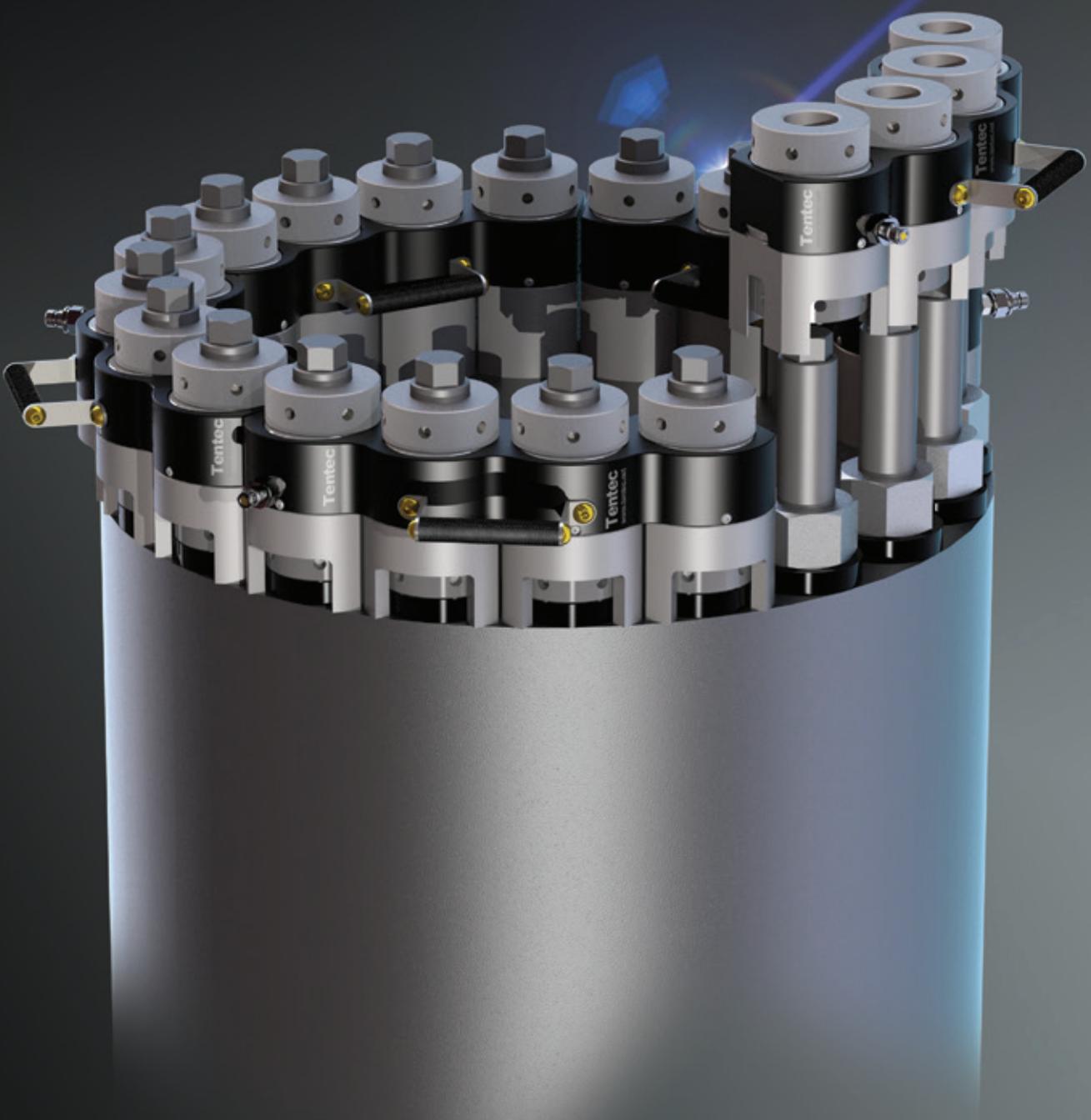


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MST - Multi Stud Tensioning Systems



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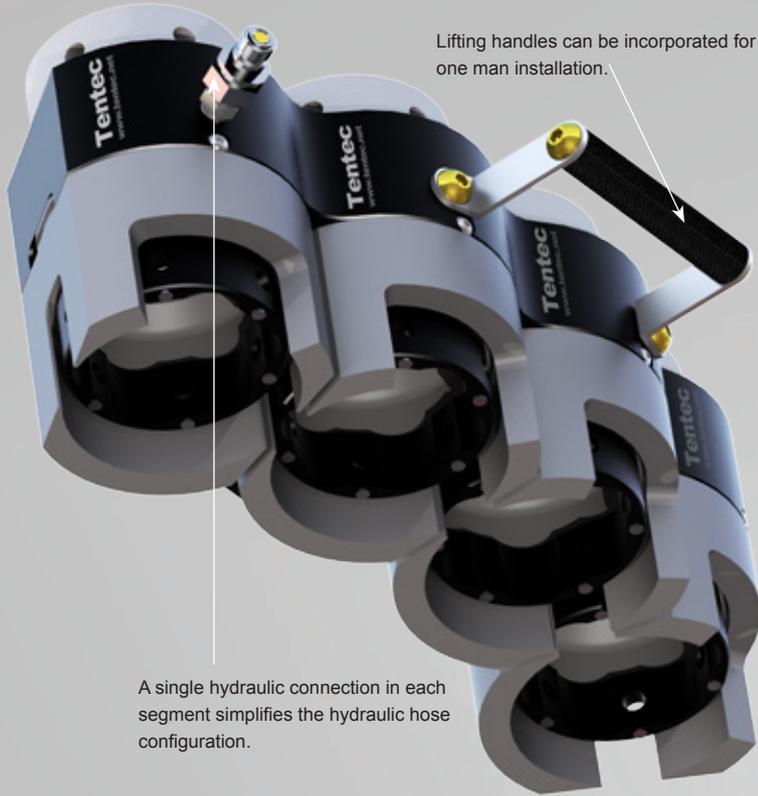
The Segmented Multi-Stud bolt tensioning System (MST) is a detachable system designed to simultaneously tension all studs on system closures such as steam generator primary and secondary manways, handwheel and valve covers. This state of the art system applies a predictable and accurate pre-load to all studs simultaneously, thus eliminating the problems normally associated

with conventional torque tightening techniques such as uneven gasket pre-loads resulting in closure leakage, galling, broken fasteners, etc.

Hydraulic pressure is applied simultaneously to each segmented stud tensioner. All frictional factors connected with conventional bolt tightening methods are alleviated since MST systems apply a direct axial force to the bolts which generates a bolt elongation. This elongation (tension) is permanently retained by means of the applications hexagon nuts.

A Complete MST consists of a number of segments. The number of segments is determined at the design stage in order to optimise the individual weigh of each segment. A typical MST segment can typically cover 4, 5 or 6 bolts therefore a conventional 16 bolt closure flange would need 4 segments, each segment simultaneously tensioning 4 bolts.

Everything about the design of a Tentec MST is included to allow for extremely rapid and simple bolt tensioning. Each segment is fitted with just a single hydraulic inlet port which means that a typical 16 bolt, 4 segment MST system uses just 4 lengths of high pressure flexible hydraulic hose to simultaneously feed the segments. This makes the hydraulic hose installation very simple and fast.



Lifting handles can be incorporated for one man installation.

A single hydraulic connection in each segment simplifies the hydraulic hose configuration.

A Typical 4 Bolt MST Segment

Profile machine cut segment profiles reduce segment weight.



MST systems are designed to order and can incorporate many bespoke design features..

Weight: In order to optimise the individual weight of each segment Tentec MST systems can be profile machine cut to remove un-necessary material.

Axial Bolt Load: Bolt load is applied axially to the bolts. Inconsistencies such as friction, bending and lubricant are not a factor when using MST systems. No torsional stresses are involved.

Rapid: MST systems offer an extremely rapid and simple method of simultaneously accurately tensioning every bolt on a closure flange. A typical application for MST's are nuclear manway covers where the elevated radioactive environment demands an extremely rapid tensioning time in order to minimise personnel exposure time.

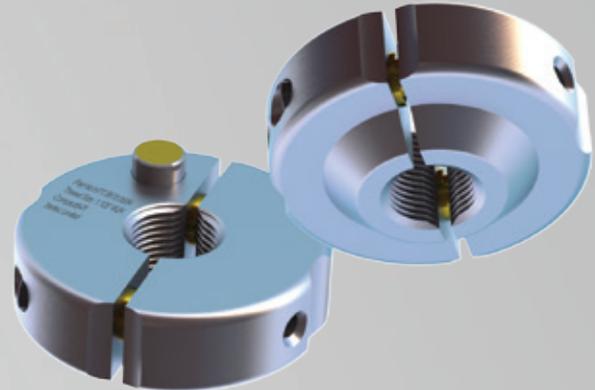
Detachable: MST systems are removed from the closure once the bolts are loaded. This allows for a single MST to be used on many identical closure joints.

Accurate: Bolt load is directly proportional to the pressure applied to the tensioner.

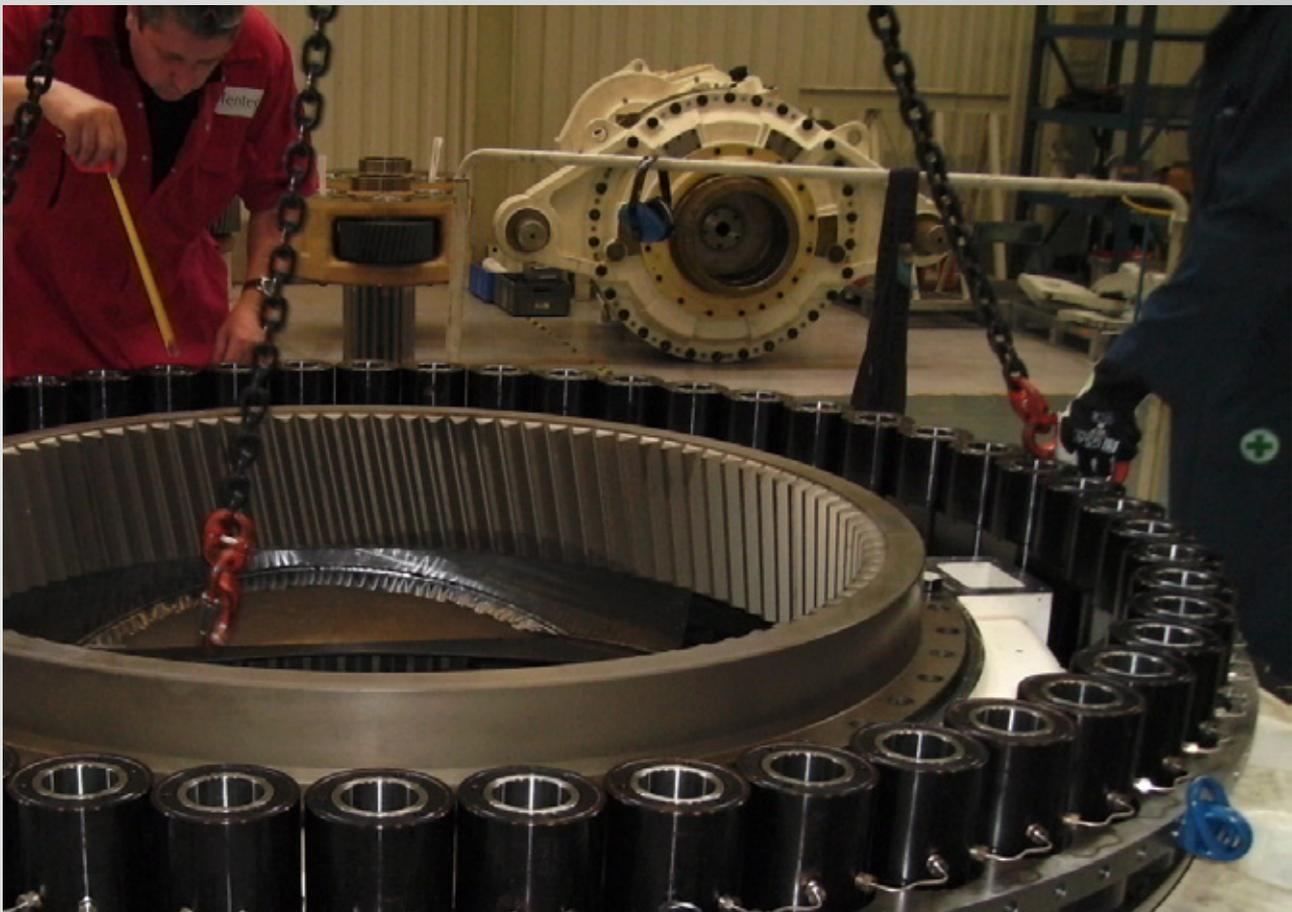
Standard Fasteners: MST systems are mostly used with standard fasteners, no special or proprietary bolting components are required.

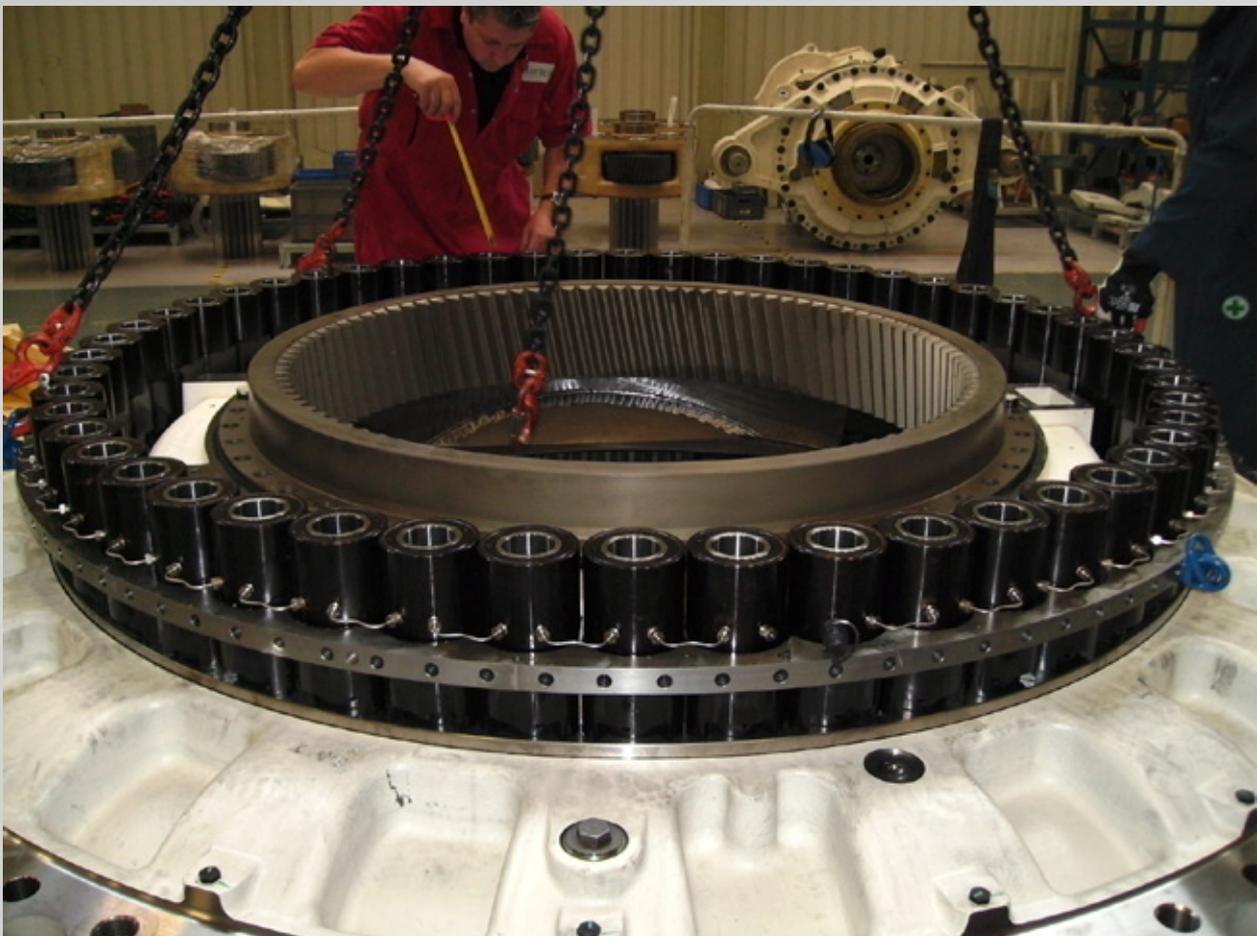
Elliptical Piston Rams: In order to maximise the space between each bolt and to achieve the correct hydraulic pressure area a special non-circular piston ram can be utilised.

Split Reaction Nuts: Tentec quick fitting Split Reaction Nuts can be incorporated into the MST design. These allow for even quicker installation and de-installation times.



Tentec Split Reaction Nuts





Tentec products are subject to continual development and we reserve the right to make changes in the specification and design of products without prior notice.



ISO 14001



BS OHSAS 18001



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