

sSteam™ Valve

Optimize Production in Heavy Oil Reservoirs

Cyclic Steam Stimulation (CSS) and Steam Assisted Gravity Drainage (SAGD) are widely used enhanced oil recovery (EOR) methods used to extract the bitumen or hydrocarbons in heavy oil reservoirs. Halliburton WellDynamics has developed a new downhole valve technology, the sSteam™ valve, to assist operators to optimize production in CSS and SAGD applications. The sSteam valve allows uniform or selective placement of steam along the entire length of the horizontal section of the wellbore.

The sSteam valve is robust technology designed to handle high temperatures (500 °F) and moderate pressures associated with steam injection. The sSteam valve can be deployed as part of the production liner with or without zonal isolations.

Benefits

- Permits uniform or selective placement of steam across the wellbore
- Places uniform steam chamber under variant reservoir and steam quality conditions
- Prevents steam breakthrough by selectively shutting off a valve

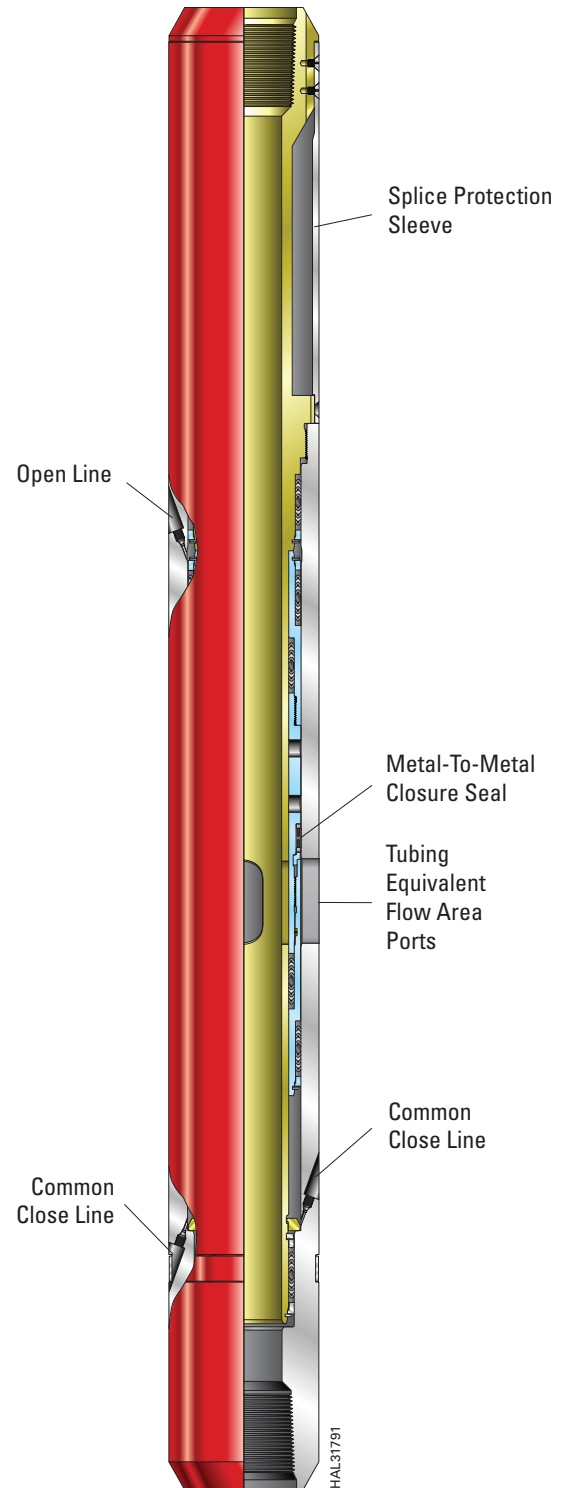
Features

- 500°F temperature rating
- 3,000 psi working pressure
- High temperature control line fluid
- Metal-to-metal closure seal
- Remotely operated

WellDynamics' reliable Direct Hydraulics downhole control system uses hydraulic lines connected directly from the surface to remotely actuate the sSteam valve. Each of the two control lines required to operate the valve is connected to the open or close side of the valve respectively. If multiple valves are present, the close side is networked to a common close line, and the open side of each valve has a dedicated open line. A specially developed hydraulic control fluid is used to operate the valve. This hydraulic control fluid retains its desired viscosity when subjected to the extreme temperatures of the CSS / SAGD environment.

In the event of steam breakthrough, the sSteam valve can be selectively shut off thus allowing efficient hydrocarbon recovery without the threat of injected steam being produced or the need to shutdown production to cool the reservoir.

Patent Pending



sSteam™ Valve	
Details	
Tubing Size	3.5-in.
Maximum OD	5.430-in.
Minimum ID	2.735-in.
Length	53.5-in.
Top and Bottom Connection	3.5-in. 8 RD 9.3# EUE Box X Box
Service	Steam
Maximum Working Temperature	500 °F
Working Pressure Internal	3,000 psi
Working Pressure External	3,000 psi
Test Pressure Internal	3,000 psi
Test Pressure External	3,000 psi
Base Metallurgy	A005 (4140)
Fastener Metallurgy	Stainless Steel
Piston Area	5.15 in ²
Total Stroke	Open / Close 4.419-in.
Tensile Rating (based on 9.3# TBG)	207,000 lbf
Compressive Rating (based on 9.3# TBG)	207,000 lbf
Minimum Internal Flow Area	5.87 in ²
Control Line Bypass	6 x .25-in. lines
Variations	2 Position / Open - Close

**For more information on any of the details featured here, please email us at
welldynamics@halliburton.com**

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