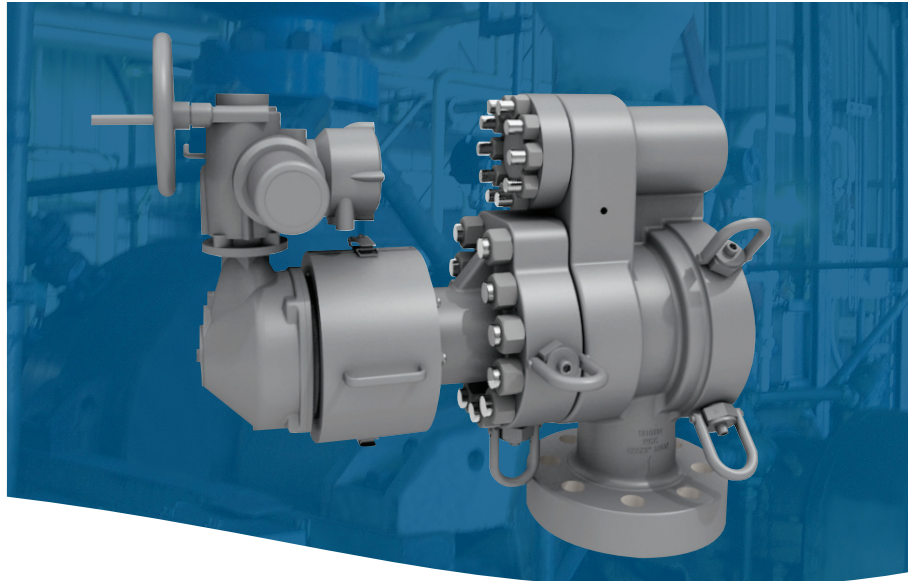


Decoking Control Valve

Hydraulic Decoking Systems

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



Advanced Decoking Control Valve

The Flowserve Decoking Valve uses proven designs to provide trouble-free operation in the harsh decoking service. When maintenance is required, the valve can be completely refurbished at the plant site in less than a day.

The Flowserve decoking control valve controls the flow from the jet pump, with a single valve providing three distinct functions:

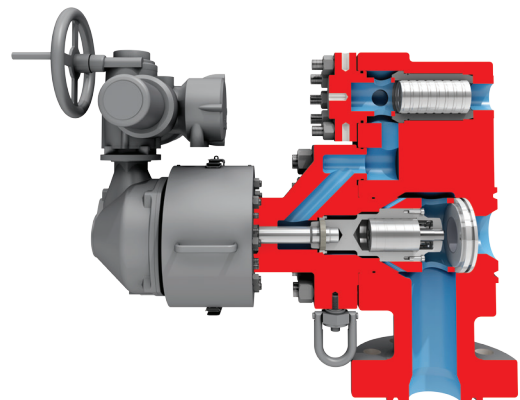
- Recirculation (bypass) flow control for pump protection
- Pre-fill of decoking lines, hoses, manifolds, etc., at a predetermined reduced flow rate to prevent water hammer
- Full flow to the decoking tool nozzles. Very low pressure drop (high Kv [Cv]) in full flow for reduced energy consumption

Cavitationless Design utilizes stacked orifice plates to gradually drop pressure across the valve without damaging internal components.

Short Stroke, Single Stem Operation assures no unwanted overlap of functions.

Non-clogging Design passes particles up to 3 mm (1/8 in).

Ultra-compact Design means less weight and a smaller size envelope.



Cartridge Design features field-removable orifice stacks for ease of maintenance.

Simple Installation is suitable for direct mounting on the jet pump.

Replaceable, Hardened plug and seat surfaces.

Instant Return to any operating mode upon command.

Dimensionally Interchangeable with Pacific heritage decoking control valve.

Cost-Effective Solution

- Lower initial cost than alternative valve designs
- Lower lifetime maintenance cost than alternatives
- Design and maintenance simplicity with minimal moving parts
- No foundation required

Actuation

Limitorque® motor operator is standard. Optional double-acting pneumatic actuator with positioner is available with 5.5 bar (80 psi) to 7 bar (100 psi) air supply requirement.

Specifications	
Sizes	6 in x 6 in x 3 in 8 in x 8 in x 4 in
Flange Ratings	Class 1500 Class 2500
Body Material	CA6NM
Actuator Types	Electric Pneumatic

Testing

Full operational hydrotest is standard with optional full-pressure, full-flow testing available.

Decoking Valve Operating Modes

Bypass

- Bypass mode provides the minimum flow required by the jet pump to prevent deadheading.
- As liquid enters the valve, it is diverted through the bypass stack, and cycled back to the supply tank.
- The stack is made up of multiple orifice plates that gradually drop the liquid pressure, avoiding the cavitation damage commonly found in other valve types.
- The valve should always be in bypass mode before starting the jet pump.

Pre-fill

- This mode performs a low pressure pre-fill sequence until the system lines are filled with liquid.
- The center stem retracts slightly, allowing liquid to pass through the plug stack. This drops the flow rate and pressure of the liquid before entering the system lines.
- This mode allows the system to start without damaging water hammer effects.

Decoking

- Decoking mode provides full flow to the cutting tool with minimal pressure drop.
- After pre-fill, the stem continues to retract, pulling the plug stack off the hardened valve seat.
- This mode is initiated any time after the decoking line is completely filled with liquid and all air expelled.
- To stop full flow, return the valve to bypass mode.

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