# Flat & Button Head Socket Cap Screws

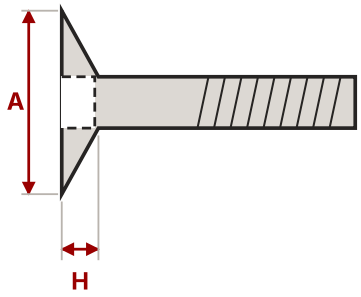
jandesupply.com/reference-flat-button-socket-dimensions.php

J & E Supply & FASTENER CO.

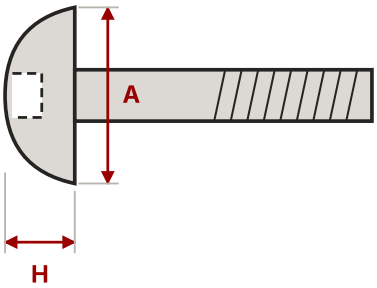
**Hex key size, head diameter, head height and key depth for inch flat (countersunk) and button head socket cap screws. ASME B18.3.**

Two low-profile cousins of the socket head cap screw. A **flat head** has an 82° cone under the head and sits **flush** in a countersunk hole. A **button head** has a low, wide dome that sits on top. **J** is the hex key (Allen wrench) that fits it; **A** is the head diameter; **H** is the head height; **T** is how deep the key goes in. Inches throughout.

FLAT (COUNTERSUNK) — 82°




BUTTON HEAD




Letters match the tables. Socket shown dashed.

## Flat (countersunk) head socket cap screws — ASME B18.3 (inches)

| SIZE | KEY J | HEAD DIA. A MAX | A MIN | HEAD HEIGHT H | KEY DEPTH T MIN |
|---|---|---|---|---|---|
| #0 | .035″ | 0.138 | 0.117 | 0.044 | 0.025 |
| #1 | .050″ | 0.168 | 0.143 | 0.054 | 0.031 |
| #2 | .050″ | 0.197 | 0.168 | 0.064 | 0.038 |
| #3 | 1/16″ | 0.226 | 0.193 | 0.073 | 0.044 |
| #4 | 1/16″ | 0.255 | 0.218 | 0.083 | 0.055 |
| #5 | 5/64″ | 0.281 | 0.240 | 0.090 | 0.061 |
| #6 | 5/64″ | 0.307 | 0.263 | 0.097 | 0.066 |
| #8 | 3/32″ | 0.359 | 0.311 | 0.112 | 0.076 |
| #10 | 1/8″ | 0.411 | 0.359 | 0.127 | 0.087 |
| 1/4″ | 5/32″ | 0.531 | 0.480 | 0.161 | 0.111 |
| 5/16″ | 3/16″ | 0.656 | 0.600 | 0.198 | 0.135 |
| 3/8″ | 7/32″ | 0.781 | 0.720 | 0.234 | 0.159 |
| 7/16″ | 1/4″ | 0.844 | 0.781 | 0.234 | 0.159 |
| 1/2″ | 5/16″ | 0.938 | 0.872 | 0.251 | 0.172 |
| 5/8″ | 3/8″ | 1.188 | 1.112 | 0.324 | 0.220 |
| 3/4″ | 1/2″ | 1.438 | 1.355 | 0.396 | 0.220 |
| 7/8″ | 9/16″ | 1.688 | 1.604 | 0.468 | 0.248 |
| 1″ | 5/8″ | 1.938 | – | 0.540 | 0.297 |

A max is to the sharp corners of the cone; A min is the actual head with its edge flat. Head height H is a reference value. 1″ A min: our two sources differ — give us a call at 405-670-1234.

## Button head socket cap screws — ASME B18.3 (inches)

| SIZE | KEY J | HEAD DIA. A MAX | A MIN | HEAD HEIGHT H MAX | H MIN | KEY DEPTH T MIN |
|---|---|---|---|---|---|---|

| SIZE | KEY J | HEAD DIA. A MAX | A MIN | HEAD HEIGHT H MAX | H MIN | KEY DEPTH T MIN |
|---|---|---|---|---|---|---|
| #4 | 1/16″ | 0.213 | 0.201 | 0.059 | 0.051 | 0.035 |
| #6 | 5/64″ | 0.262 | 0.250 | 0.073 | 0.063 | 0.044 |
| #8 | 3/32″ | 0.312 | 0.298 | 0.087 | 0.077 | 0.052 |
| #10 | 1/8″ | 0.361 | 0.347 | 0.101 | 0.091 | 0.070 |
| 1/4″ | 5/32″ | 0.437 | 0.419 | 0.132 | 0.122 | 0.087 |
| 5/16″ | 3/16″ | 0.547 | 0.527 | 0.166 | 0.152 | 0.105 |
| 3/8″ | 7/32″ | 0.656 | 0.636 | 0.199 | 0.185 | 0.122 |
| 1/2″ | 5/16″ | 0.875 | 0.851 | 0.265 | 0.245 | 0.175 |
| 5/8″ | 3/8″ | 1.000 | 0.970 | 0.331 | 0.311 | 0.210 |

Thread sizes and pitches are on the thread pitch chart.

## Where they fit

| HEAD | USE IT FOR |
|---|---|
| Flat | A flush finish — the head sits down in a countersunk hole, level with the surface. |
| Button | A low, wide, finished-looking head that sits on top of the part. |

**Strength:** flat and button heads are for light-duty fastening. They are not for critical high-strength joints; use a socket head cap screw → there. Alloy-steel flat and button heads are made to ASTM F835.

## Quick answers

**What size Allen wrench fits a 1/4" flat head socket cap screw?**

A **5/32″** hex key.

**What hex key goes with each flat head socket screw size?**

#0 – .035″, #1 – .050″, #2 – .050″, #3 – 1/16″, #4 – 1/16″, #5 – 5/64″, #6 – 5/64″, #8 – 3/32″, #10 – 1/8″, 1/4″ – 5/32″, 5/16″ – 3/16″, 3/8″ – 7/32″, 7/16″ – 1/4″, 1/2″ – 5/16″, 5/8″ – 3/8″, 3/4″ – 1/2″, 7/8″ – 9/16″, 1″ – 5/8″.

**What hex key goes with each button head socket screw size?**

#4 – 1/16″, #6 – 5/64″, #8 – 3/32″, #10 – 1/8″, 1/4″ – 5/32″, 5/16″ – 3/16″, 3/8″ – 7/32″, 1/2″ – 5/16″, 5/8″ – 3/8″.

**What angle is a flat head socket cap screw?**

82° under the head, so it sits flush in an 82° countersink.

**Are button head screws as strong as socket head cap screws?**

No. Flat and button heads are for light-duty fastening and are not for critical high-strength joints — use a socket head cap screw there.

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