

Nord-Lock Wheel nuts

USER MANUAL

Nord-Lock
Technology

2

Product
Information

3

Dimension
Guide

3

Assembly
Instructions

4

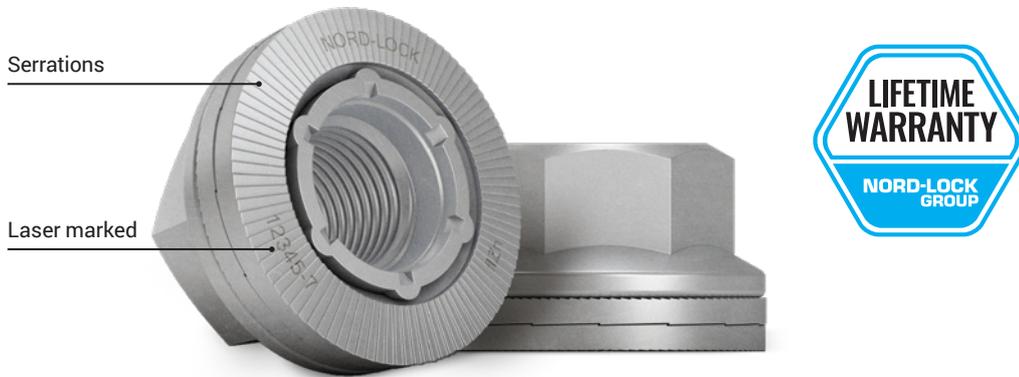


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NORD-LOCK®
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Prevents wheels from loosening



Safe wheel save lives

Nord-Lock wheel nuts safely secure wheels on both on-road and off-road heavy vehicles by maintaining a high clamp force, even under extreme operating conditions. They represent a simple and cost-effective way to make wheels safe and secure for more productive and efficient operations.

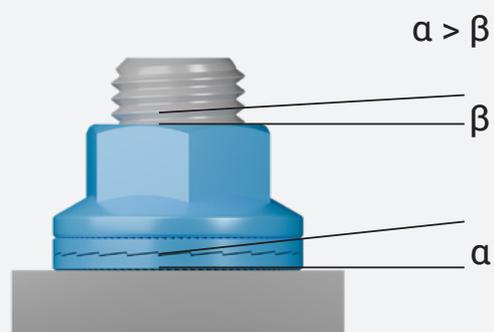
Applications

Nord-Lock wheel nuts are designed for flat-faced steel rims. Each nut is permanently attached to a pair of Nord-Lock wedge-locking washers. The wheel nut is suitable for:

- Heavy on-road vehicles (buses, trucks, trailers, etc.)
- Off-road vehicles (tractors, farming equipment, mining equipment, forestry machinery, military vehicles, etc.)

How it works

Each wheel nut is equipped with a pair of Nord-Lock washers, with cam faces on one side and serrations on the other. When tightened, the serrations embed into the mating surfaces. As the cam angle α is greater than the thread pitch β , a wedge-effect is created, so movement only occurs across the cam faces - maintaining preload and preventing loosening.



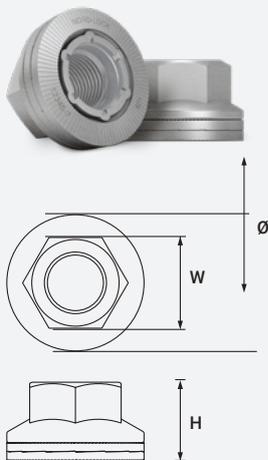
Product information

Applications	Heavy on-road vehicles and off-road vehicles
Washer material	Steel EN 1.7182
Property class	Class 10, ISO 898-2
Hardening	Through hardened
Washer hardness*	≥ 465HV1
Corrosion resistance	Minimum 600 hours in salt spray test (according to ISO 9227)
Temperature range	-50°C to 150°C**
Product designation	NLWN
Laser marking	Traceable batch number and type code flZn
Size range	M16 - M24
Coating	Basecoat Delta Protekt® KL100, Topcoat VH 302 GZ
Lubrication	Dry film lubricant/lubricating paste

* Washer hardness must be greater than the hardness of the mating surfaces in order to assure its mechanical function.

** Temperature recommendations are based on information from the raw material supplier and testing. The locking function is not affected within the specified range.

NORD-LOCK WHEEL NUTS DIMENSIONS AND TORQUE GUIDELINES



Thread	Product designation	Width W [mm]	Ø [mm]	Height H [mm]	Tightening torque		Clamping force	
					Metric [Nm]	UNC [ftlb]	Metric [kN]	UNC [lb]
M16x1.5	NLWN M16	24.0	34.5	22.0	280	205	~100	~22,500
M18x1.5	NLWN M18	27.0	40.0	24.0	400	295	~130	~29,200
M20x1.5	NLWN M20	30.0	45.0	26.0	550	405	~160	~36,000
M22x1.5	NLWN M22	32.0	46.0	27.0	650	480	~180	~40,500
7/8"-11 BSF	NLWN 7/8"-11	32.0	46.0	27.0	650	480	~170	~38,200
M24x1.5	NLWN M24	36.0	48.0	33.0	950	700	~240	~54,000

Coating	Corrosion resistance	Lubrication	Property class
Base coat: Delta Protekt® KL100 zinc flake coating Top coat: VH 302 GZ	Minimum 600 hours in salt spray test (according to ISO 9227)	Anti-corrosive wax Dry film lubricant/ lubricating paste	Class 10

Assembly Instructions

For flat-faced rims – First time installation

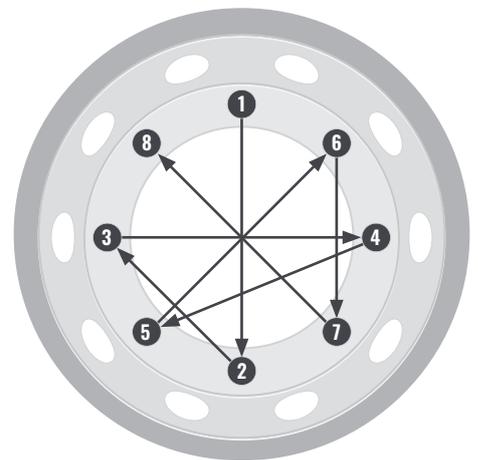
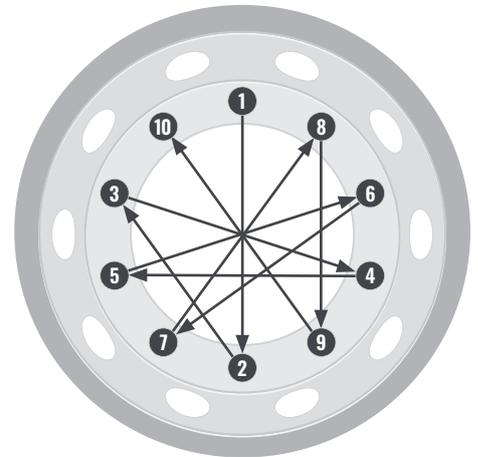
Nord-Lock wheel nuts are designed for use on flat-faced rims. Sliding always occurs between the nut and the upper washer during tightening, and between the cam faces during untightening. In this way, clear impression marks are created without scoring the contact surface. Upon reuse, the serrations find their way back into the previously created impressions.

1.

Place the rim over the wheel hub. Ensure the wheel studs are not damaged.

2.

Before tightening, clean the contact surfaces from dirt, gravel, and rust to avoid compromising the grip of the serrations and to minimize settlements. This applies not only to the direct surfaces of the nut, but also to the contact surfaces between the rim and the wheel hub. Fit and tighten the nuts using a calibrated torque wrench, applying the recommended torque and following the **tightening sequence illustrated here**.



Tightening sequences for rims with 8 and 10 holes

For flat-faced rims – Re-use

Clean off as much dirt and rust as possible while the nuts are still tightened on the wheel. Minimizing the amount of contamination that can get between the washers will increase the number of possible reuses. Ensure the nut is thoroughly cleaned before re-installation. It is recommended to re-lubricate both the threads and the underside of the flange using a sprayable penetrating lubricant. If the nut appears worn, heavily corroded, or shows visible damage, it should be replaced.

NOTE!

All clamped parts affect the function and safety of a bolted connection. This includes the wheel hub, wheel studs, rim, any wheel trim, and wheel nuts. Ensure that all clamped components are in good condition—undamaged, clean, and of sufficient quality. If any part does not meet these criteria, it must be replaced.

FAQ

Do I need any special tools to tighten Nord-Lock wheel nuts?	No, Nord-Lock wheel nuts are developed to fit standard equipment and tools.
Do I need to re-tighten Nord-Lock wheel nuts?	Yes. It is common practice to retighten Nord-Lock wheel nuts. Nord-Lock wheel nuts do not lose clamp load due to rotation. However, settlements occur in other parts of the wheel assembly during driving, which may result in loss of clamp load. Nord-Lock therefore recommends that standard retightening procedures are maintained.
Should the Nord-Lock wheel nuts be lubricated?	Nord-Lock wheel nuts are pre-lubricated with a dry film lubricant or lubricating paste to facilitate assembly. During reuse it is recommended to re-lubricate the threads as well as under the flange. Use a sprayable lubrication and make sure that it penetrates in between the washers and between the washer and the nut. The lubrication should be of a kind that creates a long-life lubricating film.
Do I need to change all wheel nuts to Nord-Lock wheel nuts?	Yes, in order to maintain the clamp load in the entire wheel assembly, Nord-Lock wheel nuts must be fitted to all wheel studs.
Can I use wheel trims with my Nord-Lock wheel nuts?	High-quality steel wheel trims can generally be used as long as no movement can occur between the wheel trim and the rim.