FEDERAL SUPPLY CLASS
3110

RATIONALE

AS21441 REVISION B IS A FIVE-YEAR REVIEW AND UPDATE OF THIS SPECIFICATION, FIGURE AND TABLES REFORMATTED, CAD PLATE WARNING ADDED, MATERIALS AND HEAT TREATMENTS CLARIFIED.

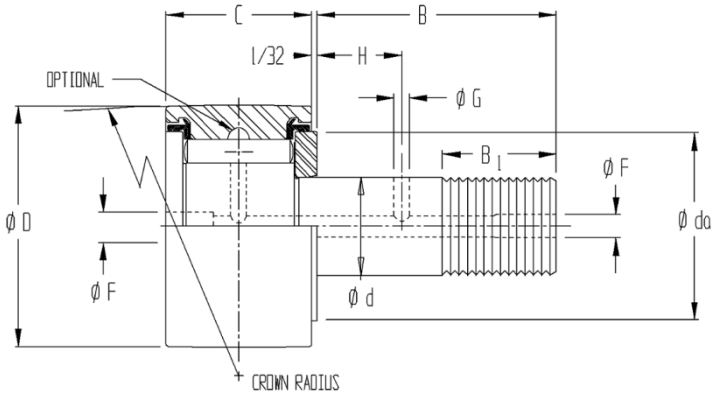


FIGURE 1

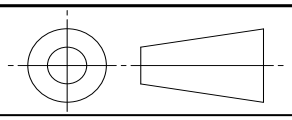
TABLE 1 - DIMENSIONS

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 G HOLE DIA.	OIL HOLE H HOLE CENTER	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_c 40 lb_f	LIMIT LOAD RATING lb_f	MASS (APPROX) lbs.
-080	.2500	.5000	.375	.625	.2500	1/4 - 28	--	--	.125*	7	.40	10	700	508	1000	.03
-091		.5625					--	--						--		.04
-101	.3125	.6250	.438	.750	.3125	5/16 - 24	--	--		8	.47	40	1100	718	1500	.05
-111		.6875					--	--						--		.06
-121	.4375	.7500	.500	.875	.3750	7/16 - 20	.094	.250	.188	10	.61	150	2000	1030	2600	.09
-141		.8750												1160		.11
-161	.6250	1.0000	.625	1.000	.5000	5/8 - 18	.125			12	.78	390	2900	1480	3900	.21
-181		1.1250												1670		.24
-201	.7500	1.2500	.750	1.250	.6250	3/4 - 16		.312		14	.97	750	4100	2330	5500	.39
-221		1.3750												2570		.44
-241	.8750	1.5000	.875	1.500	.7500	7/8 - 14	.157	.375		20	1.10	900	5500	3380	7300	.65
-261		1.6250												3660		.73
-281	1.0000	1.7500	1.000	1.750	.8750	1 - 14		.438			1.30	1350	7700	4500	10300	1.02
-301		1.8750												4828		1.38
-321	1.1250	2.0000	1.250	2.000	1.0000	1 1/8 - 12	.188	.500		24	1.45	1650	10400	6550	13800	1.59
-361		2.2500												7370		1.89
-401	1.2500		1.500	2.250	1.1250	1 1/4 - 12		.562		30	1.70	2050	16200	9250	21600	2.78
-441		2.5000												10200		3.21
-481	1.5000	2.7500	1.750	2.500	1.2500	1 1/2 - 12		.625	.250		2.10	3000	24600	13400	32800	4.58
-521		3.0000												14500		5.19
-561	1.7500	3.2500	2.000	2.750	1.3750	1 3/4 - 12		.688			2.44		31200	18300	41700	7.13
-641	2.0000	3.5000	2.250	3.500	1.5000	2 - 12		.750			2.80		41000	24100	54700	11.3

* OIL HOLE "F" DRILLED FROM THE FLANGE END OF THE STUD TO THE RADIAL OIL HOLE ONLY.

1/ INSTALLATION TORQUE LUBRICATED THREADS.

THIRD ANGLE PROJECTION



ISSUED 1999-07 REVISED 2013-01

CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS39901

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

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

TABLE 2 - TOLERANCE LIMITS

ø d BASIC STUD DIAMETER		ALLOWABLE DEVIATION FROM d OF SINGLE MEAN DIA., d_{mp}		ø D BASIC OUTER RING OUTSIDE DIAMETER		ALLOWABLE DEVIATION FROM D OFSINGLE 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	3.5000	+.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:

a. OUTER RING - OUTER RING CHROME PLATED PER AMS-QQ-C-320, CLASS 2 OR AMS2460, CLASS 2. O.D. AND O.D. CORNERS .0004 TO .0010 INCH THICKNESS, FACES MINIMUM .0003 INCH THICKNESS.

b. STUD: ALL EXTERNAL SURFACES, EXCEPT FOR THE UNTHREADED PORTION OF STUD SHANK, ZINC- NICKEL IN ACCORDANCE WITH AMS2417, TYPE 2, GRADE B, OR CADMIUM PLATED IN ACCORDANCE AMS-QQ-P-416, TYPE I, CLASS 2, .0003 TO .0006 INCH THICK.

c. ENDPLATES - 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, .0003 TO .0006 INCH THICK.

   IF ZINC-NICKEL PLATE IS REQUIRED ADD CODE DESIGNATOR “E” AFTER THE MS21441 DASH NUMBER.

4. 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-TYPE 1 IS REQUIRED, ADD THE LETTER “G” AFTER THE MS PART NUMBER.

5. MARKING: THE MARKING SHALL CONSIST OF THE MS PART NUMBER AND THE MANUFACTURER’S IDENTIFICATION IN ACCORDANCE WITH MIL-STD-130.