

BHG-5

Digital Wall-Lock Borehole Geophone

- **Digitizes in the tool:
data free from
electrical noise**
- **String multiple tools in
series for tomography**
- **Sensors oriented with
built-in compass**
- **3-component sensors**
- **Motor-driven clamp**
- **No seismograph
required**
- **Data collected,
displayed and stored
on laptop computer**

The BHG-5 adds new capability to the widely-used series of wall-lock borehole geophones from Geostuff. Preferred world-wide for downhole shear-wave surveys and velocity logging, the BHG-5 adds downhole digitization of the geophone signals with 32-bit A/D converters, eliminating electrical noise from analog cables.

Most exciting is that multiple BHG-5's can be connected together to form a downhole array for efficient tomographic measurements.



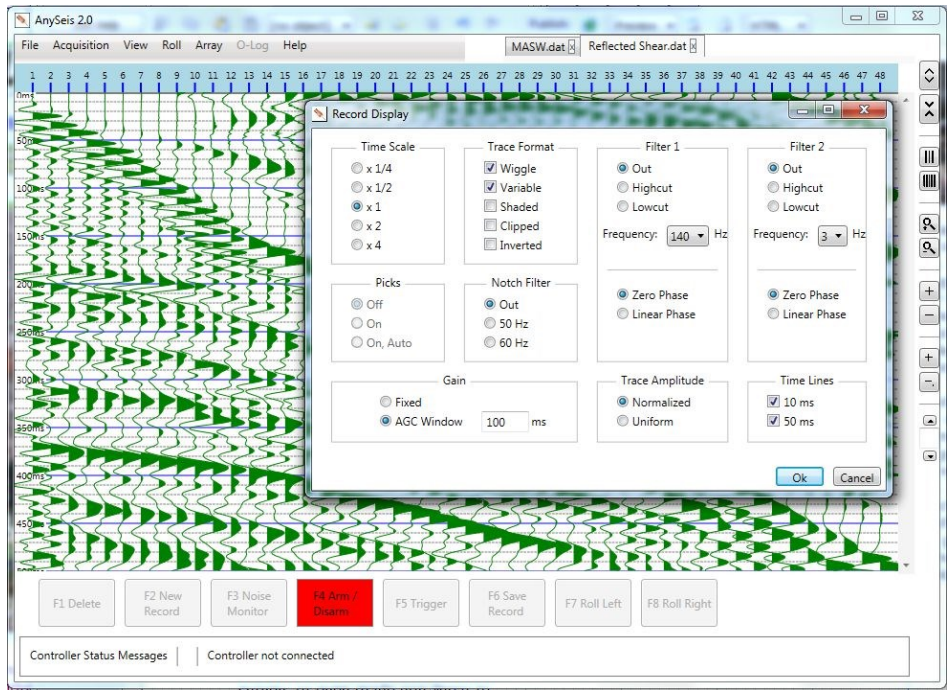
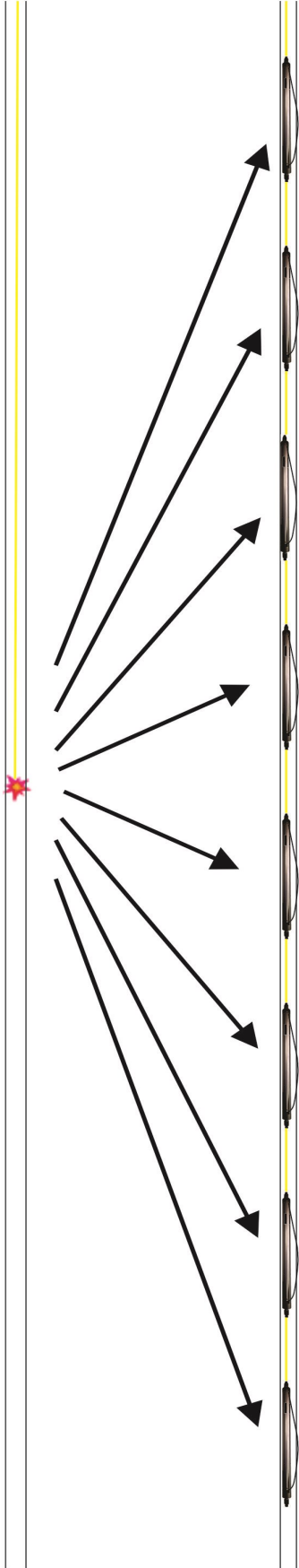
An electronic compass module determines the orientation of the sensors, and they are mathematically rotated to the azimuth of your choice, immediately, for display on your laptop.

The surface controller operates the clamp mechanism and connects directly to a computer through the USB port.

Software is included to display the data and save it on permanent media in an SEG standard format, readable by all popular seismic software programs.

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Data is displayed on a laptop computer. The acquisition and display parameters are controlled by the laptop, which also stores the data on the internal disk in a standard SEG format. Data can be archived on external media.

Multiple geophones can be connected in series to form a down-hole array. The distance between the sensors is determined by the length of the connecting cables. The user can order additional cable sets in different intervals or even in non-linear intervals.

Orientation is measured with a digital compass sensor in each geophone. Geophone data is mathematically rotated for the display.

System operates from a surface controller which interfaces between the array and the laptop, provides power and data flow, operates the clamp system, and connects by USB. Standard seismic triggers initiate data acquisition. Data can be retrieved immediately, or stacked in the tool. Multiple controllers can be linked for additional downhole arrays.

Specifications:

Sensor: 3 in each tool, 15-Hz omnidirectional, high-output geophones

Tool Diameter: 45 mm, 1.85 inch

Length: 725 mm 28 inches

Weight: 2 Kg, 4 lb

Minimum Borehole diameter: 51mm, 2 inches min

Maximum borehole: 150 mm, 6 in.
Larger with optional big-hole kit

A/D converter: 32-bit Sigma Delta

Sample rate: 500, 1000, 2000, or 4000 sps, selectable

Minimum interval between sondes in multiple string: 1 meter

Maximum interval between sondes in multiple string: 50 meter

Maximum number of sondes in an array: 24

Maximum depth: 300 meters in wet hole

Clamp Mechanism: : Metal spring expands against the borehole wall, powered by aDC motor in the tool.