

WELL COMMANDER

Ball-activated drilling circulating valve

FEATURES

- Generous flow-through area via multiple ports
- Ball catcher has a 18-ball capacity (9 complete cycles)
- Ports open and close using same-size ball
- Available in 5-in, 7-in, 8¼-in, and 9½-in OD
- No internal tool connections
- Tool activation mechanism locks into open or closed position and is isolated from wellbore fluids
- Ball catcher permits smaller ball and/or limited wireline access through the tool even after a ball has been dropped
- Optional shut-off ball prevents coarse LCM from entering sensitive bottomhole assemblies such as LWD/MWD/core barrel, mud motor and more.

ADVANTAGES

- Easy spotting of LCM or WSM while drilling
- Cuttings-beds removal, enhanced hole cleaning and efficient fluid displacement by boosting annular velocities in conjunction with pipe rotation
- Will not function prematurely from high-circulation or tripping rates
- Provides jetting functionality in the BOP
- Permits running other ball-activated tools below
- Permits limited wireline access for freepoint indicators or other elements
- Promotes filling or draining the workstring while tripping



The WELL COMMANDER* ball-activated drilling circulating valve is placed above sensitive bottomhole assemblies such as MWD and LWD tools, core barrels, and mud motors.

Applications

The WELL COMMANDER valve provides an alternate circulation path for performing critical functions like placing LCM (loss circulation material) in troublesome zones, avoiding plugging the BHA or damaging the LWD/MWD tools.

The WELL COMMANDER valve also permits boosting annular velocities during drilling or completion operations. This is typically done to prevent or remove cuttings-beds buildup, enhance fluid displacement, or simplify reverse circulation.

Placing the tool above other ball-drop tools, such as an underreamer, can also be highly advantageous.

The tool could be used to help fill or drain the drillstring during trips to control surge and swab pressures and to enhance tripping operations by minimizing fluid discharge.

How it Works

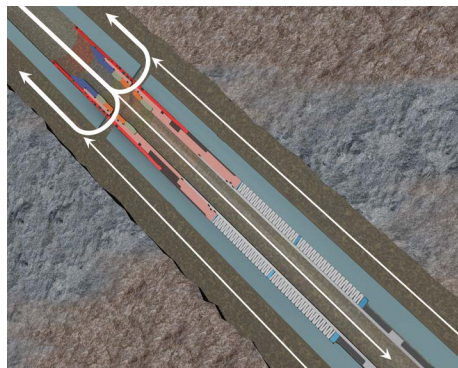
The WELL COMMANDER valve is ball activated and can be cycled multiple times. It uses single-size ball to open and close the tool, and a second size to isolate, if required, the flow of fluid through the tool. Once the tool is open, the majority of the flow will exit through the ports, and a small amount of flow will go through the tool to cool down the BHA unless a "shut off" ball is dropped.

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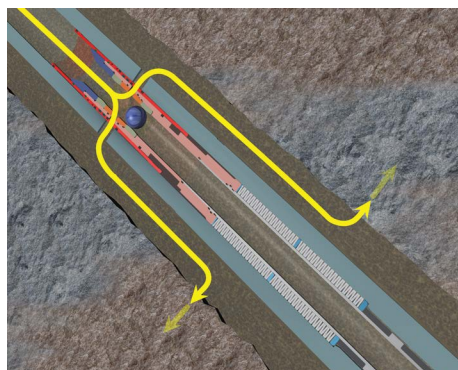
WELL COMMANDER

The WELL COMMANDER valve is run into or pulled out of the hole with the ports locked open or closed. The ports remain in the same position until the tool is activated by dropping a ball and pressuring up to shift the circulating port. The tool uses the same size operating ball to open and close the ports, with the capacity of the ball catcher (18 balls/9 cycles) being the only limitation. A smaller BHA-shutoff ball can be dropped to prevent fluid flow or solids deposition at the top of the BHA. This ball is expelled with the subsequent operating ball. The operating balls and BHA-shutoff balls are collected in the ball-catcher assembly below the tool. This bypass ball catcher captures the balls to one side of the inside diameter to facilitate positioning other ball-drop tools below it, as smaller activation balls can pass through the WELL COMMANDER valve and ball catcher without activating it.

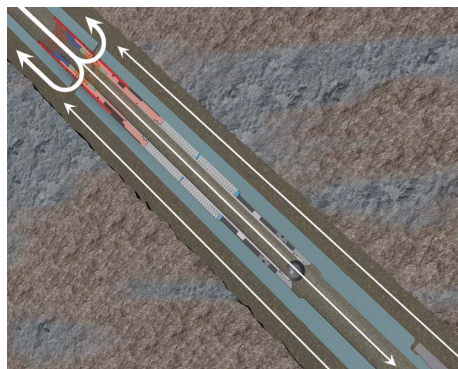
Unique ball-seat technology allows the same-size ball to open and close the tool, eliminating the risk of dropping the wrong size ball. No complicated ball/dart sequence or potentially problematic pump on/off hydraulic sequencing is required to open and close the tool. Additionally, high circulation rates will not cause the tool to function prematurely.



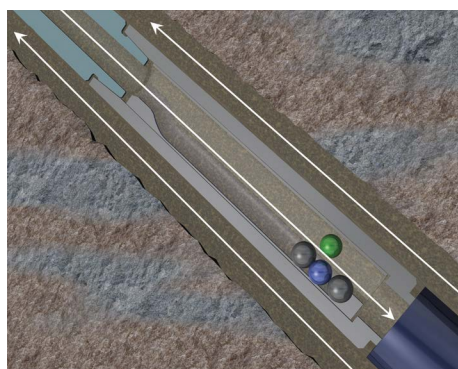
*Activating the
WELL COMMANDER valve.*



Spotting the LCM.



*Boosting annular
velocity.*



*Dropping a smaller ball
past the ball catcher.*

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