What Are Hexagon Weld Nuts Used For?

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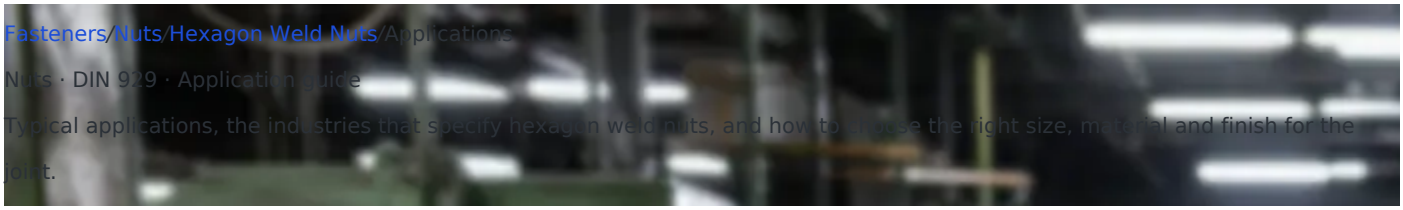

Fasteners/Nuts/Hexagon Weld Nuts/Applications

Nuts · DIN 929 · Application guide

Typical applications, the industries that specify hexagon weld nuts, and how to choose the right size, material and finish for the joint.

Hexagon Weld Nuts are used for putting a captive thread into sheet metal or a weldment where there is no access to hold a nut. They are manufactured to DIN 929, 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
: Putting a captive thread into sheet metal or a weldment where there is no access to hold a nut

Governing standard
: DIN 929

Thread size range
: M3 to M16

Category
: Nuts

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

Hexagon Weld Nuts are used primarily for putting a captive thread into sheet metal or a weldment where there is no access to hold a nut. 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 929. Stocked across roughly M3 to M16, they cover general to heavy-duty work.

Typical Applications for Hexagon Weld Nuts

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.
- **Bolted joints:** the clamping counter-face on studs and bolts across every assembly type.
- **Vibration-prone equipment:** where a locking or flanged style resists loosening.

How to Specify Hexagon Weld Nuts for Your Application

- **Size:** Match the nominal size to the mating thread or hole. This product spans M3–M16; 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 929. 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 Hexagon Weld 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 Hexagon Weld 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 929)

Size	Pitch (mm)	Width across flats s (mm)	Width across corners e (mm)	Nut height m (mm)	Pilot diameter d2 (mm)	Reference standard
M3	0.5	7.5	8.15	3	4.5	DIN 929
M4	0.7	9	9.83	3.5	6	DIN 929
M5	0.8	10	10.95	4	7	DIN 929
M6	1.0	11	12.02	5	8	DIN 929
M8	1.25	14	15.38	6.5	10.5	DIN 929
M10	1.5	17	18.74	8	12.5	DIN 929
M12	1.75	19	20.91	10	14.8	DIN 929
M14	2.0	22	24.27	11	16.8	DIN 929
M16	2.0	24	26.51	13	18.8	DIN 929

Video: What Are Hexagon Weld Nuts Used For? in use

► Watch video: https://www.youtube.com/watch?v=r7noaMgRfBY

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 Hexagon Weld Nuts used for?

Putting a captive thread into sheet metal or a weldment where there is no access to hold a nut. They are supplied to DIN 929.

Which industries use Hexagon Weld Nuts?

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

How do I choose the right size of Hexagon Weld Nuts?

Match the nominal size to the mating thread or hole. This product is available from M3 to M16; the full dimension table on this page lists each size.

Do Hexagon Weld Nuts need a locking feature?

If the joint sees vibration or cyclic load, use a locking style (nyloc, all-metal lock, or serrated flange) or a thread-locking adhesive. For static joints a standard nut tightened correctly is usually sufficient.

Can I get a quote for Hexagon Weld 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: Hexagon Weld Nuts — specifications & sizes

Hexagon Weld Nuts Specification Guides

- M3 Hexagon Weld Nuts size guide
- A4 stainless Hexagon Weld 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