

3 Reasons Vibratory Bull Floats Need Electric Vibrators

By Rob Beiersdorfer

Always choose an electric vibrator over an air vibrator for a vibratory bull float because of the operational and physical differences between the two. Let's dig in...

The purpose of bull floating concrete is to:

- Bring cement "cream" to the surface
- Depress aggregate below the surface
- Provide a relatively smooth surface finish, which makes it easier to complete the finalized concrete surface (brushed, smooth trowel, exposed aggregate, etc)



1. The type of vibrational energy (linear vs omnidirectional) developed by electric vibrators versus pneumatic vibrators has a dramatic effect on accomplishing all three finishing goals.

For best results, you must introduce linear vibration energy to the concrete surface. Unfortunately, air-driven vibrators can only supply omni-directional vibration, ie, "shaking" in all directions, and omni-directional vibration energy cannot achieve bull floating goals. Using a rotary electric vibrator on a bull float, on the other hand, does transmit vibration energy as a linear force which is directed perpendicular to the concrete surface. This linear vibration provides the superior concrete surface you are looking to achieve (aggregate driven below the surface while simultaneously bringing the "cream" to the surface).

2. There are maintenance considerations. Typically, bull floating is performed in the uncontrolled ambient temperature conditions where the concrete is being poured. That's a problem for air vibrators. They are very susceptible to wear-and tear from condensation caused by the temperature differences between the compressed air delivered by the compressor to the ambient temperature on the plant floor or the outdoors. Electric vibrators, on the other hand, are both sealed and rated dust- and water-tight, so temperature differences do not affect them. Electric vibrators are better suited for this type of environment.



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3. Finally, electric vibrators can be easily adjusted to "tune-in" process-specific vibration force and frequency (3600-RPM) requirements. Using easily adjusted weights and a dependable, consistent voltage. This weight adjustment feature coupled with the fixed frequency (speed) of electric vibrators (3600-RPM) provide the exact repeatability an industrial process such as concrete finishing requires. All pneumatic vibrators used on bull floats, regardless of make or type, are only adjustable using air pressure (PSI) regulators and/or air volume (CFM) controls. These pneumatic adjustments are limited by the reliability of the regulators, controls, and the air supply to which the vibrators are attached. It becomes difficult to repeat a specific process requirement when PSI and CFM continuously vary because demand for compressed air varies throughout the plant during the day.

In conclusion, based on achieving the finishing objectives of bull floating, maintenance requirements, and process repeatability, it is a clear choice to use dependable electric vibrators rather than pneumatic vibrators when finishing concrete using vibratory bull floats.

Rob Beiersdorfer is Vibration Products Manager at AIRMATIC and has over 30 years of applied vibration experience in a wide range of industries.

Thanks for reading our post. If you'd like to learn more about industrial rotary or linear electric vibrators, or vibratory motors and finishing equipment, please contact one of our Vibration Specialists at infocenter@airmatic.com.