

# SBRO-DVX™ Side-Pocket Gas-Lift Mandrel

Reduces nonproductive time by improving well containment and decreasing chances of corrosive fluids contacting the casing

## Applications

- Deepwater, subsea, or other high-profile wells where it is beneficial to prevent wellbore fluids from entering the annulus
- Wells where well control is a concern during the gas-lift valve pulling and installation process

## Features and Benefits

- Dual external valves prevent wellbore fluids from entering the casing annulus and protect the casing string from high pressures and corrosive fluids, which enhances safety and environmental integrity.
- The specialized design avoids the problem of tubing-to-casing communication that occurs with standard side-pocket mandrels during gas-lift valve replacement.
- Complete unloading of the casing annulus and tubing after gas-lift changeout is not required, which reduces production downtime.
- If required, DVX mandrels can be validated to the highest American Petroleum Institute certifications to confirm that the mandrel can withstand extreme wellbore conditions.
- The industry-standard pocket configuration is compatible with gas-lift valves that have an outside diameter (OD) of 1.0 or 1.5 in. (25.4 or 38.1 mm) and with latches from other manufacturers.
- The pocket and check-valve configurations provide ample gas passage capability, which enables maximum production rates.
- The packing-stack arrangement provides optimum force distribution to prevent ejection of the valve from the mandrel pocket, which reduces the chances of nonproductive time.
- Gas-lift valves are pulled and installed using standard wireline tools.

## Tool Description

The patented Weatherford SBRO-DVX side-pocket gas-lift mandrel features unique dual external valves, which prevent corrosive well fluids from entering the casing annulus through the gas-lift valves or through empty mandrel pockets. These check valves provide a second and third protective barrier for the casing string against high pressures, hydrogen sulfide (H<sub>2</sub>S), carbon dioxide (CO<sub>2</sub>), and other hazards. External placement of the valves enhances safety, protects the casing string and the environment, and makes the SBRO-DVX mandrel well suited for use in severe well conditions.

Weatherford SBRO-DVX gas-lift mandrels can be provided to meet API 19G1 V-1 certification, which is currently the highest standard in the industry.



SBRO-DVX side-pocket gas-lift mandrel



# SBRO-DVX Side-Pocket Gas-Lift Mandrel

## Options

- Custom mandrel designs are available for premium threads and weights, special running-OD clearance, and premium metallurgy (such as 13Cr, S13Cr, and 718 Inconel\*).
- Special protective rails or grooves can be included in the design to facilitate different combinations of multiple data and chemical-injection lines.

Standard Side-Pocket Mandrel

Valve in pocket



Injection gas flows through the gas-lift valve.

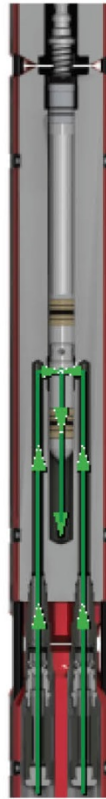
Valve out of pocket



When the valve is pulled from the standard side-pocket mandrel, well fluids flow into the casing through the mandrel pocket.

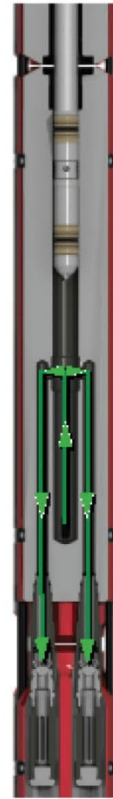
DVX-Type Side-Pocket Mandrel

Valve in pocket



Injection gas flows through external check valves and then through mandrel pocket, valve, slot, and into the tubing.

Valve out of pocket



When the valve is pulled from the DVX-type gas-lift mandrel, well fluids are contained in the tubing.

\* Inconel is a registered trademark of the Special Metals Corporation group of companies.