

TUBING RETRIEVABLE SAFETY VALVE



Applications: Well Control, Production, and Injection



Viking's tubing retrievable flapper valve creates a well barrier in the tubing string when remotely operated from surface. The valve is made up into the tubing string and connected to a hydraulic control line before running to its desired setting depth.

The valve is normally closed and opens by applying pressure to the control line. Hydraulic fluid enters the valve and acts on the piston and flow tube, forcing them downwards. The flow tube contacts the flapper pushing it off seat. The flapper rotates around the hinge pin and is protected by the flow tube when in the full open position.

When the control line pressure is bled off, the well pressure and compressed main spring push upwards on the flow tube. When the bottom edge of the flow tube passes the edge of the flapper, the hinge spring swings the flapper closed. The flapper has a metal seat which contacts the resilient seal and metal seat on the seat insert. The resilient seal creates a low-pressure barrier. As pressure increases, a metal-to-metal seal is created between the flapper and seat insert.

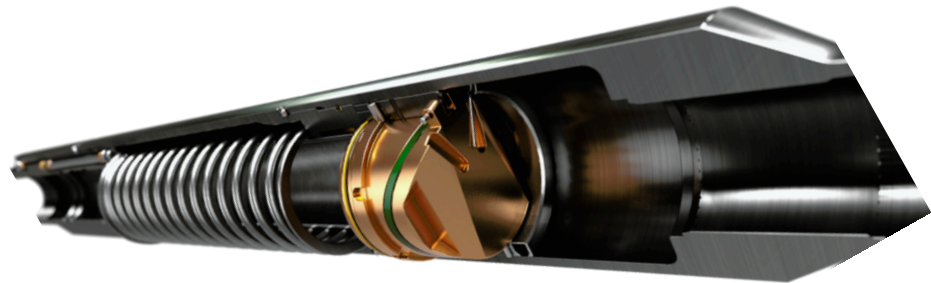
If the valve fails to open or close properly when control line pressure is applied, an insert valve can be installed inside it. A dedicated lock open/exercising tool is required to establish control line communication with the tubing bore.

A wireline insert valve is then installed in the bore of the valve located in the landing nipple profile in the top sub. Seal stacks on the wireline valve and lock mandrel seal off in the seal bores in the top sub and bottom sub. Control line pressure now operates the wireline insert valve.

The internal profile in the piston also allows the valve to be "exercised" open and closed if debris or scale is hindering its operation.

Benefits

- Allows safe shut in of the well in emergencies
- Full drift access



FEATURES

- ✓ Up to 10,000 psi differential pressure rating
- ✓ Flapper type valve mechanism
- ✓ Setting depth up to 2,600 feet
- ✓ Materials to suit all well environments
- ✓ Hydraulically operated from surface through control line
- ✓ Pressure equalizing option through flapper poppet valve
- ✓ Sizes to suit 3-1/2" to 7" tubing
- ✓ Inconel 718 flapper and seat as standard



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REG Q11791

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General Information				
Product Number	80FEV281	80FEV381	80FEV456	80FEV7000
Tubing Size	3-1/2"	4-1/2"	5-1/2"	7.000"
Maximum OD	5.693"	6.898"	8.192"	9.198"
ID / Profile Size	2.813"	3.813"	4.562"	6.000"
Profile Type	VX	VX	VX	TN

Performance Data				
API 14A Testing Level (Tested in accordance with API 14A)	V3	V3	V3	V3
API 14A Validation Grade	N/A	V3	N/A	V3
Pressure Rating	10,000	5,000	5,000	5,000
Temperature Rating (psi)	20 - 125	25 - 150	25 - 125	25 - 125
Tensile Strength	Equal to Tubing			
Start to Open Pressure (psi)	600	900	1104	750
Minimum Hold Open Pressure (psi)	1,200 + FWP	2,300 + FWP	2,200 + FWP	2,500 + FWP
Full Open Pressure (psi)	1,200	2,300	1,883	2,500
Opening Pressure Max (psi)	10,000	7,500	7,500	8,000
Closing Pressure Min (psi)	600 + SITP	900 + SITP	900 + SITP	750 + SITP
Failsafe Setting Depth (psi)	1,300	2,118	2,599	1,765

Associated Equipment				
Exercise Tool	40VET281	40VET381	40VET456	40VET700
Communication Tool	40VCT281	40VCT381	40VCT456	40VCT700
Insert Valve	18FEV281	18FEV381	18FEV381	18FEV600
Nipple Protection Sleeve	15NPS281	15NPS381	15NPS456	15NPS700
Lock Out Tool	40LOT281	40LOT381	40LOT456	40LOT700
Isolation Sleeve	15NPS281	40VIS381	40VIS3456	40VIS3700



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