	TITLE: Operating Instructions for SSBB- LWD Compatible		
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	Issue Date 27-06-2014	Revision Date 01-02-2015	Approved By Ross Landry

PBL – By Pass Tool [LWD Compatible (SSBB)]

OPERATING INSTRUCTIONS

Activation Procedure

1. Prior to activating the tool, Record Pump Pressure _____ Pump Strokes _____. This will be used as a reference to confirm de-activation of the tool (Fig:1).
2. Calculate the fluid displacement **volume and time** in the drill string to estimate when the activation dart will reach the Bypass Tool. Break drill string at floor and drop one (1) stainless steel activation dart **Record Dart Size** _____. Ensure Dart will pass through any drill pipe restrictions above the tool.
3. It is recommended to maintain normal drilling pump rates, Displace 50% of the volume inside the drill string, and then reduce the pump rate to 25% (Max. 200 GPM) until the dart lands on the seat. The dart will almost always seat sooner than the calculated pump strokes. **NOTE: Care should be taken when pumping the dart down.**
4. When the activation dart lands on-seat (**fig 2**), the inner mandrel will shift to its open position against the spring. **NOTE: IT ONLY TAKES 100-200 PSI TO FULLY ACTIVATE /OPEN THE TOOL.** Fluid will now be diverted through the side ports. As long as pumping is continuous, fluid will be diverted through the ports. If pumping is halted, the sliding sleeve will shift to the closed position. When pumping resumes, the mandrel will shift open again allowing fluid diversion through the ports of the Bypass Tool. It is recommended a constant pump rate be maintained while the tool is in the open position. It is not recommended to utilize the dart if the hole angle is greater than **55 degrees** between the surface and PBL Tool.
5. Surface indication of the tool being in the open position is a pressure drop. **Compare pump pressure/strokes to rates and pressures recorded in step one.** Once the tool is open, pump rates can be increased to the desired rate.
6. Rotating and reciprocating the drill string is good practice while activating the PBL tool.

De-Activation Procedure

Pick-up fishing accessories (overshot) and run as per wireline companies procedures and latch onto 1" fishing neck on dart and POOH. At surface break the drill string at rig floor retrieve dart with overshot. Deactivation is simply achieved by retrieving the dart with an overshot (**fig 3**).



Fig-1

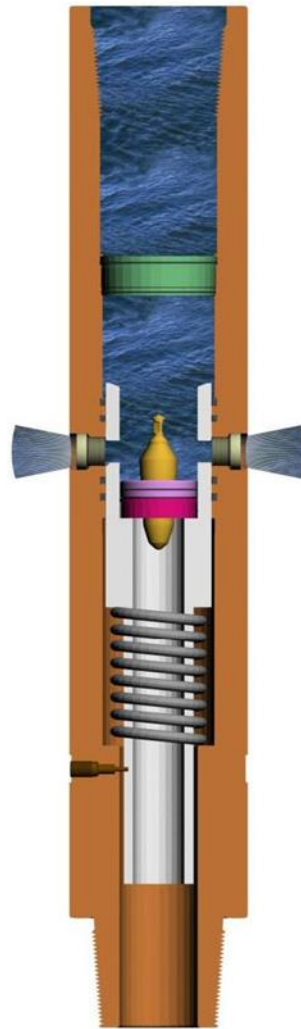


Fig-2

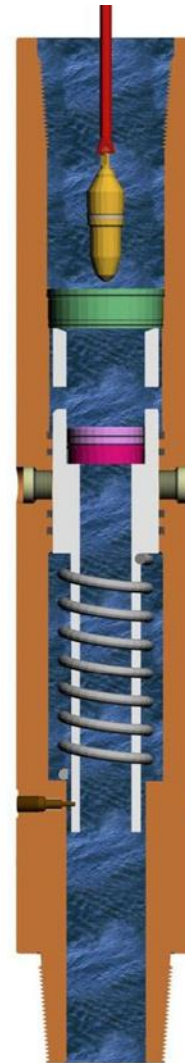


Fig-3

PBL Sliding Sleeve Multiple Activation Bypass System Table

Tool size inches	4-3/4"	6-3/4"	8-1/4"
Number of ports	2	2	2
Drift sizes (when no dart is in tool)	51, 53, 57 MM	51, 53, 57 MM	62, 67 MM
Drift (when dart are in tool):	No drift	No drift	No drift
Maximum O.D. inches:	4.75	6.5	8.25
Standard Connections:	3-1/2 IF	4-1/2 IF	6 5/8 REG
Activation dart sizes:	52, 54, 58 MM	52, 54, 58 MM	63, 68 MM
Number of Activation Cycles	Unlimited	Unlimited	Unlimited