

VIBROMETRIC

VIBSIST-250/500

SWEPT IMPACT SOURCE FOR DEEP RANGE SURFACE HIGH-RESOLUTION SEISMICS



Major benefits

- ◆ Effective reflection and refraction seismic source
- ◆ Produces compression and shear waves
- ◆ High productivity
- ◆ High resolution
- ◆ Rugged and mobile

Additional benefits

- ◆ Environmentally friendly
- ◆ Mechanically reliable
- ◆ Compatible with most seismographs

The VIBSIST is a **multi-impact, time-distributed source** that uses a dedicated vehicle and hydraulic rock breaker, powered through a computer controlled flow regulator. The vehicle is powered by a Diesel 27 Hp motor with electric starter engine, moves at 5.5 km/h and can climb slopes of max 30°. Temperature range for operation is, normally -35° to 55°C.

Applications

- ◆ Multi-offset, multi-azimuth VSP
 - ◆ 2D & 3D surface reflection and refraction
1. Mineral exploration
 2. Hydrogeological studies
 3. Hazardous waste investigations
 4. Shallow oil and gas
 5. Research and education

The seismic signals are produced as a series of pulses, according to a specific pre-programmed sequence.

The use of a monotonous variation of the impact rate controls effectively the non-repeatability of the impact intervals and achieves a wide bandwidth even when coupling to the ground is relatively poor.

Using standard equipment allows the VIBSIST-250/500 to be a safe, non-destructive and environmentally friendly high-resolution seismic source. It also makes it reliable and highly cost effective.

SYSTEM COMPONENTS

SYSTEM MODULES

1. The **controller** transfers to the impact hammer the sweep control sequence provided by the computer
2. Caterpillar vehicle with combustion engine operating in accordance with the sweep control sequence, through a **hydraulic servo controller**
3. The **ground impact assembly** includes a pressure plate (may be customized for certain ground conditions).
4. A variety of **seismographs** can be used, they include all DMT Summit series and Geometrics' Geode, StrataVisor and StrataView.
5. With non-Windows seismographs, a **laptop** is required but not provided with the VIBSIST-250/500.

SOFTWARE

Four software modules are included as part of the VIBSIST-250/500 system, they are:

- **Controller software** used to program the sweep control sequence
- **Sweep Decoder**, correlates the sweeps. This module can either be used for fast On-Line monitoring or elaborate Off Line processing
- **Signal Conditioning**, includes a collection of filtering programs used for processing of the records before or after correlation

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SPECIFICATIONS

Impact energy:

VIBSIST-250: 120—250 J / impact

VIBSIST-500: 300—500 J / impact

Impact frequency band: approximately 20 to 1000 Hz

Repetition rate: programmable between 3 to 20 impacts per second

Programmed sweep characteristics: operator designed (graphic interface) or preset

Sweep time adjustment: 2.5s to *desired* (this is restricted by the number of samples available per recording channel in the acquisition system).

Controller

Remote start button for normal operations, Display unit for sweep characteristics set-up. Default settings.

Data transmission

Radio / Cable link for trigger, pilot signal.

Impact Hammer

Hydraulic with gas accumulator

Impact Plate

Steel and aluminum sandwich, base plate 500 x 500mm

Hydraulic Controller

Oil Tank 20 l

Pressure 150 bar

