

BOOSTER BYPASS TOOL

PBL

DSI FZE is pleased to introduce a new option for splitting the flow while drilling, or during completion and workover operations. With a single ball activation /de-activation cycle a pre-calculated amount of drilling or completion fluid will pass through the Booster Tool and on the BHA below while the remaining fluid is diverted out of the Booster Tool ports. The ability to split the flow gives the operator more options on available hydraulics and hole cleaning parameters.

The proven PBL ball-drop technology enables operators to precisely determine when the tool is in closed / opened position and an integrated float minimizes tool length while maintaining well control. The tool can be cycled (opened and closed) 10 times.

Field interchangeable jetting nozzles are directed up-hole allowing for increased annular fluid velocity while minimizing well-bore erosion and maximizing hole cleaning. The fluted main body has a wear reduction coating applied in the exterior contact areas to allow for increased durability, well-bore interaction and reduced vibration. All of this contributes to higher tool reliability.

At the time split flow is required, a single ball is inserted and pumped down to the Booster Tool. After the ball lands on the seat, the blocked passage will allow the pressure to build and cause the sleeve to shift downwards. When the ball shear pressure is reached, the ball will shear thru seat and the ball drops into the ball catcher below. The spring-loaded sleeve travels upwards and remains in the open (split) position. In this position the ports in the sleeve are now aligned with the main body orifice allowing for the flow to split.

To close the Booster Tool, another single ball is pumped down. Pressuring up on the sleeve, shifts it downwards until the ball shear pressure is reached and the ball shears thru the seat. The spring-loaded sleeve travels upwards and remains in the closed position allowing for all of the flow to exit the bit.

Splitting the flow allows a much higher flow rate above the MWD-LWD and DD tools in the string. This enhances hole cleaning without altering drilling efficiency (at the bit).

Highlights of the Booster Tool:

- Flow in the tool remains in the optimum range
- Drilling parameters remain optimum at the bit
- Better steerability
- Better hole conditioning (no washout)
- Optimum motor bit and RSS performance
- Elimination of tool damage due to erosion and vibration during clean up cycle
- The booster tool is simple and reliable system that will save the operator a substantial amount of rig time and thus money



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The Booster Bypass Tool was developed to assist operators in achieving higher flow rates while drilling. By splitting the flow, the operator will achieve more effective continuous hole cleaning and well-bore management, while maintaining allowable flow rates through today's sophisticated down-hole tools. This innovative, new tool uses the following features to make it unlike any other circulation tools in the market.

- Single ball activation / de-activation cycles using proven ball-drop technology enables the operator to precisely determine when the tool is closed/open
- Standard interchangeable jetting nozzles are directed up-hole allowing for increased fluid velocity minimizing well-bore erosion and maximizing hole cleaning and motor performance
- Fluted main body has wear reduction coating applied in exterior contact areas to allow for increased well-bore interaction reducing vibration
- Completely mechanical; No electronics or hydraulics means operator ease-of-use and constant reliability
- Integrated float minimizes tool length while maintaining well control
- A customized hydraulics program is utilized to size tool nozzles for optimal performance

Technical Specifications

Tool Size (")	5	6 ¾
Maximum O.D. (")	5.875	8.375
Minimum I.D. (") ¹	1.400	1.800
Standard rig ends	NC 38	NC 50
Fishing neck I.D. (")	5.000	6.750
Number of stabilization pads	4	3
Number of nozzles	4	3
Nozzle size range (")	7/32 – 16/32	7/32 – 16/32
Activation / De-Activation ball size (")	1.5	2
Number of cycles	10	10
Flow area through tool (in ²)	1.67	2.92
TFA through nozzles when tool is activated (min. in ²)	0.148	0.111
TFA through nozzles when tool is activated (max. in ²)	0.784	0.589
Weight (lbs)	460	1,198
Shoulder to shoulder length (")	120	150
Make-Up Torque (ft-lbs)	11,500	34,840

¹ Minimum Tool ID could vary if Activation Ball or Dart is used

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