Bolt Tightening Solutions
Torque & Tension, we've got it covered
Bolt Tightening Solutions

Tentec are an innovative producer of bolt tightening equipment with a high level of focus on quality and safety. The company have Lloyds quality approvals to ISO 9001, ISO 14001 & BS OHSAS 18001.

Our Bolt Tensioning products are designed to suit diverse applications in varied working environments throughout the industrialised world. We incorporate many unique features into our products to ensure that they are simple, reliable and safe.

No matter what your preference for bolt tightening, Tentec have it covered. We offer world class standard ranges of hydraulic bolt tensioning tools, hydraulic nuts and innovative ranges of direct drive, square drive hydraulic torque wrenches.

Tentec serve tensioning solutions to most industrial sectors. Along with our general purpose tensioners and torque wrenches we also offer many industry specific bolt tightening tools and solutions.

Tentec are one of the few companies in the world to offer specially designed bolt tensioning tools for instances where standard tensioners are just not suitable. Contact Tentec and we will design a special tensioner solution normally within days of your enquiry and provide a fully detailed proposal drawing and quotation.

BTS - Bolt Tightening Software
Wind Turbine Bolt Tightening.

Fully aware of the difficulties associated with wind turbine blade tensioning, the Tentec Aero WT is a purpose designed range of hydraulic bolt tensioning tools to suit most wind turbine bolting applications. The WTB Tensioning tools have the capacity to achieve the specified proof load requirements as detailed in EN ISO 898-1:1999 and ASTM A490M for grade 10.9 Bolts. These feature packed tensioners have been designed with rapid tensioning in mind and offer a safe, reliable and consistent method to simultaneously tension many wind turbine bolts.

- Blade to Bearing
- Rear Main Bearing
- Nacelle Frame
- Front Main Bearing
- Nacelle/Yaw Bearing
- Tower Bolting
- Main Shaft to Hub
- Foundation Bolting

A selection of Tentec Aero WT tools including Aero WTB & Aero WTF bolt tensioners
Subsea Bolt Tightening

Tentec subsea bolt tensioning tools have been used in the UK North sea by most of the large bolting contractors since 1991 and have a proven reliability and safety record. The COMPACT-8 range of subsea bolt tensioning tools brings a new generation of bolting solutions.

Comprising just 8 bolt tensioning tools, the COMPACT-8 series is capable of tensioning most standard flanges including most of the newer Vector SPO* Compact flanges. The COMPACT-8 series is made from high strength stainless steel which greatly reduces maintenance work to a minimum after subsea use. The Compact-8 range of subsea bolt tensioning tools can be supplied with quick acting Split Reaction Nuts. Simply mount the tensioning tool over the bolt, slide the open reaction nut over the bolt and snap the reaction nut halves together for rapid and reliable assembly. The rapid speed of fit ensures the most efficient use of expensive diver time. The use of Tentec’s Bolt Load Software package along side the COMPACT-8 range of subsea bolt tensioning tools completely removes the complexity of calculating what pressure to operate the tensioning tools. A complete bolt tensioning project can be defined and rapid joint specific technical datasheets can be produced.
Custom Tensioner Design

Tentec are one of the few tensioning companies in the world who offer custom tensioner tool solutions. If the standard ranges of tensioners are not suitable, contact Tentec and we will design a custom tool to do the job. Tentec use the latest 3D modeling software (Solidworks) and FEA analysis software (Solidworks Simulation) to design non standard tools. Once the custom solution has been designed we offer either 2D drawings of the proposed tool or if requested we can supply 3D step files which allows our customers to import the custom tool into their 3D assembly to check fit.

Tentec recognised from the start that having the ability to rapidly design custom tensioner solutions was an important and necessary function of the company and Tentec have invested heavily in its engineering department. We aim to provide special tensioner solutions within one week of receiving the enquiry. Special tensioner tools currently make up approximately 50% of the complete business.
A World of Bolting Applications.

Oil Refinery
- High Pressure Heat Exchanges
- Pressure vessel covers
- Reactor covers
- Ammonia converters
- Urea Stripers
- High Pressure Pipe flanges
- Compressor casings

Offshore Engineering
- Flange connections
- Riser Clamps
- Sand Separators
- Slug Catchers
- Crane Bearings
- Single Point Moorings
- Vector SPO Compact flanges
- Clamps

Nuclear Power
- Steam Generator Manway Covers
- Boiler Feed Pumps
- Fuel Handling Systems
- Steam Valves
- Steam Turbine Casings

Wind Turbine
- Foundation Bolting
- Tower Bolting
- Nacelle Frame bolts
- Blade to Bearing bolts
- Main Shaft to Hub bolts.

OEM’s
- High Exchange Covers and Nozzles
- Pressure vessel covers
- Boiler feed pump covers
- Compressor casings
- Diesel engine & Compressor
- Connecting rods
- Power Presses
- Material Testing Machines
- Water Turbine casings
- Hydraulic power units

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Tentec Training

Tentec are a specialist provider of training and competence assurance programmes in the assembly and tightening of bolted connections to industries as diverse as oil & gas (onshore and offshore), power generation, construction, defence and renewable energy.

Tentec delivers training in controlled bolting in accordance with "Mechanical Joint Integrity Standards" document published by the Engineering Construction Industry Training Board (ECITB). The training standards available are MJI10 hand torque, MJI18 hydraulic tensioning and MJI19 hydraulic torque wrenches. Additional Tentec derived courses include TE12 Hydraulic Nuts and TE13 BTS-Bolt Tightening Software.

These standards are recognised by industry and recommended as the benchmark qualification for bolting personnel by The Energy Institute and other influential authorities.

Training location to suit you

Tentec offer a mobile training service as well as our own comprehensive certified training school within the Tentec facility. This gives our clients the option of either using Tentec equipment in our training school or onsite at our client's facility giving the trainee's the benefit of learning on the actual equipment they will be using on the job.

- ECITB defined training course “Mechanical Joint Integrity Standards”
- Training is given by fully certified ECITB licensed trainers
- Successful candidates are issued the globally recognised ECITB Certificate of Technical Competance. “Management of Joint Integrity”

Employer’s can selectively choose training content from a selection of disciplines:-

MJI10 Hand Torque Bolted Connections
MJI18 Hydraulic Tensioned Bolted Connections
MJI19 Hydraulic Torqued Bolted Connections
TE12 Hydraulic Nuts*
TE13 BTS-Bolt Tightening Software*

A preferred Learner/Trainer ratio of 4:1 is available.
*Optional Tentec derived training courses.

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How detachable bolt tensioners work...

**Consistent:** Using multiple bolt tensioning tools on a bolted joint gives a much improved uniform bolt load across all bolts.

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

**Rapid:** Multiple bolt tensioners offer a rapid and accurate method of tightening a bolt.

**Adaptable:** Conversion kits are available to convert a tensioner from one bolt size to another offering an economical and versatile solution.

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

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

**Simplified Calculations:** Using the Tentec BTS-Bolt Tightening Software takes away the complexity of calculating tensioner pressures and torque values.

1. The stud and nut are assembled onto the bolted joint. The two halves of the joint are pulled together.
2. The thread insert (puller) is screwed onto the bolt protrusion.
3. The nut rotating socket is assembled over the hexagon nut.
4. The tensioner is assembled over the hexagon nut.
5. The tensioner is connected to an hydraulic pump unit through high pressure flexible hose.
6. While the tool pressure is held, the hexagon nut is rotated down to the joint face and locked down tightly.
7. The pressure is released, the bolt is tensioned.
8. The tensioner can be removed.

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Global Distributor Coverage

Tentec have over 50 highly experienced distributors situated all over the world. Many distributors offer local bolt tightening advice and bolting services. Refer to the Tentec website for a distributor near you.