

# VIBSIST-50 CODED-Impact Seismic Source

## DESCRIPTION

The VIBSIST-50 is a multi-impact, time-distributed seismic source.

The seismic signals are generated by an electric hammer, which produces a sequence of impacts according to a pre-programmed time function.

The VIBSIST-50 is portable, safe, non-destructive and environmentally friendly.



The VIBSIST-50 Controller.



The new VIBSIST-50 with hand cart.

## KEY FEATURES

- ◆ Reflection, refraction and surface waves seismic source
- ◆ High productivity
- ◆ Simultaneous multiple-source operation
- ◆ High resolution
- ◆ Portable
- ◆ Environmentally friendly
- ◆ Compatible with all industry-standard seismographs

## APPLICATIONS

The VIBSIST-50 is intended for detailed P/S-wave and surface wave surveys with a typical penetration range up to 250 m, in reflection mode.

The fields of use include:

- *urban geotechnical investigations*
- *foundation engineering*
- *roadbed and dam inspection*
- *placer exploration*
- *ground water exploration*
- *ore delineation*
- *research and education*



MEDIUM RANGE urban Seismic Source



Compared with previous models, the VIBSIST-50 features a 2-fold increase of the impact energy.

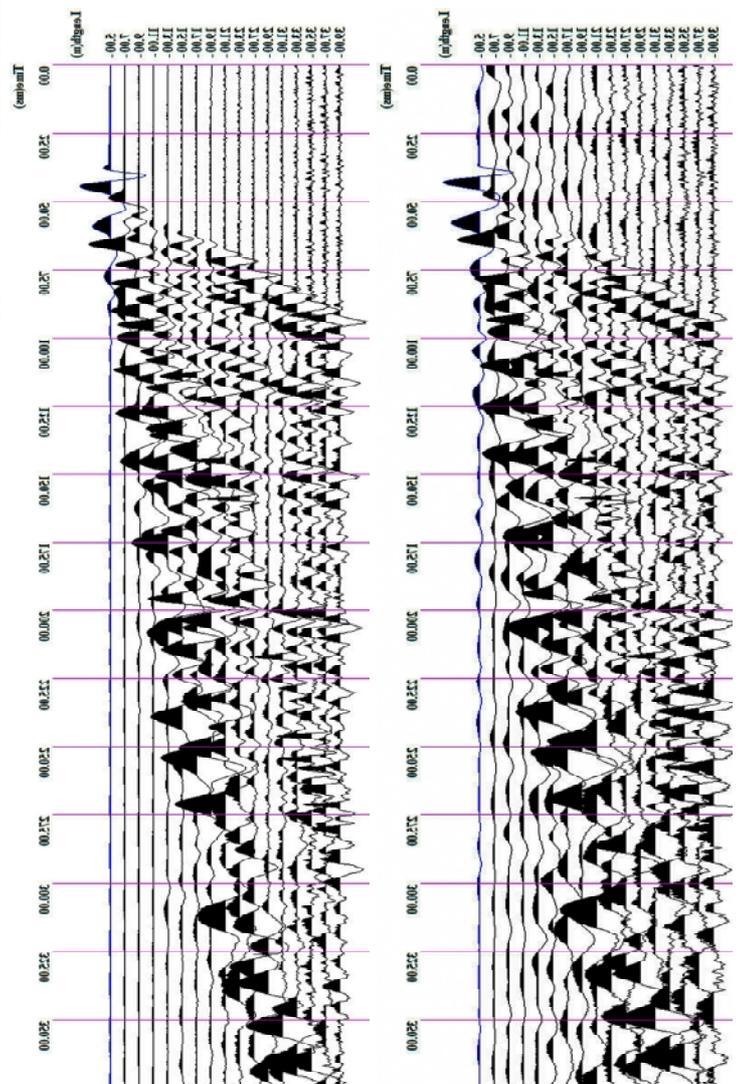
Compared with frequency swept vibrators, a wide bandwidth is achieved with the VIBSIST-50 even when the coupling to the rock or ground is relatively poor.

With the VIBSIST-50, you can finish the job quite sooner than with alternative methods.

The VIBSIST-50 source can be efficiently used in urban and remote environments.

**HIGHER RESOLUTION AND DATA QUALITY**

The new VIBSIST-50 achieves better data quality than older models and small drop-weights, especially in noisy environments. The improvement is obtained by accumulating higher impact energy over a period of time. A signal energy of 10 kJ is produced over a period of 25 seconds at an average rate of 3 impacts per second. The build-up of individually low energy impacts leads to significant depth penetration while conserving the high frequency component and leading to higher resolution surveys. All types of noise - cultural, natural, and instrumental - are canceled by the swept impact technique.



New VIBSIST-50 and old VIBSIST-50 raw shot records.

## SYSTEM MODULES

The impact assembly is built as a sandwich of aluminum, steel and rubber plates and bells and several types are available to customize the VIBSIST-50 for specific applications and ground or rock conditions.

The Electric impact hammer operates in accordance with the coded sequence, produced by the instrument controller. A power source such as a gas/Diesel generator is needed to power the hammer

The seismic response recorded by the controller processor of the source is conveyed to the recording station by cable or optionally by a coded radio signal. A variety of seismographs can be used, which include all industry-standard recording systems.

## SPECIFICATIONS

**Power supply:** 115 V/60 Hz - 230 V/50 Hz

**Maximum current:** 12—25 A

**Repetition rate:** programmable between 7 to 15 impacts per second

**Impact energy:** approximately 70 J / impact

**Sweep time adjustment:** 2.5 to 30 seconds (possibly limited by the maximum number of samples per channel of the recorder).

### Controller

*Dimensions:* 300 x 120 x 60 mm

*Weight:* 2 kg

### Impact Hammer

*Length:* 760 mm

*Handle span:* 600 mm

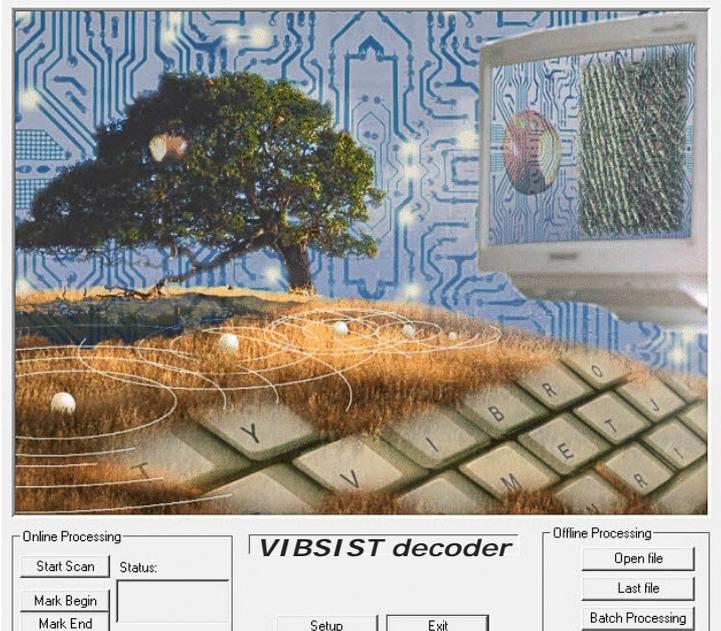
*Weight:* 48 kg

### Impact Stand / Trolley / Coupling plate

*Weight:* 25 kg

## SOFTWARE

- **Control Software** used to program and operate 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 filters used for processing of the records before and/or after correlation
- **Signal Display Interface** allows the operator to visualize the data conveniently and flexibly.



ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE



# VIBSIST-50 Seismic Source



## PORTABLE and MOBILE

The VIBSIST-50 is portable and mobile. It allows jobs to be done faster and in very different conditions. The VIBSIST-50 can be used to generate and measure surface waves.

## ENVIRONMENTALLY FRIENDLY

The VIBSIST-50 is an environmentally friendly seismic source. It is a non-destructive alternative that does not create environmental pollution such as chemicals, sound, etc. Legal risks frequently associated with using explosives are eliminated.

## COMPATIBLE WITH ALL INDUSTRY-STANDARD SEISMOGRAPHS

The VIBSIST-50 can be used all WINDOWS seismographs and a number of UNIX/LINUX seismographs. A dedicated correlator is included with the VIBSIST software.

