

INCH - POUND

MS24466K

21 September 1998

MS24466J

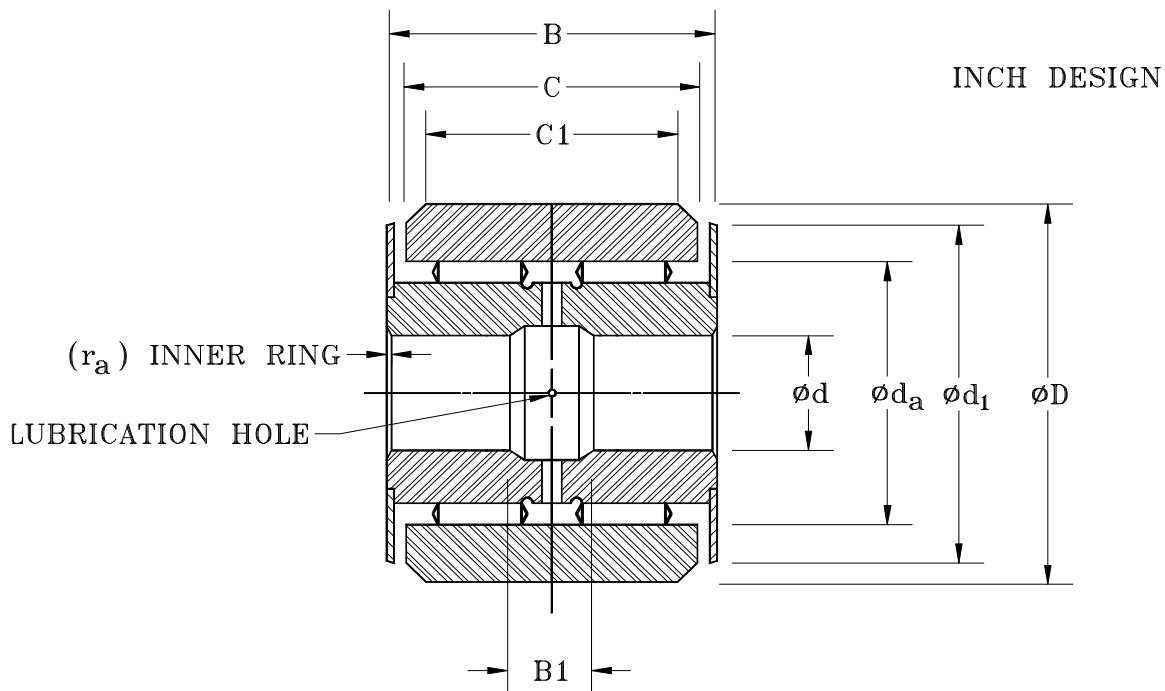
05 December 1994

MILITARY SPECIFICATION SHEET

BEARING, ROLLER, NEEDLE-DOUBLE ROW,
HEAVY DUTY, TRACK ROLLER, TYPE VI,
ANTIFRICTION, INCH

This specification sheet is approved for use by all Departments and
Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this
specification sheet and the issue of the following specification listed in that issue of the
Department of Defense Index of Specifications and Standards (DoDISS) specified in the
solicitation: MIL-B-3990.

FIGURE 1. Bearing section.**INACTIVE FOR NEW DESIGN...USE MS21439**

AMSC N/A

1 of 5

FSC 3110

DISTRIBUTION STATEMENT. Approved for public release; distribution is unlimited.

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TABLE I. Bearing properties.

| DASH NO. | Ød BORE | Ø D OUTER RING OUTSIDE DIA. | B OVER ALL WIDTH | C OUTER RING WIDTH | C ₁ TRACK CONT-ACT WIDTH | Ø d ₁ WASHER OUTSIDE DIA. | B ₁ LUBRICATION GROOVE WIDTH | r _a 1/ FILLET MAX | TOTAL RADIAL CLEARANCE MAX | Ø d _a CLAMPING DIA. MIN | 2/ LIMIT LOAD RATING LBF | 3/ LOAD RATING AS A TRACK ROLLER LBF | TRACK CAPACITY 40HRC LBF | MASS (APPROX) LB |
|----------|---------|-----------------------------|------------------|--------------------|-------------------------------------|--------------------------------------|---|------------------------------|----------------------------|------------------------------------|--------------------------|--------------------------------------|--------------------------|------------------|
| | | | | | | | | | | | | | | |
| -6 | 0.3750 | 1.1250 | 1.000 | 0.875 | 0.750 | 1.000 | 0.188 | 0.022 | 0.0014 | 0.672 | 7130 | 5370 | 2600 | 0.228 |
| -8 | 0.5000 | 1.3750 | 1.250 | 1.125 | 1.000 | 1.250 | 0.250 | 0.032 | 0.0014 | 0.891 | 12500 | 9370 | 4250 | 0.416 |
| -10 | 0.6250 | 1.6250 | 1.500 | 1.375 | 1.125 | 1.500 | 0.375 | 0.032 | 0.0014 | 1.109 | 19900 | 15000 | 5650 | 0.693 |
| -12 | 0.7500 | 1.8750 | 1.750 | 1.625 | 1.375 | 1.750 | 0.375 | 0.032 | 0.0014 | 1.281 | 28500 | 21400 | 7950 | 1.08 |
| -14 | 0.8750 | 2.1250 | 2.000 | 1.875 | 1.625 | 2.000 | 0.375 | 0.032 | 0.0015 | 1.469 | 38500 | 28900 | 10650 | 1.55 |
| -16 | 1.0000 | 2.3750 | 2.250 | 2.049 | 1.794 | 2.215 | 0.375 | 0.032 | 0.0015 | 1.578 | 44900 | 33600 | 13200 | 2.20 |
| -20 | 1.2500 | 2.7500 | 2.500 | 2.299 | 2.044 | 2.500 | 0.375 | 0.032 | 0.0015 | 1.844 | 59500 | 44600 | 17300 | 3.10 |
| -24 | 1.5000 | 3.0000 | 2.750 | 2.549 | 2.294 | 2.750 | 0.375 | 0.032 | 0.0015 | 1.984 | 71300 | 35600 | 21200 | 4.12 |
| -28 | 1.7500 | 3.4375 | 3.000 | 2.792 | 2.544 | 3.187 | 0.375 | 0.032 | 0.0015 | 2.281 | 92000 | 69000 | 27000 | 5.80 |
| -32 | 2.0000 | 3.8750 | 3.000 | 2.799 | 2.544 | 3.625 | 0.375 | 0.032 | 0.0015 | 2.562 | 102000 | 76600 | 30400 | 7.00 |

1/ The chamfer on the bearing shall clear the maximum fillet radius given in the table. However, this specification does not control bearing chamfer contours.

2/ The limit load rating listed can be defined as the maximum radial load which can be applied to a bearing without impairing the subsequent functioning of the bearing. The ultimate or static fracture load rating shall be not less than 1.5 times the limit load rating.

3/ The load rating as a track roller is the load the bearing will carry as a track roller for a L-10 life of 20,000 revolutions.

DIMENSIONS IN MILLIMETERS

| DASH NO. | Ød BORE | Ø D OUTER RING OUTSIDE DIA. | B OVER ALL WIDTH | C OUTER RING WIDTH | C ₁ TRACK CONTACT WIDTH | Ø d ₁ WASHER OUTSIDE DIA. | B ₁ LUBRICATION GROOVE WIDTH | r _a 1/ FILLET MAX | TOTAL RADIAL CLEARANCE MAX | Ø d _a CLAMPING DIA. MIN | LIMIT ₂ LOAD RATING M | LOAD ₃ RATING AS A TRACK ROLLER M | TRACK CAPACITY 40HRC | MASS (APPROX) KG |
|----------|---------|-----------------------------|------------------|--------------------|------------------------------------|--------------------------------------|---|------------------------------|----------------------------|------------------------------------|----------------------------------|--|----------------------|------------------|
| -6 | 9.325 | 28.575 | 25.40 | 22.22 | 19.05 | 25.40 | 4.78 | 0.6 | 0.036 | 17.07 | 31800 | 23900 | 11600 | 0.104 |
| -8 | 12.700 | 34.925 | 31.75 | 28.58 | 25.40 | 31.75 | 6.35 | 0.8 | 0.036 | 22.63 | 55500 | 41700 | 18900 | 0.189 |
| -10 | 15.875 | 41.275 | 38.10 | 34.92 | 28.58 | 38.10 | 9.51 | 0.8 | 0.036 | 28.17 | 88700 | 66700 | 25100 | 0.315 |
| -12 | 19.050 | 47.625 | 44.45 | 41.28 | 34.92 | 44.45 | 9.52 | 0.8 | 0.036 | 32.54 | 127000 | 95200 | 35400 | 0.49 |
| -14 | 22.250 | 53.975 | 50.80 | 47.62 | 41.28 | 50.80 | 9.52 | 0.8 | 0.038 | 37.31 | 171000 | 129000 | 47400 | 0.70 |
| -16 | 25.400 | 60.325 | 57.15 | 52.04 | 45.57 | 53.98 | 9.52 | 0.8 | 0.038 | 40.08 | 199000 | 149000 | 58700 | 1.00 |
| -20 | 31.750 | 69.850 | 63.50 | 58.39 | 51.92 | 63.50 | 9.52 | 0.8 | 0.038 | 46.84 | 265000 | 198000 | 77000 | 1.41 |
| -24 | 38.100 | 76.200 | 69.85 | 64.74 | 58.27 | 69.85 | 9.52 | 0.8 | 0.038 | 50.39 | 318000 | 238000 | 94300 | 1.87 |
| -28 | 44.450 | 87.312 | 76.20 | 71.09 | 64.62 | 80.95 | 9.52 | 0.8 | 0.038 | 57.94 | 409000 | 307000 | 120000 | 2.64 |
| -32 | 50.800 | 98.425 | 76.20 | 71.09 | 64.62 | 92.08 | 9.52 | 0.8 | 0.038 | 65.07 | 453000 | 341000 | 135000 | 3.18 |

2/ The limit load rating listed can be defined as the maximum radial load which can be applied to a bearing without impairing the subsequent functioning of the bearing. The ultimate or static fracture load rating shall be not less than 1.5 times the limit load rating.

3/ The load rating as a track roller is the load the bearing will carry as a track roller for a L-10 life of 20,000 revolutions.

TABLE III. Tolerance limits.

| DIMENSIONS IN INCHES | | | | | | | | | |
|----------------------|---|------|--|------|--|--------|---|-----|---|
| Ød BASIC BORE | ALLOWABLE DEVIATION FROM d OF SINGLE MEAN DIA, Ød | | ALLOWABLE DEVIATION FROM OVER- ALL WIDTH B | | ALLOWABLE DEVIATION FROM WASHER OUTSIDE DIA, Ød ₁ | | ALLOWABLE DEVIATION FROM LUBRI- CATION GROOVE WIDTH B ₁ | | Ø D BASIC OUTER RING OUTSIDE DIA |
| | INCL | LOW | HIGH | LOW | HIGH | LOW | HIGH | LOW | |
| OVER | INCL | HIGH | LOW | HIGH | LOW | HIGH | LOW | LOW | LOW |
| 2.0000 | 2.0000 | +0 | -0.0007 | +0 | -0.005 | +0.010 | -0.010 | +0 | -0.062 |
| 0.2500 | 0.2500 | +0 | -0.0007 | +0 | -0.005 | +0.010 | -0.010 | +0 | -0.062 |

TABLE IV. Tolerance limits.

| DIMENSIONS IN MILLIMETERS | | | | | | | | | |
|---------------------------|---|------|--|------|--|--------|---|-----|---|
| Ød BASIC BORE | ALLOWABLE DEVIATION FROM d OF SINGLE MEAN DIA, Ød | | ALLOWABLE DEVIATION FROM OVER- ALL WIDTH B | | ALLOWABLE DEVIATION FROM WASHER OUTSIDE DIA, Ød ₁ | | ALLOWABLE DEVIATION FROM LUBRI- CATION GROOVE WIDTH B ₁ | | Ø D BASIC OUTER RING OUTSIDE DIA |
| | INCL | LOW | HIGH | LOW | HIGH | LOW | HIGH | LOW | |
| OVER | INCL | HIGH | LOW | HIGH | LOW | HIGH | LOW | LOW | LOW |
| 6.350 | 50.800 | +0 | -0.018 | +0 | -0.13 | +0.25 | -0.25 | +0 | -1.06 |
| 0.2500 | 2.0000 | +0 | -0.0007 | +0 | -0.005 | +0.010 | -0.010 | +0 | -0.062 |

TABLE V. Oil hole data.

| NUMBER OF HOLES | | |
|-----------------|------|------------|
| BORE-DASH NO. | | INNER RING |
| OVER | INCL | 4 |
| -3 | -32 | 4 |

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REQUIREMENTS:

1. MATERIAL: SAE-AMS6274; ASTM-A304, ASTM-A576, ASTM-A675; QQ-S-700; FED-STD-66, Steel 50100, 51100, and 52100.
2. PLATING: OD and sides of outer ring, chromium plate, QQ-C-320, Class 2. Thickness: .013-.025 (.0005-.0010 inches). Other surfaces, excluding inner ring bore, zinc-nickel plating per SAE-AMS 2417, Type 2, or cadmium plating in accordance with QQ-P-416, Type 1, Class 2, with a thickness of .0003 to .0006 inches.
3. MACHINE FINISH: ASME-B46.1, see procurement specification.
4. LUBRICATION: Grease conforming to MIL-PRF-81322.
5. Dimensions to be met after plating, remove all burrs and sharp edges.

CONCLUDING MATERIAL

Custodians:

Army – AT
Navy - AS
Air Force – 99

Preparing activity:

Navy – AS

(Project 3110-1138)

Review Activities:

Air Force - 84
DLA - GS