

What Are Serrated Lock Washers Used For?

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Washers · DIN 6798 · Application guide

Typical applications, the industries that specify serrated lock washers, and how to choose the right size, material and finish for the joint.

Serrated Lock Washers are used for load distribution and anti-loosening under a bolt or nut. They are manufactured to DIN 6798, and selection is driven by the nominal bolt size, the fit and tolerance the assembly requires, and the service environment.

Primary duty

Load distribution and anti-loosening under a bolt or nut

Governing standard

DIN 6798

Nominal bolt size range

M3 to M20

Category

Washers

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



The primary duty of Serrated Lock Washers is load distribution and anti-loosening under a bolt or nut. Below: the sectors that specify them in volume, the checklist used to select the right size and material for the application, installation notes, and the known limits of the type. Stocked across roughly M3 to M20, they cover general to heavy-duty work.

Typical Applications for Serrated Lock Washers

The most common settings where these are specified:

- **Timber & soft materials:** large-OD types that prevent pull-through.
- **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 structural joints:** spreading load over soft or oversized holes and protecting the surface.

How to Specify Serrated Lock Washers for Your Application

- **Size:** Match the nominal size to the mating thread or hole. This product spans M3-M20; check the full table below for the exact dimensions of each size.
- **Type & OD:** Select flat for load spreading, spring/serrated for anti-loosening, or fender/large-OD for soft or oversized holes.

- **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 6798. Quoting the standard on your order guarantees interchangeable dimensions between suppliers.

Installation & Assembly Practice

- Place the washer under the rotating element (usually the nut) so tightening does not score the surface.
- Chamfered-hole side of a hardened washer faces the bolt head fillet.
- On serrated-flange hardware, do not add a plain washer — it defeats the serrations.

Common Selection Mistakes with Serrated Lock Washers

- Relying on a spring washer for locking on class 8.8+ joints — at high preload it flattens and adds nothing.
- Choosing an OD too small for soft material, so the head pulls through or embeds.

Where Serrated Lock Washers Are Not the Right Choice

A washer does not replace a locking feature on its own in severe vibration, and a spring washer adds little clamp on high-strength joints.

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 6798)

For size	Inner diameter d1 (mm)	Outer diameter d2 (mm)	Thickness h (mm)	Type	Reference standard
M3	3.2	6.0	0.5	Internal-tooth type A	DIN 6798 A/J
M4	4.3	7.6	0.5	Internal-tooth type A	DIN 6798 A/J
M5	5.3	9.2	0.6	Internal-tooth type A	DIN 6798 A/J
M6	6.4	11.0	0.7	Internal-tooth type A	DIN 6798 A/J
M8	8.4	14.8	0.8	Internal-tooth type A	DIN 6798 A/J
M10	10.5	18.0	0.9	Internal-tooth type A	DIN 6798 A/J
M12	13.0	21.5	1.0	Internal-tooth type A	DIN 6798 A/J
M16	17.0	27.0	1.2	Internal-tooth type A	DIN 6798 A/J
M20	21.0	33.0	1.5	Internal-tooth type A	DIN 6798 A/J
M3	3.2	7.0	0.5	External-tooth type J	DIN 6798 A/J
M4	4.3	9.0	0.5	External-tooth type J	DIN 6798 A/J
M5	5.3	10.0	0.6	External-tooth type J	DIN 6798 A/J
M6	6.4	12.0	0.7	External-tooth type J	DIN 6798 A/J
M8	8.4	15.0	0.8	External-tooth type J	DIN 6798 A/J

For size	Inner diameter d1 (mm)	Outer diameter d2 (mm)	Thickness h (mm)	Type	Reference standard
M10	10.5	19.0	0.9	External-tooth type J	DIN 6798 A/J
M12	13.0	22.0	1.0	External-tooth type J	DIN 6798 A/J
M16	17.0	28.0	1.2	External-tooth type J	DIN 6798 A/J
M20	21.0	34.0	1.5	External-tooth type J	DIN 6798 A/J

Video: What Are Serrated Lock Washers Used For? in use



► Watch video: https://www.youtube.com/watch?v=xU7zypw3Z_I

The Truth - Which Holds Better? Split Lock Washer, Internal Tooth Lock Washer, or Locknut

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 Serrated Lock Washers made to a recognized standard?

Yes — they are manufactured to DIN 6798, so dimensions are interchangeable between suppliers when you quote the standard on your order.

What are Serrated Lock Washers used for?

Load distribution and anti-loosening under a bolt or nut. They are supplied to DIN 6798.

Which industries use Serrated Lock Washers?

They are commonly specified in bolted structural joints, vibration applications and timber & soft materials, among other sectors.

How do I choose the right size of Serrated Lock Washers?

Match the nominal size to the mating thread or hole. This product is available from M3 to M20; the full dimension table on this page lists each size.

Can I get a quote for Serrated Lock Washers 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: [Serrated Lock Washers — specifications & sizes](#)

Serrated Lock Washers Specification Guides

- [M3 Serrated Lock Washers size guide](#)
- [A4 stainless Serrated Lock Washers](#)

Related Fastener Applications

- [Bearing Lock Washers \(MB Series\) applications](#)
- [Bonded Sealing Washers applications](#)
- [Conical Spring Washers \(HV\) applications](#)
- [Cup Washers applications](#)
- [Disc Springs \(Belleville Washers\) applications](#)
- [EPDM Sealing Washers applications](#)