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REV.
E

AS27646™

FEDERAL SUPPLY CLASS
3110

RATIONALE

DOCUMENT IS SUBJECT TO FIVE-YEAR REVIEW CYCLE. THE DOCUMENT WILL BE UPDATED TO CURRENT SAE STANDARDS AND INDUSTRY FEEDBACK. REMOVED STATEMENT "UNDER DEPARTMENT OF DEFENSE POLICIES...TECHNICAL REPORT" FROM NOTICE SECTION SHEET 1 AND CADMIUM PLATE STATEMENT UPDATED.

NOTICE

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

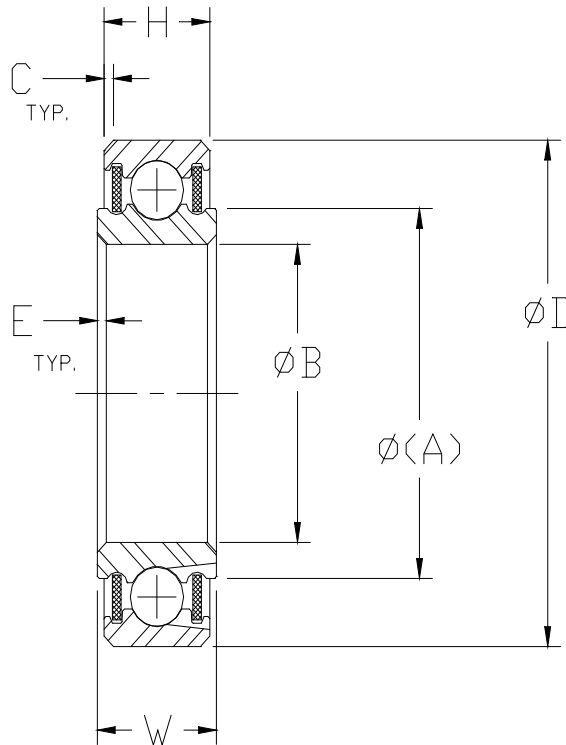
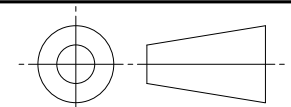


FIGURE 1 - PART CONFIGURATION

For more information on this standard, visit
<https://www.sae.org/standards/content/AS27646E/>

THIRD ANGLE PROJECTION



CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS7949



AEROSPACE STANDARD

BEARING, BALL, AIRFRAME,
ANTIFRICTION, EXTRA LIGHT DUTY

AS27646™
SHEET 1 OF 3

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TABLE 1 - DIMENSIONS

MS DASH NO.	øB BORE	BORE TOLERANCE 2/	øD OUTSIDE DIAMETER 1/	OUTSIDE DIAMETER TOLERANCE 2/	W WIDTH INNER RING +.000 -.005 1/	H WIDTH OUTER RING +.000 -.005 1/	(øA) SHOULDER DIAMETER INNER RING (APPROX)	E 4/	C 3/	WEIGHT POUNDS (APPROX)		
								CORNER CHAMFER X 45°				
								INNER RING BORE +.015 -.000	OUTER RING OD +.015 -.000			
-38	.6250	+.0007 -.0007	1.0625	+.0000 -.0010	.281	.250	.777	.015	.015	.03		
-39	.7500		1.1875				.895			.04		
-40	.8750		1.3125				1.016			.05		
-41	1.0625		1.5000				1.216			.06		
-42	1.3125		1.7500				1.451			.09		
-43	1.5625	+.0010 -.0010	2.0000	+.0000 -.0015			1.702			.10		
-44	1.8125		2.2500				1.970			.11		
-45	2.0625		2.6250				2.286			.15		
-46	2.3125		2.8750				2.527			.17		

1/ ALL DIMENSIONS TO BE MET AFTER PLATING.

2/ OUT-OF-ROUND TOLERANCES: BORE: -38 THRU -43 ±.0010; -44 THRU -46 ±.0016.

OUTER DIAMETER: -38 THRU -43 +.0005, -.0015; -44 THRU -46 +.0008, -.0023.

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.

TABLE 2 - RATINGS

MS DASH NO.	RADIAL LIMIT LOAD RATING POUNDS	THRUST LIMIT LOAD RATING POUNDS	1/ RADIAL LOAD RATING (POUNDS) FOR AVERAGE LIFE OF 10000 COMPLETE 90° CYCLES		3/ MAXIMUM STARTING TORQUE (IN-OZ)
			CASE I	CASE II	
-38	3280	1500	1990	1820	2.0
-39	3750	1700	2050	1900	2.0
-40	4220	1900	2110	1970	3.0
-41	5000	2200	2170	2020	4.0
-42	5950	2700	2220	2130	4.0
-43	6880	3200	2260	2180	5.0
-44	7980	3600	2300	2220	6.0
-45	9220	4000	2340	2260	7.0
-46	10150	4400	2360	2280	8.0

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

CASE II - LOAD FIXED WITH RESPECT TO INNER RING.

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

3/ 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 OR POLYTETRAFLUOROETHYLENE (PTFE) GLASS CLOTH REINFORCED PER AMS3666 TYPE 1 OR TYPE 2.

TESTING FOR VOLUME RESISTIVITY AND ELECTRICAL FLAWS IS NOT REQUIRED. NOMINAL THICKNESS .020 WARP BREAKING STRENGTH SHALL BE 300 LB/IN WIDTH MINIMUM.

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 LETTER "G" AFTER THE MS27646 DASH NUMBER. MIL-PRF-23827 TYPE I SHALL NOT BE USED FOR OPERATION WHERE TEMPERATURES EXCEED 250 °F.

	AEROSPACE STANDARD	AS27646™ SHEET 1 OF 3	REV. F
	BEARING, BALL, AIRFRAME, ANTIFRICTION, EXTRA LIGHT DUTY		



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