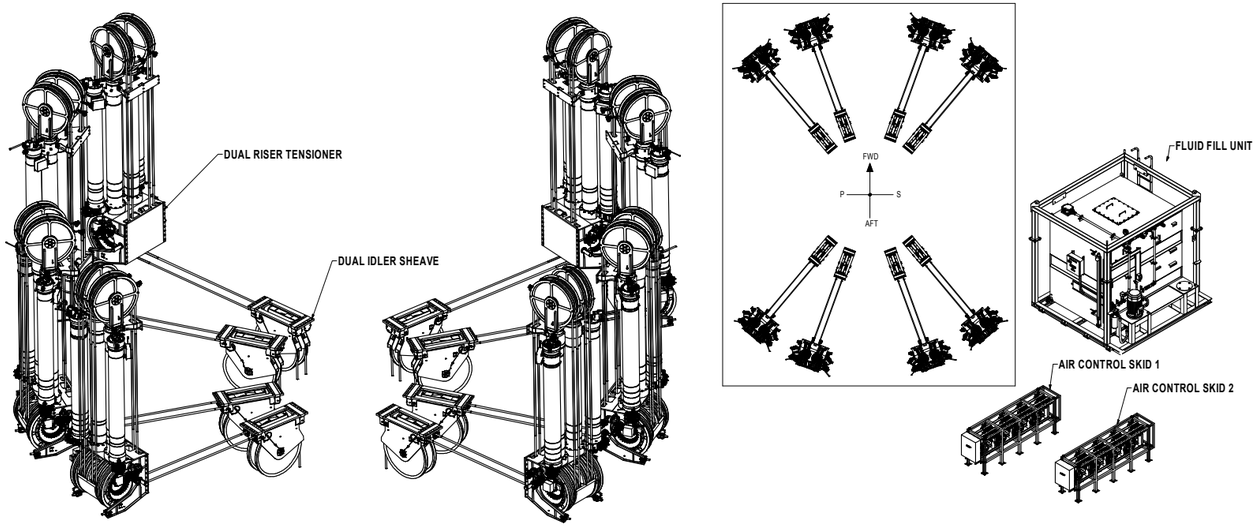
*For reference only, please contact your local sales contact for more information.

Wireline Riser Tensioner (WRT)



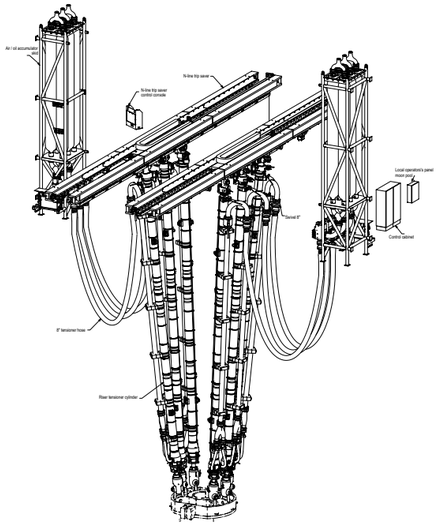
Description

The wireline tensioner provides positive tension to the marine riser, and compensates for the relative motion between the riser and the drilling rig. The tensioners are installed diametrically opposite to each other. This is to avoid any lateral forces in the riser tensioner ring when reducing tension in one unit (bleeding off air for wire cut/slip etc.). The tensioners maintain tension in each support wire, which is connected to the support ring on the marine riser pipe. The wires from the support ring runs over the pivot hinged idler sheaves, via the fixed lead-in sheaves and then around the two double sheave assemblies on each end of the tensioner cylinders. The wires are then attached to the wire rope anchors.

- A four to one mechanical advantage is obtained, cylinder stroke of 12.5 ft. is transferred to 50 ft. of wire rope travel
- A fluid connection block is installed between the accumulator and cylinder
- Prevents damage on the cylinder and other equipment
- Accumulator gas side is connected to a gas reservoir to obtain constant tension in marine riser pipe
- Centralized control of tensioners
- Driller's control panel interfaces with control unit for operator to start, operate, monitor or shut down the total system

Technical specifications	WRT-120	WRT-200	WRT-225	WRT-250	WRT-280
Dynamic capacity (ex. total kips)	120 kips (960 kips)	200 kips (1,600 kips)	225 kips (3,600 kips)	250 kips (4,000 kips)	280 kips (2,240 kips)
Weight single	14 mT	28 mT	28 mT	30 mT	32 mT
Weight double	23 mT	50 mT	50 mT	63 mT	67 mT
Comp. stroke	3.81 m (12.5')	3.81 m (12.5')	3.81 m (12.5')	3.81 m (12.5')	3.81 m (12.5')
Wire travel	15.24 m (50')	15.24 m (50')	15.24 m (50')	15.24 m (50')	15.24 m (50')
Sheave diameter (groove)	1.321 m (52")	1.829 m (72")	1.829 m (72")	2.083 m (82")	2.083 m (82"
Wire diameter	2"	2½"	2½"	2¾"	2⅞"
Design temperature	-20°C to +45°C	-20°C to +45°C	-20°C to +45°C	-20°C to +45°C	-20°C to +45°C
Max op. press	207 bar (3,000 psi)	207 bar (3,000 psi)	207 bar (3,000 psi)	207 bar (3,000 psi)	207 bar (3,000 psi)
SYSTEM					
Tensioners	4 or 8 dual or single	4 or 8 dual or single	8 or 16 dual or single	8 or 16 dual or single	4 or 8 dual or single
Working APV volume/cyl.	2,000 l	3,200 l	4,000 l	4,700 l	5,800 l
Standby APV	Individual	Individual	Individual	Individual	Individual
Compressor	2 pcs. 138 nm³/h	2 pcs. 138 nm³/h	2 pcs. 138 nm³/h	2 pcs. 138 nm³/h	2 pcs. 138 nm³/h
Idler sheaves	4 or 8 dual or single	4 or 8 dual or single	8 or 16 dual or single	8 or 16 dual or single	4 or 8 dual or single
control equipment	1 or 2 unit, riser tensioner air control skid 1 PLC control panel 1 Remote control panel	1 or 2 unit, riser tensioner air control skid Control skid 1 PLC control panel 1 Remote control panel	1 or 2 unit, riser tensioner air control skid Control skid 1 PLC control panel 1 Remote control panel	1 or 2 unit, riser tensioner air control skid Control skid 1 PLC control panel 1 Remote control panel	1 or 2 unit, riser tensioner air control skid 1 PLC control panel 1 Remote control panel

N-Line Riser Tensioner (NRT)



Description

The wireline tensioner provides positive tension to the marine riser, and compensates for the relative motion between the riser and the drilling rig. The tensioners are installed diametrically opposite to each other. This is to avoid any lateral forces in the riser tensioner ring when reducing tension in one unit (bleeding off air for wire cut/slip etc.). The tensioners maintain tension in each support wire, which is connected to the support ring on the marine riser pipe. The wires from the support ring runs over the pivot hinged idler sheaves, via the fixed lead-in sheaves and then around the two double sheave assemblies on each end of the tensioner cylinders. The wires are then attached to the wire rope anchors.

- A four to one mechanical advantage is obtained, cylinder stroke of 12.5 ft. is transferred to 50 ft. of wire rope travel
- A fluid connection block is installed between the accumulator and cylinder
- Prevents damage on the cylinder and other equipment
- Accumulator gas side is connected to a gas reservoir to obtain constant tension in marine riser pipe
- Centralized control of tensioners
- Driller's control panel interfaces with control unit for operator to start, operate, monitor or shut down the total system

Technical specifications	NRT-1800	NRT-3600	NRT-4800
Max tension capacity (at midstroke)	1,800 kips (8,007 kN)	3,600 kips (16,014 kN)	4,800 kips (21,352 kN)
No. of tension cylinders	6	6	6
Weight (installed)	268 mT	280 mT	298 mT
Comp. stroke	15.24 m (50')	15.24 m (50')	15.24 m (50')
Gas volume (standard)	76,800 l	76,800 l	114,600 l
Hose connection	8"	8"	8"
Design temp.	-20°C to +55°C	-20°C to +55°C	-20°C to +55°C
Max op. press	207 bar (3,000 psi)	207 bar (3,000 psi)	207 bar (3,000 psi)
Design press.	230 bar (3,336 psi)	230 bar (3,336 psi)	230 bar (3,336 psi)
Piston speed (max)	2 m/s	2 m/s	2 m/s
Pston speed (extreme)	4 m/s	4 m/s	4 m/s
Anti-recoil valve	Yes, 8"	Yes, 8"	Yes, 8"
Hydraulic fluid	Water/glycol (HFC)	Water/glycol (HFC)	Water/glycol (HFC)
Remote controlled from drillers cabin (cyberbase)	Yes	Yes	Yes
Local control panel	Yes	Yes	Yes
Trip saver	Possible	Possible	Possible