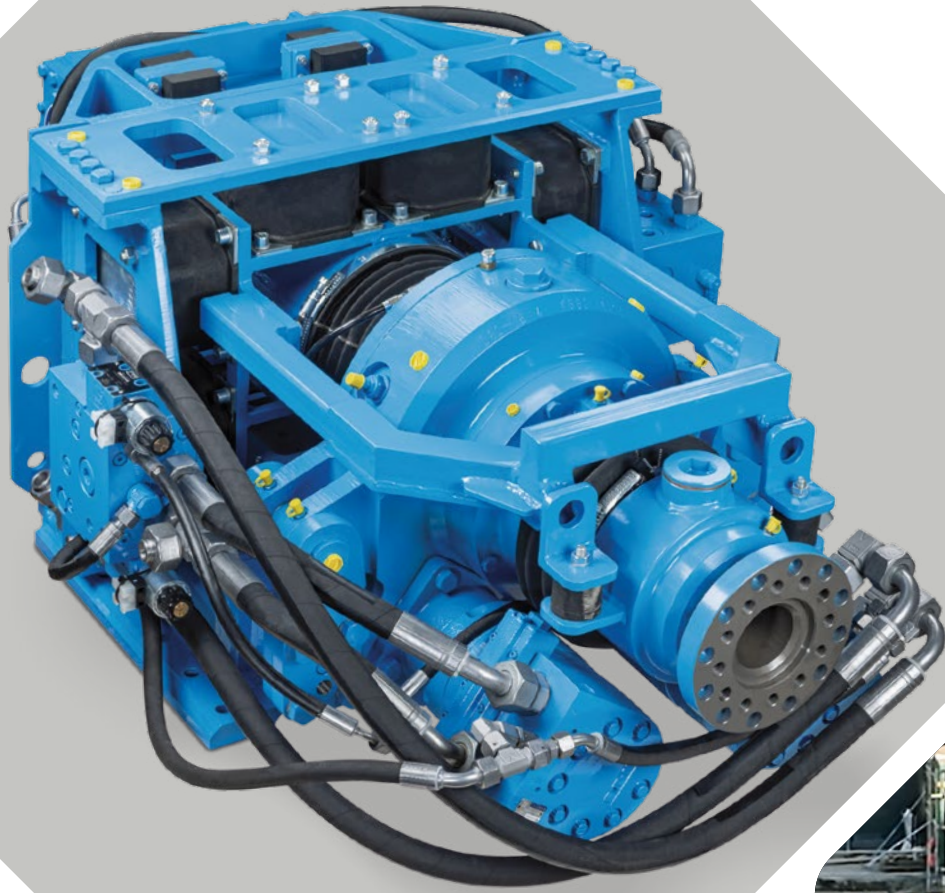


terra  
infrastructure

safety: efficient and sustainable



VIBRO DRILL  
VD100

# VIBRO DRILL VD100

Frequency from 85 Hz to 120 Hz

VD100 is a VibroDrill especially developed for:

- Micropile drilling up to a casing diameter of 6 inches (ø152.4 mm)
- Overburden drilling up to an outside casing diameter of 5 inches (ø133 mm)
- Threaded hollow bar drilling (self-drilling anchors) up to a bar diameter of 3 inches (ø76 mm)
- Geothermal drilling with one-time drill bit up to a casing diameter of 6 inches (ø152.4 mm)
- Geotechnical drilling for soil sampling up to a diameter of 4.5 inches (ø114.3 mm)

VD100 has a standard built-in special rubber damping mechanism to avoid vibrations from being transferred into the drill mast.

VD100 achieves optimum drilling performance in different types of soil by adjusting the eccentric moment; different centrifugal forces (impact energies) are available.

VD100 offers two different high-speed and high-pressure motors (480 cm<sup>3</sup>, 677 cm<sup>3</sup>).

VD100 has a total weight of 1,050 kg.

| Vibro Unit         | 85 Hz                   | 100 Hz                  | 120 Hz                  |
|--------------------|-------------------------|-------------------------|-------------------------|
| Operating pressure | 260 - 340 bar           | 260 - 340 bar           | 260 - 340 bar           |
| Oil flow rate      | 97 l/min                | 114 l/min               | 137 l/min               |
| Impact rate        | 5,100 min <sup>-1</sup> | 6,000 min <sup>-1</sup> | 7,200 min <sup>-1</sup> |
| Centrifugal force  | 190 kN                  | 200 kN                  | 195 kN                  |
| Motor size         | 1 × 19 cm <sup>3</sup>  | 1 × 19 cm <sup>3</sup>  | 1 × 19 cm <sup>3</sup>  |
| Casing weight      | 2,800 kg                | 2,000 kg                | 1,300 kg                |

## Performance Data

|                       |                                      |
|-----------------------|--------------------------------------|
| Drilling performance  | up to 1 m per minute                 |
| Drilling accuracy     | more precise (1-2 % deviation)       |
| Drilling angle        | 0° - 90° (horizontal - vertical)     |
| Casing diameter range | Ø 88.9 - 152.4 mm                    |
| Drilling depth        | up to 80 m                           |
| Soil conditions       | sand, gravel, clay, medium-hard rock |

### OPTIONS

- External flushing head for casings, self-drilling hollow bars and soil sampling
- Built-in RPM sensors with external box for speed and frequency indication
- Special drill rods, casings and drill bits
- Soil sampling drilling tools

## Rotary Drive

**Motor HP480 ccm**

| Pressure at rotary drive |                                | 170 bar         |                 |                 |                 | 200 bar         |                 |                 |                 | 240 bar         |                 |                 |                 | 280 bar         |                 |                 |                 |
|--------------------------|--------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Gear                     |                                | 4 <sup>th</sup> | 3 <sup>rd</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 4 <sup>th</sup> | 3 <sup>rd</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 4 <sup>th</sup> | 3 <sup>rd</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 4 <sup>th</sup> | 3 <sup>rd</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> |
| Oil flow rate (lpm)      | 90 Torque (Nm)<br>Speed (rpm)  | 2,000<br>108    | 3,100<br>72     | 4,200<br>54     | 6,300<br>36     | 2,400<br>108    | 3,600<br>72     | 5,000<br>54     | 7,500<br>36     | 2,900<br>108    | 4,400<br>72     | 6,000<br>54     | 9,100<br>36     | 3,400<br>108    | 5,200<br>72     | 7,000<br>54     | 10,600<br>36    |
|                          | 120 Torque (Nm)<br>Speed (rpm) | 1,400<br>144    | 2,800<br>96     | 4,000<br>72     | 6,100<br>48     | 1,800<br>143    | 3,300<br>96     | 4,800<br>72     | 7,300<br>48     | 2,300<br>143    | 4,100<br>95     | 5,800<br>71     | 8,900<br>48     | 2,800<br>142    | 4,900<br>95     | 6,900<br>71     | 10,400<br>47    |
|                          | 170 Torque (Nm)<br>Speed (rpm) | 1,200<br>204    | 2,400<br>136    | 3,800<br>102    | 5,900<br>68     | 1,600<br>203    | 2,900<br>135    | 4,600<br>102    | 7,000<br>68     | 2,100<br>202    | 3,700<br>135    | 5,600<br>101    | 8,600<br>67     | 2,700<br>201    | 4,500<br>134    | 6,600<br>101    | 10,200<br>67    |

1<sup>st</sup> gear (parallel mode), 2<sup>nd</sup> gear (parallel + high-speed mode), 3<sup>rd</sup> gear (serial mode), 4<sup>th</sup> gear (serial + high-speed mode)

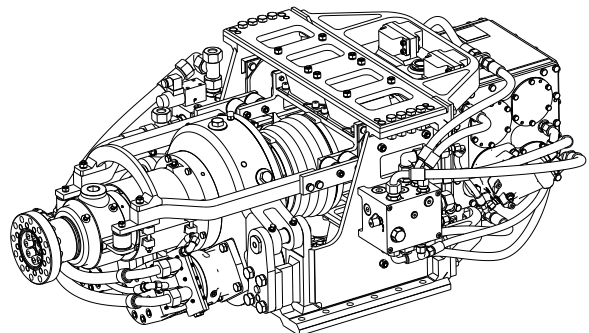
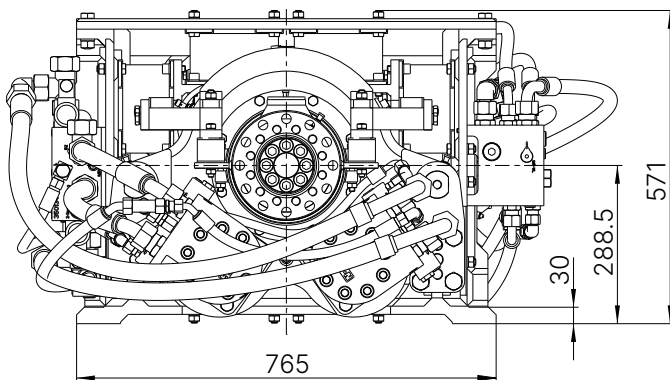
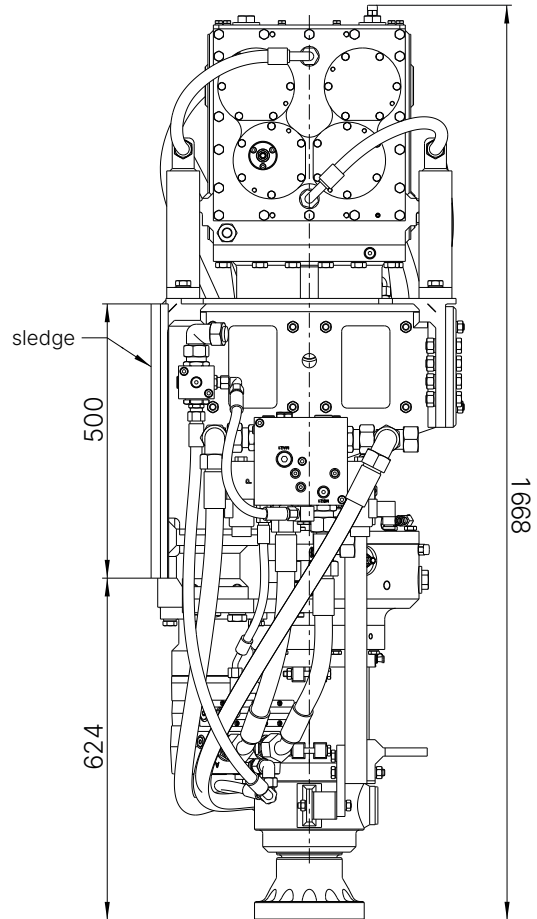
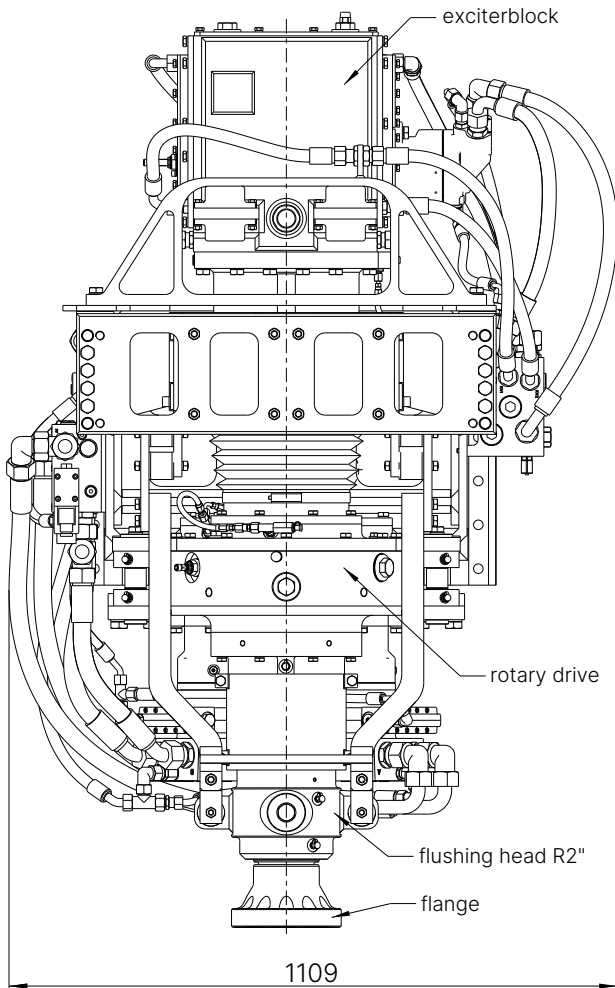
**Motor HP677 ccm (standard)**

| Pressure at rotary drive |                                | 170 bar         |                 |                 |                 | 200 bar         |                 |                 |                 | 240 bar         |                 |                 |                 | 280 bar         |                 |                 |                 |
|--------------------------|--------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Gear                     |                                | 4 <sup>th</sup> | 3 <sup>rd</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 4 <sup>th</sup> | 3 <sup>rd</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 4 <sup>th</sup> | 3 <sup>rd</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> | 4 <sup>th</sup> | 3 <sup>rd</sup> | 2 <sup>nd</sup> | 1 <sup>st</sup> |
| Oil flow rate (lpm)      | 90 Torque (Nm)<br>Speed (rpm)  | 2,800<br>77     | 4,300<br>51     | 5,900<br>39     | 8,900<br>26     | 3,300<br>77     | 5,100<br>51     | 7,000<br>39     | 10,600<br>26    | 4,100<br>77     | 6,200<br>51     | 8,500<br>39     | 12,800<br>26    | 4,800<br>77     | 7,300<br>51     | 9,900<br>39     | 15,000<br>26    |
|                          | 120 Torque (Nm)<br>Speed (rpm) | 2,000<br>102    | 3,900<br>68     | 5,700<br>51     | 8,700<br>34     | 2,500<br>102    | 4,700<br>68     | 6,800<br>51     | 10,300<br>34    | 3,300<br>101    | 5,800<br>67     | 8,200<br>50     | 12,500<br>34    | 4,000<br>101    | 6,900<br>67     | 9,700<br>50     | 14,700<br>34    |
|                          | 170 Torque (Nm)<br>Speed (rpm) | 1,700<br>145    | 3,300<br>97     | 5,300<br>72     | 8,300<br>48     | 2,300<br>144    | 4,200<br>96     | 6,400<br>72     | 9,900<br>48     | 3,000<br>143    | 5,300<br>96     | 7,900<br>71     | 12,100<br>48    | 3,700<br>143    | 6,400<br>95     | 9,400<br>71     | 14,300<br>48    |

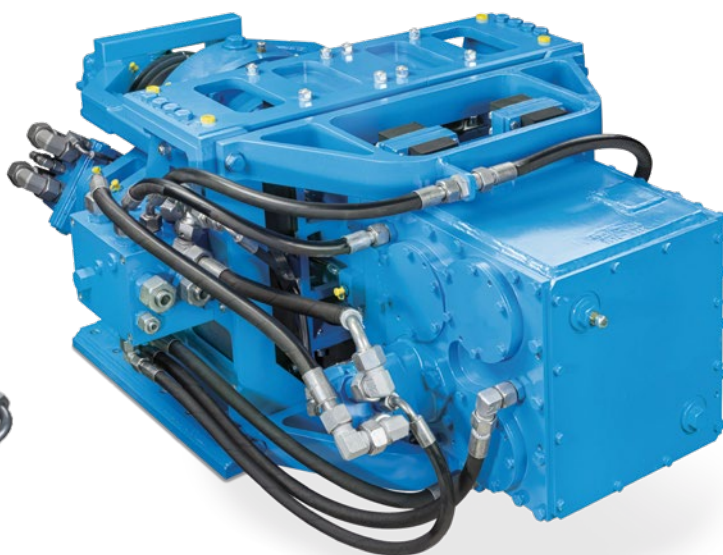
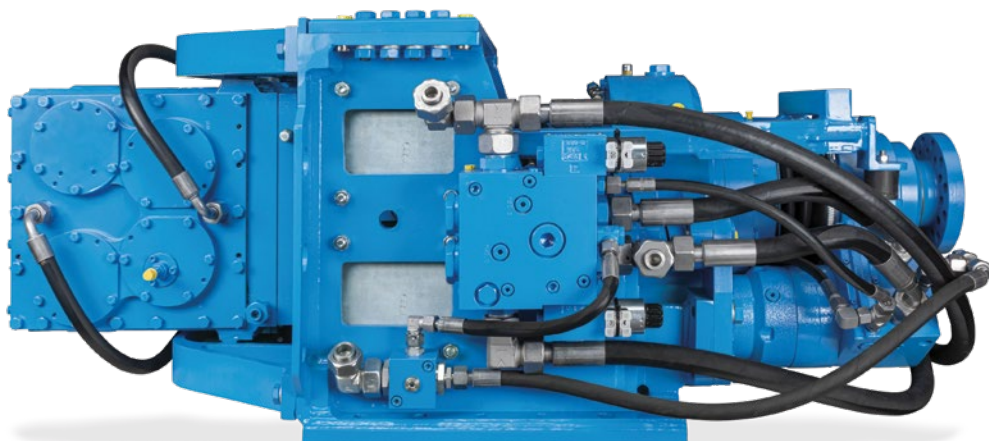
1<sup>st</sup> gear (parallel mode), 2<sup>nd</sup> gear (parallel + high-speed mode), 3<sup>rd</sup> gear (serial mode), 4<sup>th</sup> gear (serial + high-speed mode)

## Dimensions

VD100 with 4 unbalances  
centrifugal force max. 200 kN



push down force max. 30 kN  
retraction force max. 100 kN



VD100 drilling in granite, 25 m deep, hole diameter 120 mm, flushing with air



VD100 drilling in sand and gravel, 65 m deep, hole diameter 190 mm, flushing with water



VD100 drilling in medium-hard rock, 100 m deep, hole diameter 135 mm, flushing with air

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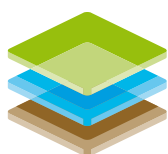
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