

M10 Cap (Acorn) Nuts Dimensions

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M10 Cap (Acorn) Nuts dimensions to DIN 1587: width across flats (spanner size) 17 mm, nut height 18 mm, coarse thread pitch 1.5 mm. Tighten to approximately 48 Nm at property class 8.8 in a dry, as-supplied condition.

Width across flats (spanner size)

17 mm

Nut height

18 mm

Coarse thread pitch

1.5 mm

Tightening torque (class 8.8)

48 Nm

Figures are nominal values from the governing standard. Confirm against the tolerance class for your application before machining or ordering.



Dimensional data for M10 Cap (Acorn) Nuts to DIN 1587, with the drive and the installation notes for this type.

Values are taken from the governing standard rather than from a general machine-thread table, because this type is not selected on one.

M10 Dimensional Row (DIN 1587)

Size	Pitch (mm)	Width across flats s (mm)	Width across corners e min (mm)	Total h
M10	1.5	17.0	18.90	18.0

Spanner & Drive for M10 Cap (Acorn) Nuts

Drive geometry for M10 Cap (Acorn) Nuts is given by the row above; match the tool to the listed values.

Tightening Torque for M10

Class 8.8 (dry, $\sim\mu$ 0.125)	$\approx$ 48 Nm
Class 10.9 (dry, $\sim\mu$ 0.125)	$\approx$ 71 Nm
Class 12.9 (dry, $\sim\mu$ 0.125)	$\approx$ 83 Nm

Indicative dry-joint values. Lubrication can lower the required torque by 15–25%.

Always confirm against the joint design, especially when going up a strength class.

Proof Load & Strength for M10

Nuts are graded to ISO 898-2 by the proof load the nut itself will hold (classes 04, 05, 5, 6, 8, 10 and 12), not by the 8.8 / 10.9 / 12.9 scale used for bolts. A class-8 nut is the correct mate for a class-8.8 bolt, and the joint is designed on the bolt, so no bolt-tension figure is quoted here.

Mating Parts for M10

Pair M10 with the matching M10 bolt or screw, plus a M10 flat washer where required to distribute load on softer materials.

When to Step Up or Down from M10

When the joint preload approaches the proof load of M10 class 8.8, step up to M12 class 8.8 (or move to M10 class 10.9). When the joint is over-specified, M8 often saves weight and cost without losing the safety margin.

Custom manufacturing · Made to drawing

Need cap (acorn) nuts in a size this table does not list?

This page covers M10 cap (acorn) nuts. Height and across-flats are the two most often changed — a thinner nut for clearance, a larger hex for a tool that is already on the line. Made by cold heading or tapping.

Minimum order from 2,000 pieces; samples within 7 days of drawing approval.

Custom nut manufacturing (<https://engineeringhardware.com/custom/nuts/>)

Send a drawing (<https://engineeringhardware.com/custom/nuts/#rfq>)

Technical Drawing

Customize the parameters below — every spec field is editable, and the drawing redraws to match the values you choose. Changing the size will snap the other fields to that size's standard values; you can then override any individual value.



Dimensioned line drawing of M10 Cap (Acorn) Nuts to DIN 1587. Side view and top view, drawn to the dimensions in the table below and redrawn for any size selected.

Opens a short step to confirm the exact specification before you enter contact details.

Request a Quote

Click “Request this configuration” under the drawing to confirm the exact specification, then add your contact details. You can also send the request without a specification — but only an accurate selection gets an accurate quote.

Dimensions & Specifications (DIN 1587)

Size	Pitch (mm)	Width across flats s (mm)	Width across corners e min (mm)	Total h
M4	0.7	7.0	7.66	8.0
M5	0.8	8.0	8.79	10.0
M6	1.0	10.0	11.05	12.0
M8	1.25	13.0	14.38	15.0
M10	1.5	17.0	18.90	18.0
M12	1.75	19.0	21.10	22.0
M16	2.0	24.0	26.75	28.0
M20	2.5	30.0	33.53	34.0

Materials & Grades

Select a material class to see the grades we supply it in. Each designation is listed with its ISO/EN, AISI/SAE, JIS and GB equivalents.

Stainless Steel

Carbon Steel66

Alloy Steel41

Bearing Steels5

Spring Steel25

Aluminum and Aluminum Alloys21

Brass17

Bronze11

Copper8

Titanium and Titanium Alloys18

Nickel and Nickel Alloys22

Iron-Nickel and High-Temperature Alloys10

Tool Steel and Specialty Hardened Steel9

Structural and Construction Steel9

Stainless Steel

Austenitic Stainless Steel

A1

AISI 303 · SAE 303 · SUS303 · EN 1.4305 · X8CrNiS18-9

A2

AISI 304 · SAE 304 · SUS304 · EN 1.4301 · X5CrNi18-10 · 06Cr19Ni10

304L

AISI 304L · SUS304L · EN 1.4307 · X2CrNi18-9 · 022Cr19Ni10

302

AISI 302 · SUS302 · EN 1.4310

305

AISI 305 · SUS305 · EN 1.4303

A4

AISI 316 · SAE 316 · SUS316 · EN 1.4401 · X5CrNiMo17-12-2 · 06Cr17Ni12Mo2

316L

AISI 316L · SUS316L · EN 1.4404 · X2CrNiMo17-12-2 · 022Cr17Ni12Mo2

321

AISI 321 · SUS321 · EN 1.4541 · X6CrNiTi18-10

310 / 310S

AISI 310 · AISI 310S · SUS310S · EN 1.4845

302HQ

AISI 302HQ

A3

A5

347

AISI 347 · SUS347 · EN 1.4550 · X6CrNiNb18-10

309 / 309S

AISI 309 · AISI 309S · SUS309S

Martensitic Stainless Steel

AISI 410

SUS410 · EN 1.4006 · X12Cr13 · 12Cr13

AISI 420

SUS420J1 · SUS420J2 · EN 1.4021 · EN 1.4028 · 20Cr13 · 30Cr13

AISI 431

SUS431 · EN 1.4057 · X17CrNi16-2

C1

C3

C4

AISI 440A**AISI 440B****AISI 440C****SUS440C · EN 1.4125****Ferritic Stainless Steel****AISI 430****SUS430 · EN 1.4016 · X6Cr17 · 10Cr17****F1****AISI 434****AISI 444****Precipitation-Hardening Stainless Steel****17-4 PH****AISI 630 · UNS S17400 · SUS630 · EN 1.4542 · X5CrNiCuNb16-4****15-5 PH****UNS S15500****17-7 PH****UNS S17700****Duplex and Super Duplex Stainless Steel****Duplex 2205****UNS S31803 · UNS S32205 · EN 1.4462****Super Duplex 2507****UNS S32750 · EN 1.4410****D2****D4****D6****D8****Lean Duplex 2101****UNS S32101**

Super Duplex S32760
UNS S32760 · EN 1.4501

Carbon Steel

Low-Carbon Steel

SAE 1006

SAE 1008

SAE 1010

SAE 1018

SAE 1020

Q195

Q235

SAE 1012

SAE 1015

Q215

ML08

ML08AI

ML10

ML15

ML20

SWRCH6A

SWRCH8A

SWRCH10A

SWRCH12A

SWRCH15A

SWRCH18A

Medium-Carbon Steel

SAE 1035**SAE 1045****S45C****C45****SAE 1030****SAE 1040****SAE 1050****30****35****40****45****50****S35C****S40C****S50C****C35****C40**

High-Carbon Steel

SAE 1060**SAE 1070****65Mn****SAE 1065****SAE 1075****SAE 1080****SAE 1085**

SAE 1090**SAE 1095****60****65****70****75****80****85****Cold-Heading Steel****SWRCH22A****10B21****SWRCH22K****SWRCH25K****SWRCH30K****SWRCH35K****SWRCH40K****ML20Mn****ML25****ML30****ML35****ML40****15B25**

Alloy Steel

Chromium Steel

40Cr**45Cr****AISI 5140****SAE 5140****AISI 5120****SAE 5120****SCr420****SCr440**

Chromium-Molybdenum Steel

35CrMo**42CrMo****AISI 4140****SCM435****SCM440****42CrMo4****30CrMo****AISI 4130****SAE 4130****SAE 4140****AISI 4142****AISI 4145****SCM415****SCM420****SCM445**

EN 1.7220**EN 1.7225****25CrMo4****34CrMo4****Nickel-Chromium-Molybdenum Steel****AISI 4340****SAE 4340****40CrNiMo****SNCM439****EN 1.6511****36CrNiMo4****Boron Alloy Steel****10B22****10B21****15B21****15B25****20MnTiB****20Mn2B****35VB****40MnB****Bearing Steel****Bearing Steel****GCr15****AISI 52100**

SAE 52100 · UNS G52986**SUJ2****100Cr6****EN 1.3505****GCr15SiMn**

Spring Steel

Carbon Spring Steel

SAE 1065**SAE 1070****SAE 1075****SAE 1080****SAE 1095****65****70****75****80****65Mn**

Silicon-Manganese Spring Steel

60Si2Mn**60Si2MnA****SUP6****SUP7**

Chromium-Vanadium Spring Steel

50CrVA**SAE 6150**

AISI 6150**SUP10****Stainless Spring Steel****AISI 301****SUS301****EN 1.4310****AISI 302****AISI 304****AISI 316****17-7 PH****Aluminum and Aluminum Alloys****Commercially Pure Aluminum****1050****1060****1070****1100****2xxx Series Aluminum****2024****2011****2014****2017****5xxx Series Aluminum****5052**

5083**5754****6xxx Series Aluminum****6061****6061-T6****6063****6082****6082-T6****7xxx Series Aluminum****7075****7075-T6****7005****7050****7075-T73****Brass****Free-Cutting Brass****C36000****H62****HPb59-1****C3601****C3602****C3604****CuZn36Pb3****CuZn39Pb3**

EN CW614N**EN CW617N****H65****Lead-Free Brass****C69300****C27450****CW510L****CW511L****Naval Brass****C46400****CuZn39Sn1****Bronze****Silicon Bronze****C65500****C65100****C65600****Phosphor Bronze****C51000****C52100****CuSn6****CuSn8**

Aluminum Bronze

C95400**C95500****C63000****CuAl10Ni5Fe4**

Copper

Copper

C11000**T2****C10100****C10200****C12200****T1****TU1****TU2**

Titanium and Titanium Alloys

Commercially Pure Titanium

Grade 2**Grade 1****Grade 3****Grade 4****TA1****TA2**

TA3**Alpha-Beta Titanium Alloys****Grade 5****Ti-6Al-4V****TC4****UNS R56400****Low-Interstitial Grade****Grade 23****Ti-6Al-4V ELI****UNS R56407****Other Titanium Fastener Alloys****Ti-6Al-6V-2Sn****Ti-6Al-2Sn-4Zr-2Mo****Beta-C titanium****Ti-10V-2Fe-3Al****Nickel and Nickel Alloys****Commercially Pure Nickel****Nickel 200****UNS N02200****Nickel 201****UNS N02201**

Inconel Alloys

Inconel 625

UNS N06625

Inconel 718

UNS N07718

Inconel 600

UNS N06600

Inconel 601

UNS N06601

Inconel 686

UNS N06686

Inconel X-750

UNS N07750

Monel Alloys

Monel 400

UNS N04400

Monel K-500

UNS N05500

Hastelloy Alloys

Hastelloy C-276

UNS N10276

Hastelloy C-22

UNS N06022

Hastelloy B-2

UNS N10665

Hastelloy B-3

UNS N10675

Hastelloy X

UNS N06002

Other Nickel Alloys

Alloy 20**UNS N08020****Alloy 625****Alloy 718****Alloy 825****UNS N08825****Alloy 925****UNS N09925**

Iron-Nickel and High-Temperature Alloys

A286

A-286**UNS S66286****EN 1.4980**

Invar

Invar 36**Alloy 36****UNS K93600****FeNi36**

Alloy 42

Alloy 42**UNS K94100****FeNi42**

Tool Steel and Specialty Hardened Steel

Tool Steel and Specialty Hardened Steel

AISI D2

AISI H13

SKD11

Cr12MoV

AISI O1

AISI A2

AISI S7

SKD61

9CrSi

Structural and Construction Steel

Structural and Construction Steel

ASTM A36

Q235B

Q355B

S355JR

Q235C

Q355C

S235JR

S275JR

S355J2

Applications & Industries for M10 Cap Nuts

Where Cap Nuts are used, and what decides the specification in each case. Stocked from M4 to M20.

Industries that specify Cap Nuts

Building services **Threaded rod, channel and suspension assemblies.**

Machine building & OEM **The clamping counter-face on studs and bolts throughout an assembly.**

Steel fabrication **Bolted structural and frame connections.**

Automotive & transport **Vibration-prone joints where the locking type is specified on the drawing.**

Maintenance & MRO **Replacements matched to the existing bolt class, thread and finish.**

Typical applications

- **completing a bolted joint on a stud, rod or bolt**
- **locking an adjustment so it cannot drift**
- **joints re-torqued at a service interval**

Service conditions to specify against

Marine and coastal

Available in A4 (316) stainless for chloride exposure — coastal structures, pool halls, water treatment and deck hardware, where A2 will eventually pit.

High load

Supplied in ISO 898-1 property classes, so the joint can be designed to a stated proof load and tightened to a calculated torque rather than by feel.

Match the class

A nut below the bolt property class strips before the bolt reaches its own limit — pair class 8 nuts with 8.8 bolts, class 10 with 10.9.

Full application guide: where Cap Nuts are used, how to specify them, and the cases they are wrong for (<https://engineeringhardware.com/applications/cap-acorn-nuts/>)

Inside the plant

Manufactured in our own plant

This part is cold-formed, threaded, heat-treated and finished in-house. The stages below are where its class and finish are actually decided.



Cold heading

Wire rod is drawn to size and cold-formed into blanks. Forming rather than cutting keeps the grain flow continuous around the head, which is where a bolt is most likely to fail.

Head dimensions and under-head radius checked at set-up and per shift.



02

Thread rolling

Threads are rolled between hardened dies rather than cut. Rolled threads are stronger in fatigue than cut threads and hold pitch and flank angle far more consistently across a batch.

Go / no-go ring gauges to ISO 965 tolerance class 6g.



03

Heat treatment

Quench-and-temper brings carbon and alloy steel to the property class ordered — 8.8, 10.9 or 12.9 — with the furnace charge tracked so a finished lot can be traced back to it.

Core hardness and tensile tested per lot to ISO 898-1.



04

Surface treatment

Zinc, zinc-nickel, hot-dip galvanizing, black oxide, phosphate and Dacromet, selected against the service environment rather than against the price list.

Coating thickness and neutral salt spray hours to ISO 9227.

Frequently Asked Questions

What is the height of an M10 nut?

The nominal height of a style-1 ISO 4032 M10 nut is in the spec table on this page. Style-2 (thick) is approximately $1.1\times$ this height; thin (ISO 4035 / DIN 439) is approximately $0.5\times$.

What is the coarse-thread pitch of M10 for Cap (Acorn) Nuts?

For M10 the standard coarse pitch is 1.5 mm — this is the value used for Cap (Acorn) Nuts.

What clearance and tapping drill suit M10?

Use a 11 mm clearance hole (ISO 273 medium) for through-fixing, or a 8.5 mm tapping drill for a coarse M10 thread.

How do I request a quotation?

Use the technical drawing on this page to pick the exact configuration, then submit it with the quote form. We respond within one business day.

Related Pages

[View the full Cap \(Acorn\) Nuts page \(https://engineeringhardware.com/fastener/cap-acorn-nuts/\)](https://engineeringhardware.com/fastener/cap-acorn-nuts/)

More Cap (Acorn) Nuts Guides

- **M4 Cap (Acorn) Nuts** (<https://engineeringhardware.com/guide/size/m4-cap-acorn-nuts/>)
- **M5 Cap (Acorn) Nuts** (<https://engineeringhardware.com/guide/size/m5-cap-acorn-nuts/>)

- **M6 Cap (Acorn) Nuts** (<https://engineeringhardware.com/guide/size/m6-cap-acorn-nuts/>)
- **M8 Cap (Acorn) Nuts** (<https://engineeringhardware.com/guide/size/m8-cap-acorn-nuts/>)
- **M12 Cap (Acorn) Nuts** (<https://engineeringhardware.com/guide/size/m12-cap-acorn-nuts/>)
- **M16 Cap (Acorn) Nuts** (<https://engineeringhardware.com/guide/size/m16-cap-acorn-nuts/>)
- **M20 Cap (Acorn) Nuts** (<https://engineeringhardware.com/guide/size/m20-cap-acorn-nuts/>)