

NEW and IMPROVED

DISC-LOCK SAFETY WHEEL NUT

WITH NEW, SUPERIOR ANTI-CORROSION COATING



**THE VIBRATION AND SHOCK PROOF WHEEL NUT
FOR TRUCKS, TRAILERS AND BUSES WHICH
VIRTUALLY ELIMINATES THE RISK OF WHEEL LOSS**

- MAINTAIN WHEELS ON AXLES
- ARE FITTED BY MAJOR FLEET OPERATORS WORLDWIDE
- ARE APPROVED BY VEHICLE AND AXLE MANUFACTURERS
- FITTED IN THE SAME WAY AS A STANDARD WHEEL NUT

DISC-LOCK™

LEADING INNOVATORS IN FASTENER TECHNOLOGY



www.disc-lock.com

Over the years **Disc-Lock** has listened carefully to its customers' comments and concerns. In the last year **Disc-Lock** took action. The result...?

A new and greatly improved **Disc-Lock** Safety Wheel Nut featuring:

- **Improved design** - the **Disc-Lock** Safety Wheel Nut has been redesigned into three pieces without compromising the original working principle of rising cams to prevent the wheel nut loosening.
- **Improved assembly** - a retaining ring has replaced the old retaining clip thereby enhancing the assembly and further reducing the possibility of corrosion.
- **Superior corrosion protection** - the **Disc-Lock** Safety Wheel Nut is now coated with a new, superior anti-corrosion coating (Dacromet) which has passed a 500 hours salt spray test. (The previous Disc-Lock Safety Wheel Nut was tested for 96 hours).
- **Easier to install and remove** - the new **Disc-Lock** Safety Wheel Nut is easier to install and remove because the lower flange is deeper and can be grasped by the socket more easily.

Features which remain the same:

- **Patented **Disc-Lock**** system of rising cams remains the same.

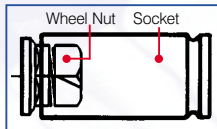
What is the **Disc-Lock** Safety Wheel Nut?

The **Disc-Lock** Safety Wheel Nut is a vibration proof wheel nut, specifically designed to prevent wheel loss from commercial vehicles such as trucks, trailers and buses. **Disc-Lock** Safety Wheel Nuts are considered to be far superior in terms of safety than conventional wheel nuts. The shock and vibration, which cause existing wheel nuts to come loose, cause **Disc-Lock** Safety Wheel Nuts to lock.

How does the **Disc-Lock** Safety Wheel Nut Work?

Unlike a conventional wheel nut, the **Disc-Lock** Safety Wheel Nut is split into two sections, comprising a nut and an hexagon-flanged washer. Both sections (which are joined together to form a one-piece assembly) have interlocking cams. When subjected to road shock or vibration, the most common causes of wheel nut loosening, the interlocking cams of the **Disc-Lock** Safety Wheel Nut attempt to rise against each other. As the angle of the cams is greater than the pitch angle of the threads on the stud, a wedging action takes place and the **Disc-Lock** Safety Wheel Nut locks and will not come loose, thus keeping the wheel on the axle.

- The **Disc-Lock** Safety Wheel Nut is installed in the same way as conventional wheel nuts.
- To remove the wheel nut the socket is placed over the hexagon nut and hexagon flanged washer and then loosened.
- The patented **Disc-Lock** system is approved by vehicle and axle manufacturers.
- Refer to axle manufacturer's instructions for torque settings. However, **Disc-Lock** recommends that its wheel nuts should be torqued to 700 Nm (515 ft.lbs) on M22 and 7/8" nuts to achieve optimum clamping force.



Junker Vibration Test and Results

Disc-Lock Safety Wheels Nuts are tested on a Junker Test machine which is named after its German designer Gerhard Junker. Junker's theories are based in part on the so-called "long-form torque equation" relating the torque applied to a fastener to the frictional and elastic reactions to that torque. The Junker Test machine works as follows: an eccentric cam generates a controllable amount of transverse displacement on the joint under test. A load cell measures the actual transverse forces exerted on the joint. One can determine the relationship between residual preload in the fastener under test and external vibratory forces created by the test machine as a function of time.

When tested against a conventional wheel nut on a Junker Test Machine the **Disc-Lock** Safety Wheel Nut remains secure under the most severe vibration conditions, while the conventional wheel nut comes completely loose.

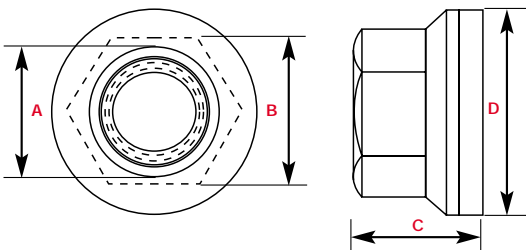
What the experts say

"Not long ago I witnessed some very severe and impressive tests of several Disc-Lock nuts on a Junker machine, and came away a believer."

John Bickford

One of the world's leading experts on bolting technology from the USA, in his text book "An Introduction to the Design and Behaviour of Bolted Joints"

Disc-Lock Safety Wheel Nut Dimensional Chart



SIZE & THREAD WIDTH ACROSS THE FLATS HEIGHT FLANGE DIAMETER

A	B	C	D
M18 x 1.5	34.0mm	29.0mm	48.0mm
M20 x 1.5	34.0mm	29.0mm	48.0mm
M20 x 2.5	34.0mm	29.0mm	48.0mm
M22 x 1.5	38.0mm	33.5mm	52.5mm
7/8" - 11 BSF (Scania)	38.0mm	33.5mm	52.5mm
7/8" - 14 UNF (Volvo)	38.0mm	33.5mm	52.5mm

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