

### LINEAR VIBRODYNE - VIBRA - 9001 series

VIBRA-9001 is the first mechanical vibrodyne with linear actuator, designed for applications in civil engineering field, able of generating constant amplitude forcing along with the frequency variation. Designed and built entirely in Italy, the product is available in different sizes according to applications.



#### VIBRA - 9001

The structure of VIBRA-9001 is made entirely of aluminum. This makes it particularly manageable and easy to transport at the structure to be investigated, without the help of machinery lifting and handling equipment, reducing time and installation costs.

The modular masses are set in motion by the linear motor and can be easily placed on the upper tray, allowing the generation of different forcing according to requirements.

Using the RTC 9000-VIBRA Real Time Controller and the SHAKER software tool, it is possible to set the oscillating frequency (in steps or in frequency sweep mode) and the dwell time at desired frequencies.

The control system automatically and continuously manages the distance traveled by the slide in order to keep the forcing value constant along with the frequency variation.

The special fixing plates allow a simple and effective anchoring of the vibrodyne to the structure to be investigated.

#### Application fields

The linear vibrodyne VIBRA-9001 has its main application in the civil engineering field.

VIBRA-9001 is indispensable in all dynamic identification activities with EMA (Experimental Modal Analysis) techniques and in all cases where it is necessary an appropriate and constant forcing even at low excitation frequencies.

#### Characteristics



OIL FREE



LOW CONSUMPTION



EASY TO USE



LOW WEIGHT  
COMPACT FOOTPRINT



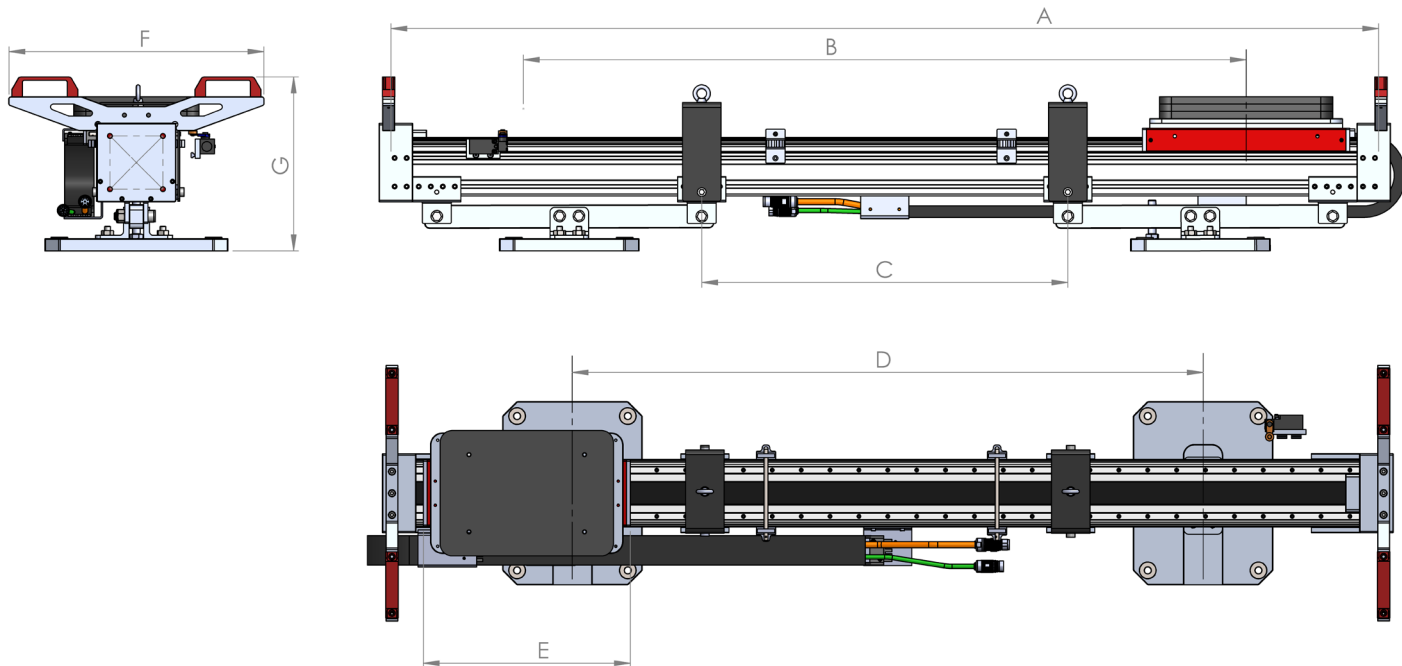
EASY  
TO TRANSPORT



MAXIMUM FLEXIBILITY  
AND CONFIGURABILITY

Al fine di migliorare le prestazioni tecniche del prodotto, la società si riserva di apportare variazioni senza preavviso.  
In order to improve the technical performances of the product, the company reserves the right to make any change without notice.

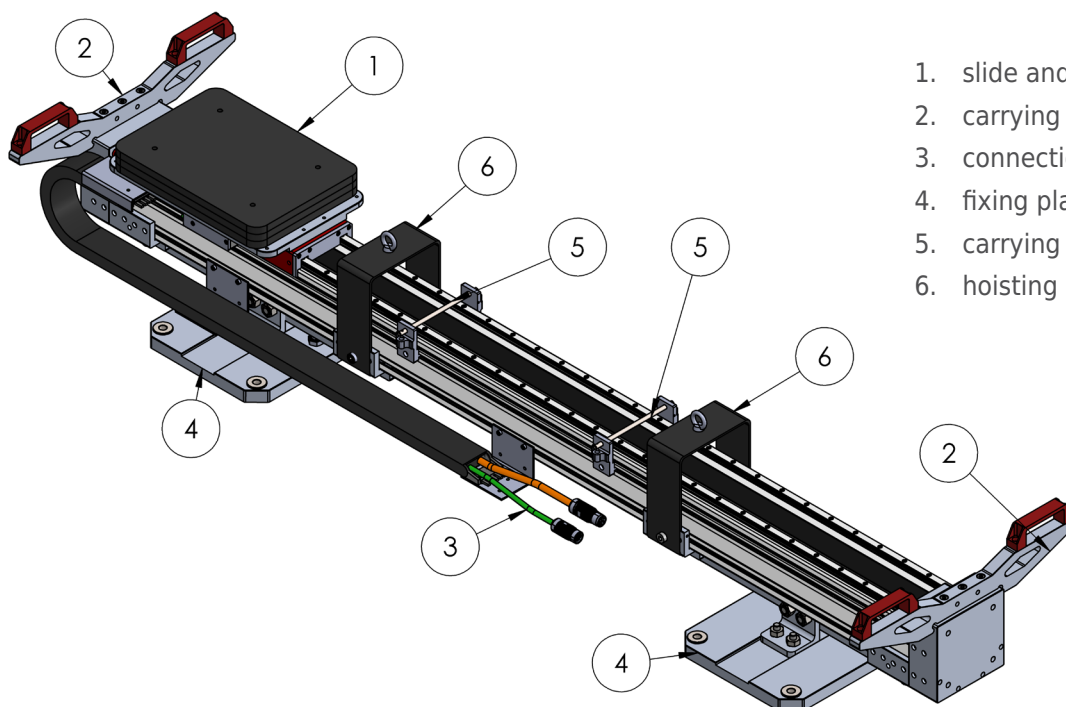
## VIBRA - 9001 Dimensions



VIBRA - 9001								
Dimensions	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	Weight* [Kg]
VIBRA - 9001-1000	1370	1000	510	870	430	530	360	85
VIBRA - 9001-1500	2050	1500	760	1310	430	530	360	95

\*modular masses not included

## Details



1. slide and modular masses
2. carrying handles
3. connection cables
4. fixing plates
5. carrying mechanical blocks
6. hoisting brackets

Broad civil structures such as masonry buildings, historic buildings or buildings with low height have the first resonance frequencies generally lower than 15 - 20 Hz.

Slender buildings such as towers, skyscrapers, big bridges or pedestrian walkways have their first resonance frequencies below a few Hz.

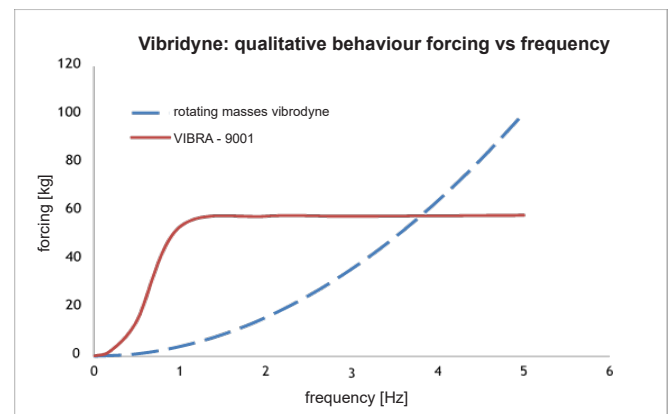
The linear vibrodyne VIBRA 9001 stems from the need to have a dynamic exciter capable of adequately exciting the structures even at low frequencies.

TECHNICAL SPECIFICATIONS	eu	VIBRA - 9001-1000	VIBRA - 9001-1500
Slide travel (max)	mm	1000	1500
Frequency min. (con a=1g)	Hz	1.0	0.7
Frequency max.	Hz	50	50
Acceleration (max)	g	1	1
Slide mass (minimum moved mass)	kg	12	12
Modular masses (total)	kg	28	28
Total moved mass (max)	kg	40	40
VIBRA - 9001 overall weight*	kg	85	95
Maximum power	kW	2	2
Power supply		AC 110-240V 50-60Hz	AC 110-240V 50-60Hz

\*modular masses not included

## Technical specifications

Thanks to the RTC 9000-VIBRA Real Time Controller and the SHAKER Software Tool, the VIBRA-9001 linear vibrodyne can control the slide amplitude strokes, thus obtaining constant and appropriate forcing even at low frequencies; which is impossible using normal rotating masses vibrodynes.



## Real Time Controller RTC 9000-VIBRA



Real Time Controller RTC 9000-VIBRA bi-axial (2 independent or simultaneous axes). Includes SS 9000 Software Suite - standard version and SHAKER Software Tool.

It is therefore possible to control two VIBRODYNES at the same time, by setting the phase between them at will or by making them work independently.

The linear motor is driven by the LiTeM servo-drive EM20 series, included in the kit.

The 4 read-only channels on the Controller allow the acquisition of 4 accelerometers installed on the structure.

The VIBRA - 9001 system is supplied complete with a laptop for use on site.

## Software tool - SHAKER

The SHAKER software tool has been specifically designed for use on site. The simple and intuitive graphic interface allows the operator to easily set the test and control parameters.

SHAKER, combined with the RTC 9000-VIBRA, allows you to set the slide acceleration (up to a maximum of 1 g) and then it will manage, independently, the distance traveled by the slide at the different oscillation frequencies in order to keep the forcing value constant along with the frequency variation.



The frequencies can be set manually, automatically with the step function mode or automatically (frequency sweep mode).

With the step function mode, the dwell times can be set at each frequency step.



TUTORIAL  
VIDEO

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