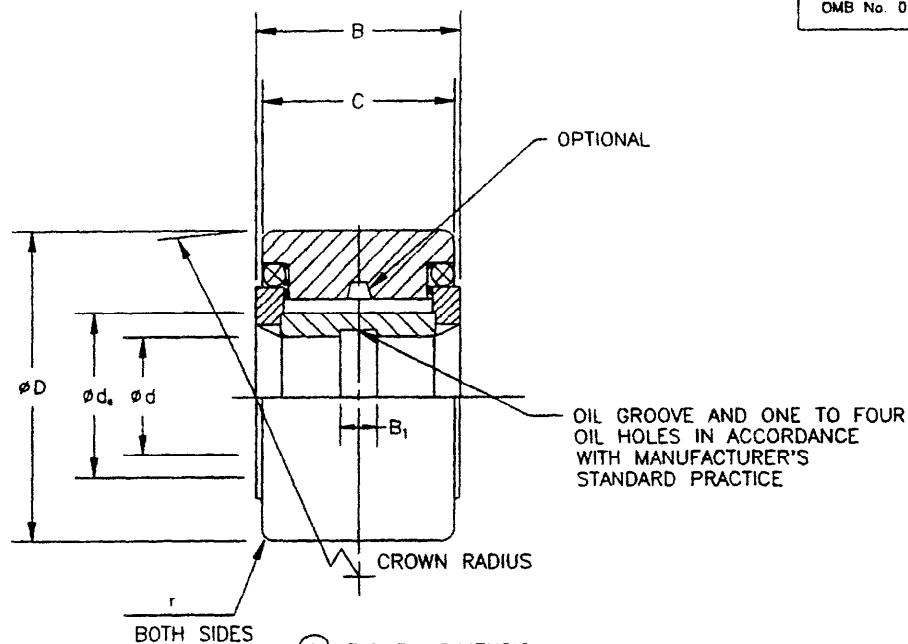


THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THE SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE D. THE SOLICITATION: MIL-B-3990

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(B) TABLE I. DIMENSION

Dash No.	$\phi d$ Bore	$\phi D$ Outer Ring Outside Diameter	C Outer Ring Width	B Over-all Width	$\phi d_1$ Clamping Diameter Min.	r Rad. Min. 1/	B1 Lubrication Groove Width	Crown Radius Ref.	Total Radial Clearance Max.	Capacity As a Track Roller Lb.	Track Capacity 40 MRC Lb.	Limit Load Rolling Lb.	Mass (Approx) lbs.
-103	.1900	.7500	.280	0.312	0.438	0.022	0.094	10.000	0.0018	900	290	1200	0.03
-104	.2500	.8750	.345	0.375	0.516	0.022	0.125	10.000	0.0018	1430	575	1910	0.05
-106	.3750	1.0625	.455	0.500	0.872	0.022	0.188	10.000	0.0018	2700	1000	3600	0.10
-108	.5000	1.3125	.580	0.625	0.944	0.032	0.188	12.500	0.0018	4300	1785	5780	0.18
-110	.6250	1.5000	.705	0.750	0.953	0.032	0.250	17.500	0.0018	6400	2600	8500	0.28
-112	.7500	1.7500	.950	1.000	1.100	0.032	0.250	25.000	0.0018	18700	4050	14200	0.52
-114	.8750	2.0000	1.075	1.125	1.219	0.032	0.250	27.500	0.0018	14400	3350	18300	0.75
-120	1.2500	2.5000	1.200	1.250	1.825	0.032	0.375	30.000	0.0018	18900	7100	25300	1.16
-124	1.5000	3.0000	1.440	1.500	2.000	0.032	0.375	60.000	0.0018	28400	18900	37900	2.36
-128	1.7500	3.4375	1.440	1.500	2.281	0.032	0.375	60.000	0.0018	33000	12400	44100	2.71
-132	2.0000	3.8750	1.440	1.500	2.562	0.032	0.375	60.000	0.0018	36700	14000	48900	3.42
-136	2.2500	4.3125	1.440	1.500	2.859	0.032	0.375	60.000	0.0020	41200	15600	55000	4.23
-140	2.2000	4.7500	1.440	1.500	3.109	0.032	0.375	60.000	0.0020	44900	17200	59900	5.14
-144	2.7500	5.0000	1.440	1.500	3.344	0.032	0.375	60.000	0.0020	46800	18100	64800	5.49

1/ MINIMUM CORNER RADIUS FOR OUTSIDE DIAMETER.

(B) TABLE II. TOLERANCE VALUES.

DIMENSIONS IN INCHES

$\phi d$ Basic Bore		Allowable Deviation From $d$ of Single Mean Dia., $d_{mp}$		Allowable Deviation From Over-all Width B		Allowable Deviation From Lubrication Groove Width B <sub>1</sub>		$\phi d$ Basic Bore		Allowable Deviation From D of Single Dia., $d_{mp}$		Allowable Deviation From Outer Ring Width C	
Over	Incl	High	Low	High	Low	High	Low	Over	Incl	High	Low	High	Low
0.1250	2.7500	0	-0.0007	0	-0.010	0	-0.062	0.6875	5.0000	0	-0.0007	0	-0.015

(B) DENOTES CHANGES

INCH-POUND

PREPARING ACTIVITY: NAVY-AS CUSTODIANS: ARMY-AT NAVY-AS AIR FORCE-99 REVIEW: ARMY-AT NAVY-AS AF-11.99 DLA-IS USER: PROJECT NUMBER 3110-0849	<b>MILITARY SPECIFICATION SHEET</b> TITLE BEARING, ROLLER, NEEDLE, SINGLE ROW, HEAVY DUTY, TRACK ROLLER, SEALED, TYPE V ANTI-FRICTION, INCH	SPECIFICATION SHEET NUMBER <b>MS21438</b> 05 DEC 94 REV B SUPERSEDING MS21438A 31 MAR 81 AMSC- N/A FSC 3110
DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.		Page <u>1</u> of <u>2</u>

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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 THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODDS SPECIFIED IN THE SOLICITATION: MIL-B-3990

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# REQUIREMENTS:

## 1. MATERIAL:

- a. STEEL, MIL-S-7493, MIL-S-8690, ASTM NO. A304, A322, A331, QQ-S-700, FED-STD-66, AISI/SAE STEEL NO. 50100, 52100, STEEL AMS 6640.
- b. SEALS AND BACKING RINGS - ACETAL RESIN PER L-P-392 OR NYLON PER L-P-410, TYPE 6/6, WEAR RESISTANT GRADE, OR POLYESTER ELASTOMER. CONSTRUCTION OPTIONAL.

## 2. FINISH OR PLATING:

- a. OUTER RING - OUTER RING CHROME PLATED PER QQ-C-320, CLASS 2. O.D. AND O.D. CORNERS .0005-.0010 INCH THICKNESS, FACES MINIMUM .0003 IN THICKNESS.
- (B) b. INNER RING - ALL EXTERNAL SURFACES, EXCEPT THE INNER RING BORE, ZINC-NICKEL IN ACCORDANCE WITH AMS 2417, TYPE 2, OR CADMIUM PLATED IN ACCORDANCE WITH QQ-P-416, TYPE II, CLASS 2, WITH A THICKNESS OF .0003 TO .0006 INCHES.
- (B) c. ENDPLATES - ALL EXPOSED SURFACES ZINC-NICKEL IN ACCORDANCE WITH AMS 2417, TYPE 2, OR CADMIUM PLATED IN ACCORDANCE QQ-P-416, TYPE II, CLASS 2, WITH A THICKNESS OF .0003 INCHES TO .0006 INCHES.
3. LUBRICANT: MIL-G-81322 OR MIL-G-23827. ALL BEARINGS SHALL BE PREPACKED WITH GREASE CONFORMING TO MIL-G-81322 UNLESS OTHERWISE SPECIFIED. IF MIL-G-23827 IS REQUIRED, ADD THE SUFFIX G TO THE MS PART NUMBER.
4. MARKING: THE MARKING SHALL CONSIST OF THE MS PART NUMBER AND THE MANUFACTURER'S IDENTIFICATION IN ACCORDANCE WITH MIL-STD-130.
5. PART NUMBER: THE MS PART NUMBER SHALL CONSIST OF THE MS NUMBER PLUS THE DASH NUMBER.  
EXAMPLES: MS21438-103, MS21438-103G.
- (B) 6. PACKAGING: BEARINGS SHALL BE INDIVIDUALLY PACKAGED TO THE REQUIREMENTS OF MIL-P-197. PACKAGE MARKED WITH MANUFACTURER'S NAME OR TRADEMARK, AND DATE OF LUBRICATION BY MONTH AND YEAR.
7. DIMENSIONS: ALL DIMENSIONS ARE AFTER PLATING AND ARE IN INCHES.
8. LOAD RATING: THE LIMIT LOAD RATING LISTED CAN BE DEFINED AS THE MAXIMUM RADIAL LOAD WHICH CAN BE APPLIED TO A BEARING WITHOUT IMPAIRING THE SUBSEQUENT FUNCTIONING OF THE BEARING. THE ULTIMATE OR STATIC FRACTURE LOAD RATING IS NOT LESS THAN 1.5 TIMES THE LIMIT LOAD RATING. THE LOAD RATING AS A TRACK ROLLER IS THE LOAD THE BEARING WILL CARRY AS A TRACK ROLLER FOR AN L-10 LIFE OF 20,000 REVOLUTIONS.
9. TEMPERATURE: BEARING OPERATING TEMPERATURE RANGE -65°F TO 250°F.
10. REMOVE ALL BURRS AND SHARP EDGES.

# NOTES:

1. MS21438 SUPERSEDES MS24465.
2. DESIGN FEATURES: FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER DOCUMENTS REFERENCED HEREIN.
3. REFERENCED DOCUMENTS: REFERENCED DOCUMENTS ARE THE ISSUES IN EFFECT ON DATE OF INVITATIONS FOR BID.

PREPARING ACTIVITY NAVY-AS CUSTODIANS: ARMY-AT NAVY-AS AIR FORCE- REVIEW ARMY-AT NAVY-AS AF-11,99 DLA-IS USER: PROJECT NUMBER 3110-0849	MILITARY SPECIFICATION SHEET TITLE BEARING, ROLLER, NEEDLE, SINGLE ROW, HEAVY DUTY, TRACK ROLLER, SEALED, TYPE V ANTIFRITON, INCH	SPECIFICATION SHEET NUMBER <b>MS21438</b> 05 DEC 94 REV B SUPERSEDING MS21438A 31 MAR 81 AMSC- N/A FSC 3110 DISTRIBUTION STATEMENT A Approved for public release, distribution is unlimited Page <u>2</u> of <u>2</u>
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