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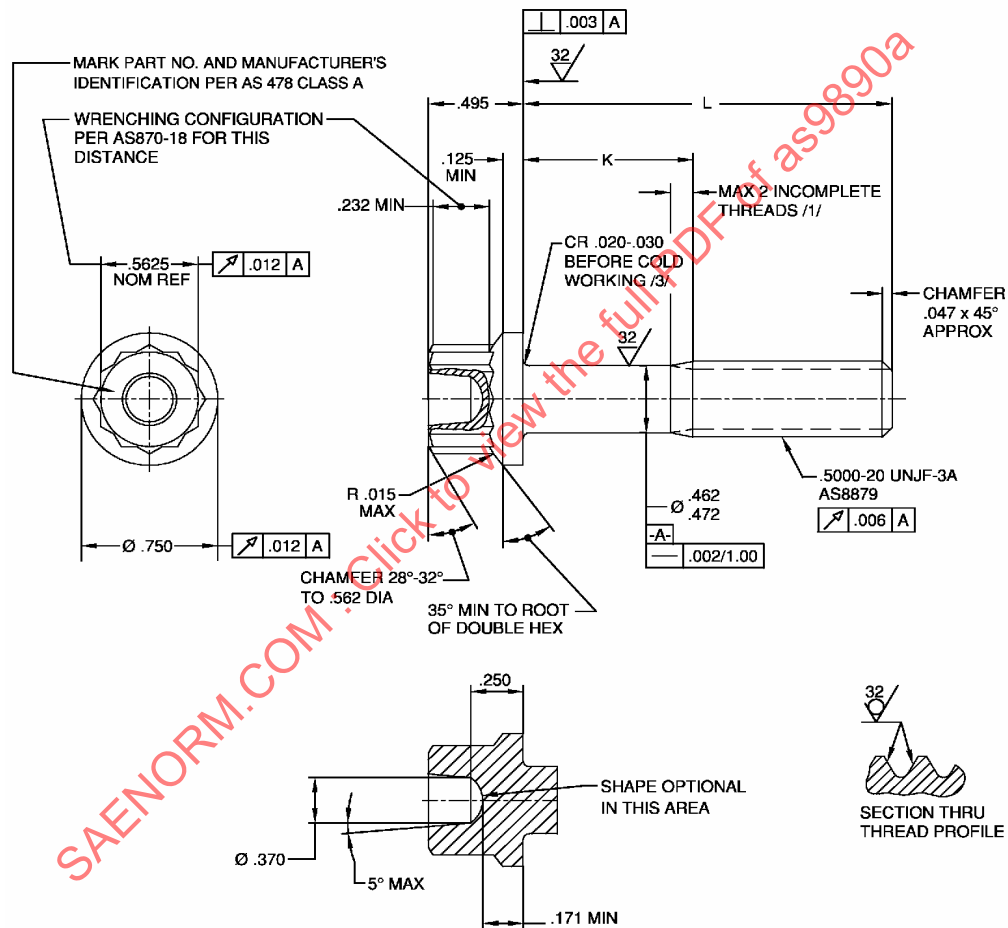
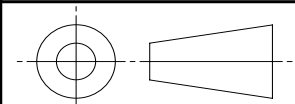


FIGURE 1



PROCUREMENT SPECIFICATION: /3/

**SAE Aerospace**  
An SAE International Group

## AEROSPACE STANDARD

(R) BOLT, MACHINE - DOUBLE HEXAGON EXTENDED  
WASHER HEAD, CRES UNS S41800,  
.5000-20 UNJF-3A

**AS9890**  
SHEET 1 OF 3

**REV.**  
**A**

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|---------------|--------------------|-----------------|
| SSUED 1998-05 | REAFFIRMED 2003-10 | REVISED 2007-07 |
|---------------|--------------------|-----------------|

TABLE 1 - DIMENSIONS AND PART NUMBERS

| PART<br>NUMBER | L     | K           | APPROX<br>WEIGHT<br>LB/100 |
|----------------|-------|-------------|----------------------------|
| MS9890-04      | .812  | .105-.125   | 7.99                       |
| MS9890-05      | .875  | .105-.125   | 8.28                       |
| MS9890-06      | .938  | .105-.125   | 8.59                       |
| MS9890-07      | 1.000 | .105-.125   | 8.90                       |
| MS9890-08      | 1.062 | .105-.125   | 9.22                       |
| MS9890-09      | 1.125 | .105-.125   | 9.54                       |
| MS9890-10      | 1.188 | .105-.125   | 9.86                       |
| MS9890-11      | 1.250 | .105-.125   | 10.18                      |
| MS9890-12      | 1.312 | .105-.125   | 10.48                      |
| MS9890-13      | 1.375 | .105-.125   | 10.78                      |
| MS9890-14      | 1.438 | .128-.188   | 11.09                      |
| MS9890-15      | 1.500 | .190-.250   | 11.40                      |
| MS9890-16      | 1.562 | .252-.312   | 11.71                      |
| MS9890-17      | 1.625 | .315-.375   | 12.02                      |
| MS9890-18      | 1.688 | .378-.438   | 12.33                      |
| MS9890-19      | 1.750 | .440-.500   | 12.64                      |
| MS9890-20      | 1.812 | .502-.562   | 12.93                      |
| MS9890-21      | 1.875 | .565-.625   | 13.24                      |
| MS9890-22      | 1.938 | .628-.688   | 13.55                      |
| MS9890-23      | 2.000 | .690-.750   | 13.86                      |
| MS9890-24      | 2.125 | .815-.875   | 14.45                      |
| MS9890-25      | 2.250 | .940-1.000  | 15.04                      |
| MS9890-26      | 2.375 | 1.065-1.125 | 15.68                      |
| MS9890-27      | 2.500 | 1.190-1.250 | 16.30                      |
| MS9890-28      | 2.625 | 1.315-1.375 | 16.91                      |
| MS9890-29      | 2.750 | 1.440-1.500 | 17.52                      |
| MS9890-30      | 2.875 | 1.565-1.625 | 18.13                      |
| MS9890-31      | 3.000 | 1.690-1.750 | 18.74                      |
| MS9890-32      | 3.125 | 1.815-1.875 | 19.35                      |
| MS9890-33      | 3.250 | 1.900-2.000 | 19.96                      |
| MS9890-34      | 3.375 | 2.065-2.125 | 20.58                      |
| MS9890-35      | 3.500 | 2.190-2.250 | 21.20                      |
| MS9890-36      | 3.625 | 2.315-2.375 | 21.81                      |
| MS9890-37      | 3.750 | 2.440-2.500 | 22.42                      |
| MS9890-38      | 3.875 | 2.565-2.625 | 23.04                      |
| MS9890-39      | 4.000 | 2.690-2.750 | 23.66                      |
| MS9890-40      | 4.125 | 2.815-2.875 | 24.27                      |
| MS9890-41      | 4.250 | 2.940-3.000 | 24.88                      |
| MS9890-42      | 4.375 | 3.065-3.125 | 25.49                      |
| MS9890-43      | 4.500 | 3.190-3.250 | 26.10                      |
| MS9890-44      | 4.625 | 3.315-3.375 | 26.71                      |
| MS9890-45      | 4.750 | 3.440-3.500 | 27.32                      |
| MS9890-46      | 4.875 | 3.565-3.625 | 27.98                      |
| MS9890-47      | 5.000 | 3.690-3.750 | 28.59                      |
| MS9890-48      | 5.125 | 3.815-3.875 | 29.20                      |
| MS9890-49      | 5.250 | 3.940-4.000 | 29.81                      |
| MS9890-50      | 5.375 | 4.065-4.125 | 30.42                      |
| MS9890-51      | 5.500 | 4.190-4.250 | 31.03                      |
| MS9890-52      | 5.625 | 4.315-4.375 | 31.64                      |
| MS9890-53      | 5.750 | 4.440-4.500 | 32.25                      |
| MS9890-54      | 5.875 | 4.565-4.625 | 32.86                      |
| MS9890-55      | 6.000 | 4.690-4.750 | 33.47                      |