

# The Nord-Lock Group **PIONEERING SAFETY**



**Brüce Hudson**

***No Need For Retightening (NNFR)***

North America Region DROPS Forum – Houston, TX USA

August 24, 2015

**NORD-LOCK**

# The Challenges!

NO NEED FOR  
RETIGHTENING

Secured by  
Nord-Lock™



higher.



deeper.



faster.



longer.



smarter.



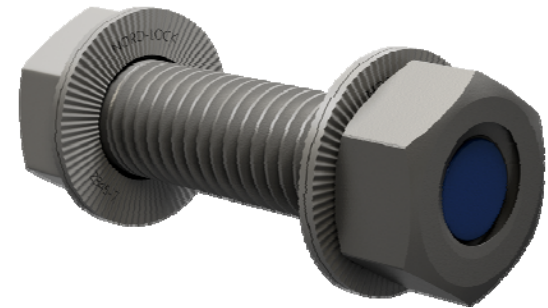
bigger.

# Facts

NO NEED FOR  
RETIGHTENING

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Nord-Lock™

- We know that work injuries, regardless of industry, are often caused by bolts loosening. This can create disruption in production and in many cases also add huge costs for companies globally.
- Hazards related to loose bolts are found in all industries
- There is a common thread linking many of these incidents that apparently has gotten little attention, if any at all, which is the secure locking of all bolts and nuts!

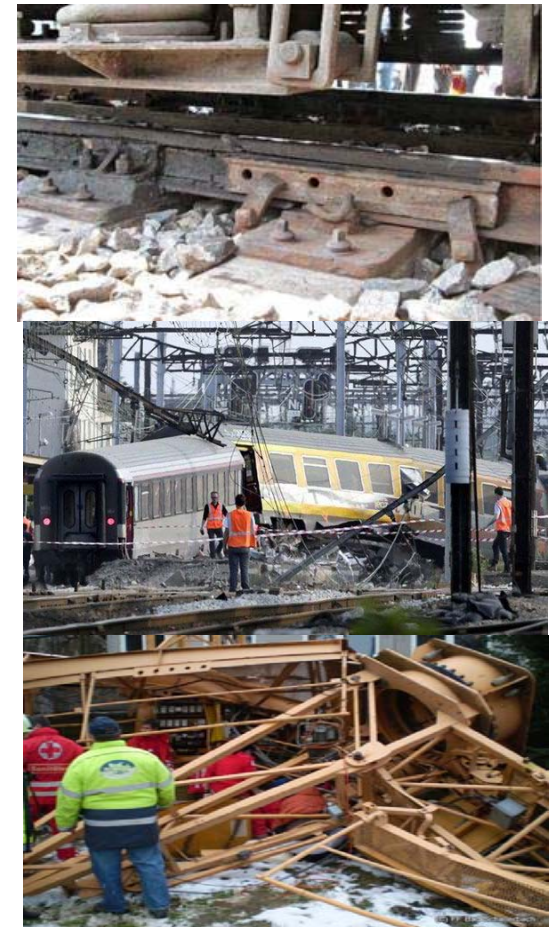


# Facts

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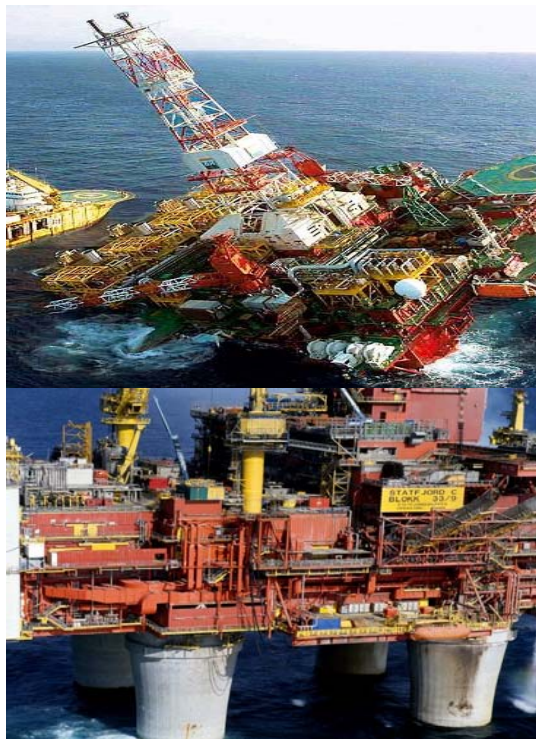
Secured by  
Nord-Lock

- We know that work injuries regardless of industry is very often caused by bolts loosening. This also creates disruption in production and in many cases also add huge costs for companies globally.
- Hazards related to loose bolts are found in all industries
- There is a point which in many cases which apparently have not gotten enough attention or any at all; the bolts, nuts and secure locking of them!





# Managing Risk!



Bolts loosening on installations is well-known in several industries, and can have fatal consequences.

Consequently:

- Classification societies obliges owners/operators to perform torque checks of critical bolted connections,
- Operator has a continuous torque check on bolts.

There are many methods of preventing or reducing industrial injuries:

- Risk assessment programs, safety training, personal protective equipment, safety barriers, entry control, mechanisms on machinery etc.

*Even with extensive regulation, reported data shows that unwanted incidents related to bolts loosening occur daily in all industry segments world wide.*

# Bolted Joints in the Oil & Gas Industry



- A conventional semi-rig is held together by ~ 300,000 bolted joints.
- Regulations / classification societies oblige operators to perform annual control and torque check on at least 20% of the bolts related to drilling structures.
- Calculations performed with operators indicates this can represent as much as **\$1 million USD in annual costs per rig**. In most cases, additional costs appear when needed corrective measures or bolt replacement are required.



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## A SOLUTION TO AVOID ANNUAL RETIGHTENING AND TORQUE CHECKS ON BOLTED CONNECTIONS:

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Secured by  
Nord-Lock™

**Bolted by Dokka Fasteners**

**Secured by Nord-Lock**

# No Need For Retightening (NNFR)



A concept (*currently only offered in Norway*) consisting of the hardware, the knowledge and the routines required for an **amendment in the inspection and torque check routines**, implemented across the entire industry.

NOTE: ABS, Lloyds and DNG-GL will only issue exemptions on a case by case basis and will not currently issue any general exemption for NNFR



# What is No Need For Retightening (NNFR):



- STD NNFR KIT includes bolts and nuts produced by Dokka Fasteners, which have extensively controlled production process to meet the highest quality requirements (EN 14399), and are secured by original Nord-Lock SC washers.
- Nord-Lock`s washers are the only locking method in the world that have been certified by classification companies such as DNV-GL and ABS. Nord-Lock washers are recommended as best practice by DROPS and are the most certified products in their category, with some washers types being certified both by DNV-GL and ABS. Nord-Lock washers are also recommended in many major oil companies own books for safe securing of bolts.
- Bolts, nuts and the washers in a STD NNFR KIT are marked to increase traceability, with each KIT getting its own batch number as well.
- All STD NNFR KITS are preassembled to avoid incorrect installation.
- Each bolt and nut furnished in a STD NNFR KIT are fully lubricated which is important for an optimal tightened connection.
- Torque values are indicated on each STD NNFR KIT box and on the head of each bolt, to avoid incorrect tightening torque.

# Benefits of NNFR

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- NNFR means operators and owners may apply for exemption from classification societies annual torque checks of bolts, where that is required.
- Provides correctly designed joints right from the beginning.
- Increases worker safety.
- Increases operational reliability.
- Less corrective actions or bolt replacements.
- Reduces bolting costs.
- By implementing NNFR, bolted connections for new-build or replacement will achieve correct tightening performed by certified installers.
- E-learning course for installers will be provided at [www.trainingportal.no](http://www.trainingportal.no)



# Focus on Safety and Cost



- ✓ No Need For Retightening (NNFR) improves bolted connections making an NNFR equipped installation more secure against accidents and increasing worker safety
- ✓ A STD NNFR KIT from Nord-Lock and Dokka Fasteners will help operators and owners save a lot of unnecessary maintenance, prevent shutdowns and have more profitable installations.



**Bolted by Dokka Fasteners**

**Secured by Nord-Lock**

# HOW CAN WE IMPROVE YOUR BOLTING SAFETY?



[www.nord-lock.com](http://www.nord-lock.com)

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