INFLOW CONTROL

TENDEKA

FloSure Bypass Valve

Effective treatments in AICD wells

Tendeka's FloSure Bypass Valve (BPV) is a technology for treatment of the completion annulus and near wellbore on wells completed with Inflow Control technologies.

Inflow Control Devices can provide great improvements in inflow performance in horizontal wells. Their check valve functionality is beneficial during deployment to enable effective circulation of well fluids, and during production to prevent cross-flow between zones. To enable the AICD to be bypassed if chemical treatment of the annulus or near wellbore is required, the FloSure BPV can be deployed to allow higher rate treatments to be performed.

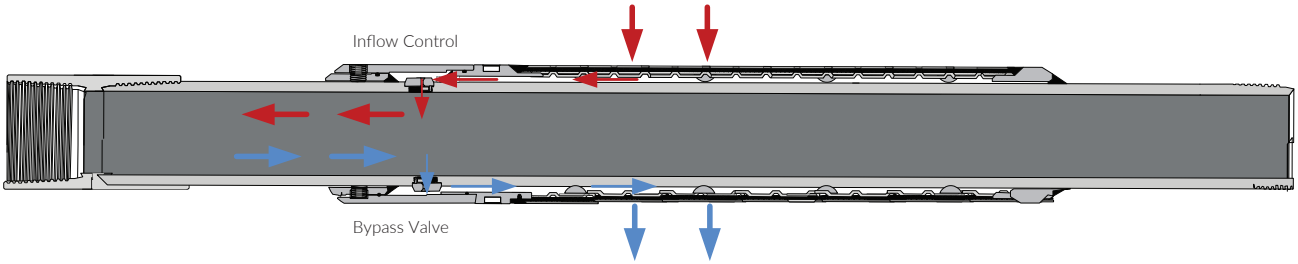
The FloSure BPV is deployed within the AICD housing to enable treatment of the screen and annulus. The devices can be run per joint, per zone, or in multiples within a single joint dependent on the rate or placement requirements. The FloSure Bypass Valve is designed for use with a wide range of fluids including acids and gas, making it very adaptable for well control.

Features

- Based on field proven AICD design and materials
- Bias closed with an adjustable spring force, the BPV is further activated by AICD pressure drop during production.

Benefits

- Improved well performance
- Adaptable for well control
- Interchangeable with AICD for field flexibility
- Allows bypass of the AICD for chemical treatments



Bypass Valve assembled within ICD housing

Technical Specifications

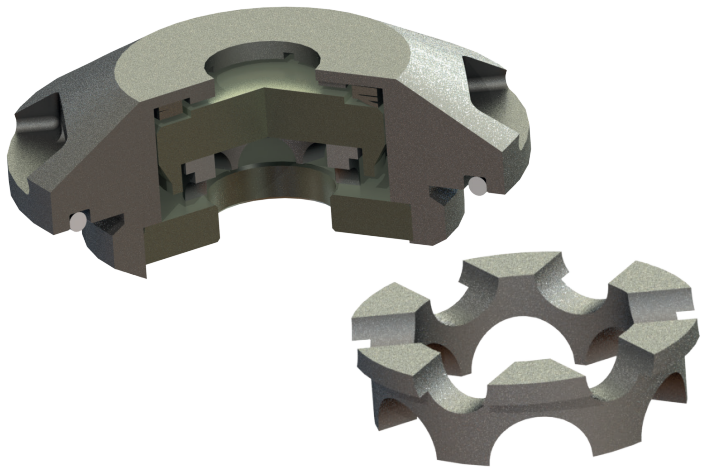
Nozzle size equivalent	10mm
Design Conditions	
Absolute pressu re	No design limit
Differential pressure	725psi
Differential opening pressure	40-450psi
Maximum liquid rate	6.5 gpm/BPV
Maximum gas lift rate	35 mmscf/day
Materials	
Housing	Alloy 718
Seal area	Tungsten carbide

FloSure Bypass Valve-GP

Inflow-enabled gravel pack

Our FloSure Bypass Valve-GP enables standard gravel packing operations to be performed with inflow control devices in the completion without significant additional cost, complexity or compromise. Dissolvable magnesium is utilised with a spring-loaded valve located within the ICD housing to provide a high flow area path from the annulus to the tubing during completion operations.

Following completion of gravel packing operations, the magnesium element is dissolved, allowing the spring-loaded valve to close and all production inflow to pass through the ICD.



Specification	Valve	Comment
Physical dimensions		
Max OD	1.76”	Interchange-able with FloSure
Height	0.356”	Above basepipe OD
Thread	M33 x 2.0	
Min flow area	79mm^2	Equivalent to 10mm diameter
Materials		
Production wetted	Alloy 718/TC	
Spring	17/7 PH SS	
Elastomers	Viton	Static o-ring seal on valve housing
Design conditions		
Temperature		Seal or spring limited
Diff. pressure	725psi	Max AICD operating pressure
Diff. opening pressure	70-435psi	Spring adjustable
Leak rate	0.02kg/hr	At max differential pressure
Design life	20 years	
Number of cycles	40	2 treatments per year
Max liquid rate	0.158bpm	
Total fluid	1,500Bbl	4 hours injection at 225bpd/device