



MP-25 vibrator control box/ Vibrator control box retro fit

20000077 VIBRATOR CONTROL BOX

20000078 VIBRATOR CONTROL BOX-RETRO FIT

Rev 1 – 05-04-2010

620 County Road 4841. Haslet, TX 76052

Ph 817.439.1108 Fax 817.636.5675

www.machine-technologies.com

Dear Customer,

Before starting this machine please complete the following;

component Date of purchase.....

component serial number, if applicable.....

Please read the following information contained within this manual and fully familiarize yourself with the equipment.

Contents	Page
Section 1 - General Safety information.....	3
Danger.....	3
Section 2 - Component Description.....	4
Function.....	4
Unit illustrations	5
20000078 VIBRATOR CONTROL BOX-RETRO FIT	5
20000077 VIBRATOR CONTROL BOX	6
Section 3 –Mounting and Wiring	7
Mounting	7
Wiring-retro fit	10
Wiring.....	16
Section 4 – Unit set up	17
Weight adjustment	17
Section 5 – Unit operation	18
General notes for operation	18
Section 6 – Simple maintenance.....	19
LIMITED WARRANTY POLICY	20

Section 1 - General Safety information

Danger

Follow these instructions very carefully, in order to avoid injury to yourself or others.

Electrically powered machine.

Always ensure that all power to the machine has been turned off and isolated before ANY maintenance / repair work is carried out on the machine.

Ensure that all guards are correctly fitted before starting or attempting to operate the machine.

Ensure that all fasteners are present and correctly fitted before attempting to start or operate the machine.

Ensure that the pump unit is correctly fastened to the front of the hopper unit of the machine, and free of damage before attempting to start or operate the machine.

The MP-25 pump unit can produce high pressures, high torques and can uses high voltages.

Authorized persons **ONLY** can use this machine, and must take care at all times.

Section 2 - Component Description

Function

The vibrator is used to help feed the material into the dosing section of the hopper.

The vibrator is best used with materials that are low in density, or light weight that do not have a natural tendency to free flow, or that tend toward bridging in auger feed systems.

The vibrator can be fitted to any MP-25 machine, that uses either single phase input power or 3 phase input power.

The vibrator is a 208-230 VAC single phase powered unit, which is powered from the main MP-25 control panel, either wired into the provided fused connections, or wired into retro fitted fused connections, per the instructions given in the manual.

The vibrator rotates at a fixed speed using the power provided from the machine, via a simple switched control box, that contains the required 60Hz capacitor. Power is applied to the switch box when ever the MP-25 is powered up and switched on at the isolator. The amount of vibration is adjustable, by altering the ratio of opposing number discs at either end of the vibrator, contained within the protective and sealed covers.

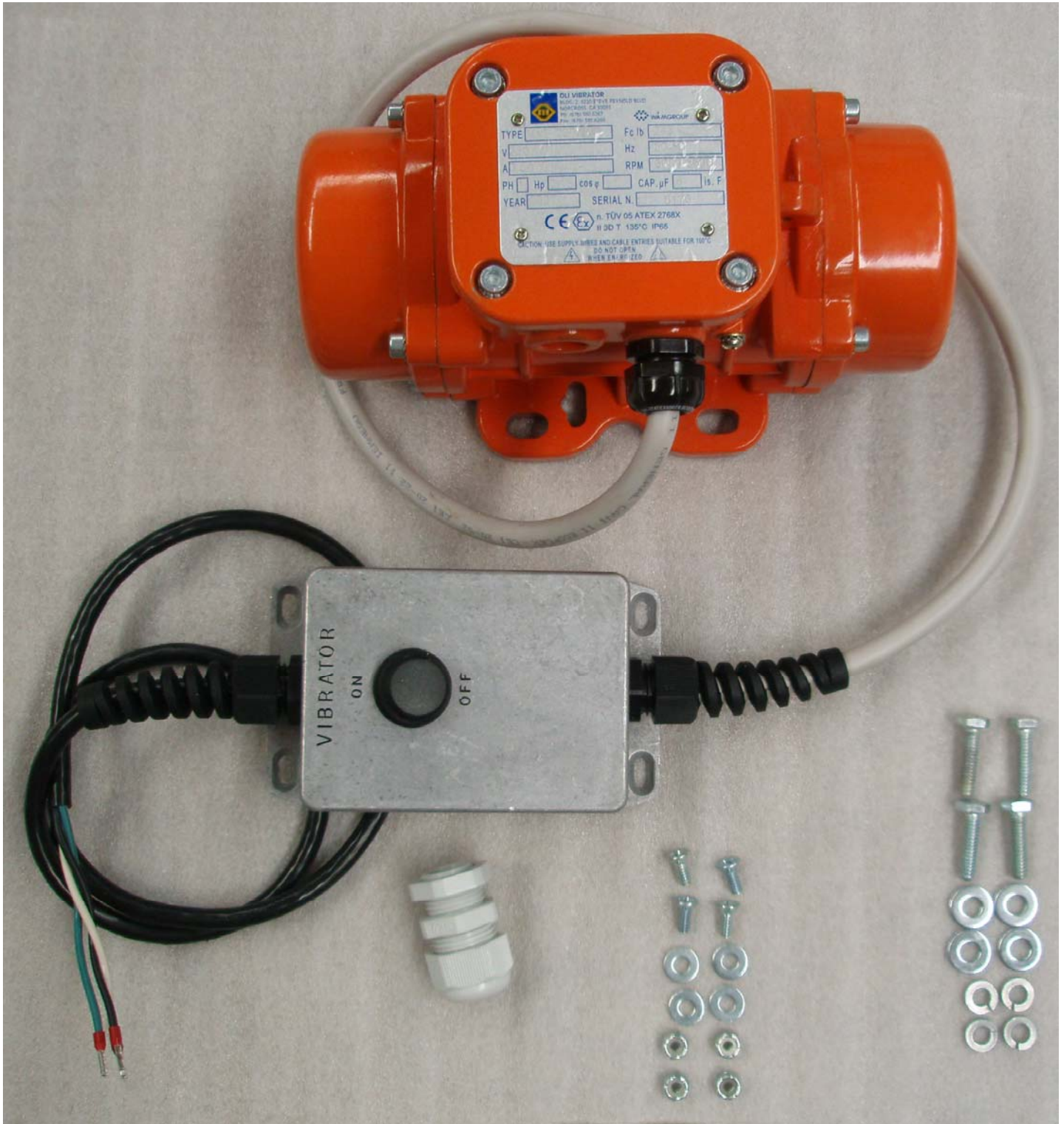
It is important that the vibrator be securely mounted onto the supplied vibrator mounting plate (Number 44010306), which in turn is welded to the hopper face, or to the provided mounting plate factory fitted to the hopper.

Unit illustrations

20000078 VIBRATOR CONTROL BOX-RETRO FIT



20000077 VIBRATOR CONTROL BOX



Section 3 –Mounting and Wiring

Mounting

Tools required;

Center punch.

3/16” drill bit.

Permanent marker pen – fine tip.

Tape measure.

Cross head screw driver No.2.

3/8” AF wrench.

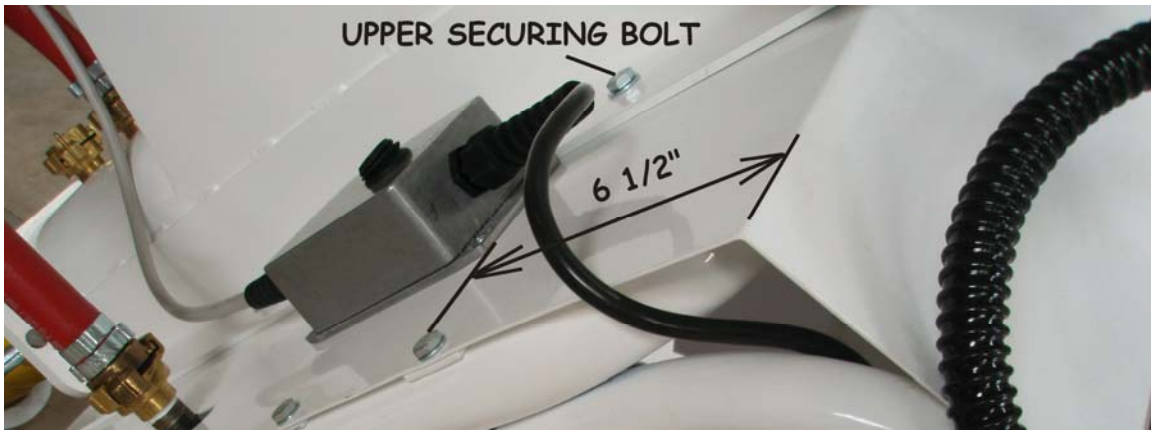
7/16” AF wrench

Power drill for 3/16” drill bit.

Using the 7/16 wrench, fix the vibrator to the vibrator mounting plate on the MP-25 hopper using the four 1/4-20 x1” Bolts, the four shake proof washers and the four 1/4” fender washers. Tighten securely.



Place the switch box as shown in the photo below, and ensure that the upper mounting holes for the box are below the hopper securing bolts, use the tape measure to ensure that the box flange is 6 1/2" from the fold line on the MP-25 top cover.



Hold the box in place and mark hole positions, using a marker pen, as shown



Center punch the hole positions marked with the pen, and drill the four holes using the 3/16" drill bit.

Using the supplied #10-24 flat head screws, the 3/16" washers and the #10-24 locking nuts, fasten the switch box to the MP-25 top cover with the 3/8" wrench and the crosshead screw driver, as shown.



Wiring-retro fit

If the MP-25 you are fitting the vibrator to is not supplied with internal connections, or a hole in the control panel, then you will have to “retro fit” the kit to the MP-25.

Tools required

7/8” hole punch, or step drill

1/8” terminal screw driver – flat blade

Power drill, for step drill.

Remove all power to the MP-25 machine, and leave for 15 minutes for the residual power in the inverter to dissipate.

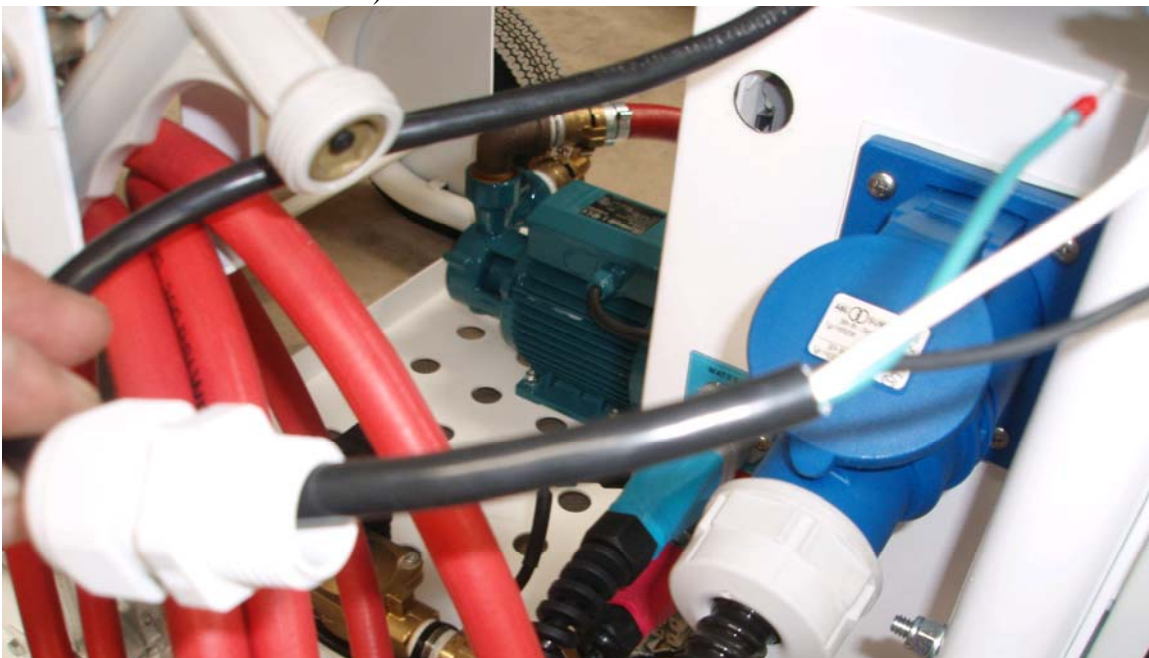
Drill a hole of between 13/16 and 7/8” in diameter in the upper left corner of the control box’s left side, (when viewed from the opening door face of the front of the control box).



Route the cable as shown



Place the cable gland over the black cable coming from the vibrator switch box, but make sure that the retaining nut from the gland has been removed, as this has to be placed over the cable once inside the box).



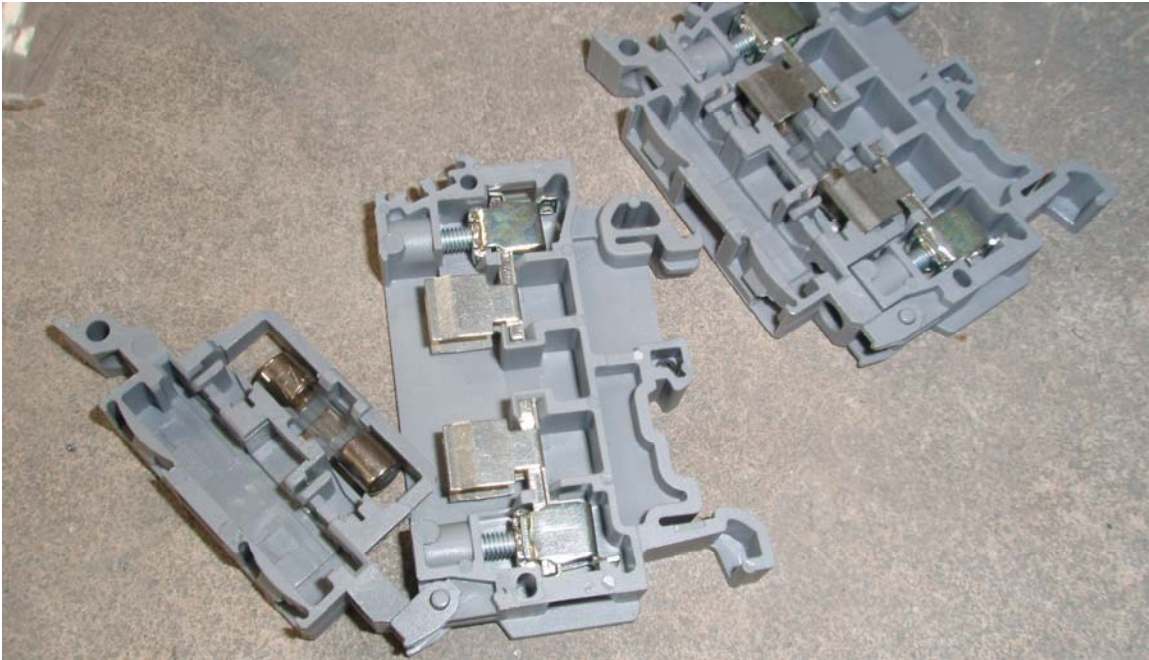
Assemble the cable into new hole in the MP-25 control box, then the cable gland.



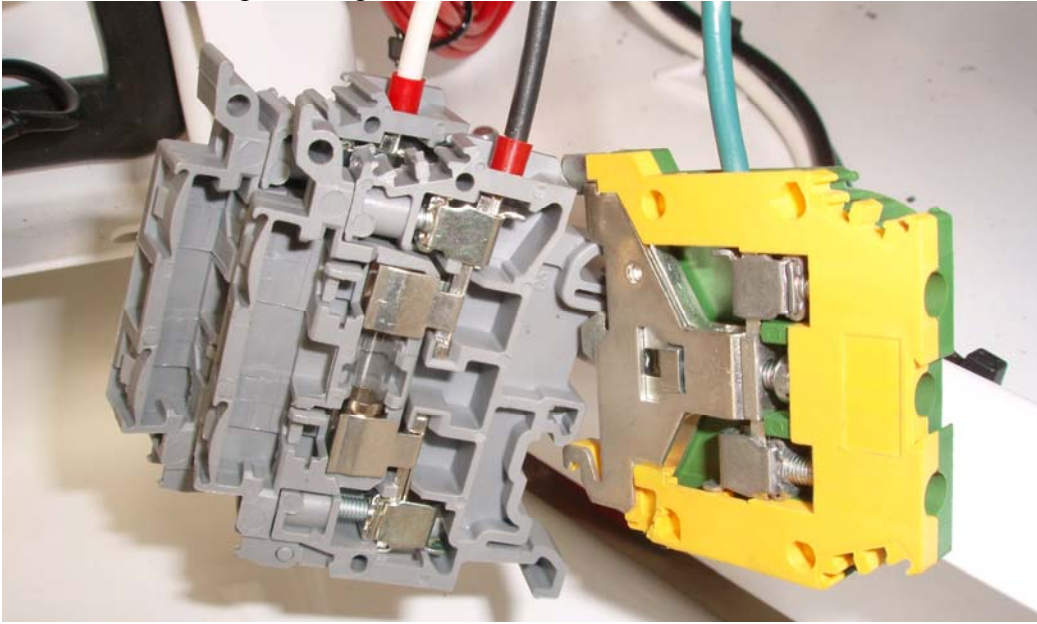
Inside the box, assemble the retaining nut over the cable and the gland and tighten the nut to secure the gland on the side of the box.



Assemble the fuses into the fuse holders as shown



Attach the wires from the vibrator switch box using the terminal screw driver, to the fuse holders and to the grounding connector.



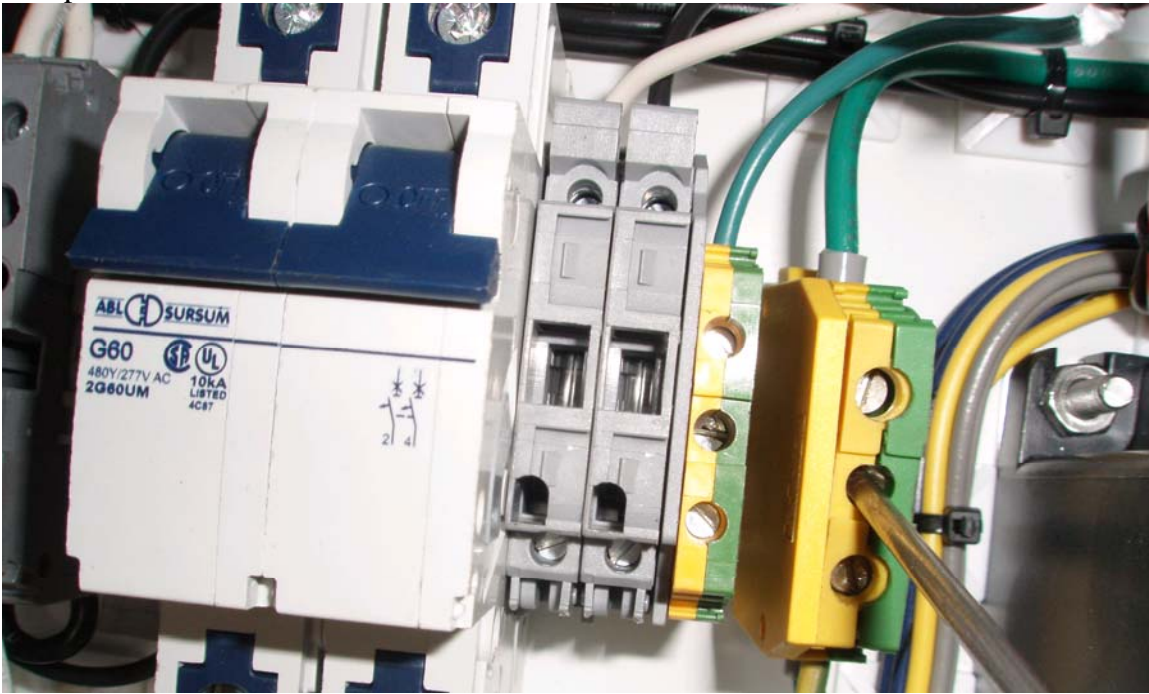
In order to be able to fit the extra fuse and earth connector to the DIN rail, items already fitted will need to be slide around and one of the existing clamps will need to be removed.

It is suggested that the illustrated clamp be removed, by loosening the central screw, which will allow the clamp to be “tipped” and lifted from the rail.



Attach the fuse holders and the earth connector to the DIN rail. The fuse holders just “snap” into position, the earth connector is placed over the DIN rail and the center screw is tightened to retain the item on the rail.

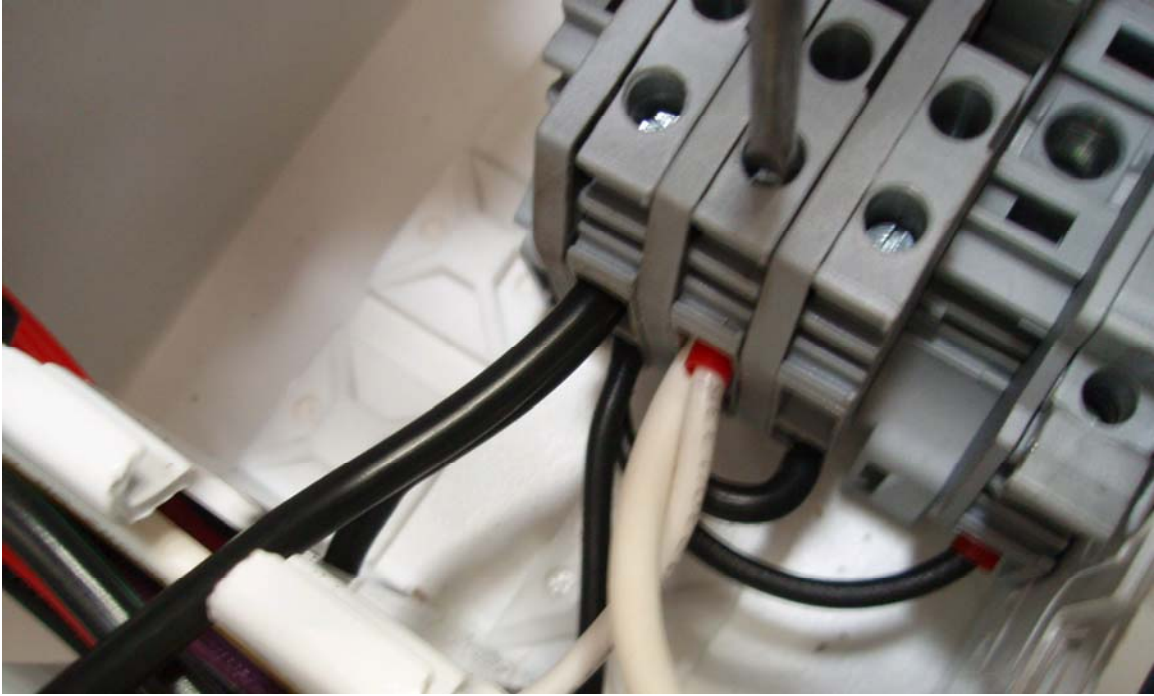
Loosen the existing earth clamp via the center screw, then slide along side the new earth clamp and secure



Once secured in place, the electrical feeds need to be “jumped” from the existing terminations over to the new fuse holders and the earth.

Locate the terminal block as shown, Loosen the wire retaining screw, and load the supplied short jumper leads into the white and black connectors together with the wire that is already fitted. Each block has a total of four possible wire connections, two inner and two outer.





Once the feed wires are attached then link them across to the new fused connectors and to the earth connector, then insert and secure using the screw driver



Wiring

Wiring the vibrator to a machine that has been supplied with a control panel with a hole provided for the cable gland, and with the fused connections inside the control box, is the same as wiring a retro fit unit, with the exception of the following.

No control box drilling is required.

No power feed “jumpering” is required

No clamp removal is required, or the repositioning of any components

Additional instructions are as follows.

Ensure that there is no power connected to the machine

Remove the fuses in the fuse holders, for the vibrator connections fitted to the machine

Place the white wire into the fuse holder fitted with the white feed wire, and using the terminal screw driver secure the wire in position.

Repeat the above operation using the black wire and the fuse holder fitted with the black feed wire.

Secure the earth wire into the earth connector using the same method as above.

Replace the fuses in the fuse holders.

Section 4 – Unit set up

Weight adjustment

The vibrator units are supplied from Machine Technologies, already adjusted to 33% of maximum capacity, being approximately 74 lbs of force.



Note, above there are 18 discs(9 discs shown) each able to apply approx 12.4lbs, the amount of force applied, is the difference between the two sides, in this case being 3, which equates to 3×12.4 , then doubled to give 74.4 lbs.

The force can be adjusted by removing the end covers, removing the clamping nuts, from each end of the vibrator motor shaft, and repositioning the weight discs. Each end of the shaft has to be the same, but the discs can be rotated by 180 degrees to increase or decrease the amount of “out of balance”, using all nine discs at each end.

Maximum vibration is when all nine discs are offset on the same side. Minimum vibration is when there is an even number of discs offset on either side of the shaft. Again both ends of the motor shaft must be the same.



Section 5 – Unit operation

With power connected to the MP-25, and the main isolator turned ON, the vibrator control switch can be switched to ON and the vibrator will start, switch the switch to OFF and the vibrator will stop.

General notes for operation

- Do not leave the vibrator running while the machine is not in operation, as this will pack the material, and cause different particle sizes to separate out in layers, causing possible finished material failure.
- Always check that the vibrator is secure and that all the fasteners are present.
- Never operate the vibrator when it is loose on the hopper.
- Always check the condition of the welds on the vibrator mounting plate and the hopper sides, prior to and during operation.
- Always check the condition of the vibrator cables, to the switch box and to the vibrator itself. Never operate the vibrator with damaged cables.

Section 6 – Simple maintenance

The vibrator is maintenance free, with the exception of keeping it clean, dry and free from damage. The unit can be washed down, but not pressure washed.

Occasional removal and cleaning of the end caps is suggested to ensure that there is no excessive moisture build up, that the weight locking nuts are always secure, that the bearings are still in good condition and that there is no excessive corrosion. The bearings are sealed for life, and if showing signs of wear must be replaced.



LIMITED WARRANTY POLICY

Machine Technologies warrants each of its new machines to be free of defects in material and workmanship under normal use and services for a period of one (1) year from the date of delivery.

The warranty is issued **ONLY** to the **INITIAL USER**. The warranty period begins when the product is delivered to the initial user or when first put into service, whichever occurs first. Said warranty is void if the machine is subject to misuse, neglect, accident or abuse.

Machine Technologies' obligation under this warranty is limited to correcting without charge, at its warehouse, any parts or parts thereof which shall be returned to its warehouse, transportation/shipping prepaid and upon Machine Technologies' examination proves to have been originally defective. Correction of such defects by repair or replacement shall constitute fulfillment of all obligations to the initial user. This warranty does not include labor or transportation charges unless specifically identified and authorized in writing by Machine Technologies. Nor does the warranty apply to any unit upon which repairs or unauthorized alterations have been made.

The warranty does not apply to normal maintenance service or to normal replacement of certain machine parts which are subject to normal wear (including but not limited to pins, bushings, rotors, stators, hoses, spray caps, spray nozzles, mixing shafts, shaft couplings and connectors, dosing shafts, pump shafts, filter elements and tires).

THIS IS A LIMITED WARRANTY AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE. In no event shall Machine Technologies be made liable for incidental, general or consequential damage, loss or any expense directly or indirectly related and resulting from use or lack of use caused by delay in delivery, parts failure, or any other causes associated with the product use. No person, firm or corporation is authorized to assume for Machine Technologies any other liability in connection with the sale of Machine Technologies products.