OPERATION, MAINTENANCE, AND INSTALLATION MANUAL

V.I.P.

With VIP-LOCK®: Positive Container Lock-in Device

Vert-I-Pack®

INCLUDES FL/3 MODELS & UNTOUCHABLE MODELS

MARATHON®

Vernon, AL
1-800-633-8974

Marathon Equipment Company OMI Manual No. 0020,
Revision Date: 05/14
www.marathonequipment.com

Table of Contents

OPERATION

Introduction

Thank you for purchasing a Marathon Vert-I-Pak® (VIP) Compactor.

This product is designed to give you reliable service and superior performance for years to come. The purpose of this manual is to provide the owner and/or operators with the necessary information to properly and safely install, operate, and maintain the equipment. Also included are sections regarding troubleshooting and service procedures. The manual is not intended as a primary training source, but as a reference guide for authorized, trained personnel. Each person involved in the operation, maintenance, and installation of the machine should read and thoroughly understand the instructions in this manual and follow ALL warnings.

Employers involved in the operation, maintenance, and installation of the equipment should also read and understand the most current version of the following applicable standards:

ANSI Standard No. Z245.2, "Stationary Compactors Safety Requirements"

A copy of this standard may be obtained from ANSI (www.ansi.org):

25 West 43rd Street
New York, NY 10036

OSHA Standards – 29 CFR

Refer to www.osha.gov for details:

- **Part 1910.147:** "The Control of Hazardous Energy (Lock-Out/Tag-Out)"
- **Part 1910.212:** "Machinery and Machine Guarding: General Requirements For All Machines"

Any service or repair instructions contained in this manual should be performed by factory authorized personnel only.

If you should need assistance with your equipment, please contact your distributor. When contacting your distributor, you will need to provide:

- Serial Number: _____
- Installation Date: _____
- Electrical Schematic Number: _____

If you have any safety concerns with the equipment, or need further information, please contact us at 1-800-633-8974 or:

Marathon Equipment Company
Attn: Field Service Department
P.O. Box 1798
Vernon, AL 35592-1798

Specifications

Clear Top Opening	23.5” x 46” (597 x 1168 mm)
Cycle Time	30 seconds
Total Normal Force	26,400 lbs (117 kN)
Total Maximum Force	30,200 lbs (134 kN)
Electric Motor	3 HP (available in 3/4 HP, 1 PH)
Voltage	3/60/208, 230, 460; 1/60/230

Configurations

The Vert-I-Pak compactor is available in a number of configurations:

Front Loader	**Container Size**
• Front/Rear Feed (Untouchable)	2.75yd^3 (2.1m^3)
• Front Feed	3yd^3 (2.3m^3)
• Front/Rear Feed	4yd^3 (3.1m^3)
• Front/Rear Feed	6yd^3 (4.6m^3)
• Front/Rear Feed	8yd^3 (6.1m^3)
• Side Feed[1]	6yd^3 (4.6m^3)
• Side Feed1	8yd^3 (6.1m^3)
Rear Loader	**Container Size**
• Front Feed	4yd^3 (3.1m^3)
• Rear Feed	4yd^3 (3.1m^3)

Refer to Figure 1 on page 1-3.

With the exception of the Side Feed configurations, the front and rear feeds can be reversed if required. Refer to Converting To Opposite Feed on page 2-33.

[1] Reversible/adjustable feature not available on Side Feed models.

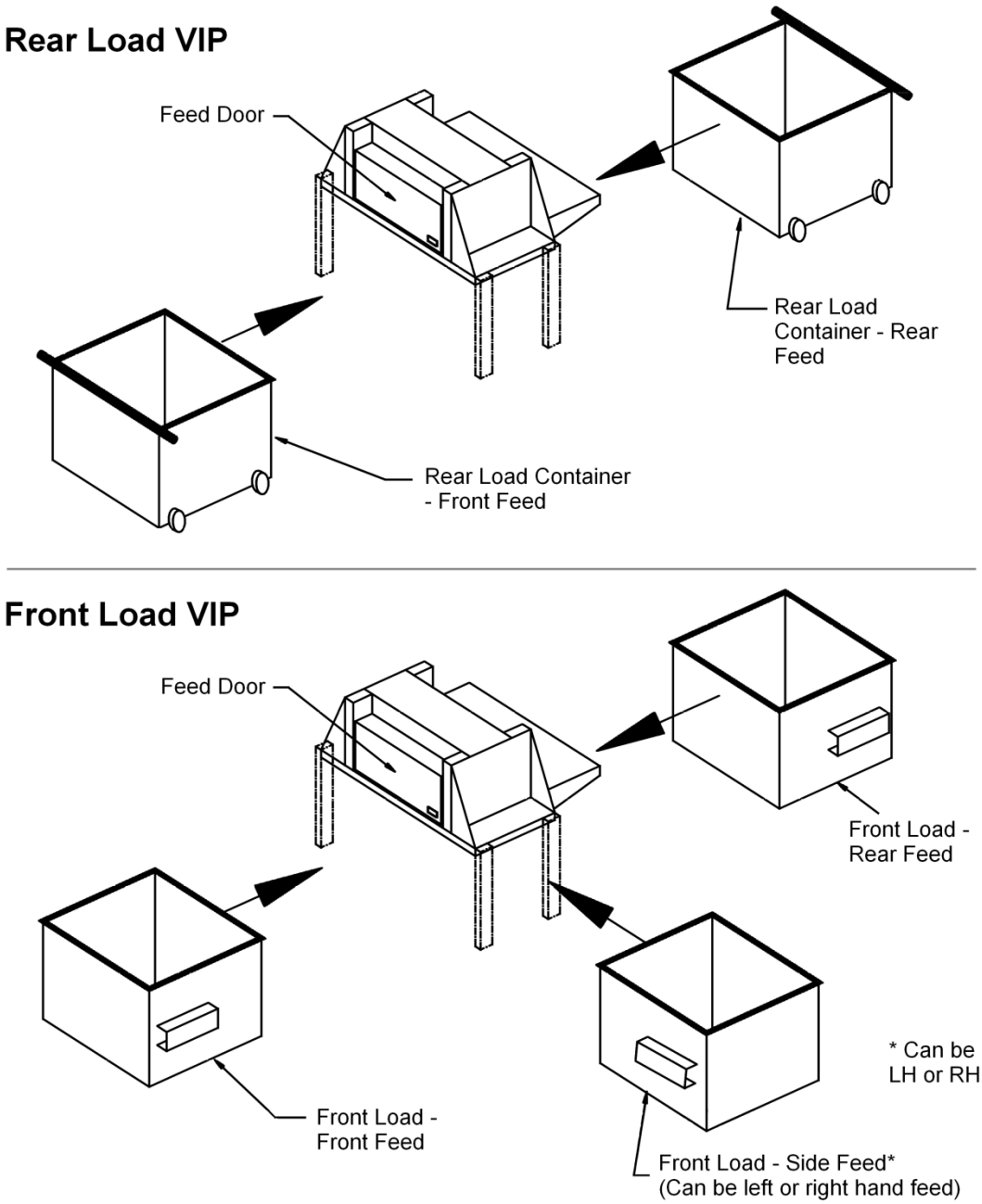


Figure 1 - Load / Feed Configurations

Pre-Operation Instructions

WARNING: Do not operate compactor until operating instructions are thoroughly understood. Wear safety glasses and gloves when operating this equipment.

This machine starts automatically. Stay clear of all internal parts of the compactor during operation. Failure to do so could result in serious personal injury or death!

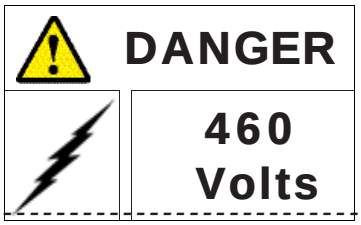
Never enter any part of compactor unless the disconnect switch has been turned off, padlocked, and all stored energy sources have been removed. See Lock-Out & Tag-Out Instructions on page 2-1.

Before starting the compactor, be sure no one is inside. Be certain that everyone is clear of all operation and pinch point areas before starting.

Employers should allow only authorized and trained personnel to operate this compactor.

This compactor is equipped with a key operated locking system. Keys should be in possession of only authorized personnel. Federal regulation prohibits operation by persons under 18 years of age. Turn OFF and remove the key after use.

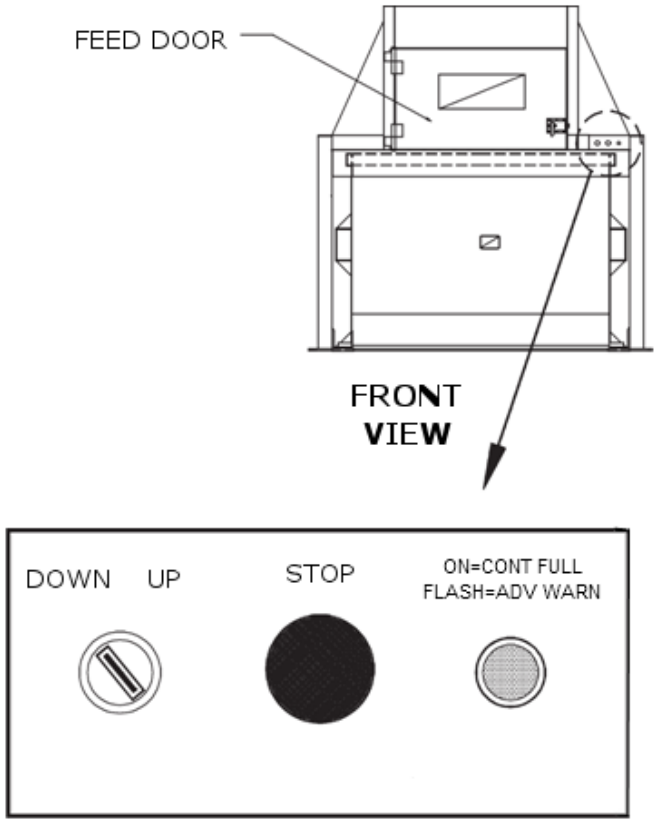
Do not remove access covers except for servicing. Only authorized service personnel should be allowed inside. All access covers on the compactor body should always be secured in place when the unit is operating.
See **Lock-Out & Tag-Out Instructions on page 2-1**.



Only authorized personnel should be allowed inside the panel box. The panel box contains high voltage components. See **Lock-Out & Tag-Out Instructions on page 2-1.**

Operator Controls

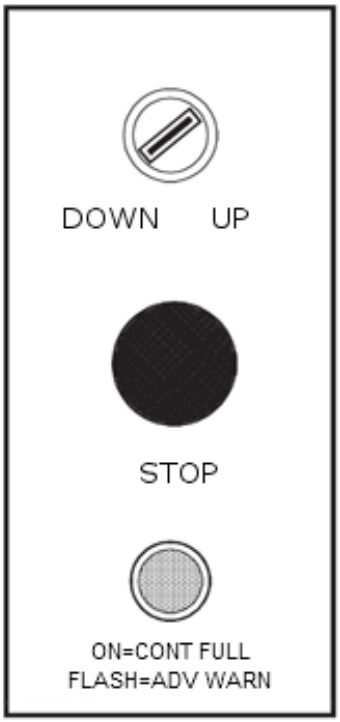
Standard Unit



1. **DOWN/UP (Keyed Start Switch)** – This spring-return switch requires a key for operation. Insert the key in the DOWN position and turn clockwise to the UP position and release. The compaction ram travels to the UP position and stops. At that time, the feed door can be opened for loading of refuse. When the material is loaded, close the door. The ram automatically compacts the refuse, returns to the midpoint position and stops. After use, remove the key.
2. **EMERGENCY STOP** – When depressed, this mushroom head pushbutton stops ALL powered operation of the compactor. Push this button to stop the machine in the event of an emergency or any time the machine needs to be stopped.

   NOTE: Be thoroughly familiar with the location of each emergency stop button BEFORE operating the machine.
3. **INDICATOR LIGHT (ON=CONT FULL + FLASH=ADV WARN) –**
   - **ADVANCED WARNING** – Flashes to alert the operator that 400 psi is remaining before the pressure switch activates and shuts the unit OFF, when the container is full.
   - **CONTAINER FULL** – Lit permanently indicates that the container is full. To reset the light, empty the container, and replace the container.

Untouchable Unit

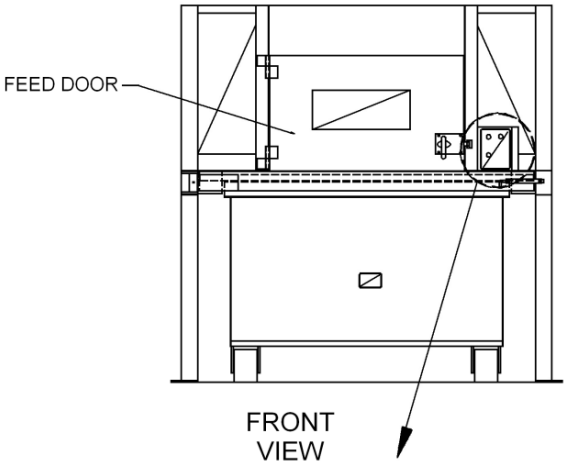


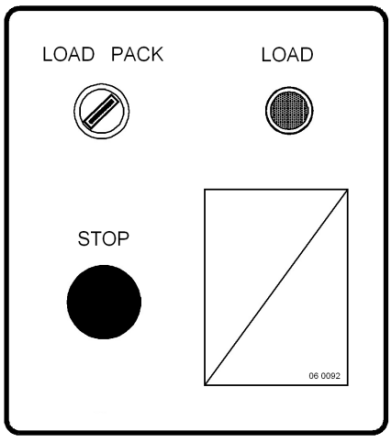
1. **DOWN/UP (Keyed Start Switch)** – This spring-return switch requires a key for operation. Insert the key in the DOWN position and turn clockwise to the UP position and release. The compaction ram travels to the UP position and stops. At that time, the feed door can be opened for loading of refuse. When the material is loaded, close the door. The ram automatically compacts the refuse, returns to the midpoint position and stops. After use, remove the key.
2. **EMERGENCY STOP** – When depressed, this mushroom head pushbutton stops ALL powered operation of the compactor. Push this button to stop the machine in the event of an emergency or any time the machine needs to be stopped.

   NOTE: Be thoroughly familiar with the location of each emergency stop button BEFORE operating the machine.

4. **INDICATOR LIGHT (ON=CONT FULL + FLASH=ADV WARN) –**
   - **ADVANCED WARNING** – Flashes to alert the operator that 400 psi is remaining before the pressure switch activates and shuts the unit OFF, when the container is full.
   - **CONTAINER FULL** – Lit permanently indicates that the container is full. To reset the light, empty the container, and replace the container.

3 Cubic Yard Front Load Unit





1. **LOAD / PACK (Keyed Start Switch)** – This two-position switch requires a key for operation. Insert the key in the PACK position and turn counter-clockwise to the LOAD position and release. The compaction ram travels to the UP position and stops. At that time, the feed door can be opened for loading of refuse. When the material is loaded, close the door. Turn the key to the PACK position and the ram compacts the refuse and stops. After use, remove the key.
2. **EMERGENCY STOP** – When depressed, this mushroom head pushbutton stops ALL powered operation of the compactor. Push this button to stop the machine in the event of an emergency or any time the machine needs to be stopped.

   NOTE: Be thoroughly familiar with the location of each emergency stop button BEFORE operating the machine.
3. **LOAD** – Illuminates when the ram is in the UP position, indicating that the compactor door can be opened and refuse loaded.

Operating Instructions

Standard and Untouchable Unit

WARNING: Do NOT operate compactor until operating instructions are thoroughly understood.

Prior to start-up of the compactor each day, check the items found in the “DAILY” list in Periodic Maintenance on page 2-4.

1. Insert the key into the key switch (DOWN position). Turn it clockwise (to the UP position), hold for 1 to 2 seconds, then release. The compactor ram retracts to the top position and stops.
2. Open the feed door and place the material to be discarded into the compactor.
3. Close the feed door.

   The ram automatically cycles down and compacts the refuse. The ram then returns to the mid position and stops.
4. Repeat steps 1 - 3, if necessary, after the compactor has stopped.
5. When you have finished using the compactor, remove the key from the key switch.
6. When the CONTAINER FULL light comes on, it is time to empty the container. Refer to Hauler Information on page 3-9.

IN CASE OF EMERGENCY:
Push the large RED button to STOP

Tips For Maximum Compaction

- Place refuse uniformly across the compaction area.
- ALWAYS keep the feed door closed. This assures that the ram has compacted the refuse and has stopped at the mid position where it holds constant pressure on the refuse.

3 Cubic Yard Front Load Unit

WARNING: Do NOT operate compactor until operating instructions are thoroughly understood.

Prior to start-up of the compactor each day, check the items found in the “DAILY” list in Periodic Maintenance on page 2-4.

1. Insert the key into the key switch (PACK position). Turn it counter-clockwise to the LOAD position. The compactor ram retracts to the top position and stops. The LOAD light will then illuminate.
2. Open the feed door and place the material to be discarded into the compactor.
3. Close the feed door.
4. Turn the key to the PACK position.

   The ram automatically cycles down, compacts the refuse then stops.
5. Repeat steps 1 - 4, if necessary, after the compactor has stopped.
6. When you have finished using the compactor, remove the key from the key switch.

IN CASE OF EMERGENCY:

Push the large RED button to STOP

Tips For Maximum Compaction

- Place refuse uniformly across the compaction area.
- ALWAYS compact (PACK) the refuse that is put into the compactor. This assures that the ram has cycled and has stopped at the mid position where it holds constant pressure on the refuse.

Decals

Warning Decal Requirements

When your compactor leaves the factory, several WARNING DECALS are installed for your protection. These labels are subject to wear and abuse due to the nature of the refuse handling operation. THESE DECALS MUST BE MAINTAINED. Additional decals may be purchased from your distributor or from Marathon Equipment Company. Refer to Decal Part Numbers on page 1-10.

Refer to Decal Placement starting on page 1-12.

Decal Part Numbers

PART #	DESCRIPTION
06-0038	WARNING DO NOT REMOVE ACCESS COVER
06-0039	DANGER DO NOT ENTER
06-0057*	CAUTION STAND CLEAR WHEN CONTAINER...
06-0068*	DO NOT PLAY IN, OR AROUND...
06-0078	ATTENTION DRIVER: REMOVE CONTAINER...
06-0092	OPERATING INSTRUCTIONS
06-0121	NOTICE FEDERAL REGULATIONS...
06-0249	LOCKOUT AND TAGOUT POWER BEFORE...
06-0345	VIP (VERT-I-PACK)
06-0364	UNIT SERIAL NUMBER PLATE
06-0531	LOADING INSTRUCTIONS
06-1839	AMERICAN FLAG
06-2203*	WHITE REFLECTIVE TAPE
06-2394*	CAUTION CONTAINER MUST BE PLACED...
06-3044	DANGER VOLTS (W/BLANKS)
06-3123	CONFINED SPACE
06-3435	CRUSHING/SHEARING HAZARD
06-3976	WARNING, POTENTIAL SHOCK AND ARC FLASH
06-3977	WARNING, DO NOT OPERATE
06-3978	DANGER, DO NOT OVERRIDE OR TAMPER
06-0133	WARNING, KEEP OFF, FALL/CRUSH HAZARD
06-0279*	MARATHON CONTAINERS MODEL, SERIAL #
06-0041	DANGER: CRUSHING/SHEARING HAZARD!
06-0043	DANGER: 208 VOLTS
06-0044	DANGER: 230 VOLTS
06-0045	DANGER: 460 VOLTS

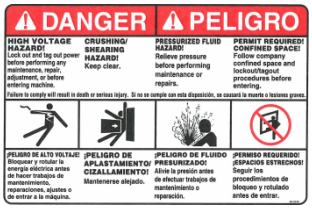
*** Only on Container**

Decal Images

06-0038

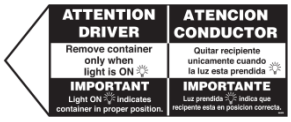
06-0039

06-0249

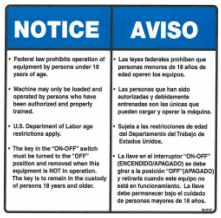


06-0133

06-0078



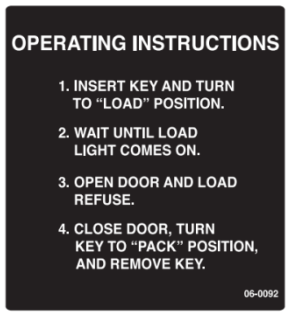
06-0121



06-3977

06-0057

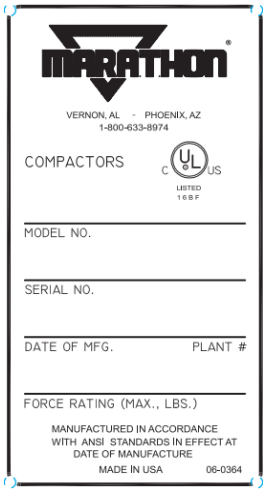
06-0092



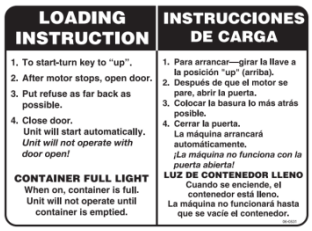
06-3123

06-3978

06-0364



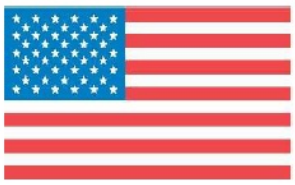
06-0531



06-3044

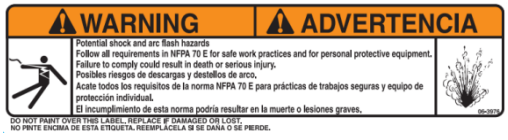
06-0068

06-1839



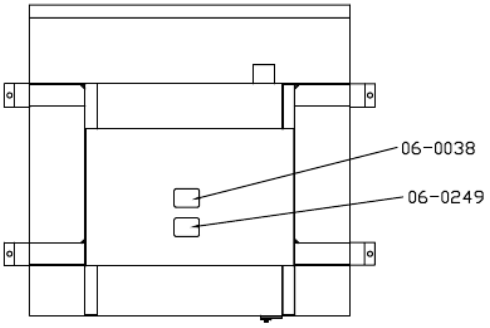
06-0345

06-3976

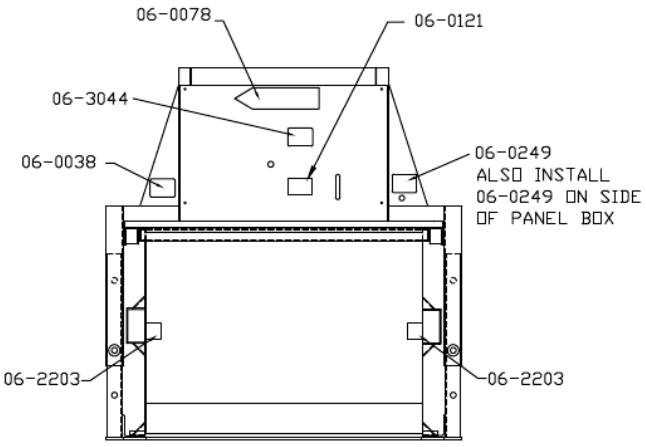


Decal Placement

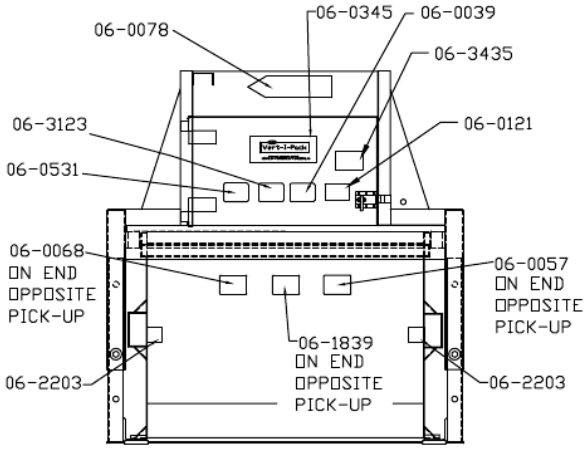
Standard and Untouchable Unit



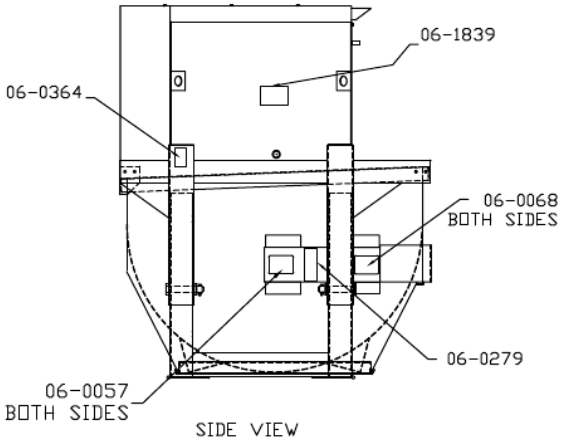
TOP VIEW



REAR VIEW

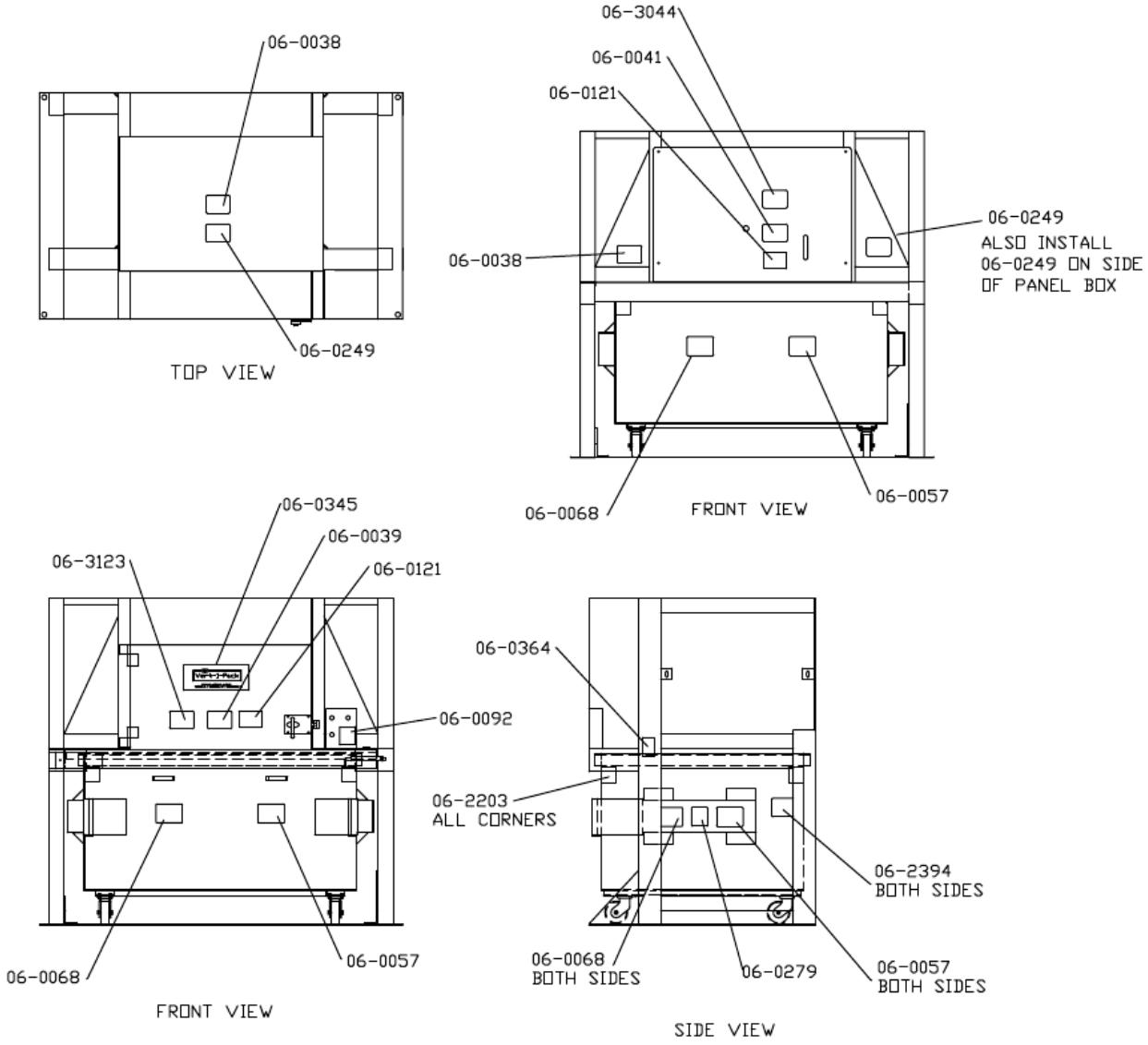


FRONT VIEW

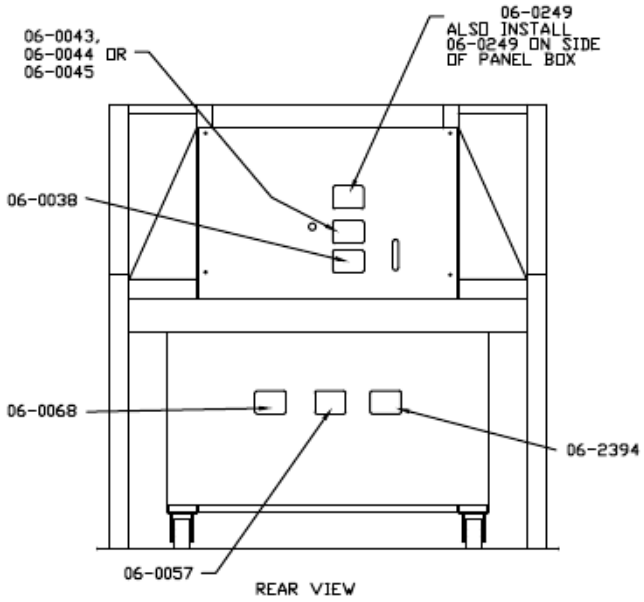


SIDE VIEW

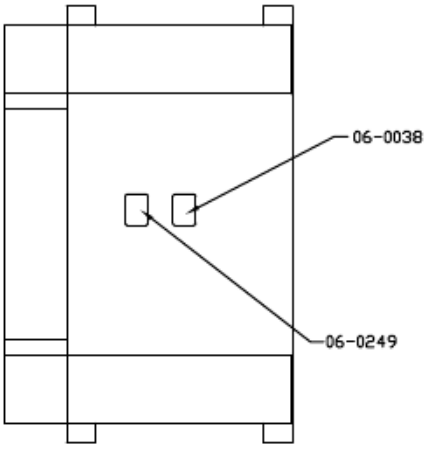
3 Cubic Yard Front Load Unit



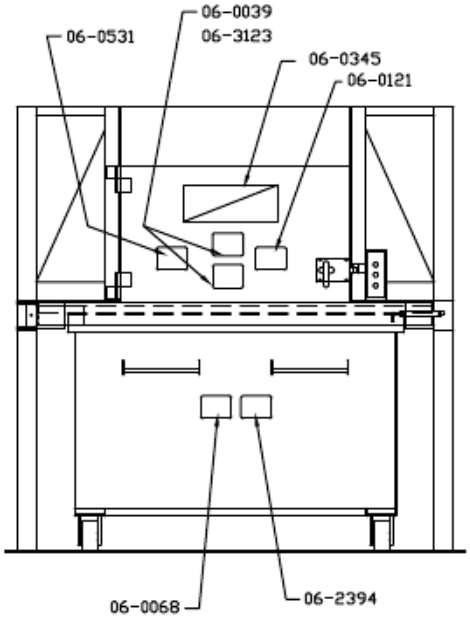
3 Cubic Yard Rear Load Unit



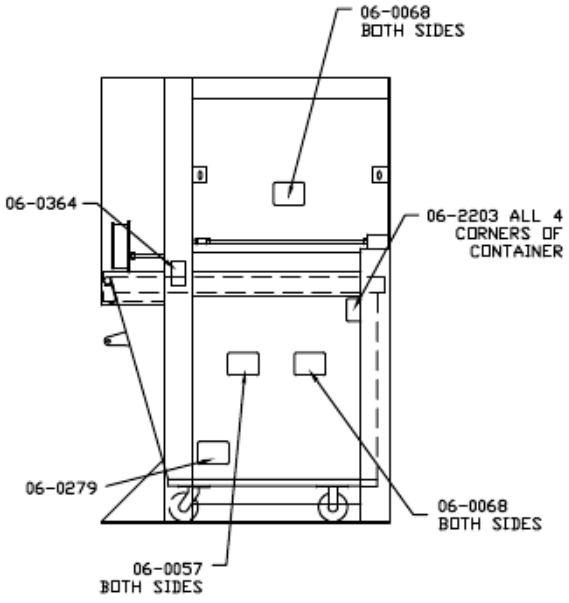
REAR VIEW



TOP VIEW



FRONT VIEW



SIDE VIEW

PARTS & MAINTENANCE

LOCK-OUT & TAG-OUT INSTRUCTIONS

FOREWORD: **Before entering any part of the compactor, be sure that all sources of energy have been shut off, all potential hazards have been eliminated, and the compactor is locked-out and tagged-out in accordance with OSHA and ANSI requirements.**

The specific lock-out and tag-out instructions may vary from company to company (i.e. multiple locks may be required, or other machinery may need to be locked-out and tagged-out). The following instructions are provided as minimum guidelines.

INSTRUCTIONS

1. **Notify all affected employees that servicing or maintenance is required on the compactor and that the compactor must be shut down and locked out to perform the servicing or maintenance.**

2. **Perform a hazard assessment;**
    a. **The authorized employee shall refer to the company procedure to identify the type and magnitude of the energy that the compactor utilizes, shall understand the hazards of the energy, and shall know the methods to control the energy.**
3. **Wear proper personal protective equipment.**

4. **If compactor is operating, it must be shut down by the normal stopping procedure. If the ram is pressing against a load, move the ram rearward before shutting the compactor down.**

5. **De-activate the energy isolating device(s) so that compactor is isolated from the energy source(s).**
    a. **Shut down all power sources.**
    b. **Move the main disconnect lever to the OFF position.**

6. **Lockout the energy isolating device(s) with assigned individual lock(s).**
    a. **Padlock the disconnect lever with a keyed padlock and take the key with you.**
    b. **Along with the padlock, place an appropriate, highly visible, warning tag on the disconnect lever. The tag should provide a warning such as:**
    "Danger: Do not operate equipment. Person working on equipment." or "Warning: Do not energize without the permission of _____."

    c. **Place operating components in such a position so as not to be subject to possible free fall and/or installation of additional blocking devices to prevent this potential for any raised or elevated component.**

7. **Stored hydraulic energy must be removed from the compactor hydraulic circuit for complete lock-out and tag-out. Make sure that this energy has been relieved by manually depressing the solenoid valve pin located in the center of each coil end of the directional control valve.**

8. **After locking and tagging the compactor, ensure that the compactor is disconnected from the energy source by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating control(s) or by testing to make certain the equipment will not operate. Try to start and operate the compactor (as outlined in the Operating Instructions) to make sure the lock-out and tag-out is effective. If the lock-out and tag-out is effective, remove the key from the key switch and take it with you.**

9. **Before entering compactor perform hazard assessment for confined space requirements(hazardous fumes, dust or other toxic material).**

10. **The stationary compactor is now locked out.**

RESTORING SERVICE

When the servicing or maintenance is completed and the stationary compactor is ready to return to normal operating condition, the following steps shall be taken:

1. **Check the compactor and the immediate area around the compactor to ensure that nonessential items have been removed and that the compactor components, guards and covers are operationally intact.**

2. **Check the work area to ensure that all employees have been safely positioned or removed from any hazardous area.**

3. **Verify that the controls are in neutral.**

4. **Remove the lockout devices and reenergize the compactor.**

   Note: The removal of some forms of blocking may require re-energizing of the compactor before safe removal.

5. **Notify affected employees that the servicing or maintenance is completed and the compactor is ready for use.**

6. **Reassess area to determine all hazards are protected.**

During normal business hours, please call:

1-800-633-8974

ATTN: MARATHON® Service Department

or log on to: www.parts1stop.com

Normal Business Hours:

Monday - Thursday	7:00am - 5:30pm
Friday	7:00am - 4:30pm
Saturday	7:00am - 12:00pm

(Central Standard Time)

Periodic Maintenance

DANGER: Only authorized and trained personnel should perform the following procedures. Lock-Out and Tag-Out the compactor as specified in Lock-Out & Tag-Out Instructions on page 2-1.

Daily (or every 8 hours of operation)

1. Check for any oil leaks. Keep all hydraulic fittings tight. Check the oil level and temperature in the hydraulic reservoir. Maintain oil level above 3/4 full in the sight gauge. Oil level should be checked with ram in the retracted position. The temperature should be below 160° F.
2. Check all remote emergency stop locations. Make sure that each emergency stop button is not obstructed, damaged, or depressed.

Weekly (or every 40 hours of operation)

1. Clean around the machine to remove any operator hazards.
2. Check the function of all emergency stop buttons and interlock switches.
3. Make sure all lights, decals, and operator instructions are clear and visible. Clean as required.

Monthly (or every 160 hours of operation)

1. Check the function of all controls (lights, switches, etc.).
2. Check all hoses for chaffing, rubbing, or other deterioration and damage.
3. Check for any obvious unsafe conditions in the compactor area.
4. Check oil level in hydraulic reservoir. Level should be 3/4 of sight gauge.
5. Clean out debris from above compactor ram.
6. Check the magnetic door lock for correct operation. Adjust if required; refer to Magnetic Door Interlock Switch Adjustment & Testing on page 2-10.
7. Check container gone interlock for correct operation. Adjust if required; refer to Container Interlock Adjustment on page 2-11.
8. Lubricate the Vert-I-Pack. Refer to Lubrication Diagram on page 2-7 for details.

Quarterly (or every 500 hours of operation)

1. Check the function of all controls and options (emergency stop buttons, timer, lights, switches, etc.).
2. Check the connections and seals on all cylinders for leaks.
3. Check the cylinder pins and make sure they are secure.

Annually (or every 2000 hours of operation)

1. Lubricate electric motor bearings annually per the manufacturer's instructions.
2. Change the hydraulic fluid in the entire system. If existing oil is reused, it should be tested by a laboratory to ensure it meets necessary specifications. Additives can be added to bring oil back to standards. Before returning oil to the tank, it should be filtered through a minimum 6 micron filter. The hydraulic tank should be cleaned inside with a nonflammable solvent and thoroughly dried before replacing the oil.
3. Filter maintenance:
   a. Hydraulic suction filters should be cleaned at yearly intervals.
   b. Care should be exercised in cleaning the filter to ensure that the element is not torn. Clean the filter with a soft brush and standard industrial solvent.
   c. Replace the filter after cleaning. Securely tighten the union or bolts. Pump noise and a "crackle" sound are most often caused by air entering the pump suction line. Tightening the suction fittings will usually eliminate problem.

Recommended Oils

Union-UNAX-46, UNAX-AW46
Gulf-Harmony 47, Harmony 48-AW
Exxon-Teresstic 46, NUTO 46
Texaco-Rando 46
Chevron-AW 46
Shell-Turbo 46, Tellus 46
Citgo-Pacemaker 46, Tellus-AW46
Conoco-Super Hydraulic Oil 46
Quaker State-Dextron II (ATF) Automatic Transmission Fluid
Amoco-Rycon MV Cold Weather Fluid

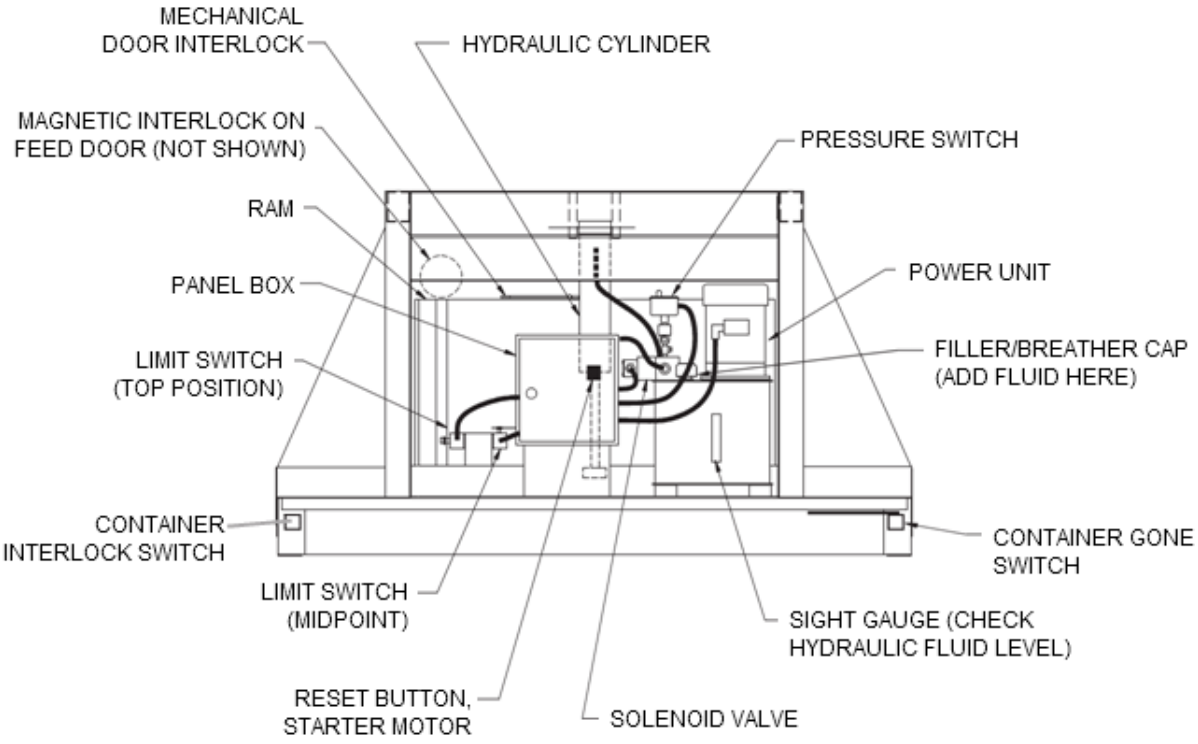
Component Locations

WARNING: Never enter any part of the compactor until the unit has been locked-out and tagged-out per Lock-Out & Tag-Out Instructions on page 2-1.

The diagram below shows the location of key components of the VIP.

NOTE: Untouchable model will vary in the power unit placement (side mounted with side access); however the components do not vary.

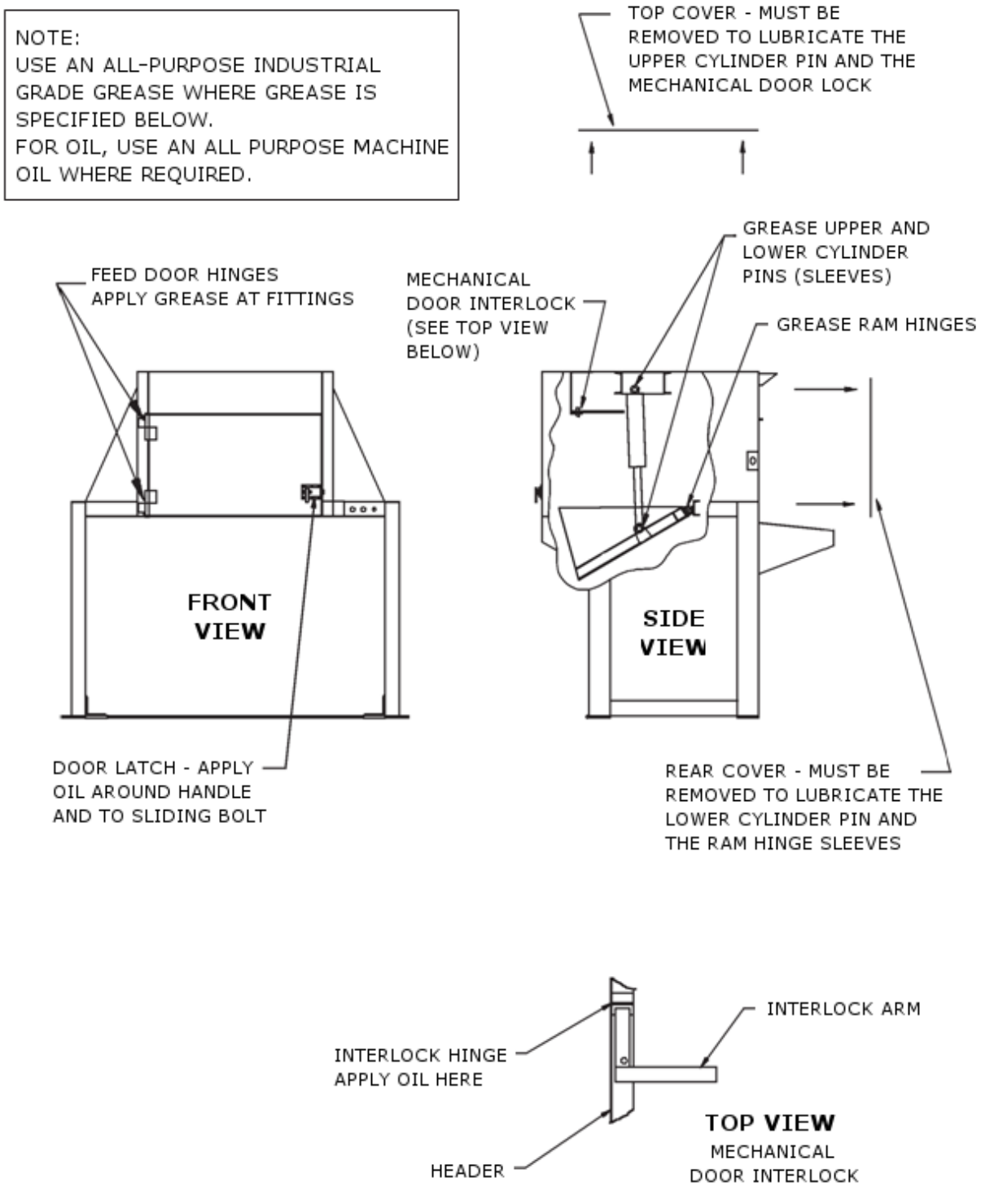
This section of the manual includes procedures for maintaining most of these components. For information not covered, contact Marathon Equipment Company; refer to page 2-3 for details.



REAR VIEW OF VIP
(END OPPOSITE FEED DOOR, REAR ACCESS COVER REMOVED)
(FOR ILLUSTRATION ONLY)

Lubrication Diagram

WARNING: Never enter any part of the compactor until the unit has been locked-out and tagged-out per Lock-Out & Tag-Out Instructions on page 2-1.



NOTE: Covers MUST be replaced before operating the unit.

Limit Switch Adjustment (Top)

WARNING: Never enter any part of the compactor until the unit has been locked-out and tagged-out per Lock-Out & Tag-Out Instructions on page 2-1.

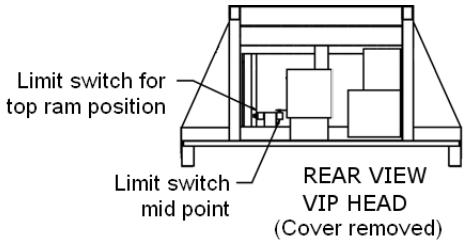
---

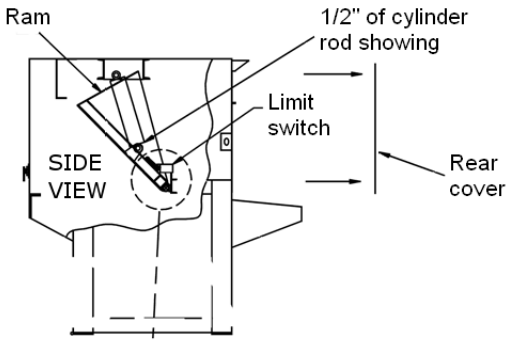
1. Locate top position limit switch.

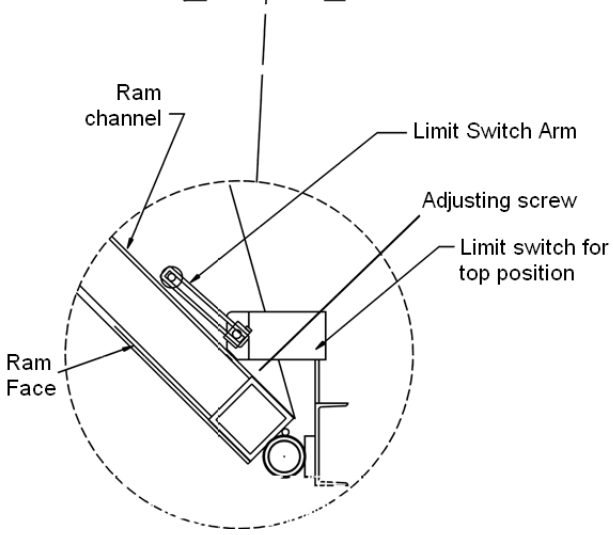
   NOTE: The limit switch for the ram top position should be set to actuate when the cylinder is ½" (12.7 mm) from bottoming out.
2. Loosen limit switch arm.
3. Make sure that compactor is clear of all personnel. Raise ram to a position where the cylinder lacks ½" (12.7 mm) before bottoming out.
4. Position limit switch arm against ram channel and tighten adjusting screw.
5. Make sure that compactor is clear of all personnel and test run compactor.

   NOTE: If the cylinder bottoms out, repeat steps 3 & 4 increasing the ½" (12.7 mm) measurement by an additional 1/8" (3.2 mm).
6. When adjustment is complete, replace the cover.

   NOTE: Covers MUST be replaced before operating the unit.







Limit Switch Adjustment (Mid Point)

WARNING: Never enter any part of the compactor until the unit has been locked-out and tagged-out per Lock-Out & Tag-Out Instructions on page 2-1.

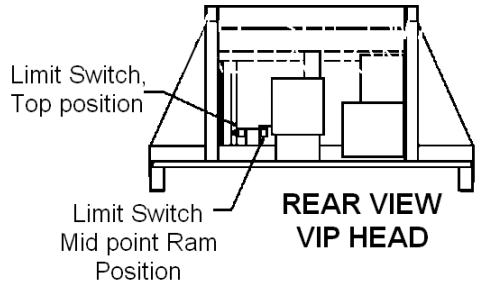
---

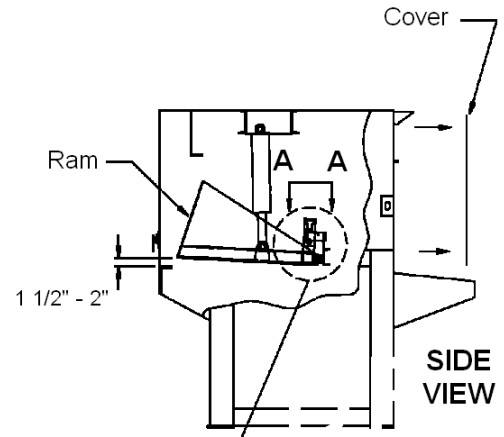
1. Locate the midpoint limit switch.

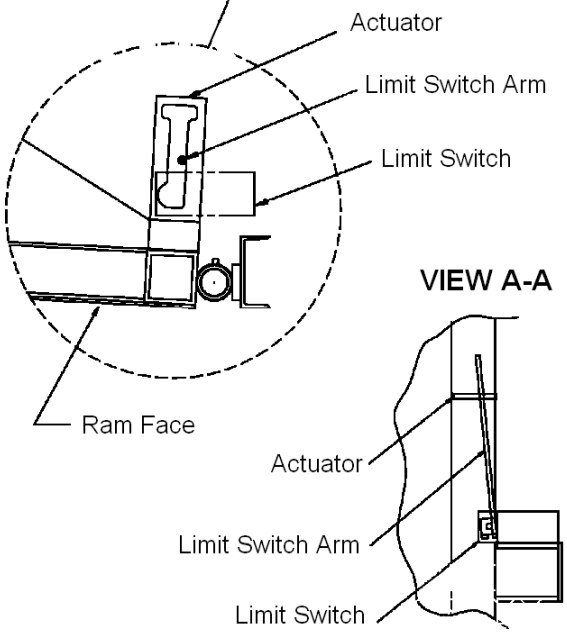
   NOTE: The limit switch for the ram midpoint position should be set so the ram face stops 1 ½" – 2" (38 – 50 mm) above the bottom of the door opening.
2. Run ram to UP position and open the door. Make a 6" (152.5 mm) chalk mark horizontally located 21 ¼" (540 mm) above the bottom of the door opening on the inside wall of the VIP.
3. Close the door and remove the rear access cover.
4. Clear the compactor area of all people and run the ram down all the way, then push the STOP button.
5. Loosen limit switch arm (rod) and slide out of actuator.
6. Clear the compactor area of all personnel. Manually engage the motor starter until the top of the ram reaches the chalk mark.

   NOTE: Release the starter before the ram reaches the mark because the ram will drift into position.
7. Extend the limit switch arm back through the actuator and position against the back of the slot in the actuator (as shown).
8. Tighten the Allen screws on the arm assembly.
9. Clear the compactor area of all people and run the machine to check correct operation.
10. Replace rear access cover.

    NOTE: Covers MUST be replaced before operating the unit.





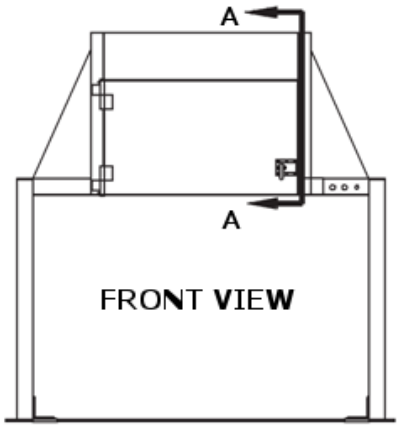


Magnetic Door Interlock Switch Adjustment & Testing

WARNING: Never enter any part of the compactor until the unit has been locked-out and tagged-out per Lock-Out & Tag-Out Instructions on page 2-1.

Adjustment

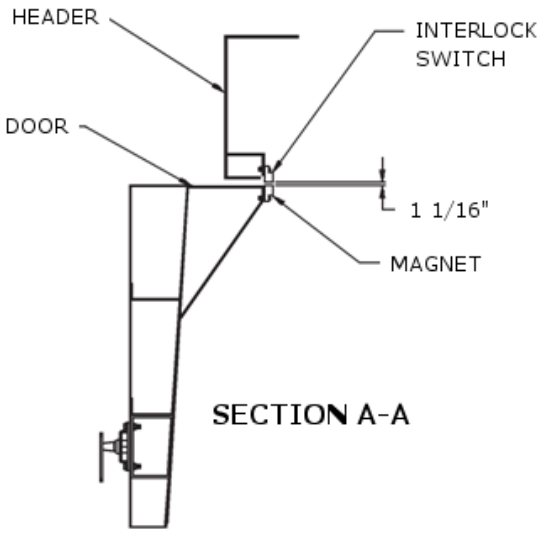
1. Loosen screws holding interlock switch to bracket
2. Adjust switch up or down until gap is between magnet and interlock switch is 1/16” (1.6 mm). Tighten all screws.
3. Turn power ON.
4. Clear the compactor area of all people and run the machine to check correct operation. If adjustment is correct and interlock is in good condition, unit should not run with the door open.



Testing

If further testing is required, a qualified and authorized electrician should make the following check:

1. With the power on the panel box, connect a voltmeter (120V) to terminal #2 and #7. The container interlock is made if the indicated voltage is 110V.
2. Connect the volt meter to terminal #4 and #7. The meter should read 110V with the door closed.
3. While watching the volt meter, have someone open the door. The voltage should then read 0 volts, indicating a good switch.

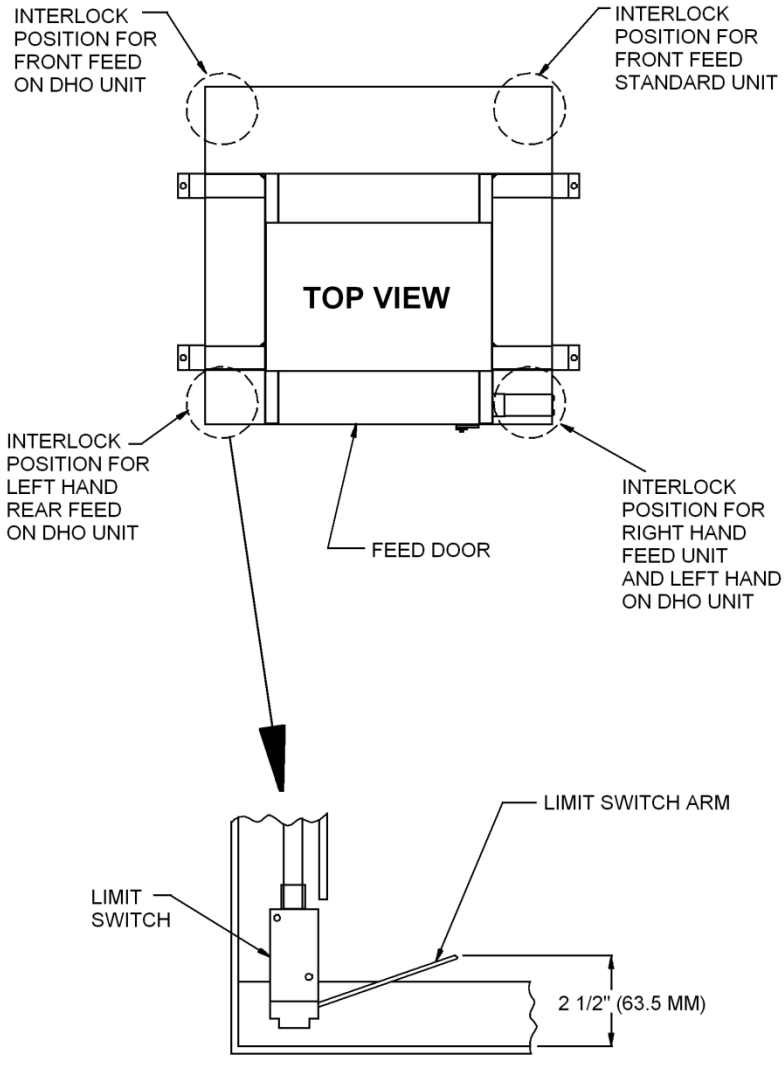


Container Interlock Adjustment

WARNING: Never enter any part of the compactor until the unit has been locked-out and tagged-out per Lock-Out & Tag-Out Instructions on page 2-1.

---

1. Lock-Out and Tag-Out the compactor as specified in Lock-Out & Tag-Out Instructions on page 2-1.
2. Loosen screw/nut holding limit switch arm. Make sure arm/rod measures 5” (127 mm).
3. Adjust arm until it is 2 ½” (63.5 mm) from container stopping point as shown below.
4. Re-tighten screw/nut and check measurements.



TOP VIEW OF INTERLOCK SWITCH
SHOWN IN POSITION PROVIDED WITH REAR FEED UNITS

Hydraulic System Pressure Setting

WARNING: Never enter any part of the compactor until the unit has been locked-out and tagged-out per Lock-Out & Tag-Out Instructions on page 2-1.

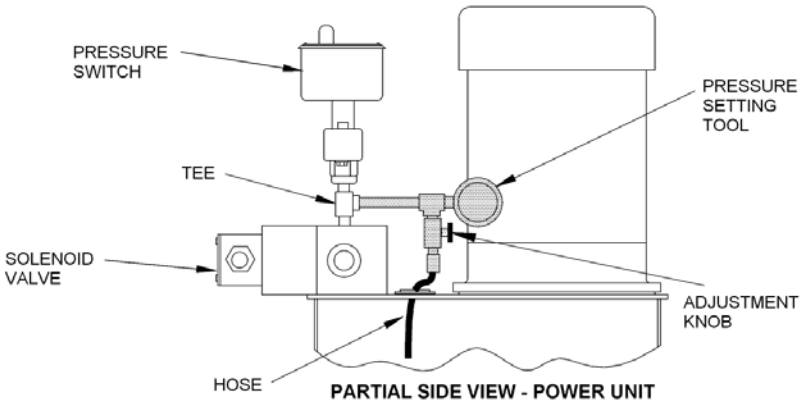
Tools required: Pressure-setting tool (part no. 29222)

1. Lock-Out and Tag-Out the compactor as specified in Lock-Out & Tag-Out Instructions on page 2-1.
2. Push the STOP button.
3. Relieve the system pressure by manually depressing the solenoid valve pin (spool) in the end of the valve.
4. Remove the ¼" (6.35 mm) pipe plug from the tee below the pressure switch and install the pressure-setting tool in the tee (threaded pipe section of the tool screws into the tee).
5. Remove the filler/breather cap from the power unit tank and insert the hose from the tool.

   NOTE: Make sure hose is inserted completely.
6. Remove the silver cap on top of the pressure switch and turn the adjustment screw counter-clockwise 3 or 4 turns to deactivate the pressure switch.
7. Start the compactor.
8. Pull the midpoint rod out of the bracket so that the ram bottoms out.
9. Adjust the pressure setting, using the adjustment knob on the tool, to 1700 psi and turn the adjustment screw on the circuit 2 pressure switch clockwise; watch the PLC screen and turn the adjustment screw until IH is highlighted.
10. Replace the rod to its original position.
11. Adjust the pressure setting, using the adjustment knob on the tool, to 2100 psi and turn the adjustment screw on the circuit 1 pressure switch clockwise until the ram reverses.

    NOTE: Make sure the ram is in the down position before proceeding.
12. Reseal the pressure switch, and manually relieve the pressure on the solenoid.
13. Remove the pressure-setting tool and replace the ¼" (6.35 mm) pipe plug. System pressure is now set.

    Relief pressure is 2400 psi. The relief valve is located internal to the pump and should not be adjusted.



PARTIAL SIDE VIEW - POWER UNIT

Cylinder Replacement

WARNING: Never enter any part of the compactor until the unit has been locked-out and tagged-out per Lock-Out & Tag-Out Instructions on page 2-1.

---

1. Lock-Out and Tag-Out the compactor as specified in Lock-Out & Tag-Out Instructions on page 2-1.
2. Remove access covers.
3. Positively support the ram with a fork lift and/or 4” x 4” (100 mm x 100 mm) wooden timbers.

   WARNING: Make sure hydraulic cylinder is securely supported before proceeding.
4. Relieve hydraulic pressure by depressing the solenoid valve pin/spool.
5. Remove hoses.

   NOTE: Disconnect one hydraulic hose at a time, removing hose fittings slowly. Plug ALL ports and hose ends.
6. Remove cylinder pins.
7. Remove cylinder.
8. Install the cylinder; process is the reverse of the above steps.

   NOTE: Before reinstalling cylinder, check cylinder pin, and cylinder rod for signs of fatigue. Do not reuse parts if wear or cracks are present.
9. Refit access covers.

   NOTE: Covers MUST be replaced before operating the unit.
10. Fill the reservoir with hydraulic oil. See Recommended Oils on page 2-5. Fill until oil is 3/4 up in the sight gauge.

Principles of Operation

Standard Unit

3 HP, 3 PH

Upon start-up, the key is turned to the UP position and the motor starter contacts are made, energizing the motor starter, and starting the electric motor which turns the single stage hydraulic pump. The valve solenoid remains de-energized and the valve spool directs fluid to the rod-end of the cylinder and raises the ram. When the ram gets to the top position, limit switch #1 is actuated, stopping the ram. At this time, T (20 sec delay timer) begins timing the ram in the UP position. If the feed door is not opened in 20 seconds, the ram will cycle down and stop at midpoint and the machine will shut down. The ram stops at midpoint when the midpoint limit switch is actuated causing the normally closed R3 contact to open, breaking the circuit to the motor starter.

If the ram is in the UP position and the door has been opened and closed, the magnetic door interlock completes the circuit which energizes the motor starter contacts causing the motor to turn the pump which directs fluid through the energized solenoid valve and to the base end of the cylinder. When the cylinder gets to the end of the extend stroke, the pressure switch senses shift pressure and causes the solenoid valve to de-energize which shifts the valve and starts the cylinder in the retract stroke. As the cylinder/ram retracts, the midpoint limit switch is actuated which breaks the circuit to the motor starter and shuts the machine down.

The Emergency Stop button will shut the compactor down when depressed by breaking the circuit to the motor starter.

3/4 HP, 1 PH – Single Phase Hi-Lo Operation

The 3/4 HP, 1 phase VIP operates as described above with the exception of the hydraulic pump. The 3/4 HP unit uses a Hi-Lo pump with two stages. The pump has a built-in check valve, relief valve, and unloading valve. The Hi-Lo pump allows a smaller horsepower motor to turn the pump during low-pressure travel at approximately the same speed as the 3 HP. During low-pressure travel (0-500 psi), both sections of the pump are pumping at 3 GPM total. During the high-pressure packing stroke (500-2400 psi), the low-pressure pump section unloads (approximately 2 1/2 GPM) to the tank. As a result, cylinder/ram travel speed slows considerably during the high-pressure stroke.

3 Cubic Yard Front Load Unit (3 HP, 3 PH)

Upon start-up, the key is turned to the LOAD position and the motor starter contacts are made, energizing the motor starter, and starting the electric motor which turns the single stage hydraulic pump. The valve solenoid remains de-energized and the valve spool directs fluid to the rod-end of the cylinder and raises the ram. When the ram gets to the top position, limit switch #1 is actuated, stopping the ram, and de-energizes the motor starter and shuts the unit down. With the ram in the LOAD position, refuse can be put into the compactor.

After the feed door has been closed, the key is turned clockwise to the PACK position. This energizes the motor starter contacts causing the motor to turn the pump which directs fluid through the energized solenoid valve and to the base end of the cylinder.

This causes the ram to travel down and compact the refuse. When the cylinder gets to the end of the extend stroke, the pressure switch senses shift pressure and causes the solenoid valve to de-energize which shifts the valve and starts the cylinder in the retract stroke. As the cylinder/ram retracts, the midpoint limit switch (#2) is actuated which breaks the circuit to the motor starter and shuts the machine down.

The Emergency Stop button will shut the compactor down when depressed by breaking the circuit to the motor starter.

Electrical Charts

Fuses and Circuit Breakers

Three-phase

Motor Size	VAC	Full Load Amp	Dual Element Fuse Max	Circuit Breaker Max	Service Disconnect
3 HP	208	8.5	15 Amp	20 Amp	30 Amp
	230	8.2	15 Amp	20 Amp	30 Amp
	460	4.1	10 Amp	15 Amp	30 Amp
	575	3.4	10 Amp	15 Amp	30 Amp

Single-phase

Motor Size	VAC	Full Load Amp	Dual Element Fuse Max	Circuit Breaker Max	Service Disconnect
3/4 HP	120	8.4	20 Amp	20 Amp	30 Amp
	230	4.2	10 Amp	15 Amp	30 Amp
3 HP	208	15.5	30 Amp	45 Amp	30 Amp
	230	14.0	25 Amp	40 Amp	30 Amp

Wire Sizes

Three-phase

Motor Size	Voltage	Length to 100’	Length to 200’	Length to 300’
3 HP	208	10	8	6
	230	12	10	8
	460	12	12	12
	575	12	12	12

Single-phase

Motor Size	Voltage	Length to 100’	Length to 200’	Length to 300’
3/4 HP	120	12	8	6
	230	12	12	10
3 HP	208	8	6	4
	230	8	6	4

Motor Starters and Heater Elements

Three-phase

Motor Size	Voltage	Starter Size	Overload Adjustment
3 HP	208	IEC 32 Amp	8.5 Amp
	230	IEC 32 Amp	8.2 Amp
	460	IEC 32 Amp	4.1 Amp
	575	IEC 32 Amp	3.4 Amp

Single-phase

Motor Size	Voltage	Starter Size	Overload Adjustment
3/4 HP	120	IEC 32 Amp	8.4 Amp
	230	IEC 32 Amp	4.2 Amp
3 HP	208	IEC 32 Amp	15.5 Amp
	230	IEC 32 Amp	14.0 Amp

Replacement Parts Lists

Components

PART #	DESCRIPTION	Front Load (FF, RF, SF) Rear Load (FF & RF)	Front Load FF 3YD
Electrical			
03-0488	FUSE, 1.5 AMP PRIMARY	x	x
03-0191	FUSE, 2 AMP CONTROL	x	x
03-4839	MOTOR STARTER IEC OVERLOAD 7-10 (ADJ 4.1 F/460V)	x	x
03-4848	MOTOR STARTER IEC OVERLOAD 4-6 (ADJ 8.5 F/208V – 8.2 F/230V)	x	x
03-0545	LIGHT, GREEN DRIVERS, COMPLETE ASSEMBLY	x	
03-0543	LENS, GREEN, FOR DRIVER LIGHT	x	
03-0010	LIMIT SWITCH, ARM (UP POSITION SWITCH)	x	x
03-0225	LIMIT SWITCH, ROD (CONT, GONE & MIDPOINT)	x	x
03-0012	LIMIT SWITCH, 5 DEG FREE TRAVEL	x	x
03-4748	MOTOR STARTER IEC 32AMP 3PH CONTACTOR	x	x
03-4350	MOTOR 3HP 1750RPM CCM	x	x
03-0013	PRESSURE SWITCH, SINGLE		x
03-0014	PRESSURE SWITCH, DUAL	x	
03-0201	PUSHBUTTON, RED MUSHROOM HD STOP	x	x
03-0198	SWITCH, 2 POS KEYED SELECTOR, SPRING LH RM	x	
03-5729	SWITCH, 3 POS KEYED		x
03-0498	SWITCH, MAGNETIC INTERLOCK W/4' CORD	x	x
03-0362	TRANSFORMER – 120 VAC PRIM, 24VAC SEC.	x	
03-0288	TRANSFORMER – TRI-VOLT	x	x
03-1131	MOTOR 3HP 208.230 IPH	x	x
03-4904	MOTOR STARTER IEC OL IPH 12-18 (ADJ 15.5 F/208/1 – 14/230/1)	x	x
03-4471	MOTOR 3HP 1725RPM 575V	x	x
03-0237	TRANSFORMER 575V	x	x
03-4850	MOTOR STARTER IEC OVERLOAD 2.5-4 (ADJ 3H F/575V)	x	x

PART #	DESCRIPTION	Front Load (FF, RF, SF) Rear Load (FF & RF)	Front Load FF 3YD
Hydraulic			
02-0197	FILLER/BREATHER CAP	x	x
02-0250	STRAINER SUCTION 100 MESH, 3/8" PORT	x	x
02-0354	PUMP, 3GPM (USED ON 3 HP, 3 PH)	x	x
02-0355	HUB COUPLING F/02-0354	x	x
02-0297	VALVE SOLENOID OP, HYDRAULIC D01	x	x
29222[2]	PRESSURE SETTING TOOL	x	x
040105	CYLINDER, 4"B X 2"R X 16" STR	x	x
040106	SEAL KIT FOR 040105 CYLINDER	x	x
Single Phase Unit Parts			
02-0368	HUB COUPLING FOR 3/4HP, 1PH MOTOR		
02-0369	PUMP, GEAR, HI-LO, 3 GPM		
03-0407	MOTOR, 3/4 HP, 1PH, 110 V		
03-5045	MOTOR STARTER – IEC OL, 1PH 7-10 (ADJ 8.4)		
Hardware			
05-0294	LATCH/ROTARY HANDLE, F/FEED DOOR	x	x
06-0334	CASTER, 6" SWIVEL W/LOCK		x

Decals

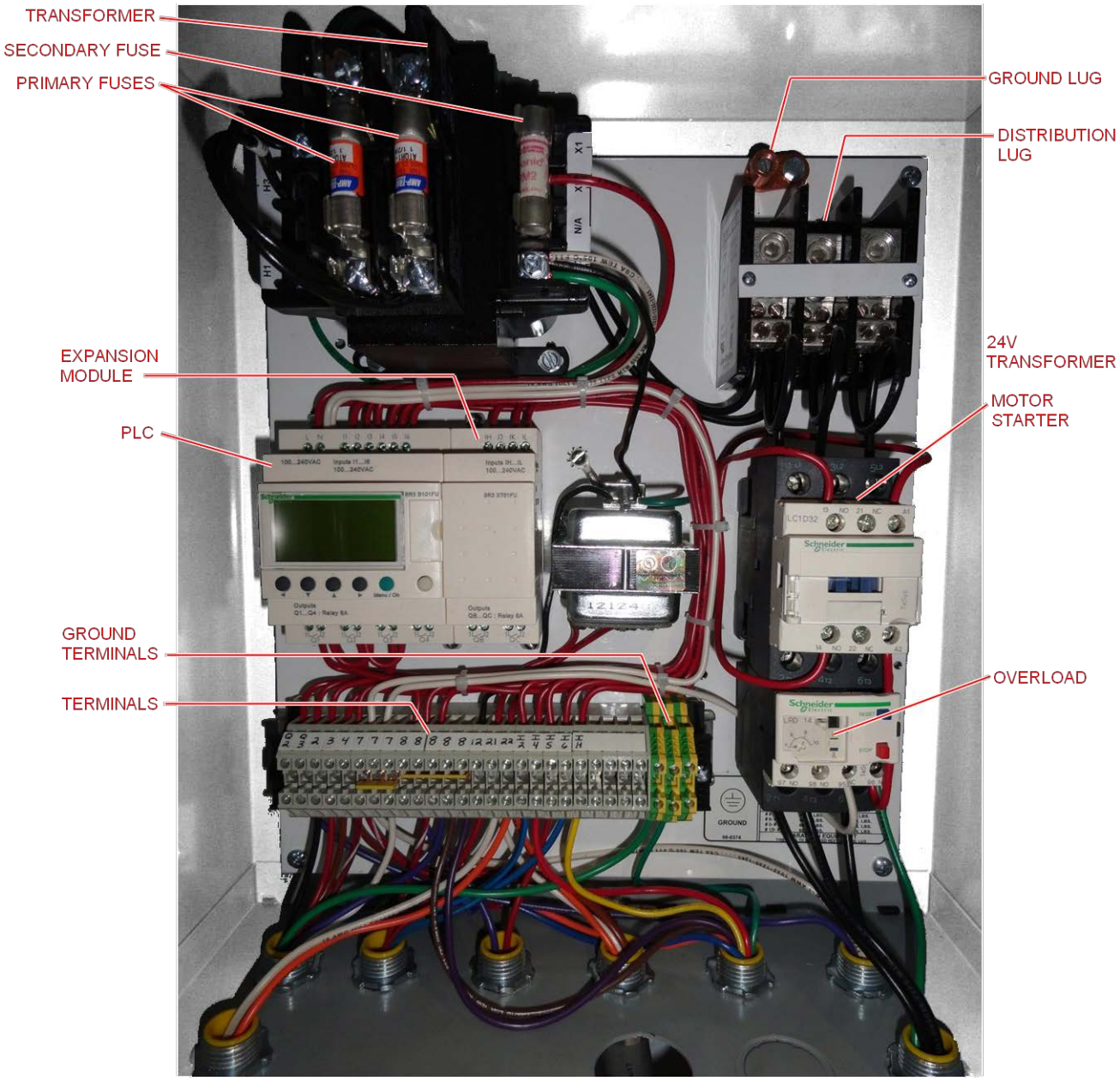
When your compactor leaves the factory, several WARNING DECALS are installed for your protection. These labels are subject to wear and abuse due to the nature of the compacting operation. Additional decals may be purchased through your distributor or from Marathon Equipment Company.

Refer to page 1-10 for a list of decal part numbers.

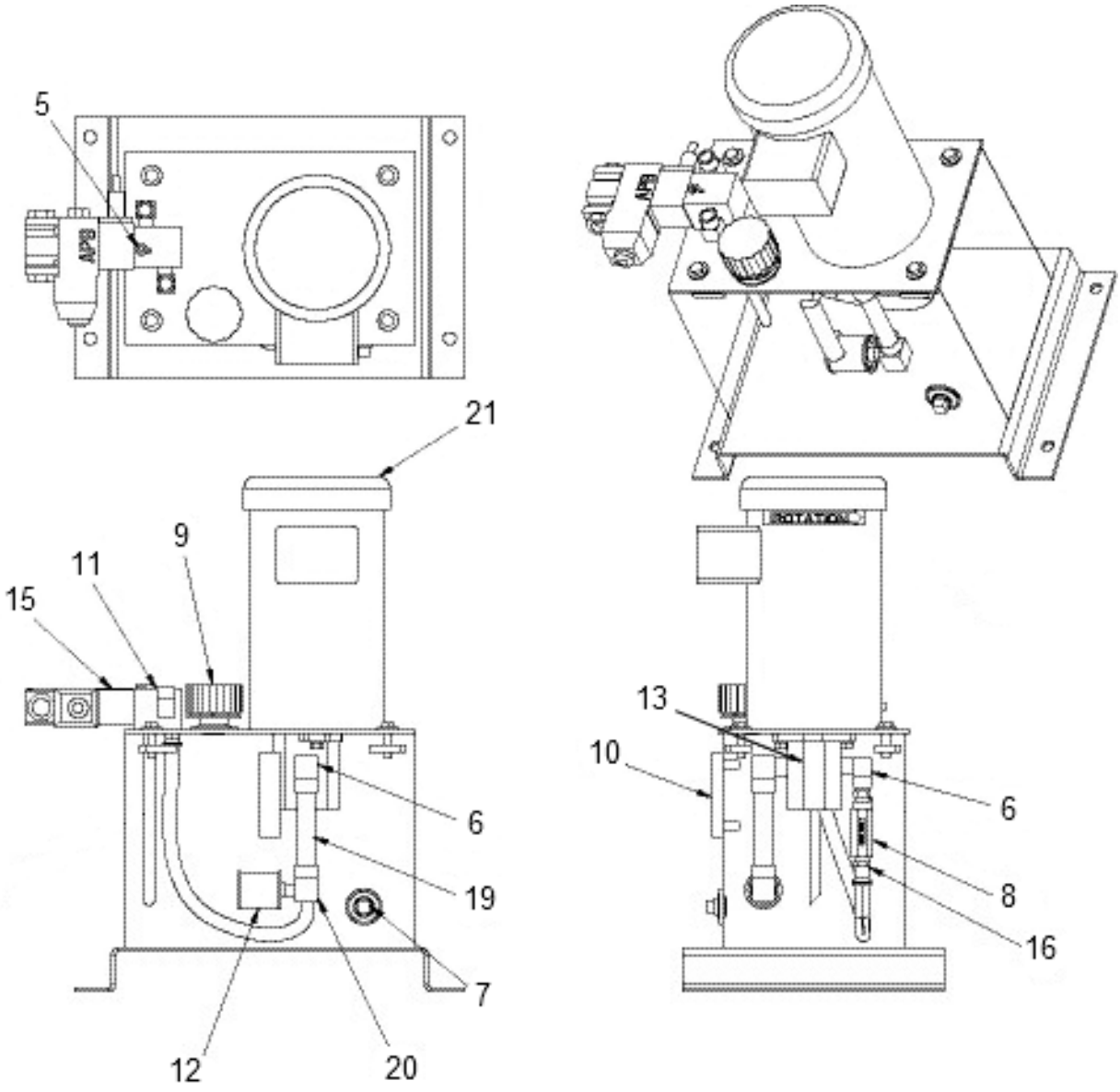
[2] Tool is mandatory for setting pressures on any VIP.

Electrical Layout

Panel Box



Power Unit 3 HP

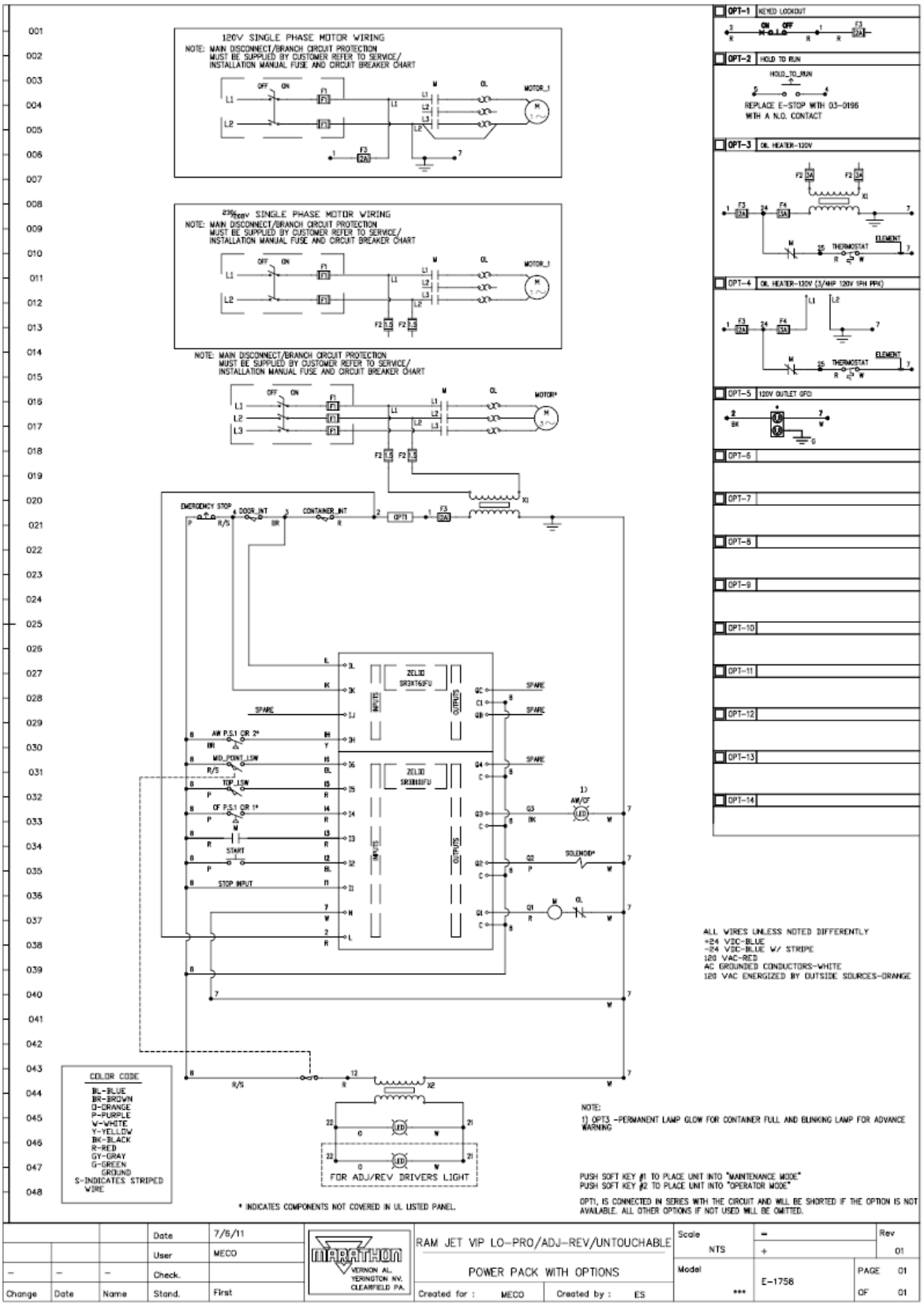


Reference numbers given below refer to Power Unit 3 HP on page 2-21.

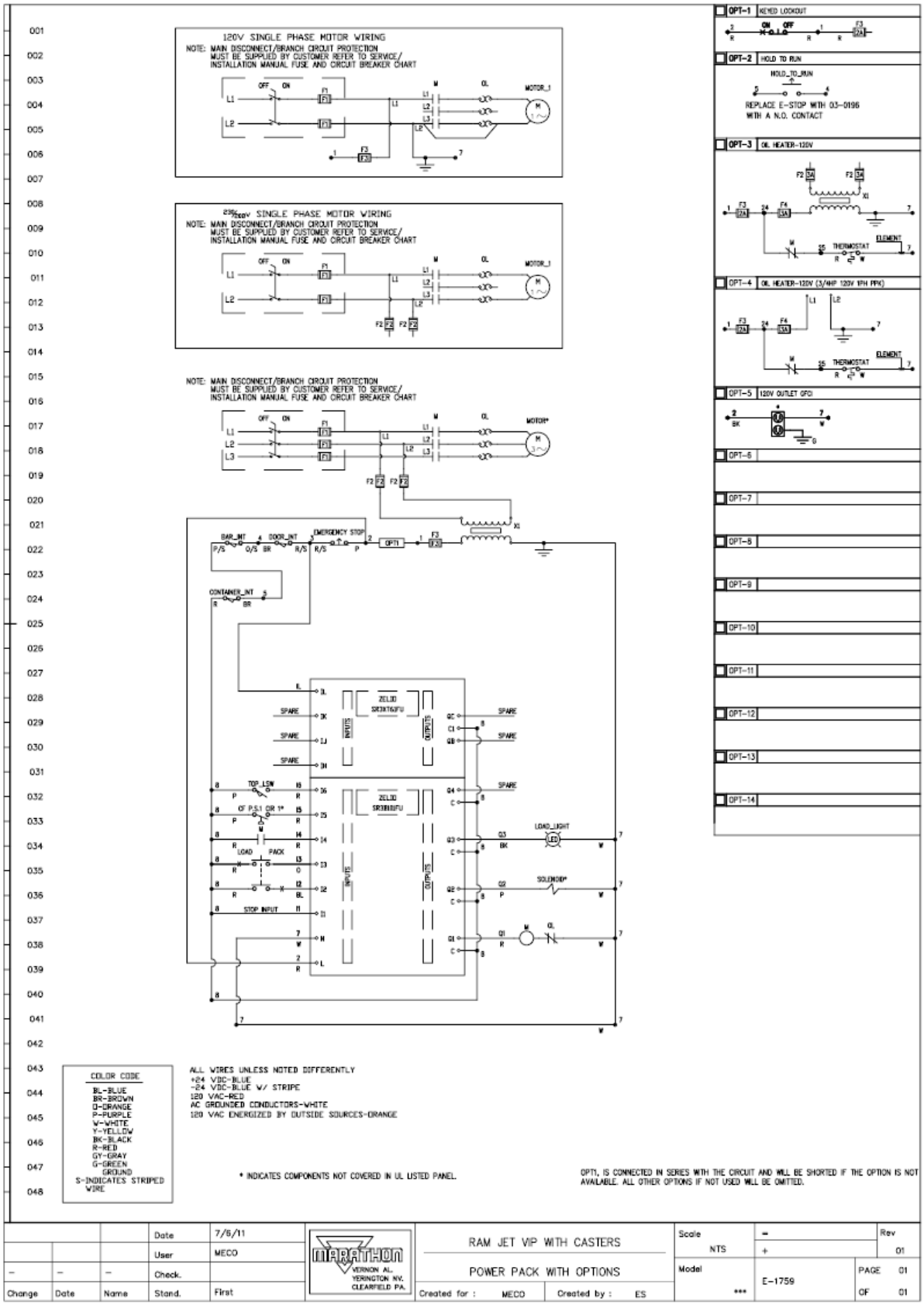
PART #	REF #	DESCRIPTION
02-0031	-	ELL 3/8 NPTM X 3/8 NPTF 90
02-0065	5	PLUG ¼ NPT SOCKET HEAD
02-0113	6	ELL 3/8 NPTF X ½ NPTM 90
02-0179	7	PLUG ½ NPT
02-0185	8	CHECK VALVE 3/8 NPTF
02-0197	9	FILLER/BREATHER 3/4
02-0198	10	GAUGE SIGHT LEVEL 3”
02-0202	11	SUB PLATE 3/8 NPTF F/VIP
02-0250	12	FILTER SUCTION 3/8 3 GPM 100 MESH
02-0282	13	PUMP 4 GPM GEAR
02-0315	15	VALVE RELIEF SANDWICH 2500 PSI
02-0331	16	HOSE END 3/8 WB X 3/8 NPTM SWV
02-0336	-	HOSE END 3/8 WB X ¼ NPTM
02-3584	-	PIPE ½ SCH 40 X 4 1/2
02-3964	20	ELL ½ NPTF X 3/8 NPTM 90
03-4350	21	MOTOR 3HP CLOSE COUPLED
05-0212	-	WASHER 3/8 LOCK
05-2018	-	BOLT 3/8-16 X 1 ¼ HHCS GR5

Electrical Schematic

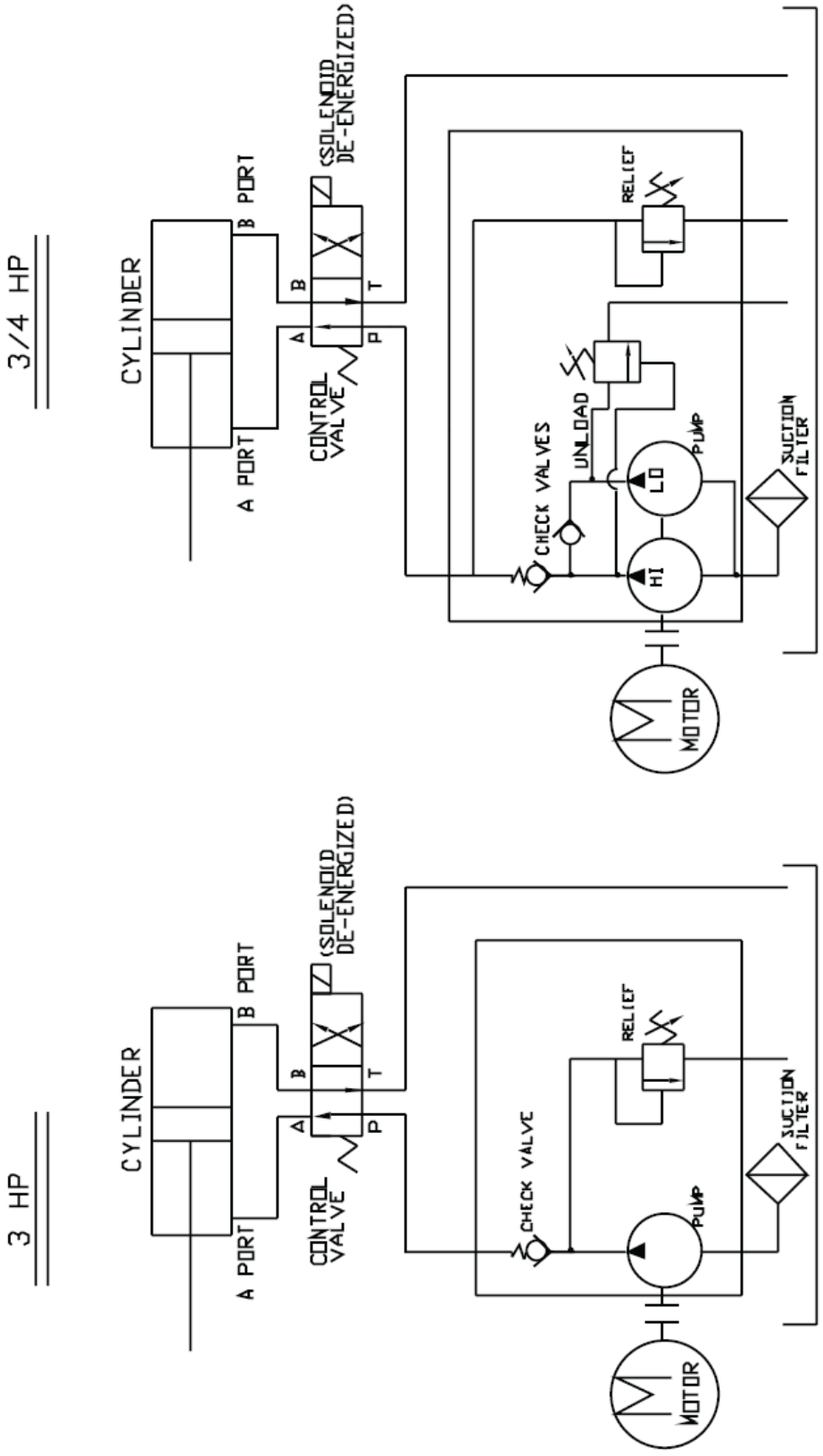
Standard and Untouchable Unit



3 Cubic Yard Unit

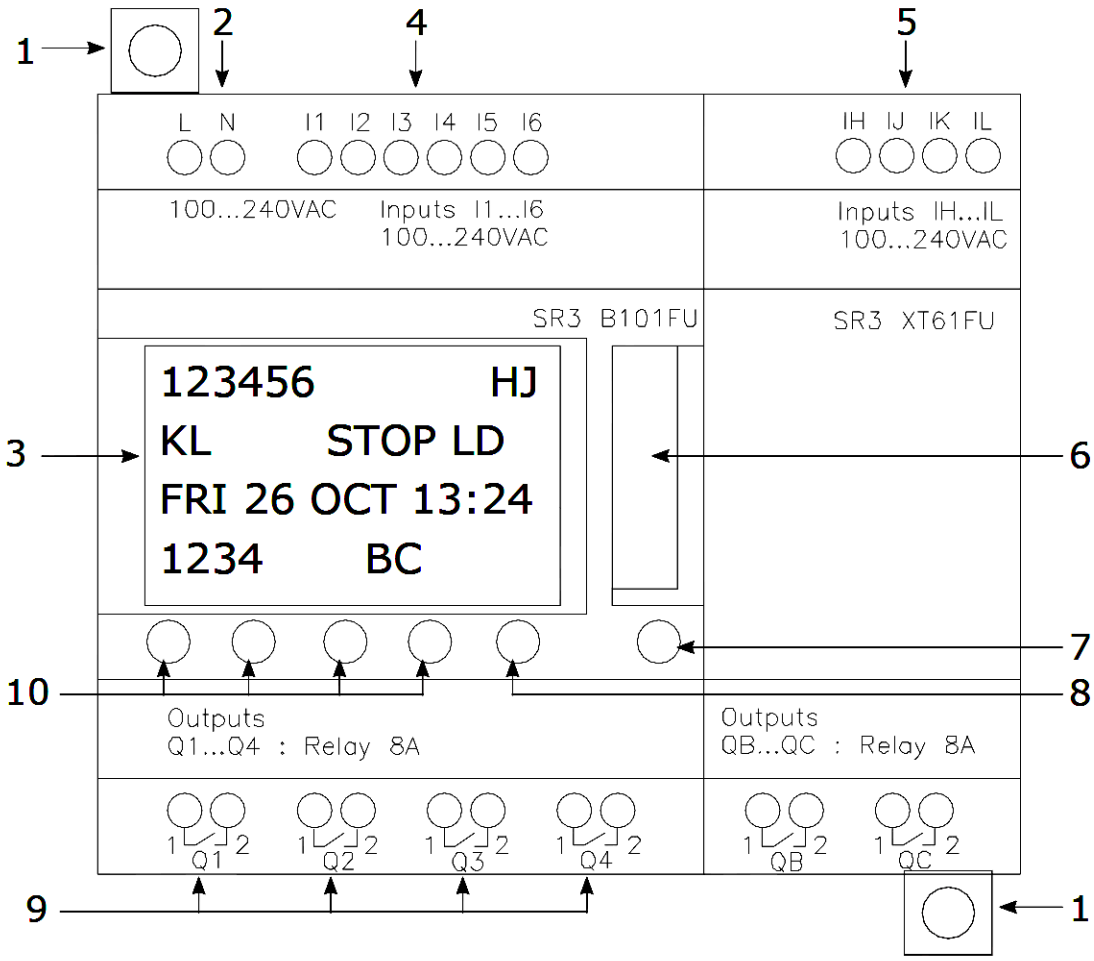


Hydraulic Schematic



PLC Maintenance

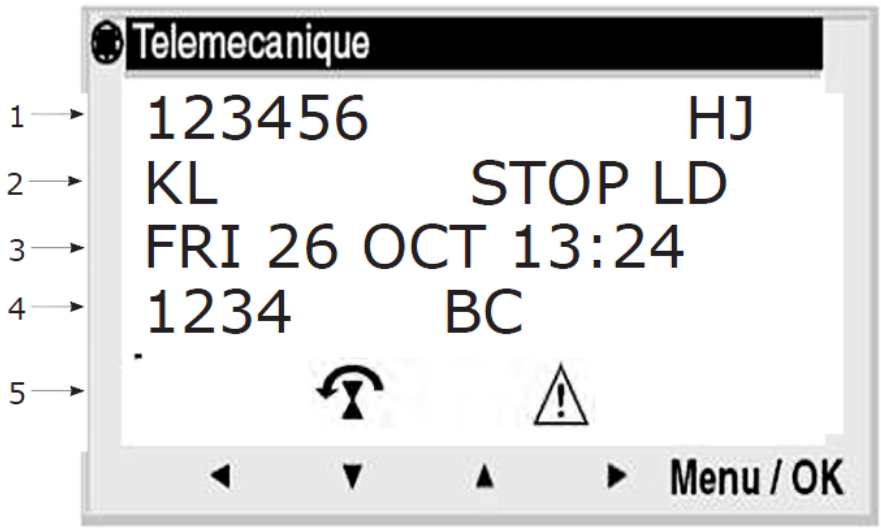
PLC Control Layout



Reference numbers given below refer to PLC Control Layout above.

REF #	DESCRIPTION
1	RETRACTABLE MOUNTING FEET
2	SCREW TERMINAL BLOCK FOR POWER SUPPLY
3	LCD, 4 LINES, 18 CHARACTERS
4	SCREW TERMINAL BLOCK FOR INPUTS
5	SCREW TERMINAL BLOCK FOR DISCRETE INPUT
6	CONNECTOR FOR BACKUP MEMORY OR PC CONNECTION CABLE
7	SHIFT KEY
8	SELECTION AND VALIDATION KEY (MENU/OK)
9	RELAY OUTPUT SCREW TERMINAL BLOCK
10	ARROW KEYS

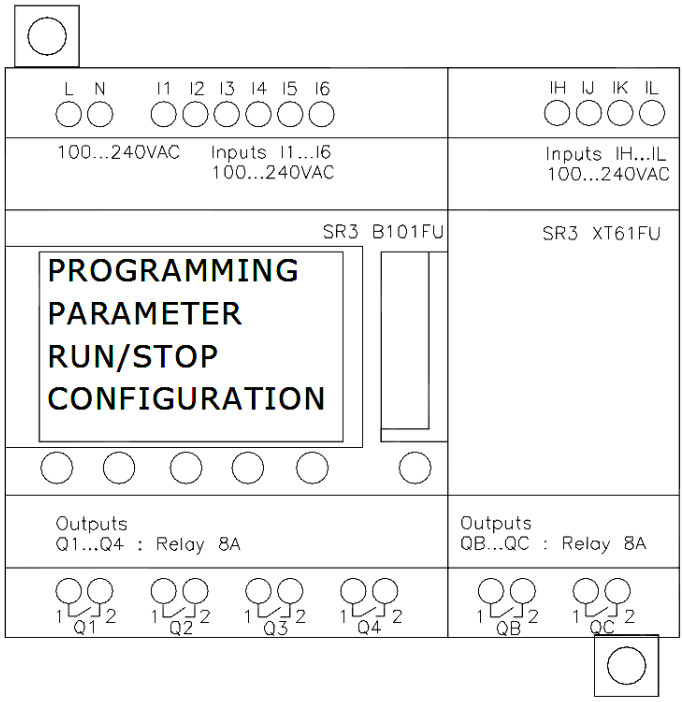
LCD Description



Reference numbers given below refer to LCD Description above.

REF #	DESCRIPTION
1	INPUT STATUS
2	OPERATING MODE (RUN/STOP); PROGRAMMING MODE (LD/FBD)
3	DATE (DAY AND TIME FOR PRODUCTS WITH CLOCK)
4	OUTPUT STATUS
5	CONTEXTUAL MENUS / PUSHBUTTONS / ICONS INDICATING THE OPERATING MODE

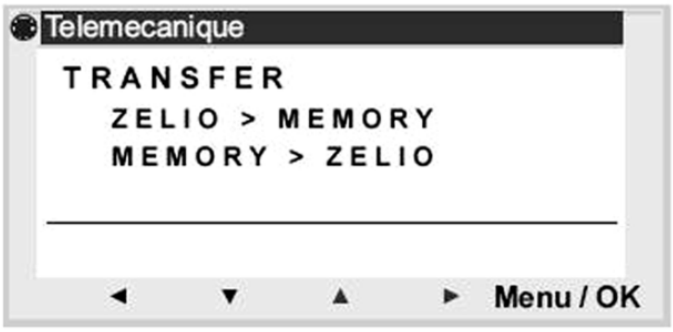
Program Run/Stop Selection



Refer to PLC Control Layout on page 2-26 for control location details.

1. Press MENU/OK button; this switches the screen to the Main Menu.
2. Using the Arrow UP or Arrow DOWN key, scroll to RUN/STOP; flashing indicates current selection.
3. Press MENU/OK button.
   "YES" option is flashing to Run or Stop Program.
4. Press MENU/OK button to complete settings.

EPROM Memory Transfer

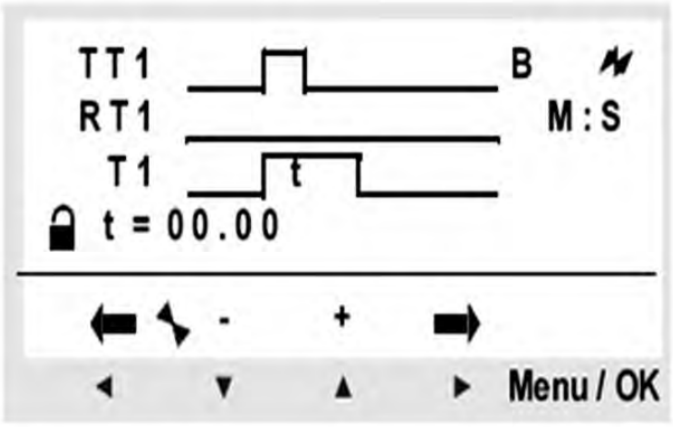


NOTE: Before you can transfer memory or change programs, the current program must be stopped. Refer to Program Run/Stop Selection on page 2-28 for instructions.

Refer to PLC Control Layout on page 2-26 for control location details.

1. Press MENU/OK button.
2. Using the Arrow UP or Arrow DOWN key, scroll to TRANSFER; flashing indicates current selection.
3. Using the Arrow UP or Arrow DOWN key, scroll to the required transfer option; ZELIO > MEMORY or MEMORY > ZELIO.
   Flashing indicates current selection.
4. Press MENU/OK button.
   “Transfer OK” will display.
5. Press MENU/OK button.
6. Using the Arrow UP or Arrow DOWN key, scroll to RUN/STOP; flashing indicates current selection.
7. Press MENU/OK button.
   “YES” option is flashing to Run Program.
8. Press MENU/OK button to complete settings.

Setting the Timer



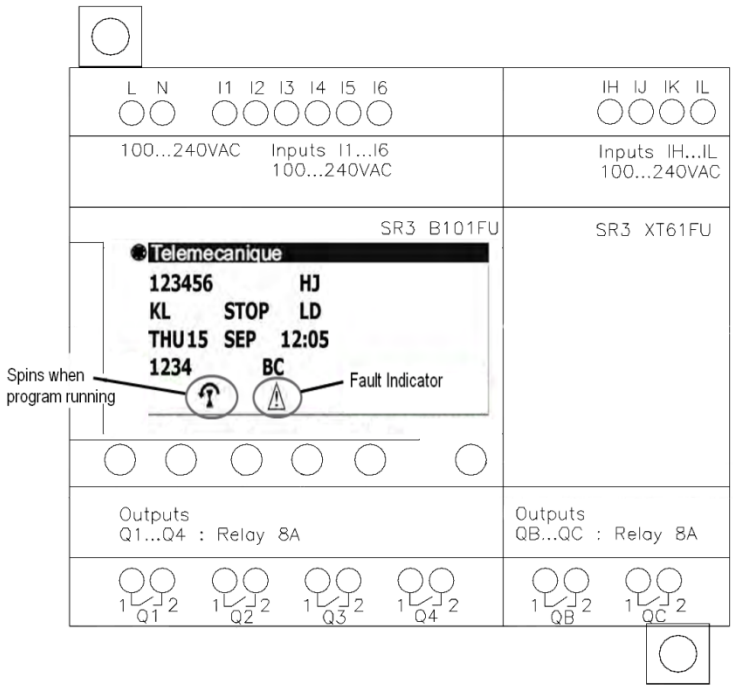
NOTE: In the event that you need to change these parameters, please call the Marathon Service department at 1-800-633-8974 and assistance will be given accordingly.

NOTE: Before you can set the timer or change programs, the current program must be stopped. Refer to Program Run/Stop Selection on page 2-28 for instructions.

Refer to PLC Control Layout on page 2-26 for control location details.

1. Press MENU/OK button.
2. Using the Arrow UP or Arrow DOWN key, scroll to PARAMETERS; flashing indicates current selection.
3. Press MENU/OK button.
4. Using the Arrow UP key, scroll to the required parameter.
   Flashing indicates current selection.
5. Press the Arrow LEFT key to select; “t=000.0” will flash.
6. Using the Arrow UP or Arrow DOWN key, adjust timer to the required setting.
7. Press MENU/OK button.
   “YES” option is flashing.
8. Press MENU/OK button to confirm the changes.
9. Using the Arrow LEFT key, select the next timer.
10. Using the Arrow UP or Arrow DOWN key, scroll to next required parameter.
    Flashing indicates current selection.
11. Press the Arrow LEFT key to select.
12. Using the Arrow UP or Arrow DOWN key, adjust timer to the required setting.
13. Press MENU/OK button.
    “YES” option is flashing.
14. Press MENU/OK button to confirm the changes.
15. Press MENU/OK button to complete the timer settings.

Clear Fault and Start Program



Refer to PLC Control Layout on page 2-26 for control location details.

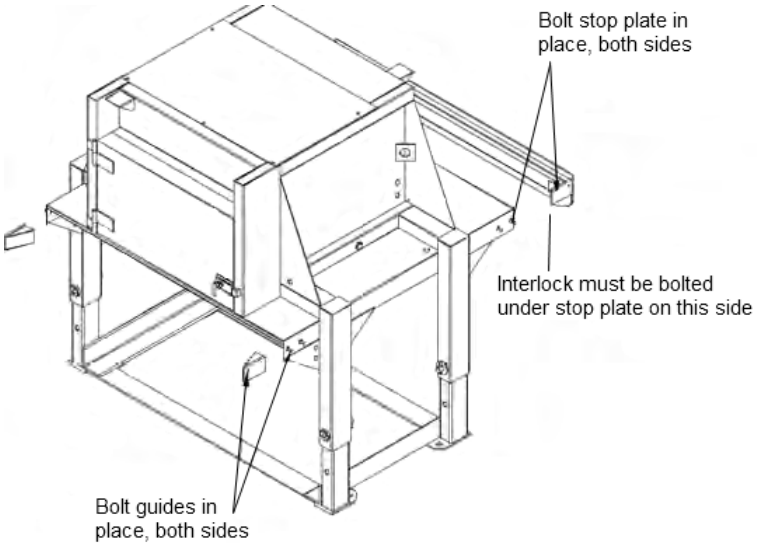
1. Press MENU/OK button; this switches the screen to the Main Menu.
2. Using the Arrow UP or Arrow DOWN key, scroll to FAULT; flashing indicates current selection.
3. Press MENU/OK button.
   "YES" option is flashing to Clear the Fault.
4. Press MENU/OK button.
5. Using the Arrow UP key, scroll to RUN/STOP; flashing indicates current selection.
6. Press MENU/OK button.
   "YES" option is flashing to Run Program.
7. Press MENU/OK button to complete settings.

Fault List

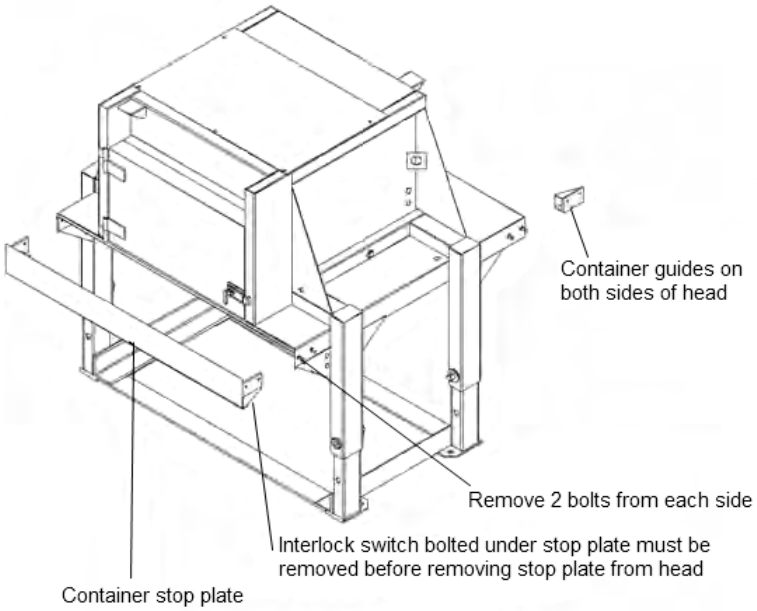
No.	DESCRIPTION OF FAULT
0	No faults.
1	**Fault in writing to EEPROM** - This fault defines transfer problems between the memory cartridge and the controller. If the fault occurs frequently, contact the after sales service.
2	**Fault in writing to the clock** - If the fault occurs frequently, contact the after sales service.
50	**Module firmware is damaged** - Reload the firmware on the module and the user application. If this problem persists, contact the after sales service.
51	**Watchdog overflow** - Warning or error according to the selection made in the configuration menu (module display) or in the configuration window (Zelio Soft 2 programming workshop). The cycle time in the module is too short compared with the application program execution time programmed in the controller. If the application requires a strict sampling of the module inputs/outputs, lengthen the cycle time in the module. To do this, configure the information either in the CONFIGURATION menu (module display) or in the configuration window (Zelio Soft 2 programming workshop). If the application does not require the cycle time, in CONFIGURATION select: No Action for the WATCHDOG.
52	**The controller has executed an unknown operation** - If the fault is permanent, reload the firmware on the module and the user application. If this problem persists, contact the after sales service.
53	**Link between module and bus extension faulty** - Check operation of the extension (connection, power supply, or fault).
54	**Link between module and bus extension faulty** - Check operation of the extension (connection, power supply, or fault).
58	**A fault is present in the firmware (software specific to the controller) or on a part of the controller hardware.** If the fault is permanent, reload the firmware on the module and the user program. If this problem persists, contact the after sales service.
59	**At the beginning of RUN on the module application: the application cannot switch to RUN as it is incompatible with the module physically connected to the supply.** If this problem occurs, contact the after sales service.
60	**At the beginning of RUN on the module application: program incompatible with the bus extension physically connected to the supply.** If this problem occurs, contact the after sales service.
61	**At the beginning of RUN on the module application: program incompatible with the Input/Output extension physically connected to the supply.** If this problem occurs, contact the after sales service.
62	**Version (or release number) incompatibility when loading a program from the backup memory.** If this problem occurs, contact the after sales service.
63	**Hardware configuration incompatibility when loading a program from the backup memory.** If this problem occurs, contact the after sales service.

Converting To Opposite Feed

1. Lock-Out and Tag-Out the compactor as specified in Lock-Out & Tag-Out Instructions on page 2-1.
2. Remove container interlock switch from container stop plate, bolted to head.
3. Remove bolts from container stop plate.
4. Remove bolts from container guides.
5. Switch sides with container stop and guides and bolt back in place.
6. Disconnect interlock from cable and re-route cable to opposite end of VIP head.
7. Reconnect interlock to cable and bolt interlock switch to container stop plate.



VIP Adjustable / Reversible
Front Feed Shown



VIP Adjustable / Reversible
Rear Feed Shown

Troubleshooting

WARNING: Never enter any part of the compactor until the unit has been locked-out and tagged-out per Lock-Out & Tag-Out Instructions on page 2-1.

Only authorized and trained service personnel should perform any inspection, maintenance, adjustment or repair on this compactor. Do NOT enter the compactor for any reason until it has been locked-out and tagged-out per the Lock-Out & Tag-Out Instructions on page 2-1.

Basic tools required:

- Continuity light
- Screwdrivers – 1 medium flat-head, 1 small Phillips
- Adjustable wrench
- Allen wrenches
- Flashlight
- Voltage and Amp tester
- Electrical schematic

Problem	Possible Cause	Solution
EXCESSIVE VOID IN CONTAINER	1) Improper loading of unit. 2) Unit not being cycled when loaded.	1) When loading, throw wastes as far to the rear as possible. 2a) Cycle after each load. 2b) Keep door closed.
CHARGE BOX AREA ALWAYS FULL OF REFUSE (UNIT NOT PACKING PROPERLY)	1) Ram being left in the UP position. 2) Unit not being cycled when loaded. 3) Loss of pressure. 4) Scheduled removal of container not allowing "Container Full" light to illuminate. 5) Improper installation.	1) When not in use, ram should be in midpoint position. Close door. 2) Cycle after each load. 3) Refer to Hydraulic System Pressure Setting on page 2-12. 4) Pack until "Container Full" light comes ON. 5) Check clearance between head and container (max. 1/8").

Problem	Possible Cause	Solution
UNIT WILL NOT START	1) No electrical power to unit.	1a) Turn main disconnect switch ON. 1b) Replace fuses or reset breakers.
	2) No electrical power to control circuits.	2a) Check primary and secondary sides of transformer. 2b) Check fuses in control box. 2c) Check STOP button. Pull to reset.
	3) No electrical power to motor.	3) Push reset on overload.
	4) Interlock switches not closed. (Check also to make sure the door is closed and that the container is fully under the VIP)	4a) Check stop button between TB #4 & #8. Contact should be closed with the Stop button pulled out. 4b) Container Gone Interlock between TB #2 & #3, should be closed. If not, make sure container is completely inserted under head. 4c) Check door interlock adjustment.
	5) UP/DOWN switch inoperative.	5a) Check UP/DOWN switch between TB #8 & #I2. Contacts should be closed when the key is in the UP position or with the timer activated. 5b) Check for moisture in UP/DOWN switch. To correct, dry all parts completely, including interior of actuator head.
	6) Limit switch #1 (top position) inoperative (when ram is not activating limit switch).	6) Normally open contact between TB #8 & #I5 open. Check wiring or replace limit switch if necessary.
	7) Limit switch #2 (midpoint) inoperative (when ram is above container).	7) Normally open contact between TB #8 & #I6 open. Check wiring or replace limit switch if necessary.
	8) Motor starter is inoperative.	8) Check motor starter coil and wiring.
	9) Motor starter contacts are inoperative.	9) Check motor starter contacts and wiring.

Problem	Possible Cause	Solution
CONTAINER FULL LIGHT ACTIVATES PREMATURELY	1) Midpoint limit switch out of adjustment.	1) Adjust midpoint limit switch.
	2) Building pressure on upstroke.	2a) Check pressure required to retract ram from full extension to midpoint. It should be no more than 400 psi. 2b) Ram is binding. Check welds. Check for warping. 2c) Cylinder is binding. Check upper and lower pinning locations. Cylinder should be perpendicular to ram. 2d) Solenoid valve malfunction. Replace valve.
UNIT WILL NOT SHUT DOWN AT TOP POSITION	1) Limit switch #1 inoperative.	1a) Check open contact between TB #8 & #I5. 1b) Check limit switch arm for proper operation.
	2) Keyswitch not being turned to its full UP position.	2) Turn switch all the way to UP and release.
MOTOR RUNS BUT RAM WILL NOT MOVE NORMALLY	1) Insufficient hydraulic fluid in the reservoir.	1) Fill reservoir with hydraulic fluid.
	2) Low relief pressure.	2) Clean orifice in relief valve (on pump) and reset pressure.
	3) Oil leakage in cylinder.	3) Replace seal kit.
	4) Defective pump.	4) Replace all hydraulic fluid in system and pump.
	5) Loose pump connection.	5) Tighten loose connections.
	6) Oil leak from hose.	6a) Replace faulty hose. 6b) Check plumbing inside reservoir for leaks and tighten or replace as necessary.
	7) Pump rotating in wrong direction.	7) Stop immediately to prevent pump seizure. Reverse any two incoming power leads.

Problem	Possible Cause	Solution
UNIT DOES NOT REVERSE	1) Pressure switch is inoperative.	1) Operate pressure switch manually by pushing micro switch on underside of cover. TB #8 & #I4 should now close. If not, check wiring and replace pressure switch if necessary.
	2) Solenoid inoperative.	2) Manually shift solenoid valve to determine whether it will function and is not binding due to contaminated fluid. Flush out solenoid valve. If it then moves freely, flush out entire hydraulic system and replace with new fluid. If valve binds after cleaning, replace valve. 2b) Check coil wiring for loose wire.
	3) Insufficient hydraulic pressure to activate pressure switch.	3) Check pressure and reset pressure switch if necessary. Pressure switch is set to activate at 2100 psi.
	4) Pump failure.	4) Replace all hydraulic fluid in system and pump if it will not hold 2400 psi steady for 3 - 5 seconds. WARNING: IF PUMP RUNS RELIEF FOR MORE THAN 15 SECONDS, DAMAGE TO PUMP MAY OCCUR.
UNIT WILL NOT SHUT DOWN AT CONTAINER SEALING POSITION (MIDPOINT)	1) Limit switch #2 inoperative.	1) Check open contact between TB #8 & #I6 to see if contact is closed. Replace if damaged.
UNIT SHUTS DOWN AFTER RAM HAS ENTERED CONTAINER	1) Container interlock malfunction.	1) Check adjustment.
	2) Container moving off the container interlock (walking).	2a) Insert container fully. 2b) Pad not level. Level pad.
	3) Improper installation.	3) Check clearance between head and container (max. 1/8”).
	4) Midpoint limit switch improperly adjusted.	4) Adjust midpoint.

Problem	Possible Cause	Solution
PUMP PRESSURE DECREASES	1) Contaminated hydraulic fluid.	1) Replace fluid in entire system.
	2) Internal hose or fitting leaking.	2) Inspect and replace as necessary.
	3) Drop in relief pressure.	3) Clean relief valve. If it will still not build pressure, replace pump.
	4) Fluid bypassing inside cylinder.	4) Replace fluid in entire system and replace cylinder.
	5) Cavitation due to lack of hydraulic fluid.	5) Add hydraulic fluid.
PUMP MAKES NOISE, SOUNDS LIKE GRAVEL	1) Partially clogged suction strainer or suction pipe.	1) Pump must receive fluid freely or cavitation will result. Flush system, clean suction pipe and clean or replace suction strainer. Add clean fluid.
	2) Low fluid level.	2) Add fluid to the correct level.
	3) Defective bearing.	3) Replace pump.
RAPID WEAR, OFTEN INDICATED BY REPEATED PUMP FAILURE AND/OR SOLENOID VALVE MALFUNCTION	1) Contaminated fluid.	1) Flush hydraulic system and replace with clean fluid.
UNUSUAL SPILLAGE DURING CONTAINER REMOVAL	1) Ram not in midpoint position.	1) Ram should remain in midpoint position at all times except when feeding.
UNIT SHUTS DOWN; NO HAULERS LIGHT	1) Bulb for Haulers light burned out.	1) Replace bulb.
	2) Transformer for Haulers light burned out.	2) Replace transformer.

Problem	Possible Cause	Solution
UNIT SHUTS DOWN; HAULERS LIGHT ON; WILL NOT START	1) Unit is packed out; Container Full Light on.	1) Empty container to reset light.
	2) Container Full system activated but Container Full light is out.	2) Light is burned out. Replace. Turn disconnect switch off and back on to reset light. Cycle unit and check light.
	3) Container Full system activated, but unit not packed out.	3) Check pressure required to return cylinder from full “extend” to midpoint. If pressure is greater than 400 psi, cylinder and/or ram may be binding or solenoid valve may not be shifting properly. Repair or replace as required. Check fluid for contamination and replace as required.
	4) Overloads may be tripped out.	4) Reset overload on motor starter and check for cause.
MOTOR OVERHEATING; RUNNING AS IF UNDER CONSTANT LOAD OR CONSTANTLY TRIPPING OUT OVERLOADS	1) Low voltage or loss or phase.	1a) Check incoming voltage at top of motor starter. Check for balanced incoming voltage (line to ground all incoming lines). 1b) Check wire connections from top of motor starter to motor taps.
CONTAINER FULL LIGHT WILL NOT ILLUMINATE	1) Ram is not at midpoint position.	1) Check midpoint limit switch adjustment.
	2) Light is burned out.	2) Replace light.

NOTE: In all events, check output fuses.

INSTALLATION

General Requirements

CAUTION: Review this manual before beginning installation. Study the jobsite and installation requirements carefully to be certain ALL necessary safeguards and/or safety devices are provided to protect all personnel and equipment during installation and as a completed system. This compactor should be installed in accordance with the most current version of ANSI standard Z245.2 at the time of manufacture.
Marathon Equipment Company does not assume responsibility for installation procedures of this equipment. Conformance to applicable local, state, and federal laws concerning installation is the customer responsibility.

The Vert-I-Pack is designed to be anchored to concrete or asphalt. **The concrete or asphalt pad must be level for the VIP to function properly.** The following descriptions give the requirements for a concrete pad or an asphalt pad. See the next page for the anchoring requirements diagram for each material.

Concrete Pad

1. Concrete should be minimum 3,000 psi (20,700 KPa), steel reinforced, 6” (150 mm) thick. It is preferred that the concrete pad be flush with the surrounding ground level.
2. To provide accessibility, concrete pad should be positioned to allow adequate space for the container-handling vehicle. If applicable, allow proper clearances for a through-the-wall chute.

Asphalt Pad

1. If using the steel foundation plate, it should be secured to your pad or floor. If asphalt is used, it should be construction grade material and standard parking lot thickness (approximately 4” (100 mm)).
2. To provide accessibility, asphalt pad should be positioned to allow adequate space for the container-handling vehicle. If applicable, allow proper clearances for a through-the-wall chute.

Decals

Installation of the compactor is not complete until an inspection of warning decals has been made. All warning decals must be in place prior to operating the compactor. Decals should be clearly visible, legible, securely applied, and in the proper location. Refer to Decal Placement starting on page 1-12.
Notify your distributor or Marathon Equipment Company if any warning decals are missing or become damaged and need replacing.

Anchoring Requirements

Concrete

The compactor should be anchored to concrete pad using four (4) minimum 1” x 6” (25 x 150 mm) long anchor bolts (red head-type recommended).

It is best if the holes are drilled in the concrete after pre-locating the compactor in its desired location.

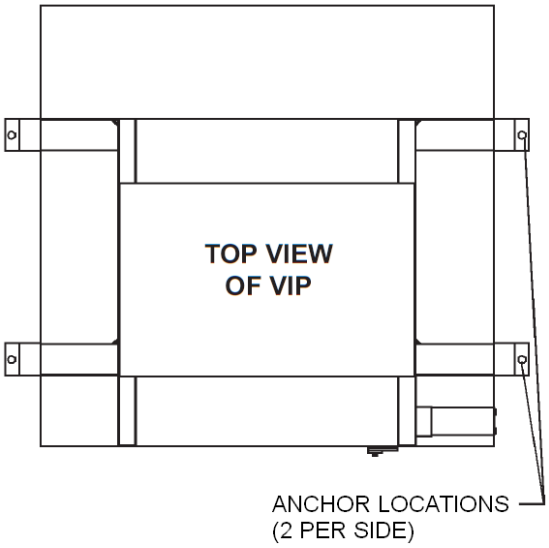
Holes in the leg plates are 1 5/16” (33 mm) dia. to permit the use of a 1 1/8” (32 mm) diameter concrete bit. The holes in the concrete should be approximately 5” (125 mm) deep.

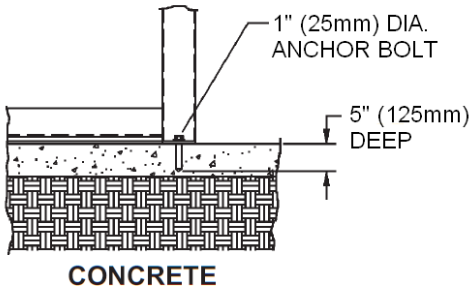
When the compactor has been permanently located, shimmed to compensate for unevenness, and anchor bolts set, tighten all nuts securely.

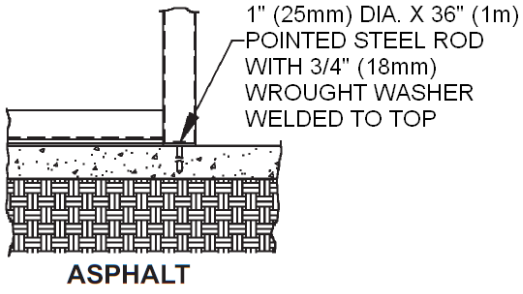
Asphalt

For asphalt applications, use four 1” (25 mm) diameter x 36” (915 mm) pointed steel rods with ¾” (18 mm) wrought steel washers welded to the top end.

Drive the headed rod though the anchor plate and asphalt and into the ground at each location.







Through-the-Wall Chute Installation

Rear Feed

Use the appropriate kit available from Marathon Equipment Company. The kit requires bolting to the interior wall, welding to the VIP body, and caulking at the exterior joint on the chute assembly.
The following diagram shows a typical rear feed through-the-wall installation.

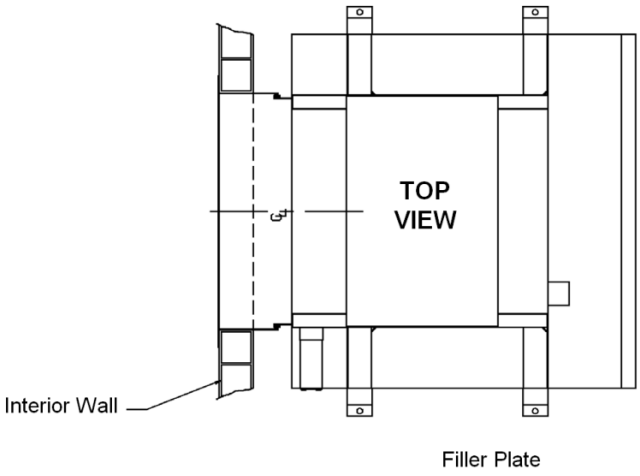
NOTE: Consult with factory for proper location of wall opening.

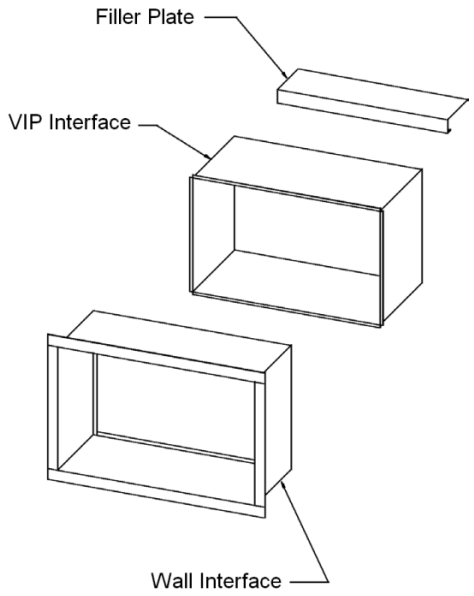
** Dimension: Ground to bottom of wall opening.

MODEL	"A"
4 YD FL RF	41 ½" (1054 mm)
6 YD FL RF	53 ¼" (1353 mm)
8 YD FL RF	71 ¼" (1810 mm)

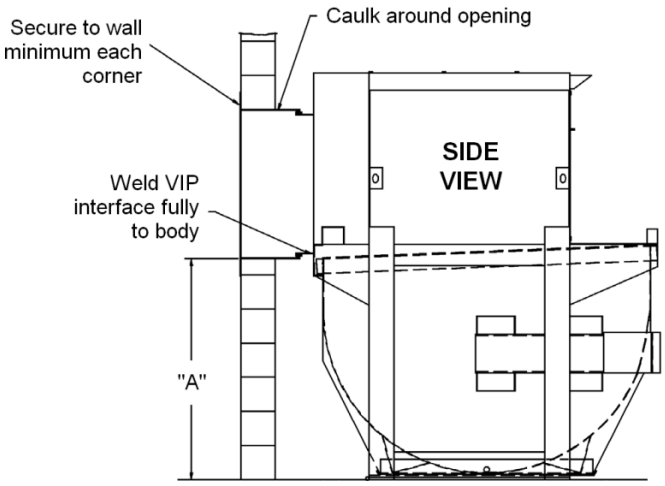
**Wall opening to be 35" (890 mm) high x 56" (1422 mm) wide. Chute fits walls up to 14" (350 mm) thick.

NOTE: Install wall interface first, then insert VIP interface through the wall interface and weld to VIP body.





CHUTE ASSEMBLY



Side Feed

Use the appropriate kit available from Marathon Equipment Company. The kit requires bolting to the interior wall, welding to the VIP body, and caulking at the exterior joint on the chute assembly.
The following diagram shows a typical side feed through-the-wall installation.

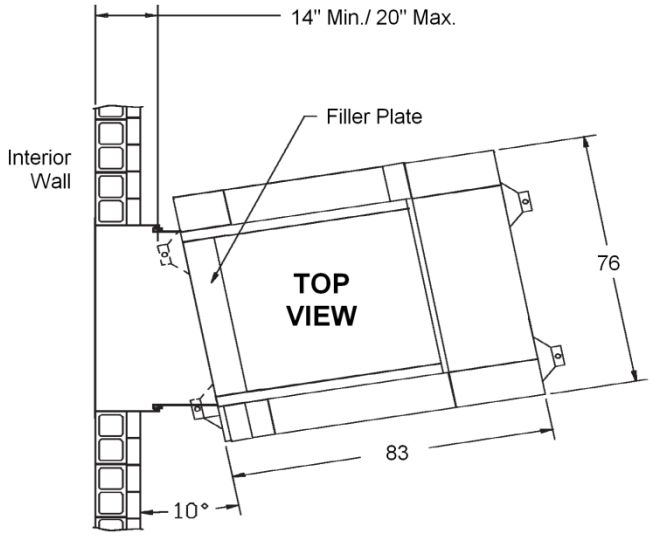
NOTE: Consult with factory for proper location of wall opening.

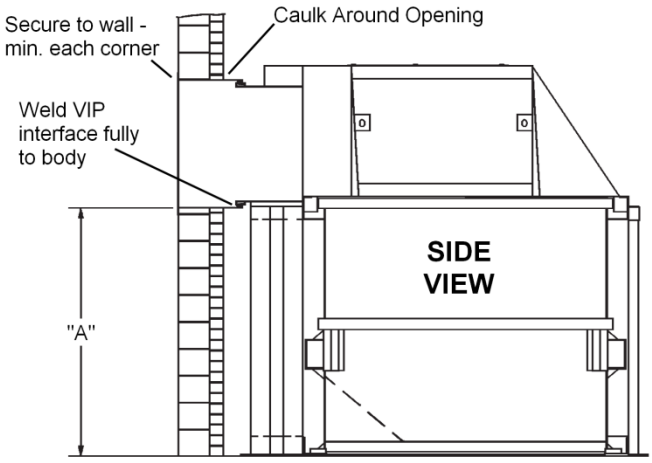
** Dimension: Ground to bottom of wall opening.

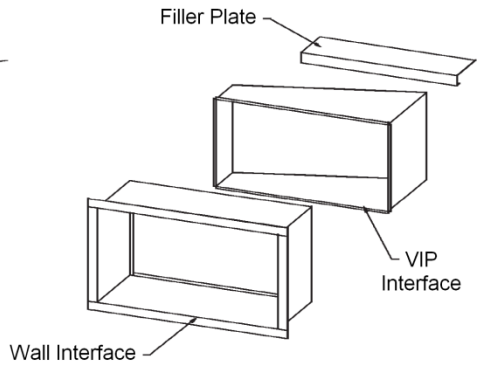
MODEL	"A"
4 YD FL SF	40" (1016 mm)
6 YD FL SF	58" (1473 mm)
8 YD FL SF	76" (1930 mm)

**Wall opening to be 35" (890 mm) high x 56" (1422 mm) wide. Chute fits walls up to 14" (350 mm) thick.

NOTE: Install wall interface first, then insert VIP interface through the wall interface and weld to VIP body.







CHUTE ASSEMBLY

Note: The 10° angle between the feed door of the VIP and the wall will accommodate most trucks.
Check your particular truck and site details BEFORE installing chute.

Untouchable Unit

Use the appropriate kit available from Marathon Equipment Company. The kit requires bolting to the interior wall, welding to the VIP body, and caulking at the exterior joint on the chute assembly.
The following diagram shows a typical side feed through-the-wall installation.

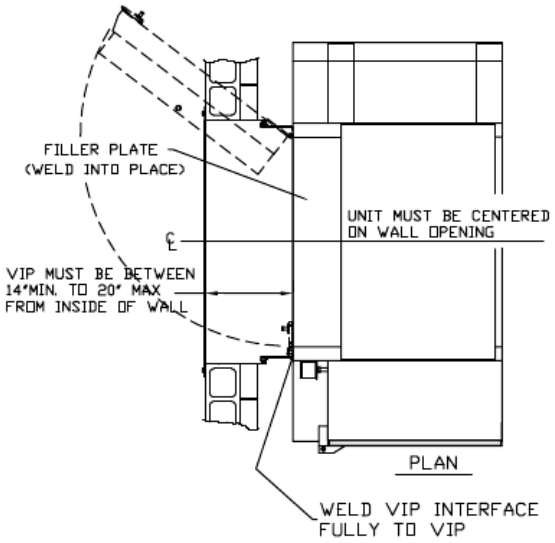
NOTE: Consult with factory for proper location of wall opening.

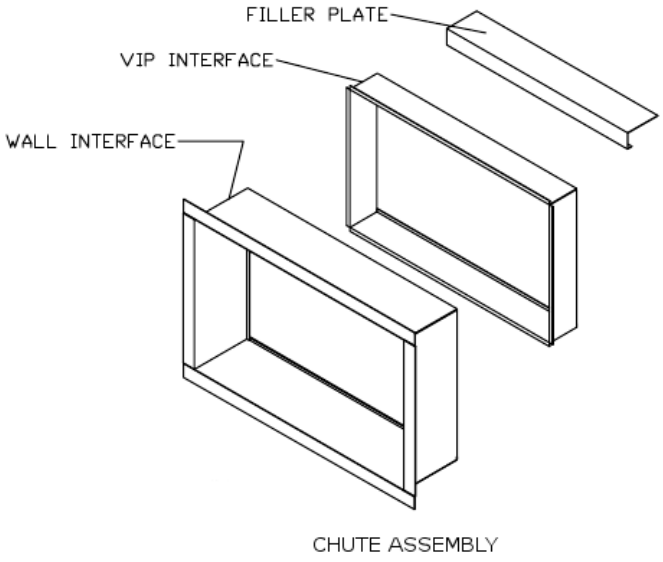
** Dimension: Ground to bottom of wall opening.

MODEL	"A"
UNTOUCHABLE 2.5 YD FL RF	48 3/4" (1238 mm)

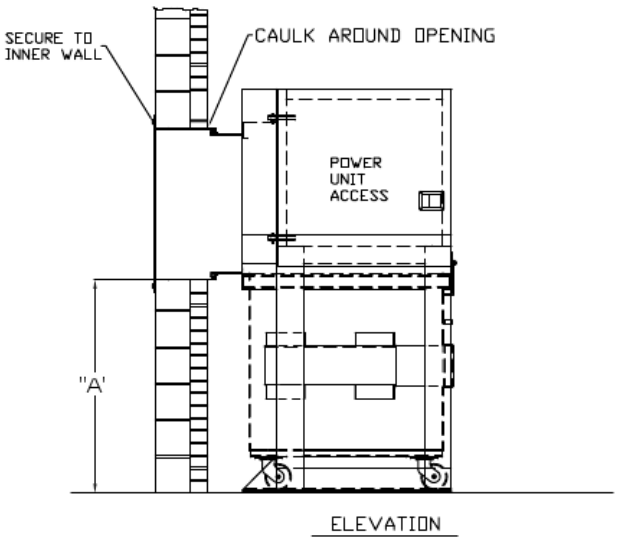
**Wall opening to be 35" (890 mm) high x 56" (1422 mm) wide. Chute fits walls up to 14" (350 mm) thick.

NOTE: Install wall interface first, then insert VIP interface through the wall interface and weld to VIP body.





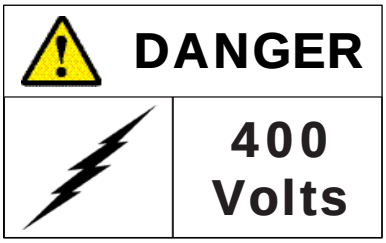
CHUTE ASSEMBLY



ELEVATION

Electrical and Hydraulic Installation

Electrical Connections



The panel box contains high voltage components. Only authorized service personnel should be allowed inside.
See **Lock-Out & Tag-Out Instructions on page 2-1.**

WARNING: Before making any electrical connection, be sure that the disconnect switch has been locked-out and tagged-out.

DANGER: All equipment should be grounded per National Electric Code.

1. Before connecting power to the compactor, check the incoming line voltage with a voltmeter. Also, check voltage wiring in the compactor panel box. If the compactor is not wired to proper voltage, make necessary corrections before proceeding.
2. A lockable fused disconnect switch (customer furnished) must be installed and be within sight of the compactor's electrical panel box location, not to exceed 50' (15.25 m) from the compactor.

   NOTE: The fused disconnect switch should be sized in accordance with the compactor. For details, refer to Electrical Charts on page 2-16.

   NOTE: A properly sized equipment ground should be connected to the enclosure ground lug.
3. Run power lines between fused disconnect switch (customer furnished) and compactor's electrical panel box, in accordance with local electrical codes, using knockouts in bottom of panel box.
   Refer to Electrical Charts on page 2-16 to determine the correct service disconnect amperage rating and the correct wire size.

   NOTE: High legs should be installed to L3 on motor starter.
4. Check voltage at fused disconnect switch to be certain it is the same as is shown on compactor or remote power pack.

Pushbutton Control Station

If a remote pushbutton control station is furnished, it will be factory wired using Sealtite. If it is necessary to disconnect the wires (for example, to install the pushbutton station inside a building), exercise care and make sure the wires are reconnected as originally furnished.

NOTE: Check local codes to be certain that Sealtite is acceptable.

Emergency Stop Buttons

CAUTION: Controls must be located so that the Emergency Stop button is readily accessible to the operator and within 3' (915 mm) of the charging chamber access. If installation requires the pushbutton control station to be located in a more remote area, a second Emergency Stop button should be added and installed in the manner described above.

Hydraulic Connections

NOTE: The hydraulic system pressure is factory set and the entire unit operated prior to shipment.

1. Check hydraulic hose connects. Refer to Hydraulic Schematic on page 2-25 to ensure proper connections.

   NOTE: Cylinder hoses; the “A” port hose (from the power unit) connects to the base end port of the cylinder. The “B” port hose (from the power unit) connects to the rod end port of the cylinder.
2. Fill the reservoir with hydraulic oil. See Recommended Oils on page 2-5. Fill until oil is 3/4 up in the sight gauge.

   NOTE: After start-up, it may be necessary to add more oil to the reservoir. Maintain oil level to 3/4 in the sight gauge with the cylinder fully retracted (UP position).

Installation Start-Up

1. Check and make sure that all electrical and hydraulic connections have been made correctly.
2. Make sure:
   a. Container is positioned all the way under the VIP head.
   b. Feed door is closed.

   NOTE: Check door open and close function. If door binds against top or bottom of door opening, unit is not level.

   Unit MUST be level for proper operation.
3. With the ram fully retracted (UP position), make sure the oil reservoir is full to the 3/4 level on the sight gauge (see Recommended Oils on page 2-5).

   NOTE: The hydraulic system pressure is factory set and the entire unit operated prior to shipment.

   CAUTION: Make sure persons and material are clear of charge box area and all other areas of the compactor.
4. Turn the disconnect switch to the “ON” position when ready to start the machine.
5. Manually depress the motor starter for one to two seconds. If the ram does not move, this indicates that the motor and pump are rotating backwards. Shut down immediately.

   CAUTION: The pump will be damaged if it is operated in reverse even for short periods. Reversing any two incoming power lines will change the motor/pump rotation.
6. Check the function of all interlock switches and Emergency Stop buttons.
7. Run the VIP for a few cycles to make sure it is operating properly.

   NOTE: If the ram scrubs the side of the charge chamber during operation, the unit is not level.

   Unit MUST be level for proper operation.
8. Make sure that ALL REQUIRED operators are trained in proper use of this equipment.

Hauler Information

Front Load

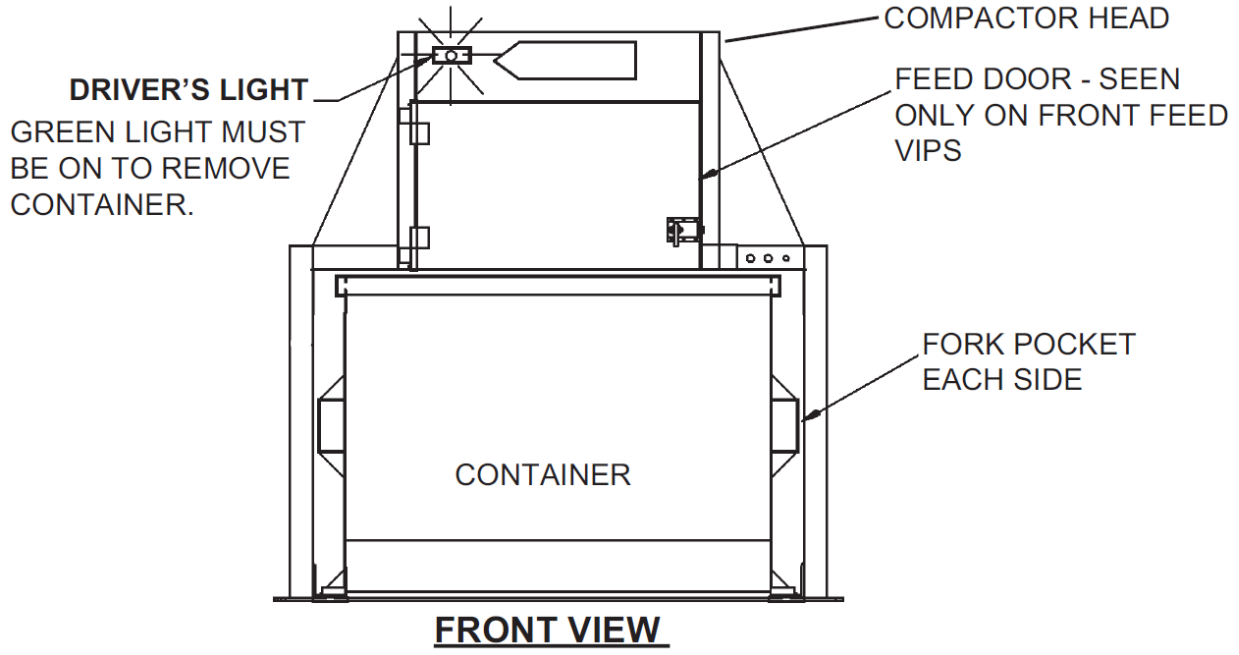
NOTE: Front load, front feed VIP shown (side feed containers handle similarly).

Standard and Untouchable Unit

CAUTION: Stand clear when container is being lifted.

1. If applicable, make sure the green driver's light is illuminated.
2. Remove and empty the container.

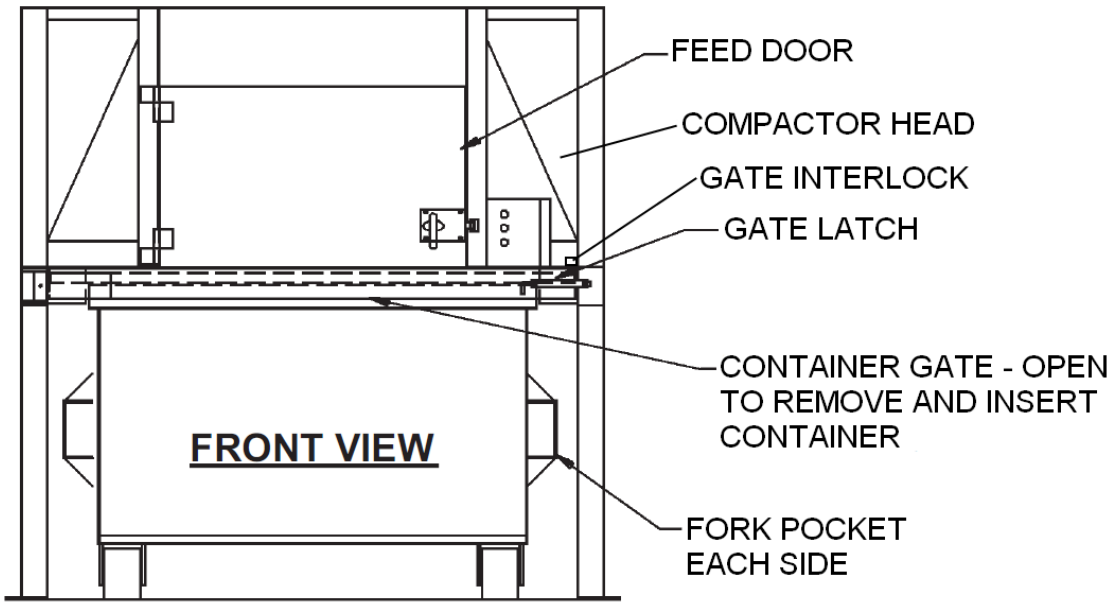
   NOTE: If the container does not have casters fitted, you must raise the container slightly to remove.
3. Insert the empty container completely under the compactor head.



3 Cubic Yard Unit

CAUTION: Stand clear when container is being lifted.

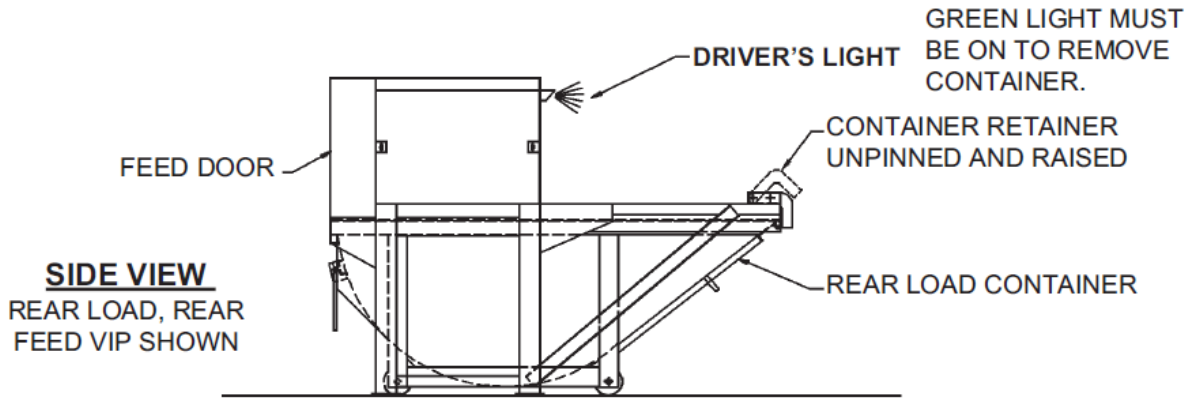
1. Unlatch and open container gate completely.
2. Remove and empty the container.
3. Insert the empty container completely under the compactor head.
4. Close container gate and latch securely.



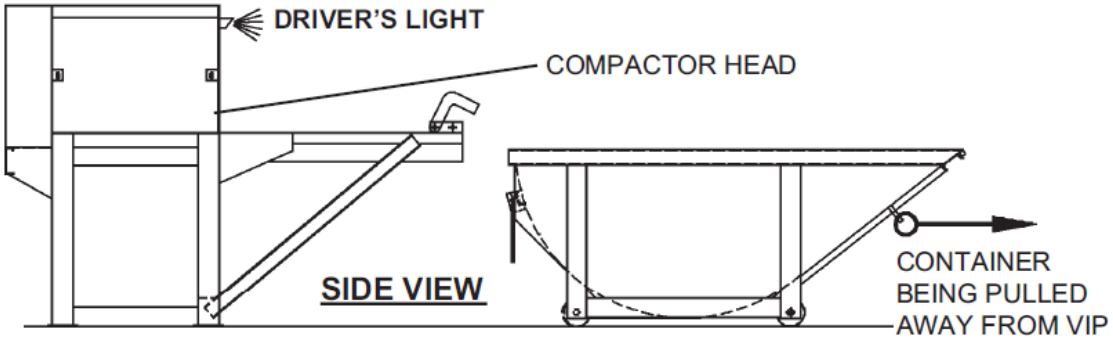
Rear Load

CAUTION: Stand clear when container is being lifted.

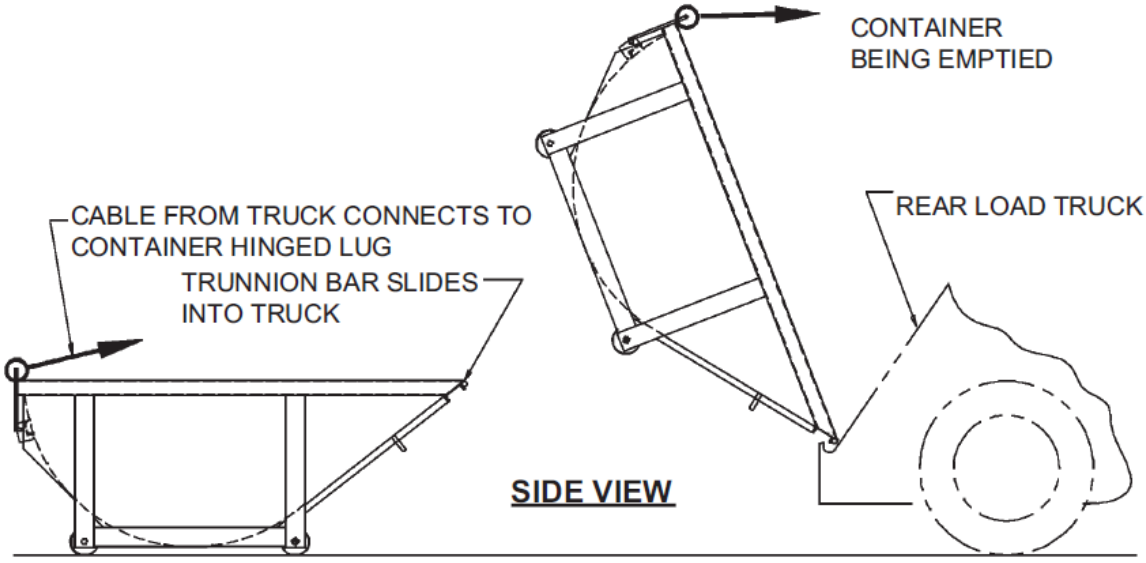
1. Make sure the green driver's light is illuminated. Unpin and raise container retainer.



2. Pull container out from under the compactor head.



3. Connect truck cable to container hinge lug and make sure container trunion bar is engaging truck properly.
4. Slowly raise and empty the container.



5. Insert the empty container completely under the compactor head.
6. Close and pin container retainer securely.

INDEX