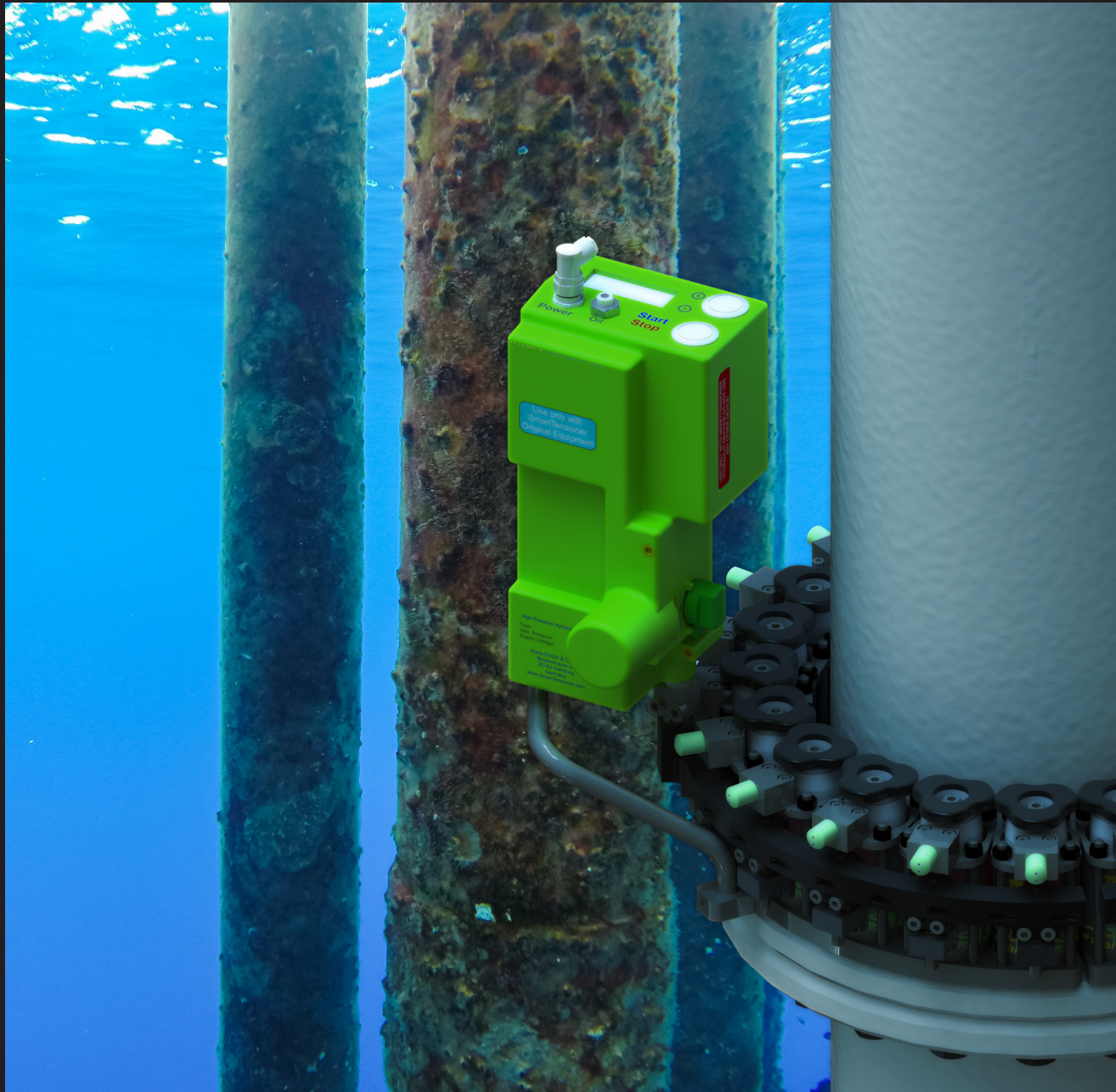


## Subsea Tensioning Devices



**Tools for Highly Loaded Bolted Connections**

**HTU**  
Hydraulic Tensioning Unit

**HMTU**  
Hydraulic Mechanical Tensioning Unit

**BT**  
Bolt Tensioner

**IBT**  
Integrated Bolt Tensioner

**STD**  
Subsea Tensioning Devices

**HP**  
Hydraulic Pump

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# STD

## SubseaTensioningDevices

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**smartTensioner technology - above all the lightweight hydraulic pump in combination with small and powerful tensioning devices - offers many advantages in environments where handling is difficult:**

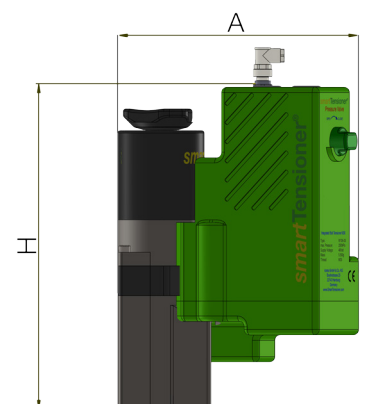
- **No high-pressure hoses need to be transported and connected**
- **No clumsy high-pressure connectors need to be operated**
- **No external hydraulic aggregates need to be transported to the installation site**

In subsea projects, using smartTensioner means reduced operating times for divers since the tensioning devices only need to be connected to electrical power after mounting on the bolt.

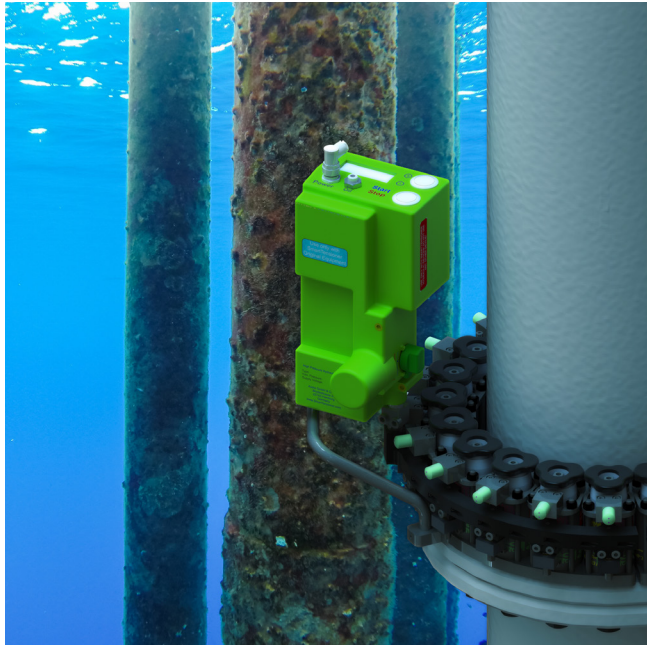
The smartTensioner pump can be remotely controlled. Even the turning of the nut can be done with our NutTurningDrive (an integral part of IBT and optional for BT and CFBT).

Furthermore, the use of smartTensioner HTUs allows constant pressure monitoring over the whole operating time of a flange connection. Ambitious requirements of quality assurance are met.

**smartTensioner®**



- No high-pressure hoses
- No high-pressure connectors
- No external hydraulic aggregates



#### Easy handling in subsea:

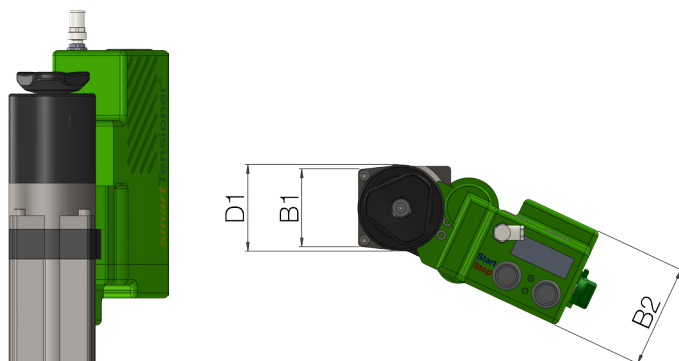
The smartTensioner Integrated Bolt Tensioner IBT is the all-in-one solution that fulfills perfectly the requirements of professional divers:

- Simple mounting on the bolt by turning the glove-friendly handle
- No need to connect anything but the power cord
- NutTurningDrive included
- Process control via remote control centre

#### The smartTensioner tensioning systems HTU, BT, CFBT and IBT are available in subsea versions.

In some cases, the maximum possible bolt force might be reduced.

The smartTensioner HydraulicPump HP is available for use in subsea projects as well. Wireless or cable remote control is available.





# Tools for highly loaded bolted connections.

## Our products:

### HTU

HydraulicTensioningUnit

M8 - M200 / 1/4" – 8"



The HTU replaces conventional (hexagonal) nuts. The bolt force is locked hydraulically.

### HMTU

HydraulicMechanicTensioningUnit

M22 - M200 / 7/8" – 8"



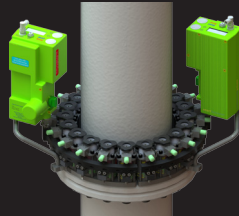
The HTU replaces conventional (hexagonal) nuts. The bolt force is locked mechanically.

### BT & CFBT

BoltTensioner

CompactFlangeBoltTensioner

M08 - M100 / 1/4" – 4"



The conventional (hexagonal) nut remains on the bolt. Bolt strained torque-free with Bolt-Tensioner. Nut is turned by manually.

### IBT

IntegratedBoltTensioner

M30 - M64 / 1 1/8" – 2 1/2"



Made for tensioning situations where extremely high bolt forces are needed and very little free area on the flange is available.

### STD

SubseaTensioningDevices

M8 - M200 / 1/4" – 8"



Made for environments where handling is very difficult, e.g. in subsea-projects.

### HP

HydraulicPump



The heart of our innovations: Very high pressure, low pressurized volume. Perfect for bolt tensioning!

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