

What Are Self-Drilling Screws Used For?

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Screws · DIN 7504 · Application guide

Typical applications, the industries that specify self-drilling screws, and how to choose the right size, material and finish for the joint.

Self-Drilling Screws are used for fixing into sheet, timber or plastic by forming their own thread as they are driven, without a tapped hole. They are manufactured to DIN 7504, and selection is driven by the size designation, the fit and tolerance the assembly requires, and the service environment.

Primary duty

Fixing into sheet, timber or plastic by forming their own thread as they are driven, without a tapped hole

Governing standard

DIN 7504

Size designation range

3.5 to 6.3

Category

Screws

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



Self-Drilling Screws (DIN 7504) are specified where the joint requires fixing into sheet, timber or plastic by forming their own thread as they are driven, without a tapped hole. 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 3.5 to 6.3, they cover general to heavy-duty work.

Typical Applications for Self-Drilling Screws

The most common settings where these are specified:

- **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.
- **Machine guarding & panels:** removable access covers that are opened for service.
- **Roofing & cladding:** fixing steel sheet and profiles without pilot drilling.
- **Steel framing:** light-gauge metal stud and track assembly.

How to Specify Self-Drilling Screws for Your Application

- **Size:** Match the nominal size to the mating thread or hole. This product spans 3.5–6.3; 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 7504. 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 Self-Drilling 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 Self-Drilling 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 (DIN 7504)

Size	Nominal diameter (mm)	Pitch (mm)	Head diameter dk (mm)	Head height k (mm)	Drill point capacity (mm)	Common length range (mm)	Reference standard	Notes
ST3.5	3.5	1.27	6.9	2.1	0.7~2.0	13~25	DIN 7504 K/N	Tek self-drilling screw, drill flute point
ST3.9	3.9	1.29	7.5	2.3	0.7~2.5	13~32	DIN 7504 K/N	Tek self-drilling screw, drill flute point
ST4.2	4.2	1.41	8.2	2.5	0.7~3.0	13~38	DIN 7504 K/N	Tek self-drilling screw, drill flute point
ST4.8	4.8	1.59	9.5	2.9	0.7~4.0	16~50	DIN 7504 K/N	Tek self-drilling screw, drill flute point
ST5.5	5.5	1.81	10.9	3.3	1.0~5.0	19~60	DIN 7504 K/N	Tek self-drilling screw, drill flute point
ST6.3	6.3	1.81	12.5	3.8	1.0~6.0	19~80	DIN 7504 K/N	Tek self-drilling screw, drill flute point

Video: What Are Self-Drilling Screws Used For? in use



► Watch video: <https://www.youtube.com/watch?v=RriZ8V5KMg4>

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.

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

Are Self-Drilling Screws made to a recognized standard?

Yes — they are manufactured to DIN 7504, so dimensions are interchangeable between suppliers when you quote the standard on your order.

What are Self-Drilling Screws used for?

Fixing into sheet, timber or plastic by forming their own thread as they are driven, without a tapped hole. They are supplied to DIN 7504.

Which industries use Self-Drilling Screws?

They are commonly specified in machine guarding & panels, roofing & cladding and steel framing, among other sectors.

How do I choose the right size of Self-Drilling Screws?

Match the nominal size to the mating thread or hole. This product is available from 3.5 to 6.3; the full dimension table on this page lists each size.

Can I get a quote for Self-Drilling 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: [Self-Drilling Screws — specifications & sizes](#)

Self-Drilling Screws Specification Guides

- [A4 stainless Self-Drilling Screws](#)

Related Fastener Applications

- [Button Head Socket Screws applications](#)
- [Cheese Head Screws applications](#)
- [Countersunk Socket 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](#)