

THE ALLIED ELECTRIC VIBRATION SYSTEM “EVS”



FEATURES OF CONTROL PANEL

- Available in 240 volt (220-240V) and 480 volt (380-480V) units, 50/60 Hertz.
- Operation in manual or automatic mode.
- Control panel consist of a variable frequency digital microprocessor that maintains frequency accuracy to 0.01.
- Built-in electronic overload relay to protect the electric vibrator.
- Programmable unit that can be preset with seven process timers to operate at multiple frequencies (vpm).
- Emergency stop button.
- Easy to use programmable keypad located on control panel.
- Easy to read alphanumeric LCD display on keypad indicating direction of vibrator rotation, operating status and drive output information.
- Speed of vibrator can be controlled manually with speed control knob (potentiometer).
- Safety lock feature - unit will not operate if door lock is in open position.
- Control panel is of NEMA 12 construction - dust tight enclosure applicable in foundry environments.
- Can be mounted for easy usage.

FEATURES OF ELECTRIC VIBRATOR

- Vibrator can be operated for 240 or 480 voltages. (380 voltages also apply)
- Vibrator is supplied 60 Hz compatible but can be used in 50 Hz applications with the control panel.
- Internal weights of vibrator are designed to be variable based on direction of vibrator shaft rotation enabling the vibrator to operate at various frequencies and amplitudes
- Electric vibrator noise level rated 60-70 dB compared to more than 95 dB for a pneumatic or air piston vibrator.
- Quick release mechanism allows for easy removal of the vibrator.
- Electricity is approximately 90% lower cost than compressed air.
- Life expectancy is 2x longer than pneumatic vibrators.



Patented
installation method for
induction furnace
applications using
“DRI-VIBES”.



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THE ALLIED ELECTRIC VIBRATION SYSTEM (EVS) FOR THE INSTALLATION OF MINRO-SIL® AND DRI-VIBE® REFRACTORY IN INDUCTION FURNACE APPLICATIONS.

- The Allied Electric Vibration System (EVS) is a patent pending refractory installation system. The EVS was designed to eliminate air pressure and air quality problems experienced when operating pneumatic or air piston vibrators. These problems cause poor refractory installations resulting in inconsistent refractory campaign life.
- Consistent refractory installations
 - Programmable control for repeatability
 - Reliable and available electricity
 - Minimal worker fatigue and variability
 - Optimal installed density without manually **DE-AIRING/FORKING** the sidewalls
- Health & Safety
 - Bulk packaging can be used reducing risk of injury from manually lifting packages
 - Low noise – less than 70 dB compared to greater than 95 dB for air driven
 - Less total dust
- Versatility – The same unit is able to install numerous type applications
 - Successful in coreless induction furnaces ranging 1mt to more than 35mt capacity
 - Successful in channel inductors with as little as 500kg (1,100 lbs.) of refractory to inductors holding more than 3.5 mt (7,700 lbs.)
 - Ferrous and nonferrous applications
- Cost
 - Reduced installation time
 - Labor costs reduced - fewer people required for installations
 - Consistent campaign life
- **The bottom line result is increased productivity and lower installation cost.**

The EVS includes a vibrator control panel and an electric vibrator with mounting bracket.



The **EVS** is able to densify the refractory without “de-airing/forking” due to the design of the variable frequency drive (control panel) and the internal weighting system of the vibrator. Operation in the **Forward** mode generates a low frequency vibration that settles the refractory. This acts as the “de-airing/forking” step. Operation in the **Reverse** mode generates a high frequency vibration that compacts the refractory to a uniform and optimum installed density.



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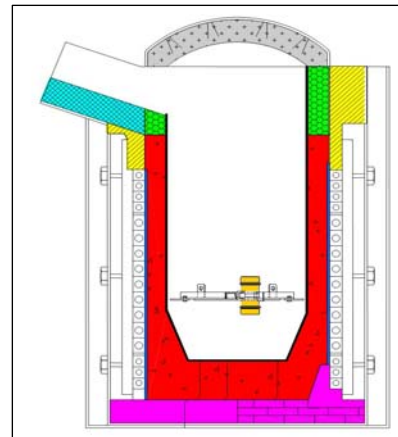
Inductor applications

- The area between the loop and bushing is difficult to reach with conventional tools. The dual mode feature of the EVS enables the refractory to flow to these hard to reach areas and compact to uniform density.
- The inductor can be filled with refractory in as little as 5-10 minutes using bulk packaging.
- No manual de-airing.
- Depending upon inductor size, one or multiple vibrator mounting locations will be used. Multiple vibrators can be used at the same time for increased efficiency.
- Vibration time as little as 15 minutes.
- Excellent compaction between loop & bushing.
- The inductor loop and bushing(s) need to be firmly secured prior to installation.
- Steel / copper / wood loop forms possible.)
- Vibration is conducted on one or multiple levels depending on furnace size.
- The vibrator is controlled by the control panel.



Coreless applications

- The floor refractory is installed with a vibrating tamper or vibrating plate. The electric vibrator can be used with a vibrating plate.
- The metal former is installed and leveled inside the furnace.
- The floor refractory is scratched in preparation for the sidewall refractory.
- The electric vibrator is connected to a metal rig inside the former at four contact points.
- Refractory is added into the sidewalls with 55 lb. (25 kg) bags or bulk bags. (no forking during the addition of refractory)
- Vibration is conducted on one or multiple levels depending on furnace size.
- The vibrator is controlled by the control panel.



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