What Are T-Slot Nuts Used For?

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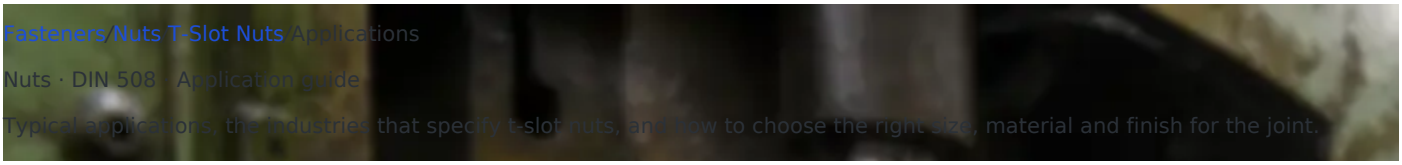

T-Slot Nuts are used for clamping fixtures, vises and workpieces to a machine table through its T-slots. They are manufactured to DIN 508, and the choice of size, property class and finish is driven by the load in the joint and the environment it sits in.

Primary duty
: Clamping fixtures, vises and workpieces to a machine table through its T-slots

Governing standard
: DIN 508

Thread size range
: M5 to M24

Category
: Nuts

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

T-Slot Nuts are used primarily for clamping fixtures, vises and workpieces to a machine table through its T-slots. 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 508. Stocked across roughly M5 to M24, they cover general to heavy-duty work.

Typical Applications for T-Slot Nuts

The most common settings where these are specified:

- **Vibration-prone equipment:** where a locking or flanged style resists loosening.
- **Frames & weldments:** captive or welded options for repeatable assembly.
- **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.

How to Specify T-Slot Nuts for Your Application

- **Size:** Match the nominal size to the mating thread or hole. This product spans M5–M24; check the full table below for the exact dimensions of each size.

- **Locking & grade:** Match the strength grade to the bolt, and choose a locking style (nyloc, all-metal, serrated flange) if the joint sees vibration.
- **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 508. Quoting the standard on your order guarantees interchangeable dimensions between suppliers.

Installation & Assembly Practice

- Run the nut down by hand before applying the wrench to catch cross-threading early.
- Tighten the nut rather than the bolt head where access allows — the torque-to-preload relation is more consistent.
- For locking styles, note that nyloc inserts are single-use in critical joints and lose grip above roughly 120 °C.

Common Selection Mistakes with T-Slot Nuts

- Pairing a high-class bolt with a lower-class nut — the nut strips before the bolt reaches proof load; the nut class must meet or exceed the bolt class.
- Using a plain nut with a spring washer in severe vibration instead of a prevailing-torque locking nut.
- Re-using nyloc nuts in critical joints.

Where T-Slot Nuts Are Not the Right Choice

Not on their own — they need a matching bolt or stud — and a plain nut is not a substitute for a locking type under heavy vibration.

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 508)

Thread size	T-slot width (mm)	Nut width b (mm)	Total height h (mm)	Key height h1 (mm)	Hook width e (mm)	Reference standard
M5	6	8.0	8.0	4.5	6.4	DIN 508 / GN505
M6	8	10.0	10.0	5.5	8.4	DIN 508 / GN505
M8	10	12.0	12.0	7.0	10.4	DIN 508 / GN505
M8	12	14.0	12.0	7.0	12.4	DIN 508 / GN505
M10	12	14.0	14.0	8.0	12.4	DIN 508 / GN505
M10	14	16.0	14.0	8.0	14.4	DIN 508 / GN505
M12	14	16.0	17.0	10.0	14.4	DIN 508 / GN505
M12	18	20.0	17.0	10.0	18.4	DIN 508 / GN505
M16	18	20.0	20.0	12.0	18.4	DIN 508 / GN505
M16	22	25.0	20.0	12.0	22.4	DIN 508 / GN505
M20	22	25.0	25.0	15.0	22.4	DIN 508 / GN505
M20	28	32.0	25.0	15.0	28.4	DIN 508 / GN505
M24	28	32.0	30.0	18.0	28.4	DIN 508 / GN505

Video: What Are T-Slot Nuts Used For? in use

► Watch video: https://www.youtube.com/watch?v=T-b0xziKIGM

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 material should T-Slot Nuts 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 T-Slot Nuts made to a recognized standard?
Yes — they are manufactured to DIN 508, so dimensions are interchangeable between suppliers when you quote the standard on your order.

What are T-Slot Nuts used for?
Clamping fixtures, vises and workpieces to a machine table through its T-slots. They are supplied to DIN 508.

Which industries use T-Slot Nuts?

They are commonly specified in vibration-prone equipment, frames & weldments and general machine building, among other sectors.

Can I get a quote for T-Slot Nuts 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: T-Slot Nuts — specifications & sizes

T-Slot Nuts Specification Guides

- M5 T-Slot Nuts size guide
- A4 stainless T-Slot Nuts

Related Fastener Applications

- All-Metal Lock Nuts applications
- All-Metal Prevailing Torque Hex Lock Nut (Type 1) — GB/T 6184 / ISO 7042 (Series 047) applications
- Cap (Acorn) Nuts applications
- Castellated Hex Nut — GB/T 6180 / ISO 7036 (Series 048) applications
- Custom Slotted Round Nut — GB/T 812 (Series 070) applications
- Hex Flange Nuts applications