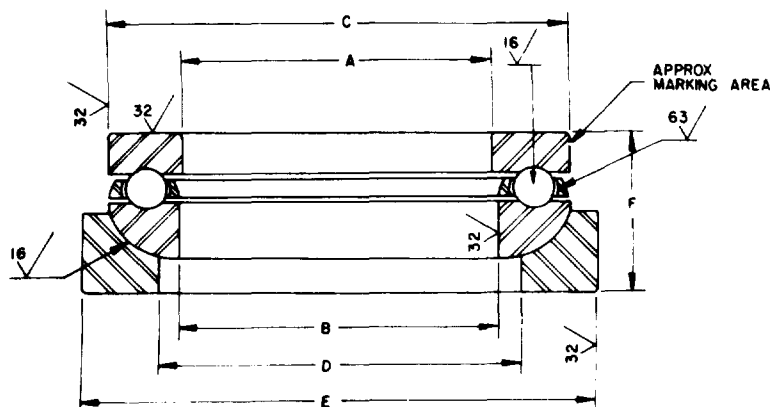


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## NOTES:

1. MATERIAL: STEEL, ALLOY, HIGH-CARBON CHROMIUM, TYPE AISI E51100 OR TYPE AISI E52100 OF FEDERAL STD. NO. 66.
2. SURFACE FINISH: SURFACES MARKED ✓ SHALL HAVE SURFACE FINISH IN ACCORDANCE WITH USAS B46.1.
3. HEAT-TREAT: BEARING SHALL BE THROUGH HARDENED TO ROCKWELL C-58 TO C-66.
4. BEARING SHALL BE FREE OF ALL DEFECTS WHICH WOULD AFFECT ITS SERVICEABILITY.
5. \* BEARING MUST CLEAR MAXIMUM HOUSING OR SHAFT FILLET RADIUS SHOWN IN FILLET RADIUS COLUMN.
6. FOR DESIGN FEATURE PURPOSES, THIS STANDARD TAKES PRECEDENCE OVER DOCUMENTS REFERENCED HEREIN.
7. REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATIONS FOR BID.
8. THE MS PART NUMBER CONSISTS OF THE MS NUMBER, PLUS THE DASH NUMBER. EXAMPLE: MS17102-1.
9. MARKING SHALL CONSIST OF THE MS PART NUMBER AND THE MANUFACTURER'S IDENTIFICATION IN ACCORDANCE WITH MIL-STD-130.

## BEARING LOAD FORMULA:

THE DYNAMIC LOAD RATING (IN POUNDS) FOR ANY COMBINATION OF ROTATIONAL SPEED (IN RPM) AND RATING LIFE (IN HOURS) MAY BE FOUND FROM THE FOLLOWING FORMULA:

$$P_A = \frac{100 C}{(60 N H)^{1/3}}$$

## WHERE:

$P_A$  = REQUIRED DYNAMIC LOAD RATING - POUNDS  
 $C$  = BASIC DYNAMIC LOAD RATING - POUNDS  
 $N$  = ROTATIONAL SPEED - RPM  
 $H$  = RATING LIFE - HOURS

THE ABOVE FORMULA IS IN AGREEMENT WITH THE LATEST AFMA STANDARD METHOD OF EVALUATING LOAD RATINGS OF THRUST BALL BEARINGS.

BASIC LOAD RATING HAVE ALSO BEEN DETERMINED ACCORDING TO AFMA STANDARD METHODS.

THE DEFINITION OF RATING LIFE IS THE NUMBER OF HOURS AT SOME CONSTANT SPEED OF THE INNER RING THAT 90 PERCENT OF A GROUP OF APPARENTLY IDENTICAL BEARINGS WILL COMPLETE OR EXCEED BEFORE THE FIRST EVIDENCE OF FATIGUE DEVELOPS.

## Ⓐ ENTIRE STANDARD REVISED

P.A. Other Cust	ARMY-AT AF -11	TITLE BEARING, BALL, THRUST: METRIC, SELF-ALIGNING	MILITARY STANDARD MS17102
PROCUREMENT SPECIFICATION NONE	SUPERSEDES	SHEET 1	OF 2

DD FORM 672-1 (Coordinated)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

REVIEW ACTIVITIES: ARMY-WC  
USER ACTIVITIES: ARMY-MI; NAVY-YD, MC

This military standard is mandatory 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.

APPROVED 11 SEPTEMBER 1959 REVISED Ⓐ 20 FEBRUARY 1968

This military standard is mandatory 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. ARMY - AT Other Cust		TITLE BEARING, BALL, THRUST METRIC, SELF-ALIGNING		MILITARY STANDARD MS17102						
AF - II		SUPERSEDES		SHEET 2						
PROCUREMENT SPECIFICATION NONE										
DASH NUMBER	A (NOM) SMALL BORE	B LARGE BORE	C BEARING O.D.	D WASHER I.D.	E WASHER O.D.	F HEIGHT OVERALL	R FIL. RAD.	BASIC DYNAMIC LOAD RATING LBS	BASIC STATIC LOAD LBS	MIL-STD-102 CODE NUMBER
	MM INCH	MM INCH	MM INCH	MM INCH	MM INCH	MM INCH	MAX			
1	15 .5906 .0004	17 .669 .0005	35 1.3780 .002	22 .866 .002	38 1.4961 .002	.669 .005	.02	3610	5620	445x01517x4000
2	20 .7874 .0004	22 .866 .0005	40 1.5748 .002	25 .984 .002	45 1.7717 .002	.709 .005	.02	3870	6740	445x02056x4000
3	25 .9843 .0004	27 1.063 .0005	48 1.8898 .002	29 1.417 .002	50 1.9685 .002	.748 .005	.02	4990	9710	445x02586x4000
4	30 1.1811 .0004	32 1.260 .0005	53 2.0866 .002	42.5 1.673 .002	59 2.3228 .002	.787 .005	.02	5030	10400	445x03026x4000
5	35 1.3780 .0005	37 1.457 .0005	62 2.4409 .002	46 1.811 .002	67 2.6378 .002	.906 .005	.02	7080	15000	445x03546x4000
6	40 1.5748 .0005	42 1.654 .0005	64 2.5197 .002	48 1.890 .002	69 2.7165 .002	.906 .005	.02	6280	14300	445x04056x4000
7	45 1.7717 .0005	47 1.850 .0005	73 2.8740 .002	53 2.087 .002	78 3.0709 .002	1.063 .005	.02	8490	19900	445x04546x4000
8	50 1.9685 .0005	52 2.047 .0005	78 3.0709 .002	58 2.283 .002	83 3.2677 .002	1.063 .005	.02	9790	23100	445x05036x4000
9	55 2.1654 .0006	57 2.244 .0006	88 3.4646 .002	71 2.795 .002	94 3.7008 .002	1.181 .005	.02	12000	28400	445x05556x4000
10	60 2.3622 .0006	62 2.441 .0006	90 3.5433 .002	69 2.717 .002	96 3.7795 .002	1.181 .005	.02	10400	27200	445x06086x4000
11	65 2.5591 .0006	67 2.638 .0006	100 3.9370 .002	74 2.913 .002	105 4.1339 .002	1.339 .005	.04	12900	33700	445x06526x4000
12	70 2.7559 .0006	72 2.835 .0006	103 4.0551 .002	81 3.189 .002	109 4.2913 .002	1.339 .005	.04	13200	35500	445x07056x4000
13	75 2.9528 .0006	77 3.031 .0006	110 4.3307 .002	89 3.504 .002	114 4.4882 .002	1.339 .005	.04	13300	37300	445x07526x4000
14	80 3.1496 .0006	82 3.228 .0006	115 4.5276 .002	89 3.504 .002	124 4.8819 .002	1.457 .005	.04	15400	44100	445x08036x4000
15	85 3.3465 .0008	88 3.465 .0008	125 4.9213 .002	98 3.858 .002	138 5.4331 .002	1.575 .010	.04	19200	52700	445x08546x4000
16	90 3.5433 .0008	93 3.661 .0008	135 5.3150 .002	110 4.331 .002	141 5.5512 .002	1.575 .010	.04	23000	63800	445x09066x4000
17	95 3.7402 .0008	98 3.856 .0008	140 5.5118 .002	107 4.213 .002	151 5.9449 .002	1.713 .010	.04	24900	69700	445x09586x4000
18	100 3.9370 .0008	103 4.055 .0008	150 5.9055 .003	118 4.646 .003	156 6.1417 .003	1.732 .010	.04	27600	79900	445x10046x4000
19	105 4.1339 .0008	108 4.252 .0008	155 6.1024 .003	118 4.646 .003	163 6.4173 .003	1.929 .010	.04	31300	89100	445x10576x4000
20	115 4.5276 .0008	118 4.646 .0008	165 6.4961 .003	128 5.039 .003	173 6.8110 .003	2.047 .010	.04	31700	93700	445x11556x4000
21	125 4.9213 .0010	128 5.039 .0010	175 6.8898 .003	139 5.472 .003	186 7.3228 .003	2.205 .010	.04	33100	103000	445x12576x4000
22	140 5.5118 .0010	143 5.630 .0010	200 7.8740 .003	156 6.142 .003	212 8.3464 .003	2.441 .010	.04	41800	131000	445x14016x4000

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APPROVED 11 SEPTEMBER 1959 REVISED (A) ENTIRE STANDARD REVISED