

| <b>STANDARD<br/>Tap &amp; Clearance Drill Sizes</b> |                   |                     |                   | <b>Tap Drill</b>                                |          |                                              |          | <b>Clearance Drill</b> |          |            |          |
|-----------------------------------------------------|-------------------|---------------------|-------------------|-------------------------------------------------|----------|----------------------------------------------|----------|------------------------|----------|------------|----------|
| Screw<br>Size                                       | Major<br>Diameter | Threads<br>Per Inch | Minor<br>Diameter | 75% Thread for<br>Aluminum, Brass<br>& Plastics |          | 50% Thread for<br>Steel, Stainless<br>& Iron |          | Close Fit              |          | Free Fit   |          |
|                                                     |                   |                     |                   | Drill Size                                      | Dec. Eq. | Drill Size                                   | Dec. Eq. | Drill Size             | Dec. Eq. | Drill Size | Dec. Eq. |
| 0                                                   | 0.060             | 80                  | 0.045             | 3/64                                            | 0.047    | 55                                           | 0.052    | 52                     | 0.064    | 50         | 0.070    |
| 1                                                   | 0.073             | 64                  | 0.054             | 53                                              | 0.060    | 1/16                                         | 0.063    | 48                     | 0.076    | 46         | 0.081    |
|                                                     |                   | 72                  | 0.056             | 53                                              | 0.060    | 52                                           | 0.064    |                        |          |            |          |
| 2                                                   | 0.086             | 56                  | 0.064             | 50                                              | 0.070    | 49                                           | 0.073    | 43                     | 0.089    | 41         | 0.096    |
|                                                     |                   | 64                  | 0.067             | 50                                              | 0.070    | 48                                           | 0.076    |                        |          |            |          |
| 3                                                   | 0.099             | 48                  | 0.073             | 47                                              | 0.079    | 44                                           | 0.086    | 37                     | 0.104    | 35         | 0.110    |
|                                                     |                   | 56                  | 0.077             | 45                                              | 0.082    | 43                                           | 0.089    |                        |          |            |          |
| 4                                                   | 0.112             | 40                  | 0.081             | 43                                              | 0.089    | 41                                           | 0.096    | 32                     | 0.116    | 30         | 0.129    |
|                                                     |                   | 48                  | 0.086             | 42                                              | 0.094    | 40                                           | 0.098    |                        |          |            |          |
| 5                                                   | 0.125             | 40                  | 0.094             | 38                                              | 0.102    | 7/64                                         | 0.109    | 30                     | 0.129    | 29         | 0.136    |
|                                                     |                   | 44                  | 0.097             | 37                                              | 0.104    | 35                                           | 0.110    |                        |          |            |          |
| 6                                                   | 0.138             | 32                  | 0.100             | 36                                              | 0.107    | 32                                           | 0.116    | 27                     | 0.144    | 25         | 0.150    |
|                                                     |                   | 40                  | 0.107             | 33                                              | 0.113    | 31                                           | 0.120    |                        |          |            |          |
| 8                                                   | 0.164             | 32                  | 0.126             | 29                                              | 0.136    | 27                                           | 0.144    | 18                     | 0.170    | 16         | 0.177    |
|                                                     |                   | 36                  | 0.130             | 29                                              | 0.136    | 26                                           | 0.147    |                        |          |            |          |
| 10                                                  | 0.190             | 24                  | 0.139             | 22                                              | 0.157    | 20                                           | 0.161    | 9                      | 0.196    | 7          | 0.201    |
|                                                     |                   | 32                  | 0.152             | 21                                              | 0.159    | 18                                           | 0.170    |                        |          |            |          |
| 12                                                  | 0.216             | 24                  | 0.165             | 16                                              | 0.177    | 12                                           | 0.189    | 2                      | 0.221    | 1          | 0.228    |
|                                                     |                   | 28                  | 0.172             | 14                                              | 0.182    | 10                                           | 0.194    |                        |          |            |          |
|                                                     |                   | 32                  | 0.178             | 13                                              | 0.185    | 9                                            | 0.196    |                        |          |            |          |
| 1/4                                                 | 0.250             | 20                  | 0.189             | 7                                               | 0.201    | 7/32                                         | 0.219    | F                      | 0.257    | H          | 0.266    |
|                                                     |                   | 28                  | 0.206             | 3                                               | 0.213    | 1                                            | 0.228    |                        |          |            |          |
|                                                     |                   | 32                  | 0.212             | 7/32                                            | 0.219    | 1                                            | 0.228    |                        |          |            |          |
| 5/16                                                | 0.313             | 18                  | 0.244             | F                                               | 0.257    | J                                            | 0.277    | P                      | 0.323    | Q          | 0.332    |
|                                                     |                   | 24                  | 0.261             | I                                               | 0.272    | 9/32                                         | 0.281    |                        |          |            |          |
|                                                     |                   | 32                  | 0.274             | 9/32                                            | 0.281    | L                                            | 0.290    |                        |          |            |          |
| 3/8                                                 | 0.375             | 16                  | 0.298             | 5/16                                            | 0.313    | Q                                            | 0.332    | W                      | 0.386    | X          | 0.397    |
|                                                     |                   | 24                  | 0.324             | Q                                               | 0.332    | S                                            | 0.348    |                        |          |            |          |
|                                                     |                   | 32                  | 0.337             | 11/32                                           | 0.344    | T                                            | 0.358    |                        |          |            |          |
| 7/16                                                | 0.438             | 14                  | 0.350             | U                                               | 0.368    | 25/64                                        | 0.391    | 29/64                  | 0.453    | 15/32      | 0.469    |
|                                                     |                   | 20                  | 0.376             | 25/64                                           | 0.391    | 13/32                                        | 0.406    |                        |          |            |          |
|                                                     |                   | 28                  | 0.394             | Y                                               | 0.404    | Z                                            | 0.413    |                        |          |            |          |
| 1/2                                                 | 0.500             | 13                  | 0.406             | 27/64                                           | 0.422    | 29/64                                        | 0.453    | 33/64                  | 0.516    | 17/32      | 0.531    |
|                                                     |                   | 20                  | 0.439             | 29/64                                           | 0.453    | 15/32                                        | 0.469    |                        |          |            |          |
|                                                     |                   | 28                  | 0.456             | 15/32                                           | 0.469    | 15/32                                        | 0.469    |                        |          |            |          |
| 9/16                                                | 0.563             | 12                  | 0.460             | 31/64                                           | 0.484    | 33/64                                        | 0.516    | 37/64                  | 0.578    | 19/32      | 0.594    |
|                                                     |                   | 18                  | 0.494             | 33/64                                           | 0.516    | 17/32                                        | 0.531    |                        |          |            |          |
|                                                     |                   | 24                  | 0.511             | 33/64                                           | 0.516    | 17/32                                        | 0.531    |                        |          |            |          |
| 5/8                                                 | 0.625             | 11                  | 0.514             | 17/32                                           | 0.531    | 9/16                                         | 0.563    | 41/64                  | 0.641    | 21/32      | 0.656    |
|                                                     |                   | 18                  | 0.557             | 37/64                                           | 0.578    | 19/32                                        | 0.594    |                        |          |            |          |
|                                                     |                   | 24                  | 0.574             | 37/64                                           | 0.578    | 19/32                                        | 0.594    |                        |          |            |          |
| 11/16                                               | 0.688             | 24                  | 0.636             | 41/64                                           | 0.641    | 21/32                                        | 0.656    | 45/64                  | 0.703    | 23/32      | 0.719    |
| 3/4                                                 | 0.750             | 10                  | 0.627             | 21/32                                           | 0.656    | 11/16                                        | 0.688    | 49/64                  | 0.766    | 25/32      | 0.781    |
|                                                     |                   | 16                  | 0.673             | 11/16                                           | 0.688    | 45/64                                        | 0.703    |                        |          |            |          |
|                                                     |                   | 20                  | 0.689             | 45/64                                           | 0.703    | 23/32                                        | 0.719    |                        |          |            |          |
| 13/16                                               | 0.813             | 20                  | 0.751             | 49/64                                           | 0.766    | 25/32                                        | 0.781    | 53/64                  | 0.828    | 27/32      | 0.844    |
| 7/8                                                 | 0.875             | 9                   | 0.739             | 49/64                                           | 0.766    | 51/64                                        | 0.797    | 57/64                  | 0.8906   | 29/32      | 0.9062   |
|                                                     |                   | 14                  | 0.787             | 13/16                                           | 0.813    | 53/64                                        | 0.828    |                        |          |            |          |
|                                                     |                   | 20                  | 0.814             | 53/64                                           | 0.828    | 27/32                                        | 0.844    |                        |          |            |          |
| 15/16                                               | 0.938             | 20                  | 0.876             | 57/64                                           | 0.891    | 29/32                                        | 0.906    | 61/64                  | 0.953    | 31/32      | 0.969    |
| 1                                                   | 1                 | 8                   | 0.847             | 7/8                                             | 0.875    | 59/64                                        | 0.922    | 1-1/64                 | 1.0156   | 1-1/32     | 1.0313   |
|                                                     |                   | 12                  | 0.898             | 15/16                                           | 0.938    | 61/64                                        | 0.953    |                        |          |            |          |
|                                                     |                   | 20                  | 0.939             | 61/64                                           | 0.953    | 31/32                                        | 0.969    |                        |          |            |          |

| METRIC<br>Tap & Clearance Drill Sizes |                      | Tap Drill                                       |                              |                                              |                              | Clearance Drill    |                           |                    |                              |
|---------------------------------------|----------------------|-------------------------------------------------|------------------------------|----------------------------------------------|------------------------------|--------------------|---------------------------|--------------------|------------------------------|
|                                       |                      | 75% Thread for<br>Aluminum, Brass<br>& Plastics |                              | 50% Thread for<br>Steel, Stainless<br>& Iron |                              | Close Fit          |                           | Free Fit           |                              |
| Screw Size<br>(mm)                    | Thread Pitch<br>(mm) | Drill Size<br>(mm)                              | Closest<br>American<br>Drill | Drill Size<br>(mm)                           | Closest<br>American<br>Drill | Drill Size<br>(mm) | Closest<br>American Drill | Drill Size<br>(mm) | Closest<br>American<br>Drill |
| M1.5                                  | 0.35                 | 1.15                                            | 56                           | 1.25                                         | 55                           | 1.60               | 1/16                      | 1.65               | 52                           |
| M1.6                                  | 0.35                 | 1.25                                            | 55                           | 1.35                                         | 54                           | 1.70               | 51                        | 1.75               | 50                           |
| M1.8                                  | 0.35                 | 1.45                                            | 53                           | 1.55                                         | 1/16                         | 1.90               | 49                        | 2.00               | 5/64                         |
| M2                                    | 0.45                 | 1.55                                            | 1/16                         | 1.70                                         | 51                           | 2.10               | 45                        | 2.20               | 44                           |
|                                       | 0.40                 | 1.60                                            | 52                           | 1.75                                         | 50                           |                    |                           |                    |                              |
| M2.2                                  | 0.45                 | 1.75                                            | 50                           | 1.90                                         | 48                           | 2.30               | 3/32                      | 2.40               | 41                           |
| M2.5                                  | 0.45                 | 2.05                                            | 46                           | 2.20                                         | 44                           | 2.65               | 37                        | 2.75               | 7/64                         |
| M3                                    | 0.60                 | 2.40                                            | 41                           | 2.60                                         | 37                           | 3.15               | 1/8                       | 3.30               | 30                           |
|                                       | 0.50                 | 2.50                                            | 39                           | 2.70                                         | 36                           |                    |                           |                    |                              |
| M3.5                                  | 0.60                 | 2.90                                            | 32                           | 3.10                                         | 31                           | 3.70               | 27                        | 3.85               | 24                           |
| M4                                    | 0.75                 | 3.25                                            | 30                           | 3.50                                         | 28                           | 4.20               | 19                        | 4.40               | 17                           |
|                                       | 0.70                 | 3.30                                            | 30                           | 3.50                                         | 28                           |                    |                           |                    |                              |
| M4.5                                  | 0.75                 | 3.75                                            | 25                           | 4.00                                         | 22                           | 4.75               | 13                        | 5.00               | 9                            |
| M5                                    | 1.00                 | 4.00                                            | 21                           | 4.40                                         | 11/64                        | 5.25               | 5                         | 5.50               | 0.22                         |
|                                       | 0.90                 | 4.10                                            | 20                           | 4.40                                         | 17                           |                    |                           |                    |                              |
|                                       | 0.80                 | 4.20                                            | 19                           | 4.50                                         | 16                           |                    |                           |                    |                              |
| M5.5                                  | 0.90                 | 4.60                                            | 14                           | 4.90                                         | 10                           | 5.80               | 1                         | 6.10               | B                            |
| M6                                    | 1.00                 | 5.00                                            | 8                            | 5.40                                         | 4                            | 6.30               | E                         | 6.60               | G                            |
|                                       | 0.75                 | 5.25                                            | 4                            | 5.50                                         | 7/32                         |                    |                           |                    |                              |
| M7                                    | 1.00                 | 6.00                                            | B                            | 6.40                                         | E                            | 7.40               | L                         | 7.70               | N                            |
|                                       | 0.75                 | 6.25                                            | D                            | 6.50                                         | F                            |                    |                           |                    |                              |
| M8                                    | 1.25                 | 6.80                                            | H                            | 7.20                                         | J                            | 8.40               | Q                         | 8.80               | S                            |
|                                       | 1.00                 | 7.00                                            | J                            | 7.40                                         | L                            |                    |                           |                    |                              |
| M9                                    | 1.25                 | 7.80                                            | N                            | 8.20                                         | P                            | 9.50               | 3/8                       | 9.90               | 25/64                        |
|                                       | 1.00                 | 8.00                                            | O                            | 8.40                                         | 21/64                        |                    |                           |                    |                              |
| M10                                   | 1.50                 | 8.50                                            | R                            | 9.00                                         | T                            | 10.50              | Z                         | 11.00              | 0.4375                       |
|                                       | 1.25                 | 8.80                                            | 11/32                        | 9.20                                         | 23/64                        |                    |                           |                    |                              |
|                                       | 1.00                 | 9.00                                            | T                            | 9.40                                         | U                            |                    |                           |                    |                              |
| M11                                   | 1.50                 | 9.50                                            | 3/8                          | 10.00                                        | X                            | 11.60              | 29/64                     | 12.10              | 15/32                        |
| M12                                   | 1.75                 | 10.30                                           | 13/32                        | 10.90                                        | 27/64                        | 12.60              | 1/2                       | 13.20              | 33/64                        |
|                                       | 1.50                 | 10.50                                           | Z                            | 11.00                                        | 7/16                         |                    |                           |                    |                              |
|                                       | 1.25                 | 10.80                                           | 27/64                        | 11.20                                        | 7/16                         |                    |                           |                    |                              |
| M14                                   | 2.00                 | 12.10                                           | 15/32                        | 12.70                                        | 1/2                          | 14.75              | 37/64                     | 15.50              | 39/64                        |
|                                       | 1.50                 | 12.50                                           | 1/2                          | 13.00                                        | 33/64                        |                    |                           |                    |                              |
|                                       | 1.25                 | 12.80                                           | 1/2                          | 13.20                                        | 33/64                        |                    |                           |                    |                              |
| M15                                   | 1.50                 | 13.50                                           | 17/32                        | 14.00                                        | 35/64                        | 15.75              | 5/8                       | 16.50              | 21/32                        |
| M16                                   | 2.00                 | 14.00                                           | 35/64                        | 14.75                                        | 37/64                        | 16.75              | 21/32                     | 17.50              | 0.6875                       |
|                                       | 1.50                 | 14.50                                           | 37/64                        | 15.00                                        | 19/32                        |                    |                           |                    |                              |
| M17                                   | 1.50                 | 15.50                                           | 39/64                        | 16.00                                        | 5/8                          | 18.00              | 45/64                     | 18.50              | 47/64                        |
|                                       | 2.50                 | 15.50                                           | 39/64                        | 16.50                                        | 41/64                        |                    |                           |                    |                              |
| M18                                   | 2.00                 | 16.00                                           | 5/8                          | 16.75                                        | 21/32                        | 19.00              | 3/4                       | 20.00              | 25/32                        |
|                                       | 1.50                 | 16.50                                           | 21/32                        | 17.00                                        | 43/64                        |                    |                           |                    |                              |
| M19                                   | 2.50                 | 16.50                                           | 21/32                        | 17.50                                        | 11/16                        | 20.00              | 25/32                     | 21.00              | 53/64                        |
|                                       | 2.50                 | 17.50                                           | 11/16                        | 18.50                                        | 23/32                        |                    |                           |                    |                              |
| M20                                   | 2.00                 | 18.00                                           | 45/64                        | 18.50                                        | 47/64                        | 21.00              | 53/64                     | 22.00              | 55/64                        |
|                                       | 1.50                 | 18.50                                           | 47/64                        | 19.00                                        | 3/4                          |                    |                           |                    |                              |

## PIPE TAP SIZES

| Tap Size      | Drill Size<br>NPT & NPTF (Taper) | Decimal<br>Equivalent | Drill Size<br>NPS (Straight) | Decimal<br>Equivalent |
|---------------|----------------------------------|-----------------------|------------------------------|-----------------------|
| 1/8"-27       | R                                | .3390"                | S                            | .3480"                |
| 1/4"-18       | 7/16"                            | .4375                 | 29/64"                       | .4531                 |
| 3/8"-18       | 37/64                            | .5781                 | 19/32                        | .5938                 |
| 1/2"-14       | 23/32                            | .7188                 | 47/64                        | .7344                 |
| 3/4"-14       | 59/64                            | .9219                 | 15/16                        | .9375                 |
| 1"-11-1/2     | 1-5/32                           | 1.1562                | 1-3/16                       | 1.1875                |
| 1-1/4"-11-1/2 | 1-1/2                            | 1.5000                | 1-33/64                      | 1.5156                |
| 1-1/2"-11-1/2 | 1-47/64                          | 1.7344                | 1-3/4                        | 1.7500                |
| 2"-11-1/2     | 2-7/32                           | 2.2188                | 2-7/32                       | 2.2188                |
| 2-1/2"-8      | 2-5/8                            | 2.6250                | 2-21/32                      | 2.6562                |
| 3"-8          | 3-1/4                            | 3.2500                | 3-9/32                       | 3.2812                |
| 3-1/2"-8      | 3-3/4                            | 3.7500                | 3-25/32                      | 3.7812                |
| 4"-8          | 4-1/4                            | 4.1250                | 4-9/32                       | 4.2812                |

## TAP DRILL SIZES (75% prob. thread)

| Tap Size    | Drill Size | Decimal Size |
|-------------|------------|--------------|
| #0-80       | 3/64"      | .0469"       |
| 1.6mm x .35 | 1.25mm     | .0492"       |
| #1-64       | 53         | .0595"       |
| 2mm x .4    | 1.6mm      | .0630"       |
| #1-72       | 53         | .0595"       |
| #2-56       | 51         | .0670"       |
| #2-64       | 50         | .0700"       |
| 2.5mm x .45 | 2.05mm     | .0807"       |
| #3-48       | 5/64"      | .0781"       |
| #3-56       | 46         | .0810"       |
| #4-40       | 43         | .0890"       |
| #4-48       | 42         | .0935"       |
| 3mm x .5    | 2.5mm      | .0984"       |
| #5-40       | 39         | .0995"       |
| #5-44       | 37         | .1040"       |
| 3.5mm x .6  | 2.9mm      | .1142"       |
| #6-32       | 36         | .1065"       |
| #6-40       | 33         | .1130"       |
| 4mm x .7    | 3.3mm      | .1299"       |
| #8-32       | 29         | .1360"       |
| #8-36       | 29         | .1360"       |
| #10-24      | 25         | .1495"       |
| #10-32      | 21         | .1590"       |
| 5mm x .8    | 4.2mm      | .1654"       |
| #12-24      | 17         | .1730"       |
| #12-28      | 15         | .1800"       |
| 6mm x 1     | 5mm        | .1969"       |
| 1/4"-20     | 7          | .2010"       |
| 1/4"-28     | 3          | .2130"       |
| 5/16"-18    | F          | .2570"       |
| 5/16"-24    | I          | .2720"       |
| 8mm x 1.25  | 6.7mm      | .2638"       |
| 3/8"-16     | 5/16"      | .3125"       |

| Tap Size    | Drill Size | Decimal Size |
|-------------|------------|--------------|
| 3/8"-24     | Q          | .3320"       |
| 10mm x 1.5  | 8.5mm      | .3346"       |
| 7/16"-14    | U          | .3680"       |
| 7/16"-20    | W          | .3860"       |
| 12mm x 1.75 | 10mm       | .3937"       |
| 1/2"-13     | 27/64"     | .4219"       |
| 1/2"-20     | 29/64"     | .4531"       |
| 14mm x 2    | 12mm       | .4724"       |
| 9/16"-12    | 31/64"     | .4844"       |
| 9/16"-18    | 33/64"     | .5156"       |
| 5/8"-11     | 17/32      | .5312"       |
| 5/8"-18     | 37/64"     | .5781"       |
| 16mm x 2    | 14mm       | .5512"       |
| 3/4"-10     | 21/32"     | .6562"       |
| 3/4"-16     | 11/16"     | .6875"       |
| 20mm x 2.5  | 17mm       | .6693"       |
| 7/8"-9      | 49/64"     | .7656"       |
| 7/8"-14     | 13/16"     | .8125"       |
| 24mm x 3    | 21mm       | .8268"       |
| 1"-8        | 7/8"       | .8750"       |
| 1"-12       | .918"      | .918"        |
| 1"-14       | 15/16"     | .9375"       |
| 1-1/8"-7    | 63/64"     | .9844"       |
| 1-1/8"-12   | 1-3/64"    | 1.0469"      |
| 30mm x 3.5  | 26.5mm*    | 1.0433"      |
| 1-1/4"-7    | 1-7/64"    | 1.1094"      |
| 1-1/4"-12   | 1-11/64"   | 1.1719"      |
| 1-3/8"-6    | 1.212"     | 1.212"       |
| 1-3/8"-12   | 1.293"     | 1.293"       |
| 36mm x 4    | 1-1/4"     | 1.250"       |
| 1-1/2"-6    | 1-11/32"   | 1.3438"      |
| 1-1/2"-12   | 1-27/64"   | 1.4219"      |

\*Recommended to bore to hole size since standard drill would be either undersized or oversized.