

### Machine Screw Sizes

| Tap   | Tap Drill                    | Decimal Equiv. of Tap Drill               | Theoretical % of Thread    | Prob-able Oversize (Mean)                 | Prob-able Hole Size                       | Percentage of Thread       |
|-------|------------------------------|---|----------------------------|---|---|----------------------------|
| 0-80  | 56<br>3/64                   | .0465<br>.0469                            | 83<br>81                   | .0015<br>.0015                            | .0480<br>.0484                            | 74<br>71                   |
| 1-64  | 54                           | .0550                                     | 89                         | .0015                                     | .0565                                     | 81                         |
| 1-72  | 53                           | .0595                                     | 75                         | .0015                                     | .0610                                     | 67                         |
| 2-56  | 51<br>50                     | .0670<br>.0700                            | 82<br>69                   | .0017<br>.0017                            | .0687<br>.0717                            | 74<br>62                   |
| 2-64  | 50                           | .0700                                     | 79                         | .0017                                     | .0717                                     | 70                         |
| 3-48  | 48<br>5/64<br>47<br>46       | .0760<br>.0781<br>.0785<br>.0810          | 85<br>77<br>76<br>67       | .0019<br>.0019<br>.0019<br>.0019          | .0779<br>.0800<br>.0804<br>.0829          | 78<br>70<br>69<br>60       |
| 3-56  | 46<br>45                     | .0810<br>.0820                            | 78<br>73                   | .0019<br>.0019                            | .0829<br>.0839                            | 69<br>65                   |
| 4-40  | 44<br>43                     | .0860<br>.0890                            | 80<br>71                   | .0020<br>.0020                            | .0880<br>.0910                            | 74<br>65                   |
| 4-48  | 42<br>1/32                   | .0935<br>.0938                            | 68<br>68                   | .0020<br>.0020                            | .0955<br>.0958                            | 61<br>60                   |
| 5-40  | 40<br>39<br>38               | .0980<br>.0995<br>.1015                   | 83<br>79<br>72             | .0023<br>.0023<br>.0023                   | .1003<br>.1018<br>.1038                   | 76<br>71<br>65             |
| 5-44  | 38<br>37                     | .1015<br>.1040                            | 79<br>71                   | .0023<br>.0023                            | .1038<br>.1063                            | 72<br>63                   |
| 6-32  | 37<br>36<br>3/64<br>35<br>34 | .1040<br>.1065<br>.1094<br>.1100<br>.1110 | 84<br>78<br>70<br>69<br>67 | .0023<br>.0026<br>.0026<br>.0026<br>.0026 | .1063<br>.1091<br>.1120<br>.1126<br>.1136 | 78<br>71<br>64<br>63<br>60 |
| 6-40  | 34<br>33<br>32               | .1110<br>.1130<br>.1160                   | 83<br>77<br>68             | .0026<br>.0026<br>.0026                   | .1136<br>.1156<br>.1186                   | 75<br>69<br>60             |
| 8-32  | 29                           | .1360                                     | 69                         | .0029                                     | .1389                                     | 62                         |
| 8-36  | 29                           | .1360                                     | 78                         | .0029                                     | .1389                                     | 70                         |
| 10-24 | 27<br>26<br>25<br>24<br>23   | .1440<br>.1470<br>.1495<br>.1520<br>.1540 | 85<br>79<br>75<br>70<br>67 | .0032<br>.0032<br>.0032<br>.0032<br>.0032 | .1472<br>.1502<br>.1527<br>.1552<br>.1572 | 79<br>74<br>69<br>64<br>61 |
| 10-32 | 22<br>21<br>20               | .1563<br>.1590<br>.1610                   | 83<br>81<br>71             | .0032<br>.0032<br>.0032                   | .1595<br>.1602<br>.1642                   | 75<br>73<br>68<br>64       |
| 12-24 | 17<br>16<br>15               | .1719<br>.1730<br>.1770<br>.1800          | 82<br>79<br>72<br>67       | .0035<br>.0035<br>.0035<br>.0035          | .1754<br>.1765<br>.1805<br>.1835          | 75<br>73<br>66<br>60       |
| 12-28 | 16<br>15<br>14               | .1770<br>.1800<br>.1820                   | 84<br>78<br>73             | .0035<br>.0035<br>.0035                   | .1805<br>.1835<br>.1855                   | 77<br>70<br>66             |

These tables show both the theoretical percentage of thread represented by the drill size and the percentage that would normally be obtained in drilling.

### Fractional Sizes

| Tap      | Tap Drill                               | Decimal Equiv. of Tap Drill                                 | Theoretical % of Thread                | Prob-able Oversize (Mean)                                   | Prob-able Hole Size   | Percentage of Thread                   |
|----------|---|---|--|---|---|--|
| 1/4-20   | 9<br>8<br>7<br>13/64<br>6<br>5<br>4     | .1960<br>.1990<br>.2010<br>.2031<br>.2040<br>.2055<br>.2090 | 83<br>79<br>75<br>72<br>71<br>69<br>63 | .0038<br>.0038<br>.0038<br>.0038<br>.0038<br>.0038<br>.0038 | .1998<br>.2028<br>.2048<br>.2069<br>.2078<br>.2093<br>.2128 | 77<br>73<br>70<br>66<br>65<br>63<br>57 |
| 1/4-28   | 3                                       | .2130   | 80                                     | .0038   | .2168   | 72                                     |
| 5/16-18  | F<br>G                                  | .2570<br>.2610  | 77<br>71                               | .0038<br>.0041  | .2608<br>.2651  | 72<br>66                               |
| 5/16-24  | H<br>I                                  | .2660<br>.2720  | 86<br>75                               | .0041<br>.0041  | .2701<br>.2761  | 78<br>67                               |
| 3/8-16   | 5/16<br>O                               | .3125<br>.3160  | 77<br>73                               | .0044<br>.0044  | .3169<br>.3204  | 72<br>68                               |
| 3/8-24   | 21/64<br>Q                              | .3281<br>.3320  | 87<br>79                               | .0044<br>.0044  | .3325<br>.3364  | 79<br>71                               |
| 7/16-14  | T<br>23/64<br>U<br>3/8<br>V             | .3580<br>.3594<br>.3680<br>.3750<br>.3770                   | 86<br>84<br>75<br>67<br>65             | .0046<br>.0046<br>.0046<br>.0046<br>.0046                   | .3626<br>.3640<br>.3726<br>.3796<br>.3816                   | 81<br>79<br>70<br>62<br>60             |
| 7/16-20  | W<br>25/64                              | .3860<br>.3906  | 79<br>72                               | .0046<br>.0046  | .3906<br>.3952  | 72<br>65                               |
| 1/2-13   | 27/64                                   | .4219   | 78                                     | .0047   | .4266   | 73                                     |
| 1/2-20   | 29/64                                   | .4531   | 72                                     | .0047   | .4578   | 65                                     |
| 9/16-12  | 15/32<br>31/64                          | .4688<br>.4844  | 87<br>72                               | .0048<br>.0048  | .4736<br>.4892  | 82<br>68                               |
| 9/16-18  | 1/2                                     | .5000   | 87                                     | .0048   | .5048   | 80                                     |
| 5/8-11   | 17/32<br>35/64                          | .5313<br>.5469  | 79<br>66                               | .0049<br>.0049  | .5362<br>.5518  | 75<br>62                               |
| 5/8-18   | 9/16                                    | .5625   | 87                                     | .0049   | .5674   | 80                                     |
| 3/4-10   | 41/64<br>21/32                          | .6406<br>.6563  | 84<br>72                               | .0050<br>.0050  | .6456<br>.6613  | 80<br>68                               |
| 3/4-16   | 11/16                                   | .6875   | 77                                     | .0050   | .6925   | 71                                     |
| 7/8-9    | 49/64<br>25/32                          | .7656<br>.7812  | 76<br>65                               | .0052<br>.0052  | .7708<br>.7864  | 72<br>61                               |
| 7/8-14   | 61/64<br>13/16                          | .7969<br>.8125  | 84<br>67                               | .0052<br>.0052  | .8021<br>.8177  | 79<br>62                               |
| 1"- 8    | 65/64<br>3/8<br>65/64                   | .8594<br>.8750<br>.8906                                     | 87<br>77<br>67                         | .0059<br>.0059<br>.0059                                     | .8653<br>.8809<br>.8965                                     | 83<br>73<br>64                         |
| 1"-12    | 23/32<br>69/64                          | .9063<br>.9219  | 87<br>72                               | .0060<br>.0060  | .9122<br>.9279  | 81<br>67                               |
| 1"-14    | 69/64<br>13/16                          | .9219<br>.9375  | 84<br>67                               | .0060<br>.0060  | .9279<br>.9435  | 78<br>61                               |
| 1 1/8- 7 | 31/32<br>63/64<br>1"                    | .9688<br>.9844<br>1.0000                                    | 84<br>76<br>67                         | .0062<br>.0067<br>.0070                                     | .9750<br>.9911<br>1.0070                                    | 81<br>72<br>64                         |
| 1 1/8-12 | 1 1/32<br>1 3/64                        | 1.0313<br>1.0469  | 87<br>72                               | .0071<br>.0072  | 1.0384<br>1.0541  | 80<br>66                               |
| 1 1/4- 7 | 1 3/32<br>1 7/64<br>1 1/8               | 1.0938<br>1.1094<br>1.1250                                  | 84<br>76<br>67                         |   |   |  |
| 1 1/4-12 | 1 5/32<br>1 11/64                       | 1.1563<br>1.1719  | 87<br>72                               |   |   |  |
| 1 3/8- 6 | 1 3/16<br>1 13/64<br>1 7/32<br>1 15/64  | 1.1875<br>1.2031<br>1.2188<br>1.2344                        | 87<br>79<br>72<br>65                   |   |   |  |
| 1 3/8-12 | 1 9/32<br>1 19/64                       | 1.2813<br>1.2969  | 87<br>72                               |   |   |  |
| 1 1/2- 6 | 1 1/16<br>1 21/64<br>1 11/32<br>1 23/64 | 1.3125<br>1.3281<br>1.3438<br>1.3594                        | 87<br>79<br>72<br>65                   |   |   |  |
| 1 1/2-12 | 1 11/32<br>1 27/64                      | 1.4063<br>1.4219  | 87<br>72                               |   |   |  |

