Powerful vibration tables for all vibrating tasks
Vibrating tables are performing today a wide range of tasks reliably in many industries, such as e.g.

- Compact
- Loose
- Transport
- Empty
- De-aerate
- Separate
- Fill
- Sort

Functional principle

Basically correlating dimensioned unbalance motors, also called vibrators, set the table top of the vibrating table in oscillation. A vibration isolating elastic support between table top and base frame of the vibrating table avoid that unwanted vibrations will get into the base frame and as a result into the floor. By adjusting the unbalances on the unbalance motors during standstill the oscillation amplitude can be adapted to the application.

When using an electric control with frequency inverter furthermore the vibration frequency can be changed during operation. Both parameter – oscillation amplitude and frequency – have influence on the vibration intensity and allow an adaption to the different scopes. Depending on the scope different directions of movement of the table top can be necessary:

**VT K** unbalance motor

The unbalance motor or external motor sets the table top in circular oscillation. It oscillates in vertical and horizontal direction.

**VT P** pendulum vibrator

The pendulum vibrator sets the table top in almost linear (elliptical) oscillation. The infinitely variable adjustable direction of introduced force allows e.g. a specific transport of mediums on the table top.

**VL L** linear vibrator

Two unbalance motors (external vibrators) which operate synchronous and in opposite direction create a linear movement of the table top. The result is a vertical directed harmonic oscillation.

In most of the different applications the mediums which shall be moved are in moulds or containers. These can be either fixed to the table or freestanding on the table. When the moulds or containers are placed freestanding on the table the vibration effects are stronger: Due to the shocks the acceleration values are higher than when the mould or container is fixed to the table. On the other side when the moulds and containers are being fixed to the table the results on are more reproducible because the mould / container has to follow the given oscillation of the table. Another advantage: The lower noise level.

On the following pages you can find exemplary presented numerous proven applications of vibrating tables. Based on our long-time experience we will find suitable solutions also for your application, even if it has not been mentioned here.
**POWERFUL VIBRATION TABLES FOR ALL VIBRATING TASKS**

**VIBRATING TABLE standard**

- **VT 4.4 6P**
  - Vibrating table with elliptical movement of the table surface, e.g. for the production of small concrete elements. Available with or without mounting option for the mould.
  - Length: 400 mm
  - Width: 400 mm
  - Height: 350 mm
  - Oscillation frequency: 50 Hz
  - Centrifugal force: max. 6 kN
  - Movement

- **VT 7.7 20K**
  - Vibrating table with circular movement of the table surface, e.g. for the production of small concrete elements. Available with or without mounting option for the mould.
  - Length: 700 mm
  - Width: 700 mm
  - Height: 350 mm
  - Oscillation frequency: 30 – 100 Hz
  - Centrifugal force: max. 20 kN
  - Movement

- **VT 12.8 40L**
  - Vibrating table with vertical movement of the table surface, e.g. for the production of small concrete elements. Available with or without mounting option for the mould.
  - Length: 1200 mm
  - Width: 800 mm
  - Height: 750 mm
  - Oscillation frequency: 30 – 100 Hz
  - Centrifugal force: max. 40 kN
  - Movement

<table>
<thead>
<tr>
<th>Type</th>
<th>Dimensions</th>
<th>Movement</th>
<th>Max. Load</th>
<th>Oscillation frequency</th>
<th>Centrifugal force</th>
</tr>
</thead>
<tbody>
<tr>
<td>VT 4.4</td>
<td>400 x 400 mm</td>
<td>P</td>
<td>50 kg</td>
<td>20 – 50 / 100 Hz</td>
<td>6 – 10 kN</td>
</tr>
<tr>
<td>VT 5.5</td>
<td>500 x 500 mm</td>
<td>P</td>
<td>50 kg</td>
<td>20 – 50 / 100 Hz</td>
<td>6 – 20 kN</td>
</tr>
<tr>
<td>VT 7.7</td>
<td>700 x 700 mm</td>
<td>P</td>
<td>200 kg</td>
<td>20 – 50 / 100 Hz</td>
<td>24 – 40 kN</td>
</tr>
<tr>
<td>VT 8.8</td>
<td>800 x 800 mm</td>
<td>P</td>
<td>400 kg</td>
<td>20 – 50 / 100 Hz</td>
<td>24 – 40 kN</td>
</tr>
<tr>
<td>VT 10.10</td>
<td>1000 x 1000 mm</td>
<td>P</td>
<td>500 kg</td>
<td>20 – 50 / 100 Hz</td>
<td>24 – 40 kN</td>
</tr>
<tr>
<td>VT 12.5</td>
<td>1200 x 500 mm</td>
<td>P</td>
<td>500 kg</td>
<td>20 – 50 / 100 Hz</td>
<td>24 – 40 kN</td>
</tr>
<tr>
<td>VT 12.8</td>
<td>1200 x 800 mm</td>
<td>L</td>
<td>500 kg</td>
<td>20 – 50 / 100 Hz</td>
<td>24 – 40 kN</td>
</tr>
<tr>
<td>VT 20.15</td>
<td>2000 x 1500 mm</td>
<td>L</td>
<td>1000 kg</td>
<td>20 – 50 / 100 Hz</td>
<td>48 – 80 kN</td>
</tr>
<tr>
<td>VT 30.15</td>
<td>3000 x 1500 mm</td>
<td>L</td>
<td>1000 kg</td>
<td>20 – 50 / 100 Hz</td>
<td>48 – 80 kN</td>
</tr>
</tbody>
</table>
VIBRATING TABLES for concrete elements

**VT 56.6 280L**
Vibrating table with vertical movement of the table surface e.g. for the production on concrete floor elements for pigpens. Available with or without mounting option (hydraulic clamps) for the mould.

<table>
<thead>
<tr>
<th>Length</th>
<th>500 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>600 mm</td>
</tr>
<tr>
<td>Height</td>
<td>665 mm</td>
</tr>
<tr>
<td>Oscillation frequency</td>
<td>30 – 80 Hz</td>
</tr>
<tr>
<td>Centrifugal force</td>
<td>max. 280 kN</td>
</tr>
</tbody>
</table>

**VT 40.40 720L**
Vibrating table with vertical movement of the table surface e.g. for the production of large concrete elements, with mounting option (hydraulic clamps) for the mould.

<table>
<thead>
<tr>
<th>Length</th>
<th>4000 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>4000 mm</td>
</tr>
<tr>
<td>Height</td>
<td>940 mm</td>
</tr>
<tr>
<td>Oscillation frequency</td>
<td>30 – 80 Hz</td>
</tr>
<tr>
<td>Centrifugal force</td>
<td>max. 720 kN</td>
</tr>
</tbody>
</table>

**VT 32.31 352L**
Vibrating table with vertical movement of the table surface e.g. for the production of large concrete pipes, with mounting option (hydraulic clamps) for the mould.

<table>
<thead>
<tr>
<th>Length</th>
<th>3200 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>3100 mm</td>
</tr>
<tr>
<td>Height</td>
<td>1030 mm</td>
</tr>
<tr>
<td>Oscillation frequency</td>
<td>30 – 80 Hz</td>
</tr>
<tr>
<td>Centrifugal force</td>
<td>max. 352 kN</td>
</tr>
</tbody>
</table>
VIBRATING TABLES various applications

**VT 40.30 400L**
Vibrating table with vertical movement of the table surface e.g. for the production of machine racks out of polymer concrete. The elastic suspension is by rubber buffers in standard configuration. The table is equipped with 2 rows of each 5 vibrators and the vibrators of one row are coupled by shafts.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>4000 mm</td>
</tr>
<tr>
<td>Width</td>
<td>3000 mm</td>
</tr>
<tr>
<td>Height</td>
<td>600 mm</td>
</tr>
<tr>
<td>Oscillation frequency</td>
<td>30 – 80 Hz</td>
</tr>
<tr>
<td>Centrifugal force</td>
<td>max. 400 kN</td>
</tr>
<tr>
<td>Movement</td>
<td></td>
</tr>
</tbody>
</table>

**VT 39.31 440L**
Vibrating table with vertical movement of the table surface e.g. for the production of machine racks out of polymer concrete. The table is equipped with 4 rows of vibrators which are each driven by a servomotor. Hereby the oscillation amplitude can be infinitely variable adjusted during operation. Furthermore, this table has a pneumatic level control with air springs. For this application the table was laid out for high frequencies and small displacements.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>3900 mm</td>
</tr>
<tr>
<td>Width</td>
<td>3100 mm</td>
</tr>
<tr>
<td>Height</td>
<td>1025 mm</td>
</tr>
<tr>
<td>Oscillation frequency</td>
<td>30 – 80 Hz</td>
</tr>
<tr>
<td>Centrifugal force</td>
<td>max. 440 kN</td>
</tr>
<tr>
<td>Movement</td>
<td></td>
</tr>
</tbody>
</table>

**VT 30.20 920L**
Vibrating table with vertical movement, e.g. for the production of products out of refractory material. The vibrating elements of this table are also being driven by 4 external servomotors, which allow adjusting the displacement infinitely variable during operation. For this application, high oscillation amplitudes and mean frequencies were required. The elastic suspension was executed with air springs and an active level control.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>3000 mm</td>
</tr>
<tr>
<td>Width</td>
<td>2000 mm</td>
</tr>
<tr>
<td>Height</td>
<td>700 mm</td>
</tr>
<tr>
<td>Oscillation frequency</td>
<td>16 – 60 Hz</td>
</tr>
<tr>
<td>Centrifugal force</td>
<td>max. 920 kN</td>
</tr>
<tr>
<td>Movement</td>
<td></td>
</tr>
</tbody>
</table>
VIBRATING BEAMS

**VB 19.5 50L**
Vibrating beams with vertical movement, e.g. for the production of railway sleepers out of concrete, without mounting option for the mould (free riding). The vibrating beams have an elastic suspension with rubber buffers in a special configuration (turned by 90°).

<table>
<thead>
<tr>
<th>Length</th>
<th>1900 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>500 mm</td>
</tr>
<tr>
<td>Height</td>
<td>780 mm</td>
</tr>
<tr>
<td>Oscillation frequency</td>
<td>30 – 80 Hz</td>
</tr>
<tr>
<td>Centrifugal force</td>
<td>max. 50 kN</td>
</tr>
<tr>
<td>Movement</td>
<td></td>
</tr>
</tbody>
</table>

**VB 15.5 40L**
By setting up several vibrating beams next to each other you will get a vibrating station for a long mould bracket as they are being used e.g. in the production of slatted floors. The support plates are out of Vulkollan and are damping the noise generation from the free riding mould bracket.

<table>
<thead>
<tr>
<th>Length</th>
<th>1450 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>500 mm</td>
</tr>
<tr>
<td>Height</td>
<td>800 mm</td>
</tr>
<tr>
<td>Oscillation frequency</td>
<td>30 – 100 Hz</td>
</tr>
<tr>
<td>Centrifugal force</td>
<td>max. 40 kN</td>
</tr>
<tr>
<td>Movement</td>
<td></td>
</tr>
</tbody>
</table>

**VB 11.3 20L**
Vibrating beams with vertical movements, e.g. for the production of noise barrier elements out of concrete, with mounting option (hydraulic clamps) for the moulds. The vibrating beams have an elastic suspension with rubber buffers in standard configuration.

<table>
<thead>
<tr>
<th>Length</th>
<th>1140 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>300 mm</td>
</tr>
<tr>
<td>Height</td>
<td>600 mm</td>
</tr>
<tr>
<td>Oscillation frequency</td>
<td>30 – 100 Hz</td>
</tr>
<tr>
<td>Centrifugal force</td>
<td>max. 20 kN</td>
</tr>
<tr>
<td>Movement</td>
<td></td>
</tr>
</tbody>
</table>
VIBRATING FRAMES

VF 18.12 20L
Vibrating frame with directed oscillation for emptying cardboard boxes with bulk material (material transport in one corner). Easy loading and unloading with a pallet jack possible.

VF 12.12 32L
Vibrating frame with vertical oscillation at medium frequencies and amplitude for the compaction of bulk material in Big Bags. By adjusting the bracket, pallets of several different sizes can be securely placed on the frame.

VF 12.12 50L
Vibrating frame with vertical oscillation at lower frequencies and big amplitude for the compaction of bulk material in Big Bags. By adjusting the bracket, pallets of several different sizes can be securely placed on the frame.
Details

- **Hydraulic mould clamps**
  For the fast and easy fixation of the mould to the table, hydraulic clamps are ideally suited. A massive design and vibration resistant, strong hydraulic cylinder guarantee even under high G-forces a secure connection between mould and table.

- **Vibrator coupling**
  Vibrators mounted in one row should be coupled by shafts, to be able to introduce in phase centrifugal forces in different areas of the vibrating table. Only then, a harmonic vibration of the table is assured.

- **Pneumatic suspension / Level control**
  Besides rubber buffers often air bellows are being used for the elastic suspension. These have the advantage of lower resonance frequencies and furthermore they can be activated and controlled by valves and sensors in that way, that severe unsymmetrical load on the table can be compensated.

- **Power supply and control**
  Depending on the application different requirements are asked for the control of the vibrating table, e.g. additional level control, remote control, hydraulic clamping ect. Since **KNAUER ENGINEERING** itself plans, produces and furthermore programs the controls, individual requirements can be implemented fast and at low cost.