

Installation, Operation and Maintenance Instructions



PRECIPITATOR VIBRATORS MODELS - P150 AND P155

ERIEZ MAGNETICS HEADQUARTERS: 2200 ASBURY ROAD, ERIE, PA 16506-1402 U.S.A.
WORLD AUTHORITY IN SEPARATION TECHNOLOGIES

Introduction

This manual details the proper steps for installing, operating and maintaining the Eriez Precipitator Vibrators.

Careful attention to these requirements will assure the most efficient and dependable performance of this equipment.

If there are any questions or comments about the manual, please call Eriez Magnetics at 814-835-6000 for Precipitator Vibrator assistance.

 **CAUTION**

Safety labels must be affixed to this product. Should the safety label(s) be damaged, dislodged or removed, contact Eriez for replacement.

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Installation

MOUNTING

P150 and P155 ONLY

The Vibrator should be securely fastened to the mounting surface, using bolts with lockwashers or locknuts. The base of the vibrator must have full contact with the mounting surface without being forced. To insure full contact with a surface that is not perfectly flat, use metal shims as needed between the vibrator base and the mounting surface.

ELECTRICAL CONNECTIONS

REFER TO FIGURES 1 AND 2

Check the specifications of the power line to be certain that it is the same as that shown on the name plate of the vibrator (or controller, if used).

Where no controller is used, connections are as shown in Figure 1. Where an Eriez controller is used, connections are as shown in Figure 2. Ground connections should always be used as shown.

Eriez vibrators cannot be operated by Direct Current.

YOU ARE NOW READY TO OPERATE YOUR PRECIPITATOR VIBRATOR.

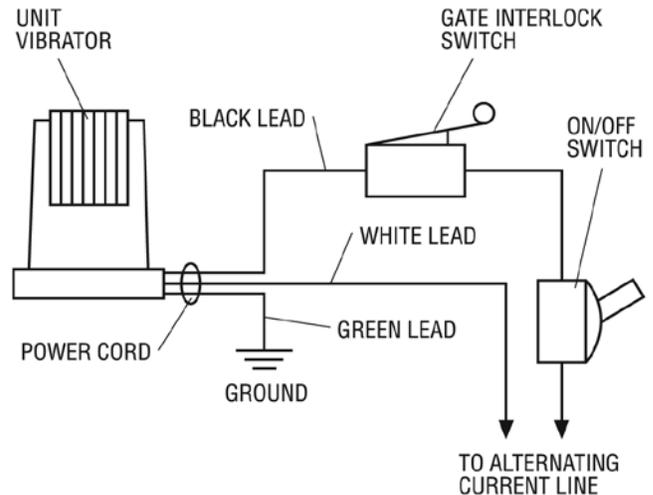


FIGURE 1

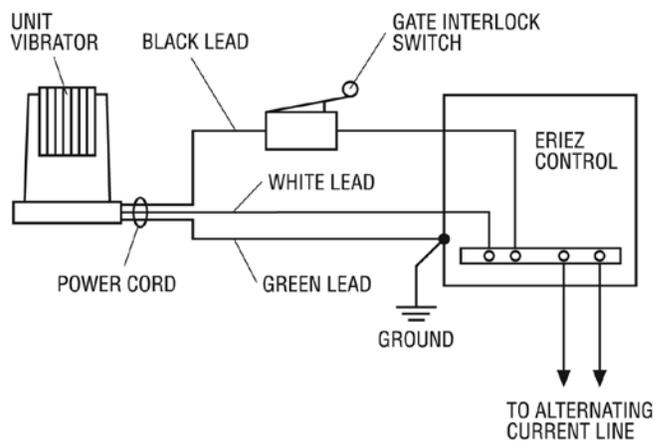


FIGURE 2

Operation and Maintenance

To start in operation after all connections have been made, simply turn the unit on. A warm-up period is not needed.

Eriez vibrators are operated by an alternating current electromagnet energized directly from any single phase AC source of the correct voltage and frequency. No intermediate rectification equipment is required.

ROUTINE MAINTENANCE AND CHECKING

In normal operation with the unit properly installed and the cover in place, the unit will operate with a solid hammering sound. This steady hammering sound is a necessary by-product of the metal-to-metal impacting action of this type of vibrator. Spurious rattling or tinny noise indicate loose or resonant parts in the system.

For inspection and checking purposes, units may be operated temporarily with the cover removed.

The mounting bolts, as well as all fasteners in the vibrator assembly, should be checked periodically for tightness. Loose fasteners anywhere in the assembly or mounting may result in a loss of efficiency.

Foreign material, if allowed to accumulate on the E-Frame and moving assembly or on the base, may also result in loss of efficiency. Such foreign material may be blown out with an air hose.

These vibrators do not require lubrication of any kind.

For possible troubles and their remedies, refer to the *Troubleshooting* section and Table 1. Service Chart at the back of this instruction material.

E-FRAME AND ANVIL GAP ADJUSTMENT

Whenever it becomes necessary to adjust the E-Frame and anvil gaps (as when parts are replaced – see *Repairs* section), use the following procedure:

- a. Loosen the bolts fastening the E-Frame, part 4, (see “Parts List”) and those holding the spring assembly. Add or remove shims, part 13, equally at each side of the spring assembly, as shown in Figure 3, until impact pad, part 9, barely touches anvil part 10. Tighten the bolts holding the spring assembly.
- b. Fasten the E-Frame bolts only finger tight so that the E-Frame can still be moved as shown in Figure 4. Using a bar or large screwdriver, shift the E-Frame to obtain a sliding fit of an .015" (.4 mm) thick non-magnetic spacer between the lower side of either armature pole piece and the adjacent E-Frame leg. After tightening the E-Frame bolts, the .015" (.4 mm) spacer should slip easily through the gap from one side to the other.

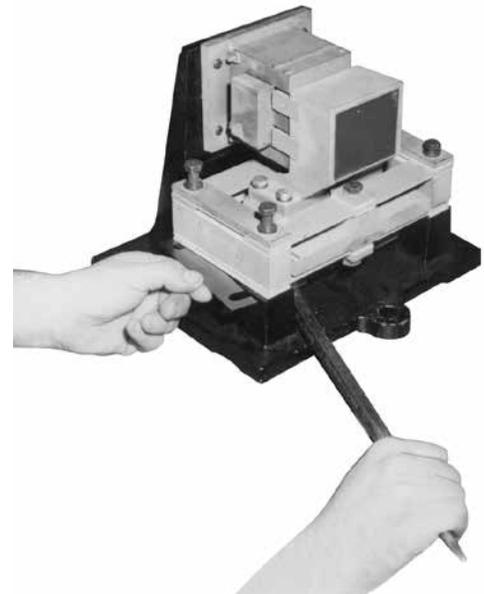


FIGURE 3

NOTE: All units pictured are of the Model P150 Vibrator.

Repairs

SPRINGS

Although spring failure will rarely occur if the unit is operated within its limitations, springs may eventually fail. Such failure will cause the unit to gradually become weak or inoperative. Faulty springs will be indicated by irregular white areas adjacent to the spring clamps, or as excessively worn areas under the edges of the clamps. Refer to the Parts List and order a new set of springs from the factory. Be sure to include the serial number of the unit when ordering.

Note: Springs should be replaced in sets to insure proper overall springing characteristics.

To install a new set of springs, proceed as follows:

- Remove the armature, part 3, and the E-Frame.
- Remove the old spring, noting the relative positions of the hammer, spring clamps, spacers, and shims in, the assembly.
- Reassemble the new springs, hammer, spring clamps, and spacers on the base, referring to Figure 4 for relative positions of the parts.
- Align the parts as shown in Figure 4 and tighten the outside center spring clamp bolt.
- Reverse the assembly (turn 180° on base) and tighten the other center spring clamp bolts.
- Replace the E-Frame and follow the instructions given for E-Frame and anvil gap adjustment.



FIGURE 4

COIL AND E-FRAME (E-FRAME ASSEMBLY)

Since the coils are permanently embedded on the center legs of the E-Frame, a coil and E-Frame must be replaced as a unit. In removing an old coil and E-Frame, disconnect the old coil by cutting the leads on the coil side of the crimp connectors, leaving stubs long enough to properly connect the new coil.

Then remove the four bolts securing the E-Frame and slide the E-Frame out sideways (see Figure 5). Before fastening the new E-Frame in place, the gaps should be adjusted in accordance with instructions previously given.

When ordering a new E-Frame assembly be sure to include the vibrator nameplate voltage.

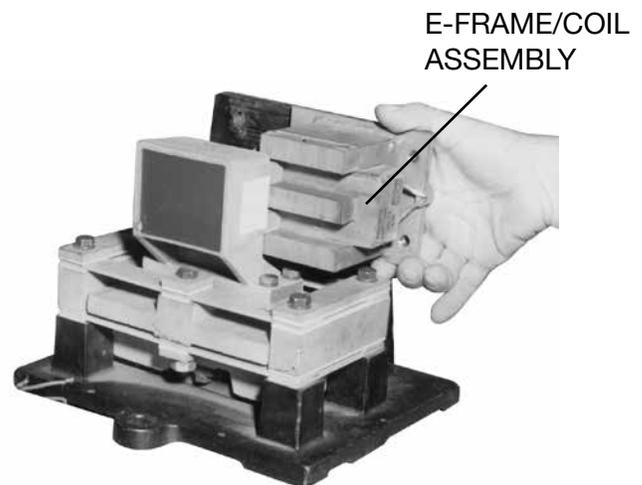


FIGURE 5

ARMATURE

Remove the E-Frame and armature, install the new armature and tighten, install E-Frame, and follow E-Frame gap adjustment procedure.

IMPACT PAD AND ANVIL

If it becomes necessary to replace the impact pad, part 9, or the anvil, part 10, due to possible wear or breakage it is best to replace both parts. In replacing these parts, the spring change procedure given above should be followed, except that it will not be necessary to unfasten the spring and hammer at the center.

Repairs (cont.)

PERFORMANCE TESTS AND STANDARDS

All vibrators must meet rigid performance standards before shipment. Testing is done with standard loading in a standard test fixture designed by Eriez.

To test the performance of the vibrator, use a manual voltage controller with sine wave output (such as a variable auto-transformer) and slowly apply voltage, starting at zero and increasing to maximum. Impacting should start at from 5% to 25% of full voltage, with maximum vibratory output obtained at full voltage.

Troubleshooting

TABLE 1. SERVICE CHART

NATURE OF PROBLEM		Incorrect Voltage	Loose Fastenings	Foreign Material Inside of Unit	Faulty Controls or Wiring	Incorrect Factory Adjustment	Blown Fuse or Circuit Breaker	Line Voltage Variation	Coil Failure	Incorrect E-Frame Gap Adjustment	Spring Failure	Product or Volume Variation	Loose or Broken Cover	Broken Base or Other Casting	Extreme Heat over 120°F (50°C)	Rubber Covered Anvil or Impact Pads Worn (40S-50S or 60U-70U)
		1	2	3	4	5								13	14	
Initial Installation	Reduced or Low Output	1	2	3	4	5								13	14	
	Noisy but Output Okay		2	3		5							12	13		
	Noisy Certain Periods Only		2						7							
Develop After Satisfactory Initial Operation	Completely Inoperative				4		6		8	9	10			13		
	Operating But Reduced Output	1	2	3	4					9	10			13		
	Output Okay Too Much Noise			3						9	10		12	13		15
	Gradual Fading			3	4				8		10					
	Inconsistent Output			3	4			7				11				

REFER TO TABLE 1. SERVICE CHART

1. **Incorrect Voltage**
Check nameplate specifications and line voltage.
2. **Loose Fastenings**
Remove cover and check all bolts—make certain that bolts in unit are tight.
3. **Foreign Matter Inside of Unit**
Remove cover and clean with air hose.

4. **Faulty Controls or Wiring**
Check and replace if necessary.
5. **Incorrect Factory Adjustment**
Adjust E-Frame gap (see maintenance instructions).
6. **Blown Fuse or Circuit Breaker**
Check and correct—check all wiring for short circuits.

Troubleshooting (cont.)

7. Line Voltage Variation

Check and install voltage regulator if necessary.

8. Coil Failure

Check—remove and install new coil (see maintenance instructions).

9. Incorrect E-Frame Gap Adjustment

Check and readjust (see maintenance instructions).

10. Spring Failure

Check and replace. Order new from factory. Follow maintenance instructions.

11. Product or Volume Variation

Possibly incurable—customer to decide and correct if practical.

12. Loose or Broken Cover

If broken cover, order new and tighten screws. All models have cover gaskets.

13. Broken base casting

Check—return to factory for repairs.

14. Extreme Heat

Ambient temperatures exceeding 120°F (50°C)
– reduce ambient temperature.

15. Check Anvil

Replace if necessary.



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