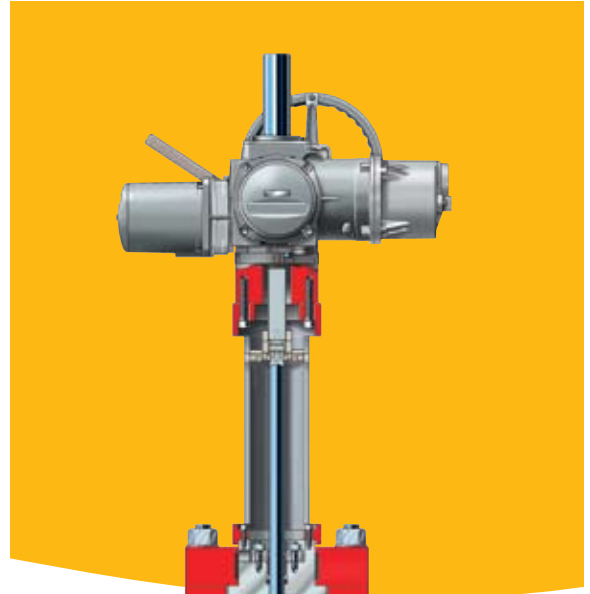


# Hydraulic Decoking Systems

Decoking Control Valve

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



## Flowserve Decoking Control Valve

*The proven Flowserve valve design provides years of trouble-free operation in 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  $K_V$  [ $C_V$ ]) in full flow for reduced energy consumption

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

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

**Compact Design** simplifies installation. Suitable for direct mounting on the jet pump.

**Stainless Steel** inlaid at all gasket surfaces, option for fully lined body.

**Valve Stem Sealing** by low friction elastomer rings. No adjustment... no packing required.

**Proven, Replaceable, Durable Soft Seats** assure zero leakage with water and coke fines – no lapping required during repairs.

**Instant Return** to any operating mode upon command.

## 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

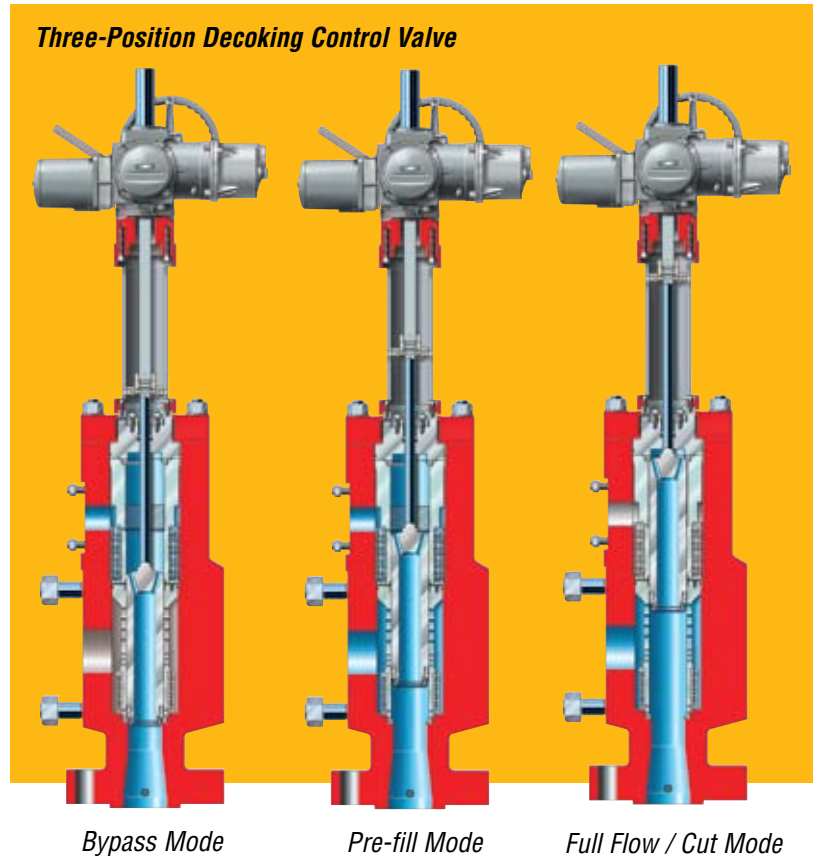
## Actuation

Limiterque® 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.

## Decoking Valve Upgrade Options

Several upgrades are available to improve the reliability and operation of existing decoking valve installations. A Flowserve decoking expert can help specify appropriate enhancements for specific applications.

- 309 SS overlay of valve body at body seat areas
- 17-4 PH SS bonnet and piston sleeve material
- Backup ring to O-ring at valve body seat and piston sleeve
- PEEK piston seal material
- Piston sleeve seal ring spacers
- Seal ring material for higher allowable pressure
- One-piece 17-4 PH SS piston and piston rod
- A forged valve body in corrosion-resistant material
- Proximity sensors and limit switches to detect mode of operation



Bulletin PSS-90-6.2b (E) Printed in USA. September 2010.  
© Flowserve Corporation

### To find your local Flowserve representative:

For more information about Flowserve Corporation, visit [www.flowserve.com](http://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  
Gebouw Hagepoint  
Westbroek 39-51  
4822 ZX Breda  
Netherlands  
Telephone: +31 76 502 8920

### 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 6779 4607