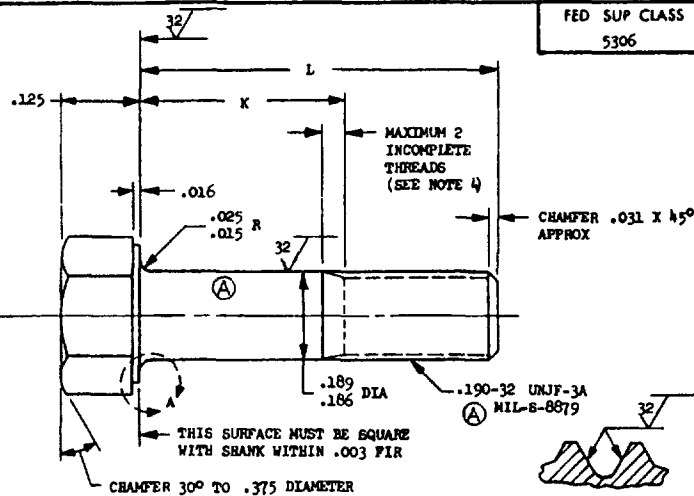
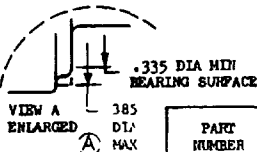
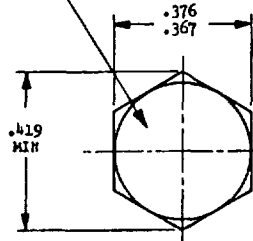


**MS9489**SHANK PART WITH AND MANUFACTURE'S  
ID' TITICAT O' PER S 478 CLASS A

SECTION THROUGH THREAD PROFILE

| PART NUMBER | L     | K           | APPROX WEIGHT LB/100 | PART NUMBER | L     | K           | APPROX WEIGHT LB/100 |
|-------------|-------|-------------|----------------------|-------------|-------|-------------|----------------------|
| MS9489-04   | .375  | .072-.092   | .72                  | MS9489-31   | 2.375 | 1.685-1.745 | 2.30                 |
| MS9489-05   | .438  | .072-.092   | .77                  | MS9489-32   | 2.500 | 1.810-1.870 | 2.40                 |
| MS9489-06   | .500  | .072-.092   | .82                  | MS9489-33   | 2.625 | 1.935-1.995 | 2.50                 |
| MS9489-07   | .562  | .072-.092   | .87                  | MS9489-34   | 2.750 | 2.060-2.120 | 2.60                 |
| MS9489-08   | .625  | .072-.092   | .92                  | MS9489-35   | 2.875 | 2.185-2.245 | 2.70                 |
| MS9489-09   | .688  | .072-.092   | .97                  | MS9489-36   | 3.000 | 2.310-2.370 | 2.80                 |
| MS9489-10   | .750  | .072-.120   | 1.02                 | MS9489-37   | 3.125 | 2.435-2.495 | 2.89                 |
| MS9489-11   | .812  | .122-.182   | 1.07                 | MS9489-38   | 3.250 | 2.560-2.620 | 2.99                 |
| MS9489-12   | .875  | .185-.245   | 1.12                 | MS9489-39   | 3.375 | 2.685-2.745 | 3.09                 |
| MS9489-13   | .938  | .248-.308   | 1.17                 | MS9489-40   | 3.500 | 2.810-2.870 | 3.19                 |
| MS9489-14   | 1.000 | .310-.370   | 1.22                 | MS9489-41   | 3.625 | 2.935-2.995 | 3.29                 |
| MS9489-15   | 1.062 | .372-.432   | 1.27                 | MS9489-42   | 3.750 | 3.060-3.120 | 3.39                 |
| MS9489-16   | 1.125 | .435-.495   | 1.32                 | MS9489-43   | 3.875 | 3.185-3.245 | 3.49                 |
| MS9489-17   | 1.188 | .498-.558   | 1.37                 | MS9489-44   | 4.000 | 3.310-3.370 | 3.59                 |
| MS9489-18   | 1.250 | .560-.620   | 1.41                 | MS9489-45   | 4.125 | 3.435-3.495 | 3.69                 |
| MS9489-19   | 1.312 | .622-.682   | 1.46                 |             |       |             |                      |
| MS9489-20   | 1.375 | .685-.745   | 1.51                 |             |       |             |                      |
| MS9489-21   | 1.438 | .748-.808   | 1.56                 |             |       |             |                      |
| MS9489-22   | 1.500 | .810-.870   | 1.61                 |             |       |             |                      |
| MS9489-23   | 1.562 | .872-.932   | 1.66                 |             |       |             |                      |
| MS9489-24   | 1.625 | .935-.995   | 1.71                 |             |       |             |                      |
| MS9489-25   | 1.688 | .998-1.058  | 1.76                 |             |       |             |                      |
| MS9489-26   | 1.750 | 1.060-1.120 | 1.81                 |             |       |             |                      |
| MS9489-27   | 1.875 | 1.185-1.245 | 1.91                 |             |       |             |                      |
| MS9489-28   | 2.000 | 1.310-1.370 | 2.01                 |             |       |             |                      |
| MS9489-29   | 2.125 | 1.435-1.495 | 2.11                 |             |       |             |                      |
| MS9489-30   | 2.250 | 1.560-1.620 | 2.20                 |             |       |             |                      |

1. SHANK SHALL BE STRAIGHT WITHIN .003 TOTAL PER INCH OF BOLT LENGTH
2. THE CONCENTRICITY OF THREAD PD IN RELATION TO THE SHANK SHALL BE WITHIN .006 FIR
3. THE CONCENTRICITY OF THE SHANK IN RELATION TO THE WASHER FACE DIAMETER AND HEXAGON SHALL BE WITHIN .011 FIR.
4. INCOMPLETE THREADS NOT TO ENTER FILLET.
5. MATERIAL CORROSION AND HEAT RESISTANT STEEL AMS 5731
6. MANUFACTURING SPECIFICATION AMS 7477.
7. FLUORESCENT PENETRANT INSPECTION PER AMS 2645
8. SURFACE TEXTURE USAS B46 1-1962 UNLESS OTHERWISE SPECIFIED SURFACES TO BE 125 MICROINCHES EXCEPT HEXAGON
9. BREAK SHARP EDGES .003-.015 UNLESS OTHERWISE SPECIFIED
10. DIMENSIONS IN INCHES. UNLESS OTHERWISE SPECIFIED, TOLERANCES: LINEAR DIMENSIONS ± .010, ANGULAR DIMENSIONS ± 5°.
11. DO NOT USE UNASSIGNED PART NUMBERS.

AS & AMS ARE SOCIETY OF AUTOMOTIVE ENGINEERS, INC. PUBLICATIONS  
 THIS STANDARD WAS DEVELOPED COOPERATIVELY WITH THE MILITARY SERVICES BY THE SAF AEROSPACE PART STANDARDS DIVISION

|   |                                       |   |                                    |
|---|---------------------------------------|---|------------------------------------|
| P.A.S. - 11<br>Other Cast<br>Army - AV<br>Navy - A5 | INTERNATIONAL<br>ASC. A14 JFD<br>17/2 | TITLE<br>BOLT, MACHINE - HEXAGON HEAD, FULL SHANK<br>AMS 5731, 190-32 UNJF-3A | MILITARY STANDARD<br><b>MS9489</b> |
| PROCUREMENT SPECIFICATION<br>N/A                    | SUPERSEDES:                           | SHEET 1 OF 1  |                                    |

DD FORM 672-1 (Coordinated)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

☆ U S GOVERNMENT PRINTING OFFICE 1970-393-093/5-3729

User activities  
 Review activities:  
 Army - AV, VI  
 Navy - A5, A7

This military standard is approved by the Department of Defense and is  
 secondary on all activities. Selection for all new engineering and design  
 applications and for repetitive use shall be made from this document.

REVISED 17 Nov 69

APPROVED 5 May 1965