

REV. B

AS21447

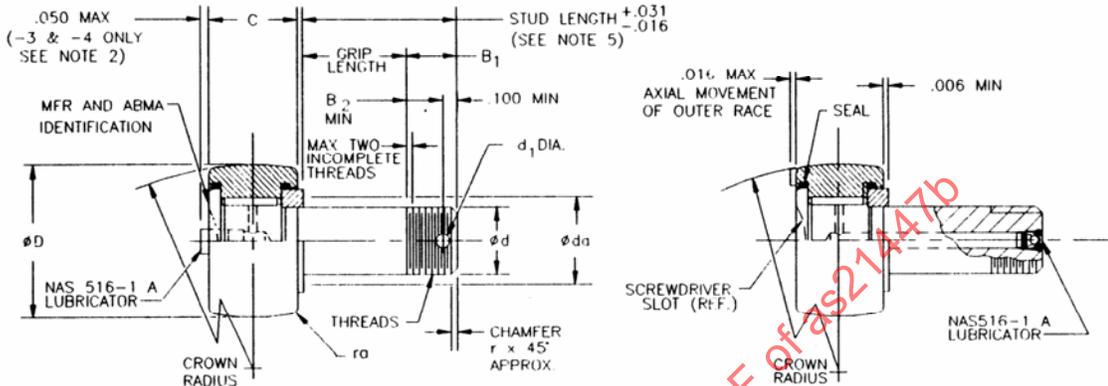
FEDERAL SUPPLY CLASS
3110

RATIONALE

AS21447 REV. B IS A FIVE YEAR REVIEW. UPDATED SPECIFICATIONS TO CURRENT REQUIREMENTS. ADDED ZINC-NICKEL PLATING CODE. ADDED SURFACE FINISH REQUIREMENTS.

NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS39901.



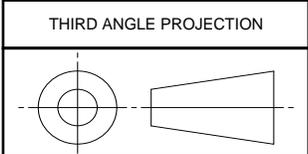
FIRST DASH NO.	Ø d STUD DIA.	Ø D OUTER RING OUTSIDE DIA.	C OUTER RING WIDTH	CROWN RADIUS (REF)	THREAD SIZE UNJF-3A	B ₁ THREAD LENGTH REF.	Ø d ₁ CLAMPING DIA. MIN.	B ₂ MIN.	Ø d ₁ COTTER PIN HOLE DIA.	r _s RAD MIN.	r	TOTAL RADIAL PLAY MAX.	LIMIT LOAD RATING lb _y	1/ lb-in MAX.	TRACK CAPACITY 40 HRC lb _y	LOAD RATING AS A TRACK ROLLER lb _y	MASS (APPROX) lb
-3	.1900	.5000	.281	10	.1900-32	.344	.297	.211	.070	.022	.031	.0017	790	8	385	395	.014 + (GRIPLENGTH NO. x .0005)
-4	.2500	.6875	.281	10	.2500-28	.344	.359	.224	.070	.022	.031	.0017	940	20	525	470	.031 + (GRIPLENGTH NO. x .0009)
-5	.3125	.7500	.344	10	.3125-24	.359	.422	.234	.076	.022	.047	.0017	1660	42	725	830	.043 + (GRIPLENGTH NO. x .0014)
-6	.3750	.8750	.489	10	.3750-24	.359	.500	.266	.106	.032	.047	.0017	2720	55	1100	1360	.081 + (GRIPLENGTH NO. x .0020)
-7	.4375	1.0000	.531	10	.4375-20	.422	.562	.283	.106	.032	.047	.0017	3860	150	1425	1930	.125 + (GRIPLENGTH NO. x .0026)
-8	.5000	1.1250	.656	10	.5000-20	.422	.625	.314	.106	.046	.047	.0017	6080	205	1975	3040	.190 + (GRIPLENGTH NO. x .0035)

1/ INSTALLATION TORQUE LUBRICATED THREADS.

TABLE 2 - TOLERANCE VALUES

Ø d BASIC STUD DIA.		ALLOWABLE DEVIATION FROM d OF SINGLE MEAN DIA., d _{mp}		ALLOWABLE DEVIATION FROM COTTER PIN DIA., d ₁		Ø D BASIC OUTER RING OUTSIDE DIA.		ALLOWABLE DEVIATION FROM D OF SINGLE MEAN DIA., D _{mp}		ALLOWABLE DEVIATION FROM OUTER RING WIDTH C	
OVER	INCL	HIGH	LOW	HIGH	LOW	OVER	INCL	HIGH	LOW	HIGH	LOW
.1250	.5000	+0	-.0015	+0.010	-0	.4375	1.1250	+0.0010	-.0005	+0	-.005

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CUSTODIAN: ACBG		PROCUREMENT SPECIFICATION: AS39901		
	AEROSPACE STANDARD		AS21447 SHEET 1 OF 4	REV. B
	(R) BEARING, ROLLER, NEEDLE, TRACK ROLLER, CROWN RADIUS O.D. INTEGRAL STUD, TYPE VII ANTIFRICTION, INCH			

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ISSUED 1998-07 REVISED 2015-02

REQUIREMENTS:

1. MATERIAL:

OUTER RING AND NEEDLES: 52100 STEEL PER AMS6440, AMS6444, AMS6447, OR ASTM A295/A295M.

STUD: 52100 STEEL PER AMS6440 OR 8620 STEEL PER AMS6274.

ENDWASHER: 52100 STEEL PER AMS6440 OR 1010, 1018, 1117 OR 1231 STEEL PER AMS-STD-66.

SEALS: POLYAMIDE (NYLON) PER L-P-410, TYPE 6/6 WEAR RESISTANT GRADE OR ACETAL COPOLYMER WITH LUBRICANT FILLERS PER ASTM D6778, OR THERMOPLASTIC POLYESTER ELASTOMER WITH ADDITIVES.

2. HEAT TREAT:

OUTER RING: HARDEN AND TEMPER TO 58-62 HRC.

NEEDLES: HARDEN AND TEMPER TO 60-64 HRC.

ENDWASHER: HARDEN AND TEMPER TO 52-56 HRC. 1010, 1018, 1117, OR 1213 HARDENED TO A DEPTH OF .005 MINIMUM WITH A SURFACE HARDNESS OF 51-59 HRC ON THE WEAR SURFACE. REMAINDER MAY BE SOFTENED FOR MANUFACTURING.

STUD (RACEWAY): CARBURIZE WITH A SURFACE HARDNESS OF 60 HRC MINIMUM OR INDUCTION HARDEN TO 60 HRC MINIMUM.

STUD (FLANGE): SURFACE HARDNESS 51 HRC MINIMUM.

STUD (SHANK): HARDEN AND TEMPER TO 36-46 HRC.

3. FINISH OR PLATING:

OUTER RING: CHROME PLATE PER AMS2460, CLASS 2. O.D. AND CORNERS .0004 TO .0010 INCH THICKNESS. FACES MINIMUM .0003 INCH THICKNESS.

ENDWASHER: ALL EXPOSED SURFACES ZINC-NICKEL IN ACCORDANCE WITH AMS2417, TYPE 2, GRADE B, OR CADMIUM PLATED IN ACCORDANCE WITH AMS-QQ-P-416, TYPE I, CLASS 2, WITH A THICKNESS OF .0003 TO .0006 INCH.

STUD: ALL EXPOSED SURFACES ZINC-NICKEL IN ACCORDANCE WITH AMS2417, TYPE 2, OR CADMIUM PLATED IN ACCORDANCE WITH AMS-QQ-P-416, TYPE I, CLASS 2, WITH A THICKNESS OF .0003 TO .0006 INCH.

IF ZINC-NICKEL PLATING IS REQUIRED ON ENDWASHER AND STUD, ADD THE LETTER "E" AFTER THE MS21447 GRIP LENGTH DESIGNATOR. NO CODE DESIGNATES CADMIUM PLATING IS REQUIRED.

4. MARKING: THE MARKING SHALL CONSIST OF THE MS PART NUMBER AND THE MANUFACTURERS CAGE CODE MARKED IN ACCORDANCE WITH MIL-STD-130 AND LOT CONTROL NUMBER IF SPACE IS AVAILABLE.

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	AEROSPACE STANDARD	AS21447 SHEET 2 OF 4	REV. B
	(R) BEARING, ROLLER, NEEDLE, TRACK ROLLER, CROWN RADIUS O.D. INTEGRAL STUD, TYPE VII ANTIFRICTION, INCH		

5. PART NUMBER: THE PART NUMBER SHALL CONSIST OF THE MS SPECIFICATION NUMBER FOLLOWED BY A DASH NUMBER TAKEN FROM THE TABLE AND THE APPLICABLE SUFFIXES.

EXAMPLE OF PART NUMBER –



6. LUBRICANT: MIL-PRF-23827 TYPE I OR MIL-PRF-81322. ALL BEARINGS SHALL BE PREPACKED WITH GREASE CONFORMING TO MIL-PRF-23827 TYPE I UNLESS OTHERWISE SPECIFIED. IF MIL-PRF-81322 IS REQUIRED, ADD THE SUFFIX "G" TO THE MS PART NUMBER.
7. PACKAGING: BEARINGS SHALL BE INDIVIDUALLY PACKAGED TO THE REQUIREMENTS OF MIL-DTL-197. PACKAGE MARKED WITH MANUFACTURER'S NAME OR TRADEMARK, AND DATE OF LUBRICATION BY MONTH AND YEAR AND LOT CONTROL NUMBER.
8. TEMPERATURE:

OPERATING TEMPERATURE RANGE -65 TO 250 °F FOR MIL-PRF-23827 LUBRICATED BEARINGS.

OPERATING TEMPERATURE RANGE -65 TO 350 °F FOR MIL-PRF-81322 LUBRICATED BEARINGS.

9. SURFACE FINISH:

STUD GRIP AREA -- 32 MICROINCHES RA MAXIMUM
 STUD BEARING RACEWAY -- 16 MICROINCHES RA MAXIMUM
 OUTER RING ID -- 40 MICROINCHES RA MAXIMUM
 OUTER RING OD -- 32 MICROINCHES RA MAXIMUM
 ENDWASHER INSIDE FACE -- 64 MICROINCHES RA MAXIMUM
 NEEDLES -- 8 MICROINCHES RA MAXIMUM

	AEROSPACE STANDARD	AS21447 SHEET 3 OF 4	REV. B
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