

Single-Shot Reversing Valve

Reverse out fluids produced during the test

APPLICATIONS

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

BENEFITS

- Improves efficiency of well-killing operations
- Reduces rig time

FEATURES

- Simple, robust design
- Large flow area
- Operator mandrel locked in both open and closed positions

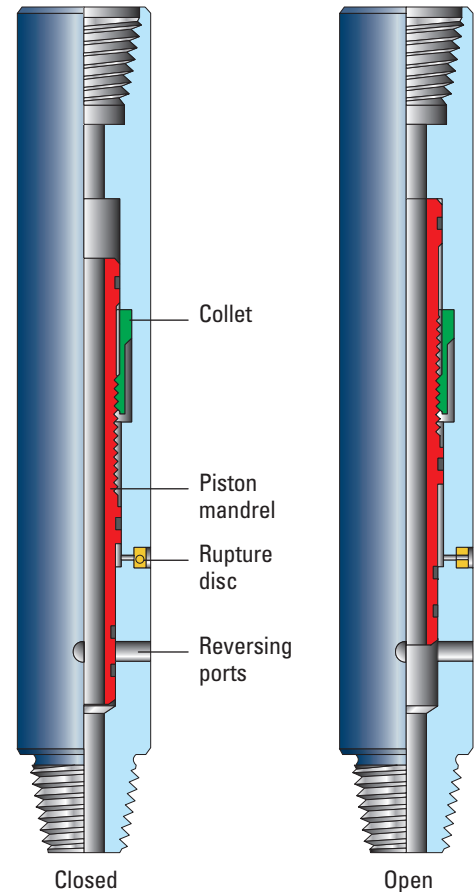
The single-shot reversing valve (SHRV) operates by applying annulus pressure to burst a rupture disc. Once actuated, the reversing ports are locked open. The SHRV is typically opened at the completion of the downhole test to reverse out fluids produced during the test.

A ratchet keeps the valve in the closed position until the disc is ruptured. When the rupture disc bursts, hydrostatic pressure is applied to the operator mandrel, moving it up against the atmospheric-pressured chamber. This results in uncovering eight large circulating ports for efficient well-killing operations. Once annulus pressure pushes the mandrel up, the same ratchet locks the mandrel in place to keep the tool open.

The SHRV-F is the standard 5-in OD by 2.25-in fullbore ID tool. The slimhole version, SHRV-G, has a 3.125-in OD and a 1.125-in ID; it is suitable for downhole testing applications where casing is smaller than 7 in. The SHRV-H is part of the large-bore IRIS* intelligent remote implementation system, with a 7-in OD and a 3.5-in ID. The SHRV-H is used for tests with high flow rates, long-duration tests, and through-tubing operations.

The SHRV-J is part of the ultrahigh-pressure J-string developed for use in wells with bottomhole temperatures greater than 425 degF [218 degC]. New seal technology has enabled successful qualification testing of the J-string tools up to 500 degF [260 degC] at the maximum rated pressure.

The SHRV-K is part 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.



Single-shot reversing valve.

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Specifications

Model	SHRV-FFB	SHRV-FEA/FEB	SHRV-GAA/GAB	SHRV-H	SHRV-J	SHRV-K
Max. OD, in [mm]	5 [127]	5 [127]	3.125 [79]	7 [178]	5 [127]	5 [127]
Tool ID, in [mm]	2.25 [57]	2.25 [57]	1.125 [29]	3.5 [89]	2.25 [57]	2.25 [57]
Pressure ratings						
Differential, psi [MPa]	17,500 [121]	15,000 [103]	15,000 [103]	10,000 [69]	17,500 [121]	17,500 [121]
Max. annular, psi [MPa]	25,000 [172]	25,000 [172]	20,000 [138]	13,000 [90]	25,000 [172]	30,000 [207]
Max. tubing, psi [MPa]	29,000 [200]	29,000 [200]	29,000 [200]	13,000 [90]	29,000 [200]	30,000 [207]
Temperature rating, degF [degC]	425 [218]	425 [218]	425 [218]	300 [149]	500 [260]	500 [260]
Length, ft [m]	4.44 [1.35]	4.44 [1.35]	4.35 [1.33]	5.17 [1.56]	4.29 [1.31]	5.30 [1.61]
Weight, lbm [kg]	280 [127]	280 [127]	64 [29]	500 [227]	218 [99]	253 [115]
Service (NACE International MR-0175)	H ₂ S, acid	H ₂ S, acid	H ₂ S, acid	H ₂ S, acid	H ₂ S, acid	H ₂ S, acid
Tensile strength at min. yield, lbf [kN]	360,000 [1,601]	360,000 [1,601]	160,000 [712]	500,000 [2,224]	400,000 [1,779]	417,500 [1,857]
Connection	3½ PH-6	3½ IF or PH-6	2¾ Reg or PH-6	4½ PH-6	3½ PH-6	3½ PH-6

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