

USER ACTIVITIES: MC, YD

ITEMS ME, MI, AV, MU, IS, NS, SH

PL

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Substitution for all items requiring 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, TYPE 751 (75)

MILITARY STANDARD
MS19081

PROCUREMENT SPECIFICATION
FF-B-187

SUPERSEDES:

SHEET 1 OF 13

3110-0468

DD FORM 1, 672-1 (COORDINATED)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

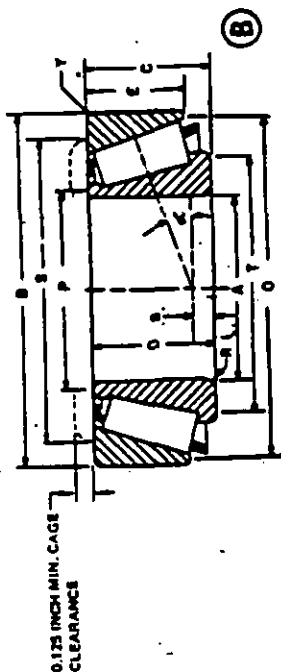


Table I

Dash No.	AFBMA bearing number (See Note 12)	A Bore	B Outside dia.	C Bearing width	D Cone width	E Cup width	R Max. shaft fillet radius	Y Max. housing fillet radius	T	(B) Recommended shoulder diameter		S	O	K factor	Basic dynamic load ratings (lb) (B)		Effective load center
										Shaft	Housing				Radial	Thrust	
1	A4050-A4138	0.5000	1.3775	0.4310	0.4326	0.3437	0.05	0.05	0.73	0.67	1.14	1.26	1.29	1.29	500	387	-0.10
2	L21549-L21511	0.6250	1.3775	0.4330	0.4330	0.3430	0.05	0.05	0.85	0.77	1.14	1.28	1.83	1.83	575	314	-0.13
*3	A6062-A6162	0.6250	1.6250	0.4687	0.4391	0.3437	0.05	0.05	0.87	0.81	1.36	1.46	1.11	1.11	530	480	-0.06
4	17580-17520	0.6250	1.6875	0.6563	0.6563	0.5313	0.06	0.06	0.91	0.83	1.44	1.54	1.76	1.76	1,150	655	-0.23
5	05062-05185	0.6250	1.8504	0.5662	0.5662	0.4375	0.06	0.05	0.93	0.83	1.59	1.67	1.64	1.64	1,020	620	-0.15
*6	09062-09195	0.6250	1.9380	0.7813	0.8480	0.5625	0.03	0.05	0.87	0.85	1.65	1.75	2.20	2.20	1,600	730	-0.36
7	A6075-A6157	0.7500	1.5745	0.4730	0.4391	0.3750	0.04	0.05	0.94	0.91	1.34	1.46	1.11	1.11	530	480	-0.06
*8	4A-6	0.7500	1.7500	0.5000	0.4688	0.3750	0.06	0.06	1.00	0.93	1.50	1.61	1.22	1.22	815	670	-0.07
9	LM11949-LM11910	0.7500	1.7810	0.6100	0.6550	0.4750	0.05	0.05	0.98	0.93	1.56	1.63	1.94	1.94	1,230	635	-0.22
10	05075-05185	0.7500	1.8504	0.5662	0.5662	0.4375	0.05	0.05	0.98	0.93	1.59	1.67	1.64	1.64	1,020	620	-0.15
11	09067-09195	0.7500	1.9380	0.7100	0.7500	0.5625	0.05	0.05	1.00	0.94	1.65	1.75	2.20	2.20	1,600	730	-0.29
183	09074-09194	0.7500	1.9380	0.9063	0.8480	0.6875	0.06 x 45°	0.14	1.02	0.94	1.54	1.75	2.20	2.20	1,600	730	-0.36
*12	1775-1729	0.7500	2.2400	0.7625	0.7810	0.6250	0.06	0.05	1.06	0.98	1.93	2.01	1.90	1.90	1,740	915	-0.27
13	12580-12520	0.8125	1.9380	0.7813	0.7813	0.6250	0.06	0.06	1.12	1.02	1.67	1.79	1.81	1.81	1,660	915	-0.28
14	M12649-M12610	0.8437	1.9687	0.6900	0.7200	0.5500	0.05	0.05	1.08	1.00	1.73	1.81	2.10	2.10	1,660	790	-0.25
15	07087-07196	0.8750	1.9687	0.5313	0.5614	0.3750	0.05	0.04	1.12	1.06	1.75	1.85	1.45	1.45	1,130	780	-0.11
16	1755-1729	0.8750	2.2400	0.7625	0.7810	0.6250	0.05	0.05	1.14	1.08	1.93	2.01	1.90	1.90	1,740	915	-0.27
17	1779-1729	0.9375	2.2400	0.7625	0.7810	0.6250	0.04	0.05	1.16	1.12	1.93	2.01	1.90	1.90	1,740	915	-0.27
18	07100-07196	1.0000	1.9687	0.5313	0.5614	0.3750	0.04	0.04	1.20	1.16	1.75	1.85	1.45	1.45	1,130	780	-0.11
184	L44643-L44610	1.0000	1.9800	0.5600	0.5800	0.4200	0.05	0.05	1.24	1.16	1.75	1.85	1.56	1.56	1,200	770	-0.13

Denotes changes. For NOTES see sheets 11 and 12.

APPROVED 30 April 1959 REVISED (A) 6 February 1958 (B) 20 August 1978

FED. SUP CLASS
3110

USER ACTIVITIES: MC, YD

REVIEWER AL (VIT) ME, MI, AV, MU, IS, NS, SH

The activities described are approved for use by all Departments and Agencies of the Department of Defense.
 No item from this list can be used for engineering and design applications and for repetitive use shall be made from this list.

REP. SUP. CLASS
3110

Dash No.	AFBMA [®] bearing number (See Note 12)	A Bore	B Outside dia.	C Bearing width	D Cone width	E Cup width	R [®] Max. shaft fillet radius	Y [®] Max. housing fillet radius	B Recommended shoulder diameter				K factor	Basic dynamic load ratings (lb [®])		Effective load center
									T	P	S	O		Radial	Thrust	
19	1780-1729	1.0000	2.2400	0.7625	0.7810	0.6250	0.03	0.05	1.20	1.18	1.93	2.01	1.90	1,740	915	-0.27
20	15101-15245	1.0000	2.4409	0.7500	0.8125	0.5625	0.03	0.05	1.28	1.24	2.17	2.28	1.67	1,990	1,190	-0.23
21	2687-2631	1.0000	2.6150	0.9375	1.0013	0.7500	0.05	0.05	1.32	1.24	2.28	2.36	2.30	2,970	1,290	-0.37
*22	3189-3120	1.0000	2.8593	1.1875	1.1810	0.9375	0.03	0.13	1.40	1.38	2.40	2.64	1.76	3,700	2,100	-0.40
23	15590-15520	1.1250	2.2500	0.6875	0.6875	0.5313	0.14	0.06	1.56	1.32	2.01	2.09	1.69	1,800	1,070	-0.20
*24	15113-15243	1.1250	2.4375	0.7500	0.8125	0.5625	0.03	0.08	1.36	1.34	2.13	2.28	1.67	1,990	1,190	-0.23
25	2689-2631	1.1250	2.6150	0.9375	1.0013	0.7500	0.05	0.05	1.42	1.34	2.28	2.36	2.30	2,970	1,290	-0.37
26	3198-3120	1.1250	2.8593	1.1875	1.1810	0.9375	0.05	0.13	1.54	1.46	2.40	2.64	1.76	3,700	2,100	-0.40
*27	17119-17244	1.1875	2.4409	0.6300	0.6522	0.5625	0.06	0.06	1.46	1.36	2.13	2.24	1.53	1,620	1,060	-0.14
185	LM67048-LM67010	1.2500	2.3280	0.6250	0.6600	0.4650	***	0.05	1.67	1.42	2.05	2.20	1.42	1,580	1,110	-0.12
28	15126-15245	1.2500	2.4409	0.7500	0.8125	0.5625	0.03	0.05	1.46	1.44	2.17	2.28	1.67	1,990	1,190	-0.23
*29	02476-02421	1.2500	2.6875	0.8750	0.8750	0.6875	0.03	0.03	1.54	1.52	2.32	2.48	1.40	2,490	1,780	-0.20
*186	14125A-14276	1.2500	2.7170	0.7813	0.7710	0.6250	0.14	0.05	1.73	1.48	2.36	2.48	1.53	2,180	1,420	-0.17
30	2580-2523	1.2500	2.7500	0.9375	0.9983	0.7500	0.03	0.05	1.52	1.48	2.40	2.52	2.14	3,280	1,530	-0.34
*31	3188-3130	1.2500	2.8593	1.1875	1.1810	0.9375	0.03	0.03	1.57	1.56	2.48	2.64	1.76	3,700	2,100	-0.40
*187	HM88542-HM88510	1.2500	2.8750	1.1563	1.0938	0.9063	0.05	0.13	1.79	1.68	2.32	2.76	1.07	3,640	3,400	-0.22
32	3476-3420	1.2500	3.1250	1.1563	1.1721	0.9375	0.05	0.13	1.69	1.61	2.64	2.91	1.60	4,150	2,590	-0.34
33	M88048-M88010	1.3125	2.6875	0.8750	0.8750	0.6875	0.03	0.06	1.67	1.62	2.28	2.56	1.07	2,620	2,450	-0.11
*34	HM88547-HM88510	1.3125	2.8750	1.1563	1.0938	0.9063	0.03	0.13	1.79	1.68	2.32	2.76	1.07	3,640	3,400	-0.22
35	HM89443-HM89410	1.3125	3.0000	1.1563	1.1250	0.9063	0.03	0.13	1.83	1.75	2.44	2.87	1.07	3,880	3,630	-0.22
188	LM48548-LM48510	1.3750	2.5625	0.7100	0.7200	0.5500	0.14	0.05	1.81	1.57	2.28	2.40	1.55	2,140	1,380	-0.15
*36	M38549-M38510	1.3750	2.6250	0.8125	0.8125	0.6563	0.14	0.09	1.83	1.57	2.28	2.44	1.66	2,520	1,520	-0.22
37	14137A-14276	1.3750	2.7170	0.7813	0.7710	0.6250	0.06	0.05	1.65	1.57	2.36	2.48	1.53	2,180	1,420	-0.17
*38	2878-2820	1.3750	2.8750	0.8750	0.9375	0.6875	0.03	0.13	1.65	1.61	2.48	2.68	1.59	2,910	1,830	-0.22
39	25877-25821	1.3750	2.8750	0.9375	0.9688	0.7500	0.06	0.03	1.69	1.59	2.56	2.68	2.01	3,340	1,660	-0.32
*40	23690-23620	1.3750	2.8750	1.0625	1.0620	0.8750	0.14	0.06	1.93	1.66	2.48	2.68	1.58	3,540	2,240	-0.32
41	HM89446-HM89410	1.3750	3.0000	1.1563	1.1250	0.9063	0.14	0.13	2.09	1.75	2.44	2.87	1.07	3,880	3,630	-0.22
42	3482-3420	1.3750	3.1250	1.1563	1.1721	0.9375	0.03	0.13	1.73	1.71	2.64	2.91	1.60	4,150	2,590	-0.34

For NOTES see sheets 11 and 12.

P. A. OS Other Case AT 11	INTERNATIONAL INTEREST	TITLE BEARING, ROLLER, TAPERED, SINGLE ROW OF ROLLERS, NORMAL ANGLE, TYPE 751 (TS)	MILITARY STANDARD MS19081
PROCUREMENT SPECIFICATION FF-B-187	SUPERSEDES:	SHEET 2 OF 13	3110-0468

DD FORM 672-1 COORDINATED: 3110-0468

APPROVED 30 April 1959 REVISED 13 For changes see sheets 1 thru 13

FED. SUP CLASS
3110

For NOTES see sheets 11 and 12.

APPROVED 30 April 1959 REVISED 18 For changes see sheets 1 thru 13

ME, MI, AV, MU, IS, NS, SH

USER ACTIVITIES MC, YD

REVIEWER

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

P. A. QS		INTERNATIONAL INTEREST		TITLE		MILITARY STANDARD	
Order Code AT 11				BEARING, ROLLER, TAPERED, SINGLE ROW OF ROLLERS, NORMAL ANGLE, TYPE 751 (TS)		MS19081	
PROCUREMENT SPECIFICATION FF-B-187		SUPERSEDES:		SHEET 3 OF 13		3110-0468	
DD FORM 672-1 (COORDINATED)		PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE					

AFBMA® bearing number (See Note 12)		A		B		C		D		E		R		Y		T		P		S		O		K factor		Basic dynamic load ratings (lb) (B)		Effective load center			
Dash No.		Cone-Cup		Bore		Outside dia.		Bearing width		Cone width		Cup width		Max. shaft fillet radius		Max. housing fillet radius		Shaft		Recommended shoulder diameter		Housing		K factor		Radial		Thrust		Effective load center	
*43		3581-3526		1.3750		3.4375		1.1875		1.2160		0.9375		0.14		0.03		1.95		1.69		3.15		1.91		4.550		2.380		-0.40	
44		HM89449-HM89410		1.4375		3.0000		1.1563		1.1250		0.9063		0.14		0.13		2.13		1.75		2.44		1.07		3.880		3.630		-0.22	
189		31597-31520		1.4375		3.0000		1.1563		1.1250		0.9375		0.14		0.13		2.01		1.75		2.52		1.45		3.770		2.600		-0.30	
190		3878-3820		1.4375		3.3750		1.1875		1.1875		0.9375		0.03		0.13		1.89		1.85		2.87		1.45		5.000		3.450		-0.32	
45		13685-13621		1.5000		2.7170		0.7500		0.7500		0.5918		0.14		0.09		1.95		1.69		2.40		1.45		2.230		1.540		-0.12	
*191		2788A-2735X		1.5000		2.8750		0.9375		1.0100		0.7500		0.06		0.03		1.81		1.71		2.60		1.93		3.460		1.790		-0.31	
46		28150-28300		1.5000		3.0000		0.8125		0.8244		0.6105		0.06		0.05		1.79		1.71		2.68		1.45		2.440		1.680		-0.19	
47		2788-2729		1.5000		3.0000		0.9375		1.0100		0.7500		0.14		0.03		1.97		1.71		2.68		1.93		3.460		1.790		-0.31	
*48		347-332		1.5000		3.1496		0.8268		0.8820		0.7018		0.14		0.05		1.97		1.73		2.87		2.14		3.000		1.400		-0.25	
*49		27881-27820		1.5000		3.1510		0.9688		0.9330		0.7288		0.14		0.06		2.09		1.85		2.68		1.04		3.080		2.960		-0.10	
*50		26878-26820		1.5000		3.1562		1.0000		1.0000		0.8125		0.03		0.13		1.77		1.75		2.72		1.83		3.660		2.000		-0.29	
51		3490-3422		1.5000		3.1562		1.1563		1.1721		0.9375		0.14		0.13		2.05		1.81		2.68		1.60		4.150		2.590		-0.34	
*52		HM801346-HM801310		1.5000		3.2500		1.1563		1.1250		0.9063		0.03		0.13		2.01		1.93		2.68		1.07		4.300		4.000		-0.19	
*53		3583-3525		1.5000		3.4375		1.1875		1.2160		0.9375		0.14		0.13		2.05		1.79		2.95		1.91		4.550		3.380		-0.40	
*54		49150-49368		1.5000		3.6875		1.2500		1.2500		1.0000		0.14		0.13		2.13		1.89		3.23		1.62		5.250		3.230		-0.36	
*55		542-532A		1.5000		4.3750		1.5000		1.4550		1.1875		0.14		0.13		2.17		1.93		3.74		1.97		6.900		3.500		-0.48	
192		2789-2735X		1.5625		2.8750		0.9375		1.0100		0.7500		0.14		0.03		2.05		1.77		2.60		1.93		3.460		1.790		-0.31	
*56		2789-2720		1.5625		3.0000		0.9375		1.0100		0.7500		0.14		0.13		2.05		1.77		2.60		1.93		3.460		1.790		-0.31	
57		3382-3320		1.5625		3.1562		1.1563		1.1965		0.9375		0.14		0.13		2.05		1.79		2.76		2.14		4.300		2.000		-0.43	
58		18590-18520		1.6250		2.8750		0.6562		0.6875		0.5000		0.14		0.06		2.09		1.81		2.60		1.67		2.020		1.210		-0.11	
59		LM501349-LM501310		1.6250		2.8910		0.7700		0.7800		0.5800		0.14		0.03		2.09		1.83		2.64		1.46		2.520		1.720		-0.13	
60		342-332		1.6250		3.1496		0.8268		0.8820		0.7018		0.14		0.05		2.09		1.81		2.87		2.14		3.000		1.400		-0.25	
61		26882-26820		1.6250		3.1562		1.0000		1.0000		0.8125		0.14		0.13		2.13		1.85		2.72		1.83		3.660		2.000		-0.29	
193		3877-3821		1.6250		3.3750		1.1875		1.1875		0.9375		0.14		0.05		2.24		1.98		2.95		1.45		5.000		3.450		-0.32	
62		3577-3525		1.6250		3.4375		1.1875		1.2160		0.9375		0.14		0.13		2.13		1.89		2.95		1.91		4.550		2.380		-0.40	
*63		49162-49368		1.6250		3.6875		1.2500		1.2500		1.0000		0.14		0.13		2.24		1.97		3.23		1.62		5.250		3.230		-0.36	
64		526-522		1.6250		4.0000		1.3750		1.4200		1.0625		0.14		0.13		2.24		1.97		3.50		2.05		6.550		3.200		-0.50	
65		HM807035-HM807010		1.6250		4.1250		1.4375		1.4375		1.1250		0.06		0.13		2.36		2.24		3.50		1.20		7.150		5.950		-0.29	
66		L102849-L102810		1.7500		2.8750		0.7188		0.7188		0.5938		0.06		0.06		2.01		1.93		2.60		1.83		2.470		1.350		-0.15	
67		12175-12303		1.7500		3.0312		0.6875		0.6750		0.4688		0.06		0.06		2.05		1.95		2.68		1.15		2.000		1.740		-0.00	
*68		35176-35326		1.7500		3.2650		0.8750		0.9060		0.6875		0.03		0.03		1.97		1.95		2.99		1.96		3.150		1.610		-0.24	

APPROVED 30 April 1959		REVISED 18		For changes see sheets 1 thru 13	
For NOTES see sheets 11 and 12.					

REVIEWER ACTIVITIES: ME, MI, AV, MU, IS, NS, SH USER ACTIVITIES: MC, YD

This military standard is approved for use by all Departments and Agencies of the Department of Defense. It is the policy of the Department of Defense to acquire and use only those products and services which are specified in this standard.

P. A. OS															FED. SUP CLASS														
Other Cat. AT 11															3110														
INTERNATIONAL INTEREST																													
TITLE																													
BEARING, ROLLER, TAPERED, SINGLE ROW OF																													
ROLLERS, NORMAL ANGLE, TYPE 751 (TS)																													
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PROCUREMENT SPECIFICATION FF-B-187															SUPERSEDES														
SHEET 4															OF 13														

Dash No.	AFBMA [®] bearing number (See Note 12)	A	B	C _i	D	E	R	Y	B Recommended shoulder diameter				K factor	Basic dynamic load ratings (lb)		Effective load center
									Shaft		Housing			Radial	Thrust	
									T	P	S	O				
69	25580-25520	1.7500	3.2650	0.9375	1.0000	0.7500	0.14	0.03	2.24	1.97	2.91	3.03	1.74	3,680	2,110	-0.25
194	25580-25521	1.7500	3.2700	0.9375	1.0000	0.7500	0.14	0.13	2.24	1.97	2.83	3.03	1.74	3,680	2,110	-0.25
70	3578-3525	1.7500	3.4375	1.1875	1.2160	0.9375	0.14	0.13	2.24	2.01	2.95	3.19	1.91	4,550	2,380	-0.40
*71	49175-49368	1.7500	3.6875	1.2500	1.2500	1.0000	0.14	0.13	2.32	2.09	3.23	3.43	1.62	5,250	3,230	-0.36
*195	HM804843-HM804810	1.7500	3.7500	1.1875	1.1563	0.9063	0.14	0.13	2.48	2.24	3.19	3.58	1.07	5,150	4,800	-0.15
*196	3783-3732	1.7500	3.8750	1.1875	1.1930	0.9375	0.25	0.13	2.52	2.05	3.31	3.54	1.73	5,000	2,890	-0.32
72	527-522	1.7500	4.0000	1.3750	1.4200	1.0625	0.14	0.13	2.32	2.09	3.50	3.74	2.05	6,550	3,200	-0.50
73	HM807040-HM807010	1.7500	4.1250	1.4375	1.4375	1.1250	0.14	0.13	2.60	2.32	3.50	3.94	1.20	7,150	5,950	-0.29
*74	535-532X	1.7500	4.2500	1.4375	1.4550	1.1250	0.14	0.13	2.36	2.13	3.70	3.94	1.97	6,900	3,500	-0.48
*75	615-612A	1.7500	4.7260	1.6250	1.6250	1.2500	0.14	0.13	2.44	2.20	4.06	4.33	1.86	8,300	4,450	-0.55
76	LM603049-LM603011	1.7812	3.0625	0.7812	0.7812	0.5937	0.14	0.03	2.24	1.97	2.80	2.91	1.37	2,610	1,910	-0.09
77	25590-25523	1.7960	3.2650	1.0625	1.0000	0.8750	0.14	0.09	2.28	2.01	2.83	3.03	1.74	3,680	2,110	-0.25
*197	18690-18620	1.8125	3.1250	0.6875	0.6875	0.5313	0.11	0.06	2.20	2.01	2.80	2.91	1.56	2,090	1,340	-0.08
78	2984-2924	1.8125	3.3465	1.0000	1.0082	0.8125	0.14	0.05	2.28	2.05	2.99	3.15	1.69	3,830	2,270	-0.25
79	3779-3720	1.8750	3.6718	1.1875	1.1930	0.9375	0.14	0.13	2.40	2.17	3.23	3.46	1.73	5,000	2,890	-0.32
198	HM804846-HM804010	1.8750	3.7500	1.1875	1.1563	0.9063	0.14	0.13	2.60	2.27	3.19	3.58	1.07	5,150	4,800	-0.15
199	528-522	1.8750	4.0000	1.3750	1.4200	1.0625	0.14	0.13	2.44	2.17	3.50	3.74	2.05	6,550	3,200	-0.50
*80	617-612A	1.8750	4.7260	1.6250	1.6250	1.2500	0.14	0.13	2.56	2.28	4.06	4.33	1.86	8,300	4,450	-0.55
200	HM804849-HM804810	1.9060	3.7500	1.1875	1.1563	0.9063	0.14	0.13	2.60	2.27	3.19	3.58	1.07	5,150	4,800	-0.15
201	5395-5335	1.9375	4.0625	1.7188	1.7510	1.4375	0.14	0.13	2.60	2.36	3.50	3.82	1.97	8,800	4,450	-0.63
202	HM807044-HM807010	1.9375	4.1250	1.4375	1.4375	1.1250	0.14	0.13	2.72	2.48	3.50	3.94	1.20	7,150	5,950	-0.29
*81	65390-65320	1.9375	4.5000	1.7500	1.7500	1.3750	0.14	0.13	2.76	2.36	3.82	4.21	1.36	8,850	6,500	-0.49
203	HH506348-HH506310	1.9375	4.5000	1.7500	1.7500	1.4200	0.14	0.13	2.80	2.40	3.82	4.21	1.45	9,900	6,800	-0.53
82	LL205449-LL205410	2.0000	3.0625	0.5000	0.5000	0.3750	0.06	0.06	2.24	2.17	2.80	2.91	1.74	1,500	860	0.00
83	L305649-L305610	2.0000	3.1875	0.7188	0.7188	0.5625	0.06	0.06	2.28	2.20	2.87	3.03	1.64	2,680	1,630	-0.09
84	18790-18720	2.0000	3.3465	0.6875	0.6875	0.5313	0.14	0.06	2.44	2.20	3.03	3.15	1.44	2,240	1,550	-0.03
85	368-362	2.0000	3.5433	0.7874	0.8750	0.6250	0.06	0.08	2.28	2.20	3.19	3.31	1.83	3,310	1,810	-0.17
204	3780-3730	2.0000	3.6718	1.1875	1.1930	0.9375	0.14	0.03	2.52	2.28	3.31	3.46	1.73	5,000	2,890	-0.32
86	3780-3720	2.0000	3.6718	1.1875	1.1930	0.9375	0.14	0.13	2.52	2.28	3.23	3.46	1.73	5,000	2,890	-0.32
205	49583-49522	2.0000	4.0000	1.2500	1.2500	1.0000	0.14	0.03	2.60	2.32	3.54	3.78	1.46	5,300	3,630	-0.28

For NOTES see sheets 11 and 12.

APPROVED 30 April 1959 REVISED B For changes see sheets 1 thru 13

FED. SUP CLASS
3110

For NOTES see sheets 11 and 12.

APPROVED 30 April 1959 REVISED ⑨ For changes see sheets 1 thru 13

P. A. OS Other Cost AT 11	INTERNATIONAL INTEREST	TITLE BEARING, ROLLER, TAPERED, SINGLE ROW OF ROLLERS, NORMAL ANGLE, TYPE 751 (TS)	MILITARY STANDARD MS19081
PROCUREMENT SPECIFICATION FF-B-187	SUPERSEDES	SHEET 4	OF 13

DD FORM 672-1 (COORDINATED)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

3110-0468

USER ACTIVITIES MC, YD

REVISED TILES ME, MI, AV, MU, IS, NS, SH

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 list.

FED. SPEC. CLASS
3110

Dash No.	AFBMA® bearing number (See Note 12)	A	B	C	D	E	R Max. shaft fillet radius	Y Max. housing fillet radius	T	P	S	O	K factor	Basic dynamic load ratings (lb)®		Effective load center	
														Radial	Thrust		
																	Shoulder diameter
206	49585-49520	2.0000	4.0000	1.2500	1.2500	1.0000	0.14	0.13	2.60	2.32	3.46	3.78	1.46	5.300	3.630	-0.28	
207	529-522	2.0000	4.0000	1.3750	1.4200	1.0625	0.03	0.13	2.32	2.28	3.50	3.74	2.05	6.550	3.200	-0.50	
87	529X-522	2.0000	4.0000	1.3750	1.4200	1.0625	0.14	0.13	2.56	2.28	3.50	3.74	2.05	6.550	3.200	-0.50	
208	45284-45220	2.0000	4.1250	1.1875	1.2188	0.9375	0.25	0.13	2.80	2.32	3.66	3.90	1.76	6.200	3.520	-0.32	
88	HM807046-HM807010	2.0000	4.1250	1.4375	1.4375	1.1250	0.14	0.13	2.76	2.48	3.50	3.94	1.20	7.150	5.950	-0.29	
209	537-532X	2.0000	4.2500	1.4375	1.4550	1.1250	0.14	0.13	2.56	2.32	3.70	3.94	1.97	6.900	3.500	-0.48	
*89	619-612A	2.0000	4.7260	1.6250	1.6250	1.2500	0.14	0.13	2.64	2.40	4.06	4.33	1.86	8.300	4.450	-0.55	
210	555-553X	2.0000	4.8125	1.5000	1.4440	1.1875	0.09	0.13	2.60	2.44	4.25	4.53	1.69	7.900	4.700	-0.37	
90	65200-65500	2.0000	5.0000	1.7500	1.7500	1.3750	0.14	0.13	2.95	2.72	4.21	4.69	1.20	9.850	8.200	-0.37	
211	33895-33821	2.1250	3.7500	1.0938	1.1250	0.8750	0.06	0.09	2.48	2.36	3.35	3.54	1.77	5.250	2.960	-0.30	
212	456-453X	2.1250	4.1250	1.1875	1.1542	0.9687	0.14	0.13	2.68	2.40	3.62	3.86	1.74	5.400	3.090	-0.28	
91	HM807049-HM807010	2.1250	4.1250	1.4375	1.4375	1.1250	0.14	0.13	2.87	2.48	3.50	3.94	1.20	7.150	5.950	-0.29	
92	539-532A	2.1250	4.3750	1.5000	1.4550	1.1875	0.14	0.13	2.68	2.40	3.74	3.94	1.97	6.900	3.500	-0.48	
213	621-612	2.1250	4.7500	1.6250	1.6250	1.2500	0.14	0.13	2.76	2.48	4.13	4.33	1.86	8.300	4.450	-0.55	
214	65212-65500	2.1250	5.0000	1.7500	1.7500	1.3750	0.14	0.13	3.03	2.80	4.21	4.69	1.20	9.850	8.200	-0.37	
215	6280-6220	2.1250	5.0000	2.0000	2.0625	1.6250	0.14	0.13	2.91	2.64	4.25	4.61	1.96	12.400	6.350	-0.77	
216	5566-5535	2.1875	4.8125	1.7188	1.7230	1.4375	0.05	0.13	2.76	2.68	4.17	4.57	1.63	10.200	6.250	-0.48	
*217	HM813840-HM813810	2.1875	5.0000	1.4375	1.4375	1.0625	0.14	0.13	2.99	2.76	4.37	4.76	1.16	8.050	6.950	-0.15	
93	L507949-L507910	2.2500	3.4375	0.7188	0.7188	0.5625	0.06	0.06	2.56	2.44	3.11	3.27	1.50	2.810	1.870	-0.03	
241	387A-382A	2.2500	3.8125	0.8268	0.8640	0.6250	0.14	0.03	2.72	2.44	3.50	3.62	1.65	3.590	2.180	-0.12	
179	28682-28622	2.2500	3.8437	0.9688	0.9688	0.7656	0.14	0.03	2.76	2.48	3.46	3.62	1.45	4.400	3.040	-0.13	
94	387-382	2.2500	3.8750	0.8268	0.8640	0.7018	0.09	0.03	2.60	2.44	3.54	3.62	1.65	3.590	2.180	-0.12	
218	462-453X	2.2500	4.1250	1.1875	1.1542	0.9687	0.09	0.13	2.64	2.48	3.62	3.86	1.74	5.400	3.090	-0.28	
95	45290-45220	2.2500	4.1250	1.1875	1.2188	0.9375	0.09	0.13	2.68	2.56	3.66	3.90	1.76	6.200	3.520	-0.32	
96	390-394A	2.2500	4.3307	0.8661	0.8660	0.7411	0.09	0.05	2.76	2.60	3.98	4.11	1.45	4.000	2.770	-0.03	
*97	462-454	2.2500	4.3307	1.0943	1.1542	1.0630	0.09	0.08	2.64	2.48	3.78	3.94	1.74	5.400	3.090	-0.28	
242	3979-3920	2.2500	4.4375	1.1875	1.1830	0.9375	0.14	0.13	2.83	2.60	3.90	4.17	1.45	5.900	4.050	-0.18	
243	33225-33462	2.2500	4.6250	1.1875	1.1875	0.9375	0.14	0.13	2.91	2.68	4.09	4.41	1.34	5.950	4.450	-0.11	
98	623-612	2.2500	4.7500	1.6250	1.6250	1.2500	0.14	0.13	2.83	2.60	4.13	4.33	1.86	8.300	4.450	-0.55	
99	65225-65500	2.2500	5.0000	1.7500	1.7500	1.3750	0.14	0.13	3.15	2.80	4.21	4.69	1.20	9.850	8.200	-0.37	

P. A. OS
Other Code AT
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INTERNATIONAL INTEREST

TITLE
BEARING, ROLLER, TAPERED, SINGLE ROW OF ROLLERS, NORMAL ANGLE, TYPE 751 (TS)

MILITARY STANDARD
MS19081

SHEET 5 OF 13

3110-0468

PROCUREMENT SPECIFICATION
FF-B-187

SUPERSEDES:

For NOTES see sheets 11 and 12.

APPROVED 30 April 1959
REVISED (B) For changes see sheets 1 thru 12

For NOTES see sheets 11 and 12.

APPROVED 30 April 1959 REVISED 19 For changes see sheets 1 thru 12

REVIEWER ACTIVITIES ME, MI, AV, MU, IS, NS, SH USER ACTIVITIES MC, YD

This specification is approved for use by all Departments and Agencies of the Department of Defense. It is to be used in all procurement and design applications and for repetitive use shall be made from this.

Dash No.	AFBMA® bearing number (See Note 12)	A Bore	B Outside dia.	C Bearing width	D Cone width	E Cup width	R Max. shaft fillet radius	Y Max. housing fillet radius	T	P Recommended shoulder diameter	S Housing	O	K factor	Basic dynamic load ratings (lb)		Effective load center
														Radial	Thrust	
*100	6375-6320	2.2500	5.3447	2.1250	2.2050	1.7500	0.17	0.13	3.15	2.83	4.61	4.96	1.80	13,300	7,350	-0.76
219	6455-6420	2.2500	5.8750	2.1250	2.1350	1.7500	0.14	0.13	3.19	2.95	5.08	5.51	1.61	14,700	9,100	-0.59
220	3981-3920	2.3125	4.4375	1.1875	1.1830	0.9375	0.14	0.13	2.87	2.64	3.90	4.17	1.45	5,900	4,050	-0.18
101	28985-28920	2.3750	4.0000	1.0000	1.0000	0.7813	0.14	0.13	2.87	2.64	3.54	3.82	1.37	4,550	3,310	-0.10
221	HM212044-HM212010	2.3750	4.8125	1.5000	1.5100	1.1700	0.31	0.06	3.35	2.76	4.33	4.57	1.73	9,150	5,300	-0.43
102	65237-65500	2.3750	5.0000	1.7500	1.7500	1.3750	0.14	0.13	3.23	2.80	4.21	4.69	1.20	9,850	8,200	-0.37
222	637-633	2.3750	5.1250	1.6250	1.6250	1.3500	0.14	0.13	3.07	2.83	4.57	4.88	1.61	9,600	5,950	-0.44
223	L610349-L610510	2.5000	3.1788	0.7500	0.7500	0.5938	0.06	0.06	2.80	2.72	3.39	3.58	1.38	3,070	2,220	+0.02
224	29585-29520	2.5000	4.2500	1.0000	1.0000	0.7500	0.14	0.13	3.03	2.80	3.78	4.06	1.27	4,650	3,670	-0.03
103	390A-394A	2.5000	4.3307	0.8661	0.8660	0.7411	0.06	0.05	2.87	2.76	3.98	4.11	1.45	4,000	2,770	-0.03
*104	29586-29521	2.5000	4.3307	1.0000	1.0000	0.7500	0.06	0.05	2.87	2.80	3.90	4.09	1.27	4,650	3,670	-0.03
105	39585-39520	2.5000	4.4375	1.1875	1.1875	0.9375	0.14	0.13	3.03	2.80	3.98	4.21	1.72	7,000	4,050	-0.26
106	5584-5535	2.5000	4.8125	1.7188	1.7230	1.4375	0.14	0.13	3.19	2.95	4.17	4.57	1.63	10,200	6,250	-0.48
107	565-563	2.5000	5.0000	1.4375	1.4240	1.1250	0.14	0.13	3.15	2.87	4.41	4.72	1.61	8,250	5,100	-0.32
225	HM13842-HM13811	2.5000	5.0000	1.4375	1.4375	1.0625	0.14	0.06	3.23	2.99	4.45	4.76	1.16	8,050	6,950	-0.15
*108	639-633	2.5000	5.1250	1.6250	1.6250	1.3500	0.14	0.13	3.19	2.91	4.57	4.88	1.61	9,600	5,950	-0.44
109	HM14235-HM14210	2.5000	5.3750	1.6250	1.6250	1.3500	0.14	0.13	3.23	3.07	4.76	5.08	1.62	10,900	6,750	-0.43
110	HM15336-HM15311	2.5000	5.3750	1.8125	1.8125	1.4375	0.14	0.13	3.43	3.15	4.65	5.20	1.24	11,900	9,600	-0.33
*111	6475-6420	2.5000	5.8750	2.1250	2.1350	1.7500	0.14	0.13	3.39	3.15	5.08	5.51	1.61	14,700	9,100	-0.59
226	569-563	2.5576	5.0000	1.4375	1.4240	1.1250	0.14	0.13	3.19	2.91	4.41	4.72	1.61	8,250	5,100	-0.32
227	6379-6320	2.5625	5.3447	2.1250	2.2050	1.7500	0.14	0.13	3.31	3.05	4.61	4.96	1.80	13,300	7,350	-0.76
228	3955-394A	2.6250	4.3307	0.8661	0.8660	0.7411	0.14	0.05	3.11	2.87	3.98	4.11	1.45	4,000	2,770	-0.03
112	3984-3920	2.6250	4.4375	1.1875	1.1830	0.9375	0.14	0.13	3.15	2.91	3.90	4.17	1.45	5,900	4,050	-0.18
*229	3994-3920	2.6250	4.4375	1.1875	1.1830	0.9375	0.22	0.13	3.31	2.91	3.90	4.17	1.45	5,900	4,050	-0.18
230	39590-39520	2.6250	4.4375	1.1875	1.1875	0.9375	0.14	0.13	3.15	2.91	3.98	4.21	1.72	7,000	4,050	-0.26
231	39591-39520	2.6250	4.4375	1.1875	1.1875	0.9375	0.22	0.13	3.31	2.91	3.98	4.21	1.72	7,000	4,050	-0.26
232	33262-33462	2.6250	4.6250	1.1875	1.1875	0.9375	0.14	0.13	3.19	2.95	4.09	4.41	1.34	5,950	4,450	-0.11
233	560-553X	2.6250	4.8125	1.5000	1.4440	1.1875	0.14	0.13	3.19	2.95	4.25	4.53	1.69	7,900	4,700	-0.37
234	HM212049-HM212010	2.6250	4.8125	1.5000	1.5100	1.1700	0.14	0.06	3.23	2.97	4.33	4.57	1.73	9,150	5,300	-0.43
113	HM212049-HM212011	2.6250	4.8125	1.5000	1.5100	1.1700	0.14	0.13	3.23	2.97	4.25	4.57	1.73	9,150	5,300	-0.43

FED. SUP CLASS
3110

For NOTES see sheets 11 and 12.

APPROVED 30 April 1959 REVISED ② For changes see sheets 1 thru 13

REVIEW: ATTIES: ME, MI, AV, MU, IS, NS, SH USER ACTIVITIES: MC, YD

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.

										FED. MP CLASS						
										3110						
Dash No.	AFBMA(B) bearing number (See Note 12)	A Bore	B Outside dia.	C Bearing width	D Cone width	E Cup width	R (B) Max. shaft fillet radius	Y (B) Max. housing fillet radius	(B) Recommended shoulder diameter			K factor	Basic dynamic load ratings (lb(B))		Effective load center	
									T Shaft	P	S Housing		Radial	Thrust		
235	H414242-H414210	2.6250	5.3750	1.6250	1.6250	1.2500	0.14	0.13	3.35	3.19	4.76	5.08	1.62	10,900	6,750	-0.43
236	H715341-H715311	2.6250	5.3750	1.8125	1.8125	1.4375	0.14	0.13	3.50	3.27	4.65	5.20	1.24	11,900	9,600	-0.33
114	399A-394A	2.6875	4.3307	0.8661	0.8660	0.7411	0.09	0.05	3.07	2.91	3.98	4.11	1.45	4,000	2,770	-0.03
237	399AS-394A	2.6875	4.3307	0.8661	0.8660	0.7411	0.20	0.05	3.27	2.91	3.98	4.11	1.45	4,000	2,770	-0.03
238	33269-33462	2.6875	4.6250	1.1875	1.1875	0.9375	0.14	0.13	3.23	2.99	4.09	4.41	1.34	5,950	4,450	-0.11
239	480-472A	2.6875	4.7244	1.1418	1.1420	0.9230	0.14	0.13	3.23	2.95	4.17	4.49	1.52	5,900	3,900	-0.16
240	560S-553X	2.6875	4.8125	1.5000	1.4440	1.1875	0.14	0.13	3.27	2.99	4.25	4.53	1.69	7,900	4,700	-0.37
250	H715343-H715311	2.6875	5.3750	1.8125	1.8125	1.4375	0.14	0.13	3.54	3.31	4.65	5.20	1.24	11,900	9,600	-0.33
251	29675-29620	2.7500	4.4375	1.0000	1.0000	0.7500	0.06	0.13	3.15	3.03	3.98	4.29	1.20	4,900	4,100	0.04
252	33275-33462	2.7500	4.6250	1.1875	1.1875	0.9375	0.14	0.13	3.31	3.03	4.09	4.41	1.34	5,950	4,450	-0.11
115	47487-47420	2.7500	4.7244	1.2813	1.2813	1.0313	0.14	0.13	3.31	3.07	4.21	4.49	1.62	7,600	4,700	-0.25
116	566-563	2.7500	5.0000	1.4375	1.4240	1.1250	0.14	0.13	3.35	3.07	4.41	4.72	1.61	8,250	5,100	-0.32
253	HM813846-HM813811	2.7500	5.0000	1.4375	1.4375	1.0625	0.14	0.06	3.46	3.19	4.45	4.76	1.16	8,050	6,950	-0.15
180	643-633	2.7500	5.1250	1.6250	1.6250	1.2500	0.14	0.13	3.39	3.15	4.57	4.88	1.61	9,600	5,950	-0.44
117	643-632	2.7500	5.3750	1.6250	1.6250	1.2500	0.14	0.13	3.39	3.15	4.65	4.92	1.61	9,600	5,950	-0.44
254	655-653	2.7500	5.7500	1.6250	1.6250	1.2500	0.14	0.13	3.46	3.23	5.16	5.47	1.43	10,300	7,150	-0.31
*118	6454-6420	2.7500	5.8750	2.1350	2.1350	1.7500	0.20	0.13	3.70	3.35	5.08	5.51	1.61	14,700	9,100	-0.59
255	745A-742	2.7500	5.9090	1.7500	1.8375	1.4375	0.14	0.13	3.46	3.23	5.28	5.59	1.80	13,200	7,350	-0.47
256	34274-34478	2.7540	4.7812	0.9688	0.9060	0.6875	0.08	0.08	3.19	3.07	4.33	4.57	1.30	4,250	3,270	0.06
257	33281-33462	2.8125	4.6250	1.1875	1.1875	0.9375	0.14	0.13	3.35	3.11	4.09	4.41	1.34	5,950	4,450	-0.11
258	47490-47420	2.8125	4.7244	1.2813	1.2813	1.0313	0.14	0.13	3.39	3.11	4.21	4.49	1.62	7,600	4,700	-0.25
119	H414249-H414210	2.8125	5.3750	1.6250	1.6250	1.2500	0.14	0.13	3.50	3.28	4.76	5.08	1.62	10,900	6,750	-0.43
259	H715345-H715311	2.8125	5.3750	1.8125	1.8125	1.4375	0.14	0.13	3.66	3.43	4.65	5.20	1.24	11,900	9,600	-0.33
*120	H715345-H715310	2.8125	5.5000	1.8125	1.8125	1.4375	0.14	0.13	3.66	3.43	4.72	5.24	1.24	11,900	9,600	-0.33
121	29685-29620	2.8750	4.4375	1.0000	1.0000	0.7500	0.14	0.13	3.39	3.15	3.98	4.29	1.20	4,900	4,100	0.04
122	33287-33462	2.8750	4.6250	1.1875	1.1875	0.9375	0.14	0.13	3.43	3.15	4.09	4.41	1.34	5,950	4,450	-0.11
260	27680-27620	2.8750	4.9375	1.0000	1.0000	0.7813	0.14	0.06	3.46	3.23	4.53	4.72	1.40	5,150	3,690	0.02
123	567-563	2.8750	5.0000	1.4375	1.4240	1.1250	0.14	0.13	3.46	3.19	4.41	4.72	1.61	8,250	5,100	-0.32
261	6460-6420	2.8750	5.8750	2.1350	2.1350	1.7500	0.14	0.13	3.66	3.43	5.08	5.51	1.61	14,700	9,100	-0.59
262	744-742	2.8750	5.9090	1.7500	1.8375	1.4375	0.14	0.13	3.38	3.35	5.28	5.59	1.80	13,200	7,350	-0.47
263	577-572	2.9375	5.5115	1.4375	1.4212	1.1250	0.14	0.13	3.58	3.35	4.92	5.24	1.45	8,800	6,100	-0.21

For NOTES see sheets 11 and 12.

APPROVED 30 April 1959

REVISION For changes see sheets 1 thru 13

P. A. OS
Other Code AT
11

INTERNATIONAL
INTEREST

TITLE
BEARING, ROLLER, TAPERED, SINGLE ROW OF
ROLLERS, NORMAL ANGLE, TYPE 751 (TS)

MILITARY STANDARD
MS19081

PROCURMENT SPECIFICATION
FF-8-187

SUPERSEDES:

SHEET 7 OF 13

DD FORM 672-1 (COORDINATED)

3110-0468

For NOTES see sheets 11 and 12.

APPROVED 30 April 1959 REVISED For changes see sheets 1 thru 13

REVIEWER ACTIVITIES: ME, MI, AV, MU, IS, NS, SH

USER ACTIVITIES: MC, YD

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.

FED. SUP. CLASS
3110

Dash No.	AFBMA ^(B) bearing number (See Note 12)	A Bore	B Outside dia.	C Bearing width	D Cone width	E Cup width	R (B) Max. shaft fillet radius	Y (B) Max. housing fillet radius	(B) Recommended shoulder diameter				K factor	Basic dynamic load ratings (lb)(B)		(B) Effective load center
									T	P	S	O		Radial	Thrust	
264	27684-27620	3.0000	4.9375	1.0000	1.0000	0.7813	0.14	0.06	3.58	3.31	4.53	4.72	5.150	3,690	0.02	
265	5760-5735	3.0000	5.3438	1.7500	1.8150	1.3750	0.14	0.13	3.70	3.46	4.69	5.12	11,200	7,800	-0.46	
124	575-572	3.0000	5.5115	1.4375	1.4212	1.1250	0.14	0.13	3.62	3.39	4.92	5.24	8,800	6,100	-0.21	
125	659-653	3.0000	5.7500	1.6250	1.6250	1.2500	0.14	0.13	3.66	3.43	5.16	5.47	10,300	7,150	-0.31	
126	6461-6420	3.0000	5.8750	2.1250	2.1350	1.7500	0.14	0.13	3.78	3.52	5.08	5.51	14,700	9,100	-0.59	
266	659-652	3.0000	6.0000	1.6250	1.6250	1.2500	0.14	0.13	3.66	3.43	5.28	5.55	10,300	7,150	-0.31	
267	755-752	3.0000	6.3750	1.8750	1.9000	1.5000	0.14	0.13	3.74	3.46	5.67	5.91	13,800	8,050	-0.47	
127	6576-6535	3.0000	6.3750	2.1250	2.1693	1.6875	0.14	0.13	3.90	3.62	5.55	6.06	16,000	11,000	-0.52	
268	843-832	3.0000	6.6250	2.1250	2.2190	1.6250	0.25	0.13	3.98	3.50	5.87	6.10	19.5	16,900	8,700	-0.73
269	HH221430-HH221410	3.0000	7.5000	2.2500	2.2650	1.8125	0.14	0.13	3.98	3.74	6.73	7.05	22,000	12,600	-0.59	
128	42690-42620	3.0625	5.0000	1.1875	1.2205	0.8750	0.14	0.13	3.58	3.35	4.49	4.76	6,750	4,850	-0.11	
270	5795-5735	3.0625	5.3438	1.7500	1.8150	1.3750	0.14	0.13	3.78	3.50	4.69	5.12	11,200	7,800	-0.46	
271	750-742	3.1250	5.9090	1.7500	1.8375	1.4375	0.14	0.13	3.78	3.54	5.28	5.59	13,200	7,350	-0.47	
272	740-742	3.1875	5.9090	1.7500	1.8375	1.4375	0.20	0.13	3.98	3.58	5.28	5.59	13,200	7,350	-0.47	
244	L116149-L116110	3.2500	4.5625	0.8125	0.8438	0.6503	0.06	0.06	3.54	3.46	4.25	4.37	4,150	2,170	-0.05	
245	27687-27620	3.2500	4.9375	1.0000	1.0000	0.7813	0.14	0.06	3.78	3.50	4.53	4.72	5,150	3,690	0.02	
246	495-492A	3.2500	5.2500	1.1875	1.1720	0.8750	0.14	0.13	3.82	3.54	4.72	5.04	6,550	5,000	-0.03	
129	47686-47620	3.2500	5.2500	1.3125	1.3125	1.0313	0.14	0.13	3.82	3.54	4.69	5.04	7,850	5,450	-0.17	
130	HM516449-HM516410	3.2500	5.2500	1.5625	1.5625	1.2813	0.14	0.13	3.90	3.62	4.65	5.04	10,000	6,900	-0.29	
131	580-572	3.2500	5.5115	1.4375	1.4375	1.1250	0.14	0.13	3.86	3.58	4.92	5.24	8,800	6,100	-0.21	
132	663-653	3.2500	5.7500	1.6250	1.6250	1.2500	0.14	0.13	3.90	3.62	5.16	5.47	10,300	7,150	-0.31	
247	757-752	3.2500	6.3750	1.8750	1.9000	1.5000	0.14	0.13	3.94	3.70	5.67	5.91	13,800	8,050	-0.47	
133	6559-6535	3.2500	6.3750	2.1250	2.1693	1.6875	0.14	0.13	4.09	3.86	5.55	6.06	16,000	11,000	-0.52	
248	842-832	3.2500	6.6250	2.1250	2.2190	1.6250	0.14	0.13	3.98	3.70	5.87	6.10	19,900	8,700	-0.73	
273	27690-27620	3.2813	4.9375	1.0000	1.0000	0.7813	0.14	0.06	3.78	3.54	4.53	4.72	5,150	3,690	0.02	
134	749-742	3.3475	5.9090	1.7500	1.8375	1.4375	0.14	0.13	3.98	3.74	5.28	5.59	13,200	7,350	-0.47	
274	497-492A	3.3750	5.2500	1.1875	1.1720	0.8750	0.14	0.13	3.90	3.66	4.72	5.04	6,550	5,000	-0.03	
135	497-493	3.3750	5.3750	1.1875	1.1720	0.8750	0.14	0.13	3.90	3.66	4.80	5.12	6,550	5,000	-0.03	
*136	HM617049-HM617010	3.3750	5.5960	1.6875	1.6875	1.3438	0.19	0.13	4.17	3.77	4.92	5.39	11,600	8,600	-0.29	
181	596-592A	3.3750	6.0000	1.5625	1.4300	1.1875	0.14	0.13	4.02	3.78	5.31	5.67	9,350	7,100	-0.10	

For NOTES see sheets 11 and 12.

APPROVED 30 April 1959 REVISED (B) For changes see sheets 1 thru 13

P. A. OS
Other Cast: AT
11

INTERNATIONAL
INTEREST

TITLE
BEARING, ROLLER, TAPERED, SINGLE ROW OF
ROLLERS, NORMAL ANGLE, TYPE 751 (TS)

MILITARY STANDARD

MS19081

PROCUREMENT SPECIFICATION
FF-B-187

SUPERSEDES

SHEET 8 OF 13

FED. SUP. CLASS
3110

For NOTES see sheets 11 and 12.

APPROVED 30 April 1959 REVISED (B) For changes see sheets 1 thru 13

P. A. OS Other Cont. AT 11	INTERNATIONAL INTEREST	TITLE BEARING, ROLLER, TAPERED, SINGLE ROW OF ROLLERS, NORMAL ANGLE, TYPE 751 (TS)	MILITARY STANDARD MS19081
PROCUREMENT SPECIFICATION FF-B-187	SUPERSEDES		SHEET 8 OF 13

MC, YD

USER ACTIVITIES:

ITEMS ME, MI, AV, MU, IS, NS, SH

REVISE

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 for all engineering and design applications and for repetitive use shall be made from this
 document

FED. AUP CLASS
3110

Dash No.	AFBMA® bearing number (See Note 12)	A Bore	B Outside dia.	C Bearing width	D Cone width	E Cup width	R Max. shaft fillet radius	Y Max. housing fillet radius	B Recommended shoulder diameter			K factor	Basic dynamic load ratings (lb) (B)		Effective load center	
									T	P	S		O	Radial		Thrust
275	758-752	3.3750	6.3750	1.8750	1.9000	1.5000	0.14	0.13	4.06	3.82	5.67	5.91	1.71	13,800	8,050	-0.47
276	677-672	3.3750	6.6250	1.6250	1.6250	1.1875	0.14	0.13	4.13	3.90	5.87	6.30	1.24	11,500	9,250	-0.11
277	841-832	3.3750	6.6250	2.2190	2.2190	1.6250	0.14	0.13	4.09	3.82	5.87	6.10	1.95	16,900	8,700	-0.73
278	LL217849-LL217810	3.5000	4.7812	0.5938	0.5938	0.4375	0.06	0.06	3.82	3.70	4.53	4.61	1.77	2,600	1,470	0.12
279	42350-42587	3.5000	5.8750	1.2500	1.1406	0.9688	0.12	0.13	4.09	3.86	5.28	5.63	1.19	7,100	6,000	0.12
137	593-592A	3.5000	6.0000	1.5625	1.4300	1.1875	0.14	0.13	4.09	3.86	5.31	5.67	1.32	9,350	7,100	-0.10
182	593A-592A	3.5000	6.0000	1.5625	1.4300	1.1875	0.25	0.13	4.33	3.86	5.31	5.67	1.32	9,350	7,100	-0.10
138	759-752	3.5000	6.3750	1.8750	1.9000	1.5000	0.14	0.13	4.17	3.90	5.67	5.91	1.71	13,800	8,050	-0.47
139	6580-6535	3.5000	6.3750	2.1250	2.1693	1.6875	0.14	0.13	4.29	4.01	5.55	6.06	1.46	16,000	11,000	-0.52
280	679-672	3.5000	6.6250	1.6250	1.6250	1.1875	0.14	0.13	4.21	3.98	5.87	6.30	1.24	11,500	9,250	-0.11
281	850-832	3.5000	6.6250	2.1250	2.2190	1.6250	0.14	0.13	4.17	3.94	5.87	6.10	1.95	16,900	8,700	-0.73
282	77350-77675	3.5000	6.7500	1.8750	1.9000	1.5000	0.20	0.13	4.33	3.98	6.02	6.34	1.59	14,300	9,000	-0.38
140	855-854	3.5000	7.5000	2.2500	2.2650	1.7500	0.31	0.13	4.65	4.06	6.69	6.85	1.74	19,300	11,100	-0.60
283	HM218248-HM218210	3.5433	5.7874	1.5748	1.5748	1.2795	0.28	0.14	4.41	3.90	5.24	5.55	1.76	11,700	6,650	-0.34
141	760-752	3.5625	6.3750	1.8750	1.9000	1.5000	0.14	0.13	4.21	3.98	5.67	5.91	1.71	13,800	8,050	-0.47
284	47890-47820	3.6250	5.7500	1.3125	1.3750	1.0313	0.14	0.13	4.21	3.98	5.16	5.51	1.30	8,750	6,750	-0.04
285	42368-42584	3.6875	5.8437	1.1250	1.1406	0.8438	0.12	0.12	4.21	4.02	5.28	5.59	1.19	7,100	6,000	0.12
286	L319749-319210	3.7500	5.1250	0.8125	0.8438	0.6563	0.06	0.06	4.06	3.98	4.80	4.92	1.67	4,450	2,670	0.05
287	47896-47820	3.7500	5.7500	1.3125	1.3750	1.0313	0.14	0.13	4.33	4.06	5.16	5.51	1.30	8,750	6,750	-0.04
142	594-592A	3.7500	6.0000	1.5625	1.4300	1.1875	0.14	0.13	4.33	4.09	5.31	5.67	1.32	9,350	7,100	-0.10
288	77375-77675	3.7500	6.7500	1.8750	1.9000	1.5000	0.14	0.13	4.45	4.17	6.02	6.34	1.59	14,300	9,000	-0.38
143	776-772	3.7500	7.1250	1.8750	1.8900	1.5000	0.14	0.13	4.49	4.21	6.34	6.61	1.51	14,900	9,850	-0.32
144	864-854	3.7500	7.5000	2.2500	2.2650	1.7500	0.31	0.13	4.84	4.25	6.69	6.85	1.74	19,300	11,100	-0.60
*145	HH221440-HH221416	3.7500	7.8750	2.4375	2.2650	2.0000	0.31	0.13	4.92	4.33	6.87	7.05	1.74	22,000	12,600	-0.59
289	685-672	3.8750	6.6250	1.6250	1.6250	1.1875	0.14	0.13	4.57	4.29	5.87	6.30	1.24	11,500	9,250	-0.11
290	779-772	3.8750	7.1250	1.8750	1.8900	1.5000	0.14	0.13	4.57	4.33	6.34	6.61	1.51	14,900	9,850	-0.32
291	866-854	3.8750	7.5000	2.2500	2.2650	1.7500	0.14	0.13	4.65	4.37	6.69	6.85	1.74	19,300	11,100	-0.60
292	783-772	3.9370	7.1250	1.8750	1.8900	1.5000	0.14	0.13	4.65	4.37	6.34	6.61	1.51	14,900	9,850	-0.32
293	52393-52618	3.9375	6.1875	1.4375	1.4219	1.0313	0.14	0.13	4.57	4.29	5.59	5.98	1.23	9,900	8,050	-0.01
146	52400-52618	4.0000	6.1875	1.4375	1.4219	1.0313	0.14	0.13	4.61	4.37	5.59	5.98	1.23	9,900	8,050	-0.01

For NOTES see sheets 11 and 12.

APPROVED 30 April 1959 REVISED (B) For changes see sheets 1 thru 13

P. A. OS Other Case AT 11	INTERNATIONAL INTEREST	TITLE BEARING, ROLLER, TAPERED, SINGLE ROW OF ROLLERS, NORMAL ANGLE, TYPE 751 (TS)	MILITARY STANDARD MS19081
PROCUREMENT SPECIFICATION FF-B-187	SUPERSEDES:	SHEET 9 OF 13	3110-0468

DD FORM 672-1 (COORDINATED)

For NOTES see sheets 11 and 12.

APPROVED 30 April 1959 REVISED (B) For changes see sheets 1 thru 13

DD FORM 672-1 COORDINATED

USER ACTIVITIES MC, YD

IES ME, MI, AV, MU, IS, NS, SH

REVISED

Standard is approved for use by all Departments and Agencies of the Department of Defense.
No change for all new engineering and design applications and for repetitive use shall be made from this standard.

FED. SUP. CLASS 3110																
Dash No.	AFBMA® bearing number (See Note 12)	A Bore	B Outside dia.	C Bearing width	D Cone width	E Cup width	R Max. shaft fillet radius	Y Max. housing fillet radius	T	B Recommended shoulder diameter		O	K factor	Basic dynamic load ratings (lb)®		a(B) Effec- live load center
										Shaft	Housing			Radial	Thrust	
162	95500-95925	5.0000	9.2500	2.5000	2.5000	1.9375	0.25	0.13	6.06	5.59	8.23	8.54	1.58	27,300	17,300	-0.55
163	HH228349-HH228310	5.0000	10.0000	3.0625	3.2500	2.4375	0.38	0.25	6.46	5.83	8.78	9.20	1.82	38,200	21,000	-0.92
*164	HH231637-HH231610	5.0000	11.3750	3.2500	3.4375	2.2500	0.53	0.25	6.85	5.91	10.04	10.38	1.83	43,000	23,400	-1.05
309	799-792	5.0625	8.1250	1.8750	1.8750	1.3750	0.13	0.13	5.75	5.51	7.32	7.80	1.27	16,800	13,200	-0.07
165	799A-792	5.1250	8.1250	1.8750	1.8750	1.3750	0.14	0.13	5.83	5.59	7.32	7.80	1.27	16,800	13,200	-0.07
310	48385-48320	5.2500	7.5000	1.5625	1.5625	1.3125	0.14	0.13	5.83	5.59	6.97	7.24	1.82	13,700	7,500	-0.16
166	95525-95925	5.2500	9.2500	2.5000	2.5000	1.9375	0.38	0.13	6.54	5.83	8.23	8.54	1.58	27,300	17,300	-0.55
167	48393-48320	5.3750	7.5000	1.5625	1.5625	1.3125	0.14	0.13	5.94	5.67	6.97	7.24	1.82	13,700	7,500	-0.16
311	74537-74850	5.3750	8.5000	1.8750	1.8750	1.3750	0.14	0.13	6.10	5.83	7.72	8.19	1.20	17,200	14,300	0.09
168	74550-74850	5.5000	8.5000	1.8750	1.8750	1.3750	0.14	0.13	6.22	5.94	7.72	8.19	1.20	17,200	14,300	0.09
312	898-892	5.5000	9.0000	2.2500	2.2500	1.7500	0.14	0.13	6.30	6.02	8.07	8.50	1.39	23,000	16,500	-0.23
313	82550-82950	5.5000	9.5000	2.2500	2.2300	1.7500	0.14	0.13	6.34	6.06	8.46	8.90	1.32	23,000	17,400	-0.14
169	99550-99100	5.5000	10.0000	2.6250	2.6250	1.8750	0.28	0.13	6.69	6.14	8.94	9.37	1.43	29,200	20,400	-0.48
*170	HH231649-HH231610	5.5000	11.3750	3.2500	3.4375	2.2500	0.38	0.25	6.97	6.34	10.04	10.38	1.83	43,000	23,400	-1.05
*171	EE450551-EE451212	5.5000	12.1250	3.5000	3.6875	2.4375	0.38	0.27	7.09	6.61	10.59	10.82	1.79	44,000	24,600	-1.07
*172	HH234031-HH234018	5.5000	12.5000	3.5000	3.6875	2.6250	0.38	0.27	7.09	6.61	11.02	11.24	1.79	49,500	27,800	-1.04
*173	36690-36620	5.7500	7.6250	1.1250	1.1250	0.9063	0.06	0.06	6.10	6.02	7.17	7.40	1.59	9,700	6,100	0.19
314	36691-36620	5.7500	7.6250	1.1250	1.1250	0.9063	0.19	0.06	6.38	6.02	7.17	7.40	1.59	9,700	6,100	0.19
315	82576-82950	5.7500	9.5000	2.2500	2.2300	1.7500	0.14	0.13	6.54	6.30	8.46	8.90	1.32	23,000	17,400	-0.14
316	99575-99100	5.7500	10.0000	2.6250	2.6250	1.8750	0.28	0.13	6.89	6.38	8.94	9.37	1.43	29,200	20,400	-0.48
317	EE107057-107105	5.7500	10.5625	2.9375	2.9375	2.2500	0.25	0.25	6.93	6.54	9.33	9.82	1.51	34,400	22,800	-0.59
*174	HM231149-HM231110	5.8750	9.3125	2.2500	2.2300	1.7500	0.14	0.13	6.57	6.42	8.54	8.82	1.83	26,300	14,400	-0.45
318	99587-99100	5.8750	10.0000	2.6250	2.6250	1.8750	0.28	0.13	7.01	6.50	8.94	9.37	1.43	29,200	20,400	-0.48
175	HH231649-HH231610	6.0000	8.7500	1.8437	1.8437	1.3750	0.14	0.06	6.65	6.42	8.15	8.39	1.76	17,400	9,900	-0.23
176	99600-99100	6.0000	10.0000	2.6250	2.6250	1.8750	0.28	0.13	7.13	6.57	8.94	9.37	1.43	29,200	20,400	-0.48
*177	HH234048-HH234010	6.0000	12.1250	3.5000	3.6875	2.6250	0.38	0.27	7.52	7.05	10.87	11.24	1.79	49,500	27,800	-1.04
*178	HH234048-HH234018	6.0000	12.5000	3.5000	3.6875	2.6250	0.38	0.27	7.52	7.05	11.02	11.24	1.79	49,500	27,800	-1.04

*Inactive for new design after 20 August 1976.
*** Max shaft fillet radius (R) for dash number 185 is a special compound radius.

NOTES:
(B) 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).

P. A. OS
Other Code: AT 11

INTERNATIONAL INTEREST

TITLE
BEARING, ROLLER, TAPERED, SINGLE ROW OF ROLLERS, NORMAL ANGLE, TYPE 751 (TS)

PROCUREMENT SPECIFICATION
FF-B-187

SUPERSEDES:

MILITARY STANDARD
MS19081

SHEET 11 OF 13

APPROVED 30 April 1959 revised 13 For changes see sheets 1 thru 13

*Inactive for new design after 20 August 1976.

*** Max shaft fillet radius (R) for dash number 185 is a special compound radius.

NOTES:

- (B) 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).

APPROVED 30 April 1959 REVISED (B) For changes see sheets 1 thru 13

USER ACTIVITIES MC, YD

REVIEWER ACTIVITIES ME, MI, AV, MU, IS, NS, SH

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. OS Other Cost AT 11		INTERNATIONAL INTEREST	TITLE BEARING, ROLLER, TAPERED, SINGLE ROW OF ROLLERS; NORMAL ANGLE, TYPE 751 (TS)		MILITARY STANDARD MS19081	
PROCUREMENT SPECIFICATION FF-B-187			SUPERSEDES		SHEET 12 OF 13	

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)**				Cup diameter (B)**				Bore size range				Bearing width (C)**				Assembled bearing maximum radial runout	
Size range (B)		Tolerance		Size range		Tolerance		Bore size range		Tolerance		Bearing width (C)**		Tolerance		Assembled bearing maximum radial runout	
Over	Incl.	Plus	Minus	Over	Incl.	Plus	Minus	Over	Incl.	Plus	Minus	Over	Incl.	Plus	Minus	Cup O.D. (B)	Tolerance
0	3.0000	5	0	0.0000	12.0000	10	0	0	4.0000	80	0	0	4.0000	6.0000	140	100	Over
3.0000	6.0000	10	0	12.0000	24.0000	20	0	4.0000	6.0000	140	100	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 (a) 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 (a) 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.

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 300 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:

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

where:

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

The average life is approximately five times the rating life.

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 resisting forces set up by the rollers and a plane perpendicular to the bearing axis.

12. Part number: The MS part number consists of the MS number, plus the dash number. Example: MS19081-136. The AFBMA (Anti-Friction Bearing Manufacturers Association) cup and cone numbers are for reference only and are not to be used for ordering purposes.

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

14. Referenced documents shall be of the issue in effect on the date of invitation for bid.

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3110

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B Table II, a numerical listing of dash numbers cross-referenced to bore size A, is included as information to assist in locating a known dash number in Table I.

[illegible]

FED. SUP CLASS
3110

APPROVED 30 April 1959 REVISED (B) For changes see sheets 1 thru 13

P. A. OS Other Cost AT 11	INTERNATIONAL INTEREST	TITLE BEARING, ROLLER, TAPERED, SINGLE ROW OF ROLLERS, NORMAL ANGLE, TYPE 751 (TS)	MILITARY STANDARD MS19081
PROCUREMENT SPECIFICATION FF-B-187	SUPERSEDES:	SHEET 13 OF 13	