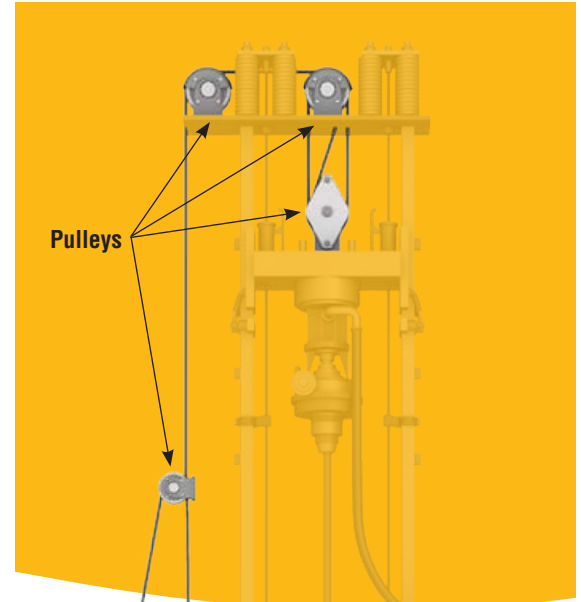


Hydraulic Decoking Systems

Lifting Mechanism Components

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

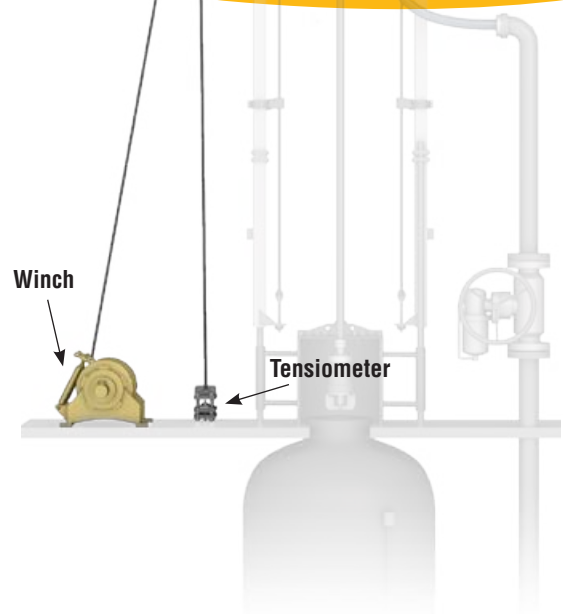


Decoking Lifting Mechanism

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.

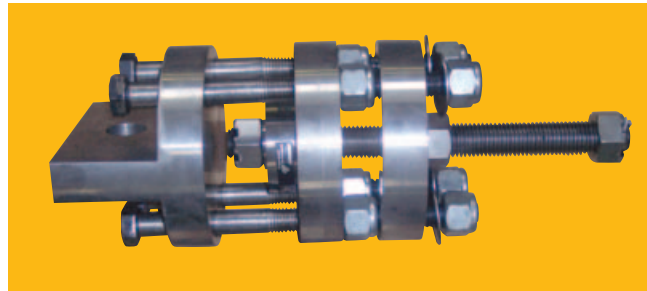


Pulley Blocks

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

Bulletin PSS-90-6.12 (E) August 2012. © 2012 Flowserve Corporation

To find your local Flowserve representative:

For more information about Flowserve Corporation, visit www.flowserve.com or call +1 937 890 5839.

USA and Canada

Flowserve Corporation
5215 North O'Connor Blvd.
Suite 2300
Irving, Texas 75039-5421 USA
Telephone: +1 937 890 5839

Europe, Middle East, Africa

Flowserve Corporation
Parallelweg 13
4878 AH Etten-Leur
The Netherlands
Telephone: +31 76 502 8100

Latin America

Flowserve Corporation
Martín Rodríguez 4460
B1644CGN-Victoria-San Fernando
Buenos Aires, Argentina
Telephone: +54 11 4006 8700
Telefax: +54 11 4714 1610

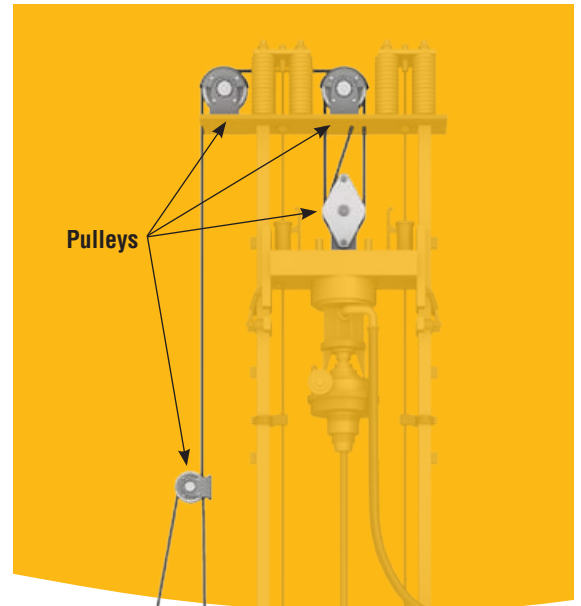
Asia Pacific

Flowserve Pte. Ltd.
10 Tuas Loop
Singapore 637345
Telephone: +65 6771 0600
Telefax: +65 6862 2329

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.

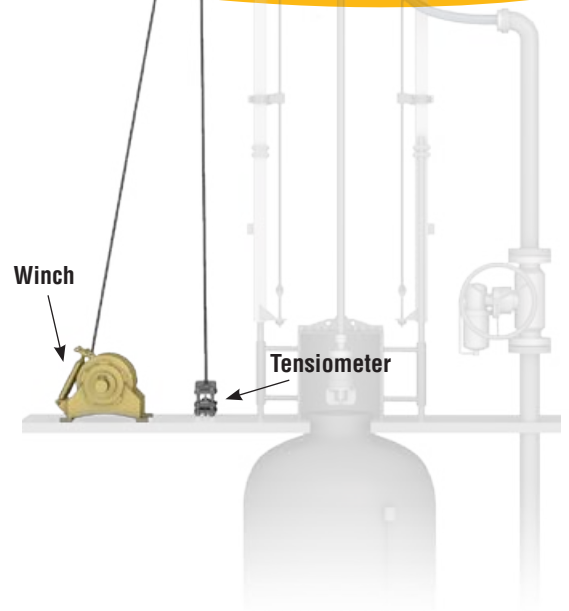


Decoking Lifting Mechanism

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.

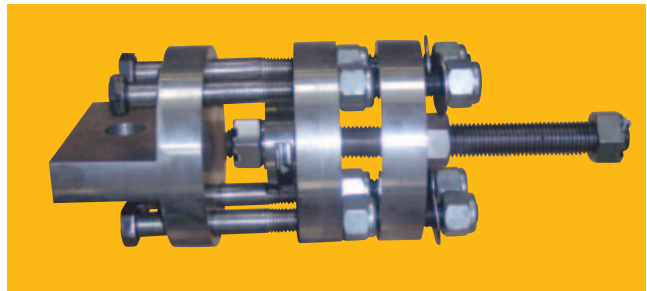


Pulley Blocks

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

Bulletin PSS-90-6.12 (E/A4) August 2012. © 2012 Flowserve Corporation

To find your local Flowserve representative:

For more information about Flowserve Corporation, visit www.flowserve.com or call +1 937 890 5839.

USA and Canada

Flowserve Corporation
5215 North O'Connor Blvd.
Suite 2300
Irving, Texas 75039-5421 USA
Telephone: +1 937 890 5839

Europe, Middle East, Africa

Flowserve Corporation
Parallelweg 13
4878 AH Etten-Leur
The Netherlands
Telephone: +31 76 502 8100

Latin America

Flowserve Corporation
Martín Rodríguez 4460
B1644CGN-Victoria-San Fernando
Buenos Aires, Argentina
Telephone: +54 11 4006 8700
Telefax: +54 11 4714 1610

Asia Pacific

Flowserve Pte. Ltd.
10 Tuas Loop
Singapore 637345
Telephone: +65 6771 0600
Telefax: +65 6862 2329