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Topside Bolt Tensioning Series: THT Range



Incorporating Torcup Bolt Load Software



“The THT range of bolt tensioning tools are some of the most compact and reliable tensioners available today.”

Seal Reliability

Seal reliability is a fundamental requirement. All tensioners have polyurethane self-energizing lip seals requiring no adjustment. The seals ‘snap fit’ into the piston housing, remain firm and will not dislodge to cause failure after prolonged use. As the seals are machined and not molded, size is not restricted, allowing no compromise in tensioner design. The Torcup seal exhibits a much lower coefficient of friction than nitrile seals used in many other hydraulic bolt tensioners. This benefit, in conjunction with a special anti-extrusion device, allows the tool piston/ram to be returned to its closed position with minimal effort.

Link Hose System

One of the many advantages of hydraulic bolt tensioning is the ability to link a number of tensioners together and load simultaneously all the bolts on a joint. Although this gives excellent load distribution, an enormous variety of flexible hose assemblies are necessary - which confuse the user. To overcome this problem Torcup offer a single assembly called a ‘Link hose’. This length of flexible high pressure hose, fitted with male and female quick connect couplings at opposite ends is fast and an economical method of connecting multiple tensioners together - the number of hoses required is the same as the number of tools to be linked - a simple formula to remember.

Bolt Load Software
Takes the complexity out of tensioner and torque calculations.

Features & Benefits

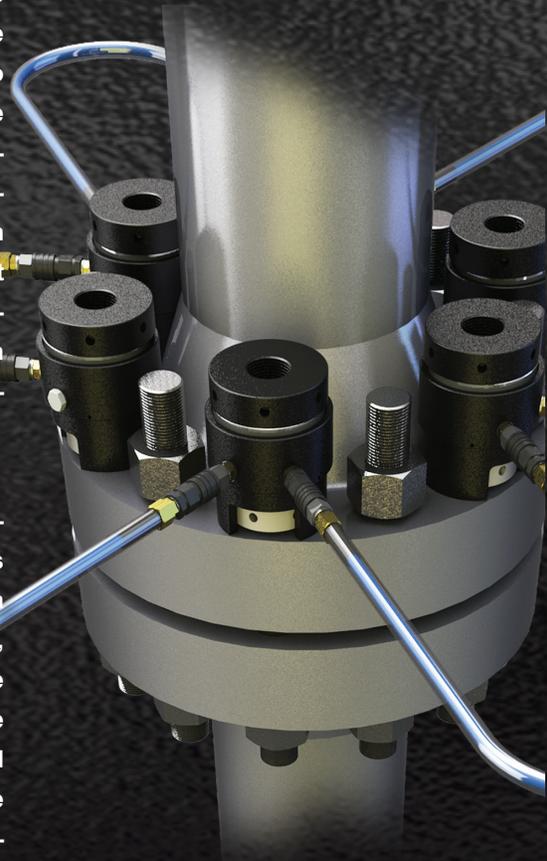
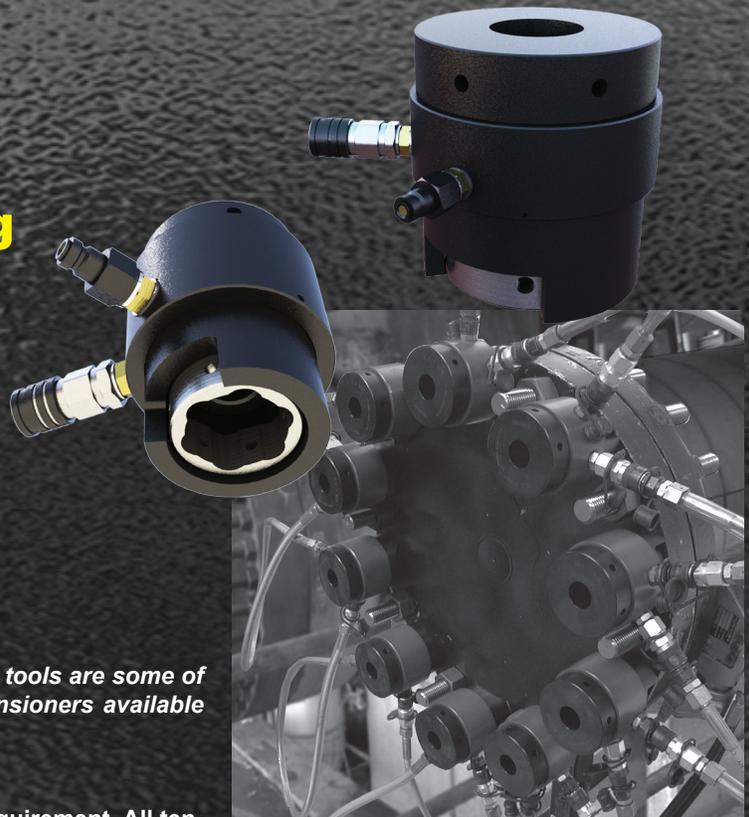
- High quality polyurethane seals for reliable, leak free operation
- Powerful bolt load capacity
- 15mm Ram Stroke
- Only 6 Base tools to cover bolt sizes 3/4” to 4”
- Supplied with Nut Rotating Sockets, no need for drilled nuts.
- Over stroke pressure safety device
- Manufactured from high strength steel for long life.
- Easy Hose assembly with Torcup

Link Hose System

Suitable for use on most standard flanges

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

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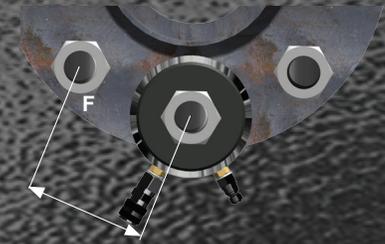
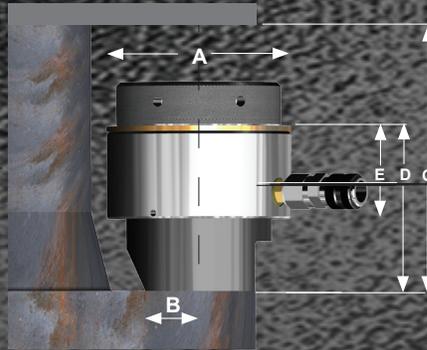


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User Safety

When using hydraulic bolt tensioners, it is important that the maximum movement of the piston/ram is not exceeded. In the unfortunate situation when stroke is exceeded, a simple failure mechanism inside most TorcUP tensioners directs any escaping fluid away from the operator and deposits it inside the device. A red warning indicator line becomes visible as the maximum piston extension position is reached.



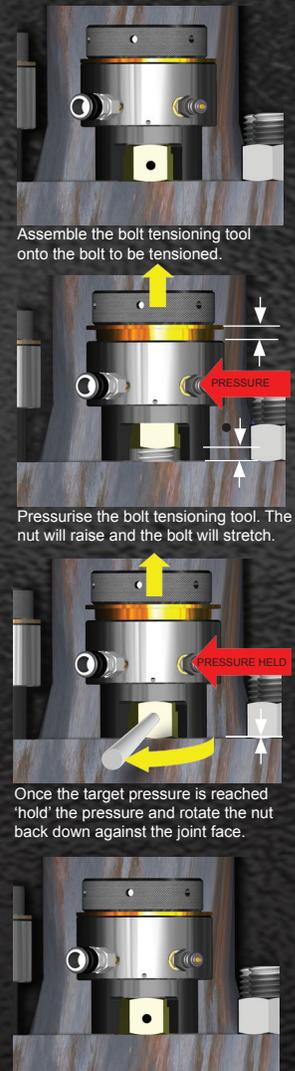
Technical Specifications

| Tool Ident | Part No | | Bolt Size | | Part No | | Bolt Load | | Ram Area | | Stroke inches | Weight lbs | A | B | C | D | E | F |
|------------|-------------|--|-----------|-----|--------------|--|-----------|--------|-----------------|-----------------|---------------|------------|-----|-----|------|-----|-----|-----|
| | Imperial | | Inch | mm | Metric | | Kn | Ton | In ² | mm ² | | | | | | | | |
| 1 | THT-1CT-012 | | 0.75 | 20 | THT-1CT-20M | | 227.75 | 22.86 | 2.354 | 1518.76 | 0.39 | 7.7 | 2.9 | 0.8 | 4.3 | 2.8 | 1.8 | 2.5 |
| | THT-1CT-014 | | 0.875 | 22 | THT-1CT-22M | | | | | | | | 2.9 | 0.9 | 4.3 | 2.8 | 1.8 | 2.5 |
| | THT-1CT-100 | | 1 | 24 | THT-1CT-24M | | | | | | | | 2.9 | 0.9 | 4.5 | 2.8 | 1.8 | 2.5 |
| | THT-1CT-102 | | 1.125 | 27 | THT-1CT-27M | | | | | | | | 2.9 | 0.9 | 5.1 | 2.8 | 1.8 | 2.5 |
| 2 | THT-2CT-102 | | 1.125 | 27 | THT-2CT-27M | | 442.94 | 44.45 | 4.578 | 2953.69 | 0.59 | 11.0 | 4.0 | 1.1 | 5.9 | 3.6 | 2.1 | 3.2 |
| | | | | 30 | THT-2CT-30M | | | | | | | | 4.0 | 1.3 | 5.9 | 3.7 | 2.1 | 3.3 |
| | THT-2CT-104 | | 1.25 | 33 | THT-2CT-33M | | | | | | | | 4.0 | 1.2 | 5.9 | 3.7 | 2.1 | 3.3 |
| | THT-2CT-106 | | 1.375 | 36 | THT-2CT-36M | | | | | | | | 4.0 | 1.3 | 5.9 | 3.9 | 2.1 | 3.6 |
| | THT-2CT-108 | | 1.5 | 39 | THT-2CT-39M | | | | | | | | 4.0 | 1.4 | 6.7 | 3.9 | 2.1 | 4.0 |
| 3 | THT-3CT-108 | | 1.5 | 39 | THT-3CT-39M | | 810.64 | 81.36 | 8.379 | 5405.70 | 0.59 | 19.8 | 5.2 | 1.4 | 6.9 | 4.3 | 2.2 | 3.8 |
| | THT-3CT-110 | | 1.625 | 42 | THT-3CT-42M | | | | | | | | 5.2 | 1.5 | 7.3 | 4.2 | 2.2 | 4.3 |
| | THT-3CT-112 | | 1.75 | 45 | THT-3CT-45M | | | | | | | | 5.2 | 1.6 | 7.7 | 4.6 | 2.2 | 4.5 |
| | THT-3CT-114 | | 1.875 | 48 | THT-3CT-48M | | | | | | | | 5.2 | 1.7 | 8.1 | 4.6 | 2.2 | 4.6 |
| | THT-3CT-200 | | 2 | 52 | THT-3CT-52M | | | | | | | | 5.2 | 2.0 | 8.3 | 4.6 | 2.2 | 4.7 |
| 4 | THT-4CT-114 | | 1.875 | 48 | THT-4CT-48M | | 1273.16 | 127.78 | 13.159 | 8489.96 | 0.59 | 33.1 | 6.4 | 1.7 | 8.1 | 4.6 | 2.2 | 5.1 |
| | THT-4CT-200 | | 2 | 52 | THT-4CT-52M | | | | | | | | 6.4 | 1.8 | 8.5 | 4.6 | 2.2 | 4.9 |
| | THT-4CT-204 | | 2.25 | 56 | THT-4CT-56M | | | | | | | | 6.4 | 2.2 | 9.3 | 4.8 | 2.2 | 5.3 |
| | | | | 60 | THT-4CT-60M | | | | | | | | 6.4 | 2.1 | 9.4 | 5.7 | 2.2 | 5.9 |
| | THT-4CT-208 | | 2.5 | 64 | THT-4CT-64M | | | | | | | | 6.4 | 2.3 | 10.0 | 5.1 | 2.2 | 5.8 |
| 5 | THT-5CT-208 | | 2.5 | 64 | THT-5CT-64M | | 1828.99 | 183.56 | 18.905 | 12196.45 | 0.59 | 55.1 | 7.6 | 2.5 | 10.0 | 5.2 | 2.4 | 5.8 |
| | | | | 68 | THT-5CT-68M | | | | | | | | 7.6 | 3.1 | 10.2 | 5.6 | 2.4 | 6.3 |
| | THT-5CT-212 | | 2.75 | 72 | THT-5CT-72M | | | | | | | | 7.6 | 2.8 | 10.2 | 5.8 | 2.4 | 6.3 |
| | THT-5CT-300 | | 3 | 76 | THT-5CT-76M | | | | | | | | 7.6 | 3.0 | 10.2 | 5.7 | 2.4 | 6.7 |
| 6 | THT-6CT-300 | | 3 | 76 | THT-6CT-76M | | 2643.43 | 265.30 | 27.323 | 17627.48 | 0.59 | 97.0 | 9.2 | 3.0 | 10.2 | 6.0 | 2.5 | 6.7 |
| | | | | 80 | THT-6CT-80M | | | | | | | | 9.2 | 3.1 | 10.4 | 6.1 | 2.5 | 7.0 |
| | THT-6CT-304 | | 3.25 | 85 | THT-6CT-85M | | | | | | | | 9.2 | 3.1 | 10.7 | 6.1 | 2.5 | 7.2 |
| | THT-6CT-308 | | 3.5 | 90 | THT-6CT-90M | | | | | | | | 9.2 | 3.4 | 11.0 | 6.3 | 2.5 | 7.5 |
| | THT-6CT-312 | | 3.75 | 95 | THT-6CT-95M | | | | | | | | 9.2 | 3.9 | 11.8 | 6.6 | 2.5 | 8.3 |
| | THT-6CT-400 | | 4 | 100 | THT-6CT-100M | | | | | | | | 9.2 | 4.1 | 12.0 | 6.9 | 2.5 | 8.7 |

Maximum working pressure = 21750 psi : 1500 bar
 If the standard tensioner is not suitable, TorcUP offer special tensioner designs on request.

Simplified Principle

Note: for clarity the pressure hose is not shown on the following diagrams.



Assemble the bolt tensioning tool onto the bolt to be tensioned.

Pressurise the bolt tensioning tool. The nut will raise and the bolt will stretch.

Once the target pressure is reached 'hold' the pressure and rotate the nut back down against the joint face.

Release the pressure. The bolt is now loaded and the tool can be removed.