

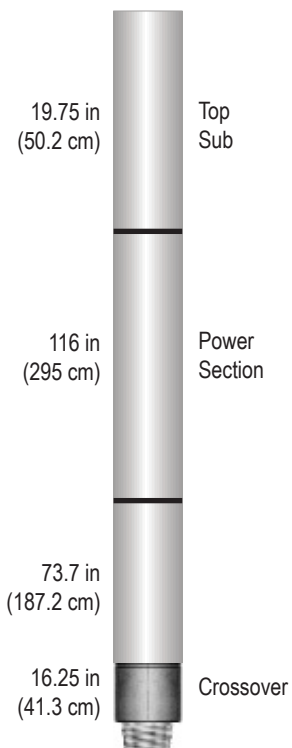


4.75 inch Down Hole Vibrating (DHV) Tool

The Down Hole Vibrating (DHV) Tool was developed by Scientific Drilling to enhance Directional Drilling operations. The tool is strategically placed in the BHA, above the motor, to provide improved ROP's by way of an oscillating movement within the system. This in turn provides smoother drilling and lessens the chance of sidewall sticking.

The DVH is MWD-friendly and operates with only 50 psi differential pressure. The tool works best between 600 and 1,000 feet behind the bit. It is possible to run multiple Rattlers in the toolstring.

The tool is available in 4.75 inch and 6.5 inch O.D. Standard API connections are available.



TECHNICAL SPECIFICATIONS	
O.D.	4.75 in (12 cm)
Overall Length	17.6 ft (5.4 m)
Weight	750 lbs (340 kg)
Maximum Flow Rate	275 GPM
Revolutions per Gallon	0.54
Maximum RPM	150
Maximum Temperature*	275°F (135°C)
Pressure Loss Across Tool	125 psi (862 Kpa)
Sand Content	<2.0%
Solids Content	<5.0%
Hole Size	5-7/8 in - 7-7/8 in (15 cm - 20 cm)
Maximum Overpull for Re-run	60,000 lbs (27,215.5 kg)
Maximum Overpull to Yield	120,000 lbs (54,431 kg)

* Hot-hole stators available upon request.

Specifications are subject to change without notice.

