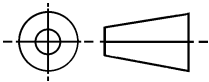



SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom,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

AS21438	Submitted for recognition as an American National Standard		FEDERAL SUPPLY CLASS 3110
	<p align="center">NOTICE</p> <p>THIS DOCUMENT HAS BEEN TAKEN DIRECTLY FROM U.S. MILITARY SPECIFICATION MS21438C 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 MS21438C. ANY PART NUMBERS ESTABLISHED BY THE ORIGINAL SPECIFICATION REMAIN UNCHANGED.</p> <p>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.</p> <p>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.</p>		
		<p align="center">THIRD ANGLE PROJECTION</p> 	
PREPARED BY AIRFRAME CONTROL BEARINGS GROUP			
	<p align="center">AEROSPACE STANDARD</p> <p align="center">BEARING, ROLLER, NEEDLE, SINGLE ROW, HEAVY DUTY, TRACK ROLLER, SEALED, TYPE V ANTIFRICTION, INCH</p>		<p align="center">AS21438 SHEET 1 OF 4</p>

SAENORM.COM : Click to view the full PDF of as21438

ISSUED 1998-07

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-3990.

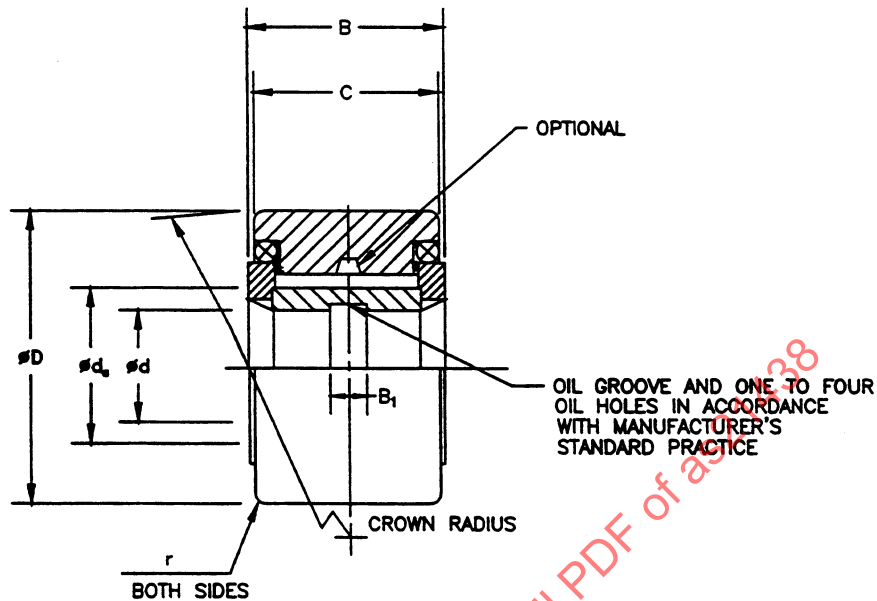


TABLE I. DIMENSIONS

Dash No.	ϕd Bore	ϕD Outer Ring Outside Diameter	C Outer Ring Width	B Overall Width	ϕd_o Clamping Diameter Min	r Rad Min 1/	B ₁ Lubrication Groove Width	Crown Radius Ref.	Total Capacity Clearance Max.	Capacity As a Track Roller Lb.	Track Capacity 40 HRC lb.	Limit Load Rating 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	0.672	0.022	0.188	10.000	0.0018	2700	1000	3600	0.10
-108	.5000	1.3125	.580	0.625	0.844	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	1.109	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	5350	19300	0.75
-120	1.2500	2.5000	1.200	1.250	1.625	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	0.0018	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

TABLE II. TOLERANCE VALUES.

Dimensions in inches

-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_1		-D Basic Outside Dia.		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	+0.001	-0.001	0	-0.015

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. 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, WITH A THICKNESS OF .0003 TO .0006 INCHES.
- c. ENDPLATES - ALL EXPOSED SURFACES ZINC-NICKEL IN ACCORDANCE AMS 2417, TYPE 2, OR CADMIUM PLATED IN ACCORDANCE WITH QQ-P-416, TYPE I, 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 PART NUMBER SHALL CONSIST OF THE BASIC SPECIFICATION SHEET NUMBER FOLLOWED BY A DASH NUMBER TAKEN FROM TABLE I. WHEN BLACK OXIDE COATING IS REQUIRED, THE DASH NUMBER SHALL BE FOLLOWED BY THE LETTER "B".

EXAMPLES: MS21438-103, MS21438-103G.

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.