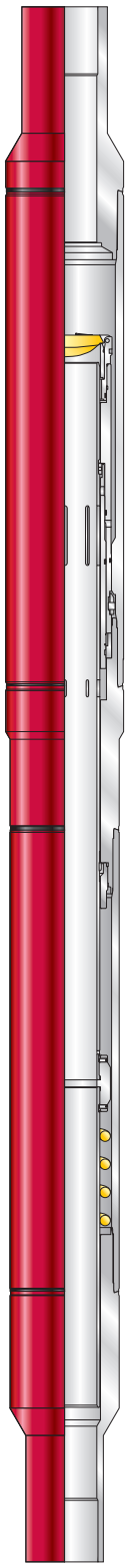
OptiSet™ Valve



Weatherford's *OptiSet* valve is a flapper valve that holds pressure from above, providing a simple method of setting packers and reducing fluid loss.

When installed below the packer, the *OptiSet* valve allows the tubing to self-fill during run-in, without the need for a separate auto-fill sub. After the packer is set hydrostatically/hydraulically, the pressure is increased to shear the *OptiSet* valve open. Once the valve is sheared, the flapper is folded up, out of the way, without depositing any debris in the well.

The *OptiSet* valve uses an API-qualified safety-valve flapper and seat. Using Weatherford's proven flapper design, this valve offers reliable performance with simplicity of design and operation. The flapper is manufactured from aluminum; therefore, in the unlikely event that the shear mechanism does not function and the flapper stays down, the flapper can be milled or eroded away by production.

Applications

- Setting packers
- Reducing fluid loss

Features, Advantages and Benefits

- The aluminum flapper can be milled or eroded away should the shear mechanism not function or the flapper stay down.
- The valve holds pressure from above, providing interventionless packer-setting.
- The valve is self-filling (tubing to tubing), eliminating the need for—and cost of—a separate auto-fill sub (annulus to tubing).
- Industry standard for a valve of this type is a set number of pressure cycles before the valve is opened; but the *OptiSet* valve is capable of multiple pressure cycles (up to 50) up to 70% of the final shear value so that it can be opened at any time to set packers.
- The flapper of the valve opens to full tool ID when flowed from below, allowing reverse circulation at high rates.
- The flapper is locked open after functioning, producing no debris.
- Large equalization ports provide quick equalization of the well.

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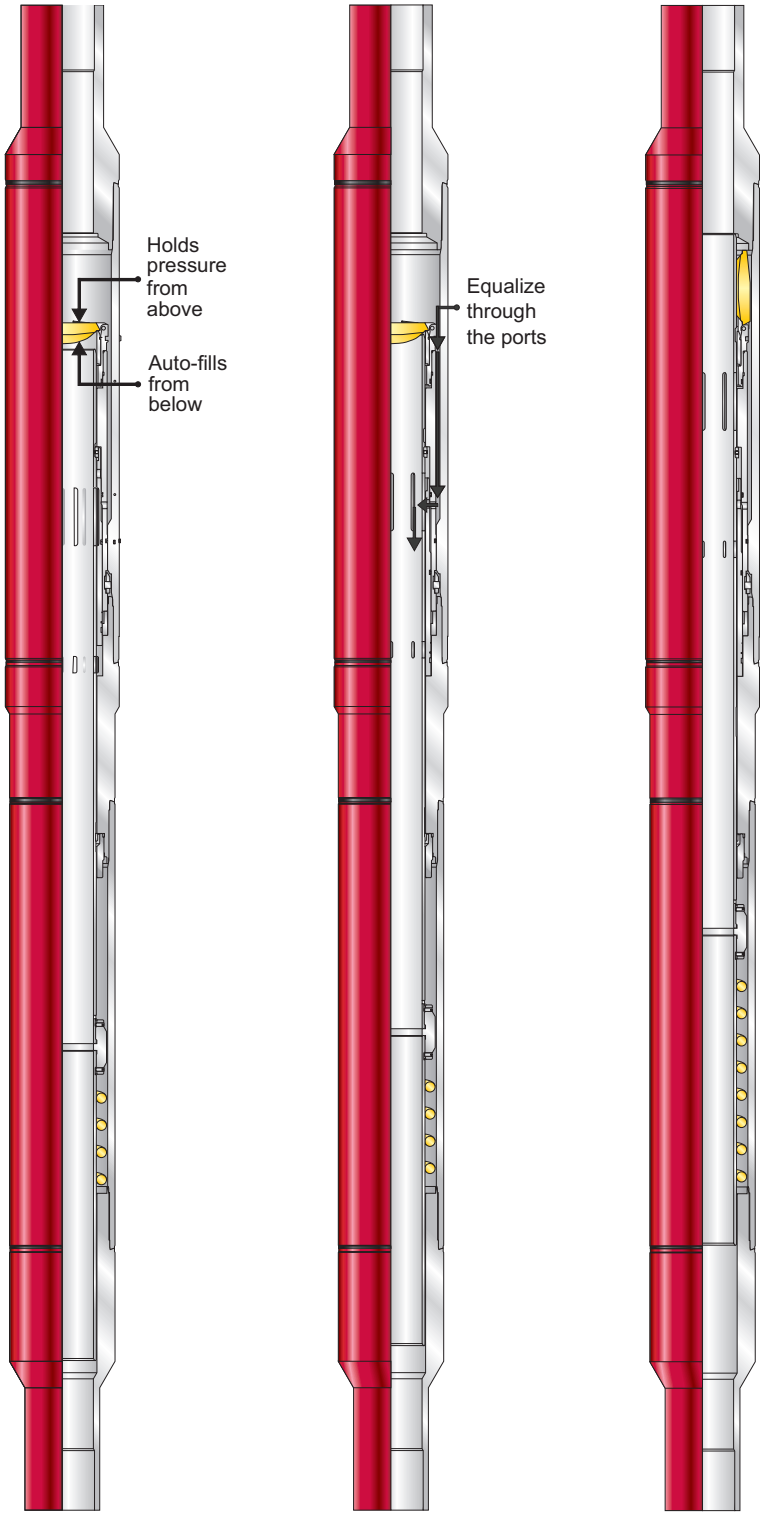

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Specifications

Size (in.)	7 × 3-1/2	7 × 4-1/2	9-5/8 × 4-1/2	9-5/8 × 5-1/2		9-5/8 × 7
Casing size and weight	7 in., 29.0 lb/ft	7 in., 35.0 lb/ft	9-5/8 in., 53.5 lb/ft	9-5/8 in., 53.5 lb/ft	9-5/8 in., 47.0 lb/ft	9-5/8 in., 47.0 lb/ft
Tubing size and weight	3-1/2 in., 9.2 lb/ft	4-1/2 in., 12.6 lb/ft	4-1/2 in., 12.6 lb/ft	5-1/2 in., 17.0 lb/ft		7 in., 26.0 lb/ft
Body burst pressure rating (psi/*MPa*)	10,000 *68.9*	7,500 *51.7*	10,000 *68.9*			5,000 *34.4*
Body collapse pressure rating (psi/*MPa*)						
Flapper pressure rating (psi/*MPa*)	7,500 *51.7*	6,500 *44.7*	7,500 *51.7*	9,000 *62.0*		5,000 *34.4*
Maximum temperature rating (°F/°C)	325° *162°*					
Tensile rating (lb/*kg*)	225,000 *102,058*	200,000 *90,718*	350,000 *158,757*			
Shear range (psi/*MPa*)	2,500 to 6,000 *17.2 to 48.3*					2,500 to 4,000 *17.2 to 27.5*
Body material	4140, 13 Cr, (80-ksi min yield strength)	Super 13 Cr, INCOLOY® 925, 4140 (110-ksi - min yield strength)	4140, 13 Cr, (80-ksi min yield strength)	Super 13 Cr, INCOLOY 925, 4140 (110 ksi - min yield strength)		
Flapper type	Flat	Curved	Flat	Curved		
Flapper material	Aluminum Optional beryllium copper	Aluminum	Aluminum Optional beryllium copper	Aluminum		
Flapper seal material	Teflon®					
Maximum OD (in./*mm*)	5.875 *149.2*	5.813 *147.6*	8.250 *209.6*	8.250 *209.6*	8.375 *212.7*	
Minimum ID (in./*mm*)	2.850 *72.39*	3.830 *97.28*		4.570 *116.08*		6.100 *154.94*
Overall length (in./*mm*)	90.0 2,286.0	93.5 *2,374.9*	88.0 *2,235.0*	114.0 *2,895.6*		120.0 *3,048.0*

For internal use
Link to Endeca assembly part numbers: OptiSet Valve