What Are Fine-Thread Socket Head Cap Screws Used For?

Fine-Thread Socket Head Cap Screws are used for threaded assemblies where the head drive and seating style matter. They are manufactured to DIN 912 / ISO 4762 and ASME B18.3 (UNF), and the choice of size, property class and finish is driven by the load in the joint and the environment it sits in.

Primary duty

Threaded assemblies where the head drive and seating style matter

Governing standard

DIN 912 / ISO 4762 and ASME B18.3 (UNF)

Nominal diameter range

UNF (ASME B18.3) to metric fine (DIN 912 / ISO 4762)

Category

Screws

Application notes are general engineering guidance. Verify the property class and any approval requirement against your own design calculation.



Fine-Thread Socket Head Cap Screws (DIN 912 / ISO 4762 and ASME B18.3 (UNF)) are specified where the joint requires threaded assemblies where the head drive and seating style matter. The sections below cover the typical end-uses by industry, the size and material decisions for each, assembly practice, and the applications this fastener type is not suited to. Stocked across roughly 18.3 mm to 912 mm, they cover heavy and structural work.

Typical Applications for Fine-Thread Socket Head Cap Screws

The most common settings where these are specified:

Appliances & consumer goods: high-volume assembly with power tools and consistent seating.

Machine guarding & panels: removable access covers that are opened for service.

General machine building: fastening covers, brackets, motors and sub-assemblies on production equipment.

Maintenance & repair (MRO): a stocked size for servicing existing plant where the original fastener spec must be matched.

Fabrication & metalwork: bench and on-site assembly of steel frames, enclosures and weldments.

Product catalog

Related Inch Socket Screws products



(https://engineeringhardware.com/product/din251-sus304-corrosion-resistant-hex-socket-screw-for-food-machinery-frame/)

Socket Head Cap & Allen Screws

DIN251 SUS304 Corrosion Resistant Hex Socket Screw for Food Machinery Frame (https://engineeringhardware.com/product/din251-sus304-corrosion-resistant-hex-socket-screw-for-food-machinery-frame/)

Round Head · DIN, ANSI, GB

US$0.0072 – 0.012 MOQ 3,000 pieces



(https://engineeringhardware.com/product/black-oxide-din912-hexagon-socket-head-cap-screw/)

Socket Head Cap & Allen Screws

Black Oxide DIN912 Hexagon Socket Head Cap Screw
(https://engineeringhardware.com/product/black-oxide-din912-hexagon-socket-head-cap-screw/)(https://engineeringhardware.com/product/black-oxide-din912-hexagon-socket-head-cap-screw/)

Hexagon Head · DIN, DIN 912

US$0.12 MOQ 10,000 pieces



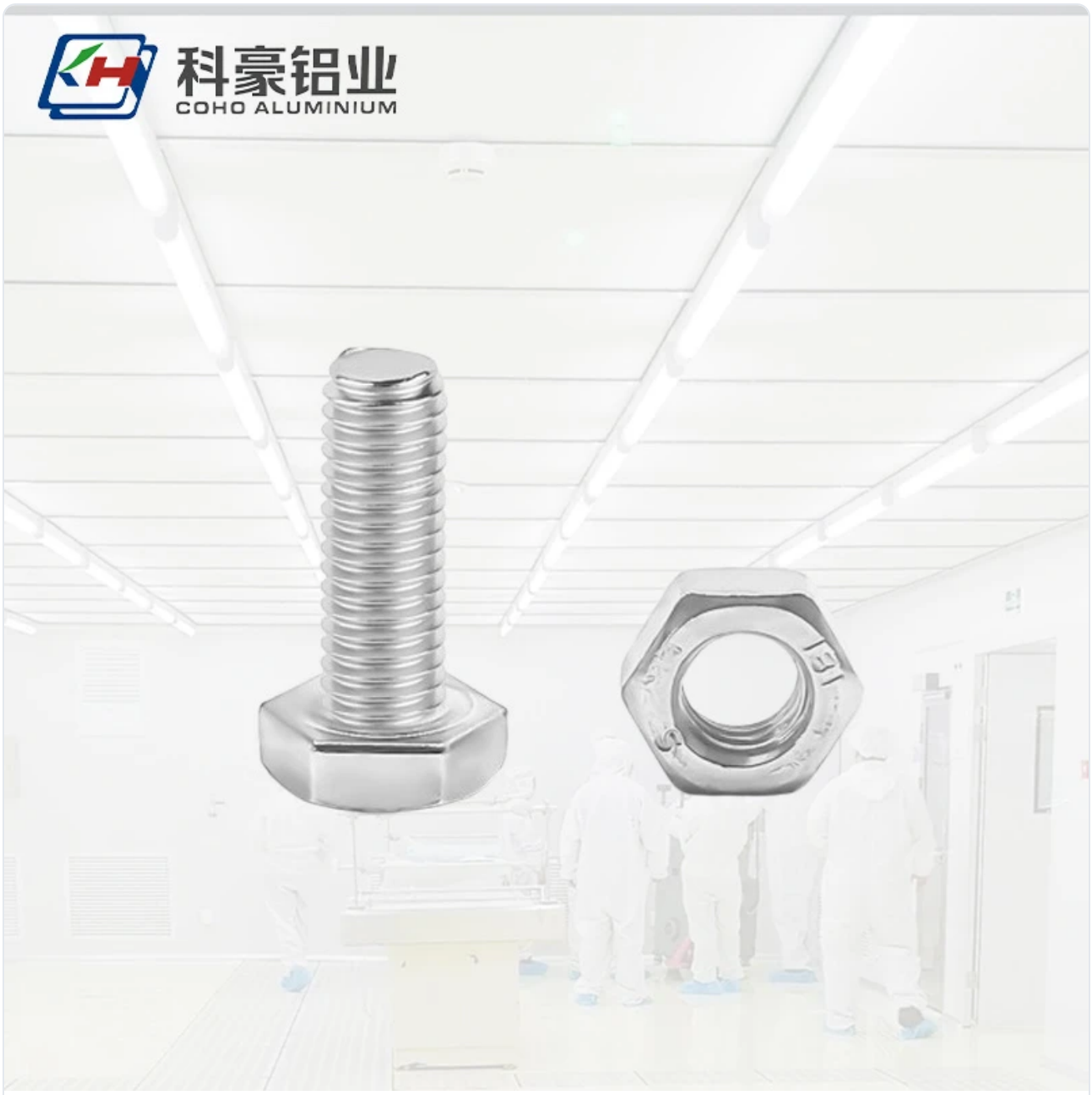
(https://engineeringhardware.com/product/m6-button-head-socket-cap-screws-12-9-steel-w-black-oxide-iso-7380-coarse-thread/)

Socket Head Cap & Allen Screws

M6 Button Head Socket Cap Screws, 12.9 Steel W/ Black Oxide ISO 7380, Coarse Thread Machine Screw for Electric Motor
(https://engineeringhardware.com/product/m6-button-head-socket-cap-screws-12-9-steel-w-black-oxide-iso-7380-coarse-thread/)

Countersunk Head · DIN, GB, ANSI, JIS

US$0.0012 – 0.12 MOQ 1,000 pieces



(https://engineeringhardware.com/product/durable-carbon-steel-external-hex-socket-head-cap-screws-with-ce-certificate-for/)

Socket Head Cap & Allen Screws

Durable Carbon Steel External Hex Socket Head Cap Screws with CE Certificate for Cleanrooms (https://engineeringhardware.com/product/durable-carbon-steel-external-hex-socket-head-cap-screws-with-ce-certificate-for/)

Window & Door Aluminum Profile, Decoration Aluminum Profile, Industria...

US$0.12 – 0.60MOQ 100 pieces



(https://engineeringhardware.com/product/durable-din-912-hex-socket-cap-screw-for-secure-

fastening/)

Socket Head Cap & Allen Screws

Durable DIN 912 Hex Socket Cap Screw for Secure Fastening

(https://engineeringhardware.com/product/durable-din-912-hex-socket-cap-screw-for-secure-fastening/)

Hexagon Head · DIN, ANSI, GB, JIS, BSW

US$0.12 MOQ 100 boxes



(https://engineeringhardware.com/product/carbon-steel-hex-socket-allen-square-flat-head-machine-screw/)

Socket Head Cap & Allen Screws

Carbon Steel Hex Socket Allen Square Flat Head Machine Screw
(https://engineeringhardware.com/product/carbon-steel-hex-socket-allen-square-flat-head-machine-screw/)(https://engineeringhardware.com/product/carbon-steel-hex-socket-allen-square-flat-head-machine-screw/)

Square Head · DIN, GB, ANSI, JIS

US$0.024 – 0.0312 MOQ 5,000 pieces

View all Socket Head Cap & Allen Screws →
(https://engineeringhardware.com/fastener-products/screws/socket-head-cap-allen-screws/)

Full product catalog (https://engineeringhardware.com/products/)

How to Specify Fine-Thread Socket Head Cap Screws for Your Application

Size: Match the nominal size to the mating thread or hole. This product spans 18.3 mm–912 mm; check the full table below for the exact dimensions of each size.

Drive & head: Pick the drive (socket, cross, slot) and head style for the tool access and seating surface; a recessed drive resists cam-out under power tools.

Environment: For damp, coastal or chemical exposure prefer A4/316 stainless or a suitable coating; indoors, plated steel or A2 is usually sufficient.

Standard: This product is supplied to DIN 912 / ISO 4762 and ASME B18.3 (UNF). Quoting the standard on your order guarantees interchangeable dimensions between suppliers.

Installation & Assembly Practice

Match the driver exactly to the recess (PH ≠ PZ; hex key sizes per ISO 2936) and keep the tool axial — side load is the main cause of stripped drives.

In tapped holes, engage a thread length of at least 1× the nominal diameter in steel, 2× in aluminum.

Set power tools to a torque that seats the head without embedding it into the mating surface.

Common Selection Mistakes with Fine-Thread Socket Head Cap Screws

Under-sizing the drive for the installation torque — a small recess at high torque strips before the screw is seated.

Using a countersunk head in thin sheet where the countersink removes most of the load-bearing material.

Specifying stainless in high-strength duty: A2-70 is roughly class 7 steel, not a 10.9 substitute.

Where Fine-Thread Socket Head Cap Screws Are Not the Right Choice

Not for high-preload structural joints (use a property-class bolt and nut), and not in thin sheet where a self-drilling or self-tapping type suits better.

Custom manufacturing · Made to drawing

Need a fine-thread socket head cap screws outside the standard range?

Head form and drive can be specified to the assembly rather than to a standard: a larger bearing face, a security drive, or a socket sized for the tool already on the bench. Made by cold heading or warm forging.

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

Custom screw manufacturing (https://engineeringhardware.com/custom/screws/)

Send a drawing (https://engineeringhardware.com/custom/screws/#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 metric fine (DIN 912 / ISO 4762) Fine-Thread Socket Head Cap Screws to DIN 912 / ISO 4762 and ASME B18.3 (UNF). Side view and top view, drawn to the dimensions in the table below and redrawn for any size selected.

Sends the selected values to the quote form below.

Request a Quote

The form below follows the current technical drawing configuration. Change the drawing values above and the request details update automatically.

Dimensions & Specifications (DIN 912 / ISO 4762 and ASME B18.3 (UNF))

Thread series	Drive	Material options	Typi
metric fine (DIN 912 / ISO 4762)	internal hex	carbon steel / alloy steel / 304 / 316 stainless	prec
UNF (ASME B18.3)	internal hex	carbon steel / alloy steel / 304 / 316 stainless	auto
UNF (ASME B18.3)	internal hex	alloy steel	gene

Video: What Are Fine-Thread Socket Head Cap Screws Used For? in use



(https://www.youtube.com/watch?v=yVMUpy5U4jo)

► Watch video: https://www.youtube.com/watch?v=yVMUpy5U4jo(https://www.youtube.com/watch?v=yVMUpy5U4jo)

Third-party video, selected automatically for this topic. It is not produced by Engineering Hardware and is not a specification source — use the tables on this page for dimensional data.

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.



01

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 material should Fine-Thread Socket Head Cap Screws be for outdoor use?

For damp, coastal or chemical environments specify A4 (316) stainless or a suitably coated steel. For indoor or dry use, A2 (304) stainless or zinc-plated steel is normally adequate.

Are Fine-Thread Socket Head Cap Screws made to a recognized standard?

Yes — they are manufactured to DIN 912 / ISO 4762 and ASME B18.3 (UNF), so dimensions are interchangeable between suppliers when you quote the standard on your order.

What are Fine-Thread Socket Head Cap Screws used for?

Threaded assemblies where the head drive and seating style matter. They are supplied to DIN 912 / ISO 4762 and ASME B18.3 (UNF).

Which industries use Fine-Thread Socket Head Cap Screws?

They are commonly specified in appliances & consumer goods, machine guarding & panels and general machine building, among other sectors.

Can I get a quote for Fine-Thread Socket Head Cap Screws in the size and material I need?

Yes. Use the technical drawing and quote form on this page to set the size and options, then send the exact configuration to our team for pricing and lead time.

Related Pages

Product page: Fine-Thread Socket Head Cap Screws — specifications & sizes (https://engineeringhardware.com/fastener/fine-thread-socket-head-cap-screws/)

Fine-Thread Socket Head Cap Screws Specification Guides

- **A4 stainless Fine-Thread Socket Head Cap Screws (https://engineeringhardware.com/guide/material/a4-stainless-steel-fine-thread-socket-head-cap-screws/)**

Related Fastener Applications

- **4IP Internal Service Screws for Mobile Devices applications (https://engineeringhardware.com/applications/4ip-internal-service-screws-for-mobile-devices/)**
- **Ball-Ended Thrust Screws applications (https://engineeringhardware.com/applications/ball-ended-thrust-screws/)**
- **Bicycle General Threaded Fasteners applications (https://engineeringhardware.com/applications/bicycle-general-threaded-fasteners/)**
- **Bicycle Spoke Nipples applications (https://engineeringhardware.com/applications/bicycle-spoke-nipples/)**
- **Button Head Socket Cap Screws, UNC applications (https://engineeringhardware.com/applications/asme-b18-3-3a-unc-button-head-socket-cap-screw/)**
- **Button Head Socket Screws applications (https://engineeringhardware.com/applications/button-head-socket-screws/)**