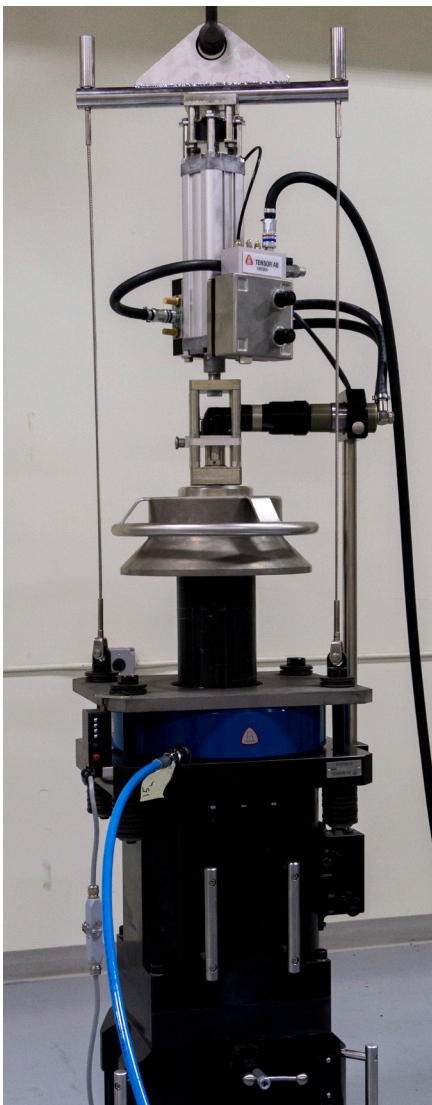
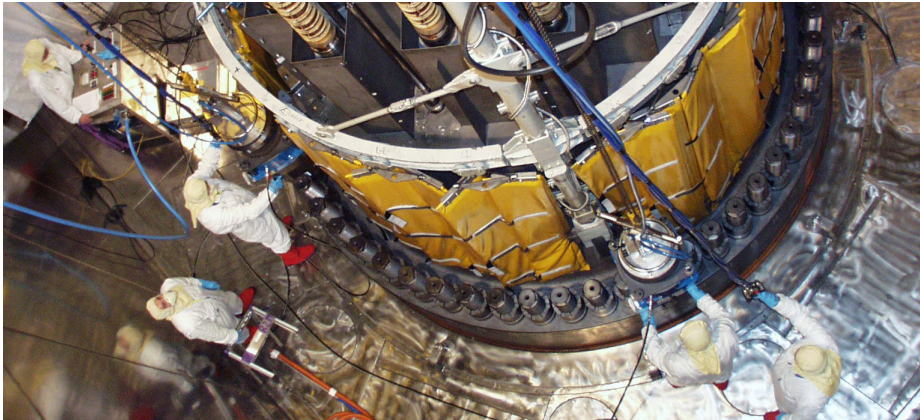


Nuclear Power Products and Services



To better support the North American nuclear market in outage, spare parts, maintenance, and technical sales, Curtiss-Wright has partnered with Tensor AB to provide the Tensor Bolt Tensioning System. Tensor systems have over 35 years of worldwide experience, and the Tensor Bolt Tensioning System is a proven design that is less complex, lighter weight, quickly operated, and more easily maintained than other systems.

**Bolt Tensioning System
Key Benefits**

- Compact design reduces the tensioner weight
- Promotes worker safety and easy handling method
- Reduced equipment set-up/removal time
- Less weight added onto the carousel and polar crane
- Reliable, less-complex design
- Minimal tooling maintenance requirements
- Fail-safe design with built-in redundancies and different operation modes
- Flexible pump and console positioning in low dose area
- Counterbalance device boosts safe and quick positioning
- Flexible bolt tensioning system with 3 to 8 bolt tensioners
- Floating piston

**Bolt Tensioner
Typical Specifications (6" stud)**

- Weight: approx. 1,600 lbs
- Height: approx. 6' with puller sleeves attached to the hoist
- Pressurization time: Less than 30 seconds adapted to customer requirements

Tensor

Bolt Tensioning System

Safety First

- Overstroke protection – stroke indicator signals operator and prevents overstroke
- Stop button on each tensioner allows instant cessation of operation
- Confirms signal to pump operator

Worker Friendly

- Lighter weight bolt tensioners with faster and safer stud-to-stud movement and stud engagement reduce worker fatigue
- Single hand controls allow for easy movement left and right or up and down
- Integrated signaling system permits concise communication between pump and tensioner operators
- Hoist is a one hand maneuver at tensioner

Flexible Bolt Tensioning System

- Pumps
 - Console unit and Pump unit are separate units
 - Option to operate pumps from lower-dose area
- Tensioners
 - Designed to incorporate 3 to 8 tensioners depending on customer requirements

Performance

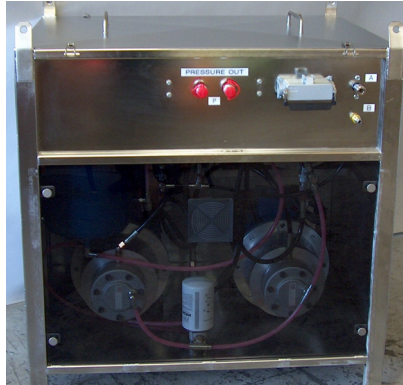
- Quick pressurization – system can reach max pressure in less than 30 seconds, as customer requires
- Counterbalancing device counters the weight of the puller sleeve for easier handling, minimizing the risk of damage by reducing the force required to engage the threads with the puller sleeve
- Operator can send a confirm signal for each step in the stroke process

Durable Design

- Major components built to last more than 40 years
- High-strength steel housing is designed to withstand repeated compression stresses

Easy to Maintain

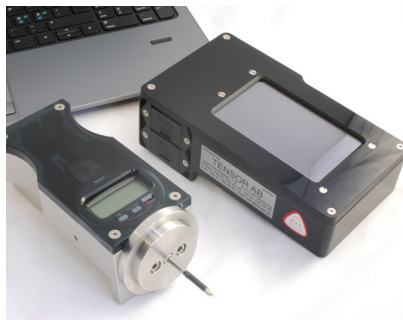
- Less-complex design means reduced maintenance requirements
- Tensioners parts are easily accessible for maintenance
- Seven year preventive maintenance included



The pump and console unit are electrically driven and fast operating, reaching 14,500 psi in less than 30 seconds.



Each bolt tensioner is equipped with an 'easy-to-read' stroke indicator box that provides the pump operator with the condition of its stroke using yellow, green, red, and blue indicating lights.



Elongation readings are recorded electronically and stored in real-time, including immediate calculations.



Tensioner movement from one stud to the next is achievable in less than 20 seconds. Trolley features smooth acceleration and deceleration (ramping function) and 2-speed up/down hoisting.

Tensor Bolt Tensioning System Applications

Applications in the United States:

- Arkansas Nuclear One
- Brunswick
- Catawba
- Ginna
- Harris
- McGuire
- Monticello
- Prairie Island - Fall 2023
- Robinson
- Salem
- Waterford

International Applications:

- England
- Finland
- Hungary
- Spain
- Sweden
- Ukraine

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