Multi Capacity Wireline Tensioners

MHWirth's patented gear change for our wireline tensioner system (WLT) expands the operational range of deepwater and midwater rigs to lower water depths. Additionally, it minimizes equipment wear and increases performance.

Our new multi capacity system allows for easy adjustment of the capacity of wireline tensioners according to specific operational requirements and water depths. The system is unique in the market and is based on our proven WLT system. The operator can change the tension capacity during operation, simply by pushing a button that triggers an additional control valve in the WLT.

Each WLT cylinder can be operated in two gears: single acting/plunger, or dual acting. Combined with the large number of tensioners in the system, this offers a broad range of tensioner settings. Gear up/gear down can be selected flexibly for any number of tensioners at any time.

Compared to traditional systems, our multi capacity system adjusts forces by changing the effective area in the cylinder instead of changing the air pressure. This prevents time and energy consuming re-charging of pressure vessels.

In daily operations, this is particularly beneficial in deploying and retrieving the blow-out preventer (BOP). Tension is changed simply by pushing a button instead of making any pressure setting changes.

The precise adjustment of each tensioner is supported by a user-friendly graphic visualization of the gear change.

When changing the tensioners from high capacity mode to low capacity mode, both the current and maximum tension is reduced by up to 35 % (depending on system size). Due to less oil flow and air volume, load variations are reduced, which minimizes wear on the subsea equipment and the wellhead.

Our multi capacity system can be delivered to both new systems and as an upgrade. In upgrade versions, cylinder rods are to be replaced to achieve best performance gear changes.

Benefits

- Expedient and valuable support all the way through the project
- Extends the operational range
- Up to 35 % reduction of tensioner variation in low gear setting reduces wear on the subsea equipment and the wellhead
- Immediate gear change during operation without operational stops
- No air operation during gear change eliminates time-consuming pressure vessel recharging
- Filtration unit and continuous level measuring on accumulators reduce equipment wear and tear

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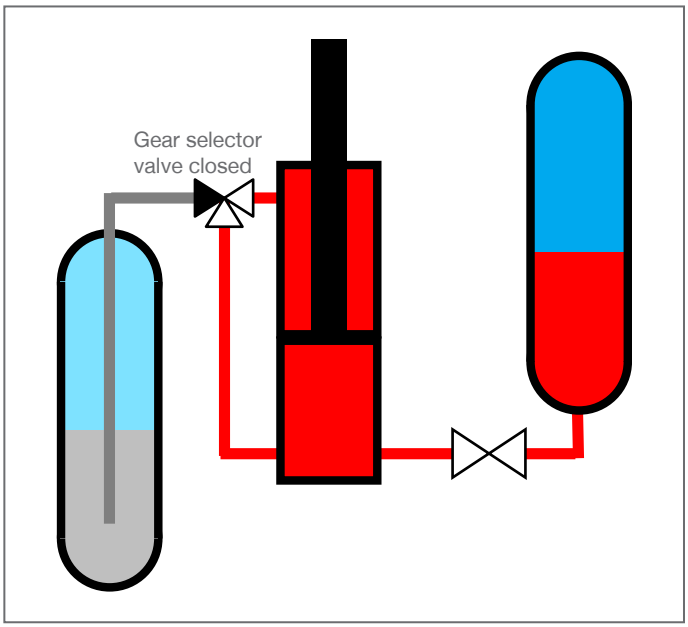
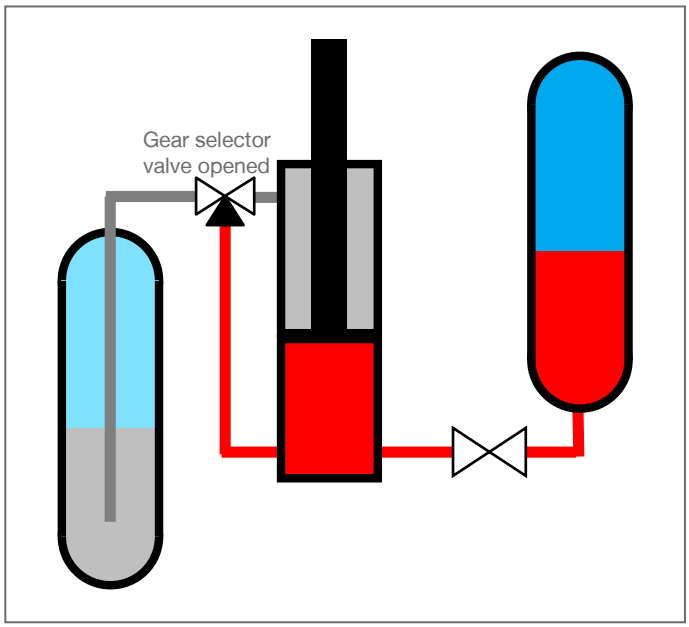
Depending on the drilling requirements, tensioner settings can be changed between two gears:

- For single acting operations, the cylinder is set at a low gear. The effective area in the cylinder is the cylinder rod's diameter
- For more powerful dual acting operations, the cylinder is set at a high gear. The effective area in the cylinder is the bore diameter

Low gear – single acting



High gear – dual acting



Technical Specifications

	250/160 kips	200/130 kips	160/100 kips
Tensioner capacity per cylinder high gear*	250 kips (1113 kN)	200 kips (900 kN)	160 kips (708 kN)
Tensioner capacity per cylinder low gear*	160 kips (708 kN)	130 kips (580 kN)	100 kips (446 kN)
Weight	Additional weight of approximately 3 307 lb (1 500 kg) compared to a regular unit		
Working pressure	3 002 psi (207 bar)		
Design pressure	3 336 psi (230 bar)		
Stroke	Typically 50 ft (15.2 m) wire travel. Other lengths upon request		

*The values are given for one single tensioner. Multiply to actual number of tensioners.
Data is subject to confirmation by the manufacturer.