

Production Riser Tensioner System

Integrated monitoring and operation for enhanced certainty, flexibility, and safety offshore

APPLICATIONS

- Offshore drilling

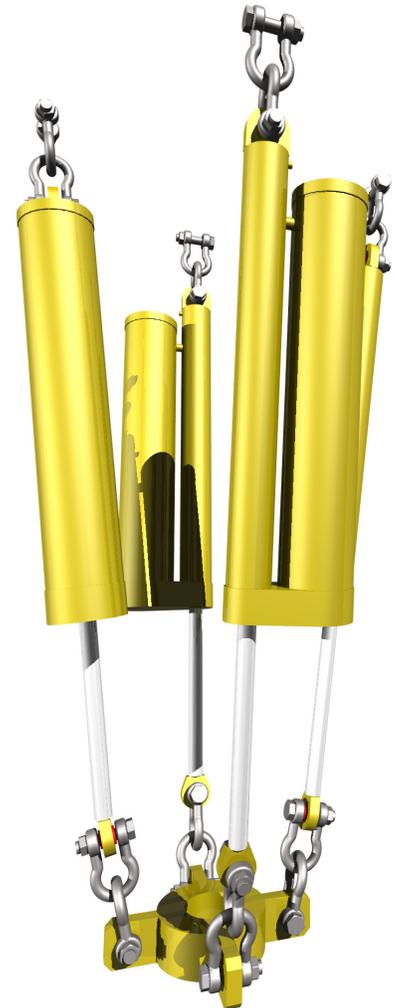
BENEFITS

- Enhanced protection against buckling and ocean movements
- Improved operational versatility with ability to accommodate the most common production riser ODs
- Greater certainty with monitoring and operation of each production riser tensioner unit

FEATURES

- Adjustable tension
- Low maintenance requirements
- Remote system monitoring of the tension and fluid level
- Relief valves that protect the accumulators and tensioner cylinders from overpressure
- Full tension capacity with one cylinder or accumulator unit out of service
- Piston rod made of carbon steel coated with an absolute-nonporous layer for enhanced corrosion resistance
- Easy and reliable shackle suspension at both ends of the cylinder
- Easy-availability monitoring signals in the driller's control room
- Cushioning device at the rod end (extended) of each cylinder

The Cameron production riser tensioner (PRT) system comprises PRT units and a control panel that enables wired or remote monitoring and operation. The system was designed using field-proven technology, including the hydropneumatic principle and robust, reliable components that accommodate a range of configurations. The units are designed to maintain the production riser system in tension to prevent buckling under compressive loading from self weight and to compensate for ocean currents, waves, and relative movements between the platform and riser.



The integrated PRT system includes an advanced control panel that enables monitoring and operating each PRT unit for greater operational efficiency and certainty.

Production Riser Tensioner System

Specifications

Tension capacity, lbm [kg]	275,000 [125,000]
Number of PRT units	4
Maximum vertical riser movement, ft [m]	7 [2.13]
Riser stroke range, ft [m]	
Upstroke	1.18 [0.36]
Downstroke	5.81 [1.77]
Cylinder stroke length, ft [m]	8.20 [2.50]
Piston diameter, in [mm]	7.87 [200]
Rod diameter, in [mm]	3.54 [90]
Cylinder pressure at zero position and maximum tension, psi [MPa]	1,910 [13.2]
Cylinder pressure at zero position and maximum tension with three PRT units	2,540 [17.5]
Design pressure, psi [MPa]	
Rod side	3,000 [20.7]
Piston side	90 [0.6]
Control panel	3,000 [20.7]
Accumulator volume, galUS [L]	58 [220]
Angle between cylinder and vertical riser at zero position, °	13
Hydraulic fluid type	Water glycol base
Ambient operating temperature range, degF [degC]	-4 to 113 [-20 to 45]
Area classification	Ex Zone 1

Scope of supply

Four PRT units, each with a cylinder, accumulator, valves, lifting lugs, pressure transmitters, and shackles in each end of each cylinder

One PRT control panel comprising valves, digital pressure displays, digital tension displays, and alarm indication lamps

Documentation set

Options

Fluid-filling unit

Riser-guidance and -centralization system

Structural mounting frame for cylinder or accumulator assemblies

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