POWER GENERATION
BOLT TENSIONERS

For Critical Fastening Applications in Wind, Gas and Steam Turbines

Stocked and Distributed by Norman Equipment Company 800-323-2710
Power Generation Bolt Tensioners

Shown: PGT-Series Single Stage and Double Deck Tensioners

High Precision, Low Maintenance

- PGT-Series Bolt Tensioners are designed for critical fastening applications in wind, steam and gas turbines.
- A broad range of single stage and double deck tensioners provide high performance in tight spaces associated with Power Generation applications.
- PGT-Series Bolt Tensioners are loaded with performance enhancing features such as Auto-Retract Pistons, Cycle Counters and a premium coating to offer the ultimate in efficiency, durability and ease of use.

<table>
<thead>
<tr>
<th>Description</th>
<th>Single Stage</th>
<th>Double Deck</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-Retract Piston</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Zinc Coating</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Geared Nut-Rundown</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Over-stroke Indicator</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Over-stroke Preventer</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Single Male Fitting</td>
<td>♦</td>
<td>♦</td>
</tr>
<tr>
<td>Swivel Manifold</td>
<td>♦</td>
<td>♦</td>
</tr>
<tr>
<td>Cycle Counter</td>
<td>♦</td>
<td>♦</td>
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</table>

● = Standard
◆ = Possible option
✦ = Option not available

1. Auto-retract piston: Simplifies use and improves speed of operation.
2. Long-life puller: For maximum durability.
3. Long-life seals: For maximum durability and extended service life intervals.
5. Interchangeable bridge: For optimal application fit.
6. Over-stroke Preventer: Mechanically prevents over-stroke, extending cylinder life.
7. Over-stroke Indicator: Extends cylinder life by helping to prevent over-stroking of cylinder.
8. Optional counter: Helps indicate when maintenance is due to maximize uptime.
9. Quick-disconnect coupler: For safe, simple hydraulic connection. OPTIONAL 360° swivel available for additional hose positioning flexibility.
10. Spring-loaded nut engagement: Keeps socket positioned on nut for faster and easier seating process.
11. Auto-engage nut rundown: For rapid and accurate seating of nuts.

*The model above illustrates a typical tool configuration. Actual model configurations vary.*
PGT-Series, Power Generation Bolt Tensioners

This is how a Power Generation Bolt Tensioner model number is built up:

<table>
<thead>
<tr>
<th></th>
<th>1 Product Type</th>
<th>2 No. of Stages</th>
<th>3 Bolt Diameter (mm)</th>
<th>4 Nut AF Dimension (mm)</th>
<th>5 Fitting Type</th>
<th>6 Counter*</th>
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<tbody>
<tr>
<td>PGT</td>
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<tr>
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</table>

2 Model Type

S = Single stage
D = Double Deck

3 Bolt Diameter (mm)

Example: 36 = M36

4 Nut Across the Flats Measurement

Example: 55 = 55 mm AF

5 Fitting Type

S = Includes single male fitting
SW = Includes swivel manifold with single male fitting

6 Counter*

C = Includes Counter

* Not available with single-stage tools.

---

1 Product Type

PGT = Power Generation Tensioner

2 Model Type

S = Single stage
D = Double Deck

3 Bolt Diameter (mm)

Example: 36 = M36

4 Nut AF Dimension (mm)

Example: 55 = 55 mm AF

5 Fitting Type

S = Includes single male fitting
SW = Includes swivel manifold with single male fitting

6 Counter*

C = Includes Counter

* Not available with single-stage tools.

---

**SPECIFICATION TABLE**

<table>
<thead>
<tr>
<th>Type</th>
<th>Bolt Diameter (mm)</th>
<th>Thread</th>
<th>Model Number*</th>
<th>Nut AF Dimension (mm)</th>
<th>Max. Pressure (psi)</th>
<th>Hydraulic Pressure Area (in²)</th>
<th>Load Capacity (tons)</th>
<th>Stroke (in)</th>
<th>Dimensions (in)</th>
<th>Wt. (lbs)</th>
<th>Bolt Protrusion (in)</th>
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<tbody>
<tr>
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<td>0.79 20 M20 x 2.5</td>
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<td>2.12</td>
<td>22.9</td>
<td>0.28</td>
<td>A 2.52 B 2.52 C 0.98 D 1.39 E 3.07</td>
<td>4.37</td>
<td>1.73 1.73</td>
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<tr>
<td></td>
<td>0.94 24 M24 x 3.0</td>
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<td>PGT2436S</td>
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<td>21,750</td>
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<td>32.8</td>
<td>0.28</td>
<td>A 3.03 B 3.03 C 0.98 D 1.39 E 3.23</td>
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<td>1.93 1.93</td>
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<tr>
<td></td>
<td>1.42 36 M36 x 4.0</td>
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<td>21,750</td>
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<td>75.3</td>
<td>0.35</td>
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<td>0.39</td>
<td>A 5.28 B 4.09 C 1.73 D 6.97 E 3.90</td>
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<td>3.11 3.11</td>
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<tr>
<td>Double</td>
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<td>PGT2742S</td>
<td>1.65</td>
<td>19,575</td>
<td>4.56</td>
<td>44.6</td>
<td>0.24</td>
<td>A 2.68 B 2.95 C 1.34 D 7.72 E 3.31</td>
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<td></td>
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<td>25.02</td>
<td>3.23 3.23</td>
</tr>
</tbody>
</table>

* These models reflect a standard configuration. To select an optional modification, apply the appropriate nomenclature indicated at the top of the page. If models beyond those indicated in this table are required, contact Enerpac.
Foundation Bolt Tensioners

- FTR-Series Foundation Bolt Tensioners provide fast, accurate and easy tightening of external or internal-ring wind tower foundations
- Standard models are available for 75, 150 ksi and metric style Williams, Dyson and Macalloy® bar types
- Long-stroke options accelerate process with single-pull tensioning

High Precision, Low Maintenance

FTR-Series Foundation Bolt Tensioners are designed specifically for tensioning wind tower foundation bolts. These tensioners provide the speed and precision required by this critical application. Potential thread fit problems are eliminated through the use of existing rebar hex nuts as a reaction point. The FTR-Series includes long-stroke models, which provide greater speed and ease of use by enabling applications to be completed in a single pull.

2. Over-stroke indicator: Extends life by helping to prevent over-stroking of cylinder.
3. Long-life seals: For maximum durability and extended service life intervals
4. Auto-retract piston: Simplifies use and improves speed of operation.
5. Quick-disconnect coupler: For safe, simple hydraulic connection. OPTIONAL 360° swivel available for additional hose positioning flexibility.
6. Interchangeable bridge: For optimal application fit.
**FTR-Series, Foundation Bolt Tensioners**

- **FTR Series**
  - **Load Range:** 0-308 Tons
  - **Maximum Operating Pressure**: 21,750 psi / 1500 bar
    - *Max. Pressure varies, see specification table for details.

**Tensioner Pumps**
- Electric, pneumatic and manual high-pressure tensioning pumps are available for use with Enerpac hydraulic tensioners.

**Hoses and Fittings**
- High-pressure hoses and fittings for use with Enerpac tensioning systems are available.

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**SPECIFICATION TABLE**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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<td>64.4</td>
<td>0.39</td>
<td>4.02</td>
<td>3.90</td>
</tr>
</tbody>
</table>

1. Single male fitting
2. Swivel manifold with single male fitting
3. Nut run down gear box

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Gear box square drive dimension S = 1/2 inch.
• **FTE-Series Foundation Bolt Tensioners** provide fast and accurate performance in difficult, narrow access foundation tensioning applications

• Standard models are available for 75, 150 ksi and metric style Williams, Dyson and Macalloy® bar types

• Ideal universal solution that fits both standard and narrow access applications

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1. **Max. stroke Indicator**: Extends life by helping to prevent over-stroking of cylinder.

2. **Long-life seals**: For maximum durability and extended service life intervals.

3. **Auto-retract piston**: Simplifies use and improves speed of operation.

4. **Elliptical form**: Provides access to close clearance applications.

5. **Corrosion protection**: Zinc coating provides best-in-class corrosion resistance.

6. **Quick-disconnect coupler (not shown)**: For safe, simple hydraulic connection. OPTIONAL 360° swivel available for additional hose positioning flexibility.

---

High Precision, Low Maintenance

**FTE-Series, Foundation Bolt Tensioners**

Similar to Standard Foundation Tensioners, Elliptical tensioners were designed specifically for foundation fastening applications on wind towers, and utilize the existing hex nut as a reaction point in order to eliminate thread fit misalignment.

Unlike Standard FTR-Series Tensioners, FTE-Series Tensioners feature an elliptical geometry, which enables fit in narrow access foundation applications, without reducing load capabilities.

Operators may access the nut with a Tommy bar rather than employing the use of an offset rundown gear.

Elliptical tensioners are ideal for close clearance applications, or as a universal tool that will work in nearly any foundation application, whether standard or narrow access.
This is how an FTE-Series Foundation Bolt Tensioner model number is built up:

1 **Product Type**
   - **FTE** = Foundation Tensioner, Elliptical

2 **Bar Grade**
   - 75 = 75 ksi
   - 150 = 150 ksi
   - (or metric designation)

3 **Bar Size Designation**
   - Example: 10 = No. 10 bar

4 **Fitting Type**
   - **S** = Includes single male fitting
   - **SW** = Includes swivel manifold with single male fitting

---

**FTE Series**

- **Load Range:**
  - 0-86 Tons

- **Maximum Operating Pressure**: 21,750 psi / 1500 bar
  - *Max. Pressure varies, see specification table for details.

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**Tensioner Pumps**

Electric, pneumatic and manual high-pressure tensioning pumps are available for use with Enerpac hydraulic tensioners.

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**Hoses and Fittings**

High-pressure hoses and fittings for use with Enerpac tensioning systems are available.

---

**SPECIFICATION TABLE**

<table>
<thead>
<tr>
<th>Bar Grade</th>
<th>Bolt Diameter</th>
<th>Bar Size Designation</th>
<th>Model Number</th>
<th>Nut AF</th>
<th>Maximum Pressure</th>
<th>Hydraulic Pressure Area</th>
<th>Load Capacity</th>
<th>Stroke</th>
<th>Dimensions (in)</th>
<th>WL (lbs)</th>
<th>Min. Bolt Protrusion (in)</th>
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<tbody>
<tr>
<td>75 ksi</td>
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<td>#10</td>
<td>FTE7510S</td>
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<td>17,400</td>
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<td>FTE7511S</td>
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</tbody>
</table>
BOLTING SOLUTIONS

Enerpac’s comprehensive range of bolting equipment provides precise and effective force to make your work more productive, safer, and easier to perform. The best solutions for controlled tightening, joint integrity and more, available from one source.

Controlled Tightenting and Loosening

- Pneumatic and Electric Wrenches
- Hydraulic Torque Wrenches: Square Drive, Low Profile, Ultra Slim
- Electric Torque Wrench Pumps
- Pneumatic Torque Wrench Pumps
- Manual Torque Multipliers

Tensioning Tools

- Power Generation Bolt Tensioners
- General Purpose Bolt Tensioners
- Electric Tensioning Pumps
- Pneumatic Tensioning Pumps
- High-Pressure Hand Pumps

Joint Assembly & Joint Separation

- Hydraulic Nut Cutters and Nut Splitters
- Step-Type Spreaders
- Flange Alignment Tools
- Flange Spreaders
- Mechanical Flange Face Tool

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Distributor Inquiries: 800-558-0530

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