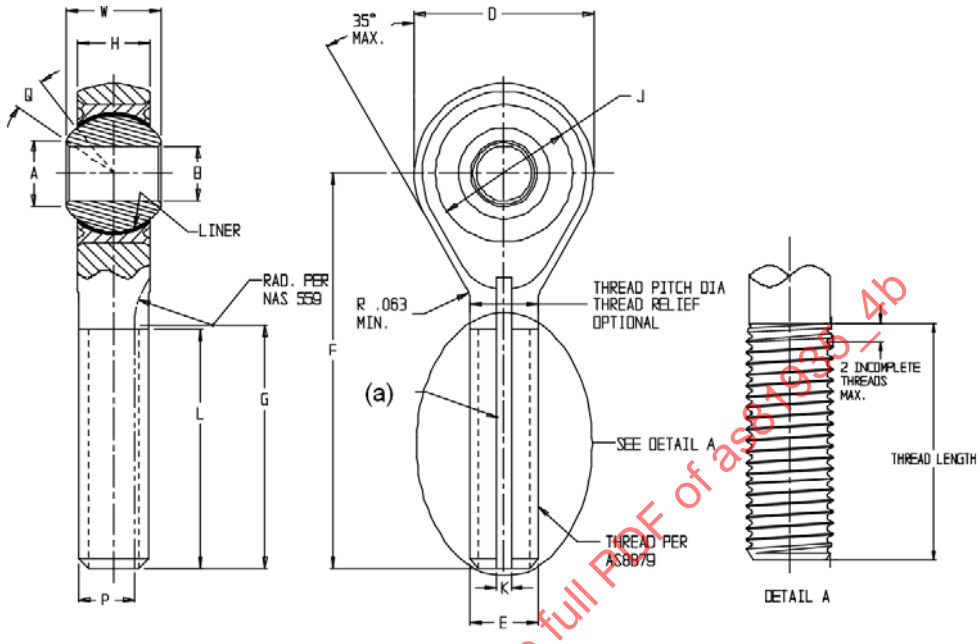
FEDERAL SUPPLY CLASS
3120

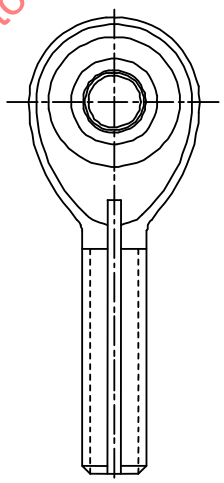
RATIONALE

AS81935/4 IS BEING REVISED TO CLARIFY THE KEYWAY PART NUMBER ORDERING INFORMATION. CLARIFIED THE PART NUMBER ORDERING OPTIONS FOR THE -03AK. THE KEYWAY FLAT DIMENSIONS WERE CLARIFIED ON THE -03AK. THE -03A PART NUMBER WAS CANCELLED AND SUPERSEDED BY -03B. THE -03B IS A PART NUMBER CHANGE ONLY, DIMENSIONALLY IDENTICAL TO -03A. THE -03B WAS CREATED TO SOLVE THE PROBLEM CREATED WHEN THE AS81820 "A" SUFFIX LINER WAS USED ON THE -03.



(a) KEYWAY SHALL BE ORIENTED ALONG THE CENTERLINE OF THE THREADED SHANK. THE PLANE OF THE BOTTOM OF THE KEYWAY SHALL BE PARALLEL TO THE PLANE MADE BY THE FACE OF THE ROD END HOOP.

OPTIONAL ELLIPTICAL HEAD DESIGN (BELOW)



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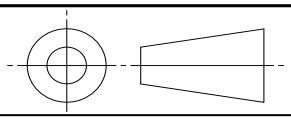
THIRD ANGLE PROJECTION



ISSUED 1998-03 REVISED 2014-06

CUSTODIAN: ACBG

PROCUREMENT SPECIFICATION: AS81935

SAE INTERNATIONAL

AEROSPACE STANDARD

BEARING, PLAIN, ROD END, SELF-ALIGNING, SELF-LUBRICATING, NARROW, EXTERNALLY THREADED, -65 TO +325 °F

AS81935/4
SHEET 1 OF 4

REV. B

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TABLE 1 - DIMENSIONS

DASH NUMBER	B BORE +.0000 -.0005	D SPH. DIA. ±.010	L THREAD LENGTH ±.031	E THREAD SIZE UNJF-3A (c)	F CTRLINE BALL TO END ±.010	W BALL WIDTH +.000 -.002	H BODY WIDTH ±.005
-03	.1900	.680	.775	.2500-28	1.315	.281	.228
(d) ~~-03A~~	~~.1900~~	~~.680~~	~~.775~~	~~.2500-28~~	~~1.315~~	~~.281~~	~~.228~~
-03B	.1900	.680	.775	.2500-28	1.315	.281	.228
-04	.2500	.827	.775	.2500-28	1.443	.343	.260
-05	.3125	.984	1.187	.3125-24	1.948	.375	.291
-06	.3750	1.131	1.187	.3750-24	2.030	.406	.322
-07	.4375	1.294	1.281	.4375-20	2.250	.437	.353
-08	.5000	1.459	1.468	.5000-20	2.544	.500	.400
-10	.6250	1.763	1.562	.6250-18	2.832	.625	.510
-12	.7500	2.140	1.687	.7500-16	3.193	.750	.603
-14	.8750	2.372	2.000	.8750-14	3.677	.875	.713
-16	1.0000	2.681	2.100	1.0000-12	3.968	1.000	.807

DASH NUMBER	A MIN	J MAX HOUSING I.D.	Q° MIN	G KEYWAY FLAT	K KEYWAY (b) +.005 -.000	P KEYWAY (b) +.000 -.005
-03	.293	.5625	10	.896/.876	.062	.207
(d) ~~-03A (D)~~	~~.293~~	~~.5625~~	~~10~~	~~.876/.836~~	~~.062~~	~~.207~~
-03B (D)	.293	.5625	10	.876/.836	.062	.207
-04	.364	.6562	10	.896/.876	.062	.207
-05	.419	.7500	10	1.308/1.288	.062	.268
-06	.475	.8125	9	1.308/1.288	.093	.319
-07	.530	.9062	8	1.402/1.382	.093	.383
-08	.600	1.0000	8	1.589/1.569	.093	.445
-10	.739	1.1875	8	1.683/1.663	.125	.541
-12	.920	1.4375	8	1.808/1.788	.125	.663
-14	.980	1.5625	8	2.121/2.101	.156	.777
-16	1.118	1.7500	9	2.221/2.201	.156	.900

(b) KEYWAY, WHEN SPECIFIED, IS COMPATIBLE WITH LOCKING DEVICES: AS81935/3 FOR SIZES –03 THROUGH –08, AND NAS 513 FOR SIZES –10 THROUGH –16. KEYWAY TOLERANCES NOT SPECIFIED SHALL BE IN ACCORDANCE WITH AS81935/3 OR NAS 513 AS APPLICABLE.

(c) THREADS SHALL BE FORMED BY A SINGLE ROLLING OPERATION AFTER FINAL HEAT TREAT AS SPECIFIED IN THE THREAD SECTION OF AS81935.

(d) THE -03A WAS CANCELLED AND SUPERSEDED BY -03B. THE -03A WAS CREATED BEFORE THE ADDITION OF THE AS81820 TYPE A LINER OPTION. A PART NUMBER CONFLICT EXISTED IF THE -03 WAS ORDERED WITH THE "A" AS81820 OPTION PTFE LINER. THE CONFLICT EXISTED BECAUSE THE -03A DASH NUMBER COULD ONLY BE ORDERED WITH THE KEYWAY OPTION. THE -03A WAS CREATED TO LIMIT THE KEYWAY BREAKOUT SO IT DID NOT ENTER THE ROD END BODY I.D. CHAMFER. THE -03A OPTION COULD ONLY BE ORDERED WITH THE KEYWAY OPTION CONTAINING A "K" IN THE PART NUMBER SUFFIX. IN ORDER TO OVERCOME THE AS81820 TYPE "A" LINER CONFLICT, THE -03A WAS CANCELLED, SUPERSEDED, AND REPLACED BY THE -03B.

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TABLE 2 - LOAD VALUES

DASH NUMBER	(e) ULTIMATE STATIC LOAD (LB)	(f) FATIGUE LOAD (LB)	AXIAL PROOF LOAD (LB)	WEIGHT REF. (LB)	NO LOAD ROTATIONAL BREAKAWAY TORQUE (IN-LB)	
					MIN	MAX
-03	3000	1100	150	.045	.5	6
(d) -03A	3000	1100	150	.045	.5	6
-03B	3000	1100	150	.045	.5	6
-04	5300	1500	430	.060	.5	6
-05	8600	2400	700	.100	1	15
-06	13 000	3600	1100	.135	1	15
-07	17 800	5000	1400	.200	1	15
-08	24 200	6800	2040	.285	1	15
-10	38 500	10 800	2430	.505	1	15
-12	56 600	16 000	2940	.830	1	15
-14	77 400	21 900	3190	1.235	1	24
-16	101 400	28 600	3570	1.725	1	24

(e) ULTIMATE LOADS ARE ANALYTICAL VALUES BASED ON ROD END BANJO FOR –03 AND THREADS FOR ALL OTHER SIZES.
(f) FATIGUE LOADS ARE ANALYTICAL VALUES BASED ON 50 000 CYCLE LIFE. FATIGUE LOADS ARE DEFINED PER PROCUREMENT DOCUMENT AS81935.

NOTICE

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

REQUIREMENTS:

1. MATERIAL:

   BODY: 4340 ALLOY STEEL PER AMS6415 OR AMS-S-5000.

   BEARING CARTRIDGE: MS14101-XX WITH A 440C AMS5630 BALL SHALL BE USED AS THE DEFAULT BEARING INSERT. MS14101-XXC WITH A PH13-8MO AMS5629 BALL SHALL BE USED WHEN SPECIFIED IN THE PART NUMBER FOR THE ROD END ASSEMBLY. MS14101A-XX BEARING SHALL BE USED WHEN SPECIFIED IN PART NUMBER. SUFFIX "A" INDICATES THE BEARING CARTRIDGE UTILIZES A PTFE LINER THAT IS AS81820 TYPE "A" QUALIFIED". ABSENCE OF "A" INDICATES STANDARD PTFE LINER QUALIFIED TO AS81820. SEE BELOW FOR PART NUMBER EXAMPLE.

2. HARDNESS:

   BODY: HRC 39-42. HEAT TREAT IN ACCORDANCE WITH AMS-H-6875 OR AMS2759/1.

3. SURFACE TEXTURE: PER ANSI B46.1.

   BODY: BORE, RA 32 MAX., SIDES OF THE THREAD AND ROOT AREA, RA 32, THREAD RELIEF, RA 63.
   ALL OTHER MACHINED SURFACES, RA 125 MAX.

4. PLATING: CADMIUM PLATING PER AMS-QQ-P-416, TYPE II, CLASS 2, ON ALL SURFACES INCLUDING BODY BORE.

5. TOLERANCES: UNLESS OTHERWISE SPECIFIED, DECIMALS ±.010, ANGLES ±1/2°.

6. DIMENSIONS IN INCHES, UNLESS OTHERWISE SPECIFIED.

7. BREAK SHARP EDGES AND CORNERS AND REMOVE ALL BURRS AND SLIVERS.

8. NONDESTRUCTIVE TESTING: THE ROD END BODY ONLY, AFTER ALL FINISH MACHINING, HEAT TREAT, AND CADMIUM PLATING, PRIOR TO BEARING INSTALLATION, SHALL BE MAGNETIC PARTICLE INSPECTED PER ASTM E1444. THE ACCEPTANCE CRITERIA SHALL BE AS DEFINED IN THE PROCUREMENT DOCUMENT AS81935 (UNDER MAGNETIC PARTICLE INSPECTION).

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