

REV.
A

SAE AS21440

FEDERAL SUPPLY CLASS
3110

RATIONALE

AS21440 REV A IS A FIVE YEAR REVIEW AND UPDATE OF THIS SPECIFICATION. FIGURE AND TABLES REFORMATTED, CAD PLATE WARNING ADDED, MATERIALS AND HEAT TREATMENTS CLARIFIED.

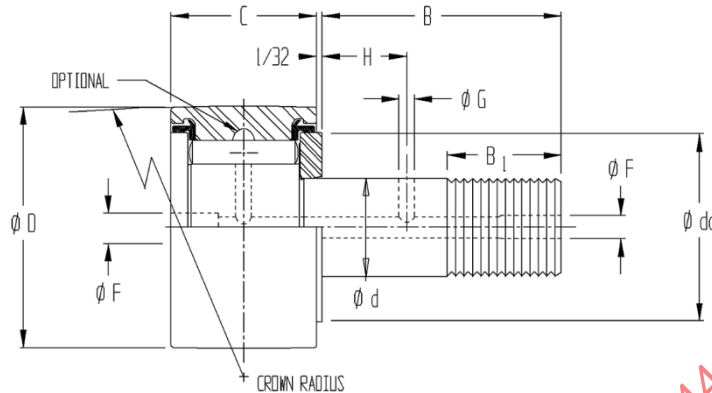


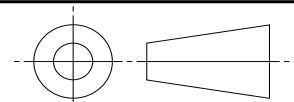
FIGURE 1 - PART CONFIGURATION

TABLE 1 - DIMENSIONS

DASH NO.	Ø D STUD DIA.	Ø D OUTSIDE DIA.	C OUTER RING WIDTH	B STUD LENGTH	B ₁ MINIMUM PERFECT THREAD LENGTH	THREADS UNF - 3A	OIL HOLE		Ø F LUB FITTING SIZE	CROWN RADIUS REF.	Ø d _a CLAMPING DIA. MIN.	TORQUE lbs.-in. MAX. 1/	CAPACITY AS A TRACK ROLLER	TRACK CAPACITY HR ₄₀ lb _f	LIMIT LOAD RATING lb _f	MASS (APPROX) lbs.	
							Ø G HOLE DIA.	H HOLE CENTER									
-080	.1900	.5000	.344	.500	.2500	10 - 32	.125	.125	.125*	6	.30	8	600	460	600	.02	
-081		.5625	.375	.625						7			700	508	700		
-091			575							1000			657	1000			
-101	.2500	.6250	.406	.750	.3125	1/4 - 28	.125	.125	.188	8	.36	10	1100	718	1100	.05	
-102		.6875	.438	.750						12			1100	865	1100		
-111			1030							2000			1030	2000			
-121	.3750	.7500	.500	.875	.3750	3/8 - 24	.125	.125	.188	10	.50	55	2000	1160	2000	.10	
-141		.8750	.625	1.000						12			2900	1480	2900		
-161			1.0000							.625			1.000	14	4100		2330
-181	.4375	1.1250	.750	1.250	.6250	1/2 - 20	.125	.312	.188	12	.64	150	2900	1670	2900	.20	
-201		1.2500	.750	1.250						14			205	4100	2570		4100
-221		1.3750	.875	1.500						20			390	5500	3380		5500
-241	.6250	1.5000	.875	1.500	.7500	5/8 - 18	.157	.375	.188	14	.77	205	4100	2570	4100	.35	
-261		1.6250	.875	1.500						20			5500	3660	5500		
-281		1.7500	1.000	1.750						24			7700	4500	7700		
-301	.7500	1.8750	1.250	2.000	1.0000	3/4 - 16	.157	.438	.188	16	1.05	750	7700	4820	7700	.95	
-321		2.0000	1.250	2.000						24			900	10400	6550		10400
-361		2.2500	1.500	2.250						30			1350	16200	9250		16200
-401	1.0000	2.5000	1.500	2.250	1.1250	1 - 14	.188	.562	.188	18	1.20	900	10400	7370	10400	1.67	
-441		2.7500	1.750	2.500						24			1350	16200	9250		16200
-481		3.0000	1.750	2.500						30			2050	24600	13400		24600
-521	1.2500	3.2500	2.000	2.750	1.2500	1 1/4 - 12	.188	.625	.250	20	.89	390	5500	3660	5500	.61	
-561		1.3750	2.000	2.750						24			7700	4500	7700		
-641		1.5000	2.250	3.500						30			3000	41000	24100		41000
* OIL HOLE "F" DRILLED FROM THE FLANGE END OF THE STUD TO THE RADIAL OIL HOLE ONLY.																	
1/16" INSTALLATION TORQUE LUBRICATED THREADS.																	

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/AS21440A>

THIRD ANGLE PROJECTION



CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS39901

SAE Aerospace
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AEROSPACE STANDARD
(R) BEARING, ROLLER, NEEDLE, TRACK ROLLER
INTEGRAL STUD, SEALED, TYPE VIII
ANTIFRICTION, INCH

SAE AS21440
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TABLE 2 - TOLERANCE LIMITS

ϕ d BASIC STUD DIAMETER		ALLOWABLE DEVIATION FROM d OF SINGLE MEAN DIA., d _{mp}		ϕ D BASIC OUTER RING OUTSIDE DIAMETER		ALLOWABLE DEVIATION FROM D OF SINGLE MEAN DIA, D _{mp}		ALLOWABLE DEVIATION FROM OUTER RING WIDTH, C	
OVER	INCL	HIGH	LOW	OVER	INCL	HIGH	LOW	HIGH	LOW
.1250	1.5000	+.0015	-.0000	.4375	4.0000	+.0020	-.0005	+.005	-.005

REQUIREMENTS

1. MATERIAL:

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

STUD: 52100 STEEL PER AMS6440, AMS6444, AMS6447 OR ASTM A295/A295M OR AISI 8620 STEEL PER AMS6274.

ENDWASHER: 52100 STEEL PER AMS6440, AMS6444, AMS6447 OR ASTM A295/A295M, AISI 1070-1095 PER ASTM A108 OR AISI 1010, 1018, 1117 OR 1231 STEEL PER AMS-STD-66.

SEALS: ACETAL RESIN PER ASTM D6778 POM 111 OR NYLON PER L-P-410, OR PTFE PER AMS3652, OR PTFE IMPREGNATED FIBERGLASS PER AMS3666.

2. HEAT TREAT:

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

NEEDLES: HARDEN AND TEMPER TO 60-64 HRC.

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.

ENDWASHER: HARDEN AND TEMPER TO 52-56 HRC EXCEPT AISI 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.

3. FINISH OR PLATING:

- OUTER RING - OUTER RING CHROME PLATED PER AMS-QQ-C-320 CLASS 2, OR AMS2460, CLASS 2. OD AND OD CORNERS .0004 TO .0010 INCH THICKNESS, FACES MINIMUM .0003 INCH THICKNESS.
- STUD - ALL EXTERNAL SURFACES, EXCEPT THE UNTHREADED PORTION OF STUD SHANK, ZINC-NICKEL PLATED PER AMS2417, TYPE 2, GRADE B OR CADMIUM PLATED IN ACCORDANCE WITH AMS-QQ-P-416 TYPE I, CLASS 2, TO A MINIMUM THICKNESS OF .0003 INCH, MAXIMUM THICKNESS OF .0006 INCH.
- ENDPLATES - ALL EXPOSED SURFACES ZINC-NICKEL PLATED IN ACCORDANCE WITH AMS2417, TYPE 2, GRADE B OR CADMIUM PLATED IN ACCORDANCE WITH AMS-QQ-P-416 TYPE I, CLASS 2, TO A MINIMUM THICKNESS OF .0003 INCH, MAXIMUM THICKNESS OF .0006 INCH.

IF ZINC-NICKEL PLATE IS REQUIRED ADD CODE DESIGNATOR "E" AFTER THE MS21440 DASH NUMBER.

- LUBRICANT MIL-PRF-81322 OR MIL-PRF-23827 TYPE 1. ALL BEARINGS SHALL BE PREPACKED WITH GREASE CONFORMING TO MIL-PRF-81322 UNLESS OTHERWISE SPECIFIED. IF MIL-PRF-23827 TYPE 1 IS REQUIRED ADD THE LETTER "G" AFTER THE MS PART NUMBER.
- MARKING: THE MARKING SHALL CONSIST OF THE MS PART NUMBER AND THE MANUFACTURER'S IDENTIFICATION IN ACCORDANCE WITH MIL-STD-130.

 An SAE International Group	AEROSPACE STANDARD		SAE AS21440 SHEET 2 OF 3	REV. A
	(R) BEARING, ROLLER, NEEDLE, TRACK ROLLER INTEGRAL STUD, SEALED, TYPE VIII ANTIFRICTION, INCH			