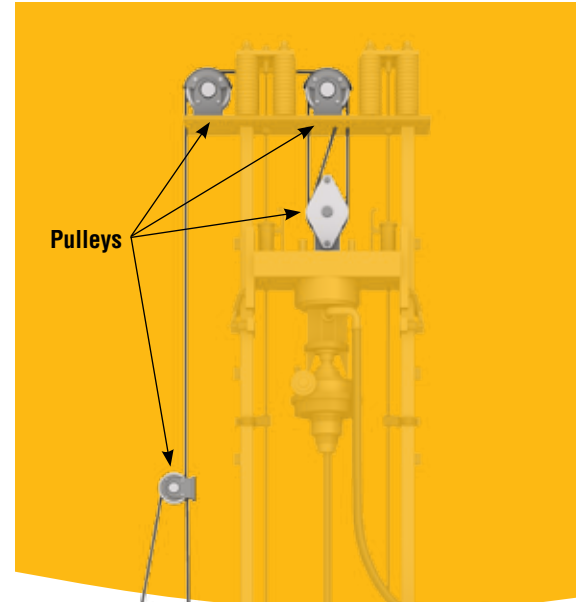


# Hydraulic Decoking Systems

Lifting Mechanism Components

*Under its Worthington®, Pacific® and IDP® heritage names, Flowserve hydraulic decoking systems are installed in more than 150 refineries worldwide.*



## Decoking Lifting Mechanism

*The Flowserve hydraulic decoking lifting mechanism consists of three primary parts: the winch, pulley blocks and tensiometer. Together with the crosshead and free-fall arrester, these components make up a system that safely and efficiently manages the working height and storage of the drill string.*

### Winch

- Available in electric, hydraulic or pneumatic drive. Electric or hydraulic drives are the preferred choice for automated decoking systems.
- The winch delivers large hoisting power with a high design factor and variable line speed.
- Comes complete with a fabricated steel drum and frame assembly, planetary gearbox, fail-safe, oil-bath disc brake and automatic drum brake.
- Oversized drum barrels with press rollers and level winds promote longer wire rope life.
- Winch is designed for decoking service with a small footprint and enough lifting capacity for large cutting systems and coke drum collapses.

### Pulley Blocks

- The lift mechanism uses a four-part reeving system of high-strength cable, pulley blocks and sheaves made to Flowserve specifications.
- Multiple sizes and load ratings are available to meet specific design requirements.
- Overhead supported sheaves provide high strength with low maintenance requirements.
- Attachment of blocks to the crosshead and tower structure is achieved through the use of hanger plates, which are custom designed for individual applications.
- The crown sheaves are available with an optional system to indicate “in-drum” tool position.



**Pulley Blocks**

### Tensiometer

The Flowserve compression-type tensiometer replaces typical designs used for measuring cable tension. The result is a more practical load measurement system with many safety, operation and maintenance advantages.

- All parts are manufactured of NACE-grade materials that mitigate stress corrosion cracking.
- Load cell can be unloaded without disconnecting the cable, allowing the strain gauge amplifier to be zero adjusted with all components in place.
- Removal and replacement of tensiometer can be accomplished without disconnecting the cable.
- Tensiometer may be located at the cutting deck for easy maintenance access.
- Direct cable attachment capability eliminates the need for commercial eye bolts.
- Design is compatible with existing strain gauge amplification modules and display units.



**Tensiometer**

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