

**REV.
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AS21438

FEDERAL SUPPLY CLASS
3110

NOTICE

THIS DOCUMENT INCLUDES CADMIUM AS A PLATING MATERIAL. THE USE OF CADMIUM HAS BEEN RESTRICTED AND/OR BANNED FOR USE IN MANY COUNTRIES DUE TO ENVIRONMENTAL AND HEALTH CONCERNS. THE USER SHOULD CONSULT WITH LOCAL OFFICIALS ON APPLICABLE HEALTH AND ENVIRONMENTAL REGULATIONS REGARDING ITS USE.

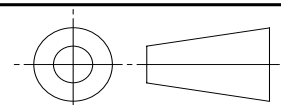
UNDER DEPARTMENT OF DEFENSE POLICIES AND PROCEDURES, ANY QUALIFICATION REQUIREMENTS AND ASSOCIATED QUALIFIED PRODUCTS LISTS ARE MANDATORY FOR DOD CONTRACTS. ANY REQUIREMENT RELATING TO QUALIFIED PRODUCTS LISTS (QPL'S) HAS NOT BEEN ADOPTED BY SAE AND IS NOT PART OF THIS TECHNICAL REPORT.

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: AS39901.

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THIRD ANGLE PROJECTION



CUSTODIAN: AIRFRAME CONTROL BEARINGS GROUP

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

(R) BEARING, ROLLER, NEEDLE, SINGLE ROW,
HEAVY DUTY, TRACK ROLLER, SEALED, TYPE V
ANTIFRICTION, INCH

AS21438
SHEET 1 OF 4

**REV.
A**

ISSUED 1998-07 REVISED 2005-07

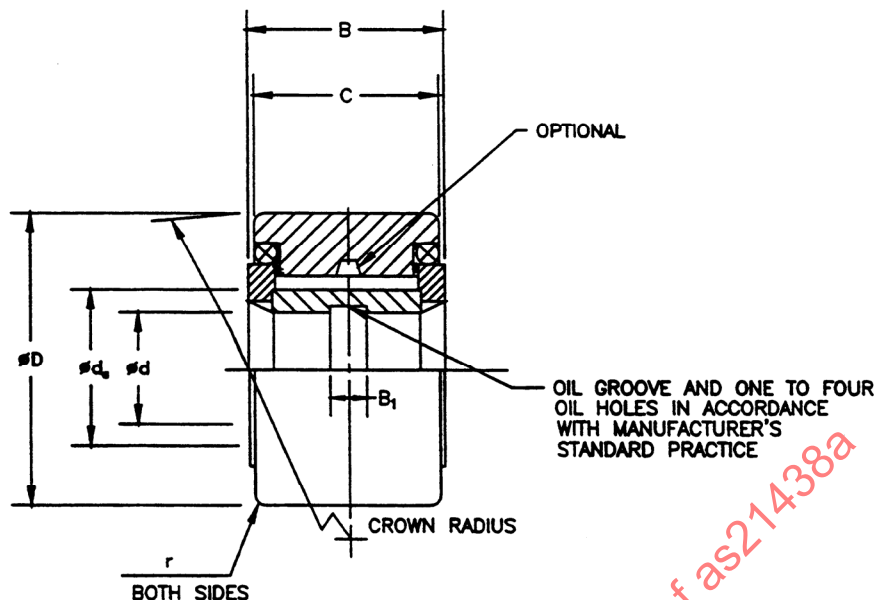


TABLE I. DIMENSIONS

Dash No.	—d Bore	—D Outer Ring Outside Diameter	C Outer Ring Width	B Overall Width	—d _a 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. INNER RING, OUTER RING AND NEEDLES: 52100 STEEL PER AMS 6440, AMS 6444, AMS 6447, OR ASTM A295.
- b. ENDWASHERS: 52100 STEEL PER AMS 6440, AMS 6444, AMS 6447 OR ASTM A295; AISI 1074 STEEL PER ASTM A684
- c. SEALS AND BACKING RINGS - ACETAL RESIN PER ASTM D 4181 POM 111 OR NYLON PER L-P-410, TYPE 6/6, WEAR RESISTANT GRADE, OR POLYESTER ELASTOMER. CONSTRUCTION OPTIONAL.
- d. RETAINING RINGS: BRASS (OPTIONAL)

2. HEAT TREAT:

- a. OUTER RING: HARDEN AND TEMPER TO 58-62 HRC
- b. INNER RING: HARDEN AND TEMPER TO 60-64 HRC OR INDUCTION HARDEN TO 60-64 HRC FOR .015 MINIMUM DEPTH AND 50 HRC AT .030 MINIMUM DEPTH.
- c. NEEDLES: HARDEN AND TEMPER TO 60-64 HRC
- d. ENDWASHERS: HARDEN AND TEMPER TO 51-56 HR

3. FINISH OR PLATING:

- a. OUTER RING - OUTER RING CHROME PLATED PER AMS-QQ-C-320, CLASS 2. O.D. AND O.D. CORNERS .0004 - .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 AMS-QQ-P-416, TYPE 1, CLASS 2. WITH A THICKNESS OF .0003 TO .0006 INCHES. OPTIONAL INNER RING FINISH BLACK OXIDE PER MIL-DTL-13924
- c. ENDPLATES - ALL EXPOSED SURFACES ZINC-NICKEL IN ACCORDANCE AMS 2417, TYPE 2, OR CADMIUM PLATED IN ACCORDANCE WITH AMS-QQ-P-416, TYPE I, CLASS 2, WITH A THICKNESS OF .0003 INCHES TO .0006 INCHES.

4. LUBRICANT: MIL-PRF-81322 OR MIL-PRF-23827. ALL BEARINGS SHALL BE PREPACKED WITH GREASE CONFORMING TO MIL-PRF-81322 UNLESS OTHERWISE SPECIFIED. IF MIL-PRF-23827 IS REQUIRED, ADD THE SUFFIX G TO THE MS PART NUMBER.