

M3 Screw Size Chart: Head Dimensions and Drive Size

M3	dk / k / drive size across five head types	Nominal (= max) values	Row-level standards
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M3 machine screw at a glance: thread diameter d = 3 mm, coarse pitch P = 0.5 mm; cross recessed pan head (GB/T 818) dk = 9.5 mm / k = 3.7 mm / recess No.2 = PH2; socket head cap (GB/T 70.1) dk = 8.5 mm / k = 5 mm / hexagon socket s = 4 mm, which takes a 4 mm hex key. Head figures are nominal (= max) values, not the nominal screw size.

M3

d = 3 mm · P = 0.5 mm

M3 in every head type (mm)

One row per head type at the same thread size. dk and k are nominal (= max) values from the standard named in each row.

Head type	Standard	Head dia. dk (mm)	Head height k (mm)	Coarse pitch P (mm)	Drive size
Slotted pan head (GB/T 67)	GB/T 67-2016	5.6	1.8	0.5	Slot width n = 0.8 mm
Cross recessed pan head (GB/T 818)	GB/T 818-2016	5.6	2.4	0.5	No.1 (PH1)
Cross recessed countersunk head 90° (GB/T 819.1)	GB/T 819.1-2016	5.5	1.65	0.5	No.1 (PH1)
Cross recessed cheese head (GB/T 822)	GB/T 822-2016	5.5	2	0.5	No.2 (PH2)
Socket head cap (GB/T 70.1)	GB/T 70.1-2008	5.5	3	0.5	Hex socket s = 2.5 mm

M3 beside the next sizes

Left four columns: cross recessed pan head (GB/T 818). Right four columns: socket head cap (GB/T 70.1). Values in mm, nominal (= max).

Size d (mm)	Coarse pitch P (mm)	Head dia. dk (mm)	Head height k (mm)	Recess No.	Head dia. dk (mm)	Head height k (mm)	Hex socket s (mm)
M2.5 (d = 2.5)	0.45	5	2.1	1	4.5	2.5	2
M3 (d = 3)	0.5	5.6	2.4	1	5.5	3	2.5
M4 (d = 4)	0.7	8	3.1	2	7	4	3

In this range the nominal diameter steps by 0.5 mm or 1 mm. Measure d across the thread with a caliper and compare with the rows below before ordering.

Which dimension do you need? d, dk, k and the drive size

A machine screw carries four different numbers that all get called "the size". Buyers order by the first one and measure the others, which is where most wrong orders start.

- d - nominal thread diameter** — The number after M: M5 is d = 5 mm, a 5 mm thread. It is what the order is placed on, and it is not the head size.
- P - pitch** — Distance between two thread crests. M5 in the coarse series is 0.8 mm. Coarse pitch covers almost all machine screws; fine pitch is agreed on order against the drawing.
- dk - head diameter** — Outside diameter of the head, measured across it with a caliper. It sets the clearance hole and the counterbore: 9.5 mm for an M5 cross recessed pan head, 8.5 mm for an M5 cheese head, 9.3 mm for an M5 countersunk head.
- k - head height** — Height of the head above the bearing surface (on a countersunk head this is kc, the depth that has to be sunk). It sets counterbore depth and how far the head stands proud: 3.7 mm for an M5 pan head, 5 mm for an M5 socket head, 2.7 mm for an M5 countersunk head.
- Drive size - recess No., slot width n or hexagon socket s** — The recess that takes the tool: No.2 (PH2) at M5 in the cross recessed pan head series, slot width n = 1.2 mm at M5 in the slotted series, hexagon socket s = 4 mm at M5 for a socket head cap screw. Take the drive size from the head type, not from the thread size.

References

- GB/T 67-2016 Slotted pan head screws - table 1 (head diameter dk, head height k, slot width n) — https://openstd.samr.gov.cn/bzgk/gb/std?std_no=GB%2FT%2067-2016
- GB/T 818-2016 Cross recessed pan head screws - table 1 (dk, k, recess No.) — https://openstd.samr.gov.cn/bzgk/gb/std?std_no=GB%2FT%20818-2016
- GB/T 819.1-2016 Cross recessed countersunk head screws, part 1: class 4.8 - table 1 (dk, theoretical dk max, kc, recess No., 90° head) — https://openstd.samr.gov.cn/bzgk/gb/std?std_no=GB%2FT%20819.1-2016
- GB/T 822-2016 Cross recessed cheese head screws - table 1 (dk, k, recess No.; sizes M2.5 to M8) — https://openstd.samr.gov.cn/bzgk/gb/std?std_no=GB%2FT%20822-2016
- GB/T 70.1-2008 Socket head cap screws - table 1 (head diameter dk for the plain head, head height k, hexagon socket s) — https://openstd.samr.gov.cn/bzgk/gb/std?std_no=GB%2FT%2070.1-2008
- Table values are the nominal (= max) figures of the standard editions above, checked row by row against the official text. No table values are reproduced from third-party dimension tables, and each row is labelled with the standard it comes from.

Disclaimer: this table is a selection and quotation reference built from the standard editions named on this page, not a design basis or an acceptance standard.

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