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REV.
E

AS27648™

FEDERAL SUPPLY CLASS
3110

RATIONALE

AS27648E IS A FIVE-YEAR REVIEW. REMOVED DEPARTMENT OF DEFENSE STATEMENT FROM NOTICE SECTION. UPDATED FIGURE 1 PART CONFIGURATION FROM Ø(A) TO ØA TO REMOVE REDUNDANCIES BETWEEN FIGURE AND TABLE. UPDATED TABLE 1 HEADER TO REMOVE () FOR DIMENSION (ØA) SINCE INDICATED AS APPROX. UPDATED TABLE 1 HEADER TO ADD (REF) FOR DIMENSION ØJ COLUMN. UPDATED TABLE 1 HEADER WEIGHT COLUMN TO LB/EA. UPDATED TABLE 2 HEADER LB TO (LB).

NOTICE

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

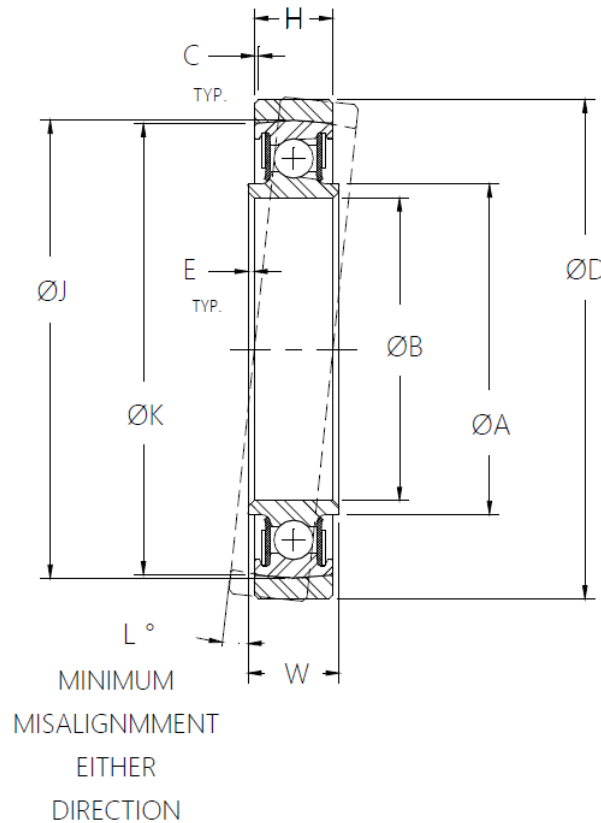
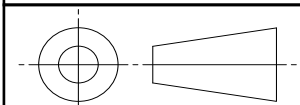


FIGURE 1 - PART CONFIGURATION

For more information on this standard, visit
<https://www.sae.org/standards/content/AS27648E>

THIRD ANGLE PROJECTION



CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS7949



AEROSPACE STANDARD

BEARING, BALL, AIRFRAME,
ANTI-FRICTION, EXTERNAL SELF-ALIGNING,
EXTRA LIGHT DUTY

AS27648™
SHEET 1 OF 3

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TABLE 1 - DIMENSIONS

MS DASH NO.	ØB BORE 2/ TOLERANCE	ØD OUTSIDE DIAMETER +0.000 -0.010 1/ 2/ TOLERANCE	W WIDTH INNER RING +0.000 -0.005 1/ TOLERANCE	H WIDTH OUTER RING +0.000 -0.005 1/ TOLERANCE	ØA SHOULDER DIAMETER INNER RING (APPROX)	E 4/ CORNER CHAMFER X C 3/ 45°		ØK TO SHARP CORNER (REF)	ØJ BRG. SPHERE OUTSIDE DIAMETER (REF)	L° MISALIGNMENT ANGLE EITHER DIRECTION 5/ (REF)	WEIGHT LB/EA (APPROX)
						INNER RING BORE +0.015 -0.000	OUTER RING OD +0.015 -0.000				
-16	1.0000	+0.0000 -0.0005	1.9375	.437	1.141	.024	.024	1.709	1.740	7° 25'	.18
-21	1.3125	+0.0005 -0.0005	2.2500		1.454			2.028	2.052	6° 30'	.20
-23	1.4375		2.3750		1.575			2.155	2.178	6°	.22
-25	1.5625		2.5000		1.693			2.282	2.302	5° 45'	.25
-29	1.8125		2.7500		1.931			2.535	2.552	5°	.27
-33	2.0625		3.0000		2.231			2.787	2.802	5°	.30
-37	2.3125		3.2500		2.468			3.039	3.052	4° 30'	.33
-47	2.9375		4.1250	.531	3.093	.039	.039	3.846	3.865	4° 30'	.64
-48	3.0000		4.2500		3.222			3.972	3.990	4°	.69
-49	3.0625		4.2500		3.222			3.972	3.990	4°	.69

1/ ALL DIMENSIONS TO BE MET AFTER PLATING.

2/ OUT-OF-ROUND TOLERANCES: BORE: -16 +0.0003, -0.0008 -21 THROUGH -49 +0.0008, -0.0008. OUTER DIA: +0.0010, -0.0020.

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/ MISALIGNMENT ANGLE IS NOT TO EXCEED MINIMUM REQUIREMENT IN DESIGN OR APPLICATION.

TABLE 2 - LOADS AND STARTING TORQUE

MS DASH NO.	RADIAL LIMIT LOAD RATING (LB)	THRUST LIMIT LOAD RATING (LB)	RADIAL LOAD RATING (LB) FOR AVERAGE LIFE OF 10000 COMPLETE 90° CYCLES 1/ 2/		MAXIMUM STARTING TORQUE (IN-OZ) 3/
			CASE I	CASE II	
-16	8085	1600	4260	3960	5.0
-21	9840	2000	4590	4290	7.0
-23	10500	2200	4650	4360	9.0
-25	11300	2300	4680	4420	9.0
-29	12700	2600	4760	4530	14.0
-33	14400	2900	4820	4630	14.0
-37	15800	3200	4880	4690	20.0
-47	24700	5000	6600	6390	30.0
-48	27500	5500	8150	7840	30.0
-49	27500	5500	8150	7840	32.0

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.

SEAL RETAINERS: ANY CORROSION RESISTANT STEEL.

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 MS27648 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.

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