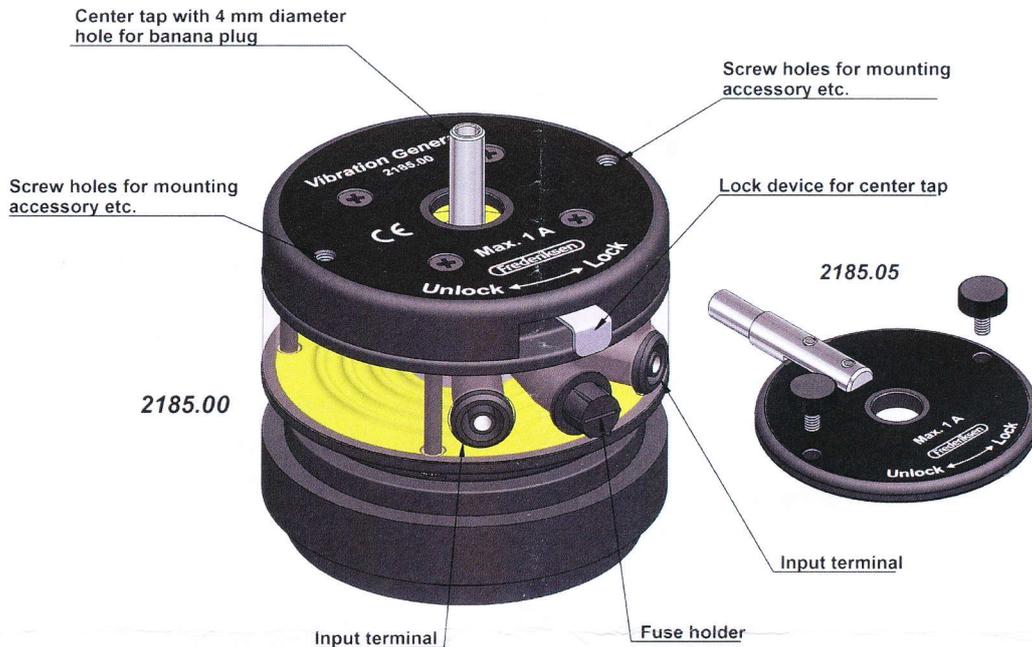


## Instruction Manual for the Vibration Generator no. 2185.00

19.07.14

Ae 2185.00



The Vibration Generator no. 2185.00 is a robust and versatile apparatus especially well suited for all sorts of wave experiments.

The Vibration Generator is essentially a loudspeaker. A coil wound on a thin aluminium tube moves within a permanent magnetic field when current of an alternating nature is applied to it. The coil is controlled by 2 suspensions for optimum guidance. Coupling the Vibration Generator to external equipment is facilitated by an 8 mm dia. aluminium pin connected to the coil. The pin is equipped with a 4 mm hole for a banana plug connector.

### N.B.

Most Vibration Generators of this type have 2 vulnerable points:

1. Mounting of accessories will inevitably sooner or later damage the moving parts.
2. Another frequent problem is when too high a current is applied to the vibrator via the input terminals.

We have eliminated these problems. The mechanical problem is eliminated by supplying the apparatus with a locking device. When set in the "Lock" position the centertap is locked, and accessories can be mounted without any damage to the moving parts. The second problem is eliminated by means of a fuse (1.0 A Fast, no. 4085.33), when too high a current is applied the fuse is simply blown. Replace only with a similar rated fuse!

When using the vibrator for the purpose of generating waves, we recommend the use of a function generator e.g. no. 2502.50 or similar. However please be sure that the applied current does not exceed 1 A.

To generate waves attach e.g. a wire, a spring or a string using the provided banana plug connector. Apply a signal e.g. from a function generator.

The Vibration Generator will vibrate at any frequency ranging from 0.1-5 kHz and with amplitudes up to 7 mm at the low end of the frequency range.

The waveform need not be a sine wave, other waveforms such as square, triangular or sawtooth can be used.

The Vibration Generator may be used sitting upright, on its side, or inclined e.g. on an Overhead Projector. By means of the accessory no. 2185.05 the Vibration Generator may be placed at any angle you may choose, or use the accessories listed below to perform the experiments of your choice.

#### **Troubleshooting:**

If at any time your Vibration Generator fails to work:

1. Check the fuse. If the fuse is blown replace it only with a similarly rated fuse. 1.0 A, 250 v, Fast. When replacing the fuse make sure that the fuseholder is fully tightened.
2. If the fuse is not blown, check that the fuseholder is fully tightened.

#### **Operation:**

1. Lock the drive arm by sliding the locking device at the top to the "Lock" position. This protects the apparatus while connecting external equipment to the drive arm.
2. Use the banana plug connector to connect the experimental apparatus of your choice to the drive arm.
3. Unlock the drive arm.
4. Apply the signal from e.g. your function generator to the input terminals on the front of the Vibration Generator.
5. Adjust the frequency and amplitude of the function generator to produce the desired waves. The current should not to exceed 1.0 A.
6. When no longer in use set the locking device to the "Lock" position, demount the equipment attached to the drive arm, and store the apparatus.

#### **Technical specifications:**

Frequency range:	0.1 Hz to 5 kHz.
Amplitude:	7 mm at 1 Hz, decreasing with increasing frequency.
Input impedance:	8 ohm.
Max. current:	1.0 A, fuse limited.

#### **Available accessories:**

2185.05	Holder for top mounting.
2185.06	Holder for mounting in the Base.
2185.10	Piano wire loop.
2185.12	Banana plug connector.
2185.20	Chladni plate, square.
2185.25	Chladni plate, circular.
2185.30	Resonant steel strips.
2185.40	Rubber cord, 2 m.
2185.55	Kinetic gas theory set.