. HARDNESS: HEAT TREAT RINGS AND BALLS TO 60-66 HRC AND STABILIZE FOR OPERATION AT 250 °F

4. SURFACE ROUGHNESS: RACEWAYS AND BALL SHALL HAVE A MAXIMUM SURFACE ROUGHNESS OF 8 MICROINCHES Ra PER ASME B46.1

5. PLATING: ALL EXTERNAL SURFACES EXCEPT BORE, SEALS AND SEAL RETAINERS SHALL BE PLATED .0003 TO .0006 THICK WITH:

(NO DESIGNATOR) CADMIUM IN ACCORDANCE WITH AMS-QQ-P-416, TYPE I, CLASS 2

DESIGNATOR "E" ZINC-NICKEL IN ACCORDANCE WITH AMS2417, TYPE 2, GRADE B

6. RADIAL INTERNAL CLEARANCE: WITHOUT "R" DESIGNATOR PART NUMBER INDICATES .0004 TO .0010 WITH "R" DESIGNATOR PART NUMBER INDICATES .0002 TO .0005.

7. RADIAL ECCENTRICITY: INNER RING, .0010 MAX, OUTER RING, .0016 MAX.

8. LATERAL ECCENTRICITY: INNER RING, .0010 MAX, OUTER RING, .0016 MAX.

	AEROSPACE STANDARD		AS27640™ SHEET 2 OF 3	REV. E
	BEARING, BALL, AIRFRAME, ANTI-FRICTION, HEAVY DUTY			





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