

REV. C

AS5929™

FEDERAL SUPPLY CLASS
3110

RATIONALE

GRAPHICS REDRAWN. MATERIAL AND FINISH NOTE REFORMATTED. PACKAGING NOTE 6 ADDED TO REQUIREMENT SECTION. EXAMPLE OF PART NUMBER NOTE 7 REFORMATTED. LOAD RATING AND TEMPERATURE NOTE MOVED TO NOTES SECTION. NOTE 4 REVISED. NOTE 5 ADDED TO CLARIFY APPLICATION OF CODE "A." NEW NOTE 16 ADDED.

NOTICE

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

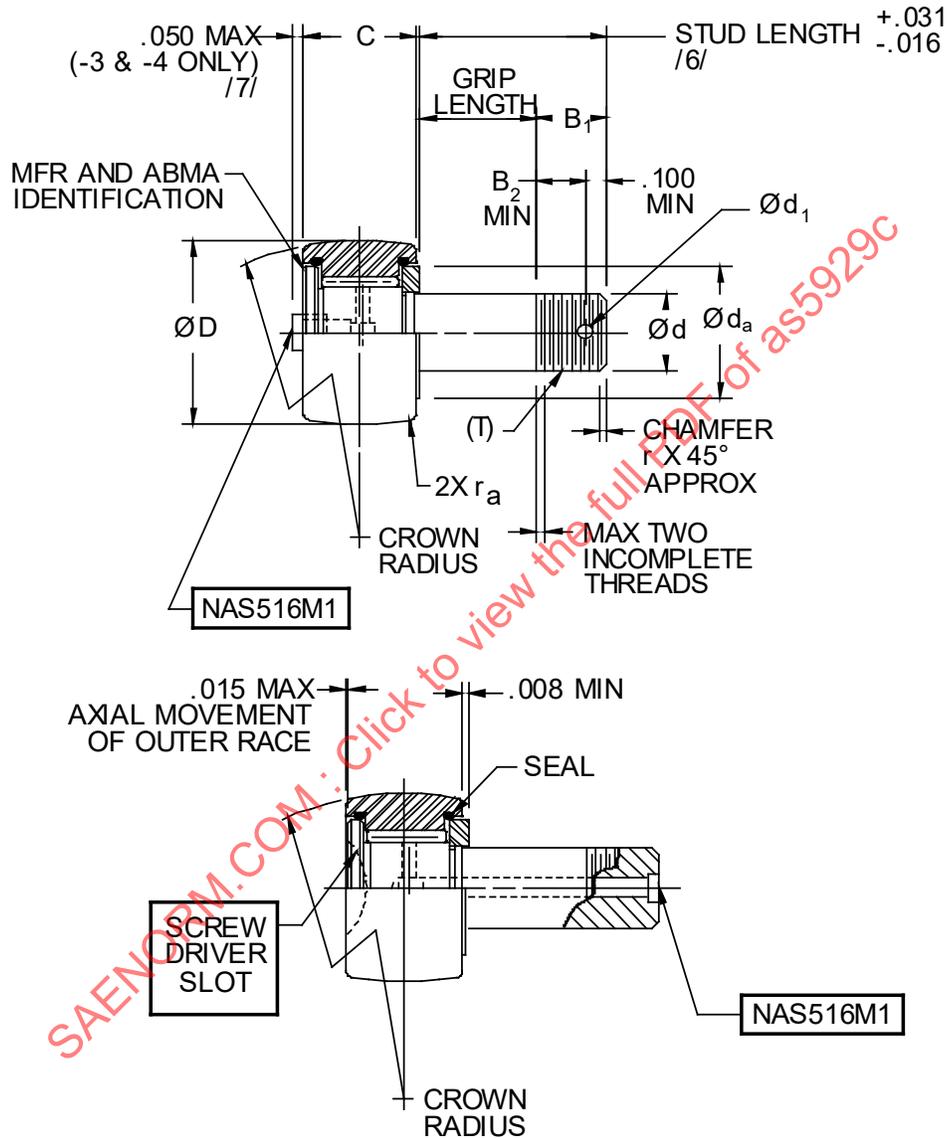
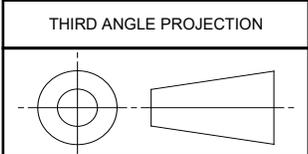


FIGURE 1

For more information on this standard, visit
<https://www.sae.org/standards/content/AS5929C/>



CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS39901



AEROSPACE STANDARD

BEARING, ROLLER, NEEDLE, TRACK-ROLLER, CROWN RADIUSED
 OD, INTEGRAL STUD, TYPE VII, ANTI-FRICTION, CORROSION
 RESISTANT NITROGEN (CREN) STEEL AND CORROSION
 RESISTANT (CRES) STEEL, INCH

AS5929™
 SHEET 1 OF 6

REV. C

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user." SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

ISSUED 2006-06 REVISED 2022-11

TABLE 1

FIRST DASH NO.	∅d STUD DIAMETER	∅D OUTER RING OD	C OUTER RING WIDTH	CROWN RADIUS REF	THREAD (T) SIZE UNJF-3A	B ₁ THREAD LENGTH REF	∅d _a CLAMPING DIAMETER MINIMUM	B ₂ MINIMUM	d ₁ COTTER PIN HOLE DIAMETER	r _a 1/ FILLET MAXIMUM	r CHAMFER	RADIAL INTERNAL CLEARANCE MAXIMUM
-3	.1900	.5000	.281	10.0	.1900-32	.344	.297	.211	.070	.010	.031	.0017
-4	.2500	.6875	.281	10.0	.2500-28	.344	.359	.224	.076	.010	.031	.0017
-5	.3125	.7500	.344	10.0	.3125-24	.359	.422	.234	.076	.010	.047	.0017
-6	.3750	.8750	.469	10.0	.3750-24	.359	.500	.265	.106	.025	.047	.0017
-7	.4375	1.0000	.531	10.0	.4375-20	.422	.562	.283	.106	.025	.047	.0017
-8	.5000	1.1250	.656	10.0	.5000-20	.422	.625	.314	.106	.040	.047	.0017

1/ THE OUTER RING OD CORNERS MUST CLEAR THE MAXIMUM FILLET RADIUS GIVEN IN TABLE 1. THIS SPECIFICATION DOES NOT CONTROL THE CORNER CONTOURS.

TABLE 2

∅d BASIC STUD DIAMETER		ALLOWABLE DEVIATION FROM ∅d OF SINGLE MEAN DIAMETER d		ALLOWABLE DEVIATION FROM COTTER PIN DIAMETER d ₁		∅D BASIC OUTSIDE DIAMETER		ALLOWABLE DEVIATION FROM ∅D OF SINGLE MEAN DIAMETER D		ALLOWABLE DEVIATION FROM OUTER RING WIDTH C	
OVER	INCL	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
.1900	.5000	0	-.0015	+.010	0	.5000	1.1250	+.0010	-.0005	0	-.005

TABLE 3

FIRST DASH NO.	LOAD RATING AS A TRACK ROLLER POUNDS	LIMIT LOAD RATING POUNDS	TRACK CAPACITY 40 HRC STEEL POUNDS	WEIGHT (APPROXIMATELY) POUNDS
-3	395	790	385	.014 + (GRIP LENGTH X.0005)
-4	470	940	525	.031 + (GRIP LENGTH X.0009)
-5	830	1660	725	.043 + (GRIP LENGTH X.0014)
-6	1360	2720	1100	.081 + (GRIP LENGTH X.0020)
-7	1930	3860	1425	.125 + (GRIP LENGTH X.0026)
-8	3040	6030	1975	.190 + (GRIP LENGTH X.0035)

TABLE 4

FIRST DASH NO.	SCREW DRIVER SLOT			INSTALLATION TORQUE IN-LB MAXIMUM 2/
	LENGTH MINIMUM	WIDTH MINIMUM	DEPTH MINIMUM	
-3	.220	.040	.035	8
-4				20
-5	.340	.055	.045	40
-6				55
-7				155
-8				205

2/ INSTALLATION TORQUE LUBRICATED THREADS.

	AEROSPACE STANDARD		AS5929™ SHEET 2 OF 6	REV. C
	BEARING, ROLLER, NEEDLE, TRACK-ROLLER, CROWN RADIUSED OD, INTEGRAL STUD, TYPE VII, ANTI-FRICTION, CORROSION RESISTANT NITROGEN (CREN) STEEL AND CORROSION RESISTANT (CRES) STEEL, INCH			

REQUIREMENTS:

/1/ MATERIAL:

- A. CREN BEARINGS: TYPE "A" STUD MATERIAL CORROSION RESISTANT NITROGEN (CREN) STEEL (SEE CODING):
 - a. STUD: CORROSION RESISTANT NITROGEN (CREN) STEEL PER AMS5898, AMS5925.
 - b. OUTER RING AND NEEDLES: CORROSION RESISTANT NITROGEN (CREN) STEEL PER AMS5898, AMS5925, OR 422 STEEL PER AMS5655.
 - c. ENDWASHER: 420 STEEL PER AMS5506 OR AMS5621, 422 STEEL PER AMS5655, OR CORROSION RESISTANT NITROGEN (CREN) STEEL PER AMS5898 OR AMS5925.
 - d. PLUG: 420 STEEL PER AMS5506 OR AMS5621 OR 17-4PH STEEL PER AMS5622.
 - e. 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.

HEAT TREATMENT:

- a. STUD: STEEL PER AMS5925 OR AMS5898 RACEWAY AND INSIDE FLANGE FACE INDUCTION HARDENED 58 HRC MINIMUM TO A DEPTH OF .015 MINIMUM, CORE AND SHANK 36 TO 46 HRC.
- b. OUTER RINGS: STEEL PER AMS5898 AND AMS5925 THROUGH HARDEN TO 58 HRC MINIMUM. STEEL PER AMS5655 CASE HARDEN TO 58 HRC MINIMUM AT A CASE DEPTH OF .030.
- c. NEEDLES: 58 HRC MINIMUM.
- d. ENDWASHER: 50 TO 56 HRC.

- B. CRES BEARINGS: TYPE "B" STUD MATERIAL CORROSION RESISTANT (CRES) STEEL (SEE CODING):
 - a. STUD: CORROSION RESISTANT (CRES) STEEL PER AMS5930.
 - b. OUTER RING AND NEEDLES: CORROSION RESISTANT NITROGEN (CREN) STEEL PER AMS5898, AMS5925, 422 STEEL PER AMS5655 OR CORROSION RESISTANT (CRES) STEEL PER AMS5618 OR AMS5880.
 - c. ENDWASHER: 420 STEEL PER AMS5506 OR AMS5621, 422 STEEL PER AMS5655 OR CORROSION RESISTANT NITROGEN (CREN) STEEL PER AMS5898 OR AMS5925.
 - d. PLUG: 420 STEEL PER AMS5506 OR AMS5621 OR 17-4PH STEEL PER AMS5622.
 - e. 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.

HEAT TREATMENT:

- a. STUD: STEEL PER AMS5930 CASE HARDENED TO 58 HRC MINIMUM AT A CASE DEPTH OF .015 MINIMUM, CORE 39 HRC MINIMUM, SHANK 36 TO 46 HRC.
- b. OUTER RINGS: STEEL PER AMS5898 AND AMS5925 THROUGH HARDEN TO 58 HRC MINIMUM. STEEL PER AMS5655 CASE HARDEN TO 58 HRC MINIMUM AT A CASE DEPTH OF .030.
- c. OUTER RINGS: STEEL PER AMS5618 AND AMS5880 THROUGH HARDEN TO 58 HRC MINIMUM, GRAIN SIZED ASTM 8 OR FINER PER ASTM E112.
- d. NEEDLES: STEEL PER AMS5655, AMS5898, OR AMS5925, 58 HRC MINIMUM.
- e. NEEDLES: STEEL PER AMS5618 OR AMS5880, 58 HRC MINIMUM, RETAINED AUSTENITE 7% MAXIMUM, GRAIN SIZE ASTM 8 OR FINER PER ASTM E112.
- f. ENDWASHER: 50 TO 56 HRC.

	AEROSPACE STANDARD	AS5929™ SHEET 3 OF 6	REV. C
	BEARING, ROLLER, NEEDLE, TRACK-ROLLER, CROWN RADIUS OD, INTEGRAL STUD, TYPE VII, ANTI-FRICTION, CORROSION RESISTANT NITROGEN (CREN) STEEL AND CORROSION RESISTANT (CRES) STEEL, INCH		

2. FINISH:

A. OUTER RING, NEEDLES, AND PLUG:

PASSIVATE PER AMS2700, METHOD 1, TYPE 2 OR METHOD 2. TEST FOR PASSIVATION PER AMS2700 METHOD 101 OR 102.

B. STUD AND ENDWASHER:

FINISH CODE LETTER "C": CADMIUM PLATE EXPOSED SURFACES PER AMS-QQ-P-416, TYPE I, CLASS 2.

FINISH CODE LETTER "E": ZINC-NICKEL PLATE EXPOSED SURFACES PER AMS2417, TYPE 2, GRADE B.

FINISH CODE LETTER "P": PASSIVATE PER AMS2700, METHOD 1, TYPE 2 OR METHOD 2. TEST FOR PASSIVATION PER AMS2700, METHOD 101 OR 102 (SEE CODING).

3. SURFACE FINISH:

a. NEEDLE OD: 8 MICROINCHES Ra MAXIMUM

b. STUD RACEWAY: 16 MICROINCHES Ra MAXIMUM

c. OUTER RING RACEWAY: 40 MICROINCHES Ra MAXIMUM

d. ENDWASHER INSIDE FACE: 63 MICROINCHES Ra MAXIMUM

4. LUBRICANT: ALL BEARINGS SHALL BE PRE-PACKED 80 TO 100% FULL WITH MAINTENANCE-FREE GREASE, CONSISTING OF A LITHIUM COMPLEX THICKENED SYNTHETIC BASE OIL GREASE (GREASE A) MIXED WITH A HIGH QUALITY PTFE THICKENED PER FLUORINATED OIL GREASE (GREASE B). IF RELUBRICATION IS DESIRED, RELUBRICATING WITH THE LITHIUM COMPLEX THICKENED SYNTHETIC BASE OIL GREASE COMPONENT (GREASE A) ONLY IS RECOMMENDED. GREASES USED FOR THE ORIGINAL FILL AND RELUBRICATION MUST BE APPROVED BY THE QUALIFYING ACTIVITY AND IDENTIFIED BY BRAND NAME ON QUALIFICATION DRAWINGS.

5. MARKING: THE MARKING SHALL CONSIST OF THE AS PART NUMBER AND THE MANUFACTURER'S CAGE CODE IN ACCORDANCE WITH MIL-STD-130 AND A LOT CONTROL NUMBER.

6. PACKAGING: BEARINGS SHALL BE INDIVIDUALLY PACKAGED TO THE REQUIREMENTS OF MIL-DTL-197 AND MIL-STD-2073-1. PACKAGE MARKED WITH THE MANUFACTURER'S NAME OR TRADEMARK, DATE OF LUBRICATION BY MONTH AND YEAR, AND LOT CONTROL NUMBER.

SAENORM.COM : Click to view the full PDF of AS5929C

	AEROSPACE STANDARD	AS5929™ SHEET 4 OF 6	REV. C
	BEARING, ROLLER, NEEDLE, TRACK-ROLLER, CROWN RADIUSED OD, INTEGRAL STUD, TYPE VII, ANTI-FRICTION, CORROSION RESISTANT NITROGEN (CREN) STEEL AND CORROSION RESISTANT (CRES) STEEL, INCH		