

USER ACTIVITIES: MC, AV, SA

REVIEWER ACTIVITIES: MI, IS, NS

This military standard is approved for use by all Departments and Agencies of the Department of Defense.
No restriction for all low engineering and design applications and for repetitive use shall be made from this.
See comment

FED. STD. CLASS
3110

0.125 INCH MIN. CAGE
CLEARANCE (SEE NOTE 13)

Dash No.	AFBMA bearing number (see note 12)		A	B	C	D	E	J	R	Y	Flange		Recommended shoulder diameter		K factor	Basic dynamic load ratings (lb)		Effective load center	
	Cone	Cup									Width	Dia	Shaft	Housing		Radial	Thrust		
11	A4050-A4138B		0.5000	1.3775	0.4330	0.4326	0.3437	.1823	.05	.05	1.4985	.0930	0.73	0.67	1.14	1.32	500	387	-10
12	A4059-A4138B		0.5906	1.3775	0.4330	0.4326	0.3437	.1823	.03	.05	1.4985	.0930	0.77	0.75	1.14	1.32	500	387	-10
1	A6075-A6157B		0.7500	1.5745	0.4730	0.4391	0.3750	.1910	.04	.05	1.6955	.0930	0.94	0.91	1.34	1.50	530	480	-06
13	07100-07204B		1.0000	2.0470	0.5910	0.5614	0.5000	.2000	.04	.06	2.1990	.1090	1.20	1.16	1.77	1.97	1130	780	-11
2	1780-1729B		1.0000	2.2400	0.7625	0.7810	0.6250	.2935	.03	.03	2.3920	.1560	1.20	1.18	1.95	2.09	1740	915	-27
14	17119-17244B		1.1875	2.4409	0.6300	0.6522	0.5625	.2075	.06	.06	2.5930	.1400	1.46	1.36	2.13	2.32	1620	1060	-14
3	02476-02420B		1.2500	2.6875	0.8750	0.8750	0.6875	.3437	.03	.06	2.8397	.1562	1.54	1.52	2.32	2.56	2490	1780	-20
15	02475-02420B		1.2500	2.6875	0.8750	0.8750	0.6875	.3437	.14	.06	2.8397	.1562	1.75	1.52	2.32	2.56	2490	1780	-20
16	2581-2523B		1.3125	2.7500	0.9375	0.9983	0.7500	.3435	.03	.06	2.9020	.1560	1.56	1.54	2.40	2.60	3280	1530	-34
17	2585-2523B		1.3125	2.7500	0.9375	0.9983	0.7500	.3435	.14	.06	2.9020	.1560	1.77	1.54	2.40	2.60	3280	1530	-34
18	19150-19268B		1.5000	2.6875	0.6250	0.6504	0.4688	.2968	.06	.06	2.8397	.1406	1.77	1.69	2.40	2.64	2000	1530	-06
4	3490-3420B		1.5000	3.1250	1.1563	1.1721	0.9375	.4063	.14	.13	3.3090	.1875	2.05	1.81	2.64	2.99	4150	2590	-34
19	3382-3320B		1.5625	3.1562	1.1563	1.1965	0.9375	.4063	.14	.13	3.3396	.1875	2.05	1.79	2.76	3.03	4300	2000	-43
*5	49175-49368B		1.7500	3.6875	1.2500	1.2500	1.0000	.4688	.14	.13	3.9023	.2188	2.32	2.09	3.23	3.50	5250	3230	-36
20	3780-3720B		2.0000	3.6718	1.1875	1.1930	0.9375	.4375	.14	.13	3.8558	.1875	2.52	2.28	3.23	3.54	5000	2890	-32

P. A. OS
Other Class AT
11

INTERNATIONAL INTEREST

TITLE

BEARING, ROLLER, TAPERED, SINGLE ROW OF ROLLERS, NORMAL ANGLE, FLANGED CUP, TYPE 755 (TSF)

MILITARY STANDARD
MS 19082

PROCUREMENT SPECIFICATION
FF-B-187

SUPERSEDES:

SHEET 1 OF 3

For NOTES see sheets 2 and 3.

denotes changes

APPROVED 30 Apr 1959 REVISED 20 Mar 1978

For NOTES see sheets 2 and 3.

A denotes change

APPROVED 30 Apr 1959 REVISED 20 Mar 1978

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Dash No.	A: BMA bearing number (see note 12)	A	B	C	D	E	J	R	Y	Flange				Recommended shoulder diameter				K factor	Basic dynamic load ratings (lb)		a Effective load center			
										Outside dia	Bearing width	Cone width	Cup width	Stand-out	Max shaft fillet radius	Max housing fillet radius	Dia		Housing			Radial	Thrust	
																	Shaft		Shoulder diameter	Shaft				Housing
21	529-522B	2.0000	4.0000	1.3750	1.4200	1.0625	.5625	.03	.13	4.2460	.2500	2.32	2.28	3.50	3.82	2.05	6550	3200	-50					
6	529K-522B	2.0000	4.0000	1.3750	1.4200	1.0625	.5625	.14	.13	4.2460	.2500	2.56	2.28	3.50	3.82	2.05	6550	3200	-50					
7	623-612B	2.2500	4.7500	1.6250	1.6250	1.2500	.6562	.14	.13	5.0272	.2812	2.83	2.60	4.13	4.33	1.86	8300	4450	-55					
22	3982-3920B	2.5000	4.4375	1.1875	1.1830	0.9375	.4375	.14	.13	4.6210	.1875	3.03	2.80	3.90	4.25	1.45	5900	4050	-18					
*8	5595-5535B	2.5938	4.8125	1.7188	1.7230	1.4375	.5313	.14	.13	5.0625	.2500	3.27	3.03	4.17	4.65	1.63	10200	6250	-48					
23	39590-39520B	2.6250	4.4375	1.1875	1.1875	0.9375	.4688	.14	.13	4.6523	.2188	3.15	2.91	3.98	4.33	1.72	7000	4050	-26					
24	399A-394AB	2.6875	4.3307	0.8661	0.8660	0.7411	.3120	.09	.05	4.5147	.1870	3.07	2.91	3.98	4.17	1.45	4000	2770	-03					
9	6461-6420B	3.0000	5.8750	2.1250	2.1350	1.7500	.6875	.14	.13	6.1835	.3125	3.78	3.52	5.08	5.51	1.61	14700	9100	-59					
25	594-592B	3.7500	6.0000	1.5625	1.4300	1.1875	.6250	.14	.13	6.2460	.2500	4.33	4.09	5.31	5.67	1.32	9350	7100	-10					
26	687-672B	4.0000	6.6250	1.6250	1.6250	1.1875	.7187	.14	.13	6.9030	.2812	4.65	4.41	5.87	6.30	1.24	11500	9250	-11					
10	861-854B	4.0000	7.5000	2.2500	2.2650	1.7500	.8750	.31	.13	7.8710	.3750	5.08	4.49	6.69	6.85	1.74	19300	11100	-60					
27	56425-56650B	4.2500	6.5000	1.4375	1.4375	1.0625	.6250	.14	.13	6.7460	.2500	4.84	4.61	5.87	6.38	1.18	10100	8600	.08					
28	36690-36620B	5.7500	7.6250	1.1250	1.1250	0.9063	.3750	.06	.06	7.7772	.1563	6.10	6.02	7.17	7.48	1.59	9700	6100	.19					

P. A.	OS	INTERNATIONAL INTEREST	TITLE
Other Cost	AT 11		BEARING, ROLLER, ROLLERS, NORMAL TYPE 755 (TSF)
PROCUREMENT SPECIFICATION		SUPERSEDES:	
FF-B-187			

*Inactive for new design after 20 Mar 1978.

NOTES:

- ① MATERIAL: Cones, cups, and rollers: bearing quality - carburizing grade alloy or through-hardening grade alloy steel in accordance with FED-STD-66. Cage; carbon steel (one piece stamped).
- ② HARDNESS: Cones, cups and rollers: 58 to 64 Rockwell C.
3. TOLERANCES: Standard grade (AFBMA Class 4) (allowable tolerances are in 0.0001 inch).

Cone bore (A)**			
Size range	Incl.	Plus	Minus
Over 0	3.0000	5	0
3.0000	6.0000	10	0

Cup diameter (B)			
Size range	Incl.	Plus	Minus
Over 0.0000	12.0000	10	0
12.0000	24.0000	20	0

Standout (J)			
Bore size range	Incl.	Plus	Minus
Over 0	4.0000	80	0
4.0000	6.0000	140	100

③ Cone bore (A) dimension for dash number 12 is the maximum value; tolerance value is minus by the same magnitude as positive table value.

FED. SUP CLASS
3110

DD FORM 672-1 COORDINATED

3110-0513

APPROVED 30 Apr 1959 REVISED ④ For changes see pages 1 through 3.

MILITARY STANDARD

MS 19082

SHEET 2 OF 3

USER ACTIVITIES MC, AV, SA

REV ACTIVITIES MI, IS, NS

This standard is approved for use by all Departments and Agencies of the Department of Defense as a basis for all engineering and design applications and for repetitive use shall be made from this standard.

P. A. OS Other Code AT 11		INTERNATIONAL INTEREST	TITLE BEARING, ROLLER, TAPERED, SINGLE ROW OF ROLLERS, NORMAL ANGLE, FLANGED CUP, TYPE 755 (TSF)	MILITARY STANDARD <div style="font-size: 2em; font-weight: bold; text-align: center;">MS 19082</div>	
PROCUREMENT SPECIFICATION FF-B-187		SUPERSEDES:		SHEET 3 OF 3	

① **Cup Range OD (It)**

Size range	Tolerance
Over Incl.	Plus Minus
0	12.0000 20 0

② **Assembled bearing maximum radial runout**

Cup OD (B)	Tolerance
Over Incl.	
0	24.0 20

4. **DIMENSIONS:** All dimensions are in inches. Dimensions T, P, S, and O are recommended shaft and housing shoulder diameters. Dimensions R and Y are the maximum fillet radii on the shaft and the housing respectively, which will be cleared by the bearing corners.

5. **EFFECTIVE LOAD CENTER:** Dimension (s) locates a point on the cone axis which is the center of pressure of all resisting forces set up by the bearing rollers. All moments should be calculated from this point when determining bearing loading and shaft stresses. A minus value of (s) indicates that the center is inside the cone backface.

6. **OPERATING TEMPERATURE:** Recommended operating temperature not to exceed 121° Celsius (250° Fahrenheit).

7. **LUBRICATION:** Bearings shall be furnished without lubrication. Bearings shall be furnished with preservative per MIL-C-11736, Class 3.

8. **BASIC DYNAMIC LOAD RATING:** Basic dynamic load rating is that constant stationary load which a group of apparently identical bearings with stationary cups (outer rings) can endure for a rating life of 90 million revolutions of the cone (inner ring). The basic dynamic load ratings listed herein are based on a rated life of 90 million revolutions or 3000 hours at 500 rpm.

9. **RATING LIFE (HOURS):** Rating life is the number of hours at some constant speed of the cone (inner ring) that 90 percent of a group of apparently identical bearings will complete or exceed before first evidence of fatigue develops. The magnitude of the rated life in hours is found from the following:

$$L_{10} = \frac{1.5 \times 10^6 \left(\frac{C}{P} \right)^{10/3}}{R} \text{ hours}$$

where:

C = Basic dynamic load rating, lb.
P = Equivalent load (combined radial and thrust load), lb.
R = Revolutions per infinite.

10. **K FACTOR:** The K factor is the ratio of the basic radial dynamic load rating to basic thrust dynamic load rating.

11. **NORMAL ANGLE:** A normal angle bearing has a contact angle (α) between 10 and 19 degrees. The contact angle is the angle between the line of action of the roller load and a plane perpendicular to the bearing axis.

① 12. **PART NUMBER:** The MS part number consists of the MS number, plus the dash number. Example: MS19082-14. The AFDMA (Anti-Friction Bearing Manufacturers Association) cup and cone numbers are for reference only and are not to be used for ordering purposes.

① 13. **CAGE CLEARANCE:** Designers should provide a clearance of .125 inch minimum between the outside edge of the cage and the housing counterbore.

14. For design feature purposes, this standard takes preference over procurement documents referenced herein.

15. Referenced documents shall be of the issue in effect on the date of invitation for bid or request for proposal.

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3110

APPROVED 30 Apr 1959 REVISED ① For changes see sheets 1 through 3