

Dual-Action Valve

Full-opening downhole test valve

APPLICATIONS

- Reservoir testing
- Downhole testing
- Completion operations
- Deviated and deepwater wells
- HPHT wells

BENEFITS

- Minimizes operating time by using rupture disc operations

FEATURES

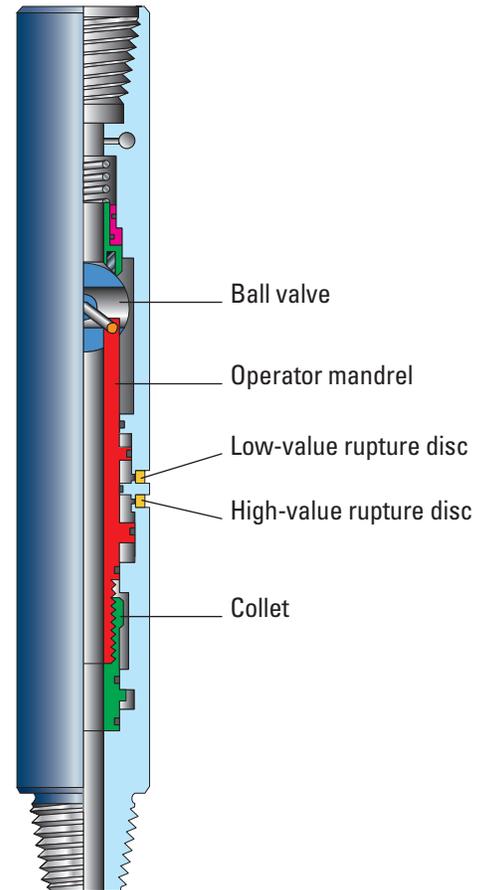
- Rupture-disc-operated tester valve
- Fullbore when opened

The dual-action valve (DAV) is a full-opening downhole test valve. It is run in the closed position, opened by annulus overpressure (rupture disc), and then reclosed by a second annulus overpressure (rupture disc). The operator mandrels are balanced to ID pressure. A two-way ratchet is used to prevent the operator mandrel from shifting, except in response to annulus overpressure.

When the first disc is ruptured, hydrostatic pressure is applied to an operator area, which opens the ball valve. The ball stays in the open position until the second disc is ruptured. Rupturing this disc applies hydrostatic pressure to a greater operator area, which permanently recloses the ball valve.

Replacing the DAV ball valve with the alternative ball valve enables running the DAV open, closed, and then permanently reopened.

The DAV-K is part of the new-generation hostile K-string developed for ultrahigh-pressure wells with bottomhole pressures up to 30,000 psi. Seal options used in the tool make it suitable for both standard and ultrahigh-temperature environments, as well as hostile drilling and completion fluids.



Dual-action valve.

Specifications

Model	DAV-E	DAV-FAA/FAB	DAV-K
Max. OD, in [mm]	5 [127]	5 [127]	5 [127]
Tool ID, in [mm]	2.25 [57]	2.25 [57]	2.25 [57]
Pressure ratings			
Max. differential across wall, psi [MPa]	10,000 [69]	15,000 [103]	15,000 [103]
Max. annular, psi [MPa]	12,000 [83]	20,500 [141]	30,000 [207]
Max. tubing, psi [MPa]	13,000 [90]	23,500 [162]	30,000 [207]
Max. across ball from above, psi [MPa]	10,000 [69]	15,000 [103]	15,000 [103]
Max. across ball from below, psi [MPa]	10,000 [69]	15,000 [103]	15,000 [103]
Temperature rating, degF [degC]	350 [177]	350 [177]	450 [232]
Length, ft [m]	5.08 [1.55]	5.08 [1.55]	7.47 [2.28]
Weight, lbm [kg]	246 [112]	246 [112]	378 [172]
Service (NACE International MR-0175)	H ₂ S, acid	H ₂ S, acid	H ₂ S, acid
Tensile strength at min. yield, lbf [kN]	350,000 [1,557]	350,000 [1,557]	404,000 [1,797]
Connection	3½ IF	3½ IF or PH-6	3½ PH-6