

WR-VOi™ Variable Orifice Safety Valve with HiFlo™ Lock



Wireline Retrievable Sub-Surface Controlled Injection Safety Valve

Applications:

- Injection operations
- Subsurface controlled safety valve
- Available for HPHT applications

Benefits:

- Surge protection
- Passive autonomous control
- Minimize pressure drop over a range of injection rates
- Eliminates orifice size change-outs
- Unlimited setting depth
- Reduced flow turbulence
- 20-year design life
- Simple installation/ recovery
- Bubble tight seal

Features:

- Variable orifice design controlled by flow rate
- Debris barrier for recovery
- Integral equalization feature
- Run in the “open” position
- Large variability of orifice response to flow
- Constant velocity profile regardless of flow rate
- Erosion resistant ceramic materials
- Wireline retrievable with standard GS Pulling Tools

Description:

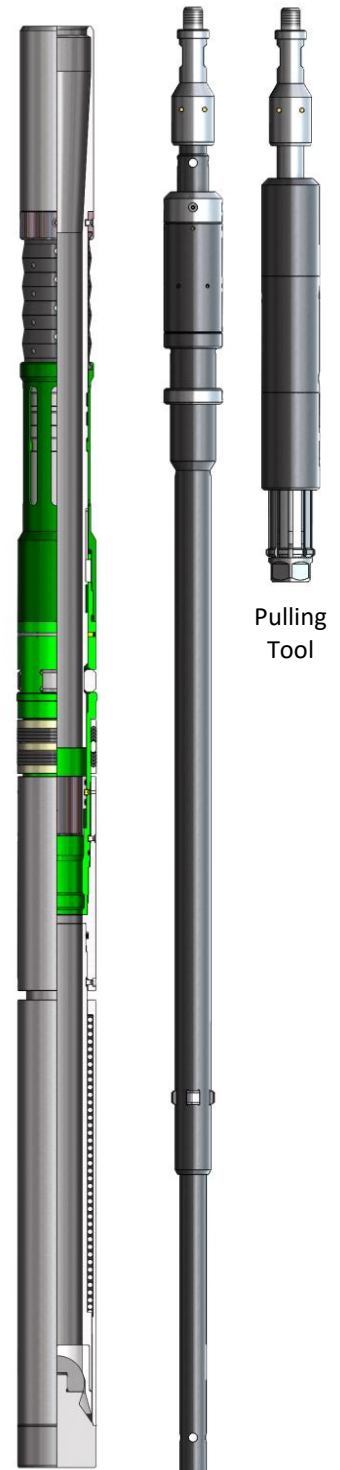
The Tejas WR-VOi™ Variable Orifice Safety Valve is an API-14A, V3 rated safety valve designed specifically for injection operations. It can be deployed within either a Tubing Retrievable Injection Valve (TRIV™), a failed injection tubing safety valve, or within any tubing nipple profile.

It is preferred to deploy the WR-VOi with the Tejas HiFlo™ Lock (shown) to provide the greatest longevity and lowest injection differential pressure during operation. The improved pumping efficiency has been achieved by providing a smooth and large inside diameter. An integral outside debris barrier and equalization feature ensure that the lock can be retrieved reliably and safely.

The WR-VOi and HiFlo Lock together allow for normal wireline running procedures and standard post-installation pressure testing. The variable orifice safety valve incorporates a “Torpedo” that has a bubble tight seal that prevents potential formation damaging “surge” within the well when injection stops.

The unique variable orifice design proportionally opens in response to injection flow and maintains a constant pressure drop regardless of the injection flow rate. The WR-VOi™, eliminates the need for costly wireline orifice change-outs required for flapper-style safety valves when the injection rate changes over time.

The WR-VOi™ is designed to be versatile, reliable, and maintenance free. It is designed to operate smoothly from zero to the maximum API tubing / casing injection rates and is recoverable via wireline. The internal components are highly erosion resistant and have greater longevity than traditional flapper-style injection safety valves.



WR-VOi™ Running Position Tool
Running Tool