SeaShield® Model 7875 Below-Tension-Ring (BTR) Rotating Control Device (RCD)

Creates a pressure-tight barrier in the wellbore annulus to safely contain and divert annular fluids from marine risers

Applications

- Managed pressure drilling (MPD) in riser-based applications for installation below the tension ring or below the termination joint
- Underbalanced drilling operations
- Drilling in formations with abnormally pressured aquifers
- Drilling in all marine environments
- Extended-reach horizontal wells and ultradeep vertical wells that require large-diameter drillstrings
- Drilling operations that require prevention of background gas from flashing to the atmosphere on the rig floor
- Offshore drilling operations that present the risk of two-phase flow
- Drilling in shallow-gas formations

Features and Benefits

- The bearing assembly running tool (BART), control console, and stabbing stand enable the positioning and removal of the bearing and sealing element assembly without using a hoist or requiring personnel to work below the rotary table.
- A 19-in. (482.6-mm) bearing assembly OD enables deployment through rotary tables and most tension ring components.
- A bearing ID of 9.155 in. (232.5 mm) makes the Model 7875 below-tension-ring (BTR) rotating control device (RCD) capable of handling drillpipe with sizes up to 6-5/8 in. and casing of 7-in. and smaller in drilling-with-casing operations.
- The human machine interface (HMI) of the hydraulic control system has a monitor that displays real-time wellbore pressure and latch hydraulic pressure to enhance operational efficiency and safety.
- The 21 1/4-in., 10M top and bottom flanges meet the American Petroleum Institute (API) 6A standard.
- The RCD body is designed to carry riser tensile loading of 3,500,000 lbf (15,569 kN).
- The dual-barrier elastomeric sealing elements in the bearing assembly rotate with the drillpipe and maintain a tight seal as the drillpipe passes through the RCD.
- The design and proprietary elastomeric composition of the sealing elements provide durability and sealing capability suitable for low- and high-pressure drilling operations.
- The safety mechanisms within the latching assembly secure the bearing assembly in place and protect against accidental release of the bearing assembly.
- The umbilical control and stab plate system enable fast makeup and deployment of hydraulic and electric lines.

Part of the SeaShield marine series of RCDs, the Model 7875 BTR RCD has features that together enhance safety and efficiency in offshore drilling.

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Tool Description

The Weatherford Model 7875 BTR RCD is the key tool in closed-loop drilling operations that enables positive diversion of annular returns from marine risers of floating rigs with subsea blowout preventers (BOPs) and typical 21 1/4-in. (540-mm) riser systems. Part of the marine series of RCDs, the Model 7875 BTR RCD bears the API 16RCD monogram.

The design of the BTR RCD is extensively and globally field-proven on offshore rigs with subsea BOP stacks. The BTR RCD enhances well control and drilling performance on challenging deepwater wells during Secure Drilling operations, and it enables rapid transitions from MPD to conventional drilling operations and vice versa.

The BTR RCD body is configured below the tension ring or the termination joint as an integral component of the riser. When the self-lubricated bearing and annular-seal assembly is latched into the body, annular returns are positively diverted to a dedicated MPD manifold and other rig equipment through flexible flowlines that compensate for rig heave movement.

Parts and Accessories

- Sealing elements are provided in either natural rubber or oil-resistant polyurethane.
- The BART aids in installing the bearing assembly and drillpipe within the Model 7875 BTR RCD and removing them from it.
- The stabbing stand aids in assembling the bearing assembly to and removing it from the BART.
- The RCD can also use a logging adapter, test plug, protective sleeve, and snubbing adapter.

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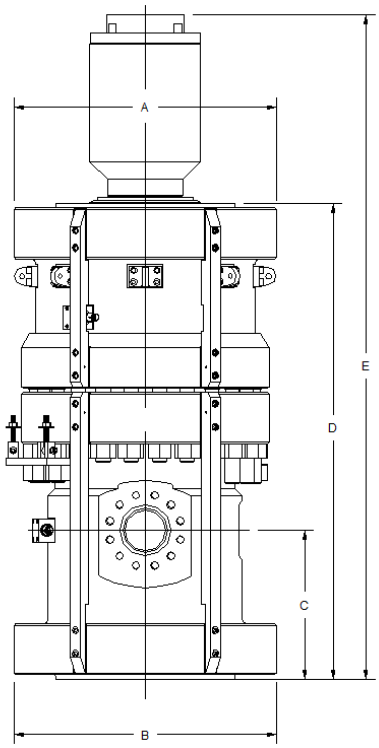
Specifications

Dynamic pressure rating[a]	1,500 psi (10.34 MPa)
Static pressure rating[a]	5,000 psi (34.5 MPa)
Maximum speed rating[b]	200 rpm
Minimum throughbore ID of the RCD body	18.75 in. (476 mm)
Power requirements	480 V, 60 Hz, 3-phase
Maximum tensile rating	3,500,000 lbf (15,569 kN)
Top and bottom flanges: OD	API 21-1/4 in. 10M (539.8 mm)
Maximum RCD body running OD[c]	48.18 in. (1,223.8 mm)
Bearing assembly OD[d]	19.00 in. (482.6 mm)
Bearing assembly ID[e]	9.155 in. (232.5 mm)

a Pressure tests to verify the static and dynamic pressure capability of the Model 7875 BTR RCD are conducted in a controlled environment. Actual field application pressure capabilities will depend on several factors, such as the type and size of the sealing element; the type, size, and condition of the drillpipe; and the drilling fluid temperature. Because of the uncontrolled nature of the environment and the well conditions encountered during drilling operations, Weatherford makes no representation or warranty on the operation of the RCD outside of the pressure ratings as set forth herein.
b This rating depends on wellbore pressure.
c The body running OD enables deployment through 49 1/2-in. rotary tables.
d The bearing assembly is deployable through most risers.
e The bearing assembly enables running of 6 5/8-in. drill collars and hard banding.

Dimensions[f]				
A	B	C	D	E
45.00 in. (1,143 mm)	45.00 in. (1,143 mm)	25.60 in. (650 mm)	81.78 in. (2,077 mm)	114.03 in. (2,896 mm)

f All dimensions are approximate



Bearing Assembly Weight: 2,869 lb (1,301 kg)

Latch and Body Assembly Weight: 20,000 lb (9,072 kg)

Flowline: 7-1/16 in. (179 mm)
5,000 psi (34.5 MPa) Accessory: 2-1/16 in. (52 mm), 5,000 psi (34.5 MPa)

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