

REV.
B

AS21432

FEDERAL SUPPLY CLASS
3110

RATIONALE

AS21432 REV. B IS A FIVE YEAR REVIEW. UPDATED SPECIFICATIONS TO CURRENT REQUIREMENTS. ADDED ZINC-NICKEL PLATING CODE. ADDED SURFACE FINISH REQUIREMENTS.

NOTICE

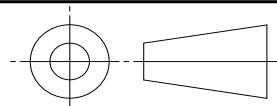
UNDER DEPARTMENT OF DEFENSE POLICIES AND PROCEDURES, ANY QUALIFICATION REQUIREMENTS AND ASSOCIATED QUALIFIED PRODUCT LISTS ARE MANDATORY FOR DOD CONTRACTS. ANY REQUIREMENT RELATING TO QUALIFIED PRODUCT LISTS (QPL'S) HAS NOT BEEN ADOPTED BY SAE AND IS NOT A PART OF THIS TECHNICAL REPORT.

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

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THIRD ANGLE PROJECTION



CUSTODIAN: ACBG/ROLLING ELEMENT SUBCOMMITTEE

PROCUREMENT SPECIFICATION: AS39901

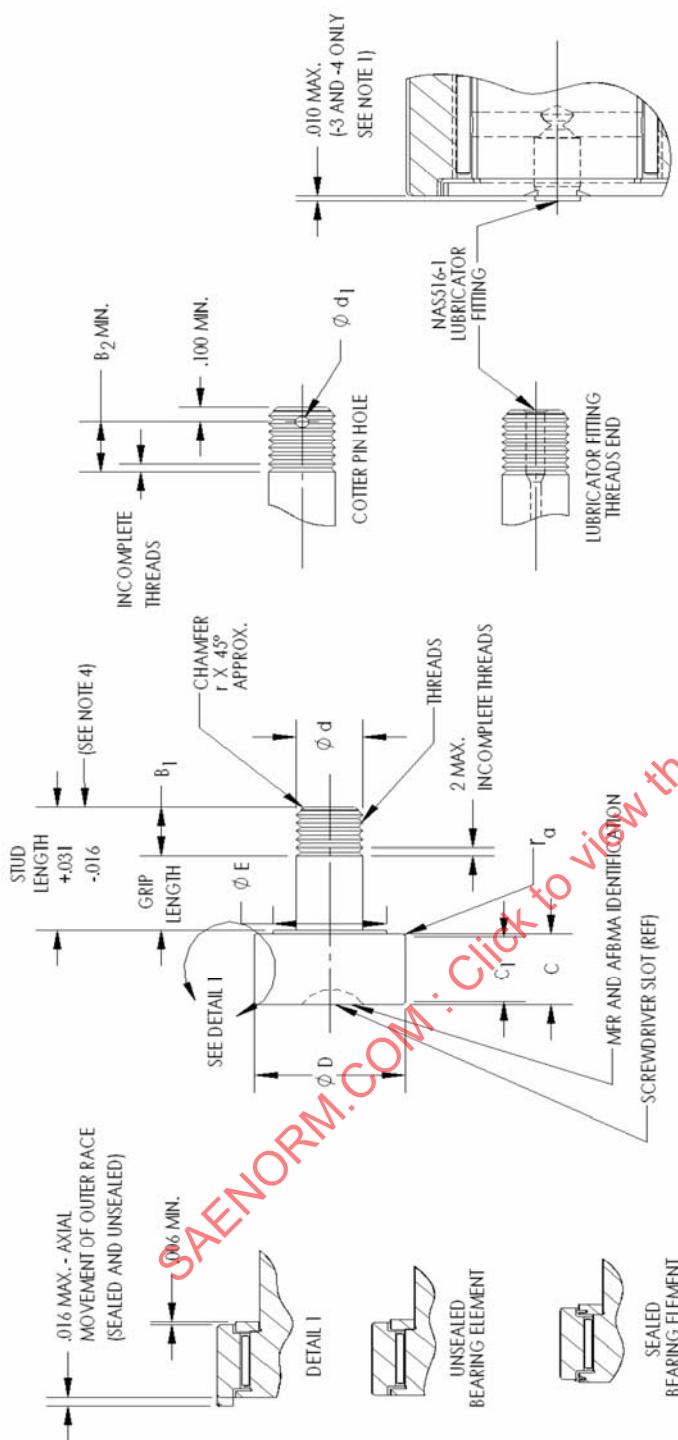


AEROSPACE STANDARD

(R) BEARING, ROLLER, NEEDLE, TRACK ROLLER,
INTEGRAL STUD, TYPE VII,
ANTIFRICTION, INCH

AS21432
SHEET 1 OF 5

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B



FIRST DASH NO.	$\varnothing d$ STUD	$\varnothing D$ OUTER RING OUTSIDE DIA.	C ₁ OUTER RING CONTACT WIDTH MIN.	THREAD SIZE UNJF-3A	THREAD LENGTH REF.	B_1	$\varnothing E$ MIN.	B_2 MIN.	$\varnothing d_1$ COTTER PIN MALE	r RAD. MIN.	TOTAL RADIAL PLAY MAX.		LIMIT LOAD RATING lb _r	1/ lb-in MAX.	TRACK CAPACITY 40 HRC lb _r	LOAD RATING AS A TRACK ROLLER lb _r	MASS (APPROX) lb
											lb _r	lb _r					
-3	.1900	.5000	.281	.230	.1900-32	.344	.297	.211	.070	.022	.031	.00117	.790	.8	385	395	
-4	.2500	.6875	.281	.230	.2500-28	.344	.359	.224	.076	.022	.031	.00117	.940	.20	525	470	
-5	.3125	.7500	.344	.290	.3125-24	.359	.422	.234	.076	.022	.047	.00117	1660	.42	725	830	
-6	.3750	.8750	.469	.380	.3750-24	.359	.500	.265	.106	.032	.047	.00117	2720	.55	1100	1360	
-7	.4375	1.0000	.531	.430	.4375-20	.422	.562	.283	.106	.032	.047	.00117	3860	.150	1425	1930	
-8	.5000	1.1250	.656	.530	.5000-20	.422	.625	.314	.106	.046	.047	.00117	6080	.205	1975	3040	

1/INSTALLATION TORQUE LUBRICATED THREADS

	AEROSPACE STANDARD (R) BEARING, ROLLER, NEEDLE, TRACK ROLLER, INTEGRAL STUD, TYPE VII, ANTIFRICTION, INCH		AS21432 SHEET 2 OF 5	REV. B

TABLE 2 - TOLERANCE VALUE

$\varnothing d$ BASIC STUD DIA.		ALLOWABLE DEVIATION FROM d OF SINGLE MEAN DIA., d_{mp}		ALLOWABLE DEVIATION FROM COTTER PIN DIA., d_1	
OVER	INCL	HIGH	LOW	HIGH	LOW
.1250	.5000	+0	-.0015	.010	-0

$\varnothing D$ BASIC 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
.4375	1.1250	+.0010	-.0005	+0	-.005

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 1213 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 HR_C.

NEEDLES: HARDEN AND TEMPER TO 60-64 HR_C.

ENDWASHERS: HARDEN AND TEMPER TO 52-56 HR_C. 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 TO 36-46 HR_C.

3. FINISH OR PLATING:

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

ENDWASHERS: 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, GRADE B 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 MS21432 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 A LOT CONTROL NUMBER IF SPACE IS AVAILABLE.

5. 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.

6. 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.

	AEROSPACE STANDARD		AS21432 SHEET 3 OF 5	REV. B
	(R) BEARING, ROLLER, NEEDLE, TRACK ROLLER, INTEGRAL STUD, TYPE VII, ANTIFRICTION, INCH			

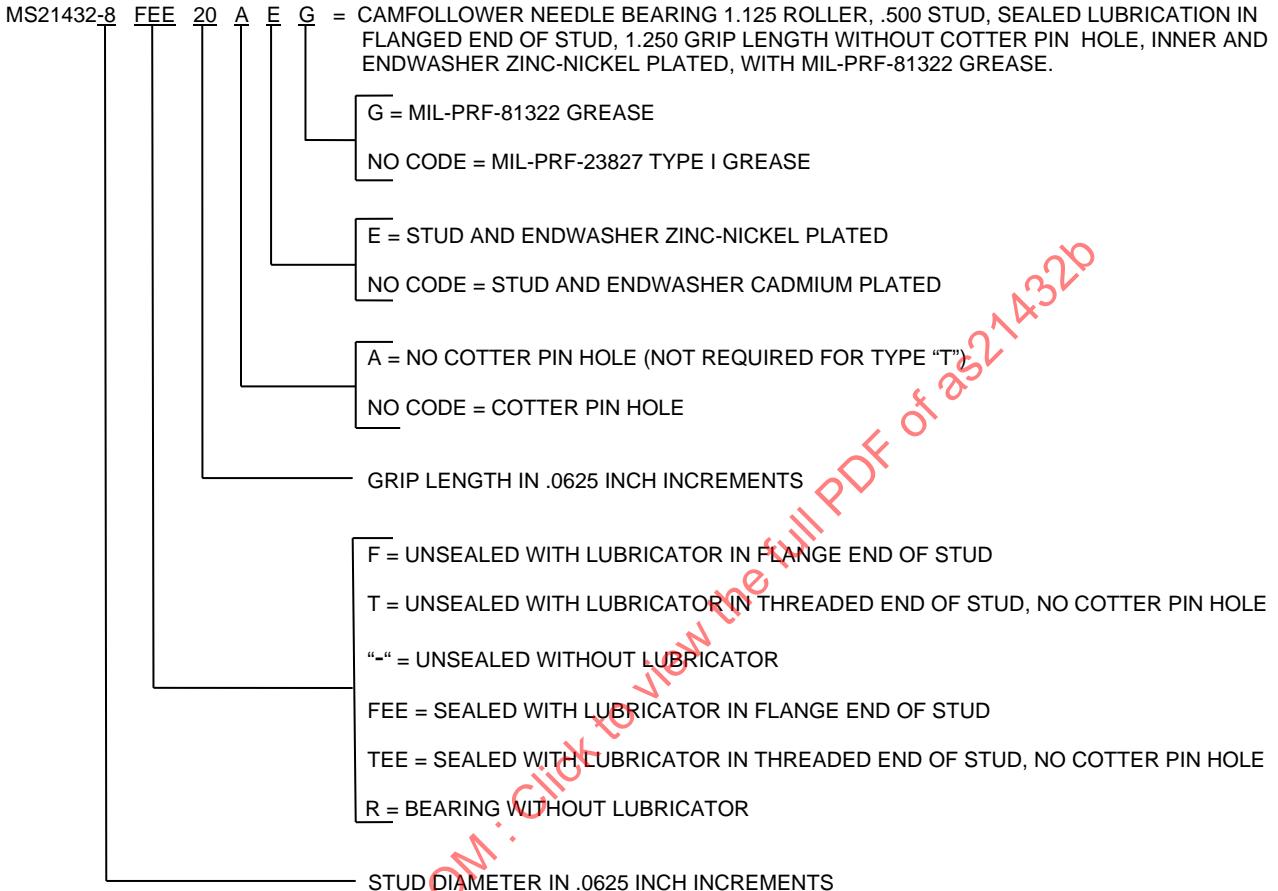
7. TEMPERATURE:

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.

8. 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:



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

NOTES:

NOTICE

THIS DOCUMENT REFERENCES A PART WHICH CONTAINS CADMIUM AS A PLATING MATERIAL. CONSULT LOCAL OFFICIALS IF YOU HAVE QUESTIONS CONCERNING CADMIUM'S USE.

1. MS21432-3 MAY BE CODED FOR LUBRICATION FACILITIES IN THE FLANGED END ONLY. LUBRICATION FITTING FOR THE MS21432-3 MAY BE SHIPPED SEPARATELY AND INSTALLED ON ASSEMBLY. LUBRICATORS INSTALLED IN THE THREADED END OF STUD SHALL BE FLUSH. LUBRICATORS INSTALLED IN THE FLANGED END OF STUD ON MS21432-3 AND -4 MAY EXTEND .05 INCH BEYOND THE FLANGED END THEREBY NECESSITATING AN INCREASE OF .05 INCH, ON ALL OTHER SIZES THE LUBRICATOR SHALL BE FLUSH OR INDENTED.

	AEROSPACE STANDARD (R) BEARING, ROLLER, NEEDLE, TRACK ROLLER, INTEGRAL STUD, TYPE VII, ANTIFRICTION, INCH	AS21432 SHEET 4 OF 5	REV. B