

REV.
D

AS27643™

FEDERAL SUPPLY CLASS
3110

RATIONALE

AS27643 REV D IS A FIVE YEAR REVIEW. SPECIFIED CRES MATERIAL FOR SEAL RETAINERS, REMOVE DEPARTMENT OF DEFENSE 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.

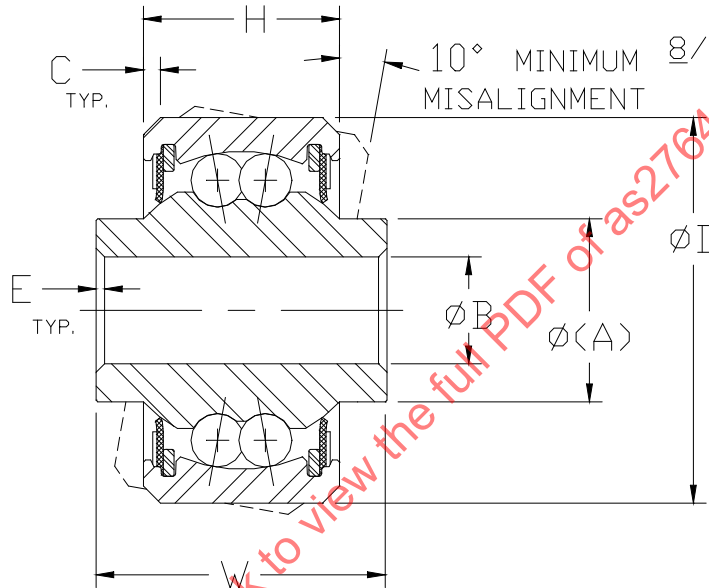
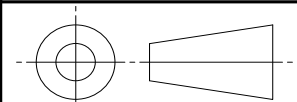


FIGURE 1 - PART CONFIGURATION

For more information on this standard, visit
<https://www.sae.org/standards/content/AS27643D/>

THIRD ANGLE PROJECTION



CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS7949



AEROSPACE STANDARD

BEARING, BALL, AIRFRAME,
ANTI-FRICTION, SELF-ALIGNING,
DOUBLE ROW, HEAVY DUTY

AS27643™
SHEET 1 OF 3

REV.
D

TABLE 1 - DIMENSIONS AND LOADS

MS DASH NO.	øB BORE +.0000 -.0005 2/	øD OUTSIDE DIAMETER +.0000 -.0005 1/ 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/	AXIAL INTER- NAL CLEAR- ANCE MAX	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)	7/ MAXIMUM STARTING TORQUE (IN-OZ)
							CORNER CHAMFER X 45°					CASE I	CASE II		
							INNER RING BORE +.015 -.000	OUTER RING OD +.015 -.000							
-3	.1900	.7774	.500	.392	.304	.005	.022	.0055	1420	200	1420	1220	.04	1.0	
-4	.2500	.9014	.687	.464	.430	.005	.032	.0055	1780	300	1780	1600	.06	1.0	
-5	.3125	1.2500	.812	.656	.515	.015	.032	.006	3740	600	3740	3300	.16	3.0	
-6	.3750	1.4375	.937	.750	.564	.015	.032	.006	5100	800	4980	4370	.24	4.0	
-8	.5000	1.6875	1.000	.812	.775	.015	.044	.007	7120	1000	6340	5570	.36	5.0	
-10	.6250	1.9375	1.125	.937	.869	.015	.044	.007	9000	1300	7780	6860	.53	6.0	

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.

8/ THESE BEARINGS ARE INTERNAL SELF-ALIGNING FOR 10° MINIMUM IN EITHER DIRECTION. MISALIGNMENT ANGLE IS NOT TO EXCEED MINIMUM REQUIREMENT IN DESIGN OR APPLICATION.

TABLE 1 - DIMENSIONS AND LOADS (CONTINUED)

MS DASH NO.	MINIMUM TORQUE TO DISLODGE SEAL (IN/LB)
-3	8
-4	12
-6	28
-6	45
-8	60
-10	78

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, OR AMS5906,
304 CRES PER AMS5513, AMS5911, 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 MS27643 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.



AEROSPACE STANDARD

BEARING, BALL, AIRFRAME,
ANTI-FRICTION, SELF-ALIGNING,
DOUBLE ROW, HEAVY DUTY

AS27643™
SHEET 2 OF 3

REV.
D