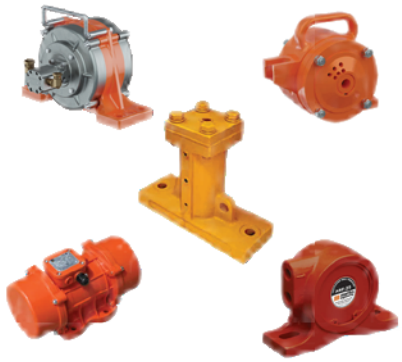
How to Reduce Your Plant's Exposure to Vibrator Noise

By Rob Beiersdorfer



Today's federal, state, and local regulations regarding acceptable noise levels in and around the industrial work environment are stringent. The Occupational Safety and Health Administration (OSHA) requires employers to implement a hearing conservation program when noise exposure is at or above 85 dB (A) averaged over eight working hours.

There are several different ways to control worker exposure to excessive noise and thereby prevent hearing loss, including using quieter machines, isolating the noise source, limiting worker exposure, or using effective personal protective equipment (PPE).

What Causes Industrial Vibrator Noise?

In many plants and mines, Industrial Vibrators can be a source of unacceptable noise levels. Typical pneumatic vibrators are rated at 85 dB (A) to 110 dB (A) depending on the type of vibrator in use. Depending on the vibration force and frequency needed, and the facility's power availability, a simple fix to lowering noise levels is to substitute a rotary electric vibrator for a pneumatic vibrator. Rotary electric vibrators typically run at 65 dB (A) to 70 dB (A). This sound level is quite acceptable in an industrial environment since it does not negatively impact workers' hearing.

(There are "next generation" pneumatic vibrators available for most applications that can significantly reduce noise levels if compressed air is your choice of power or you need the easily adjustable force and speed output provided by air vibrators. Call us at +215.333.5600 for more information!)

Vibrator Type	Typical Noise Level	Power Source	Key Advantage
Pneumatic Vibrator	**85 – 110dB (A)**	**Compressed Air**	**Delivers high vibration force that's PSI-adjustable; may exceed safe noise limits**
Rotary Electric Vibrator	**65 – 70dB (A)**	**Electric Power**	**Operates more quietly and does not negatively impact workers' hearing**
Next-Generation Pneumatic Vibrator	**65 < 80dB (A)**	**Compressed Air**	**Reduces noise levels while maintaining pneumatic performance**

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How Can You Reduce Industrial Vibrator Noise in Your Facility?

If changing out a pneumatic vibrator for an electric vibrator or a "next generation" pneumatic vibrator is cost-prohibitive, there are other methods to consider for controlling and reducing workers' noise exposure in your workplace. Here are two that have worked for our customers:

Apply Administrative Noise Controls

Apply Administrative Noise Controls: These involve changes in the workplace or work schedule that reduce or cut worker exposure to noise. Examples of effective Administrative Noise Controls include:

- Limiting the amount of time a worker spends at or near the noise source
- Controlling noise exposure through distance. This is often an effective, yet simple and inexpensive, Administrative Control. Specifically, for every doubling of the distance between the noise source and the worker, the noise is decreased by 6 dB (A)
- Providing quiet areas where workers can gain periodic relief from hazardous noise sources
- Operating noisy machines during shifts when fewer people would be exposed

Apply Engineering Noise Controls

Apply Engineering Noise Controls involve changing or replacing equipment or making related physical changes at the noise source or along its transmission path to reduce the noise level at the worker's ear. Examples of effective Engineering Noise Controls include:

- Placing a barrier, such as sound walls or curtains, between the noise source and the worker(s)
- Enclosing or isolating the noise source
- Maintaining and lubricating machinery and equipment

Rule of Thumb: if you need to raise your voice to speak to someone only three feet away, the noise level is likely over 85 dB (A), and should be investigated and addressed.

FAQs

Why are industrial vibrators loud?

Most noise comes from the rapid movement of internal parts and air exhaust in pneumatic vibrators. The higher the vibration frequency and air pressure, the louder the operation tends to be.

How can I reduce vibrator noise in my plant?

Consider replacing pneumatic units with rotary electric vibrators or “next generation” pneumatic

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vibrators, which run at lower decibel levels. You can also add sound barriers, isolate the source, or schedule noisy operations during off-peak shifts.

What is the acceptable noise limit for workers?

OSHA requires employers to implement hearing conservation measures when exposure averages 85 dB (A) or more over an eight-hour period. Prolonged exposure above this level can lead to hearing loss.

When should I contact a vibration specialist?

If noise levels stay high despite regular maintenance or administrative controls, a specialist can assess your equipment setup and recommend quieter or more efficient alternatives.

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