



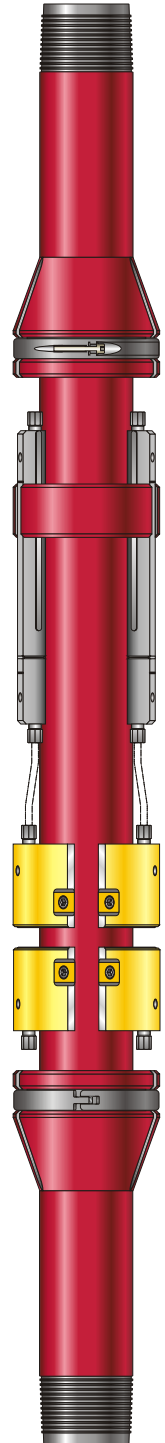
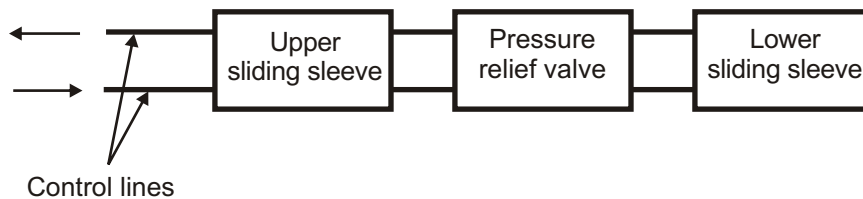
Pressure Relief Valve

Weatherford's pressure relief valve is a tubing-mounted component used in an intelligent completion to operate two ROSS® or ROSS V remotely operated sliding sleeves with two common-architecture hydraulic control lines from the surface.

The pressure relief valve is placed between the sleeves and allows pressure to operate only one while the other remains undisturbed. When control-line pressure is maintained below a predefined threshold value, the lower sliding sleeve remains isolated from the acting pressure to maintain zonal isolation. As pressure is increased to exceed the predefined value, an internal valve opens, allowing pressure to operate the lower sliding sleeve.

Applications

- Multiple-zone intelligent wells requiring commingled production





Pressure Relief Valve

Features, Advantages and Benefits

- The pressure relief valve enables control of two sliding sleeves with just two control lines from the surface rather than the usual four lines. This simplified wellhead design provides greater operating efficiency along with cost savings on control lines.
- The ability to operate just one sleeve enables selective zonal isolation.
- The pressure relief valve enables operation of the *ROSS* and *ROSS V* tools without intervention by wireline or coiled tubing. This capability reduces costs while enhancing reservoir management and production.
- Built-in filter protects critical hydraulic components from debris to ensure optimal performance and service life.
- Solid-body configuration of the pressure relief valve protects the filters, manifolds and other critical components from damage during deployment.
- Pin x pin design provides clamp points immediately above and below components for maximum protection against damage by the casing wall. This design also provides a more accurate dimension for clamps to optimize their effectiveness.
- External control-line connections facilitate testing before deployment.
- Simple and proven relief valve technology provides high reliability.
- Material options make the pressure relief valve suitable for use with hydraulic mineral/synthetic oils and most water-glycol based fluids.



Pressure Relief Valve

Specifications

Size (in./mm)	3.500 88.9
Maximum OD (in./mm)	5.500 139.7
Minimum ID (in./mm)	2.992 76.0
Top thread connection	3 1/2-in., 9.2-lb/ft NEW VAM [®] pin
Bottom thread connection	
Tensile rating (lb/kg)	207,000 93,894
Pressure rating (PSI/bar)	10,000 689.48
Minimum crack pressure (PSI/bar)	3,400 234.42
Minimum shutoff pressure (PSI/bar)	3,200 220.63
Minimum flow rate (GPM)*	0.95
Filter size (micron)	5

*At 4,050 PSI (279 bar)

Options

- The pressure relief valve can be built of almost any material to meet the requirements of almost any environment, including high-nickel alloy for hydrogen sulfide (H₂S) and carbon dioxide (CO₂) conditions.

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