



PRODUCT  
GUIDE  
2023/2024

**VERTEX**  
DOWNHOLE



## Vertex Downhole Product Guide

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Vertex Downhole Tools are manufactured in North America to the highest quality standards using the best materials available. We strive to provide downhole technology to our customers to meet their needs in challenging environments, from high pressure to high temperature wells. With international distribution, we focus on providing the right technology and the right tools to help complete the job safely while exceeding performance expectations.

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# Mudlink Measurement While Drilling Kit

## FEATURES:

- Easy to learn, operate & assemble.
- Low operating cost, minimal servicing required.
- Designed to withstand challenging shock and vibration environments.
- 175° C hot hole capable.
- Compatible with OEM sensors; at-bit sensors, azimuthal gamma, resistivity and pressure-while-drilling.
- High speed, 4 bits per second.
- High LCM capabilities.
- LWD ready; supports gamma, focused gamma, and resistivity. uses integrated gamma/resistivity logging software (LogIT).
- Advanced measurements including inclination and azimuth-while-drilling; shock and vibration, RPM, and dynamic telemetry.

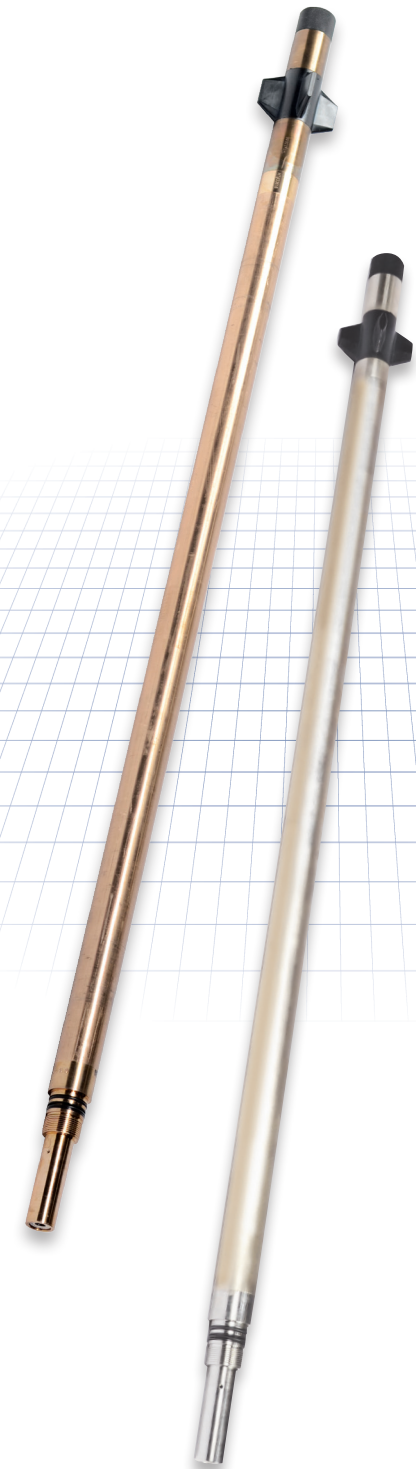
Powered by Mudlink Telemetry, our MWD Kit is the ultimate in rugged design. It has the highest mud pulse data rates available for directional companies; 4 bits/second, which is 24 second full surveys and 2-3 second telemetry updates.



# Directional Module

## FEATURES:

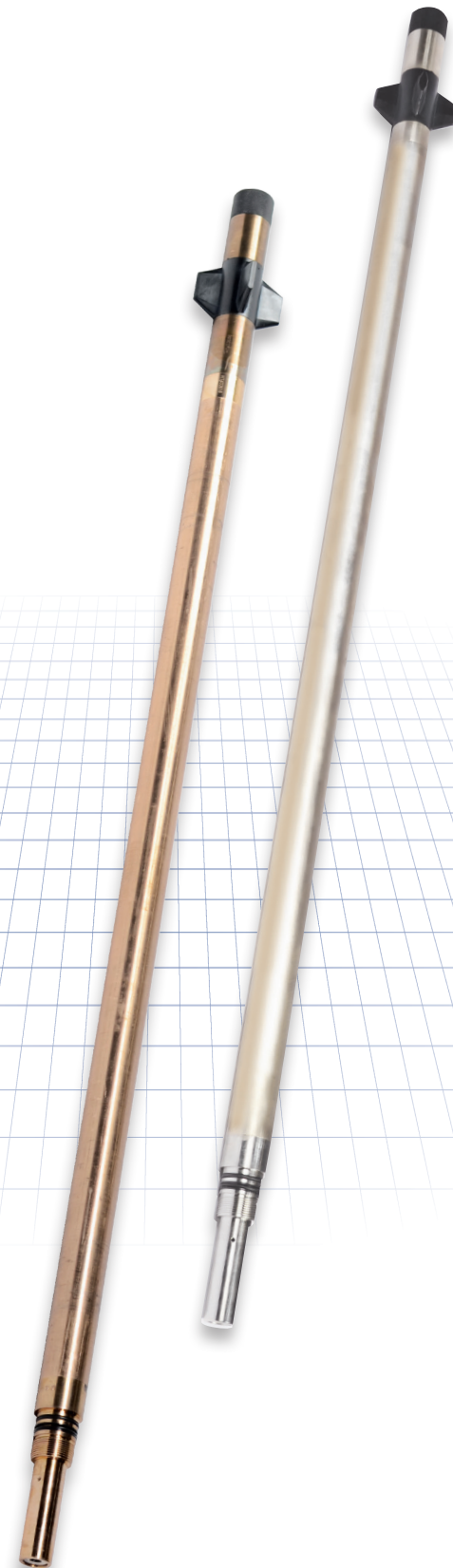
- Inclination and azimuth while drilling.
- Integrated memory of 64 MB with full data logging of sensors and events.
- Vertex communication protocol designed to add additional sensors.
- Inclination accuracy  $\pm 0.1^\circ$ .
- Azimuth accuracy  $\pm 0.5^\circ$  (at  $90^\circ$  Inclination).
- Toolface accuracy  $\pm 1.0^\circ$ .
- Total g field accuracy  $\pm 2.5^\circ\text{mg}$ ; total h field accuracy  $\pm 125 \text{ nT}$ .
- RPM measurement 2-200 RPM  $\pm 2\%$  of value.
- Real time shock, vibration and RPM pulsed to surface.
- Dynamic rotation/sliding sequences.
- Super alloy skin available.



## Battery Module

### FEATURES:

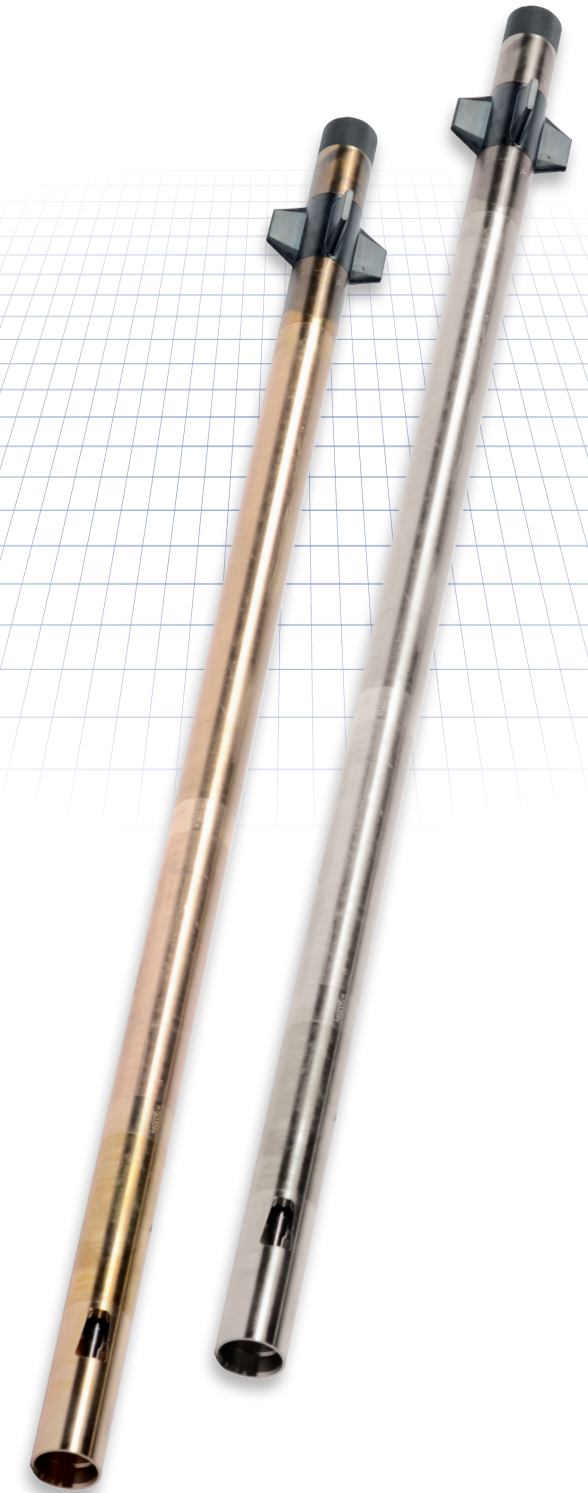
- Battery monitor with power usage and shock/vibration logging.
- Advanced shock absorber.
- Simple battery change.
- Integrated rubber fin centralize.
- Rotary connectors.
- Super alloy skin available.



## MWD Pulser

### FEATURES:

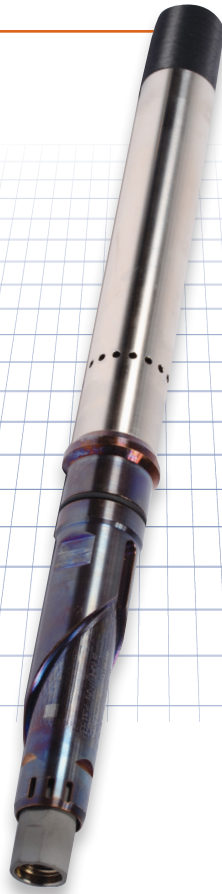
- High LCM tolerant.
- 64 MB of memory for logging and diagnostic uses.
- Rugged construction, designed for high vibration environment.
- Reduced number of parts makes it easy to service.
- Self-adjusting poppet ensures perfect pulse placement.
- Modular indexed sub assemblies for fast, trouble free assembly.
- Twin-start threads, modular design for quicker assembly.
- Can be assembled with minimum set of tools.
- Designed to minimize wash.
- Piston-compensated; tool only uses 5 cubic inches of oil and fills in less than 30 minutes.
- Servo poppet and orifice are changed without removing oil.
- Retrievable.



## Latching Lower End (Super Alloy)

### FEATURES:

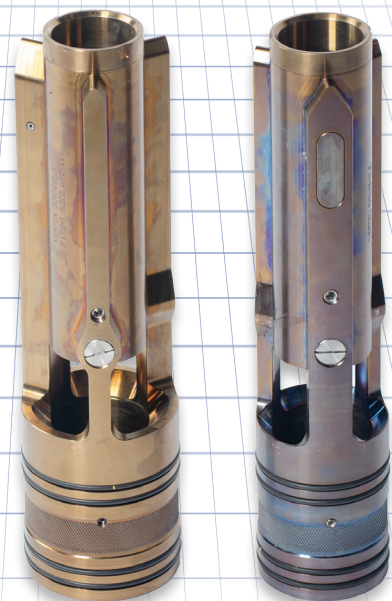
- Latching helix.
- Slim body; carbide coated main shaft.
- Carbide coated poppet bolts.
- High LCM Tolerance.
- Quad seal piston.
- Internal ram stop.
- Pressure assist lock.
- High wear capacity for high data rates.



## Medium & Large Latching Muleshoes

### FEATURES:

- Adjustable strength latching mechanism.
- Replaceable Reverse Helix.
- Locking muleshoe key.
- Internal O-Ring for Pressure lock with Helix.



## Program & Test Kit

### FEATURES:

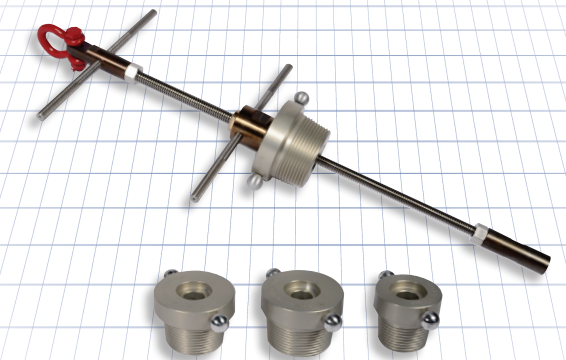
- Tool programming.
- Tool memory download interface.
- Battery memory download box.
- Flow Simulators for on surface Decode Testing.



## Insertion Extraction Tool

### FEATURES:

- Safe and quicker insertion and extraction of the MWD String.
- Capable of pulling with 6500lbs of force.
- Multiple thread types available



## Rig Floor Display Kit

### FEATURES:

- Advanced decoder capable of high speed decoding, integrated.
- CE, ATEX Zone 2, NEMA 4x, IP65, Class 1/Division 2 certified.
- Large 19" sunlight readable, anti-glare, glove compatible touch screen display.
- Integrated heater allows operation from -40°C to 60°C (-40°F to 140°F).
- High environmental performance and reliability.
- High power wireless, 1 watt.
- North american and european power 120V, 240V.
- Easy hook up; pressure transducer connection directly in back.
- Depth tracking ready with Vertex Downhole Depth Tracking Kit.
- Small tablet clone available for mirror display when there are space constraints.



## IHub Database Wireless Receiver

### FEATURES:

- IHub supports as many laptop clients as needed.
- Rugged, fanless design.
- High power 802.11 b/g/n wireless hub (1 watt).
- 4 RS-232/RS-485 ports for WITS input/output WITS auto recognition (no configuring).
- USB ports for external device connection.
- Includes integrated gamma software.
- SD card for continuous automatic database backup.

## UPS Kit

### FEATURES:

- Battery backup in case of a loss of power.
- Regulates power to connected devices to protect from surges.



## Pressure Transducer Kit

### FEATURES:

- Pressure transducer has cage to protect connector and cable.
- 10k hammer union 1502 Wika low noise transducers.

## Pressure Transducer Cables

### FEATURES:

- 100' cable for short distance between dog house and standpipe connections.
- 300' cable top between dog house and pump location.



## Running Gear

### FEATURES:

- Running gear required to land and retrieve equipment on surface and downhole.
- Muleshoe align and removal tools.
- Tool connection wrenches with torque wrench.
- Tools stands.
- Pipe screens are customizable with flanges to fit drill pipe based on threads.



## Tools Kit

### FEATURES:

- Rugged, heavy duty tool box.
- Contains all the tools required to complete on site maintenance and repairs.



## Parts Kit

### FEATURES:

- Rugged, heavy duty tool box.
- Contains all the parts required for standard in field servicing.



## Orifice Kit

### FEATURES:

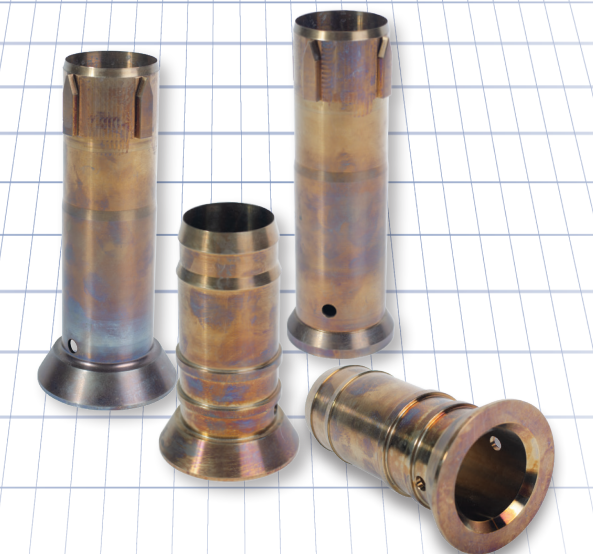
- Rugged, heavy duty tool box.
- Foam inserts to hold all carbide orifices and poppets.



## Fin Kit

### FEATURES:

- A spare set of fins which can be changed on location.
- Fin cutters based on thread type for tool to be retrieved from downhole.



## The Fishneck

### FEATURES:

- Used for seating and extracting the tool while on surface.
- When used along side the fin cutters the Fishneck allows for the tool to be retrieved while downhole.
- Made out of Super Alloy the Fishneck has high resistance to wear during drilling operations.





## Gamma Module

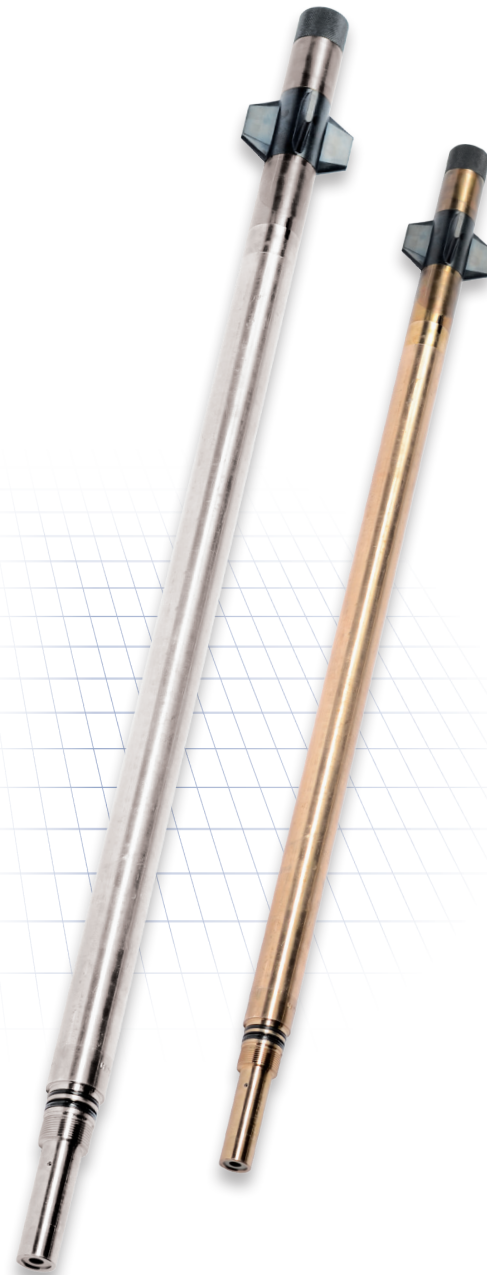
### FEATURES:

- Vertex gamma interface and software supports focused gamma sensors.
- Typical Sensitivity ~1.0 counts / API.
- Thin-bed resolution 6.8" (in 8" hole diameter at 50% points).
- Accuracy +/- 3% count rate change  
-25°C to 177°C or -13°F to 347°F.
- Low power. <14 mA @ 24V 25°C,  
< 20 mA @ 24V 177°C or 347°F.
- Operating voltage range +15V to +30V.
- Operating temperature -77°F to 347°F or  
-40°C to 175°C.
- Rugged. Vibration (3-axis) 5-1000 Hz random spectrum 20 g RMS, Shock (Z-axis) 500 G, (X or Y-axis) 1000 g, 0.5 ms.
- Gain stabilizing; open loop gain compensation with temperature.
- Integrated memory of 64 MB for full high resolution internal recording (5 second intervals > 1,000 hours).

## Azmuthal Gamma

### FEATURES:

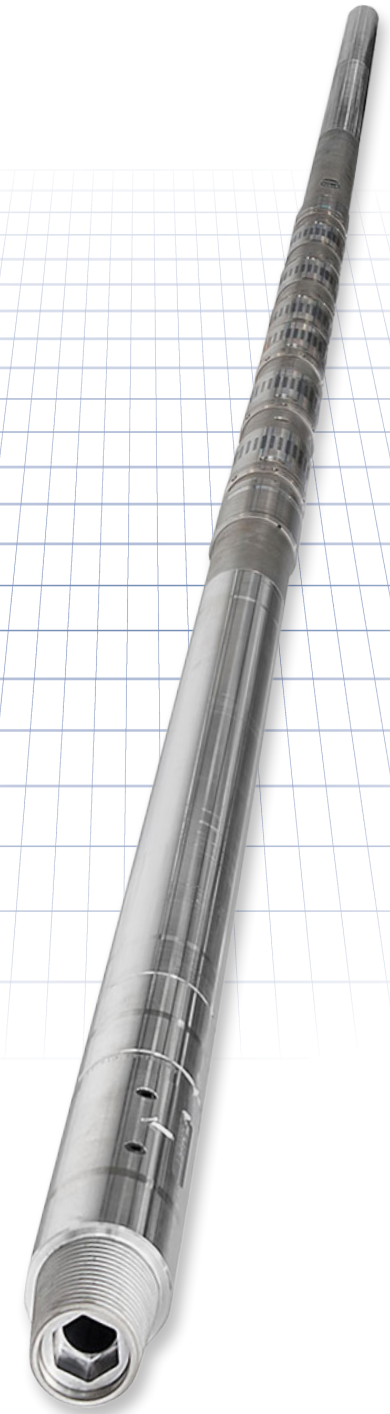
- Probe based design supports all BHA sizes.
- Retrievable.
- Gamma ray data up to 8 azimuthally sectorized bins.
- Both sectorized gamma and total gamma telemetered real time.
- integrated memory with full 360 degree high resolution gamma image.



## Resistivity Tool Integration

### FEATURES:

- Vertex logging software (Log IT) included to support resistivity collar.
- Provides 8 resistivity measurements, compensated for borehole and electrical errors, in all muds and drilling fluids whether they are oil based or salt saturated.
- All downhole measurements are presentable in both real time and memory, fully customizable dependent upon specific well requirements. This includes, in conjunction with resistivity, MWD steering, gamma, shock and vibration.
- Vertex MWD tool string integrates with leading resistivity tool manufacturers including Paisano, Oliden, RMS, and Well Resolution using a simple resistivity conversion kit.



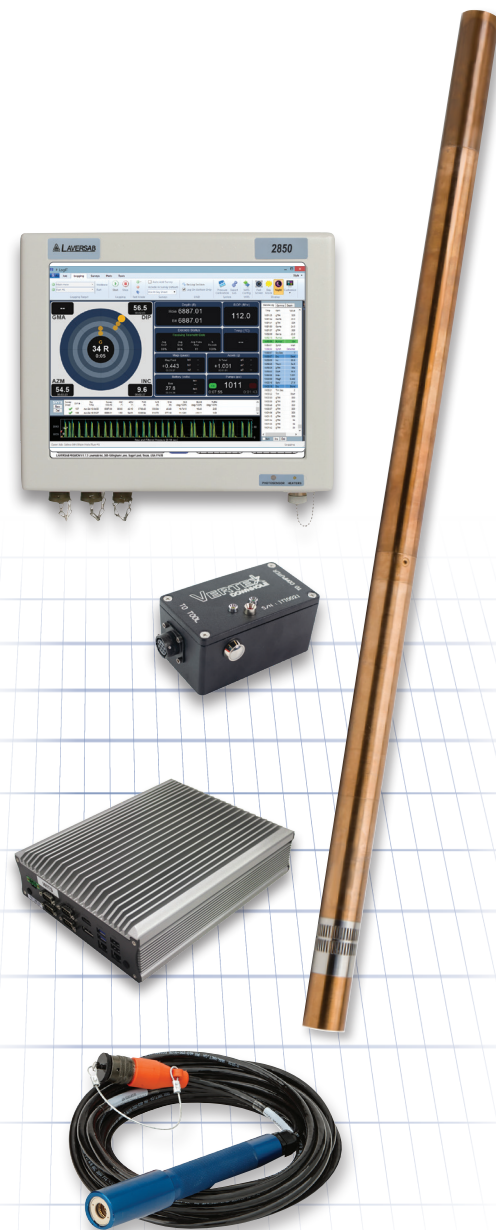
## Legacy System Upgrade (Kit Trade In)

### FEATURES:

- Trade in your old MWD tool strings and old surface decoding system (DM, gamma, battery barrel, pulser, and old RFD and decode boxes) for discount pricing on new Vertex tools strings and surface systems. Extra discount if DM accels can be harvested, or gamma crystal can be harvested.
- Most of other components of kit will be reused (to be determined upon trade in).
- New technology supports up to 0.15 second pulse width.
- Reliability; patent pending PCB board mounting. Makes boards impervious to shock and vibration.
- Real time shock, vibration and RPM.
- Full memory capabilities, with graphical interface
- Patented Mudlink dual digitizer decoding. Advanced syncing, pulse detection.
- Includes gamma and resistivity logging software
- Dynamic telemetry – telemetry switches automatically between rotating and sliding; no need to program check points in telemetry sequence.
- Re-sync on rotary, no need to recycle pumps.
- Drilling dynamics – plot all EDR data with calculated and decoded data.
- Flowswitch or rotary downlinking; 49 options.

The Vertex Mudlink™ tool is a probe based, retrievable, mud pulse system capable of operating at 3 to 4 bits per second, and not limited to depth. Our upgrade kit converts your tools to the Mudlink protocol. This will upgrade your current data rate from less than 1 bit per second to Mudlinks 3 to 4 per second.

Note: must use the locking muleshoe to achieve higher data rates.



## WINC + Kit (Manless MWD)

### FEATURES:

- Simplified manless MWD.
- Retrievable and reseatable, tool switches out down-hole via wireline
- Tools can come preloaded in nonmagnetic drill collars.
- 175° C / 347° F operation.
- Minimal configuration required, easy one step, high side offset if TF is needed.
- Inclination accuracy  $\pm .10^\circ$ .
- Azimuth accuracy  $\pm 0.5^\circ$ .
- Reliable, high LCM tolerant mud pulse technology.
- Real-time shock and vibration measurements.
- Detailed shock and vibration reports from tool memory.
- High battery life expectancy of 800 hours in survey only mode.
- Remote log-in support and troubleshooting and 24/7 phone support.



## WINC Tool (Wireless Inclination)

### FEATURES:

- Prevent the need to stop rotating and circulating to run single or multi shot surveys.
- Surveys are taken at connections and drilling can resume once pumps are brought up and the tool has synchronized with surface.



## WINC Surface System

### FEATURES:

- CE, ATEX Zone 2, NEMA 4x, IP65, Class 1 / Division 2 Certified.
- Rugged design provides reliability required for field use.
- Onsite WiFi allows remote access to the equipment. Ideal for command center operations.
- A simplified user interface that is operated by rig personnel.
- Edit, display and email surveys directly from the doghouse or remotely. Option for automatic email distribution.



## Direct V™ Unmanned Automated Vertical Correction Tool

## 3rd Party Pulser

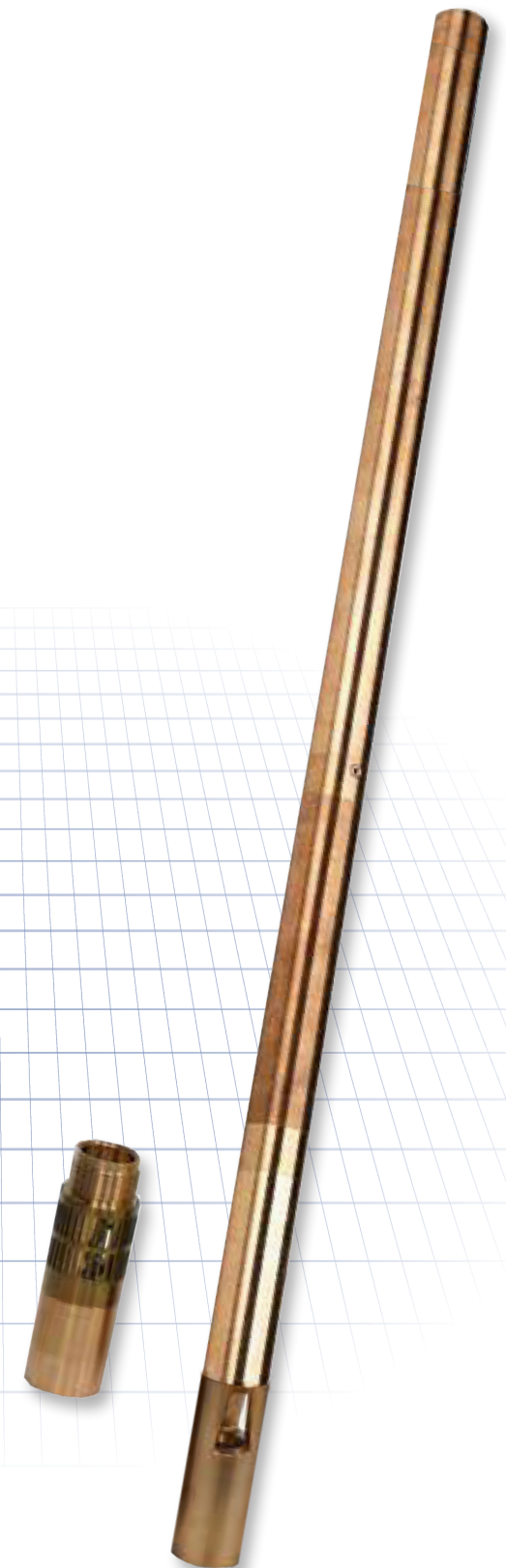
### FEATURES:

- Fully automatic, electromechanical, closed loop system with a configurable +/- .2° inclination accuracy threshold. This allows the movable hydraulic stabilizers to expand and to redirect the path to vertical.
- Compatible with all survey tools and MWD systems, although an MWD system is not required.
- Low operating cost.
- Simple and rugged in design; mud flow is straight through center shaft, eliminating loss of ability to circulate mud.



### FEATURES:

- Use with any existing MWD system with a 5v pulse line.
- High LCM tolerant.
- Rugged construction; designed for high vibration environment.
- Reduced number of parts makes it easy to service.
- Self adjusting poppet for less pulse jitter.
- Open top so can be configured for customer specific top connection; Kintec, Lemo, Rotary, etc.
- Can be assembled with minimum set of tools.
- Designed to minimize wash.
- Piston-compensated; tool only uses 5 cubic inches of oil and fills in less than 30 minutes.
- Servo poppet & orifice are changed without removing oil.
- Retrievable.

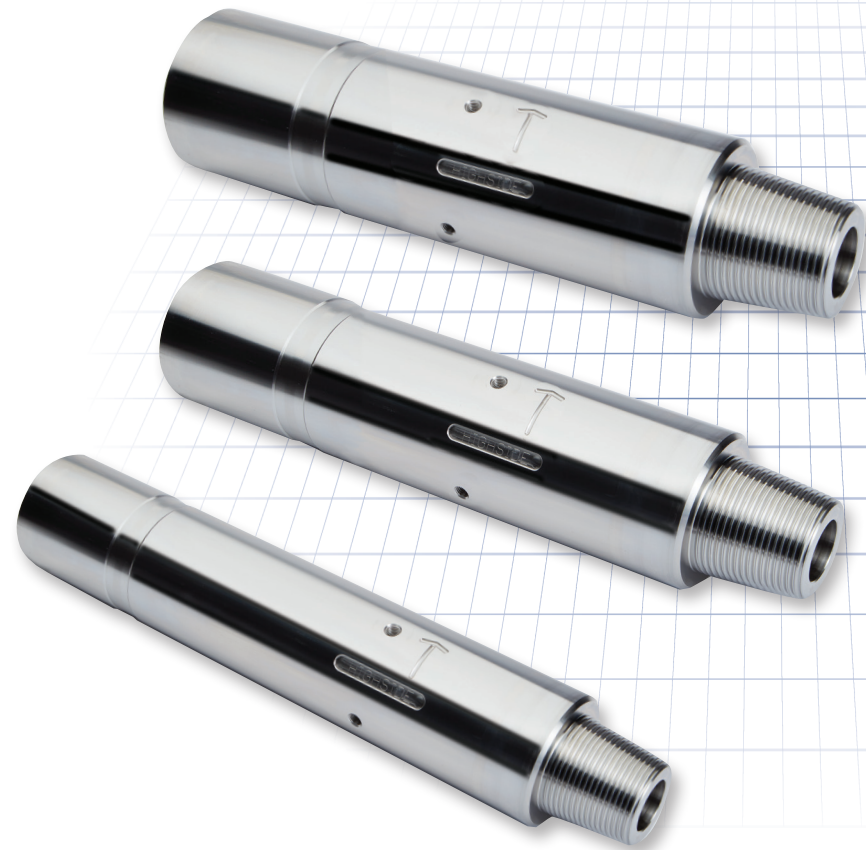


## UBHO Subs / Landing Subs

### Universal Bottom Hole Orientation

#### FEATURES:

- User helpful scribe mark, on the side of sub, is for assisting drilling assembly offset setup with WINC tool.



## Optional Accessories

#### FEATURES:

- Ethernet Extender Kit to provide extended range wired backup communication when wireless does not work. Class 1/Division 2 for hazardous area operations.
- The Vertex Downhole Depth Tracking Kit is fully integrated to the LogIT software. No third party software required, connects to back of RFD.



Ethernet Extender Kit



Depth Tracking System

# Lab Set-up

# Company Contact

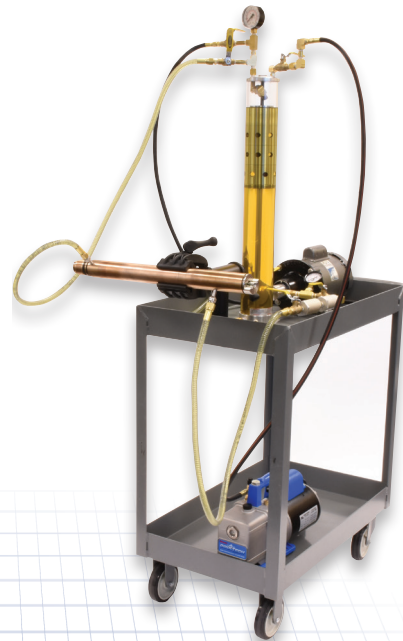
LAB SET-UP

### FEATURES:

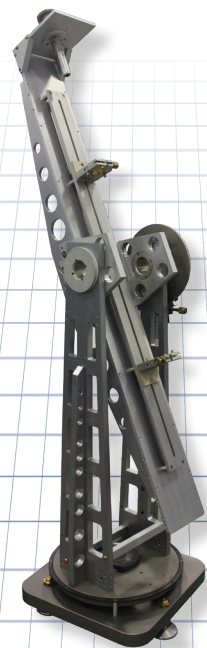
- A complete set-up of lab equipment is available for servicing and testing your valuable equipment. Please contact Vertex Downhole sales for a full list of products.



**Pulser Pressure Tester with Adaptors**



**Oil Fill Station**



**Roll Test Stand**



**Breakout Box Kit**



**Cirrus Tester & Cables**

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