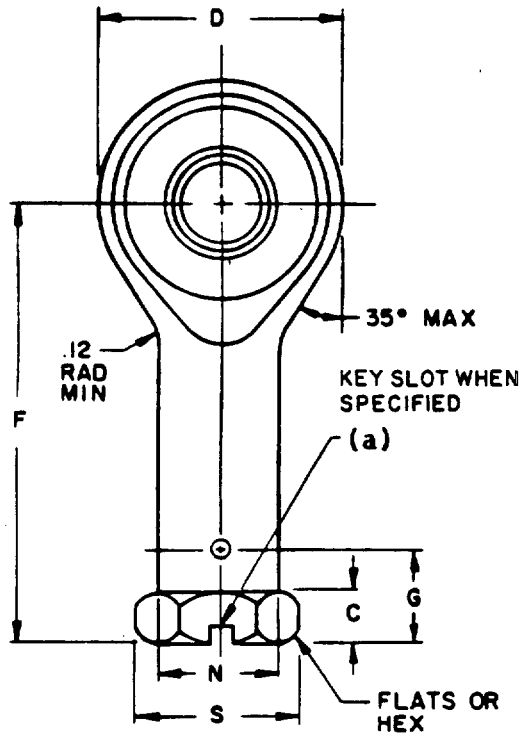
MIL-B-81935/5B
1 June 1987
SUPERSEDING
MIL-B-81935/5A
24 June 1983

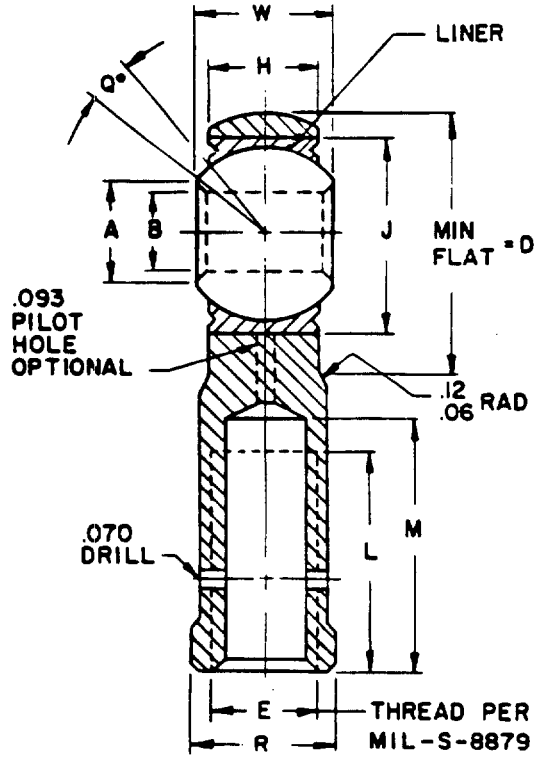
MILITARY SPECIFICATION SHEET

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

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the bearings described herein shall consist of this specification and the latest issue of MIL-B-81935.





(a) For -3 thru -6, the keyslot shall be oriented perpendicular to the plane made by the face of the rod end hoop (see page 2 for additional details).

AMSC N/A FSC 3120

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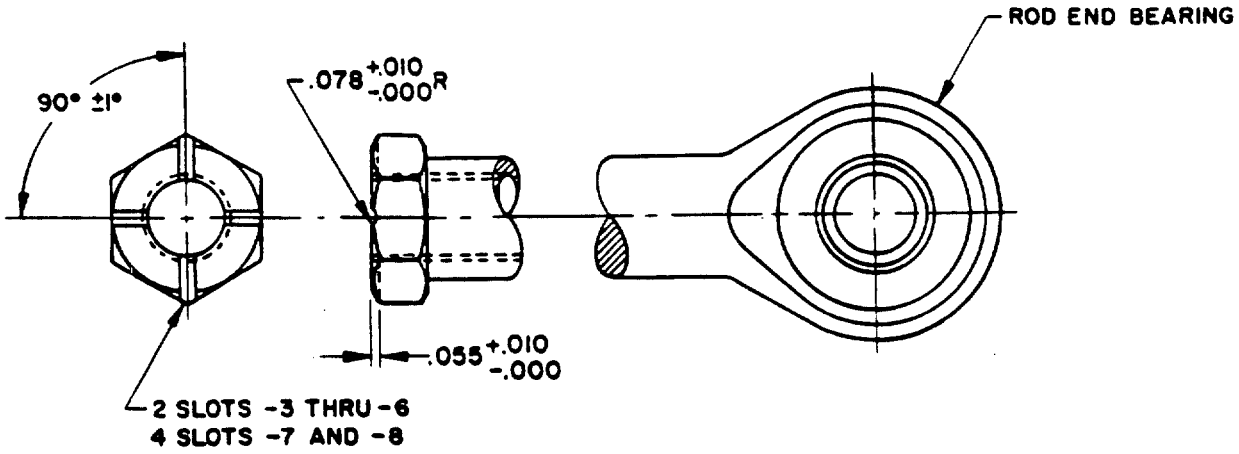
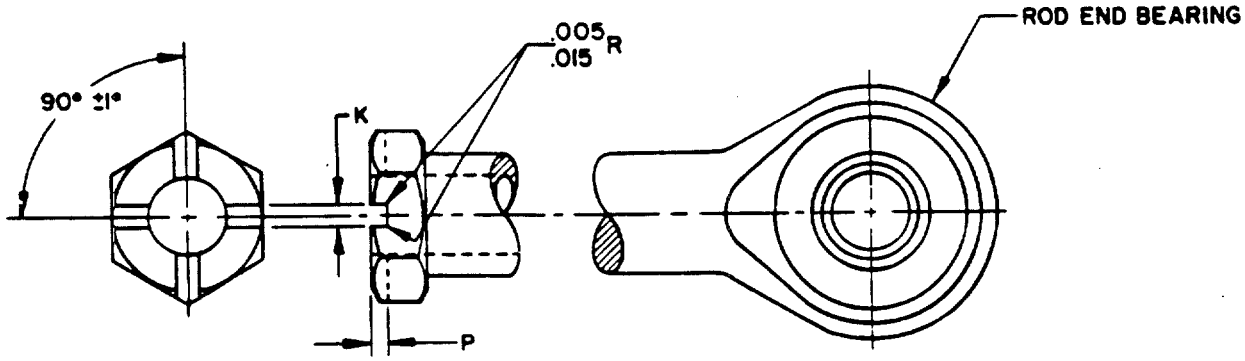


Keyslot designation "K."
Sizes -3 thru -8 (Rounded slot).
Keyslot, when specified, is compatible with MIL-B-81935/3 Locking Device.
2 Slots shall be oriented perpendicular to rod end hoop face.

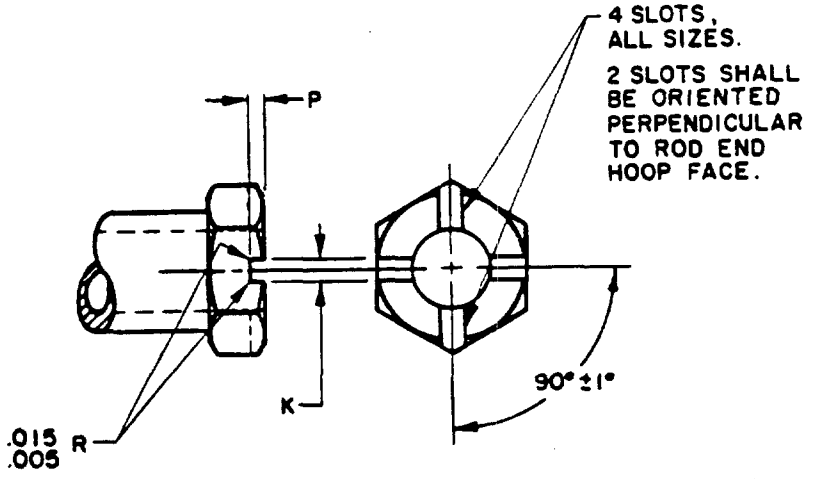


Keyslot designation "K."
Sizes -10 thru -16 (Square slot).
Keyslot, when specified, is compatible with MS14227, NAS 513 and NAS 1193.
2 Slots shall be oriented perpendicular to rod end hoop face.

Dash No. (Ref)	K +.005 -.000	P +.005 -.000
-10	.125	.077
-12	.125	.077
-14	.156	.086
-16	.156	.094

Keyslot designation "W" (Deep Square Slot).
Sizes -3 thru -16

Keyslot, when specified is compatible with MS 14198, MS 14227, NAS 1193, NAS 513 and NAS 559. NOTE: Design usage restrictions apply against NAS 513 and NAS 559.



Dash No.	Terminal Thread	K +.005 -.000	P +.005 -.000
3 & 4	5/16 - 24UNJF-3A	.062	.110
5 & 6	3/8 - 24UNJF-3A	.093	.110
7	7/16 - 20UNJF-3A	.093	.110
8	1/2 - 20UNJF-3A	.093	.110
10	5/8 - 18UNJF-3A	.125	.110
12	3/4 - 16UNJF-3A	.125	.110
14	7/8 - 14UNJF-3A	.156	.110
16	1 - 12UNJF-3A	.156	.110

TABLE I. Dimensions.

Dash No.	B Bore +.0000 -.0005	D Outside Dia ±.010	L Completed Thread Min	E Thread Size UNJF-3B	F Ctr Line Ball to End ±.010	G Ctr Line Drill to End ±.020	N Shank Dia ±.010	W Ball Width +.000 -.002	H Body Width ±.005	A Min	J Max Housing I.D.	M Max	C Ht of Wrenching Surfaces +.010 -.062	R Width Across Flats +.002 +.010	Q Min	S Ref. Across Corners or Dia.
-3	.1900	.680	.625	.2500-28	1.210	.312	.329	.281	.228	.293	.5625	.750	.188	.375	10	.430
-4	.2500	.827	.625	.2500-28	1.338	.312	.329	.343	.260	.364	.6562	.750	.188	.375	10	.430
-5	.3125	.984	.750	.3125-24	1.566	.375	.413	.375	.291	.419	.7500	.875	.188	.437	10	.500
-6	.3750	1.131	1.000	.3750-24	1.908	.437	.501	.406	.322	.475	.8125	1.125	.250	.625	9	.720
-7	.4375	1.294	1.125	.4375-20	2.125	.500	.584	.437	.353	.530	.9062	1.250	.250	.625	8	.720
-8	.5000	1.459	1.250	.5000-20	2.356	.562	.672	.500	.400	.600	1.0000	1.375	.375	.875	8	1.020
-10	.6250	1.763	1.375	.6250-18	2.707	.687	.845	.625	.510	.793	1.1875	1.500	.375	.875	8	1.020
-12	.7500	2.140	1.625	.7500-16	3.193	.812	1.017	.750	.603	.920	1.4375	1.750	.500	1.125	8	1.300
-14	.8750	2.372	1.875	.8750-14	3.677	.937	1.187	.875	.713	.980	1.5625	2.062	.500	1.250	8	1.375
-16	1.0000	2.681	2.125	1.0000-12	4.101	1.062	1.356	1.000	.807	1.118	1.7500	2.312	.500	1.375	9	1.590

TABLE II. Load values.

Dash No.	1/ Ultimate Static Load (Lbs)	2/ Fatigue Load (Lbs)	Axial Proof Load (Lbs)	Weight Max (Lbs)	No Load Rotational Breakaway Torque (In-Lbs)	
					Min	Max
-3	3,000	1,100	150	.044	.5	6
-4	5,500	1,300	430	.052		
-5	8,900	2,000	700	.087	1	15
-6	13,400	3,100	1,100	.137		
-7	18,200	4,200	1,400	.193		
-8	24,600	5,700	2,040	.279		
-10	39,500	9,200	2,430	.504		
-12	57,200	13,500	2,940	.860		
-14	77,800	18,400	3,100	1.266	1	24
-16	101,000	24,000	3,570	1.814		

1/ Ultimate loads are analytical values based on rod end banjo.

2/ Fatigue loads are analytical values based on 50,000 cycle life. Fatigue loads are defined per MIL-B-81935 Section 4.7.3.

REQUIREMENTS:

Material:

Body: Alloy steel per MIL-S-5000 (4340)

Bearing Cartridge: MS14101-XX

Hardness:

Body: R_C 39-42

Heat Treatment: In accordance with MIL-H-6875.

Surface Texture: Per ANSI B46.1

Body: Bore, R_a 32 max.
Sides of thread and root area, R_a 32.
Thread relief, R_a 63.
All other machined surfaces, R_a 125 max.

REQUIREMENTS (Continued)

Plating: Cadmium plating per QQ-P-416, Type II, Class 2, on all surfaces including body bore.

Tolerances: Unless otherwise specified, decimals ±.010, angles ±1/2°.

Dimensions in inches, unless otherwise specified.

Break sharp edges and corners and remove all burrs and slivers.

Part Number:

M81935/5- XX X X Example of part number: M81935/5-16KL

- X: Add "L" for left hand thread when specified.
- X: Keyway (code "K" or "W") when specified.
- XX: Bore diameter code in multiples of 1/16 inch.
- M81935/5-: Basic part number.

Custodians:
Army - AV
Navy - AS
Air Force - 11

Review Activities:
Army - AR
Navy - SH
Air Force - 99
DLA - IS

Preparing Activity:
Navy - AS
(Project No. 3120-0667-02)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions – Reverse Side)

1. DOCUMENT NUMBER	2. DOCUMENT TITLE
MIL-B-81935/5B	Bearing, Plain, Rod End, Self-Aligning

3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION *(Mark one)*
	☐ VENDOR
b. ADDRESS *(Street, City, State, ZIP Code)*	☐ USER
	☐ MANUFACTURER
	☐ OTHER *(Specify)*: _____

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional	b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional
c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional	8. DATE OF SUBMISSION *(YYMMDD)*

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