

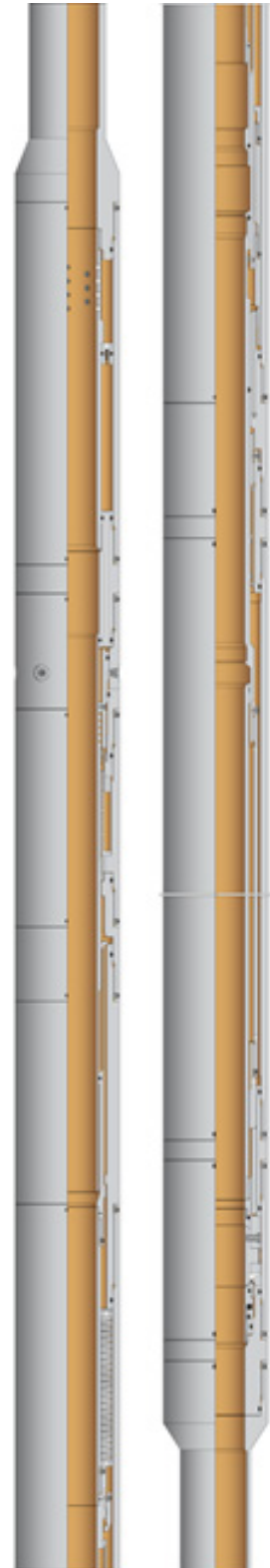
Reclosable Hydraulic Well Barrier Valve (X-HBV)

Superior’s Hydraulic Well Barrier Valve (X-HBV) is utilized as a temporary barrier for service as a Type-CC V1 qualified product as per API-19V. The field-run and tested rigid frame is designed for harsh downhole environments. The debris tolerant interior hydraulic and mechanical mechanisms are configured for long-term, reliable service under severe wellbore conditions. In addition, the length between the ball and shifting profiles are customizable. The valve provides a unique hydraulic actuated trigger feature which allows a choice of cycles from 5, 8, 11, 14, 17, 20 +/- 1.

Superior’s X-HBV provides a one-time hydraulically trigger open feature despite multiple mechanical shifts to open or close prior to hydraulic activation. Once functioned hydraulically, the valve can be cycled open or closed numerous times by mechanical means. A multi-action, basket-style, soft-release collet shifting tool is utilized for valve operations during the well completion phase; to provide a positive mechanical shifting under severe fluid loss conditions. A hydraulic-actuated shifting tool can also be utilized to open or close the ball valve relayed downhole via coiled tubing. The slim-factor tool design is adequate for production tubing entry while maintaining engagement required for a reliable mechanical valve function.

The hydraulic actuator and the axial-supported cam driven mechanism are preloaded in a fluid-filled environment with floating pistons to adjust to wellbore hydrostatic conditions. The actuation piston is held in position with a pre-determined shear value.

A pressure-assisted inert seal enhances integrity in low pressure gas wells while maintaining positive assurance at higher differentials. The frame design incorporates applicable safety and temperature factors to qualify the assembly as a barrier valve.



Features and Benefits

- Ratings
 - 10,000 psi burst and collapse on body
 - 5,000 psi bi-directional burst and collapse across the ball
- Debris tolerant
 - Actuation mechanisms shielded from internal debris
 - A screen protected, oil filled hydraulic chamber guarantees a clean environment for moving parts
 - Smooth ID to prevent debris collection
- Shifting tools
 - Mechanical – Multi-action, soft-release, basket style collet
 - Hydraulic – Pressure actuated coiled tubing shifting tool
- Qualification
 - Bi-directional fluid loss control valve
 - Qualified as per API-19V as a Type-CC V1 barrier valve
 - Valve for well completions and abandonments
- Actuation
 - Mechanical – pre and post hydraulic actuation
 - Hydraulic – one time only; remote multi-cycle trigger for controlled opening
- Full bore ID maximizes production and permits access to the sandface
- Flexible upper completion operations such as pressure tests above a closed ball
- Multiple mechanical open and close cycles prior to and after hydraulic open