

What Are Lag Screws (Hex Wood Screws) Used For?

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Fasteners/Bolts/Lag Screws (Hex Wood Screws)/Applications

Bolts · DIN 571 · Application guide

Typical applications, the industries that specify lag screws (hex wood screws), and how to choose the right size, material and finish for the joint.

Lag Screws (Hex Wood 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 571, and selection is driven by the screw size, 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 571

Screw size range

5 to 24

Category

Bolts

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



Lag Screws (Hex Wood Screws) are used primarily for fixing into sheet, timber or plastic by forming their own thread as they are driven, without a tapped hole. This page lists the industries and assemblies where they are specified, the selection criteria that matter for each application, installation practice, and the cases where a different fastener type is the correct choice. Parts are supplied to DIN 571. Stocked across roughly 5 to 24, they cover general to heavy-duty work.

Typical Applications for Lag Screws (Hex Wood Screws)

The most common settings where these are specified:

- **Fabrication & metalwork:** bench and on-site assembly of steel frames, enclosures and weldments.
- **Structural steel:** bolting beams, base plates and bracing where a defined preload and property class are required.
- **Automotive & transport:** chassis, suspension and powertrain mounting points subject to vibration.
- **Heavy machinery:** securing gearboxes, frames and guarding on plant that sees shock loads.
- **Energy & infrastructure:** tower, pylon and pipework supports exposed to weather and long service life.

How to Specify Lag Screws (Hex Wood Screws) for Your Application

- **Size:** Match the nominal size to the mating thread or hole. This product spans 5–24; check the full table below for the exact dimensions of each size.

- **Strength class:** Choose the property class (e.g. 8.8, 10.9, 12.9 or A2/A4 stainless) for the load and environment, and tighten to the matching torque so the joint relies on preload, not friction.
- **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 571. Quoting the standard on your order guarantees interchangeable dimensions between suppliers.

Installation & Assembly Practice

- Tighten to the torque for the size and property class with a calibrated wrench — the joint is held by preload, not by the thread friction alone.
- Ensure at least one full thread projects beyond the nut after tightening, and never re-use a bolt that has been tightened into yield.
- Under slotted or oversized holes, fit a hardened washer so the preload does not relax into the hole edge.

Common Selection Mistakes with Lag Screws (Hex Wood Screws)

- Specifying class 12.9 "to be safe" in a corrosive environment — high classes are more sensitive to hydrogen embrittlement and stress corrosion; 8.8 hot-dip galvanized often outlasts them outdoors.
- Choosing a length that puts the shear plane through the threaded portion when a plain shank (partially threaded bolt) was available.
- Mixing stainless bolts with plated-steel nuts: the joint loses its corrosion logic and can gall or seize.

Where Lag Screws (Hex Wood Screws) Are Not the Right Choice

Not for permanent joints that will never be opened (a rivet or weld is cheaper), and not where the head must sit flush — use a countersunk screw instead.

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 571)

Nominal diameter (mm)	Pitch (mm)	Width across flats (mm)	Head height k (mm)	Pilot/guide hole (mm)	Common length range (mm)	Reference standard	Notes
5	2.0	8.0	3.5	3.0	25~100	DIN 571	Wood screw, self-tapping point
6	2.5	10.0	4.0	4.0	30~150	DIN 571	Wood screw, self-tapping point
8	3.0	13.0	5.5	5.0	40~200	DIN 571	Wood screw, self-tapping point
10	3.5	16.0	6.5	7.0	50~250	DIN 571	Wood screw, self-tapping point
12	4.0	18.0	7.5	8.5	60~300	DIN 571	Wood screw, self-tapping point
14	4.0	21.0	9.0	10.0	60~300	DIN 571	Wood screw, self-tapping point
16	4.5	24.0	10.0	11.5	80~300	DIN 571	Wood screw, self-tapping point
18	5.0	27.0	11.5	13.0	80~300	DIN 571	Wood screw, self-tapping point
20	5.0	30.0	12.5	14.5	100~300	DIN 571	Wood screw, self-tapping point
22	5.5	32.0	14.0	16.0	100~300	DIN 571	Wood screw, self-tapping point

Nominal diameter (mm)	Pitch (mm)	Width across flats (mm)	Head height k (mm)	Pilot/guide hole (mm)	Common length range (mm)	Reference standard	Notes
24	6.0	36.0	15.0	17.5	100~300	DIN 571	Wood screw, self-tapping point

Video: What Are Lag Screws (Hex Wood Screws) Used For? in use



► Watch video: <https://www.youtube.com/watch?v=GZFczKxVIN0>

how to PROPERLY install “lag bolts” (pilot holes sizes)

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

What are Lag Screws (Hex Wood 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 571.

Which industries use Lag Screws (Hex Wood Screws)?

They are commonly specified in fabrication & metalwork, structural steel and automotive & transport, among other sectors.

How do I choose the right size of Lag Screws (Hex Wood Screws)?

Match the nominal size to the mating thread or hole. This product is available from 5 to 24; the full dimension table on this page lists each size.

How tight should Lag Screws (Hex Wood Screws) be torqued?

Tighten to the torque for the size and property class so the joint is held by bolt preload. The size pages and torque reference table give recommended values; use a calibrated torque wrench for anything structural.

Can I get a quote for Lag Screws (Hex Wood 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: [Lag Screws \(Hex Wood Screws\) — specifications & sizes](#)

Lag Screws (Hex Wood Screws) Specification Guides

- [A4 stainless Lag Screws \(Hex Wood Screws\)](#)

Related Fastener Applications

- [Carriage Bolts applications](#)
- [Clamping Handle Screw \(Long\) — DIN 6336 / GN 313 \(Series 044\) applications](#)
- [Clamping Handle Screw \(Medium\) — DIN 6336 / GN 313 \(Series 043\) applications](#)
- [Clamping Handle Screw \(Short\) — DIN 6336 / GN 313 \(Series 042\) applications](#)
- [Equal-End Stud Bolt — GB/T 901 / DIN 939 \(Series 093\) applications](#)
- [Eye Bolts applications](#)