

### Applications:

- Multi-zone production applications
- Temperatures from 75 deg F to 140 deg F [4 deg C to 60 deg C]

### Benefits:

- Sliding flapper housing design w/rubber cushion for limited impact
- Lock out profile for optional manual shifting

### Features:

- Full bore access
- Snap-ring to lock-open designed to prevent re-closure
- Torque through capability
- Adjustable opening pressure
- Optional Drillable Flapper (based on material requirements)
- V-3 Rated

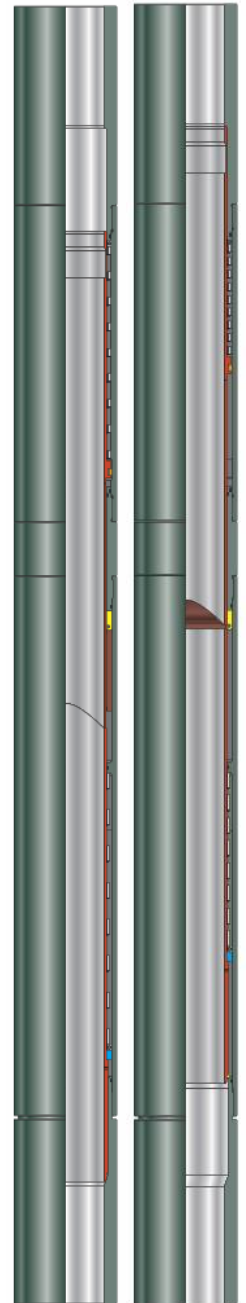
### Description:

The “**Cascade**” valve is based on a double seated curved flapper design. The double seated curved flapper concept, builds on proven surface controlled subsurface safety valve curved flapper technology. The curved flapper offers optimized packaging opportunities relative to working pressure and available wall sections (OD /ID constraints).

The Cascade valve uses a sequence of timed shear events that allow the seat surfaces to translate away from the flapper while the flapper is rotated open and locked out with the upper flow tube. Once the flapper rotates behind the upper flow tube, the Cascade valve provides a full 6.210” bore through which the completion string may pass.

This sequence of “cascading” events occur repeatedly until the last valve is encountered. However, the last valve will be “pinned” higher to allow for higher pressures to be achieved, enabling the inflation of packers and well testing prior to shearing out at 5,000 psi.

If the spring energized shifting mechanism does not work the B-Shifting sleeve profile can be engaged through mechanical means to shift the Upper Flow Tube/Seat into the open/locked position.



Cascade Valve  
Open/Closed  
Position



Q1-0099