

**REV.  
A****AS27646**

## NOTICE

THIS DOCUMENT HAS BEEN TAKEN DIRECTLY FROM U.S. MILITARY SPECIFICATION MS27646F AND CONTAINS ONLY MINOR EDITORIAL AND FORMAT CHANGES REQUIRED TO BRING IT INTO CONFORMANCE WITH THE PUBLISHING REQUIREMENTS OF SAE TECHNICAL STANDARDS. THE INITIAL RELEASE OF THIS DOCUMENT IS INTENDED TO REPLACE MS27646F. ANY PART NUMBERS ESTABLISHED BY THE ORIGINAL SPECIFICATION REMAIN UNCHANGED.

THE ORIGINAL MILITARY SPECIFICATION WAS ADOPTED AS AN SAE STANDARD UNDER THE PROVISIONS OF THE SAE TECHNICAL STANDARDS BOARD (TSB) RULES AND REGULATIONS (TSB 001) PERTAINING TO ACCELERATED ADOPTION OF GOVERNMENT SPECIFICATIONS AND STANDARDS. TSB RULES PROVIDE FOR (A) THE PUBLICATION OF PORTIONS OF UNREVISED GOVERNMENT SPECIFICATIONS AND STANDARDS WITHOUT CONSENSUS VOTING AT THE SAE COMMITTEE LEVEL, AND (B) THE USE OF THE EXISTING GOVERNMENT SPECIFICATION OR STANDARD FORMAT.

UNDER DEPARTMENT OF DEFENSE POLICIES AND PROCEDURES, ANY QUALIFICATION REQUIREMENTS AND ASSOCIATED QUALIFIED PRODUCTS LISTS ARE MANDATORY FOR DOD CONTRACTS. ANY REQUIREMENT RELATING TO QUALIFIED PRODUCTS LISTS (QPL'S) HAS NOT BEEN ADOPTED BY SAE AND IS NOT PART OF THIS TECHNICAL REPORT.

SAENORM.COM : Click to view the full PDF of as27646a

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be reaffirmed, revised, or cancelled. SAE invites your written comments and suggestions.

ISSUED 1998-04 REVISED 1998-11

PREPARED BY AIRFRAME CONTROL BEARINGS GROUP (ACBG)

**SAE** The Engineering Society  
For Advancing Mobility  
Land Sea Air and Space®  
**INTERNATIONAL**  
400 Commonwealth Drive, Warrendale, PA 15096-0001

**AEROSPACE STANDARD**

BEARING, BALL, AIRFRAME,  
ANTI-FRICTION, EXTRA LIGHT DUTY

**AS27646**  
SHEET 1 OF 3

**REV.  
A**

REV.  
A

AS27646

THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODISS SPECIFIED IN THE SOLICITATION: MIL-B-7949.

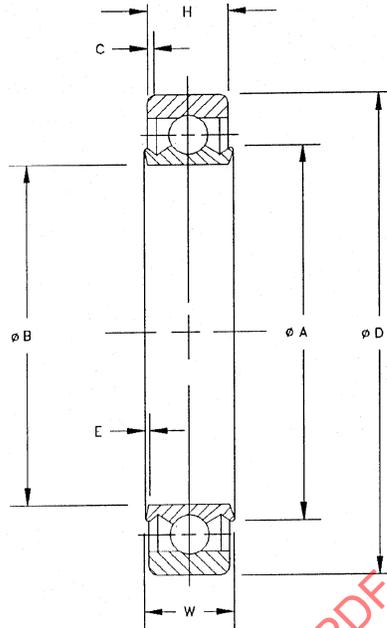


FIGURE 1 BEARING

TABLE I. DIMENSIONS AND LOADS

MS DASH NO.	øB BORE	øD OUTSIDE DIAMETER		W WIDTH INNER RING	H WIDTH OUTER RING	øA SHOULDER DIAMETER INNER RING APPROX.	E & C CORNER CHAMFER X 45°		RADIAL LOAD LIMIT RATING LBS	THRUST LOAD LIMIT RATING LBS	4/ RADIAL LOAD FOR AVERAGE LIFE OF 10,000 COMPLETE 90° CYCLES		WEIGHT POUNDS (APPROX)	MAXIMUM STARTING TORQUE (INCH-OZ)
		1/ 2/	3/ 4/				5/ 6/	7/ 8/						
		1/	2/				3/	4/						
-38	.6250	1.0625				.777			3280	1500	1990	1820	.03	2
-39	.7500	1.1875				.895			3750	1700	2050	1900	.04	2
-40	.8750	1.3125				1.016			4220	1900	2110	1970	.05	3
-41	1.0625	1.5000				1.216			5000	2200	2170	2020	.06	4
-42	1.3125	1.7500	.281	.250		1.451	.015		5950	2700	2220	2130	.09	4
-43	1.5625	2.0000				1.702			6880	3200	2260	2180	.10	5
-44	1.8125 8/	2.2500 7/				1.970			7980	3600	2300	2220	.11	5
-45	2.0625 8/	2.6250 7/				2.286			9220	4000	2340	2260	.15	6
-46	2.3125 8/	2.8750 7/				2.527			10150	4400	2360	2280	.17	6

- 1/ DIMENSIONS TO BE MET AFTER PLATING.
- 2/ A RADIUS GIVING APPROXIMATELY THE SAME GRIP FOR STAKING THE BEARING IN THE HOUSING WILL BE ACCEPTABLE.
- 3/ A RADIUS GIVING APPROXIMATELY THE SAME FILLET CLEARANCE WILL BE ACCEPTABLE.
- 4/ CASE I = LOAD FIXED WITH RESPECT TO OUTER RING.  
CASE II = LOAD FIXED WITH RESPECT TO THE INNER RING.
- 5/ THESE RATINGS ARE FOR OPERATION UP TO 250°F. WHEN SUBJECT TO OPERATION UP TO 350°F, THE RATINGS SHALL BE REDUCED BY 20 PERCENT.
- 6/ OUT-OF-ROUND TOLERANCES: BORE: -38 THRU -43 ±.0010; -44 THRU -46: ±.0016  
OUTSIDE DIAMETER: -38 THRU -43 +.0005, -.0015; -44 THRU -46: +.0008, -.0023
- 7/ FOR DASH NUMBER SIZES -44, -45, AND -46, THE OUTSIDE DIAMETER TOLERANCE SHALL BE +.0000 TO -.0015 INCHES.
- 8/ FOR DASH NUMBER SIZES -44, -45, AND -46 THE BORE TOLERANCE SHALL BE +.0010 TO -.0010 INCHES.
- (F) DENOTES CHANGES