



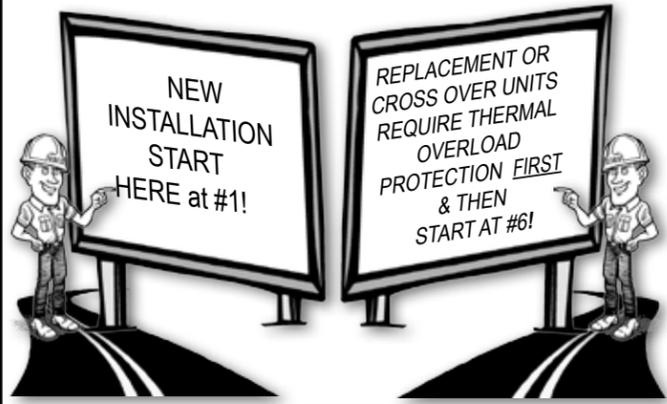
VIBCO INSTRUCTION MANUAL



Explosion Proof Electric Vibrators

WARNING: Failure to read and follow these installation instructions and safety precautions could result in personal injury, equipment damage, shortened service life or unsatisfactory equipment performance. All information in this document is vital to the proper installation and operation of the equipment. It is important that all personnel who will be coming in contact with this product thoroughly read and understand this manual.

1 THANK YOU FOR CHOOSING A VIBCO VIBRATOR



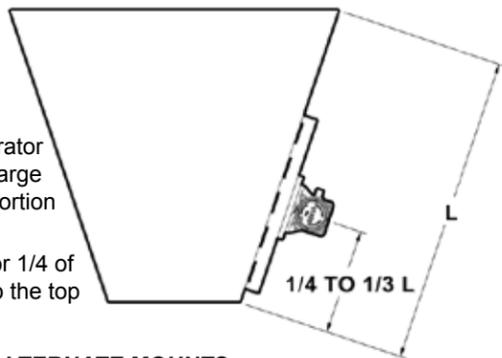
2 MOUNTING INSTRUCTIONS CHECKLIST

- Determine vibrator placement. *Make sure UL hazardous location of vibrator matches area's classification!*
- Determine length of channel iron and position on side of bin.
- Determine style of mounting plate.
- STITCH** weld mounting plate to channel iron.
- STITCH** weld channel iron to bin.
- Attach vibrator to mounting plate. Check the mounting plate for warping. Secure firmly. **DO NOT OVER TIGHTEN THE BOLTS.**
- Install safety chain or cable.
- Connect wiring for vibrator using the NEC Standards.
- Take a voltage reading at vibrator while running. **VOLTS** _____
- Take an amp reading while vibrator is running. **AMPS** _____
- Compare readings to standard values. Is the force the vibrator produces sufficient? Do you need more or less?
- FILL OUT WARRANTY CARD AND MAIL TO VIBCO!!!!**



3 VIBRATOR PLACEMENT

STOP! Make sure UL hazardous location of vibrator matches area's classification!



For coarse materials: mount vibrator 1/3 of the distance from the discharge opening to the top of the sloped portion of the bin.

For fine materials: mount vibrator 1/4 of the distance from the discharge to the top of the sloped portion of the bin.

FOR ALTERNATE MOUNTS

refer to full detail instruction manual online at www.vibco.com or call 800-633-0032

4 PLATE & CHANNEL SELECTION

VIBRATOR FORCE in LBS	MNTNG PLATE THICKNESS	CHANNEL IRON SIZE	FACTOR A
101 - 500	1/4" - 3/8"	3" x 4.1 lbs 3" x 5 lbs	2
501 - 1200	1/2"	4" x 5.4 lbs 4" x 7.5 lbs	3
1201 - 3000	5/8"	6" x 8.2 lbs / 6" x 10.5 lbs	4
3001 - 5000	3/4" - 1"	6" x 8.2 lbs / 6" x 10.5 lbs 8" x 8.5 lbs / 8" x 11.5 lbs	5

BIN WALL THICKNESS	FACTOR B
1/8" (10 ga.) or less	6
1/8" - 1/4"	5
1/4" - 3/8"	4
3/8" - 1/2"	3
1/2" & up	2

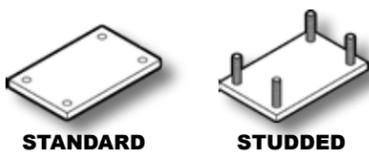
FACTOR A + B	USE CH. IRON LENGTH
11	N/A
10	6 - 8 FT. (80 - 90%)
9	5 - 7 FT. (70 - 80%)
8	4 - 6 FT. (60 - 70%)
7	3 - 5 FT. (50 - 60%)
6	2 - 4 FT. (50 - 60%)
5	1 - 2 FT. (50 - 60%)
4	N/A

NOTE:

1. Longer channel iron will not affect vibrator performance, but total channel length should not exceed length of bin wall.
2. Percentages shown indicate % of bin wall height your channel iron should be for shorter bins.
3. To match your vibrator on chart above, model number suffixes generally correspond to pounds of force generated. For any questions, consult VIBCO.

MOUNTING PLATES, CHANNEL IRON & ACCESSORIES AVAILABLE FROM VIBCO OR LOCAL DEALER

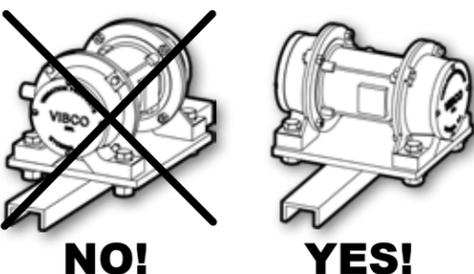
5 MOUNTING HARDWARE



A MOUNTING PLATE MUST BE USED to ensure proper stability for the vibrator.

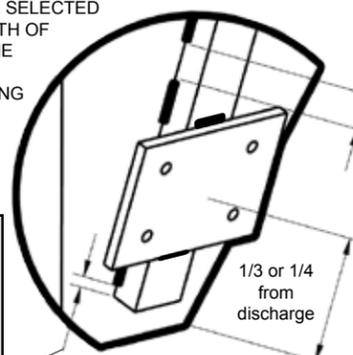
Always start & stop welds 1 in. from ends to prevent heat concentration. Then weld 2 to 3 inches, skip 1 to 2 inches and repeat until the plate is securely mounted.

NO! VIBRATOR & MOUNTING PLATE MUST BE MOUNTED PERPENDICULAR TO CHANNEL IRON, NOT PARALLEL. OTHERWISE, IT WILL CAUSE FLEXING & THE VIBRATOR WILL OVERLOAD & BURN OUT.



6 STITCH WELD MOUNTING

BE SURE YOU HAVE SELECTED THE PROPER LENGTH OF CHANNEL USING THE TABLES ABOVE. IMPROPER MOUNTING CAN RESULT IN FAILURE OF UNIT OR DAMAGE TO EQUIPMENT.



STITCH WELDS SHOULD START & STOP 1" (2.5cm) FROM BOTH ENDS OF CHANNEL TO PREVENT CRACKING

STITCH WELDS SHOULD BE 3" - 6" LONG LEAVING 3" (7.5cm) BETWEEN EACH WELD

DO NOT MOUNT VIBRATOR DIRECTLY TO SURFACE OF BIN !!! Always use mounting plate & channel iron

ON REPLACEMENTS, CROSS-OVERS OR REINSTALLATIONS CHECK BIN/HOPPER FOR FATIGUE CRACKS & ENSURE PROPER MOUNTING CONFIGURATION BEFORE PROCEEDING

7 BOLTING PROCEDURE

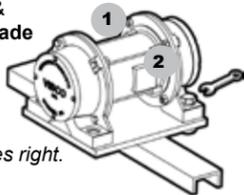
Now put vibrator in place. Make sure it is secured tightly. Retighten bolts after first 10 to 15 minutes of operation and check periodically to maintain proper tightness. Damage to both bin and vibrator can occur if vibrator is not mounted securely.

NOTE: no matter how thick the mounting plate, it can still warp during welding, especially if VIBCO's instructions are not followed.

NOTE: Shimming the feet is necessary to avoid strain on the shaft & bearings that can cause high amperage draw & burn out the vibrator.

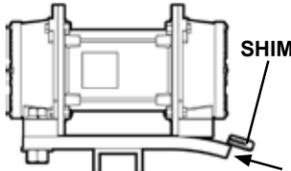
Step 1

Place vibrator on mounting plate, then insert & tighten 2 Grade 5 bolts on same end of vibrator. See proper torque values right.



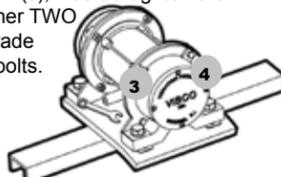
Step 2

Now, look at feet on other end of vibrator. If a gap exists between mounting plate & feet, welding warped the mounting plate. Shim space under feet.



Step 3

After gap has been filled with shim(s), insert & tighten the other TWO Grade 5 bolts.



GRADE 5 BOLT SIZE	MAX TORQUE ft.-lbs
1/4"	9
5/16"	18
3/8"	32
1/2"	78
5/8"	160
3/4"	260
1"	580
1-1/4"	1105

For other bolt grades, please consult VIBCO.

8 RESTRAINT

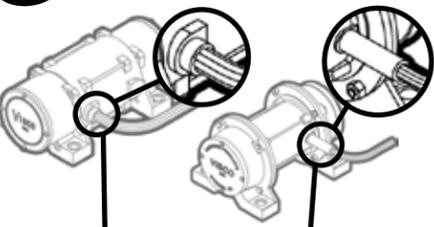


ALWAYS INSTALL SAFETY CABLE or CHAIN

Mount one end to the vibrator and the other to the hopper or bin **above** the vibrator **NEVER ATTACH TO THE MOUNTING PLATE!**

9 ELECTRICAL INSTALLATION

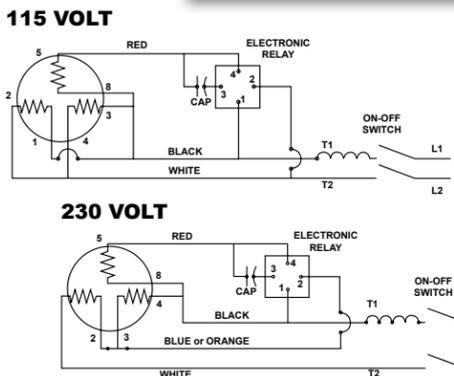
All VIBCO Explosion Proof Electric Vibrators **MUST** be installed to code by a qualified, licensed electrician or warranty is void.



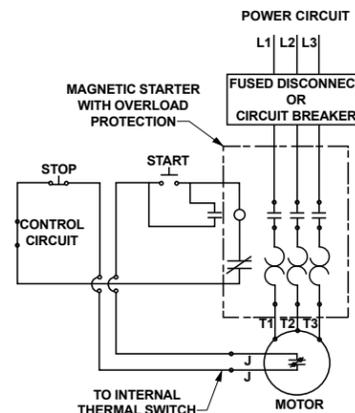
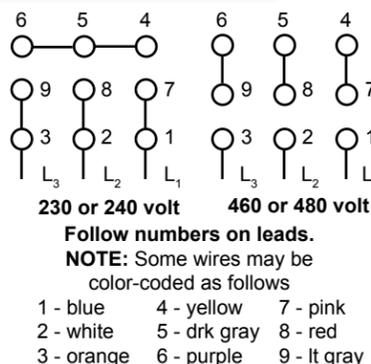
NOTE: DO NOT MAKE DIRECT OR HARD CONNECTION TO NIPPLE.

Nipple will crack & compromise explosion proof rating. Use flexible cable. Attach one end to nipple & other end to explosion proof conduit box. Make all connections from conduit box.

SINGLE PHASE



THREE PHASE



TAKE AN AMPERAGE READING WHILE THE VIBRATOR IS RUNNING Operating amperage should not exceed the value listed on the vibrator label. If it does, it is most likely due to faulty mounting. Check mounting welds, and re-tighten bolts if necessary. See TROUBLESHOOTING for more info.



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MAXIMUM OPERATING TEMPERATURE Model & class dependent. Refer to motor nameplate or code class chart in full detail manual at www.vibco.com for maximum allowable temperature.

10 LUBRICATION

Models 2PX-200, 2PX-450, 4PX-350 and 4PX-700 are pre-lubricated for life.

MODEL #	INTERMITTENT DUTY	CONTINUOUS DUTY
4PX-2000 4PX-5000	Lubricate every 1000-2000 hours	Lubricate every 4 weeks

Grease Specifications

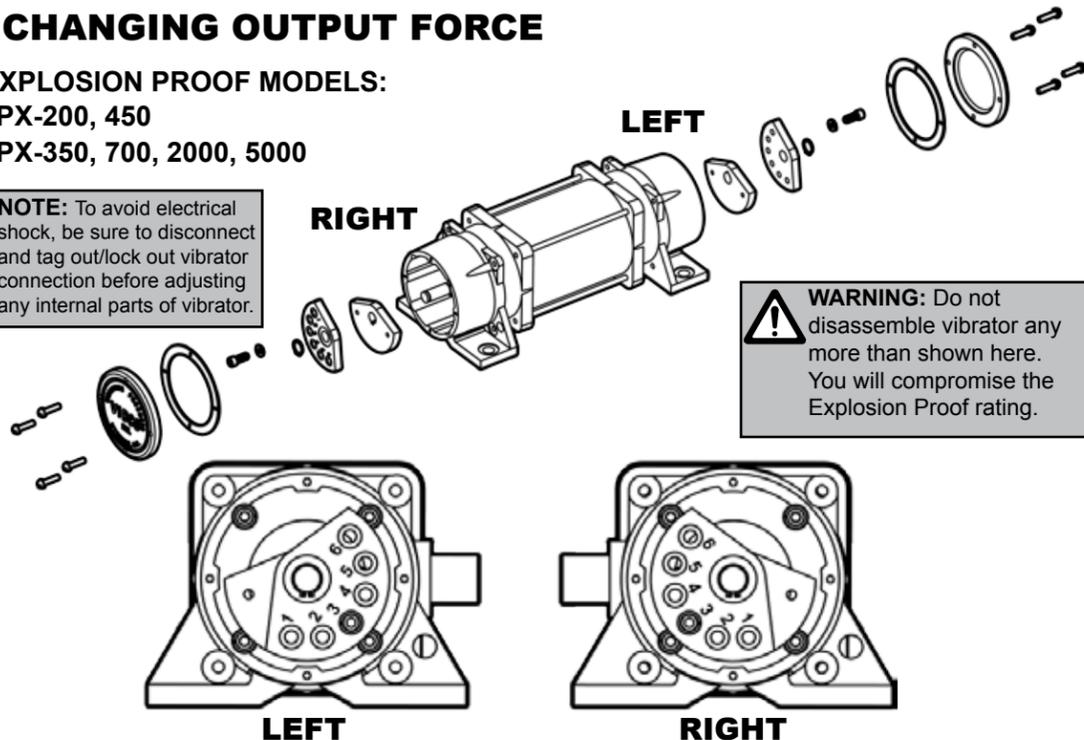
Lubriko M21 general purpose grease or equal Sodium Calcium based NLGI grade 2 grease. Minimum temperature range 0° - 225°F. Minimum viscosity 70 - 80 SUS (at 212°F).

Use 2.5 to 3 grams (two pumps with standard manual grease gun). Do not over grease!

11 CHANGING OUTPUT FORCE

EXPLOSION PROOF MODELS:
2PX-200, 450
4PX-350, 700, 2000, 5000

NOTE: To avoid electrical shock, be sure to disconnect and tag out/lock out vibrator connection before adjusting any internal parts of vibrator.



WARNING: Do not disassemble vibrator any more than shown here. You will compromise the Explosion Proof rating.

NOTE: These vibrators are set to Setting #3 (Factory Setting).
Settings 1 - 3 are continuous duty rated Settings 4 - 6 are intermittent duty rated only

To change the force:

1. Remove both end covers.
2. Remove the cap screw that holds the outer eccentric to the inner eccentric and turn the outer eccentric so that the numbered hole aligns with the threaded hole in the inner eccentric. **NOTE: You must set both ends of the vibrator to the same setting.**
3. Replace the cap screw. Apply Loctite 242 (or equivalent).
4. Replace both end covers. End cover bolts have a locking patch and do not need Loctite.

For two vibrators mounted in tandem to produce linear motion for table & feeder applications:

In order to produce linear motion you must make sure vibrators rotate opposite from one another. The force output labels should be opposite to one another when viewed from the same side (one increases clockwise, the other counter-clockwise as in picture above). Follow instructions as above, and be sure you set both vibrators and both ends to the same setting.

NOTE: If you INCREASE force of vibrator, you **MUST** take a new amperage draw reading to ensure vibrator is still operating within specified limits.

NOTE: Only run intermittently when set to higher than factory set output forces (maximum running time of 30 min in any one hour period).

Warranty & Repairs

All warranty claims must be submitted to VIBCO for approval prior to any repairs being done. Failure to do so will void any and all warranty coverage. All repairs must be done at the VIBCO factory or a UL certified repair shop or you will void the Explosion Proof rating of the vibrator.

Errors, Shortages & Complaints

Complaints concerning goods received or errors should be made at once. Claims must be made within five days after receipt of goods. Clerical errors are subject to correction. Damage during shipping must be reported to the carrier, not VIBCO.

Returning Parts

Parts should not be returned to VIBCO without prior authorization. Call VIBCO's customer service department at 800-633-0032 (800-465-9709 in Canada) for a Return Goods Authorization (RGA) number. A return authorization will be emailed or faxed to you. Use this as your packing slip. Return shipping must be prepaid. Material returned may be subject to a 10% restocking fee. All returned shipments should clearly display your name, address and original invoice number to ensure proper credit.

**** Orders for custom equipment built to customer's specifications are not returnable.**

Product Changes

VIBCO reserves the right to make changes in pattern, design or materials when deemed necessary, without prior notice or obligation to make corresponding changes in previous models. To be sure of exact mounting dimensions, it is recommended that you obtain a certified dimensional drawing from the factory.

Ordering Spare Parts

Parts can be ordered through authorized distributors or from VIBCO's Spare Parts Department. The following data should be provided when placing your spare parts order:

- From vibrator tag: Model of unit.
- From spare parts list: Reference number, part number, description & quantity required.
- Shipping instructions: Specify shipping point and method of shipping.

12 TROUBLESHOOTING

MY MATERIAL STILL ISN'T MOVING!

1. Did you put your vibrator in the right location? Did you mount your vibrator properly?
2. Do you have the right vibrator for the job? Does it provide enough force? Do you have the vibrator set to the maximum force? (see left) Is it the right frequency? Still not sure? Call VIBCO Technical Support at 800-633-0032.

THE VIBRATOR WON'T START!

1. Check power supply to unit. Are you getting the proper voltage? Has the thermal overload protection tripped?
2. Check stator continuity, if "open" stator winding is burned or has a short, replace stator. If unsure how to check continuity, call VIBCO or consult a licensed electrician.

VIBRATOR STOPS RUNNING!

1. Check power supply to unit.
2. Has the thermal overload protection tripped?
Single phase units are supplied with a capacitor and relay and must be connected to a single phase motor starter with proper individual overload protection in a properly UL-rated enclosure. Is your vibrator connected correctly?
Three phase units must be connected to three phase motor starters with proper individual overload protection. Is your vibrator connected correctly?
If overload protection has tripped, wait a minimum of two (2) minutes then reset.
Refer to wiring chart in Section #9 for details.

3. Have you checked your bin/hopper for fatigue cracks? Repair any you find as per detailed instructions in the full detail manual found online at www.vibco.com.
4. Are you running your vibrator on an empty or nearly empty bin? Proper force for full hopper can be excessive for empty or nearly empty hopper. For hopper clean-out, use vibrator intermittently only to prevent overload or burn out.
5. Are you running the vibrator continuously? All VIBCO heavy duty models are rated for continuous duty but only at certain eccentric settings. See diagrams to left for proper output force settings for continuous duty.

NOTE: For best performance and vibrator life cycle, it is best to run them intermittently. VIBCO offers timers to help facilitate this. Consult factory for details.

6. Are you running the vibrator in a high temperature environment? Consult VIBCO about high temp rated models. Refer to full detail instructions for proper mounting in high temp applications.
7. Are you running the vibrator in a wet or washdown environment? Consult VIBCO about washdown rated models.
8. Are you repeatedly stopping and starting the vibrator? This can overload the vibrator. Use the following guidelines for proper timing of starts and stops:

Single phase (2PX-450; 4PX-700):

These are capacitor start models and rated for a MAXIMUM of 30 starts per hour.

Three phase (2PX-200, 450; 4PX-350, 700, 2000 & 5000):

For run times of 10 seconds or less, use 1:7 ratio for run time vs. off time. (example: 5 seconds on to 35 seconds off). For run times longer than 10 seconds, any cycle is acceptable.

For custom mounting applications or any other questions:

800-633-0032

or

vibrators@vibco.com

