



FormationSaver Valve with Lockout

7 X 3-1/2 in. & 9-5/8 X 4-1/2 in.

Weatherford's FormationSaver Valve with Lockout is an advanced-design check valve that is typically installed below an electric submersible pump (ESP) to protect against formation-damaging fluid loss. High-performance features set the FormationSaver valve apart from conventional check valves. It uses three triangular actuator flappers that are spring-biased closed and a safety-valve flapper. This design gives the valve self-piloting capability, enabling total remote actuation of the valve and eliminating the dependence on hydraulic control lines and other mechanical components. The flapper has proved to be one of the industry's most reliable, durable, and effective sealing devices.

The FormationSaver Valve with Lockout uses the shifting tool to lock the flappers open and return them to the self-piloting position—enabling the valve to be locked open, the intervention tools to be run, and the valve to return to autopilot in a single trip.

Applications

- Wells using an ESP (to prevent formation-damaging fluid loss when pulling the pump)
- Packer setting (when run below a packer, applied pressure sets the packer, production opens the flapper to provide full ID, and the tool can be locked open during intervention)
- Multilateral completions (installed in each lateral to prevent crossflow)
- High-rate flowing applications

Features, Advantages and Benefits

- The FormationSaver Valve with Lockout eliminates damaging fluid loss to the formation and associated losses in overall well productivity. Valuable ESP rotating days are spent producing crude rather than cleaning out fluids lost to the formation.
- The FormationSaver Valve with Lockout increases ESP life by preventing the reverse of pump rotors.
- The self-piloting tri-flapper closure mechanism is actuated by reversing the flow of fluid. Self-piloting enhances sealing reliability by eliminating hydraulic or mechanical controls and external signals.
- All sealing components, including the surface of the main flapper (American Petroleum Institute (API)-qualified), are protected from erosive effects by the flow tube. This patented design reduces seal damage and solids deposition to ensure greater reliability and longer life than industry standard ball-and-seat configurations.





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Features, Advantages and Benefits (continued)

- The tri-flapper design's full-bore unrestricted ID automatically opens or closes the valve with minimal pressure drop while providing maximum sealing ability to protect the reservoir.
- The self-piloting design enables installation below ESPs in two-trip completion or below a packer, enabling unlimited setting depths.

Specifications

Size (in./mm)	7 × 3-1/2 177.8 × 88.9	9-5/8 × 4-1/2 244.5 × 114.3	9-5/8 × 5-1/2 244.5 × 139.7
Casing size (in./mm)	7 177.8	9-5/8 244.5	9-5/8 244.5
Casing weight (lb/ft, kg/m)	29.0 43.1	47.0 69.9	
Tubing size (in./mm)	3-1/2 88.9	4-1/2 114.3	5-1/2 139.7
Tubing weight (lb/ft, kg/m)	9.2 13.7	12.6 18.8	20.0 29.8
Burst pressure rating (psi/MPa)	7,500 51.7		10,000 68.9
Collapse pressure rating (psi/MPa)			
Maximum temperature rating (°F/°C)	375° 191°		
Metallic material	13 Cr, 80ksi		
Wiper material	PEEK™		N/A
Flapper seal material	Teflon®		
Maximum OD (in./mm)	5.50 139.70	7.90 200.66	8.25 209.55
Overall length (in./mm)	135 3429	145 3683	
Minimum ID (in./mm)	2.750 196.85	3.812 96.82	4.580 116.3
Tensile rating (lb/kg)	250,000 113 398	300,000 136 078	

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For internal use

Link to Endeca assembly part numbers: [FormationSaver Valve with Lockout](#)