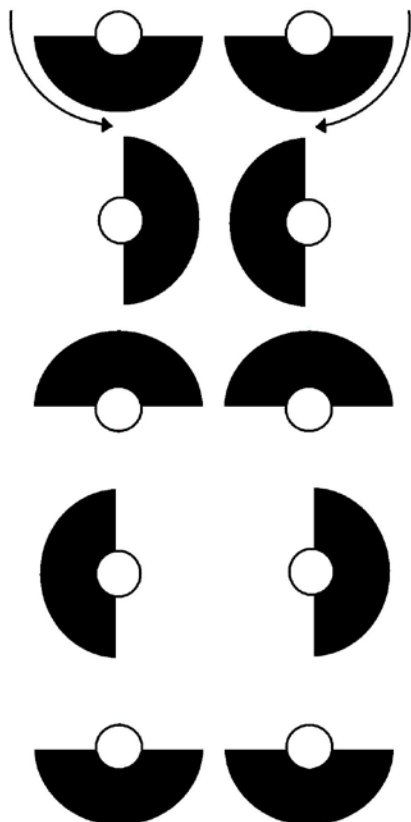
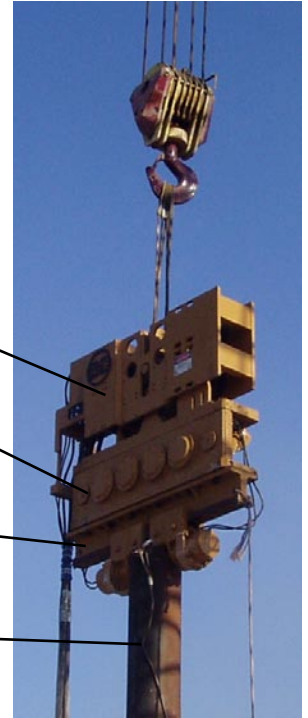


## How a Vibratory Driver/Extractor works

A vibratory pile driver/extractor is a steel box that vibrates up and down. The vibrator attaches to a pile by gripping on to it and shaking it up and down in a vertical motion. The vibrator holds onto the pile by gripping it with powerful clamping jaws.

Contained inside the vibratory pile driver/extractor gearbox is a set of unbalanced wheels we call eccentric weights. Each eccentric weight is mounted on a shaft with bearings on each end. The eccentrics are made to rotate via a hydraulic motor or motors which turn the eccentric weights at a very high speed. When spun, the unbalanced eccentrics cause the machine to vibrate up and down. The twin eccentrics are timed so they can go up and down at exactly the same time and also cancel each other out as they throw their weight sideways. To understand how this works, please study the cycles of the eccentrics as they rotate on the below picture.



- 1 Down**      Eccentrics are facing downward. This creates a force in a vertical direction.
- 2 Cancel**      As they rotate, they cancel each other out in this position. This means the eccentrics do nothing and all sideways motion is cancelled out.
- 3 Up**          As the eccentrics continue to turn, they join together to create another vertical force.
- 4 Cancel**      Just before they complete one full rotation they oppose each other to cancel out any sideways movement.

**Repeat cycle up to 38 times per second.**