RamJet® Stationary Compactor

RJ-225 WITH SOLAR POWER UNIT

OPERATION, SERVICE, AND INSTALLATION

ISSUED DECEMBER 2014

CUSTOMER NAME: _____

SERIAL NUMBER: _____

COMPACTION & RECYCLING SOLUTIONS

0016S-RJSS-1214

Environmental Solutions Group
2030 Hamilton Place Blvd., Suite 200
Chattanooga, TN 37421
Marathon Customer Care: 1.800.633.8974

⚠ WARNING

IF INCORRECTLY USED, THIS EQUIPMENT CAN CAUSE SEVERE INJURY. THOSE WHO USE AND MAINTAIN THE EQUIPMENT SHOULD BE TRAINED IN ITS PROPER USE, WARNED OF ITS DANGERS, AND SHOULD READ AND FULLY UNDERSTAND THIS ENTIRE MANUAL BEFORE ATTEMPTING TO SET UP, OPERATE, ADJUST OR SERVICE THE EQUIPMENT. KEEP THIS MANUAL FOR FUTURE REFERENCE

IMPORTANT SAFETY NOTICE

Proper service and repair are important to the safe, reliable operation of the Marathon Equipment Company products. Service procedures recommended by Marathon Equipment Company are described in this Operation, Service, and Installation Manual and are effective for performing service operations. Some of these service operations may require the use of tools or blocking devices specially designed for the purpose. Special tools should be used when and as recommended. It is important to note that some warnings against the use of specific methods that can damage the product or render it unsafe are stated in the service manual. It is also important to understand these warnings are not exhaustive. Marathon Equipment Company could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each method. Consequently, Marathon Equipment Company has not undertaken any such broad evaluations. Accordingly, anyone who uses service procedures or tools which are not recommended by Marathon Equipment Company must first satisfy himself thoroughly that neither his safety nor the product safety will be jeopardized by the method he selects.

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MODEL RJ-225 WITH SOLAR POWER UNIT

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SECTION 1
GENERAL INFORMATION

INTRODUCTION

Thank you for purchasing a Marathon® RamJet Stationary 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 install, operate, and maintain the machine. 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 machine 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:

ENVIRONMENTAL INDUSTRIES ASSOCIATION

4301 CONNECTICUT AVENUE, NW SUITE 300

WASHINGTON, D.C. 20008

OSHA Standards - 29 CFR

Refer to:

- Part 1910.147: "The Control of Hazardous Energy (Lock-Out/Tag-Out)"
- Part 1910.212: "Machinery and Machine Guarding: General Requirements for all Machines"
- All other applicable OSHA Standards

ANY SERVICE OR REPAIRS THAT GO BEYOND THE SCOPE OF THIS MANUAL SHOULD BE PERFORMED BY FACTORY AUTHORIZED PERSONNEL ONLY!

If you should need further assistance, please contact your distributor. You will need to provide the equipment serial number, installation date, and electrical schematic number to your distributor.

If you have any safety concerns with the equipment or need further information, please contact us at:

Marathon Equipment Company

P.O. Box 1798

Vernon, AL 35592-1798

Attn: Field Service Department

877-258-1105

PREFACE

The following sections are a guide for maintenance and service of the Marathon Equipment Company unit. The sections cover preventive maintenance, adjustment, and troubleshooting hints. Before performing maintenance, check the work area carefully to find all the hazards present and make sure all necessary safeguards or safety devices are used to protect all persons and equipment involved. In order to diagnose a problem quickly and effectively, a service person must be thoroughly familiar with the machine. This Operation, Service, and Installation Manual explains the system and its major components. Diagrams and schematics of the electrical and hydraulic systems are in the Service Section.

IMPORTANT!

- Before starting any maintenance, study this section of the manual.
- Read all hazard warnings and decals on the unit.
- Clear the area of other persons before performing any maintenance.
- Know and understand safe use of all controls.
- It is your responsibility to understand and follow manufacturer's instructions on equipment and care.

HAZARD SYMBOLS AND DEFINITIONS

Listed below are the definitions for the various levels of hazards. It is important that the operators of this equipment and people who service units read and understand all warnings as they relate to this equipment operation.

- DANGER – indicates an imminently hazardous situation, which WILL result in DEATH or SERIOUS INJURY if you don't follow proper instructions.
- WARNING – indicates an imminently hazardous situation, which COULD result in DEATH OR SERIOUS INJURY if you don't follow proper instructions.
- CAUTION – indicates an imminently hazardous situation, which will result in MINOR to MODERATE INJURY if you don't follow proper instructions.
- NOTICE – means unit or other property may be damaged if these instructions are not followed.

You must read and obey all warnings in any manual produced by Marathon Equipment Company to support your unit.

LOCK-OUT & TAG-OUT INSTRUCTIONS

⚠ DANGER

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 install 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, toxic material, or other hazards) per the OSHA confined space standard.
10. The compactor is now locked out.

LOCK-OUT & TAG-OUT INSTRUCTIONS (CONTINUED)

RESTORING SERVICE

When the servicing or maintenance is completed and the 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 re-energize the compactor.

NOTICE

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.

SPECIFICATIONS

Model	Clear Top LxW (in)	Total Cycle Time (sec)	Extend Time Setting (sec)	Normal Force (lbs)	Max Force (lbs)	Ram Pen. (in)	Motor (HP)	Pump (GPM)	Cyl. Bore (in)	Cyl. Rod (in)	Pressure Norm/ Max (PSI)
RJ-225	40.5 x 60	56	30	46,600	55,100	13.5	1.5	4.35	6	2.5	1650/1950

Note: Specifications are accurate at the date of revision on the cover of this manual, but are subject to change without notice at the manufacturer's discretion. Contact our Technical Service department at 877-258-1105 if you have any questions.

SERVICE/PARTS ASSISTANCE

Assistance in troubleshooting, repair and service is available by contacting the authorized Marathon Equipment Company Dealer in your area. Parts are available at your Marathon Equipment Company Dealer or through Marathon Equipment Company. Marathon Equipment Company personnel are trained to give prompt, professional assistance.

ALWAYS give the machine serial number in all correspondence relating to the equipment.

GUARDS AND ACCESS COVERS

Before operating or performing maintenance, check the work area carefully to find all the hazards present and make sure all guards and safety devices are in place to protect all persons and equipment involved.

GREASE LUBRICANT RECOMMENDATION

Use a grease gun. Before engaging grease gun, clean the fitting. Always pump enough grease to purge the joint of contaminated grease and wipe off the excess grease. Lubricate a unit as recommended on the lubrication decal on the unit and in the Operation, Service, and Installation Manual. Use NLGI 000 grease.

RECOMMENDED OILS

The following oils by brand name are approved for use in the hydraulic system on this equipment and considered to be all temperature hydraulic fluids.

- 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

Automatic Transmission Fluid (for 15 HP and smaller units only)

- Quaker State-Dextron II (ATF)

Cold Weather Fluid

- Amoco-Rycon MV

WARNING DECALS ON THE UNIT

⚠ WARNING

DO NOT operate without all guards and access covers in place.

Make sure you can read all warning and instruction decals. Clean decals if you cannot read the words. See below for directions on cleaning decals. Replace any decal that is damaged, missing, or is not readable. When you replace a part that has a decal, make sure a new decal is installed on the new part. See the Operation, Service, and Installation Manual for replacement decals. Order replacement decals from Marathon Equipment Company or an authorized dealer.

DECAL CARE

It is important that the decals are properly cleaned to make sure that they are readable and do not come off the unit. Use the following steps to clean the decals.

A. General Instructions

Following these instructions helps the decals adhere longer.

- Wash the decals with a blend of mild car wash detergent and clean water
- Rinse with clean water
- Let the unit air-dry or dry with a micro-fiber cloth
- Do not allow fuels to stay in contact with the decal for an extended period of time. Remove the fuel contamination as quickly as possible
- Do not use carnauba-based wax over the decals
- Do not use a mechanical brush while washing the decals.

B. Pressure Washer Precautions

Pressure washing can cause damage to decals. It can cause the edges of the decals to lift and peel the decal away from the unit. Over time, the decal can fade, crack or chip away.

Use pressure washing only when other cleaning methods are not effective. If you use a pressure washer, use the following precautions.

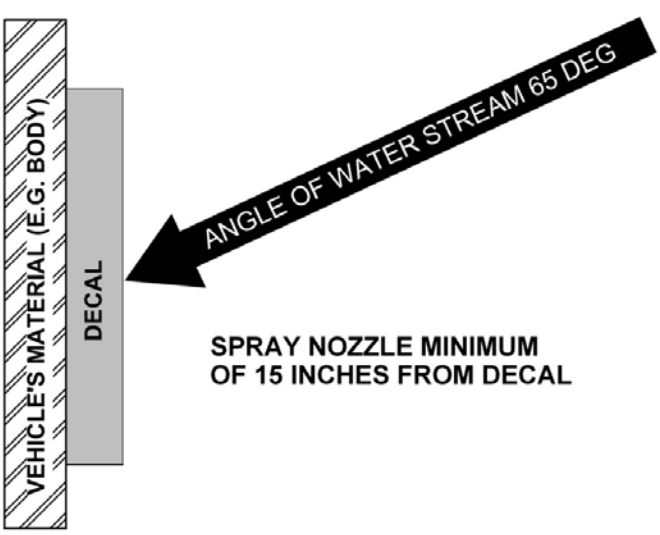
- Spray nozzle opening: 40° wide pattern
- Spray angle: 65° from vehicle' s body
- Distance of nozzle to decal: 15" minimum
- Water pressure: less than or equal to 800 psi
- Length of time: not more than 30 sec.
- Do not use sharp angles to clean the decals – this can lift the decals from the unit.
- NEVER use a "turbo pressure nozzle".

C. Remove Difficult Debris

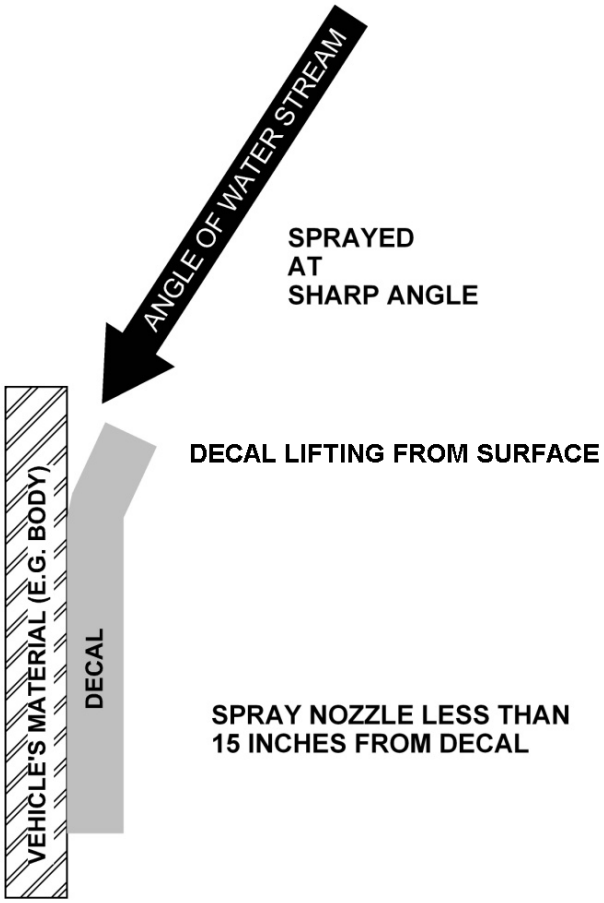
When normal cleaning procedures do not remove difficult debris from the decals, try the following:

- Spot clean the decal with Isopropyl Alcohol and a micro-fiber cloth (rag)
- If these methods do not work on a problem area, call a Marathon Equipment Company Dealer or Marathon Equipment Company Customer Support.

DECAL CARE - CONTINUED

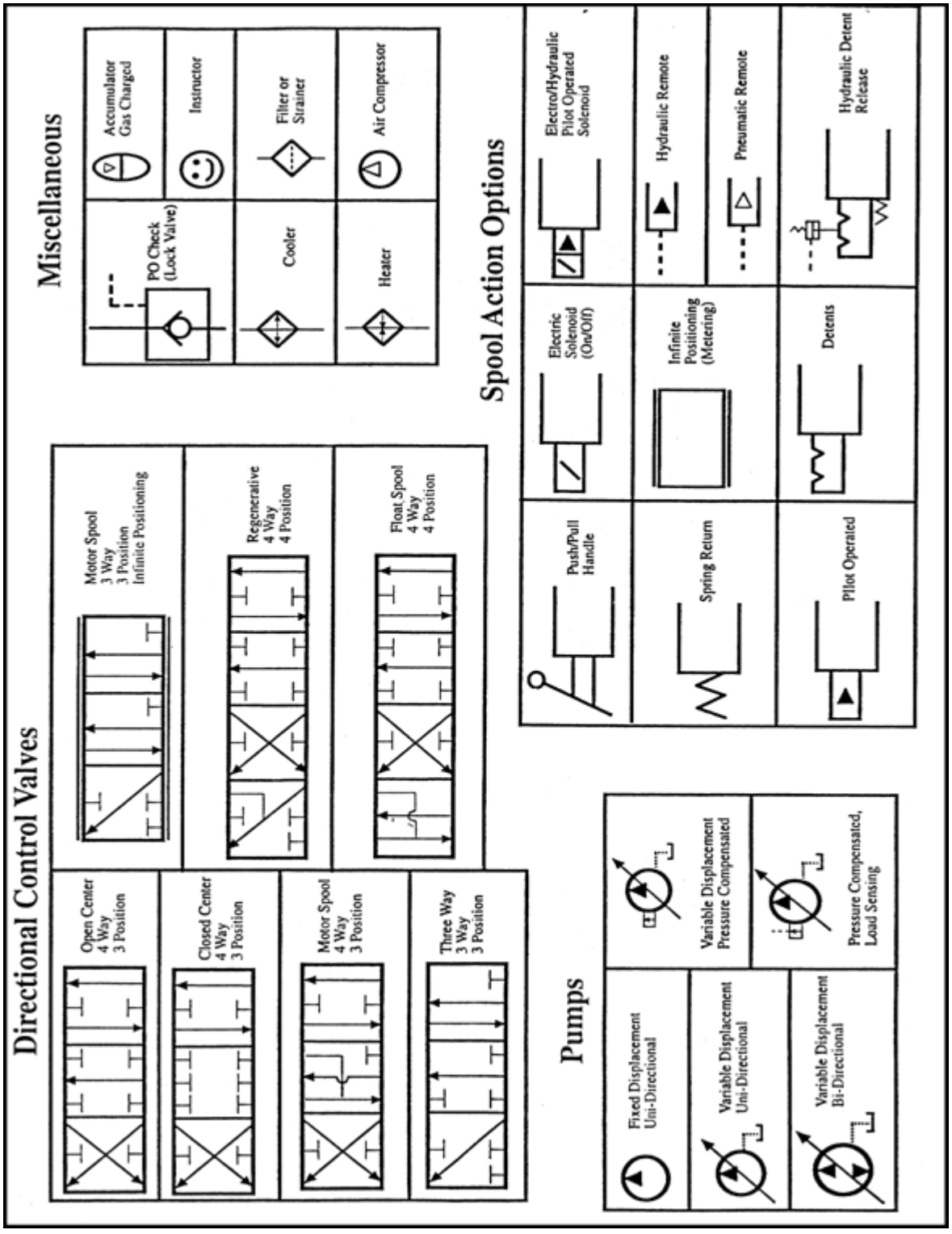


RECOMMENDED TECHNIQUE

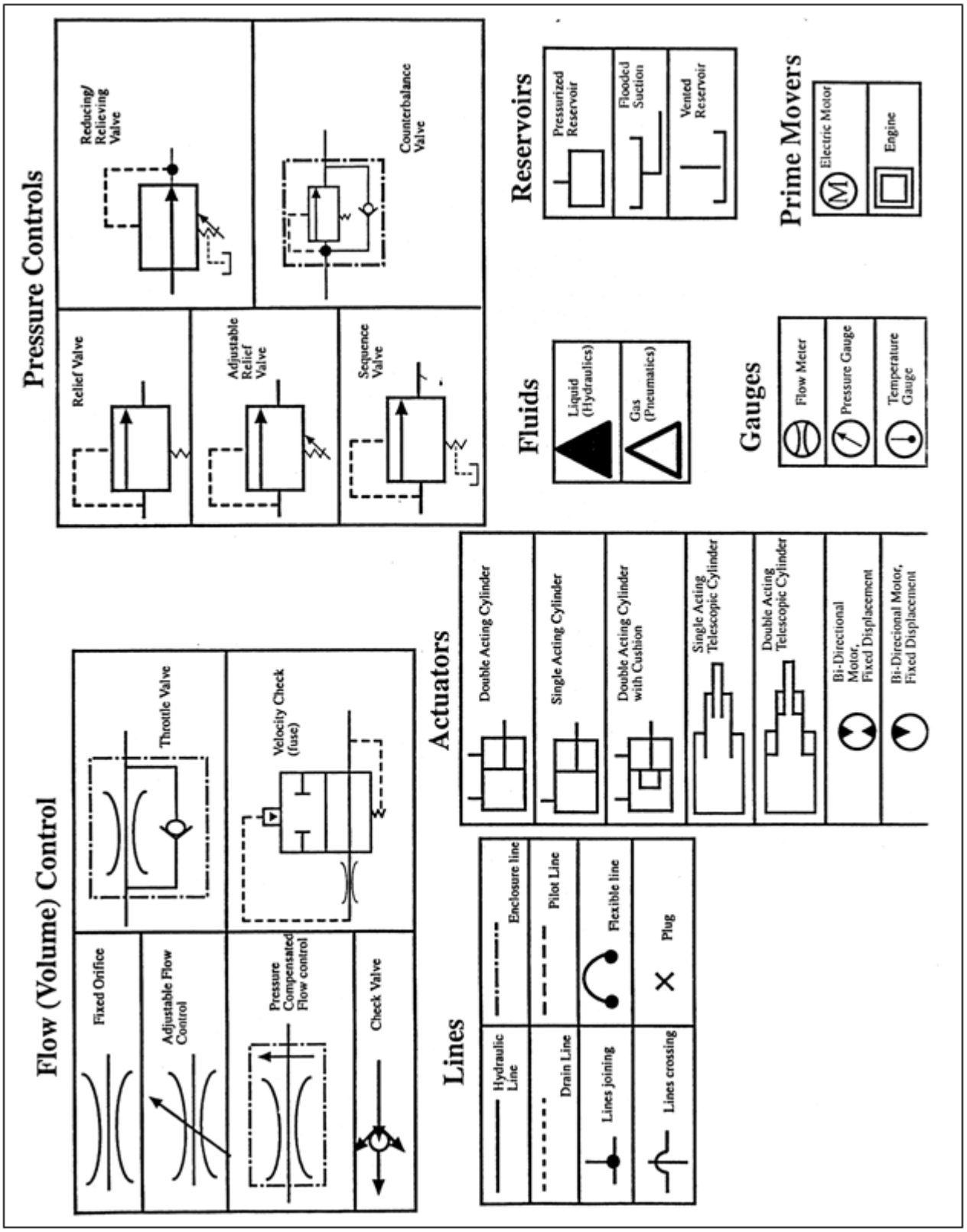


INCORRECT TECHNIQUE

HYDRAULIC SYMBOLS

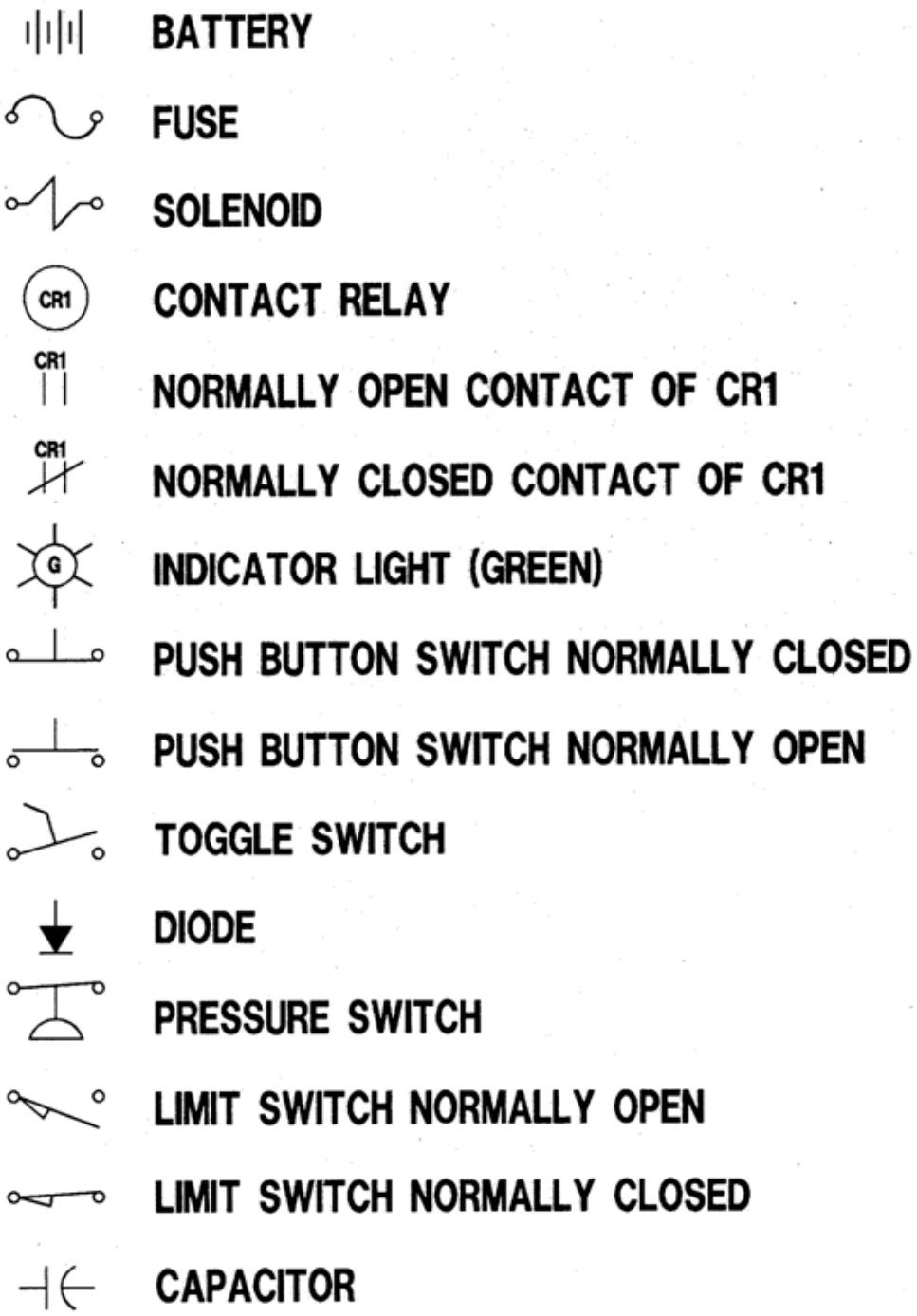


HYDRAULIC SYMBOLS (CONTINUED)



ELECTRICAL SYMBOLS

SYMBOL DEFINITIONS



SECTION 2
INSTALLATION

CONTACT INFORMATION

Technical Service:

877-258-1105

Parts and Warranty:

800-528-5308

For parts visit our e-commerce market place at **www.mecomerchant.com**.

If you do not have a user name and password, contact our Parts Department and they will assist with your registration.

Normal Business Hours:

Monday-Friday 8:00am - 5:00pm

(Central Standard Time)

CONCRETE PAD REQUIREMENTS

These installation instructions are not intended as a substitute for training and experience in proper use and safety procedures in operating this equipment. Marathon Equipment Co. does not assume responsibility for the installation procedures of this equipment. Conformance to applicable local, state, and federal laws concerning installation rests with the customer.

⚠ CAUTION

Review this manual before making the installation. Study the jobsite and installation requirements carefully to be certain all necessary safeguards or safety devices are provided to protect all personnel and equipment during the installation and as a completed system. Special attention is directed to the most current ANSI Z245.2 standards.

Concrete Pad

1. Preferred dimensions of the concrete pad are 10'0" wide and a length of 5'0" greater than the length of the compactor/container. It should be level and of minimum 3000 PSI concrete steel reinforced, 6" thick. It is preferred that the concrete pad be flush with the surrounding ground level.

NOTICE

Units with four ground rollers must be installed on a level pad.

2. To provide accessibility, the concrete pad should be positioned to allow 28" clearance between any obstacle and the outside edge of grab claw per ANSI Z245.21. Allow a minimum of 45’ of clear space from end of pad for the container handling vehicle.

NOTICE

The clearances given are minimums. Your installation may require greater clearances, depending on the site and the hauling equipment that will be used.

STEEL INSTALLATION PROCEDURES

Dock Installation

If the appropriate accessories are ordered from Marathon Equipment Co., the compactor will be furnished with either a four-sided hopper or a three-sided hopper with a hinged gate. THESE ACCESSORIES SHOULD NOT BE ALTERED AS THEY ARE MANUFACTURED IN ACCORDANCE WITH THOSE STANDARDS WHICH PREVAIL AT THE TIME OF MANUFACTURE.

If the compactor cannot be directly abutted to the dock or if there is any difference in height between the dock and the compactor/container, an appropriately sturdy transition section should be provided by the customer and securely affixed to the dock. Along with the transition section, a compactor/container guidance/stop mechanism should be installed to assure that the unit does not bottom out against the transition section or dock during dock placement (See ANSI Z245.2 Safety Standards). Optional container guides with stops are available from Marathon and are recommended for proper dock placement of the compactor/container.

Chute-Fed Installation

Compactors installed in this arrangement are normally fed "through-the-wall". The lower edge of the access hole in the wall should be a MINIMUM of 42" (and, if possible, not more than 58") from the inside floor level. Also, due to compactor height variations, the bottom of the access hole should be at least 2" above the compactor height. A security door (in accordance with local code) should be installed in the wall opening. In the absence of a local code, this door should be constructed of 3/16" thick steel or of steel hollow core design and be lockable from the inside of the building.

Decals

Be certain that the appropriate decals are in their proper locations at all times on the machine. For decals locations, see **Decals** 47 and **Decal Placement for Standard Units** 48 in the "Replacement Parts" section of this manual.

Note: Installation is not complete until all decals are in place.

Container Guides

If container guides (optional) are used with the compactor and container, each guide should be anchored to the concrete pad using two (2) 3/4" X 6" (minimum) anchor bolts. These bolts should be concrete anchors or expansion type anchor bolts. To allow for construction variations, it is best if these holes are drilled in the concrete after prelocating the container guides in their desired location. When the guides have been placed in position, and the anchor bolts have been set, tighten all nuts securely.

ELECTRICAL AND HYDRAULIC INSTALLATION

The Panel Box contains high voltage components. Only authorized service personnel should be allowed inside. See **Lock-Out & Tag-Out Instructions** 6 in the Service Section.

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 50'0" from the compactor. This fused disconnect switch should be sized in accordance with the compactor (see **Fuse and Circuit Breaker Charts**).

⚠ WARNING

All equipment should be grounded per National Electric Code.

Grounding Instructions

This appliance must be connected to a grounded, metal, permanent wiring system; or an equipment grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the appliance.

If there is any doubt whether the equipment is properly grounded, a qualified electrician should be consulted.

Remote Power Pack Installation

1. If the power unit is remote, it should be installed and anchored as required by the customer. If push buttons are mounted in the face of the panel box, be certain these controls are located as to be in a convenient, but not hazardous, location to the customer.

⚠ CAUTION

Controls must be located so that the Emergency Stop Button is readily accessible to the operator and within three (3) feet of the charging chamber access. If installation requires this 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.

2. For a through-the-wall power pack installation, see the diagram **Through-the-Wall Power Unit Installation** 20 at the end of this section.
3. Connect the hydraulic hoses between the compactor body and the power unit. The rear port (base end) on the compactor is “A” port. The front port (rod end) on the compactor is “B” port.
4. The Limit Switch is connected to the power unit with Sealtite. To install, bolt the limit switch to the pre-drilled hole pattern outside the compactor body (right-hand side towards the rear for compactors with power unit connection on the right-hand side; left-hand side towards the rear for compactors with power unit connection on the left hand side). Other compactor mounted electrical options are color coded and referenced to the schematic shipped with the compactor. Make sure all wires are connected properly. Check local codes to assure that Sealtite is acceptable.

ELECTRICAL AND HYDRAULIC INSTALLATION (CONTINUED)

Pushbutton Control Panel

If a remote pushbutton station is furnished, it will be factory wired using Sealtite. If it is necessary to disconnect it from the wires (to install the pushbutton station inside a building), exercise care that these wires are reconnected as originally furnished. (Check local codes to be certain that Sealtite is acceptable.)

⚠ CAUTION

Controls must be located so that the Emergency Stop Button is readily accessible to the operator and within three (3) feet of the charging chamber access. If installation requires this 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.

Electrical Connections

1. Run power lines between fused disconnect switch (customer furnished) and compactor's electrical panel box, in accordance with local electrical codes, using knock-outs in bottom of panel box. See **Fuse & Circuit Breaker Charts** for Motors and **Wire Size Chart**, in the Service section, to determine the proper service disconnect amperage rating and the proper wire size.

   Note: High legs should be installed to L3 on motor starter.

2. Check voltage at fused disconnect switch to be certain it is the same as is shown on compactor or remote power pack.

Start-Up Instructions

With the ram fully retracted, check to be sure the oil reservoir is full to the 3/4 level on the sight gauge (Refer to the **Periodic Maintenance** 35 page for hydraulic oil recommendations). The hydraulic system pressure has been factory set and the entire unit has been operated prior to shipment.

⚠ CAUTION

Make sure persons and material are clear of charge box area.

Put fused disconnect switch in "ON" position when ready to start machine. Depress the start button and check the motor fan for proper rotation (should be clockwise). Caution: If the pump rotates backward, stop immediately. 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. Follow all **Lock-Out & Tag-Out Instructions** 6 in the "Service" section.

Make sure that the operators are trained in the proper use of this equipment.

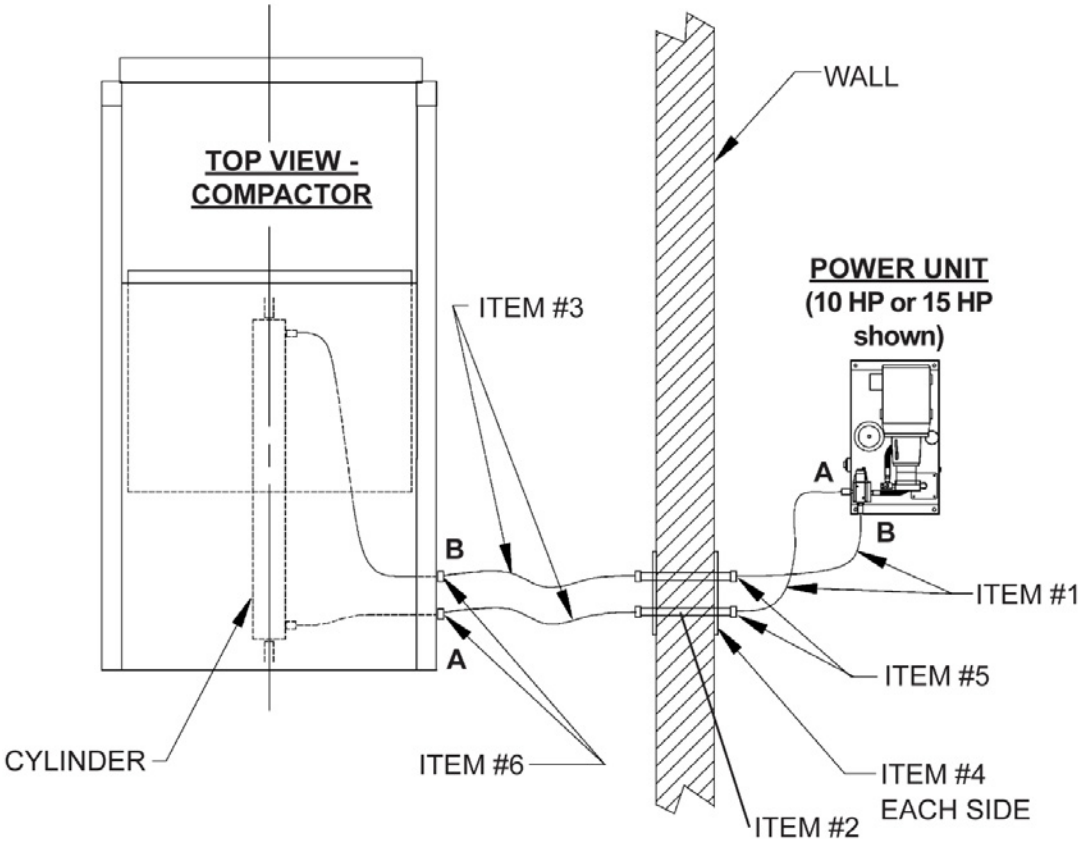
THROUGH-THE-WALL POWER UNIT INSTALLATION

If your installation uses a remote power unit mounted through-the-wall, the following list of material and diagram is the suggested method of arranging the hydraulic plumbing.

LIST OF MATERIAL		
ITEM	**QTY**	**DESCRIPTION**
1	2	Hydraulic Hose, Hi-Pressure (sized to power unit*), 36” long
2	2	Pipe, Sch 80 (sized to power unit*), 36” long
3	2	Hydraulic Hose, Hi-Pressure (sized to power unit*), 48” long
4	2	Steel plate with holes for Item No. 2, 3/16” x 8” x12”
5	4	Coupling, Female (sized to fit hose & pipe*)
6	3	Coupling, Male x Female Swivel
* 1/2” for runs of 20’-0” or less. Must be 3/4” for 18.5 gpm or greater. Consult factory for longer runs.		

⚠ WARNING

An Emergency Stop Button must be mounted within 3’-0” of the compactor charge box access.



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SECTION 3
OPERATION

CONTACT INFORMATION

Technical Service:

877-258-1105

Parts and Warranty:

800-528-5308

For parts visit our e-commerce market place at **www.mecomerchant.com**.

If you do not have a user name and password, contact our Parts Department and they will assist with your registration.

Normal Business Hours:

Monday-Friday 8:00am - 5:00pm

(Central Standard Time)

PRE-OPERATION INSTRUCTIONS

Employers should allow only authorized and thoroughly 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. Turn off and remove the key after use.

⚠ DANGER

ONLY TRAINED AND AUTHORIZED PERSONNEL SHOULD BE ALLOWED INSIDE PANEL BOX. The panel box contains high voltage components. See **Lock-Out/Tag-Out Instructions** 6.

⚠ WARNING

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

⚠ WARNING

Stay clear of all internal compactor parts and all moving external compactor parts when in operation. Failure to do so could result in serious personal injury or death!

⚠ WARNING

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** 6.

⚠ WARNING

Do not remove access covers except for servicing. Only trained and authorized service personnel should be allowed to service this equipment. All access doors on the compactor body should always be secured in place when the unit is operating. See **Lock-Out/Tag-Out Instructions** 6.

⚠ WARNING

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

⚠ WARNING

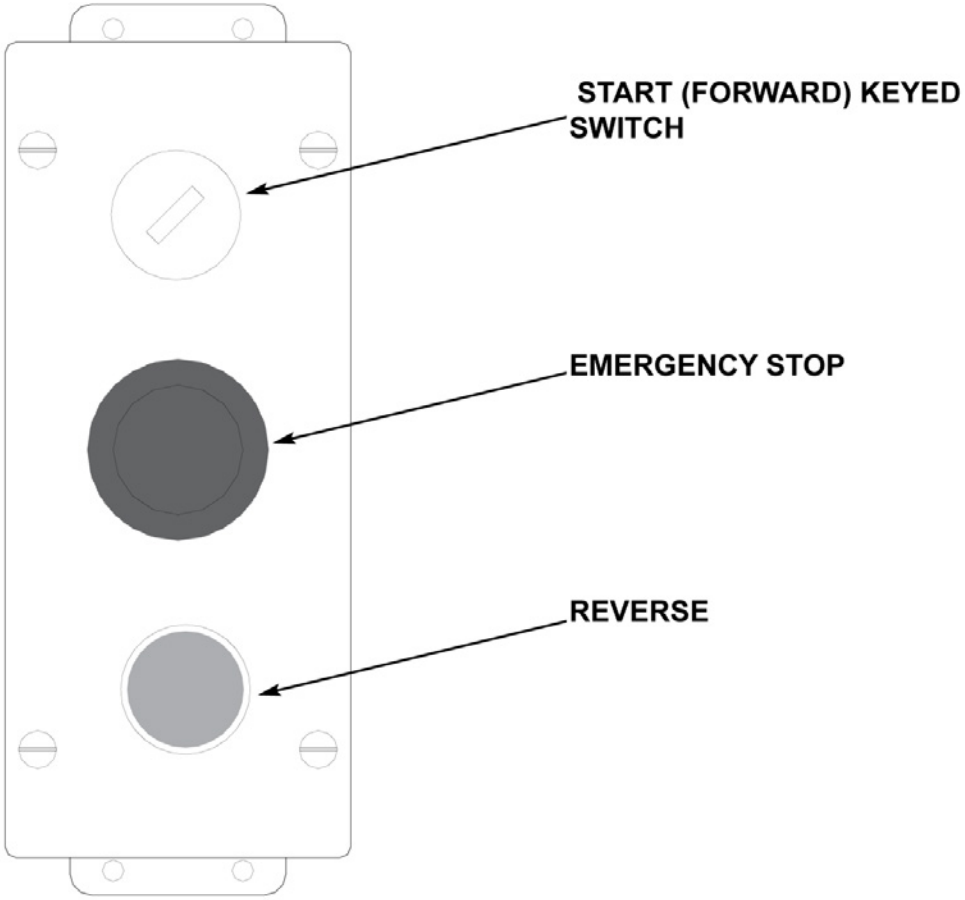
If the compactor is equipped with a security gate or doghouse with security door, be sure that the security gate or door is closed before the compactor is started.

NOTICE

Federal regulation prohibits the use of this equipment by anyone under 18 years of age.

CONTROLS FOR STANDARD UNITS (INCLUDING REGEN)

Use for the RJ-160, RJ-225, RJ-225HD, RJ-275, RJ-275XHD, RJ-325, RJ-325HD, RJ-450, RJ-500, RJ-500HD, and RJ-550



Control Description

1. **KEYED START (FORWARD) SWITCH** - This switch requires a key for operation. Insert the key and turn clockwise to the START position. Depress and hold the key for one to two seconds and release. The compactor will cycle one time (complete extension and retraction of the ram) and stop. After use, turn the key to the counterclockwise position and remove the key.
2. **EMERGENCY STOP MUSHROOM HEAD PUSHBUTTON** - When depressed, this pushbutton will stop all powered operation of the compactor.
3. **REVERSE PUSHBUTTON** - This pushbutton will reverse the compaction ram when depressed. The Keyed Start Switch must be energized for the REVERSE button to operate. See the **Manual Override Instructions** 27 for details of the operation.

OPERATING INSTRUCTIONS FOR STANDARD UNITS (INCLUDING REGEN)

1. Place the material to be discarded into the compactor.

NOTICE

If you are loading the compactor through a door or gate, close it before starting the compactor. Refer to **Decal Placement for Optional Loading Configurations** 51 to determine how your compactor is configured.

2. Insert the key into the key switch. Turn it clockwise and depress for 1 to 2 seconds, then release. The unit will make one complete cycle, then stop.
3. Repeat, if necessary, after the compactor has stopped.
4. 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!

Manual Override Instructions (Ram Stop Rear Only)

If the ram is stopped in any position, (ram stop rear or ram stop forward):

- To move the ram rearward, turn and depress the key switch, then press REVERSE button.

While the ram is moving:

- To reverse the ram while it is moving, depress the REVERSE button.

NOTICE

Refer to **Optional Controls** for Manual Override on Ram Stop Forward Machines.

OPERATING INSTRUCTIONS - MODELS WITH PHOTOELECTRIC CYCLE CONTROL

NOTICE

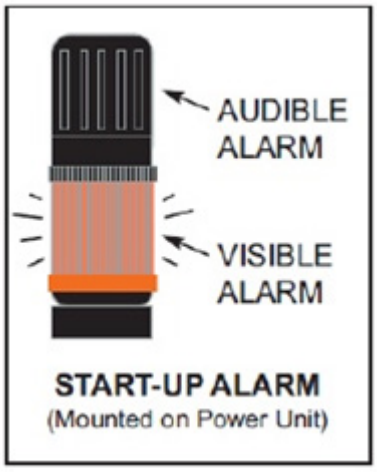
This compactor features an ANSI Z245.21-5.12.1 compliant start-up alarm that is both audible and visible during the activation of the AUTOMATIC mode.

Operating Instructions (Automatic Mode)

1. Place the material to be discarded into the compactor.
2. Insert the first key into the "MANUAL - OFF - AUTOMATIC" key switch and turn to the “AUTOMATIC” position.
3. Insert the second key into the "START" switch and turn to the right.
4. Depress the key in the "START" switch and hold it continuously for 20 seconds.
   a. Both the audible and visual start-up alarms will energize for 5 seconds.
   b. After 5 seconds the audible alarm will stop, but the visual alarm will continue for an additional 15 seconds (for a total of 20 seconds).
   c. After 20 seconds, the motor will start and the ram will extend, and then retract (one complete cycle).
   d. The light will continue to flash until the unit is manually turned off, automatically shuts down, or is switched to manual mode.

NOTICE

If you are loading the compactor through a door or gate, close it before starting the compactor.



⚠ WARNING

In AUTOMATIC mode, the power unit will run automatically anytime photocells detects ANY OBJECT in the charge box.

OPTIONAL CONTROLS (FOR ALL UNITS)

- **Sustained Manual Pressure Control Button** (Hold-To-Run, Release-To-Stop) - This option requires the compactor operator to remain at the pushbutton station while the compactor is in use. Actuation requires depressing the “Hold-To-Run” and “Start” buttons. After the unit has started, the “Start” button is released. If the “Hold-To-Run” button is released, the unit will stop instantly.
- **Container Full Light** - When the light is on, the container is full and is ready to be emptied before its next use. To deactivate, press the illuminated container full light. (The unit will not run while the light is on).
- **Advance Warning Light** - When the light is on, the container is nearing the full level and a pick-up call should be made. At this time 200 PSI is left before the pressure switch is activated to shut the unit off and the container is full. (Unit will run with this light on.)
- **Ram Stop Forward** - When a machine with this option has been stopped, the ram automatically begins to move rearward when restarted. To reverse the ram while it is stopped, depress the key switch. The ram will retract and then go forward.
- **Cycle Timer** - This option is used when more than one cycle is desired. The factory setting is for three strokes (adjustable).
- **Access Interlock** - Required for units equipped with doors, chutes, or access gates. It prevents the unit from operating while a door or gate is open.
- **Photoelectric Cycle Control** - Consists of an LED light source and a reflector. It can be mounted on a hopper or chute. Two holes, located to prevent any hazard, are located in opposite walls of the chute. When the light beam is blocked for 15 seconds, the compactor is activated and will continue to run until the obstruction has been cleared.
- **Automatic Shutdown** - Used with the photoelectric cycle control. This option has a timer that should not be set over 30 minutes. Factory setting is 15 minutes. If a blockage in the charge chamber causes the compactor to continue cycling, the timer will shut the compactor down after the preset time has passed. To deactivate the timer, the illuminated auto shutdown pushbutton is pressed after clearing the blockage.
- **Thermostatically Controlled Oil Heater** - This option is installed in the oil reservoir. The heater will heat the oil when the oil temperature goes below a preset level.
- **Jog Control Station** - This control station is located on the compactor on the discharge end. When the container is to be emptied, the driver inserts a key and switches the compactor to “Bypass” mode so that the charge box can be cleared. The jog control station also has an OFF position so that all compactor controls can be deactivated while the container is being emptied.

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SECTION 4
SERVICE

CONTACT INFORMATION

Technical Service:

877-258-1105

Parts and Warranty:

800-528-5308

For parts visit our e-commerce market place at **www.mecomerchant.com**.

If you do not have a user name and password, contact our Parts Department and they will assist with your registration.

Normal Business Hours:

Monday-Friday 8:00am - 5:00pm

(Central Standard Time)

LOCK-OUT & TAG-OUT INSTRUCTIONS

⚠ DANGER

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 install 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, toxic material, or other hazards) per the OSHA confined space standard.
10. The compactor is now locked out.

LOCK-OUT & TAG-OUT INSTRUCTIONS (CONTINUED)

RESTORING SERVICE

When the servicing or maintenance is completed and the 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 re-energize the compactor.

NOTICE

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.

PERIODIC MAINTENANCE

⚠ WARNING

Never enter any part of the compactor until the unit has been locked-out and tagged-out.

Monthly

- On compactors with legs, remove access cover(s) and clean debris from behind the compactor ram. Replace cover (s) when clean-out is complete. On compactors with skids (RJ-450 and above), open the hinged access cover on each side at the bottom and clean out. Close hinged cover and fasten when clean-out is complete. See **Compactor Clean-Out Procedure** 36 on the next page.
- Check external hoses for chafing, rubbing, and other deterioration or damage.
- Check for any unsafe conditions in the compactor area.
- Check oil level in hydraulic reservoir. Level should be 3/4 of sight gauge.
- Clean out debris from behind compactor ram.
- Lubricate the ram guidance tracks using the grease fittings on the compactor side. (For guided ram machines only)

Quarterly

- Check functional operation of controls and options (stop button, timers, lights, etc.).
- Check hydraulic cylinder, internal hoses, and connections for leakage; check hoses for chafing and wear.

Annually

- Lubricate electric motor bearings annually per the manufacturer’s instructions.

Filter Maintenance

- The hydraulic suction line filter should be cleaned regularly at yearly intervals.
- The filter may be removed from the unit by disconnecting the union on the suction side of the pump, removing the four bolts retaining the suction flange, and lifting the filter from the reservoir.
- Care should be exercised in cleaning the filter to ensure that the element is not torn.
- Clean the element with a soft brush and standard industrial solvent.
- Replace the filter after cleaning and tighten the union securely. Pump noise and a "crackle" sound is most often caused by air entering the pump suction line. Tightening the suction fittings will usually eliminate the problem.

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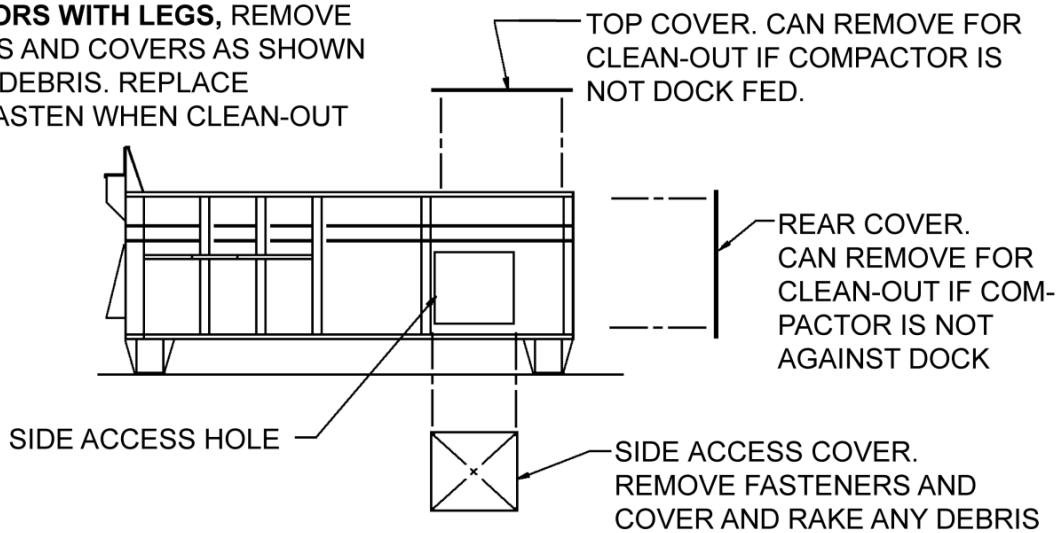
COMPACTOR CLEAN-OUT PROCEDURE

⚠ WARNING

Never enter any part of the compactor or perform any maintenance until the unit has been Locked-Out and Tagged-Out.

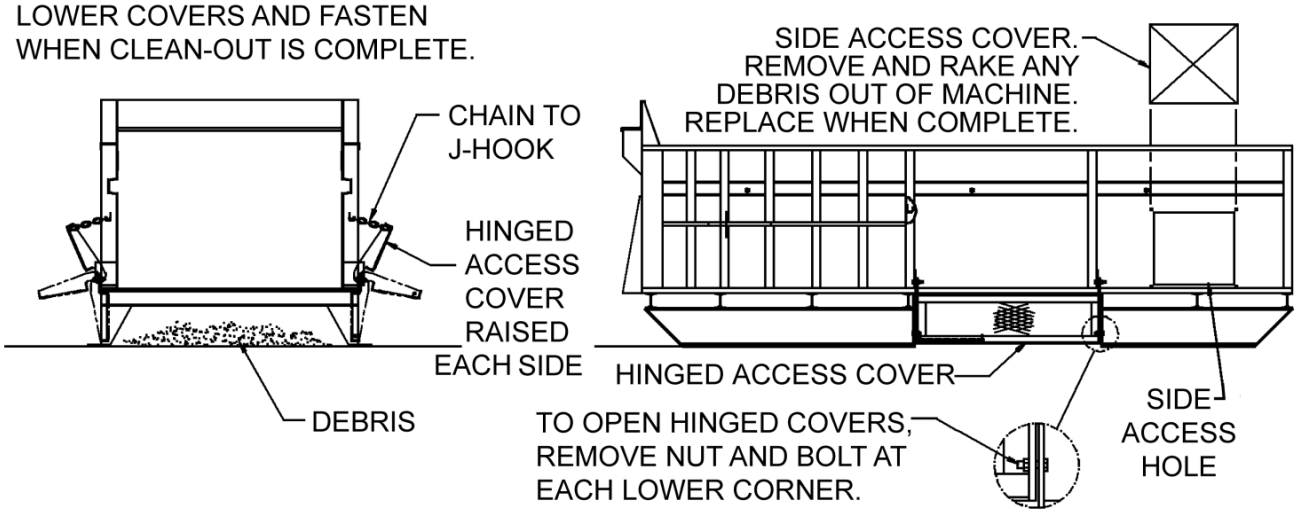
FOR COMPACTORS WITH LEGS, REMOVE THE FASTENERS AND COVERS AS SHOWN TO CLEAN OUT DEBRIS. REPLACE COVERS AND FASTEN WHEN CLEAN-OUT IS COMPLETE.



SIDE VIEW - COMPACTOR WITH LEGS

FOR COMPACTORS WITH SKIDS, REMOVE THE FASTENERS AT THE LOWER CORNERS OF EACH HINGED COVER AND RAISE THE COVERS TO CLEAN-OUT DEBRIS. LOWER COVERS AND FASTEN WHEN CLEAN-OUT IS COMPLETE.

SIDE VIEW - COMPACTOR WITH SKIDS



PRESSURE SETTINGS

⚠ WARNING

Lock-Out & Tag-Out compactor prior to any service or maintenance.

1. **Lock-Out & Tag-Out** 6 the compactor following procedure.
2. Install a 3000 PSI liquid-filled pressure gauge in the gauge port on the hydraulic sub plate located underneath the hydraulic directional control valve.
3. Remove the access cover (top or side). Mark the position of the bottom limit switch actuator on the actuator mounting bracket. Then remove the bottom limit switch actuator. See **Procedure for Limit Switch Adjustment** 39.
4. Loosen the locknut on the relief valve adjustment screw and back the adjustment screw off CCW (counter-clockwise) several turns.
5. Turn the disconnect to the ON position.
6. Start the compactor and extend the ram until it bottoms out and slowly turn the adjustment screw until the unit shuts down. If the pressure on the gauge is the same as shown on the chart (Pressure Switch Setting) below, proceed to step 22.
7. If the pressure on the gauge does not agree with the chart, the pressure switch will need to be re-adjusted to the required setting. If the pressure switch is a United Electric (cylindrical shaped) proceed to step #8. If the pressure switch is a Barksdale (top mounted adjustment type) proceed to step #9.
8. Pressure switch adjustment for United Electric pressure switch. Slide the protective collar on the pressure switch back to revealing the adjustment mechanism. Insert a small screwdriver into the slot and rotate the adjustment mechanism CCW several turns. Also, turn the adjustment screw on the relief valve several turns CCW. Proceed to step #10.
9. Pressure switch adjustment for Barksdale pressure switch. Remove the protective cap from the adjustment screw located on the top of the pressure switch cp and turn the adjustment screw several turns CCW. Also, turn the adjustment screw on the relief valve several turns CCW. Proceed to step #10.
10. Restart the compactor, fully Extending the ram, and turn the relief valve adjusting screw clockwise until the pressure on the gauge reads 1650psi.
11. Slowly turn the adjustment screw on the pressure switch clockwise until the unit shuts down. The shut down pressure for the compactor is now set.
12. The system relief pressure must now be set.
13. **Lock-Out & Tag-Out** 6 the compactor following procedure.
14. Install a jumper wire on terminals #4 & #10 inside the compactor panel box. This will prevent the compactor from shutting down as the relief pressure is adjusted above the shutdown pressure setting.
15. Turn the disconnect to the ON position.
16. Start the compactor and fully Retract the ram until it bottoms out. Slowly turn the relief valve adjustment screw clockwise until the pressure reading on the gauge reads 1950psi.
17. Tighten the relief valve adjustment screw locknut.
18. Turn the compactor off using the STOP button located in the control station.
19. **Lock-Out & Tag-Out** 6 the compactor following procedure.
20. Remove the jumper wire from terminal #4 & #10. Ensure all wires are correctly installed under terminals and terminals are tightened correctly.

PRESSURE SETTINGS (CONTINUED)

⚠ WARNING

Lock-out & tag-out compactor prior to any service or maintenance.

21. Replace the protective covers on pressure switch adjustment screws.
22. Replace the bottom limit switch actuator on the mounting bracket and reposition using the locating marks from step #3.
23. Turn the disconnect to the ON position.
24. Cycle compactor to ensure proper limit switch settings and operation.
25. Replace all access covers.

Pressure Setting Chart

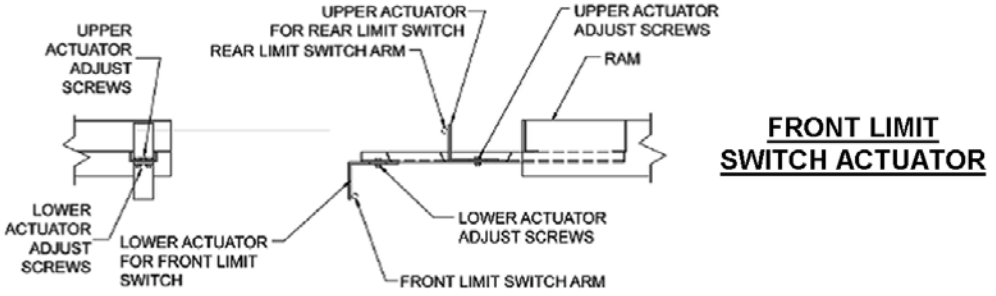
Model	HP	GPM	Relief Valve Setting	Ckt #1 Pressure Switch	Cylinder Bore	Cylinder Rod	Cylinder Str
RJ-225	1.5	4.35	1950	1650	6	2.5	56

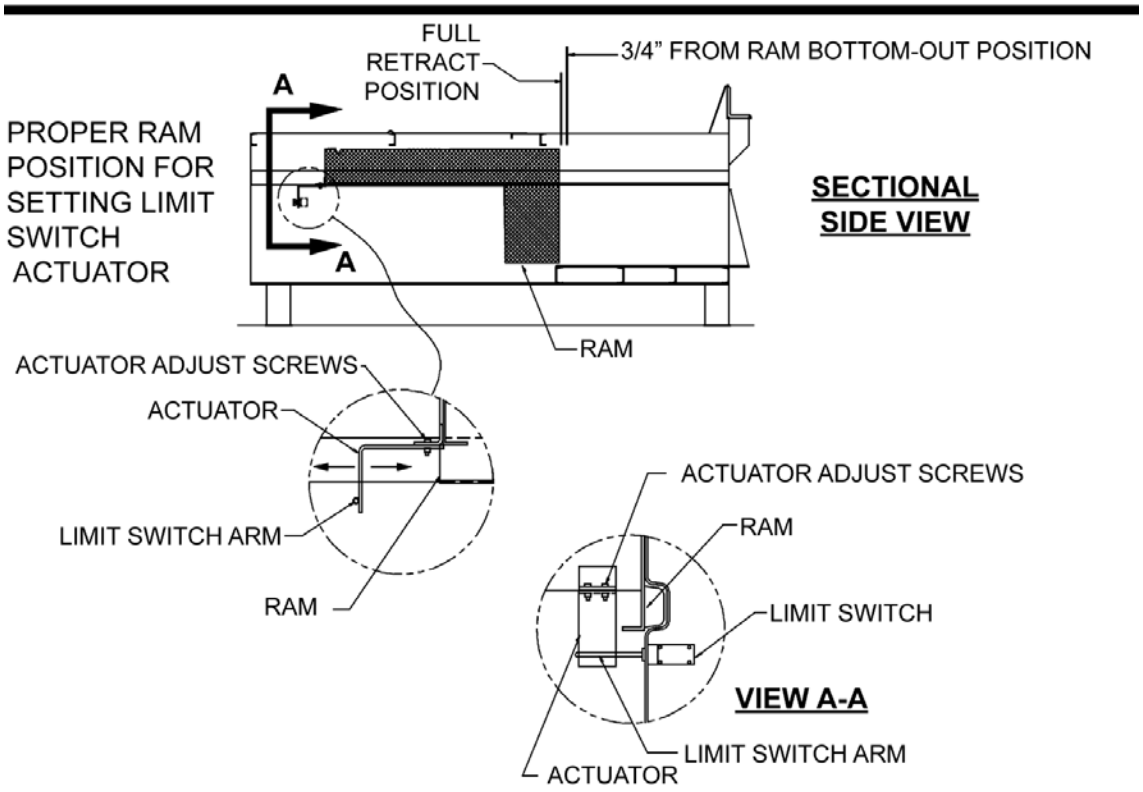
NOTICE

On units with the Advance Warning Light, set the pressure to 200 PSI below the pressure switch setting.

PROCEDURE FOR LIMIT SWITCH ADJUSTMENT

1. Retract the ram completely. Lock-out and tag-out compactor.
2. Mark the ram front position on the compactor side. Power the compactor and run the ram forward 3/4” - 1” and stop. Lock-out and tag-out the compactor.
3. Remove the top cover or side access cover to access to the upper actuator.
4. Loosen the actuator screws and slide the actuator back against the rear limit switch arm until the limit switch clicks. Re tighten the screws.
5. Extend the ram completely. Lock-out and tag-out compactor.
6. Mark the ram position on the compactor side. Power up the compactor and run the ram back 3/4” - 1” and stop. Lock-out and tag-out the compactor.
7. Remove the top cover or side access cover to gain access to the lower actuator.
8. Loosen the actuator screws and slide the actuator forward against the front limit switch arm until the limit switch clicks. Re tighten the screws.
9. Replace the access cover(s). Make sure that all personnel are clear of the compactor.
10. Test run the compactor to make sure adjustment is correct.





PROCEDURE FOR MULTI-CYCLE TIMER ADJUSTMENT (OPTIONAL)

⚠ WARNING

Lock-out & tag-out compactor prior to any service or maintenance.

Determine the total cycle time of your compactor. This can be found in **Specifications** 8. Normally the multi-cycle timer is set for 3 strokes. To determine the total seconds required for the multiple strokes, multiply the cycle time shown in the chart by the desired number of cycles AND subtract one-fourth of the cycle time. This is the cumulative number of seconds for which to set the switches. For example:

EXAMPLE:

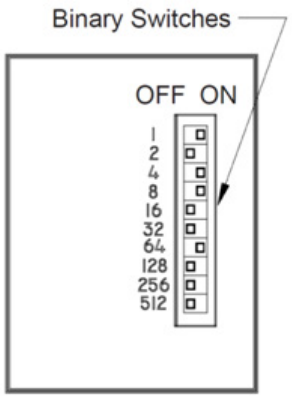
- Cycle time of machine = 28 sec
- Desired number of cycles = 3
- Total seconds for 3 cycles (28 X 3) = 84 sec
- One fourth of cycle time (28/4) = 7 sec
- Number of seconds to set timer (84 - 7) = 77 sec

When the total number of seconds is determined, locate the T2 timer in the electrical panel box and move the appropriate binary switches on the timer to the ON position. The timer switch settings are cumulative (all switches in the ON position add up to the total number of seconds for the timer setting).

Example:

Switch 1	(1 sec)	= ON	1 sec
Switch 2	(2 sec)	= OFF	
Switch 3	(4 sec)	= ON	4 sec
Switch 4	(8 sec)	= ON	8 sec
Switch 5	(16 sec)	= OFF	
Switch 6	(32 sec)	= OFF	
Switch 7	(64 sec)	= ON	64 sec
Switch 8	(128 sec)	= OFF	
Switch 9	(256 sec)	= OFF	
Switch 10	(512 sec)	= OFF	

NOTE: The timer settings add up to 77 sec



Front View - T2 Timer

PROCEDURES FOR CYLINDER REPLACEMENT

⚠ WARNING

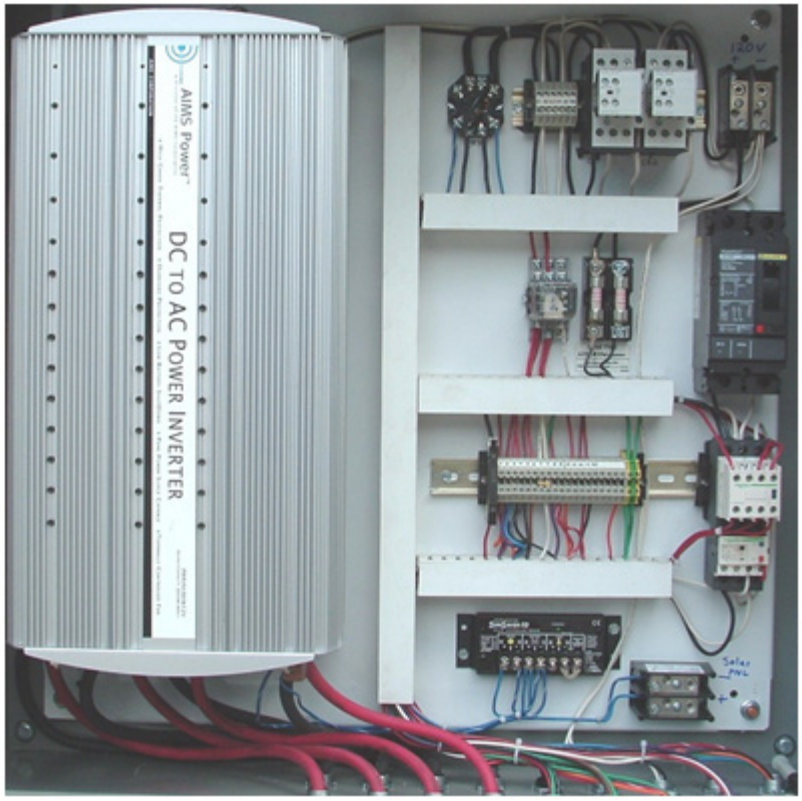
Lock-Out & Tag-Out compactor prior to any service or maintenance.

Cylinder Replacement

1. Remove the access covers.
2. Remove the hoses.
3. Remove the cylinder pins.
4. Remove the cylinders.
5. To install the cylinders, reverse the above steps.

TYPICAL PANEL BOX CONFIGURATION

This diagram represents a typical panel box configuration for the stationary compactors. The panel box on your compactor may differ depending on the model and/or optional equipment and controls.



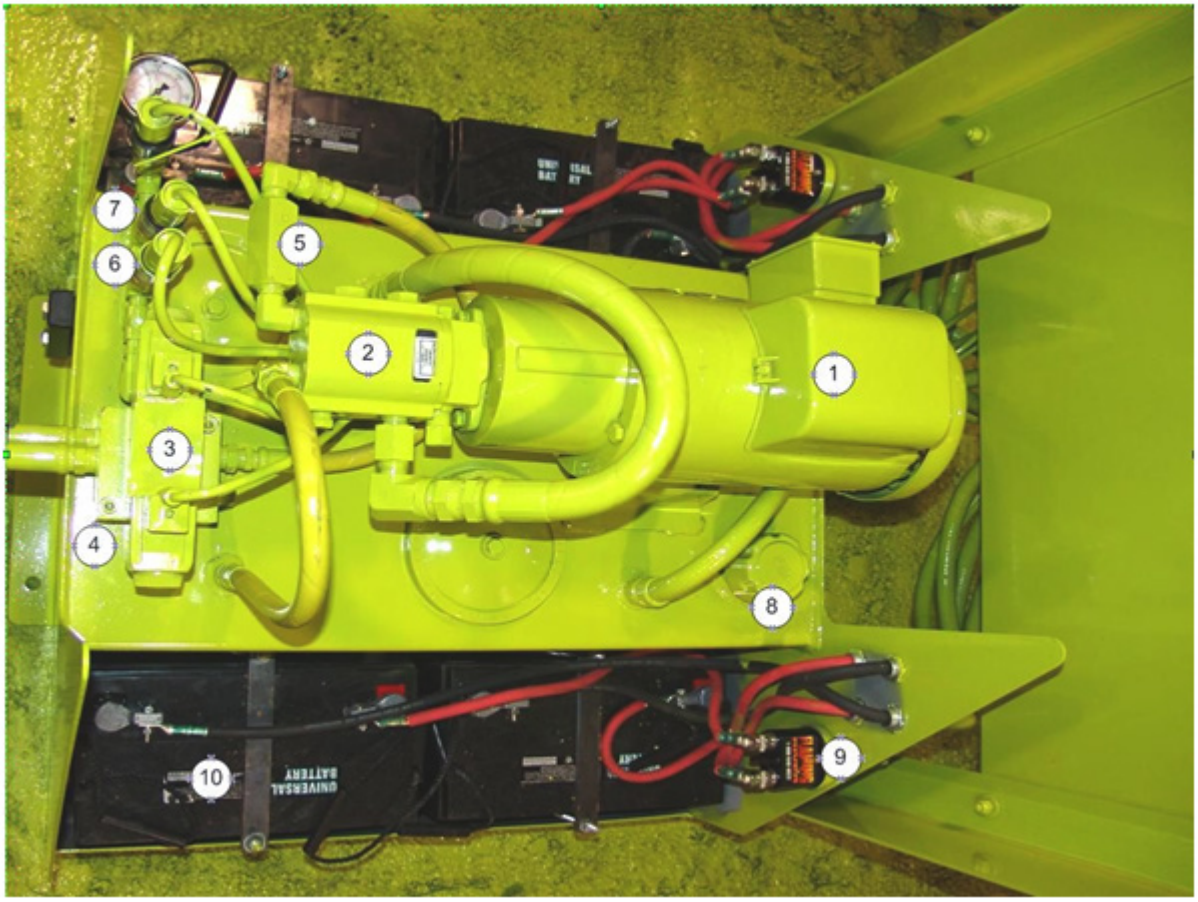
To order replacement parts, please call our Parts Department at 800-528-5308.

Refer to the following chart to identify components:

Need New Chart

REF #	PART #	DESCRIPTION
1	03-5635	Inverter 8000 W
2	03-5634	Voltage Relay
4	03-5631	Reversing Contactor
6	03-5637	Motor Starter
7	03-7510	Solar Controller

POWER UNIT - STANDARD 1.5 HP



Match the reference numbers with the following chart to identify components. For replacement part ordering, call our parts department at 800-528-5308.

REF. #	PART #	DESCRIPTION	QTY
1	03-2649	Motor 1-½ HP	1
2	02-3790	Pump 4.35 GPM	1
3	02-0628	Valve	1
4	02-3958	Sub plate with Relief	1
5	02-0185	Check Valve	1
6	03-0658	Pressure Switch	1
8	02-0197	Breather Cap	1
9	03-5635	Battery Disconnect	1
10	03-5247	Battery 12 V	1

TROUBLESHOOTING CHART

PROBLEM	CAUSE	SOLUTION
UNIT WILL NOT START	1. No electrical power to unit	1a. Turn on main disconnect. 1b. Replace fuses/reset breakers
	2. No electrical power to control circuit	2a. Check primary and secondary sides of transformer. 2b. Check for correct voltage. Check control fuses. 2c. Check stop button. 2d. Check start button to be sure contact closes when depressed.
	3. No electrical power to motor	3a. Check overload reset.
UNIT WILL NOT CONTINUE RUNNING WHEN START BUTTON IS RELEASED	1. Motor starter is in-operative.	1a. Check motor starter coil & wiring.
	2. Motor starter auxiliary contacts are inoperative.	2a. Check motor starter contacts and wiring.
MOTOR RUNS BUT RAM DOES NOT MOVE NORMALLY	1. Insufficient oil in reservoir	1a. Fill reservoir with oil
	2. Low relief pressure	2a. Check relief pressure (refer to PROCEDURES-HYDRAULIC PRESSURE CHECK and PRESSURE SETTINGS for correct pressure. 2b. Clean orifice in relief valve and reset pressure 2c. Check "O" rings on relief valve for damage or leakage
	3. Oil leakage in cylinder	3a. Check cylinder for bypassing 3b. Replace seal kit, inspect rod and cylinder tube for scoring/nicks 3c. Replace cylinder
	4. Defective pump	4a. Replace pump
	5. Oil leakage from hose fittings	5a. Tighten hose fittings
	6. Pump may be driven in the wrong direction of rotation	6a. Stop immediately to prevent seizure. Check direction of drive rotation (proper rotation direction is indicated by arrow on motor)
	7. Shaft broken, or shaft key sheared	7a. Visually inspect motor and pump shaft and hub couplings for damage. Replace if necessary.
	8. Intake pipe from reservoir blocked, or oil viscosity too heavy to prime	8a. Drain system. Add clean fluid of proper viscosity and specifications. Filter as recommended. Check suction strainer for cleanliness.
	9. Intake air leaks (foam in oil or sounds like gravel in pump)	9a. Check intake connections. Tighten securely
	10. Units shift slowly	10a. (For units equipped with pilot valve) remove pilot section, remove and clean orifices
	11. Valve response sluggish	11a. Contaminated oil-drain and flush system. 11b. Inadequate voltage, check voltage, check solenoid coil. 11c. Disassemble valve & clean
UNIT WILL NOT REVERSE	1. Solenoid valve is in-operative	1a. Check coil in solenoid valve

TROUBLESHOOTING CHART

PROBLEM	CAUSE	SOLUTION
PUMP MAKES NOISE-SOUNDS LIKE GRAVEL	1. Partly clogged intake strainer or restricted intake pipe	1a. Pump must receive intake fluid freely or cavitation results. Drain system, clean intake pipe and clean or replace strainer
	2. Defective bearing	2a. Replace pump
	3. Air leak at pump intake pipe joints	3a. Tighten joints as required.
PUMP SHAFT SEAL LEAKING	1. Continuous running	1a. When over 140° F or hot in comparison with circuit lines, pump should be shut down immediately. Before restarting, insure that fluid cooling capacity is adequate to remove system generated heat. 1b. Install oil cooler (air or water type) 1c. Install oil temperature shut down switch 1d. Check to be sure CYCON Power Pack has not been exchanged for Pressure Shifting Power Pack.
	2. Undersized hydraulic lines	2a. Replace with larger hydraulic lines
	3. High ambient temp in relation to oil temp.	3a. Use lower viscosity oil
	4. Excessive system leakage	4a. Check system for bypassing or leaks
RAPID WEAR	1. Abrasive matter in the hydraulic oil being circulated through pump	1a. Install adequate filter or clean filter. 1b. Replace oil more often and clean tank
	2. Viscosity of oil too low at working conditions	2a. Replace oil with factory recommended oil.
	3. Pressure too high	3a. Reduce pump pressures to factory specifications.
	4. Air recirculation causing pump noise	4a. Tighten all fittings.
ERRATIC OPERATION	1. Valve sticking or binding	1a. Disassemble & clean as necessary
	2. Viscosity of oil too high	2a. Change oil to factory recommended viscosity
	3. Air in system	3a. Check for leaks, tighten fittings
	4. Low oil	4a. Fill reservoir with oil
	5. Low voltage	5a. Check primary & secondary sides of transformer for correct voltage
OVERLOADS TRIP FREQUENTLY	1. Incorrect voltage	1a. Check for correct voltage (incoming power).
	2. Excessive load on motor	2a. Check relief valve setting and pressure switch settings 2b. Check pump and motor alignment
	3. Possible problem with motor	3a. Check motor windings for shorted or open windings 3b. Check motor bearings and lubrication
	4. Improper overload setting	4a. Check overload section for correct setting. Adjust as needed. 4b. Check overload for correct size
	5. Loose connections	5a. Check heater elements to be sure they are tight 5b. Check wiring from starter to motor-make sure all connections are tight 5c. Check motor leads to be sure all connections are tight surges or voltage
	NOTE: Excessive overload tripping and/or motor or coil failures may occur if voltage surges or voltage drops are frequent in your area. This circumstance can be remedied by the installation of phase protectors which drop power to the motor if surges are present.	

SECTION 5
REPLACEMENT PARTS

CONTACT INFORMATION

Technical Service:

877-258-1105

Parts and Warranty:

800-528-5308

For parts visit our e-commerce market place at **www.mecomerchant.com**.

If you do not have a user name and password, contact our Parts Department and they will assist with your registration.

Normal Business Hours:

Monday-Friday 8:00am - 5:00pm

(Central Standard Time)

DECAL PARTS LIST

Warning Decal Requirements

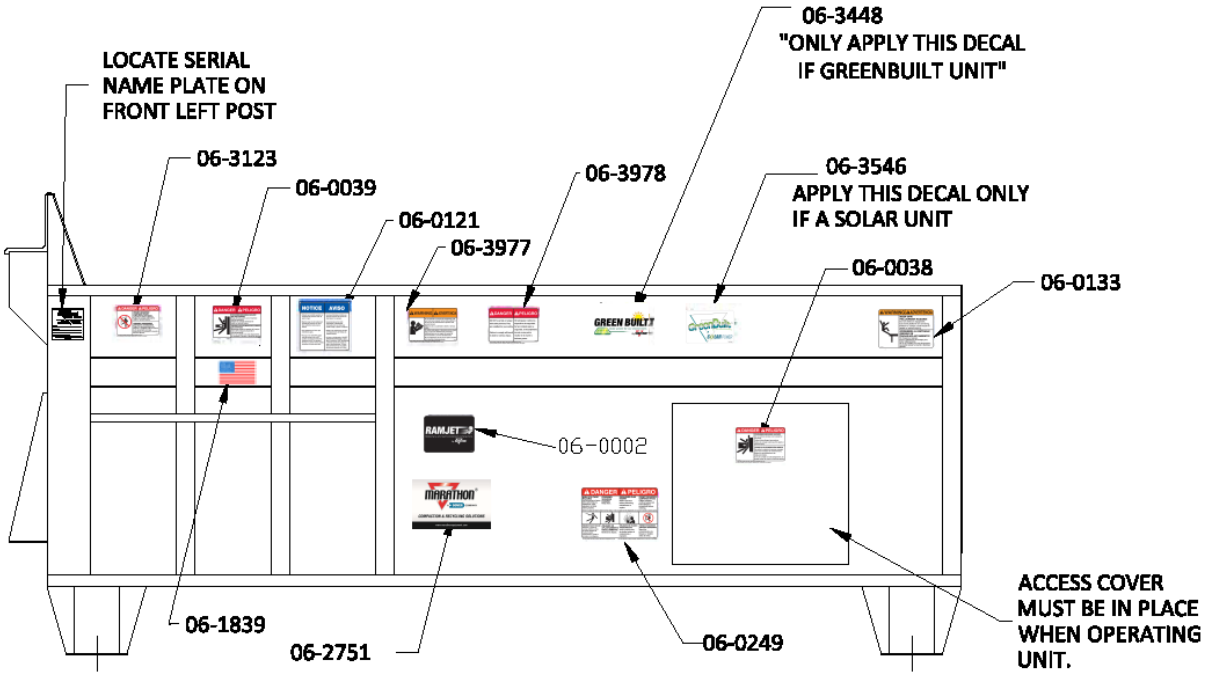
When your compactor leaves the factory, several WARNING DECALS are installed for your protection. These labels are subject to wear and abuse due to the nature of operation. The FOLLOWING DECALS MUST BE MAINTAINED. Additional decals may be purchased through your distributor or from Marathon Equipment Company by calling the parts department at 800-528-5308.

When ordering replacement decals, match the reference numbers in the chart below with the **drawing** on the next page or look for the part number in the lower right-hand corner of the decal.

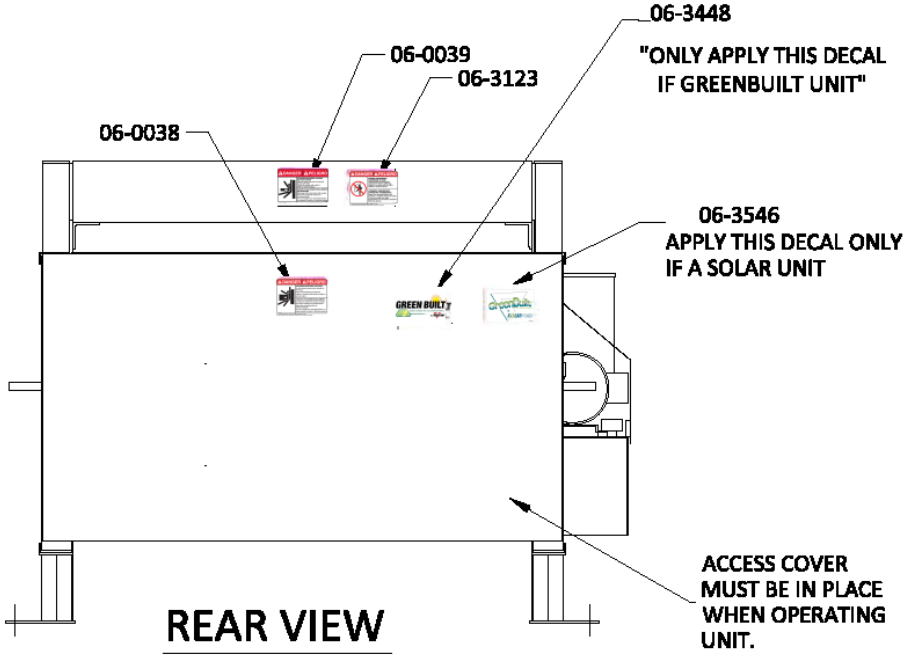
DECALS		
PART #	**DESCRIPTION**	**QTY**
06-0002	RAM-JET	2
06-0038	WARNING: DO NOT REMOVE ACCESS COVER…	4
06-0039	DANGER: DO NOT ENTER	3*
06-0121	NOTICE: FEDERAL REGULATIONS/ NO UNDER 18	2*
06-0249	DANGER: HAZARDOUS VOLTAGE	2
06-1839	AMERICAN FLAG	2
06-3123	DANGER: CONFINED SPACE	3*
06-0364	COMPACTOR SERIAL NUMBER	1
06-3044	DANGER _____ VOLTS	1
06-3977	WARNING: DO NOT OPERATE…	2
06-3978	DANGER: DO NOT OVERRIDE…	2
06-0133	WARNING: KEEP OFF!	2
06-3231	“ULTRA” DECAL**	2
06-0040	DANGER: CRUSHING HAZARD....KEEP OUT.... ***	*
06-0052	DANGER: GATE MUST BE CLOSED.... ***	*
06-3333	NOTICE: IN THE EVENT OF FIRE..... ***	*
06-0058	A PORT****	2
06-0059	B PORT****	2
06-3448	GREEN BUILT SOLAR POWER FOR OUR ENVIRONMENT	2
06-3546	GREEN BUILT FOR OUR ENVIRONMENT	2
06-2751	MARATHON COMPACTION & RECYCLING SOLUTIONS	2

* Quantity varies depending on optional loading configurations. Quantity listed is the minimum for standard decal placement.
**Only on “ULTRA” Models
*** Only on optional loading configurations. See **Decal Placement for Optional Loading Configurations** for placement.
**** Only on units with a remote power unit.

DECAL PLACEMENT FOR RJ-225 & RJ-225HD



LEFT SIDE VIEW

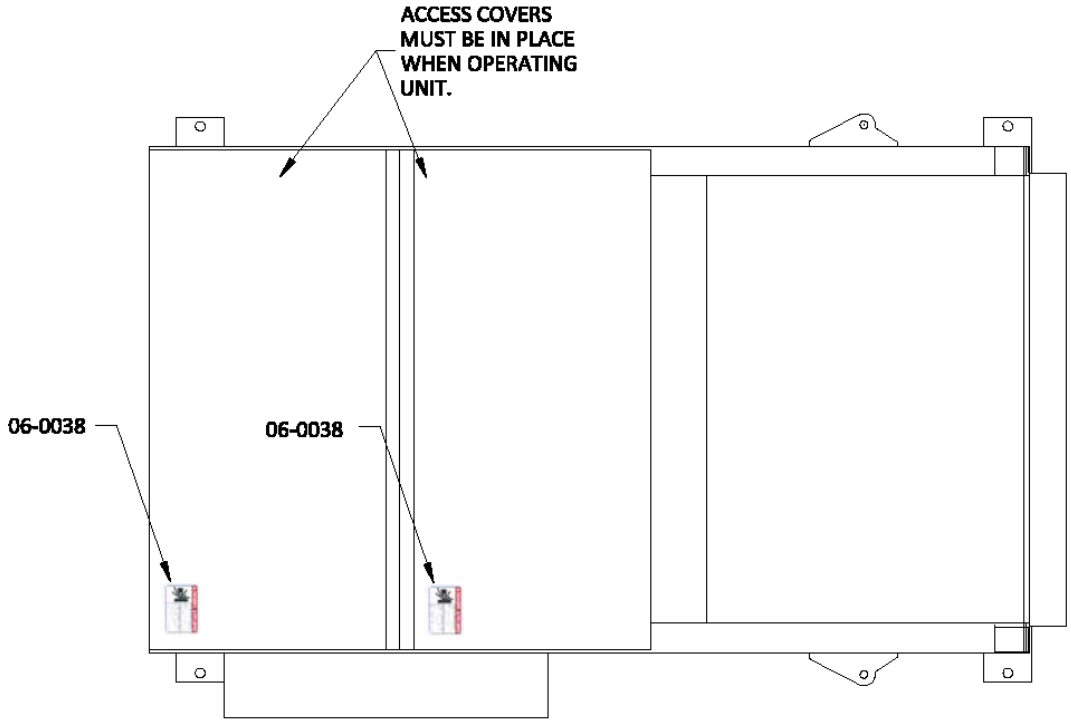


REAR VIEW

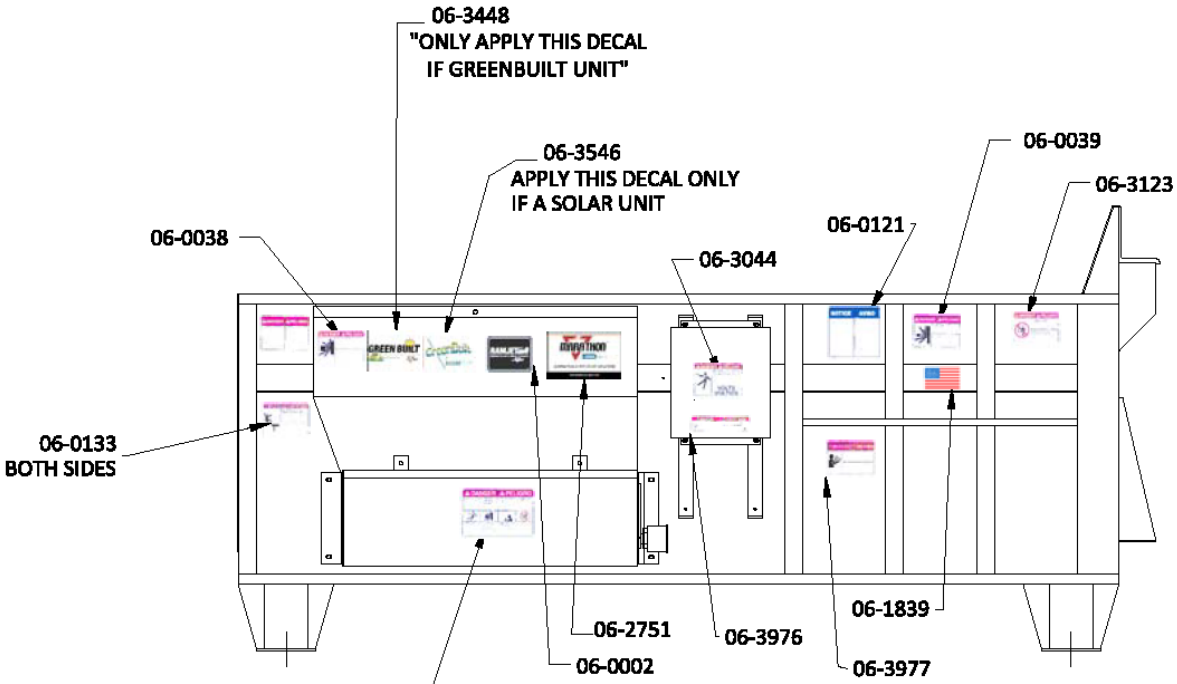
RIGHT HAND SIDE MOUNT SHOWN
LEFT HAND OPP

Illustration Page 1 of 2

DECAL PLACEMENT FOR RJ-225 AND RJ-225HD (CONTINUED)



TOP VIEW

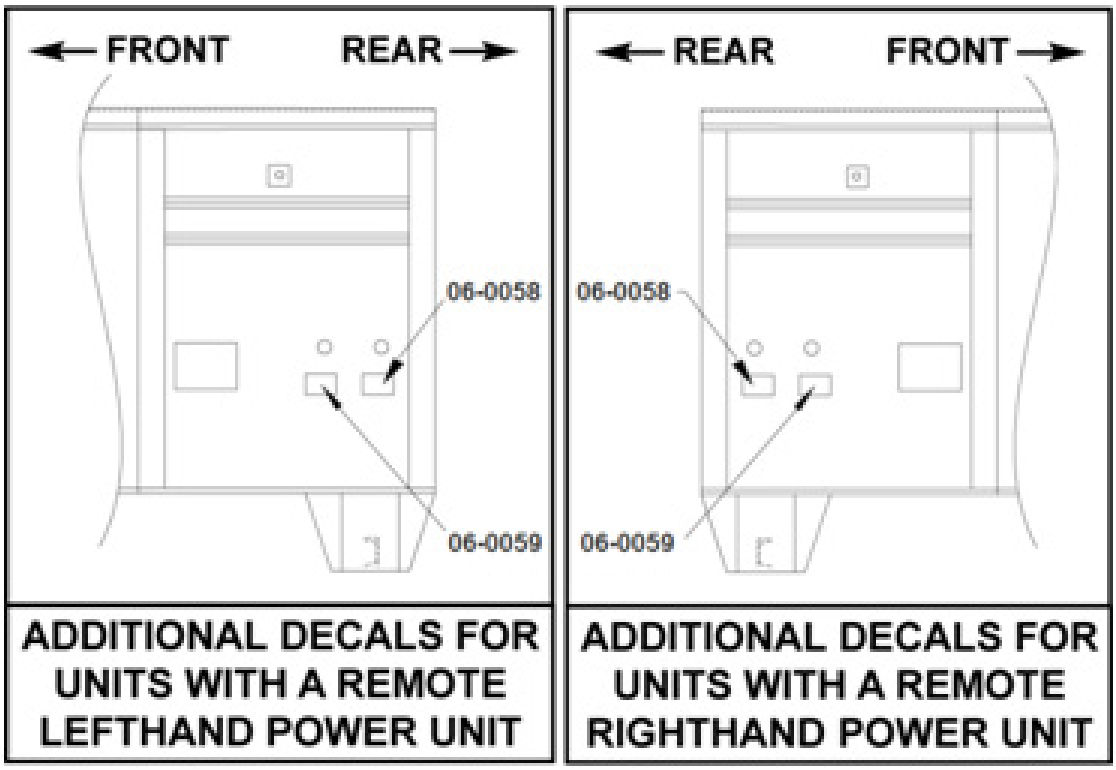


RIGHT SIDE VIEW

Illustration Page 2 of 2

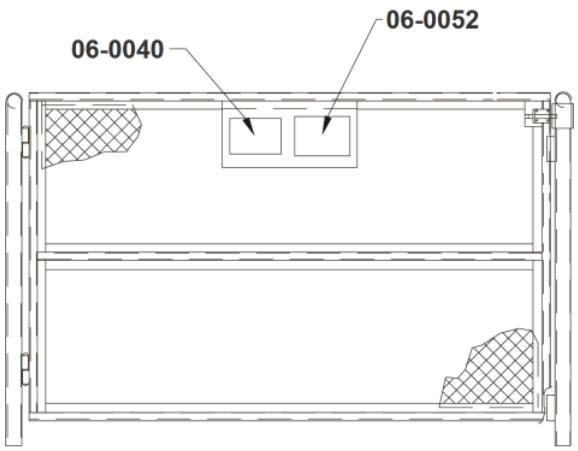
DECAL PLACEMENT FOR UNITS WITH REMOTE POWER UNITS

See **Decal Images** for more details.

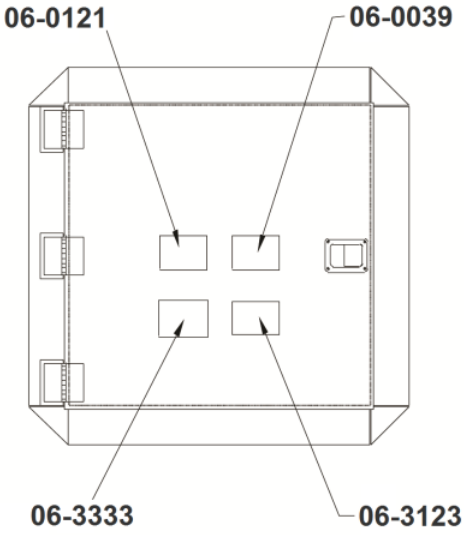


DECAL PLACEMENT FOR OPTIONAL LOADING CONFIGURATIONS

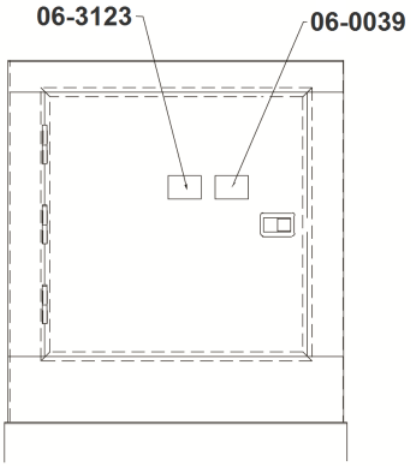
In addition to the standard decal placement, the following decals shown below need to be maintained on any optional loading configurations installed with your horizontal compactor. Match the reference numbers with the decals listed on the **Decals** chart. Since quantities vary by installation, it is best to record the quantity of each of these decals at the time of installation for future reference.



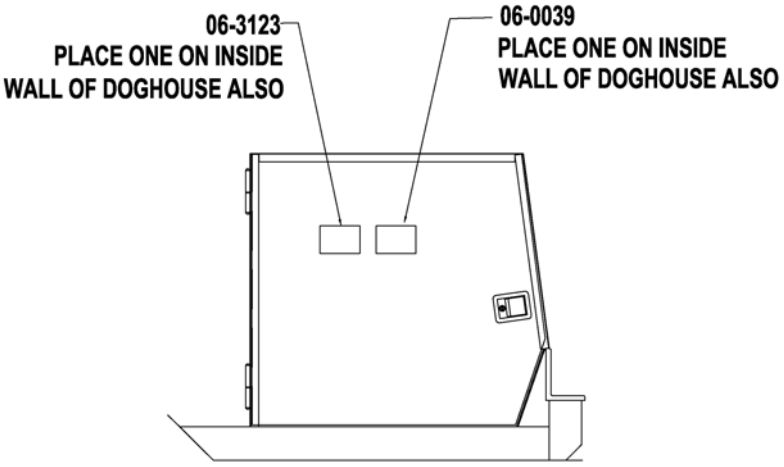
ACCESS GATE



SECURITY DOOR

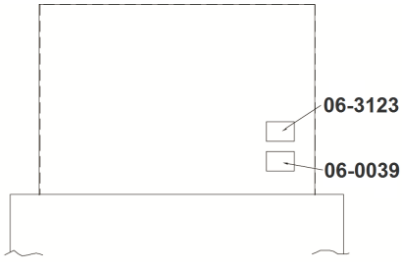


REAR FEED DOGHOUSE

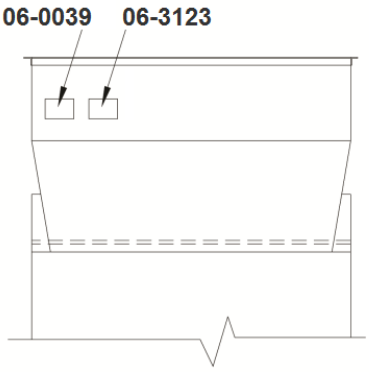


SIDE FEED DOGHOUSE

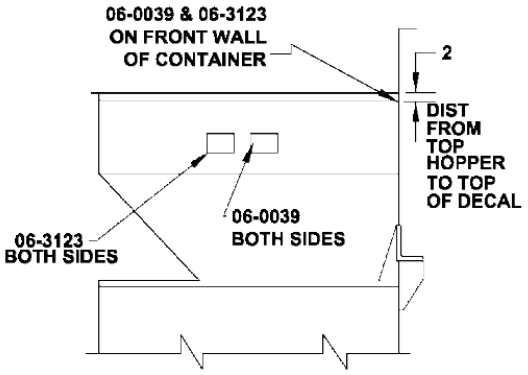
DECAL PLACEMENT FOR OPTIONAL LOADING CONFIGURATIONS (CONTINUED)



SIDE FEED SECURITY CHUTE

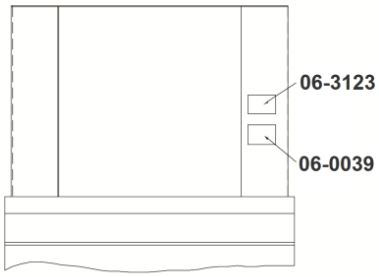


REAR VIEW

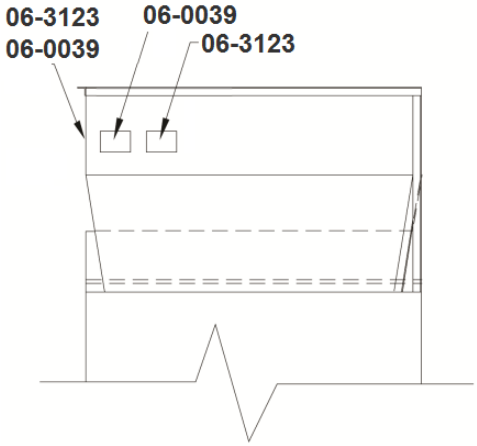


SIDE VIEW

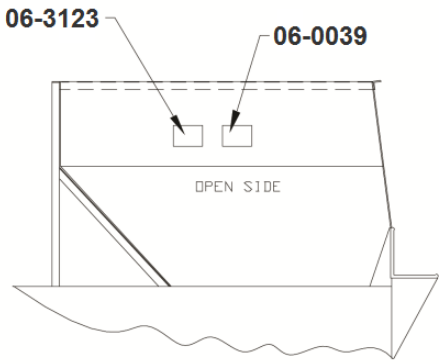
4 SIDED HOPPER



REAR FEED SECURITY CHUTE



REAR VIEW



SIDE VIEW

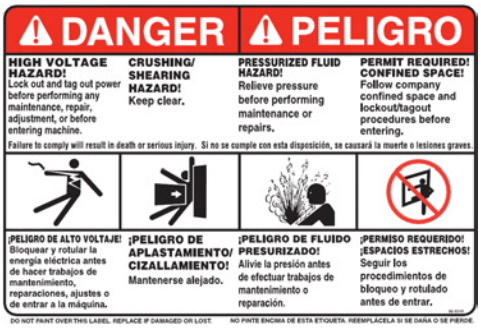
3 SIDED HOPPER

DECAL IMAGES

06-0038

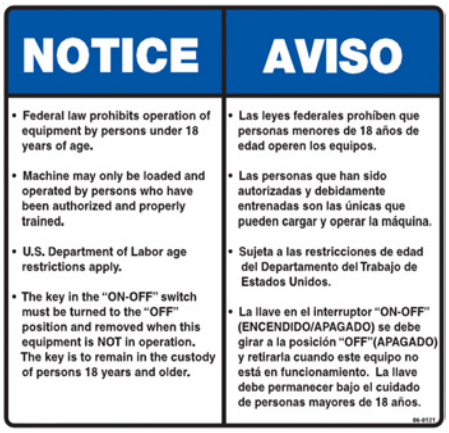
06-0039

06-0249

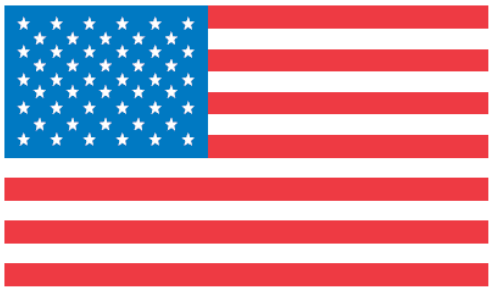


06-0002

06-0121



06-1839



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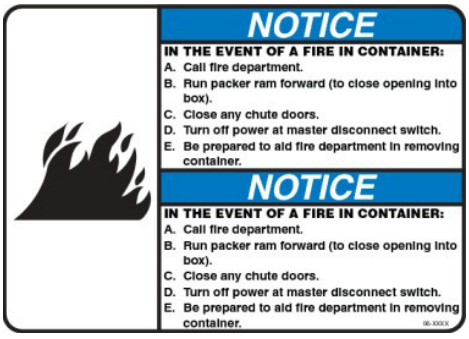
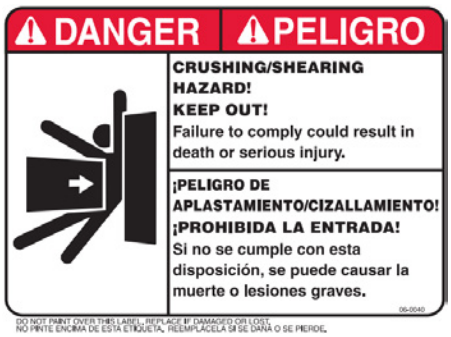
06-3123

06-3044

06-3333



06-0040



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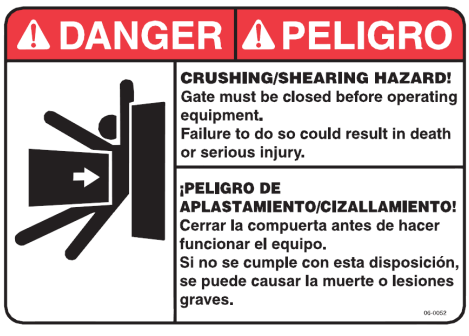

DECAL IMAGES

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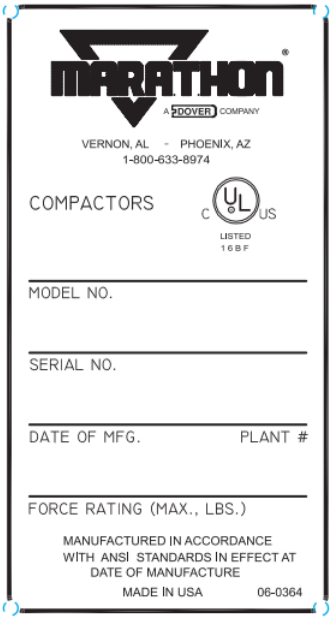
06-3977

06-0133

06-0364



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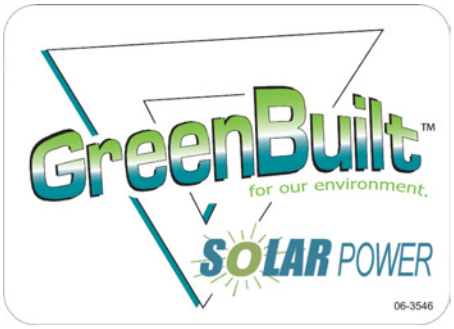
06-3448

06-3546



06-0058

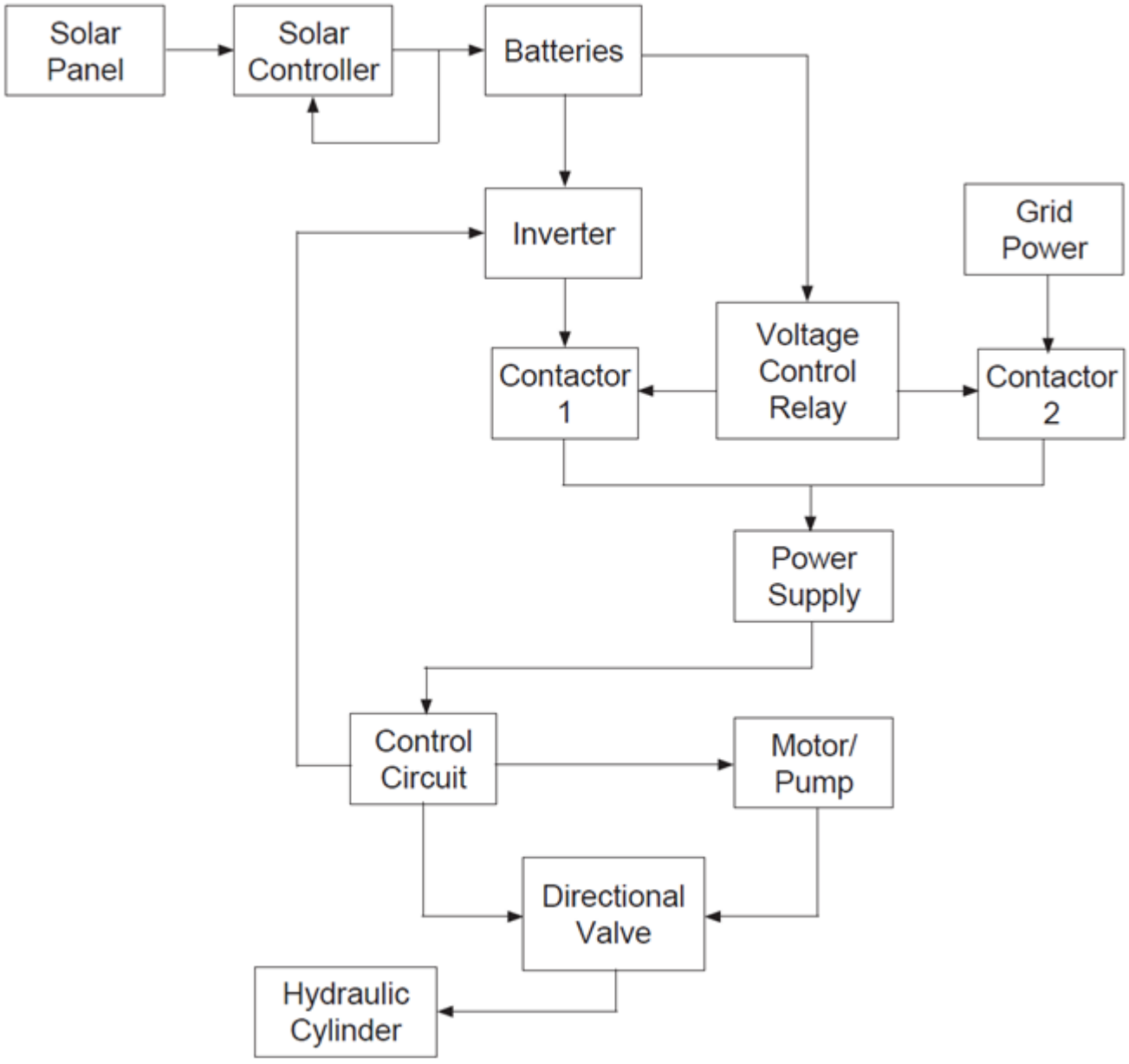
06-0059

SECTION 6
SOLAR POWER UNIT

SOLAR POWER UNIT - SPECIFICATIONS

COMPACTOR MODEL	SELF-CONTAINED/STATIONARY (QTY)
Motor - 120 VAC, 1.5 HP, 4.35 GPM motor/pump combination	2
Batteries - sealed AGM deep-cycle lead acid 12 volt, 110 amp hours	4
100 Watt Solar Panel	1 2

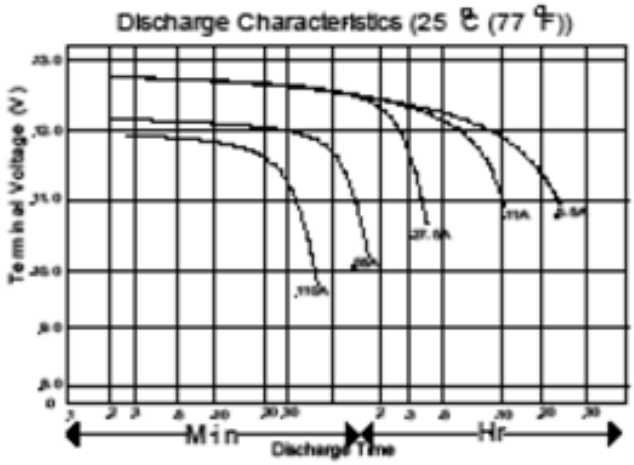
SOLAR POWER UNIT - SCHEMATIC

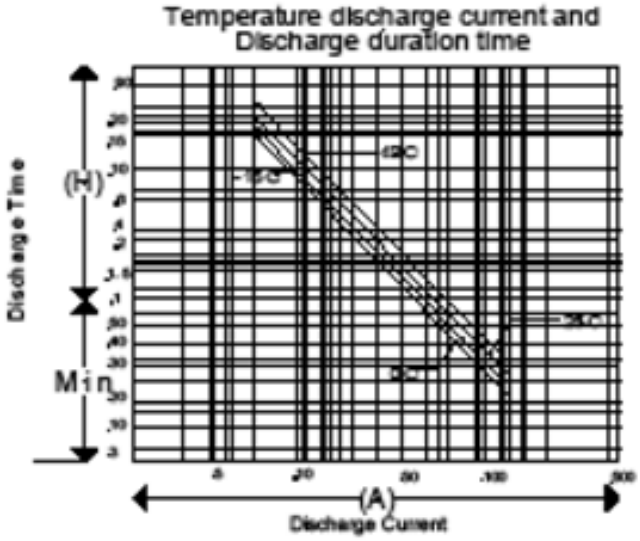


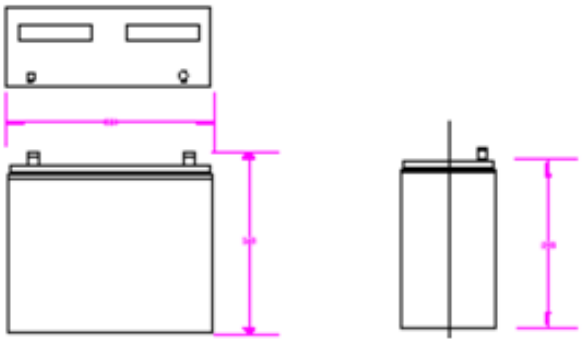
SOLAR POWER UNIT - BATTERY SPECIFICATIONS

Nominal Voltage		12V
Rated Capacity		110 Ah/20HR
Dimensions	L	331mm
	W	173mm
	Total H.	243mm
Weight		Approx. 33 kg (72.75 lbs)
Capacity 20º C (68º F)	20 HR 5.5A	110Ah
	10 HR 10.0A	100Ah
	5 HR 18A	90Ah
	4 HR	87.7Ah
	1 HR 80A	80Ah
Internal resistance		Approx. 4 milliohms
Terminal		Flag
Charging (Constant Voltage)	Cycle	Initial charging current than 40A Voltage 14.40-15.0V
	Float	Voltage 13.50-13.80
Capacity affected by Temp (20 HR)		40º C => 102% 25º C => 100% 0º C => 95% -15º C => 65%
Self Discharge (25º C)		Capacity after 3 months storage 91% Capacity after 6 months storage 82% Capacity after 12 months storage 64%
The Plate Material: Pb-Ca-Sn alloy and oxide of Pb (activity material)		
Construction: Positive plate and negative plate, battery case - ABS, AGM separator, H2SO4 and valve		
Electrolyte concentration: 1.32		
Watts per cell @ 4 hour= 44		
Run time @ 25A = 4 hours 16 min.		
CCA		720A
Discharge rate @ 4 hours = 22A		

SOLAR POWER UNIT - BATTERY SPECIFICATIONS (CONTINUED)







SOLAR POWER UNIT - PARTS LIST

PART #	DESCRIPTION	QTY
PANEL BOX		
03-5552 & 03-5553	Panel Box	1
03-5630	Inverter	1
03-5631	Reversing Contactor	1
03-4448	Fuse 2 Amp	1
03-4480	Fuse 1 Amp	1
03-5634	Voltage Relay	1
03-5846	Manual Motor Protector	1
03-7510	Solar Controller	1
03-5845	Motor Starter	1
PPK (Power Unit)		
02-0050	Suction Filter	1
03-2649	Motor 1-½ HP	1
02-3790	Pump 4.35 GPM	1
02-3958	Sub-plate	1
02-0628	Valve	1
03-0658	Pressure Switch	1
02-3969	Hup Coupling	1
02-3924	Pump/Motor Adapter	1
SOLAR PANEL		
03-5247	Battery	4
03-5635	Battery Disconnect	2
03-5399	Red Battery Cable	Varies
03-5400	Black Battery Cable	Varies
03-5687	Solar Panel	2

SOLAR POWER UNIT - WIRE SIZES

100 WATTS (1 X 100 WATT PANEL)			
DISTANCE (FEET)	**WIRE SIZE (GAUGE)**	**WIRE DIAMETER (INCHES)**	**CONDUIT SIZE (INCHES)**
20	10	<3/16	1/2
25	10	<3/16	1/2
30	10	<3/16	1/2
35	8	<1/4	1/2
40	8	<1/4	1/2
45	8	<1/4	1/2
50	6	1/4	3/4
60	6	1/4	3/4
70	6	1/4	3/4
80	4	>5/16	1
90	4	>5/16	1
100	4	>5/16	1
125	3	>3/8	1
150	3	>3/8	1
200	1	>7/16	1-1/4

200 WATTS (2 X 100 WATT PANEL)			
DISTANCE (FEET)	**WIRE SIZE (GAUGE)**	**WIRE DIAMETER (INCHES)**	**CONDUIT SIZE (INCHES)**
20	4	>5/16	1
25	4	>5/16	1
30	3	<3/8	1
35	2	>3/8	1
40	2	>3/8	1
45	1	>7/16	1-1/4
50	1	>7/16	1-1/4
60	1/0	<1/2	1-1/4
70	2/0	>1/2	1-1/2
80	2/0	>1/2	1-1/2
90	3/0	>9/16	1-1/2
100	3/0	>9/16	1-1/2
125	4/0	>5/8	2
150	250 kcmil	<3/4	2
200	350 kcmil	13/16	2-1/2

SOLAR POWER UNIT - WIRE SIZES (CONTINUED)

300 WATTS (3 X 100 WATT PANEL)			
DISTANCE (FEET)	**WIRE SIZE (GAUGE)**	**WIRE DIAMETER (INCHES)**	**CONDUIT SIZE (INCHES)**
20	3	<3/8	1
25	2	>3/8	1
30	1	>7/16	1-1/4
35	1	>7/16	1-1/4
40	1/0	<1/2	1-1/4
45	2/0	>1/2	1-1/2
50	2/0	>1/2	1-1/2
60	3/0	>9/16	1-1/2
70	3/0	>9/16	1-1/2
80	4/0	>5/8	2
90	250 kcmil	<3/4	2
100	250 kcmil	<3/4	2
125	300 kcmil	<13/16	2-1/2
150	400 kcmil	<15/16	2-1/2
200	500 kcmil	<1	3

SOLAR POWER UNIT - PERIODIC MAINTENANCE

⚠ WARNING

Never perform maintenance on the Solar Power Unit without first following the **Lock-Out & Tag-Out Instructions** 6.

Follow all Periodic Maintenance procedures in the OMI Manual that is specific to your compactor, as well as the following:

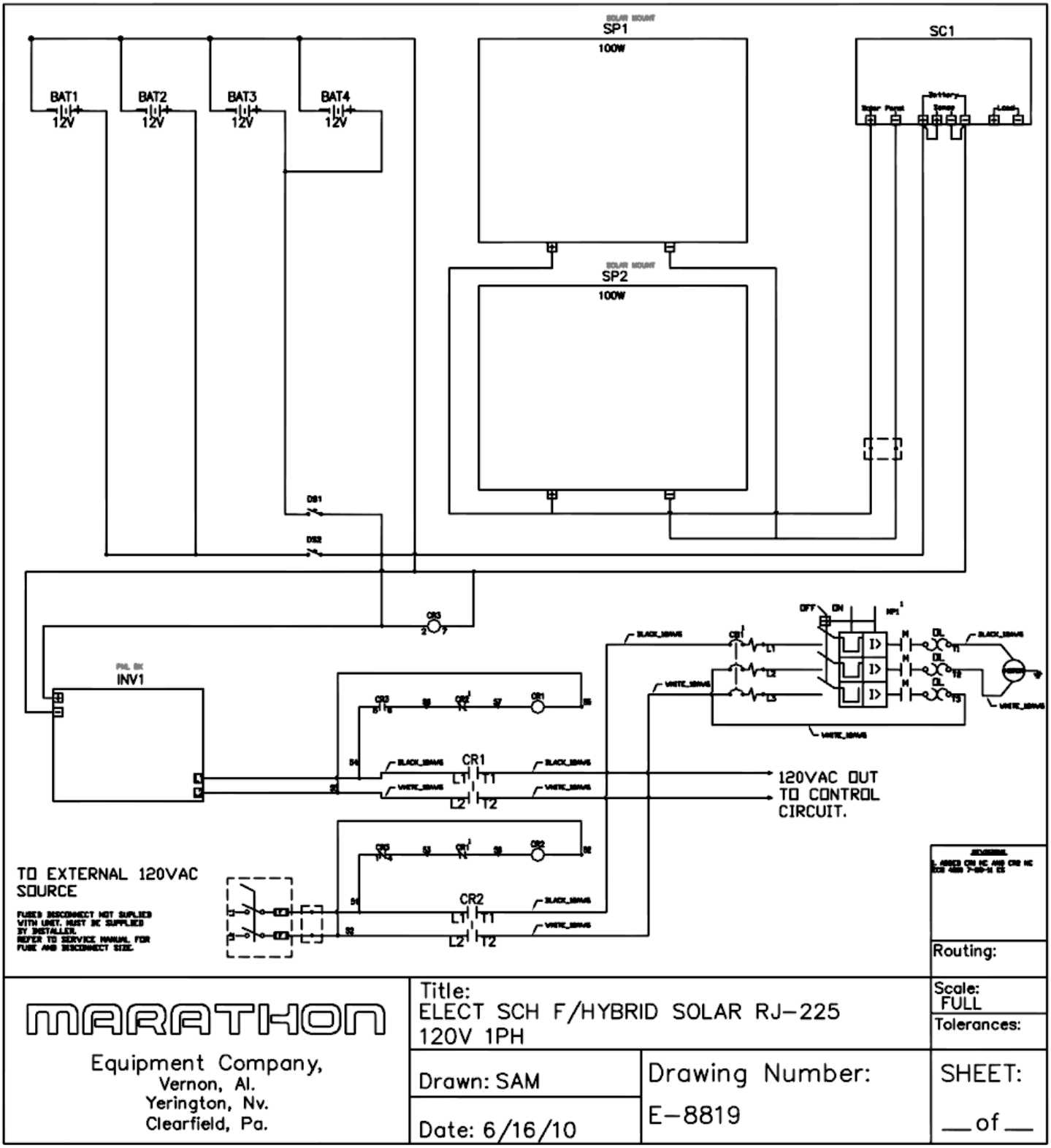
Monthly

- Check the solar panel for dust or residue (especially in a heavily particulate or urban environment) and clean as necessary. Usually a hose stream or wiping it off with a clean, damp cloth is sufficient. Avoid using harsh chemicals or cleaning the panel while it is hot.
- Check battery cables, connections, and terminals for wear and/or corrosion.

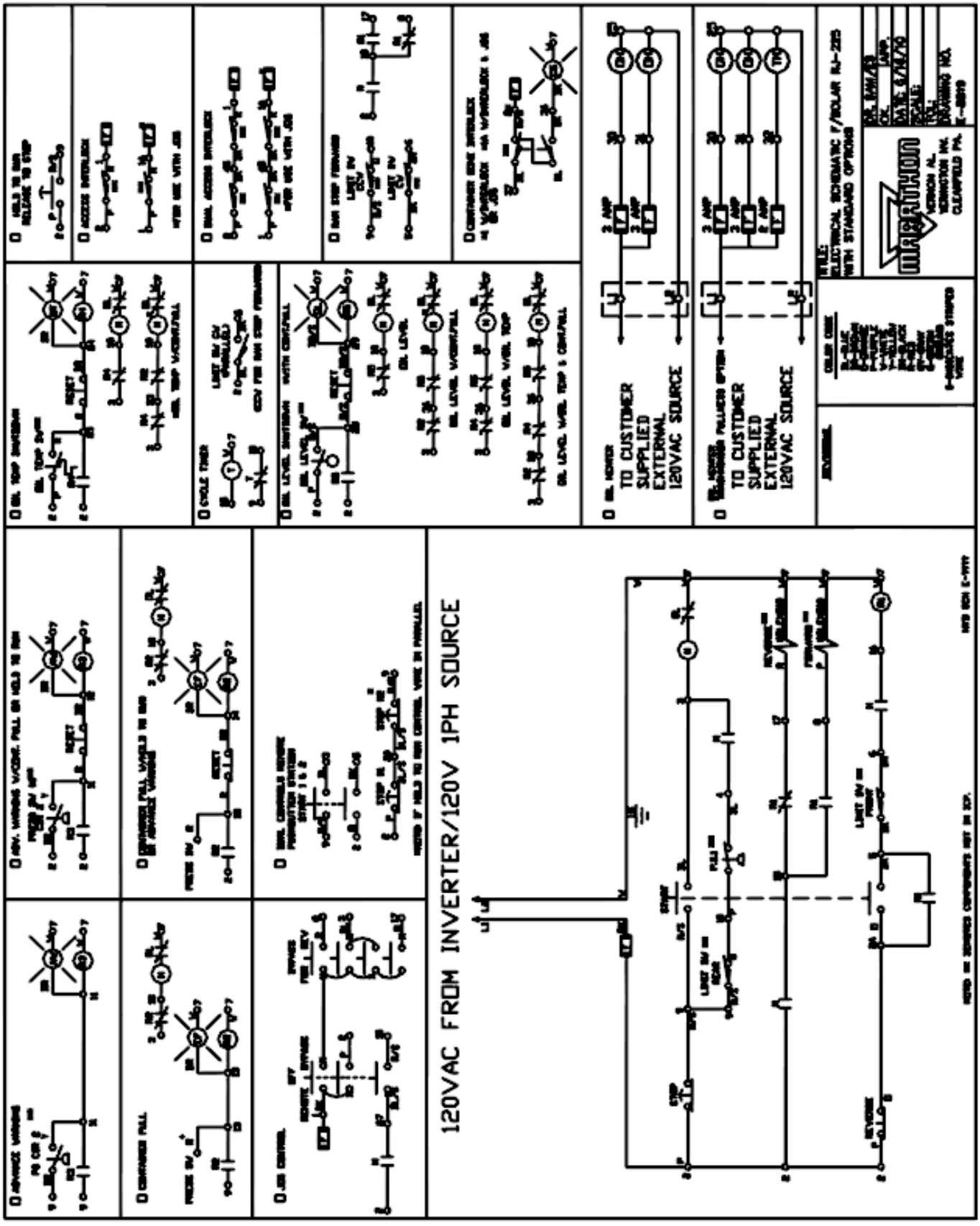
Recommended Oil

- BioHydran AW 46

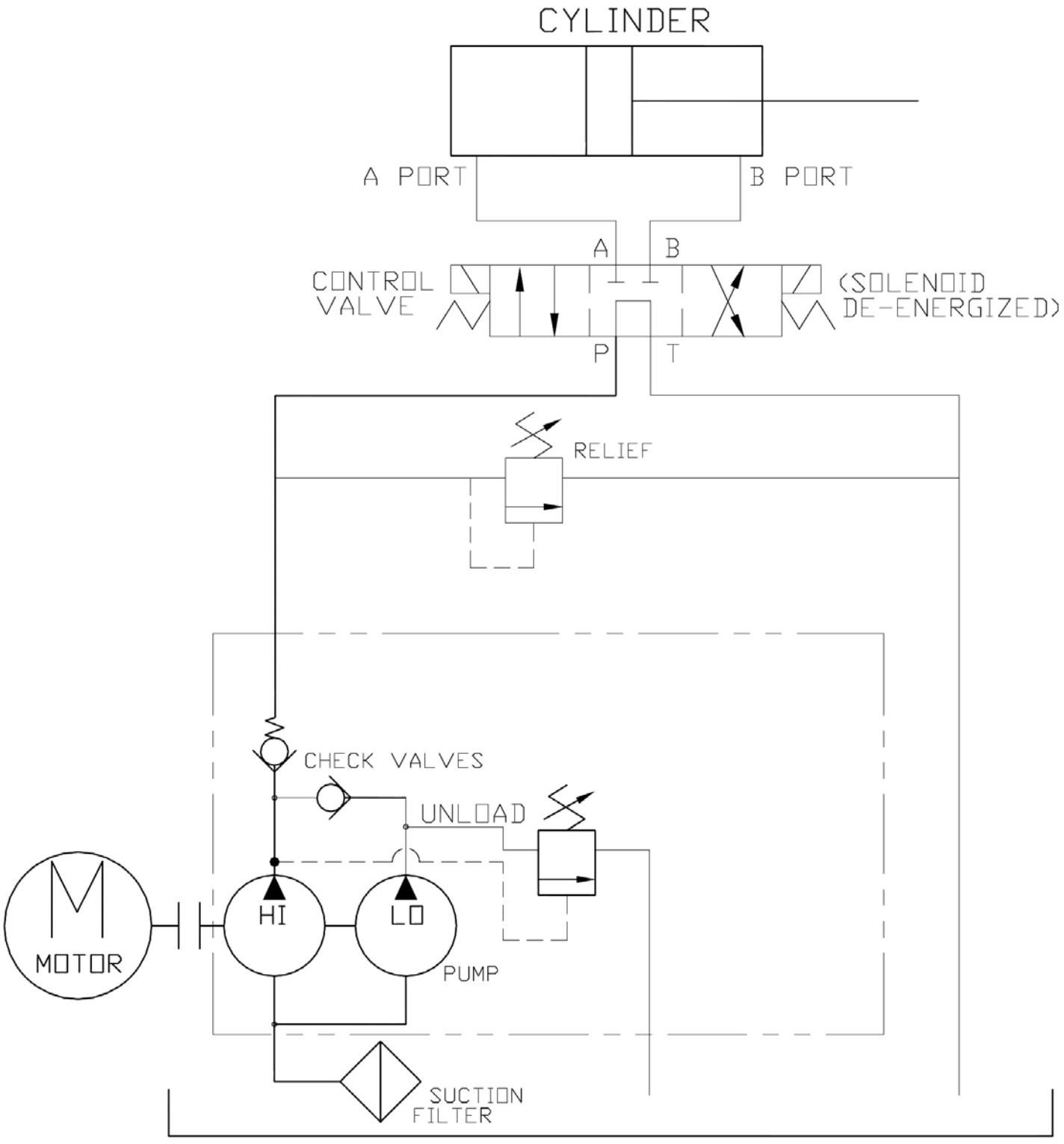
SOLAR POWER UNIT - TYPICAL ELECTRICAL SCHEMATIC



SOLAR POWER UNIT - TYPICAL ELECTRICAL SCHEMATIC (CONTINUED)

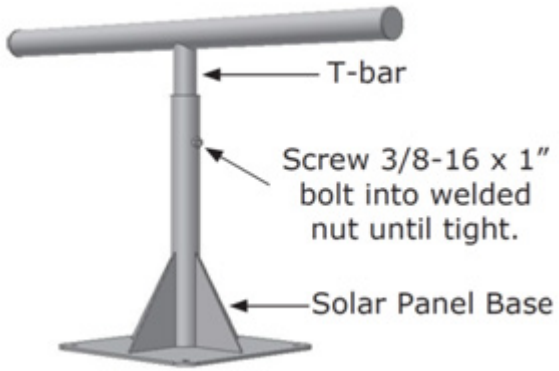
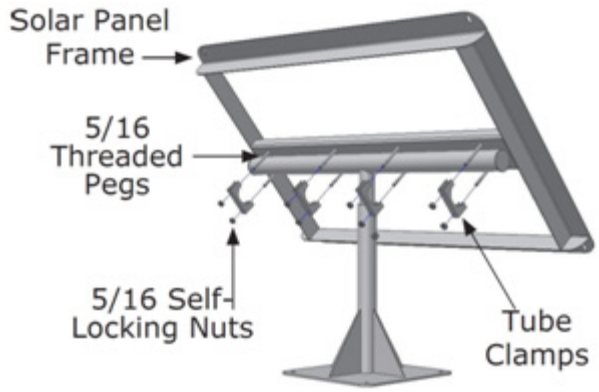
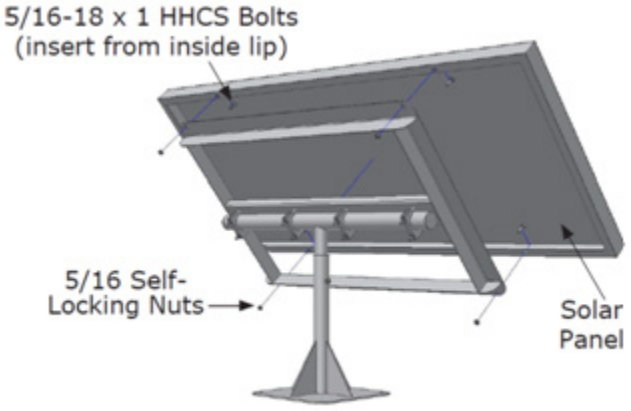


SOLAR POWER UNIT - TYPICAL HYDRAULIC SCHEMATIC



ASSEMBLING THE SOLAR PANEL STAND

The following instructions describe the assembly process for the standard solar panel stand, which can then be mounted on top of the power unit, roof, or other applicable horizontal surface. The components and assembly process for pole-mounted or wall-mounted stands may vary. See the next page for details on **mounting options** 66.

Step 1 Slide the T-bar neck into the solar panel base as shown in the diagram on the right. Screw the 3/8-16 x 1” bolt into the lock nut welded to the neck of the solar panel base until tightened.	
Step 2 Locate the solar panel frame over the T-bar as shown in the diagram. Slide the 4 tube clamps into each pair of 5/16 threaded pegs and fasten using the provided 5/16 hex self-locking nuts. Ensure that the frame is centered with the T-bar and base assembly. Tighten the tube clamps sufficiently to prevent slippage of the frame angle chosen for optimum insolation (See **Connecting and Orienting the Solar Panel** 68).	
Step 3 Attach the solar panel to the frame using four 5/16-18 x 1 HHCS bolts and four self-locking nuts as shown in the diagram.	

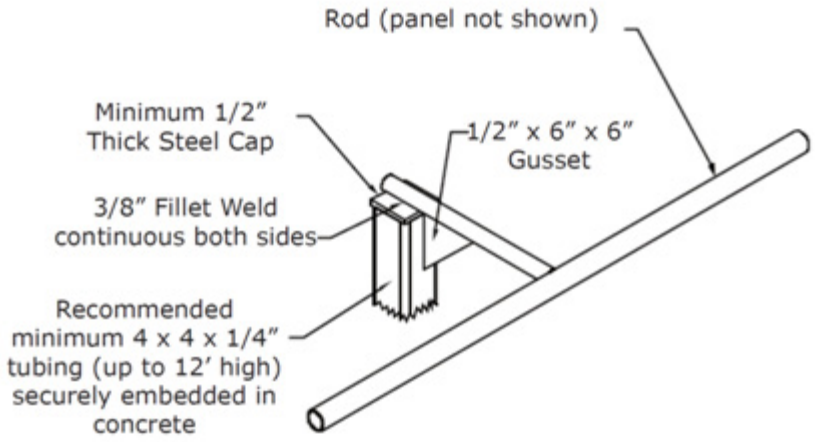
MOUNTING THE SOLAR PANEL STAND

NOTICE

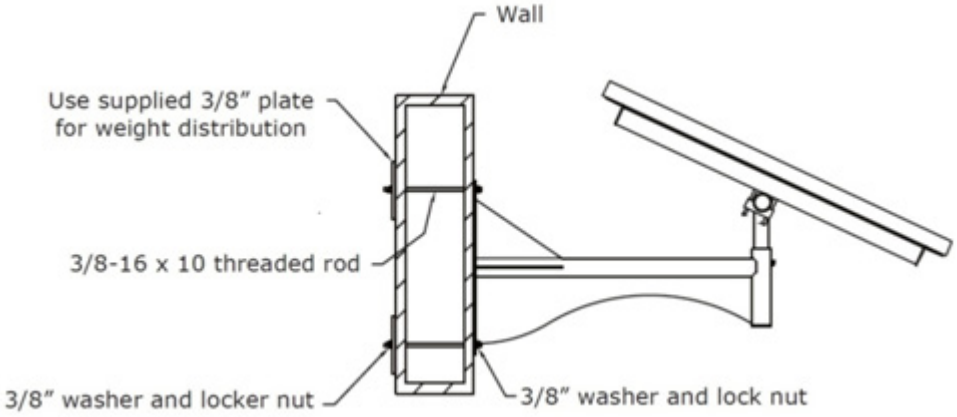
Before choosing where to mount the solar panel stand, read the **Orientation of the Solar Panel** 68 recommendations. The solar panel and stand can be mounted on either the top of the power unit, a wall, roof, or on a pole located within 100 feet of the power unit and connected to the solar charger controller with an S.O. cord or 12 gauge wiring in conduit or Sealtite.

The required bolts for mounting the panel will vary depending on the chosen installation. There are four 1/2” holes on the mounting bracket, all 10” apart from the centers of the adjacent holes. These match the holes in the top of the power unit. For wall, roof, or pole installations, use the proper anchor bolts rated for the specific composition and reference the diagrams below as guidelines for installation.

Pole Mount Installation

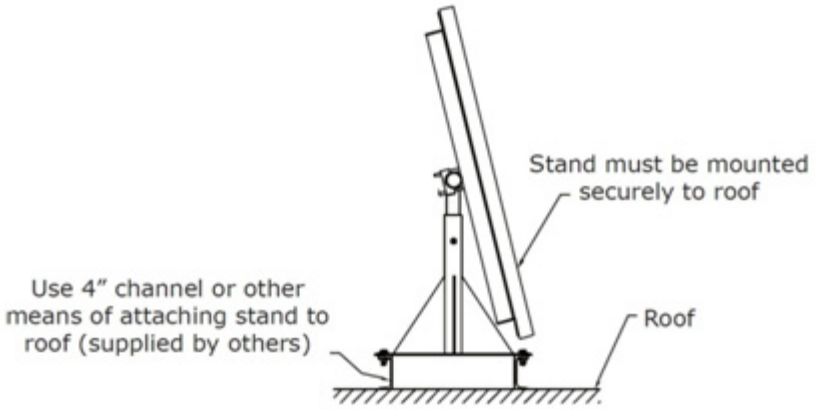


Wall Mount Installation



MOUNTING THE SOLAR PANEL STAND (CONTINUED)

Roof Mount Installation



CONNECTING AND ORIENTING THE SOLAR PANEL

After mounting the solar panel, connect the cord to the plug in on the power unit.

Orientation of the Solar Panel

In the northern hemisphere, it is best for the solar panels to face southward. In the southern hemisphere, it is best that they face northward. The best angle from the horizontal position will vary by season, but the following equation is given as a general example for winter tilt, which is about 10 degrees steeper than normal recommendations:

Site Latitude x (0.9) + 29 degrees = angle from horizontal position for best tilt

The best angle for optimum insolation will have to be determined on site. Some factors that will prohibit optimum insolation are clouds, haze, trees, or any other opaque object obstructing sunlight from the solar panel. These factors are just as important in determining the best position and angle for the solar panel.

LATITUDE	ANGLE	% OF OPTIMUM
25° (Key West, Taipei)	51.5°	85%
30° (Houston, Cairo)	56°	86%
35° (Albuquerque, Tokyo)	60.5°	88%
40° (Denver, Madrid)	65°	89%
45° (Minneapolis, Milano)	69.5°	89%
50° (Winnipeg, Prague)	74°	93%

NOTE: It is recommended that you independently research and assess your site for the best placement.

INDEX

T

W

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