



How much bolt load do your bolted joints have?

The problem with bolted joints has always been; how can you be sure that your threaded assemblies have achieved and/or have kept the required bolt load?

The problems

- Unequal and insufficient bolt load is in most cases reason for gasket joints to start to leak.
- During assembly gaskets get an overload to compensate later relaxation, especially with hydraulic tensioners.
- How big is the relaxation over time?
- Expensive check up and re-tightening procedures became common for high loaded bolts in important (steel) construction such as cranes and wind turbines.
- Bolts break due to fatigue issues.
- During operation bolt loads may vary. But..... how much?
- Bolts become loose.....but why?
- How can maintenance costs on bolting be reduced?
- What is the coefficient of friction?
- What is the right tool setting or best bolting procedure?

The solution

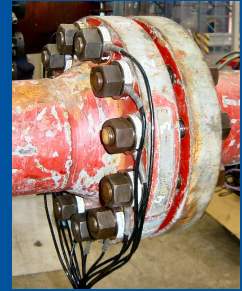
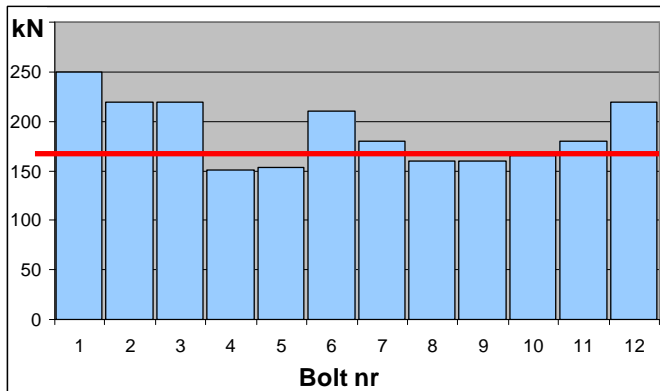
Place a BoltSafe washer between the nut/bolt head and the flange surface, and measure the actual bolt load during the assembly. This way the correct residual bolt load bolted joint is ensured. After assembly, the actual bolt load can be monitored so under/overload and expensive check ups can be avoided. With a simple test the coefficient of friction can be determined rather than assumed or guessed. The same test shows you the exact tool settings how to reach the desired bolt load.



Result

Enhanced safety, dependable joints, better control and improved cost benefit both during installation and throughout the joint's service life. The washer is suitable for torque and tensioning applications. To avoid bolting related failures was never as simple as now.

See www.boltsafe.com for some remarkable test results.



Continuous Monitoring Sensor



Periodic Monitoring Sensor

Alarming

The graph at the left shows the measured results. Alarming too low or too high can be adjusted with a network interface.



Ways to visualize bolt load:



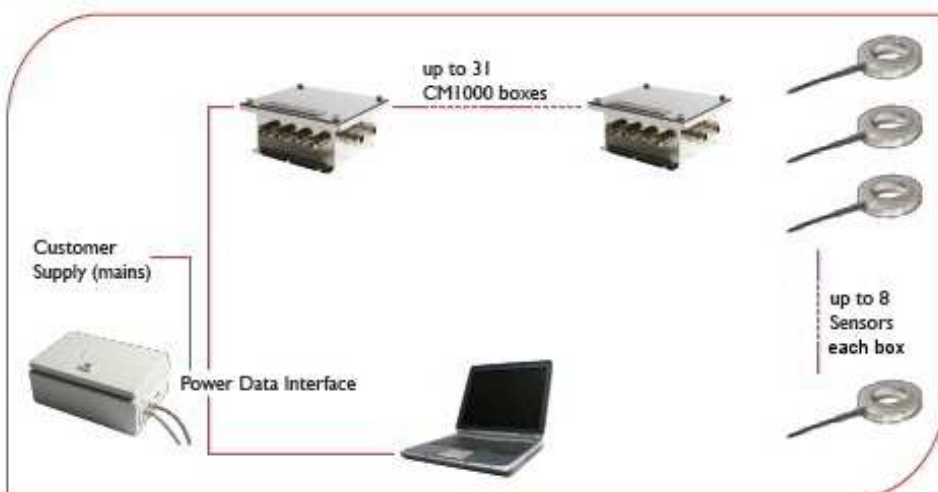
Handheld Reader

The SM-200 Handheld Reader is a handheld instrument that has the function to read and store data from both the CMS (Continuous Monitoring Sensor) and PMS (Periodic Monitoring Sensor) BoltSafe washers. For reading the PMS washer a probe is needed.



Network with PDI-NT

The PDI-NT is a connection box for interfacing the BoltSafe network. PDI-NT provides in smart coupling of the measured bolt load from the BoltSafe washers with other measured values. With the PDI-NT it is also possible to connect the BoltSafe washers to other platforms.



Network with PDI

The PDI is a connection box for interfacing the BoltSafe network to be monitored on a PC/ pocket PC with BS-2000 / BS-1000 software installed.

For more information:

BoltSafe	Platinawerf 8	Tel: +31(0)24 – 6 790 797	info@boltsafe.com
Division of Total Flange Care BV	NL – 6641 TL BEUNINGEN	Fax: +31(0)24 – 6 790 799	www.boltsafe.com