

REV.  
B

RATIONALE

AS21439 REV. B IS A FIVE YEAR REVIEW. UPDATED SPECIFICATIONS TO CURRENT REQUIREMENTS. ADDED ZINC-NICKEL PLATING CODE. ADDED SURFACE FINISH REQUIRMENTS. ADDED CODE FOR TYPE 2 GREASE.

NOTICE

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.

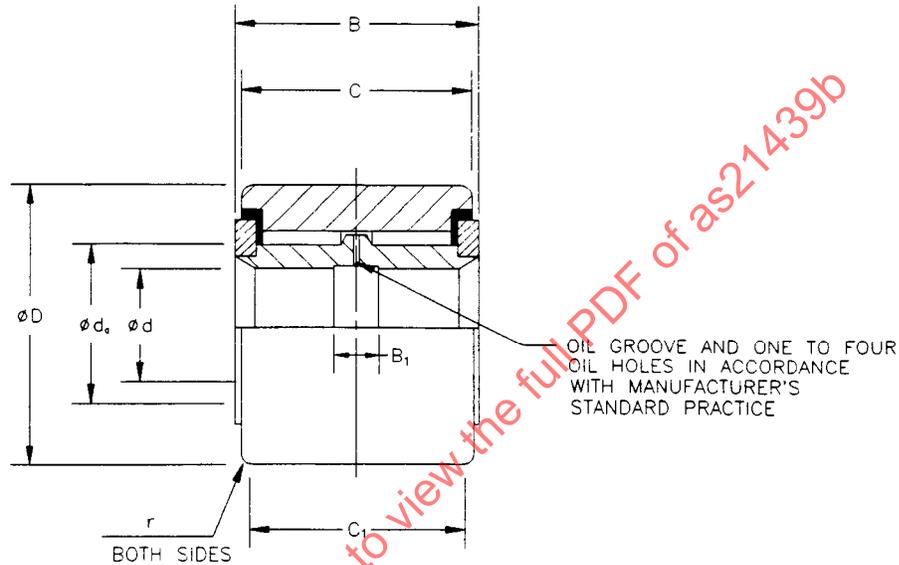


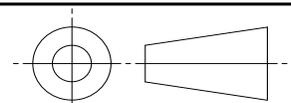
FIGURE 1

TABLE 1 - DIMENSIONS IN INCHES

DASH NO.	Ød BORE	ØD OUTSIDE DIA	C OUTER RING WIDTH	B OVERALL WIDTH	Ød <sub>c</sub> CLAMPING DIA MIN	r RAD MIN.	B <sub>1</sub> LUBRICATION GROOVE WIDTH	C <sub>1</sub> MIN TRACK CONTACT WIDTH	CAPACITY AS A TRACK ROLLER LBS.	TRACK CAPACITY 40 HRC LBS.	LIMIT LOAD LBS.	MASS (APPROX.) LBS.
-106	.3750	1.1250	.940	1.000	.672	.022	.188	.750	5370	2600	7130	.24
-108	.5000	1.3750	1.190	1.250	.891	.032	.250	1.000	9370	4250	12500	.44
-110	.6250	1.6250	1.440	1.500	1.109	.032	.375	1.125	15000	5650	19900	.73
-112	.7500	1.8750	1.690	1.750	1.281	.032	.375	1.375	21400	7950	28500	1.13
-114	.8750	2.1250	1.940	2.000	1.469	.032	.375	1.625	28900	10650	38500	1.63
-116	1.0000	2.3750	2.190	2.250	1.578	.032	.375	1.797	33600	13200	44900	2.31
-120	1.2500	2.7500	2.440	2.500	1.844	.032	.375	2.047	44600	17300	59500	3.26
-124	1.5000	3.0000	2.690	2.750	1.984	.032	.375	2.297	53600	21200	71300	4.33
-128	1.7500	3.4375	2.940	3.000	2.281	.032	.375	2.547	69000	27000	92000	6.09
-132	2.0000	3.8750	2.940	3.000	2.562	.032	.375	2.547	76600	30400	102000	7.35

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/AS21439B>

THIRD ANGLE PROJECTION



CUSTODIAN: AIRFRAME CONTROL BEARINGS GROUP

PROCUREMENT SPECIFICATION: NONE

**SAE Aerospace**  
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**AEROSPACE STANDARD**  
BEARING, ROLLER, NEEDLE, DOUBLE ROW, HEAVY DUTY, TRACK ROLLER, SEALED, TYPE VI, INCH

**SAE AS21439**  
SHEET 1 OF 3

**REV. B**

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ISSUED 1998-07 REVISED 2012-03

TABLE 2 - TOLERANCE VALUE

DIMENSIONS IN INCHES															
∅d BASIC BORE		ALLOWABLE DEVIATION FROM d OF SINGLE MEAN DIAMETER d <sub>mp</sub>				ALLOWABLE DEVIATION FROM OVERALL WIDTH B		ALLOWABLE DEVIATION FROM LUBRICATION GROOVE WIDTH B <sub>1</sub>		∅D BASIC OUTER RING OUTSIDE DIA		ALLOWABLE DEVIATION FROM D OF SINGLE MEAN DIAMETER D <sub>mp</sub>		ALLOWABLE DEVIATION FROM OUTER RING WIDTH C	
OVER	INCL	HIGH	LOW	HIGH	LOW	HIGH	LOW	OVER	INCL	HIGH	LOW	HIGH	LOW		
.2500	2.0000	.0000	-.0007	.0000	-.010	.0000	-.062	1.0000	3.8750	+.001	-.001	.0000	-.005		

1. MATERIAL:

- a. INNER RING, OUTER RING, AND NEEDLES: 52100 STEEL PER AMS6440, AMS6444, AMS6447 OR ASTM A295.
- b. ENDWASHERS: 52100 STEEL PER AMS6440, AMS6444, AMS6447 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 INCH MINIMUM DEPTH AND 50 HRC AT .030 INCH MINIMUM DEPTH.
- c. NEEDLES: HARDEN AND TEMPER TO 60-64 HRC
- d. ENDWASHERS: HARDEN AND TEMPER TO 51-56 HRC.

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 TO .0010 INCH THICKNESS, FACES MINIMUM .0003 IN THICKNESS.
- b. INNER RING - ALL EXTERNAL SURFACES BLACK OXIDE PER MIL-DTL-13924.
- c. ENDPLATES - ALL EXPOSED SURFACES ZINC-NICKEL PLATED IN ACCORDANCE 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. IF ZINC-NICKEL PLATING IS REQUIRED, ADD THE LETTER "E" AFTER THE MS21439 DASH NUMBER. NO CODE DESIGNATES CADMIUM PLATING.

4. SURFACE TEXTURE:

- RACEWAYS -- 16 MICROINCHES MAXIMUM Ra
- BORE AND O.D. -- 40 MICROINCHES MAXIMUM Ra
- NEEDLE O.D. -- 8 MICROINCHES MAXIMUM Ra

5. LUBRICANT: MIL-PRF-81322 OR MIL-PRF-23827. ALL BEARINGS SHALL BE PREPACKED WITH GREASE CONFORMING TO MIL-PRF-81322 UNLESS OTHERWISE SPECIFIED. ALL BEARINGS SHALL BE FILLED 80% MINIMUM WITH GREASE. IF MIL-PRF-23827 TYPE 1 GREASE IS REQUIRED, ADD THE SUFFIX "G" TO THE MS DASH NUMBER. IF MIL-PRF-23827 TYPE 2 GREASE IS REQUIRED, ADD THE SUFFIX "J" TO THE MS21439 DASH NUMBER.

6. MARKING: THE MARKING SHALL CONSIST OF THE MS PART NUMBER AND THE MANUFACTURER'S CAGE CODE MARKED IN ACCORDANCE WITH MIL-STD-130. AND A LOT CONTROL NUMBER IF SPACE IS AVAILABLE.

 An SAE International Group	<b>AEROSPACE STANDARD</b>	<b>SAE AS21439</b> SHEET 2 OF 3	<b>REV.</b> <b>B</b>
	BEARING, ROLLER, NEEDLE, DOUBLE ROW, HEAVY DUTY, TRACK ROLLER, SEALED, TYPE VI, INCH		