

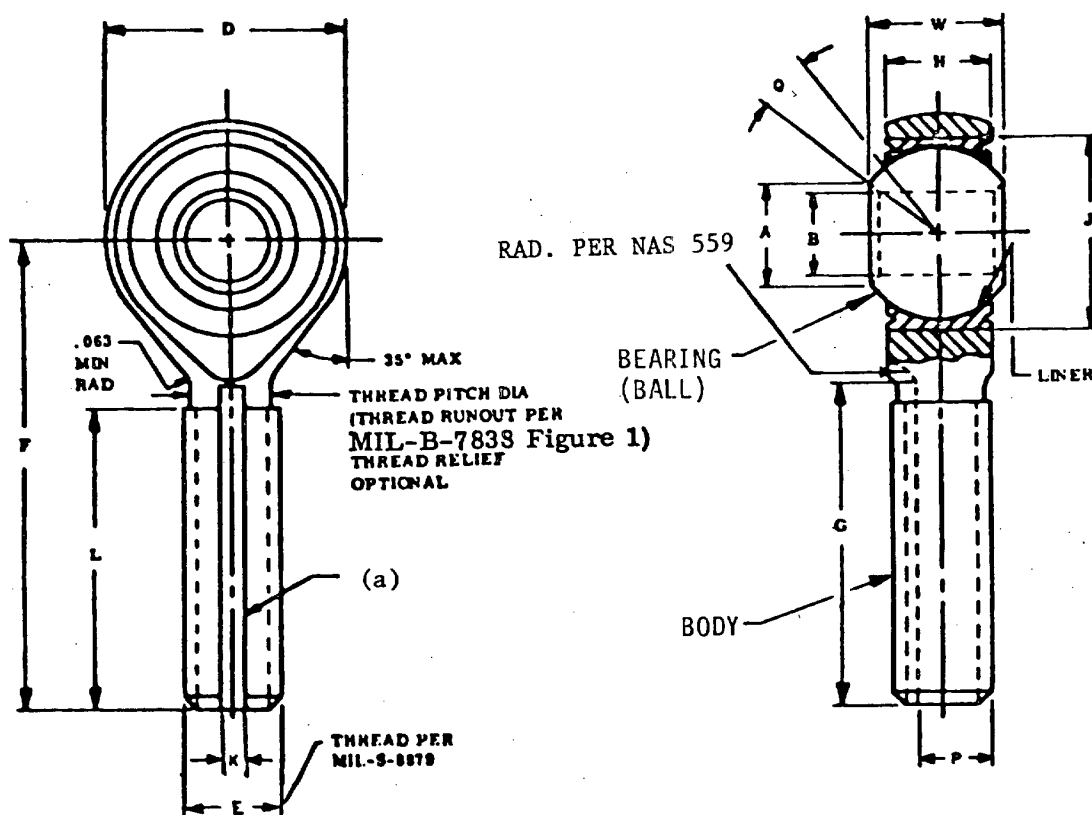
MIL-B-81935/1B  
 24 JUNE 1983  
 SUPERSEDING  
 MIL-B-81935/1A  
 31 July 1980

# MILITARY SPECIFICATION SHEET

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

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

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



- (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.

TABLE I DIMENSIONS

DASH NUMBER	B	D	L	E	F	W	H	A	J	Q'	G	K	P		
	BORE +.0000 -.0005	OUTSIDE DIA ±.010	THREAD LENGTH ±.031	THREAD SIZE UNJF-3A	CTRL LINE BALL TO END ±.010	BALL WIDTH +.000 -.002	BODY WIDTH ±.005	MIN	MAX HOUSING I. D.	MIN	KEYWAY FLAT +.000 -.020	KEYWAY(a)			
												+ .005 - .000	+ .000 - .005		
-3	.1900	.800	.968	.3125-24	1.562	.437	.337	.30	.6250	15	.980	.062	.268		
-4	.2500														
-5	.3125	.900	1.187		.3750-24		1.938	.500	.416	.47	.8125			8	1.235
-6	.3750	1.025		1.281		.4375-20						2.125	.562		
-7	.4375	1.150	1.468		.5000-20		2.438	.625	.515	.61	1.0000			9	1.589
-8	.5000	1.337		1.562		.6250-18						2.625	.750		
-10	.6250	1.525	1.687		.7500-16		2.875	.875	.640	.85	1.3750			13	1.808
-12	.7500	1.775		1.8750-14		3.375						.875	.765		
-14	.8750	2.025	2.000		1.2500-12		4.125	1.375	1.015	1.27	2.1250			12	2.404
-16	1.0000	2.775		2.343		1.2500-12						4.125	1.375		

- (a) Keyway, when specified, is compatible with locking devices, MIL-B-81935/3 for sizes -3 thru -8, and NAS 513 for sizes -10 thru -16. Keyway tolerances not specified shall be in accordance with MIL-B-81935/3 or NAS 513 as applicable.

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TABLE II LOAD VALUES

DASH NO.	ULTIMATE STATIC LOAD (LBS)	FATIGUE (LOAD (LBS)	AXIAL PROOF LOAD (LBS)	WEIGHT MAX (LBS)	NO LOAD ROTATIONAL BREAKAWAY TORQUE IN-LBS	
					MIN	MAX
-3	2360	1470 (b)	1000	.072	.5	6
-4	4860	2380	1000			
-5	7180	2770 (c)	1100	.087	1	15
-6	8550	3570	1660	.136		
-7	12000	4800	1850	.183		
-8	19500	7680 (c)	2040	.278		
-10	21900	9180	2430	.424		
-12	29300	11600	2810	.639		
-14	34500	13100	3320	.963	1	24
-16	80300	30400	4340	2.546		

(b) BASED ON BOLT BENDING FATIGUE STRENGTH 180,000 PSI  
(c) SHANK LIMITATION

## MIL-B-81935/1B

## REQUIREMENTS:

## MATERIAL:

BODY: ALLOY STEEL PER MIL-S-5000 (4340)

BEARING: PER MIL-B-81820 AND MS14103

HARDNESS: HEAT TREATMENT IN ACCORDANCE WITH MIL-H-6875

BODY: Rc 39-42

SURFACE TEXTURE: PER ANSI B46.1

BODY: BORE: Ra 32 MAX

SIDES OF THREAD AND ROOT AREA: Ra 32

THREAD RELIEF: Ra 63

ALL OTHER MACHINED SURFACES: Ra 125 MAX

PLATING: CADMIUM PLATING PER QQ-P-416, TYPE II, CLASS 2

TOLERANCES: UNLESS OTHERWISE SPECIFIED: DECIMALS  $\pm .010$ ;  
ANGLES  $\pm 1/2^\circ$ 

DIMENSIONS IN INCHES, UNLESS OTHERWISE SPECIFIED.

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

PART NUMBER: M81935/1 XX X X

ADD L FOR LEFT HAND  
THREAD WHEN SPECIFIED

KEYWAY (CODE K) WHEN SPECIFIED

BORE DIAMETER CODE IN MULTIPLES  
OF 1/16 INCH

BASIC PART NUMBER

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

Preparing activity:  
NAVY - AS

(Project No. 3120-0610)

Review activities:  
Army -  
Air Force - 99  
DLA - IS