Gemini Horizontal Balers

GEMINI 3560 AND GEMINI XTREME MODELS

OPERATION, SERVICE, AND INSTALLATION

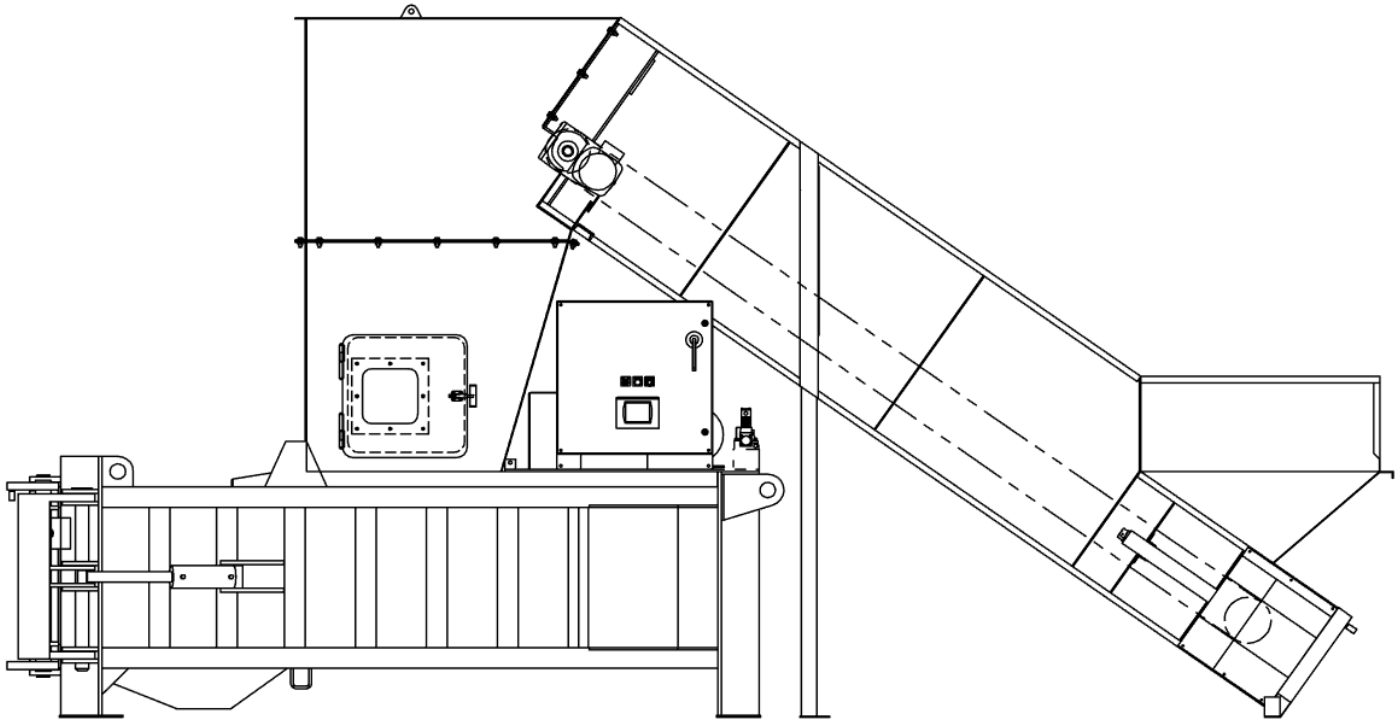
ISSUED MAY 2018

CUSTOMER NAME: _____

SERIAL NUMBER: _____

COMPACTION & RECYCLING SOLUTIONS

0030-GEMINI-0518



Environmental Solutions Group
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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Gemini-3560 & Gemini X-Treme Horizontal Balers

OPERATION, SERVICE, AND INSTALLATION

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SECTION 1
GENERAL INFORMATION

INTRODUCTION

Thank you for purchasing a Marathon® Gemini Horizontal Baler!

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. Z245.5, "SAFETY REQUIREMENTS FOR INSTALLATION, MAINTENANCE AND OPERATION"

ANSI STANDARD NO. Z245.51, "SAFETY REQUIREMENTS FOR BALING EQUIPMENT"

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 maintenance 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 FOR HORIZONTAL BALERS

⚠ DANGER

Before entering any part of the baler, be sure that all sources of energy have been shut off, all potential hazards have been eliminated, and the baler 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 baler and that the baler 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 baler 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 baler 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 baler down.

5. De-activate the energy isolating device(s) so that baler 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 baler 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 baler, ensure that the baler 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 baler (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.

LOCK-OUT & TAG-OUT INSTRUCTIONS (CONTINUED)

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

10. The baler is now locked out.

RESTORING SERVICE

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

1. Check the baler and the immediate area around the baler to ensure that nonessential items have been removed and that the baler 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 baler.

NOTICE

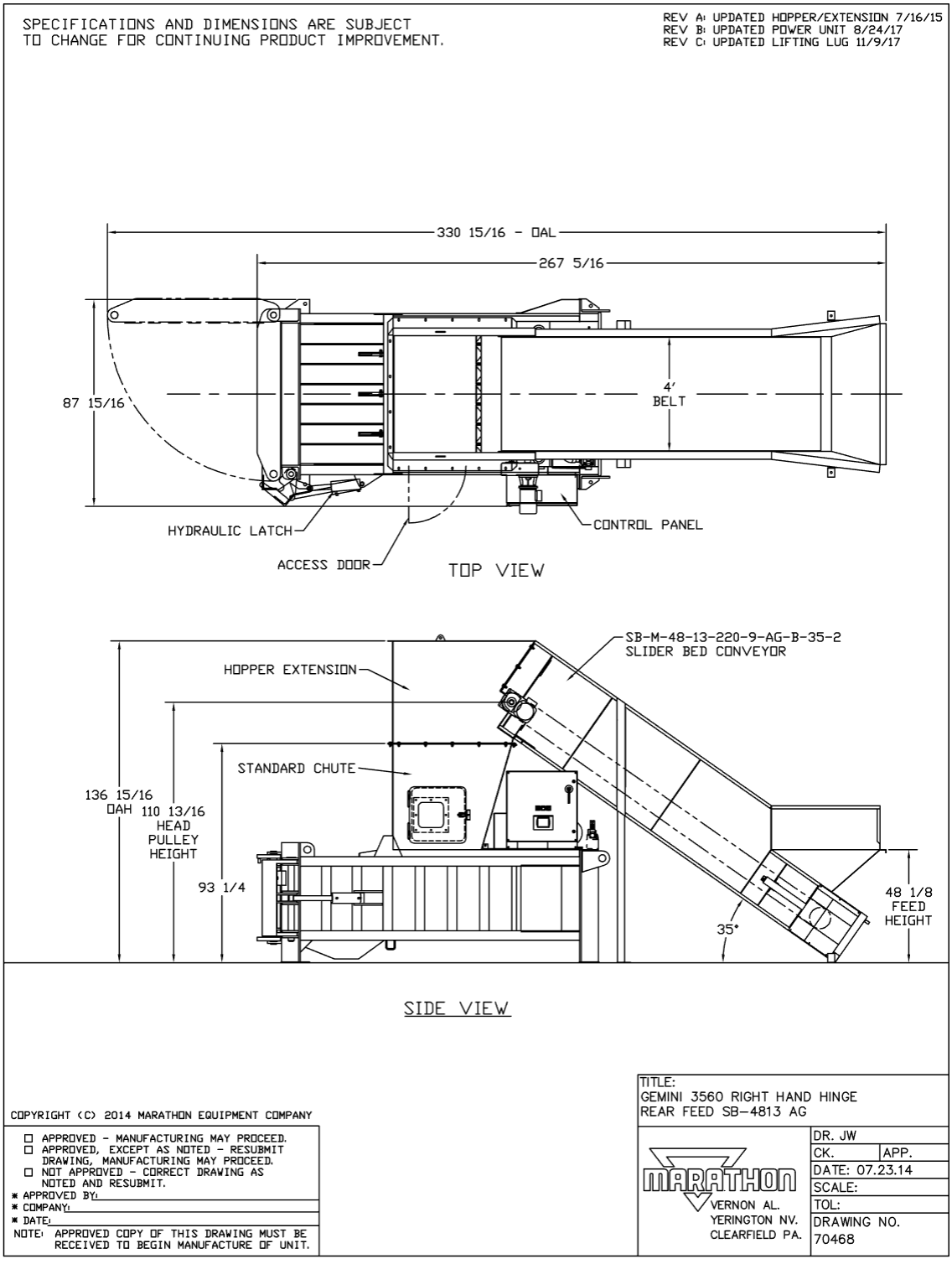
The removal of some forms of blocking may require re-energizing of the baler before safe removal.

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

6. Reassess area to determine all hazards are protected.

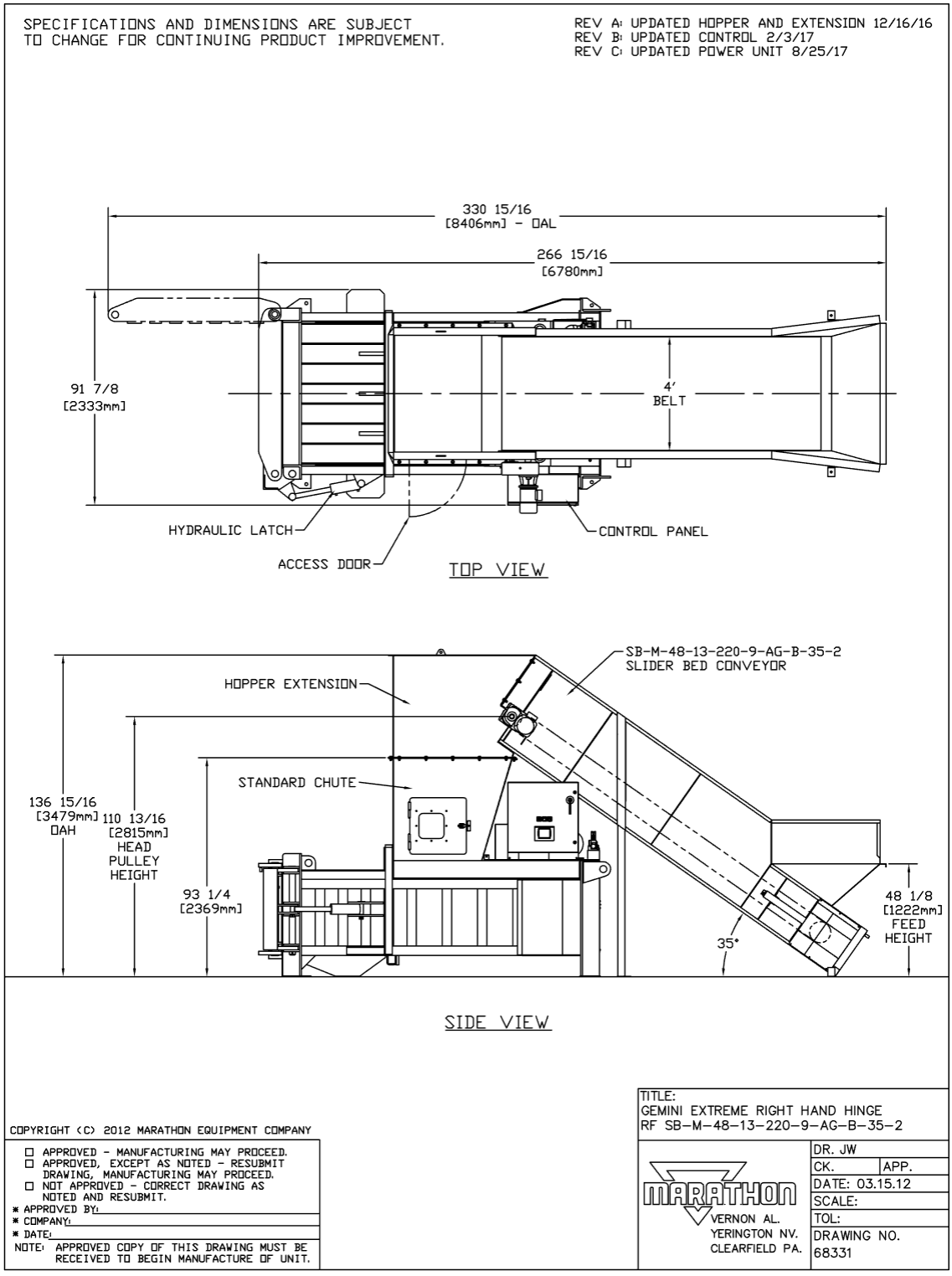
SPECIFICATIONS

This is the standard specification and dimensional drawing for the Gemini 3560 Horizontal Baler.



SPECIFICATIONS (CONTINUED)

This is the standard specifications and dimensional drawing for the Gemini Extreme Horizontal Baler.



SPECIFICATION CHARTS

NOTICE

Do not operate the baler if the relief valve setting is lower than the pumppressure compensator setting. Excessive heat will result.

PRESSURE SETTINGS					
MODEL	HP	GPM	RELIF VALVE (psi)	PRESSURE SWITCH 1 (psi)	PUMP PRESSURE COMPENSATE
3560	20	34	2750*	2250	2450*
XTREME	20	34	3300*	2800	3000*
*NOTE: Do not operate the baler if the relief valve setting is lower than the pump pressure compensator setting. Excessive heat will result.					

FUSES AND CIRCUIT BREAKERS					
MOTOR SIZE	VAC	FULL LOAD AMP	DUAL ELEMENT FUZE MAX. SIZE	CIRCUIT BREAKER MAX. SIZE	SERVICE DISCONNECT AMP.
20 HP, 3PH	208	51.0	100	125	100
	230	48.0	90	125	100
	460	24.5	45	60	60
	575	19.1	35	50	60

WIRE SIZES THW Copper 75°C (165°F)				
		LENGTH		
MOTOR SIZE	VOLTAGE	TO 100'	200'	TO 300'
20 HP, 3PH	208	4	1	1/0
	230	4	2	1
	460	10	8	6
	575	10	10	8

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.

⚠ WARNING

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

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.

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.

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

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.

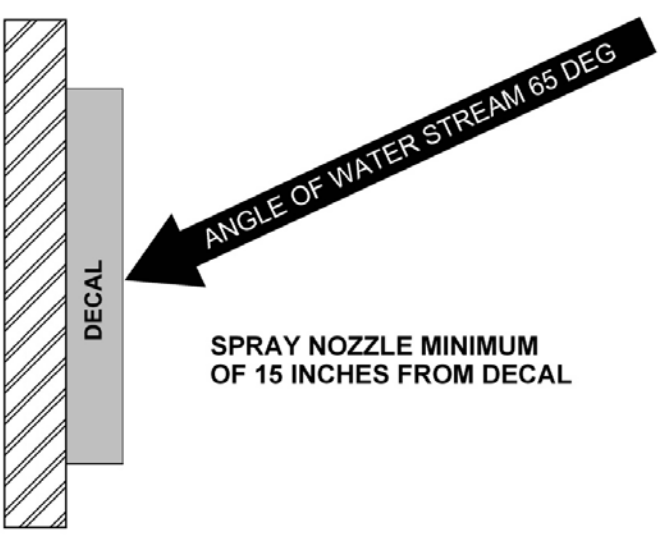
- Spray nozzle opening: 40° wide pattern
- Spray angle: 65° from unit's body
- Distance of nozzle to decal: 15" minimum
- Water pressure: less than or equal to 800 psi
- Length of time: not more than 30 sec.
- Do not use sharp angles to clean the decals – this can lift the decals from the unit.
- NEVER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

C. Remove Difficult Debris

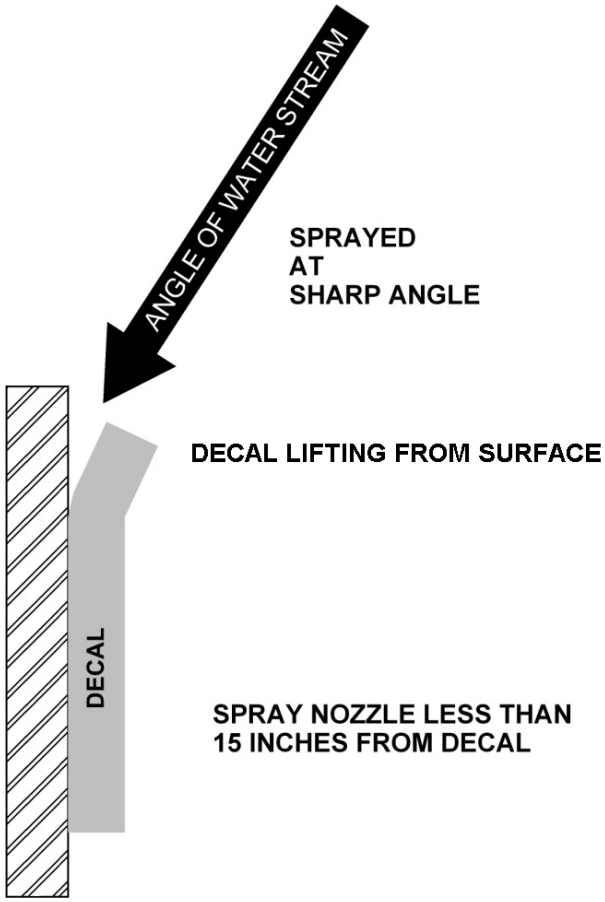
When normal cleaning procedures do not remove difficult debris from the decals, try the following:

- 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 (CONTINUED)

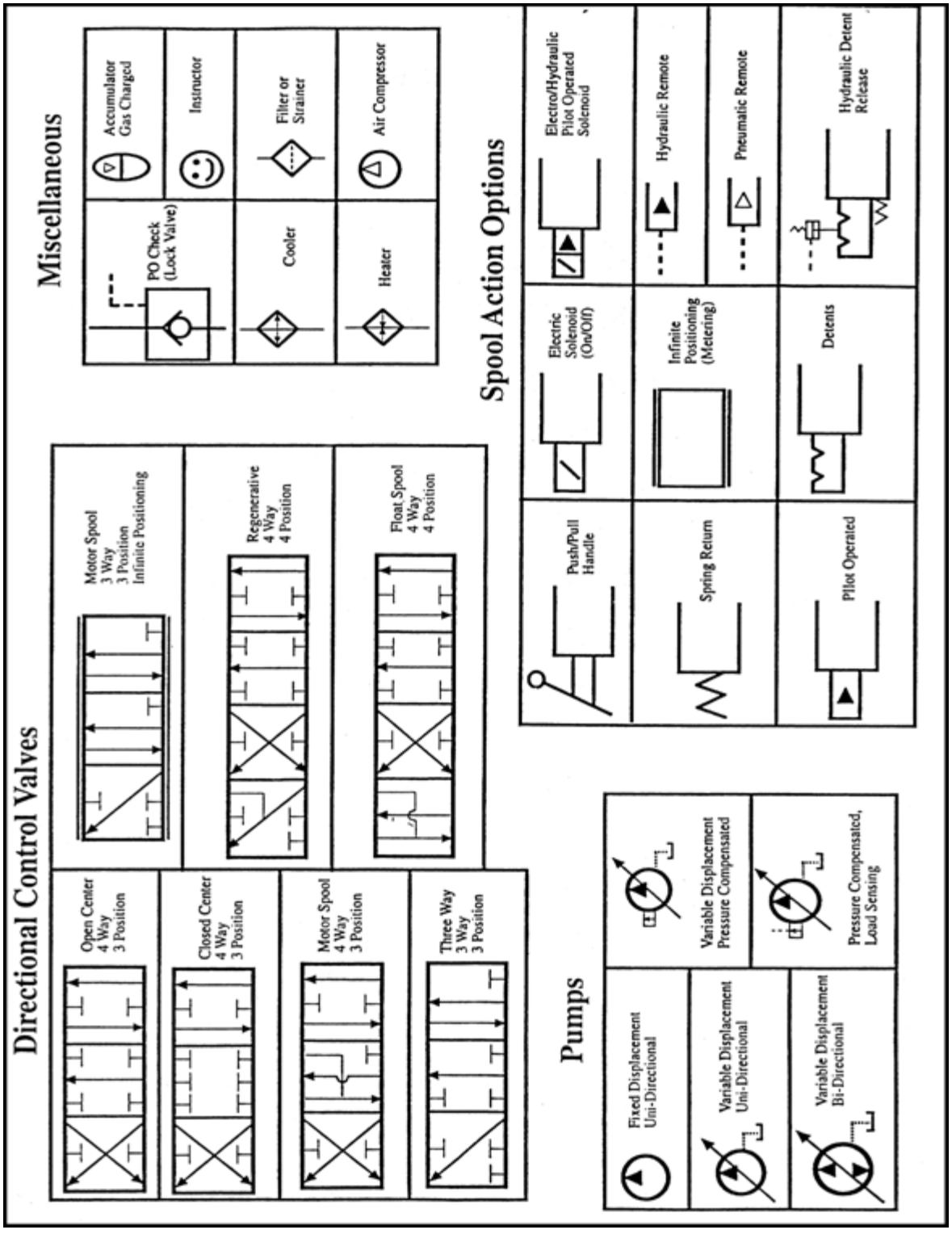


RECOMMENDED TECHNIQUE

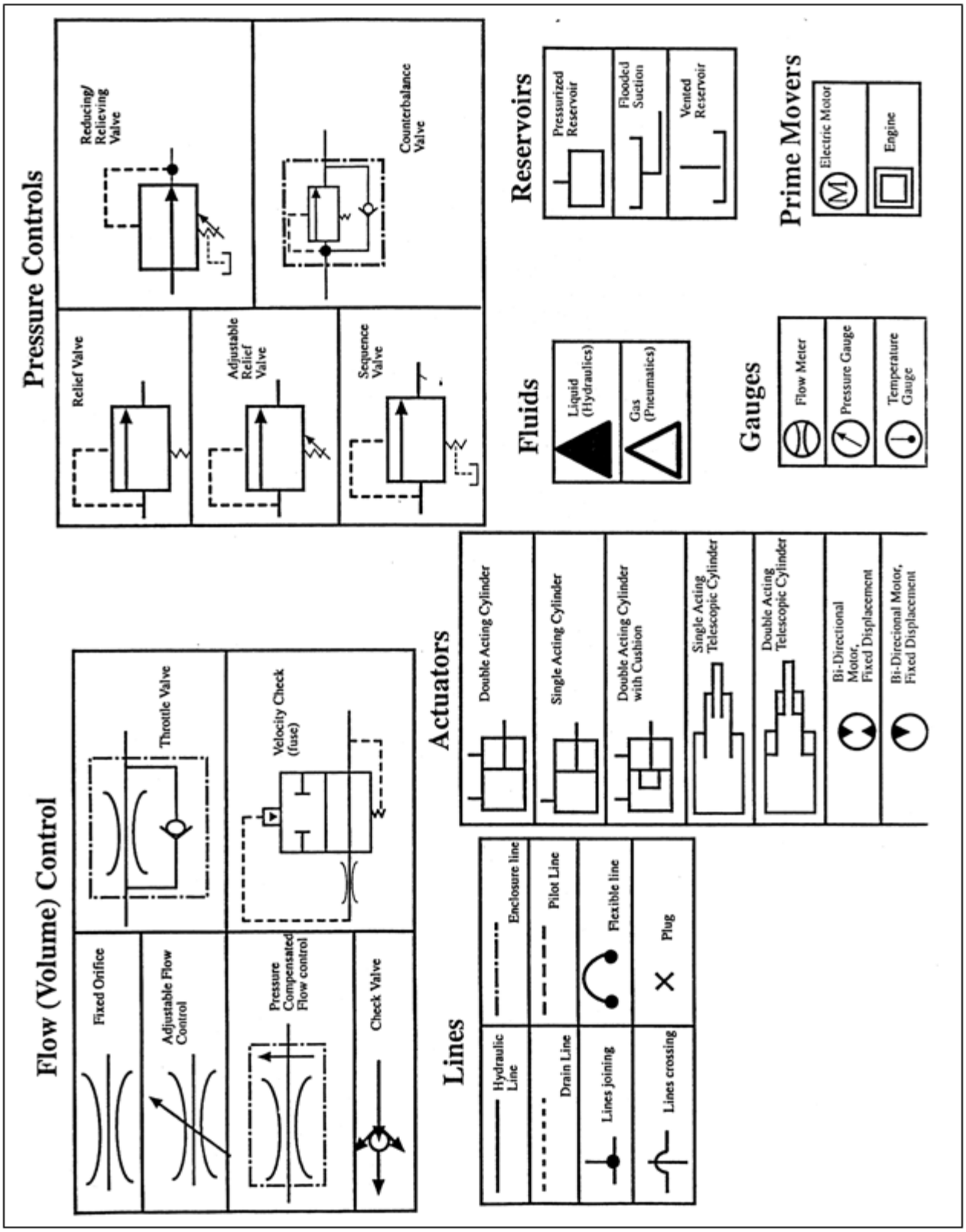


INCORRECT TECHNIQUE

HYDRAULIC SYMBOLS

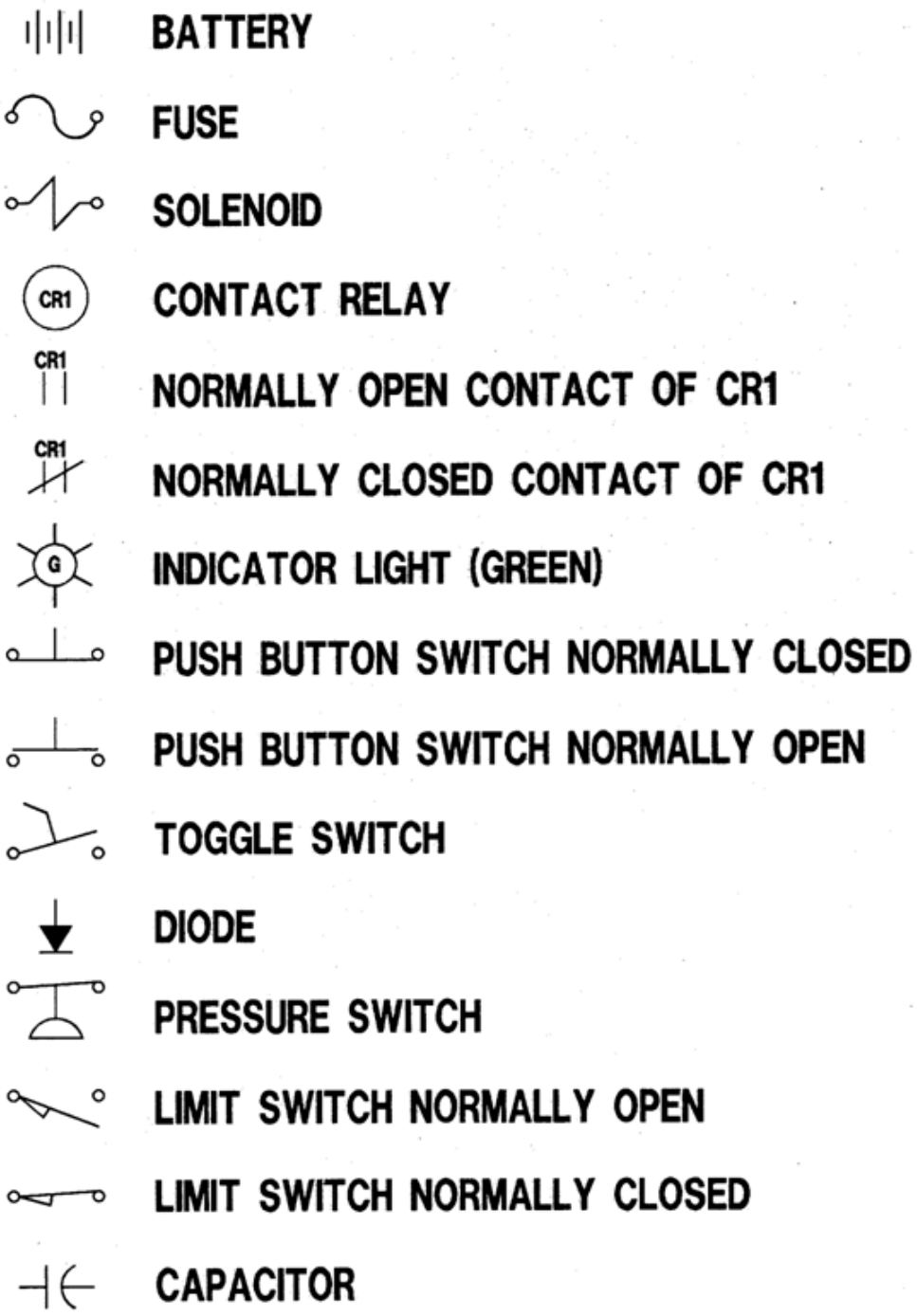


HYDRAULIC SYMBOLS (CONTINUED)



ELECTRICAL SYMBOLS

SYMBOL DEFINITIONS



SECTION 2
INSTALLATION

CONTACT INFORMATION

Technical Service and Warranty:

877-258-1105

Parts:

800-528-5308

For parts visit our eCommerce Marketplace 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)

GENERAL REQUIREMENTS

This section of the manual covers the assembly and installation of any two-ram baler. The following pages cover general installation, plumbing installation, and electrical installation.

⚠ CAUTION

Review this manual before beginning installation. Study the jobsite and installation requirements carefully to be certain all necessary safeguards and/or safety devices are provided to protect all personnel and equipment during installation and as a completed system. This baler should be installed in accordance with the most current version of ANSI standard Z245.5 at the time of manufacture.

NOTICE

Operating instructions in the first section of this manual are not intended as a substitute for training and experience in the proper use and safety procedures in operating this equipment.

NOTICE

This baler is designed for indoor use ONLY.

NOTICE

Marathon does not assume responsibility for installation procedures of this equipment. Conformance to applicable local, state, and federal laws concerning installation is the customer responsibility.

A. Concrete Pad or Floor

The baler foundation should be a minimum of 6” thick, 3000 psi steel reinforced concrete. It is recommended that the baler be positioned on a 3/4” steel foundation plate to prevent possible floor damage. Marathon is not responsible for floor damage if a foundation plate is not used. It is recommended that the pad or floor be flush with the surrounding area.

B. Anchoring

If using the steel foundation plate, it should be secured to your pad or floor.

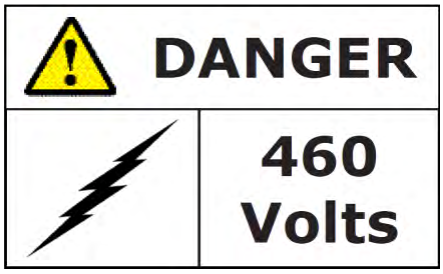
1. Allow enough clearance for the panel box door to swing completely open and it must comply with state and local building codes.
2. Allow enough space in front of the bale exit for a bale-handling vehicle.
3. Allow enough space for installation and safe operation of the auto-tie mechanism.
4. Allow enough space around the baler for any maintenance or service (including cylinder removal and liner replacement).

C. Decals

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

ELECTRICAL AND HYDRAULIC INSTALLATION

The motor control panel contains high voltage components. Only authorized service personnel should be allowed inside. See **Lock-Out/Tag-Out Instructions**.



⚠ DANGER

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

⚠ CAUTION

All equipment should be grounded per National Electric Code.

1. Before connecting power to the baler, check the incoming line voltage with a voltmeter. Also, check voltage wiring in the baler panel box. If the baler is not wired to proper voltage, make necessary corrections before proceeding.
2. A lockable disconnect switch is provided in the baler motor control panel and is sized in accordance with the baler. Three-phase power should be connected to the top of this disconnect switch. Be careful not to let the incoming wires touch each other. A properly sized equipment ground should be connected to the enclosure ground lug.
3. Reconnect all sealtite connections on the baler and power unit. Also reconnect all electrical wires in sealtite to terminals indicated by the wire numbers on wires. If the wire numbers are missing, or are not readable, refer to the electrical schematic shipped with the baler.
4. If the baler is supplied with a conveyor, it can be supplied with a wiring disconnect in the baler panel box. When the conveyor is anchored into place, connect sealtite from the conveyor to the baler panel box. Next, connect the wires per the electrical schematic shipped with the baler.
5. Connect all hydraulic hoses. Refer to the **Hydraulic Schematic to ensure proper connections** 63.
   a. Install 2” Main Ram hoses as shown.
   b. Install 1-1/4” Ejector Ram hoses. The “A” port hose (from the power unit) connects to the base end port of the Ejector cylinder. The “B” port hose (from the power unit) connects to the rod end port of the Ejector cylinder. Connect hoses between hard piping on the Ejector Ram body and the Main Ram body to complete the Ejector Ram plumbing. (Top to top, bottom to bottom.)
   a. Install Wire Tier hoses. A 3/4” hose from the pressure port on the pump connects to tubing to the pressure port on the Wire Tier manifold. A 3/4” hose from the reservoir connects to tubing from the return port of the Wire Tier manifold. A 3/8” hose from the reservoir connects to 3/8” tubing from the drain on the Wire Tier.
6. Fill the reservoir with hydraulic oil. See **Recommended Oils** 13 in General Information. Fill until oil is 3/4 up in the sight gauge. After start-up, it may be necessary to add more oil to the reservoir. Maintain oil level to 3/4 in the sight gauge with the main ram retracted.

INSTALLATION START-UP

NOTICE

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

1. Check to ensure that all electrical and hydraulic connections have been made.
2. Turn the disconnect switch to the ON position.
3. Check the rotation of the motor. This will require 2 people.
   a. Remove the cover on the pump.
   b. Insert the CONTROLS key into the key switch and turn it to the ON position.
   c. Press the POWER ON switch.
   d. Press and hold the MAIN MOTOR START switch until the motor starts (20 seconds).
   e. Allow the motor to run for 1 second and press the STOP button.
   f. Looking at the HUB COUPLING from the motor end, the rotation should be clockwise. If the motor turns in the wrong direction, turn the main disconnect switch to the OFF position. Lock-Out/Tag-Out power and reverse any two incoming power wires in the motor control panel.
   g. Replace the cover on the pump.
4. Restart the machine.
5. Manually operate the main ram and the ejector ram in the forward and reverse directions several times to fill the cylinders and hydraulic lines with oil.
6. Check the function of all interlock switches and stop switches. Check the reflectors and operation of photocells.

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SECTION 3
OPERATION

CONTACT INFORMATION

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877-258-1105

Parts:

800-528-5308

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PRINCIPLES OF OPERATION

Gemini Baler Operating Characteristics

Electrical

The Marathon Gemini baler is equipped with a programmable logic controller (PLC). This controller is a computer that monitors inputs, determines what action is needed, and turns on outputs to make the baler function. The PLC is made up of three basic parts: inputs, outputs, and the central processing unit.

All of the inputs and outputs on the baler are digital. They are either on or off. They are also all equipped with LED lights to tell the operator if an input or output is on or off.

The central processing unit (CPU) is the brain of the PLC. The CPU takes the information supplied by the input devices and decides when to open and close the output contacts. In the event that a problem should arise in the CPU or its program, the CPU FAULT light will be illuminated. The baler cannot run until the fault has been cleared. To clear the fault, turn off the power and wait 60 seconds. Then turn the power back on. If the fault light remains on, call the service department at Marathon Equipment Co. If the fault light goes out and the RUN light is illuminated, the baler will run properly.

The baler can be started by touching one of the function buttons (AUTO CYCLE, FORWARD, REVERSE) for 20 seconds. The POWER ON must be pressed and the power on light must be illuminated. This energizes the MASTER CONTROL RELAY (MCR) and provides power to the controls. The power unit will start after a function button has been held for 20 seconds. If the MCR should lose power for any reason, the machine will stop immediately.

Once the motor is running, the machine can be cycled by pushing any of the function buttons.

General

The Gemini baler can be operated in Photo-cycle mode, Autocycle mode, or manual mode (using Forward and Reverse controls). The ram must be at the rear position, on the limit switch, to initiate the Photo-cycle mode or Autocycle mode.

The baler is limit switch shifted at the rear position and timer and pressure switch shifted on the extend position. The timer does not start counting until the extending ram passes the BALE MADE position limit switch. At that time, the BALE MADE limit switch is actuated which starts the timer. With an empty bale chamber, the ram will extend fully past the BALE MADE position and after 12 seconds, the timer will time out and shift the hydraulic control valve, retracting the ram. When the ram reaches the rear position in the Autocycle mode or the Photo-cycle mode, if no material is detected in the charge chamber, the power unit will run until the sleep timer times out and shuts the motor off.

As the bale chamber fills with material, the ram is timer shifted by the extend timer located in the PLC program. The ram compacts the material until the extend timer times out and retracts the ram. The control valve then shifts and the ram retracts. As the baler compacts the material, each time the ram will pass the BALE MADE position, actuate the BALE MADE limit switch, and then build pressure against the material. This continues as material is fed into the baler until the ram reaches the bale made pressure before reaching the BALE MADE limit switch, see Specifications Charts 11. At that time, the BALE MADE light will come on, an alarm will sound, and the baler will shut down.

If a conveyor is supplied with the Gemini, it has an AUTO mode as well as a continuous run (ON) mode. When the conveyor is in the AUTO mode, and the baler is operating in the Photo-cycle mode, the conveyor will stop running when the photoeye is blocked.

PRINCIPLES OF OPERATION (CONTINUED)

Hydraulic

In a typical auto-cycle, the Gemini will operate as follows: Upon starting the baler (key in the ON position and AUTOCYCLE button pressed and held for 20 seconds) the motor starter is energized and the electric motor rotates the pressure-compensated hydraulic pump. This pump is used for minimum flow at maximum pressure. The solenoid SV1A on the pilot-operated control valve shifts and causes the oil to fill the base end of the cylinders and the ram to extend. As the ram extends, the BALE MADE limit switch is actuated and a timer is energized. If the bale chamber is empty, the ram will extend and the timer will time for 12 seconds. After 12 seconds, the timer will energize the SV1B solenoid on the pilot-operated control valve. This shifts the control valve and directs the oil flow to the rod-end of the cylinders, retracting the ram. When the ram retracts to the rear and actuates the rear limit switch, the baler will continue to run until either the EMERGENCY STOP button is pressed or until the sleep timer times out and shuts the motor off. In a typical auto-cycle, the Gemini will operate as follows: Upon starting the baler (key in the ON position and AUTOCYCLE button pressed and held for 20 seconds) the motor starter is energized and the electric motor rotates the pressure-compensated hydraulic pump. This pump is used for minimum flow at maximum pressure. The solenoid SV1A on the pilot-operated control valve shifts and causes the oil to fill the base end of the cylinders and the ram to extend. As the ram extends, the BALE MADE limit switch is actuated and a timer is energized. If the bale chamber is empty, the ram will extend and the timer will time for 12 seconds. After 12 seconds, the timer will energize the SV1B solenoid on the pilot-operated control valve. This shifts the control valve and directs the oil flow to the rod-end of the cylinders, retracting the ram. When the ram retracts to the rear and actuates the rear limit switch, the baler will continue to run until either the EMERGENCY STOP button is pressed or until the sleep timer times out and shuts the motor off.

PRE-OPERATION INSTRUCTIONS

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

This baler 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.

NOTICE

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

⚠ WARNING

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

⚠ WARNING

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

⚠ WARNING

Never enter any part of baler unless the disconnect switch has been turned off, padlocked, and all stored energy sources have been removed. See **Lock-Out/Tag-Out Instructions**.

⚠ WARNING

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

⚠ WARNING

This baler is controlled by photocells and will start automatically when photocells detect ANY OBJECTS in the charge box.

⚠ WARNING

The compression ram in this baler travels at a very fast speed. Stand clear of the baler when in operation.

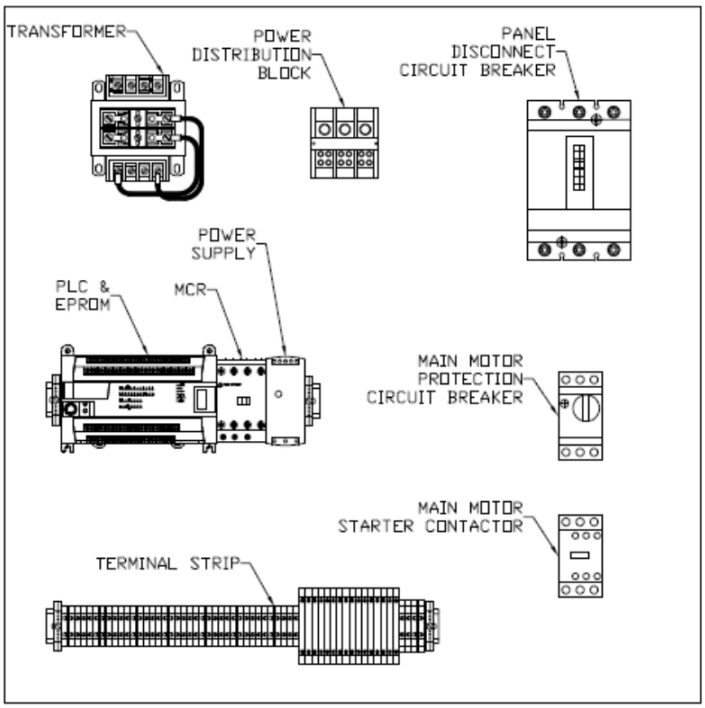
⚠ WARNING

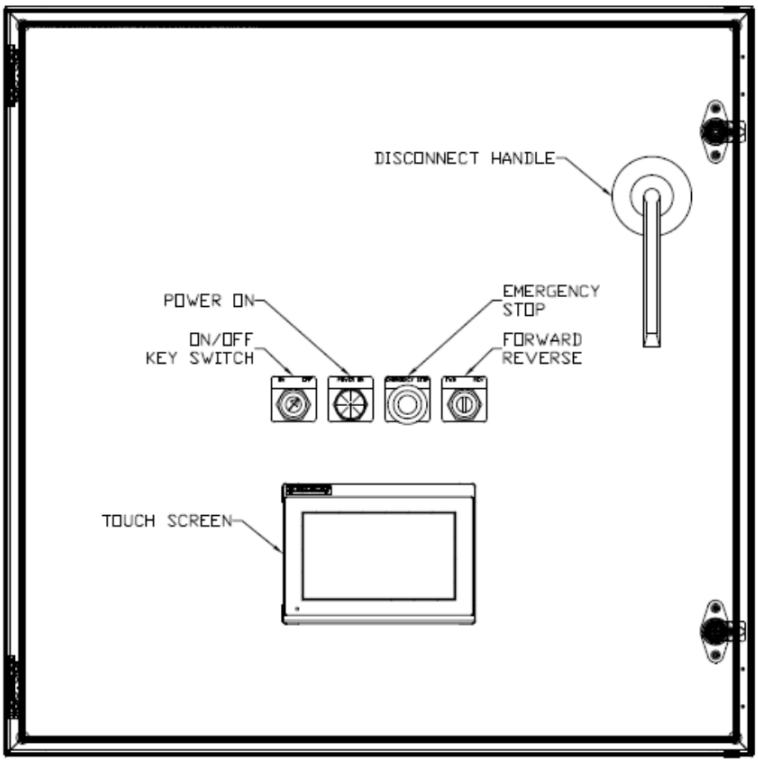
ONLY AUTHORIZED PERSONNEL SHOULD BE ALLOWED INSIDE PANEL BOX. The panel box contains high voltage components. See **Lock-Out/Tag-Out Instructions**.

⚠ CAUTION

The baler hydraulic system operates at high pressures and at high temperatures. If you suspect a leak, do not check with your hands and avoid contact with piping, hoses, and cylinders.

OPERATOR STATION





OPERATOR STATION CONTROL DESCRIPTION

1. POWER ON (Green Illuminated Pushbutton)

   This button is pressed to supply power to the PLC inputs and outputs, and controls. The light in the pushbutton will illuminate when the button is pressed.

2. ON-OFF (Keyed Selector Switch)

   Turning this switch to the ON position energizes the controls on the operator station. The baler cannot be operated unless the key switch in in the ON position. When the switch is in the OFF position the key should be removed and in the possession of only authorized personnel.

3. EMERGENCY STOP (Red Mushroom Head Pushbutton)

   Depressing this button will stop the baler instantly at any point in the cycle. There is also an EMERGENCY STOP button on each side of the conveyor if so equipped.

4. FORWARD SELECTOR SWITCH

   Forward selector switch. Turn the REVERSE/FORWARD selector switch to the forward position and hold. This will cause the ram to extend. When the switch is released the ram will stop movement. The baler can be started by turning the switch to the forward position and holding it for 20 seconds.

5. REVERSE SELECTOR SWITCH

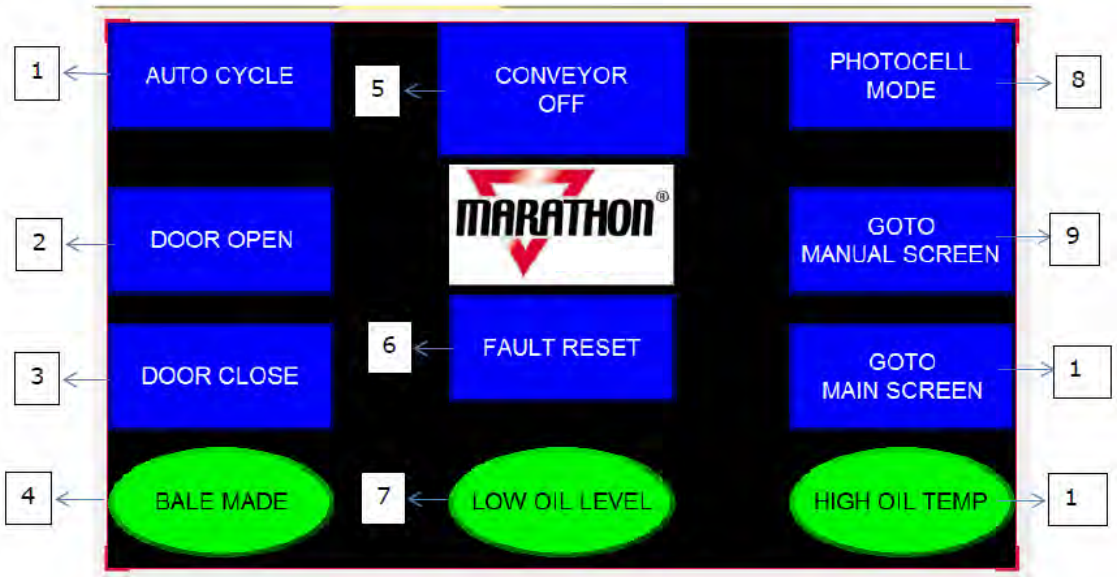
   Turn the REVERSE/FORWARD selector switch to the reverse position and hold. This will cause the ram to retract. When the switch is released the ram will stop movement. The baler can be started by turning the switch to the reverse position and holding it for 20 seconds.

TOUCH SCREEN CONTROLS: MAINSCREEN

Main Screen

1. GO TO AUTO SCREEN. Touching Go to Auto Screen will take you to the screen for automatic control. See page 35 for details on Automatic Screen.
2. BALE COUNTS. The Bale Counts display shows the overall number of bales produced by the baler. It cannot be reset.
3. GO TO SETTINGS. Touching Go to Settings will take you to the settings screen where adjustments to how the baler operates can be made. See page 37 for detail on Settings screen.
4. TOTAL HOURS. The Total Hours display shows the overall number of hours the main motor and pump have run. It cannot be rest.
5. TOTAL HOURS PER SHIFT. The Total Hours Per Shift display shows the number of hours the main motor and pump have run during a specific period of time or shift. It can be reset from the settings screen.
6. GO TO MANUAL SCREEN. Touching the Goto Manual Screen will take you to the screen for manual control. See page 36 for details on Manual screen.
7. BALE COUNTS PER SHIFT. The Bale Counts Per Shift display shows the total number of bales made during a certain period of time or shift. It can be reset from the settings screen.
8. GOTO ALARMS. Touching Goto Alarms will take you to the alarm screen. See page 39 for details on Alarm screen.
9. LANGUAGE SELECTOR. Touching this button will cause the Language Selection box to appear. Use the up arrow to choose English and the down arrow to choose Spanish. Use the enter button to enter the selected language. There will be a couple second delay before the language changes on the screen. The selection box will stay on the screen for 5 seconds before hiding in the back ground again.

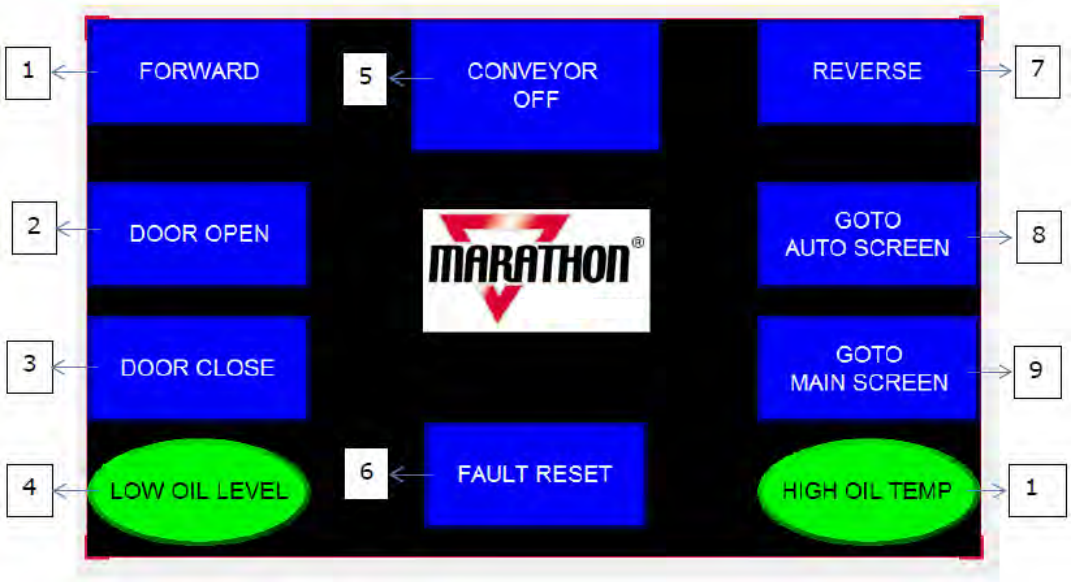
TOUCH SCREEN CONTROLS: AUTOMATIC SCREEN



Automatic Screen

1. AUTO CYCLE. Touching Auto Cycle will start the baler and cause the baler to make one complete cycle and return to the rear limit switch.
2. DOOR OPEN. Touching Door Open will open the door latch.
3. DOOR CLOSE. Touching Door Close will close the door latch.
4. BALE MADE. When the baler reaches the bale made pressure setting the Bale Made indicator will illuminate red and will be accompanied by a warning horn. When a bale is made the baler will cease operation. Follow the procedures for bale tie off and removal.
5. CONVEYOR OFF/ON/AUTO. Touching Conveyor Off/On/Auto will change the setting for the conveyor control. The image will also change to indicate what state the conveyor control is set to.
6. FAULT RESET. If a fault should occur the Fault Reset button will flash red and the image will change to read PUSH TO RESET FAULT. Touching Fault Reset will reset the fault. If the fault condition has not been corrected the fault condition will return.
7. LOW OIL LEVEL. If your baler is equipped with the Oil Management Package the Low Oil Level indicator will be visible on the screen. When the oil level in the hydraulic reservoir is at normal levels the indicator will illuminate green. If the oil level should drop below normal levels the indicator will illuminate red and will be accompanied by a warning horn. The baler operation will cease. Once the hydraulic oil level has been returned to normal levels the Low Oil Level alarm can be reset and baler operation may be resumed.
8. PHOTOCELL MODE. Touching Photocell Mode will allow the baler to cycle anytime the material level in the charge chamber blocks the photocell beam. The baler will cycle until the material level falls below the level of the photocell. The baler must be running and the ram must be fully retracted before it can be placed into photocell mode. The photocell delay setting and photocell watchdog timer setting can be adjusted from the settings screen.
9. Go to MANUAL SCREEN. Touching Go to Manual Screen will take you to the screen for manual control.
10. Go to MAIN SCREEN. Touching Go to Main Screen will take you to the main start up screen.
11. HIGH OIL TEMP. If your baler is equipped with the Oil Management Package the High Oil Temp indicator will be visible on the screen. When the temperature of the oil in the hydraulic reservoir is at normal levels the indicator will illuminate green. If the oil temperature should rise above normal levels the indicator will illuminate red and will be accompanied by a warning horn. The baler operation will cease. Once the hydraulic oil temperature has been returned to normal levels the High Oil Temp alarm can be reset and baler operation may be resumed.

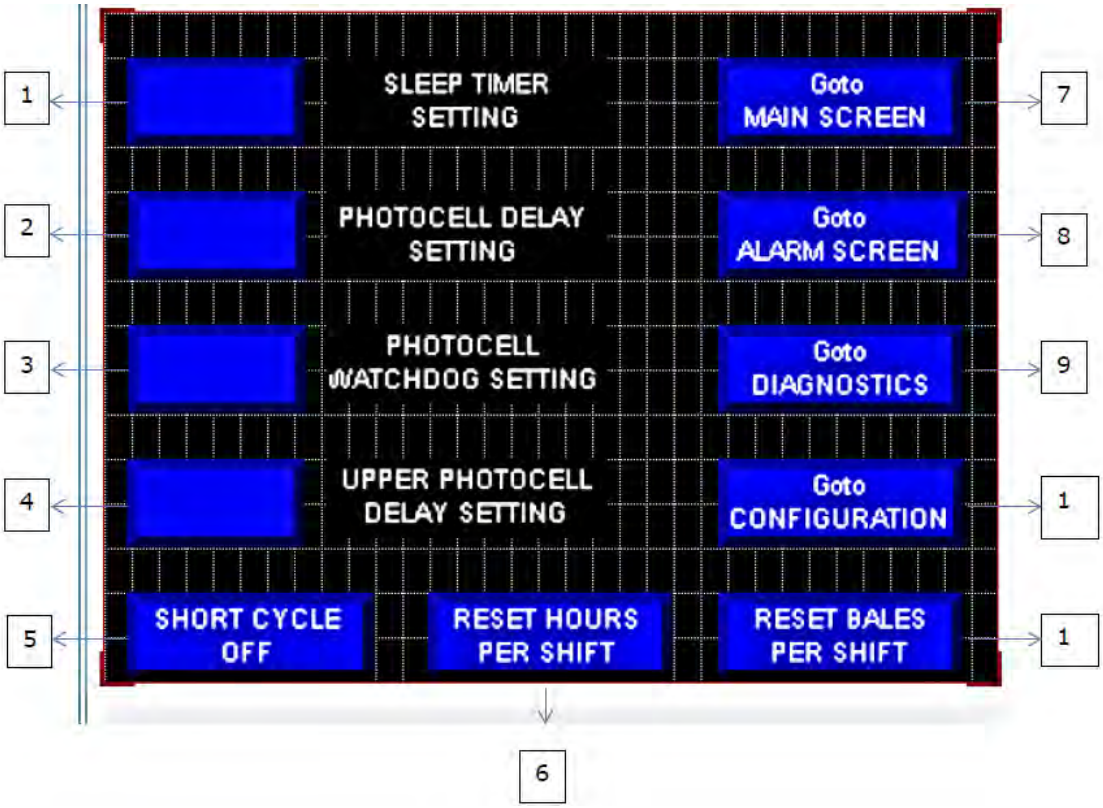
TOUCH SCREEN CONTROLS: MANUAL SCREEN



Manual Screen

1. FORWARD. Touching Forward will start the baler and cause the main ram to move forward. As long as the Forward button is held the ram will extend until it reaches the end of the cylinders stroke.
2. DOOR OPEN. Touching Door Open will open the door latch.
3. DOOR CLOSE. Touching Door Close will close the door latch.
4. LOW OIL LEVEL. If your baler is equipped with the Oil Management Package the Low Oil Level indicator will be visible on the screen. When the oil level in the hydraulic reservoir is at normal levels the indicator will illuminate green. If the oil level should drop below normal levels the indicator will illuminate red and will be accompanied by a warning horn. The baler operation will cease. Once the hydraulic oil level has been returned to normal levels the Low Oil Level alarm can be reset and baler operation may be resumed.
5. CONVEYOR OFF/ON/AUTO. Touching Conveyor Off/On/Auto will change the setting for the conveyor control. The image will also change to indicate what state the conveyor control is set to.
6. FAULT RESET. If a fault should occur the Fault Reset button will flash red and the image will change to read PUSH TO RESET FAULT. Touching Fault Reset will reset the fault. If the fault condition has not been corrected the fault condition will return.
7. REVERSE. Touching Reverse will start the baler and cause the ram to retract. As long as the Reverse button is held the ram will retract until it reaches the rear limit switch.
8. Go to AUTOMATIC SCREEN. Touching Go to Automatic Screen take you to the screen for automatic control.
9. Go to MAIN SCREEN. Touching Go to Main Screen will take you to the main start up screen.
10. HIGH OIL TEMP. If your baler is equipped with the Oil Management Package the High Oil Temp indicator will be visible on the screen. When temperature of the oil in the hydraulic reservoir is at normal levels the indicator will illuminate green. If the oil temperature should rise above normal levels the indicator will illuminate red and will be accompanied by a warning horn. The baler operation will cease. Once the hydraulic oil temperature has been returned to normal levels the High Oil Temp alarm can be reset and baler operation may be resumed.

TOUCH SCREEN CONTROLS: SETTINGS SCREEN



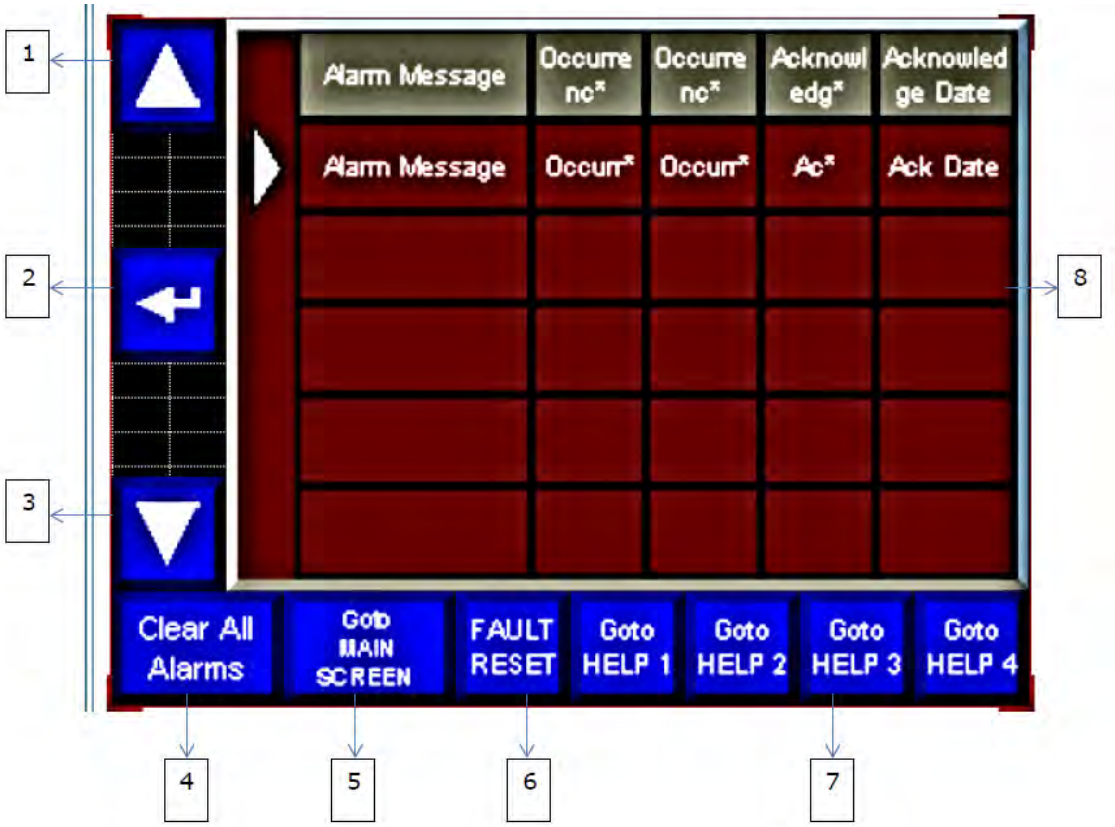
Settings Screen

1. SLEEP TIMER SETTING. The sleep timer is a function that will shut the main motor down if the baler sits idle for a specified amount of time. The baler will restart on its own if it is in photocell mode and the photocell is blocked. The sleep timer setting can be adjusted by touching the blue box to the left of the caption. When it is touched a numerical entry display will pop up on the screen. Enter the desired amount of time in seconds and touch the enter button. The new value will be entered into the PLC program and will show on the display.
2. PHOTOCELL DELAY SETTING. The photocell delay is the amount of time it takes after the photocell is blocked before the machine will cycle. The photocell delay time can be adjusted by touching the blue box to the left of the caption. When it is touched a numerical entry display will pop up on the screen. Enter the desired amount of time in seconds and touch the enter button. The new value will be entered into the PLC program and will show on the display.
3. PHOTOCELL WATCHDOG SETTING. The photocell watchdog setting is a function that will shut the baler down if the photocell remains blocked for a specified amount of time. If the baler shuts down because of the photocell watchdog function, an alarm will appear on the screen accompanied by a warning horn. The condition must be corrected before the alarm can be reset and cleared. The photocell watchdog time setting can be adjusted by touching the blue box to the left of the caption. When it is touched a numerical entry display will pop up on the screen. Enter the desired amount of time in seconds and touch the enter button. The new value will be entered into the PLC program and will show on the display.

TOUCH SCREEN CONTROLS: SETTING SCREEN (CONTINUED)

4. UPPER PHOTOCELL DELAY SETTING. The upper photocell delay setting is a function that is used to control a conveyor if the baler is equipped with one. If your baler is not equipped with an upper photocell this setting will not appear on the screen. The upper photocell delay time setting can be adjusted by touching the blue box to the left of the caption. When it is touched a numerical entry display will pop up on the screen. Enter the desired amount of time in seconds and touch the enter button. The new value will be entered into the PLC program and will show on the display.
5. SHORT CYCLE. The Short Cycle On/Off control is used only on the Gemini Xtreme. It is used to select between the normal cycle mode and short cycle mode. If your baler is a Gemini-3560 model you will not see this control on the settings screen.
6. RESET HOURS PER SHIFT. To reset the Hours Per Shift display on the Main screen, simply touch the Reset Hours Per Shift button.
7. Go to MAIN SCREEN. Touching Go to Main Screen will take you to the main start up screen.
8. Go to ALARM SCREEN. Touching Go to Alarm Screen will take you to the alarm screen.
9. Go to DIAGNOSTICS SCREEN. Touching Go to Diagnostics Screen will take you to the diagnostic screen.
10. Go to CONFIGURATION SCREEN. Touching Go to Configuration Screen will take you to the diagnostic screen. A user/password request will pop up on the screen. This screen is used by Marathon Equipment during manufacturing to set the baler up with the correct options and settings. Should there be a reason you need to access this screen please contact Marathon Equipment Company's Service Department at 1-800-633-8974.
11. RESET BALES PER SHIFT. To reset the Bales Per Shift display on the Main screen, simply touch the Reset Bales Per Shift button.

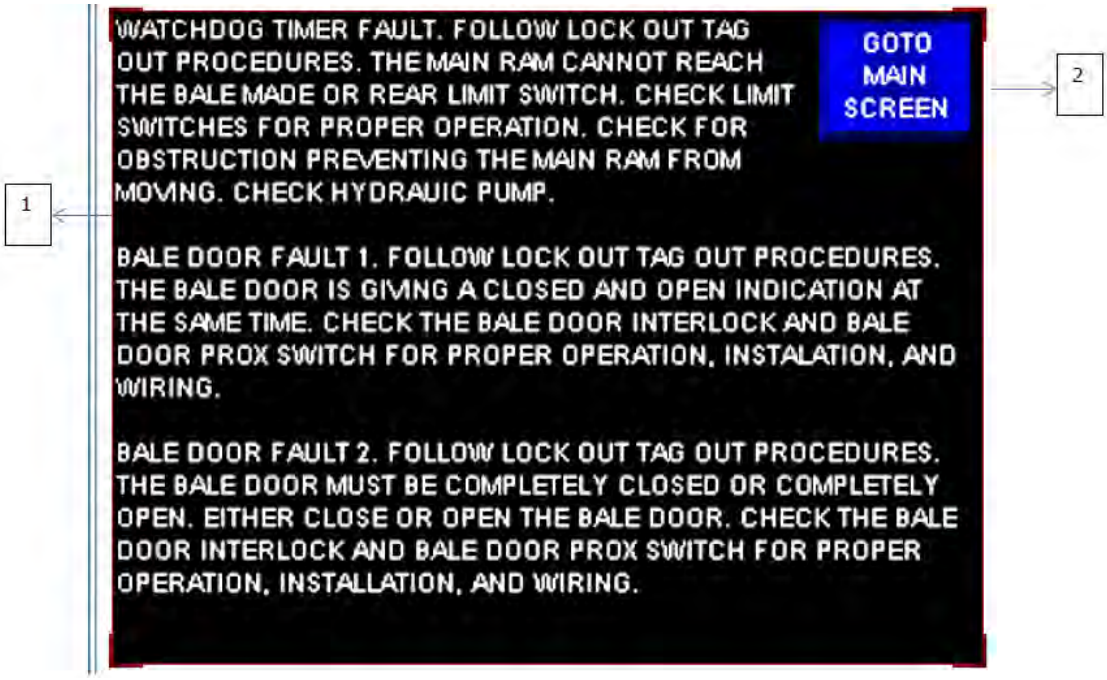
TOUCH SCREEN CONTROLS: ALARM SCREEN



Alarm Screen

1. SCROLL UP. The scroll up button allows you to scroll to the top of the alarm log.
2. ENTER BUTTON. The enter button can be used to acknowledge alarms on the log.
3. SCROLL DOWN. The scroll down button allows you to scroll to the bottom of the alarm log.
4. CLEAR ALL ALARMS. The clear all alarms button will clear all alarms from the alarm log when touched.
5. Go to MAIN SCREEN. Touching Go to Main Screen will take you to the main start up screen.
6. FAULT RESET. If a fault should occur the Fault Reset button will flash red and the image will change to read PUSH TO RESET FAULT. Touching Fault Reset will reset the fault. If the fault condition has not been corrected the fault condition will return.
7. Go to HELP 1-2-3-4. The Go to Help 1-2-3-4 buttons will only appear if there is a fault that has not yet been reset. If a help button is present, touching it will take you to a help screen that will display text to direct you to what the possible causes of the fault may be. If you cannot find the cause of the fault or need assistance, please contact Marathon Equipment Company's Service Department at 1-800-633-8974 or contact your local Marathon Equipment distributor.
8. ALARM LOG DISPLAY. The alarm log displays alarms or faults in a list organized by time and date of occurrence. Each time an alarm or fault occurs it will appear in the list with an occurrence time and occurrence date. If the fault or alarm has been acknowledged there will also be an acknowledged time and acknowledged date displayed. The alarm log can be used to track the frequency of reoccurring alarms or faults. This can be helpful when trouble shooting problems.

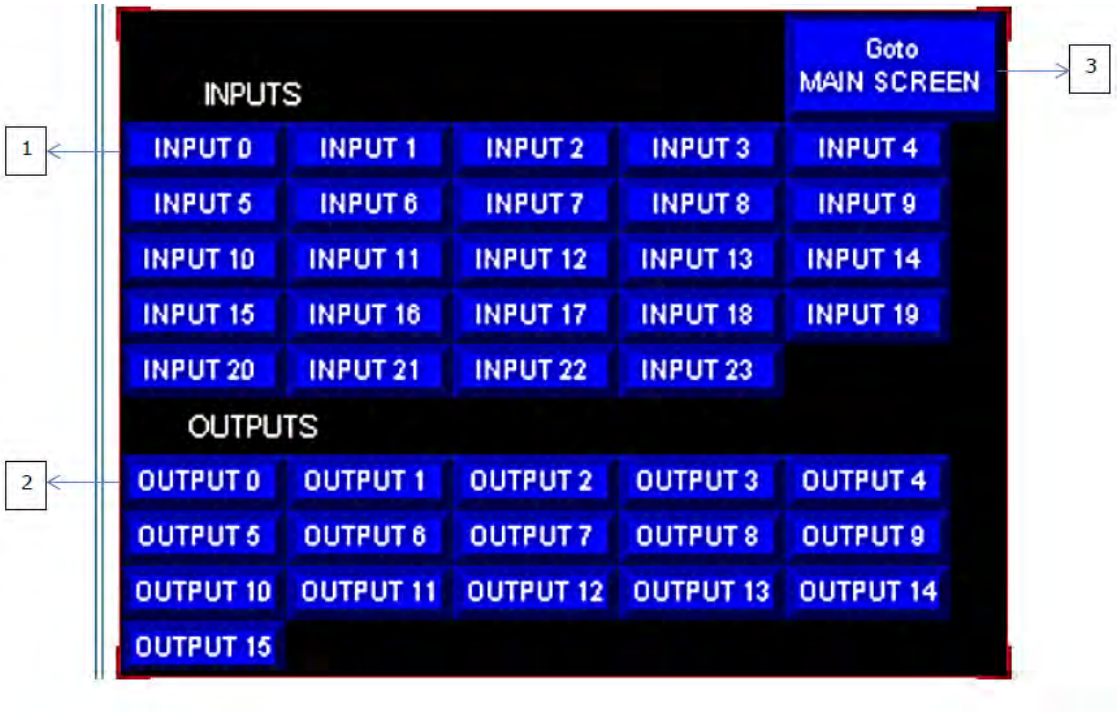
TOUCH SCREEN CONTROLS: HELP SCREEN: 1-2-3



Help Screen 1-2-3

1. HELP SCREEN DIALOG. If a fault occurs a help button will appear on the alarm screen. Touching the help button will bring you to the corresponding help screen. On the help screen text will be displayed directing you to things that may be the cause of the fault. In most cases only one text box will appear although on rare occasions more than one may appear or there may be more than one help button available. If you cannot find the cause of the fault or need assistance please contact Marathon Equipment Company's Service Department at 1-800-633-8974 or contact your local Marathon Equipment distributor.
2. GO TO MAIN SCREEN. Touching Go to Main Screen will return you to the main start up screen.

TOUCH SCREEN CONTROLS: DIAGNOSTIC SCREEN



Diagnostic Screen

1. INPUT INDICATOR. The input indicators show the status of the inputs on the PLC. If an input is on its corresponding indicator will illuminate green.
2. OUTPUT INDICATOR. The input indicators show the status of the outputs on the PLC. If an output is on its corresponding indicator will illuminate green.
3. GO TO MAIN SCREEN. Touching Go to Main Screen will return you to the main start up screen.

OPERATING INSTRUCTIONS - MAKING A BALE

⚠ DANGER

Never enter any part of the baler until the disconnect switch has been locked out and tagged out per the **Lock-Out/Tag-Out Instructions**.

⚠ WARNING

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

⚠ WARNING

Do not operate baler until operating instructions are thoroughly understood.

NOTICE

IMPORTANT! Before beginning operation, check the oil level in the reservoir, it should be at least 3/4 full on the sight gauge. Check for any hazards around the machine, it should be clear of any material that could cause harm to the machine or the operator. Check to make sure that no one is inside the machine. Make sure the bale door and latch are completely closed.

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

This baler can be operated in either an automatic mode or a manual mode. The ram must be at the rear when initiating the PHOTO CYCLE or AUTOCYCLE modes.

Automatic Mode

1. Insert the key into the key switch and turn to the ON position. Depress the POWER ON button.

2. Touch and hold the AUTO CYCLE button on the touch screen for 20 seconds. The baler warning buzzer will sound for 5 seconds, and the beacon light will flash for 20 seconds, then the unit will start. The ram will complete one full cycle and the ram will return to the rear limit switch. Now touch the PHOTOCELL MODE button on the touch screen. This will place the baler into the photocell mode. The unit will cycle automatically anytime the photocell senses that the feed hopper/charge box has ANY OBJECT in it after the 20 second start-up. If the time elapses on the sleep timer without a cycle being initiated by the photocell or without operation of any of the controls, the power unit will shut down. WARNING: In this mode, the power unit will restart the baler automatically anytime the photocell detects any object in the charge box.

3. Feed materials into the baler. When a bale is completed, the BALE MADE light will come on, the buzzer will sound, and the unit will shut down automatically. Bale tie off and ejection instructions are on pages 1-19, 1-20 and 1-21.

OPERATING INSTRUCTIONS - MAKING A BALE (CONTINUED)

Manual Mode

1. Insert the key into the key switch and turn to the ON position. Depress the POWER ON button. Completely fill the charge box with material.

2. Touch and hold the AUTO CYCLE button on the touch screen for 20 seconds. The baler warning buzzer will sound for 5 seconds, and beacon light will flash for 20 seconds, and the power unit will start. The baler will cycle one time (one complete extend and retract of the ram) and the ram will return to the retracted position. The unit will remain running until the sleep timer shuts the power unit off or the EMERGENCY STOP button is pressed. To continue making a bale, feed material into the charge chamber and touch the AUTOCYCLE button on the touch screen. When a bale is made the BALE MADE indicator will come on and the buzzer will sound.

3. The baler can also be operated using the FORWARD or REVERSE pushbutton. The baler will start if the POWER ON light is illuminated and either the FORWARD or REVERSE button is pressed and held for 20 seconds.

Conveyor Control

1. If the baler is supplied with a conveyor the CONVEYOR CONTROL button on the touch screen is used to select the method of conveyor control. If CONVEYOR ON is selected the conveyor will run continuously. If CONVEYOR AUTO is selected the photocell will turn the conveyor on and off depending on the level of material detected in the charge chamber.

BALE TIE OFF & BALE EJECT

When the BALE MADE light comes on and the buzzer sounds, it is time to tie off and eject the completed bale from the baler. Use the following instructions along with the diagrams on the following 2 pages.

⚠ CAUTION

Wear safety glasses and leather gloves during the following operations.

1. Insert the first bale tie, loop-end first, through the top of the first tie slot in the bale chamber door. Pull the wire tie to the rear of the bale chamber and insert the loop-end down through the tie slot in the ram face. The tie wire should push freely through the tie slot and around through the wire guide under the bale chamber. The tie should exit the wire guide through the bottom of the tie slot in the bale chamber door. Tie each bale tie hand-tight to allow for expansion when the bale is ejected.

2. Repeat the above step at each of the 6 tie slot/wire guide locations.

3. Turn the keyswitch to the ON position, and press and hold the REVERSE button. The baler will restart.

⚠ CAUTION

Before opening the bale chamber door, make sure that all personnel are clear of the bale chamber door and door latch areas. Before standing in front of the bale chamber door, make sure that the latch is fully open and there is no pressure exerted on the bale chamber door by the compacted material.

4. Before the latch can be operated the main ram must be fully retracted. Using the touch screen controls or the FORWARD/REVERSE switch, retract the ram completely. Touch and hold the DOOR OPEN button on the touch screen until the door latch is completely open. Open the bale door until the door open proximity switch is made (approximately 90 degrees).

5. Press the FORWARD button to eject the bale out of the bale chamber.

6. Press the REVERSE button to retract the ram. Close the bale chamber door completely.

7. Touch the DOOR CLOSE button on the touch screen and close the door latch completely.

NOTICE

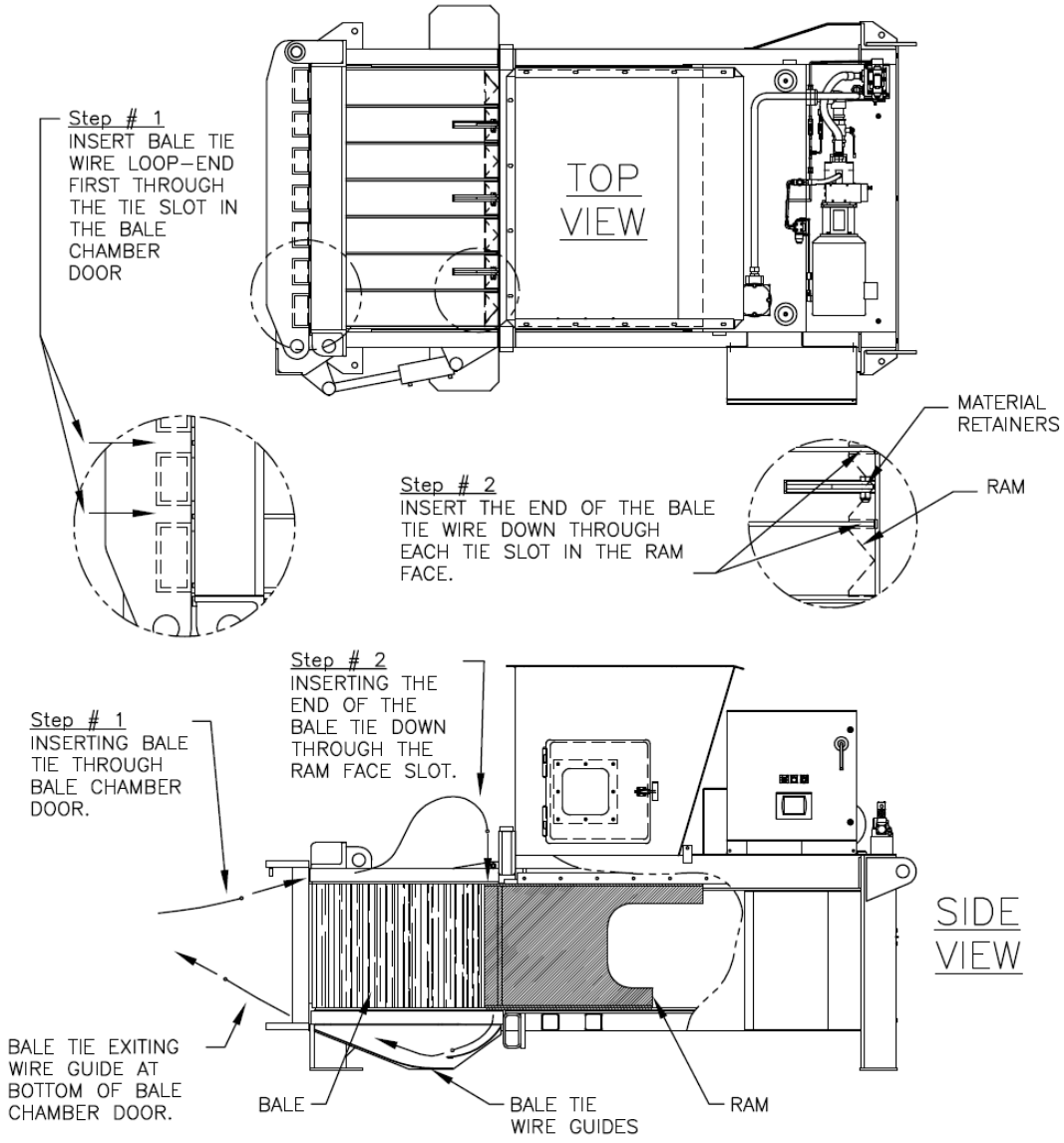
If you experience difficulty in getting a bale tie wire through the tie slots in the ram or through the wire guides, see the Tie Slot & Wire Guide Cleaning Instructions later in this section of the manual.

BALE TIE OFF & BALE EJECT (CONTINUED)

This diagram should be used with the instruction from the previous page.

WHEN THE BALE MADE LIGHT COMES ON AND THE BUZZER SOUNDS, THREAD THE LOOP-END OF EACH BALE TIE WIRE AROUND THE BALE AS SHOWN BELOW. THERE ARE 6 TIE SLOTS ON THE BALER. EACH SLOT SHOULD GET A BALE TIE. SOME MATERIALS MAY REQUIRE MULTIPLE TIES AT EACH SLOT LOCATION.

SEE THE NEXT PAGE FOR THE PROPER TIE-OFF OF EACH BALE TIE AND THE EJECTION OF THE BALE.



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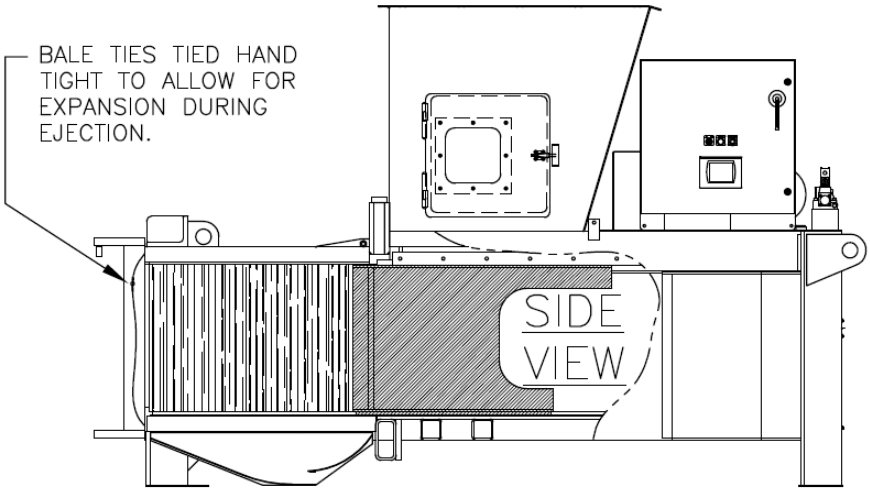
BALE TIE OFF & BALE EJECT (CONTINUED)

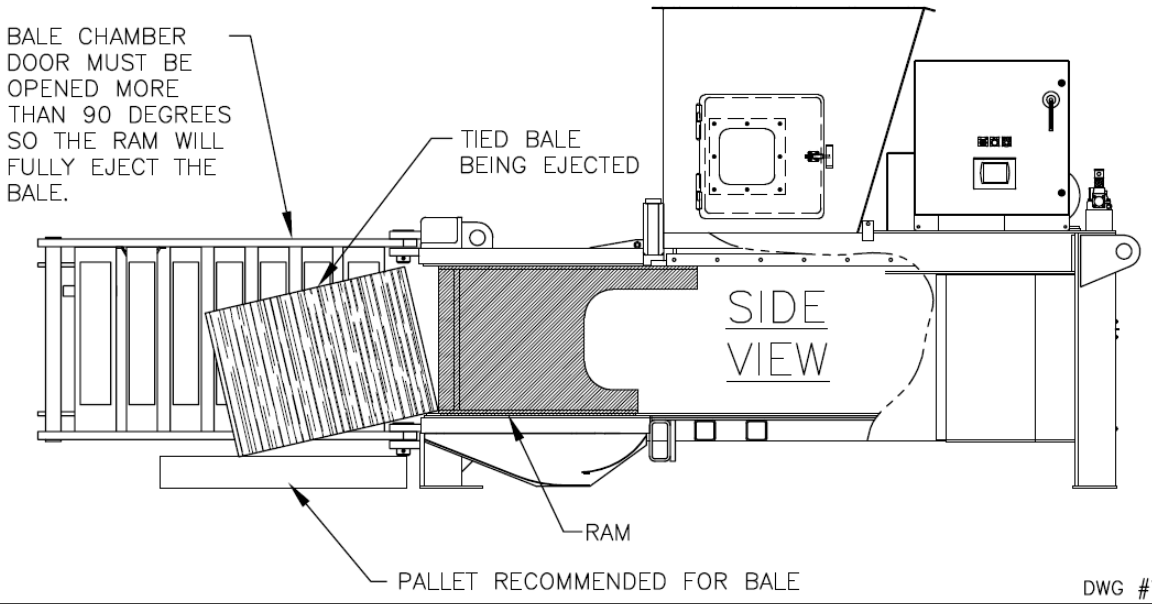
BALE TIE–OFF

ALL BALE TIES SHOULD BE TIGHTENED HAND–TIGHT TO ALLOW FOR BALE EXPANSION WHEN EJECTED. WHEN ALL OF THE BALE TIES HAVE BEEN TIED, IT IS TIME TO EJECT THE BALE.



Bale Ejection

SEE INSTRUCTIONS ON PAGE 1–19 AND 1–20. OPEN THE LATCH COMPLETELY ON THE BALE CHAMBER DOOR SO THAT THE DOOR WILL SWING OPEN. SWING THE BALE CHAMBER DOOR OPEN GREATER THAN 90 DEGREES. EJECT THE BALE USING THE FORWARD PUSHBUTTON ON THE CONTROL PANEL.



TIE SLOT & WIRE GUIDE CLEANING INSTRUCTIONS

In some applications, small pieces of material may get into the ram tie slots and the wire guides on the baler. If the bale tie wires are difficult to push through the slots or guides, it may be necessary to clean them out. "A TIE SLOT & WIRE GUIDE CLEANING TOOL" is supplied with the baler for this purpose. The following instructions describe the usage of this tool.

⚠ WARNING

Before performing the following procedures, lock-out/tag-out the baler per the instructions on Lock-out/Tag-out page.

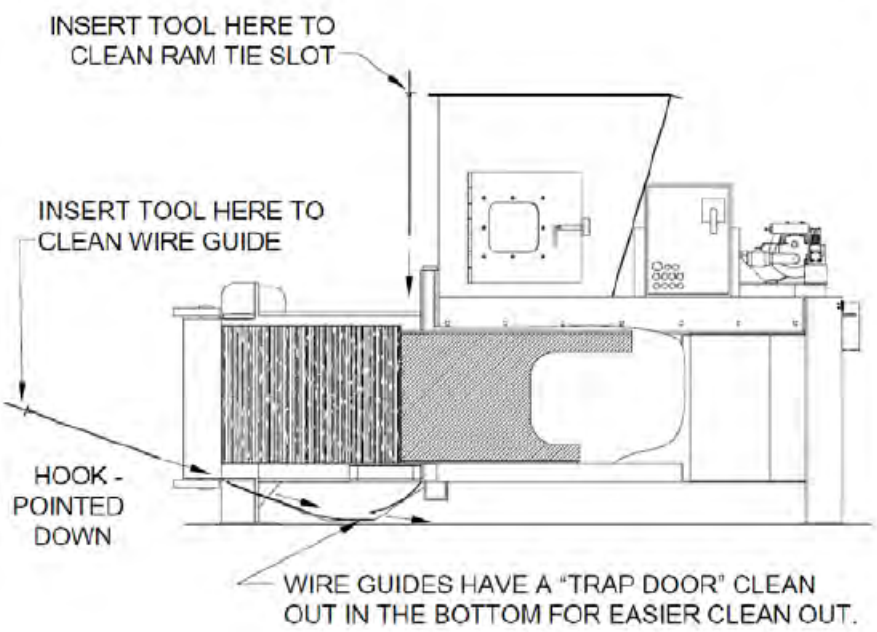
Instructions

To clean out the ram tie slot, insert the hook end of the tool down through the top of the problem slot. Either hook the obstruction and pull it out or force the material down into the adjacent wire guide. Next, take the tool and insert it "hook down" into the adjacent wire guide by inserting the tool through the slot on the bale door and into the wire guide. Rake the obstructing material out of the wire guide.

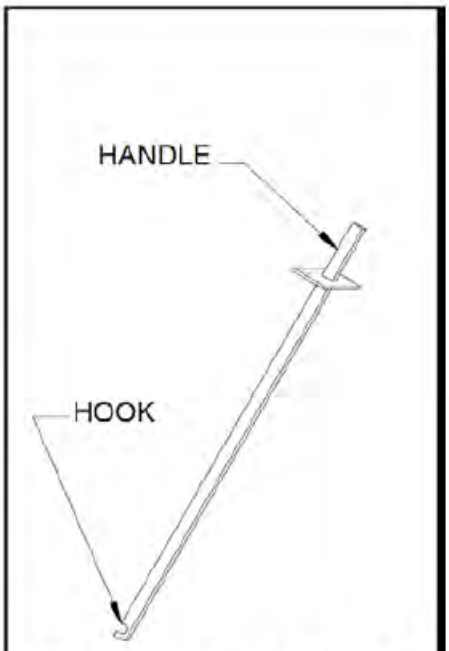
If the ram tie slot is clear but the wire guide is obstructed, insert the tool into the wire guide (through the bale door), hook the obstruction, and pull it out. The obstruction may have to be pushed and pulled with the tool to make it easier to remove.

Preventative Maintenance

It is recommended that the wire guides be inspected for blockage prior to starting a new bale. With the bale chamber door and latch closed, and the ram retracted all the way, visually check each slot. If a slot is blocked, Lock-out and Tag-out the baler per the instructions on page 2–2. Take the cleaning tool and rake or push the blockage from the slot. After all slots are clean, the baler can be restarted.



SIDE VIEW



TIE SLOT & WIRE GUIDE CLEANING TOOL

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SECTION 4
SERVICE

CONTACT INFORMATION

Technical Service and Warranty:

877-258-1105

Parts:

800-528-5308

For parts visit our eCommerce Marketplace 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 FOR HORIZONTAL BALERS

⚠ DANGER

Before entering any part of the baler, be sure that all sources of energy have been shut off, all potential hazards have been eliminated, and the baler 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 baler and that the baler 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 baler 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 baler 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 baler down.

5. De-activate the energy isolating device(s) so that baler 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 baler 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 baler, ensure that the baler 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 baler (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.

LOCK-OUT & TAG-OUT INSTRUCTIONS (CONTINUED)

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

10. The baler is now locked out.

RESTORING SERVICE

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

1. Check the baler and the immediate area around the baler to ensure that nonessential items have been removed and that the baler 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 baler.

NOTICE

The removal of some forms of blocking may require re-energizing of the baler before safe removal.

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

6. Reassess area to determine all hazards are protected.

PERIODIC MAINTENANCE

⚠ WARNING

Do not enter the baler for any reason until the baler has been locked-out and tagged-out per Lock-Out/Tag-Out Instructions 49.

Daily

- Check oil level in hydraulic reservoir. Maintain oil level to at least 3/4 full in sight gauge. Do not overfill hydraulic reservoir. Leave room for thermal expansion of hydraulic fluid.
- Check for oil leaks. Keep all hydraulic fittings tight.
- Check the oil filter indicator on the return line oil filter housing.. If this indicator shows RED, change filter element immediately. Change filter if necessary. See the instructions for checking the indicator see Power Unit Filter Indicator 62.
- Check for any unsafe conditions in the compactor area.

Weekly

- Clean around power pack and machine to remove operator hazards.
- Check all interlock switches to ensure free movement.
- Clean photocell head and reflector.
- Grease door hinges and door latch hinges if needed.

Monthly

- Check for any unsafe condition such as exposed electrical lines or operator obstructions in the operating area.
- Check external hoses for chafing, rubbing, or other deterioration and damage.
- Lubricate the ram drag plate assembly with an all purpose grease.
- Lubricate the ram hold down bars with an all purpose grease and check for wear.
- Check unit for cracked welds, bowing, and structural deterioration.
- Units with adjustable shear blades and hold down bars, should be checked for clearance, and adjusted as necessary. See Return Line Filter and Shear Bar Maintenance 53.

Three Months

- Change the return oil filter element in the oil filter housing (filter/housing is located on top of reservoir at the end of the oil return line).
- Check hydraulic cylinder, internal hoses, and connections for leakage: check hoses for chafing and wear.
- Check all decals to be sure they all are readable and in good condition.

Six Months

- Send oil sample out for evaluation. Change if required. See **Recommended Oils** in "General Information" Section.
- Check baler structure for any signs of problems (i.e., cracked welds, bending, etc.).
- Check all electrical connections.

Annually

- Change hydraulic fluid and filter.
- Grease electric motor bearings.

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PERIODIC MAINTENANCE (CONTINUED)

⚠ WARNING

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

Annually

- Change hydraulic fluid and filter.
- Grease electric motor bearings.

Recommended Oils

- Union - Unax-46, Unax-AW46
- Gulf - Harmony 47, Harmony 48-AW
- Exxon - Teresstic 46, Nuto 46
- Texaco - Rando 46
- Chevron - AW 46
- Shell -Turbo 46, Tellus 46
- Quaker State - Dextron II (ATF)
- Citgo - Pacemaker 46, Tellus - AW46
- Amoco - (Rycon)

RETURN LINE FILTER AND SHEAR BAR MAINTENANCE

⚠ WARNING

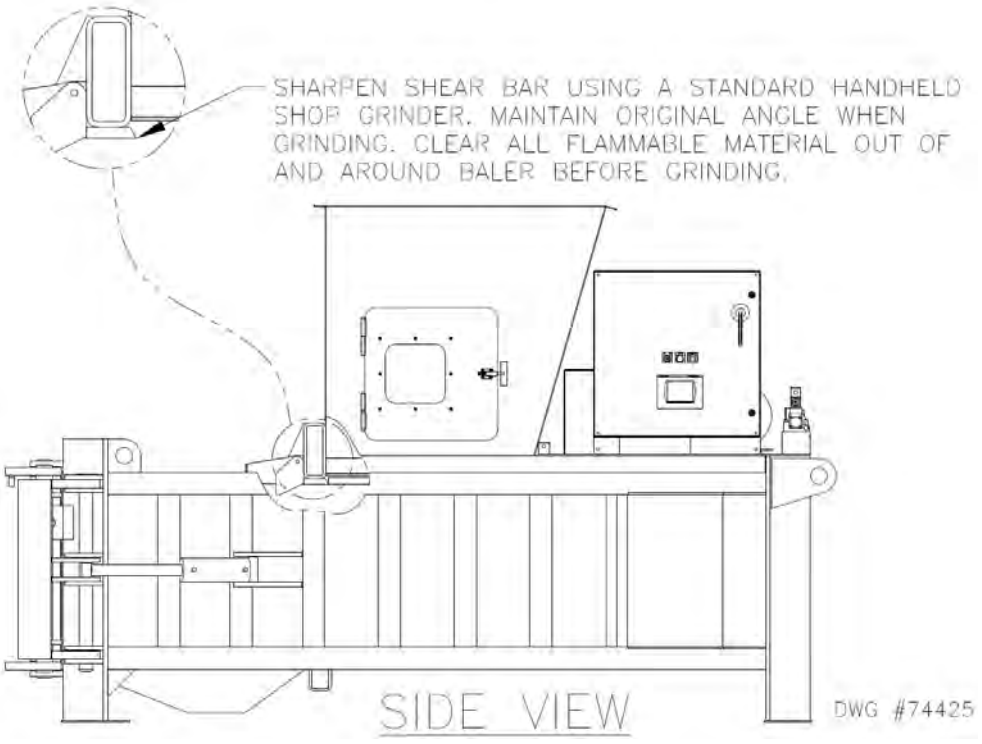
Never enter any part of the compactor until the unit has been Locked-Out and Tagged-Out.

The Gemini baler uses a 10 micron replaceable filter element in the return line of the power unit. See Parts List for element. There is not a filter on the pump suction.

The filter housing containing the replaceable element is located on top of the reservoir. The housing has an indicator that is divided into a green zone and a red zone. See Power Unit Filter Indicator 62. When the indicator is in the green zone, the element is operating correctly. When the indicator is in the red zone, operation of the Gemini baler should be discontinued immediately, and the element should be changed.

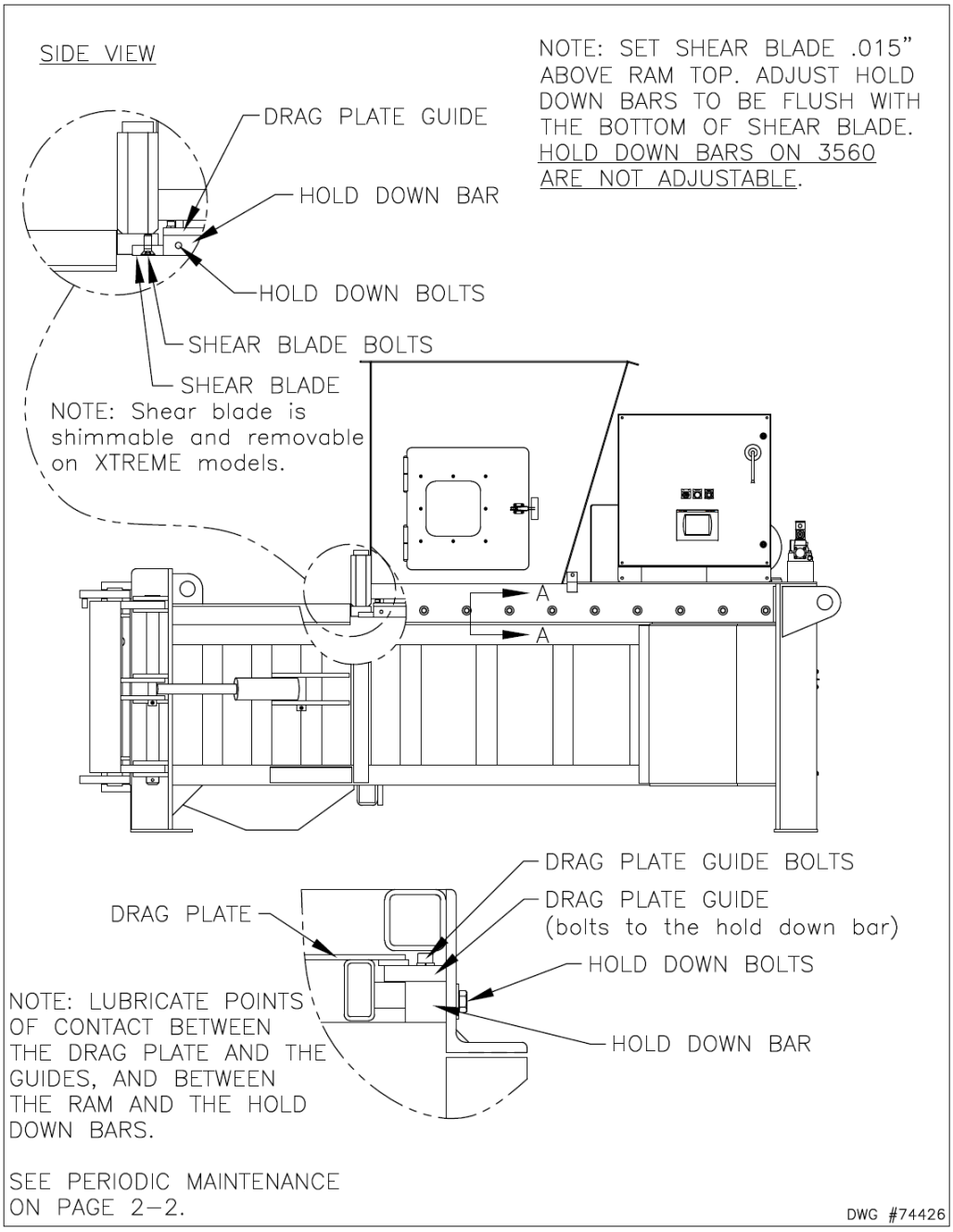
Failure to do so could result in pre-mature component failure. To replace the element, unscrew the wing nuts on top of the housing and remove the top plate. Replace the element. Replace the top plate. Secure the wing nuts.

Shear Bar Maintenance on Gemini 3560



RETURN LINE FILTER AND SHEAR BAR MAINTENANCE (CONTINUED)

Shear Bar Maintenance on Xtreme Units



PRESSURE SETTINGS

⚠ WARNING

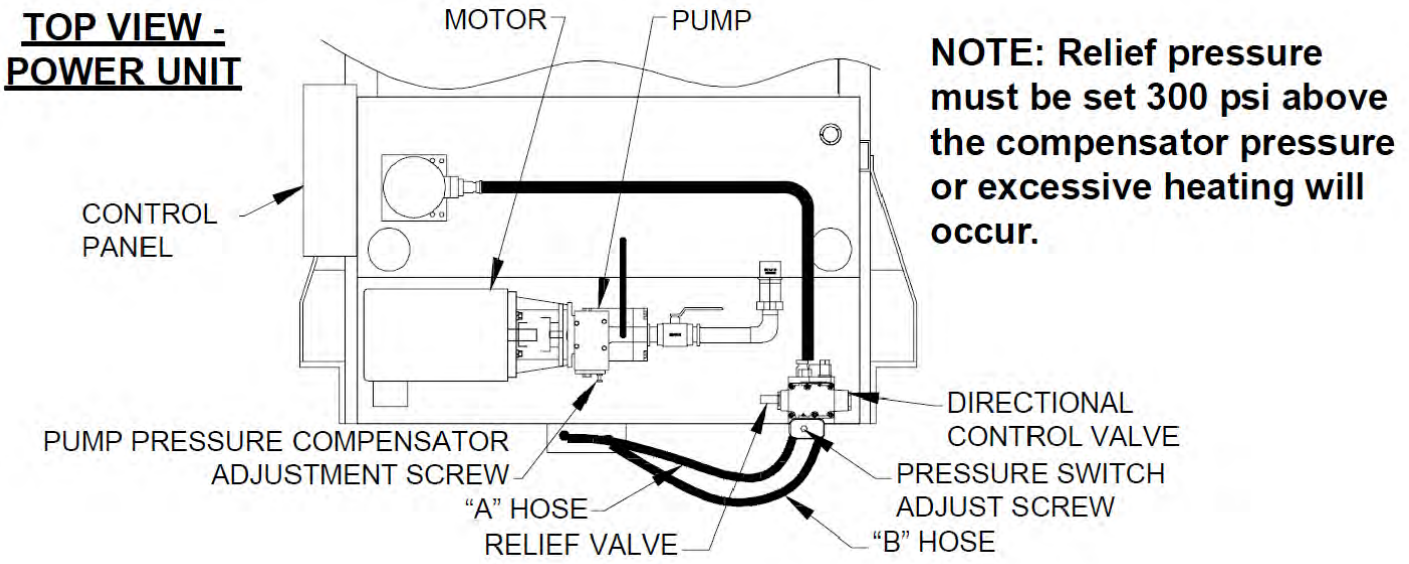
Lock-Out and Tag-Out compactor prior to any service or maintenance. See **Compactor Lock-Out/Tag-Out Instructions**.

1. Lock-out and Tag-out baler and install a 0-3000 psi hydraulic pressure gauge in the gauge port on the valve subplate.
2. Loosen the locknut on the relief valve and turn the adjustment screw CCW several turns.
3. Remove the pressure switch adjustment screw cover.
4. Remove the Lock-out and Tag-out provisions and start the baler.
5. Fully extend the ram by pressing and holding the FORWARD button. While holding the FORWARD button, set the BALE MADE pressure, turn the relief valve screw CW until the pressure reads 2250 psi (or 2800 psi for HD and XTREME units). NOTE: If the pressure will not adjust up to the desired setting, turn the pump pressure compensator adjustment screw CW until the gauge reads appropriate pressure.
6. Observe input light for the pressure switch on the programmable controller in the panel box. If the light is on, turn the pressure switch set screw CCW until the light goes off. Then turn the screw CW until the light first comes on. Replace pressure switch adjustment screw cover.
7. Continue to hold the FORWARD button and set the relief pressure, fully extend the ram and turn the relief pressure up to 2750 psi (or 3300 psi for HD and XTREME units). NOTE: The pump pressure compensator may have to be turned up at the same time.
8. When the relief pressure reaches the desired setting, lock the relief valve locknut on the adjustment screw.
9. Lower the compensator pressure to 2450 psi (or 3000 psi for HD and XTREME units) and lock the locknut on the compensator adjustment screw.
10. Remove the pressure gauge and install plug.

PRESSURE SETTINGS (CONTINUED)

NOTICE

Units with advanced warning light, set pressure to 200 PSI below shutdown pressure switch.



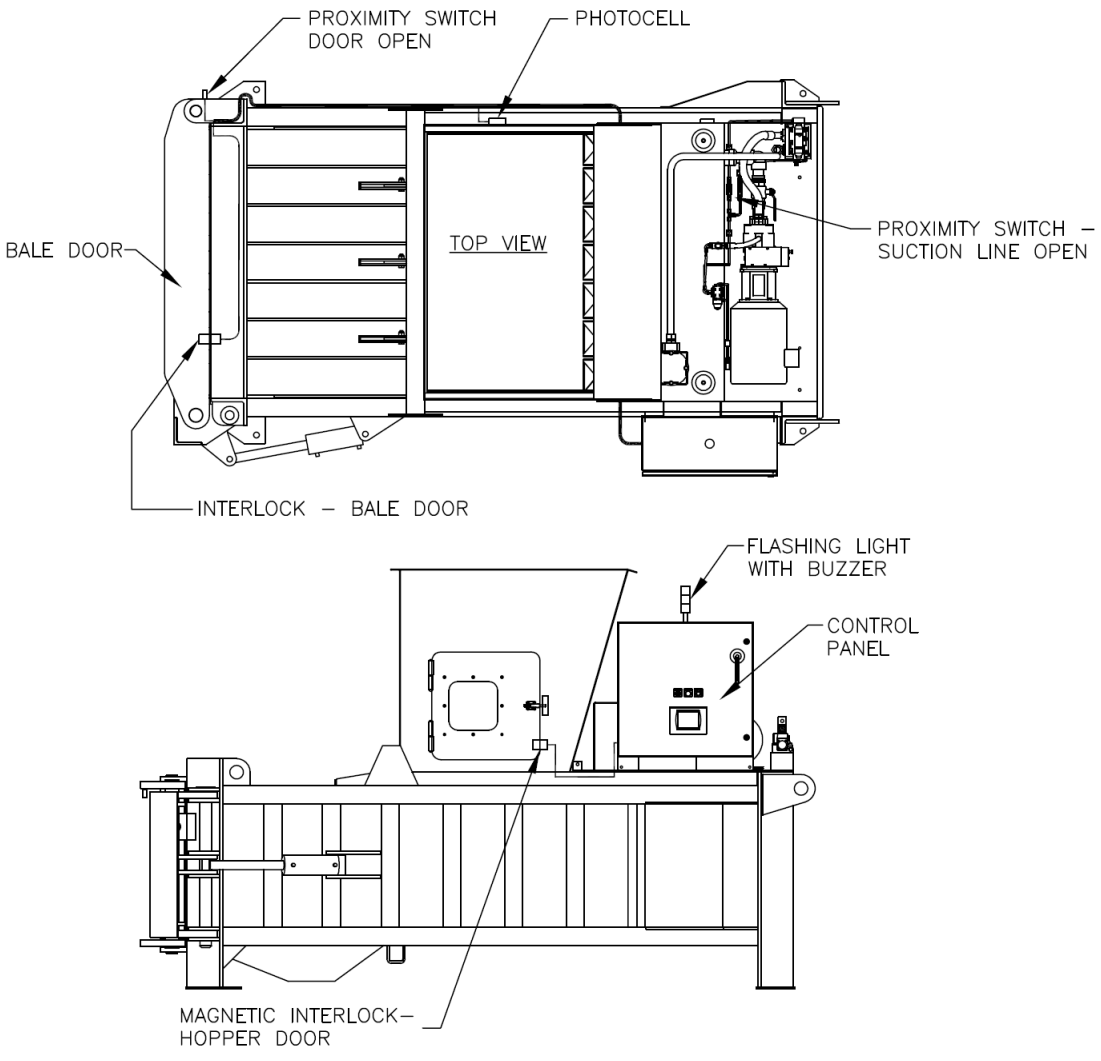
LOCATION OF PHOTOCELL & INTERLOCKS

Only authorized and trained service personnel should perform any testing or repairs to the photocell, interlocks or limit switches.

⚠ DANGER

Never override the photocell or interlocks! Tampering with these items could result in serious damage to the baler, serious personal injury, or death! Never enter any part of the baler unless the disconnect switch has been turned off and padlocked per the lock-out & tag-out instructions.

SEE NEXT PAGE FOR TESTING PROCEDURES.



TESTING OF PHOTOCELL & INTERLOCKS

Photocell Testing

1. Start the baler using the AUTO CYCLE button on the touch screen. Once the baler has started it will complete one cycle and the ram will return to the fully retracted position. Touch the PHOTOCELL mode button on the touch screen. The baler is now in photocell mode. Block the photocell with something solid. The ram will not cycle until the photocell detects an object in the charge chamber.

2. To test the photocell, place something solid (cardboard or equivalent) in front of the photocell. NOTE: The piece of cardboard will have to be long enough to reach the photocell from the top of the feed hopper or from whatever personnel barrier is installed around the feed hopper (i.e., handrails).

3. The baler will react after the photocell delay time has expired and make a complete cycle. The baler will continue to cycle as long as the light beam on the photocell is broken.

4. If the photocell does not perform as specified, Lock-Out and Tag-Out the baler and have the photocell repaired.

Mechanical Interlock Testing (Hopper Door & Bale Door)

This baler is equipped with mechanical interlocks on the feed hopper door and the bale door.

1. To check the feed door interlock switch, turn the key switch to the ON position. When the feed hopper door is open, the baler should not operate. When the feed hopper door is closed, the baler should operate.

2. Test the bale door interlock switch by opening the bale door part way. DO NOT OPEN IT TO 90 DEGREES. With the bale door open part way, the ram should not move in the forward direction.

⚠ WARNING

If the interlock is not working properly, disconnect the Power and lock-out and tag-out the baler until repairs can be made.

Proximity Switch Testing (Suction Line Valve & Bale Door)

The baler is equipped with two proximity switches. One is located on the bale door and one is located on the ball valve of the pump suction line. The proximity switch located on the bale door will prevent the ram from moving forward unless the bale door is open past 90 degrees. The proximity switch located on the ball valve of the pump suction line prevents the power unit from operating unless the ball valve is completely open.

1. To test the proximity switch on the ball valve, with the power on and baler not running, close the valve on the pump suction line. The POWER ON light should go off. If the POWER ON light does not go off the proximity switch may need to be adjusted or replaced.

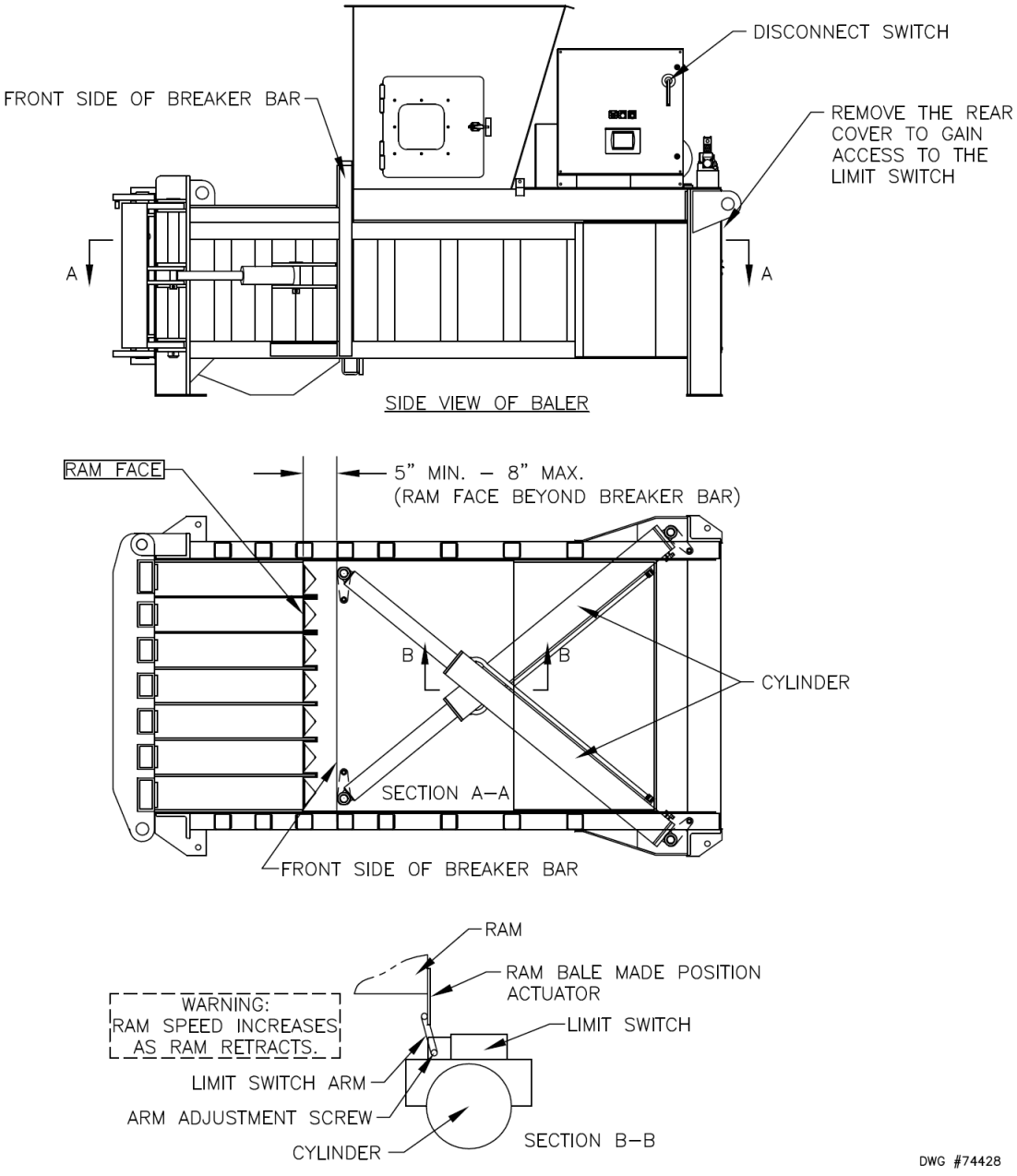
2. To test the proximity switch on the bale door, with the baler running, open the bale door latch following the procedures for doing so in this manual, then open the bale door past 90 degrees. The indicator light on the proximity switch should illuminate and the ram should move forward when the forward button on the touch screen is touched. If the ram does not move forward the proximity switch may need to be adjusted or replaced. If any of the switches do not operate properly, have the switch checked by an authorized maintenance person and replaced if necessary.

ADJUSTMENT OF BALE MADE LIMIT SWITCH

⚠ WARNING

Lock-Out and Tag-Out compactor prior to any service or maintenance. See **Compactor Lock-Out/Tag-Out Instructions**.

The BALE MADE limit switch is factory adjusted for the proper BALE MADE ram position. If the limit switch is replaced or requires readjustment, the limit switch arm should be positioned so that the switch is not actuated until the ram face is located as shown below.

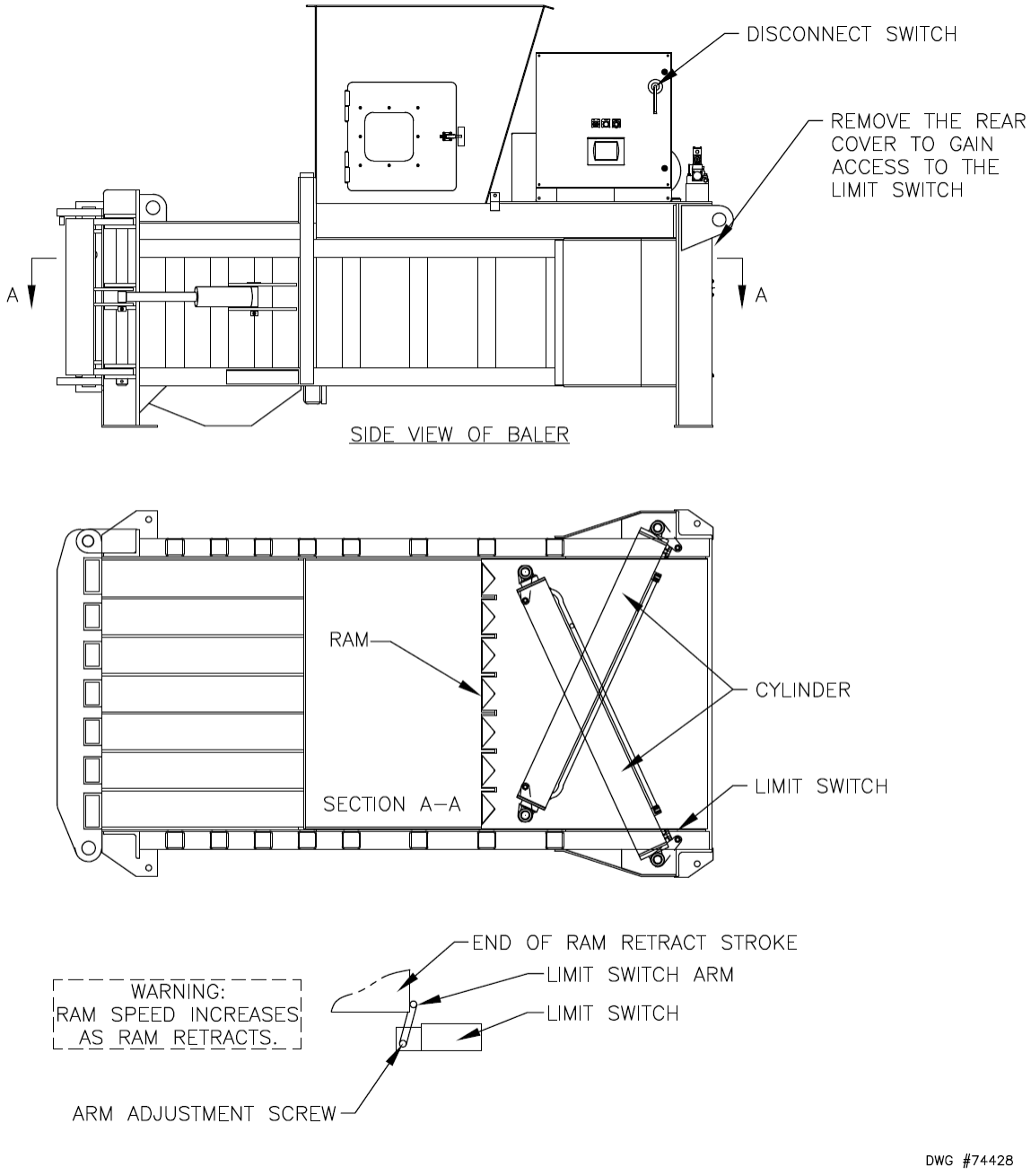


ADJUSTMENT OF REAR LIMIT SWITCH

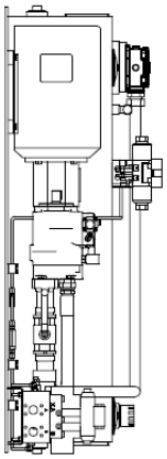
⚠ WARNING

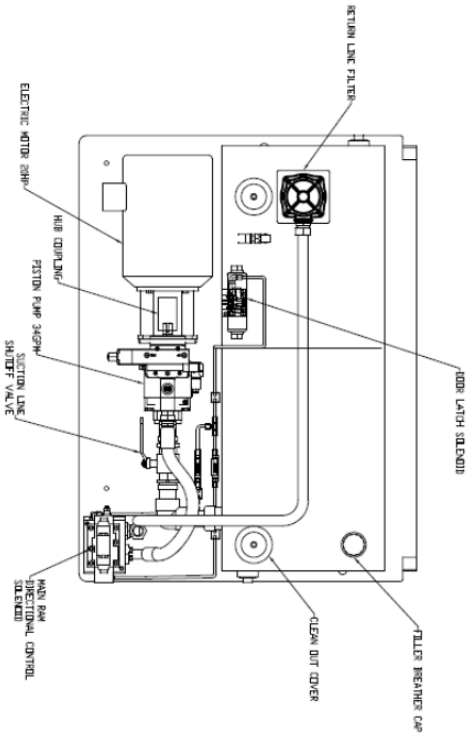
Lock-Out and Tag-Out compactor prior to any service or maintenance. See **Compactor Lock-Out/Tag-Out Instructions**.

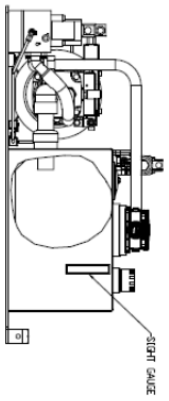
The rear limit switch is factory adjusted for the proper rear ram position. If the limit switch is replaced or requires readjustment, the limit switch arm should be positioned so that the limit switch is actuated when the ram is 3/4” from the rear position.



POWER UNIT FOR GEMINI (20 HP/34 GPM)



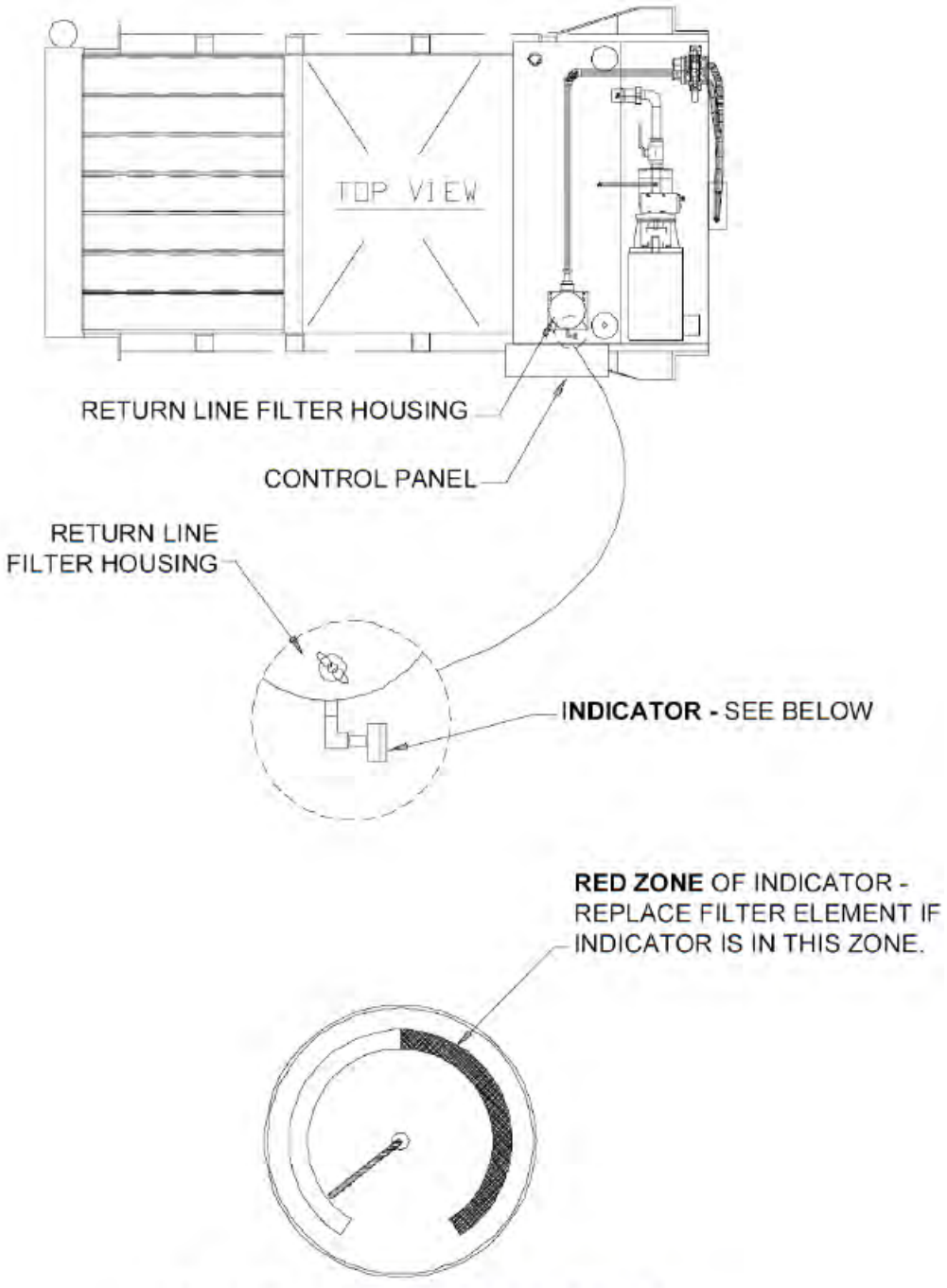




PPK F/GEMINI W/SOFT START PISTON PUMP HYD DL	
MARATHON VERNON AL YERINGTON NV.	DRAWN:ES
	DATE:4/13/17
	SCALE:1
	TOL: ±1/16
	DRAWING NUMBER: 459289

POWER UNIT FILTER INDICATOR

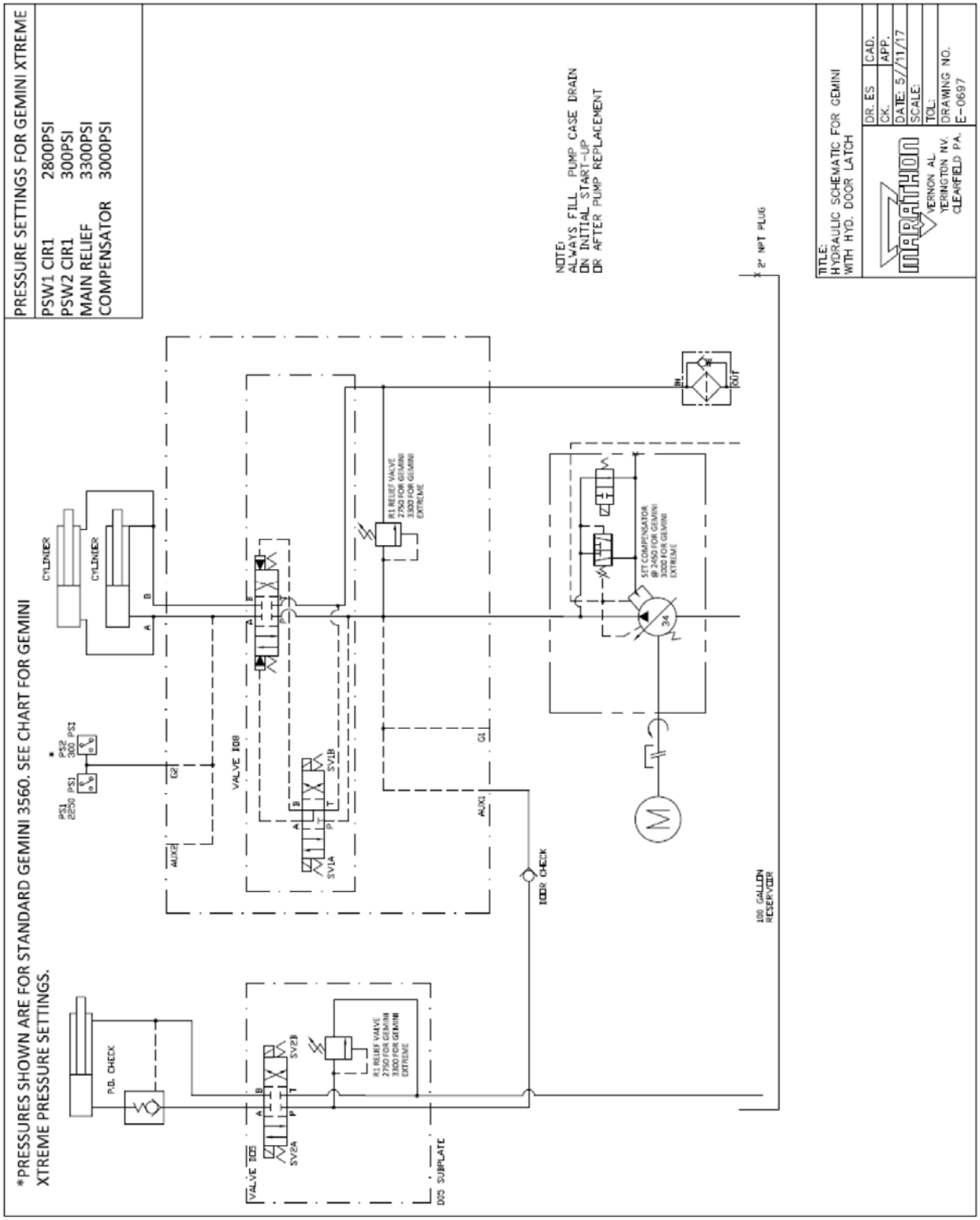
Before operating the Gemini, and periodically during the operation, check the indicator on the return line filter housing. This indicator is located on the filter housing on top of the power unit reservoir. If the indicator is in or approaching the red zone, have the filter element replaced immediately.



RETURN LINE FILTER INDICATOR

HYDRAULIC SCHEMATICS

Refer to the electrical schematic shipped with your GEMINI or contact Marathon Equipment Co. Service Department at 1-800-633-8974.



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SECTION 5
REPLACEMENT PARTS

CONTACT INFORMATION

Technical Service and Warranty:

877-258-1105

Parts:

800-528-5308

For parts visit our eCommerce Marketplace 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)

Gemini Horizontal Balers

Replacement Parts

PARTS LIST		
ITEM	**DESCRIPTION**	**NOTES**
030191	FUSE 2 AMP CONTROL	
030288	TRANSFORMER 150VA 208/230/460	
031540	RELAY 4 POLE 120 VAC 25 A NO C	
034448	FUSE 2 AMP 5MM X 20MM	
030488	FUSE 1.5 AMP 500 V	
035312	BREAKER 60A HDL36060	
034748	MOTOR STARTER IEC 32A 3P CONTA	
034762	MOTOR STARTER IEC 24-32A MPCB	
034827	BREAKER MECHANISM ROTARTY TELE	
034480	FUSE 1 AMP FAST-ACTING 250V 5M	
030201	OPERATOR 30 PUSH/PULL MHD RED	
030687	OPERATOR 30 PUSHBUTTON ILL GRE	
030269	OPERATOR 30 SELECTOR 2 KEYED M	
030477	LEGEND 30 'ON OFF'	
030588	LEGEND 30 'EMERGENCY STOP'/'RE	
030846	LEGEND 30 'POWER ON'	
036000	PLC AB MICROLOGIX 1200 W/DUAL	
033716	PLC AB EEPROM F/MICRO LOGIX 12	
035999	OPERATOR INTERFACE PANEL VIEW	
036001	PLC AB CABLE MICROLOGIX TO PC	
034732	POWER SUPPLY 24VDC 60W 85-264	
034853	CONTACT AUX SIDE MTD NO/NC FAU	
030139	OPERATOR 30 SELECTOR 3 RTN CTR	
037161	LEGEND 30 'FORWARD REVERSE'	
020645	VALVE, RELEIF, 50GPM CARTRIDGE	
020647	FILLER BREATHER	
020817	VALVE, D08 4 WAY	
026264	PUMP, 34 GPM PISTON W/SOLENOID UNLOADING	
026267	RETURN LINE FILTER (COMPLETE ASSEMBLY)	
026268	FILTER ELEMENT F/026267	
030010	LIMIT SWITCH ARM	
030012	LIMIT SWITCH 5 DEG TRAVEL	
030013	PRESSURE SWITCH	

Gemini Horizontal Balers

Replacement Parts

PARTS LIST		
ITEM	**DESCRIPTION**	**NOTES**
030677	PHOTOCELL LIMIT SWITH TYPE BASE	
030678	PHOTOCELL LIMIT SWITH TYPE RECEPTACLE	
030174	BALE DOOR INTERLOCK SWITCH	
030256	RELAY BLOCK, 3 POLE (CONV CNTRL RELAY)	
031470	KEYED INTERLOCK SWITCH	
033638	STROBE LIGHT, RED	
034283	ALARM STACK MODULE	
034734	SIDED MOUNT BASE F/STROBE LIGHT	
031071	MOTOR 20HP 3PH	
031856	VARIALBLE SPEED POTENTIOMETER	
037155	MOTOR STARTER, VFD, 2HP, 460V	
037336	MOTOR STARTER, VFD, 2HP, 208/230V	
037369	MOTOR STARTER, VFD, 2HP, 575V	
037185	MOTOR STARTER, VFD, 3HP, 460V	
037237	MOTOR STARTER, VFD, 3HP, 208/230V	
037370	MOTOR STARTER, VFD, 3HP, 575V	
994485	CYLINDER, 6"B 4"R 57"S	
995297	HUB COUPLING	
997362	PROXIMITY SWITCH 30MM N.O.	
997302	PHOTOCELL HEAD DIFFUSE TYPE	

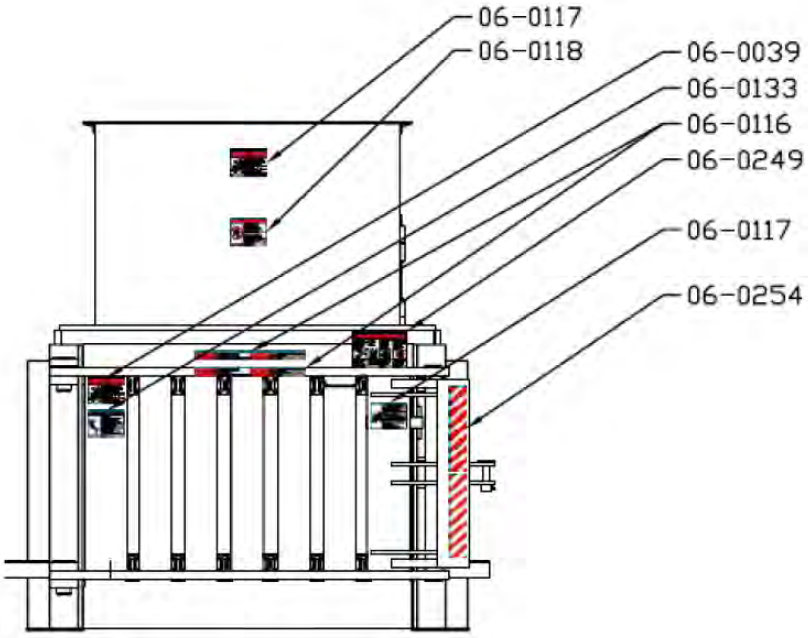
DECAL PARTS LIST

Warning Decal Requirements

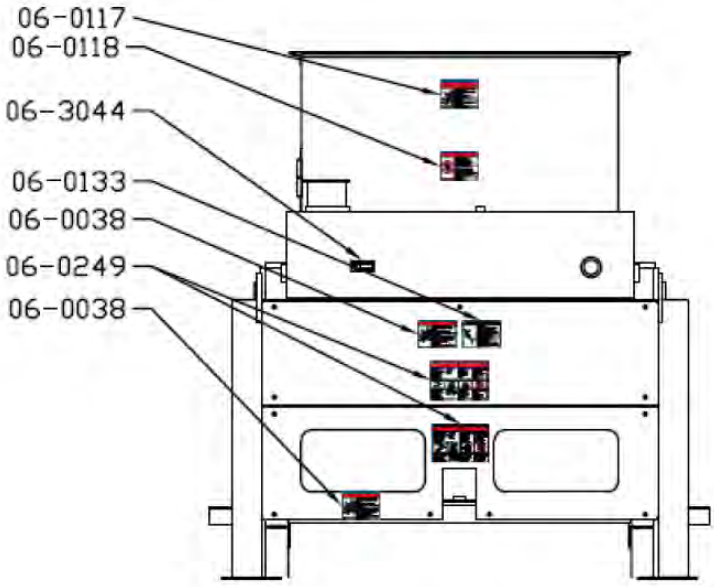
When your Gemini Horizontal Baler leaves the factory, several WARNING DECALS are installed for your protection. These labels are subject to wear and abuse due to the nature of operation. The FOLLOWING DECALS MUST BE MAINTAINED. Additional decals may be purchased through your distributor or from Marathon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

Part #	Description	Qty
06-0117	DECAL WARNING STAND CLEAR WHILE	1
06-0116	DECAL DANGER KEEP HANDS OUT	3
06-0249	DECAL DANGER HAZARDOUS VOLTAGE	5
06-2751	DECAL MARATHON COMP & RECYCLE	2
06-0118	DECAL WARNING STAND CLEAR WHEN	1
06-0254	DECAL RED/WHITE STRIPED 3X15.5	4
06-0120	DECAL DANGER DISCONNECT & LOCK	1
06-0133	DECAL WARNING STAY OFF..DO NOT	5
06-0039	DECAL DANGER DO NOT ENTER E/S	7
06-0250	DECAL DANGER LOCK OUT POINT DA	1
06-0121	DECAL NOTICE FEDERAL REGULATIONS	2
06-3044	DECAL DANGER VOLTS W/BLANK SPACE	1
06-3045	DECAL GEMINI XTREM 3X7.6	2
06-0534	DECAL GEMINI 3560 3X11	2
06-0097	DECAL SERIAL NUMBER PLATE	1
06-3274	DECAL WARNING "FLASH HAZARD" B	1
06-0038	DECAL DANGER DO NOT REMOVE ACCESS	2
06-3976	DECAL WARNING SHOCK ARC FLASH	1
06-3977	DECAL WARNING DO NOT OPERATE	2
06-3978	DECAL DANGER DO NOT OVERIDE OR	2
06-0041	DECAL DANGER THIS MACHINE STAR	2
06-3123	DECAL DANGER CONFINED SPACE	4

DECAL PLACEMENT

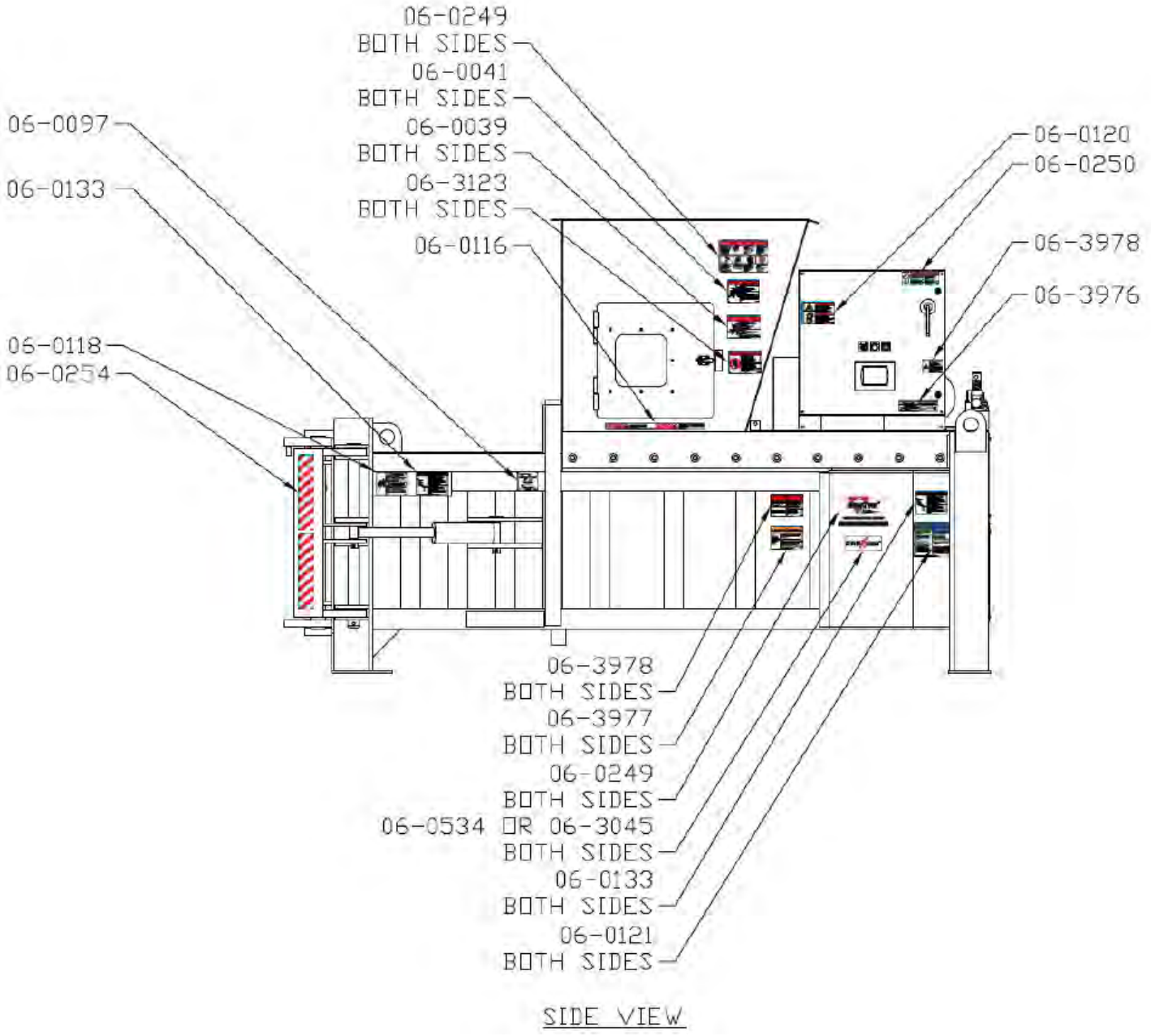


DOOR END VIEW



REAR END VIEW

DECAL PLACEMENT (CONTINUED)



SIDE VIEW

DECAL IMAGES

06-0116

06-0041

06-0118

06-2751

06-0117

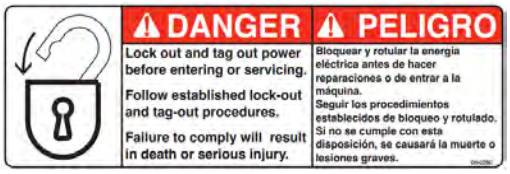
06-3044

06-0249

06-3123

06-0133

06-0250



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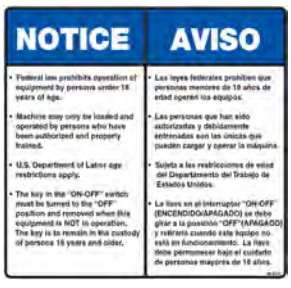

06-3274

DECAL IMAGES

06-0534

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06-0097

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06-0039

06-0254

06-3978

06-0038

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Gemini Horizontal Balers
INDEX

www.marathonequipment.com

Customer Care:
800-633-8974

Parts Central:
800-528-5308
www.mecomerchant.com

Technical Service and Warranty:
877-258-1105

Customer Support:

Marathon Equipment Company
P.O. Box 1798
Vernon, AL 35592-1798