



High integrity Bolting &
Tensioning specialists



Tightening Solutions for Nuclear Applications

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Pilgrim in Nuclear

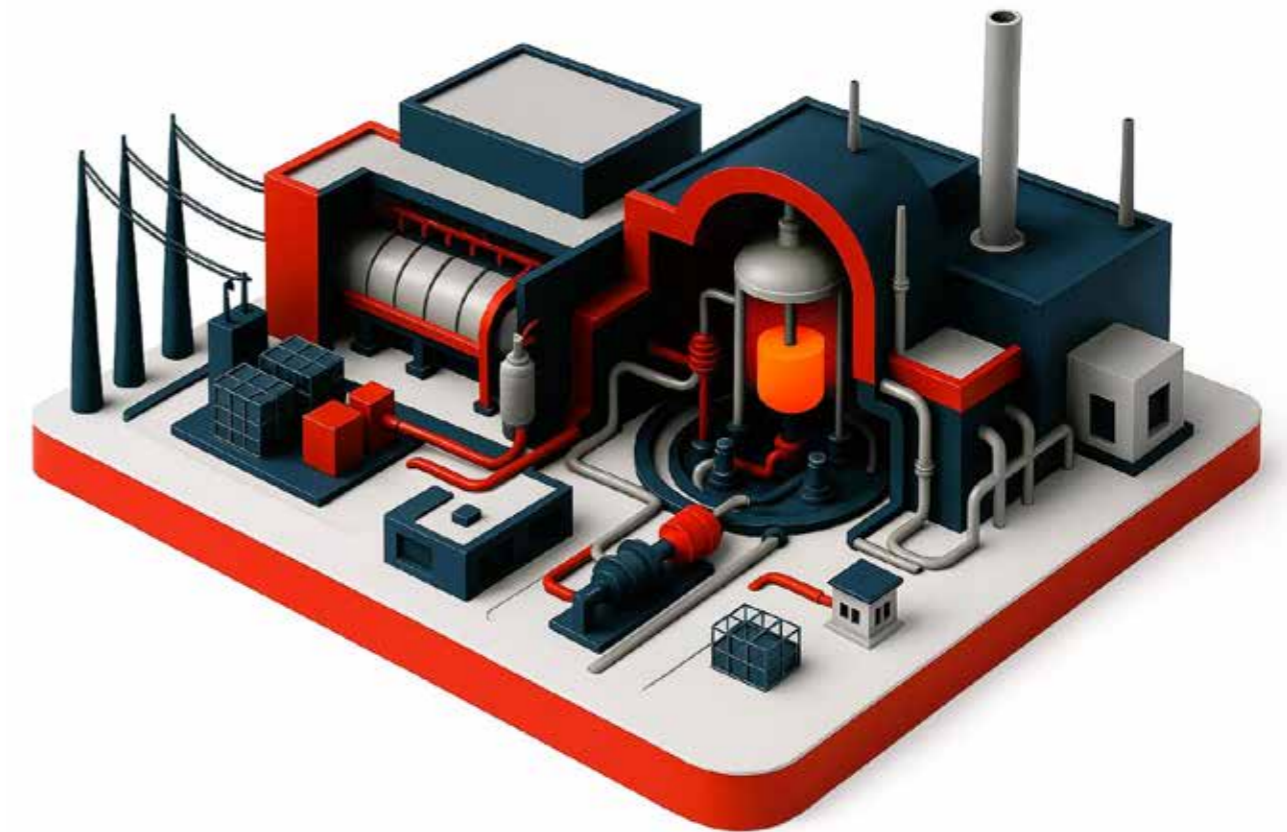
Pilgrim International Limited is a trusted leader in UK engineering, delivering precision solutions to the nuclear generation and defence sectors for over 40 years.

From high-torque steam turbine coupling bolt systems to specialised mobile-reactor head cover bolts and multi-tensioning systems for nuclear reactor head covers, we've consistently been at the forefront of innovation and reliability for over 40 years. Collaborating with OEMs and Power Plant Operators, Pilgrim has built a proven reputation for eliminating uncertainty in critical tightening operations—ensuring safety, accuracy, and confidence in the most demanding nuclear environments.



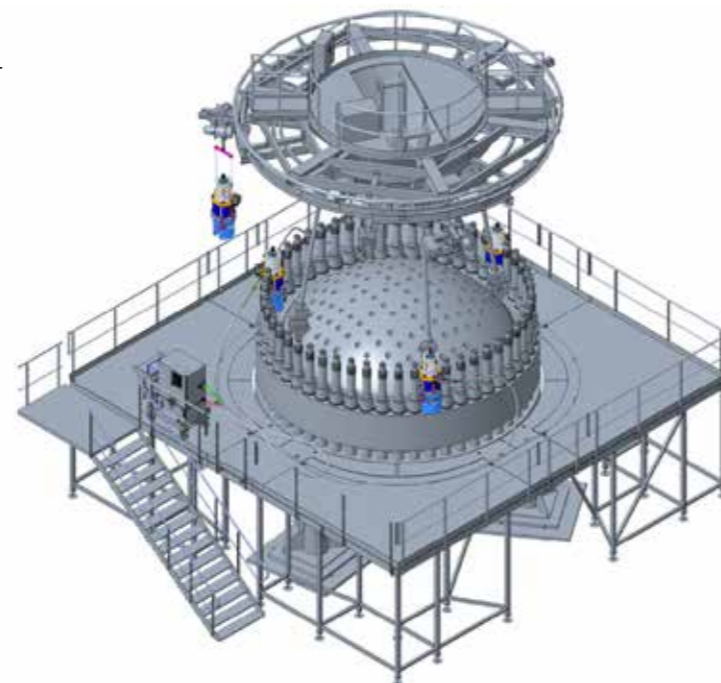
Typical Applications

At Pilgrim, our engineering solutions approach leads to supply to a wide range of applications, from the precise tightening of valves to the secure fastening of the Reactor Head Cover. Our expertise ensures that our clients experience the removal of uncertainty through reliable tightening operations, delivering desired and predictable outcomes in terms of safety, efficiency, and performance.



Engineered Solutions

Our highly experienced engineering team is dedicated to solving our clients' fastening challenges by delivering intuitive, high-performance systems. We focus on minimising costly downtime while ensuring precise achievement of tightening specifications—guaranteeing full safety, reliability, and operational confidence in every designed solution.



HTQR1050 4 x Single Tensioners for EPR Nuclear Pressure Vessel Lids

Our Capabilities

- DFMEA: Design Failure Mode and Effects Analysis
- FEA: Finite Element Analysis
 - Feasibility Studies
 - Performance improvements
- Project Management of Turnkey Packages
- Site Commissioning
- In-house testing
- After Sales Support
 - Training
 - Supervision
 - Spares

Steam Generator

- THP, THS, TO, TP & TH PZR cover tightening
- Anchorage stud tightening
- Tightening of lifting points

Steam Turbine & Generator

- Turbine Coupling Bolting
- Casing closure
- Shutdown valves

Pressure Vessel Head

- Tightening system for accurate, quick and reliable closure
- Tightening of lifting points

Primary Pump

- Volute casing stud tightening

Control Rod Drive Mechanism

- Tightening system for fixing of fuel rods into place

Heat Exchanger

- Tensioning for essential service water cooling system

Our Offerings



HYDROCAM® Bolt Tightening

The muscle of the tightening system, whether it's from the standard range of HYDROCAM® bolt tensioners to our unique QUICK CONNECT® technology, we are able to provide tensioning for critical applications delivering guaranteed performance when tightening.

Benefits

- Fully automated tightening:
 - Remote operation
 - Nut turn down
 - Piston return
- Homogeneous tightening
- Ring or segmented mounting
- Quick connect—saving time



Control Systems

As the brain of the tightening system, Pilgrim provides smart and intuitive control systems that ensure operators achieve the desired tightening requirements. With tailored operator screens and Bluetooth communications between the tensioner, pump, and control system, remote operations are made seamless.

Benefits

- Wireless communications
- Tailored control system to customer preference
- Condition monitoring
- Minimises operator exposure



Hydraulic Power

The heart of the tightening system, whether it's a standard pump or a bespoke Morpress pump solution, Pilgrim provides the right solution for the application. We take into consideration, size, flow rates, ease of operation, operator exposure, control and reliability.

Benefits

- Standard or tailored pump solutions to match your needs
- Electric, pneumatic or hand operated options
- Remote operation



Handling & Test Equipment

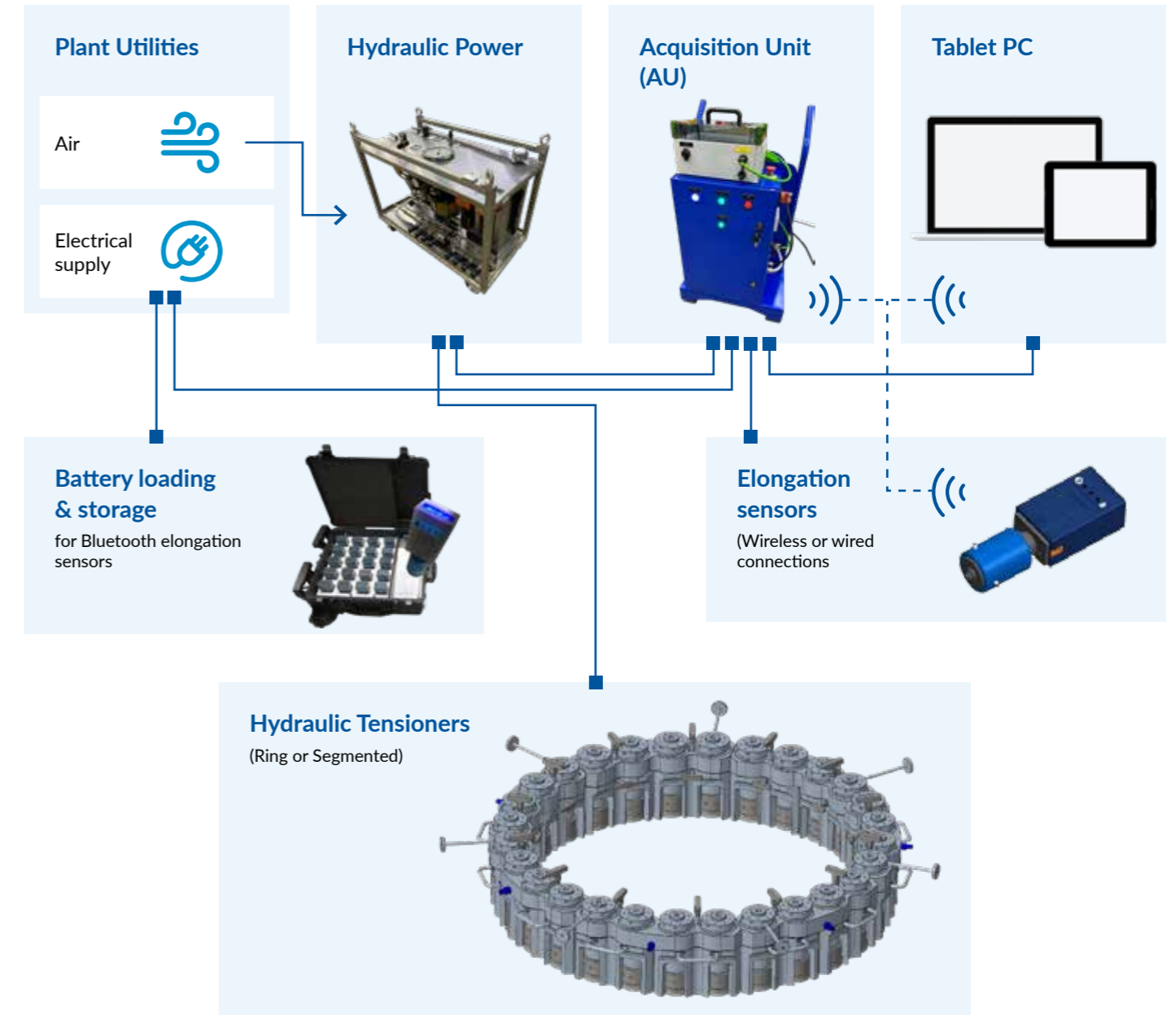
As part of our offering, we are able to provide special handling equipment, from simple ramps, hoists and transport trolleys to complete fully automated manipulators offering manway covers seamlessly into position safely and quickly. Additionally we are able to provide test stands for off line training .

Benefits

- Reduces operator exposure
- Solves difficult lifting operations
- Calibrating and training offline

Typical Lid / Cover Tightening System

Demonstrated below is a schematic of a typical tightening system and how each element interlinks



Additional Equipment

- Test Stands: For calibrating and training
- Studs and Nuts supply
- Lifting Equipment and Manipulators
- Storage Boxes



High Torque Coupling Bolts

Designed to ensure certainty in both mounting / dismantling and performing while in operation, this neat hydraulic radial fitted bolt type (RFB) is simple to install while providing a "fitted" bolt when installed and in operation. With its compact design and high torque carrying capacity its ideal for coupling steam turbine trains.

Benefits

- Two removal options
- Quick, easy and safe to install & remove
- Eliminates risk of face galling, hole damage and stuck bolts



Turbine Coupling Alignment

Utilising hydraulic power the Pilgrim Coupling Hole Alignment Tool is ideal for re-aligning the coupling holes after being split, quickly bringing the coupling back to its original position.

Benefits

- Quick alignment achieved
- Can handle up to 2.5mm of misalignment
- Closes the Coupling



Hydraulic Nuts

Hydraulically tensioned nuts that are designed to be left in situ after tightening, with two locking options; shim or collar type. Easy to fit and remove individually or link together to provide homogeneous tightening for efficient tightening in applications, such as foundation bolting, covers and turbine casing.

Benefits

- Suitable for high temperature applications
- High retained loads achieved
- Remain in situ
- Adjustable



PilgrimBolt

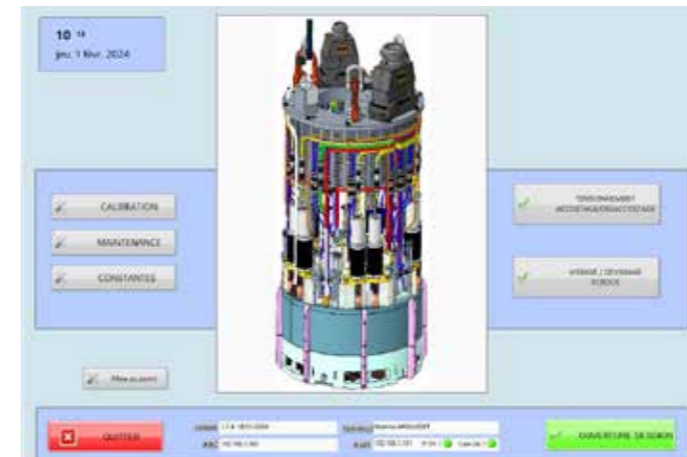
This hydraulically installed bolt designed for high pressures, combines a bolt with a built in hydraulic head for plug and play, idea of applications with limited access. With a size range of M36 to M120 . Once tensioned the bolt can be fixed by either a shim or a locking collar.

Benefits

- Suitable for minimum space applications
- High retained loads
- Static or rotating applications
- Blind or thru holes



SG Manway Cover Test Rig



Operator Screen for Control System



Bluetooth Elongation Sensors in Recharging Case



Pressured Vessel Cover Tensioners



Control Rod Drive Mechanism Tensioner being Tested



Tensioning Rig being Tested



Segmented Tensioning Rig on Control Panel



Segmented Tensioning Rig on Test with Bluetooth Sensors



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