

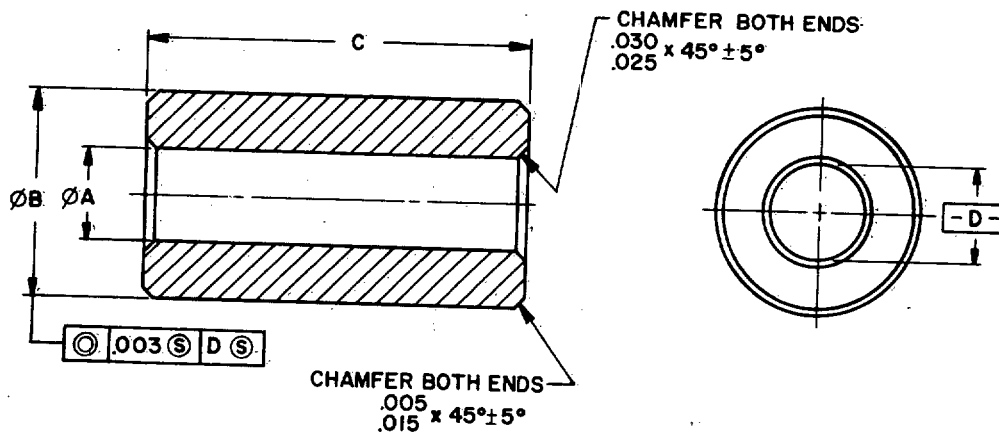
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TABLE I. DASH NUMBERS AND DIMENSIONS.

DASH NUMBER	NOMINAL ID	Ø A DIAMETER		WALL THICKNESS (REFERENCE)	Ø B DIAMETER AFTER PLATING	RECOMMENDED HOUSING BORE
		BEFORE SIZING	REFERENCE AFTER SIZING			
03	.1875	.1785	.1920	.0625	.3155 .3145	.3145 .3115
04	.2500	.2410	.2520	.0625	.3780 .3770	.3770 .3740
05	.3125	.3035	.3145	.0625	.4405 .4395	.4395 .4365
06	.3750	.3660	.3770	.0938	.5655 .5645	.5645 .5615
07	.4375	.4285	.4395	.0938	.6270 .6260	.6260 .6230
08	.5000	.4910	.5020	.1250	.7530 .7520	.7520 .7490
09	.5625	.5515	.5645	.1250	.8145 .8135	.8135 .8105
10	.6250	.6160	.6270	.1250	.8790 .8780	.8780 .8750
12	.7500	.7410	.7520	.1250	1.0040 1.0030	1.0030 1.0000
14	.8750	.8655	.8770	.1875	1.2520 1.2510	1.2505 1.2470
16	1.000	.9915	1.003	.1875	1.3790 1.3780	1.3775 1.3740

21 Feb 84

REVISED

APPROVED

USER ACTIVITIES:

REVIEWER ACTIVITIES:  
ARMY-AR, MI  
NAVY-AS, OS  
AIR FORCE-II  
DLA-CS, IS

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document.

P. A. Other Cust	84 AT OS 99	INTERNATIONAL INTEREST	TITLE  BEARING, SLEEVE, PLAIN, SINTERED IRON BASE, OIL IMPREGNATED	MILITARY STANDARD  MS21782
PROCUREMENT SPECIFICATION MIL-B-5687		SUPERSEDES:		PAGE 1 OF 3

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TABLE II.

DIMENSIONAL TOLERANCES	CONCENTRICITY	SHAFT RUNNING CLEARANCES	
		SHAFT SIZE	CLEARANCE (MIN)
INSIDE DIAMETER (BORE) $\pm 0.003$ (BEFORE SIZING)	FOR WALL THICKNESS UP TO 0.190 0.003	UP TO 0.760	0.001
LENGTH $\pm 0.005$	ID TO OD FIM	0.761 TO 1.510	0.0015

TABLE III. STANDARD SLEEVE BEARINGS OF PREFERRED INCH LENGTHS.

INSIDE DIA (REFERENCE)		OUTSIDE DIA (REFERENCE)		WALL THICKNESS (REFERENCE)	C LENGTH
FRACTION	DECIMAL	FRACTION	DECIMAL		
3/16	0.1895	5/16	0.3155	1/16	0.375
1/4	0.2520	3/8	0.3780	1/16	0.500
5/16	0.3145	7/16	0.4405	1/16	0.562
3/8	0.3770	9/16	0.5655	3/32	0.625
7/16	0.4375	5/8	0.6250	3/32	0.625
1/2	0.5020	3/4	0.7530	1/8	0.750
9/16	0.5625	13/16	0.8165	1/8	0.750
5/8	0.6270	7/8	0.8790	1/8	0.937
3/4	0.7520	1	1.0040	1/8	1.125
7/8	0.8750	1 1/4	1.2500	3/16	1.250
1	1.0030	1 3/8	1.3790	3/16	1.500

## REQUIREMENTS:

1. MATERIAL. SINTERED IRON IN ACCORDANCE WITH MIL-B-5687, TYPE II, GRADE 4. YIELD STRENGTH IN COMPRESSION, 20,000 psi MIN. FOR A 0.1% PERMANENT SET.
2. FINISH. CADMIUM PLATED PER QQ-P-416, TYPE II, CLASS 2 ON OUTSIDE DIAMETER AND ENDS ONLY.
3. POROSITY. OIL CONTENT BY VOLUME, 20% MINIMUM.
4. LUBRICATION. BEARINGS ARE TO BE IMPREGNATED 18% MINIMUM WITH OIL CONFORMING TO MIL-L-6085.
5. BEARING LENGTHS. LENGTH OF SLEEVE BEARINGS SHALL BE SIXTEENTH OF AN INCH INCREMENTS. PREFERRED LENGTHS SHALL BE IN ACCORDANCE WITH TABLE III.

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Other Cust	AT		BEARING, SLEEVE, PLAIN, SINTERED IRON BASE, OIL IMPREGNATED	MS21782
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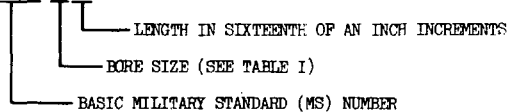
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6. PART NUMBER. THE PART NUMBER CONSISTS OF THE BASIC MILITARY STANDARD (MS) NUMBER FOLLOWED BY A DASH NUMBER TAKEN FROM TABLE I. THE LENGTH SHALL BE SPECIFIED IN ACCORDANCE WITH REQUIREMENT 5. PART NUMBER DIGITS ARE NOT DECIMAL SIZES.

EXAMPLE: MS21782-03006



INDICATES - BEARING, SLEEVE, PLAIN, SINTERED IRON BASE, OIL IMPREGNATED; .1900 NOMINAL ID; 0.375 LENGTH; CADMIUM PLATING.

7. RADIAL CRUSHING STRENGTH. THE RADIAL CRUSHING STRENGTH OF CYLINDRICAL PARTS SHALL BE NOT LESS THAN THE VALUE DETERMINED FROM THE FOLLOWING:

$$S = \frac{Lt^2}{D - t} \times 40,000 \quad \text{WHERE}$$

S = RADIAL CRUSHING STRENGTH IN POUNDS  
D = OD OF BEARING IN INCHES  
t = WALL THICKNESS IN INCHES  
L = LENGTH OF BEARING IN INCHES

8. PERMISSIBLE LOAD RATINGS ARE AS FOLLOWS:

SHAFT PERIPHERAL VELOCITY (FEET PER MINUTE)	PERMISSIBLE LOAD (POUNDS PER SQUARE INCH)
SLOW & INTERMITTENT	8000
25	3000
50 TO 100	700
OVER 100 TO 150	400
OVER 150 TO 200	300
OVER 200	1/

- 1/ PERMISSIBLE LOAD: FOR SHAFT VELOCITIES ABOVE 200 FEET PER MINUTE, THE PERMISSIBLE LOAD RATING IS FOUND FROM THE FOLLOWING:

$$P = \frac{50,000}{V} \quad \text{WHERE}$$

P = SAFE LOAD IN psi OF PROJECTED AREA (W x BEARING ID x LENGTH)  
V = SHAFT PERIPHERAL VELOCITY IN FEET PER MINUTE

## NOTES:

- DIMENSIONS ARE IN INCHES.
- THESE BUSHINGS ARE INTENDED FOR SIZING ON ASSEMBLY.
- REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BIDS OR REQUEST FOR PROPOSAL, EXCEPT THAT REFERENCED ADOPTED INDUSTRY DOCUMENTS SHALL GIVE THE DATE OF THE ISSUE ADOPTED.
- FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER PROCUREMENT DOCUMENTS REFERENCED HEREIN.
- NOT RECOMMENDED FOR MILITARY AIRFRAME APPLICATIONS.

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