

# Hydraulic nuts

## Top collar and bottom collar models

Hydraulic Nuts offer an extremely rapid and simple method of simultaneously accurately tensioning every bolt on a bolted joint. Hydraulic Nuts become a permanent part of the bolted joint and remain on the joint after the bolt load has been generated.

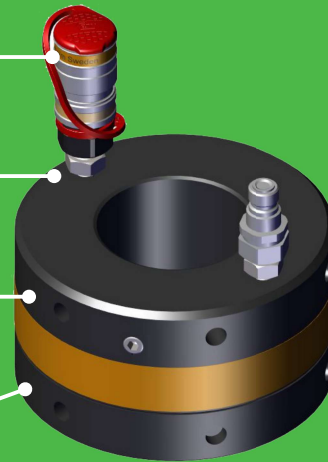
### Bottom collar

**Hydraulic Connections**  
User configurable quick release connections. Side and top connections available.

**Nut Body**  
Designed with considerable allowable piston movement.

**Hydraulic Seals**  
Proven seal technology ensures thousands of tool pressure cycles.

**Load retaining Collar**  
The tension is permanently retained by means of the load retaining collar.

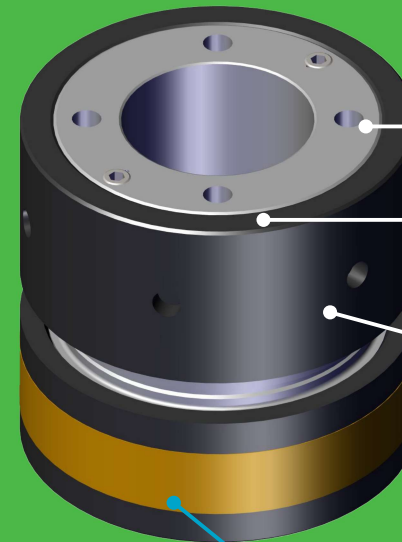


### Top collar

**Hydraulic Connections**  
User configurable quick release connections. Side and top connections available.

**Load retaining Collar**  
Interfaces with load collar to retain bolt load.

**Load retaining Collar**  
The tension is permanently retained by means of the load retaining collar.



## The hydraulic nut is completely customizable, and can be manufactured to any specific application.

Our knowledgeable and experienced team here at Atlas Copco will help guide you and create the perfect hydraulic nut solution that will suit your application.

Design and manufacturing is controlled fully in house ensuring the highest quality and shortest lead times. We always work to achieve the quickest turnaround times.

**Nut Body**  
Designed with considerable allowable piston movement.

**All of our Hydraulic Nuts are made specifically for each customer please get in touch with your local Atlas Copco representative for a quote.**

# Customized Solutions

## Designed for your application

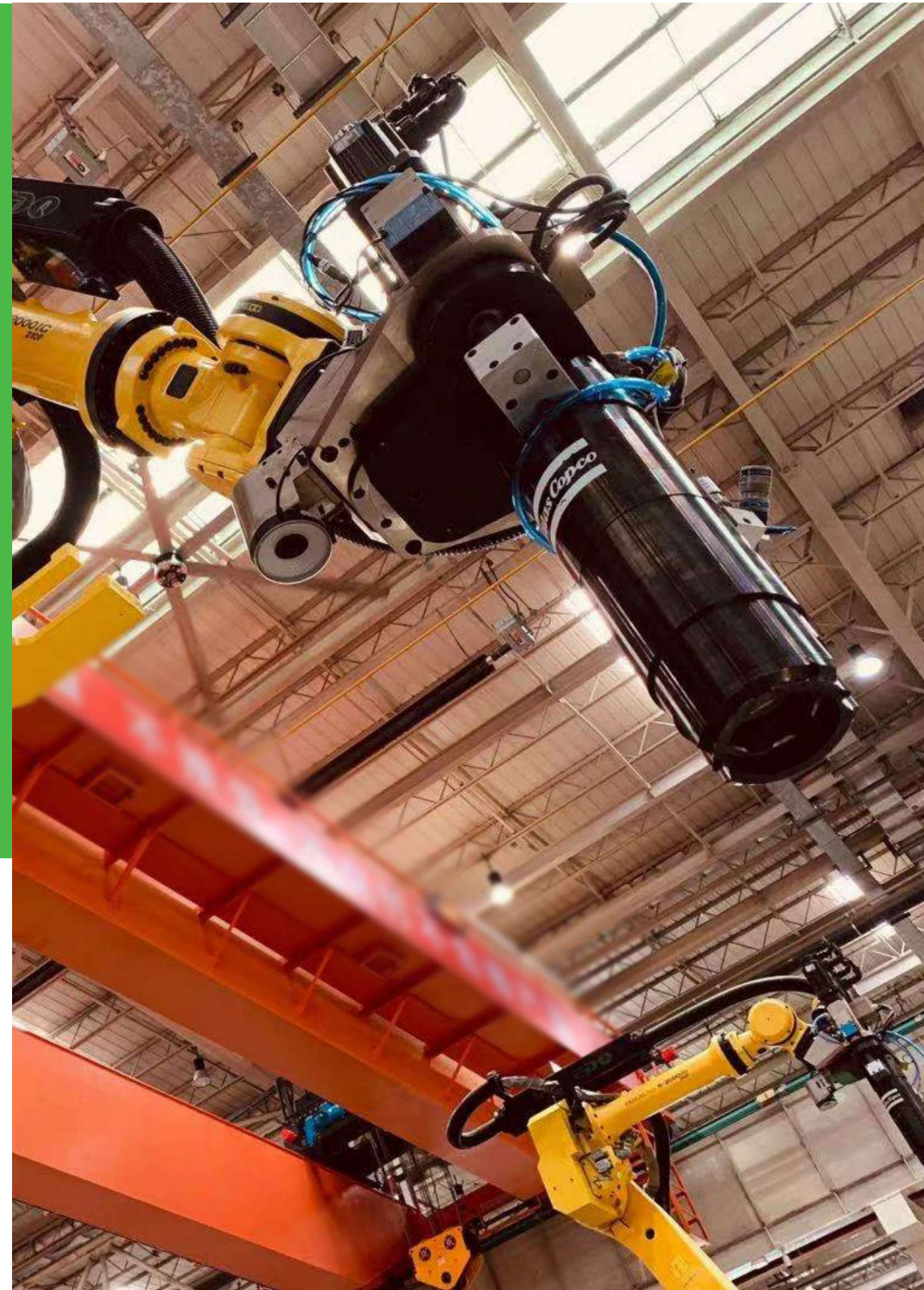


Reach out to your local representative for a customized solution for your application

**From M4 to M720, there's nothing too big or small.**

Atlas Copco's in-house development team can design, manufacture and assemble any custom tensioner design. No matter the application, our team can get it done. By providing us with basic measurements, we can create the exact tensioner design for your application.

All parts of a tensioner can be customized to cater for any special application. Common customizations requested can consist of to match thread pitch, bolt load requirements and nut rotating socket height.



## Direct Fit type tensioner

### What is it?

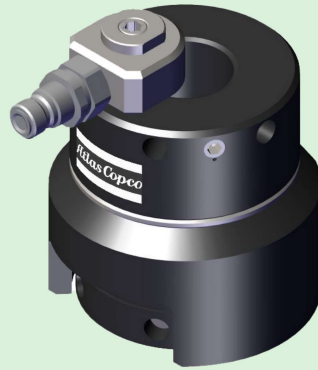
Direct fit tensioners consist of a nut rotating socket, bridge and a threaded loadcell. Having the loadcell threaded means that an insert is not required on the application. This enables us to make the tensioner much smaller to fit difficult applications, as less components are required.

### Key features

- Can design and manufacture to smaller sizes.
- Ideal for fitting on difficult to reach applications.

### Typical Applications

- Low density polyethylene (LDPE) Plants.
- Crane slew rings.
- Crane Assembly.
- Flanges with reduced bolt circle diameter (BCD) or limited spaces.



## Monobloc type tensioner

### What is it?

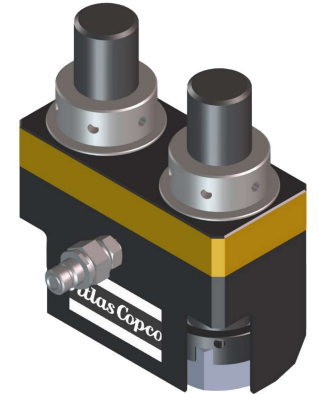
A monoblock tensioner consists of a single unit or "monoblock" that houses the hydraulic piston and the tensioning mechanism, which tensions two bolts simultaneously. The monoblock is typically smaller and more compact than other types of tensioners, which makes it ideal for use in tight spaces or in applications where access is restricted.

### Key features

- Tension multiple bolts at once.
- Uniform tensioning on the joint.
- Bespoke design for specific applications

### Typical Applications

- Engine blocs.
- Nuclear plant framework.
- G-clamp connectors.
- 2 bolts within close proximity that need larger loads.



## Long Stroke Cylinder tensioner

### What is it?

This is simply used as a pulling device more than a tensioner really, so it can be used for pulling heavy equipment. For example, like a rope attached to a steel bridge that needs to be pulled up.

### Key features

- Air return or hydraulic return can be offered.
- Can be made to fit certain space restrictions.
- Different coating can be applied.

### Typical Applications

- Pulling applications.
- Nets around oil rigs.
- Offshore buoyancy aids.



## Reaction Nut type tensioner

### What is it?

The reaction nut type tensioner is designed to achieve and maintain the correct tension in bolts. There is a specialized nut or washer that is placed on the opposite side of the bolt from the fastening point.

### Key features

- High load capacity.
- Accurate tensioning control.
- Ease of installation.
- Compatibility with bolt sizes.

### Typical Applications

- Special thread on long stud protrusions.
- Wind foundation tools.
- Bridge construction.



## Special Insert type tool

### What is it?

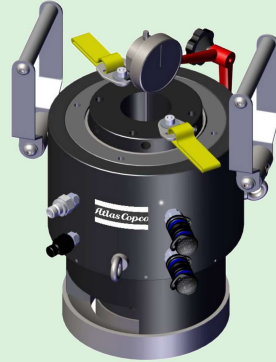
Insert type tensioners generally consist of an NRS, bridge, load-cell and an insert. The benefit of an insert type tensioner is that you can potentially use the same loadcell on different studs by changing the insert.

### Key features

- Use the same loadcell on different studs.
- Different thread type can be added.
- Different loads can be achieved.
- Different coating can be applied.
- Can have auto, hydraulic or spring return can be used.

### Typical Applications

- Special threads.
- Tight restrictions, extreme loads.
- All engineering applications.
- Construction.
- Wind foundation.



## Robotic adaptable tensioners

### What is it?

Robotic adaptable tensioners are designed to work with automated robotic systems, which can either be insert type or direct fit. They can be offered with QST Spindles or mounts, whichever is required for your application. These tensioners can save operator time and increase the overall accuracy of processes.

### Key features

- Reduce operator fatigue.
- Reduce process times on the application.
- More accurate tightenings .

### Typical Applications

- Wind turbine manufacture installations.
- Blade hubs.
- Engineering applications that have multi-stud tensioning.



## Multi-stud type tensioner (MST)

### What is it?

A multi-stud tensioner is a tool used to simultaneously tension multiple bolts or studs on a flange or other joint. It consists of a hydraulic cylinder that applies a stretching force to a set of bolts or studs, which helps to ensure that the clamping force is evenly distributed across the joint. They can help to reduce the time and labour required to tighten multiple bolts or studs.

### Key features

- Quick installation with extreme accuracy.
- Tension multiple bolts at once.
- Uniform tensioning on the joint.
- Bespoke design for specific applications
- Reduces time on the application.

### Typical Applications

- Steam generators.
- Nuclear Industry.



## Specialized Blade tensioner

### What is it?

This type of tensioner is very similar to the WTB Tensioner where the design includes a puller bar. The puller bar type tensioners can also be included in Monoblock and MST. The puller bar component does exactly what its name insinuates, it pulls on the bolt stretching it until it meets the required load.

### Key features

- Can be used on restrictive space envelopes.
- Different coats can be applied to the tensioner.
- Various threads can be manufactured.

### Typical Applications

- Wind turbine blades.
- Slew cranes.
- Foundation.

