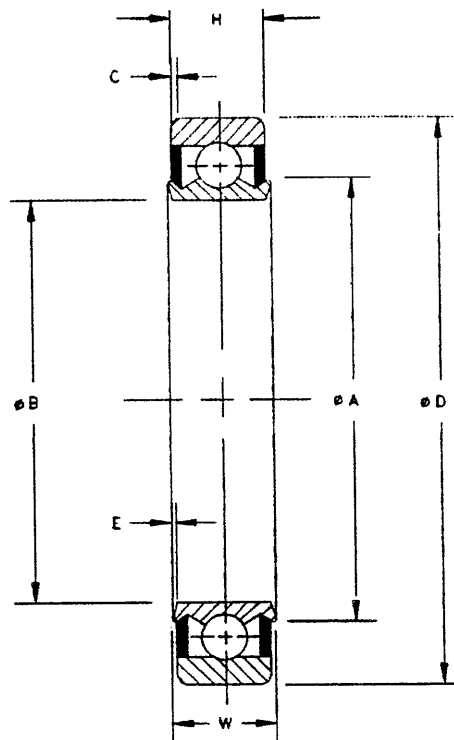


THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE.

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



Form Approved
OMB No. 0704-0188

TABLE I. DIMENSIONS AND LOADS

MS DASH NO.	ØB 2/ BORE	BORE TOLERANCE	ØD 1/ 2/ OUTSIDE DIAMETER	OUTSIDE DIAMETER TOLERANCE	W	H	ØA	E & C	WEIGHT POUNDS (APPROX)	RADIAL LIMIT LOAD RATING LBS	THRUST LIMIT LOAD RATING LBS	5/ RADIAL LOAD RATING (LBS.) FOR AVERAGE LIFE OF 10,000 COMPLETE 90° CYCLES		6/ MAXIMUM STARTING TORQUE (INCH-ØZ)		
					1/ WIDTH INNER RING	1/ WIDTH OUTER RING	SHOULDER DIAMETER INNER RING APPROX.	3/ CORNER CHAMFER 45°				CASE I	CASE II			
					+ .0000 - .0025	+ .000 - .005									+ .020 - .000	
-38	.6250	+.0000 -.0005	1.0625	+.0000 -.0005	.2810	.250	.777	.015	.03	3280	1500	1990	1820	2		
-39	.7500		1.1875				.895		.04	3750	1700	2050	1900	2		
-40	.8750		1.3125				1.016		.05	4220	1900	2110	1970	3		
-41	1.0625		1.5000				1.216		.06	5000	2200	2170	2020	4		
-42	1.3125	+.0000 -.0008	1.7500	+.0000 -.0007			1.451		.09	5950	2700	2220	2130	4		
-43	1.5625		2.0000				1.702		.10	6880	3200	2260	2180	5		
-44	1.8125		2.2500				1.970		.11	7960	3600	2300	2220	5		
-45	2.0625		2.6250				2.286		.15	9220	4000	2340	2260	6		
-46	2.3125		2.8750				2.527		.17	10150	4400	2360	2280	6		

1/ DIMENSIONS TO BE MET AFTER PLATING.

2/ OUT-OF-ROUND TOLERANCES:

BORE:

FOR -38 THRU -43: +.0003, -.0008

FOR -44 THRU -46: +.0003, -.0011

OUTER DIAMETER:

FOR -38 THRU -43: +.0005, -.0010

FOR -44 THRU -46: +.0005, -.0012

3/ A RADIUS GIVING APPROXIMATELY THE SAME GRIP FOR STAKING THE BEARING AND MAINTAINING DIMENSION C IS ACCEPTABLE IN LIEU OF THE 45° FLAT SURFACE CHAMFER.

4/ A RADIUS GIVING APPROXIMATELY THE SAME FILLET CLEARANCE AND MAINTAINING DIMENSION E IS ACCEPTABLE IN LIEU OF THE 45° FLAT SURFACE CHAMFER.

5/ CASE I = LOAD IS FIXED WITH RESPECT TO 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 SHALL BE REDUCED BY 20%.

© DENOTES CHANGES

INCH-POUND

PREPARING ACTIVITY: NAVY-AS

CUSTODIANS: ARMY- AV

NAVY-AS

AIR FORCE- 99

DLA-

REVIEW ARMY-AR,AT,MI AIR FORCE-84, DLA-IS

PROJECT NUMBER: 3110-0925

DISTRIBUTION STATEMENT

MILITARY SPECIFICATION SHEET

TITLE

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

SPECIFICATION SHEET NUMBER

MS21428

21 JUNE 95
REV C

SUPERSEDING

MS21428B

05 DEC 94

AMSC- N/A

FSC 3110

A. Approved for public release, distribution is unlimited.

Page 1 of 2

DD Form 672, MAY 88

PREVIOUS EDITIONS ARE OBSOLETE

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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.
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 "G" AFTER THE MS21428 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 R_a PER ANSI/ASME B46.1.
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 1, CLASS 2, WITH A MINIMUM THICKNESS OF .0003 TO .0006 INCHES.
6. RADIAL INTERNAL CLEARANCE: .0001 TO .0005
7. RADIAL ECCENTRICITY: INNER RING: .0008 MAXIMUM. OUTER RING .0008 MAX.
8. LATERAL ECCENTRICITY: INNER RING: .0008 MAXIMUM. OUTER RING .0008 MAX.
9. PART NUMBER: THE PART NUMBER SHALL BE SEQUENCED LEFT TO RIGHT WITH DESIGNATIONS IN THE FOLLOWING SEQUENCE:

EXAMPLE OF PART NUMBER.

MS21428-38G = BEARING, BALL AIRFRAME, ANTIFRICTION, EXTRA LIGHT DUTY, PRECISION, .6250.
INCH BORE, FILLED 80% MINIMUM WITH MIL-G-23827 LUBRICANT, 250°F MAX.

— LUBRICANT DESIGNATOR (SEE LUBRICANT REQUIREMENTS)

— DASH NUMBER (SEE TABLE I)

— MILITARY SPECIFICATION SHEET NUMBER
10. REMOVABLE SEALS ARE REQUIRED.

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.

PREPARING ACTIVITY: NAVY-AS CUSTODIANS: ARMY- AV NAVY- AS AIR FORCE- 99 DLA-	MILITARY SPECIFICATION SHEET TITLE BEARING, BALL, AIRFRAME, ANTI-FRICTION, EXTRA LIGHT DUTY, PRECISION	SPECIFICATION SHEET NUMBER MS21428 21 JUNE 95 REV C
REVIEW: ARMY-AR, AT, MI AIR FORCE-84, DLA-IS		SUPERSEDING MS21428B 05 DEC 94
PROJECT NUMBER: 3110-0925		AMSC- N/A FSC 3110
DISTRIBUTION STATEMENT A. Approved for public release, distribution is unlimited		Page <u>2</u> of <u>2</u>