Schlumberger

TRC-II-20

HPHT tubing-retrievable, charged safety valve

Rated to 20,000 psi [137.9 MPa]

Rated up to 205 degC [400 degF]

APPLICATIONS

- Deep and ultradeep setting depths, with low hydraulic operating control pressures
- Sweet to severely corrosive environments

BENEFITS

- Eliminates the need for high-pressure hydraulic systems because hydraulic operation is insensitive to production tubing pressure
- Increases reliability by reducing need for workovers via hydraulic control redundancy
- Ensures wellbore integrity in the event of emergency with industry-leading flapper leak-rate criteria tested to bubble-tight standards

FEATURES

- Setting depth flexibility
- Simple hydraulic system that allows fewer potential leak paths
- Dual, redundant hydraulic actuation systems
- Integral control fluid filter system
- Premium metal-to-metal seal body joints that minimize potential leak paths
- Optimized geometry and a unique INCONEL® 718 flapper mechanism with full metal-to-metal sealing
- Piston-disconnect design for fail-safe closure
- Nose-seal technology with optimal geometry and clearance between sliding components

The TRC-II-20* HPHT tubing-retrievable, charged safety valve is designed for extreme environments: deepwater and ultradeepwater and temperatures ranging from 4 to 205 degC [40 to 400 degF]. This surface-controlled subsurface safety valve performs reliably at depths where other technologies areineffective. Because these valves can be installed at depths greater than 15,000 ft [4,661 m], they can be positioned below the hydrate, asphaltene, or paraffin deposit regions within the wellbore to increase operating efficiency.

Field-proven reliability

Incorporating the best Schlumberger laboratory and field-proven technologies, the TRC-II-20 valve features rod-piston hydraulic actuators that are insensitive to production tubing pressure. Both independent systems—each piston has its own system—incorporate a minimum number of critical, dynamic, and static seals, a 5-micron filtered control fluid filter, and a gas-powered spring to offset the hydrostatic control line and annulus pressure. The patented lower piston disconnect is designed for fail-safe operation in the event of seal failure. Multiple disconnect-reconnect operations can be conducted.

Operating redundancy

As with all TRC-II* tubing-retrievable charged safety valves, the TRC-II-20 valve provides complete operating redundancy, with two separate and completely independent hydraulic operating systems connected by individual control lines. Either piston can fully operate the valve at hydraulic pressures substantially lower than those required by conventional valve designs. These features make this valve exceptionally reliable for deepset and low-operating-pressure applications.

Customizable parameters

The TRC-II-20 valve permits the precise matching of operating parameters to the actual well conditions before the valve is installed. Proprietary software predicts the operating pressure of the valve for a specific application. The integral gas-powered springs are set at the factory to the pressure calculated to match the closing requirements for the well conditions.

TRC-II-20 Valve Specifications

Tubing Size, in [mm]	Max. OD, in [mm]	Nipple Bore Size, in [mm]	Working Pressure, psi [MPa]	Tensile Strength, lbf [N]
4.500 [114.3]	7.750 [196.9]	3.250 [82.6]	20,000 [137.9]	1,090,000 [494,415]

TRC-II-20 valve.