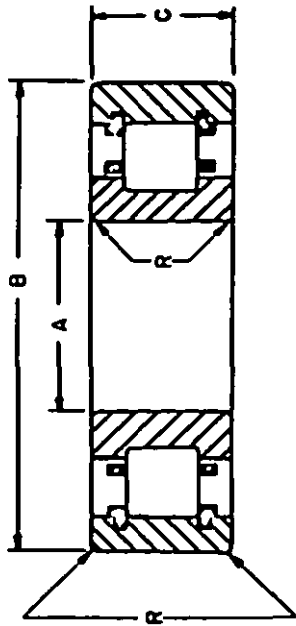


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THE CORNER RADIUS OR CHAMFER ON BOTH SIDES OF BEARING MUST CLEAR THE SHAFT AND HOUSING FILLET RADIUS LISTED IN THE TABLE BELOW.

| U.S. PART NO. | FIN. | A<br>INSIDE DIA.<br>INCH | B<br>OUTSIDE DIA.<br>INCH | C<br>WIDTH<br>INCH | R<br>SHAFT & HOUSING FILLET RADIUS | RECOMMENDED |         | INTERNAL RADIUS CLEARANCE<br>-.0001 INCH | BASIC DYNAMIC LOAD RATING | BASIC STATIC LOAD RATING | RECOMMENDED LIMITING SPEED | EST. WEIGHT |
|---------------|------|--------------------------|---------------------------|--------------------|------------------------------------|-------------|---------|--|---------------------------|--------------------------|----------------------------|-------------|
|               |      |                          |                           |                    |                                    | SHAFT       | HOUSING |  |                           |                          |                            |             |
| 1             | 2    | 3                        | 4                         | 5                  | 6                                  | 7           | 8       | 9  | 10                        | 11                       | 12                         | 13          |
| MS19073 - 1   |      | 17                       | 1.5748                    | 12                 | .025                               | .04         | 1.44    | 4  | 2500                      | 1400                     | 7450                       | .19         |
| MS19073 - 2   |      | 17                       | 1.5748                    | 12                 | .025                               | .04         | 1.44    | 4  | 2500                      | 1400                     | 7450                       | .19         |
| MS19073 - 3   |      | 20                       | 1.7117                    | 15                 | .040                               | .080        | 1.67    | 4  | 3500                      | 1500                     | 6650                       | .32         |
| MS19073 - 4   |      | 25                       | 1.8843                    | 15                 | .040                               | .080        | 1.67    | 4  | 3500                      | 1500                     | 6650                       | .32         |
| MS19073 - 5   |      | 25                       | 1.8843                    | 15                 | .040                               | .080        | 1.67    | 4  | 3500                      | 1500                     | 6650                       | .32         |
| MS19073 - 6   |      | 30                       | 1.9111                    | 16                 | .040                               | .080        | 1.67    | 4  | 3500                      | 1500                     | 6650                       | .32         |
| MS19073 - 7   |      | 30                       | 1.9111                    | 16                 | .040                               | .080        | 1.67    | 4  | 3500                      | 1500                     | 6650                       | .32         |
| MS19073 - 8   |      | 35                       | 1.9780                    | 17                 | .040                               | .080        | 1.67    | 4  | 3500                      | 1500                     | 6650                       | .32         |
| MS19073 - 9   |      | 35                       | 1.9780                    | 17                 | .040                               | .080        | 1.67    | 4  | 3500                      | 1500                     | 6650                       | .32         |
| MS19073 - 10  |      | 40                       | 1.9748                    | 18                 | .040                               | .080        | 1.67    | 4  | 3500                      | 1500                     | 6650                       | .32         |
| MS19073 - 11  |      | 40                       | 1.9748                    | 18                 | .040                               | .080        | 1.67    | 4  | 3500                      | 1500                     | 6650                       | .32         |
| MS19073 - 12  |      | 45                       | 1.7717                    | 23                 | .060                               | .104        | 1.04    | 6  | 10300                     | 6350                     | 3250                       | 1.74        |
| MS19073 - 13  |      | 45                       | 1.7717                    | 23                 | .060                               | .104        | 1.04    | 6  | 10300                     | 6350                     | 3250                       | 1.74        |
| MS19073 - 14  |      | 50                       | 1.9685                    | 27                 | .060                               | .104        | 1.04    | 6  | 14200                     | 9050                     | 2000                       | 2.32        |
| MS19073 - 15  |      | 55                       | 2.1654                    | 31                 | .060                               | .104        | 1.04    | 6  | 17000                     | 11100                    | 2700                       | 3.04        |
| MS19073 - 16  |      | 55                       | 2.1654                    | 31                 | .060                               | .104        | 1.04    | 6  | 17000                     | 11100                    | 2700                       | 3.04        |
| MS19073 - 17  |      | 60                       | 2.3622                    | 33                 | .080                               | .160        | 1.04    | 8  | 20700                     | 13000                    | 2400                       | 3.86        |
| MS19073 - 18  |      | 60                       | 2.3622                    | 33                 | .080                               | .160        | 1.04    | 8  | 20700                     | 13000                    | 2400                       | 3.86        |
| MS19073 - 19  |      | 65                       | 2.5591                    | 33                 | .080                               | .160        | 1.04    | 8  | 23200                     | 15500                    | 2300                       | 4.82        |
| MS19073 - 20  |      | 65                       | 2.5591                    | 33                 | .080                               | .160        | 1.04    | 8  | 23200                     | 15500                    | 2300                       | 4.82        |
| MS19073 - 21  |      | 70                       | 2.7559                    | 35                 | .080                               | .160        | 1.04    | 8  | 25600                     | 17100                    | 2050                       | 5.99        |
| MS19073 - 22  |      | 70                       | 2.7559                    | 35                 | .080                               | .160        | 1.04    | 8  | 25600                     | 17100                    | 2050                       | 5.99        |
| MS19073 - 23  |      | 75                       | 2.9528                    | 37                 | .080                               | .160        | 1.04    | 10                                       | 30100                     | 20800                    | 2150                       | 7.47        |
| MS19073 - 24  |      | 75                       | 2.9528                    | 37                 | .080                               | .160        | 1.04    | 10                                       | 30100                     | 20800                    | 2150                       | 7.47        |
| MS19073 - 25  |      | 80                       | 3.1496                    | 40                 | .080                               | .160        | 1.04    | 10                                       | 33300                     | 23500                    | 1800                       | 8.55        |
| MS19073 - 26  |      | 80                       | 3.1496                    | 40                 | .080                               | .160        | 1.04    | 10                                       | 33300                     | 23500                    | 1800                       | 8.55        |
| MS19073 - 27  |      | 85                       | 3.3465                    | 41                 | .080                               | .160        | 1.04    | 10                                       | 36500                     | 25500                    | 1650                       | 10.47       |
| MS19073 - 28  |      | 85                       | 3.3465                    | 41                 | .080                               | .160        | 1.04    | 10                                       | 36500                     | 25500                    | 1650                       | 10.47       |
| MS19073 - 29  |      | 90                       | 3.5433                    | 43                 | .080                               | .160        | 1.04    | 12                                       | 42000                     | 30900                    | 1550                       | 12.28       |
| MS19073 - 30  |      | 90                       | 3.5433                    | 43                 | .080                               | .160        | 1.04    | 12                                       | 42000                     | 30900                    | 1550                       | 12.28       |
| MS19073 - 31  |      | 95                       | 3.7402                    | 45                 | .080                               | .160        | 1.04    | 12                                       | 46500                     | 33300                    | 1500                       | 14.21       |
| MS19073 - 32  |      | 95                       | 3.7402                    | 45                 | .080                               | .160        | 1.04    | 12                                       | 46500                     | 33300                    | 1500                       | 14.21       |
| MS19073 - 33  |      | 100                      | 3.9370                    | 47                 | .080                               | .160        | 1.04    | 12                                       | 51000                     | 35700                    | 1400                       | 16.94       |
| MS19073 - 34  |      | 100                      | 3.9370                    | 47                 | .080                               | .160        | 1.04    | 12                                       | 51000                     | 35700                    | 1400                       | 16.94       |

FED. SUP CLASS  
3110

MILITARY STANDARD

MS 19073

SHEET 1 OF 3

APPROVED 30 APR 1958 REVISED

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| MS PART NO.  | FIN | A<br>INSIDE DIA |        | B<br>OUTSIDE DIA |         | C<br>WIDTH |        | R<br>SHAFT & HOUSING FILLET RADIUS | RECOMMENDED<br>SHAFT DIAMETER |       | INTERNAL<br>RADIAL<br>CLEARANCE<br>-0001<br>INCH | BASIC<br>DYNAMIC<br>LOAD<br>RATING | BASIC<br>STATIC<br>LOAD<br>RATING | RECOMMENDED<br>LIMITING<br>SPEED | EST<br>WEIGHT<br>LBS |
|--------------|-----|-----------------|--------|------------------|---------|------------|--------|------------------------------------|-------------------------------|-------|--|------------------------------------|-----------------------------------|----------------------------------|----------------------|
|              |     | MIN             | MAX    | MIN              | MAX     | MIN        | MAX    |                                    | MIN                           | MAX   |  |                                    |                                   |                                  |                      |
| MS19073 - 34 |     | 100             | 3.9370 | 215              | 8.4646  | 47         | 1.8504 | .100                               | 4.83                          | 7.82  | 12   | 61500                              | 45900                             | 1300                             | 19.50                |
| MS19073 - 35 |     | 105             | 4.1339 | 100              | 7.4803  | 38         | 1.4173 | .090                               | 4.77                          | 6.84  | 14   | 38000                              | 30000                             | 1250                             | 10.32                |
| MS19073 - 36 |     | 105             | 4.1339 | 225              | 8.8583  | 49         | 1.8291 | .100                               | 5.05                          | 7.97  | 14   | 69700                              | 52400                             | 1250                             | 22.35                |
| MS19073 - 37 |     | 110             | 4.3307 | 200              | 7.8740  | 38         | 1.4961 | .080                               | 5.01                          | 7.20  | 14   | 45000                              | 34000                             | 1300                             | 11.81                |
| MS19073 - 38 |     | 110             | 4.3307 | 240              | 9.4488  | 50         | 1.9685 | .100                               | 5.37                          | 8.50  | 14   | 79100                              | 60300                             | 1150                             | 27.39                |
| MS19073 - 39 |     | 120             | 4.7244 | 215              | 8.4646  | 40         | 1.5748 | .090                               | 5.47                          | 7.74  | 14   | 49500                              | 37500                             | 1250                             | 14.70                |
| MS19073 - 40 |     | 120             | 4.7244 | 260              | 10.2362 | 55         | 2.1634 | .100                               | 5.82                          | 9.21  | 14   | 93400                              | 71100                             | 9750                             | 35.00                |
| MS19073 - 41 |     | 130             | 5.1181 | 260              | 11.0236 | 58         | 2.2835 | .120                               | 6.32                          | 9.82  | 16   | 110000                             | 90100                             | 800                              | 43.85                |
| MS19073 - 42 |     | 130             | 5.9055 | 320              | 12.5884 | 65         | 2.5591 | .120                               | 7.11                          | 11.34 | 16   | 133000                             | 106000                            | 800                              | 60.00                |

DD FORM 672-1

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

FED. SUP CLASS  
3110

P.A. **NORD**  
Other Cess **ORD**  
**USAF**  
PROCUREMENT SPECIFICATION  
FF-B-185

TITLE  
BEARINGS, ROLLER, CYLINDRICAL, SINGLE ROW OF ROLLERS, TWO  
ROLLER RETAINING RIBS ON INNER RING, TWO ROLLER RETAINING  
SNAP RINGS ON OUTER RING, NON-LOCATING  
SUPERSEDES:

MILITARY STANDARD  
**MS 19073**  
SHEET 2 OF 3

APPROVED 20 APR 1959 REVISED

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# TOLENCES: STANDARD GRADE (TOLERANCES IN .0001 INCH)

| INNER RING |      |     | RADIAL RUNOUT |
|------------|------|-----|---------------|
| BORE DIA   | A    |     |               |
| OVER       | INCL | MIN | MAX           |
| 0          | 10   | -3  | 3             |
| 10         | 18   | -3  | 4             |
| 18         | 30   | -4  | 5             |
| 30         | 50   | -5  | 6             |
| 50         | 80   | -6  | 8             |
| 80         | 120  | -8  | 10            |
| 120        | 180  | -10 | 12            |
| 180        | 250  | -12 | 15            |

| OUTER RING |      |     | RADIAL RUNOUT |
|------------|------|-----|---------------|
| OD DIA     | B    |     |               |
| OVER       | INCL | MIN | MAX           |
| 0          | 18   | -4  | 6             |
| 18         | 30   | -4  | 8             |
| 30         | 50   | -5  | 10            |
| 50         | 80   | -6  | 14            |
| 80         | 120  | -8  | 18            |
| 120        | 150  | -10 | 20            |
| 150        | 180  | -12 | 24            |
| 180        | 250  | -14 | 28            |
| 250        | 315  | -16 | 32            |
| 315        | 400  | -18 | 36            |

| WIDTH            |      |     | C   |
|------------------|------|-----|-----|
| NOMINAL BORE DIA |      |     |     |
| OVER             | INCL | MAX | MIN |
| 0                | 180  | 0   | -50 |

THE TOLERANCE FOR WIDTH APPLIES TO INDIVIDUAL RINGS.

MATERIAL: RINGS AND ROLLERS: ALLOY STEEL, FED. STD. 65 STEEL NO'S., 4320, 4620, 8620 OR 52100. CASE: CARBON STEEL (ONE PIECE STAMPED).

HARDNESS: RINGS AND ROLLERS: 58 RC. TO 66 RC.

FINISHES: UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

LUBRICATION: THE IDENTIFYING NUMBER DOES NOT INCLUDE LUBRICATION.

BASIC DYNAMIC LOAD RATING:

BASIC DYNAMIC LOAD RATING IS THAT CONSTANT STATIONARY RADIAL LOAD WHICH A GROUP OF APPARENTLY IDENTICAL BEARINGS WITH STATIONARY OUTER RING CAN ENDURE FOR A RATING LIFE OF ONE MILLION REVOLUTIONS OF THE INNER RING.

RATING LIFE (HOURS):

RATING LIFE IS THE NUMBER OF HOURS AT SOME CONSTANT SPEED OF THE INNER RING THAT 50 PER CENT OF A GROUP OF APPARENTLY IDENTICAL BEARINGS WILL COMPLETE OR EXCEED BEFORE THE FIRST EVIDENCE OF FATIGUE DEVELOPS.

THE MAGNITUDE OF THE APPROXIMATE RATING LIFE IN HOURS,  $H$ , IS FOUND FROM THE FORMULA:

$$H = \frac{10^6}{R} \left( \frac{C}{P} \right)^{\frac{10}{3}}$$

WHERE  $C$  = BASIC DYNAMIC LOAD RATING  
 $P$  = EQUIVALENT LOAD (COMBINED RADIAL AND SHAFI LOAD)  
 $R$  = REVOLUTIONS PER MINUTE

AVERAGE LIFE IS APPROXIMATELY FIVE TIMES THE RATING LIFE.

BASIC STATIC LOAD RATING:

BASIC STATIC LOAD RATING IS THE MAXIMUM STATIC RADIAL LOAD WHICH WILL PRODUCE A PERMANENT DEFORMATION IN THE RACE AND ROLLERS, COMBINED AT ANY ONE CONTACT POINT, OF NOT MORE THAN .0001 OF THE ROLLER DIAMETER.

OPERATING TEMPERATURE:

RECOMMENDED OPERATING TEMPERATURE NOT TO EXCEED 250 DEGREES FARENHEIT.

LIMITING RPM:

LIMITING RPM IS THE RECOMMENDED SAFE DESIGN SPEED FOR NORMAL OPERATING CONDITIONS WITH GREASE LUBRICATION (INNER RING ROTATING).

NOTES:

(1) THIS STANDARD TAKES PRECEDENCE OVER DOCUMENTS REFERRED HEREIN.

(2) REFERENCED DOCUMENTS SHALL BE OF THE ISSUE IN EFFECT ON DATE OF INVITATION FOR BID.

P.A. NORD  
Other Cost  
ORD  
USAF

PROCUREMENT SPECIFICATION  
FF-U-185

TITLE  
BEARINGS, ROLLER, CYLINDRICAL, SINGLE ROW OF ROLLERS, TWO ROLLER  
RETAINING RIBS ON INNER RING, TWO ROLLER RETAINING CHAM RINGS ON  
OUTER RING, NON-LOCATING.

SUPERSEDES:

MILITARY STANDARD

MS 19073

SHEET 3 OF 3