# Tapping Screw Dimensions

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J & E Supply & FASTENER CO.

**Threads per inch, major diameter, head size and driver size for inch sheet metal (tapping) screws — Type A, AB and B, flat, oval, pan, truss, hex and hex washer heads — and self-drilling screws. ASME B18.6.3 (the tapping-screw tables that were ASME B18.6.4) and SAE J78.**

A tapping screw makes its own thread as it goes in. **Type A** has a sharp point and a coarse, widely spaced thread, for thin sheet metal; the standard no longer recommends it and points to Type AB. **Type AB** has the same sharp point with the finer Type B thread. **Type B** has a blunt point, for a drilled or punched hole in heavier sheet metal, castings and plastics. A **self-drilling** (Tek) screw has a drill point that makes its own hole first. Sizes go by the number: #8 is about 0.16″, #10 about 0.19″; the larger sizes are sold as #14 (1/4″), #20 (5/16″) and #24 (3/8″) — for Type A the number is the size, for Type AB and B it is the fraction. **Flat** and **oval** heads sink into an 82° countersink; **pan**, **truss**, **hex** and **hex washer** heads sit on top.



Type A · sharp, coarse | Type AB · sharp, finer | Type B · blunt | Self-drilling · drill point

H head height

A head diameter (across flats on a hex)

The letters match the table columns.

## Type A tapping screw threads — ASME B18.6.3 (inches)

| SIZE | THREADS PER INCH | MAJOR DIA MAX / MIN | TYPE AB THREAD AT THIS LENGTH OR SHORTER: PAN, TRUSS, HEX HEADS | … FLAT, OVAL HEADS |
|---|---|---|---|---|
| #6 | 18 | .141 / .136 | 1/4″ | 5/16″ |
| #7 | 16 | .158 / .152 | 5/16″ | 3/8″ |
| #8 | 15 | .168 / .162 | 3/8″ | 7/16″ |
| #10 | 12 | .194 / .188 | 3/8″ | 1/2″ |
| #12 | 11 | .221 / .215 | 7/16″ | 9/16″ |
| #14 | 10 | .254 / .248 | 1/2″ | 5/8″ |
| #20 | 9 | .333 / .327 | 11/16″ | 13/16″ |
| #24 | 9 | .390 / .383 | 3/4″ | 1″ |

A short Type A screw is made with the Type AB thread (next table) so it holds — the last two columns give the length. Sizes #2–#5 aren't listed: only one of our sources has them.

## Type AB and Type B tapping screw threads — ASME B18.6.3 (inches)

| SIZE | THREADS PER INCH | MAJOR DIA MAX / MIN |
|---|---|---|
| #2 | 32 | .088 / .082 |
| #4 | 24 | .114 / .108 |
| #5 | 20 | .130 / .123 |
| #6 | 20 | .139 / .132 |
| #7 | 19 | .154 / .147 |
| #8 | 18 | .166 / .159 |
| #10 | 16 | .189 / .182 |
| #12 | 14 | .215 / .208 |
| 1/4″ | 14 | .246 / .237 |
| 5/16″ | 12 | .315 / .306 |
| 3/8″ | 12 | .380 / .371 |

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Type AB and Type B share one thread; AB has a sharp point, B a blunt one.

## Flat head (82°) tapping screws — ASME B18.6.3 (inches)

| SIZE | HEAD DIA A MAX / MIN | HEAD HEIGHT H MAX | SQUARE DRIVE |
|---|---|---|---|
| #2 | .162 / .144 | .051 | — |
| #4 | .212 / .191 | .067 | #0 square |
| #5 | .237 / .215 | .075 | — |
| #6 | .262 / .238 | .083 | #1 square |
| #7 | .287 / .262 | .091 | — |
| #8 | .312 / .285 | .100 | #2 square |
| #10 | .362 / .333 | .116 | #2 square |
| #12 | .412 / .380 | .132 | #3 square |
| #14 | .462 / .427 | .148 | — |
| 1/4″ | .477 / .442 | .153 | #3 square |
| 5/16″ | .597 / .556 | .191 | #4 square |
| 3/8″ | .717 / .670 | .230 | — |

Sits flush in an 82° countersink; length is measured overall. The Phillips driver size for flat heads isn't on our chart yet — only one of our sources lists it.

## Oval head (82°) tapping screws — ASME B18.6.3 (inches)

| SIZE | HEAD DIA A MAX / MIN | SIDE HEIGHT H MAX | OVERALL HEAD HEIGHT MAX |
|---|---|---|---|
| #2 | .162 / .144 | .051 | .080 |
| #4 | .212 / .191 | .067 | .104 |
| #5 | .237 / .215 | .075 | .116 |
| #6 | .262 / .238 | .083 | .128 |
| #7 | .287 / .262 | .091 | .140 |
| #8 | .312 / .285 | .100 | .152 |
| #10 | .362 / .333 | .116 | .176 |
| #12 | .412 / .380 | .132 | .200 |
| #14 | .462 / .427 | .148 | .224 |
| 1/4″ | .477 / .442 | .153 | .232 |
| 5/16″ | .597 / .556 | .191 | .290 |
| 3/8″ | .717 / .670 | .230 | .347 |

A countersunk head with a raised dome; length is measured from the rim, the dome isn't counted. Phillips driver size: not on our chart yet.

## Pan head tapping screws, Phillips and square drive — ASME B18.6.3 (inches)

| SIZE | HEAD DIA A MAX / MIN | HEAD HEIGHT H MAX / MIN | PHILLIPS DRIVER | SQUARE DRIVER |
|---|---|---|---|---|
| #2 | .167 / .155 | .062 / .053 | — | — |
| #4 | .219 / .205 | .080 / .070 | #1 Phillips | #0 square |
| #6 | .270 / .256 | .097 / .087 | #2 Phillips | #1 square |
| #7 | .296 / .281 | .106 / .096 | #2 Phillips | — |
| #8 | .322 / .306 | .115 / .105 | #2 Phillips | #2 square |
| #10 | .373 / .357 | .133 / .122 | #2 Phillips | #2 square |
| #12 | .425 / .407 | .151 / .139 | #3 Phillips | #3 square |
| 1/4″ | .492 / .473 | .175 / .162 | #3 Phillips | #3 square |
| 5/16″ | .615 / .594 | .218 / .203 | — | — |
| 3/8″ | .740 / .716 | .261 / .244 | — | — |

A recessed (Phillips or square) pan head is taller than a slotted one. #14 isn't listed: only one of our sources has it.

### Pan head tapping screws, slotted — ASME B18.6.3 (inches)

| SIZE | HEAD DIA A MAX / MIN | HEAD HEIGHT H MAX / MIN |
|---|---|---|
| #2 | .167 / .155 | .053 / .045 |
| #4 | .219 / .205 | .068 / .058 |
| #5 | .245 / .231 | .075 / .065 |
| #6 | .270 / .256 | .082 / .072 |
| #7 | .296 / .281 | .089 / .079 |
| #8 | .322 / .306 | .096 / .085 |
| #10 | .373 / .357 | .110 / .099 |
| #12 | .425 / .407 | .125 / .112 |
| 1/4″ | .492 / .473 | .144 / .130 |
| 5/16″ | .615 / .594 | .178 / .162 |
| 3/8″ | .740 / .716 | .212 / .195 |

### Truss head tapping screws — ASME B18.6.3 (inches)

| SIZE | HEAD DIA A MAX / MIN | HEAD HEIGHT H MAX / MIN | PHILLIPS DRIVER |
|---|---|---|---|
| #2 | .194 / .180 | .053 / .044 | — |
| #4 | .257 / .241 | .069 / .059 | #1 Phillips |
| #5 | .289 / .272 | .078 / .066 | — |
| #6 | .321 / .303 | .086 / .074 | #2 Phillips |
| #7 | .352 / .333 | .094 / .081 | — |
| #8 | .384 / .364 | .102 / .088 | #2 Phillips |
| #10 | .448 / .425 | .118 / .103 | #2 Phillips |
| #12 | .511 / .487 | .134 / .118 | — |
| #14 | .557 / .530 | .146 / .129 | — |
| 1/4″ | .573 / .546 | .150 / .133 | #3 Phillips |
| 5/16″ | .698 / .666 | .183 / .162 | #4 Phillips |
| 3/8″ | .823 / .787 | .215 / .191 | — |

A wide, low dome. A dash: our sources differ or only one lists it.

### Hex washer head tapping and self-drilling screws — ASME B18.6.3 (inches)

| SIZE | NUT DRIVER | ACROSS FLATS MAX / MIN | HEAD HEIGHT MAX / MIN | WASHER DIA MAX / MIN |
|---|---|---|---|---|
| #4 | — | — / .181 | .060 / .049 | .243 / .225 |
| #6 | 1/4″ | .250 / .244 | .093 / .080 | .328 / .302 |
| #7 | 1/4″ | .250 / .244 | .093 / .080 | .328 / .302 |
| #8 | 1/4″ | .250 / .244 | .110 / .096 | .348 / .322 |
| #10 | 5/16″ | .312 / .305 | .120 / .105 | .414 / .384 |
| #12 | 5/16″ | .312 / .305 | .155 / .139 | .432 / .398 |
| #14 | — | — | .190 / .172 | .520 / .480 |
| 1/4″ | 3/8″ | .375 / .367 | .190 / .172 | .520 / .480 |
| 5/16″ | 1/2″ | .500 / .489 | .230 / .208 | .676 / .624 |
| 3/8″ | 9/16″ | .562 / .551 | .295 / .270 | .780 / .720 |

The standard also allows a 7/16″ hex on 1/4″ and 5/16″ screws, so check the head. #14: our sources differ (3/8″ or 7/16″).

### Hex head tapping screws — ASME B18.6.3 (inches)

| SIZE | NUT DRIVER | ACROSS FLATS MAX / MIN | HEAD HEIGHT MAX / MIN |
|---|---|---|---|
| #4 | — | — / .181 | .060 / .049 |
| #6 | 1/4″ | .250 / .244 | .093 / .080 |
| #7 | 1/4″ | .250 / .244 | .093 / .080 |
| #8 | 1/4″ | .250 / .244 | .110 / .096 |
| #10 | 5/16″ | .312 / .305 | .120 / .105 |
| #12 | 5/16″ | .312 / .305 | .155 / .139 |
| #14 | — | — | .190 / .172 |
| 1/4″ | 3/8″ | .375 / .367 | .190 / .172 |
| 5/16″ | 1/2″ | .500 / .489 | .230 / .208 |
| 3/8″ | 9/16″ | .562 / .551 | .295 / .270 |

Same hex as the hex washer head, without the washer.

### Good to know

Hole size for a tapping screw depends on the metal and its thickness, so it isn't on this chart — give us a call. Self-drilling screws use the hex washer head table above; their thread and how thick a steel each drill point drills (SAE J78) aren't on the chart yet — only one of our sources lists them, and makers rate their points differently. Round and binding heads aren't on the chart yet. How to measure a flush head is on How to Measure a Flat Head; heads that sit on top on How to Measure a Bolt.

## Quick answers

**How many threads per inch on a #10 sheet metal screw?**

**12** on a Type A, **16** on a Type AB or Type B (ASME B18.6.3).

**What is the difference between Type A and Type AB tapping screws?**

Both have a sharp point; Type AB has the finer Type B thread — a #8 Type A has 15 threads per inch, a #8 Type AB 18. The standard recommends AB over A.

**What size nut driver fits a hex washer head sheet metal screw?**

#6 – 1/4″, #7 – 1/4″, #8 – 1/4″, #10 – 5/16″, #12 – 5/16″, 1/4″ – 3/8″, 5/16″ – 1/2″, 3/8″ – 9/16″ (ASME B18.6.3).

**What Phillips bit fits a #8 pan head sheet metal screw?**

A **#2** Phillips (ASME B18.6.3).

**How big is the head on a #10 pan head sheet metal screw?**

.373″ across at most; a Phillips pan head is up to .133″ tall.

Reference values drawn from the governing standards. For critical applications, confirm against the standard and the manufacturer's published data. Technical information disclaimer →