# Industrial Fastener Standards Cross-Reference: DIN, ISO, ASME B18

cBallast · 2026 edition · Standards comparison

## DIN / ISO / ASME cross-reference

| Product | DIN | ISO | ASME B18 |
|---|---|---|---|
| Hex head cap screw (full) | DIN 933 | ISO 4017 | B18.2.1 (fully threaded) |
| Hex head cap screw (partial) | DIN 931 | ISO 4014 | B18.2.1 (partly threaded) |
| Socket head cap screw | DIN 912 | ISO 4762 | B18.3 |
| Countersunk socket screw | DIN 7991 | ISO 10642 | B18.3 |
| Button head socket screw | DIN EN ISO 7380 | ISO 7380 | B18.3 |
| Hex nut standard | DIN 934 | ISO 4032 | B18.2.2 |
| Hex nylon-insert lock nut | DIN 985 | ISO 10511 | B18.16.6 |
| All-metal lock nut | DIN 980 | ISO 7042 | B18.16.6 |
| Plain washer | DIN 125 | ISO 7089 | B18.22 |
| Spring washer | DIN 127 | - | B18.21 |
| Tooth lock washer | DIN 6798 | ISO 10673 | B18.22 |
| Threaded insert | DIN 8140 | ISO 1234 | - |

## Carbon steel property class

| Class | Tensile MPa | Yield MPa | Typical use |
|---|---|---|---|
| 4.6 | 400 | 240 | Low-duty, non-structural |
| 5.8 | 500 | 400 | General mechanical |
| 8.8 | 800 | 640 | Machinery, drives — standard |
| 10.9 | 1000 | 900 | High-stress structural, engine, gearbox |
| 12.9 | 1200 | 1080 | Precision engine, hydraulic manifolds |

## Stainless steel property class

| Grade | Alloy | Cold-work | Tensile MPa |
|---|---|---|---|
| A2-70 | AISI 304 / 1.4301 | Cold-worked | 700 |
| A2-80 | AISI 304 / 1.4301 | Heavy cold-worked | 800 |
| A4-70 | AISI 316 / 1.4401 | Cold-worked | 700 |
| A4-80 | AISI 316 / 1.4401 | Heavy cold-worked | 800 |

| | | | |
|---|---|---|---|
| A4L-80 | AISI 316L / 1.4404 | Heavy cold-worked, low C | 800 |

## Metric thread pitch — coarse vs fine

| Size | Coarse pitch | Fine pitch | Pitch dia (coarse) |
|---|---|---|---|
| M6 | 1.0 | 0.75 | 5.350 |
| M8 | 1.25 | 1.0 | 7.188 |
| M10 | 1.5 | 1.25 | 9.026 |
| M12 | 1.75 | 1.25 | 10.863 |
| M14 | 2.0 | 1.5 | 12.701 |
| M16 | 2.0 | 1.5 | 14.701 |
| M18 | 2.5 | 1.5 | 16.376 |
| M20 | 2.5 | 1.5 | 18.376 |
| M22 | 2.5 | 1.5 | 20.376 |
| M24 | 3.0 | 2.0 | 22.051 |

## Torque calculation

T = K x d x F. K = friction coefficient (0.20 dry uncoated, 0.14 zinc-plated + oil, 0.10 MoS2). d = nominal diameter. F = target preload (typically 70% of proof load). M10 x 8.8 dry at K=0.20 -> ~50 Nm; same bolt with MoS2 at K=0.10 -> ~25 Nm. Always calibrate K against actual lubrication.

### Related on cBallast

- https://cballast.com/categories/Fasteners
- https://cballast.com/brands/Wurth
- https://cballast.com/documents/din-933-metric-hex-bolt-spec