



ANOTHER MYTH BUSTED!

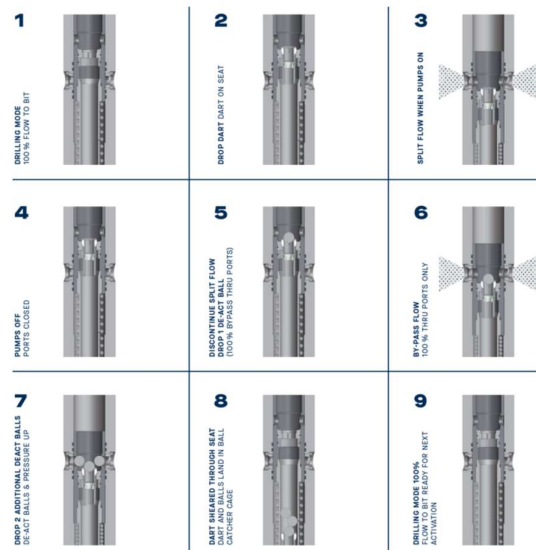
“DSI PBL Tools are capable of offering Constant Split Flow as well as On-demand Split Flow features, True or False?”

Introduction

DSI is well-known for its **PBL Multiple Activation Bypass System** and its capabilities to divert 100% of the flow through the side ports making it ideal tool to be deployed to cure losses by enabling the Operator to circulate coarse / aggressive LCM through the tool. The fact that, for many years, DSI PBL has had the capabilities to offer Split Flow Systems has, by and large, been over-shadowed by its massive success in the use of its famous ball drop system to combat lost circulation. As incredible as it may seem, DSI introduced the PBL Split Flow Dart System to the industry over a decade ago, so the claims by some that they have invented the split flow dart system is clearly unfounded and simply not true. DSI PBL Split Flow System utilises the exact tool and seat arrangement as its world-renowned Ball Activated System except that, to activate the tool, instead of dropping an Activation Ball, an Activation Split-Flow Dart is dropped. This simple system allows the user to operate the same tool down hole to achieve **100% by-pass** or a split flow bypass of predetermined percentage “**On-Demand**”. What is new with DSI is our introduction of **DSI Booster Bypass Tool** which has almost all the advantages of our PBL Tool with the exception that the Booster Bypass Tool is a “**Permanent**” split flow system while activated and the sleeve remains locked in open position until such time that the tool is deactivated and ports are closed. Both systems are still multiple activation systems and the number of cycles can be extended by supplying tools with extended Catcher Subs.

Argument

Often, in our illusive search for a “fix it all” solution, we tend to miss the “Forest” for the “Trees”. A common misconception is that PBL Circulating Bypass System is only a ball activated system and using this device only achieves 100% bypass and a split flow arrangement is not possible. This assumption is totally inaccurate. The same PBL tool that we have known and used for many years to pump aggressive LCM through, can also be easily configured to achieve a desired split flow. Naturally, we do not recommend a split flow device to be used for pumping coarse or aggressive LCM for obvious reasons, however the advantage of having a PBL Bypass Tool in the string is that the operator has the control to drop activation ball and achieve 100% bypass or drop a Universal Split Flow Dart (USFD) and achieve split flow without pulling out of hole or changing the tool. Hence DSI PBL Bypass System offers an “**on-demand**” split flow feature without compromising the safety feature of ports closing as soon as the pumps are turned off, hence maintaining the integrity of the drill string when a well control situation is encountered.



DSI PBL “Split Flow Dart” System



DSI Booster Bypass System

**BYPASS SYSTEMS
BY DSI**



There are, of course instances whereby the primary objective of having a circulating tool in the string is to enable Operator to perform wellbore clean up by boosting circulation while drilling ahead or during back reaming or milling operations. Encountering losses and the need to pump LCM to cure the losses may not be on the radar at all.

The fact that DSI's Multiple Activation Bypass System can still be deployed to address this need is already a great news but it may be that the Operator prefers a tool with an indexing system whereby tool can be locked in Open or Closed position offering constant split flow vs. 100% flow through to BHA. This being the case, DSI has a solution and that is the deployment of its **DSI Booster Bypass Tool**. This is a Ball Activated system whereby once activated, the sleeve locks in open position and a "permanent" predetermined split flow is achieved. **This system incorporates 3 or more size-adjustable 45 degrees upward pointing jetted ports** to boost hole cleaning while downward flow is permitted simultaneously. To deactivate the tool, another ball (same size ball as activation ball) is dropped and the sliding sleeve will then index to port-closed position and 100% of the flow will be directed to BHA below. It is important to note that **DSI Booster Bypass Tool incorporates an integral float which assists with maintaining well control**

Like its PBL Multiple Activation Bypass cousin, the DSI Booster Bypass Sub is capable of 5 full activation / deactivation cycles as standard. But if the need for more cycles are predicted or desired, tools can be supplied with Extended Ball Catcher Subs enabling tools to perform 10 or even 15 full cycles.

Justification / Conclusion

The DSI family of circulating tools are capable of offering **100% bypass, On-demand Split Flow or Constant Split Flow features**. Hence, the Operator has full control on how it wishes to address the anticipated well challenges. The operative word here is "having full control" rather than using a device in the string whereby its default operational mechanism requires to be over-ridden in order to achieve Operator's needs.

So, the more relevant factor to consider when choosing a circulating tool ought not be whether to use DSI PBL tool or some other less reliable circulating tool. Instead the consideration ought to be on whether to use DSI PBL Multiple Activation Bypass Tool or DSI Booster Bypass Tool to achieve the split flow needs. Why? Because we at DSI can offer complete circulating solutions.

For further details, please feel free to contact us on:

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DRILLING MODE
100% Flow to BHA/Bit



ACTIVATION
Ball on seat



ACTIVATION
Pressure Build-up



ACTIVATION
Ball Sheared



ACTIVATION
Desired Split Flow

DSI Booster Bypass System
Activation Sequence