

**INCH-POUND**

MS27647F

20 January 1998

SUPERSEDING

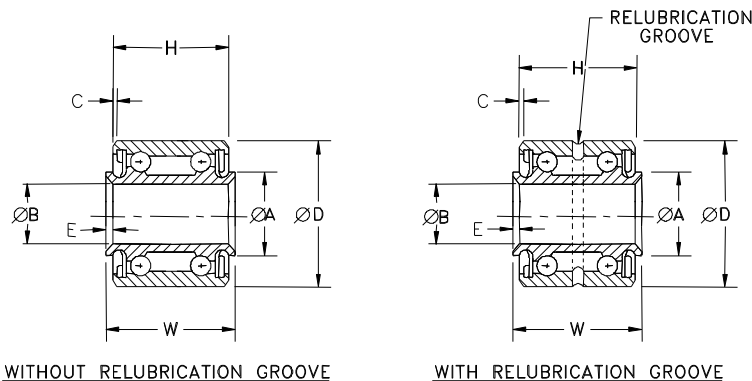
MS27647E

21 June 1995

**MILITARY SPECIFICATION SHEET****BEARING, BALL, AIRFRAME, ANTI-FRICTION, EXTRA WIDE,  
DOUBLE ROW, INTERMEDIATE DUTY**

This Specification is approved for use by all Departments and  
Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification  
sheet and the issue of the following specification listed in that issue of the Department of Index of  
Specifications and Standards (DODISS) specified in the solicitation: MIL-B-7949.

**TABLE I. DIMENSIONS AND LOADS**

MS DASH NO.	ØB	ØD	W	H	ØA	E	C	RADIAL LIMIT LOAD RATING LBS	THRUST LIMIT LOAD RATING LBS	5/ RADIAL LOAD RATING (LBS) FOR AVERAGE LIFE OF 10,000 COMPLETE 90° CYCLES		APPROXIMATE WEIGHT (LBS)	MAXIMUM STARTING TOQUE (INCH-OZ)
	2/ BORE	OUTSIDE DIAMETER	WIDTH INNER RING	WIDTH OUTER RING	SHOULDER DIAMETER INNER RING (APPROX)	4/ INNER RING CORNER CHAMFER +.015 -.000	3/ OUTER RING CORNER CHAMFER +.015 -.000						
	2/ 1/	1/	1/	1/									
	+.0000 -.0005	+.0000 -.0005	+.000 -.005	+.000 -.005						CASE I	CASE II		
-4A	.2500	.6250	.562	.500	.338	.005	.016	1400	500	1050	960	.025	1
-4	.2500	.7500	.875	.750	.372			2700	900	2070	1850	.04	1
-5	.3125	.8750	.938	.813	.466			5140	1600	2600	2320	.07	1
-6	.3750	1.0625	1.188	1.063	.570			8440	2600	4220	3740	.12	2
-8	.5000	1.4375	1.500	1.3750	.709		.032	15520	4700	7610	6520	.29	2

1/ Dimensions to be met after plating.

2/ Out-of-round tolerances: Bore: +.0002, -.0007;  
outer diameter: +.0005, -.0010.

3/ A radius giving approximately the same grip for staking the bearing in the housing is acceptable in lieu of a 45° flat surface chamfer.

4/ A radius giving approximately the same fillet clearance is acceptable in lieu of a 45° flat surface chamfer.

5/ Case I = Load is fixed with respect to the outer ring.

Case II = Load is fixed with respect to the inner ring.

6/ These ratings are for operation up to 250°F. For operation up to 350°F.

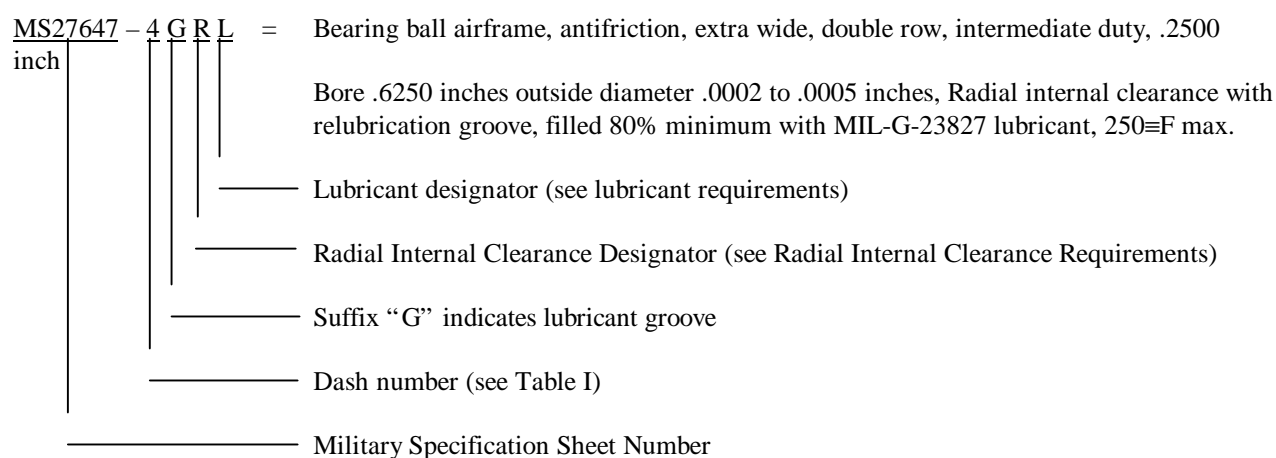
The ratings are shall be reduced by 20%.

## MS27647F

## REQUIREMENTS:

1. MATERIAL: Rings: 52100 steel per AMS6440, or E52100 steel per FED-STD-66.  
Balls: 52100 steel per AMS6440 or 51100 steel per AMS6449, or E51100 or E52100 steel per FED-STD-66.  
Seals: Polytetrafluoroethylene per AMS3652 or Polytetrafluoroethylene sheet, glass fabric reinforced per AMS3666.  
Seal retainers: Any corrosion resistant steel.
2. LUBRICANT: MIL-G-81322 or MIL-G-23827, all bearings shall be packed with grease conforming to MIL-G-81322 unless otherwise specified. If MIL-G-23827 is required, add the letter "L" after the MS27647 dash number. MIL-G-23827 shall not be used for operation where temperatures exceed 250°F.
3. HARDNESS: Heat treat rings and balls to rockwell "C" 60 to 66 and stabilize for operation at 250°F.
4. SURFACE ROUGHNESS: Raceways and balls shall be 8 microinches Ra per ANSI/ASME B 46.1.
5. PLATING: All external surfaces except bore, seals and seal retainers shall be zinc nickel in accordance with AMS 2417, Type 2, or cadmium plated in accordance with QQ-P-416, Type I, Class 2, with a thickness of .0003 to .0006 inches.
6. RADIAL INTERNAL CLEARANCE: Without designator "R" part number indicates .0000 to .0010 with designator "R" part number indicates .0002 to .0005.
7. RADIAL ECCENTRICITY: Inner ring, .0010 max, outer ring, .0016 max.
8. LATERAL ECCENTRICITY: Inner ring, .0010 max, outer ring, .0016 max.
9. PART NUMBER: The part number shall be sequenced left to right with designations in the following sequence:

## EXAMPLE OF PART NUMBER:



## NOTES:

1. Unless otherwise specified, all dimensions are in inches.
2. This specification takes precedence over any other documents referenced herein.
3. Referenced documents are the issues in effect at the date of invitation for bid.

MS27647F

Custodians:

Army - AV  
Air Force - 99  
Navy - AS

Preparing activity:

Navy - AS

(Project 3110-1066)

Review activities:

Army – AR, AT, CR4, MI,  
Air Force – 84  
DLA-IS