Schlumberger

WRHP-15 Series Safety Valves

Severe service, deepset, rod piston, flapper valves with working pressures to 15,000 psi [103,425 kPa]

APPLICATION

- Sweet to severely corrosive applications from 75 degF to 350 degF [24 degC to 177 degC]

BENEFITS

- Design is cost effective and easy to run.
- Allows fewer potential leak paths.
- Reduces problems associated with solids and scale deposition.
- Applies to a wide range of wells.

FEATURES

- Designed in accordance with API and ISO criteria
- Rod piston with a premium sealing system and field-proven Inconel® 718 flapper and seat with metal-to-metal sealing
- Compact design
- Minimum number of seals
- Optimal geometry and clearance between sliding components
- Engineered for setting depths to approximately 5,000 ft [1,524 m]

The Camco* WRHP-15 slickline-retrievable subsurface safety valves are engineered to provide industry-leading reliability. The WRHP-15 series features rod-piston operation with the rugged Camco flapper and seat design. This design maximizes long-term performance and reduces potential leak paths.

The WRHP-15 series safety valves are designed specifically as secondary valves for Pinnacle* tubing-retrievable safety valves. They are supplied with the spacer bars installed to match the primary valve's length requirement.

The WRHP-15 series is operated by a rod-piston, premium sealing system. The premium flapper mechanism also has full metal-to-metal sealing plus a secondary soft seat, and it meets a leakage-acceptance criterion that is substantially more stringent than API and ISO specifications.

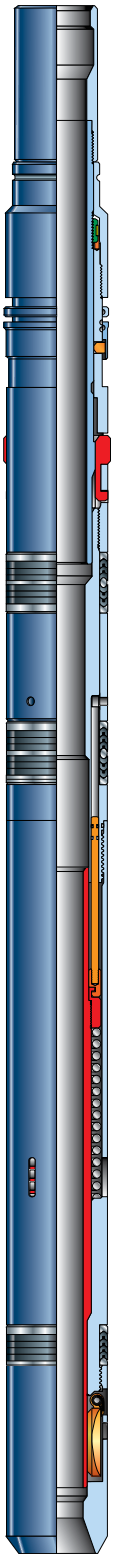
The WRHP-15 series safety valves are suitable for setting depths of approximately 5,000 ft [1,524 m] and are applicable to a wide range of wells, with working pressures to 15,000 psi [103,425 kPa].

VALVE INSTALLATION

To install a WRHP-15 series safety valve, the valve is lowered and locked into the disabled tubing-retrievable valve using the appropriate running tool and prong for the HPC series no-go lock mandrel attached to the valve.

VALVE OPERATION

The WRHP-15 series safety valves are normally closed. They are opened by applying hydraulic pressure through a control line that extends from the hydraulic landing nipple, or disabled tubing-retrievable valve, through the wellhead to the control panel. Hydraulic pressure applied from the surface control panel pushes the rod piston and the flow tube down. This downward movement compresses the power spring, moves the flapper off seat, and continues until the valve is in the fully open position. When the hydraulic control line pressure is released, the power spring lifts the flow tube and the rod piston. This upward movement permits the torsion spring on the hinged flapper to move the flapper into the flow stream, close against the flapper seat, and shut in flow from the well.



WRHP-15 safety valve.

WRHP-15 Series Safety Valves

EQUALIZING OPERATION

The WRHP-15 safety valve is a nonequalizing design. To open the safety valve with pressure below the flapper, the application of increased wellbore pressure from above is required until the valve is equalized. To open the valve after equalization, the required amount of hydraulic control line pressure is applied

Engineering Data for WRHP-15 Series Safety Valves

Tubing Size† (in [mm])	Valve Type	Valve Packing OD (in [mm])	Valve ID (in [mm])	Working Pressure (psi [kPa])
2.375 [60.3]	WRHP-15	2.312 [58.7]	0.985 [25.0]	15,000 [103,425]
2.875 [73.0]		2.562 [65.1]		
3.500 [88.9]		3.562 [90.5]	1.875 [47.6]	

† The engineering data provided illustrate the scope of this product offering and are not all inclusive. Additional sizes and pressure ratings are available upon request.

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