

M10 Screw Size Chart: Head Dimensions and Drive Size

M10 · dk / k / drive size across five head types · Nominal (= max) values · Row-level standards

M10 machine screw at a glance: thread diameter d = 10 mm, coarse pitch P = 1.5 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.

M10

d = 10 mm · P = 1.5 mm

M10 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	20	6	1.5	Slot width n = 2.5 mm
Cross recessed pan head (GB/T 818)	GB/T 818-2016	20	7.5	1.5	No.4 (PH4)
Cross recessed countersunk head 90° (GB/T 819.1)	GB/T 819.1-2016	18.3	5	1.5	No.4 (PH4)
Cross recessed cheese head (GB/T 822)	GB/T 822-2016	—	—	—	—
Socket head cap (GB/T 70.1)	GB/T 70.1-2008	16	10	1.5	Hex socket s = 8 mm

GB/T 822 covers M2.5 to M8, so the cheese head row is blank at M1.6, M2 and M10. Use the pan head or socket head column for those sizes.

M10 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)
M8 (d = 8)	1.25	16	6	4	13	8	6
M10 (d = 10)	1.5	20	7.5	4	16	10	8

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.

<https://www.yaxiio.com>

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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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