

**Foundation Requirements and  
Installation Instructions for  
SVX and SVXN Spring Isolators**



SVX6009



SVXN3307

**Vibro/Dynamics' Technologically Advanced Machinery Mounting Systems are an investment in productivity and efficiency. To realize the full potential of your investment, familiarize yourself with these instruction requirements to insure a successful installation.**

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# TECHNICAL BULLETIN: M/L-706

## FOUNDATION REQUIREMENTS

1. Foundation piers must be poured so that the press is at its desired elevation. Isolator height must be taken into account. Refer to the isolator’s specification sheet for dimensions.

2. The foundation pier should be large enough, so the isolator does not overhang. The concrete surface directly under the isolator must be clean and meet the flatness and slope tolerances shown in the Isolator Tolerance Table below. A brushed concrete finish is recommended. There should not be any holes, cracks, peaks or valleys under the isolator. Pier heights should be within 1/8” (3 mm). See Figure 1.

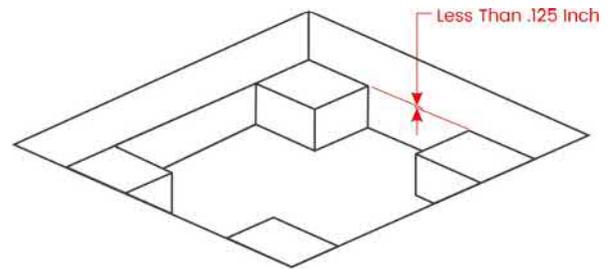


Figure 1

3. Grout or Sole plates are recommended if the Flatness and Slope tolerances in the Isolator Tolerance Table below or on the Isolator Specification Sheets cannot be met. The purpose of the plates is to ensure that all internal springs are equally loaded and to spread out the concentrated load of the hydraulic cylinders on the foundation surface when the machine is being leveled using the hydraulic cylinder pockets in the SVX isolator models. The plates must be flat, (*a 125 Blanchard ground or shot-peened finish is recommended*), anchored and grouted into place. For SVXN isolator models, without hydraulic cylinder pockets, an epoxy grout cap on top of the foundation pier is acceptable to meet the foundation slope and flatness requirements. The epoxy grout should be viscous enough to be self-leveling when poured into a form.

### ISOLATOR TOLERANCE TABLE

The flatness and slope of the supporting surface under the isolator must not exceed the tolerances below. Uneven loading of the coil springs occurs when the isolator is tilted, causing excessive stress. Sole or Grout Plates are recommended for supporting surfaces exceeding the tolerances shown below.

Isolator Model	Flatness Tolerance		Slope Tolerance	
	inches	mm	Inches/foot	mm/meter
SVX, SVXN 1604	±0.03	±0,8	0.10	8,6
SVX, SVXN 1607	±0.03	±0,8	0.09	7,7
SVX, SVXN 1609	±0.03	±0,8	0.06	5,3
SVX, SVXN 3304	±0.03	±0,8	0.11	9,1
SVX, SVXN 3307	±0.03	±0,8	0.09	7,8
SVX, SVXN 3309	±0.03	±0,8	0.08	6,7
SVX, SVXN 4806, 6106	±0.03	±0,8	0.04	3,1
SVX, SVXN 4809, 6109	±0.03	±0,8	0.04	3,1
SVX, SVXN 6009	±0.03	±0,8	0.07	5,5
SVX, SVXN 6012, 6112	±0.03	±0,8	0.04	3,7
SVX, SVXN 6016, 6116	±0.03	±0,8	0.04	3,7
SVX, SVXN 6018, 6118	±0.03	±0,8	0.03	2,2
SVX, SVXN 6020, 6120	±0.03	±0,8	0.03	2,2
SVX, SVXN 6024, 6124	±0.03	±0,8	0.03	2,2
SVX, SVXN 6108	±0.03	±0,8	0.04	3,7

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4. Clearance should be provided in either the X or Y direction to allow for the installation or removal of the isolators. See Figure 2. Dimensions X and Y should be slightly greater than the corresponding isolator dimension. *For example*, dimension X should be greater than the length of the isolator or dimension Y should be greater than the width of the isolator. Refer to the Isolator Specification Sheet for dimensions.

*Note: It may be possible to remove the isolator by moving it toward the center of the press and then into a pit but providing clearance around the isolator is the preferred method.*

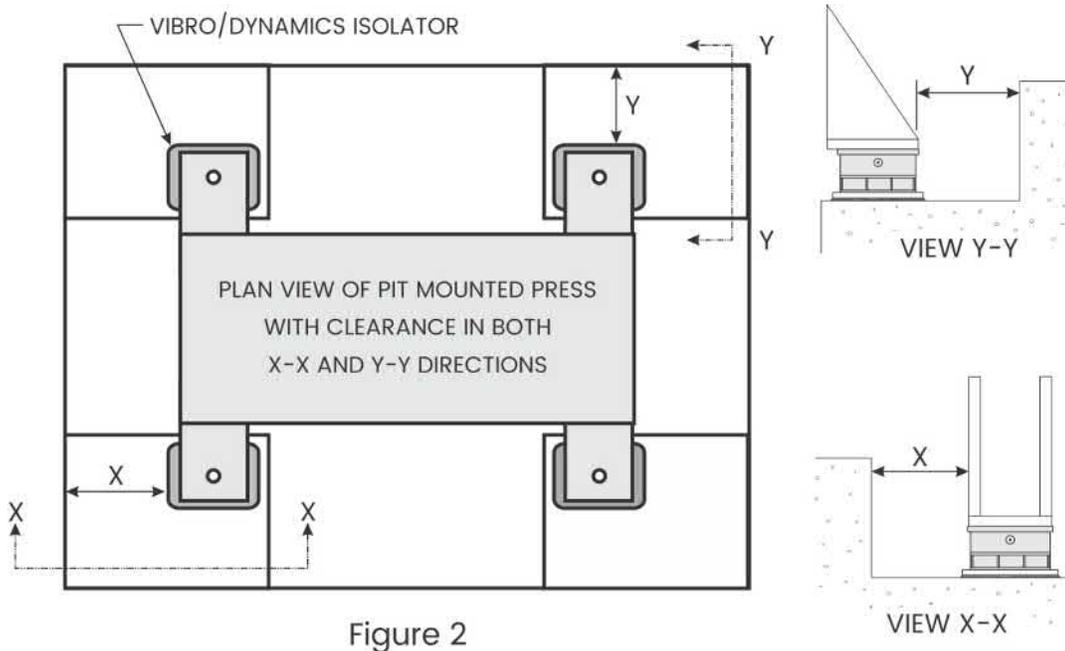


Figure 2

5. If a feed is rigidly attached to the press, then it must be totally supported by the spring mounts as shown in Figure 3. It cannot be partially supported by the press and the foundation or isolator performance will suffer. The weight of the feed must be taken into account at the time of the isolator selection and recommendation.
6. There should not be any solid connections between the machine and the foundation or building structure. Flexible connections are recommended for plumbing and electrical conduit. Floor plates, walkways, railings, etc. should not be attached to both the machine and the floor, foundation or building. Hard connections will “short-circuit” isolation effectiveness.

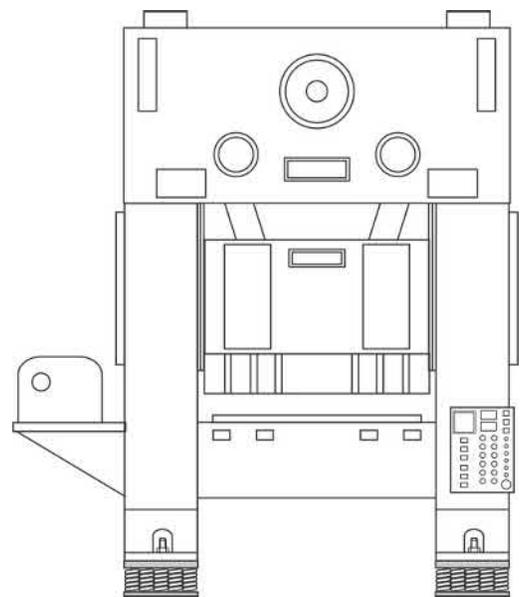


Figure 3

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7. If rolling bolster plates or die carts are going to be used, they should be installed in accordance with Figure 4. Since spring isolators are soft, they will deflect during loading and unloading of the die. The first method shown is preferred since rolling bolster beam floats with a changing press elevation, negating any alignment problems.

## REQUIREMENTS FOR ROLLING BOLSTER RAIL CONNECTIONS

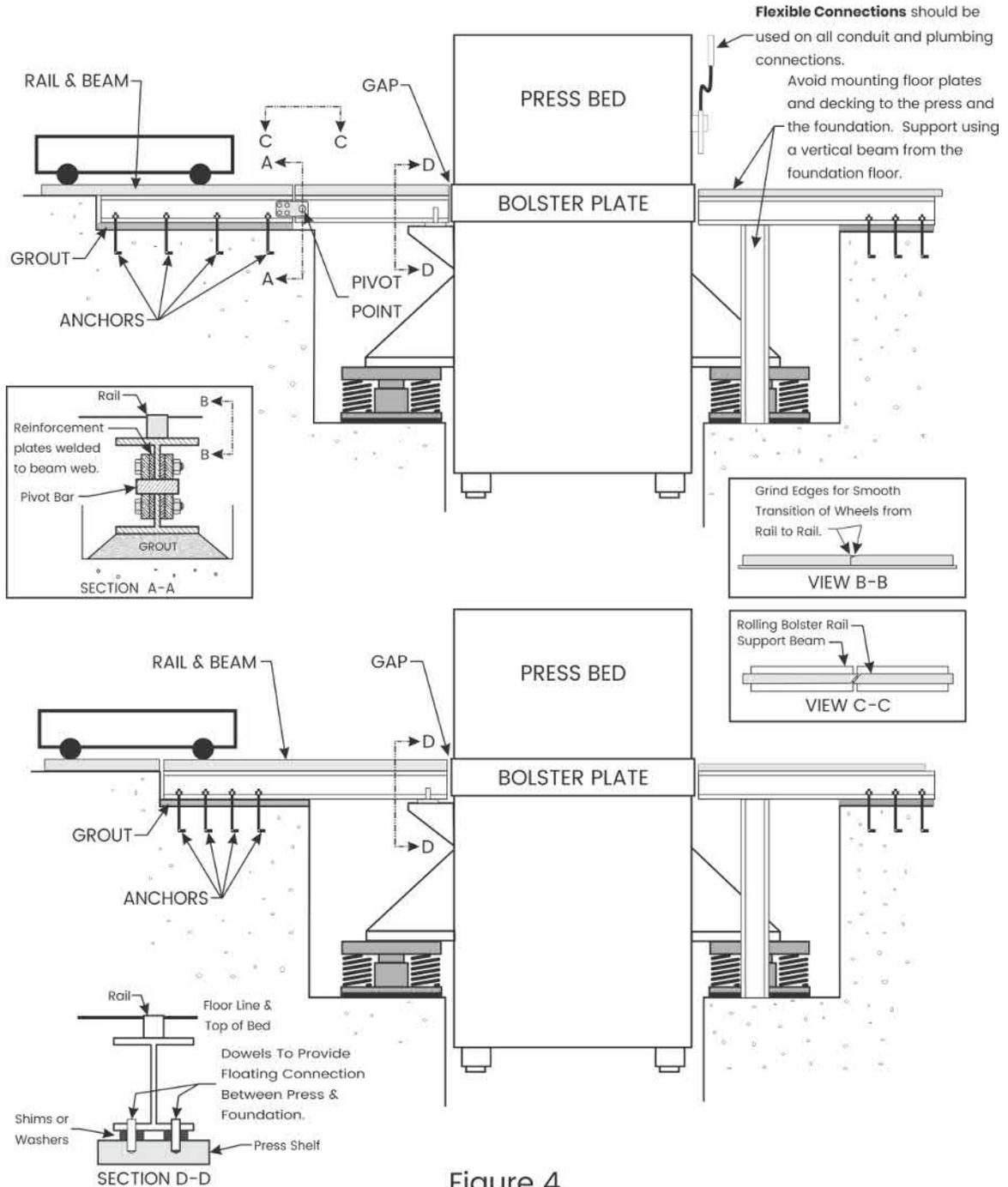


Figure 4

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## INSTALLATION INSTRUCTIONS

### MACHINE INSPECTION

1. Clean and inspect the machine feet and legs. Repair any cracks or damage. The bottom of the machine feet/base must be clean and flat where it contacts the top of the isolator.
2. Clean debris from the mounting holes for installations using attachment bolts.

### ISOLATOR INSTALLATION

3. Position each isolator under the machine foot or base.
4. For isolators equipped with attachment bolts, position the isolator under the machine foot so the tapped hole in the isolator is concentric with the machine's mounting hole as per Figure 5. (Some isolators may have more than one tapped hole. Use the one that offers the best isolator positioning under the machine foot and the best access to the attachment bolt.)

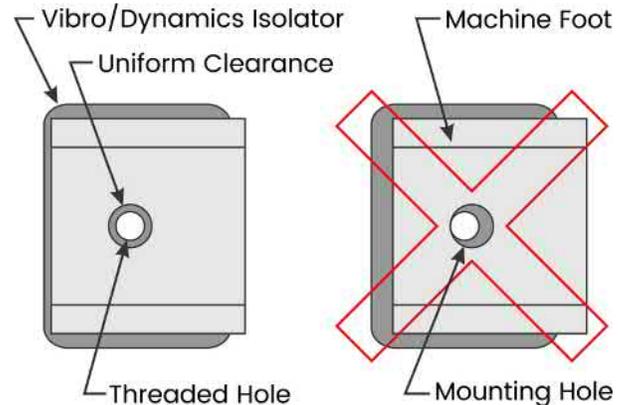


Figure 5

5. Lower the machine onto the isolator. (For isolators equipped with attachment bolts, insert the attachment bolt through the hole in the machine foot and thread into the tapped hole in the top of the isolator.)
6. Some installations may require multiple spring isolators installed under the same foot. It is important that the compression of each isolator be measured to ensure uniform loading of each isolator under the foot. If grout plates are not used, and the supporting surface under the spring isolators is sloped, the spring isolators will not be equally loaded. Measure and compare the average spring height in each isolator as shown in the Figure 6. Simply measuring the isolator height in the middle of each isolator will give the average. If the average isolator heights are not equal, apply shims to the higher isolator until the average heights are within 0.1" (2.5mm). This should be done prior to making any leveling adjustments. Shims should be inserted on the top of SVXN models and either on the top or the bottom of the SVX models.

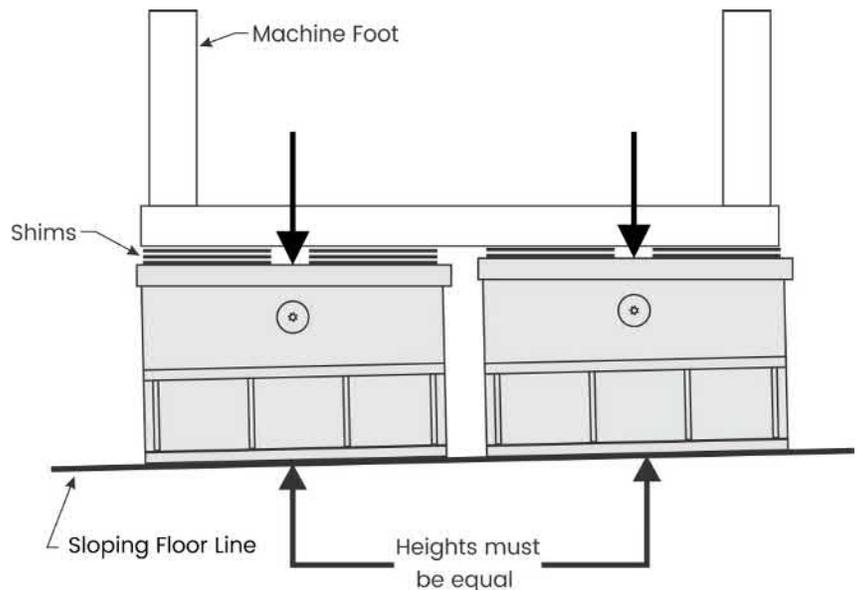


Figure 6

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## LEVELING

Shim material is provided for leveling. Typically, the shims are placed between the machine foot and the isolator for **SVXN** models and between the isolator and the foundation for **SVX** models. See Figure 7.

- **SVXN** isolator models require external lifting devices, such as an overhead crane or hydraulic cylinders placed outside of the isolators, to insert shims between the top of the isolator and the machine foot.
- **SVX** isolator models have internal pockets into which hydraulic cylinders can be inserted to lift the isolator off the floor to insert shims between the foundation and the bottom of the isolator. Grout plates are recommended to distribute the load of the hydraulic cylinders over the concrete surface. *Note: Shims can also be placed on top of SVX model isolators, but externally located lifting devices are then required.*
- For installations using optional attachment bolts, two stacks of shims are supplied with each isolator, allowing for placement of equal stacks of shims on both sides of the attachment bolt.

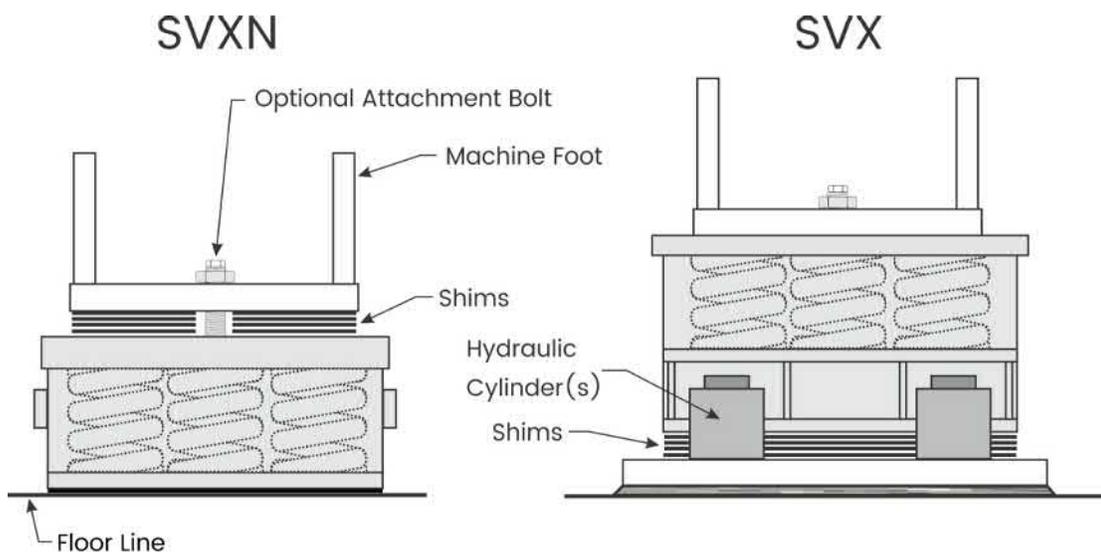


Figure 7

1. Refer to the machine manual for the machine's leveling locations and tolerances.
2. Using a precision machinists' level, or laser, determine the machine's low side in the front-to-back direction.
3. Apply an equal amount of shims to all isolators on the low side until the machine is level in that direction. *Note: For installations using more than one isolator per foot, make sure that Step 6 was completed prior to adding additional shims.*
4. Repeat procedure in the left-to-right direction.
5. Repeat the above Steps until the machine is level.
6. Tighten attachment bolt nuts if supplied.

Please call us at 1-800-842-7668 for assistance or questions regarding your installation.