

FED. SUP CLASS
3110

USER ACTIVITIES

REVIEWER ACTIVITIES: AIR FORCE - 99
DLA - 15This 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. 11
Other Cust
Army - AT
Navy - ASINTERNATIONAL
INTEREST

TITLE

BEARING, ROLLER, NEEDLE, TRACK ROLLER CROWN RADIUS
O.D. INTEGRAL STUD, TYPE VII ANTIFRICTION, INCHPROCUREMENT SPECIFICATION
MIL-B-3990

SUPERSEDES:

DD FORM 672-1 (COORDINATED)

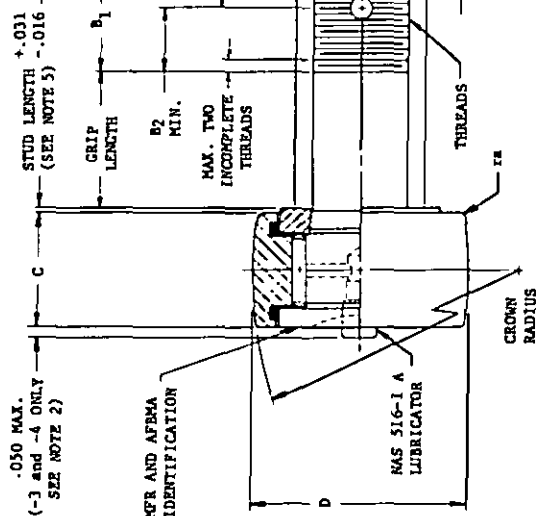
MILITARY STANDARD

MS21447

SHEET 1 OF 2

Project No. 3110-0714

APPROVED 12 SEP 84 REVISED



DIMENSIONS IN INCHES

FIRST DASH NO.	d	D	C	CROWN RADIUS (REF)	THREAD SIZE UNJF-3A	B ₁ THREAD LENGTH (REF)	d _a WASHER BACK-UP DIA. MIN.	B ₂ MIN.	d ₁ COTTER PIN HOLE DIA.	r _a 1/ FILLET MAX.	TOTAL RADIAL PLAY MAX.	2/ LIMIT LOAD RATING LB-IN MAX.	TRACK CAPACITY 40 HRC	LOAD RATING AS A TRACK ROLLER
-3	.1900	.5000	.281	10	.1900-32	.344	.207	.211	.070	.010	.0017	790	1bf	395
-4	.2500	.6875	.281	10	.2500-28	.344	.359	.224	.076	.010	.0017	940	385	470
-5	.3125	.7500	.344	10	.3125-24	.359	.422	.234	.076	.010	.0017	1660	525	830
-6	.3750	.8750	.469	10	.3750-24	.359	.500	.265	.106	.025	.0017	2720	725	1360
-7	.4375	1.0000	.531	10	.4375-20	.422	.562	.283	.106	.025	.0017	3860	1100	1930
-8	.5000	1.1250	.656	10	.5000-20	.422	.625	.314	.106	.040	.0017	6080	1425	3040

1/ THE CHAMFER ON BEARINGS MUST CLEAR THE MAXIMUM FILLET RADIUS GIVEN IN THE TABLE. THIS SPECIFICATION DOES NOT CONTROL BEARING CHAMFER CONTOURS.

2/ INSTALLATION TORQUE LUBRICATED THREADS.

FIRST DASH NO.	MASS (APPROX) lb
-3	.014 + (GRIP LENGTH NO. X .0005)
-4	.031 + (GRIP LENGTH NO. X .0009)
-5	.043 + (GRIP LENGTH NO. X .0014)
-6	.081 + (GRIP LENGTH NO. X .0020)
-7	.125 + (GRIP LENGTH NO. X .0026)
-8	.190 + (GRIP LENGTH NO. X .0035)

TABLE 1. TOLERANCE VALUES.

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DIMENSIONS IN INCHES

D BASIC STUD DIA.		ALLOWABLE DEVIATION FROM d SINGLE MEAN DIA. d_{mp}		ALLOWABLE DEVIATION FROM COTTER PIN DIA. d_1	
OVER	INCL.	HIGH	LOW	HIGH	LOW
.1250	.5000	+0	-.0015	+.010	-0

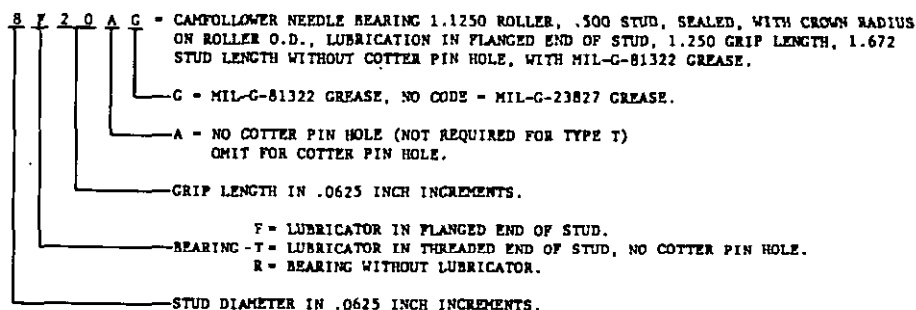
D BASIC OUTER RING OUTSIDE DIA.		ALLOWABLE DEVIATION FROM D OF SINGLE MEAN DIA. D_{mp}		ALLOWABLE DEVIATION FROM OUTER RING WIDTH C	
OVER	INCL.	HIGH	LOW	HIGH	LOW
.4375	1.1250	+.0010	-.0005	+0	-.005

MATERIALS - STEEL, MIL-S-8690, MIL-E-7493, MIL-S-7420, ASTM A304 A322/A331, QQ-S-700, FED. STD. NO. 66, AISI/SAE 50100, 51100, AISI 8620, 8620H, AMS 6440, AMS 6442.

SEALS, ACETAL RESIN, NYLON, POLYESTER ELASTOMER, OR EQUIVALENT, CONSTRUCTION OPTIONAL.

FINISH - ROLLER O.D. AND SIDES CHROME PLATED IN ACCORDANCE WITH QQ-C-320, CLASS 2, EXCEPT THICKNESS TO BE .0004 - .0007 INCHES. EXPOSED SURFACES OF OTHER PARTS AS MOUNTED. CADMIUM PLATED IN ACCORDANCE WITH QQ-P-416, TYPE 1, CLASS 2, INCLUDING UNTHREADED PORTION OF THE STUD.

EXAMPLE OF PART NUMBER -



- NOTES:
1. THE COMPLETE MS IDENTIFICATION MAY BE OBTAINED BY ADDING SUFFIX CODE LETTERS TO THE BASIC MS NUMBER SHOWN IN THE EXAMPLE OF PART NUMBER.
 2. MS21447-3 MAY BE CODED FOR RELUBRICATION FACILITIES IN THE FLANGED END ONLY. LUBRICATION FITTING FOR THE MS21447-3 MAY BE SHIPPED SEPARATELY AND INSTALLED ON ASSEMBLY. LUBRICATORS INSTALLED IN THE FLANGED END OF STUD ON MS21447-3 AND -4 MAY BE EXTENDED .05 IN. BEYOND THE FLANGED END THEREBY NECESSITATING AN INCREASE IN "W" OF .05 IN., ON ALL OTHER SIZES THE LUBRICATOR SHALL BE FLUSH OR INDENTED.
 3. THE TRACK BRINELL CAPACITY IS CRITICAL IN RESPECT TO THE ROLLING CAPACITY OF THE BEARING. AN INCREASE IN HARDNESS OF THE TRACK WILL INCREASE THE BRINELL CAPACITY OF THE TRACK, BUT IN NO CASE SHOULD THE ROLLING CAPACITY OF THE BEARING BE EXCEEDED.
 4. THE LIMIT LOAD RATING LISTED CAN BE DEFINED AS THE MAXIMUM LOAD WHICH CAN BE APPLIED TO A BEARING WITHOUT IMPAIRING THE SUBSEQUENT FUNCTIONING OF THE BEARING IN AIRFRAME APPLICATIONS. THE ULTIMATE OR STATIC FRACTURE LOAD RATING IS NOT LESS THAN 1.5 TIMES THE LIMIT LOAD RATING.
 5. FOR INSPECTION PURPOSES NOMINAL STUD LENGTH IS THE SUM OF NOMINAL GRIP AND THE THREAD LENGTH (B_1 DIMENSIONS).
 6. BEARINGS SHALL BE PREPACKED WITH GREASE AS CODED.
 7. BEARINGS TO BE WRAPPED IN GREASE PROOF PAPER OR POLYETHYLENE BAG, INDIVIDUALLY PACKAGED AND MARKED WITH THE DATE OF LUBRICATOR.
 8. ALL DIMENSIONS TO BE MET AFTER PLATING.

REVISED
APPROVED 12 SEP 84

P. A. 11 Other Cost Army - AT Navy - AS	INTERNATIONAL INTEREST	TITLE BEARING, ROLLER, NEEDLE, TRACK ROLLER CROWN RADIUS O.D. INTEGRAL STUD, TYPE VII ANTI-FRICTION, INCH	MILITARY STANDARD	
			MS21447	
PROCUREMENT SPECIFICATION MIL-B-3990	SUPERSEDES:		SHEET	2 OF 2

DD FORM 672-1 (COORDINATED)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

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