NORD-LOCK GROUP

SUPERBOLT MECHANICAL BOLT TENSIONING

TIGHTEN LARGE BOLTS USING EASILY MANAGEABLE TORQUES

SUPERBOLT™

WHATEVER COMES ALONG WE HOLD IT TOGETHER

In a world of heavy industry, where large machines and equipment build and shape our world — details matter. No one should ever have to question the integrity of critical bolted connections.

Superbolt revolutionized the world of nuts and bolts in 1984 with the multi-jackbolt tensioner (MJT) and since then has proven its technology with multiple successful installations. Superbolt tensioners are easy to work with and provide a mechanical advantage with their unique design, which divides the load among multiple small jackbolts. Correctly installed, MJT connections are reliable, stay tight indefinitely and disassemble easily for planned maintenance. Even the largest MJTs are safe and can be installed or removed by a single worker with ordinary hand tools.

But the revolution hasn't stopped here. Superbolt continues to develop a multitude of solutions to solve the next generation of bolting challenges.

WITH THE WIDEST RANGE OF MECHANICAL TENSIONERS ON THE MARKET AND CONSTANT GROWING PORTFOLIO – SUPERBOLT HOLDS IT ALL TOGETHER.

This Pelton wheel is just one example where millions of MJTs are used globally to secure bolts on critical applications.

Our engineers go to work each day determined to take on the world's most difficult bolting challenges.

We are the first to offer a full life cycle warranty for Superbolt technology, enabling engineers to shape modern living in the decades to come.

WE MAKE ON-SITE BOLTING JOBS SAFER, FASTER AND MORE EFFICIENT.

THE SUPERBOLT PRINCIPLE

Superbolt tensioners are designed as direct replacements for conventional nuts and bolts. These devices can be threaded onto a new or existing bolt, stud, threaded rod or shaft. The main thread serves to position the tensioner on the bolt or stud against the hardened washer and the load-bearing surface.

Once it is positioned, actual tensioning of the bolt or stud is accomplished with simple hand tools by torqueing the jackbolts which encircle the main thread.

The jackbolts transfer the preload evenly into the main thread and, consequently, onto the joint. The main thread is tightened in pure tension.

How it works

By tightening the jackbolts, a strong thrust (axial) force is generated. This thrust force is directed against a hardened washer. Jackbolts have a small friction diameter and can therefore create a high thrust force with relatively little torque input.

The loads are transferred through the nut body which is positioned on the main thread by hand.

A hardened washer is used to transfer the force while protecting the flange face.

The thrust (axial) force of jackbolts and the opposite reaction force of the main bolt head create a strong clamping force on the flange.

The thrust (axial) force from the jackbolt creates an equally strong reaction force in the main bolt.

BOLT TENSIONING MADE SIMPLE

Superbolt products meet the industry's highest standards. They are manufactured at our state-of-the-art facilities in Pittsburgh, Pa., USA, and St. Gallenkappel, Switzerland, where advanced CNC machining allows exceptional precision and quick turnaround. Most standard products are available off-the-shelf or within short lead times.

Quality and environmental certification

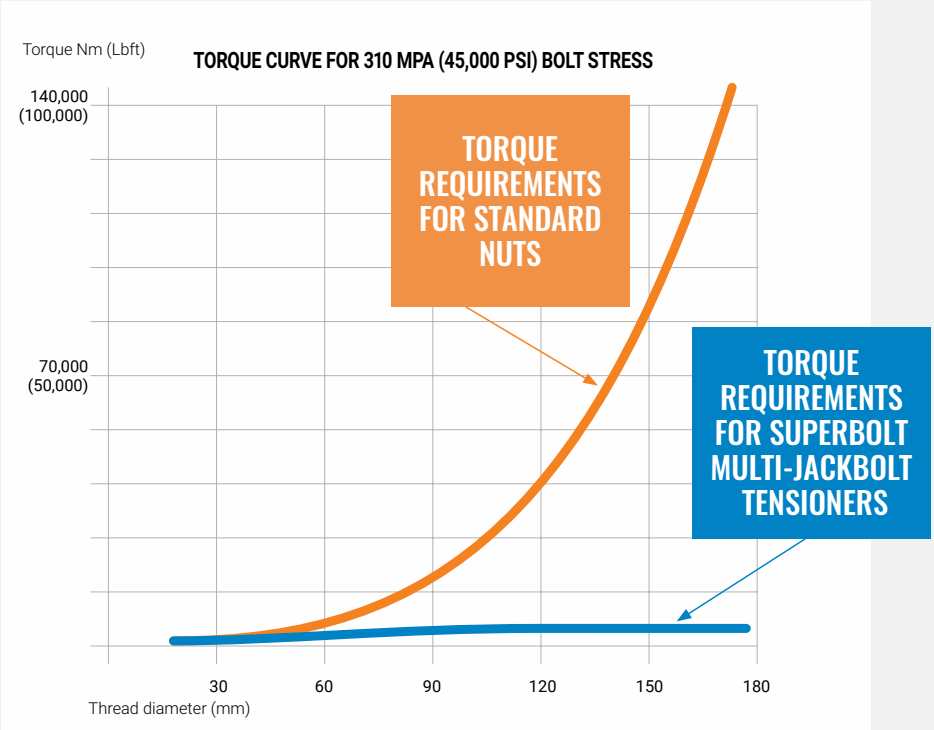
Quality control, including thread-gauging and measurement systems, are standard operating procedure, and every MJT is marked for traceability. We incorporate the latest technology and safety features into our designs.

The industry's first full Lifetime Warranty

You can trust our products, which is why we introduced the industry's first full lifetime warranty. This guarantees that our Superbolt products will stay in place and fulfill their function for the entire lifetime of the bolted connection.

Our business has achieved various levels of certification including:

- DNVGL ISO 9001 : 2015
- QS ISO 9001 : 2015
- DNVGL Type Approval for MT & CY series



The chart shows how Superbolt tensioners remain easy to install, even on larger sizes, compared to standard hex nuts. Only hand tools are required to tighten any diameter stud/bolt.

A FULL LIFESPAN OF ADVANTAGES

WE WORK CLOSELY WITH YOU

DESIGN

Higher preload
Tightening in pure tension allows higher preloads with greater accuracy than other methods, making Superbolt MJTs the ideal choice.

Better bolted joint
Generating preload high enough above the separating forces means no loosening on properly designed joints.

Custom solutions
Custom products tailored to your application can accommodate demanding preload requirements, space restrictions, or harsh environments.

Design options
High preload capacity and greater accuracy make smaller bolts feasible for your design. Reduced dimensions and tooling sizes can mean smaller devices that use less material and cost less to build.

INITIAL INSTALLATION

Hand tools only
A single worker can torque or un-torque the most massive Superbolt assemblies with ordinary hand tools.

Greater safety
Superbolt tensioners eliminate dangerous pinch points, heavy-equipment lifts, or tool-shattering stresses.

Fewer space limits
Multi-jackbolt tensioners are easier to install in confined spaces.

Reduced cycle time
You can tighten or remove Superbolt tensioners in a fraction of the time compared to other methods. Two or more technicians can work side-by-side using hand-held tools (either air or electric), further reducing cycle time.

OPERATION

Higher vibration resistance
Preloads that exceed separating forces prevent bolts from vibrating loose.

Accurate tensioning
Accurate, even tension from joint to joint ensures even loading and reduces the risk of leakage.

Greater realibility
Accurate preloads prevent joint loosening, minimizing fatigue and prolonging bolt life.

Reduced down time
Properly designed and tightened joints stay secure in service, limiting maintenance-related downtime.

MAINTENANCE

Easy inspection
Torque checks can be done safely and easily, using only hand tools.

No galling
Tightening in pure tension eliminates thread galling that is common with direct-torque methods.

Quick disassembly
Easily removed MJTs reduce the expense of extended downtime associated with standard bolting methods.

Reusability
Superbolt tensioners are reusable. Preload can be restored anywhere with simple hand tools.

CUSTOMER

DESIGNED FOR YOUR BOLTING CHALLENGES

SUPERBOLT SOLUTIONS GUIDE

STUD BOLTS

Superbolt nut-style tensioners can be used on studs into blind-tapped holes. Tightening in pure tension means studs will not gall in the tapped hole and can be easily removed.

Products available

- MT, CY, GT, GTS
- Studs
- And more

TAPPED HOLES

Superbolt bolt-style tensioners are often used into blind-tapped holes. MJT bolt heads are more compact and fit into tighter areas; additionally they reduce the number of parts.

Products available

- SB8 standard & SB12 high strength

THROUGH-HOLES

A common application of double-ended studs use Superbolt nut-style tensioners and a reaction nut (Flexnut) on the other end. Flexnuts add elasticity to the stud, increasing the fatigue life.

Products available

- MT, CY, GT, GTS
- Studs
- Flexnuts
- And more

COUNTER BORES

Superbolt bolt-style tensioners can be provided to fit completely into small counterbores. An internal installation removal hex allows for easy turning into position.

Products available

- SSJX compact/ low-profile bolt-style tensioners

STANDARD NUT- AND BOLT-STYLE TENSIONERS

When it comes to standard nut- and bolt-style tensioners, Superbolt has got you covered for a myriad of applications across all industries. Available in a wide range of sizes (often from M16 through M160). Additionally, many of these tensioners are able to be specially designed and incorporate anti-corrosion protection.

GT
ISO 898-2 Class 8 Replacement High-strength Nut-style Tensioner

The GT mechanical tensioner is ideal for medium- to high-strength studs and bolts. It is suited for the toughest applications, enabling you to achieve high bolt loads safely and with ease. Compatible with 8.8, 10.9 or equivalent-grade studs and bolts.

Applications Mining equipment, presses, anchor bolts, gear boxes, compressors etc.

Size range	M16-M160	3/4"-6"
Approx. bolt stress depending on size	400 to 1000 N/mm²	60 to 145 ksi
Temperature range	-40 to 250 °C	-50 to 500 °F
	Lower temp. on request	

GTS
ISO 898-2 Class 10 Replacement Super High-strength Nut-style Tensioner

The GTS is similar to the GT but is designed for ISO 898-2 Class 10 Replacement for use on grades 10.9, 12.9 or equivalent studs and bolts.

Applications Mining equipment, presses, anchor bolts, gear boxes, split gears, wind turbines etc.

Size range	M16-M100	3/4"-4"
Approx. bolt stress depending on size	400 to 1200 N/mm²	60 to 175 ksi
Temperature range	-40 to 250 °C	-50 to 500 °F
	Lower temp. on request	

MT
Standard Nut-style Tensioner

The MT can be used for general mechanical applications; suited for high- and medium-strength bolts and studs; fits in the same space as heavy hex nuts and feature hex-head jackbolts.

Applications Mining equipment presses, anchor bolts, pinion stands crushers, engines, compressors etc.

Size range	M16-M160	3/4"-6"
Approx. bolt stress depending on size	400 to 750 N/mm²	60 to 100 ksi
Temperature range	-40 to 250 °C	0 to 500 °F

CY
Standard High-strength Nut-style Tensioner

CY tensioners have superior capabilities due to inherent materials, making them well suited for extremely high-strength and – within limits – low-temperature applications. They fit in the same space as a heavy hex nut. They are easier to tighten and offer a higher degree of safety.

Applications Compressors & pumps, high-pressure flanges, crushers, pinion stands, gear reducers & gear boxes, presses, split gears etc. within limits, for semi-cryogenic bolting.

Size range	M16-M160	3/4"-6"
Approx. bolt stress depending on size	400 to 1000 N/mm²	60 to 145 ksi
Temperature range	-40 to 250 °C	-50 to 500 °F
	Lower temp. on request	

H650
Medium-temperature, Nut-style Tensioner

The H650 can replace standard hex nuts at temperatures up to 350 °C (650 °F). Preload and torque values are based on a bolt stress of 310 MPa (45,000 psi), the value most commonly used by pressure-vessel designers. Depending on operating temperature, jackbolt torque and preload may be increased.

Applications Boiler feed pumps boiler circulating pumps, reactors heat exchangers, valves etc.

Size range	M20-M125	3/4"-5"
Approx. bolt stress depending on size	310 N/mm²	45 ksi
	Based on stress area AS	
Temperature range	-10 to 350 °C	-50 to 650 °F

H650T
Medium-temperature, Tall Nut-style Tensioner

The H650T is ideal for use where space is limited and can replace most acorn and castle nuts at 350 °C (650°F) for tight spaces. Preload and torque values are based on a bolt stress of 310 MPa (45,000 psi).

Applications Split lines on: turbines, engines, pumps, compressors etc.

Size range	M24-M100	1"-4"
Approx. bolt stress depending on size	310 N/mm²	45 ksi
	Based on stress area AS	
Temperature range	-10 to 350 °C	-50 to 650 °F

SB8
Standard Bolt-style Tensioners

SB8 bolt-style tensioners replace standard large diameter hex-bolts. They provide multi-jackbolt features for applications with tapped holes, or where threading a stud into a nut would be impractical. The outside diameter is smaller than that of a nut-type tensioner on a stud, allowing them to fit tighter areas with an external hex for installation and removal.

Applications Gear boxes, mining equipment, pinion stands, clamp-type flange connections, propeller blades, hydraulic cylinders etc.

Size range	M16-M160	3/4"-6"
Approx. bolt stress depending on size	350 to 650 N/mm²	50 to 95 ksi
Temperature range	-10 to 250 °C	0 to 500 °F

SB12
High-strength Bolt-style Tensioners

The SB12 bolt-style tensioners are similar to the SB8 but offer higher strength than the standard range.

Applications Gear boxes, mining equipment, pinion stands, clamp-type flange connections, propeller blades hydraulic cylinders, testing equipment.

Size range	M20-M90	3/4"-3-1/2"
Approx. bolt stress depending on size	550 to 850 N/mm²	80 to 125 ksi
Temperature range	-10 to 250 °C	0 to 500 °F
	Lower temp. on request	

COMPACT/ LOW-PROFILE TENSIONERS

Height restrictions in applications make it difficult to preload joints adequately. That's why Superbolt developed our range of low-profile tensioners, bringing all the advantages of a traditional MJT in a compact design.

SJ
Standard Low-profile Jamnut Tensioner

SJ tensioners are used for applications involving limited headroom or thread engagement. They offer the advantages of MJTs: simple tightening and loosening, and high safety against loss of pre-tension.

Applications Hydraulic cylinders, shaft mounts, piston connections etc.

Size range	M20-M160	3/4"-6"
Approx. bolt stress depending on size	100 to 450 N/mm²	15 to 65 ksi
Temperature range	-10 to 250 °C	0 to 500 °F

SJX
High-strength Low-profile Jamnut Tensioner

SJX tensioners are used for applications where a high pre-load is required. They can replace normal quality 8 hex nuts while requiring less space. Due to the MJT system they are much easier to tighten and there is less risk against loss of pre-tension.

Applications Hydraulic cylinders, shaft mounts, piston connections, foundations etc.

Size range	M20-M16	3/4"-6"
Approx. bolt stress depending on size	300 to 650 N/mm²	45 to 95 ksi
Temperature range	-10 to 250 °C	0 to 500 °F

NM/NI
Bearing Locknut Tensioner

NM/NI tensioners are interchangeable with standard DIN 981 and KM locknuts. Ideal for jacking bearings into place. They can also clamp whole shaft assemblies. In addition to standard locknuts, the NM/NI provides a true pre-load, reducing the risk of failure. They are designed to match the bearing loads of the respective bearing sizes.

Applications Common bearings.

Size range	M30-M160	1"-6-1/4"
Approx. bolt stress depending on size	20 to 90 N/mm²	3 to 15 ksi
Temperature range	-10 to 250 °C	0 to 500 °F

SMX
Mill Motor Nuts Tensioner

SMX tensioners replace the standard mill motor armature nuts supplied by motor OEMs. SMX tensioners are available for most standard motor frame sizes. Their preloads match the hub stress capacities of brake wheels and pulleys.

Applications Secure brake wheels, couplings, and pulleys to mill motor armature shafts.

Size range	M30-M160	1"-4"
Approx. bolt stress depending on size	100 to 250 N/mm²	15 to 35 ksi
Temperature range	-10 to 250 °C	0 to 500 °F

SSJX
Compact/Low-profile Bolt-style Tensioners

SSJX bolt-style tensioners offer multi-jackbolt features that match the countersink dimensions of standard socket-head cap screws which are difficult to tighten. In spite of limited pre-load capacity they offer high safety against loss of pre-tension due to their multi-jackbolt design. Moly-lubricated set screws are included.

Applications Gear boxes, BOF applications, mining equipment, pinion stands, clamp-type flange connections, wind tunnels, machine tools, presses etc.

Size range	M20-M100	3/4"-4"
Approx. bolt stress depending on size	350 to 800 N/mm²	50 to 115 ksi
Temperature range	-10 to 250 °C	0 to 500 °F

TENSIONERS FOR DYNAMIC APPLICATIONS

Generating correct preload forces for compressors and rotating equipment can be especially demanding. Superbolt tensioners for dynamic applications incorporate an added safety design feature — captive machinery-style jackbolts. Gain a competitive advantage with CN Series cross-head jamnuts for reciprocating compressor crossheads: requiring only simple hand tools and featuring an easy-to-follow installation procedure.

MR

Captive Jackbolt Tensioner for Dynamic Applications

MR tensioners meet the special requirements for high-speed rotating machinery. The jackbolts are captively mounted, eliminating accidents from catapulted parts.

Applications Bolted joints on high-speed machinery such as couplings motors, turbines etc.

Size range	M16-M125	3/4"-5"
Approx. bolt stress depending on size	300 to 550 N/mm²	45 to 80 ksi
Temperature range	-10 to 250 °C	0 to 500 °F

MRA

Armored Captive Jackbolt Tensioners

MRA tensioners have recessed jackbolts into the nut body to protect them mechanically from damage and to reduce noise. The jackbolts are captively mounted within the tensioner body to stop them from becoming free and causing damage. They are armored for harsh environments to meet the special requirements for high-speed rotating machinery.

Applications Bolted joints on high-speed machinery such as couplings motors, turbines etc.

Size range	M20-M125	3/4"-5"
Approx. bolt stress depending on size	350 to 650 N/mm²	50 to 95 ksi
Temperature range	-10 to 250 °C	0 to 500 °F

CN

Compressor Crosshead Jamnuts

CN reciprocating compressor crosshead jamnuts are safe and easy to install or remove. Designed in collaboration with a major compressor manufacturer, they incorporate Superbolt captive jackbolts as an added safety feature. An extra-wide bolt circle positions jackbolts away from the piston rod for better wrench clearance.

Size range	M36-M160	1-1/2"-6"
Approx. bolt stress depending on size	210 N/mm²	30 ksi
Temperature range	-10 to 250 °C	0 to 500 °F

SP

Compressor Piston-end Nuts

Custom-designed, nut-style tensioners are ideal for compressor pistons to piston rods. No need to clamp the rod when installing or removing piston-end nuts, which incorporate captive jackbolts as an added safety feature. Specially designed to match counterbore dimensions of the piston-end nuts they replace.

Size range	M36-M160	1-1/2"-6"
Approx. bolt stress depending on size	210 N/mm²	30 ksi
Temperature range	-10 to 250 °C	0 to 500 °F

REACTIVE SIDE SOLUTIONS

SX8

Standard Flexnuts

SX8 Flexnuts are suited for use with SB8 bolt-style tensioners or in conjunction with through-studs and MT nut-style tensioners.

Applications Gasketed flanges, mining equipment, split gears presses, test equipment.

Size range	M20-M160	3/4"-6"
Approx. bolt stress depending on size	400 to 750 N/mm²	60 to 100 ksi
Temperature range	-10 to 250 °C	0 to 500 °F

SX12

High-strength Flexnuts

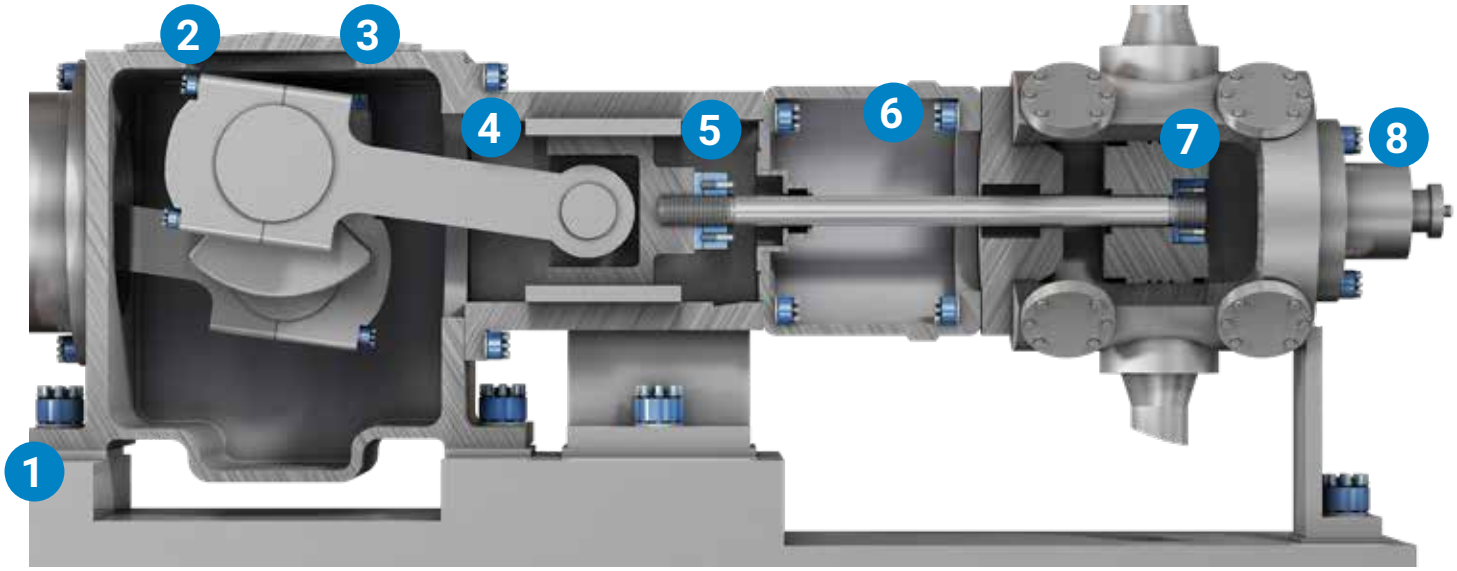
SX12 Flexnuts are suited for use with SB12 bolt-style tensioners or in conjunction with through-studs and CY nut-style tensioners.

Applications Gasketed flanges, mining equipment, split gears presses, test equipment.

Size range	M20-M160	3/4"-6"
Approx. bolt stress depending on size	400 to 1000 N/mm²	60 to 145 ksi
Temperature range	-40 to 250 °C Lower temp. on request	-50 to 500 °F

SX8 and SX12 Flexnuts are able to flex elastically. Under load, Flexnuts flex out at the bottom and in at the top. This helps relieve stress concentration in the main thread and increases the fatigue life of the bolt. Flexnuts are used for applications where bolt fatigue is a concern or failures have occurred due to fatigue. They are also great for gasketed joints where temperature fluctuations and leakages occur. Flexnuts are reactive nuts, designed to be applied opposite Superbolt tensioners. They are never torqued directly to achieve preload.

BOLT-INTENSIVE COMPRESSORS



1. Foundation Bolts **2.** Connecting Rods **3.** Main Bearing **4.** Crosshead Housing **5.** CN Tensioner on Crosshead **6.** Distance Piece **7.** SP Tensioner on Piston **8.** MT Tensioner on Cylinder Heads

ACCESSORIES AND CONSUMABLES

The wrong parts, tools, and materials can reduce the function of Superbolt tensioners or cause direct and indirect damage. You can protect your investment in safe bolted connections by using high-quality, Superbolt-recommended accessories and consumables.

Protective Caps – PVC

PVC protective plastic caps protect tensioners from environmental influences like dust, humidity, etc. They fit snugly over the outside diameter and are available for most sizes up to M160. If filled with grease, even greater protection is possible over a longer time. When used under dynamic conditions, we suggest securing the caps with cable ties or hose clamps. The caps can be used at limited temperatures on almost all Superbolt Tensioners.

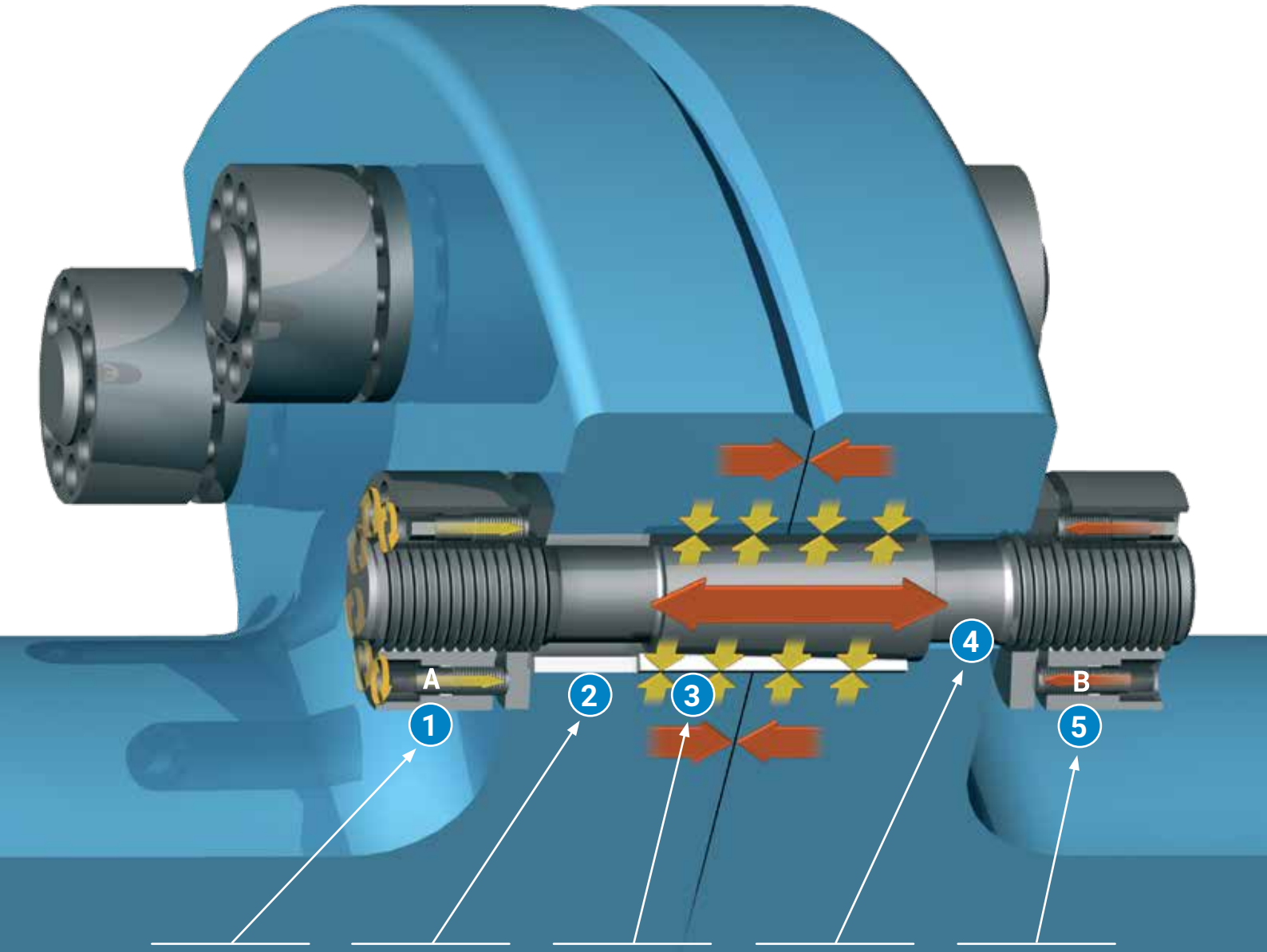
Protective Caps – Stainless Steel (available on request)

Stainless steel protective caps protect tensioners from damage in hostile environmental situations such as dust, humidity etc. as well as protection against physical damage. The restraining strap is firstly located between the washer and the tensioner body. The loose fitting cap is then placed over the tensioner and secured by means of the top bolt. For dynamic applications we suggest additional measures.

Sockets and Torque Wrenches

Heavy sockets as used on power tools are best suited for tightening Superbolt jackbolts. As a service for our customers, a selection of such sockets are available. Designed to suit the application, they offer both high safety and long life.

Available upon request
Lubricants
Special sockets
Extensions
Torque wrenches
Power tools
Torsion bars
Pneumatic/electric wrenches



1 Tensioner "A" pulls the tapered stud into the expanding tapered sleeve which is split, thus generating a radial force.

2 The spacer centers the split tapered sleeve relative to the split line.

3 The split tapered sleeve creates a radial pre-load and transfers the external torque.

4 The tapered stud transfers the forces required for the radial and axial frictional contacts. At the same time, it offers an additional form closure when over-loaded.

5 Tensioner "B" pulls the coupling flanges together, thus generating an axial clamping force. It is also used in the removal process for easy removal of the assembly.

EXPANSION BOLTS: SIMPLER, LOWER-COST BOLT REPLACEMENT

Expansion bolts are able to offer tremendous radial expansion and joint clamping force in one bolting system. Expansion bolts can replace traditional interference or force-fit bolts. The key to this solution is the split expansion sleeve that mates with the customer's machined holes. The split sleeve requires less tolerance on mating parts than is traditionally required with interference fit, saving critical machining time.

EBC – Through bores

EBB – Blind holes

EzFit expansion bolts are radially expanding, axially tensioned coupling bolts. Replacing traditional fitted bolts, which are difficult to install and dismantle, ease of installation and removal is guaranteed. Due to the radial pre-load, the joint experiences an increase in rigidity, therefore eliminating micro-movements on the split flange. EzFit are fully mechanical elements, easy to maintain and are totally re-usable.

HyFit – the hydraulically operated expansion bolt – has been designed to address safety concerns expressed by many current users of hydraulic coupling bolts. In addition to providing a solution for coupling maintenance where standard-type "fitted" bolts cause major outage delays, its application solves most large coupling bolt issues in a totally unique package. It can deliver high-performance torque transmission for critical-load rotating shafts and couplings. It's an advanced solution for every coupling that requires truly fitted bolts which will improve efficiency and reduce maintenance costs.

LARGE DIAMETERS & HIGH PRELOAD

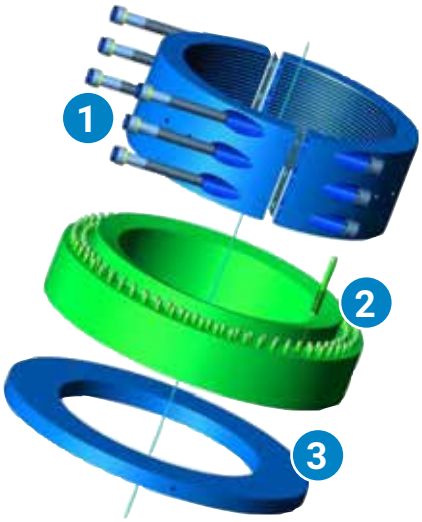
Other bolting methods are heavily challenged to solve the many bolting problems found in giant machines such as forging presses, cranes, or mining machines. All of these have large diameter nuts and bolts over M100 (4 inch) that require extremely high preloads.

Superbolt products allow you to achieve even the highest preloads. Thread diameters of 1.5 M (60 inch) and with clamp ranges up to 90 MN (20 Mlbf) have been produced.

Superbolt STC

Innovative and easy to use Split-nut Thrust Collar (STC) tensioners are the perfect solution for large-sized threads and high preload requirement applications.

A threaded split nut (1) is positioned over a threadless ring (2). When tightened, the jackbolts – which are contained in the ring – push against a hardened washer (3) and cause the ring to thrust against the split nut, thereby preloading the joint. The installation is quicker and with less heavy turning equipment.



THE SUPERBOLT TOOL
WORK SMARTER. NOT HARDER.

Multi-jackbolt Tightening Tool (MJTT)

The Superbolt Tool allows the user to tighten all the jackbolts on an MJT simultaneously, speeding up the tightening process considerably. This can benefit those who use a high number of MJTs and/or those who have frequent maintenance schedules, as the tool considerably reduces installation and removal times. It provides fast and accurate application of torque to multiple jackbolts; this maintains accurate bolt loading and provides even jackbolt load application.

The Superbolt Tool drive is supplied with an interchangeable cassette system for various tensioner sizes and functions which can be specially designed for a single application.

Advantages

Fast tightening and untightening minimizes production and maintenance schedules

- Improved maintenance planning maximizes revenue
- Use of existing input tooling ensures quality assurance programs remain unaffected
- Increased safety as pinch points have been designed out
- Lightweight, modular equipment for easy handling

Applications

Used on a wide array of applications where high quanitities of MJTs of the same size or frequent maintenance is needed

Two technologies in one system

Incorporating the strengths of both Superbolt mechanical and Boltight hydraulic tensioners, the groundbreaking new VersaTite Hydraulic Mechanical Tensioner allows you to attain the speed and uniformity of a hydraulic tensioner with the high load capability and accuracy of a mechanical tensioner. The design lets you accurately control the final preload mechanically by applying torque to a system of jackbolts. Removal method is up to you – mechanically or hydraulically.

UNIQUE DESIGNS TO YOUR SPECIFICATION

CUSTOMIZED SOLUTION EXAMPLES

When off-the-shelf parts just won't do the job, you can rely on the Superbolt Technical Center to design and manufacture exactly what you need. We respond fast to keep your downtime to a minimum and get your equipment back up and running safely, efficiently, and cost-effectively.

From our standard range, our pre-engineered range or customized solutions, we have the know-how to provide the right design for your application. The following are just a few examples of what we can do.

OFFSHORE/ SUB-SEA

Superbolt offers a unique combination of features built into this specialized multi-jackbolt tensioner for offshore bolting applications.

It incorporates three key features:

1. The washer is captive to the nut body to prevent loss of the washer
2. Corrosion protection to address the harsh conditions
3. Integral flats on the nut for turning assistance on difficult stud threads

TAMPER-PROOF TENSIONERS

Superbolt offers a tamper-resistant jackbolt design. The tamper-resistant jackbolts are a product improvement for Superbolt's MJT bolting system and are intended for use in security-sensitive applications. Tamper-resistant jackbolts are designed to protect MJTs from unwanted tightening and loosening. They utilize an abnormally shaped head set in a counter-bore hole, which requires a special tool attachment to torque or un-torque the jackbolts.

EXTERNAL THREADED TENSIONERS (ETT)

An ETT is an externally threaded tensioner that provides a pushing force for loading or sealing a mating piece (compression member). Unlike conventional nut-style tensioners with an internal threaded portion and machined-surface outer diameter, an ETT has its threads machined onto the outer diameter. The ETT can be solid or hollow (i.e. bored center hole but unthreaded). The ETTs use multi-jackbolt technology to generate compression loads for assembly components in machinery. They are simply turned into position.

A large hex or some other provided turning tool is used to facilitate nut turn-down. The jackbolts, which are tightened to a prescribed torque with low-energy handheld tools, push directly against the loading piece. Strong compression or sealing forces are generated.

HIGH- AND LOW-TEMPERATURE TENSIONERS

Extreme temperatures increase the complexity of bolting. Superbolt products are available in solutions to meet temperature ranges of -270 °C (-450 °F) to 600 °C (1150 °F). Due to the complexities of low- and high-temperature bolting, Superbolt offers a variety of solutions based on the temperatures and code requirements. Such cases are often found in power or petrochemical plants where extremely low temperatures (liquid hydrogen, fusion reactors, etc.) and extremely high temperatures (combustion chambers, turbines, steel mills, furnace equipment) exist.

CUSTOMIZED STUDS

Although the majority of our business revolves around top-quality Superbolt tensioners, we also offer one-source shopping for your entire joint hardware. With our comprehensive threading know-how and extensive inventory of gaging equipment, Superbolt can offer customized studs to meet and deliver a complete bolted package. Why not choose a Superbolt nut-style tensioner, stud and flexnut kit?

Sizes from M16 to over M300 are possible and in a wide variety of materials. We have rolled thread capability and can handle many thread configurations and standards (ISO, DIN, ANSI, Whitworth, Acme, Trapezoidal, and Buttress).

MATERIAL REQUIREMENTS, ENVIRONMENTAL & CORROSION PROTECTION

No matter the environment, Superbolt has plenty of product-enhancing options to keep things protected. From stainless steels to various coatings, we can meet your requirements in humid environments, offshore and salt water splash zones or chemical exposure. In addition to corrosion protection, coatings can be beneficial for various purposes, e.g., color-coding, durability and conductivity enhancement, as well as friction control.

Material Requirements

Stainless materials adapted for the specific requirements

- Martensitic
- Austenitic
- Duplex
- Precipitation hardened
- Inconels & Monels

Environmental & Corrosion Protection

Coatings and platings including

- Electroless nickel
- Xylan
- Zinc
- Black oxide
- Zinc flake

TECHNICAL CENTER

Technical centers and seminars

You are welcome to visit our offices and technical centers for a tour, or to attend seminars about bolted joints. For more information contact your local Superbolt representative.

On-site training

We share our knowledge and experience of best bolting practices with your team.