

TIVF

Flapper-seal tubing isolation valve

APPLICATIONS

- Run with the upper completion to enable
 - tubing autofill
 - interventionless tubing pressure testing
 - interventionless packer setting
 - interventionless fullbore through-tubing access

BENEFITS

- Reduces interventions and thereby operating time, costs, and risk

FEATURES

- Interventionless opening with Trip Saver* one-time remote-opening mechanism
- Fullbore through-tubing access after flapper is opened
- Contingency shifting tools available

The TIVF* flapper-seal tubing isolation valve is typically run below the production packer with the production tubing string.

This interventionless tool allows automatic filling of the tubing, multiple completion pressure tests, annulus fluid circulation, and hydraulic setting of the packer before cycling open to allow fullbore through-tubing access. The valve is opened using a modified version of the Trip Saver one-time remote-opening mechanism. This 15-cycle Trip Saver mechanism allows 10 pressure cycles before packer setting is initiated and 5 more cycles before the valve opens.

Eliminate multiple interventions

A typical completion sequence consists of

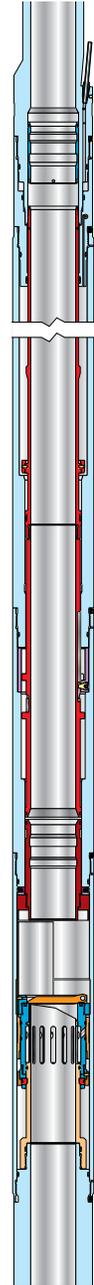
- testing the tubing during the running of the completion and after the installation of the tubing hanger
- circulating the packer fluid
- setting the packer
- testing the annulus and tubing
- reestablishing communication through the tubing to the lower completion.

The TIVF valve offers the capability of conducting all these operations without intervention. Eliminating six or seven interventions reduces completion time, which is especially useful in horizontal wells, where intervention with wireline or CT significantly increases risks and costs.

Operate with tubing pressure cycles

The Trip Saver mechanism uses tubing pressure to open the valve without conventional intervention techniques. Cycles of tubing pressure are applied against the closed valve in a number predetermined by an integral indexing mechanism. The valve has a cycle mandrel that allows a total of 15 cycles.

After the 10th pressure cycle, the modified Trip Saver mechanism exposes the hydraulic setting port connected to the packer above. The packer can then be set by simply applying tubing pressure against the closed flapper. Five more pressure cycles can be applied before the cycle mandrel reaches the opening cycle, when the Trip Saver mechanism actuates, opening the valve. The valve opens when the applied tubing pressure is bled off.



TIVF flapper-seal tubing isolation valve.

Deploy contingency shifting tool if required

The STS-P is a mechanical shifting tool equipped with spring-loaded centralizers that can be run on the end of a workstring or CT to operate the TIVF valve in the event of a contingency. The tool can be configured to engage the valve's packer setting port sleeve and shear it upward, exposing the port to tubing pressure and setting the packer. Alternatively, it can be configured to engage the valve's lower profile and shear it downward,

locking the flapper in the open position. The shifting tool is subsequently sheared off and retrieved; an emergency release mechanism is also available.

In addition, the ReSOLVE* instrumented wireline intervention service features shifting tools that can be used to open the packer setting port or to lock the flapper in the open position. The service provides real-time monitoring, dynamic tool control, and verified downhole actuation.

TIVF Valve Specifications

Casing Size, in [mm]	OD, in [mm]	ID, in [mm]	Differential Pressure Rating (Body and Flapper), psi [kPa]	Temperature Rating, degF [degC]
7.625 [193.7]	6.500 [165.1]	3.430 [87.12]	8,500 [58,605]	300 [148.9]
	7.995 [203.1]	4.565 [115.95]	5,000 [34,474]	250 [121.1]
9.625 [244.5]	8.000 [203.2]	3.700 [93.98]	5,000 [34,474]	250 [121.1]
	8.250 [209.6]	4.560 [115.82]	7,500 [51,711]	300 [148.9]

Other sizes and temperature and pressure ratings are available on request. Contact your local Schlumberger representative.

STS-P Shifting Tool Specifications

Size, in [mm]	Max. collapsed OD, in [mm]	Completion Drift ID, in [mm]
3.750 x 0.485 [95.3 x 12.32]	3.370 [85.6]	3.430 [87.1]
4.560 x 0.500 [115.8 x 12.70]	4.377 [111.2]	4.437 [112.7]
5.600 x 1.000 [142.2 x 25.40]	5.540 [140.7]	5.600 [142.2]