

SurgeMaster™ II Multiple-Opening Diverter Tool

Reduces surge pressures and increases liner-running speeds

Applications

- Running liners in weak formations or tight-tolerance annular clearances

Features and Benefits

- Large bypass ports divert fluid into the annulus, which reduces the risk of exceeding the formation fracture gradient and increases run-in-hole speeds.
- SurgeMod software optimizes tripping speed to reduce liner-running time and maintain surge pressure below the formation fracture gradient.
- The ports close automatically when running stops, which eliminates the use of a conversion ball and enables faster tool deactivation.
- The tool permits circulation down the inside diameter (ID) without permanently deactivating the tool, which allows for well conditioning or washing out a tight spot before reaching total depth.
- The large-bore ID prevents damage to drillpipe darts.
- An internal flapper orifice sized for the job enables controlled filling of the running string and provides the internal pressure differential to open the annular flow ports.
- The design enables repeatable opening and closing of the ports without permanently converting the tool and includes a contingency closing method.
- Increased circulating pressures that match pre-job modeling confirm tool closure.

Tool Description

Installed in the landing string above the liner hanger, the Weatherford SurgeMaster II multiple-opening diverter tool directs wellbore fluid from the drillpipe into the annulus as liner is run in the hole. When the drillpipe is run into the wellbore and the flow-induced differential pressure over the internal flapper orifice reaches 105 psi (1.03 MPa), the bypass ports on the tool open automatically. When pipe movement ceases, the ports automatically close. When the ports are closed, circulation can be established at any time without deactivating or permanently closing the diverter tool. The tool can be opened and closed as many times as needed. Applying 1,180 psi (8.14 MPa) of differential pressure permanently deactivates the tool.



The SurgeMaster II multiple-opening diverter tool directs wellbore fluid from the drillpipe into the annulus.



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Options

- A burst disk can be installed in the orifice flapper to reverse circulation after cementing.
- A pump-down tube, drop tube, and spear combine to offer an alternative method to close annular ports.
- A mechanical ball seat can be placed below the tool to catch and retain a dropped ball as part of a pressure test to verify that the tool is closed.

Specifications

Maximum OD	9.25 in. (235 mm)	8.5 in. (215.9 mm)	6.625 in. (168.275 mm)
Connection	6-5/8 FH	6-5/8 FH	4-1/2 IF
Drift ID	3.125 in. (79.4 mm)	3.125 in. (79.4 mm)	2.875 in. (73.025 mm)
Maximum temperature	300°F (149°C)	300°F (149°C)	300°F (149°C)
Part number	2103639	2091436	1124575

