

**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 preprogrammed 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 Geode and StrataVisor Seismic Systems.
5. With non-Windows seismographs, a **laptop** is required but not provided with the VIBSIST-250/500.

### SOFTWARE

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

### SPECIFICATIONS

**Impact energy:** VIBSIST-250: 120—240 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 or aluminum sandwich, base plate 500 x 500m

**Hydraulic Controller**

Oil Tank 20 l  
Pressure 150 bar

