

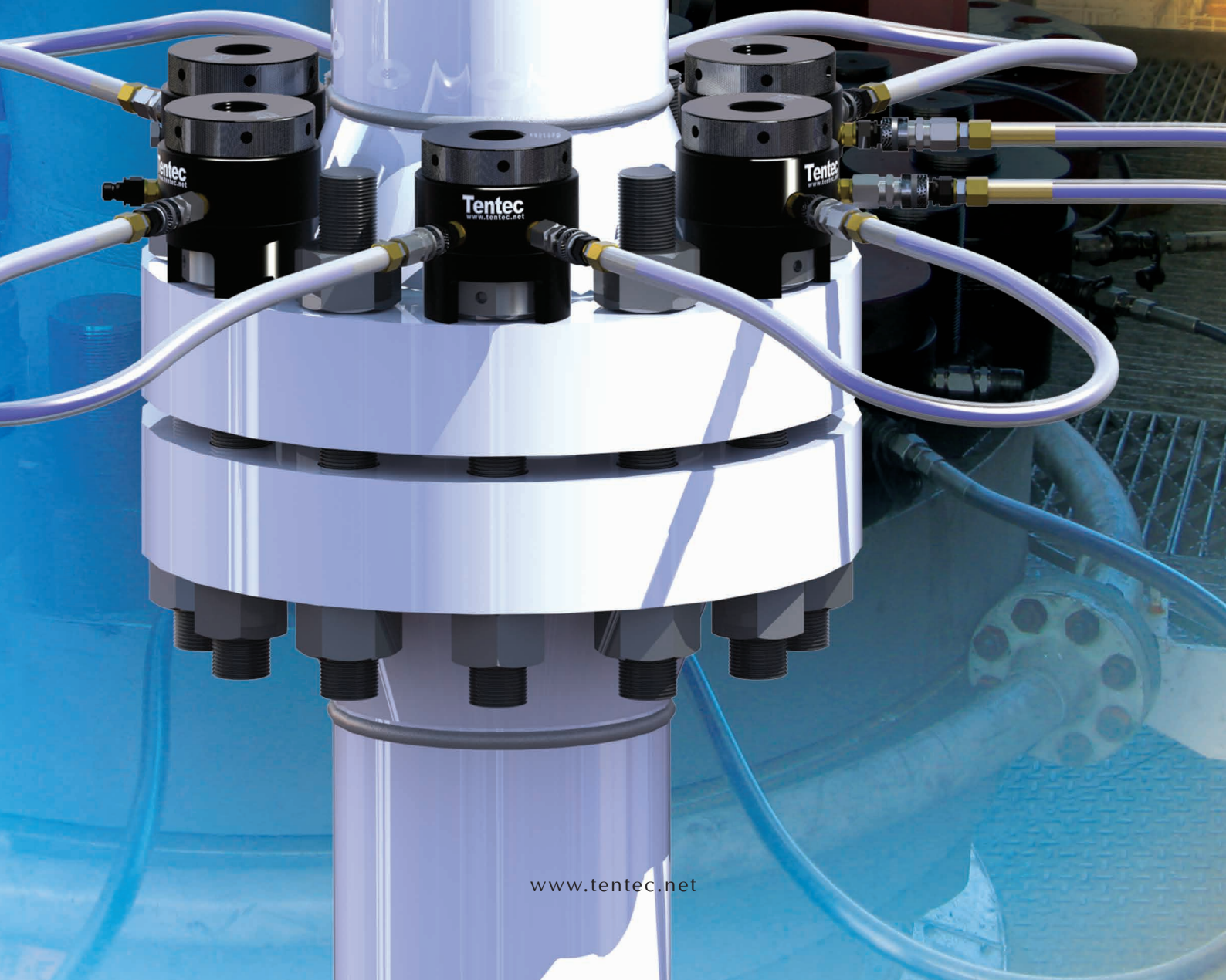
Tentec

— Part of the Atlas Copco Group

Custom Tensioners
Available on Request.

CTST : Topside Bolt Tensioning

Model: CTST 9000 Series



www.tentec.net

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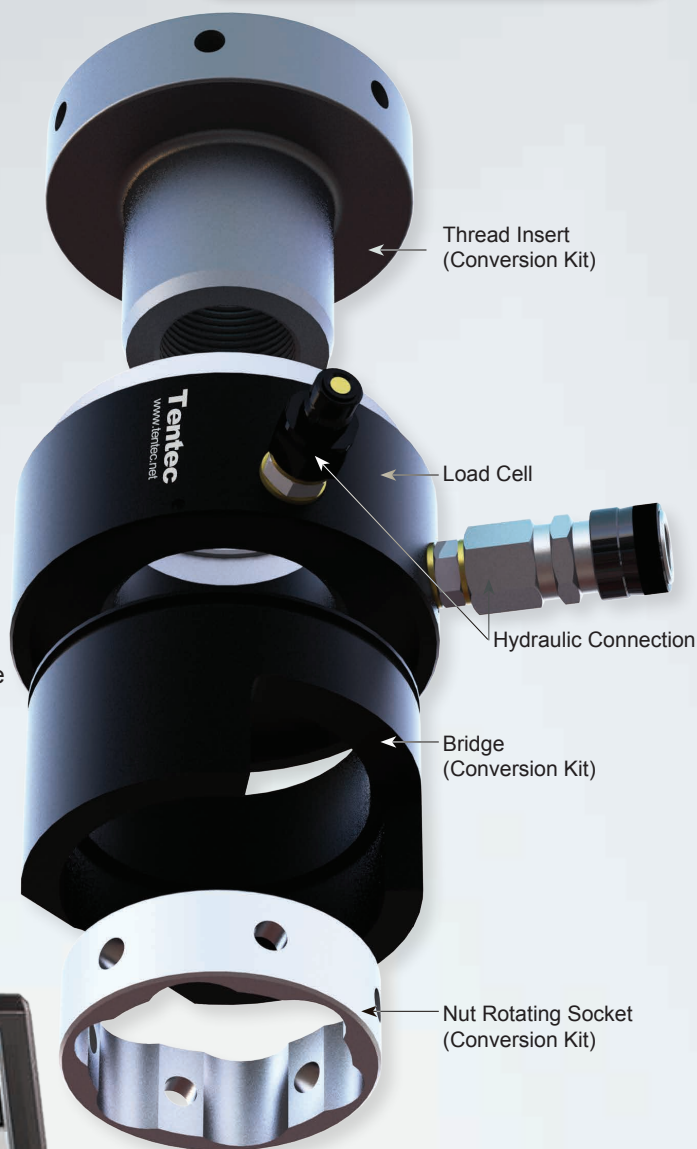
The CTST range of topside bolt tensioning tools from Tentec consist of 6 base tools covering bolt sizes from 3/4" to 4" (M20 to M100). The tools are designed to fit on to most ANSI B16.5, ANSI B16.47 Series 1, MSS-SP44, API-6A and API-17D flanges. Each base tool can be converted for use on a different bolt size by the use of a conversion kit.

Consistent, Dependable and Safe

- **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.

To Suit Fange Specifications:

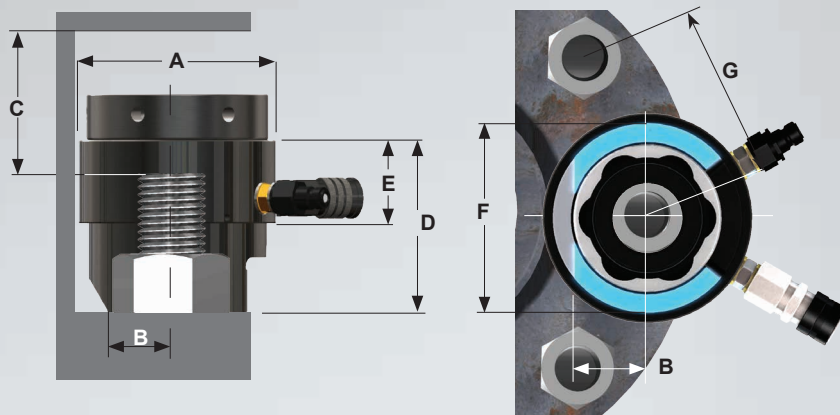
ANSI B16.5
ANSI B16.47 Series A
MSS-SP44
API-6A
API-17D



BTS-Software

The use of Tentec's Bolt Load Software package along side the CTST range of 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 data sheets can be produced with all the information that the operator of the equipment needs to successfully tighten the bolted joint.





Maximum Working Pressure =
21750 psi : 1500 bar

Non standard metric pitch tensioners
available on request.

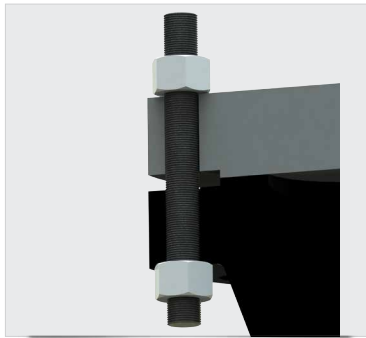
Technical Specifications

| Tool | Part No | Thread Size | | Part No | Bolt Load | | Ram Area | | Stroke | Weight | A | B | C | D | E | F | G | Metric Conversion Kit | Inch Conversion Kits | |
|-------|---------------|-------------|---------|---------------|-----------|--------|----------|----------|--------|--------|-------|-------|--------|-------|----|-----|-------|-----------------------|----------------------|--|
| Ident | Imperial | Inch | mm | Metric | Kn | Ton | In² | mm² | mm | kg | mm | | | | | | | | | |
| 1 | HTT.9551:0750 | 3/4"-10UNC | M20x2.5 | HTT.9551:M20 | 227.81 | 22.86 | 2.354 | 1518.76 | 10 | 2.0 | 73.50 | 21.0 | 67.00 | 71.0 | 45 | 62 | 49.5 | HTT.9551.521 | HTT.9551.536 | |
| | HTT.9551:0875 | 7/8"-9UNC | M22x2.5 | HTT.9551:M22 | | | | | | 1.9 | | 24.0 | 64.00 | 71.0 | | 63 | 53 | HTT.9551.523 | HTT.9551.580 | |
| | HTT.9551:1000 | 1"-8UN | M24x3 | HTT.9551:M24 | | | | | | 1.9 | | 24.0 | 69.00 | 78.0 | | 69 | 58.5 | HTT.9551.525 | HTT.9551.502 | |
| | HTT.9551:1125 | 1.1/8-8UN | M27x3 | HTT.9551:M27 | | | | | | 1.9 | | 24.0 | 66.00 | 79.0 | | 74 | 63.5 | HTT.9551.528 | HTT.9551.520 | |
| 2 | HTT.9552:1125 | 1.1/8-8UN | M27x3 | HTT.9552:M27 | 443.00 | 44.46 | 4.578 | 2953.69 | 15 | 4.8 | 102 | 27.0 | 85.50 | 92.0 | 54 | 82 | 67.5 | HTT.9552.528 | HTT.9552.520 | |
| | | | M30x3.5 | HTT.9552:M30 | | | | | | 4.9 | | 32.0 | 85.00 | 93.0 | | 85 | 69 | HTT.9552.532 | | |
| | HTT.9552:1250 | 1.1/4"-8UN | M33x3.5 | HTT.9552:M33 | | | | | | 4.6 | | 31.0 | 84.00 | 95.0 | | 85 | 72 | HTT.9552.534 | HTT.9552.516 | |
| | HTT.9552:1375 | 1.3/8"-8UN | M36x4 | HTT.9552:M36 | | | | | | 4.6 | | 34.0 | 84.00 | 98.0 | | 91 | 78 | HTT.9552.537 | HTT.9552.540 | |
| | HTT.9552:1500 | 1.1/2"-8UN | M39x4 | HTT.9552:M39 | | | | | | 4.7 | | 36.5 | 82.00 | 100.0 | | 90 | 80 | HTT.9552.514 | HTT.9552.511 | |
| 3 | HTT.9553:1500 | 1.1/2"-8UN | M39x4 | HTT.9553:M39 | 810.85 | 81.38 | 8.379 | 5405.70 | 15 | 9.5 | 133 | 36.5 | 98.00 | 109.0 | 56 | 97 | 83.5 | HTT.9553.540 | HTT.9553.514 | |
| | HTT.9553:1625 | 1.5/8"-8UN | M42x4.5 | HTT.9553:M42 | | | | | | 9.0 | | 37.5 | 93.00 | 107.0 | | 110 | 92.5 | HTT.9553.543 | HTT.9553.516 | |
| | HTT.9553:1750 | 1.3/4"-8UN | M45x4.5 | HTT.9553:M45 | | | | | | 9.3 | | 40.5 | 98.50 | 116.0 | | 115 | 98 | HTT.9553.546 | HTT.9553.536 | |
| | HTT.9553:1875 | 1.7/8"-8UN | M48x5 | HTT.9553:M48 | | | | | | 9.0 | | 42.5 | 95.00 | 116.0 | | 116 | 101 | HTT.9553.549 | HTT.9553.580 | |
| | HTT.9553:2000 | 2"-8UN | M52x5 | HTT.9553:M52 | | | | | | 8.6 | | 50.0 | 93.50 | 117.0 | | 120 | 106 | HTT.9553.553 | HTT.9553.502 | |
| 4 | HTT.9554:1875 | 1.7/8"-8UN | M48x5 | HTT.9554:M48 | 1273.16 | 127.78 | 13.159 | 8489.96 | 15 | 16.1 | 163 | 43.5 | 106.00 | 118.0 | 57 | 130 | 108 | HTT.9554.549 | HTT.9554.580 | |
| | HTT.9554:2000 | 2"-8UN | M52x5 | HTT.9554:M52 | | | | | | 15.7 | | 46.0 | 102.50 | 117.0 | | 124 | 108 | HTT.9554.553 | HTT.9554.502 | |
| | HTT.9554:2250 | 2.1/4"-8UN | M56x5.5 | HTT.9554:M56 | | | | | | 15.8 | | 55.0 | 103.00 | 123.0 | | 134 | 118.5 | HTT.9554.557 | HTT.9554.516 | |
| | | | M60x5.5 | HTT.9554:M60 | | | | | | 18.3 | | 54.0 | 121.50 | 145.5 | | 150 | 127 | HTT.9554.562 | | |
| | HTT.9554:2500 | 2.1/2"-8UN | M64x6 | HTT.9554:M64 | | | | | | 15.1 | | 58.0 | 102.50 | 130.0 | | 147 | 130.5 | HTT.9554.568 | HTT.9554.511 | |
| 5 | HTT.9555:2500 | 2.1/2"-8UN | M64x6 | HTT.9555:M64 | 1828.99 | 183.56 | 18.905 | 12196.45 | 15 | 22.7 | 193 | 64.0 | 107.50 | 133.0 | 60 | 147 | 130.5 | HTT.9555.565 | HTT.9555.514 | |
| | | | M68x6 | HTT.9555:M68 | | | | | | 23.6 | | 80.0 | 111.00 | 141.0 | | 160 | 138 | HTT.9555.570 | | |
| | HTT.9555:2750 | 2.3/4"-8UN | M72x6 | HTT.9555:M72 | | | | | | 24.7 | | 72.0 | 115.00 | 147.0 | | 161 | 143 | HTT.9555.573 | HTT.9555.536 | |
| | HTT.9555:3000 | 3"-8UN | M76x6 | HTT.9555:M76 | | | | | | 22.2 | | 77.0 | 108.00 | 146.0 | | 170 | 153 | HTT.9555.577 | HTT.9555.502 | |
| 6 | HTT.9556:3000 | 3"-8UN | M76x6 | HTT.9556:M76 | 2643.43 | 265.30 | 27.323 | 17627.48 | 15 | 38.5 | 233 | 77.0 | 120.00 | 153.0 | 64 | 170 | 153 | HTT.9556.577 | HTT.9556.502 | |
| | | | M80X6 | HTT.9556:M80 | | | | | | 38.3 | | 78.0 | 117.00 | 154.0 | | 178 | 155.5 | HTT.9556.582 | | |
| | HTT.9556:3250 | 3.1/4"-8UN | M85X6 | HTT.9556:M85 | | | | | | 38.1 | | 78.0 | 114.00 | 154.0 | | 182 | 165.5 | HTT.9556.586 | HTT.9556.516 | |
| | HTT.9556:3500 | 3.1/2"-8UN | M90X6 | HTT.9556:M90 | | | | | | 37.0 | | 86.0 | 114.00 | 160.0 | | 191 | 174.5 | HTT.9556.591 | HTT.9556.511 | |
| | HTT.9556:3750 | 3.3/4"-8UN | M95X6 | HTT.9556:M95 | | | | | | 37.0 | | 99.0 | 116.00 | 168.0 | | 210 | 189.5 | HTT.9556.596 | HTT.9556.536 | |
| | HTT.9556:4000 | 4"-8UN | M100X6 | HTT.9556:M100 | | | | | | 36.4 | | 105.0 | 116.00 | 174.0 | | 220 | 200 | HTT.9556.501 | HTT.9556.542 | |

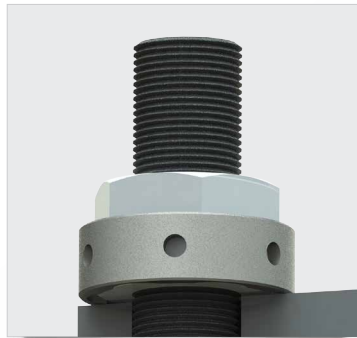


CTST tensioning tools are supplied with two hydraulic connections. This allows for very simple link hose configuration to link multiple bolt tensioning tools together.

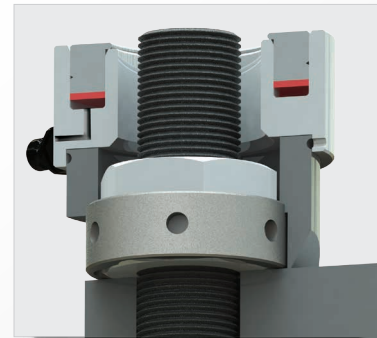
How Bolt Tensioners Work



The stud and nut are assembled onto the bolted joint. The two halves of the joint are pulled together.



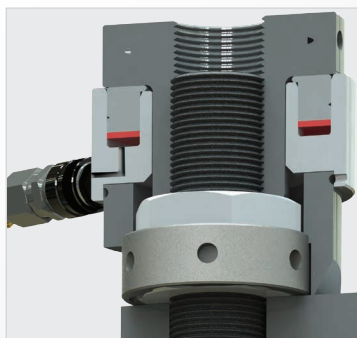
The nut rotating socket is assembled over the hexagon nut.



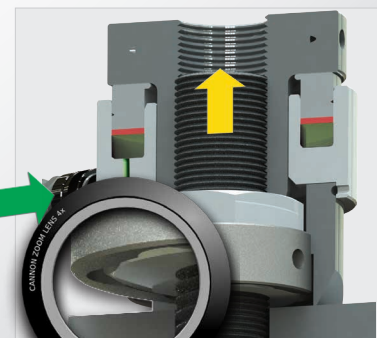
The tensioner is assembled over the hexagon nut.



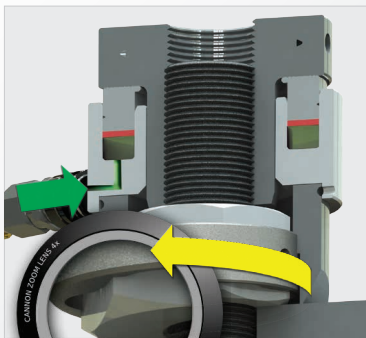
The thread insert (puller) is screwed onto the bolt protrusion.



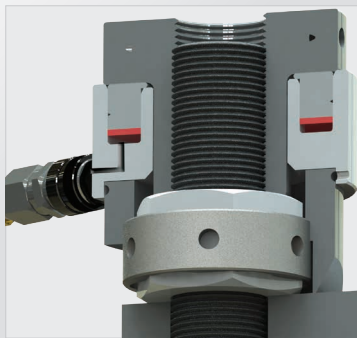
The tensioner is connected to an hydraulic pump unit through high pressure flexible hose.



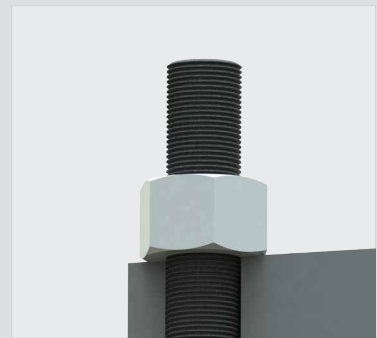
The tensioner is pressurised to the pre-calculated value. Bolt load is directly proportional to hydraulic pressure. The bolt stretches and a gap is formed below the hexagon nut. Once the target pressure is reached, the pressure is held.



While the tool pressure is held. The hexagon nut is rotated down to the joint face and locked down tightly.



The pressure is released, the bolt is tensioned.



The tensioner can be removed.

BTS-Software

The use of the Tentec bolt tightening software package alongside the CTST range of bolt tensioning tools completely removes the complexity of calculating tensioner operating pressures.



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.



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