

# **Metalfab 4P Series Vibrator**

## **Operation & Maintenance Data**

### **Introduction**

The **Metalfab** Electric Vibratory Motor you have purchased is of special manufacture. It has been designed and manufactured solely for use as a vibratory motor, to ensure the best possible performance and reliability under severe duty applications.

### **Installations**

The mounting bolts used must be of grade 8 or 9 material. When installing the motor, it is necessary to use locking nuts and tighten the bolts evenly to the recommended torque ratings. Never reinstall used fasteners, as they may fail under load. Check the bolts for security after the first thirty minutes of operation and repeat after the second day of operation.

It is imperative that the eccentric weights at both ends of the shaft are adjusted identically; "mirror images of each other". When adjusting the eccentric weights, use the least amount of amplitude and force to move your material. This will provide longer vibrator life. Refer to page four for eccentric weight adjustment.

All wiring of the vibrator motor must be done in accordance with National Electric Code standards. Refer to the diagrams or page two for wiring the motors. Each motor is supplied with a wiring diagram inside the terminal box.

***When wiring the motor, always utilize the ground connection.***

**Note:      *Never weld on the bin or structure without first disconnecting the motor leads. Failure to do so may cause damage to the motor windings and bearings by grounding through the motor.***

## **Important Notice** ***Overload Protection Required!***

This vibrator carries the best guarantee offered by any vibrator manufacturer. To assure extended life, maintain the warranty and comply with the National Electric Code, this unit must be wired with the proper size overload protection.

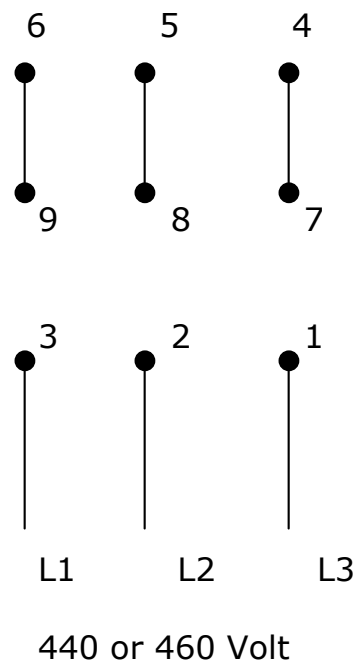
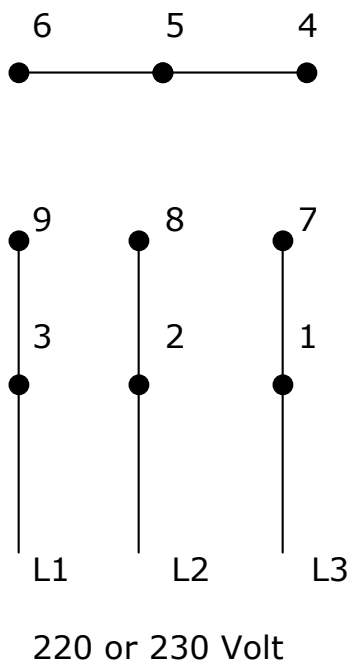
On three phase units, use overload protection on all three legs at 10% over nameplate amperage at the correct voltage.

If the vibrator cannot be operated in your application at this amperage level, consult **MetalFab** or your local distributor. Do not increase the overload protection rating. This may destroy the vibrator and will void the warranty.

## **Connection Diagrams**

All units have DUAL voltage in 3 phase 230/460 volt. To change from one voltage to another, remove cover on conduit box and reconnect as per diagram below.

To change rotation on rotor, interchange any two lead wires. This is done either in conduit box or at the plug.



## Technical Data

<b>MODEL</b>	<b>AMPERES 230/460</b>	<b>H.P.</b>	<b>MAX. FORCE</b>	<b>**DB</b>	<b>WEIGHT</b>
4P-0.35 K	1.2/.6	—	300	60	31
4P-0.7 K	1.6/.8	—	700	63	36
4P-1 K	1.6/.8	—	1000	63	41
4P-1.4 K	3/1.5	1	1400	70	63
4P-2 K	4/2	1	2000	72	98
4P-3 K	6/3	2	3000	74	155
4P-5 K	6/3	3	5000	75	195
4P-10 K	7/3.5	5	10000	76	495
4P-15 K	11/5.5	7	15000	76	660

1800 VIBRATIONS PER MINUTE

**NOTE:** MOST VIBRATORS AVAILABLE IN BOTH 50 & 60 CYCLES.  
230/460 OR 575 VOLT  
\*\*DECIBEL AT 3' (1 METER) ON A SCALE  
ALL VIBRATORS ARE CSA APPROVED.

## Lubrication Instructions

The ball bearings in the 4P-0.35K, 4P-0.75K and 4P-1K are pre-lubricated for life. All other models have two roller bearings with grease fittings. The life of the roller bearings reach far beyond the ball bearings, however, the roller has a larger contact area than the ball and needs more lubricant. Therefore, they have to be re-lubricated at certain intervals. For 1725 RPM vibrators, every 1,000 to 2,000 hours or every month for continuous duty. The amount of lubricant should be 2.5 to 3 grams (two pumps with standard manual grease gun.) Do not over grease. If too much grease is applied it will leak out. By removing the end cover you will find out if the unit has been excessively over greased. Clean out excess grease. The same amount is on inside of bearings on stator side. If too heavy, unit should be taken apart and cleaned. For vibrators without grease nipple, the outside eccentric and bearing cover have to be removed. If the bearing has a grease seal, remove and discard it. Remove as much as possible of the old grease and repack bearing.

## **Recommended Lubricant**

American Oil Co., Rykon #2 EP, or Chevron BRB #2, or other comparable lithium base lubricant with a temperature range of 300°F.

## **Eccentric Weight Adjustment**

All **Metalfab** Vibratory Motors feature eccentric weights to change the amplitude and centrifugal force. The following procedure should be adhered to whenever the eccentric weights are adjusted.

1. Remove the eccentric weight covers on both ends of the motor.
2. Note the present eccentric weight setting.
3. Loosen the bolt holding the eccentric to the shaft.
4. Line up the desired number on the eccentric with arrow on the shaft.
5. Tighten the weight adjustment bolt and duplicate this process on the other side of the motor.

**Note:**      **The upper and lower eccentric weights must be set at the same number.**

**WARNING:**      ***Before any adjustments, vibrator should be electrically "LOCKED OUT".***

## **Eccentric Weight Settings**

<b>VIBRATOR SIZE</b>	<b>FORCE IS IN POUNDS</b>					
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
4P-0.7K	0	220	510	570	670	700
4P-2K	230	660	1200	1740	1920	2000
4P-5K						
*HIGH	1500	2100	3200	4200	4860	5100
**LOW	300	1000	1875	2625	3000	3200

\*HIGH FORCE SETTINGS – AS SHIPPED WITH BOTH INSIDE AND OUTSIDE ECCENTRICS ON BOTH ENDS OF VIBRATOR.

\*\*LOW FORCE SETTINGS – REMOVE INSIDE ECCENTRIC ON BOTH ENDS OF VIBRATOR. REMOUNT OUTSIDE ECCENTRIC AND LINE UP NUMBER WITH ARROW ON SHAFT.

## **Trouble Shooting**

### A. VIBRATOR DOES NOT START:

- 1) Short in lines
- 2) Burned out overload protection
- 3) Short in winding, check with ohmmeter

### B. VIBRATOR OVERLOAD POSSIBLE CAUSES:

- 1) Bolts holding vibrator are loose
- 2) Excessive ambient heat
- 3) One phase open (check: a) power source; b) wiring)
- 4) Bad bearings

**Note:** Always make sure the data stamped on nameplate corresponds to power sources.

**WHEN INQUIRING ABOUT ANY VIBRATOR, ALWAYS REFER TO THE SERIAL NUMBER STAMPED ON THE METALFAB NAMEPLATE.**

## **Metalfab Service**

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