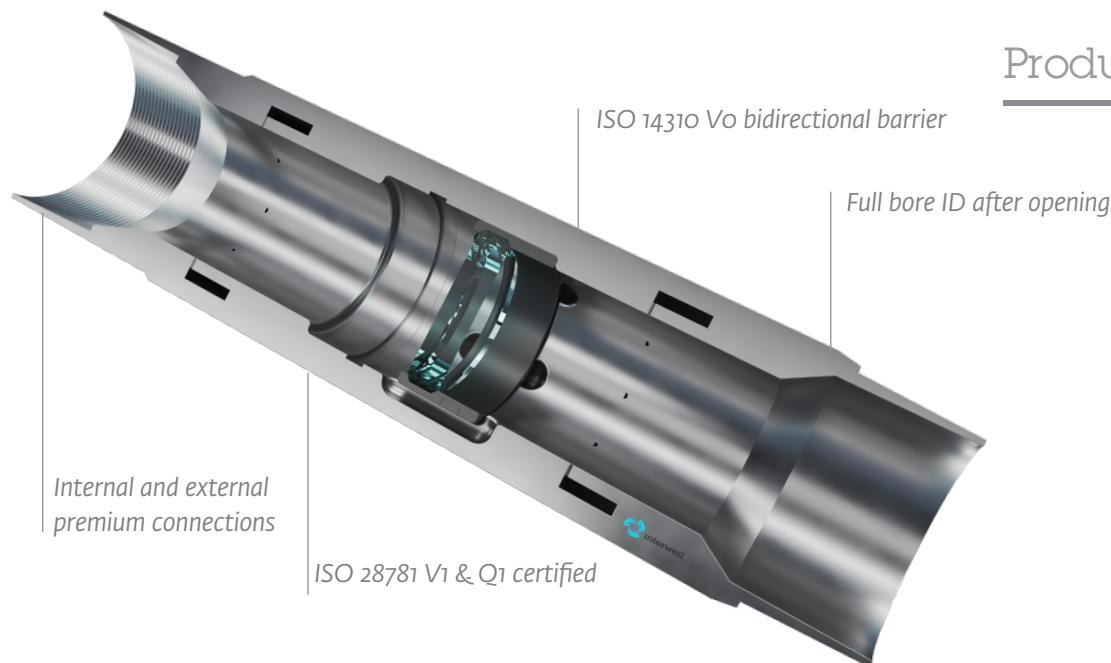


Product Sheet: Inter Remote Bypass Valve (IRBV)



Product Features

Product Description

By utilizing the IRBV, the drilling rig can batch complete subsea wells and, at a later stage, batch install the vertical x-mas trees (VXT) with an Inspection Maintenance and Repair (IMR) vessel. This ensures wireline (WL) intervention can be avoided during the completion installation.

The IRBV is a completion string integrated barrier valve, with a control line bypass feature. The design is based on the field proven Inter Remote Shatter Valve (IRSV) glass plug technology. It operates with three positions: open, closed and then permanently open. The valve is installed with the bypass ports in open position. This ensures standard completion activities can be conducted and the operator would still be able to accomplish bull heading in the event of a well control situation.

The valve is shifted to closed position after a predefined number of tubing pressure cycles have acted on the system. Once the bypass is closed an ISO14310 Vo well bidirectional barrier is established. The glass element has excellent physical properties, designed to withstand extreme bidirectional loads and high temperatures. Only a small volume of glass is required to hold the load and the glass disintegrates into small particles after removal.

Once the tubing above the element has been subjected to a predefined number of pressure cycles, the barrier element is shattered. The valve then activates to its final open state, resulting in full bore ID through the assembly for production and future intervention.

Product Benefits

Installed as part of completion string

No intervention required

Significant cost savings on rig time

Contingency solutions to close bypass and open barrier

Product Sheet: Inter Remote Bypass Valve (IRBV)

Product Application

Using the IRBV in the completion string:

- Increases operational efficiency saving time and cost, to increase the value of the well
- Creates safer working conditions by removing the QHSE exposures associated with well intervention operations, for both subsea VXT wells and conventional wells
- Reduces the carbon footprint by reducing the duration of operations

The tool can be utilized in various applications, such as:

- A shallow barrier for BOP removal and VXT installation purposes, for both conventional and subsea completion
- As a deep barrier allowing for communication down the tubing until the valve is closed, i.e. to avoid running upper completion closed ended or allowing for communication when for example running standalone screens.

Further Features

- The IRBV was subjected to a fluid erosion test prior to qualification according to ISO 14310 Vo.
- Box/pin connections according to customer specifications
- Remotely activated; no WL intervention required
- Debris tolerant activation system
- No pyrotechnics

Technical Specifications

Model	ID	OD	Circ. rate	Flow area	Pressure Rating	Temperature
596-882	5.965"	8.826" (9.437") ¹	500 l/min	1.77" ²	345 bar (520 bar) ²	0-50°C (-5-130°C) ⁴
610-882	6.103"	8.826" (9.437") ¹	1000 l/min	2.20" ²	380 bar ³	0-50°C (-5-130°C) ⁴
467-781	4.67"	7.819" (8.378) ¹	1000 l/min	2.20" ²	518 bar	4-120°C

¹ Cable clamp running OD=(X") (eccentric). Cable clamp OD is dependent on control line bypass requirements.

² Barrier is qualified according to ISO 14310: Vo to 345 bar at 0-50°C and V6 to 520 bar from above. Pressure rating of housing (S13Cr110ksi): Burst: 520 bar / Collapse: 580 bar.

³ Barrier is qualified according to ISO 14310: Vo to 380 bar at 0-50°C. Pressure rating of housing (S13Cr110ksi): Burst: 503 bar/Collapse: 381 bar.

⁴ 0-50°C: Min/max temperature for barrier function. -5 – 130°C: Temperature rating of housing.

The product can be qualified to other specifications upon request.