

# M16 Bolt Size Chart: Hex Head Dimensions s, e and k

|     |                                                         |                        |                     |
|-----|---------------------------------------------------------|------------------------|---------------------|
| M16 | Both standards (GB/T 5783 / 5782) × both grades (A / B) | Nominal (= max) values | Row-level standards |
|-----|---------------------------------------------------------|------------------------|---------------------|

M16 hex bolt: socket size s = 24 mm; head diagonal e min = 26.75 mm (grade A) / 26.17 mm (grade B); head height k = 10 mm nominal, 10.29 mm max in grade B; pitch P = 2 mm; fine pitch options 1.5. Head values are the standard's nominal (= max) or minimum figures, not measured guarantees.

## M16 in both standards and both product grades

One row per thread form and product grade. The head columns repeat because GB/T 5783 and GB/T 5782 share the same head; b is tabulated in GB/T 5782 only, and a dash means the standard does not tabulate that value for the combination.

| Thread form                    | Product grade | Coarse pitch P (mm) | Width across flats s (mm, nominal = max) | s min (mm) | Width across corners e min (mm) | Head height k (mm, nominal) | k max (mm) | b at l ≤ 125 mm | b at 125 < l ≤ 200 mm | b at l > 200 mm |
|--------------------------------|---------------|---------------------|------------------------------------------|------------|---------------------------------|-----------------------------|------------|-----------------|-----------------------|-----------------|
| Partially threaded (GB/T 5782) | A             | 2                   | 24                                       | 23.67      | 26.75                           | 10                          | 10.18      | 38              | 44                    | —               |
| Partially threaded (GB/T 5782) | B             | 2                   | 24                                       | 23.16      | 26.17                           | 10                          | 10.29      | —               | 44                    | —               |
| Fully threaded (GB/T 5783)     | A             | 2                   | 24                                       | 23.67      | 26.75                           | 10                          | 10.18      | —               | —                     | —               |
| Fully threaded (GB/T 5783)     | B             | 2                   | 24                                       | 23.16      | 26.17                           | 10                          | 10.29      | —               | —                     | —               |

## Thread length b on partially threaded bolts (GB/T 5782)

b = 2d + 6 at l ≤ 125 mm, b ≈ 2d + 12 at 125 < l ≤ 200 mm, b ≈ 2d + 25 at l > 200 mm; the tabulated figure is that value rounded to a whole millimetre. Grade A tables carry the shorter bands only; grade B carries the band that applies to each size.

## Thread length b by length band, grade B (mm)

| Size | b at l ≤ 125 mm | b at 125 < l ≤ 200 mm | b at l > 200 mm |
|------|-----------------|-----------------------|-----------------|
| M16  | —               | 44                    | —               |

## Thread length b by length band, grade A (mm)

| Size | b at l ≤ 125 mm | b at 125 < l ≤ 200 mm | b at l > 200 mm |
|------|-----------------|-----------------------|-----------------|
| M16  | 38              | 44                    | —               |

Quote the diameter and the length together: b follows l, so only "M12×100" pins the thread length down.

## Fine pitch hex bolts (GB/T 5785): fine thread against coarse thread

One diameter, one head: every fine pitch of the same d shares the same s, e, k and r, so the socket size does not change with the pitch.

| Nominal diameter d (mm) | Fine pitch P (mm) | Coarse pitch P (mm) |
|-------------------------|-------------------|---------------------|
| M16                     | 1.5               | 2                   |

A pitch in brackets is the non-preferred fine pitch of that diameter in GB/T 5785-2025; diameters not listed have no fine thread series in that standard.

## M16 beside the next sizes

The sizes either side of M16. Measure the thread diameter d with a caliper and compare the head against the rows below before ordering; the nominal diameter steps by 0.5 mm or 1 mm in this range.

| Size         | Coarse pitch P (mm) | Width across flats s (mm, nominal = max) | Width across corners e min (mm) | Head height k (mm, nominal) |
|--------------|---------------------|------------------------------------------|---------------------------------|-----------------------------|
| M14 (d = 14) | 2                   | 21                                       | 22.78                           | 8.8                         |
| M16 (d = 16) | 2                   | 24                                       | 26.17                           | 10                          |
| M18 (d = 18) | 2.5                 | 27                                       | 29.56                           | 11.5                        |

## Which number do you need: s, e or k?

"Bolt size" means three different numbers depending on the job, and order codes use a fourth. Buying a tool uses s, checking a head that will not go into a socket uses e, and a counterbore or a flush-head check uses k.

- s — width across flats (nominal = max) — M16 is s = 24 mm. This is the socket, spanner or ring size, and the number stamped on the tool. It is the same in grade A and grade B and the same in GB/T 5783 and GB/T 5782, because the two standards share the hex head.

- **e — width across corners (min)** — M16 is e min = 26.75 mm in grade A and 26.17 mm in grade B. This is the diagonal between two opposite corners of the head, the dimension that decides whether a 12-point socket or a ring spanner passes over the head. Most published bolt size charts leave this column out; it is also what you can still measure with a caliper once the flats have been rounded off.
- **k — head height (nominal, with a max)** — M16 is k = 10 mm nominal and 10.29 mm max in grade B. It sets how deep a counterbore or recess has to be and how far the head stands above the part. When the head must not protrude, k is the number to check, not s.
- **d — nominal thread diameter** — The number in the callout: M16 is a 16 mm thread, not a 16 mm head. The head is always wider, 24 mm across the flats here, which is where ordering by "size" alone goes wrong.
- **r — fillet radius under the head (min)** — r min = 0.6 mm at M16. The washer face has to clear this radius, so it matters when the bolt sits in a corner, against a shoulder or in a slotted hole rather than on a flat face.

References

- GB/T 5783-2025 Hexagon head bolts, fully threaded - width across flats s, s min, width across corners e min, head height k and fillet radius r min, product grades A and B; thread length rule b = l – a — [https://openstd.samr.gov.cn/bzgk/gb/std?std\\_no=GB%2FT%205783-2025](https://openstd.samr.gov.cn/bzgk/gb/std?std_no=GB%2FT%205783-2025)
- GB/T 5782-2025 Hexagon head bolts, partially threaded - the same head dimensions, plus the thread length b in three nominal-length bands (l ≤ 125 mm, 125 < l ≤ 200 mm, l > 200 mm) — [https://openstd.samr.gov.cn/bzgk/gb/std?std\\_no=GB%2FT%205782-2025](https://openstd.samr.gov.cn/bzgk/gb/std?std_no=GB%2FT%205782-2025)
- GB/T 5785-2025 Hexagon head bolts with fine pitch thread - fine pitch options per nominal diameter and the same hex head (s, e, k unchanged) — [https://openstd.samr.gov.cn/bzgk/gb/std?std\\_no=GB%2FT%205785-2025](https://openstd.samr.gov.cn/bzgk/gb/std?std_no=GB%2FT%205785-2025)
- Table values are the nominal (= max) or minimum 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 every 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.

M16 Bolt Size Chart: Hex Head Dimensions s, e and k — Yaxiio full-range reference PDF, pack v1 · generated 2026-09-17 · data source: yaxiio-customer/utis/boltSizeDims.ts (single source of truth) · methodology matches the online tool pages · <https://www.yaxiio.com/en/tools/bolt-size-chart/m16>