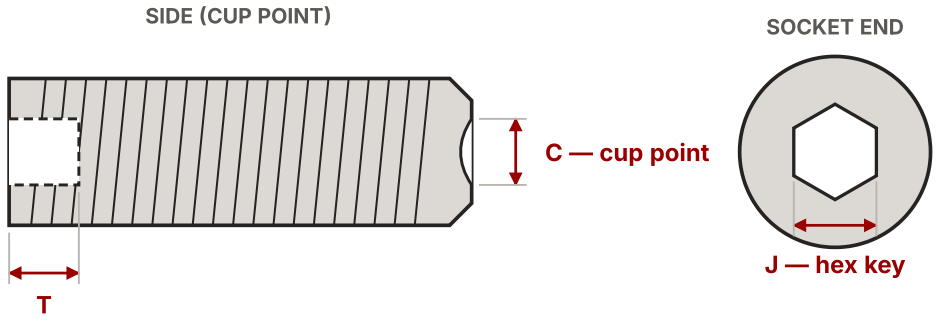
Socket Set Screw Dimensions

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J & E Supply & FASTENER CO.

Hex key size, key depth and point sizes for inch socket set screws, #0 to 1-1/2″. ASME B18.3.

The numbers behind a **socket set screw** (“grub screw” or “Allen set screw”) — a headless screw with a hex socket in one end and a point on the other. **J** is the hex key (Allen wrench) that fits it; **T** is how deep the key goes in; **C** is the cup or flat point diameter; **P** and **Q** are the half-dog point’s diameter and length; the last column is the length at which a cone point becomes 90°. The length of a set screw is its whole length, end to end. Inches throughout.



Letters match the table. Socket shown dashed.

Socket set screws — ASME B18.3 (inches)

SIZE	KEY J	DEPTH T MIN	CUP/FLAT C MAX	C MIN	HALF-DOG P MAX	Q MAX	CONE 90° FROM
#0	.028″	0.050	0.033	0.027	–	–	–
#1	.035″	0.060	0.040	0.033	–	–	–
#2	.035″	0.060	0.047	0.039	–	–	0.13″
#3	.050″	0.070	0.054	0.045	–	–	0.13″
#4	.050″	0.070	0.061	0.051	0.075	0.030	0.19″
#5	1/16″	0.080	0.067	0.057	0.083	0.033	0.19″
#6	1/16″	0.080	0.074	0.064	0.092	0.038	0.19″
#8	5/64″	0.090	0.087	0.076	0.109	0.043	0.25″
#10	3/32″	0.100	0.102	0.088	0.127	0.049	0.25″
1/4″	1/8″	0.125	0.132	0.118	0.156	0.067	0.31″
5/16″	5/32″	0.156	0.172	0.156	0.203	0.082	0.38″
3/8″	3/16″	0.188	0.212	0.194	0.250	0.099	0.44″
7/16″	7/32″	0.219	0.252	0.232	0.297	0.114	0.50″
1/2″	1/4″	0.250	0.291	0.270	0.344	0.130	0.57″
5/8″	5/16″	0.312	0.371	0.347	0.469	0.164	0.75″
3/4″	3/8″	0.375	0.450	0.425	0.562	0.196	0.88″
7/8″	1/2″	0.500	0.530	0.502	–	–	–
1″	9/16″	0.562	0.609	0.579	–	–	–
1-1/8″	9/16″	0.562	0.689	0.655	–	–	–
1-1/4″	5/8″	0.625	0.767	0.733	–	–	–
1-3/8″	5/8″	0.625	0.848	0.808	–	–	–
1-1/2″	3/4″	0.750	0.926	0.886	–	–	–

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Key depth T applies to the longer screws of each size — very short set screws have a shallower socket. Cone points are 90° at the length shown and longer, 118° on shorter screws. Knurled cup points are cup points. Thread sizes and pitches are on the thread pitch chart.

Which point to use

POINT	USE IT FOR
Cup	The most common point — general holding of collars, pulleys and gears on a shaft. The cup edge cuts into the shaft.
Flat	Parts that are re-set often — little or no damage to what it bears on. Works on hardened shafts, best against a ground flat.
Oval	Frequent adjustment with the least marking, and bearing on angled or grooved surfaces.
Cone	Permanent setting — deepest bite and the most holding power. On shafts harder than Rockwell C15, spot-drill the shaft half the point's depth. Also used as a pivot.
Half-dog	Permanent location — the point sits in a hole drilled in the shaft, or against a milled flat. Often used in place of a dowel pin.

Strength: set screws work in compression, so they are rated by hardness, not tensile strength. Alloy-steel socket set screws are heat treated to **Rockwell C45–53** (ASTM F912).

Quick answers

What size Allen wrench fits a 1/4" set screw?

A 1/4″ socket set screw takes a **1/8″** hex key (Allen wrench).

What hex key goes with each set screw size?

#0 – .028″, #1 – .035″, #2 – .035″, #3 – .050″, #4 – .050″, #5 – 1/16″, #6 – 1/16″, #8 – 5/64″, #10 – 3/32″, 1/4″ – 1/8″, 5/16″ – 5/32″, 3/8″ – 3/16″, 7/16″ – 7/32″, 1/2″ – 1/4″, 5/8″ – 5/16″, 3/4″ – 3/8″, 7/8″ – 1/2″, 1″ – 9/16″, 1-1/8″ – 9/16″, 1-1/4″ – 5/8″, 1-3/8″ – 5/8″, 1-1/2″ – 3/4″.

How do you measure a set screw?

End to end — the whole screw. A set screw has no head, so the socket end and the point are both part of the length.

Which set screw point should I use?

Cup is the most common, for general holding on a shaft. Use flat for parts that are re-set often, cone for permanent setting and the most holding power, and half-dog to locate in a drilled hole (often in place of a dowel pin).

How hard are alloy steel set screws?

Rockwell C45–53 (ASTM F912). Set screws work in compression, so they are rated by hardness, not tensile strength.

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