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## PIONEER VJB VENTURI JET JUNK BASKET

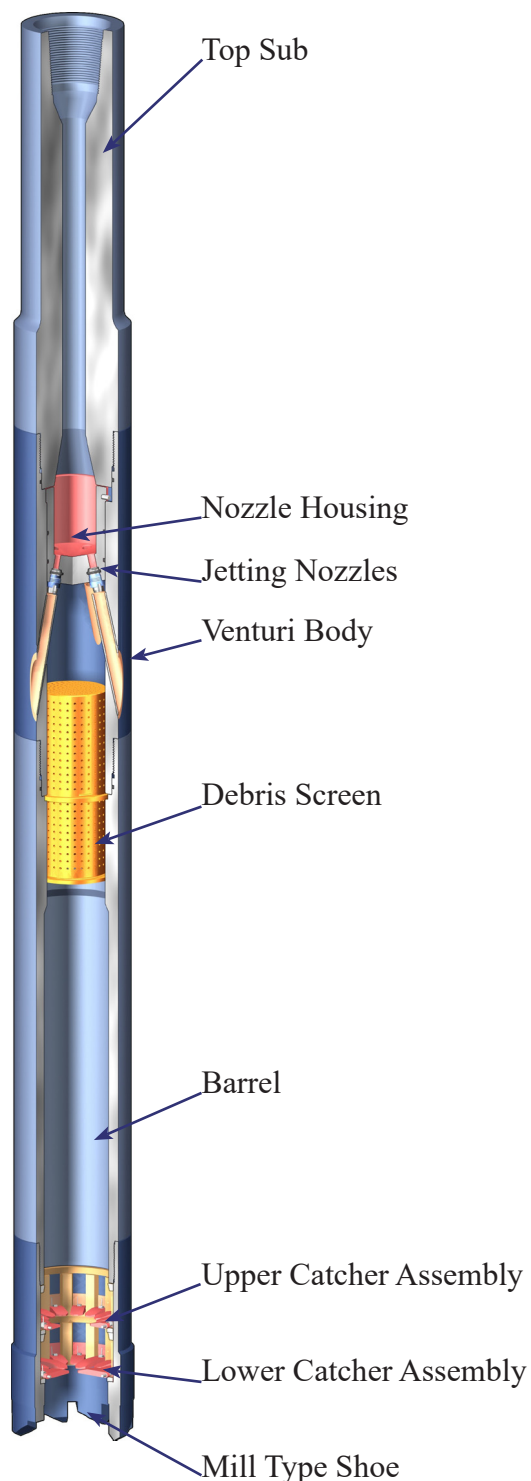
Almost inevitably, as a result of downhole operations, at some point there will be loose junk or debris present in the wellbore whose presence would be disruptive of further operations. Examples of these types objects are slips, cuttings, pieces of wireline, bit cones, lost hand tools, etc.

To retrieve these objects efficiently and effectively in a single trip, Pioneer Oil Tools Ltd has developed the Venturi Jet Junk Basket range (VJB Junk Basket). VJB Junk Baskets use reverse circulation as a means to effect debris removal. Additionally, these tools can be configured to use the classic core milling method of junk recovery.

The VJB Junk Baskets are designed to collect debris in either open-hole or cased wellbores, and are available in a range of sizes to suit various wellbores. The tools operate equally well in vertical or horizontal applications and can be run with or without a mud motor.

When operating, a VJB Junk Basket uses the Venturi Effect to literally siphon up debris: when liquid passes through a restriction, the liquid increases in velocity thus inducing a pressure drop. In this implementation of the Venturi Effect, an array of three, four or five nozzles (depending on the size of the tool) within the bore of the VJB Junk Basket each directs a high velocity jet of fluid into a tough ceramic tube. These ceramic tubes then divert the fluid out into the annulus between the tool and the wellbore. The jets are at a dramatically reduced pressure and the pressure differential between these jets and the surrounding fluids in the junk basket bore generates a strong siphoning effect that allows the tool to scour the wellbore for junk and transfer it up into the barrel (junk chamber).

Once debris has been siphoned up into the barrel, there are two features that have been employed to trap junk there. Firstly a debris screen, situated just below the ceramic tubes, traps debris of any significant size while allowing fines to be re-circulated out of the tool. Secondly, twin free-revolving catchers in the mill shoe prevent junk from dropping out of the barrel should circulation be discontinued. These same catchers are used to capture a short core should the operators decide to “core-up” the junk with the pumps off. By nature of its design, the tool will drain all fluid from the string, even when there is a core choking the barrel, thus enabling a dry string to be pulled.





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The configuration of the VJB Junk Basket is modifiable to some extent in order to conform to the specific downhole / pump conditions and accommodate operator requirements. The nozzles of the junk basket are replaceable and are available in a variety of nozzle bore sizes: this allows the operator to tailor the tool to suit the desired flow / pressure combination required. For extended cleanout operations (or for milling larger cores) an extension can be added to the barrel, increasing the size of the already generous junk chamber. The mill shoe is generally dressed with a tough tungsten carbide matrix and can be supplied in various configurations (saw tooth, wavy, burning, etc) depending on the specific requirements of the washover / milling / coring operation.

More radically, the tool can be fitted out for a different (if complementary) purpose. A Magnet Insert can replace the catchers in the mill shoe, thus converting the tool into a Venturi Fishing Magnet, alternatively all of the venturi components can be removed and the barrel attached directly to the top sub to create a Core Basket. The tool can also be used for drilling full gauge holes or hole reaming with the cuttings being retained in the barrel.

Assembly No:	Barrel OD:	Max Catch:
VJB0363	3 5/8"	2 3/4"
VJB0475	4 3/4"	3 1/2"
VJB0575	5 3/4"	4 1/2"
VJB0788	7 7/8"	6 1/4"
VJB1013	10 1/8"	8 1/2"
VJB1100	11"	8 3/4"

List of Parts	
Top Sub	VJB - 01
Venturi Body	VJB - 02
Barrel	VJB - 03
Nozzle Housing	VJB - 04
Debris Screen	VJB - 05
Jetting Nozzles	VJB - 07
Upper Catcher Assembly	CB - 21
Lower Catcher Assembly	CB - 20
Mill Type Shoe †	CB - 02

† Mill type shoes are available in three varieties: type A – a plain mill type shoe, Type B – a mill type shoe dressed with a tough tungsten carbide matrix and Type C – a flat bottomed ‘burning’ shoe suitable for cutting metal.

When ordering the largest tool to suit the hole size should be selected.

To order, specify:

1. The assembly number
2. The top connection (type and size)
3. Type of Shoe and OD
4. Any additional equipment.

As the policy of Pioneer Oil Tools is one of continual product improvement,  
we reserve the right to change designs or specifications without notice.