



RamJet® Stationary Auger Compactor

AST-220, AST-320, AST-440

OPERATION, SERVICE, AND INSTALLATION

ISSUED SEPTEMBER 2026

CUSTOMER NAME: _____

SERIAL NUMBER: _____

COMPACTION & RECYCLING SOLUTIONS

0016-2-RJAST-0326



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Environmental Solutions
201 W. Main Street, Ste 300
Chattanooga, TN 37408
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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SECTION 1

GENERAL INFORMATION

INTRODUCTION

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)

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”
- All other applicable OSHA Standards

ANY SERVICE OR REPAIR INSTRUCTIONS CONTAINED IN 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:

1-877-258-1105 or:

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

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 & 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

DANGER – indicates an imminently hazardous situation, which WILL result in SERIOUS INJURY or DEATH if you don't follow proper instructions.

WARNING

WARNING – indicates an imminently hazardous situation, which COULD result in SERIOUS INJURY or DEATH if you don't follow proper instructions.

CAUTION

CAUTION – indicates an imminently hazardous situation, which will result in MINOR to MODERATE INJURY if you don't follow proper instructions.

NOTICE

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. **SERIOUS INJURY or DEATH** will occur.

The specific Lock-Out/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/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/Tag-Out is effective. If the Lock-Out/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

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. Unit or other property may be damaged if these instructions are not followed.

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.

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.

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 2 grease. The unit is shipped with Nevastane XS 80 grease.

RECOMMENDED OILS

The following oil by brand name is approved for use in the gearbox on this equipment.

- Shell Omala S4 GX150 or Equivalent.

GUARDS & 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.

WARNING

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

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.

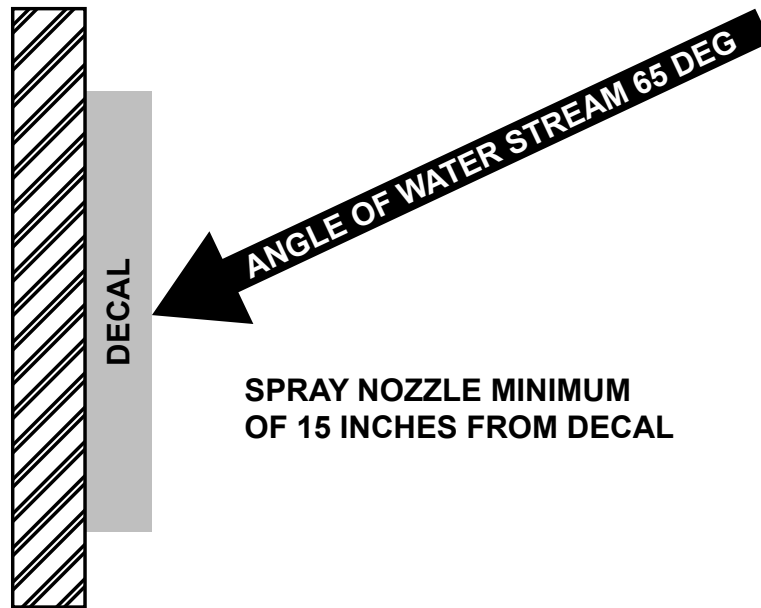
- Spray nozzle opening: 40° wide pattern
- Spray angle: 65° from unit's body
- Distance of nozzle to decal: 15" minimum
- Water pressure: less than or equal to 800 psi
- Length of time: not more than 30 sec.
- Do not use sharp angles to clean the decals – this can lift the decals from the unit.
- NEVER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

C. Remove Difficult Debris

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

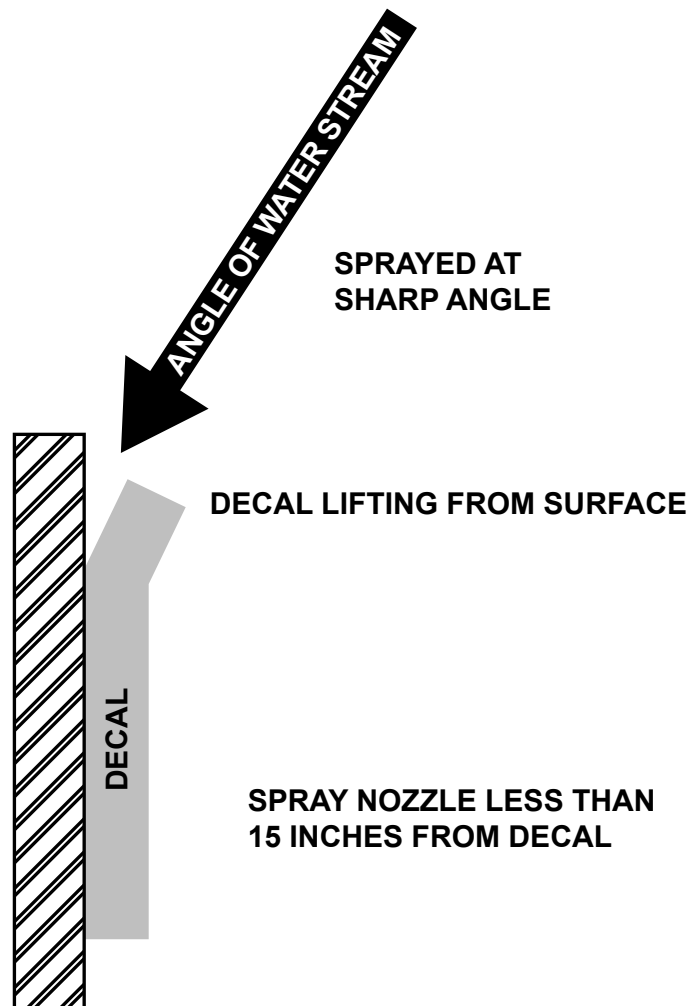
- Spot clean the decal with Isopropyl Alcohol and a micro-fiber cloth (rag)
- If these methods do not work on a problem area, call a Marathon Equipment Company Dealer or Marathon Equipment Company Customer Support.

DECAL CARE



RECOMMENDED TECHNIQUE

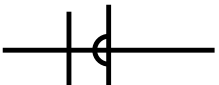
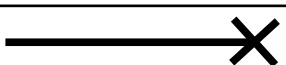
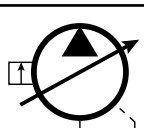
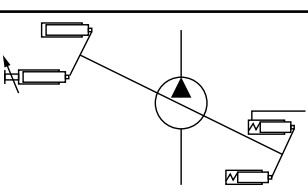
Figure 1.



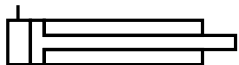
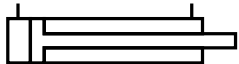
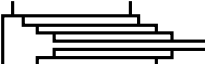
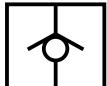
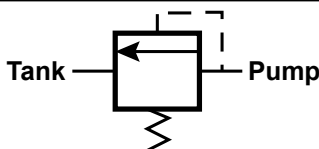
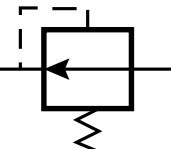
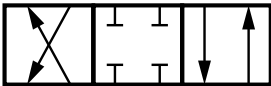
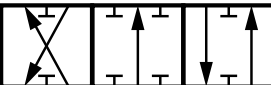
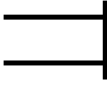
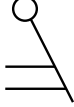
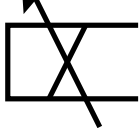
INCORRECT TECHNIQUE

Figure 2.

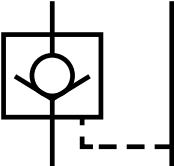
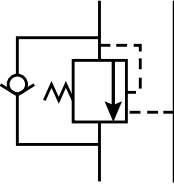
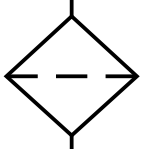
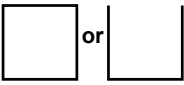
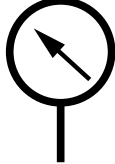
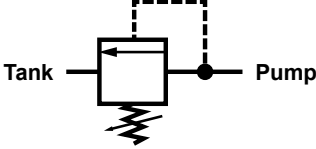
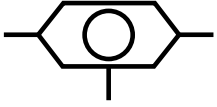
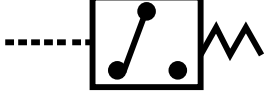
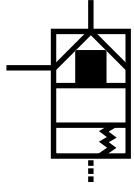
HYDRAULIC SYMBOLS

	Fluid Lines
	Pilot Lines
	Component Enclosure
	Connection Of Lines
	No Connection Of Lines
	Plugged Port
	Indicates Direction Of Flow
	Fixed Displacement, Unidirectional Pump
	Fixed Displacement, Bi-directional Pump
	Fixed Displacement, Tandem Pump
	Variable Displacement Pump
	Variable Displacement, Pressure Compensated Pump
	Variable Displacement, Pressure Compensated Piston Pump
	Fixed Displacement, Unidirectional Motor
	Fixed Displacement, Bi-directional Motor
	Variable Displacement, Bi-directional Motor

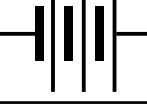
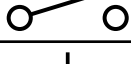
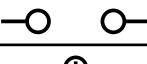
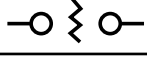
HYDRAULIC SYMBOLS

	Single Acting Rod Cylinder
	Double Acting Rod Cylinder
	Single Acting Telescopic Cylinder
	Double Acting Telescopic Cylinder
	Check Valve
	Pilot Operated Relief Valve
	Pressure Reducing Valve
	Three Position, Four Way Closed Center Valve Spool
	Three Position, Four Way Open Center Valve Spool
	Spring Actuator
	Manual Actuator
	Manual Handle Actuator
	Hydraulic Actuator
	Pneumatic Actuator
	Electric Solenoid Actuator
	Electro Proportional Actuator

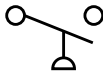
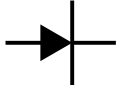
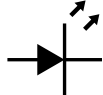
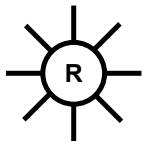
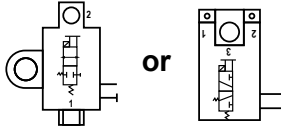
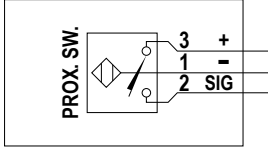
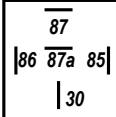
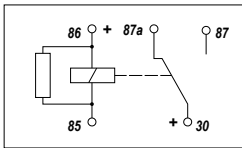
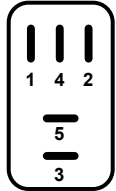
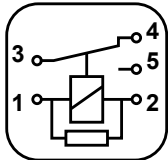
HYDRAULIC SYMBOLS

	Pilot Operated Check Valve
	Counterbalance Valve
	Filter, Strainer, Screen
	Reservoir
	Pressure Gauge
	Adjustable Relief Valve
	Orifice (Flow Restrictor)
	Adjustable Orifice (Flow Restrictor)
	Shuttle Valve
	Pressure Switch
	Shut Off Valve
	Logic Valve

ELECTRICAL SYMBOLS

	Alternating Current
	Direct Current
	Ammeter (Amp Meter)
	Volt Meter - Measures Voltage
	Watt Meter - Measures Electric Power
	Ohm Meter
	Wire
	Connected Wires
	Unconnected Wires
	Fuse
	Breaker
	Chassis Ground Or Ground
	Battery
	On/Off Switch
	Push to make switch/sometimes momentary
	Momentary Push Button
	Push To Break Switch
	Normally Open Limit Switch
	Normally Closed Limit Switch

ELECTRICAL SYMBOLS

	Pressure Switch
	Diode
	LED - Diode
	Lamp
	Indicator Light
	Resistor
	Solenoid Operated 3 Way Pneumatic Valve/MAC Valve
	Proximity Switch
	Relay Socket (General)
	Relay (General)
	Micro Relay Socket
	Micro Relay

SECTION 2

INSTALLATION

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 job site 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 standard.

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 and 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.
2. To provide accessibility, concrete pad should be positioned to allow 28" of clearance from outer most protrusion of the lock system of the compactor/container to a wall, building, structure, or container to allow adequate ingress/egress to equipment. Allow a minimum of 45' of clear space from end of pad for 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.

CONCRETE PAD REQUIREMENTS

Anchoring

The compactor should be anchored to the concrete pad using (4) minimum 3/4" x 6" long anchor bolts. These bolts can be secured to concrete pad using "Porok" or special concrete anchors. It is best if these holes are drilled in the concrete after pre-locating the compactor in it's desired location. Holes in the leg plates are 1-5/16" diameter to permit the use of a 1-1/8" diameter concrete bit. The 1-1/8" diameter holes in the concrete should be approximately 5" deep. When the compactor has been permanently located, shimmed to compensate for unevenness, and anchor bolts set, tighten all nuts securely.

NOTICE

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

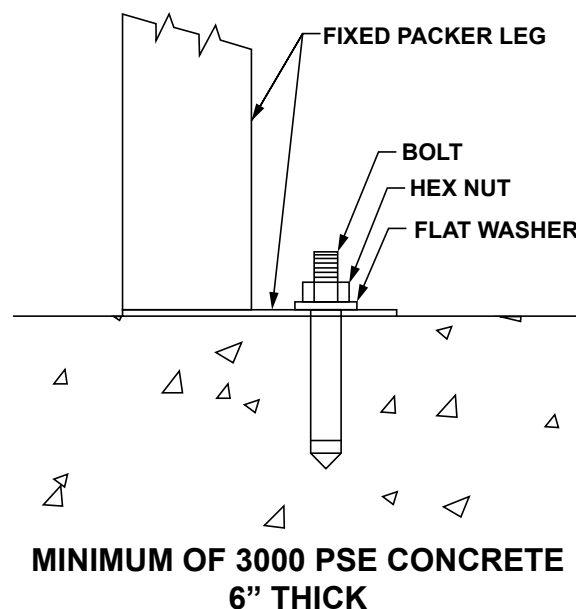


Figure 3.

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. 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 decal locations, see Decals and Decals Placement for Trash Commander Tank in the Operation 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 with 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 pre-locating 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 INSTALLATION

 DANGER  460 Volts	The Panel Box contains high voltage components. Only authorized service personnel should be allowed inside. See “Lock-Out/Tag-Out Instructions” on page 5.	
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A lockable fused disconnect switch (customer furnished) must be installed and be within sight of the compactor motor control panel location, not to exceed 50'0" from the compactor. This fused disconnect switch should be sized in accordance with the compactor.

⚠ WARNING

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

Remote Power Pack Installation

1. The remote power pack should be installed and anchored as required by the customer. If the operator station is mounted in the face of the motor control panel, be certain these controls are located as to be in a convenient, but not hazardous, location to the customer.

⚠ CAUTION

Operator Station 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 door. If installation requires the operator 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. Connect the 3 phase power to the top distribution block located in the electrical junction box mounted on auger body. NOTE: AST-440 will have two distribution blocks.
3. Verify that one line of the 3 phase wires passes through the current transducer. This component monitors motor amperage for the AW/CF indicator.

NOTE: Verify that one line of the 3 phase wire passes through the current transducer. This component monitors motor amperage for the AW/CF indicator.

ELECTRICAL & HYDRAULIC INSTALLATION

 DANGER  460 Volts	The motor control panel contains high voltage components. Only authorized service personnel should be allowed inside. See “ Lock-Out/Tag-Out Instructions ” on page 5.
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Push-button Control Panel

If a remote operator station is furnished, it will be factory wired using sealtite. If it is necessary to disconnect it from the wires (to install the operator 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 motor control panel, in accordance with local electrical codes, using knock-outs in bottom of motor control panel. See “**Principles Of Operation**” on page 40 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. If voltage is correct, put fused disconnect switch in "ON" position.

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 maintenance chart for hydraulic oil recommendations). The hydraulic system pressure has been factory set and the entire unit has been operated prior to shipment.

Depress the start button and check the pump shaft for proper rotation.

⚠ DANGER

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

⚠ 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.

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). Reversing any two incoming power lines should change the motor rotation. Push the start button for the auger to go counter clockwise. Follow all “**Lock-Out/Tag-Out Instructions**” on page 5.

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

SECTION 3

OPERATION

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**” on page 5 .

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**” on page 5.

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**” on page 5.

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.

CONTROL PANEL

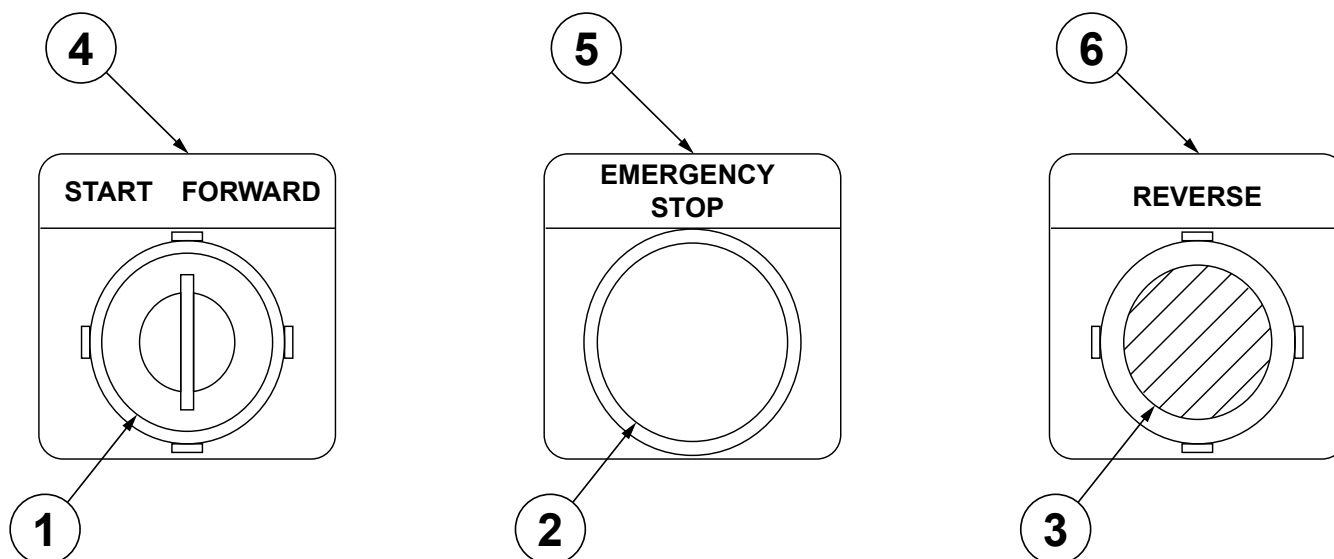


Figure 4.

ITEM	PART #	DESCRIPTION
1	03-0195	Key Switch
2	03-0201	Emergency Stop
3	03-0197	Reverse
4	03-0375	Legend "Start Forward"
5	03-0193	Legend "Emergency Stop"
6	03-0154	Legend "Reverse"

CONTROL DESCRIPTION

- KEYED START SWITCH** - This switch requires a key for operation. Insert the key and turn clockwise to the START position. Depress the key for one to two seconds and release. The compactor will cycle one time (complete extension and retraction of the ram) then stop. After use, turn the key to the counterclockwise position and remove the key.
- EMERGENCY STOP PUSHBUTTON** - When depressed, this pushbutton will stop all powered operation of the compactor.
- REVERSE PUSHBUTTON** - This pushbutton will reverse the compaction ram when depressed. The motor must be running for the REVERSE button to operate. See the **"Manual Override Instructions (Ram Stop Rear Only)"** on page 24 for details of the operation.

OPERATING INSTRUCTIONS - STANDARD MODELS

WARNING

Use ONLY Marathon reinforced receiver containers with Marathon Stationary Auger Compactors. Use of a non-OEM receiver container with a Marathon Stationary Auger Compactor could result in container damage, property damage, and/or personal injury – up to and including death.

- First, place the material to be discarded into the compactor.
- Depress the start button for 1 to 2 seconds and release. The unit will cycle for a predetermined time then stop.
- Repeat, if necessary, after the compactor has stopped.
- 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!

OPERATING INSTRUCTIONS - MODELS WITH PHOTOELECTRIC CYCLE CONTROL

⚠ WARNING

Use ONLY Marathon reinforced receiver containers with Marathon Stationary Auger Compactors. Use of a non-OEM receiver container with a Marathon Stationary Auger Compactor could result in container damage, property damage, and/or personal injury – up to and including death..

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. First, 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**” on **page 48** for optional loading configurations to determine how your compactor is configured.

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.
5. Both the audible and visual start-up alarms will energize for 5 seconds.
6. 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).
7. After 20 seconds, the motor will start and the ram will extend, and then retract (one complete cycle).
8. The light will continue to flash until the unit is manually turned off, automatically shuts down, or is switched to manual mode.

⚠ WARNING

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

OPTIONAL CONTROLS

1. SUSTAINED MANUAL PRESSURE CONTROL BUTTON (Hold-To-Run, Release-To-Stop) This option requires the compactor operator to remain at the push button 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.
2. ADVANCE WARNING / CONTAINER FULL LIGHT - When the light starts flashing (ADVANCE WARNING). When the light stays on continuously (CONTAINER FULL), the container is full and is ready to be emptied before its next use. To deactivate the light, depress the illuminated light (The unit will not run while the light is continuously on).
3. ACCESS INTERLOCK - This is optional with units equipped with doors, security doors, or access gates. It prevents the unit from operating while a door or gate is open.
4. PHOTOELECTRIC CYCLE CONTROL - (Photocell) - Consists of a LED light source and a reflector. It can be mounted on a hopper or chute. Two holes, located so as to avoid any hazard, are located in opposite walls of the chute. When the light beam is blocked for 5 seconds, the audible alarm will sound for 5 more seconds, then the compactor is activated and will continue to run until the obstruction has been cleared or the watchdog timer times out.
5. AUTOMATIC SHUTDOWN - Used with the photoelectric cycle control. 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 push-button is pressed after clearing the blockage.
6. START ON DOOR CLOSURE - When switch is in auto the PLC counts door closures. The machine will start on predetermined count that is within the PLC.

OPERATING INSTRUCTIONS - STANDARD MODELS

1. First, 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**” on page 49 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 and release. The unit will cycle the preset number of times determined by the Multi-Cycle Counter*, 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.

*For more information on the Multi-Cycle Counter see “**PLC Maintenance - Layout & Description**” on page 42.

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

Figure 5.

Manual Override Instructions (Ram Stop Rear Only)

If the ram is stopped in any position:

- To move the ram forward, turn the key switch clockwise and depress.
- To move the ram rearward, hold the reverse button down, turn and depress the key switch, release the key switch, then release the reverse button.

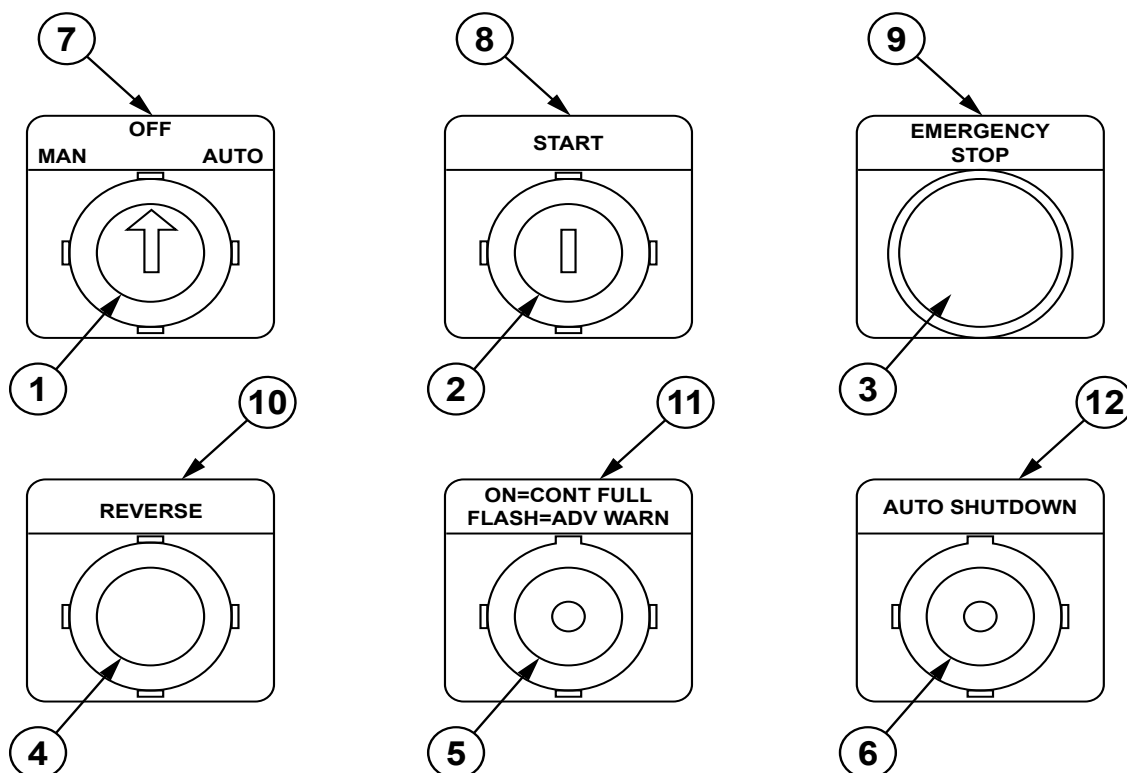
While the ram is moving:

- To reverse the ram while it is moving forward, press the reverse button.
- To cause the ram to move forward while it is moving rearward, depress the key switch.

NOTICE

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

CONTROL PANEL - MODELS WITH PHOTOELECTRIC CYCLE CONTROL



CONTROL PANEL WITH PHOTOELECTRIC CYCLE CONTROL		
ITEM	PART #	DESCRIPTION
1	03-0199	Key Switch
2	03-0195	Key Switch
3	03-0201	Emergency Stop
4	03-0197	Reverse
5	03-0081	Red Light
6	03-0081	Red Light
7	99-5045	Legend "Man/Off/Auto"
8	03-0375	Legend "Start Forward"
9	03-0193	Legend "Emergency Stop"
10	03-0154	Legend "Reverse"
11	03-5473	Legend "On = Cont Full"
12	03-0350	Legend "Auto Shutdown"

Control Description

1. **MANUAL-OFF / AUTOMATIC SHUTDOWN** - This switch controls the compactor operation mode, manual or automatic (automatic is photocell mode).
2. **KEYED START SWITCH** - This switch requires a key for operation. Insert the key and turn clockwise to the START position. Depress the key for one to two seconds and release. The compactor will cycle the preset number of times determined by the Multi-Cycle Counter, then stop. After use, turn the key to the counterclockwise position and remove the key.
3. **EMERGENCY STOP PUSHBUTTON** - When depressed, this pushbutton will stop all powered operation of the compactor.
4. **REVERSE PUSHBUTTON** - This pushbutton will reverse the compaction ram when depressed. The motor must be running for the REVERSE button to operate. See the Manual Override Instructions for details of the operation.

OPERATING INSTRUCTIONS - MODELS WITH PHOTOELECTRIC CYCLE CONTROL

5. ADVANCE WARNING / CONTAINER FULL LIGHT - When the light starts flashing (ADVANCE WARNING), then 200 PSI is left before the pressure switch is activated to shut the unit off and container is full (unit will run when light flashes). When the light stays on continuously (CONTAINER FULL), the container is full and is ready to be emptied before its next use. To deactivate the light, depress the illuminated light (the unit will not run while the light is continuously on).
6. AUTOMATIC SHUTDOWN LIGHT - Used with the photoelectric cycle control. 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 pushbutton is pressed after clearing the blockage.

*For more information on the Multi-Cycle Counter, see “PLC Maintenance - Layout & Description” on page 42

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)

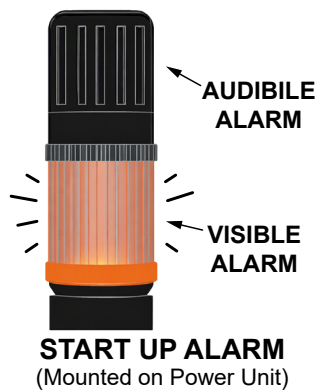


Figure 7.

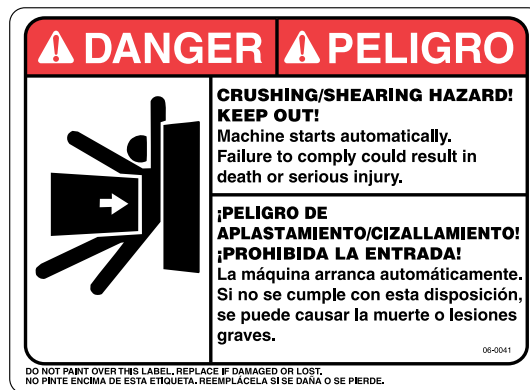


Figure 6.

NOTICE

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

7. Place the material to be discarded into the compactor.
8. Insert the first key into the “MANUAL - OFF - AUTOMATIC” key switch and turn to the “AUTOMATIC” position.
9. Insert the second key into the “START” switch and turn to the right.
10. Depress the key in the “START” switch and hold it continuously for 20 seconds.
11. Both the audible and visual start-up alarms will energize for 5 seconds.
12. 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).
13. After 20 seconds, the motor will start and the ram will extend, and then retract (one complete cycle).
14. The light will continue to flash until the unit is manually turned off, automatically shuts down, or is switched to manual mode.

⚠ WARNING

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



OPTIONAL CONTROLS

1. **SUSTAINED MANUAL PRESSURE CONTROL BUTTON** (Hold-To-Run, Release-To-Stop) this option requires the compactor operator to remain at the push button 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.
2. **ADVANCE WARNING / CONTAINER FULL LIGHT** - When the light starts flashing (ADVANCE WARNING), then 200 PSI is left before the pressure switch is activated to shut the unit off and container is full (unit will run when light flashes). When the light stays on continuously (CONTAINER FULL), 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 continuously on).
3. **ACCESS INTERLOCK** - This is optional with units equipped with doors, chutes, or access gates. It prevents the unit from operating while a door or gate is open.
4. **PHOTOELECTRIC CYCLE CONTROL** - (Photocell) - Consists of a LED light source and a reflector. It can be mounted on a hopper or chute. Two holes, located so as 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 obstruction has been cleared.
5. **AUTOMATIC SHUTDOWN** - Used with the photoelectric cycle control. 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 pushbutton is pressed after clearing the blockage.

SECTION 4

SERVICE

PERIODIC MAINTENANCE

⚠ WARNING

Ram speed accelerates as ram retracts. Never enter any part of the self-contained compactor/container until the unit has been “**Lock-Out/Tag-Out Instructions**” on page 5.

Daily/Start of Operation Preventative Maintenance

- Check for and correct any unsafe conditions in or around the compactor area.
- Clean debris from under/around the compactor/container.
- Inspect the anchor bolts located on the foot pads of the machine for damage or if they have become unfastened. Please contact the installer of the machine if either of these conditions is observed so that it may be corrected.
- Inspect the Ratchet and Ratchet Claws for function, wear, or damage.
- Check external cords and flexible conduit for chafing, rubbing, deterioration, or damage. Repair/replace as necessary.
- Check that all control functions are operational (stop button, timers, lights, auto-lube, etc.). You must be trained to operate the machine to verify they are working properly. Refer to the user’s manual for full instructions.
- Check on and around the gearbox(es) for leaks. Check the oil and oil level in the planetary gearbox. The oil should be translucent, and the proper level is to the bottom of the sight gauge. If not, change oil as needed. (If needed, place a catch pan under the gearbox, with an Allen wrench, and remove the bottom plug, once oil is drained replace the plug, and fill it with oil)

NOTE: The AST-440 has two gearboxes.

Weekly or every 40 hours of operation Preventative Maintenance

- Check the auger screw and front hub cover for material build-up (banding, plastic wrap, etc.). Remove if necessary.
- Check front hub cover for grease leakage. Visually inspect below front bearing cover for grease leakage.
- Check the auger screw for damage and repair it if necessary.
- Quarterly or every 800 hours of operation Preventative Maintenance
- Remove the rear cover with an impact drill and a 9/16” socket, and then clean debris from the chain/sprocket chamber.
- Grease internal bearings.
- For units equipped with Auto-Lube systems:
 - Check and fill the grease reservoir. The grease recommendation can be found below in the next section.
 - Depress the “Auto-Lube” button until fresh grease comes out of the drip hose.
 - Clean the excess grease from the drip pan.
- For units not equipped with Auto-Lube systems:
 - Clean the grease fitting. The fitting is located on the right-hand side just above the gearbox.

NOTE: The AST-440 has a grease fitting on both sides of the unit located just above the gearbox.

- Add grease to the grease fitting until fresh grease comes out of the drip hose.
- Clean off grease fitting.
- Clean out excess grease from the drip pan.

PERIODIC MAINTENANCE

⚠ NOTICE

Two grease fitting locations on the AST-440

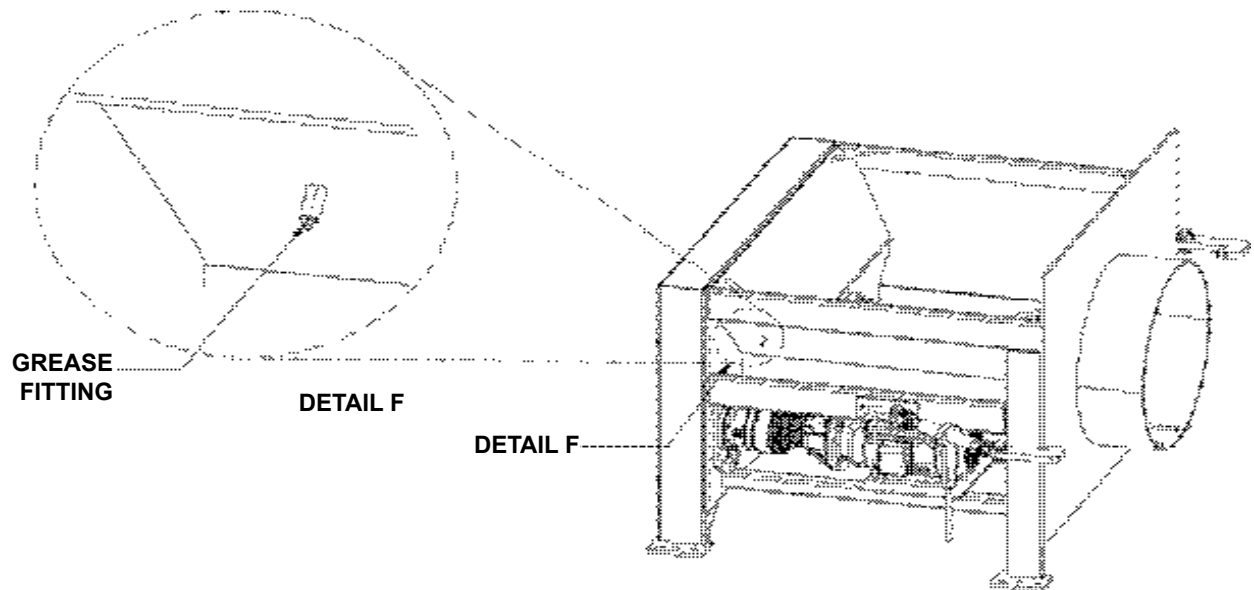


Figure 8.

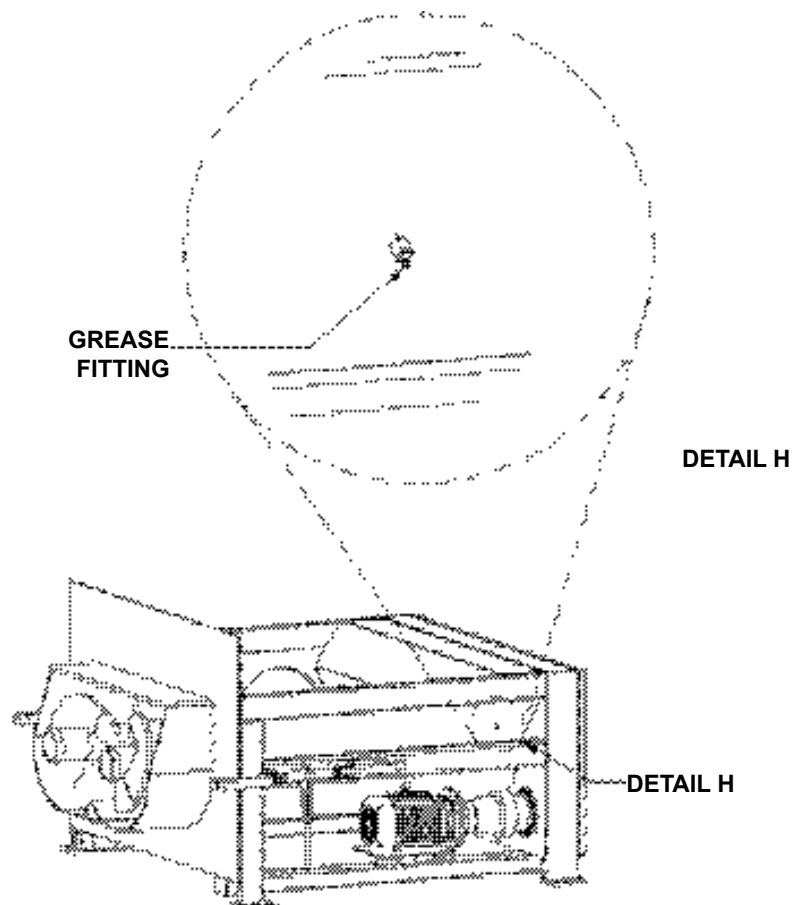


Figure 9.

PERIODIC MAINTENANCE

- Inspect rear bearing cover for grease leakage. Visual inspection of shaft between sprocket and rear bearing cover and area directly below rear bearing cover for grease leakage.
- Inspect the sprockets for excessive wear or damage. This can include, but is not limited to:
 - a. Large amounts of material missing from any of the teeth on the sprocket.
 - b. Obvious signs of wear on the points of contact between the sprocket teeth and roller chain.
- Inspect the chain for excessive wear or damage. Use the appropriate chain wear indicator to check for chain elongation.
- Check the chain for proper tension. The chain should have 1" – 1 1/2" of deflection, on the top side of the chain halfway between the sprockets, when finger pressure is applied to the chain.

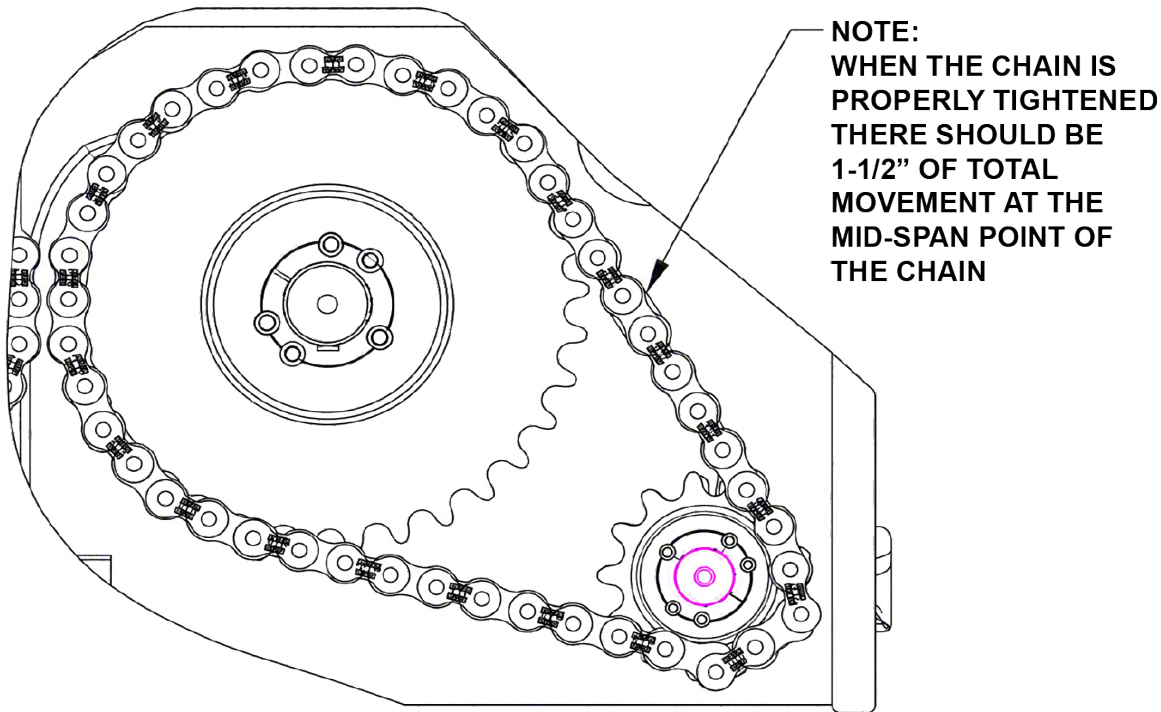


Figure 10.

- Ensure the motor/gearbox/gearbox mounting plate bolts are tight. The motor to gearbox bolts should be torqued to 150 ft-lbs. The gearbox to back plate bolts should be tightened to 110 ft-lbs.

- Check main and small sprocket alignment. Ensure the main sprocket and small sprocket are flush.

To do this, measure from the rear wall to the edge of the tooth on the main sprocket. Then measure from the rear wall to the edge of the tooth on the small sprocket.

If the dimensions are not the same adjust the small sprocket to match the main sprocket. If you are adjusting the small sprocket on the ASC-210 or AST-220:

You will need to first loosen the Allen head screw. Then move the sprocket until it aligns with the main sprocket.

NOTE: You will more than likely need to utilize a gear puller for this process.

When finished, torque the Allen's head set screw to 63 ft-lbs.

If you are adjusting the small sprocket on the AST-320 or AST-440:

You will need to first loosen the bolts retaining the small sprocket to the sleeve. Then move the sprocket until it aligns with the main sprocket.

When finished, apply blue Loctite to a new set of bolts and torque them to 60 ft-lbs.

NOTE: Do not reuse the sprocket bolts.

PERIODIC MAINTENANCE

- Inspect and verify that the sprocket bolts or Allen hex screws are still at the proper torque.
 - a. The large sprocket bolts should be torqued to 200 ft-lbs.
 - b. The small sprocket bolts should be torqued to 60 ft-lbs. (Only applies to AST-320 and AST-440 models).
 - c. The small sprocket set screw should be torqued to 63 ft-lbs. (Only applies to ASC-210 and AST-220 models).
- NOTE:** If any of the bolts are not at the proper torque, replace them with new bolts and ensure they each have blue Loctite applied to them before re-torquing. Use an alternating tightening pattern to torque the bolts. If the set screw is not at the proper torque, please use an 8 mm to torque to the specified value. Then replace the rear cover using an impact drill and a 9/16" socket.
- Grease the Ratchets with the appropriate grease recommended in the Auger Manual.
- Inspect hard surface welding on the end of the auger flighting.

For stationary compactors, you will need to first separate the compactor and container. For self-contained compactors, you will need to dump the compaction container.

Then you will need to clean off the hard surface welded zone of the auger flights. Next, measure the height of the hard surface weld perpendicular to the auger flight.

If the hard-surface weld height is less than 1/8", hard surface material needs to be re-applied.

NOTE: See the "Hard Weld Surface" section of this manual on page 38 for details.
- Inspect the liners, if applicable.
 - d. The liners for all models have an initial thickness of 3/8".
- Inspect the auger teeth, if applicable.
 - e. Check to ensure that the units have all the teeth required:
 - (1) ASC-210 and AST-220 models should have 4 teeth.
 - (2) AST-320 models should have 5 teeth.
 - (3) AST-440 models should have 5 teeth PER AUGER SCREW. 10 TOTAL.
 - f. Inspect the condition of the teeth. If the leading edge of the tooth is rounded off, replace the tooth.
 - g. If the teeth need to be replaced, please contact Marathon Support for further instructions.

Annual or every 3200 Hours of Operation Preventative Maintenance:

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

NOTE: There are two grease fitting locations on the AST-440
- Replace gear oil in the planetary gearbox. Marathon recommends either:
 - Valvoline EPG Gear Lube 320 rated 15 to 160 degrees Fahrenheit
 - Valvoline EPG Gear Lube 150 rated -22 to 90 degrees Fahrenheit.

MAINTENANCE SCHEDULE FORM

Make copies of the table below, to record your maintenance on equipment.

DAILY/WEEKLY MAINTENANCE SCHEDULE								
		DATE OF SERVICE						
FREQUENCY OF SERVICE	ACTION	DATE	DATE	DATE	DATE	DATE	DATE	DATE
DAILY	Check for Unsafe Conditions							
DAILY	Clean Debris Around/ Under Compactor							
DAILY	Check Anchor Bolts							
DAILY	Inspect Ratchets and Claws for Damage							
DAILY	Check External Cords and Conduit							
DAILY	Check All Controls and Functions are Operational							
DAILY	Check Around Gearbox for Leaks and Check Oil Level							
DAILY	Check Auger Screw and Front Hub Cover for Debris and Grease Leakage							
DAILY	Check Auger Screw for Damage							
Comments								
PRINT COPY BEFORE USE								

MAINTENANCE SCHEDULE FORM

QUARTERLY MAINTENANCE SCHEDULE								
	DATE OF SERVICE							
ACTION REQUIRED	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE
Check Grease Reservoir Level								
Clean Grease Pan and Chain/Sprocket Chamber								
Inspect Rear Bearing Cover for Grease Leakage								
Inspect Sprockets for Wear/Damage								
Inspect Chain for Damage/Elongation								
Check Chain Tension								
Check Gearbox/Motor Mounting Hardware for Torque								
Check Sprocket Alignment								
Check Torque of Sprocket Hardware								
Inspect Hard Surface Welds								
Inspect Liners (if applicable)								
Inspect Auger Teeth (if applicable)								
Grease Internal Bearings								
Grease Ratchets								
Comments								

PRINT COPY BEFORE USE

MAINTENANCE SCHEDULE FORM

Make copies of below table to record your maintenance on equipment.

ANNUAL MAINTENANCE SCHEDULE						
Date of Service						
ACTION	DATE	DATE	DATE	DATE	DATE	DATE
Lubricate Electric Motor Bearings						
Replace Gear Oil in Gearbox						
Comments:						

AUTO GREASER

For units equipped with Auto-Lube systems:

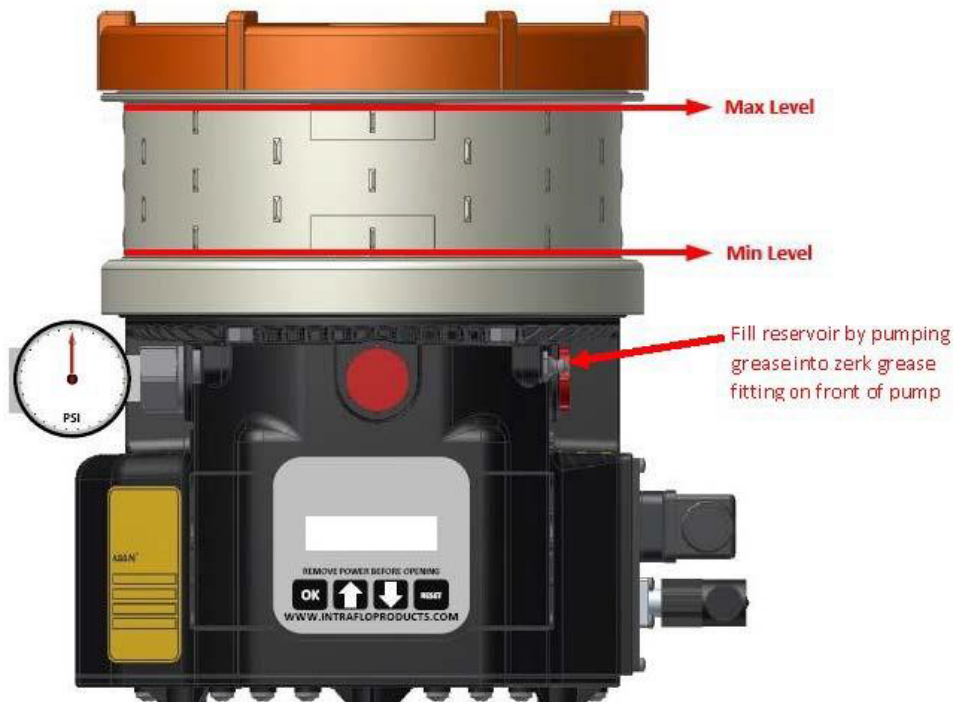


Figure 11.

Fill the grease reservoir per the auto-lube manufacturer's recommendation. The auto-lube system will automatically grease the bearings. Use NLGI 2 grease. The unit is shipped with Nevastane XS 80 Grease.

1. Depress the "Auto-Lube" button until grease fresh comes out of the drip hose.
2. Clean the excess grease from the drip pan.
3. Wipe any build up off of chain with towel and apply lubricant to chain.

BEARING LUBRICATION

For units not equipped with Auto-Lube systems:

1. Fill the grease reservoir per the auto-lube manufacturer's recommendation. The auto-lube system will automatically grease the bearings. Use NLGI 2 grease. The unit is shipped with Nevastane XS 80 Grease.
2. Depress the "Auto-Lube" button until grease fresh comes out of the drip hose.
3. Clean the excess grease from the drip pan.
4. Wipe any build up off of chain with towel and apply lubricant to chain.

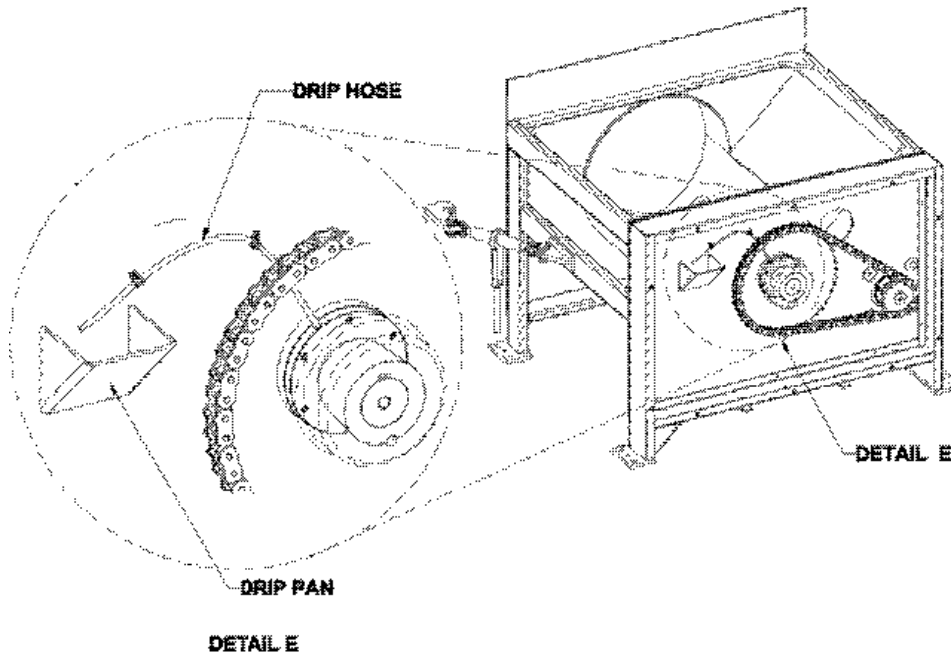


Figure 12.

For units not equipped with Auto-Lube systems:

5. Clean the grease fitting. On AST-220 and AST-320 the fitting is located on the right-hand side just above the gearbox. The AST-440 has two grease fittings one on the right-hand side and one on the left-hand side located just above each gearbox.

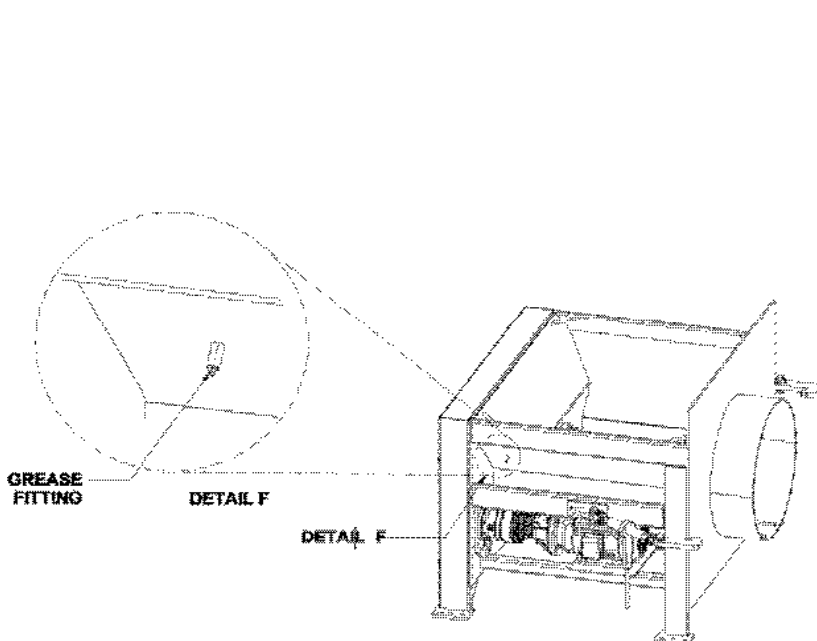


Figure 13.

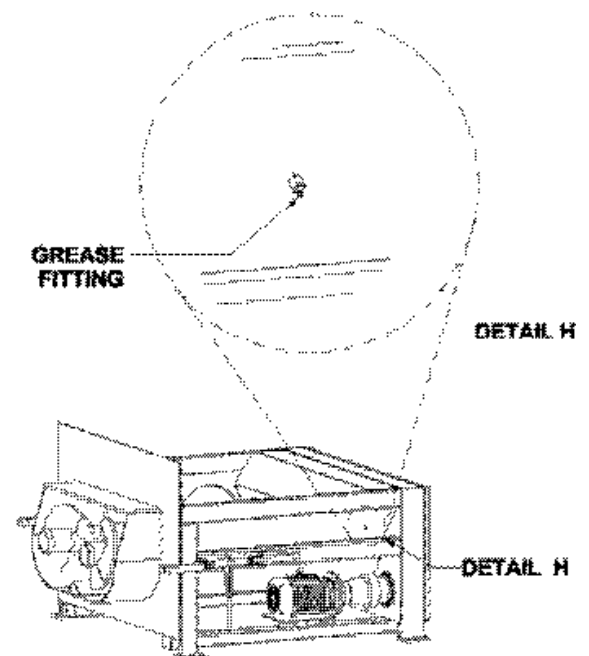


Figure 14.

BEARING LUBRICATION

1. Add grease to the grease fitting until fresh grease comes out of the drip hose.

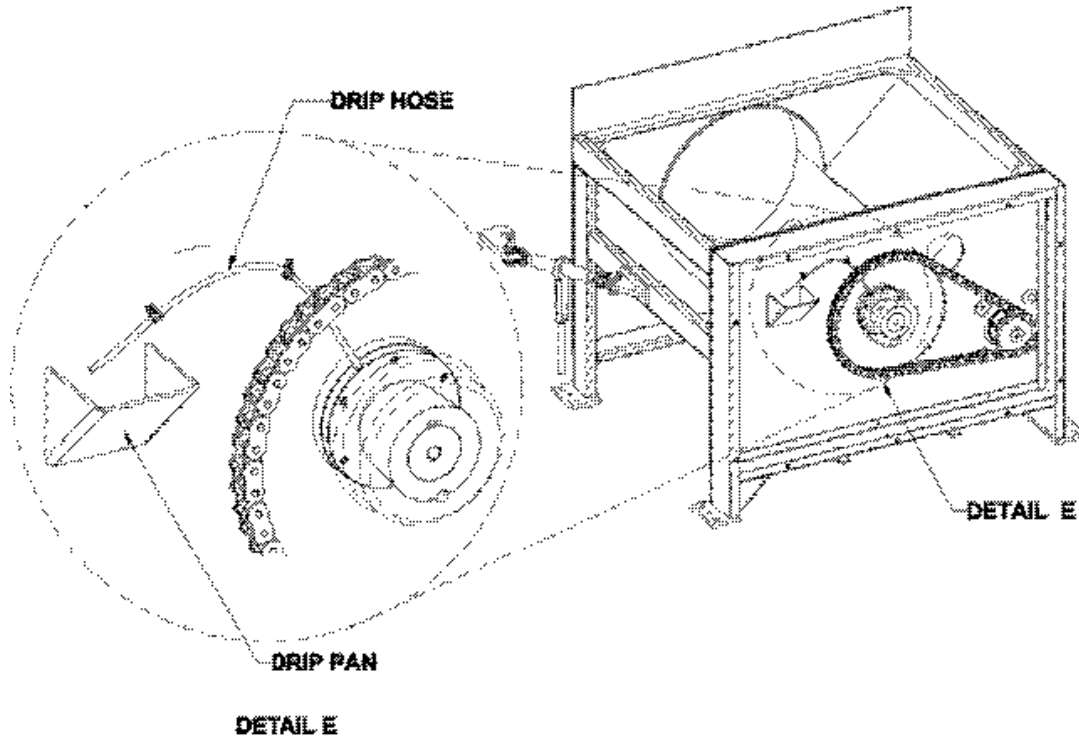


Figure 15.

2. Clean off grease fitting.
3. Clean out excess grease from drip pan.
4. Wipe any build up off of chain with towel and apply lubricant to chain.

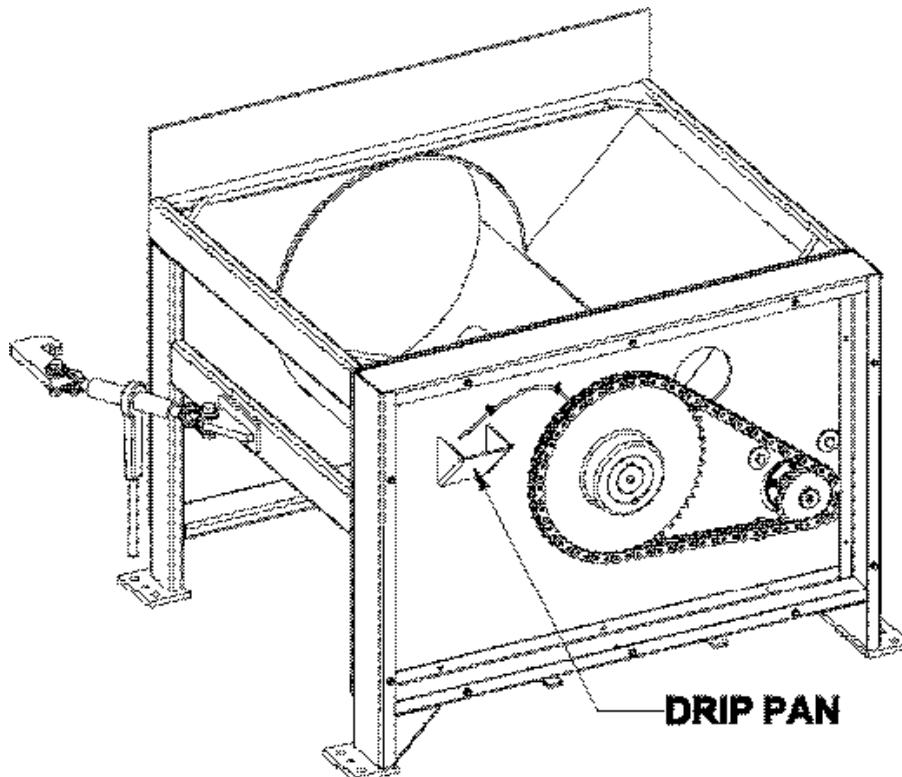


Figure 16.

HARD SURFACE WELD

⚠ WARNING

Ram speed accelerates as ram retracts. Never enter any part of the self-contained compactor/container until the unit has been “**Lock-Out/Tag-Out Instructions**” on page 5.

Inspection:

1. For stationary compactors - separate the compactor and container. For self-contained compactors – dump compaction container.
2. Clean off the hard surface welded zone of the auger flights.

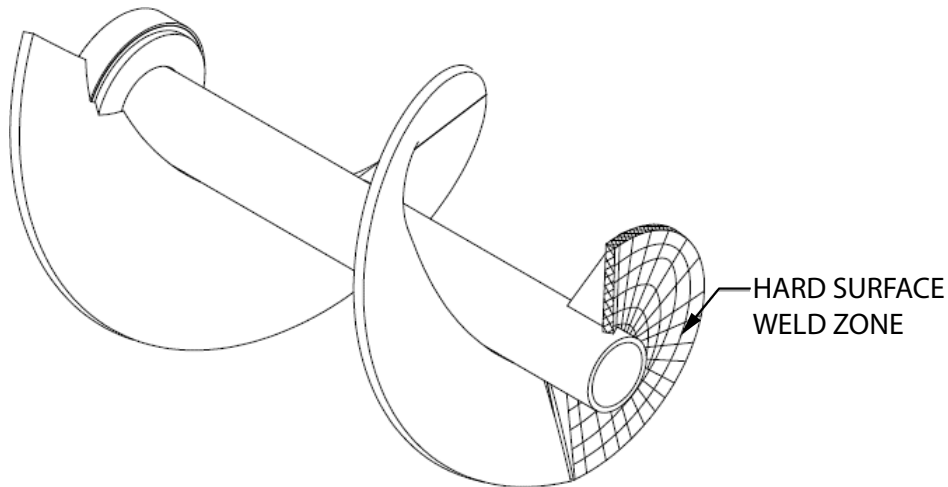


Figure 17.

3. Measure the height of the hard surface weld perpendicular to the auger flight.

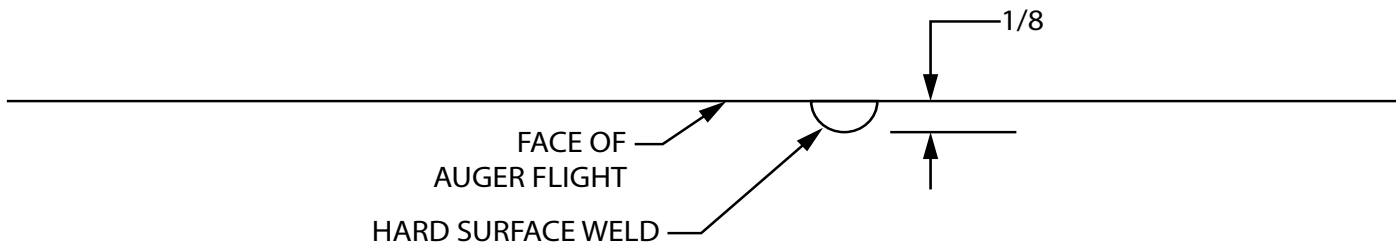


Figure 18.

4. If the hard-surface weld height is less than 1/8", hard surface material needs to be re-applied.

HARD SURFACE WELD

Hard surface weld wire specification and recommended settings:

GMAW-C (MIG)

- wire Weartech WT-1
- wire diameter .045"
- volts 26-28
- amps 240-260 or
- wire Lincore 60-0
- wire diameter .045"
- volts 25-27
- amps 190-210

SMAW (STICK)

- wire Weartech WT-1
- rod diameter .125"
- voltage dc+
- amps 115-135

Notes:

- Weld surface must be clean and free from all dirt, oil, and debris.
- Welding should preformed in a flat orientation.
- Material may crack during and after the welding process this is acceptable and expected.

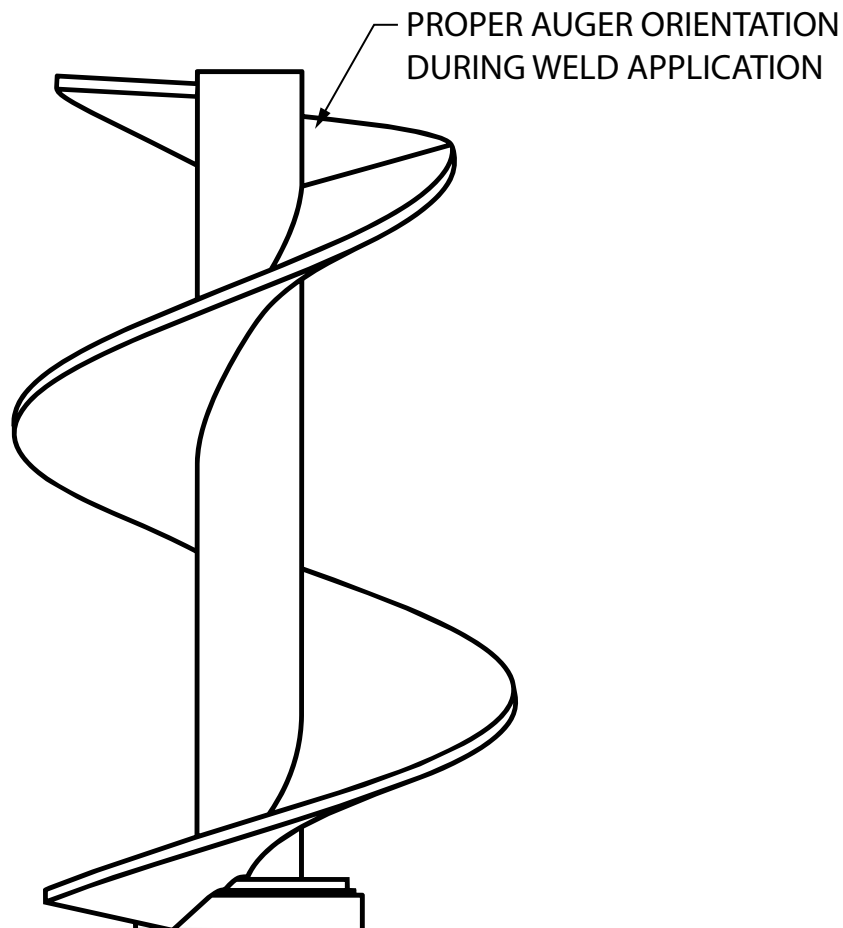


Figure 19.

PRINCIPLES OF OPERATION

Standard System Operating Characteristics. 10 Hp & 15 Hp

Upon start up, a contact is made that energizes an input on the PLC. This input is read by the operating program in the PLC and causes the output for the motor starter to energize, starting the motor. At the same time the motor output is energized the operating program in the PLC starts the timer (T1) that controls the extend stroke of the ram. The directional control valve remains de-energized allowing hydraulic fluid to flow to the base end of the hydraulic cylinders causing them to extend. When the extend timer (T1) times out it causes the output for the directional control solenoid to energize and shifts the spool in the directional control valve. This redirects hydraulic fluid to the rod end of the cylinders causing them to retract. At the same time T1 times out the operating program in the PLC starts the retract timer (T2) that controls the retract stroke of the ram. When T2 times out it de-energizes the output for the motor starter and the directional control valve causing the motor to stop and the valve to de-energize.

AST-220 Fuses & Circuit Breakers

Three Phase					
MOTOR SIZE	VAC	FULL LOAD AMP	DUAL ELEMENT FUSE MAX. SIZE	CIRCUIT BREAKER MAX. SIZE	SERVICE DISCONNECT AMP.
20 HP	208	51.0	100	125	100
	230	48.0	90	125	100
	460	24.0	45	60	60
	575	19.1	35	50	60

AST-220 Wire Sizes

Three Phase		THW Copper 75°C (165°F)		
MOTOR SIZE	VOLTAGE	LENGTH		
		TO 100'	TO 200'	TO 300'
20 HP	208	4	1	1/0
	230	4	2	1
	460	10	8	6
	575	10	10	8

AST-320 Fuses & Circuit Breakers

Three Phase					
MOTOR SIZE	VAC	FULL LOAD AMP	DUAL ELEMENT FUSE MAX. SIZE	CIRCUIT BREAKER MAX. SIZE	SERVICE DISCONNECT AMP.
20 HP	208	51.0	100	125	100
	230	48.0	90	125	100
	460	24.0	45	60	60
	575	19.1	35	50	60

PRINCIPLES OF OPERATION

AST-320 Wire Sizes

Three Phase	THW Copper 75°C (165°F)			
MOTOR SIZE	VOLTAGE	LENGTH		
		TO 100'	TO 200'	TO 300'
20 HP	208	4	1	1/0
	230	4	2	1
	460	10	8	6
	575	10	10	8

AST-440 Fuses & Circuit Breakers

Three Phase					
MOTOR SIZE	VAC	FULL LOAD AMP	DUAL ELEMENT FUSE MAX. SIZE	CIRCUIT BREAKER MAX. SIZE	SERVICE DISCONNECT AMP.
20 HP (2x)	208	118	150	200	200
	230	108	150	200	200
	460	54	70	90	100
	575	44	60	80	100

AST-440 Wire Sizes

Three Phase	THW Copper 75°C (165°F)			
MOTOR SIZE	VOLTAGE	LENGTH		
		TO 100'	TO 200'	TO 300'
20 HP (2x)	208	1/0	3/0	4/0
	230	1/0	2/0	4/0
	460	4	4	2
	575	16	6	4

PLC MAINTENANCE - LAYOUT & DESCRIPTION

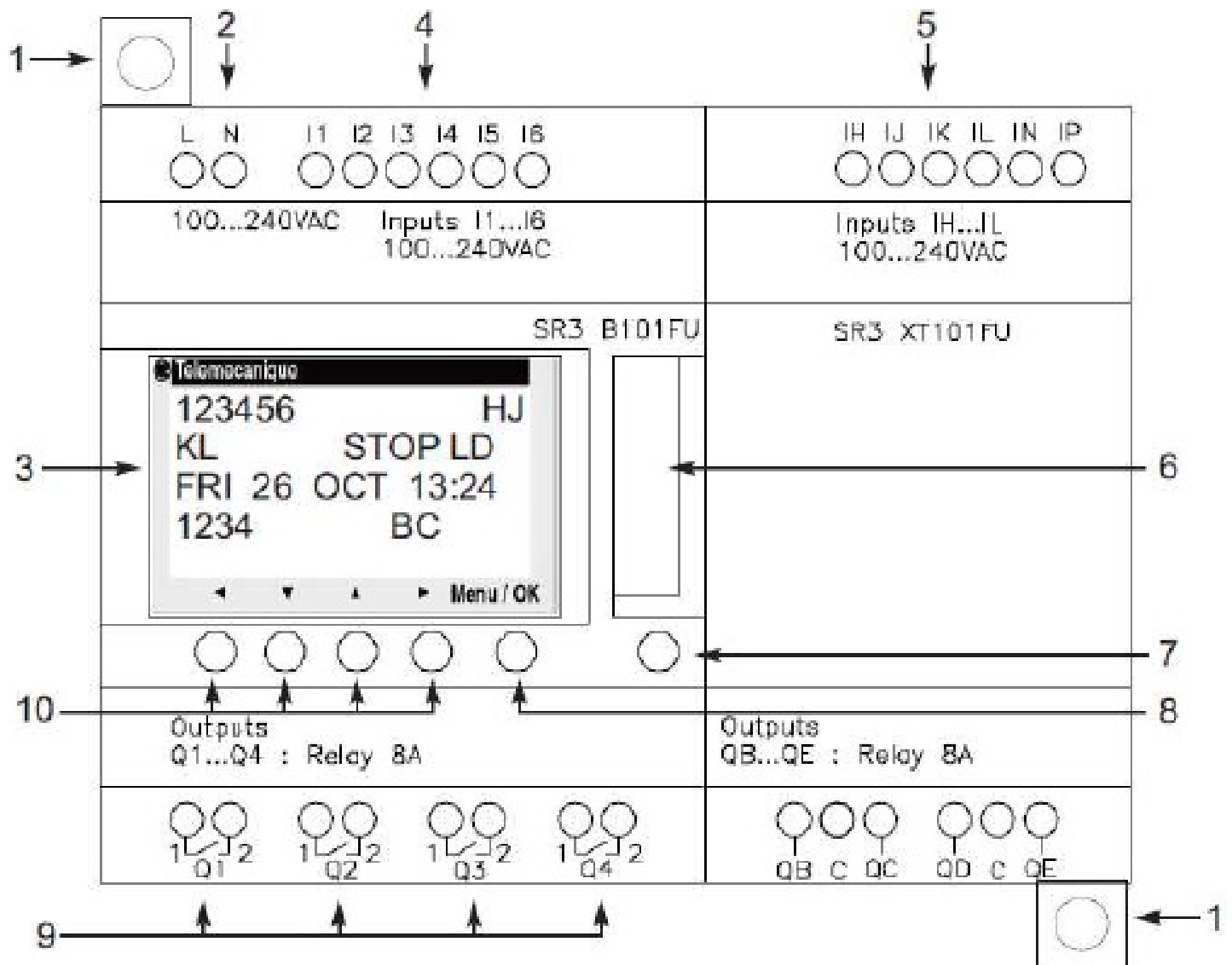


Figure 20.

REFERENCE	DESCRIPTION
1	Retractable mounting feet
2	Screw terminal block for the power supply
3	LCD, 4 lines, 18 characters
4	Screw terminal block for inputs
5	Screw terminal block for discrete input 0-10 Volt Analog Inputs Usable in Discrete Mode on Some Models
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 or After First Configuring them, Z Pushbuttons

PLC MAINTENANCE - LAYOUT & DESCRIPTION

MULTI-CYCLE COUNTER SELECTION	
STEPS	DIRECTIONS
1	Press the Menu Button
2	Press Arrow Down Button to select PARAMETER (flashing)
3	Press Menu/Ok Button
4	Press Arrow Up Button until TT1 is flashing
5	Press Arrow Left Button until Time Setting is (flashing)
6	Press Arrow Down or Arrow Up to Adjust Time
7	Press Menu/Ok Button
8	Press Menu/Ok Button to Confirm Changes
9	PRESS ARROW LEFT BUTTON TO RETURN TO TT1 = FORWARD TIMER (FLASHING)
10	Press Menu/Ok Button to Return to Normal Operation
*Note: The Timer for Each Operation Will be Listed on The Schematic.	

ELECTRICAL SCHEMATIC

Refer to the electrical schematic shipped with your compactor or contact Marathon Equipment Company's Technical Service Department at 877-258-1105. Be sure to have compactor serial number ready when contacting service.

TROUBLESHOOTING CHART

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 heater reset
UNIT WILL NOT CONTINUE RUNNING WHEN START BUTTON IS RELEASED	1. Motor starter is inoperative	1a. Check motor starter coil & wiring
	2. Motor starter auxiliary contacts are inoperative	2a. Check motor starter contacts and wiring
UNIT WILL NOT REVERSE	1. Reverse Motor Starter not energized	1a. Check coil Motor Starter
ERRATIC OPERATION	1. Low voltage	1a. Check primary & secondary sides of transformer for correct voltage.
OVERLOADS TRIP FREQUENTLY	1. Incorrect voltage	1a. Check for correct voltage
	2. Excessive load on motor	2a. Check current transducer and transducer setting. 2b. Check chain and gear box 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 all connections on motor starter, overload section, and in motor junction box for loose connections. Tighten as needed
	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

TYPICAL PANEL BOX CONFIGURATION

The diagram below represents a typical panel box configuration for the Trash Commander compactors. The panel box on your compactor may differ depending on the model and/or optional equipment/controls. Refer to the chart below to identify components. To order replacement parts, please call our Parts Department at 800-528-5308.

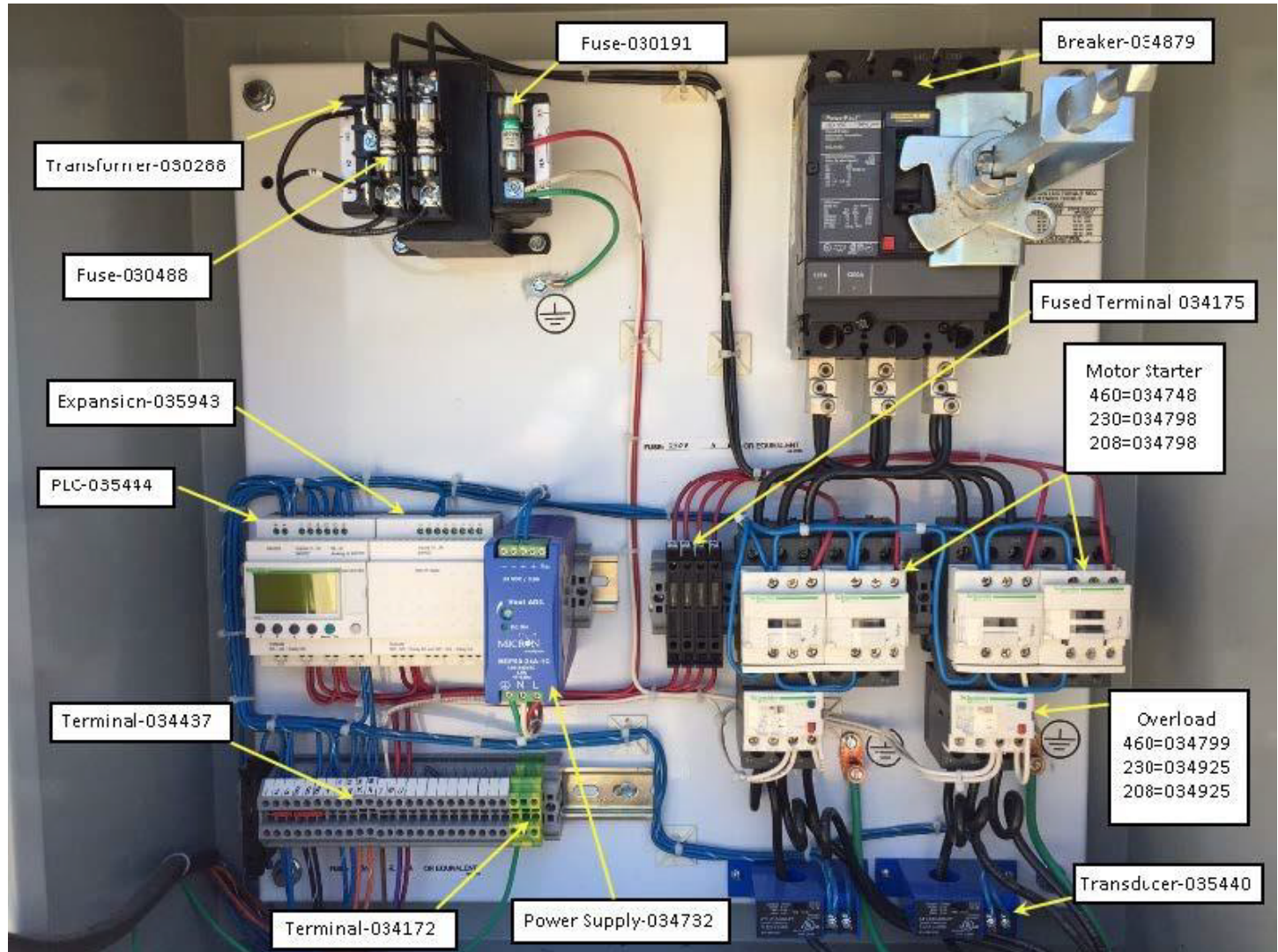


Figure 21 Decal on outside and inside of door and on inside wall opposite of door..

DECAL PARTS LIST

⚠ WARNING

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.

Note: When ordering replacement decals, use 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.

PART#	DESCRIPTION	QTY
06-0002	Ram-Jet	3
06-0038	Warning: Do Not Remove Access Cover	1
06-0039	Danger: Do Not Enter	3
06-0121	Notice: Federal Regulation	2
06-0249	Danger: Hazardous Voltage	1
06-1839	American Flag	3
06-3123	Danger: Confined Space	3
06-0097	Compactor Serial Plate	1
06-3976	Warning: Arc Flash Hazard	1
06-3977	Warning: Do Not Operate	2
06-3978	Danger: Do Not Override	2
06-0133	Warning: Keep Off	2
06-2751	"Marathon Comp & Recycling" Decal	2
06-3044	Danger Volts	1
06-0040	Danger: Crushing Hazard ... Keep Out ****	1
06-3333	Notice: In The Event Of Fire ****	1
06-0052	Danger: Gate Must Be Closed ****	1
*** ONLY ON UNITS WITH SIDE MOUNT PPK **** ONLY ON OPTIONAL LOADING CONFIGURATIONS. SEE DECAL PLACEMENT FOR OPTIONAL LOADING CONFIGURATIONS.		

DECAL PLACEMENT

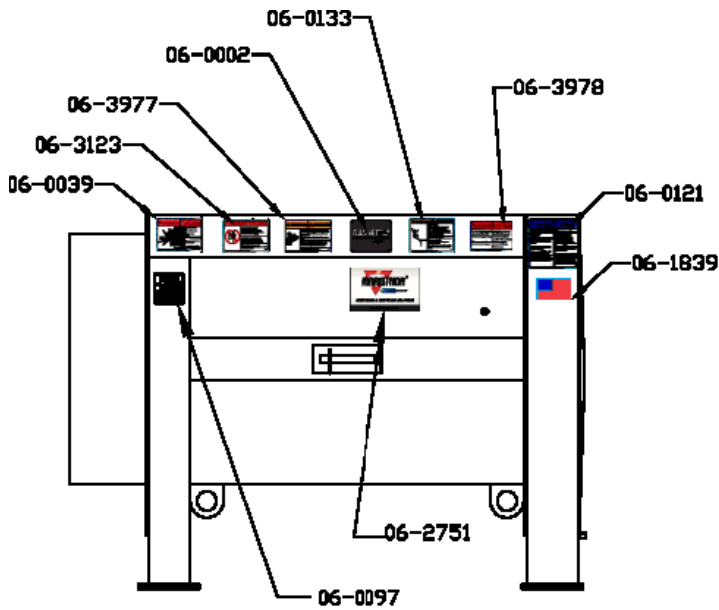


Figure 22. Left Side View

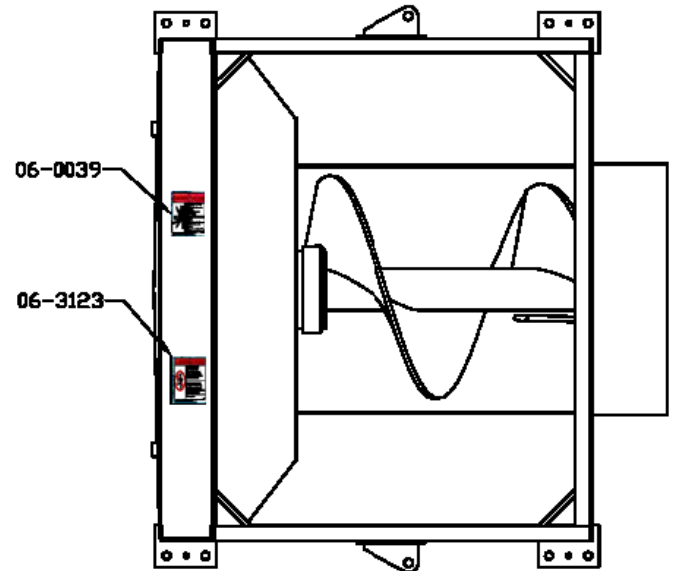


Figure 23. Top View

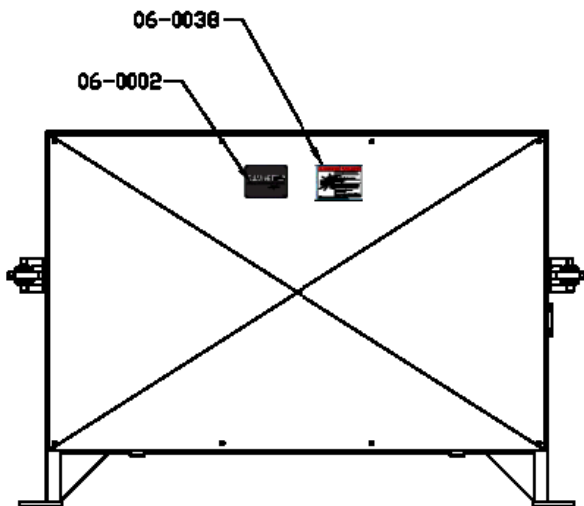


Figure 24. Rear View

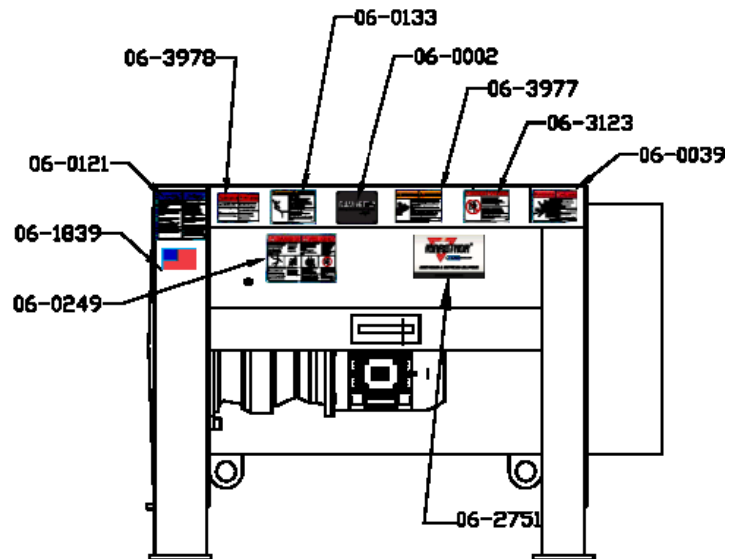


Figure 25. Right Side View

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.

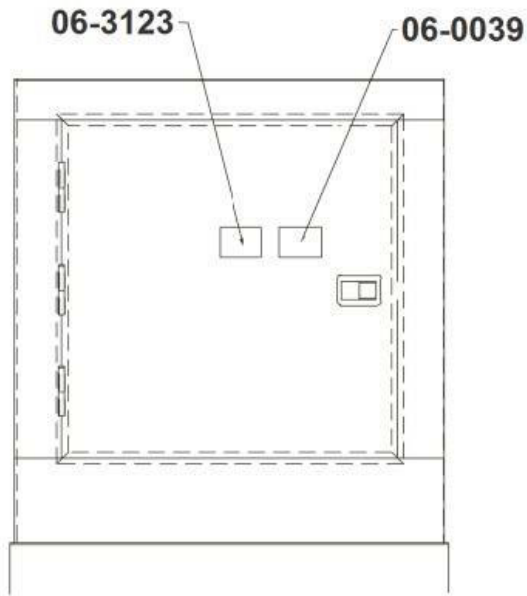


Figure 29. Rear Feed Doghouse

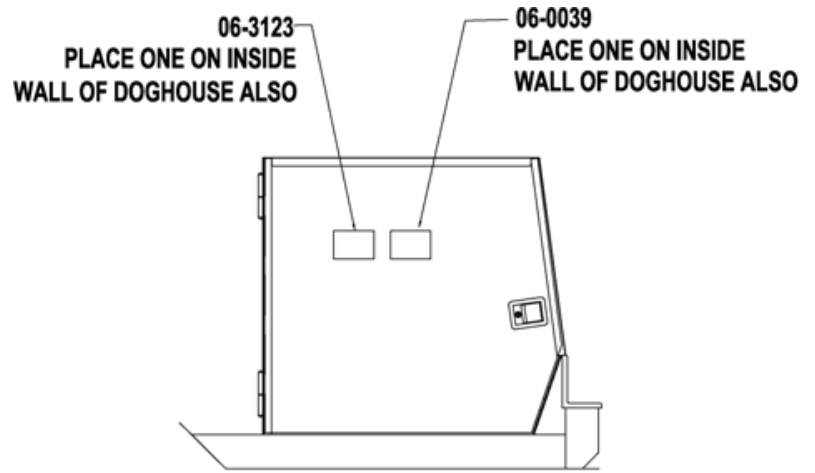


Figure 28. Side Feed Doghouse

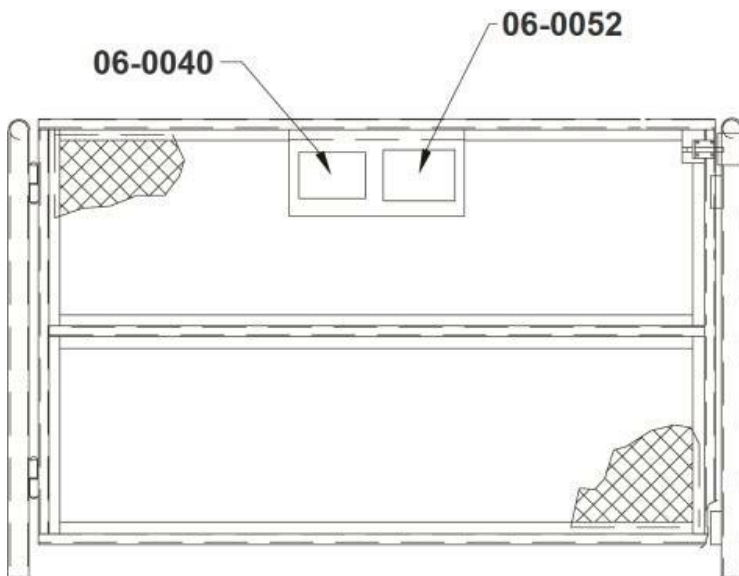


Figure 27. Access Gate

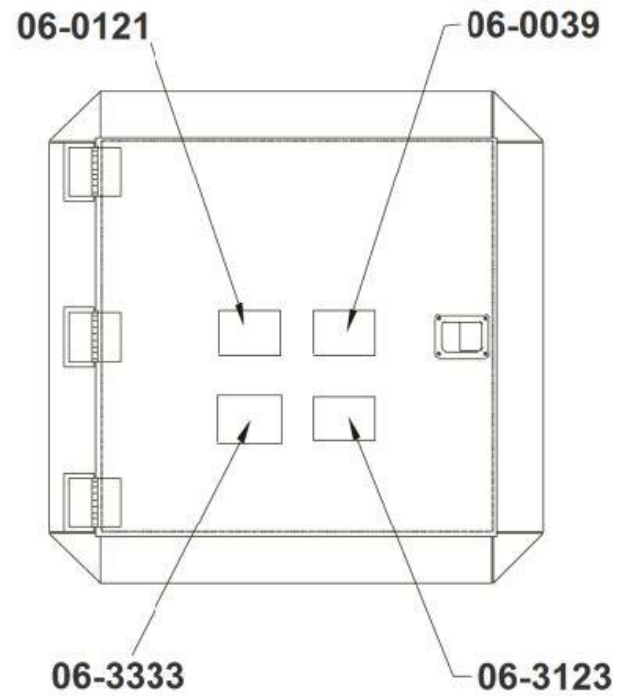


Figure 26. Security Door

DECAL PLACEMENT FOR OPTIONAL LOADING CONFIGURATIONS

06-0039 06-3123

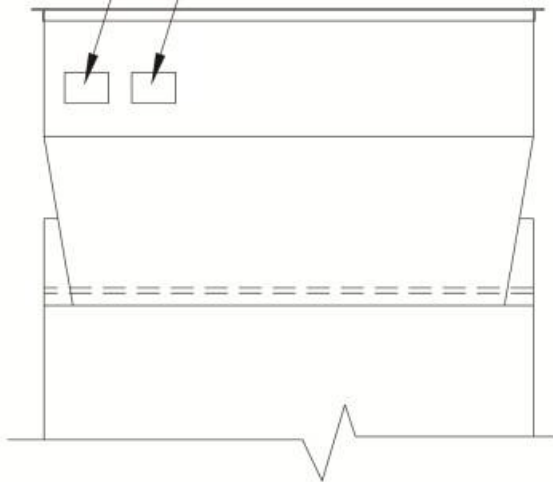


Figure 31. 4 Sided Hopper Rear View

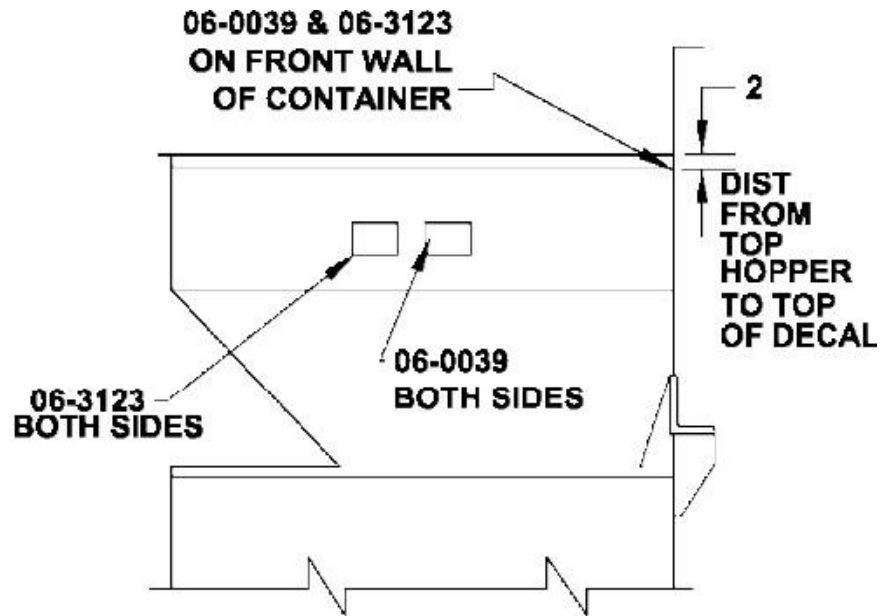


Figure 32. 4 Sided Hopper Side View

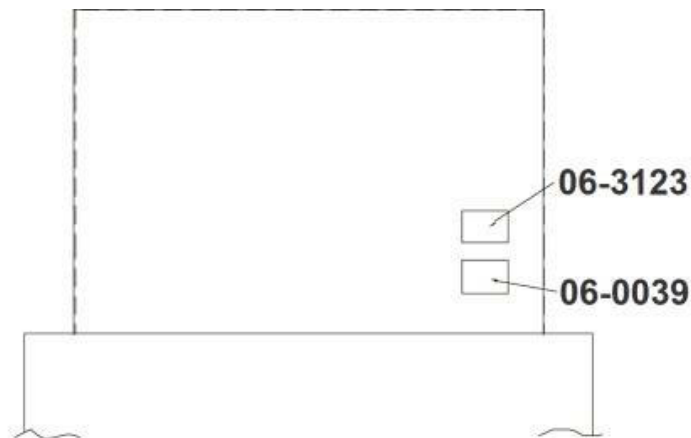


Figure 30. Side Feed Security Chute

DECAL PLACEMENT FOR OPTIONAL LOADING CONFIGURATIONS

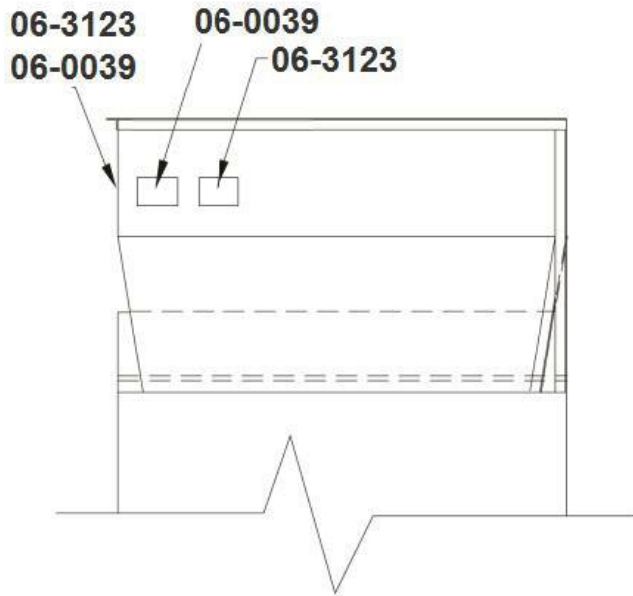


Figure 35. 3 Sided Hopper Rear View

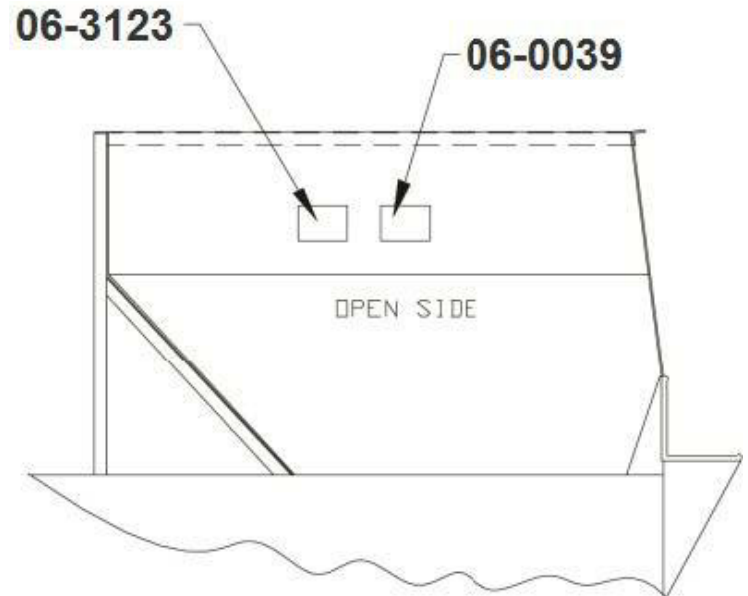


Figure 33. 3 Sided Hopper Side View

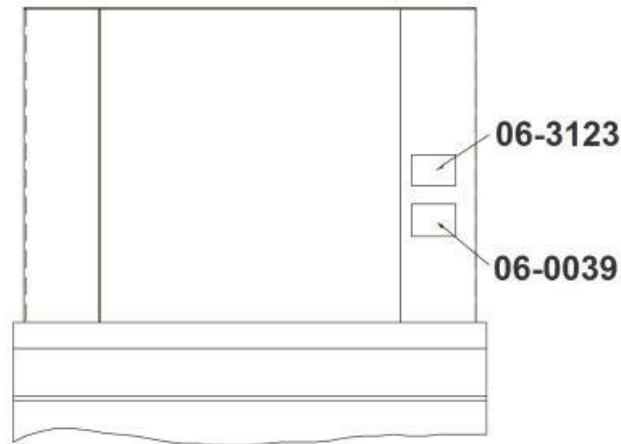
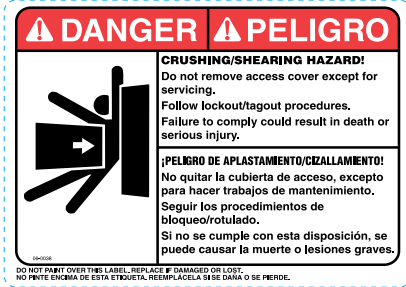


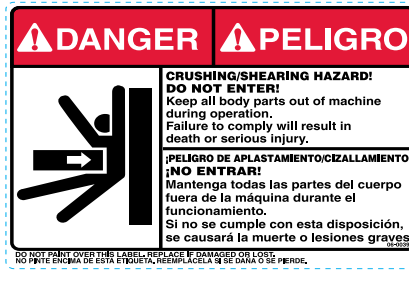
Figure 34. Rear Feed Security Chute

DECAL IMAGES

06-0038



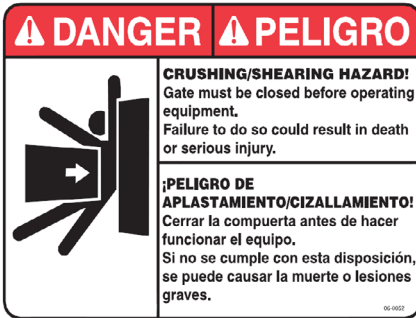
06-0039



06-3044



06-0052



06-3978



06-0040



06-0249



06-3123



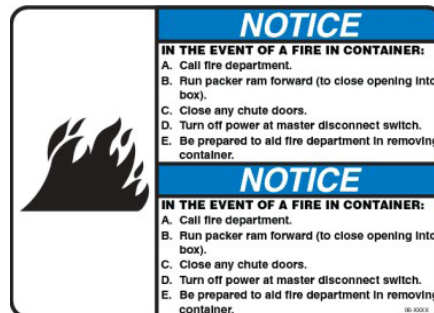
06-0133



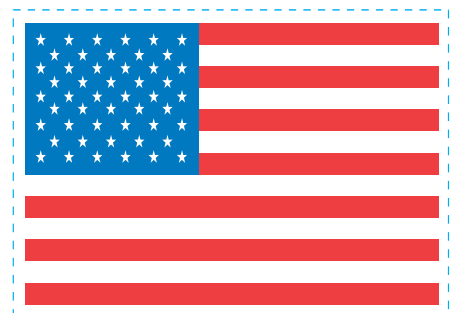
06-3977



06-3333



06-1839



DECAL IMAGES

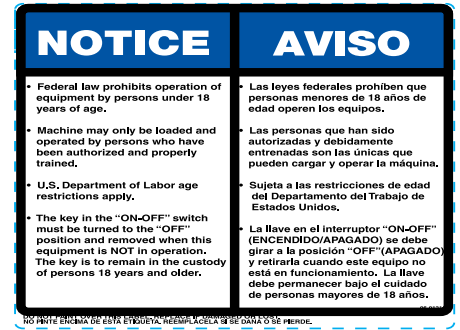
06-0002



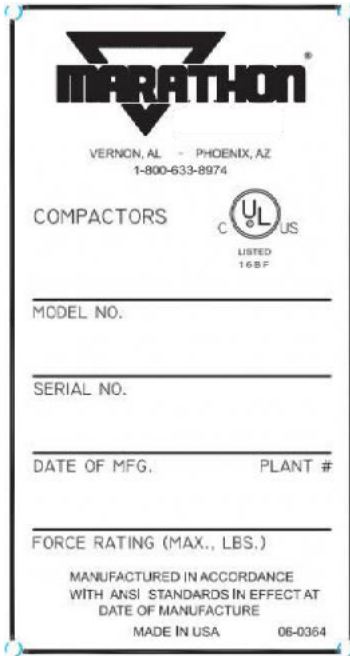
06-2751



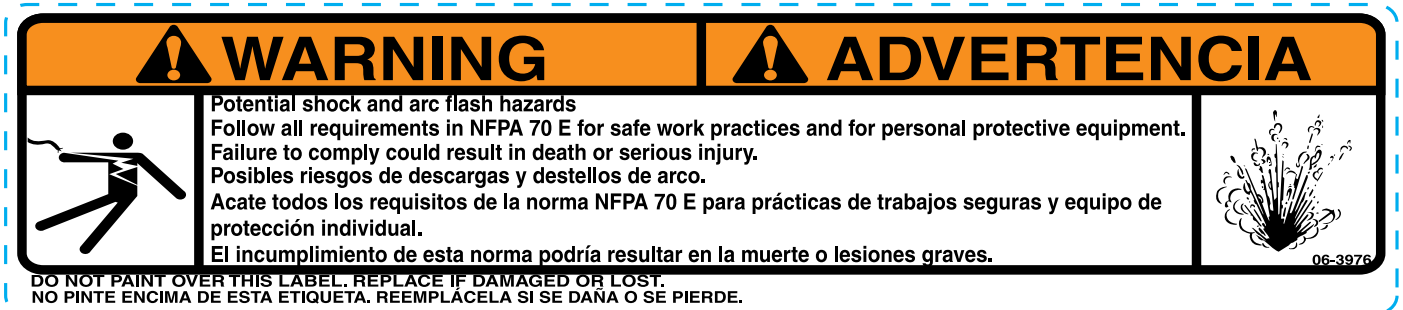
06-0121



06-0097



06-3976



AST-220 SPARE PARTS

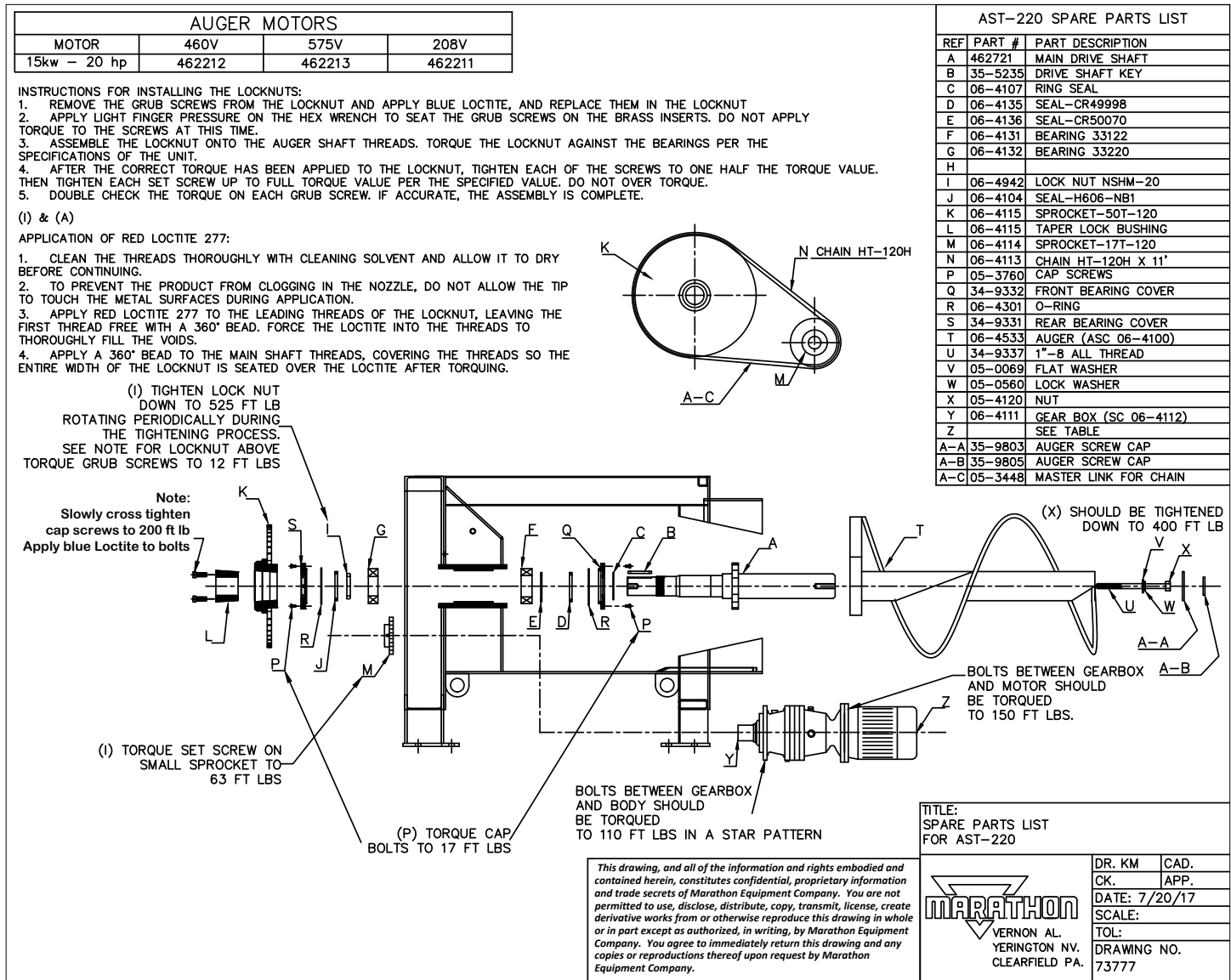


Figure 36.

Note;The locknut should be fully torqued within 3 minutes of application of the red Loctite to the threads to prevent premature curing and improper preload.

AST-320 SPARE PARTS LISTS

AST-320 DRIVETRAIN PARTS LIST		
	PART NUMBER	PART DESCRIPTION
A	35-9804 & 35-9805	AUGER SCREW CAPS
B	05-5593	NUT
C	05-5592	WASHER
D	35-9572	1"-8 ALL THREAD ROD
E	06-4380	AUGER SCREW
F	463414	MAIN DRIVE SHAFT
G	35-3584	DRIVE SHAFT KEY
H	05-4134	CAP SCREWS
I	35-3109	FRONT BEARING COVER
J	06-4282	RING SEAL
K	06-4257	SEAL
L	06-4262	O-RING
M	06-4255	BEARING 32230
N	06-4256	BEARING 32228
O		
P	06-4941	LOCK NUT NSHM-28
Q	06-4258	SEAL
R	35-3110	REAR BEARING COVER
S	35-6341	PINNING EAR
T	05-5031	RATCHET
U	09-1089	RATCHET CLAW

(P) & (F)

APPLICATION OF RED LOCTITE 277:

1. CLEAN THE THREADS THOROUGHLY WITH CLEANING SOLVENT AND ALLOW IT TO DRY BEFORE CONTINUING.
2. TO PREVENT THE PRODUCT FROM CLOGGING IN THE NOZZLE, DO NOT ALLOW THE TIP TO TOUCH THE METAL SURFACES DURING APPLICATION.
3. APPLY RED LOCTITE 277 TO THE LEADING THREADS OF THE LOCKNUT, LEAVING THE FIRST THREAD FREE WITH A 360° BEAD. FORCE THE LOCTITE INTO THE THREADS TO THOROUGHLY FILL THE VOIDS.
4. APPLY A 360° BEAD TO THE MAIN SHAFT THREADS, COVERING THE THREADS SO THE ENTIRE WIDTH OF THE LOCKNUT IS SEATED OVER THE LOCTITE AFTER TORQUING.

(P) TIGHTEN LOCK NUT DOWN TO 950 FT LB
SEE NOTE ON GRUB SCREWS BELOW
TORQUE GRUB SCREWS TO 22 FT LBS

H - TIGHTEN TO 31 FL/LBS

BEARING HUB
NON-REPLACEABLE
WELDED IN BODY

H - TIGHTEN TO 31 FL/LBS

(B) SHOULD BE TIGHTENED DOWN TO 400 FT LB

E - SEE DETAIL BELOW

INSTRUCTIONS FOR INSTALLING THE LOCKNUTS:

1. REMOVE THE GRUB SCREWS FROM THE LOCKNUT AND APPLY BLUE LOCTITE, AND REPLACE THEM IN THE LOCKNUT
2. APPLY LIGHT FINGER PRESSURE ON THE HEX WRENCH TO SEAT THE GRUB SCREWS ON THE BRASS INSERTS. DO NOT APPLY TORQUE TO THE SCREWS AT THIS TIME.
3. ASSEMBLE THE LOCKNUT ONTO THE AUGER SHAFT THREADS. TORQUE THE LOCKNUT AGAINST THE BEARINGS PER THE SPECIFICATIONS OF THE UNIT.
4. AFTER THE CORRECT TORQUE HAS BEEN APPLIED TO THE LOCKNUT, TIGHTEN EACH OF THE SCREWS TO ONE HALF THE TORQUE VALUE. THEN TIGHTEN EACH SET SCREW UP TO FULL TORQUE VALUE PER THE SPECIFIED VALUE. DO NOT OVER TORQUE.
5. DOUBLE CHECK THE TORQUE ON EACH GRUB SCREW. IF ACCURATE, THE ASSEMBLY IS COMPLETE.

TITLE:
AST-320 SPARE PARTS
DRAWING/LIST

DR. KM
CK. APP.
DATE: 8/31/17
SCALE:
TOL:
DRAWING NO.
73778A

Marathon
VERNON AL.
PHOENIX AZ.

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Figure 37.

Note;The locknut should be fully torqued within 3 minutes of application of the red Loctite to the threads to prevent premature curing and improper preload.

AST-320 SPARE PARTS LISTS

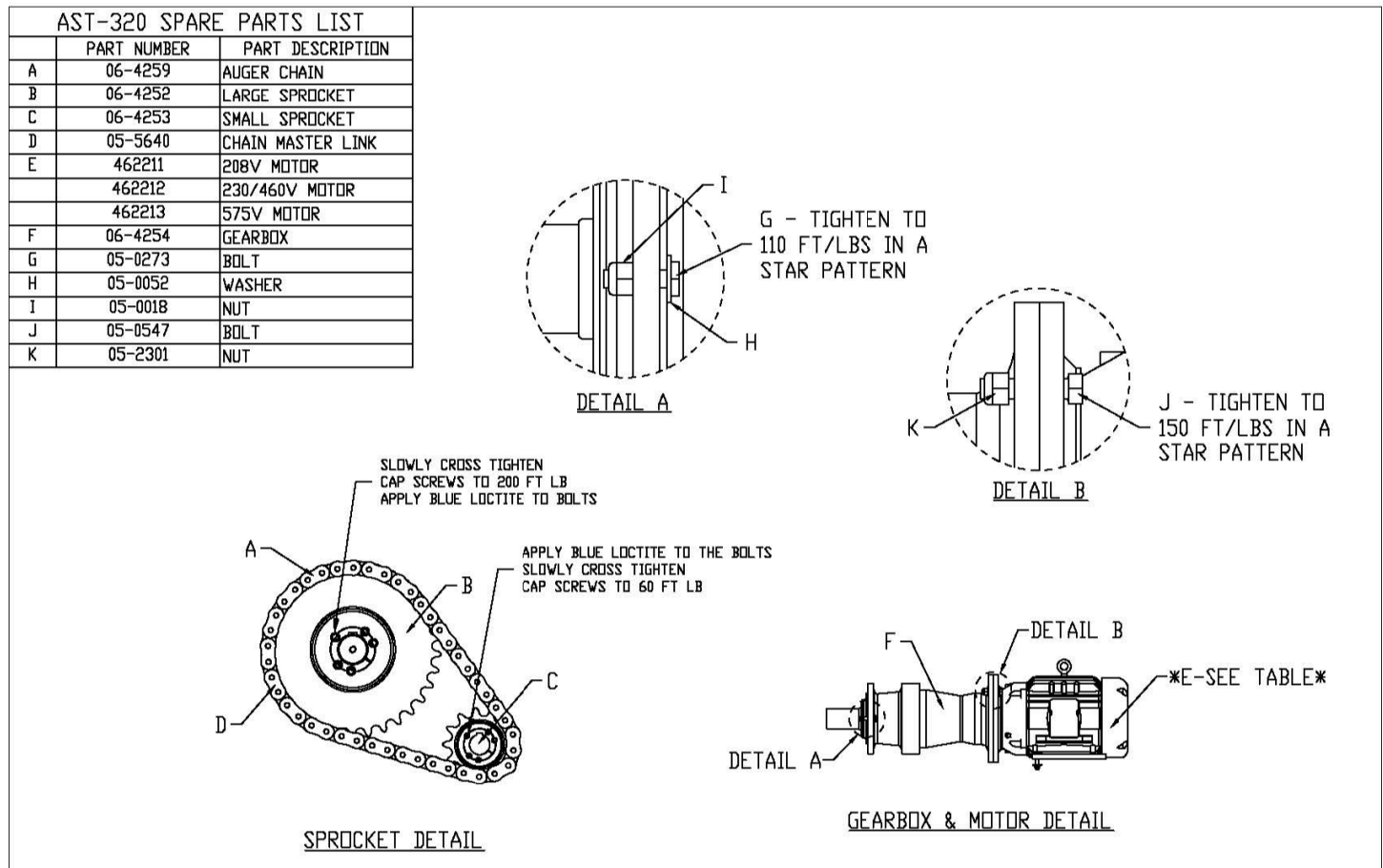


Figure 38.

AST-440 SPARE PARTS LISTS

AST-440 DRIVETRAIN PARTS LIST		
	PART NUMBER	PART DESCRIPTION
A	35-9804 & 35-9805	AUGER SCREW CAP
B	05-4120	NUT
C	05-0069	WASHER
D	35-3595	1"-8 ALL THREAD ROD
E	06-4250	LEFT HAND SCREW
	06-4251	RIGHT HAND SCREW
F	458176	MAIN DRIVE SHAFT
G	35-3584	DRIVE SHAFT KEY
H	05-4134	CAP SCREWS
I	35-3109	FRONT BEARING COVER
J	06-4282	RING SEAL
K	06-4257	SEAL
L	06-4262	O-RING
M	06-4255	BEARING 32230
N	06-4256	BEARING 32228
O		
P	06-4261	LOCK NUT NSHM 28
Q	06-4258	SEAL
R	35-3110	REAR BEARING COVER
S	35-6341	PINNING EAR
T	05-5031	RATCHET
U	32-9403	RATCHET CLAW
V	06-4281	O-RING

(P) & (F)

APPLICATION OF RED LOCTITE 277:

1. CLEAN THE THREADS THOROUGHLY WITH CLEANING SOLVENT AND ALLOW IT TO DRY BEFORE CONTINUING.
2. TO PREVENT THE PRODUCT FROM CLOGGING IN THE NOZZLE, DO NOT ALLOW THE TIP TO TOUCH THE METAL SURFACES DURING APPLICATION.
3. APPLY RED LOCTITE 277 TO THE LEADING THREADS OF THE LOCKNUT, LEAVING THE FIRST THREAD FREE WITH A 360° BEAD. FORCE THE LOCTITE INTO THE THREADS TO THOROUGHLY FILL THE VOIDS.
4. APPLY A 360° BEAD TO THE MAIN SHAFT THREADS, COVERING THE THREADS SO THE ENTIRE WIDTH OF THE LOCKNUT IS SEATED OVER THE LOCTITE AFTER TORQUING.

RIGHT HAND AUGER (06-4251)

LEFT HAND AUGER (06-4250)

FACING AUGER SNOOT

(P) TIGHTEN LOCK NUT DOWN TO 950 FT LB
SEE NOTE ON GRUB SCREWS BELOW
TORQUE GRUB SCREWS TO 22 FT LBS

H - TIGHTEN TO 31 FT/LBS

BEARING HUB
NON-REPLACEABLE
WELDED IN BODY

H - TIGHTEN TO 31 FT/LBS

(B) SHOULD BE TIGHTENED
DOWN TO 400 FT LB

*E - SEE
DETAIL BELOW*

INSTRUCTIONS FOR INSTALLING THE LOCKNUTS:

1. REMOVE THE GRUB SCREWS FROM THE LOCKNUT AND APPLY BLUE LOCTITE, AND REPLACE THEM IN THE LOCKNUT.
2. APPLY LIGHT FINGER PRESSURE ON THE HEX WRENCH TO SEAT THE GRUB SCREWS ON THE BRASS INSERTS. DO NOT APPLY TORQUE TO THE SCREWS AT THIS TIME.
3. ASSEMBLE THE LOCKNUT ONTO THE AUGER SHAFT THREADS. TORQUE THE LOCKNUT AGAINST THE BEARINGS PER THE SPECIFICATIONS OF THE UNIT.
4. AFTER THE CORRECT TORQUE HAS BEEN APPLIED TO THE LOCKNUT, TIGHTEN EACH OF THE SCREWS TO ONE HALF THE TORQUE VALUE. THEN TIGHTEN EACH SET SCREW UP TO FULL TORQUE VALUE PER THE SPECIFIED VALUE. DO NOT OVER TORQUE.
5. DOUBLE CHECK THE TORQUE ON EACH GRUB SCREW. IF ACCURATE, THE ASSEMBLY IS COMPLETE.

TITLE:
AST-440 SPARE PARTS
DRAWING/LIST

DR. KM
CK. APP.
DATE: 6/2/17
SCALE:
TOL:
DRAWING NO.
73779A

VERNON AL.
PHOENIX AZ.

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Figure 39.

Note;The locknut should be fully torqued within 3 minutes of application of the red Loctite to the threads to prevent premature curing and improper preload.

AST-440 SPARE PARTS LISTS

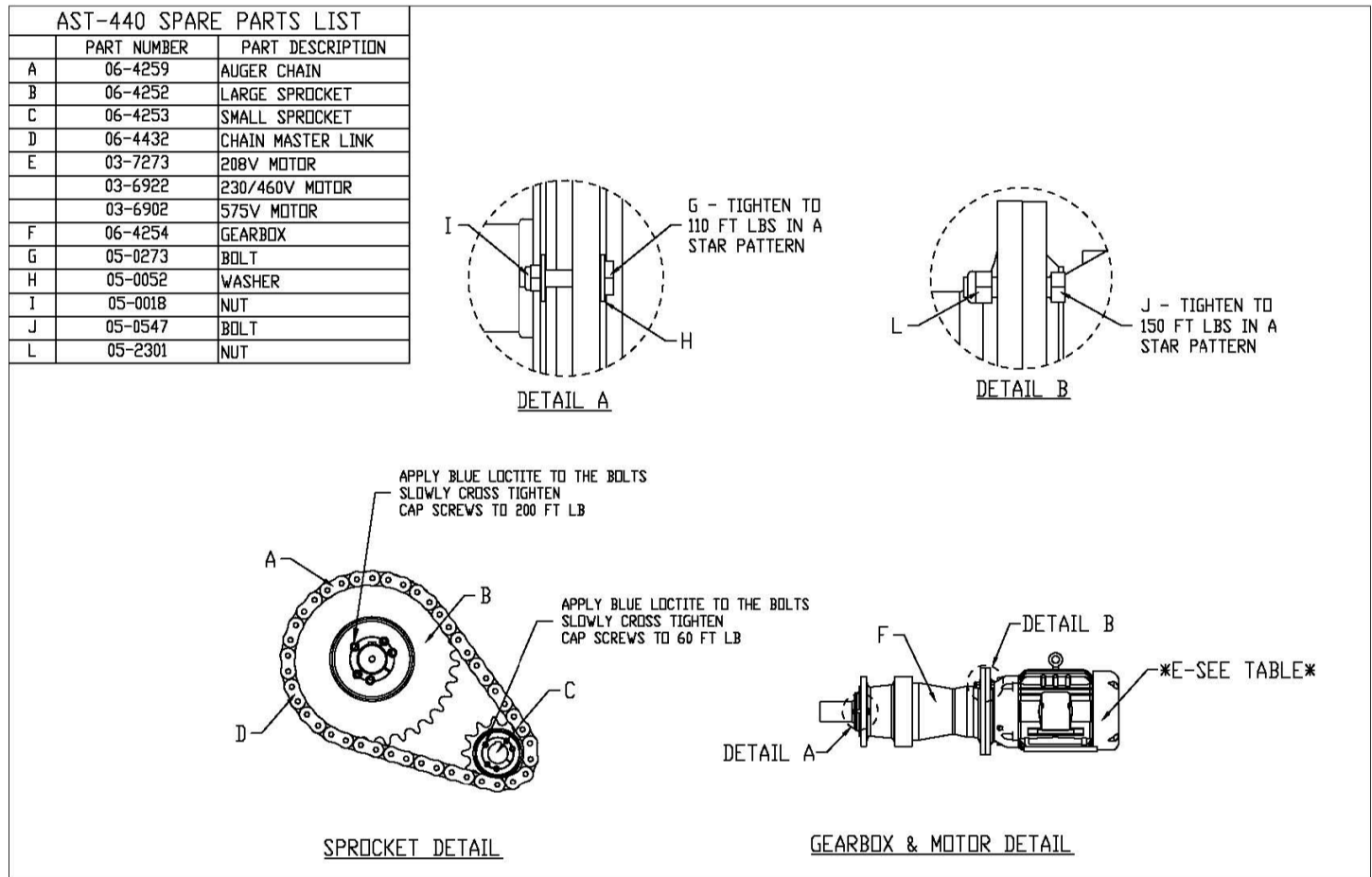


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