FEDERAL SUPPLY CLASS
3110

RATIONALE

AS21428 REV E IS A FIVE-YEAR REVIEW, REMOVE DEPARTMENT OF DEFENCE STATEMENT FROM NOTICE SECTION.

NOTICE

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

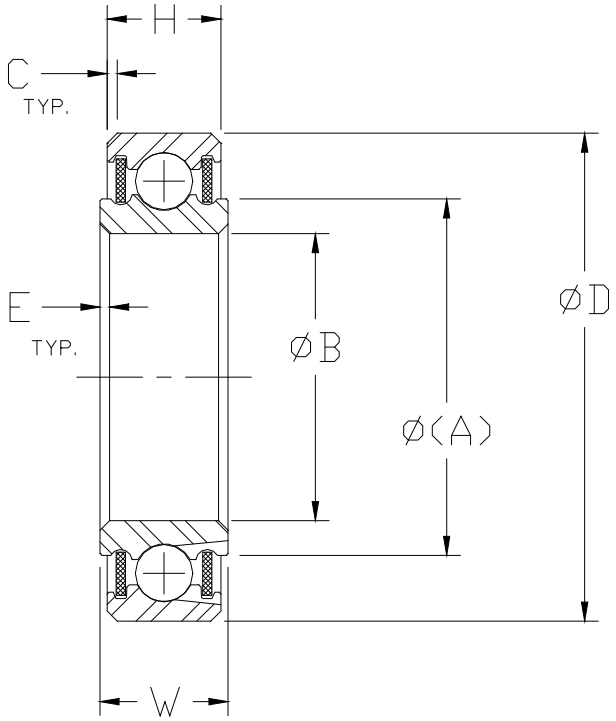
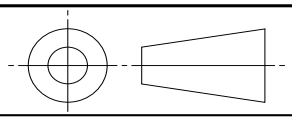


FIGURE 1 - PART CONFIGURATION

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THIRD ANGLE PROJECTION



ISSUED 1998-04 REVISED 2019-05

CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS7949

SAE INTERNATIONAL

AEROSPACE STANDARD

(R) BEARING, BALL, AIRFRAME
ANTI-FRICTION, EXTRA LIGHT DUTY
PRECISION

AS21428™
SHEET 1 OF 3

REV. E

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Documents
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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 +.0000 -.0025 1/	H WIDTH OUTER RING +.000 -.005 1/	(øA) SHOULDER DIAMETER INNER RING (APPROX)	E 4/ CORNER CHAMFER X 45° INNER RING BORE +.015 -.000	C 3/ CORNER CHAMFER X 45° OUTER RING OD +.015 -.000	WEIGHT POUNDS (APPROX) LB
-38	.6250	+.0000 -.0005	1.0625	+.0000 -.0005	.2810	.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		2.0000				1.702			.10
-44	1.8125	+.0000 -.0008	2.2500	+.0000 -.0007			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 +.0003, -.0008; -44 THRU -46 +.0003, -.0011
OUTER DIAMETER: -38 THRU -43 +.0005, -.0010; -44 THRU -46 +.0005, -.0012
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 LB	THRUST LIMIT LOAD RATING LB	1/ 2/ RADIAL LOAD RATING (LB) FOR AVERAGE LIFE OF 10000 COMPLETE 90° CYCLES CASE I	CASE II	3/ MAXIMUM STARTING TORQUE (IN-OZ)
-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 MS21428 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 TO 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.

AVA Documents
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