

# VIBSIST-50

## CODED-IMPACT SEISMIC SOURCE

The **VIBSIST-50** is an advanced, time-distributed seismic source specifically engineered for use on surface in urban environments, construction sites and in tunnels.

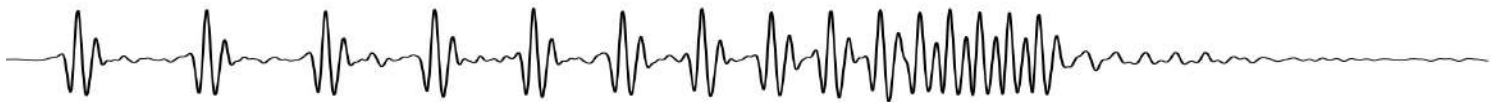
It generates seismic signals through an electric hammer that delivers a rapid sequence of impacts based on a pre-programmed time function. This non-destructive technology offers a safer and environmentally friendly alternative to traditional methods, eliminating the need for tedious sledgehammer work or use of explosives and the associated legal and environmental risks.



The VIBSIST-50 Controller



The VIBSIST-50 with hand cart



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

### Key Features

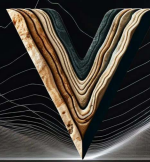
- ◇ Reflection, refraction and surface waves seismic source
- ◇ High productivity
- ◇ Simultaneous multiple-source operation
- ◇ High resolution
- ◇ Portable
- ◇ Environmentally friendly
- ◇ Compatible with all industry-standard seismographs

### Applications

The **VIBSIST-50** is intended for detailed **P/S-wave and surface wave surveys** with a typical penetration range down to 350 m, in reflection mode.

The fields of use include:

- Urban geotechnical investigations
- Foundation engineering
- Roadbed and Dam inspection
- Ground water exploration
- Mineral deposit structural characterization
- Research and Education



# MEDIUM RANGE URB



Compared with previous models, **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.

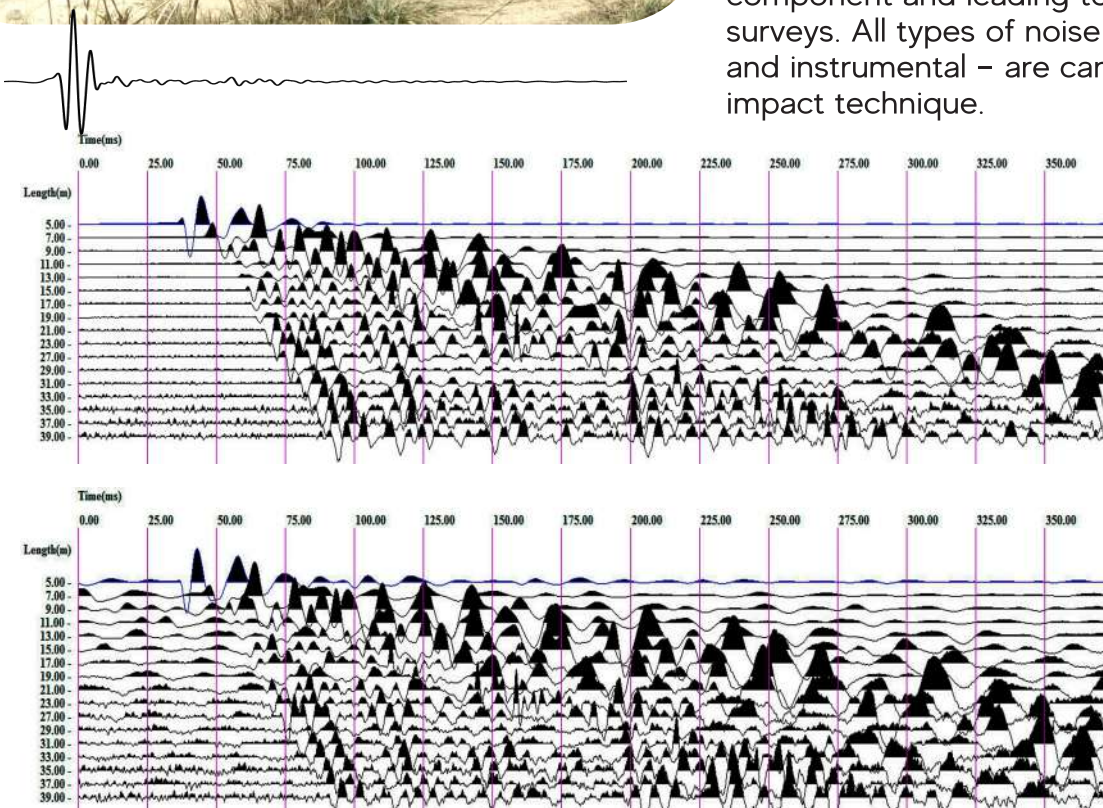
With the **VIBSIST-50**, you can finish the job quite sooner than with alternative methods.

## High 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 24 ... 28 kJ is produced over a period of 25 seconds at an average rate of 13 ... 15 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.*

# AN SEISMIC SOURCE



## System Modules

The **VIBSIST-50** operates in accordance with the coded sequence produced by the instrument **Controller**. The active component of the **Impact Assembly** is the **Electric Impact Hammer**.

The seismic response recorded by the **Controller** 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.

Computer dynamic simulation is used to maximize the efficiency of the **VIBSIST-50** on rock surfaces and hard materials.

It is possible to customize the **VIBSIST-50** for specific applications and ground or rock conditions.

A power source such as a gas/Diesel generator is required to power the **VIBSIST-50**.

## Specifications

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

**Maximum current:** 15 A - 30 A

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

**Impact energy:** approximately 75 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:* 350 x 200 x 80 mm

*Weight:* 2.5 kg

### Impact Assembly

*Length:* 800 mm

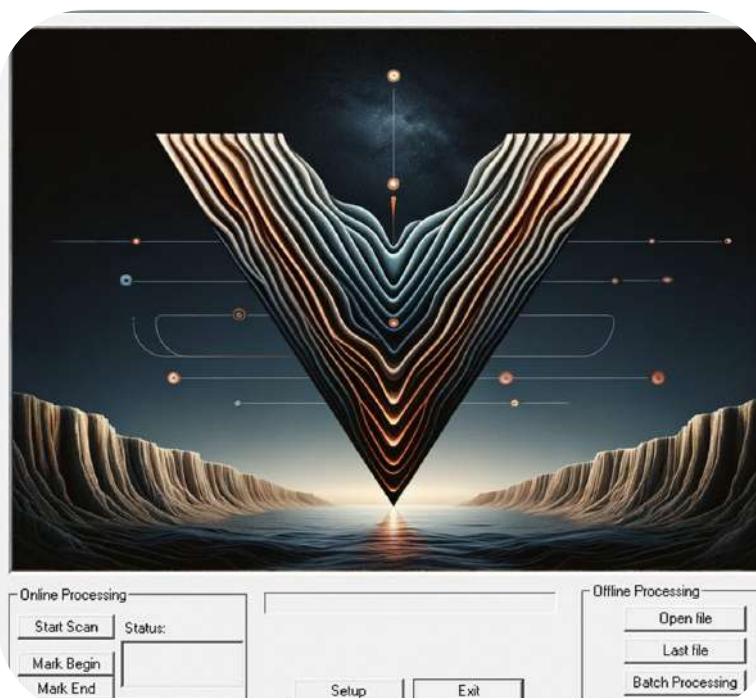
*Width:* 735 mm

*Height:* 1250 mm

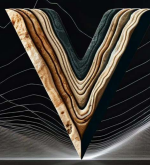
*Weight:* 48 kg

## VIBSIST Decoder 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 SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE



# VIBSIST-50



## Portable and Mobile

The **VIBSIST-50** allows jobs to be done fast, even in challenging surface conditions. It is not dependent on the force or skill of the operator using a sledgehammer or on setup variations of other impulsive sources.

## Environmentally Friendly

The **VIBSIST-50** is a non-destructive alternative that does not create environmental pollution. It can be used in urban and noisy environments, as well as in working mine conditions. 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 Decoder Software**.

**VIBROMETRIC**

127 Taipaleentie, 01860 Perttula, Finland  
T: +358 9 2761418, [info@vibrometric.com](mailto:info@vibrometric.com)  
[www.vibrometric.com](http://www.vibrometric.com)

Italian Distributor: IGS IdroGeoStudi del Dr. Mario Foresta - [igs@idrogeostudi.com](mailto:igs@idrogeostudi.com) - [www.idrogeostudi.com](http://www.idrogeostudi.com)