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NORD-LOCK[®]

Bolt securing system

*Meeting customer's needs for critical applications in
Oil & Gas, Energy, Mining and Transportation.*

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are members of



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With more than 2,600 locations worldwide, Fastenal provides superior service to our customers at the local level. As a global leader in fasteners, we are proud to bring Nord-Lock washers to our customers who require reliable fastening for critical applications.

As with all of the products we supply, we can tailor a custom inventory management program to meet your needs, so you will always have just the right amount of Nord-Lock washers available.

Exceptional Value

Nord-Lock offers a safe bolt locking system that does not rely on traditional techniques to secure the fastener. This system utilizes tension instead of friction to secure bolted joints. The proven wedge-locking method, meeting DIN 25201, is superior to any traditional fastening method.

Advantages:

- Prevents loosening caused by vibration and dynamic loads
- Ease of assembly and disassembly
- Locking function not affected by lubrication
- No special tools required
- Controllable preload
- Same temperature characteristics as bolt/nut of corresponding quality
- Reusable

Significant range and variety

- Steel, zinc flake coated with Delta Protekt®, M3-M130 (#5-5")
- Stainless steel, (316L), M3-M130 (#5-3 1/8")
- SMO254, Inconel® C-276 & 718 (for high temperatures or corrosive environments)

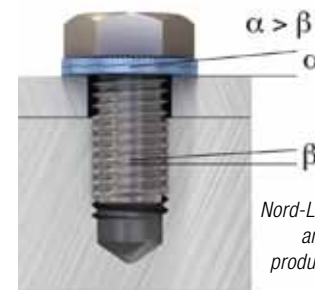
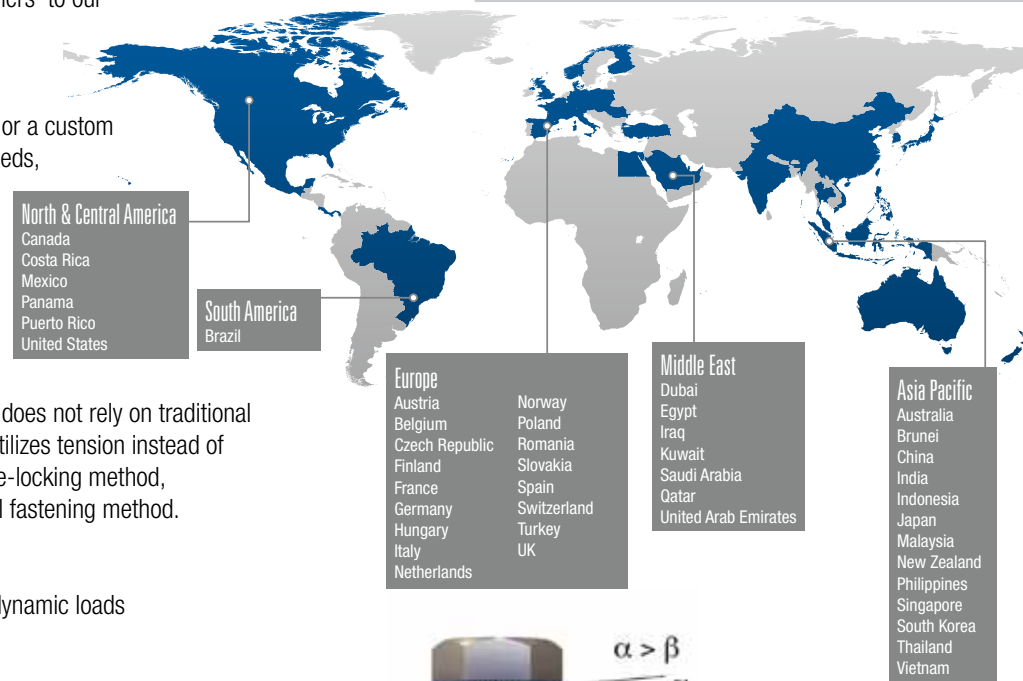


Nord-Lock washers with enlarged outer diameter are available in order to increase the load supporting area.

For slotted holes or on soft material, use a flanged nut/bolt in combination with Nord-Lock washers with an enlarged outer diameter ("sp" version).

This combination will provide the most positive locking effect, while covering as much of the mating surfaces as possible.

Fastenal's Global Customer Reach



Nord-Lock is a proud holder of ISO 9001 and ISO 14001 certificates, all products are ELV and RoHS compliant.

Nord-Lock: The world's most effective bolt securing system

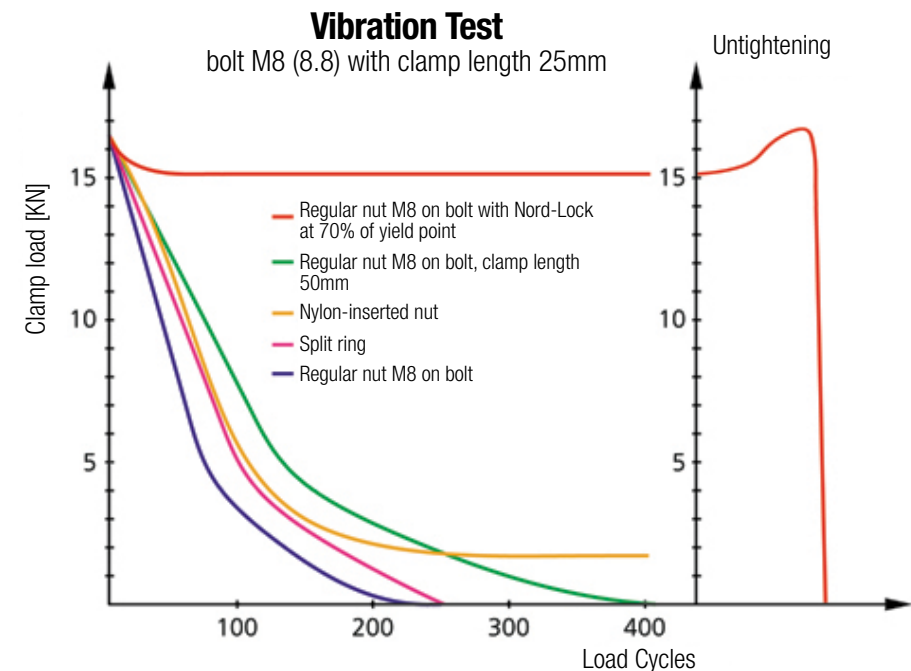
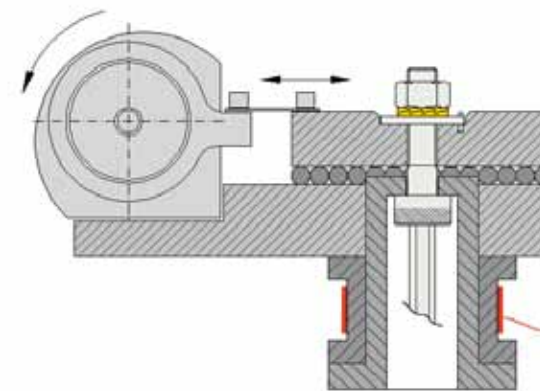
Nord-Lock washer material / type guide

Application parameter	Steel washers	Stainless steel (ss) washers	SMO254® washers	HASTELLOY® C-276 washers	INCONEL® 718 washers
Steel type	EN 1.7182 or equivalent	EN 1.4404 or equivalent	EN 1.4547 or equivalent	EN 2.4819 or equivalent	EN 2.4667 or equivalent
Examples of applications	General steel applications	General stainless steel applications. Non-chlorine / acid environments	General salt water applications, pumps, chloride applications, heat exchangers, nuclear, desalination, food processing & medical equipment	General acidic environments, process and chemical industry, evaporators, offshore downhole tooling	Applications with high temperatures, gas turbines, turbo charges, incinerators
Available for bolt sizes	M3-M130 (contact your Fastenal representative for dimensions)	M3-M80 (contact your Fastenal representative for dimensions)	M3-M39 (contact your Fastenal representative for dimensions)	M3-M39 available upon request	M3-M39 available upon request
Washer types	Regular outer diameter (NL3-NL130) Enlarged outer diameter (NL3.5sp-NL36sp)	Regular outer diameter (NL3ss-NL80ss) Enlarged outer diameter (NL3.5spss-NL30spss)	Regular outer diameter (NL3ss-254-NL39ss-254) Enlarged outer diameter (NL3.5spss-254-NL27spss-254)	Regular outer diameter (NL3ss-276-NL39ss-276) Enlarged outer diameter (NL3.5spss-276-NL27spss-276)	Regular outer diameter (NL3ss-718-NL39ss-718) Enlarged outer diameter (NL3.5spss-718-NL27spss-718)
Treatment	Through hardened	Surface hardened	Surface hardened	Surface hardened	Surface hardened
Surface coating	Delta Protekt® base coat (KL100) and top coat (VH302GZ)				
Washer hardness*	≥ 465 HV1	≥ 520HV0,05	≥ 600HV0,05	≥ 520HV0,05	≥ 620HV0,05
Corrosion resistance	Minimum 600 hours in salt spray test (according to ISO9227)	PREN 27**	PREN 45**	PREN 68**	PREN 29**
Bolt grades	Up to 12.9	Up to A4-80	Up to A4-80	Up to A4-80	Up to A4-80
Temperature range***	-20°C to 200°C	-160°C to 500°C	-160°C to 500°C	-160°C to 500°C	-160°C to 700°C

* In order to assure the unique mechanical locking function of the Nord-Lock washers, the hardness of the mating surfaces must be lower than the hardness of the Nord-Lock washers (see table above).
 ** PREN (Pitting Resistance Equivalent Number) = %Cr + 3,3x%Mo + 16x%N. Figures in table valid for base material.
 *** Temperature recommendations based on information from the raw material supplier. Locking function not affected within the specification.

The Proof

The Junker vibration test according to DIN 65151 is an excellent method for testing and comparing the security of bolted joints. In a Junker test the bolted joint is subjected to transverse movements while the tension is being continuously measured by a load cell.



Certificates & Approvals

The most prominent of our certificates are:

- AbP (Allgemein bauaufsichtliches Prüfzeugnis)
- DIBt (Deutsches Institut für Bautechnik)
- DNV (Det Norske Veritas)
- EBA (Eisenbahn-Bundesamt)
- TÜV (Technischer Überwachungs-Verein)

Quality & environmental assurance:

- ISO 9001
- ISO 14001
- Licensed by Dörken to perform Delta Protekt® surface coating in-house
- RoHS, ELV and Reach compliant
- Full traceability



For more information or a complete list of certificates and approvals, please visit our website or contact your local Fastenal representative.