

What Are Countersunk Socket Screws Used For?

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Typical applications, the industries that specify countersunk socket screws, and how to choose the right size, material and finish for the joint.

Countersunk Socket Screws are used for threaded assemblies where the head drive and seating style matter. They are manufactured to ISO 10642 / DIN 7991, 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

ISO 10642 / DIN 7991

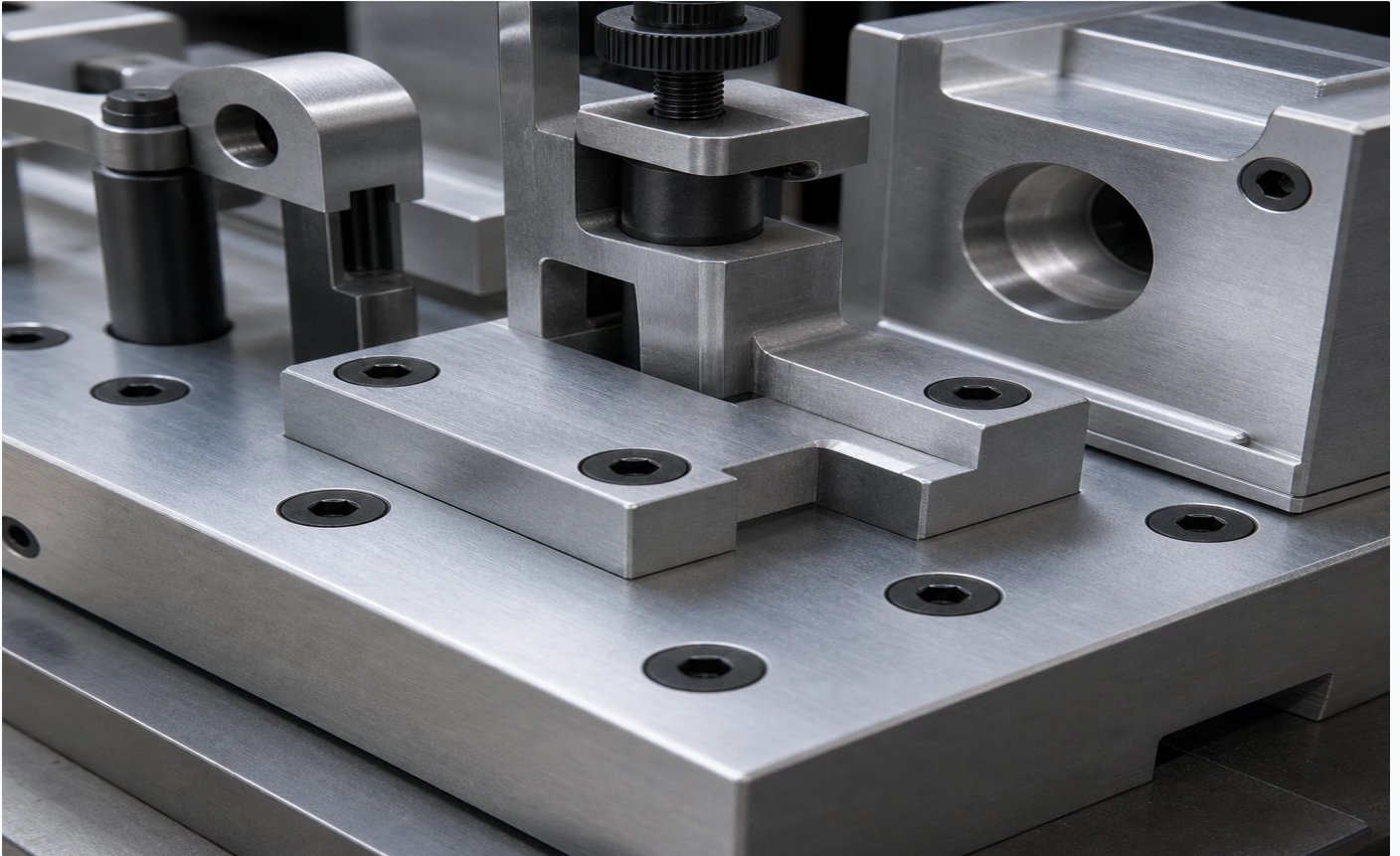
Thread size range

M3 to M24

Category

Screws

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



Countersunk Socket Screws (ISO 10642 / DIN 7991) 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 M3 to M24, they cover general to heavy-duty work.

Typical Applications for Countersunk Socket Screws

The most common settings where these are specified:

- **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.
- **Electronics & enclosures:** mounting PCBs, panels and lids where the drive style and head height matter.
- **Appliances & consumer goods:** high-volume assembly with power tools and consistent seating.

How to Specify Countersunk Socket Screws for Your Application

- **Size:** Match the nominal size to the mating thread or hole. This product spans M3–M24; 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 ISO 10642 / DIN 7991. 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 Countersunk Socket 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 Countersunk Socket 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.

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.

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 (ISO 10642 / DIN 7991)

Size	Pitch (mm)	Head diameter dk (mm)	Head height k (mm)	Hex key s (mm)	Countersink angle (deg)	Reference standard
M3	0.5	6.72	1.86	2.0	90	ISO 10642 / DIN 7991
M4	0.7	8.96	2.48	2.5	90	ISO 10642 / DIN 7991
M5	0.8	11.2	3.1	3.0	90	ISO 10642 / DIN 7991
M6	1.0	13.44	3.72	4.0	90	ISO 10642 / DIN 7991
M8	1.25	17.92	4.96	5.0	90	ISO 10642 / DIN 7991
M10	1.5	22.4	6.2	6.0	90	ISO 10642 / DIN 7991
M12	1.75	26.88	7.44	8.0	90	ISO 10642 / DIN 7991
M14	2.0	30.0	8.4	10.0	90	ISO 10642 / DIN 7991
M16	2.0	33.6	9.3	10.0	90	ISO 10642 / DIN 7991
M20	2.5	40.32	11.2	12.0	90	ISO 10642 / DIN 7991
M24	3.0	47.04	13.0	14.0	90	ISO 10642 / DIN 7991

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.

1.



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.



2.

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.

3.



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.

4.



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 are Countersunk Socket Screws used for?

Threaded assemblies where the head drive and seating style matter. They are supplied to ISO 10642 / DIN 7991.

Which industries use Countersunk Socket Screws?

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

How do I choose the right size of Countersunk Socket Screws?

Match the nominal size to the mating thread or hole. This product is available from M3 to M24; the full dimension table on this page lists each size.

What drive type do Countersunk Socket Screws use?

Drive depends on the head style — socket (hex key), cross (Phillips/Pozi) or slot. A recessed drive resists cam-out when driven with power tools; check the product head style on this page.

Can I get a quote for Countersunk Socket 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: [Countersunk Socket Screws — specifications & sizes](#)

Countersunk Socket Screws Specification Guides

- [M3 Countersunk Socket Screws size guide](#)
- [A4 stainless Countersunk Socket Screws](#)

Related Fastener Applications

- [Button Head Socket Screws applications](#)
- [Cheese Head Screws applications](#)
- [Fine Adjustment Set Screws applications](#)
- [Heavy Hex Socket Head Cap Screw — GB/T 1228 / ASTM A325 \(Series 046\) applications](#)
- [Hex Socket Cone Point Set Screw — GB/T 77 / ISO 4026 \(Series 022\) applications](#)
- [Hex Socket Cone Point Set Screw — GB/T 78 / ISO 4027 \(Series 027\) applications](#)