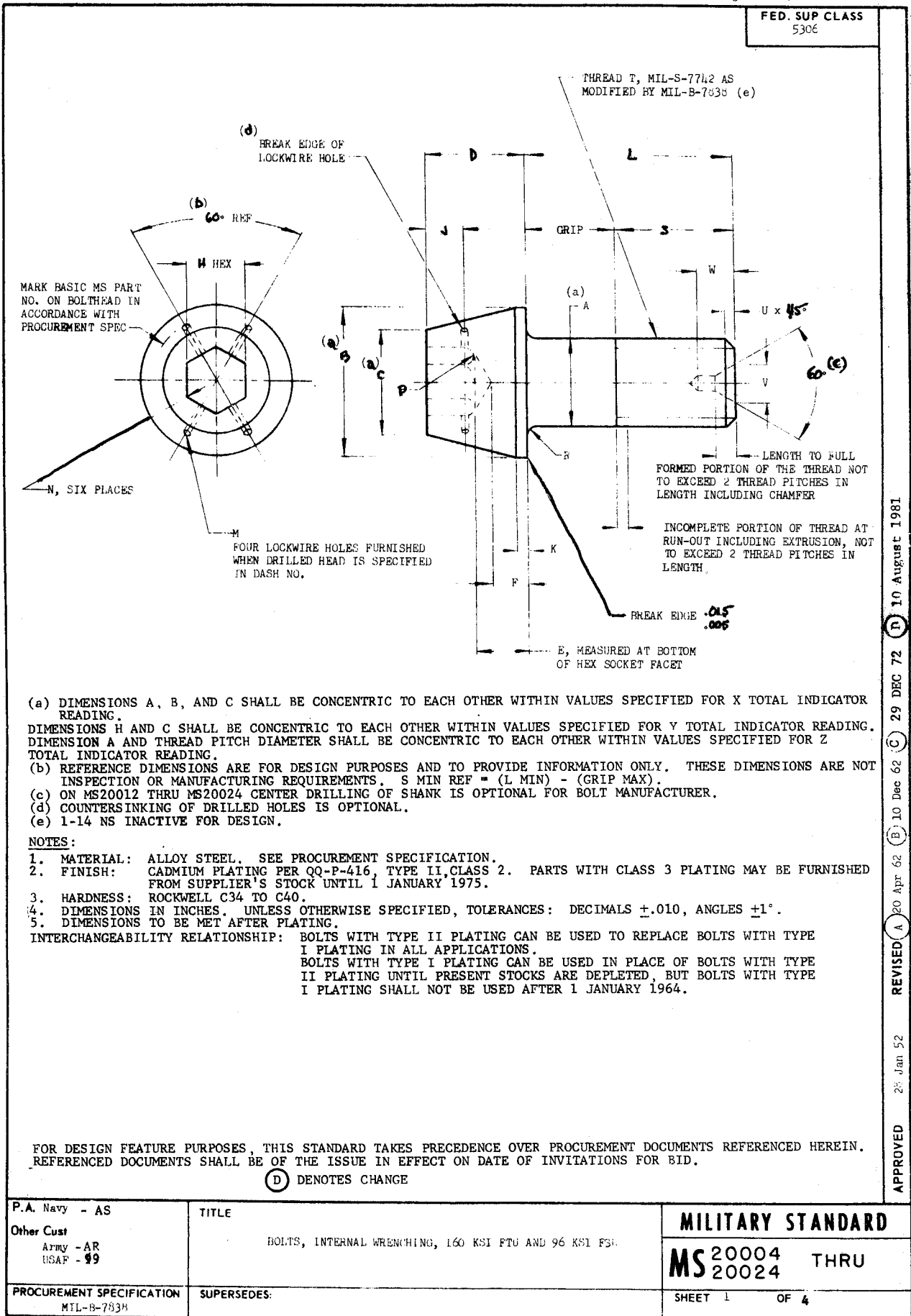


REVIEWER SYMBOLS:  
ARMY - AR  
ME  
DLA - IS

"Review/user information is current as of the date of this document.  
For future coordination of changes to this document, draft circulation  
should be based on the information in the current DODISS."

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



APPROVED 28 Jan 52 REVISED 20 Apr 62 10 Dec 62 29 DEC 72 10 August 1981

|  |  |  |
|--|--|--|
| P.A. Navy - AS<br>Other Cust<br>Army - AR<br>USAF - 99 | TITLE<br>BOLTS, INTERNAL WRENCHING, 160 KSI FTU AND 96 KSI FS. | <b>MILITARY STANDARD</b><br><b>MS 20004 THRU 20024</b> |
| PROCUREMENT SPECIFICATION<br>MIL-B-7833H               | SUPERSEDES:  |  |

FED. SUP CLASS  
5306

USER SYMBOLS:  
ARMY - AV

REVIEWER SYMBOLS:  
ARMY - ER, ME  
DIA - IS

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should be based on the information in the current DD135."

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& Agencies of the Department of Defense. Selection for all new  
engineering and design applications and for repetitive use shall  
be made from this document.

TABLE I BOLT DIMENSIONS AND TENSILE STRENGTH

| BASIC<br>MS<br>PART NO. | (a)<br>THREAD T  | (a)<br>A<br>DIA |                | (a)<br>B<br>DIA |       | (a)<br>C<br>DIA | D     | E    | F<br>MIN | (a)<br>H<br>HEX |       | J    | K    | M<br>+.005<br>-.000<br>DIA | N<br>MAX<br>RAD |
|-------------------------|------------------|-----------------|----------------|-----------------|-------|-----------------|-------|------|----------|-----------------|-------|------|------|----------------------------|-----------------|
|                         |                  | MAX             | MIN            | MAX             | MIN   |                 |       |      |          | MAX             | MIN   |      |      |                            |                 |
|                         |                  | MS20004         | 1/4 -28 UNF-3A | .2492           | .2477 |                 |       |      |          | .438            | .428  |      |      |                            |                 |
| MS20005                 | 5/16-24 UNF-3A   | .3117           | .3102          | .531            | .521  | .394            | .312  | .114 | .094     | .2210           | .2190 | .094 |      |                            | .010            |
| MS20006                 | 3/8 -24 UNF-3A   | .3742           | .3727          | .649            | .639  | .520            | .375  | .113 | .116     |                 |       | .125 | .063 |                            |                 |
| MS20007                 | 7/16-20 UNF-3A   | .4367           | .4347          | .750            | .740  | .534            | .438  | .208 | .141     | .3150           | .3130 | .156 |      |                            |                 |
| MS20008                 | 1/2 -20 UNF-3A   | .4991           | .4971          | .828            | .818  | .625            | .500  | .247 | .169     | .3785           | .3755 | .172 |      |                            | .011            |
| MS20009                 | 9/16-18 UNF-3A   | .5616           | .5596          | .938            | .928  | .723            | .562  | .279 | .190     | .4410           | .4380 | .203 |      |                            |                 |
| MS20010                 | 5/8 -18 UNF-3A   | .6240           | .6220          | 1.050           | 1.040 | .826            | .625  | .317 | .216     | .5035           | .5005 | .234 |      |                            | .019            |
| MS20012                 | 3/4 -16 UNF-3A   | .7438           | .7418          | 1.230           | 1.220 | .921            | .750  | .385 | .273     | .5660           | .5630 | .281 |      |                            |                 |
| MS20014                 | 7/8 -14 UNF-3A   | .8737           | .8707          | 1.438           | 1.428 | 1.083           | .875  | .450 | .327     | .6295           | .6257 | .344 | .094 | .055                       |                 |
| MS20016(e)              | 1 -14 NS -3A     |                 |                |                 |       |                 |       |      |          |                 |       |      |      |                            |                 |
| MS20017                 | 1 -12 UNF-3A     | .9985           | .9955          | 1.625           | 1.615 | 1.249           | 1.000 | .527 | .381     | .7547           | .7507 | .391 |      |                            |                 |
| MS20018                 | 1-1/8 -12 UNF-3A | 1.124           | 1.121          | 1.875           | 1.865 | 1.275           | 1.125 | .589 | .443     |                 |       | .453 |      |                            | .022            |
| MS20020                 | 1-1/4 -12 UNF-3A | 1.249           | 1.246          | 2.125           | 2.115 | 1.598           | 1.250 | .667 | .475     | 1.005           | 1.001 | .500 |      |                            |                 |
| MS20022                 | 1-3/8 -12 UNF-3A | 1.374           | 1.370          | 2.313           | 2.303 | 1.768           | 1.375 | .746 | .531     | 1.131           | 1.126 | .547 | .125 |                            |                 |
| MS20024                 | 1-1/2 -12 UNF-3A | 1.499           | 1.495          | 2.500           | 2.490 | 1.931           | 1.500 | .823 | .586     | 1.256           | 1.251 | .594 | .156 |                            |                 |
| MS20012A                | 3/4 -16 UNF-3A   | .7488           | .7468          | 1.230           | 1.220 | .921            | .750  | .385 | .273     | .5660           | .5630 | .281 | .094 |                            |                 |

TABLE I (CONT'D)

| BASIC<br>MS<br>PART NO. | P<br>RAD |      | R<br>RAD |      | (b)<br>S<br>MIN<br>REF | U<br>±.016 | (c)<br>V<br>MAX | (c)<br>W<br>MAX | (b)(c)<br>CENTER<br>DRILL<br>SIZE<br>REF | TENSILE<br>STRENGTH<br>LB MIN | (a)<br>CONCENTRICITY |      |       |
|-------------------------|----------|------|----------|------|------------------------|------------|-----------------|-----------------|--|-------------------------------|----------------------|------|-------|
|                         | MAX      | MIN  | MAX      | MIN  |                        |            |                 |                 |  |                               | X                    | Y    | Z     |
|                         | MS20004  |      |          |      |                        |            |                 |                 |  |                               |                      | .475 | .031  |
| MS20005                 |          |      | .041     | .031 | .537                   |            |                 |                 |  | 9,820                         | .006                 | .008 | .0045 |
| MS20006                 |          |      |          |      | .662                   |            |                 |                 |  | 15,200                        | .008                 | .010 |       |
| MS20007                 | .020     | .010 |          |      |                        | .047       |                 |                 |  | 20,600                        | .009                 | .011 |       |
| MS20008                 |          |      | .057     | .047 | .737                   |            |                 |                 |  | 27,400                        | .010                 | .012 |       |
| MS20009                 |          |      |          |      | .850                   |            |                 |                 |  | 34,800                        | .011                 | .014 | .006  |
| MS20010                 |          |      |          |      | .932                   | .062       |                 |                 |  | 43,600                        | .012                 | .016 |       |
| MS20012                 |          |      |          |      | 1.037                  |            |                 |                 |  | 63,200                        | .015                 | .018 |       |
| MS20014                 |          |      |          |      | 1.162                  |            | .187            | .200            | 2  | 86,100                        | .018                 | .022 |       |
| MS20016(e)              |          |      | .073     | .063 |                        | .078       |                 |                 |  | 112,000                       | .020                 | .025 | .009  |
| MS20017                 | .030     | .015 |          |      | 1.287                  |            | .250            | .260            | 3  | 144,000                       | .022                 | .026 |       |
| MS20018                 |          |      |          |      | 1.475                  |            |                 |                 |  | 180,000                       | .025                 | .032 |       |
| MS20020                 |          |      |          |      | 1.600                  |            |                 |                 |  | 219,000                       | .028                 | .035 | .012  |
| MS20022                 |          |      | .089     | .077 | 1.725                  | .094       | .312            | .320            | 4  | 263,000                       | .030                 | .039 |       |
| MS20024                 |          |      |          |      | 1.850                  |            |                 |                 |  | 63,200                        | .015                 | .018 | .006  |
| MS20012A                |          |      | .073     | .063 | .730                   | .062       | .187            | .200            | 2  |                               |                      |      |       |

APPROVED 28 Feb 52 REVISED (D) FOR CHANGES SEE SHEETS 2 AND 4

|   |   |   |
|---|---|---|
| P.A. Navy - AS                          | TITLE   | <b>MILITARY STANDARD</b><br><b>MS 20004 THRU</b><br><b>MS 20024</b> |
| Other Cust<br>Army - AR<br>USAF - 99    | BOLTS, INTERNAL WRENCHING, 160 KSI FTU AND 96 KSI FSU |   |
| PROCUREMENT SPECIFICATION<br>MIL-B-7838 | SUPSEDES:   | SHEET 2 OF 4  |

DD FORM 1 SEP 57 672-1 (Coordinated)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

FED. SUP CLASS  
5306

TABLE II DASH NOS., GRIP LENGTHS AND BOLT LENGTH

| DASH NO. | GRIP ±.010 | L, LENGTH ±.015 |         |         |         |         |         |         |         |         |         |         |         |         |         |         |  |
|----------|------------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
|          |            | MS20001         | MS20005 | MS20006 | MS20007 | MS20008 | MS20009 | MS20010 | MS20012 | MS20014 | MS20015 | MS20017 | MS20018 | MS20020 | MS20022 | MS20024 |  |
|          |            | 1/4             | 5/16    | 3/8     | 7/16    | 1/2     | 9/16    | 5/8     | 3/4     | 7/8     | 1       | 1       | 1-1/8   | 1-1/4   | 1-3/8   | 1-1/2   |  |
| 4        | .250       | .750            |         |         |         |         |         |         |         |         |         |         |         |         |         |         |  |
| 6        | .375       | .875            | .938    | 1.062   |         |         |         |         |         |         |         |         |         |         |         |         |  |
| 8        | .500       | 1.000           | 1.062   | 1.188   | 1.312   | 1.312   |         |         |         |         |         |         |         |         |         |         |  |
| 10       | .625       | 1.125           | 1.188   | 1.312   | 1.438   | 1.438   | 1.500   | 1.562   |         |         |         |         |         |         |         |         |  |
| 12       | .750       | 1.250           | 1.312   | 1.438   | 1.562   | 1.562   | 1.625   | 1.688   | 1.812   |         |         |         |         |         |         |         |  |
| 14       | .875       | 1.375           | 1.438   | 1.562   | 1.688   | 1.688   | 1.750   | 1.812   | 1.938   | 2.062   |         |         |         |         |         |         |  |
| 16       | 1.000      | 1.500           | 1.562   | 1.688   | 1.812   | 1.812   | 1.875   | 1.938   | 2.062   | 2.188   | 2.312   | 2.312   |         |         |         |         |  |
| 18       | 1.125      | 1.625           | 1.688   | 1.812   | 1.938   | 1.938   | 2.000   | 2.062   | 2.188   | 2.312   | 2.438   | 2.562   | 2.562   | 2.625   | 2.875   |         |  |
| 20       | 1.250      | 1.750           | 1.812   | 1.938   | 2.062   | 2.062   | 2.125   | 2.188   | 2.312   | 2.438   | 2.562   | 2.688   | 2.688   | 2.875   | 3.000   |         |  |
| 22       | 1.375      | 1.875           | 1.938   | 2.062   | 2.188   | 2.188   | 2.250   | 2.312   | 2.438   | 2.562   | 2.688   | 2.812   | 2.812   | 3.000   | 3.125   | 3.250   |  |
| 24       | 1.500      | 2.000           | 2.062   | 2.188   | 2.312   | 2.312   | 2.375   | 2.438   | 2.562   | 2.688   | 2.812   | 2.938   | 2.938   | 3.125   | 3.250   | 3.375   |  |
| 26       | 1.625      | 2.125           | 2.188   | 2.312   | 2.438   | 2.438   | 2.500   | 2.562   | 2.688   | 2.812   | 2.938   | 3.062   | 3.062   | 3.250   | 3.375   | 3.500   |  |
| 28       | 1.750      | 2.250           | 2.312   | 2.438   | 2.562   | 2.562   | 2.625   | 2.688   | 2.812   | 2.938   | 3.062   | 3.188   | 3.188   | 3.375   | 3.500   | 3.625   |  |
| 30       | 1.875      | 2.375           | 2.438   | 2.562   | 2.688   | 2.688   | 2.750   | 2.812   | 2.938   | 3.062   | 3.188   | 3.312   | 3.312   | 3.500   | 3.625   | 3.750   |  |
| 32       | 2.000      | 2.500           | 2.562   | 2.688   | 2.812   | 2.812   | 2.875   | 2.938   | 3.062   | 3.188   | 3.312   | 3.438   | 3.438   | 3.625   | 3.750   | 3.875   |  |
| 34       | 2.125      | 2.625           | 2.688   | 2.812   | 2.938   | 2.938   | 3.000   | 3.062   | 3.188   | 3.312   | 3.438   | 3.562   | 3.562   | 3.750   | 3.875   | 4.000   |  |
| 36       | 2.250      | 2.750           | 2.812   | 2.938   | 3.062   | 3.062   | 3.125   | 3.188   | 3.312   | 3.438   | 3.562   | 3.688   | 3.688   | 3.875   | 4.000   | 4.125   |  |
| 38       | 2.375      | 2.875           | 2.938   | 3.062   | 3.188   | 3.188   | 3.250   | 3.312   | 3.438   | 3.562   | 3.688   | 3.812   | 3.812   | 4.000   | 4.125   | 4.250   |  |
| 40       | 2.500      | 3.000           | 3.062   | 3.188   | 3.312   | 3.312   | 3.375   | 3.438   | 3.562   | 3.688   | 3.812   | 3.938   | 3.938   | 4.125   | 4.250   | 4.375   |  |
| 42       | 2.625      | 3.125           | 3.188   | 3.312   | 3.438   | 3.438   | 3.500   | 3.562   | 3.688   | 3.812   | 3.938   | 4.062   | 4.062   | 4.250   | 4.375   | 4.500   |  |
| 44       | 2.750      | 3.250           | 3.312   | 3.438   | 3.562   | 3.562   | 3.625   | 3.688   | 3.812   | 3.938   | 4.062   | 4.188   | 4.188   | 4.375   | 4.500   | 4.625   |  |
| 46       | 2.875      | 3.375           | 3.438   | 3.562   | 3.688   | 3.688   | 3.750   | 3.812   | 3.938   | 4.062   | 4.188   | 4.312   | 4.312   | 4.500   | 4.625   | 4.750   |  |
| 48       | 3.000      | 3.500           | 3.562   | 3.688   | 3.812   | 3.812   | 3.875   | 3.938   | 4.062   | 4.188   | 4.312   | 4.438   | 4.438   | 4.625   | 4.750   | 4.875   |  |
| 50       | 3.125      | 3.625           | 3.688   | 3.812   | 3.938   | 3.938   | 4.000   | 4.062   | 4.188   | 4.312   | 4.438   | 4.562   | 4.562   | 4.750   | 4.875   | 5.000   |  |
| 52       | 3.250      | 3.750           | 3.812   | 3.938   | 4.062   | 4.062   | 4.125   | 4.188   | 4.312   | 4.438   | 4.562   | 4.688   | 4.688   | 4.875   | 5.000   | 5.125   |  |
| 54       | 3.375      | 3.875           | 3.938   | 4.062   | 4.188   | 4.188   | 4.250   | 4.312   | 4.438   | 4.562   | 4.688   | 4.812   | 4.812   | 5.000   | 5.125   | 5.250   |  |
| 56       | 3.500      | 4.000           | 4.062   | 4.188   | 4.312   | 4.312   | 4.375   | 4.438   | 4.562   | 4.688   | 4.812   | 4.938   | 4.938   | 5.125   | 5.250   | 5.375   |  |
| 58       | 3.625      | 4.125           | 4.188   | 4.312   | 4.438   | 4.438   | 4.500   | 4.562   | 4.688   | 4.812   | 4.938   | 5.062   | 5.062   | 5.250   | 5.375   | 5.500   |  |
| 60       | 3.750      | 4.250           | 4.312   | 4.438   | 4.562   | 4.562   | 4.625   | 4.688   | 4.812   | 4.938   | 5.062   | 5.188   | 5.188   | 5.375   | 5.500   | 5.625   |  |
| 62       | 3.875      | 4.375           | 4.438   | 4.562   | 4.688   | 4.688   | 4.750   | 4.812   | 4.938   | 5.062   | 5.188   | 5.312   | 5.312   | 5.500   | 5.625   | 5.750   |  |
| 64       | 4.000      | 4.500           | 4.562   | 4.688   | 4.812   | 4.812   | 4.875   | 4.938   | 5.062   | 5.188   | 5.312   | 5.438   | 5.438   | 5.625   | 5.750   | 5.875   |  |
| 66       | 4.125      | 4.625           | 4.688   | 4.812   | 4.938   | 4.938   | 5.000   | 5.062   | 5.188   | 5.312   | 5.438   | 5.562   | 5.562   | 5.750   | 5.875   | 6.000   |  |
| 68       | 4.250      | 4.750           | 4.812   | 4.938   | 5.062   | 5.062   | 5.125   | 5.188   | 5.312   | 5.438   | 5.562   | 5.688   | 5.688   | 5.875   | 6.000   | 6.125   |  |
| 70       | 4.375      | 4.875           | 4.938   | 5.062   | 5.188   | 5.188   | 5.250   | 5.312   | 5.438   | 5.562   | 5.688   | 5.812   | 5.812   | 6.000   | 6.125   | 6.250   |  |
| 72       | 4.500      | 5.000           | 5.062   | 5.188   | 5.312   | 5.312   | 5.375   | 5.438   | 5.562   | 5.688   | 5.812   | 5.938   | 5.938   | 6.125   | 6.250   | 6.375   |  |
| 74       | 4.625      | 5.125           | 5.188   | 5.312   | 5.438   | 5.438   | 5.500   | 5.562   | 5.688   | 5.812   | 5.938   | 6.062   | 6.062   | 6.250   | 6.375   | 6.500   |  |
| 76       | 4.750      | 5.250           | 5.312   | 5.438   | 5.562   | 5.562   | 5.625   | 5.688   | 5.812   | 5.938   | 6.062   | 6.188   | 6.188   | 6.375   | 6.500   | 6.625   |  |
| 78       | 4.875      | 5.375           | 5.438   | 5.562   | 5.688   | 5.688   | 5.750   | 5.812   | 5.938   | 6.062   | 6.188   | 6.312   | 6.312   | 6.500   | 6.625   | 6.750   |  |
| 80       | 5.000      | 5.500           | 5.562   | 5.688   | 5.812   | 5.812   | 5.875   | 5.938   | 6.062   | 6.188   | 6.312   | 6.438   | 6.438   | 6.625   | 6.750   | 6.875   |  |
| 82       | 5.125      | 5.625           | 5.688   | 5.812   | 5.938   | 5.938   | 6.000   | 6.062   | 6.188   | 6.312   | 6.438   | 6.562   | 6.562   | 6.750   | 6.875   | 7.000   |  |
| 84       | 5.250      | 5.750           | 5.812   | 5.938   | 6.062   | 6.062   | 6.125   | 6.188   | 6.312   | 6.438   | 6.562   | 6.688   | 6.688   | 6.875   | 7.000   | 7.125   |  |
| 86       | 5.375      | 5.875           | 5.938   | 6.062   | 6.188   | 6.188   | 6.250   | 6.312   | 6.438   | 6.562   | 6.688   | 6.812   | 6.812   | 7.000   | 7.125   | 7.250   |  |
| 88       | 5.500      | 6.000           | 6.062   | 6.188   | 6.312   | 6.312   | 6.375   | 6.438   | 6.562   | 6.688   | 6.812   | 6.938   | 6.938   | 7.125   | 7.250   | 7.375   |  |
| 90       | 5.625      | 6.125           | 6.188   | 6.312   | 6.438   | 6.438   | 6.500   | 6.562   | 6.688   | 6.812   | 6.938   | 7.062   | 7.062   | 7.250   | 7.375   | 7.500   |  |
| 92       | 5.750      | 6.250           | 6.312   | 6.438   | 6.562   | 6.562   | 6.625   | 6.688   | 6.812   | 6.938   | 7.062   | 7.188   | 7.188   | 7.375   | 7.500   | 7.625   |  |
| 94       | 5.875      | 6.375           | 6.438   | 6.562   | 6.688   | 6.688   | 6.750   | 6.812   | 6.938   | 7.062   | 7.188   | 7.312   | 7.312   | 7.500   | 7.625   | 7.750   |  |
| 96       | 6.000      | 6.500           | 6.562   | 6.688   | 6.812   | 6.812   | 6.875   | 6.938   | 7.062   | 7.188   | 7.312   | 7.438   | 7.438   | 7.625   | 7.750   | 7.875   |  |
| 98       | 6.125      |                 |         |         |         |         | 7.000   | 7.062   | 7.188   | 7.312   | 7.438   | 7.562   | 7.562   | 7.750   | 7.875   | 8.000   |  |
| 100      | 6.250      |                 |         |         |         |         | 7.125   | 7.188   | 7.312   | 7.438   | 7.562   | 7.688   | 7.688   | 7.875   | 8.000   | 8.125   |  |
| 102      | 6.375      |                 |         |         |         |         | 7.250   | 7.312   | 7.438   | 7.562   | 7.688   | 7.812   | 7.812   | 8.000   | 8.125   | 8.250   |  |
| 104      | 6.500      |                 |         |         |         |         | 7.375   | 7.438   | 7.562   | 7.688   | 7.812   | 7.938   | 7.938   | 8.125   | 8.250   | 8.375   |  |
| 106      | 6.625      |                 |         |         |         |         | 7.500   | 7.562   | 7.688   | 7.812   | 7.938   | 8.062   | 8.062   | 8.250   | 8.375   | 8.500   |  |
| 108      | 6.750      |                 |         |         |         |         | 7.625   | 7.688   | 7.812   | 7.938   | 8.062   | 8.188   | 8.188   | 8.375   | 8.500   | 8.625   |  |
| 110      | 6.875      |                 |         |         |         |         | 7.750   | 7.812   | 7.938   | 8.062   | 8.188   | 8.312   | 8.312   | 8.500   | 8.625   | 8.750   |  |
| 112      | 7.000      |                 |         |         |         |         | 7.875   | 7.938   | 8.062   | 8.188   | 8.312   | 8.438   | 8.438   | 8.625   | 8.750   | 8.875   |  |
| 114      | 7.125      |                 |         |         |         |         |         |         |         |         |         |         |         | 8.625   | 8.750   | 8.875   |  |
| 116      | 7.250      |                 |         |         |         |         |         |         |         |         |         |         |         | 8.750   | 8.875   | 9.000   |  |
| 118      | 7.375      |                 |         |         |         |         |         |         |         |         |         |         |         | 8.875   | 9.000   | 9.125   |  |
| 120      | 7.500      |                 |         |         |         |         |         |         |         |         |         |         |         | 9.000   | 9.125   | 9.250   |  |
| 122      | 7.625      |                 |         |         |         |         |         |         |         |         |         |         |         | 9.125   | 9.250   | 9.375   |  |
| 124      | 7.750      |                 |         |         |         |         |         |         |         |         |         |         |         | 9.250   | 9.375   | 9.500   |  |
| 126      | 7.875      |                 |         |         |         |         |         |         |         |         |         |         |         | 9.375   | 9.500   | 9.625   |  |
| 128      | 8.000      |                 |         |         |         |         |         |         |         |         |         |         |         | 9.500   | 9.625   | 9.750   |  |

REVIEWER SYMBOLS: ARMY-ER ME DIA-IS  
 USER SYMBOLS: ARMY - AV  
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 This military standard is approved for use by all Departments & Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document.

UNASSIGNED DASH NOS. SHALL NOT BE USED, EXCEPT THOSE DASH NOS. COVERED BY THE FOLLOWING CODING NOTE. DASH NUMBERS INDICATE PREFERRED GRIP LENGTHS IN .125 INCREMENTS. INTERMEDIATE GRIP LENGTHS BETWEEN THOSE LENGTHS LISTED, MAY BE SPECIFIED IN .062 INCREMENTS BY INTERMEDIATE DASH NUMBERS. LENGTH AND GRIP OF A BOLT WITH AN ODD NUMBER FOR THE DASH NUMBER WILL BE .062 GREATER THAN SHOWN FOR THE BOLT WITH THE PRECEDING EVEN DASH NUMBER. ONLY BOLT DIAMETER FOR WHICH THERE ARE QUALIFIED PRODUCTS LISTED ON QPL-7838 SHALL BE USED FOR DESIGN. FOR EACH BOLT DIAMETER GRIP LENGTHS GREATER OR LESS THAN THOSE DESIGNATED BY ASSIGNED DASH NUMBERS ON SHEET 2 ARE INACTIVE FOR DESIGN. ADD H BEFORE DASH NO. FOR BOLT WITH DRILLED HEAD. EXAMPLES OF PART NOS.: MS20017-18 = 1-12 BOLT, 2.438 INCH LONG, 1.125 INCH GRIP, UNDRILLED HEAD. MS20017H18 = 1-12 BOLT, 2.438 INCH LONG, 1.125 INCH GRIP, DRILLED HEAD.

|                                      |   |                      |
|--------------------------------------|---|----------------------|
| P.A. Navy - AS                       | TITLE   | MILITARY STANDARD    |
| Other Cust<br>Army - AR<br>USAF - 99 | BOLT - INTERNAL WRENCHING, 160 KSI FTU AND 96 KSI FSU | MS20004 THRU MS20024 |
| PROCUREMENT SPECIFICATION MIL-B-7838 | SUPERSEDES:   | SHEET 3 OF 4         |

FED. SUP CLASS  
530

TABLE II (CONT'D)

| DASH NO | GRIP<br>±.010 | L. LENGTH, I.015 |
|---------|---------------|------------------|
|         |               | MS20012A         |
| 8       | .500          | 3/4<br>1.230     |

(D)

USER SYMBOLS:  
ARMY -AV

REVIEWER SYMBOLS:  
ARMY - ER, ME  
DLA - IS

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APPROVED 28 Feb. 1952 REVISED FOR CHANGES SEE SHEETS 2 AND 4

|   |   |                   |                     |
|---|---|-------------------|---------------------|
| P.A.<br>NAVY - AS<br>Other Cust<br>Army - AR<br>USAF - 99 | TITLE   | MILITARY STANDARD |                     |
|   | BOLTS, INTERNAL WRENCHING, 160 KSI FTU AND 96 KSI FSU | MS                | 20004 THRU<br>20024 |
| PROCUREMENT SPECIFICATION<br>MIL-B-7838                   | SUPERSEDES:   | SHEET             | OF                  |
|   |   | 4                 | 4                   |

DD FORM 1 SEP 71 672-1 (Coordinated)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

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