

## PORT Pressure-Operated Reference Tool

Eliminates high nitrogen precharge for increased safety at surface

### APPLICATIONS

- Downhole tests using a PCT\* pressure-controlled tester valve

### BENEFITS

- Increased HSE safety because trapping reference pressure downhole eliminates need for high nitrogen precharge at surface

### FEATURES

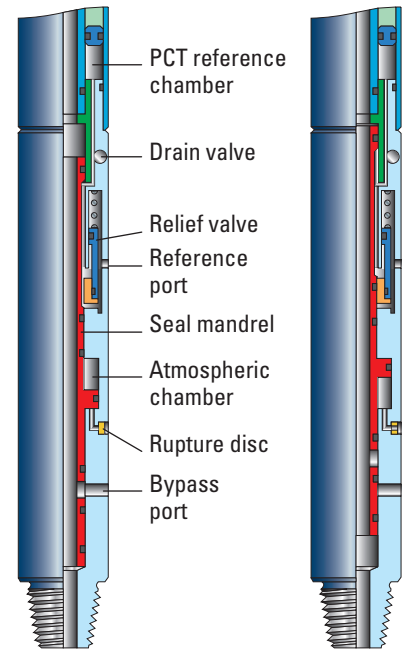
- Bleeds reference pressure to ensure a high closing force for the PCT valve
- Runs in hole with tubing-to-annulus bypass open
- Operates by annular pressure
- Requires no set-down weight
- Includes self-bleeding relief valve
- Can be used with an optional formation protector module (FPM) that protects formation when open perforations are present

The PORT\* pressure-operated reference tool provides a reference pressure to the PCT pressure-controlled tester valve and also serves as a bypass when running in the hole. The PORT tool automatically traps a reference pressure within the PCT valve, eliminating the need for a high-nitrogen precharge at the surface.

To operate the tool, pressure is applied to the annulus, causing the disc to rupture. The overpressure applied to the annulus to rupture the disc is also applied to the reference chamber of the PCT valve. When the annulus pump pressure is bled off, the relief valve bleeds the reference pressure to 450 psi above the hydrostatic pressure. This trapped reference pressure ensures a high closing force of the PCT ball valve. When the tool is being pulled out of hole, downhole reference pressure is bled through the relief valve for safety.

Because the PORT tool is pressure-operated, set-down weight is not required. The string can be run in tension, greatly simplifying the string design when testing with a permanent packer. Drill collars (weight) and slip joints (length compensation) can be eliminated. Length compensation is provided by the packer stinger when a permanent packer or the CERTIS\* high-integrity reservoir test isolation system is being used.

The PORT tool is normally fitted with an FPM kit when open perforations are present. The FPM kit prevents the annulus overpressure needed to close the PORT tool from communicating with the open formation through the bypass ports.



PORT tool before trapping reference pressure (left) and after trapping reference pressure (right).

# PORT Pressure-Operated Reference Tool

## Specifications

Model	PORT-FEA/FEB	PORT-GAA/GAB
Max. OD, in [mm]	5 [127]	3.125 [79]
Tool ID, in [mm]	2.25 [57]	1.125 [29]
Pressure ratings		
Differential, psi [MPa]	15,000 [103]	15,000 [103]
Max. annular, psi [MPa]	25,000 [172]	20,000 [138]
Max. tubing, psi [MPa]	29,000 [200]	29,000 [200]
Temperature rating, degF [degC]	425 [218]	425 [218]
Length, ft [m]	4.98 [1.52]	4.6 [1.4]
Length with FPM, ft [m]	7.4 [2.3]	6.48 [1.98]
Weight, lbm [kg]	240 [109]	75 [34]
Weight with FPM, lbm [kg]	400 [181]	95 [43]
Service (NACE International MR-0175)	H <sub>2</sub> S, acid	H <sub>2</sub> S, acid
Tensile strength min. yield, lbf [kN]	360,000 [1,600]	160,000 [710]
Connection	3½ IF or PH-6	2¾ Reg or PH-6

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