Stratos isolation valves.

Ensure reliable sealing and improve operational flexibility with unlimited remote openings

Lower completion isolation valves are commonly used to protect the reservoir and to minimize costly fluid loss and formation damage during upper completion installations and future interventions. However, high temperatures and pressures can compromise sealing integrity, threaten well control, and increase health, safety, and environmental (HSE) risks. Debris buildup can also prevent valves from reliably closing or opening. When an isolation valve fails to open, it must be milled out—deferring production and increasing NPT, costs, and safety risks.

Baker Hughes **Stratos™ isolation valves** are bi-directional barrier isolation valves that facilitate fluid isolation and temporary well suspension for safe tool deployment and upper completion installation in high-pressure/high-temperature and debris-laden environments. The **Stratos hydraulic isolation valve** enables unlimited remote openings, removing the need for an additional trip to open the valve. This increases operational reliability and efficiency, allowing access to the formation as needed throughout the life of the well. The **Stratos mechanical isolation valve** offers simple and reliable operation with shifting tools. This provides a cost-effective option when remote actuation is not feasible or not a priority.

Improve reliability and mitigate risks

Frac-pack operations enhance production and help operators avoid sand-related problems throughout the life of the well. Once a well has been packed, the lower completion must be reliably sealed to prevent formation damage, reduce costly fluid loss, and to ensure the frac-pack job remains intact while the upper completion is installed. Extreme environments, especially those found in deepwater sand control applications, can often prevent proper function of isolation valves.

The Stratos valves are V1 qualified to the American Petroleum Institute (API) 19V standard—the highest rating for barrier valves. In addition, the valves have also been tested in alignment with API 14310 validation level V0, confirming gas-tight performance when used as a well barrier. The Stratos valves were designed specifically for debris-laden, extreme deepwater environments being able to withstand temperatures up to 400°F (204.4°C) and pressures up to 15,000 psi (1034.2 bar). A large

Applications

- Deepwater applications with high temperatures and pressures
- Wells requiring high reliability
- Single or multi-zone gravel/frac-pack applications
- High-rate and high-pressure frac-pack applications
- Open-hole and cased-hole gravel pack applications
- Stand-alone screen sandface applications
- Intermediate or upper completion isolation strings

Benefits

- Provide reliable, zero leakage seal protection—even in extreme HP/HT environments
- Save trips throughout well life with fully resettable remote opening feature with unlimited open/close cycles
- Offer unparalleled debris tolerance to ensure reliable operation, even in the most challenging well conditions
- Increase operational flexibility through hydraulic or mechanical operation
- Reduce costs for workover operations by eliminating additional runs to open the valve every time it is closed

debris sump also protects the valve's hydraulic actuation ports to ensure trouble-free opening and closing, even if debris has accumulated above the valve.

Increase efficiency and reduce cost

The Stratos hydraulic isolation valve can be opened using remote hydraulic actuation, saving downhole trips. For increased flexibility, the valve offers unlimited open/close cycles and fully resettable remote actuation—unlocking remote actuation functionality even after well testing or during future workover activities.

The valves' zero-leakage sealing technology minimizes costly fluid loss and guards the formation against damage, while the debris-resistant design ensures reliable operation and reduces the risk of needing to perform additional runs to open mechanically or mill out the ball. And when the valve is deployed with the Baker Hughes **SC-XP™ gravel- and frac-pack system**, the need for an inner string is eliminated.

Both Stratos isolation valves can be shifted with the Baker Hughes service string, coiled tubing, or completion shifting tools. The service string shifting tool is typically included on the inner string and closes the valve as the workstring is pulled out of hole. The coiled-tubing shifting tool offers a slimline design to allow shifting operations through the upper completion with flow or pressure activation via coiled-tubing or electric wireline. The completion shifting tool (CST) is a resident shifting tool designed to be deployed on the upper completion tailpipe to shift open the Stratos mechanical valve for production and reclose the valve during upper completion workover. The CST design maximizes the tool's inner diameter (ID) to provide maximum production flow area and greater accessibility for intervention and stimulation operations.

To learn how Stratos isolation valves can improve reliability and reduce costs on your next well, contact your local Baker Hughes representative.

Stratos barrier valve specifications

Hydraulic valve/Mechanical valve

Maximum OD (in.)	Differential pressure across housing (psi)	Differential pressure across ball (psi)	Outside diameter (in.)	Inside diameter (in.)
5.563-in. x 2.040-in.	15,000	10,000	5.563	2.940
7.875-in. x 4.250-in.	15,000	10,000	7.875	4.250

Baker Hughes™