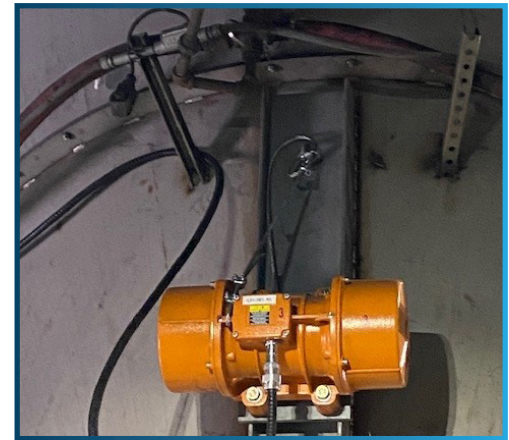


Why Did My Vibrator Mount Fail?

By Rob Beiersdorfer

There are several issues that can cause a vibrator mount beam installation to fail, cause damage to the bin, or not properly transmit vibration. They range from improper welding techniques, to welds that are too large or too small, to failure to follow guidelines for properly-placed welds or the lengths of welds.

Incorrect or poor welding techniques are the most common issue when investigating vibrator mount failures. The number one cause of mount beam/hopper wall failures can be directly related to wrapping welds around a corner of a mount beam or mount channel. There are no vibrator mount applications in which ends or corners should be welded. A corner weld provides a perfect scenario for a weld-induced stress riser to generate a crack in the mount beam or channel, as well as in the hopper wall section to which the mount is attached.



The next most common failure issue is improperly sized or excessively hot welds. A weld that is too small or too large will contribute to cracking of the mount and/or hopper wall. A properly sized mount beam weld is a fillet weld one-half the thickness of the mount leg's parent material. As an example, if the leg of the beam being attached to the hopper/chute wall is 1/2" thick, the fillet weld applied should be 1/4". It is also important to maintain the correct "burn in" amount into the hopper wall parent material. Excessive heat or size of the weld could compromise the integrity of the hopper/vessel wall by inducing warping or creating excessive stress risers in either the weld or the parent material.

Finally, it's important that all welds on a vibratory mount beam use a stitch weld technique. Using the seam technique (a full-length weld) will cause premature failure of the mount or the wall material. Stitch welds on the mount beam should start at a minimum of 1/2" to a maximum of 1" from the end of the mount. The weld portion should be approximately 3" long and provide a weld-free section of 1-1/2".

PLANT MATTERS

By adhering to these standard mount beam/channel welding practices for air or electric vibrator mounting applications, the plant will eliminate the possibility of weld, mount, or wall failure and improve the transmission of the Vibrator's force and frequency through the wall and into the stored material.

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 locating and mounting rotary electric – or pneumatic – vibrators, or about vibratory motors and equipment, please contact one of our Vibration Specialists at +215-333-5600 or at infocenter@airmatic.com.