

VersaFlex[®] Expandable Liner Hanger Surge Diverter Valve and Confirmation Sub

MAXIMIZED FLUID DIVERSION REDUCES SURGE PROFILE

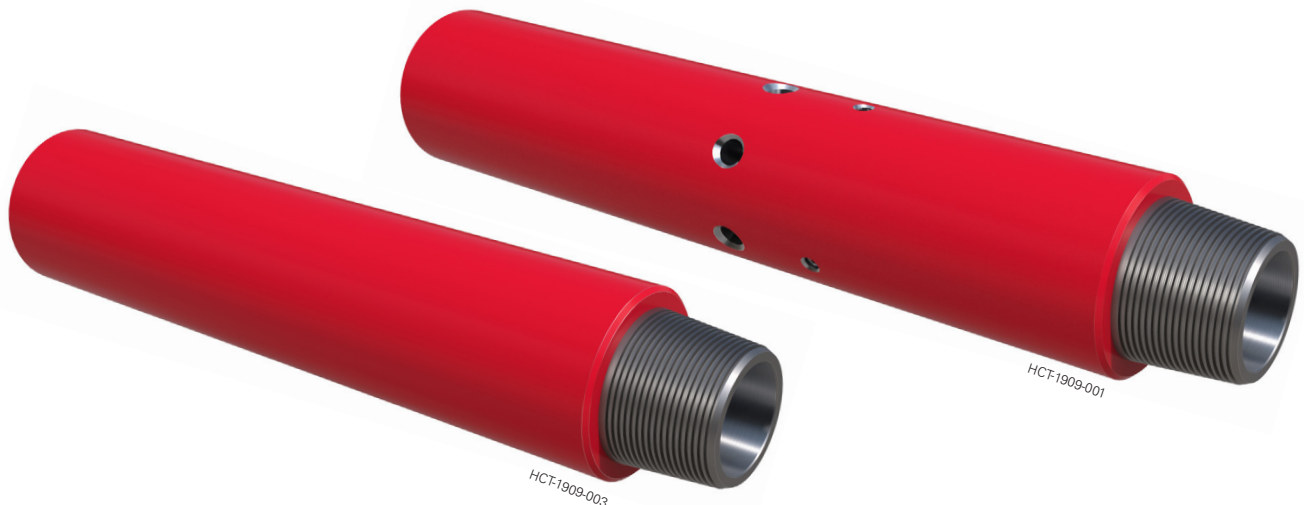
OVERVIEW

In sensitive or weak formations, surge generated from large liners and tight tolerances can induce forced fluid losses or formation damage, potentially leading to loss of costly drilling fluids, wellbore instability and well control issues. By diverting fluid flow paths during liner deployment, piston effects can be minimized to reduce surge pressure on the formation and allow for faster liner deployment.

Halliburton Liner Hanger Systems offers a simplified, engineered surge diverter valve that diverts fluid through multiple bypass ports to minimize piston effects while running the liner. The surge diverter valve is run in the open position, and when needed to close, a single ball can be dropped to activate the shear pins, fully closing the bypass ports. The ball is then extruded through the ball seat with pressure to open the string for pumping the cement job. When mated with a Halliburton surge diverter confirmation sub, the same ball extruded from the fluid diverter tool lands in the diverter confirmation sub, which causes pressure to build. As pressure builds and is recorded, the pressure integrity of the system confirms the surge diverter valve bypass is fully closed, allowing the pressure to be further increased until the ball extrudes through the ball seat. Once expended, the ball falls into a catcher sub in the landing collar.

APPLICATIONS

- » Weak or low-pressure gradient formations
- » Tight-tolerance liners
- » Large outer diameter (OD) casing accessories limit bypass



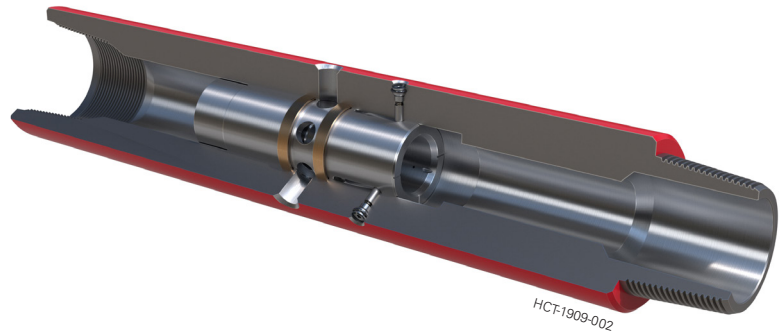
SURGE DIVERTER VALVE

FEATURES

- » API drillpipe connections
- » No body connections
- » Field-adjustable pinning
- » Concentric maximized bypass
- » Bypass sleeve locks in closed position

BENEFITS

- » High-strength connections
- » Ease of pinning
- » Largest bypass area available
- » Sleeve cannot move once seated closed



Surge Diverter Valve Specifications

Casing Size (in.)	Maximum OD (in.)	Expandable Ball Seat Minimum ID (in.)	Length (in.)	Top and Bottom Connection (in.)
11 3/4; 22	8.500	1.748	42.50	API – 6 5/8 FH

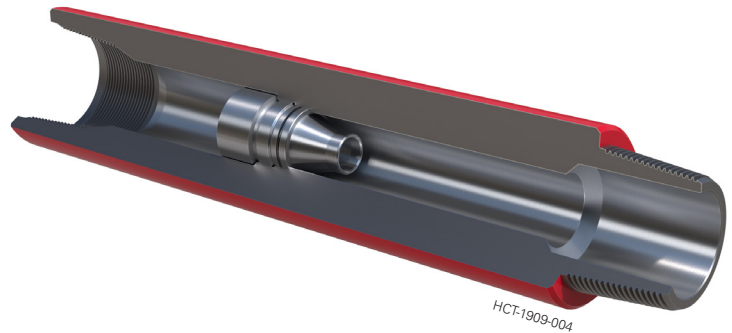
SURGE CONFIRMATION SUB

FEATURES

- » API drillpipe connections
- » No body connections
- » No pinning required
- » Minimized components

BENEFITS

- » Confirms string integrity
- » High-strength connections
- » No body leak paths
- » Largest ID compatible with most wiper darts
- » Ease of operations



Surge Diverter Valve Specifications

Casing Size (in.)	Maximum OD (in.)	Expandable Ball Seat Minimum ID (in.)	Length (in.)	Top and Bottom Connection (in.)
11 3/4; 22	8.500	1.748	37.50	API – 6 5/8 FH

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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