

Will A Rheostat Adjust RPM On Single-Phase Vibrators?

By Rob Beiersdorfer

The answer to this question depends on the type of the single-phase rotary electric vibrator being used. You cannot change speed on all single-phase vibratory motors. While some single-phase vibrator manufacturers allow the use of a rheostat on their motors, most do not.

First, find out if the vibrator you are using is designed to have its RPM adjusted via a rheostat (if you have the make and model, we can help). If the answer is yes, then you must still be aware that as a rheostat drops the voltage, it also drops the starting torque. In most cases, this drop in starting torque cannot be overcome by the vibrator. An offset-weight style vibrator requires a tremendous amount of torque to start. Therefore, we always recommend that you start even a vibrator approved for use with a rheostat with the rheostat set at maximum RPM. Then, slow the vibrator down to the speed required for the job.

It is also important to remember that most single-phase vibratory motors require capacitors for start-up and/or operation. The capacitor requirement means the rheostat used must be compatible with capacitor operation. Typically, this type of motor would require a change in frequency, not a change in voltage. If you are varying speed using a frequency-varying controller, be very careful about the amount of torque required to safely operate the vibrator without damaging it.

Simply stated, make sure a manufacturer allows variable speed operation of their single-phase vibrators before attempting to operate at a modified speed.

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 rotary or linear industrial vibrators, or vibratory motors and equipment, please contact one of our Vibration Specialists at +215-333-5600 or at infocenter@airmatic.com.

