Galaxy 2R® Baler

WESTROCK 450 SERIES

OPERATION, SERVICE, AND INSTALLATION

ISSUED MAY 2019

CUSTOMER NAME: _____

SERIAL NUMBER: _____

COMPACTION & RECYCLING SOLUTIONS

0085-2R-WR-0519

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

WARNING

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

IMPORTANT SAFETY NOTICE

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

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Galaxy 2R® Baler (WestRock)

450 SERIES

OPERATION, SERVICE, AND INSTALLATION

ISSUED MAY 2019

0085-2R-WR-0519

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SECTION 1
GENERAL INFORMATION

INTRODUCTION

Thank you for purchasing a Marathon® Galaxy2R® Two-Ram 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

⚠ DANGER

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

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

INSTRUCTIONS

1. Notify all affected employees that servicing or maintenance is required on the 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 installation of 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.

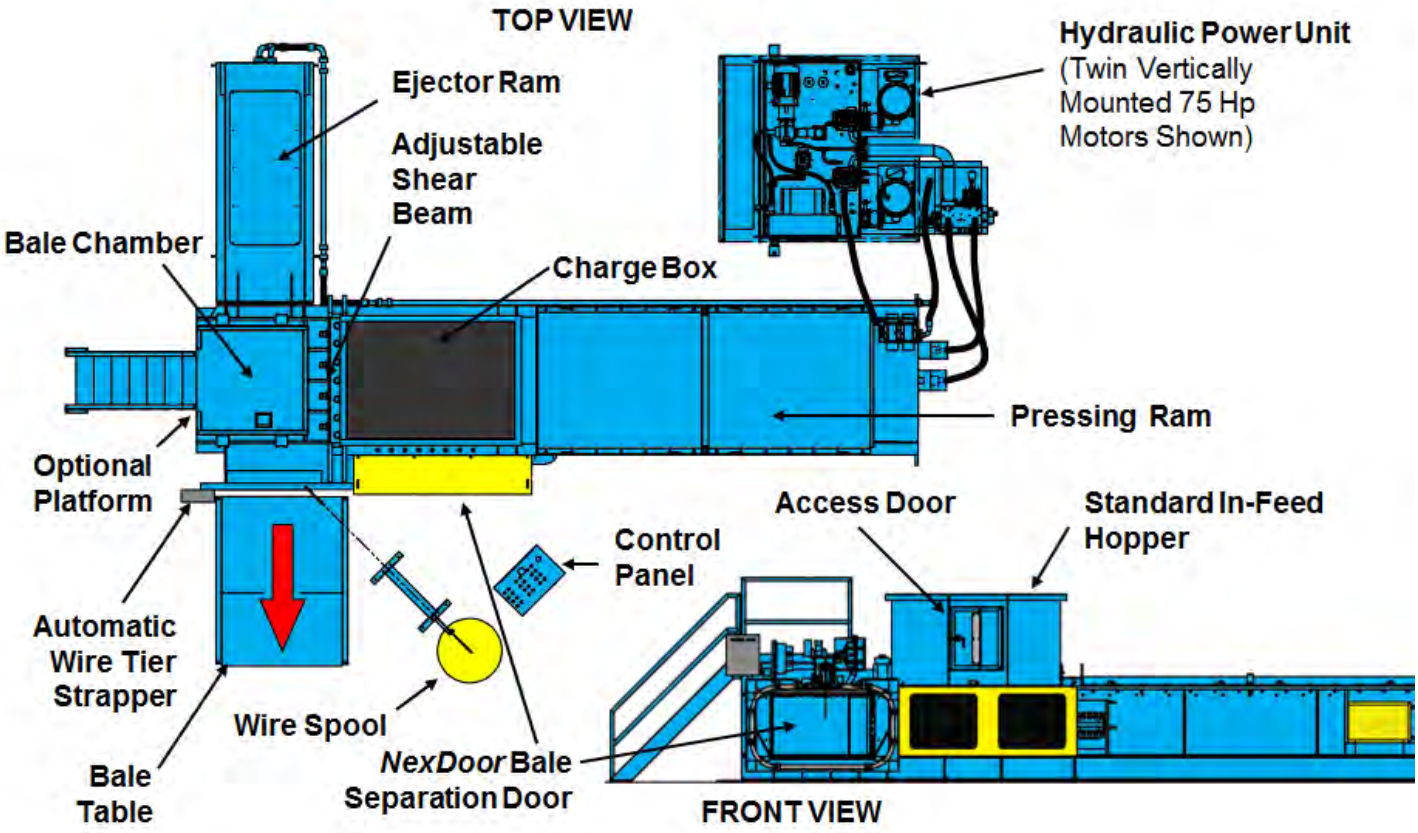
NOTICE

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.

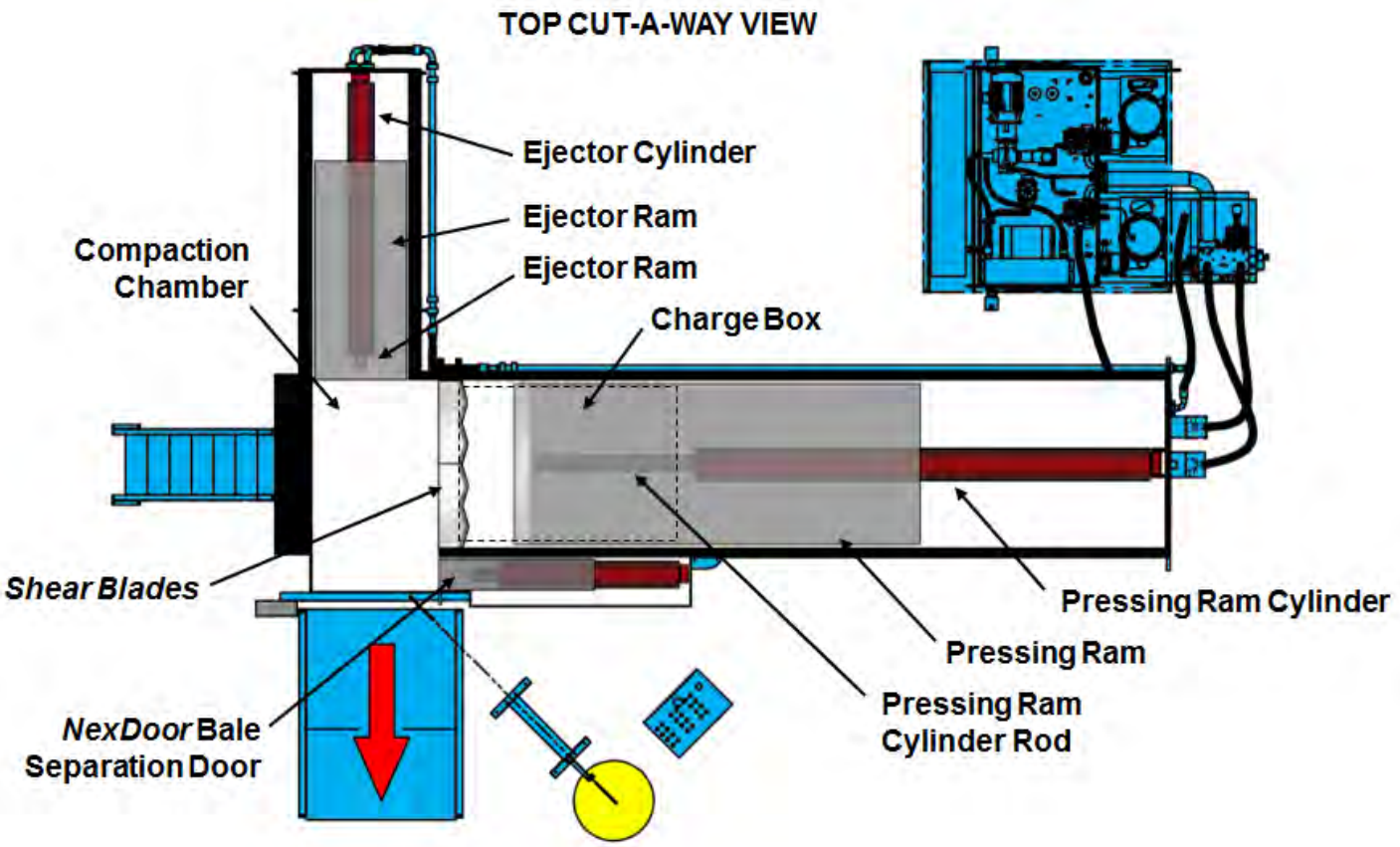
COMPONENTS

Marathon® Two Ram Balers are comprised of these major components. Become familiar with the locations of these components on your unit.



COMPONENTS (CONTINUED)

This view shows a top cut-a-way view of a Marathon® Two Ram Baler.



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 000 grease.

RECOMMENDED OILS

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

- Union-UNAX-46, UNAX-AW46
- Gulf-Harmony 47, Harmony 48-AW
- Exxon-Teresstic 46, NUTO 46
- Texaco-Rando 46
- Chevron-AW 46
- Shell-Turbo 46, Tellus 46
- Citgo-Pacemaker 46, Tellus-AW46
- Conoco-Super Hydraulic Oil 46

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

- Quaker State-Dextron II (ATF)

Cold Weather Fluid

- Amoco-Rycon MV

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.

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.

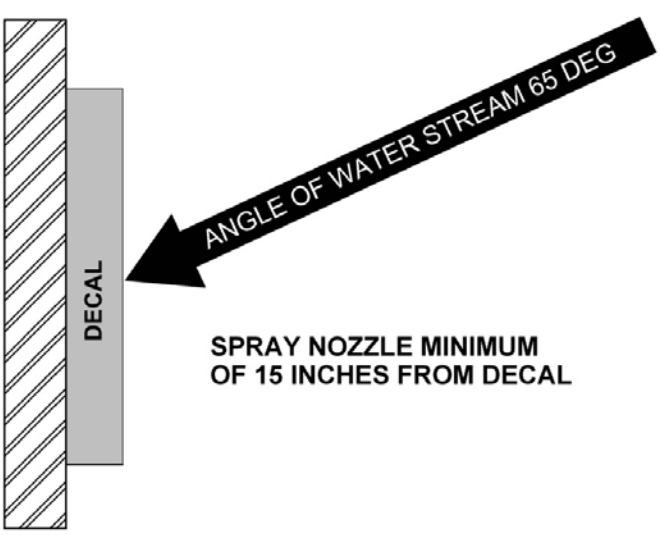
- Spray nozzle opening: 40° wide pattern
- Spray angle: 65° from unit’s body
- Distance of nozzle to decal: 15” minimum
- Water pressure: less than or equal to 800 psi
- Length of time: not more than 30 sec.
- Do not use sharp angles to clean the decals – this can lift the decals from the unit.
- NEVER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

C. Remove Difficult Debris

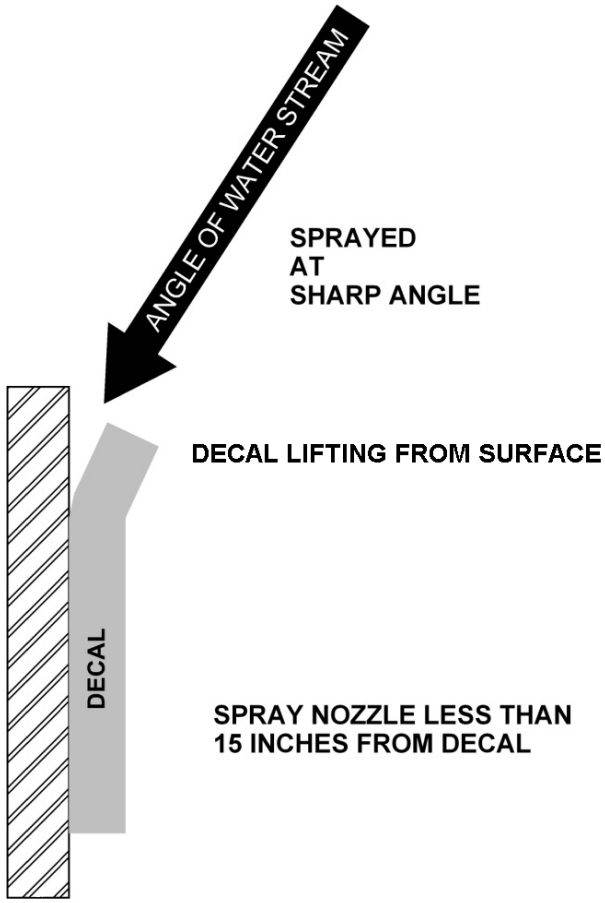
When normal cleaning procedures do not remove difficult debris from the decals, try the following:

- 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

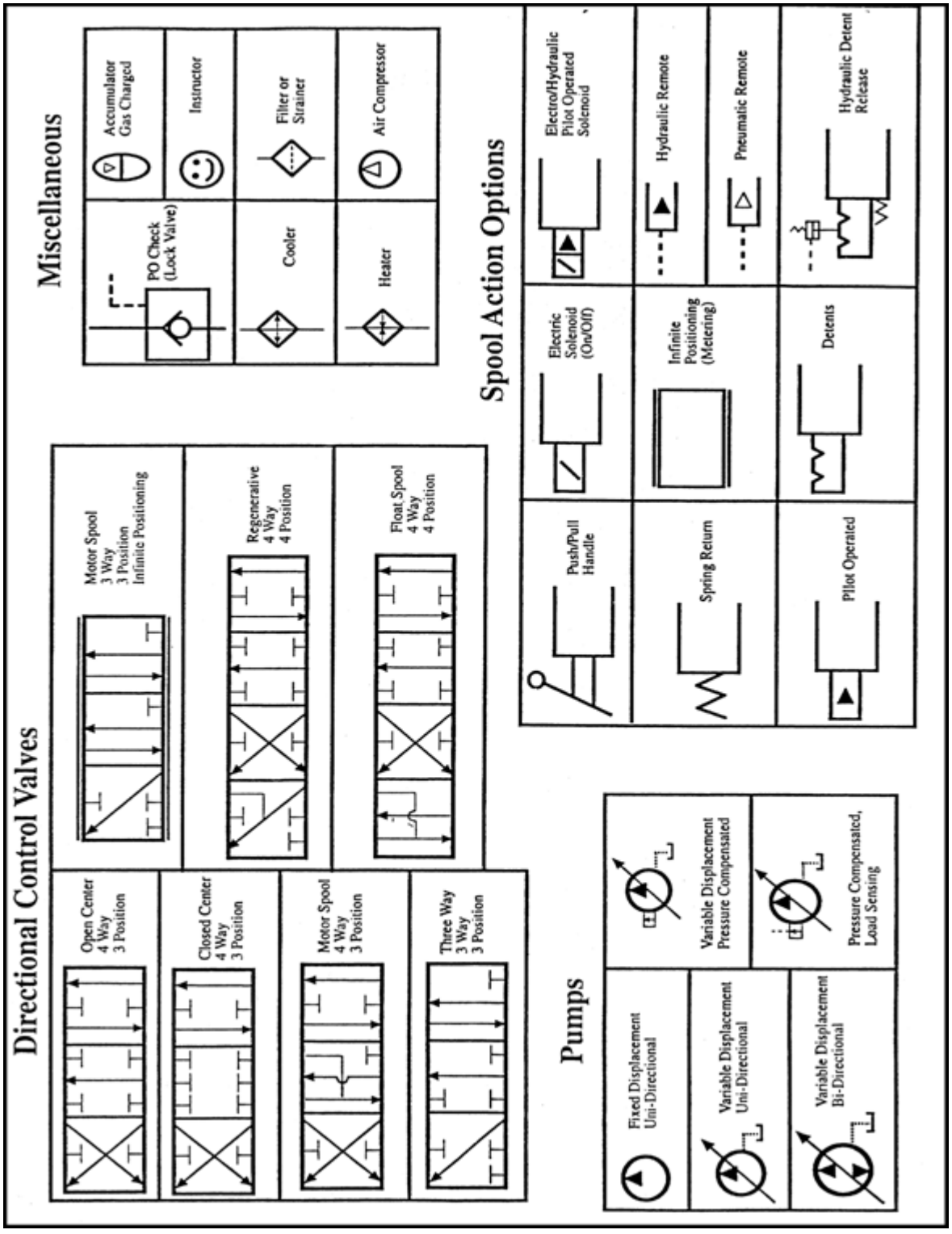


RECOMMENDED TECHNIQUE

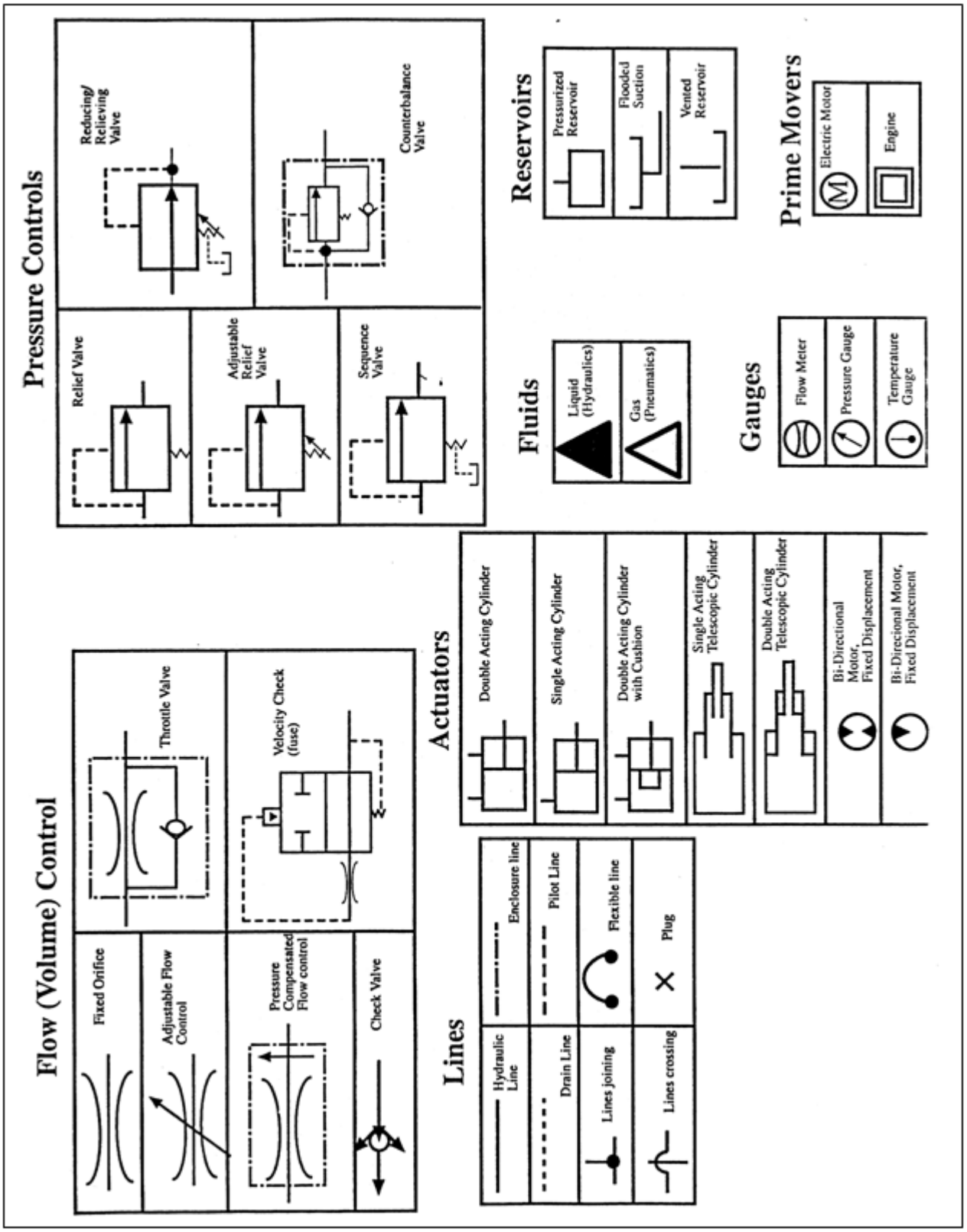


INCORRECT TECHNIQUE

HYDRAULIC SYMBOLS

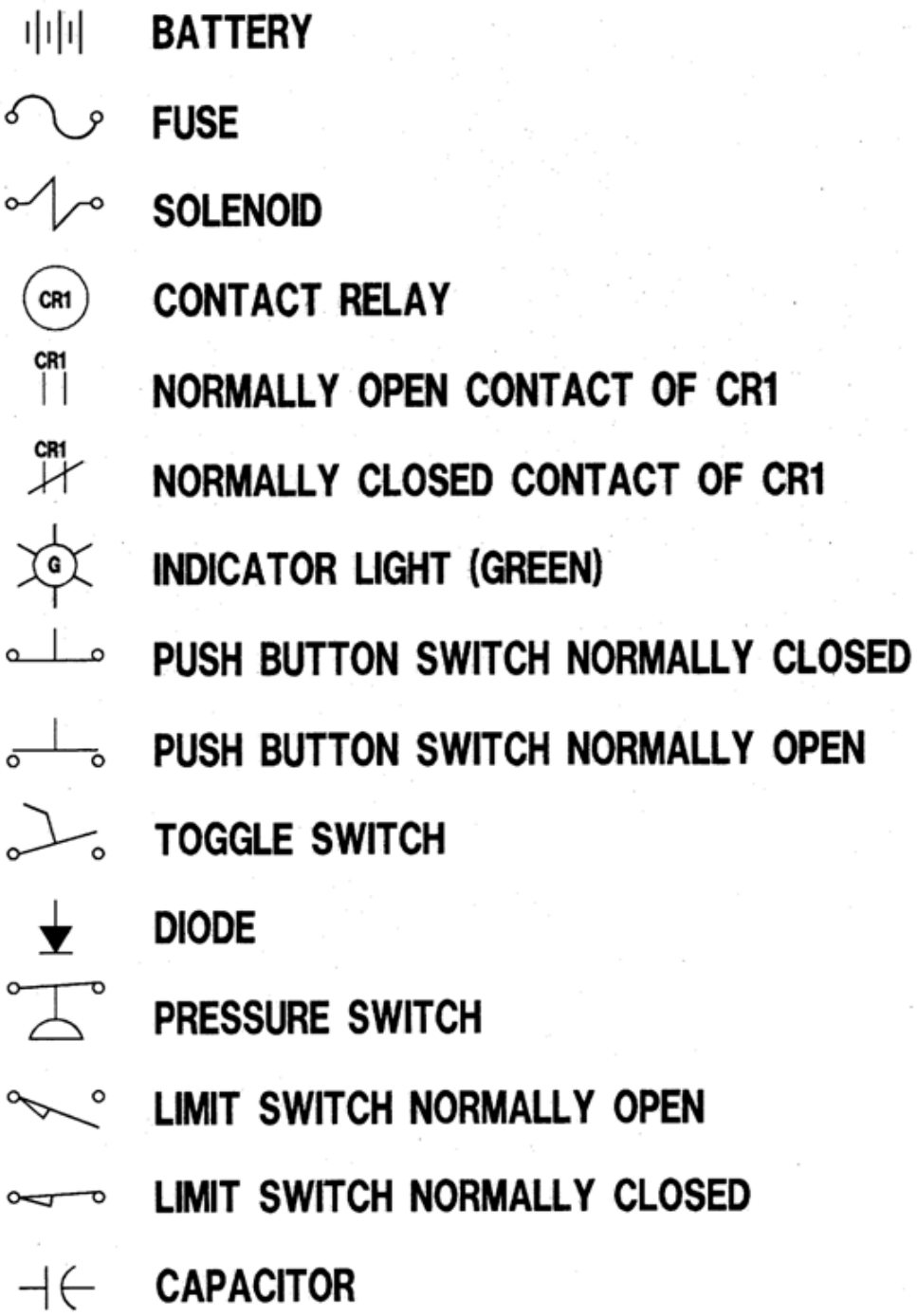


HYDRAULIC SYMBOLS (CONTINUED)



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.

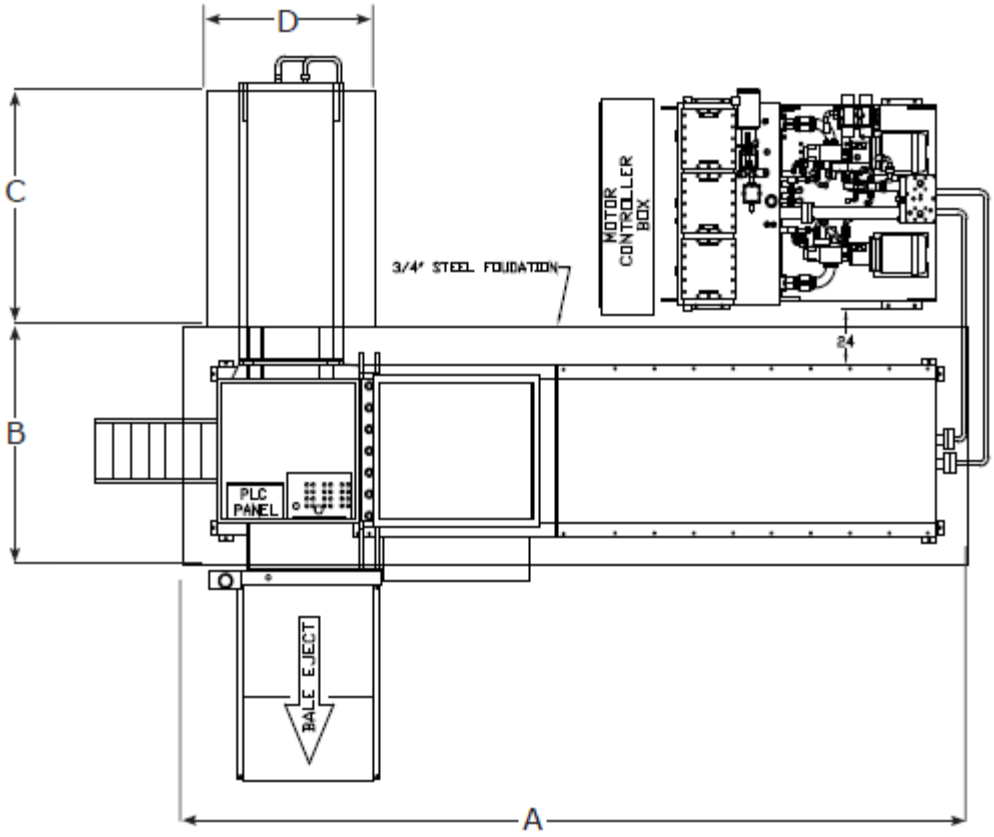
1. Allow enough clearance for the panel box door to swing completely open and it must comply with state and local building codes.
2. Allow enough space in front of the bale exit for a bale-handling vehicle.
3. Allow enough space for installation and safe operation of the auto-tie mechanism.
4. Allow 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.

FOUNDATION PLATE DIMENSIONS

Baler Foundation Requirements: A minimum 6” steel reinforced 3000 psi concrete slab with a minimum 3/4” steel foundation plate per foundation detail. The 3/4” steel foundation plate is recommended to prevent possible floor damage to the concrete slab. Marathon Equipment Company is not responsible for any floor damage if the recommended 3/4” minimum steel foundation plate is not used.



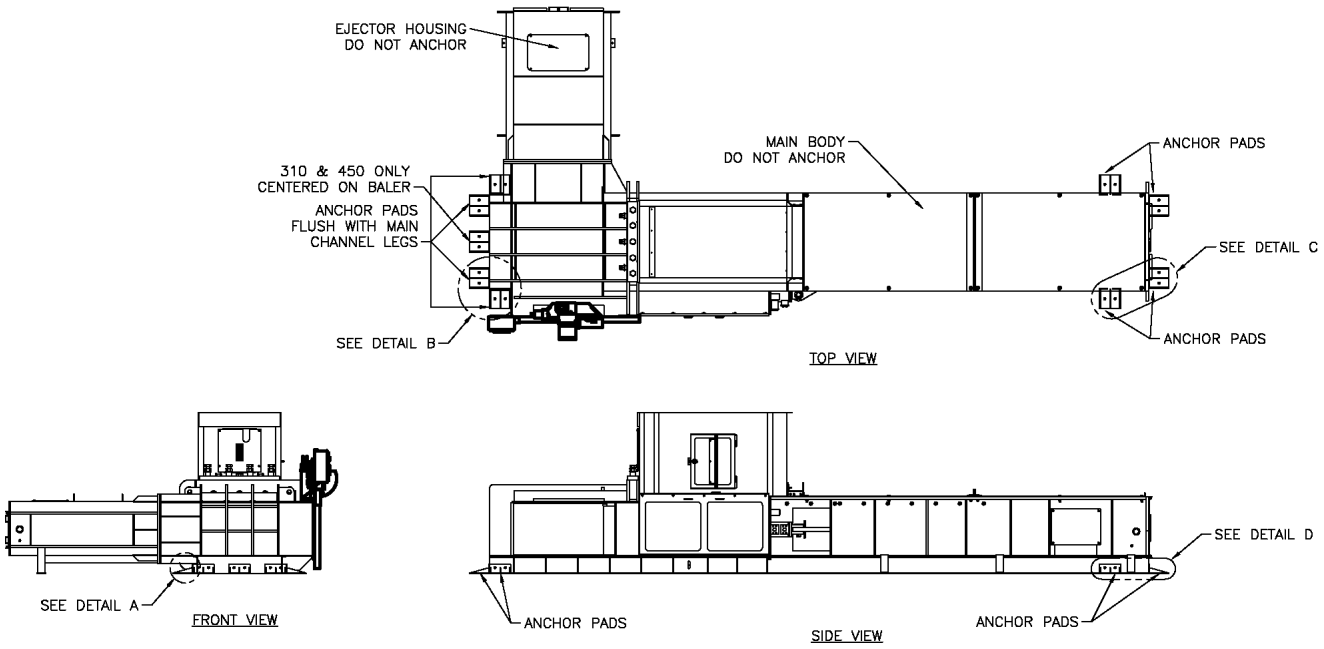
FOUNDATION PLATE DIMENSIONS (CONTINUED)

NOTICE

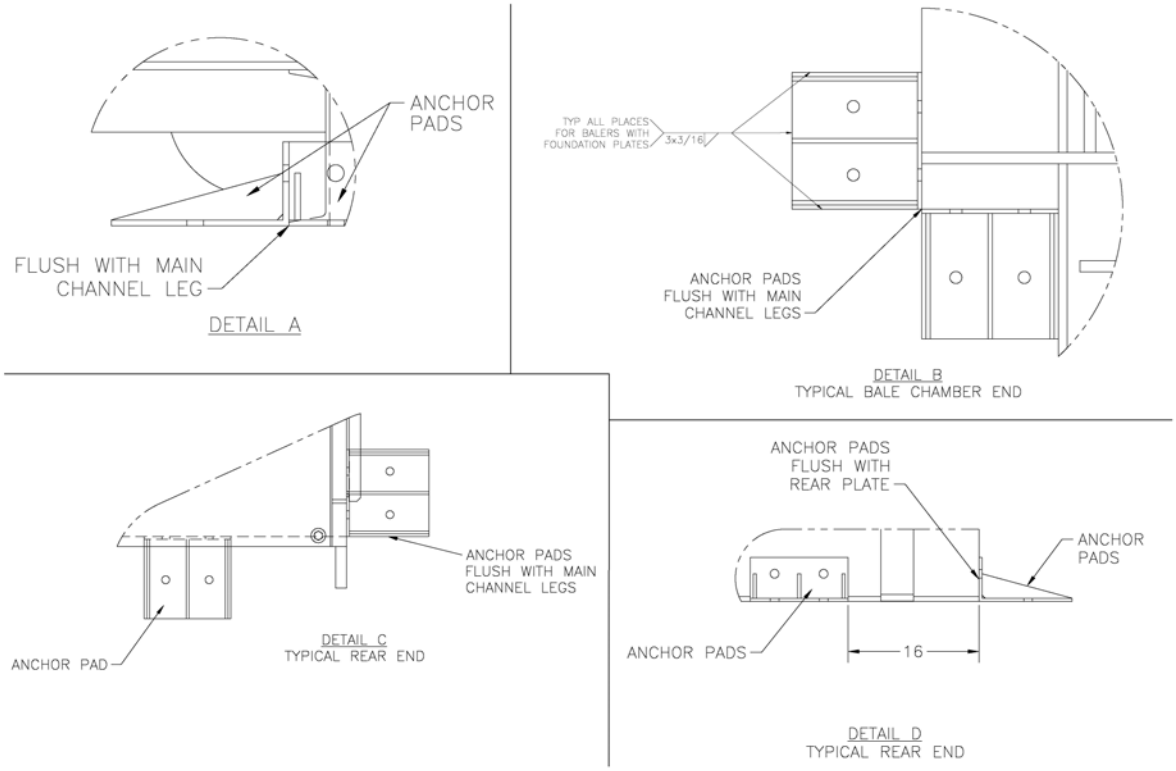
Marathon Equipment Company is not responsible for providing this steel foundation plate. The recommended foundation plate is the responsibility of the customer. It is also the customer's responsibility to anchor the foundation plate to the concrete floor.

Foundation Plate Dimensions					Anchors	
Baler	**A**	**B**	**C**	**D**	**Quantity**	**F**
2R-150-57-N	325"	75"	92"	80"	16	63 13/16
2R-190-70-N	351"	75"	92"	80"	18	57 1/2
2R-250-84-N	401"	78"	92"	80"	20	56 7/16
2R-310-84-W	389"	96"	115"	66"	18	63 13/16
2R-310-102-W	425"	96"	115"	66"	20	59 7/8
2R-450-84-W	416"	96"	115"	66"	20	58 9/16
2R-450-102-W	452"	96"	115"	66"	20	63 3/4

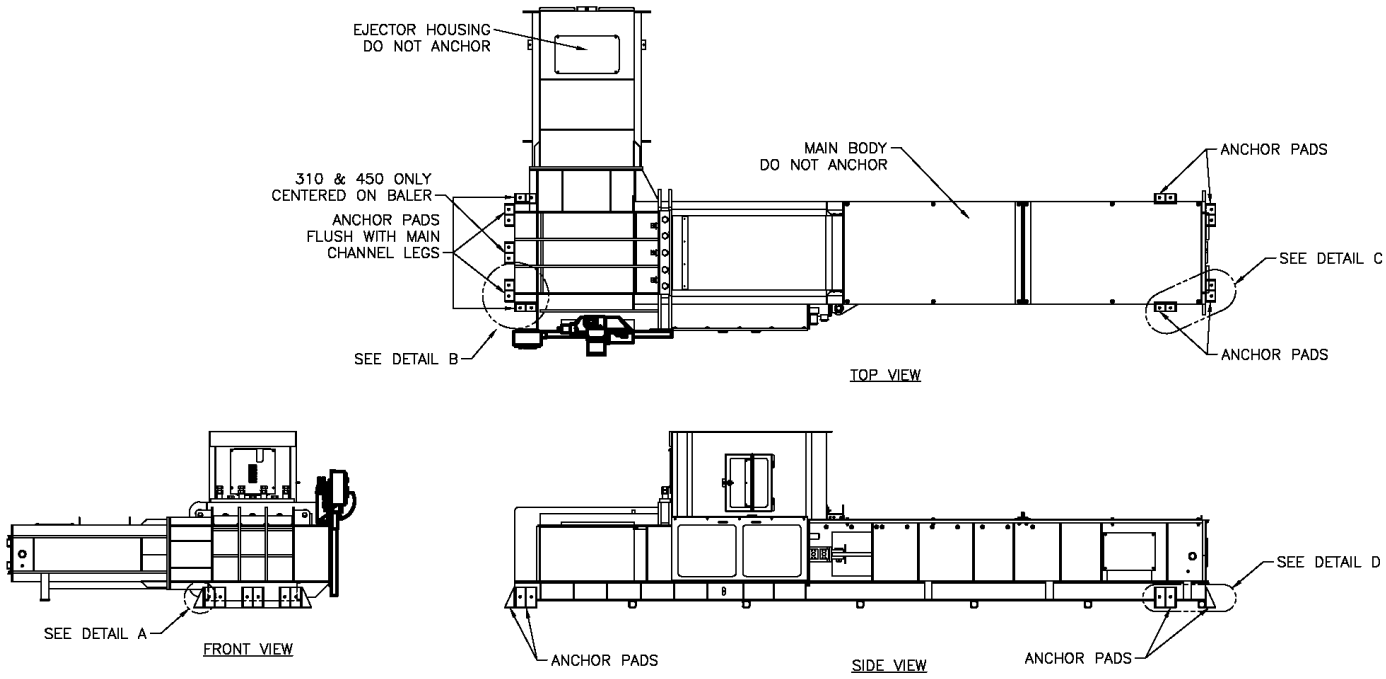
ANCHOR LOCATION FOR STANDARD BALER



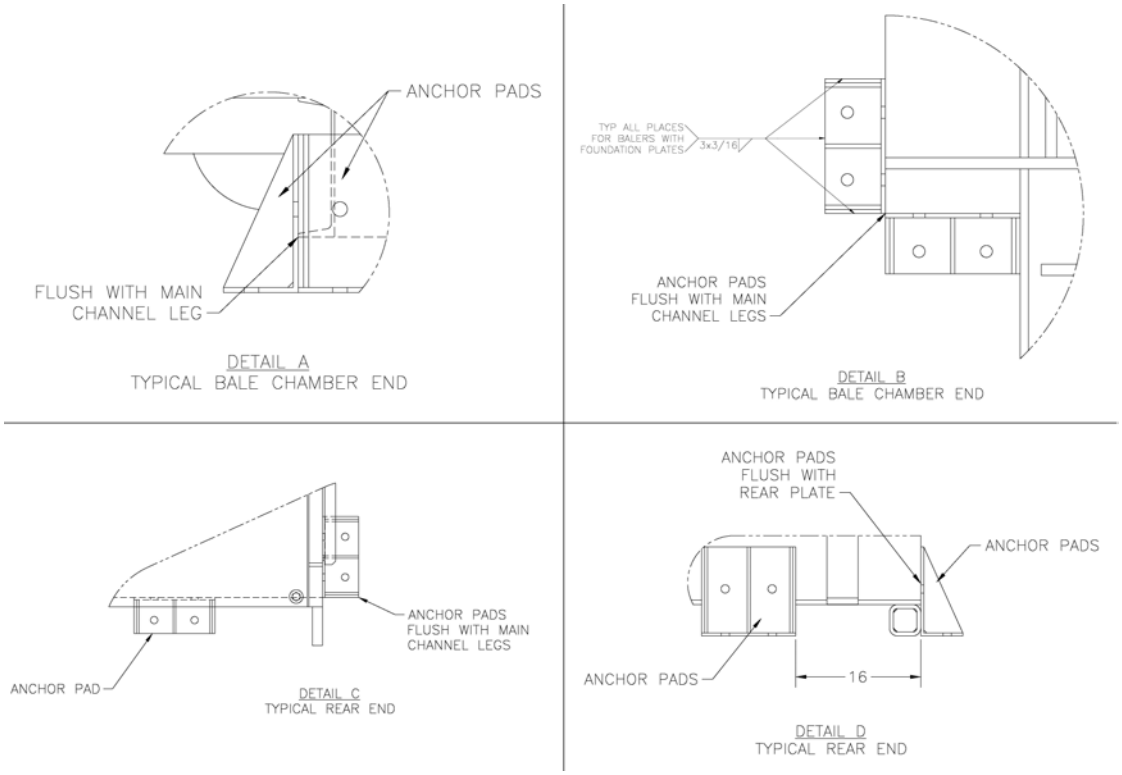
ANCHOR LOCATION FOR STANDARD BALER DETAIL VIEWS A-D



ANCHOR LOCATION FOR SOLID WASTE PACKAGE



ANCHOR LOCATION FOR SOLID WASTE PACKAGE DETAIL VIEWS A-D

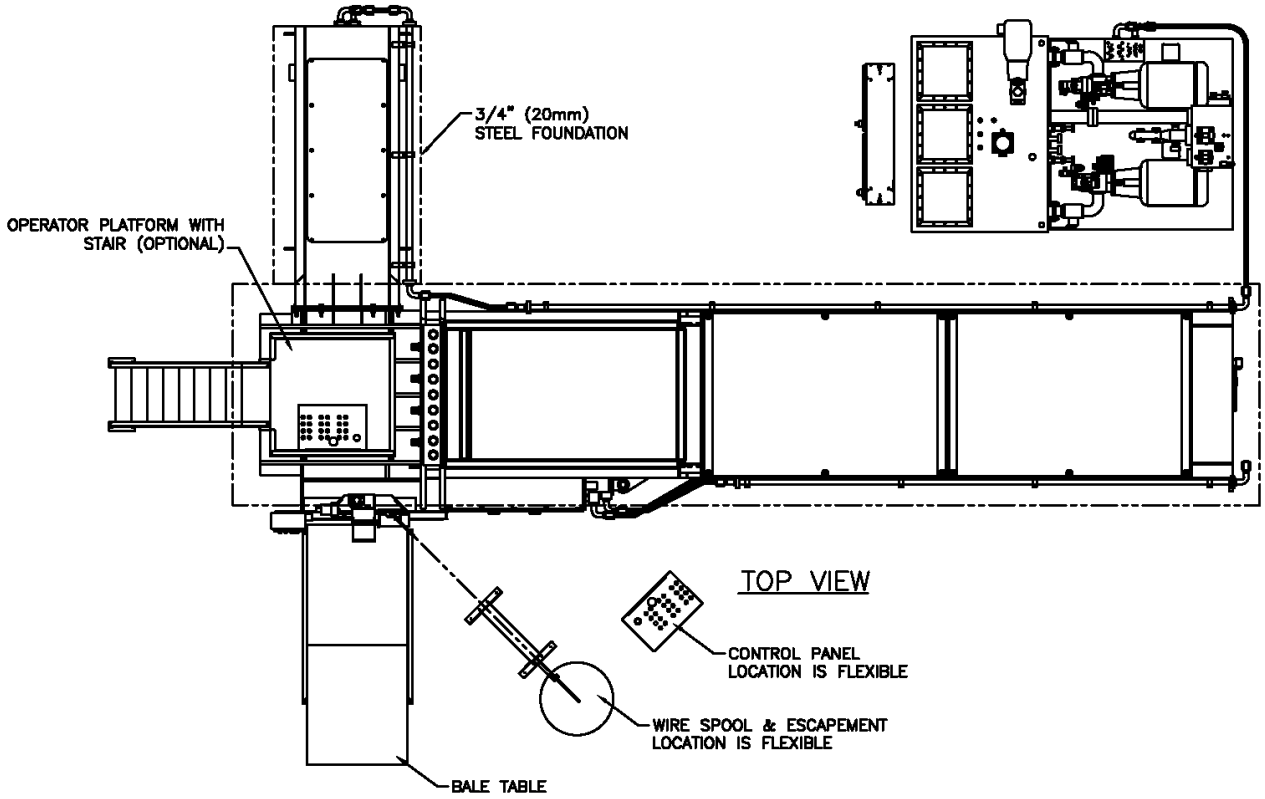


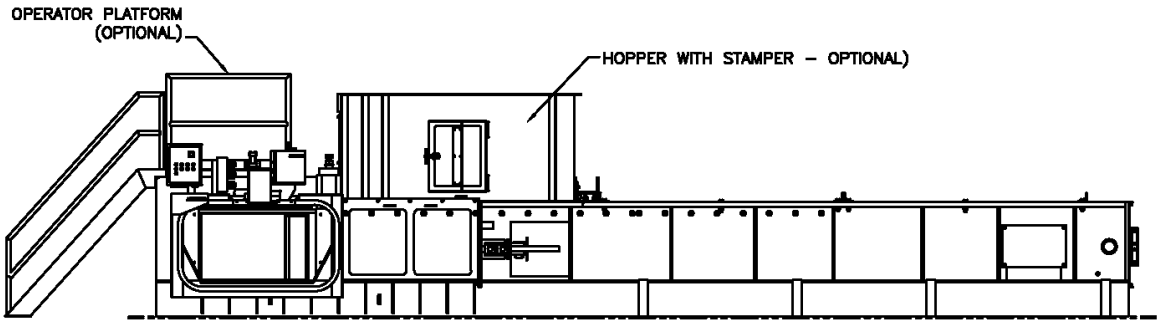
TYPICAL 2R LAYOUT

Typical Left Hand shown. Right Hand would be opposite.

NOTICE

Shown with the 2x100 HP Power Unit. Refer to the Power Unit section for the actual dimensions of optional power units.





SIDE ELEVATION
WIRE SPOOL & ESCAPEMENT NOT
SHOWN ON THIS VIEW

MACHINE ASSEMBLY

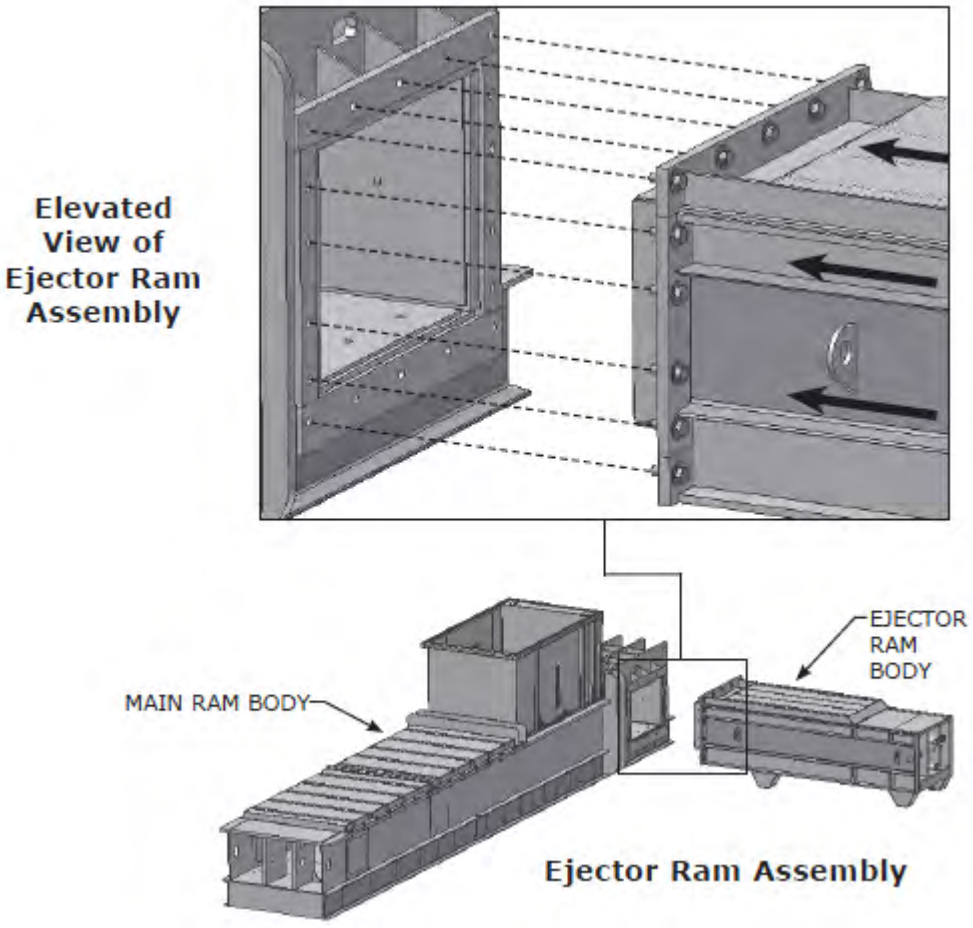
These are instructions for connecting ejector ram to main body:

1. Using a crane, fork lift, or machine roller, position the Main Ram body into the desired location (do not drag the body into place).
2. Assemble the Ejector Ram body to the Main Ram body. Slide the Ejector Ram into the Main Ram body until the facing surface of the Ejector Body contacts the Main Ram body facing surface. Bolt the Ejector Ram body to the Main Ram body with the provided bolts and nuts. A reference chart and diagram is shown below for bolt size and quantity according to the machine model.

MODEL	BOLT SIZE	QTY.	PART NO. (BOLT)	PART NO. (NUT)
150/190	3/4 x 2 3/4	12	052075	052170
250	1 x 3 1/2	12	050532	050533
310/450	1 x 4 1/2	12	053212	050533

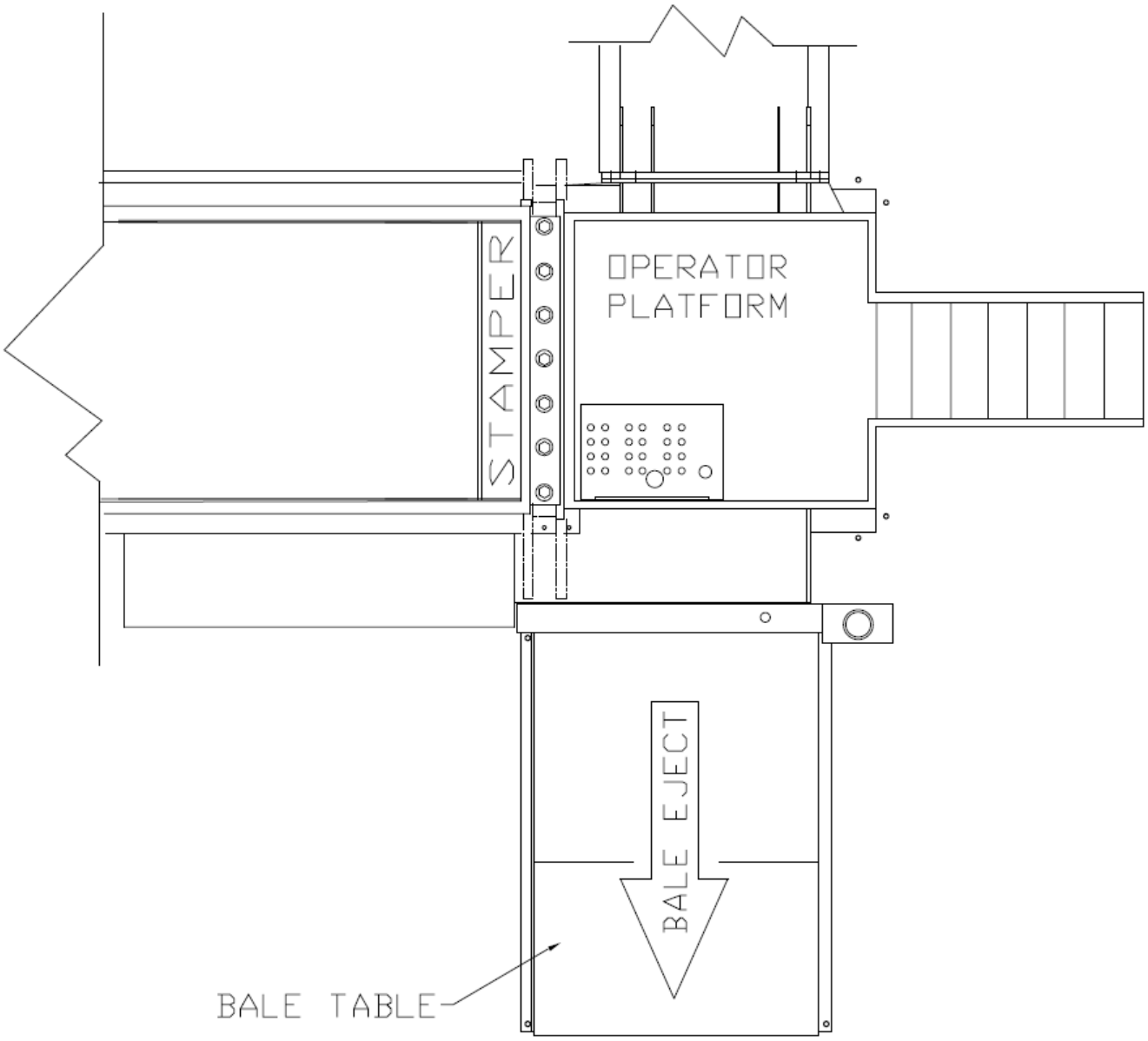
NOTICE

For Electrical and Hydraulic connections, see **Electrical and Hydraulic Installation**.



MACHINE ASSEMBLY (CONTINUED)

3. Level the machine. Use shims under the main ram body and the ejector ram body to compensate for any unevenness in the floor or pad.
4. Place the Bale Table on the floor or pad in front of the ejector opening. Center the bale table to the bale eject opening. Allow a minimum of 6" between the bale table and the deflector of the wire tier. Anchor the bale table to the floor or pad.

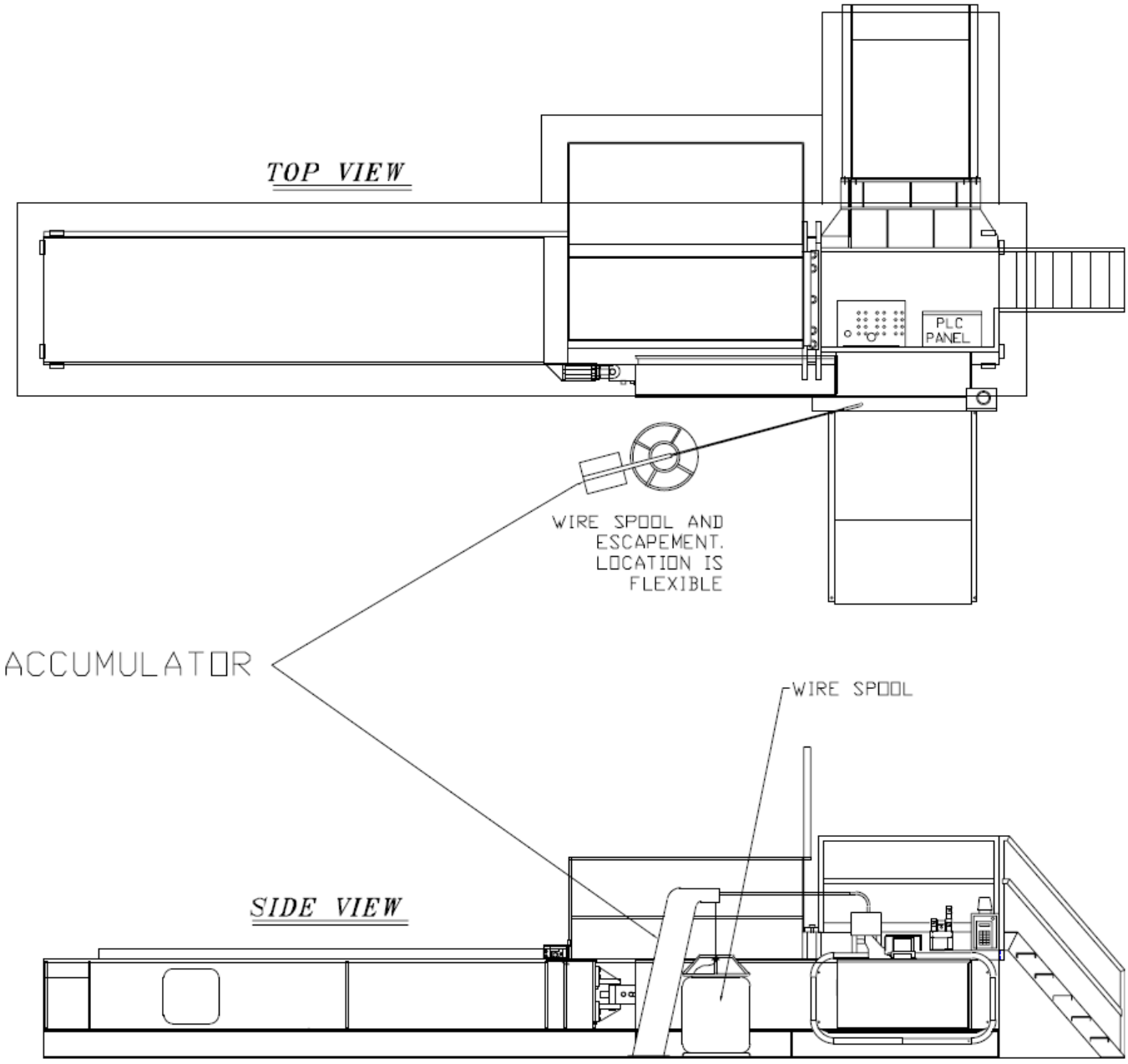


MACHINE ASSEMBLY (CONTINUED)

5. Set the accumulator for the wire tier in an out-of-way, but convenient location. Allow enough space for handling equipment for the purpose of changing wire spools. Anchor the accumulator to the floor or pad.

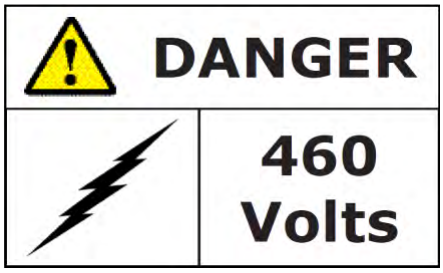
NOTICE

The typical layout is shown below. Your installation may differ. For more information on the wire tie system, see the Wire Tie manual.



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.**
   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** 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

MARATHON®
A DOVER COMPANY

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)

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.

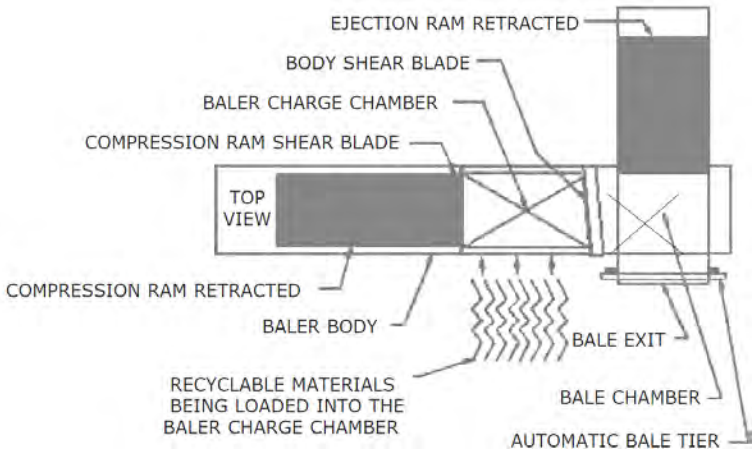
MATERIALS LIST - WHAT CAN THE GALAXY 2-RAM BALE?

The following is a representative guideline for materials that can be baled in the Galaxy 2-Ram baler. Other materials of comparable size and composition may also be baled. All materials should be fed in a manner consistent with the shearing capabilities of the baler.

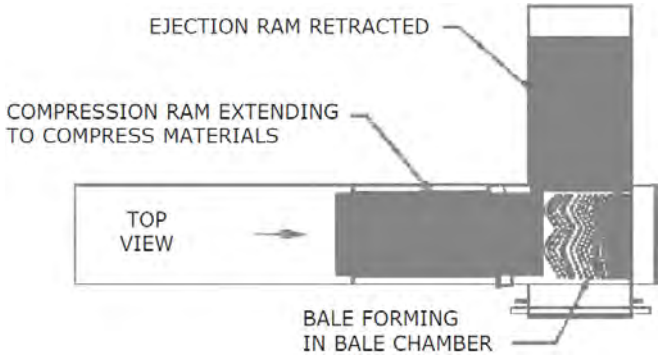
- OCC - Old Corrugated Cardboard
- ONP - Old Newspaper - disperse material evenly and not in stacks or clumps.
- High-Grade/Misc. Paper - disperse material evenly and not in stacks or clumps.
- UBC - Used Beverage Containers (aluminum cans)
- Steel Cans - Food cans and other light gauge containers, 5 gallons or less.
- PET Containers
- HDPE Containers
- Aluminum Extrusions - Aluminum shapes with 0.125” thickness or less, 1.3” maximum cross sectional area.
- Aluminum Pipe or Tubing - 0.125” maximum wall thickness, 3” maximum diameter.
- Radiators - Automotive radiators or equivalent size heat exchangers.
- Aluminum Siding
- Aluminum Sheet Scrap - 0.125” max. thickness for 6” wide or less - otherwise 0.063” max. thickness.
- Aluminum/Copper Cable - 1” diameter or less
- Copper Sheet Scrap - 0.125” max. thickness for 6” wide or less - otherwise 0.063” max. thickness.

THE BALING PROCESS

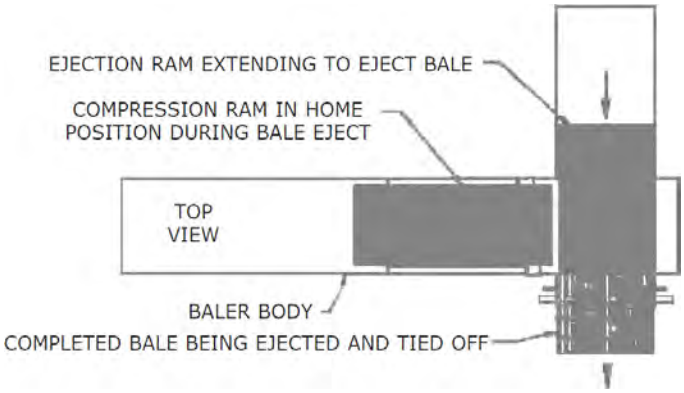
Loading



Compressing



Ejecting and Tying

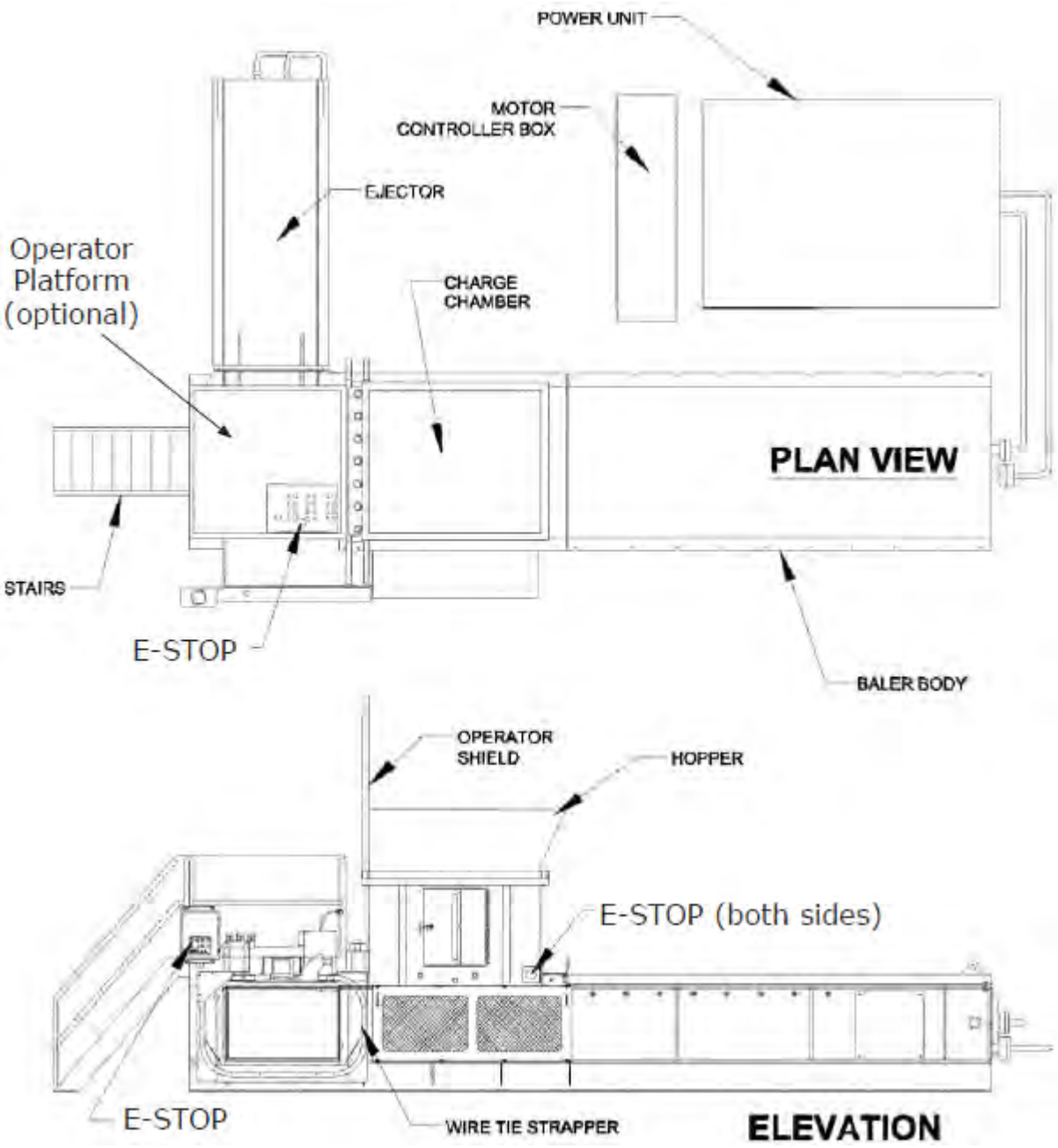


CONTROL PANEL DIAGRAM

1. **Touch Screen** - You must sign in with a username and a password. Most of the baler's operations can be controlled from here. See **Touch Screen Controls - Security Screen**.
2. **Joysticks** - Used to manually control both the main ram and the ejection ram. The touch screen controls must be set to "Manual Mode" for these to function.
3. **Controls ON/OFF** - This key switch turns power to the programmable controller either ON or OFF. The switch must be in the "ON" position for all other controls to function.
4. **Power On** - Push and hold this button for 20 seconds to turn the power on to the operator controls.
5. **Strap** - Push this button to activate the tier and put the preset number of Straps on the bale as it is ejected onto the bale table.
6. **Emergency Stop** - Push this button to stop the machine in the event of an emergency or any time the machine needs to be stopped.

EMERGENCY STOP CONTROL LOCATION

Marathon® Two Ram Balers have four emergency stop buttons mounted at various locations on the machine. Be thoroughly familiar with the location of each button. If a conveyor system is used, the conveyor should have an e-stop button mounted on it.



STANDARD OPERATION - BALER START UP

⚠ WARNING

Do not operate baler until operating instructions are thoroughly understood.

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

⚠ WARNING

Safety interlocks and devices are installed on this machine for your protection. **NEVER DISABLE OR BYPASS ANY SAFETY DEVICE**. **FAILURE** to comply with this warning could result in **SERIOUS INJURY** or **DEATH**.

Prior to start-up of the baler each day, check the items found in the “DAILY” list in **Periodic Maintenance.**

Standard operation includes baler start-up for Manual and Automatic Operation.

Baler Start Up

1. Check work area and make sure all personnel are clear of baler.
2. Turn the electrical disconnect to the “ON” position.
3. Insert the CONTROLS key and rotate switch to the “ON” position.
4. Make sure all “emergency stop buttons” are pulled out.
5. Touch the “SAFETY RELAY RESET” button. (Allow for a brief delay for the control processor to initialize).
6. Touch “Ack All” (Acknowledge All) and Reset on the touch screen to clear the Alarm screen. The screen will change to the Main Menu.
7. Touch the “MOTOR START” button and continue to touch for 20 seconds.
   a. A start-up alarm sounds and the beacon flashes for 5 seconds.
   b. The alarm silences in five seconds and the beacon continues to flash for 15 more seconds. The beacon continues to flash allowing the operator time to be sure no one is inside the baler or on the feed conveyor at any time.
   c. The main motor starts after a 20-second delay. At that time, remove your finger from “Start” button.

This completes the Baler Start Up sequence.

See **Touch Screen Controls.**

AUTOMATIC AND MANUAL OPERATION MODES

A. Automatic Operation (Auto Mode)

1. Start the baler per start-up procedures on the previous page.
2. From the touch screen's Main Menu, press the MANUAL MODE button and the screen advances to the "Manual Menu".
3. Move the MAIN RAM joystick to RETRACT until the ram is fully retracted.
4. On the touch screen, press the MAIN MENU button.
5. Press the AUTO MENU button and the screen advances to the "Auto Menu" screen".
6. Press the AUTO MODE START button and the baler automatically cycles when the designated photocell is blocked by an incoming product.
7. Press the CONVEYOR AUTO button if you want the baler to control the flow of material. You may control the flow of material manually by toggling the CONVEYOR ON / CONVEYOR OFF" button as required. (Optional controls)
8. Press the MANUAL MODE, MAIN MENU, or CYCLE STOP button to end Auto Mode. To resume Auto Mode, start over at step 1 of this procedure.

B. Manual Operation (Manual Mode)

1. Start the baler per the start-up procedures on the previous page.
2. From the touch screen's Main Menu, press the MANUAL MODE button and the screen advances to the "Manual Menu".
3. Move the MAIN RAM joystick to COMPRESS or RETRACT for manual ram operation.

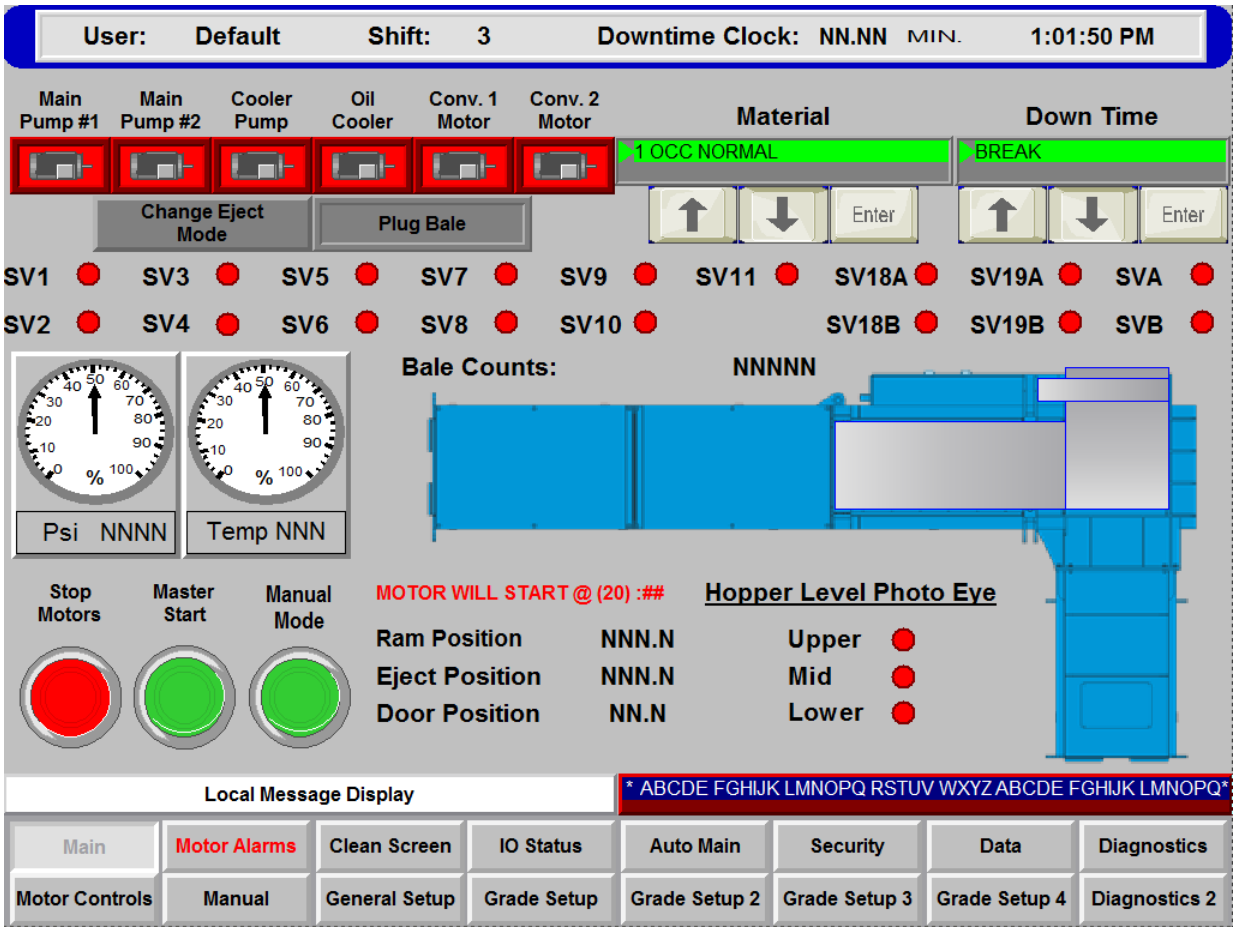
NOTICE

The manual controls will lock if not moved in 60 seconds. If this happens, press the POWER ON button to reset the timer.

See **Touch Screen Controls**.

TOUCH SCREEN CONTROLS

MAIN SCREEN



Shift- indicates what shift is operating 1st, 2nd or 3rd.

Downtime Clock- Indicates the current downtime.

Main Pump #1 - indicates the status of main pump #1. Red indicates off Green indicates on.

Main Pump #2 - indicates the status of main pump #2. Red indicates off Green indicates on.

Cooler Pump - indicates the status of cooler. Red indicates off Green indicates on.

Oil Cooler - indicates the status of the oil cooler. Red indicates off Green indicates on.

Conv 1 Motor - indicates the status of Conv 1 Motor. Red indicates off Green indicates on.

Conv 2 Moto r- indicates the status of Conv 2 Motor. Red indicates off Green indicates on.

MAIN SCREEN (CONTINUED)

Material - Press to scroll through the material list to select the type of material to be ran.

Down Time - Press to scroll through the down time list to select the type of downtime the baler was shut down for. Downtime must be entered after downtime has elapsed not prior to.

Change Eject Mode - Press to scroll through the eject type desired for the bale.

SV1 - Indicates the status of solenoid 1. Red indicates off Green indicates on.

SV2 - Indicates the status of solenoid 2. Red indicates off Green indicates on.

SV3 - Indicates the status of solenoid 3. Red indicates off Green indicates on.

SV4 - Indicates the status of solenoid 4. Red indicates off Green indicates on.

SV5 - Indicates the status of solenoid 5. Red indicates off Green indicates on.

SV6 - Indicates the status of solenoid 6. Red indicates off Green indicates on.

SV7 - Indicates the status of solenoid 7. Red indicates off Green indicates on.

SV8 - Indicates the status of solenoid 8. Red indicates off Green indicates on.

SV9 - Indicates the status of solenoid 9. Red indicates off Green indicates on.

SV10 - Indicates the status of solenoid 10. Red indicates off Green indicates on.

SV11 - Indicates the status of solenoid 11. Red indicates off Green indicates on.

SV18A - Indicates the status of solenoid 18A. Red indicates off Green indicates on.

SV18B - Indicates the status of solenoid 18B. Red indicates off Green indicates on.

SV19A - Indicates the status of solenoid 19A. Red indicates off Green indicates on.

SV19B - Indicates the status of solenoid 19B. Red indicates off Green indicates on.

SVA - Indicates the status of solenoid A. Red indicates off Green indicates on.

SVB - Indicates the status of solenoid B. Red indicates off Green indicates on.

PSI Gauge - indicates main ram pressure.

Temp Gauge - indicates hydraulic fluid temperature.

Bale Counts - indicates the number of bales made during the shift

Stop Motors - Press this to stop all motors

Master Start - Press and hold for 20 sec to start the motors.

Manual Mode - Press to place baler into manual mode

Motor Will Start - indicates the time countdown to start when start button is depressed.

Ram Position - Indicates the position of the main ram.

MAIN SCREEN (CONTINUED)

Eject Position - Indicates the ejector ram position.

Door Position - Indicates the bale door position.

Hopper Level Photo Eye - Indicates the hopper material level. Red indicates material present. Green indicates no material.

Local Message Display - Displays warnings and faults.

Main - Press this button to go to the main screen.

Motor Alarms - Press this button to go to the motor alarm screen.

Clean Screen - Press this button to go to the clean screen. This screen allows the operator to clean the screen without pressing any operation buttons.

IO Status - Press this button to go to the IO status screen

Auto Main - Press this button to go to the Auto screen.

Security - Press this button to go to the security screen.

Data - Press this button to go to the data screen.

Diagnostics - Press this button to go to the diagnostics screen.

Motor Controls - Press this button to go to the motor control screen.

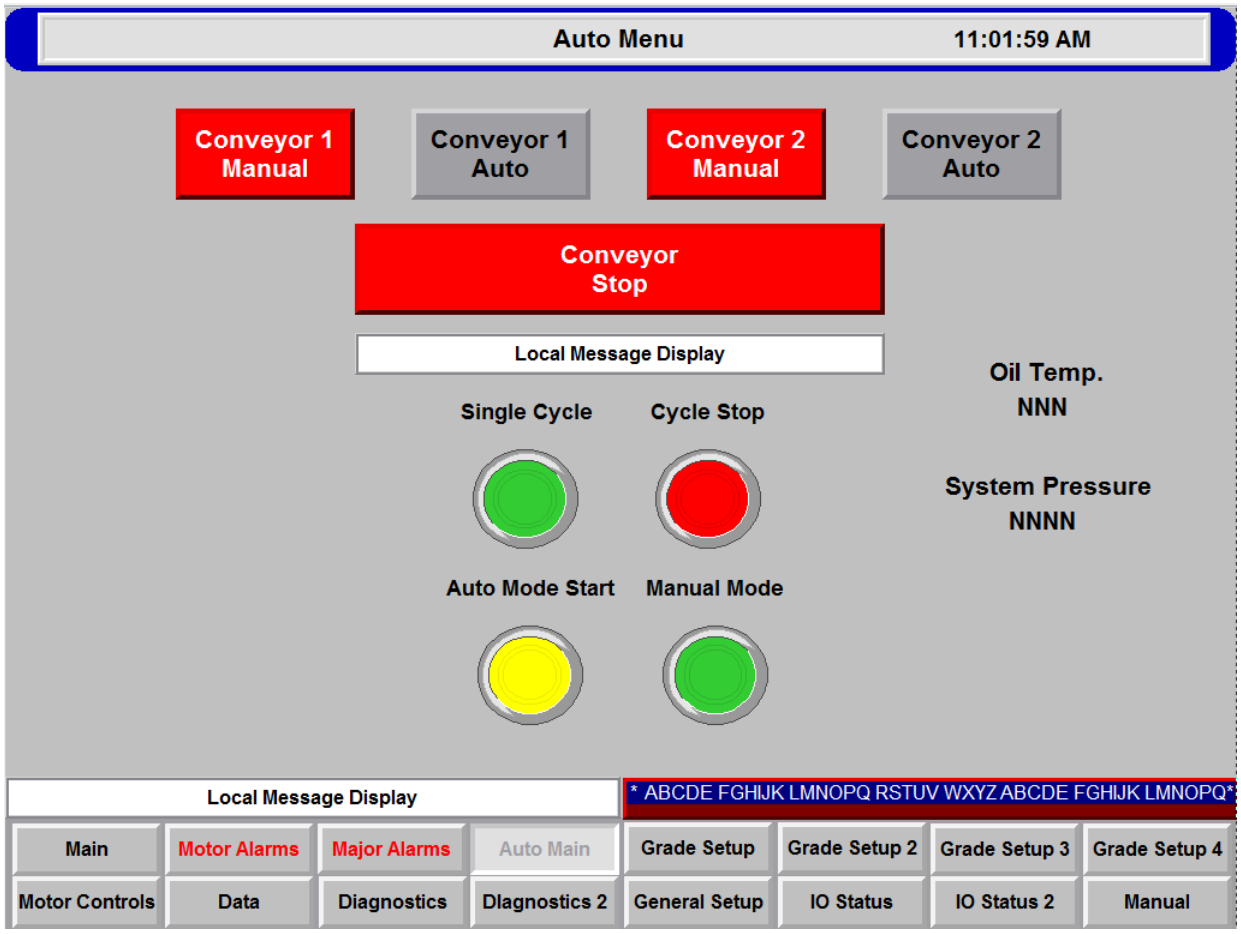
Manual - Press this button to go to the manual screen.

General Setup - Press this button to go to the general setup screen.

Grade Setup 1 2 3 and 4 - Press this button to go to the grade setup screen. The Grade setup screens are where each material is setup for pressure, bale made position, bale size, etc.

Diagnostics 2 - Press this button to go to the Diagnostics 2 Screen.

AUTO SCREEN



Conveyor 1 Manual - Press this button to run conveyor 1 in manual.

Conveyor 1 Auto - Press this button to run conveyor 1 in auto.

Conveyor 2 Manual - Press this button to run conveyor 2 in manual.

Conveyor 2 Auto - Press this button to run conveyor 2 in auto.

Conveyor Stop - Press this button to stop the conveyor function.

Local Message Display - This window displays warnings and faults.

Single Cycle - Press this button to run the main ram one cycle.

Cycle Stop - Press this button to stop the main ram cycle.

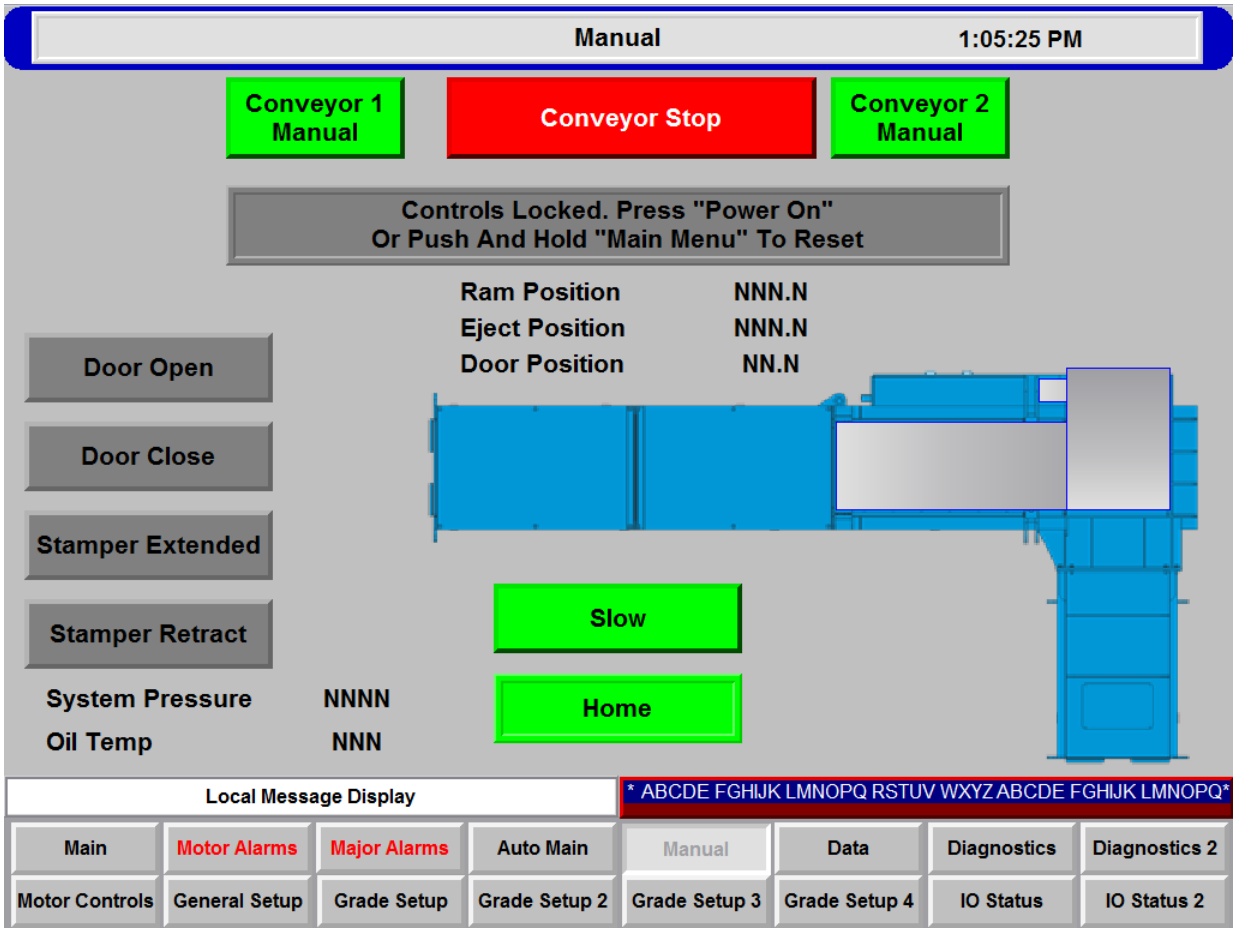
Auto Mode Start - Press this button to start in auto mode.

Manual Mode - Press this button to start in manual mode.

Oil Temp - This displays the hydraulic oil temperature.

System Pressure - This displays the system oil pressure.

MANUAL SCREEN



Conveyor 1 Manual - Press this button to start conveyor 1 in manual.

Conveyor Stop - Press this button to stop the conveyor operation.

Conveyor 2 Manual - Press this button to state conveyor 2 in manual.

Door Open - Press this button to open bale door.

Door Close - Press this button to close the bale door.

Stamper Extend - Press this button to extend the stamper.

Stamper Retract - Press this button to retract the stamper.

System Pressure - This displays the system oil pressure.

Oil Temp - This displays the hydraulic oil temperature.

Ram Position - Indicates the position of the main ram.

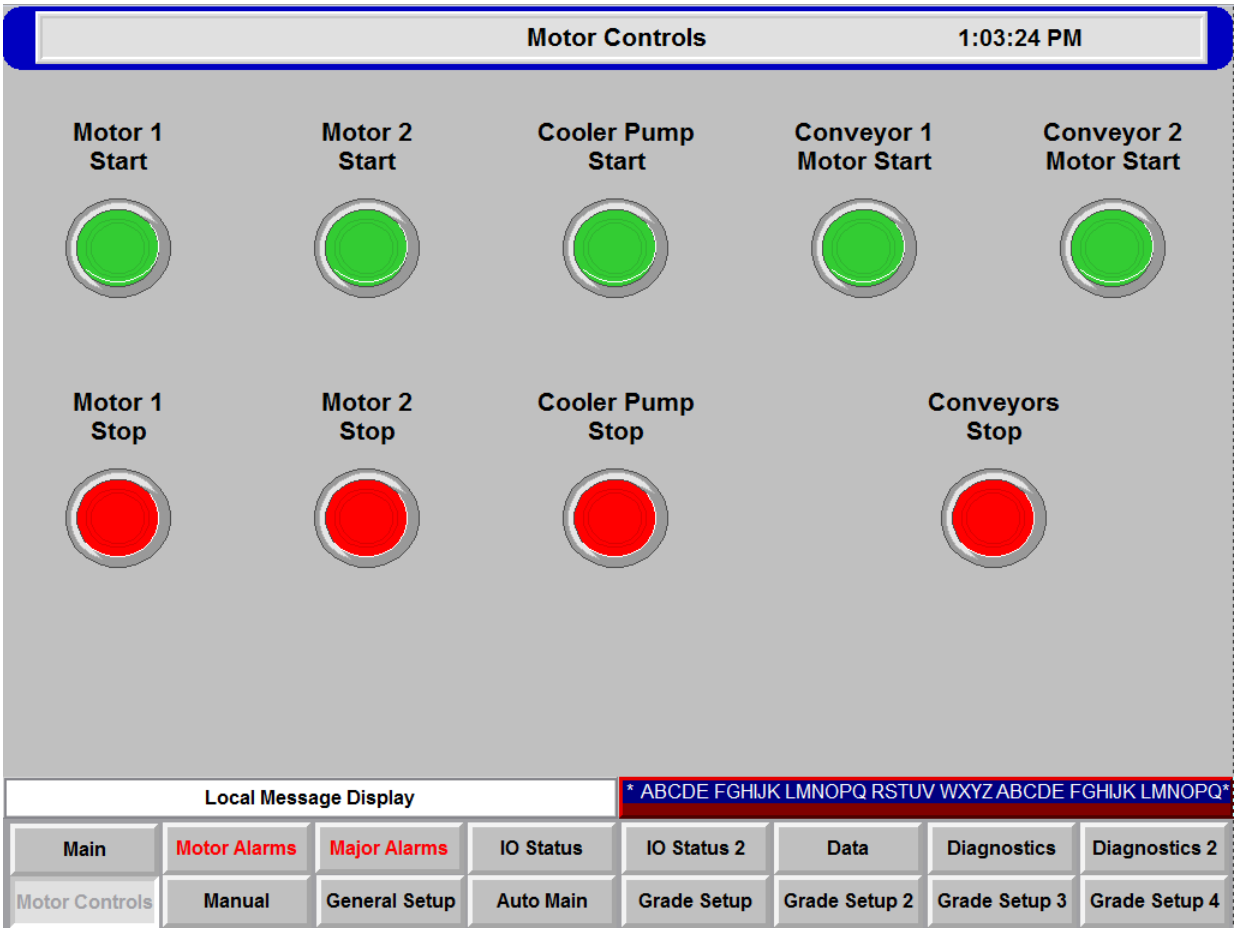
Eject Position - Indicates the ejector ram position.

Door Position - Indicates the bale door position.

Slow - This indicates the operator has pressed it and is running with reduced hydraulic oil flow.

Home - This indicates when the main ram is at home position and a bale can be ejected.

MOTOR CONTROLS SCREEN



Motor 1 Start - Press this button to start motor 1.

Motor 1 Stop - Press this button to stop motor 1.

Motor 2 Start - Press this button to start motor 2.

Motor 2 Stop - Press this button to stop motor 2.

Cooler Pump Start - Press this button to start the oil cooler pump.

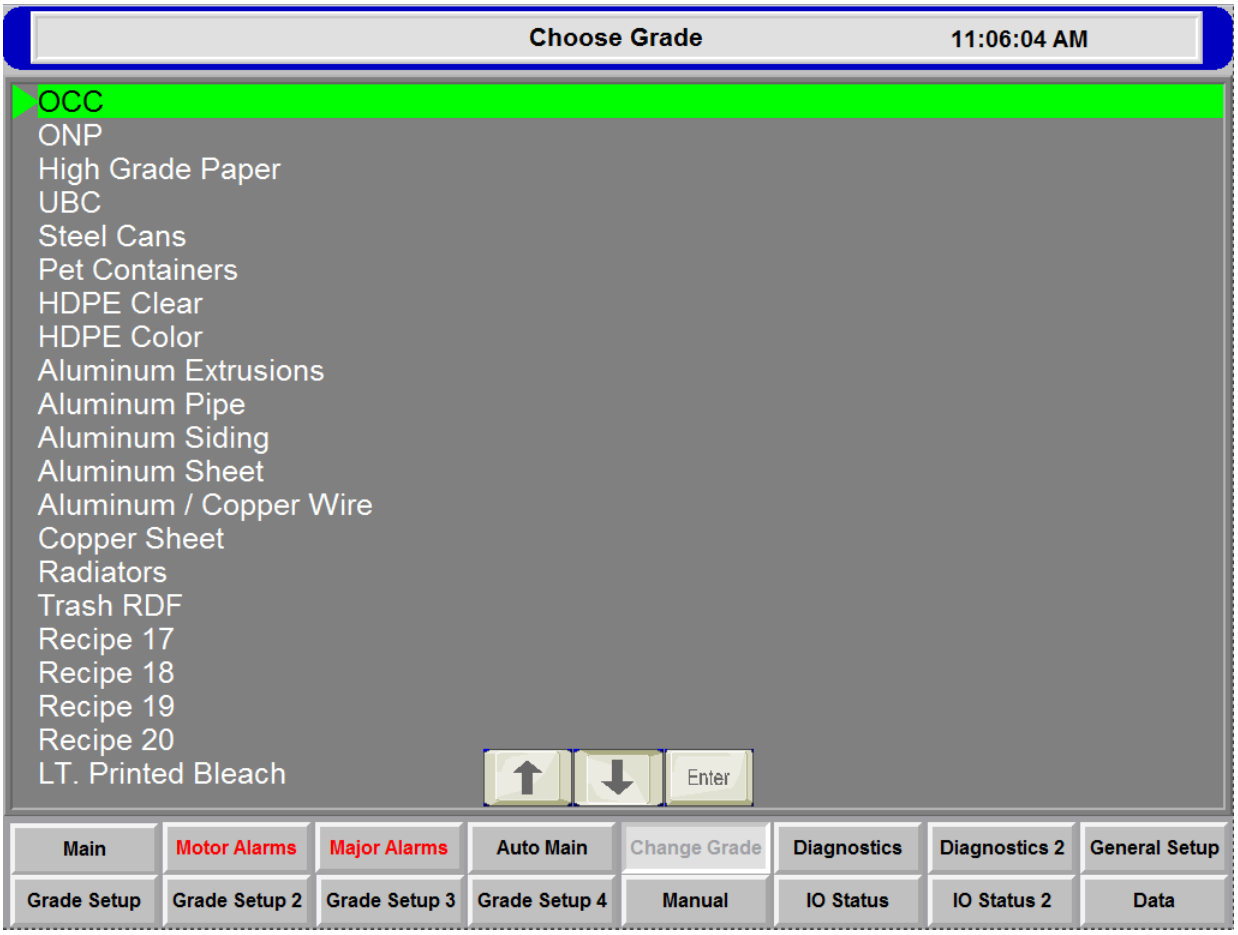
Cooler Pump Stop - Press this button to stop the oil cooler pump.

Conveyor 1 Motor Start - Press this button to start conveyor 1 motor.

Conveyor 2 motor Start - press this button to start conveyor 2 motor.

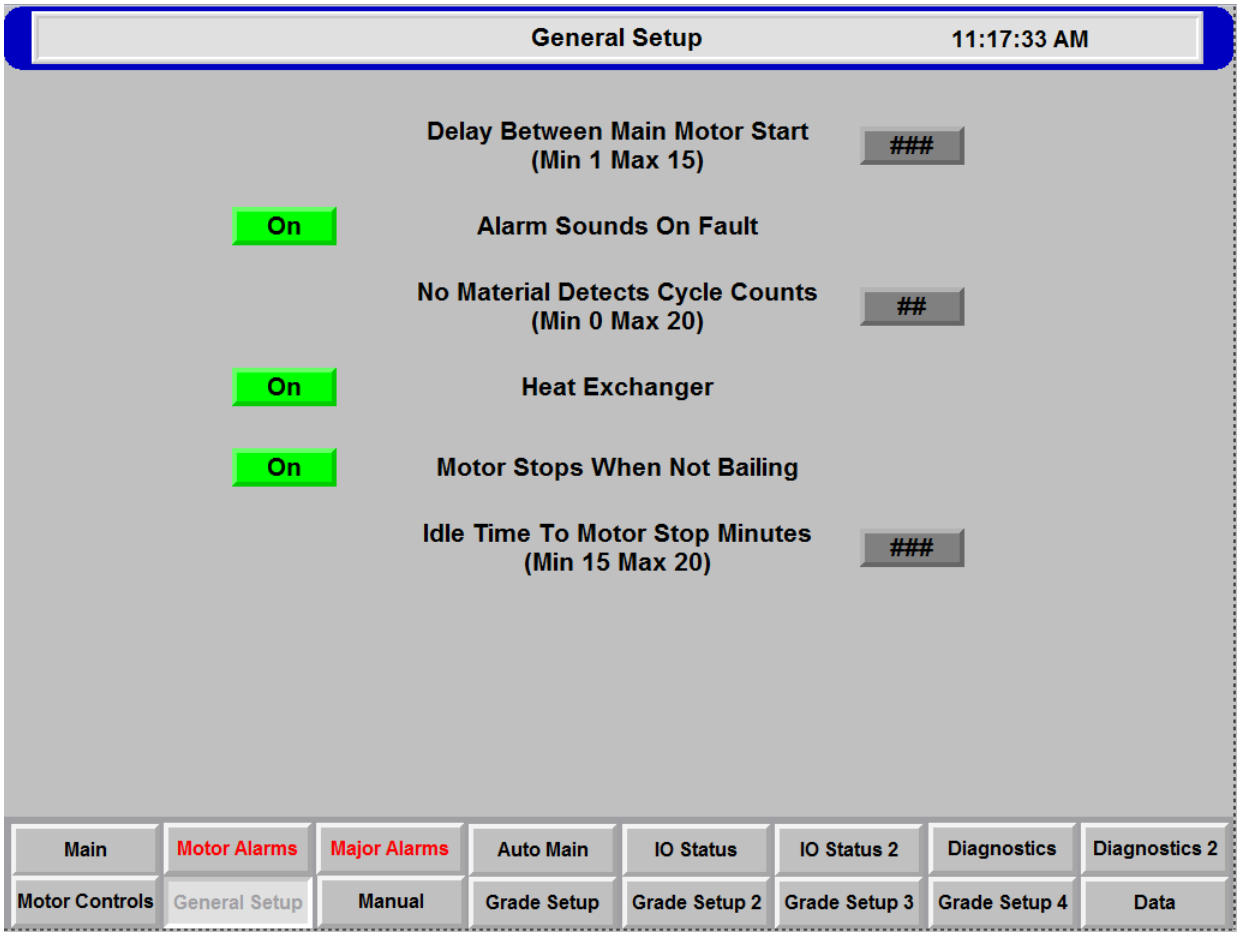
Conveyors Stop - Press this button to stop the conveyor operation.

CHOOSE GRADE SCREEN



Choose Grade Screen - this screen allows you to choose the commodity you desire to bale.

GENERAL SETUP SCREEN



Delay between Main Motor Start - press this button to choose the time delay for starting the main motor. “Min 1 sec to 15 Sec”

Alarm Sounds on Fault - Press this button to choose the audible alarm on/off on fault.

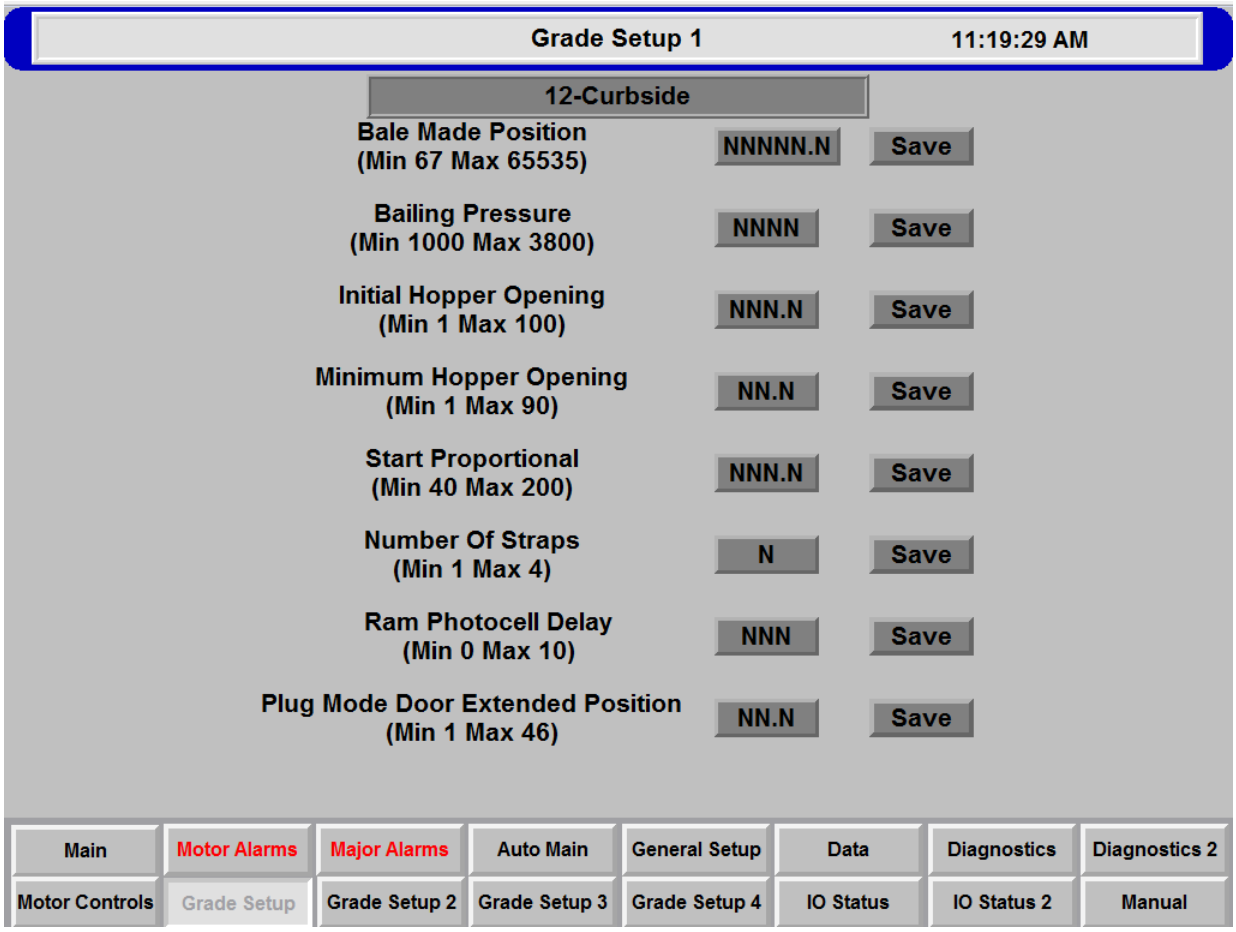
No Material Detects Cycle Counts - Press this button to choose the number of cycles allowed to run with no material detected. “Min 0 to Max 20”

Heat Exchanger - Press this button to turn the heat exchanger on or off.

Motor Stops When Not Bailing - press this button to choose if the motor turns off when not baling.

Idle Time To Motor Stop Minutes - Press this button to choose the time desired for the motor to continue to run while baler is idle. “Min 15 minutes to Max 20 minutes”.

GRADE SETUP SCREEN



Bale Made Position - Press this button to choose the desired bale made position. “Min 67 Max 65535”

Bailing Pressure - Press this button to choose the bailing pressure. “Min 1000 Max 3800”

Initial Hopper Opening - Press this button to choose the position of the main ram in the fully retracted position. “Min 1 Max 100”

Minimum Hopper Opening - Press this button to choose the starting position of the main ram. “Min 0 Max 90”

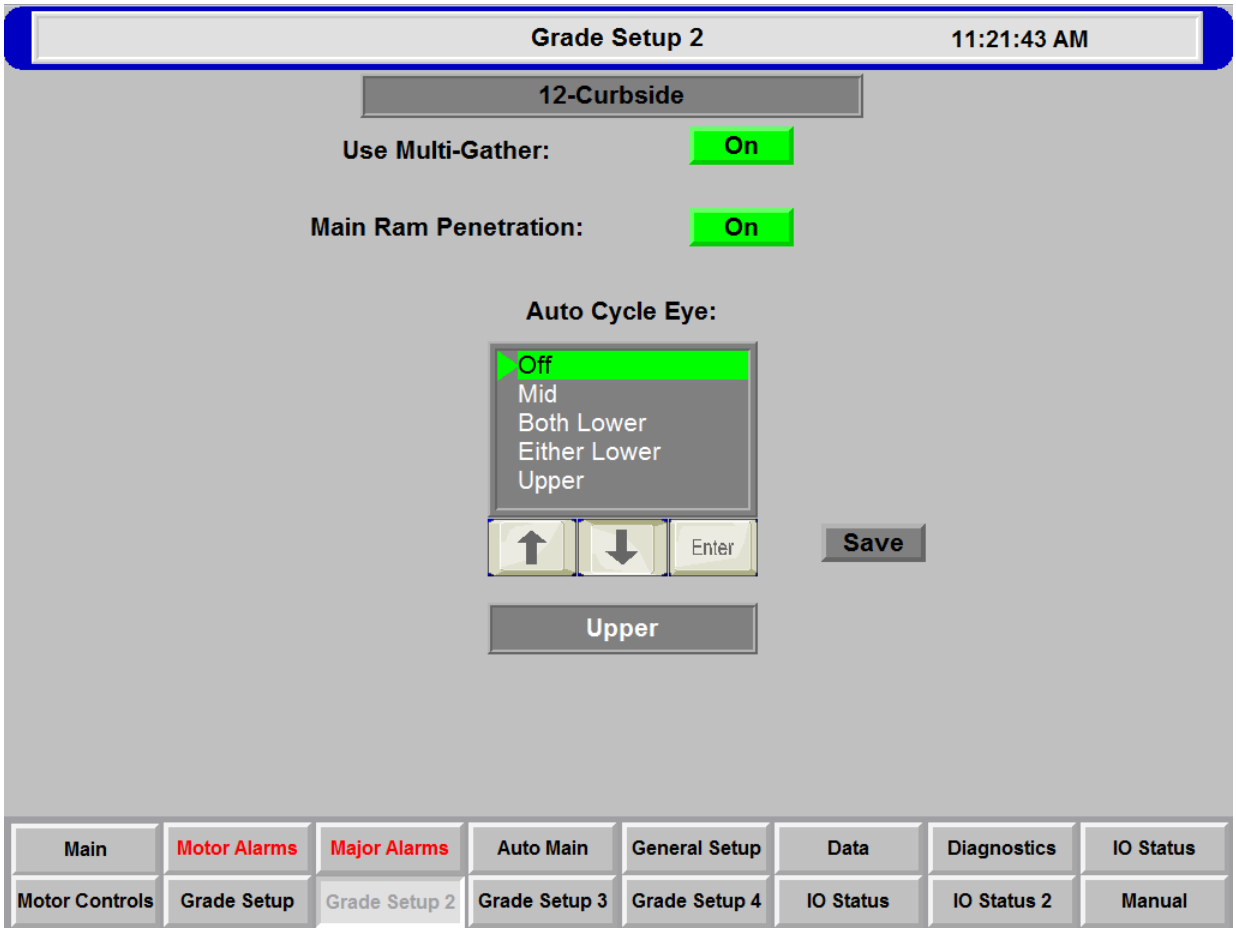
Start Proportional - Press this button to choose the calculated stroke of the main ram, to control the flow of material into the charge chamber.

Number of Straps - Press this button to select the number of straps to be put on the bale.

Ram Photocell Delay - Press this button to choose the desired time for the photocell to be blocked before the ram activates. “Min 0 Max 10”

Plug Mode Door Extended Position - Press this button to choose the desired range that the bale door penetrates into the bale “to plug the bale” (Min 1 Max 46).

GRADE 2 SETUP SCREEN

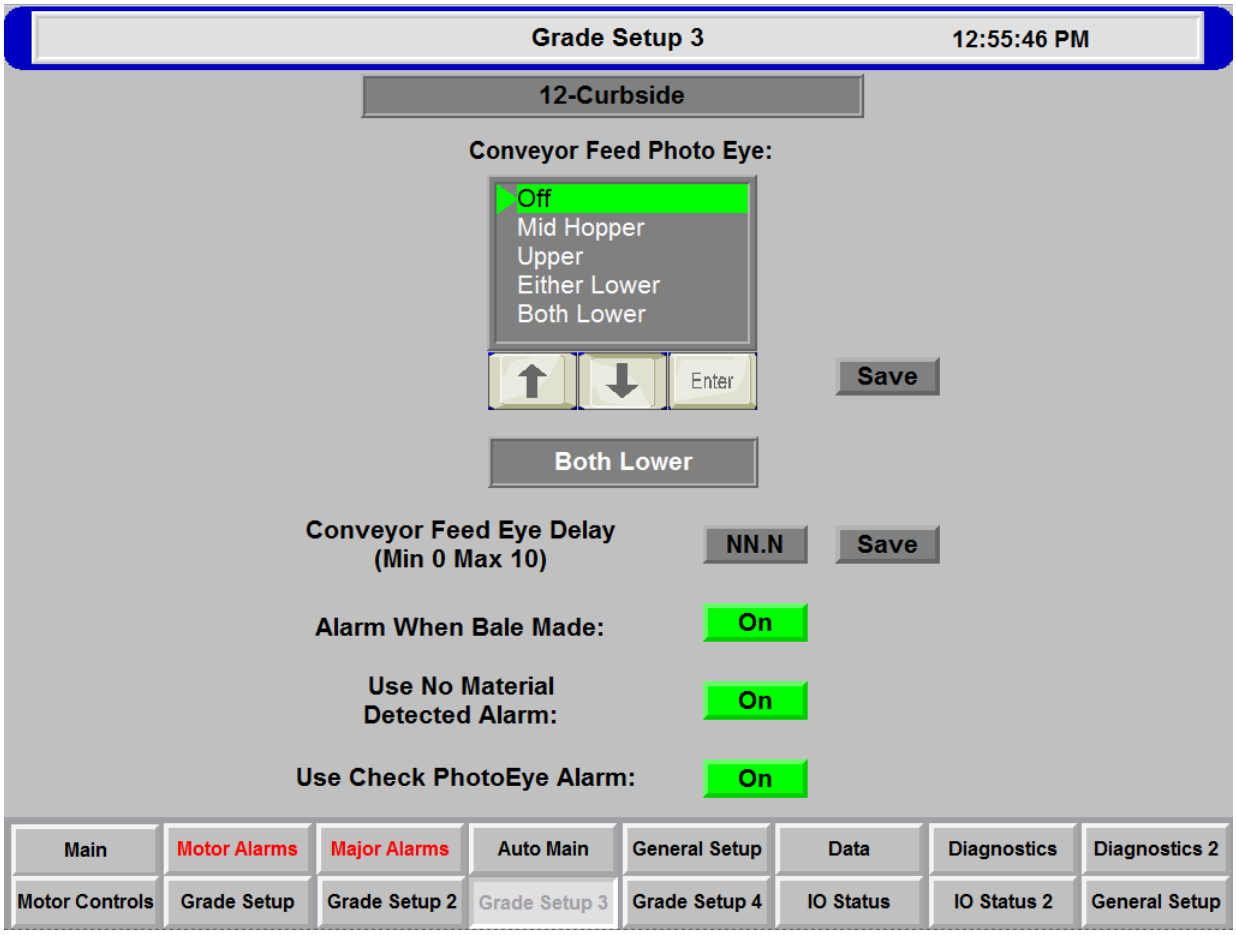


Use Multi-Gather - press this button to turn the multi gather on/off. By turning on the ram extends just past the shear blade, in order to build bale density and speed up production. When off the ram extends fully each cycle.

Main Ram Penetration - Press this button to turn the main ram penetration on/off. Choosing on will allow the main ram to penetrate fully into the bale chamber. Choosing off will allow the main ram to penetrate ½ of the bale chamber.

Auto Cycle Eye - Press this button to change the bale settings according to the baling material size. EX. When bailing larger material such as corrugated cardboard, select the “Upper” photocell. When bailing smaller material such as office paper, select “either lower” or “both lower” photocells.

GRADE 3 SETUP SCREEN



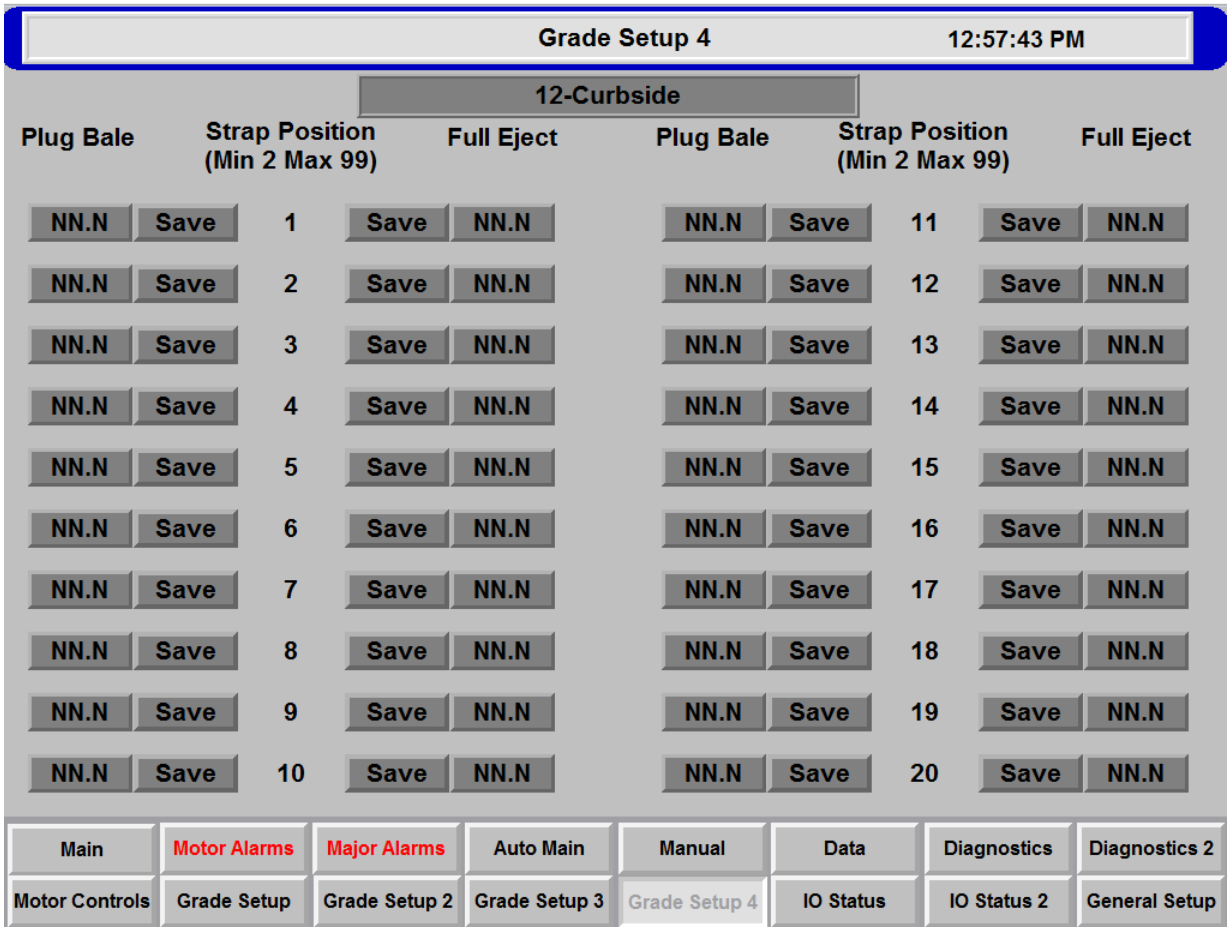
Conveyor Feed Photo Eye - The selection on this list determines which photocell stops the conveyor for the duration of the ram cycle.

Conveyor Feed Eye Delay - Press this button to display a numeric keypad to select the length of time the photocell is blocked before the conveyor stops.

Alarm When Bale Made - Press this button to select alarm on/off. When on the alarm will sound when a bale has been made. When off the alarm will not sound.

Use Check PhotoEye Alarm - Press this button to turn the photoeye on/off. When on the alarm will sound if the upper photocell is blocked, but the bottom photocell is clear. When off no alarm will sound, and no fault will be given.

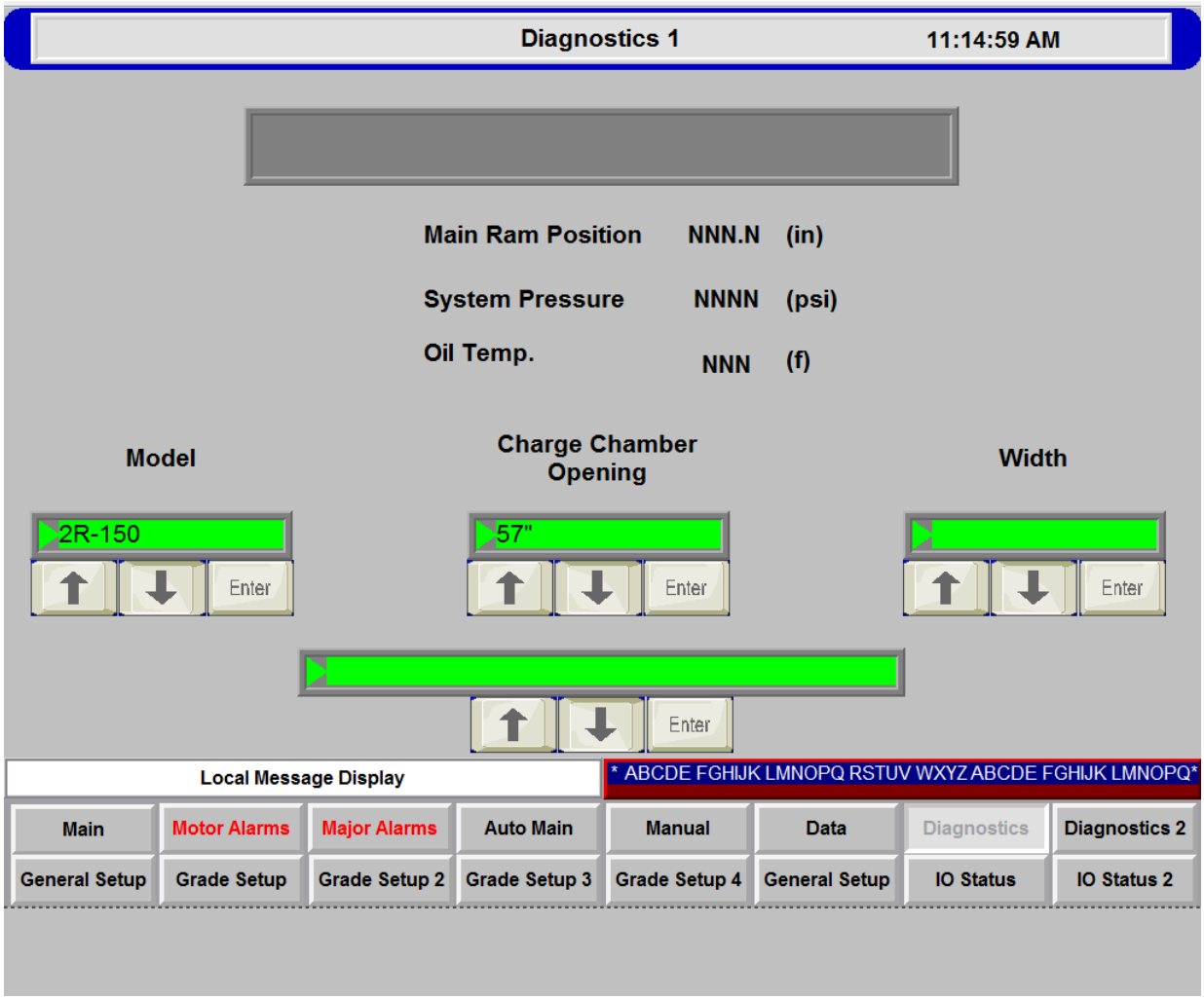
GRADE 4 SETUP SCREEN



Press the number boxes to display a numeric keypad where you can select the bale positions at which you want straps to be placed around the bale. The range for both “plug Bale” and “Full Eject” are 2-99. Although 99 exceeds the maximum position, it can be selected for straps that will not be used. EX. If you only want to use two straps on the bale, then select 99 as the position for 3-20.

The position at which strap 1 is placed on the bale can be determined in Manual Mode by recording the ejector ram position shown from the first ejected bale. Input this number in the associated number box and the strap will be placed when the bale reached that position.

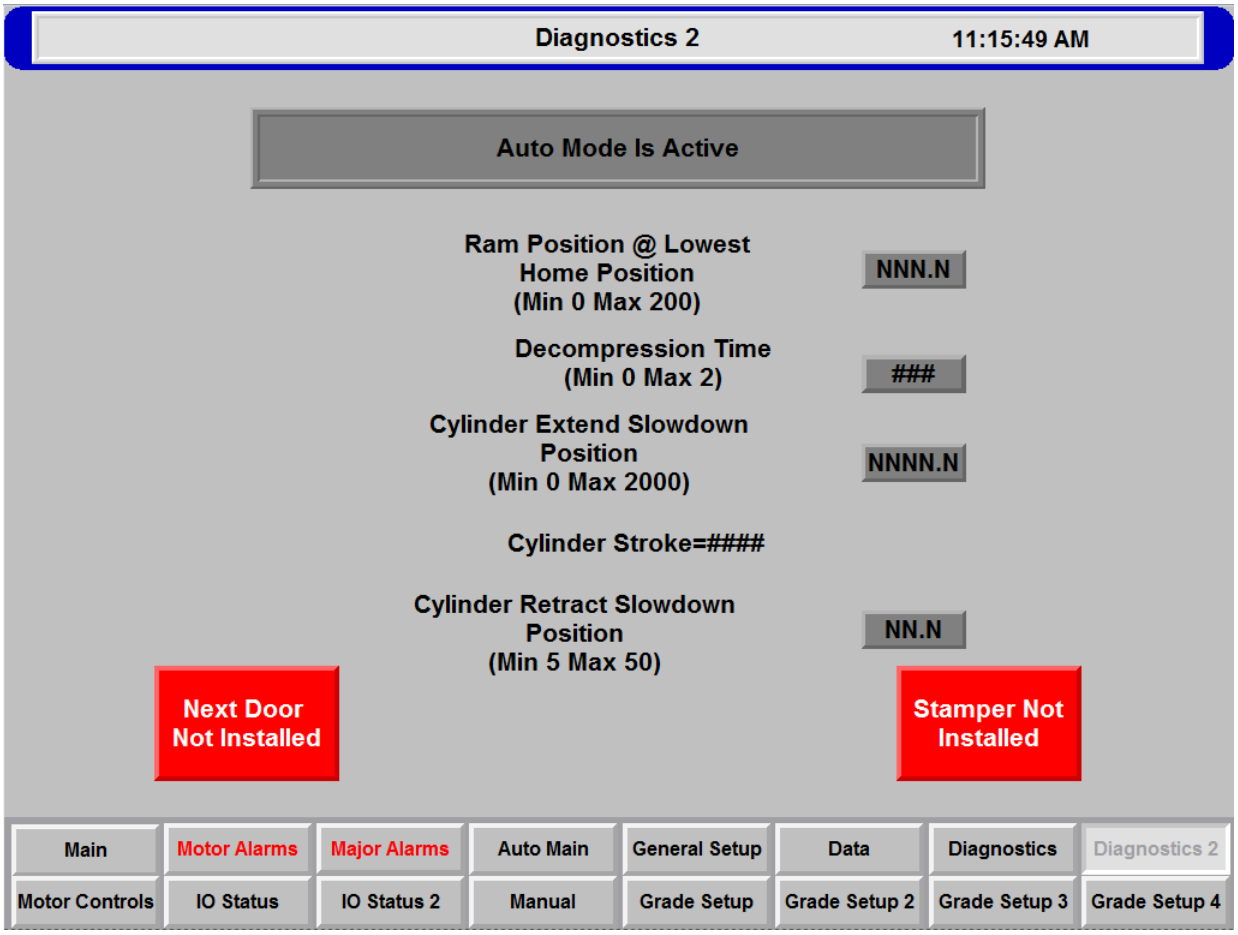
DIAGNOSTICS SCREENS



NOTICE

The diagnostics screens are accessible only by Marathon personnel. In the event that you need to access these screens, please call our service department at 877-258-1105 and proper instructions will be given accordingly.

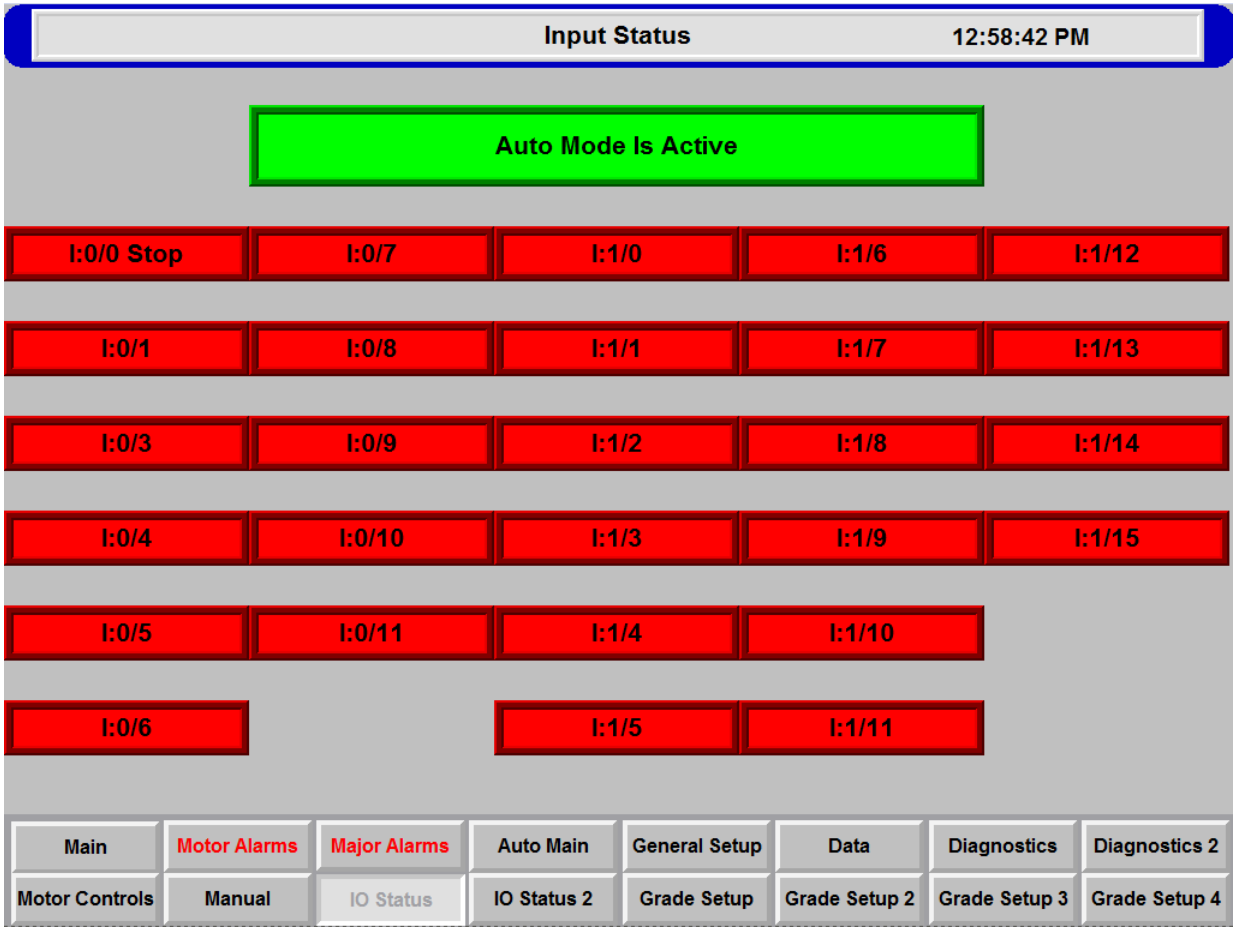
DIAGNOSTICS 2 SCREEN



NOTICE

The diagnostics screens are accessible only by Marathon personnel. In the event that you need to access these screens, please call our service department at 877-258-1105 and proper instructions will be given accordingly.

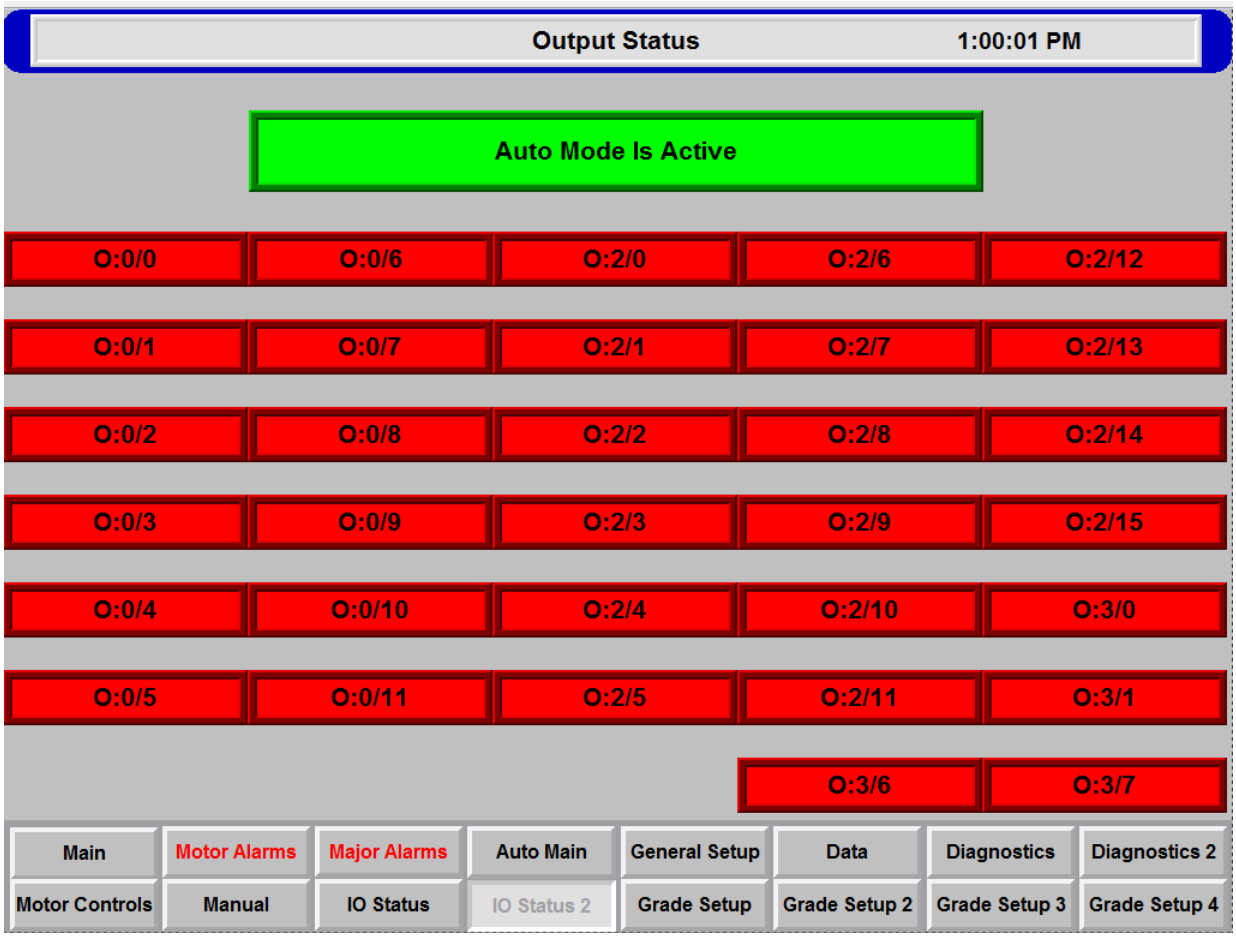
INPUT STATUS SCREEN



NOTICE

The Input/Output screens coincide with the PLC and electrical schematic to show which components have power to them illuminating green. If there is no power to the specific input/output, the box will be red.

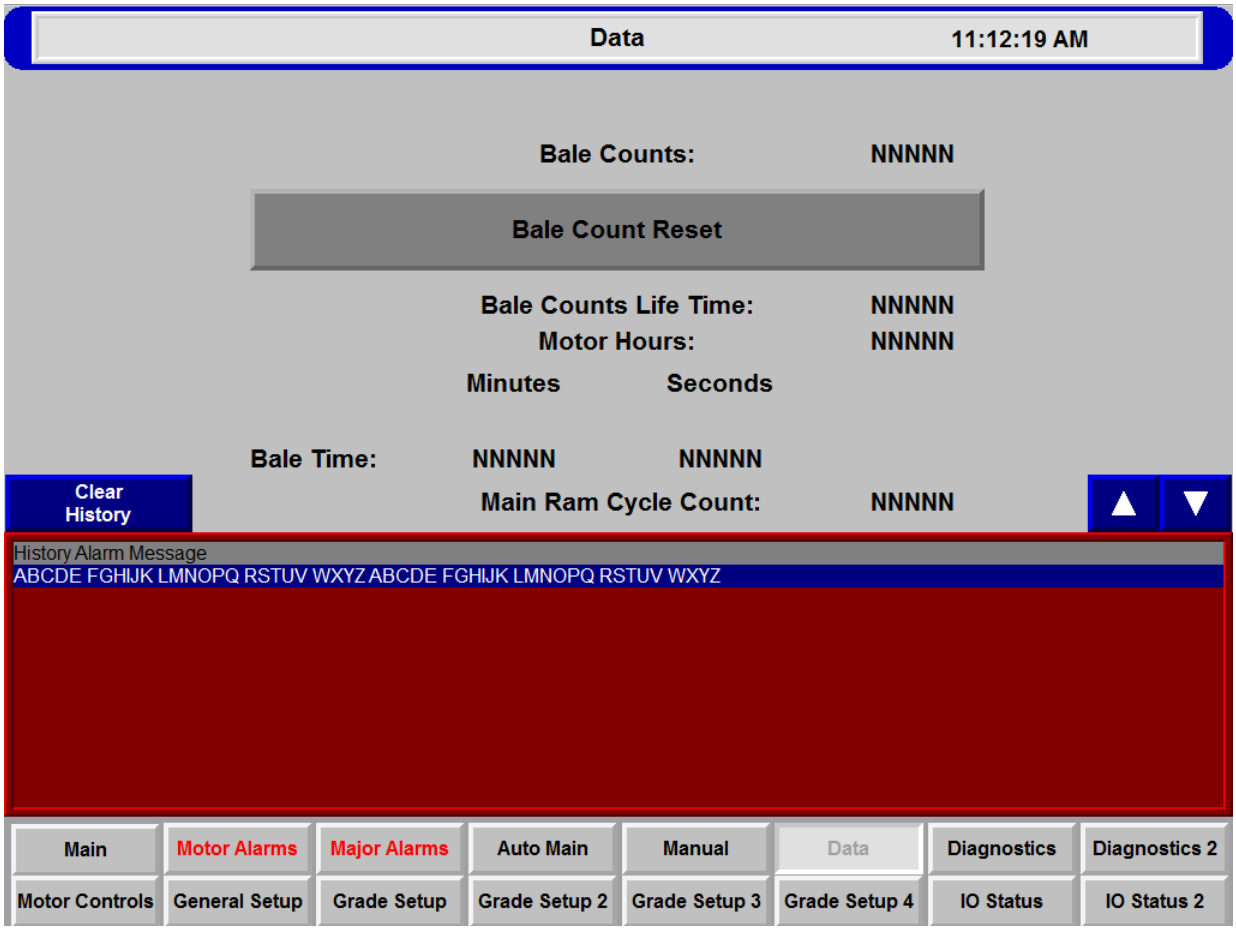
OUTPUT STATUS SCREEN



NOTICE

The Input/Output screens coincide with the PLC and electrical schematic to show which components have power to them illuminating green. If there is no power to the specific input/output, the box will be red.

DATA SCREEN



Bale Counts - Indicates the number of bales made since the last reset.

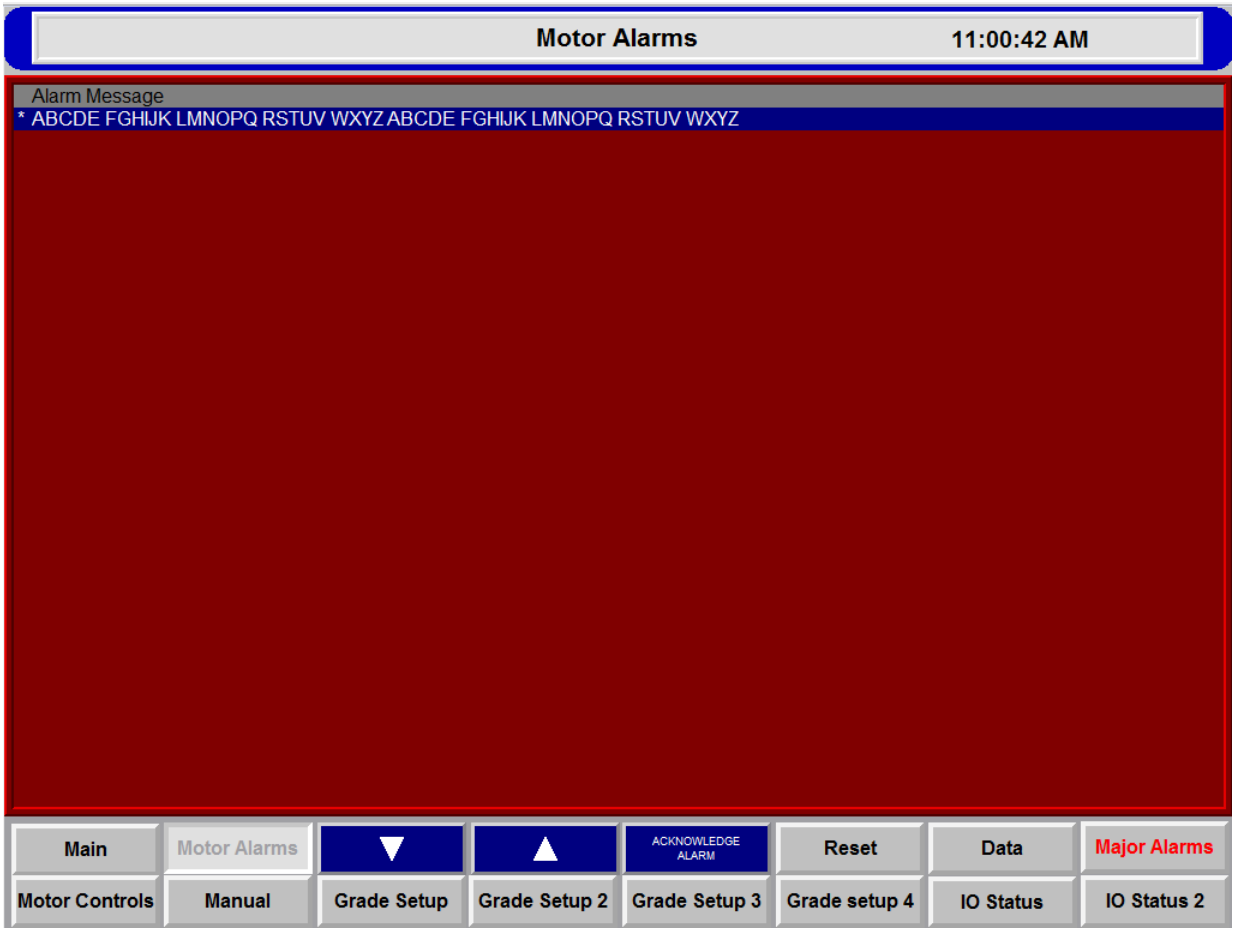
Bale Count Reset - Press to reset the bale counter.

Bale Count Life Time - Indicates the number of total bales made during the life of the baler.

Motor Hours - Indicates the total number of hours the motors have been in operation.

Main Ram Cycle Count - Indicates the number of cycles the main ram has completed.

MOTOR ALARMS SCREEN

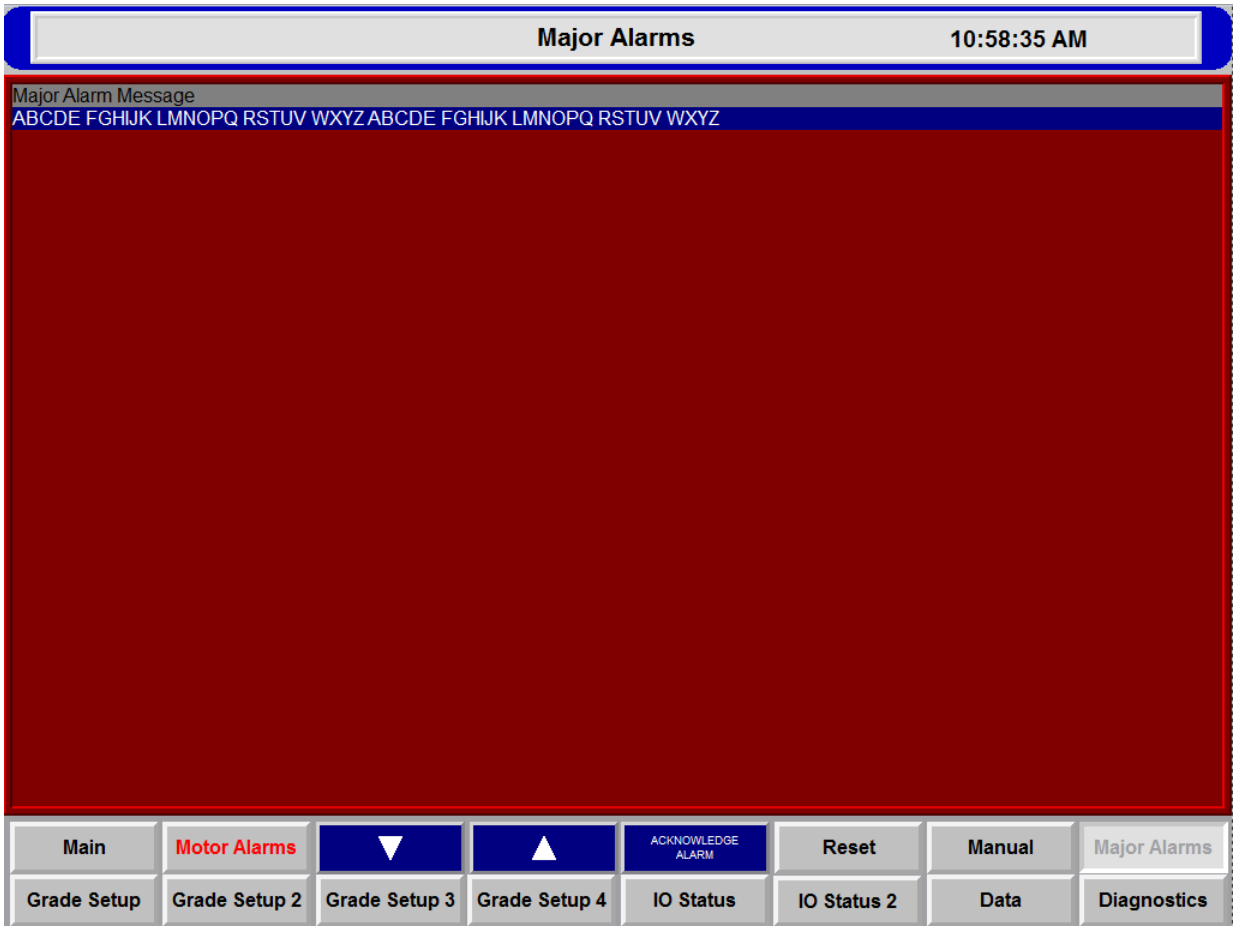


The motor alarm screen indicates that the machine has encountered a problem, and operation cannot continue until the fault is corrected. The date and time of the alarm will be displayed.

Alarm List - Scroll through the faults using the up and down arrows on the right.

Acknowledge Alarm - Press this button to acknowledge the alarm.

MAJOR ALARMS SCREEN

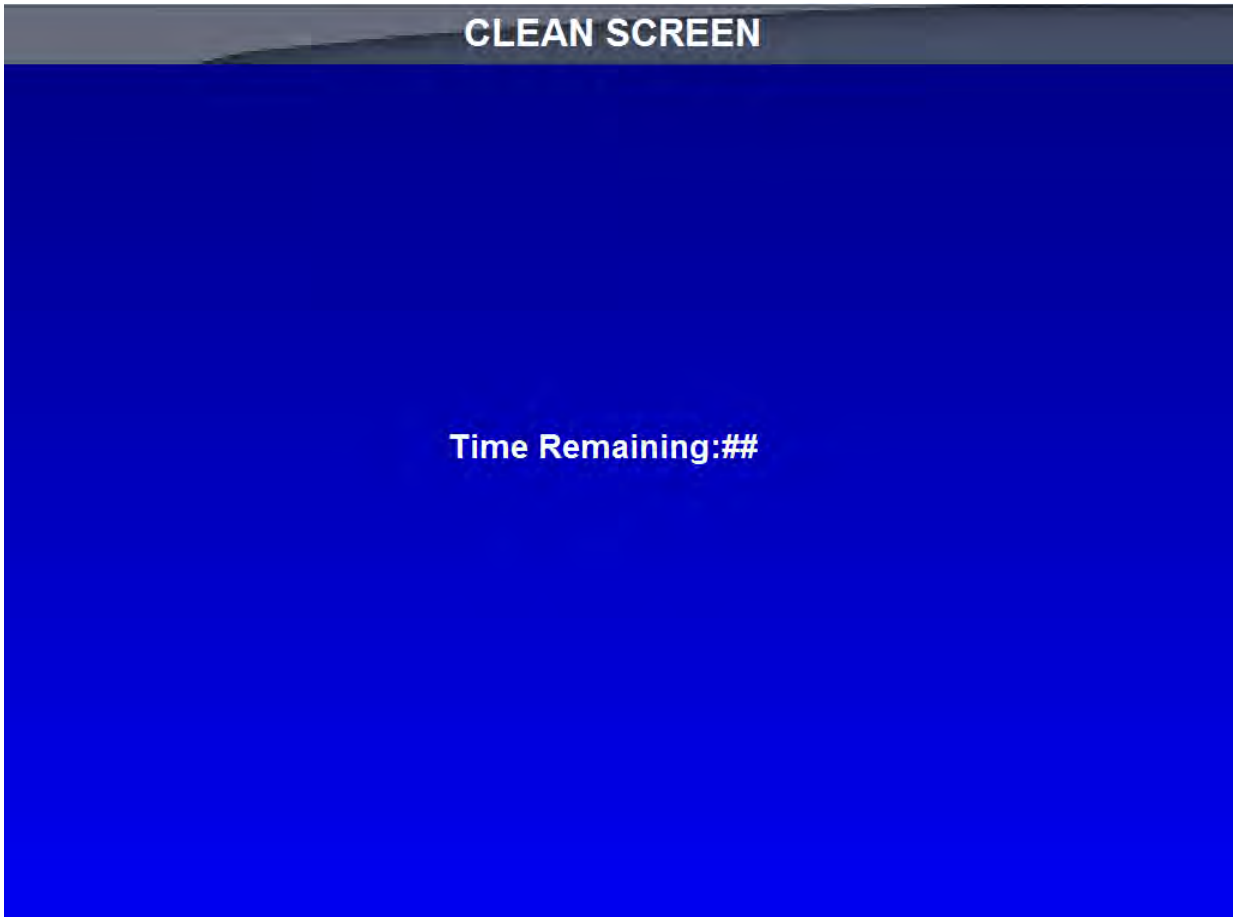


The major alarm screen indicates that the machine has encountered a problem, and operation cannot continue until the fault is corrected. The date and time of the alarm will be displayed.

Alarm List - Scroll through the faults using the up and down arrows on the right.

Acknowledge Alarm - Press this button to acknowledge the alarm.

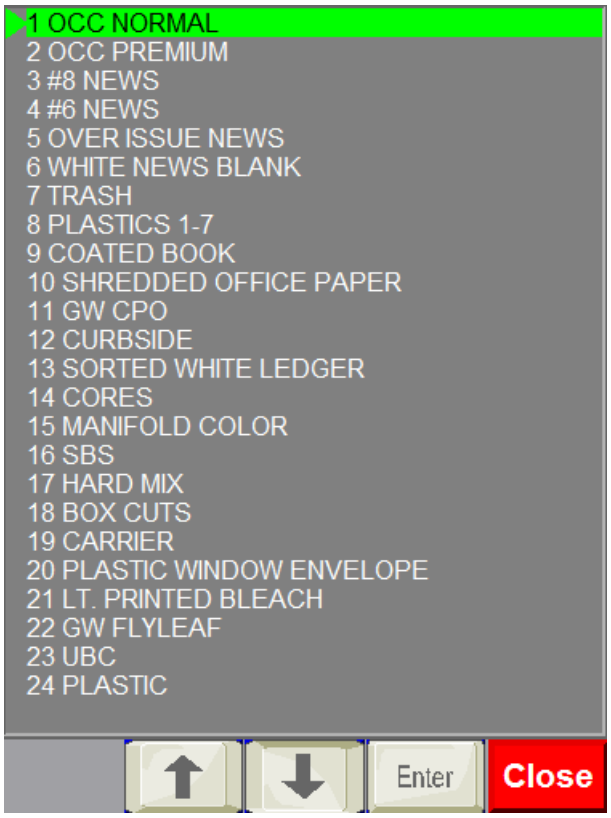
CLEAN SCREEN



This screen allows the operator to clean the screen without pressing any operation buttons.

The time remaining shows the operator how much time is left for cleaning before the screen automatically returns to an operation screen.

COMMODITY POP UP SCREEN



This screen allows the operator to change to different materials.

SECURITY SCREEN

Login - Press for entering the password to log in to the interface

Logout - Press when the operator or supervisor is ready to log out of the interface.

Main - Press this to go to the Main screen.

1st, 2nd, 3rd Begin - The operator must begin a shift prior to operation for correct reporting. This allows this time to be stored for Daily reports.

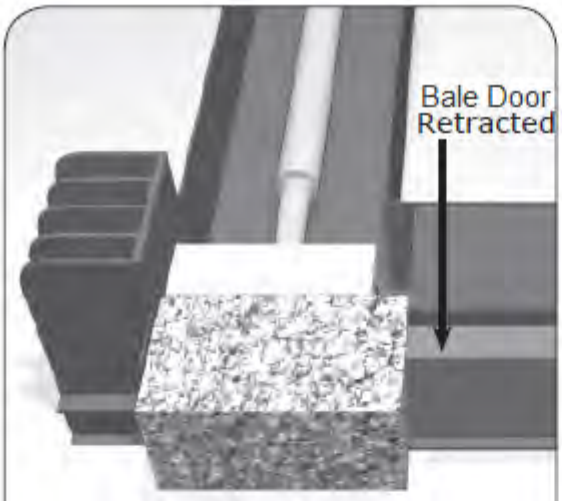
1st, 2nd, 3rd End - The operator must end the shift for correct reporting. This allows this time to be stored for Daily reports.

Documents - Press this button to view any stored documents.

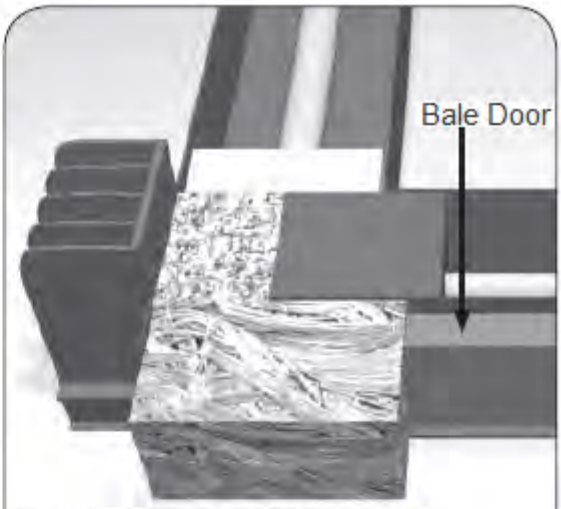
CONTROL PANEL DIAGRAM SCREEN

1. **Touch Screen** - You must sign in with a username and a password. Most of the baler's operations can be controlled from here. See **Touch Screen Controls - Security Screen** 62.
2. **Joysticks** - Used to manually control both the main ram and the ejection ram. The touch screen controls must be set to "Manual Mode" for these to function.
3. **Controls ON/OFF** - This key switch turns power to the programmable controller either ON or OFF. The switch must be in the "ON" position for all other controls to function.
4. **Power On** - Push and hold this button for 20 seconds to turn the power on to the operator controls.
5. **Strap** - Push this button to activate the tier and put the preset number of Straps on the bale as it is ejected onto the bale table.
6. **Emergency Stop** - Push this button to stop the machine in the event of an emergency or any time the machine needs to be stopped.

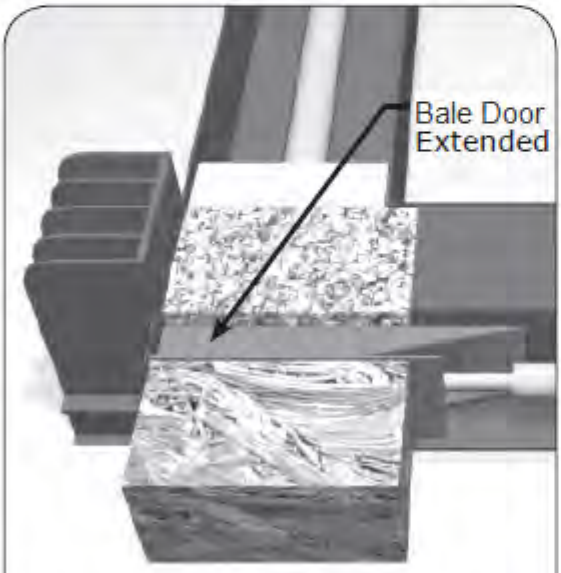
BALE DOOR DIAGRAM



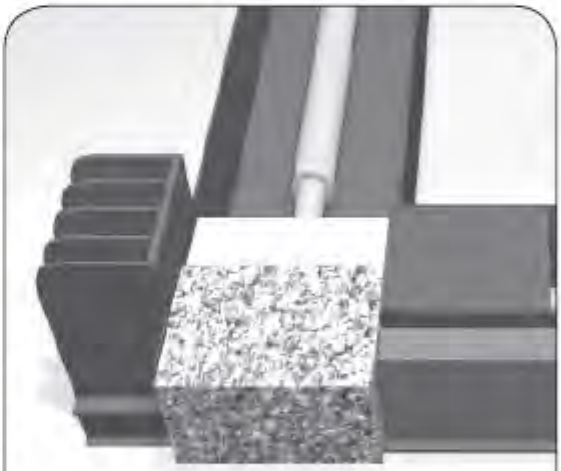
Oversized Bale Release - Device allows you to eject an oversized bale (up to 9″) from standard size.



Bale Clamp - Holds on to ejected bale to help form a square end on the next bale.



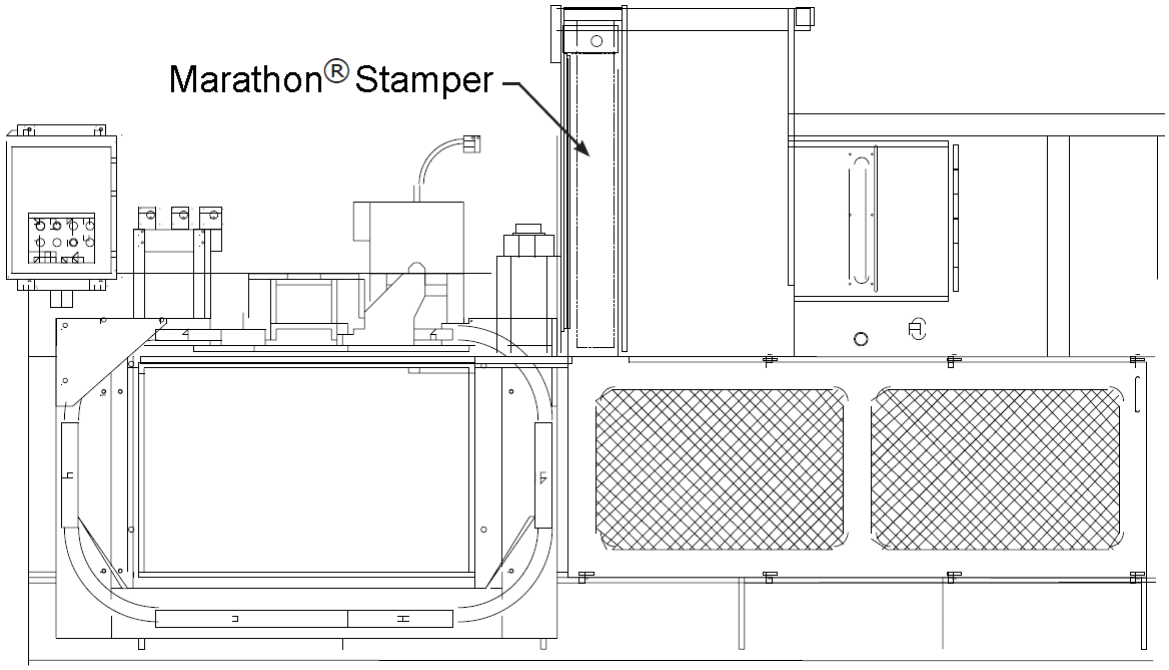
Bale Wall - Closes off the ejector nozzle of compression chamber to allow for making a square bale.
Separation Door - Separates commodities to avoid contamination.



Baler Sizer - Allows you to program a bale width of 37″ to 46″ on a narrow model or 51″ to 60″ on a wide model.

MARATHON® STAMPER DIAGRAM (OPTIONAL EQUIPMENT)

The GALAXY 2R Balers feature an optional “Stamper”, which moves up and down, clearing away any material building up on the body shear blade.



The stamper works as a vertical ram that is controlled from the touch screen. Refer to **Manual Menu Screen**. Its purpose is to clear away material jams on the Body Shear Blade.

JAM PREVENTION

⚠ WARNING

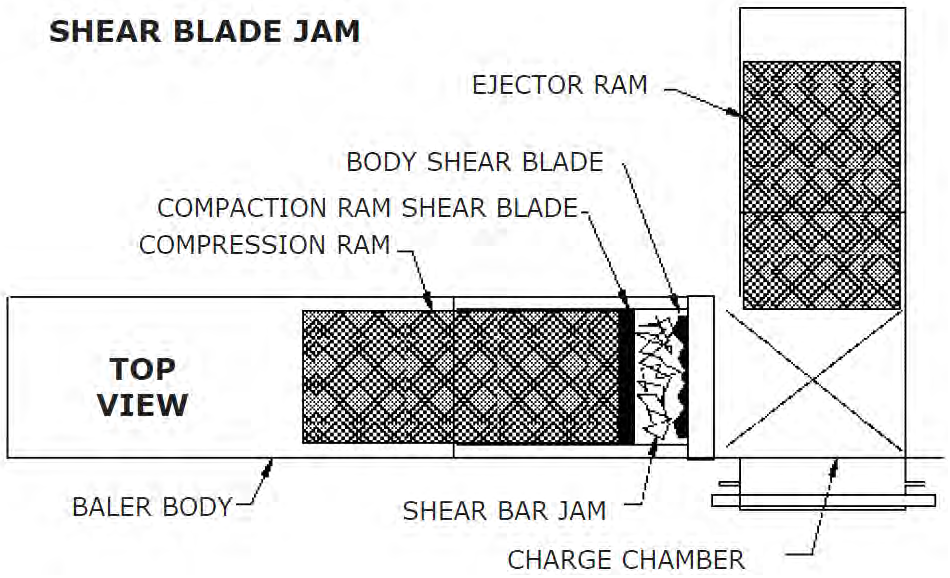
Do not enter the baler for any reason until the baler has been locked-out and tagged-out per **Lock-Out/Tag-Out Instructions**.

There are two types of jams which could occur with a two-ram baler - a jam at the shear blades and an oversize bale which is difficult to eject. The following steps may be taken to prevent the likelihood of a jam:

1. Presort the material. Remove any questionable objects or material. Make sure the material is all the same general type and composition.
2. Regulate the material flow into the baler feed hopper. Keep the flow even. Do not overfill the feed hopper.
3. Properly maintain the shear bar and compression ram hold down bars. A good cutting edge on the shear bar reduces the possibility of jamming.

The best prevention of baler jams is good judgment. An operator's familiarity with the material variances, baler limitations, and close attention to material flow reduces the possibility of a jam. It is much easier to make a couple of extra strokes with the compression ram than it is to clear out a jam.

REMOVING SHEAR BLADE JAM



If the shear blade fails to cut the material in the automatic mode, turn off the feed conveyors and switch the baler to Manual Mode. Retract the compression ram a short distance to allow material to fall away from the shear bar on the baler body. Use the MAIN RAM - COMPRESS/RETRACT control lever to cycle the ram forward. Watch the ram to see if it moves forward and shears the jam. This procedure may have to be repeated a couple of times to clear the jam. If the jam fails to clear:

1. Retract the compression ram to the full retract position.
2. Shut down the machine and follow the **Lock-Out/Tag-Out Instructions**. Never enter the baler for any reason until the baler has been locked-out and tagged-out.

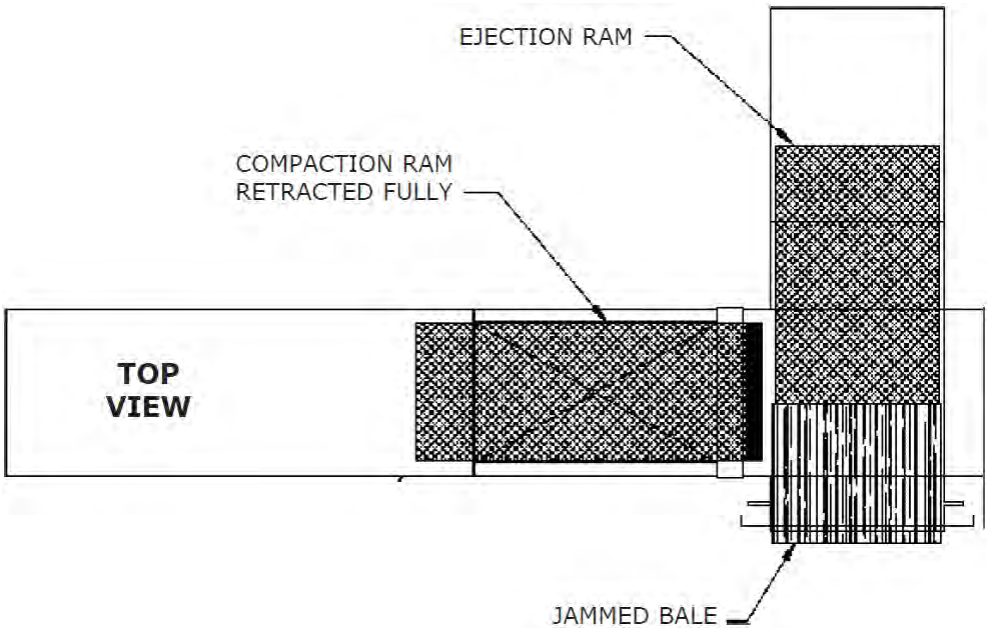
Remove material from the feed hopper and clear the obstruction.

REMOVING OVER-SIZED BALE JAM

⚠ 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**.

The following instructions explain how to remove a jammed bale.



1. If the bale fails to eject in Automatic Mode, set the baler to Manual Mode.
2. Retract the compression ram to the full retract position to relieve pressure on the bale.
3. Use the EJECTOR EXTEND button to eject the bale, and use the STRAP BUTTON to apply wire tie straps manually as the bale is ejected.
4. In the unlikely event that the bale does not eject using the EJECTOR EXTEND button, shut the baler down.
5. Lock-Out/Tag-Out the baler. See **Lock-Out/Tag-Out Instructions**. Never enter the baler for any reason until the baler has been locked-out and tagged-out.
6. Remove the excess material.

CHANGING MATERIALS AND BALER SHUTDOWN

A. Changing Materials

- To prevent contamination between bales, stop the supply of the present material to the feed conveyor. Run the conveyor empty into the baler feed hopper. Make sure the conveyor is cleared of all material. Turn the conveyor off.

NOTICE

If enough material remains to complete one bale, finish that bale.

- Make sure the feed hopper is cleared of all material by manually cycling the compression ram. Place the compression ram in the HOME position and then eject and tie off the bale.
- Change the material. Restart the feed conveyor and resume baling with the next material.

B. Baler Shutdown

1. Eject the bale.
2. Stop the conveyors feeding the baler.
3. Position the ejector ram in the retract position.
4. Position the compression ram in the full extend position.
5. Rotate the CONTROLS key switch to the OFF position and remove the key.
6. Turn the main disconnect switch to the OFF position and lock as shown in the **Lock-Out/Tag-Out Instructions**.

⚠ WARNING

If any maintenance or service is to be performed on the baler, complete Lock-Out/Tag-Out is required.

7. Clean up around the bale exit and automatic wire tier. Perform any other necessary clean up, such as behind the main ram (requires complete Lock-Out/Tag-Out), around the baler, and the feed conveyor.
8. Turn the main disconnect switch back ON so that the oil heaters may function, if required.

SECTION 4
SERVICE

CONTACT INFORMATION

MARATHON®
A DOVER COMPANY

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)

MAINTENANCE SCHEDULE

⚠ DANGER

Only authorized and trained personnel should perform the following procedures. Lock-Out/Tag-Out the baler per as specified in **Lock-Out/Tag-Out Instructions**.

Every 10 Hours of Operation

1. Verify ALL guards are in place and secured.
2. Check for oil leaks.
3. Check oil level and temperature in hydraulic reservoir. Note: Maintain oil level above 3/4 full (in sight gauge). Oil level should be checked with main ram and ejector ram in retracted position. Oil temperature should be below 160ºF.
4. Check all remote Emergency Stop locations. Note: Emergency Stops should not be obstructed, damaged, or depressed.
5. Make sure operator's platform and access steps (if so equipped) are free from hazards that could cause an accident.
6. Make sure there is an adequate supply of wire in wire tie strapper, and wire is correct gauge for tyer.
7. Clean lenses of photocells, sonic sensors, lasers and reflectors. Note: In a dusty application, it may be necessary to clean these devices and reflectors several times a day.
8. Clean radiator on oil cooler.
9. Oil wire tyer. Note: Under certain conditions it may be necessary to oil the wire tyer more often.

Time to complete: The 10 hour maintenance procedure will take approximately one hour to complete.

Additionally Every 50 Hours of Operation

1. Clean around power pack and baler to remove operator hazards.
2. Check function of all emergency stop buttons and interlock switches.
3. Check start-up alarm and flashing beacon. Clean light if required.

Time to complete: The 50 hour maintenance procedure will take approximately two to three hours to complete.

Additionally Every 200 Hours of Operation

1. Check function of all controls (i.e. lights, switches, joysticks etc.).
2. Check all hoses for chaffing, rubbing, leaking or other deterioration and damage.
3. Inspect air filter on hydraulic reservoir. Clean or replace if necessary.
4. Check cylinder pins and make sure they are secure.
5. Check shear blade on compression ram and baler body for sharpness, clearance (not to exceed .015"), and overall wear. Shim, rotate, or replace if necessary. The gap between the ram and body shear blades should be .015". The tolerance is +.005" and -.000"
6. Check hold-down bars for wear. Adjust if necessary. Tighten bolts. Rotate or replace hold-down bars if necessary. The bottom of the hold-down bars should be flush with the top of the ram.
7. Apply a light coating of all-purpose grease on hold down bars to prevent excessive wear.
8. Check seals on all cylinders for leaks.
9. After first 200 hours of operation replace return line/circulating pump filter. Thereafter, this filter maintenance interval will be extended to 500 hours.
10. Clean any debris, dust or grime from wire tyer gears and tracks. Note: In dusty conditions, it may be necessary to clean wire tyer more often.

Time to complete: The 200 hour maintenance procedure will take approximately two to three hours to complete. If hold down or shear beam adjustments need to be made, it could take longer. Please note the section on shear beam and hold down maintenance below.

Additionally Every 500 Hours of Operation

1. Change return line/circulating pump oil filter element in oil filter housing.
2. Inspect cylinder rods of compression and ejection ram cylinders for nicks and abrasions.
3. Check cylinder rod seals for damage.
4. Inspect cylinder pins for movement or missing cotter pins. Lubricate cylinder pinning sleeves and pins.
5. Grease wire tyer drive wheels (follow manufacturer's recommendations in Equipment Operation Manual).

Time to complete: The 600 hour maintenance procedure will take approximately one hour to complete.

Additionally Every 1000 Hours of Operation

1. Send oil sample for evaluation.
2. Check baler structure for any signs of problems (i.e., cracked welds, bending, etc.).
3. Rotate main ram cylinder rod 180º.

Time to complete: The 1000 hour maintenance procedure will take approximately two to three hours to complete.

Additionally Every 2000 Hours of Operation

a. Change hydraulic fluid in entire system. If existing oil is reused, it should be tested by a laboratory to ensure it meets necessary specifications. Additives can be added to bring oil back to standards. Before returning oil to tank, it should be filtered through a minimum 5 micron filter. Hydraulic tank should be cleaned inside with a non-flammable solvent and thoroughly dried before replacing oil.

b. Lubricate electric motor bearings as recommended by manufacturer.

c. Filter maintenance
   a. Hydraulic suction filters should be cleaned or replaced at yearly intervals.
   b. Care should be exercised in cleaning filter to ensure that element is not torn. Clean filter with a soft brush and standard industrial solvent.

Time to complete: The 2000 hour maintenance procedure will take approximately six to eight hours to complete.

SHEAR BLADE AND HOLD DOWN MAINTENANCE

The body and ram shear blades and hold downs work together to provide smooth operation of the ram and to assist in cutting material so as to bale more easily. These need to be adjusted, shimmed, rotated, or replaced per the following instructions as necessary. These items should be adjusted along with each other so as to provide the best operation of your baler.

⚠ DANGER

Only authorized and trained personnel should perform the following procedures. Lock-Out/Tag-Out the baler per as specified in **Lock-Out/Tag-Out Instructions**.

A. Adjust the Hold Down Bars

The hold down bars are adjusted by loosening the lock nuts associated with hold down bars on the exterior of the baler.

1. Begin by running the ram out even with the rear of the charge chamber or slightly forward so that you can view the ram top.
2. Loosen the lock nuts, and this will allow the hold down bars to slide down to the necessary position. It might be necessary to tap them with a hammer to move them.
3. The hold down bar should be as close to the top of the ram as possible without binding it; approximately 1/32''-1/16''.
4. A thin layer of grease should be applied to the bottom of the hold down bars to aid in travel.
5. The hold down bars are designed so that once one side wears, the bar can be flipped over and the other side used. To do this, the bolts must be completely removed, the bar pulled out, flipped, and reinstalled.

Time to complete: The hold down maintenance will take approximately one to two hours to complete. If the bars need to be flipped, it will take approximately four hours.

B. Adjust the Body Shear Blades

The shear beam on this baler consists of a ram shear blade and a body shear blade. The body shear blades are the ones that you will be adjusting.

1. To begin, run the ram out until the shear blades meet. Make sure the baler is then locked out.
2. In front of the hopper, there is the shear beam header. On the 2R450 balers it consists of seven bolts; four are for adjustments, three are for support and pressure. The three bolts that hold the beam up have a lock nut on them. Loosen the three lock nuts. Loosen the three bolts evenly in a counterclockwise motion to release the pressure off of the shear beam. You will be able to tell by the bolts when the pressure is released. Be careful not to totally release the bolts.
3. Once you have relieved the pressure, begin lowering the shear beam by backing out on the four adjustment bolts evenly in a counterclockwise motion. As you back out on the bolts, the shear beam will lower. Lower the blade until there is a .015” gap between the shear blades. Then you will need to tighten the three pressure bolts down until you feel them tighten up with pressure against the shear beam. Ensure that they are tightened, and then tighten down on the lock nuts to complete the process.

Time to complete: The shear beam maintenance will take approximately two hours to complete.

C. Remove and Sharpen the Ram Shear Blade

The shear blades must retain sharpness. The ram shear blade has four edges that can be used before sharpening.

1. To swap, remove the bolts, pull the shear blade off, and flip or turn 180°.
2. The body shear blades must be sharpened on site by a grinder or taken to a machine shop to sharpen.
3. Make sure that the same angle of the blade is kept during sharpening.

Time to complete: Swapping around of the ram shear blade will take approximately two hours to complete. Sharpening of the body blades on site will take approximately two hours. The complete removal of blades will take approximately two to three hours. The factory should be notified of this to provide technical support.

10 HOUR MAINTENANCE SCHEDULE			
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50 HOUR MAINTENANCE SCHEDULE			
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200 HOUR MAINTENANCE SCHEDULE

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1000 HOUR MAINTENANCE SCHEDULE

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HOLDDOWN BAR MAINTENANCE

⚠ DANGER

Only authorized and trained personnel should perform the following procedures. Lock-Out/Tag-Out the baler per as specified in **Lock-Out/Tag-Out Instructions**.

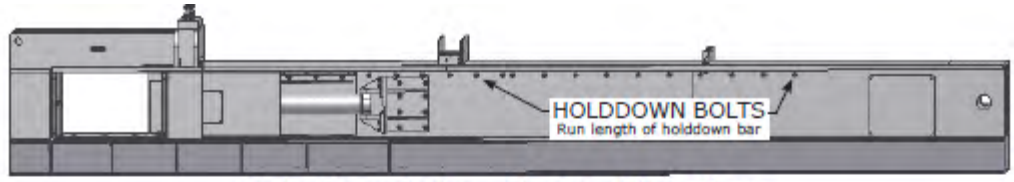
Holddown bars prevent the ram from “Riding Up” over material in the charge chamber. They also prevent the ram shear blade from coming in contact with the body shear blade. Maintenance on holddown bars should be performed when doing maintenance on shear blades.

Holddown bars can be adjusted by loosening the Holddown Bolts (which run the length of the holddown bar) on the outside walls of the baler and allowing the holddown bar to rest on top of the ram. The slot for the holddown bolts allows for 7/16” total adjustment.

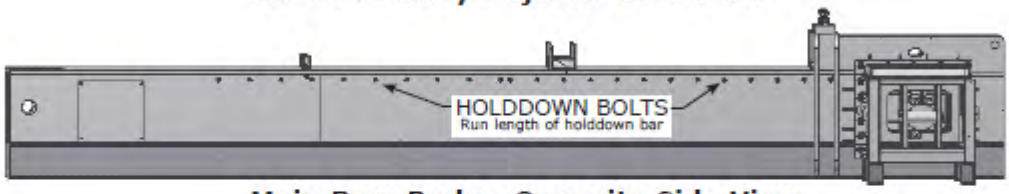
Adjust each holddown bar down so that it contacts the top of the ram through the complete ram travel path. From that position, the body shear blade should be adjusted (per the procedure described in **Body Shear Blade Adjustment**) so that it is 0.015” above the ram shear blade (0.015” above the bottom of the holddown bar). This prevents the ram shear blade from coming in contact with the body shear blade. After adjusting the holddown bars to the proper contact position on top of the ram, torque all holddown bolts to 250 ft/lb, lubricated*.

Holddown bars are considered a wear item for this machine. They are manufactured so that when wear does occur, the holddown bar can be turned over and the other side used.

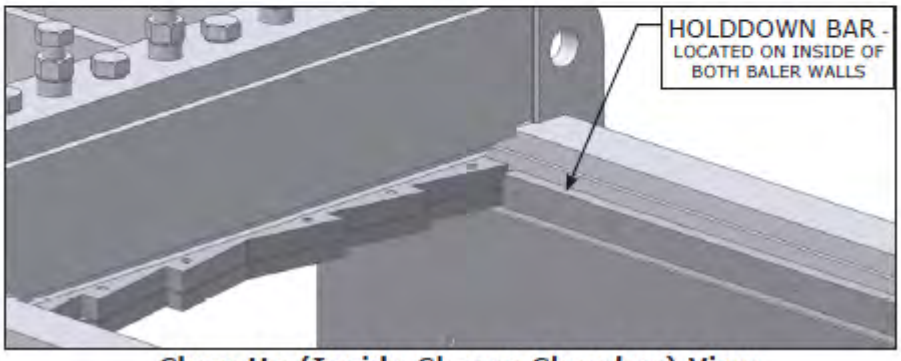
*Torque values differ between dry and lubricated hardware. Lubricated implies that bolts are delivered with a light coat of oil. No further lubrication is required during adjustment.



Main Ram Body - Ejector Side View



Main Ram Body - Opposite Side View



Close Up (Inside Charge Chamber) View

SHEAR BLADE MAINTENANCE

⚠ DANGER

Do not perform any maintenance to the ram shear blade or body shear blade until the disconnect switch has been locked-out and tagged-out per **Lock-Out/Tag-Out Instructions**.

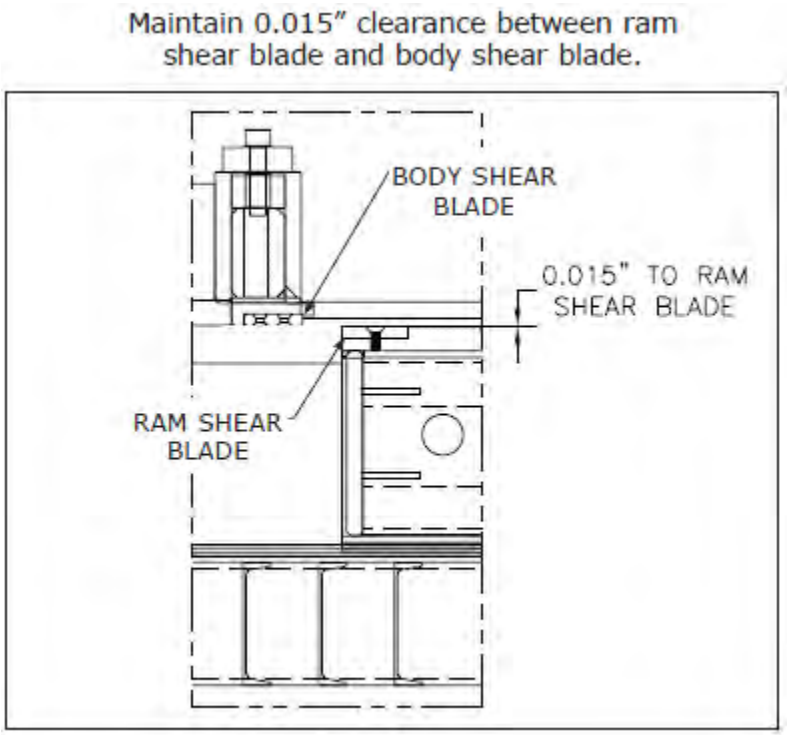
⚠ CAUTION

Do not perform any maintenance to the ram shear blade or body shear blade until the disconnect switch has been locked-out and tagged-out per **Lock-Out/Tag-Out Instructions**.

Body Shear Blade - As time passes, it is normal for the body shear blades and ram shear blades to need sharpening. Due to the hardness of the blades, it may be necessary to have them sharpened at a machine shop. During sharpening, remove only the least amount of material required to sharpen the cutting edges. All cutting edge faces should be flat and perpendicular to the top or bottom surface of the blades. For body shear blades, it is very important to maintain the original rake angle of the blades. When installing blades, all bolts should be coated with “Never-Seize” and torqued to 250 ft. lb.

NOTICE

For shear blade adjustment on all 2R-150, 190, and 250 models, contact the factory for a shim kit to shim the body shear blade down to the specified tolerance when the shear gap exceeds 0.015”.



Side View

For procedure instruction see the **Body Shear Blade Adjustment.**

BODY SHEAR BLADE ADJUSTMENT

250, 310 & 450 Models

⚠ DANGER

Do not perform any maintenance to the ram shear blade or body shear blade until disconnect switch has been locked-out and tagged-out per **Lock-Out/Tag-Out Instructions**.

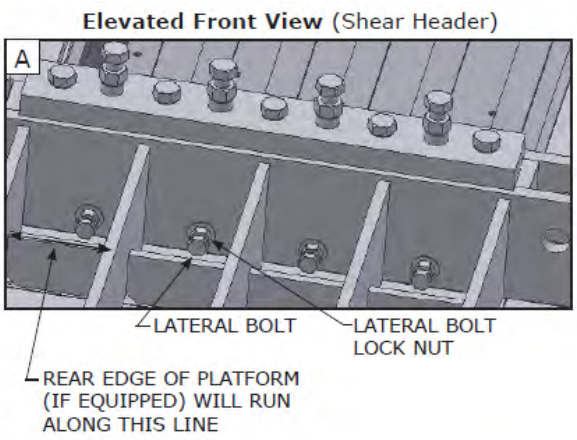
It is necessary to periodically adjust the Body Shear Blade in order to maintain the 0.015" clearance between it and the Ram Shear Blade (see drawing on previous page). Before adjustment, loosen the Lateral Bolt Lock Nuts on the front of the shear header and then loosen the Lateral Bolts (detail view A).

The number of Lateral Bolts and Shear Bolts vary by model. Use the procedures outlined on the next two pages to complete the shear blade adjustment process, according to model.

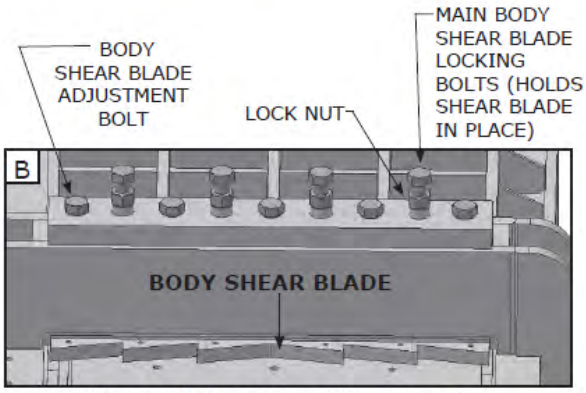
To adjust the body shear blade up or down, first loosen the Lock Nuts and Body Shear Blade Locking Bolts (detail view B).

Next, adjust the Body Shear Blade Adjustment Bolts by loosening them to lower the Body Shear Blade, or tightening them to raise it. Once proper adjustment is achieved, retighten all bolts and nuts using the torque sequence procedure on the next two pages (as listed by model).

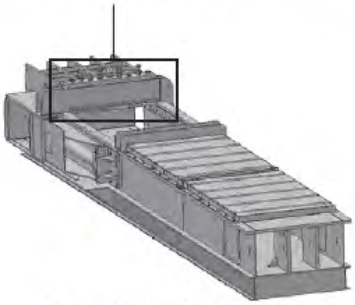
When the shear blade has been adjusted and all adjustment and locking bolts/nuts have been torqued according to procedure, then retighten the Lateral Bolts and Lateral Bolt Lock Nuts, in that order. Torque bolts to 250 ft/ lb, lubricated.



Elevated Front View (Shear Header)



Elevated Rear View (Shear Header)



Isometric Rear View
(with Hopper removed for visibility)

TORQUE SEQUENCE PROCEDURE (250 MODELS)

The following torque sequence must be used as part of the **Body Shear Blade Adjustment** procedure.

NOTICE

This procedure assumes that the body shear is in the full up position. The LATERAL BOLTS on the front face of the shear header need to be backed off prior to shear adjustment.

Before starting the following procedure, adjust the **Holddown Bars** (so that they contact the ram throughout the entire ram cycle). Once the holddown bars have been adjusted properly, position the main ram so that the ram shear blade is located 2” past (under) the cutting points of the body shear blade.

For 2R-250 Models

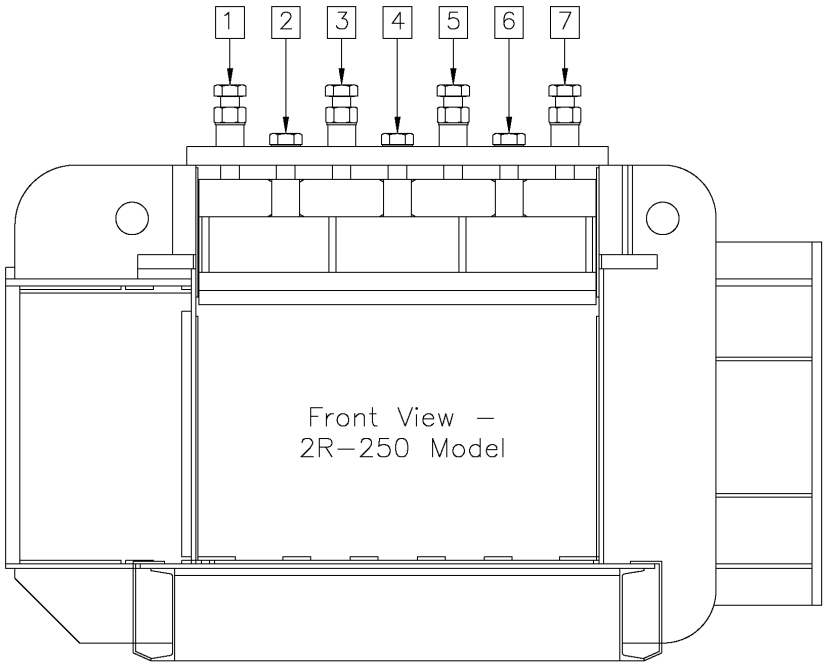
1. Starting with bolts 4, 2, and 6 (in that order) lower the body shear blade until the bottom of it is 0.015” from the top of the ram shear blade (use shim stock or feeler gauge to set gap). Turn each bolt (4, 2, and 6) only one-half turn at a time to lower the shear blade into position.

NOTICE

Turning bolts more than one-half turn at a time may cause the shear structure to jam.

2. When the shear gap is 0.015”, turn bolts 1 and 7 (in that order) down until they contact the adjustable shear structure. Then, turn bolts 3 and 5 down until they contact.
3. Torque bolts 4, 2, and 6 (in that order) to 50 ft. lb.
4. Torque bolts 1, 7, 3, and 5 (in that order) to 50 ft. lb.
5. Torque bolts 4, 2, and 6 (in that order) to 550 ft. lb.
6. Torque each LATERAL BOLT to 250 ft. lb. Start in the center of the pattern and work outward so that the outside bolts are torqued last. Tighten all lock nuts (front & top).

Torque Sequence Reference Numbers



TORQUE SEQUENCE PROCEDURE (310 MODELS)

The following torque sequence must be used as part of the **Body Shear Blade Adjustment** procedure.

NOTICE

This procedure assumes that the body shear is in the full up position. The LATERAL BOLTS on the front face of the shear header need to be backed off prior to shear adjustment.

Before starting the following procedure, adjust the **Holddown Bars** (so that they contact the ram throughout the entire ram cycle). Once the holddown bars have been adjusted properly, position the main ram so that the ram shear blade is located 2” past (under) the cutting points of the body shear blade.

For 2R-310 Models

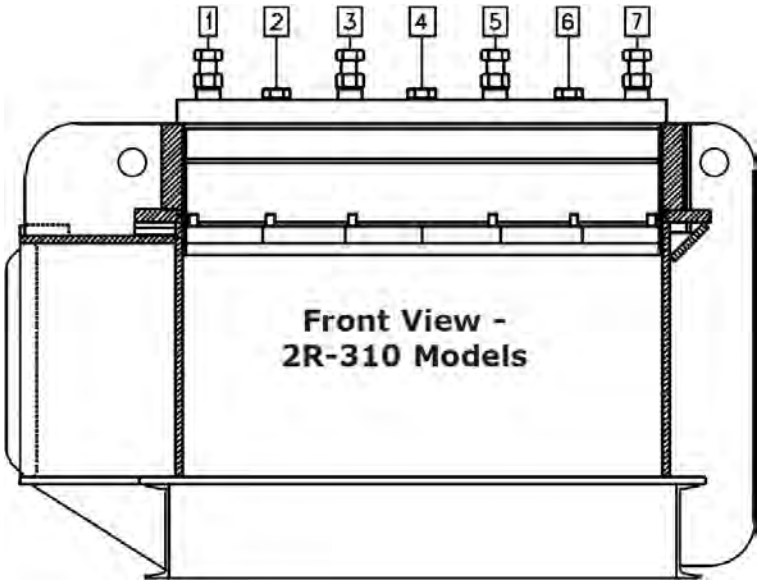
1. Starting with bolts 4, 2, and 6 (in that order) lower the body shear blade until the bottom of it is 0.015” from the top of the ram shear blade (use shim stock or feeler gauge to set gap). Turn each bolt (4, 2, and 6) only one-half turn at a time to lower the shear blade into position.

NOTICE

Turning bolts more than one-half turn at a time may cause the shear structure to jam.

2. When the shear gap is 0.015”, turn bolts 1 and 7 (in that order) down until they contact the adjustable shear structure. Then, turn bolts 3 and 5 down until they contact.
3. Torque bolts 4, 2, and 6 (in that order) to 50 ft. lb.
4. Torque bolts 1, 7, 3, and 5 (in that order) to 50 ft. lb.
5. Torque bolts 4, 2, and 6 (in that order) to 550 ft. lb.
6. Torque each LATERAL BOLT to 250 ft. lb. Start in the center of the pattern and work outward so that the outside bolts are torqued last. Tighten all lock nuts (front & top).

Torque Sequence Reference Numbers



TORQUE SEQUENCE PROCEDURE (450 MODELS)

The following torque sequence must be used as part of the **Body Shear Blade Adjustment** procedure.

NOTICE

This procedure assumes that the body shear is in the full up position. The Lateral Bolts on the front face of the shear header need to be backed off prior to shear adjustment.

Before starting the following procedure, adjust the **Holddown Bars** (so that they contact the ram throughout the entire ram cycle). Once the holddown bars have been adjusted properly, position the main ram so that the ram shear blade is located 2” past (under) the cutting points of the body shear blade.

For 2R-450 Models

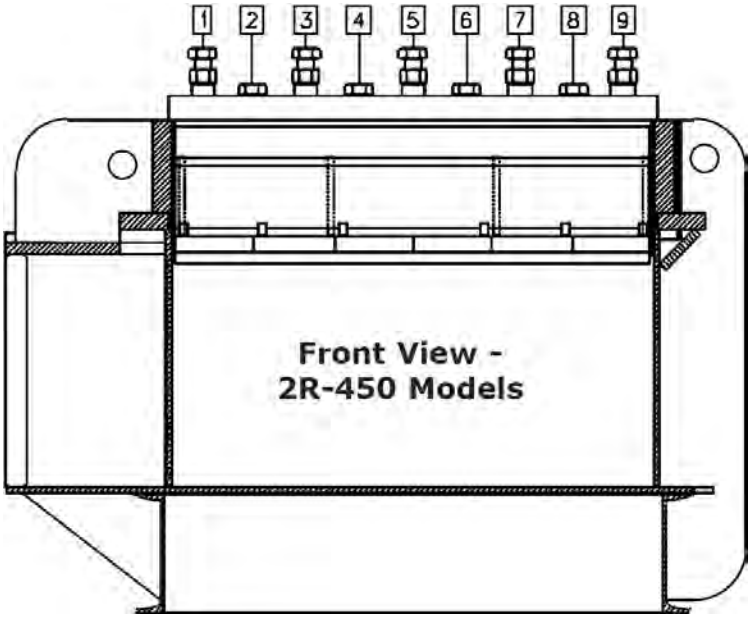
1. Starting with bolts 4, 6, 2, and 8 (in that order), lower the body shear blade until the bottom of it is 0.015” from the top of the ram shear blade (use shim stock or feeler gauge to set gap). Turn each bolt (4, 6, 2, and 8) only one-half turn at a time to lower the shear blade into position.

NOTICE

Turning bolts more than one-half turn at a time may cause the shear structure to jam.

2. When the shear gap is 0.015”, turn bolts 1 and 9 (in that order) down until they contact the adjustable shear structure. Then turn bolts 3, 7, and 5 down until they contact.
3. Torque bolts 4, 6, 2, and 8 (in that order) to 50 ft. lb.
4. Torque bolts 1, 9, 3, 7, and 5 (in that order) to 50 ft. lb.
5. Torque bolts 4, 6, 2, and 8 (in that order) to 550 ft. lb.
6. Torque each Lateral Bolt to 250 ft. lb. Start in the center of the pattern and work outward so that the outside bolts are torqued last. Tighten all lock nuts (front & top).

Torque Sequence Reference Numbers



PRESSURE SETTING PROCEDURES

PRESSURE SETTINGS FOR 2 X 30 POWER UNITS

Step 1 (System Pressure)

1. Start motor #1 only
2. Adjust the stand-by pressure on the compensator (if necessary) until the pressure setting on the touch screen reaches approximately 250 psi
3. Apply power to SV 2 "stand-by pressure" solenoid
4. Adjust the main relief until the pressure reaches 4200 psi
5. While the SV 2 solenoid is still energized adjust the compensator out until pressure drops to 4000 psi

Step 2 (Tier Pressure)

6. Hold tension on the tier with the wire fed through the tier and tensioned around the pegs
7. Adjust the relief on SV 15A "pressure to tie" solenoid to the maximum tier pressure and continue one revolution

Step 3 (Rod Relief Pressure)

8. Apply power to SV 1 "stand-by pressure" solenoid
9. While the pump is engaged energize SV 5 "base to tank" solenoid and SV 7 "rod to pressure" solenoid until ram is fully retracted
10. Adjust the relief on SV 8 "rod to tank" solenoid until the pressure reaches 3000 psi

Step 4 (Flow Control)

11. Adjust flow control relief on the manifold by turning it clockwise until it bottoms out
12. Afterward turn it counter clockwise 1/2 revolution. (This will have to be adjusted more or less depending upon the speed of the ram).

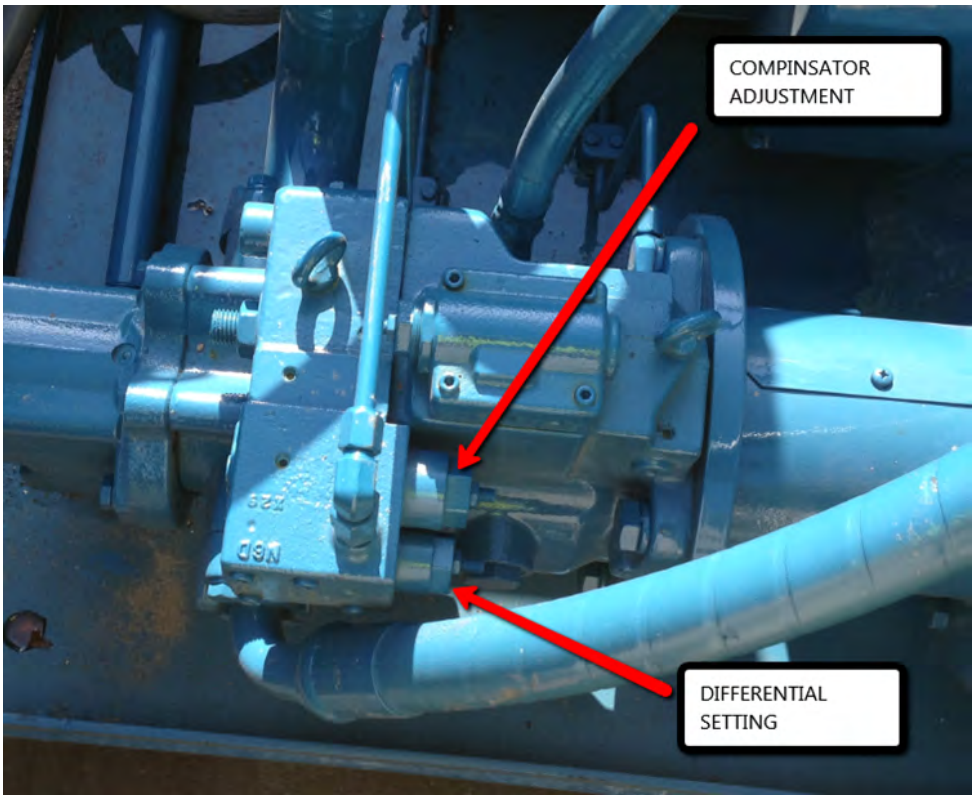
Step 5 (System Pressure)

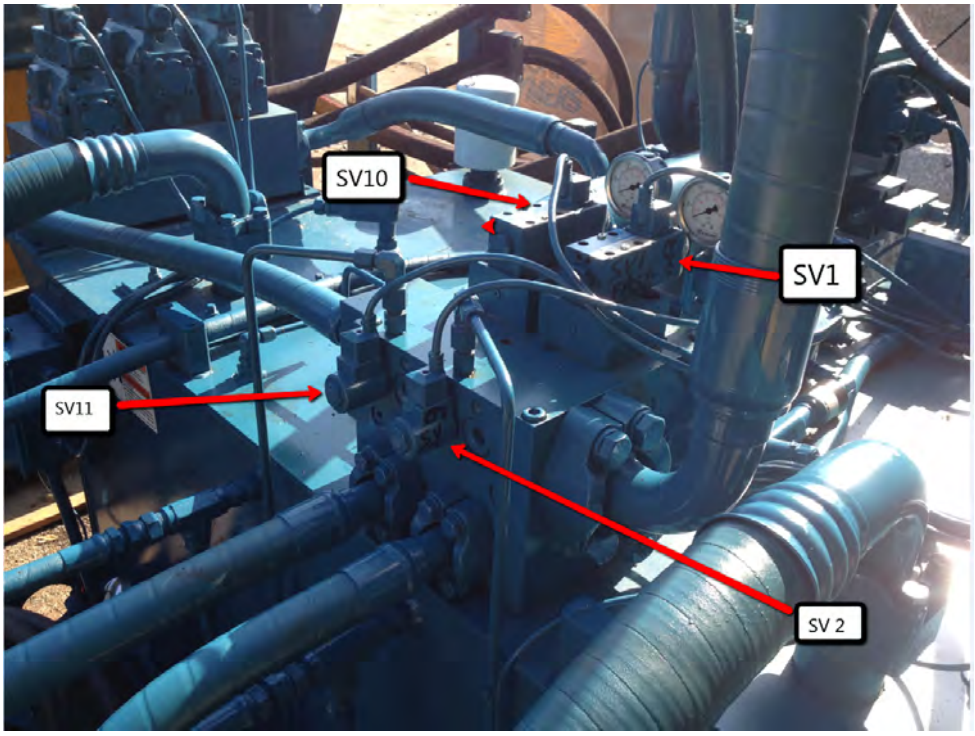
13. Stop motor #1 and start motor #2 only
14. Adjust the stand-by pressure on the compensator (if necessary) until the pressure setting on the touch screen reaches approximately 250 psi
15. Apply power to SV 11 "stand-by pressure" solenoid
16. Adjust the main relief until the pressure reaches 4200 psi
17. While the SV 11 solenoid is still energized adjust the compensator out until pressure drops to 4000 psi

Step 6 (Tier Pressure)

18. Hold tension on the tier with the wire fed through the tier and tensioned around the pegs
19. Adjust the relief on SV 16A "pressure to tie" solenoid to the maximum tier pressure and continue on revolution.

PRESSURE SETTINGS FOR 2 X 30 POWER UNITS (CONTINUED)





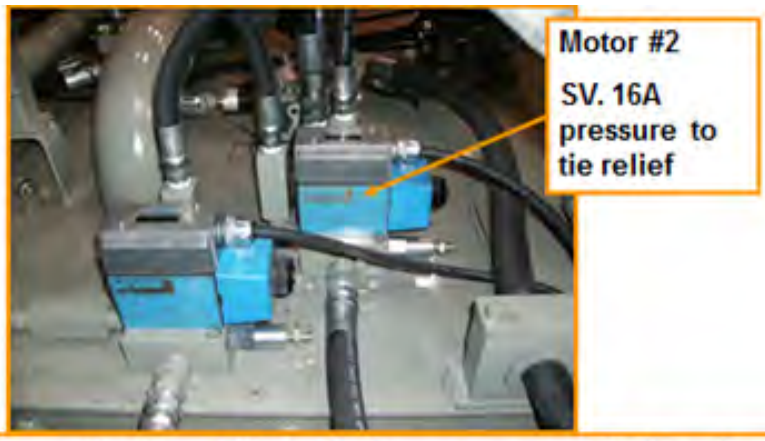
PRESSURE SETTINGS FOR 2 X 30 POWER UNITS (CONTINUED)

- Adjust the relief on **SV 15A** "pressure to tie" solenoid to the maximum tier pressure and continue one revolution.

- Hold tension on the tier with the wire fed through the tier and tensioned around the pegs.

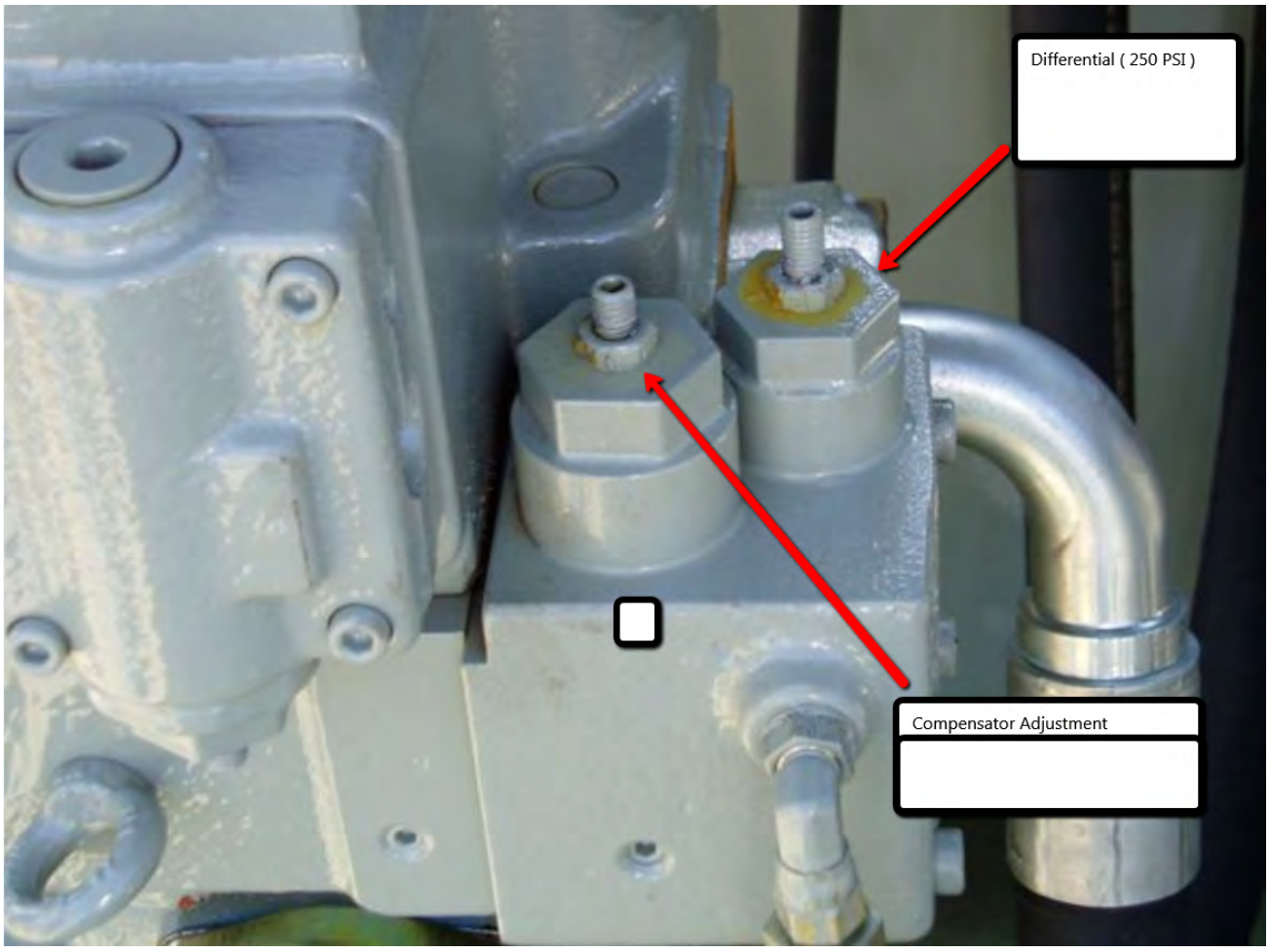
PRESSURE SETTINGS FOR 2 X 30 POWER UNITS (CONTINUED)

- While the pump is engaged energize **SV 5** "base to tank" solenoid and **SV 7** "rod to pressure" solenoid until ram is fully retracted.
- Adjust the relief on **SV 8** "rod to tank" solenoid until the pressure reaches 3000 psi.

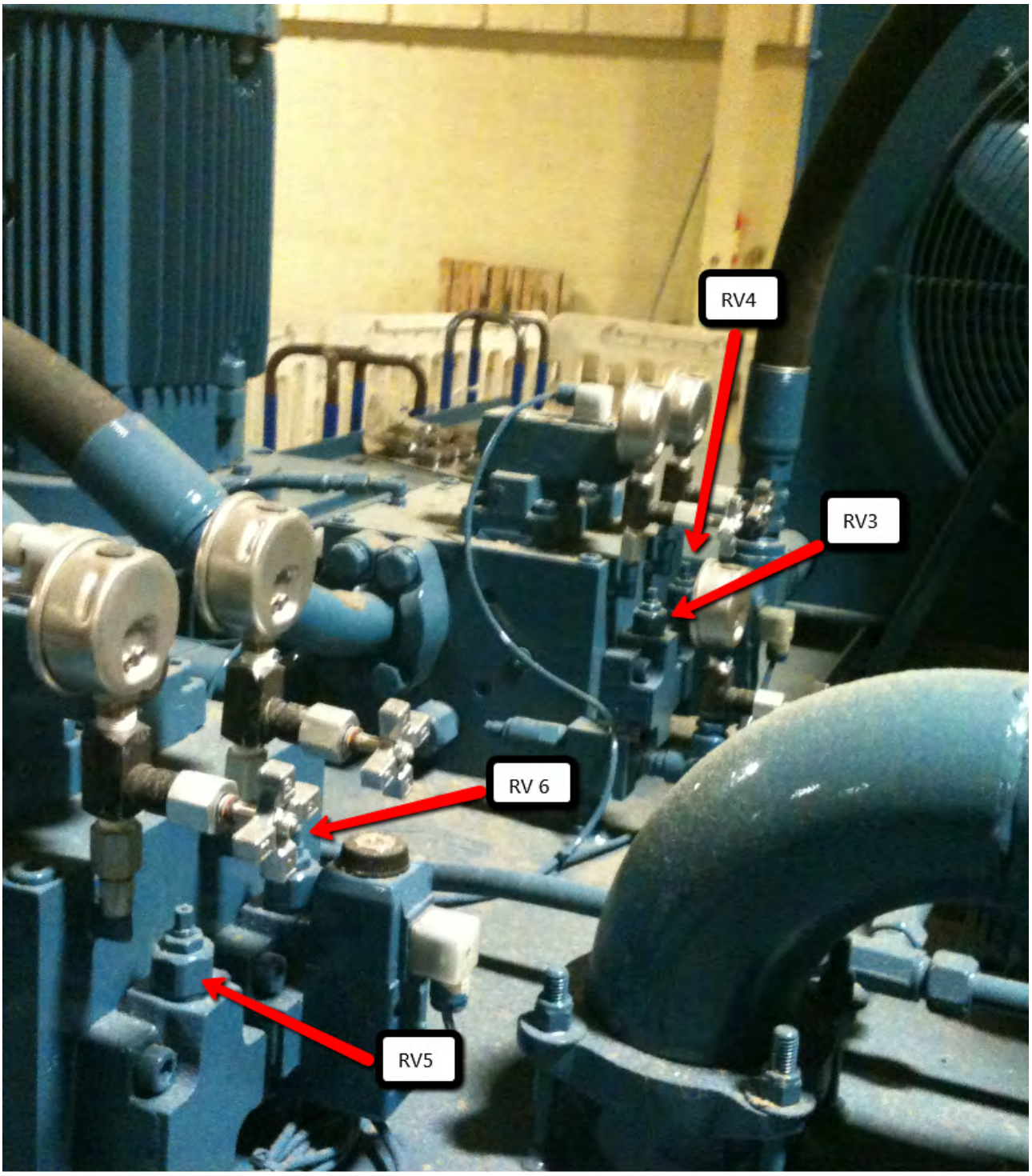


- Adjust the relief on **SV 16A** "pressure to tie" solenoid to the maximum tier pressure and continue one revolution.

PRESSURE SETTINGS FOR 2 X 50 AND 2 X 75 POWER UNITS



PRESSURE SETTINGS FOR 2 X 50 AND 2 X 75 POWER UNITS (CONTINUED)



PRESSURE SETTINGS FOR 2 X 50 AND 2 X 75 POWER UNITS (CONTINUED)

A. Motor 1: Setting the Standby (Differential) Pressure

Holds pressure when the motor is idling.

1. With Motor 1 powered on and idling, adjust the pressure to 250 psi. Check the pressure transducer on the touch screen.

B. Setting the Cutoff (Compensator) Pressure

Maximum pressure before cut-off.

1. Shut Motor 1 down and connect a jumper from Terminal 3 (in the panel box) to solenoid valve SV8.
2. Turn relief valve RV2 clockwise all the way in.
3. Back the compensator out.
4. Loosen the locknut on RV3.
5. Turn RV3 all the way in.
6. Restart Motor 1 and turn the compensator valve on Pump 1 clockwise until the pressure reaches 4200 psi.
7. Adjust RV3 counter-clockwise until the pressure starts to drop, then adjust 1/4 turn clockwise.
8. Tighten the locknut.
9. Adjust the compensator to 4000 psi.
10. Stop Motor 1 and remove the jumper from SV8.
11. Restart Motor 1 and back the adjustment screw out on RV4.
12. Using a small screwdriver, actuate SV6.
13. Increase the pressure on RV4 to 1200 psi.
14. Re-tighten the lock nut and turn off Motor 1.

C. Motor 2: Setting the Standby (Differential) Pressure

1. With Motor 2 powered on and idling, adjust the pressure to 250 psi. Check the pressure transducer on the touch screen.

D. Setting the Cutoff (Compensator) Pressure

1. Shut Motor 2 down and connect a jumper from Terminal 3 (in the panel box) to SV11.
2. Back the compensator out.
3. Loosen the locknut on RV5.
4. Turn RV5 all the way in.
5. Restart Motor 2 and turn the compensator valve on Pump 2 clockwise until the pressure reaches 4200 psi.
6. Adjust RV5 counter-clockwise until the pressure starts to drop, then adjust 1/4 turn clockwise.
7. Tighten the locknut.
8. Adjust the compensator to 4000 psi.
9. Stop Motor 2 and remove the jumper from SV11.
10. Restart Motor 2 and back the adjustment screw out on RV6.
11. Using a small screwdriver, actuate SV9.
12. Increase the pressure on RV6 to 1200 psi.
13. Re-tighten the lock nut and turn off Motor 2.

E. Main Manifold Relief Adjustment

NOTICE

This procedure requires two people.

1. Fully extend the ram using the controls.
2. Cover the laser.
3. One person holds the joystick in the “Compress” position.
4. The second person loosens the lock nuts on RV1 & RV2.
5. Turn the pressure adjustment screw clockwise all the way in on RV1.
6. Back the adjustment screw out on RV2.
7. With the first person still holding the joystick in the “Compress” position, the second person turns the adjustment screw on RV2 clockwise until the pressure reaches 4000 psi.
8. Then turn the adjustment screw clockwise 1-1/2 more turns.
9. Re-tighten the lock nut on RV2.
10. Repeat steps 6-9 with RV1.
11. Release the joystick.
12. Uncover the laser.

F. Setting the Rod Relief Valve (under SV4)

NOTICE

This procedure requires two people.

1. Fully extend the ram using the controls.
2. Pull the fuse on SV5 and SV1.
3. Loosen the lock nut.
4. While one person holds the joystick in “Retract”, the other turns the adjustment screw clockwise until 3000 psi is reached.
5. Re-tighten the lock nut.

G. Setting the Bale Door Pressure

1. Connect a jumper from Terminal 3 to SV8.
2. Using a small screwdriver, actuate the “B-side” of SV18.
3. Turn the adjustment screw clockwise until the pressure reaches 4000 psi.
4. Repeat steps 2-3 with the “A-side” of SV18.

H. Setting the Stamper Pressure

1. Adjust the flow control valve all the way out.
2. Connect a jumper from Terminal 3 to SV8.
3. Retract the stamper.
4. Using a small screwdriver, manually actuate the “A-side” of SV20.
5. Turn the adjustment screw clockwise until the pressure reaches 4000 psi.
6. Tighten the locknut.
7. Repeat steps 4-6 for the “B-side” of SV20.
8. Turn the adjustment screw on the counterbalance valve all the way in clockwise (Retract the stamper and it should fall back down).
9. Back both counterbalance valves out 2 rounds at a time until the stamper stays retracted.
10. Once it stays retracted, back out 1 more turn and tighten the lock nuts.

PRESSURE SETTINGS FOR 2 X 100 POWER UNITS

A. Pump Relief Valve Settings

1. Install the 5000 psi pressure gage in port MP1.
2. Lower pressure to the minimum settings on all relief valves on Motor 1 and Motor 2 pumps SV6, SV7, SV8, SV9, SV10, and SV11 by turning the adjustment screws counter-clockwise.
3. Loosen the locknut on relief valves RV1 and RV2. Set RV1 and RV2 to the maximum setting by turning the adjustment screw clockwise. Tighten the locknut on the adjustment screw.
4. Start all motors.
5. With the motors running, press in the manual actuator on Motor 1 low pressure pump solenoid valve SV6. Turn the relief valve adjustment screw on SV6 clockwise until the pressure reads 1000 psi on the gauge in port MP1. Tighten the locknut on the adjustment screw.
6. Press in the manual actuator on Motor 1 medium pressure pump solenoidSV7. Turn the relief valve adjustment screw on pump SV7 clockwise until the pressure reads 3000 psi on the gauge in port MP1. Tighten the locknut on the adjustment screw.
7. Press in the manual actuator on Motor 1 high pressure pump SV8. Turn the relief valve adjustment screw on SV8 clockwise until the pressure reads 4000 psi on the gage in port MP1. Tighten the locknut on the adjustment screw.
8. Repeat steps 5-7 for Motor 2 low pressure pump SV9, medium pressure pump SV10, and high pressure pump SV11.

B. Main Manifold Rod Relief Pressure Setting

NOTICE

This procedure requires three people.

1. Start Motor 1.
2. Retract the main ram fully.
3. Loosen the adjustment screw locknut on the rod relief valve and turn the adjustment screw counter-clockwise to

lower the pressure setting.

4. Press in and hold the manual actuators on the rod pressure poppet valve SV3 and the rod tank poppet valve SV4.
5. Press in and hold the manual actuator on the Motor 1 high pressure pump SV8.
6. Turn the rod relief valve adjustment screw clockwise until the pressure on Gauge MP1 reads 3000 psi. Tighten the adjustment screw locknut.

C. Door Relief Pressure Setting

NOTICE

This procedure requires two people.

1. Start Motor 1.
2. Retract the main ram and the ejector ram fully.
3. Loosen the adjustment screw locknuts on the door relief valves and turn the adjustment screws counter-clockwise to lower the pressure setting.
4. Make sure the area near the door is clear of all personnel. Close the door completely.
5. Press in and hold the manual actuator on the door close valve SV18A.
6. Press in and hold the manual actuator on the Motor 1 high pressure pump SV8.
7. Turn the open door relief valve adjustment screw clockwise until the pressure on Gauge MP1 reads 4000 psi. Release the solenoid manual actuators. Tighten the adjustment screw locknut.
8. Make sure the area near the door is clear of all personnel. Open the door completely.
9. Press in and hold the manual actuator on the door open valve SV18B.
10. Press in and hold the manual actuator on the Motor 1 high pressure pump SV8.
11. Turn the close door relief valve adjustment screw clockwise until the pressure on Gauge MP1 reads 4000 psi. Release the solenoid manual actuators. Tighten the adjustment screw locknut.

D. Stamper Pressure Setting Procedure

NOTICE

This procedure requires two people.

1. Start Motor 1.
2. Retract the main ram and the ejector ram fully.
3. Loosen the adjustment screw locknuts on the stamper relief valves and turn the adjustment screws counter-clockwise to lower the pressure setting.
4. Move the stamper down completely.
5. Press in and hold the manual actuator on the stamper down valve SV20A.
6. Press in and hold the manual actuator on the Motor 1 high pressure pump SV8.
7. Turn the stamper down relief valve adjustment screw clockwise until the pressure on Gauge MP1 reads 4000 psi. Release the solenoid manual actuators. Tighten the adjustment screw locknut.
8. Move the stamper up completely.
9. Press in and hold the manual actuator on the stamper up valve SV20B.
10. Press in and hold the manual actuator on the Motor 1 high pressure pump SV8.
11. Turn the stamper up relief valve adjustment screw clockwise until the pressure on Gauge MP1 reads 4000 psi. Release the solenoid manual actuators. Tighten the adjustment screw locknut.

E. Tie System 12 GPM Pump Pressure Setting

NOTICE

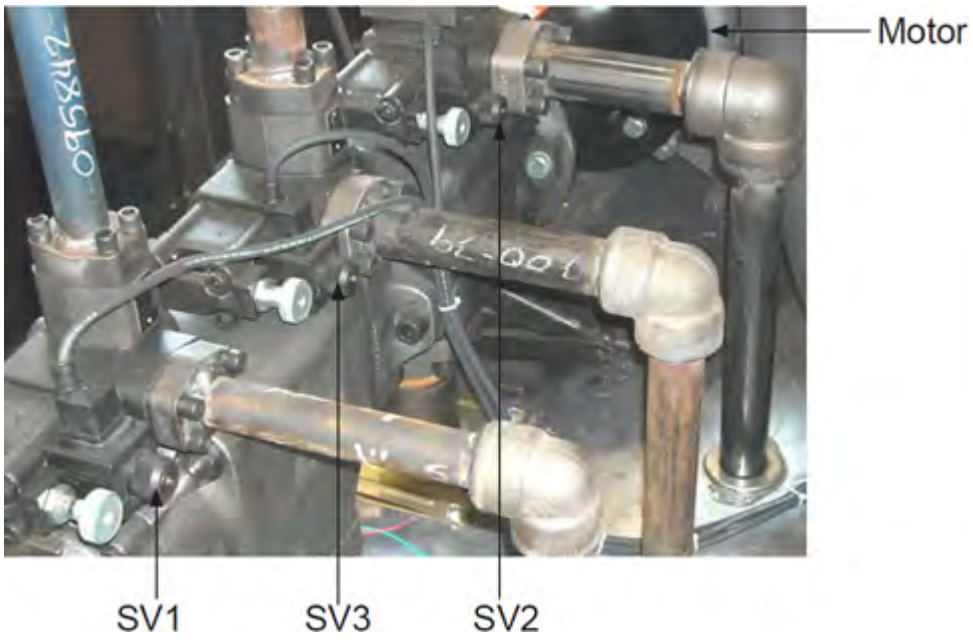
This procedure requires two people.

1. Lock out power and install a 5000 psi pressure gauge in the port provided at the 12 gpm tie system pump.
2. Install the four tie test pins into the tie system mounting plate.
3. Turn on power and the start motors.
4. Loosen the locknut on the tie system pump relief adjustment screw. Turn the adjustment screw on the tie system pump relief valve counter-clockwise to lower the pressure setting.
5. Have someone place the tie system in manual and press and hold the tension button.
6. Turn the 12 gpm pump relief valve adjustment screw clockwise until the pressure on the gauge reads 1800 psi.
7. Tighten the locknut on the relief valve adjustment screw and release the tension button.
8. Lock out power and remove the pressure gauge. Replace the plug in the pressure gage port.

PRESSURE SETTINGS FOR 1 X 100 POWER UNITS

A. Pump Relief Valve Settings

1. Install 5000 psi pressure gauge in port TPP.
2. Lower the pressure to the minimum setting on all relief valves SV1, SV2, and SV3 by turning the adjustment screws counter-clockwise.
3. Start the motor.
4. With the motor running, press in the manual actuator on low pressure pump solenoid SV2. Turn the relief valve adjustment screw on low pressure pump SV2 clockwise until the pressure reads 1000 psi on the gauge in port TPP. Tighten the locknut on the adjustment screw.
5. Press in the manual actuator on medium pressure pump, solenoid SV3. Turn the relief valve adjustment screw on medium pressure pump SV3 clockwise until the pressure reads 3000 psi on gauge in port TPP. Tighten the locknut on the adjustment screw.
6. Press in the manual actuator on high pressure pump, solenoid SV1. Turn the relief valve adjustment screw on high pressure pump SV1 clockwise until the pressure reads 4000 psi on the gauge in port TPP. Tighten the locknut on the adjustment screw.

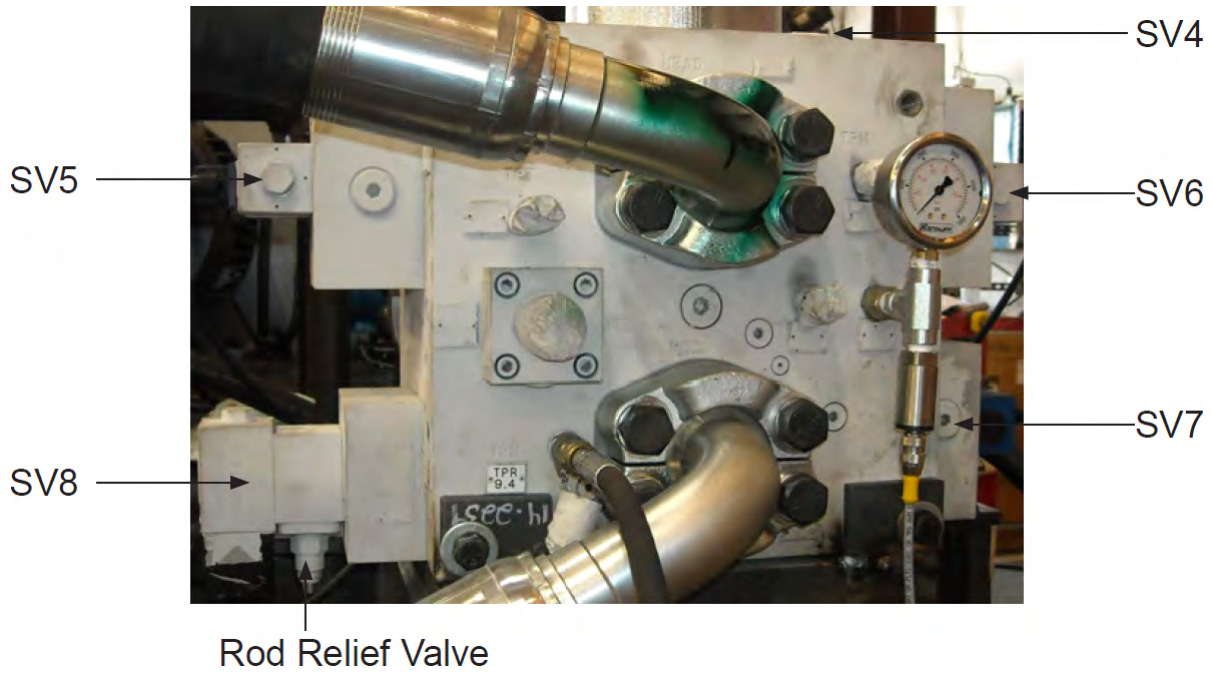


B. Main Manifold Rod Relief Pressure Setting

NOTICE

This procedure requires three people.

1. Start the motor.
2. Retract the main ram fully.
3. Loosen the adjustment screw locknut on the rod relief valve and turn the adjustment screw counter-clockwise to lower the pressure setting.
4. Press in and hold the manual actuators on the rod pressure poppet valve SV7 and the base pressure poppet valve SV5.
5. Press in and hold the manual actuator on high pressure pump solenoid SV1.



6. Turn the Rod Relief Valve adjustment screw clockwise until the pressure on Gauge TPP reads 3000 psi. Tighten the adjustment screw locknut.

C. Door Relief Pressure Setting

NOTICE

This procedure requires two people.

1. Start the motor.
2. Retract the main ram and ejector fully.
3. Loosen adjustment screw locknuts on the door relief valves and turn the adjustment screws counter-clockwise to lower the pressure setting.
4. Make sure area near the door is clear of all personnel. Close door completely.
5. Press in and hold on the manual actuator on the door close valve SV18A.
6. Press in and hold the manual actuator on the motor high pressure pump solenoid SV1.
7. Turn the open door relief valve adjustment screw clockwise until the pressure on Gauge TPP reads 4000 psi. Release solenoid manual actuators. Tighten the adjustment screw locknut.
8. Make sure area near door is clear of all personnel. Open door completely.
9. Press in and hold on the manual actuator on the door open valve SV18B.
10. Press in and hold the manual actuator on the motor high pressure pump solenoid SV1.
11. Turn the close door relief valve adjustment screw clockwise until the pressure on Gage TPP reads 4000 psi. Release solenoid manual actuators. Tighten the adjustment screw locknut.

D. Stamper Pressure Setting Procedure

NOTICE

This procedure requires two people.

1. Start the motor.
2. Retract the main ram and ejector fully.
3. Loosen the adjustment screw locknuts on the stamper relief valves and turn the adjustment screws counter-clockwise to lower the pressure setting.
4. Move the stamper down completely.
5. Press in and hold on the manual actuator on the stamper down valve SV20A.
6. Press in and hold the manual actuator on the motor high pressure pump solenoid SV1.
7. Turn the stamper down relief valve adjustment screw clockwise until the pressure on Gauge TPP reads 4000 psi. Release the solenoid manual actuators. Tighten the adjustment screw locknut.
8. Move stamper up completely.
9. Press in and hold on the manual actuator on the stamper up valve SV20B.
10. Press in and hold the manual actuator on the motor high pressure pump solenoid SV1.
11. Turn the stamper up relief valve adjustment screw clockwise until the pressure on Gauge TPP reads 4000 psi. Release the solenoid manual actuators. Tighten the adjustment screw locknut.

E. Tie System 12 gpm Pump Pressure setting

NOTICE

This procedure requires two people.

1. Lock out power and install a 5000 psi pressure gauge in the port provided at the 12 gpm tie system pump.
2. Install the four tie test pins into tie system mounting plate.
3. Turn on power and start the motor.
4. Loosen the locknut on the tie system pump relief adjustment screw. Turn the adjustment screw on the tie system pump relief valve counter-clockwise to lower the pressure setting.
5. Have someone place the tie system in manual and press and hold the tension button.
6. Turn the 12 gpm pump relief valve adjustment screw clockwise until the pressure on the gauge reads 1800 psi.
7. Tighten the locknut on the relief valve adjustment screw and release the tension button.
8. Lock out power and remove the pressure gauge. Replace the plug in the pressure gauge port.

LASER SETTING PROCEDURE

1. With the ram retracted in Manual Mode, hold the red analog button until the Teach light illuminates.
2. Press the red analog button again and the Teach light should start blinking.
3. Fully extend the ram, then press the red analog button once or until the Teach light goes off.
4. The full stroke measurement should then register on the touch screen.
5. The yellow speed button (touch screen) should be set to “Fast”.
6. Fully retract the ram. The measurement should be “.6” or less.

NOTICE

Be sure the laser beam hits the reflector all the way out and back.

TROUBLESHOOTING CHART

⚠ WARNING

Only thoroughly trained and experienced service personnel should perform troubleshooting and maintenance on this baler. Do NOT enter the baler for any reason until it has been locked-out and tagged-out per the **Lock-Out & Tag-Out Instructions**.

NOTICE

In all events, check output fuses.

PROBLEM	CAUSE	SOLUTION
MAIN MOTOR WILL NOT START/ RUN	1. No incoming power.	1. Check main disconnect switch.
	2. No control circuit power.	2. Check primary and secondary fuses in motor control panel.
	3. Safety interlock switch.	3. Check for open hopper door.
	4. Emergency stop button depressed.	4. Check E-Stop buttons.
	5. Motor overload tripped.	5. Reset overload on motor starter. Check current load amps.
	6. Electrical system malfunction	6. Check electrical system.
	7. Programmable controller fault	7. Check fault lights on P.C. Make` sure PLC is in RUN mode.
PUMP NOISE	1. Oil level low.	1. Check oil level in tank. Add if necessary
	2. Air leakage in suction line.	2. Check suction line for leaks. Check pump shaft seal.
	3. Worn pump.	3. Repair or replace hydraulic pump.
MAXIMUM HYDRAULIC PRESSURE NOT OBTAINABLE	1. Pressure relief set too low.	1. Check relief valve pressure setting.
	2. Cylinder bypass.	2. Check for internal cylinder leak.
	3. Worn pump.	3. Repair or replace hydraulic pump.
	4. Check valve on unloading valve.	4. Repair or replace.
	5. Machine not shifting out of regen.	5. Cylinder rod relief set too low. Pressure switch or transducer malfunction.
COMPRESSION RAM WILL NOT MOVE FORWARD	1. Photocell malfunction.	1. Replace photocell.
	2. Compression cylinder rod puppet malfunction.	2. Retract ejector.
COMPRESSION RAM WILL NOT RETRACT (AUTO/MANUAL)	1. Foreign material jamming ram.	1. Check for foreign material wedging between ram and shear bar.
	2. Compression cylinder rod puppet malfunction.	2. Check solenoid valve. Check for plugged orifice.
	3. Compression cylinder rod end pressure puppet not opening.	3. Check solenoid valve. Make sure valve spool is shifting.
	4. Compression cylinder rod relief pressure set too low.	4. Reset pressure to correct setting.

PROBLEM	CAUSE	SOLUTION
EJECTOR WILL NOT MOVE FORWARD	1. Compression ram not in HOME position.	1. Move to HOME position.
	2. Compression ram HOME position photocell malfunction.	2. Check for false signal. Replace photocell.
	3. Bale length counter malfunction.	3. Check for wheel rotation. Adjust proximity switch. Replace switch.
	4. Wire tie selector set on MANUAL.	4. Check controls.
	5. Ejector out limit switch malfunction.	5. Check limit switch arm adjustment. Replace limit switch.
	6. Ejector valve malfunction.	6. Check solenoid valve.
EJECTOR WILL NOT MOVE FORWARD (MANUAL)	1. Compression ram out of position.	1. Move ram to home or retracted position.
	2. Wire tie mechanism out of sequence.	2. Feed wire to Home position.
	3. Ejector valve malfunction.	3. Check solenoid valve. Make sure valve spool is shifting.
	4. Control lever malfunction.	4. Repair or replace control lever.
EJECTOR WILL NOT RETRACT (AUTO/ MANUAL)	1. Ejector retracted limit switch malfunction.	1. Check limit switch arm adjustment. Replace limit switch.
	2. Ejector valve malfunction.	2. Check solenoid valve. Make sure valve spool is shifting.
	3. Control lever malfunction.	3. Repair or replace control lever.
BALE FULLY EJECTS IN AUTOMATIC CYCLE	1. Ejector out limit switch malfunction.	1. Check limit switch arm adjustment. Replace limit switch.
COOLER/FILTER PUMP WILL NOT START/RUN	1. Motor overload tripped.	1. Reset overload on motor starter. Check current load amps.
	2. Cooler/filter pump fuses.	2. Replace blown fuses.
	3. Electrical circuit malfunction	3. Perform electrical system check.

SCHEMATICS

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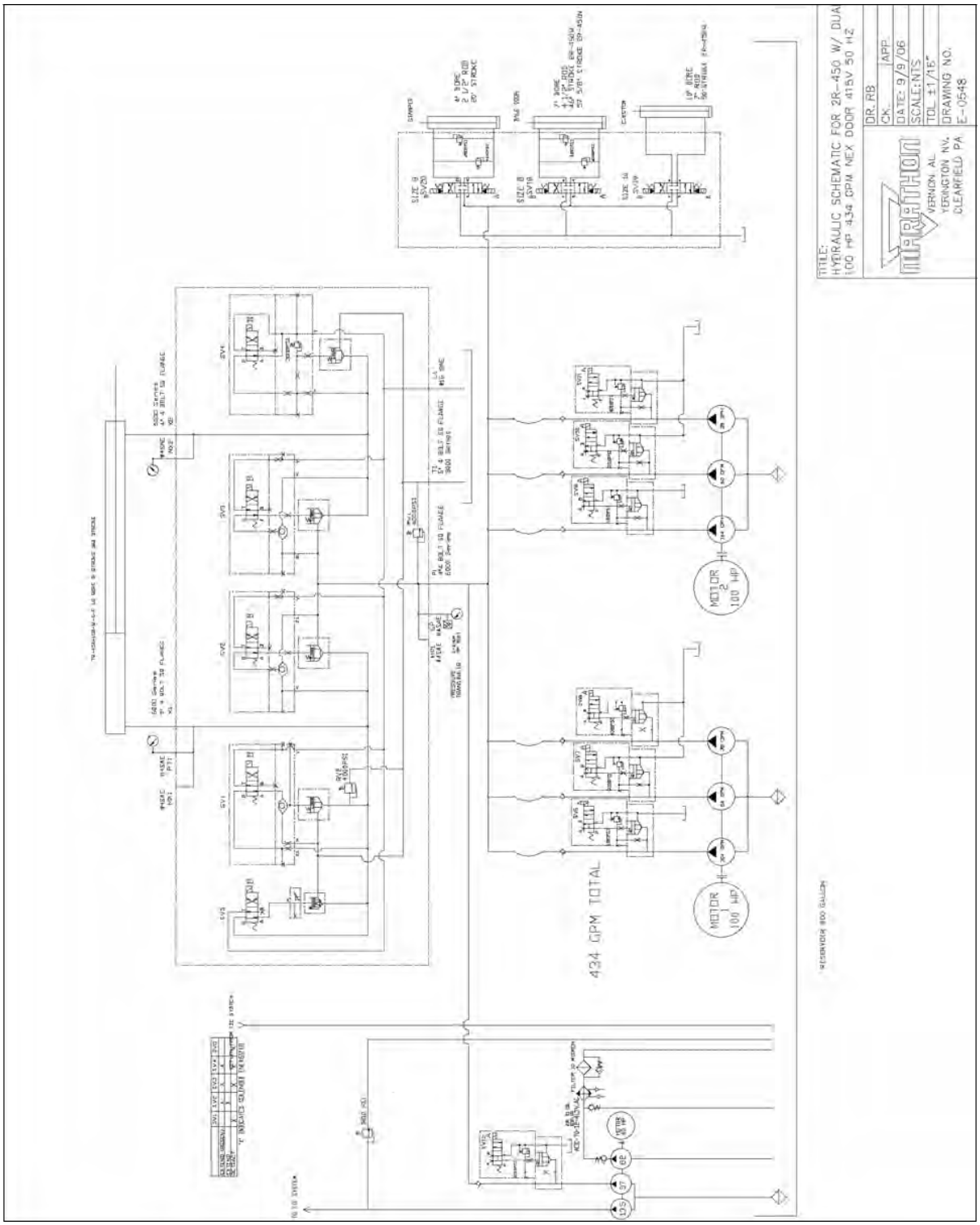
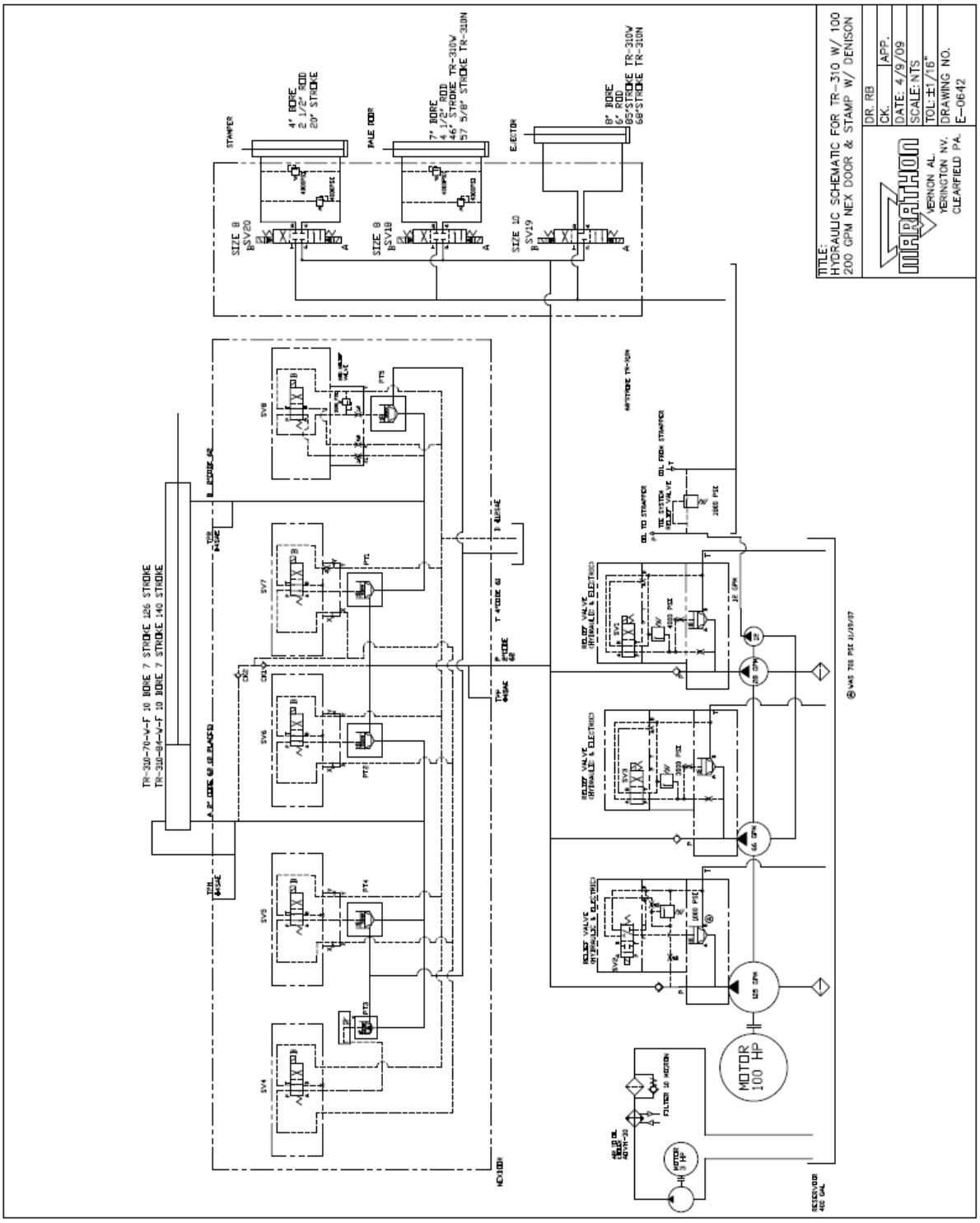
HYDRAULIC SCHEMATIC (2 X 100)



HYDRAULIC SCHEMATIC (1 X 100)



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SECTION 5
REPLACEMENT PARTS

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CONTACT INFORMATION

MARATHON®
A DOVER COMPANY

Technical Service and Warranty:

877-258-1105

Parts:

800-528-5308

For parts visit our eCommerce Marketplace at **www.mecomerchant.com**.

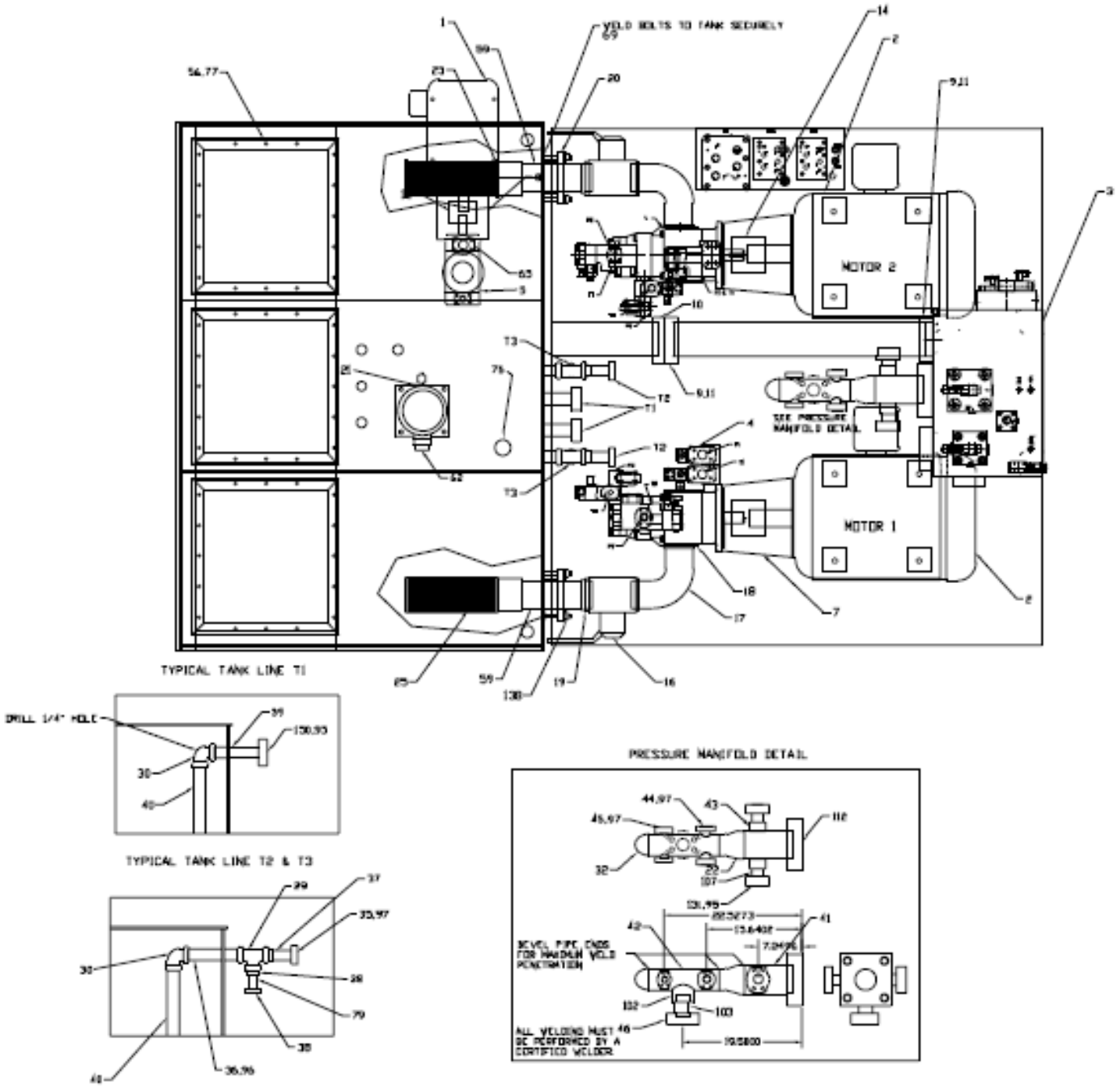
If you do not have a user name and password, contact our Parts Department and they will assist with your registration.

Normal Business Hours:

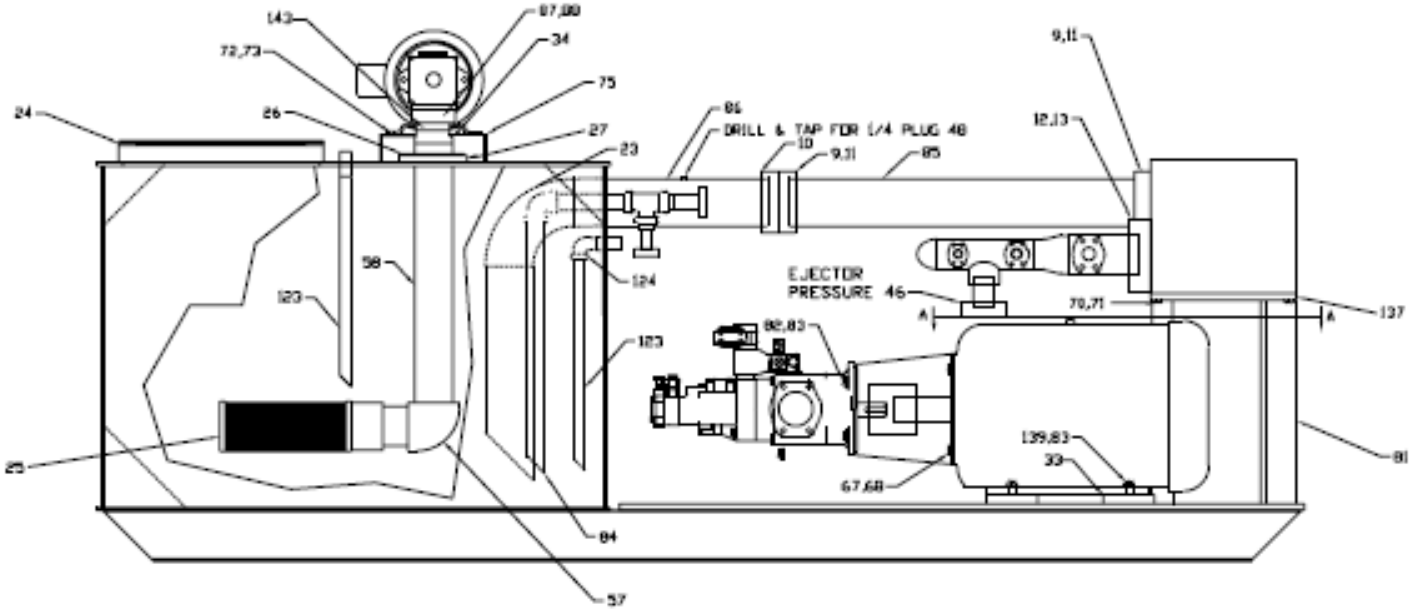
Monday-Friday 8:00am - 5:00pm

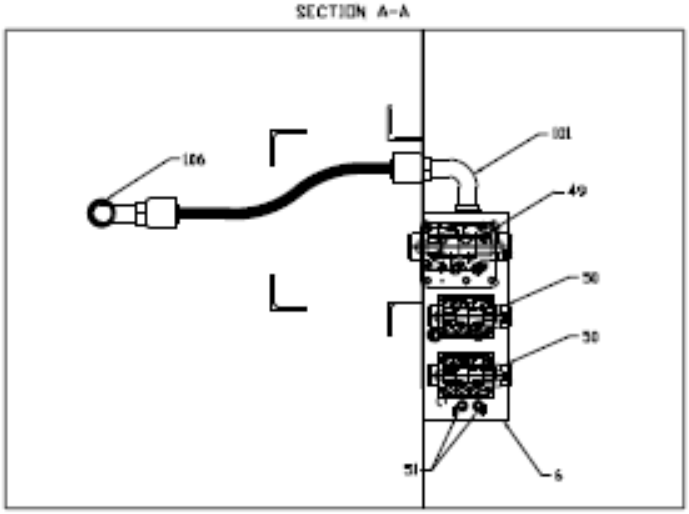
(Central Standard Time)

POWER UNIT DRAWINGS 2 X 100 HP (1 OF 3)

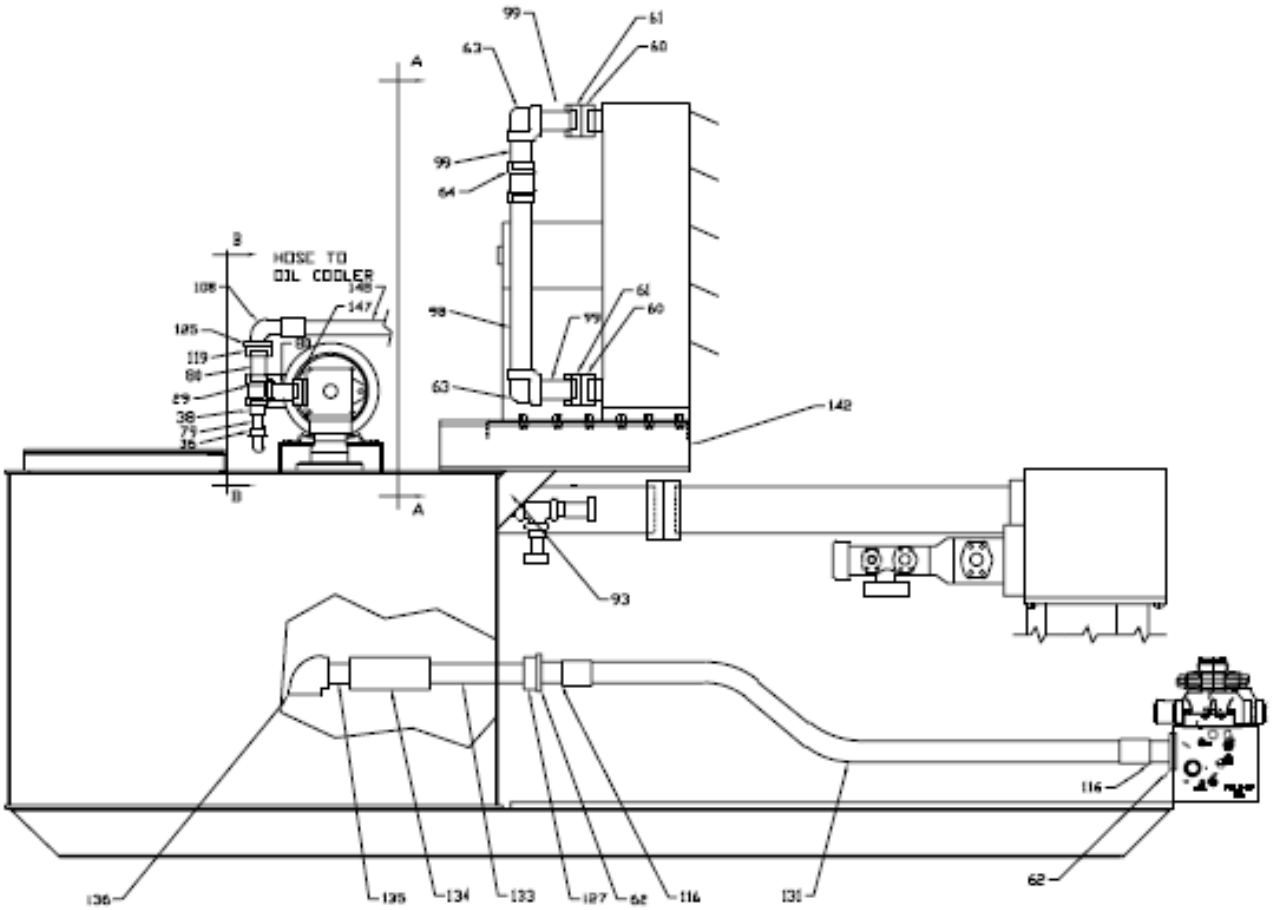


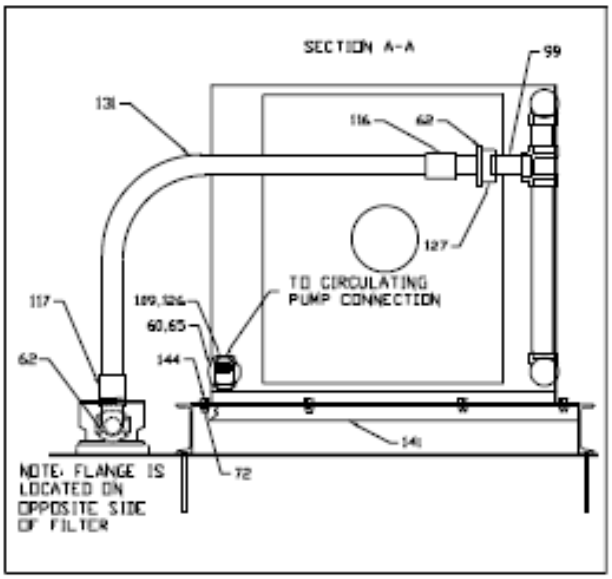
POWER UNIT DRAWINGS 2 X 100 HP (2 OF 3)

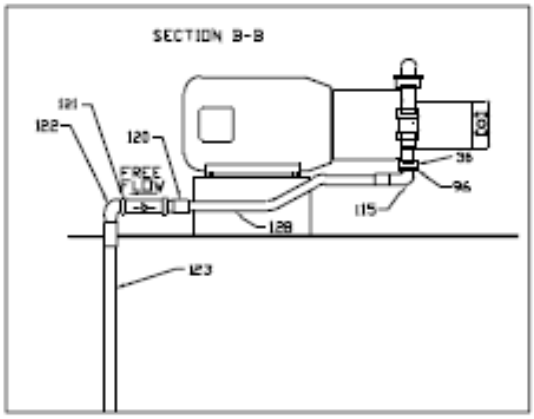




POWER UNIT DRAWINGS 2 X 100 HP (3 OF 3)







POWER UNIT REFERENCE NUMBERS 2 X 100 HP

PART NO.	REF NO.	DESCRIPTION	QTY.
02-1025		FLANGE C61 1 1/2 SPLIT W/BOLTS	1
99-7622		FILTER ELEMENT F/997166	5
05-3199		BOLT 1/2- 13 X 3 1/2 SHCS GR 8	6
03-1071	1	MOTOR 20HP 208-230/460 256TC T	1
03-0833	2	MOTOR 100HP 230/460VOLT 405TC	2
02-4398	3	MANIFOLD 425 GPM F/TR-12 REXRO	1
02-1016	4	PUMP 36 71 105 GPM VANE DENISON	1
02-1017	4	PUMP 36 71 105 GPM VANE DENISON	1
99-7069	5	PUMP 12 108 GPM VANE DENISON	1
30-0757	6	3/4 PL X 10 X 24	1
99-7103	7	ADAPTER PUMP/MTR SAE E 4B X 40	2
99-7105	8	ADAPTER PUMP/MTR SAE C 2B X 25	1
99-7106	9	FLANGE C61 5 WELD	2
99-7107	10	FLANGE C61 5 COMP	1
99-7108	11	BOLT KIT F/ 5 C61 FLANGE	2
99-7109	12	FLANGE SQ6000 4 WELD	1
99-7111	13	BOLT KIT F/ 4 SQ6000 FLANGE	1
99-7121	14	HUB COUPLING 45MM-14MM X 2 7/8	2
99-7123	15	HUB COUPLING 1 1/2-3/8 X 1 5/8	1
99-7144	16	VALVE BALL 4 ORM 300PSI	2
99-7145	17	ELL 64 ORM X F61 SPL 90	2
99-7146	18	FLANGE C61 4 SPLIT W/ BOLT KIT	2
99-7147	19	ADAPTER 4 WELD X 64 ORM	2
99-7152	20	COUPLING 4 DRESSER 4 BOLT X 5	1
99-7166	21	FILTER RETURN 120 GPM 10 MICRO	1
99-7170	22	ADAPTER 3 WELDM XXS X 4 WELDM	1
99-7171	23	ELL 5 WELDM SCH 40	1
99-7179	24	COVER CLEAN OUT NEOPRENE 1/4 X	3
02-1053	25	FILTER SUCTION 4 200GPM	3
21054	26	FLANGE SUCTION 4	1
02-1055	27	FLANGE SUCTION RISER 4	1
02-0880	28	HOSE 1 WB 4000PSI	15
99-7257	29	TEE 1 1/2 WELDF SCH 40	3
99-7218	30	ELL 1 1/2 NPTF 90 SCH 40	4
02-0912	31	HOSE 2 HYDRAULIC 5000 PSI	9

POWER UNIT REFERENCE NUMBERS 2 X 100 HP

PART NO.	REF NO.	DESCRIPTION	QTY.
99-7168	32	CAP 3 WELD XXS	1
14-2238	33	1 X 4 X 4	8
99-7214	34	ADAPTER 3 1/2 X 4 WELDB SCH 40	1
02-1062	35	FLANGE C61 1 1/4 WELD COMP	2
02-0877	36	FLANGE C61 1 WELD COMP	3
02-0571	37	ADAPTER 1 1/4 WELDF X 1 1/2 WE	2
99-7223	38	ADAPTER 1 WELDF X 1 1/2 WELDM	3
99-7224	39	PIPE 1 1/2 SCH 40 X 8	4
99-7225	40	PIPE 1 1/2 SCH 40 X 30	4
99-7226	41	PIPE 4 XXS X 8 SQ CUT	1
99-7227	42	PIPE 3 SCH 160 X 11 1/2 SQ CUT	1
99-7299	43	SOCKOLET 1 1/2 X 3-5 6000 PSI	2
99-7181	44	FLANGE SADDLE C61 1 1/4 X 3 WE	2
99-7182	45	FLANGE SADDLE C61 1 X 3 WELD C	2
02-1071	46	FLANGE C62 2 WELD COMP	1
02-0873	47	FLANGE C61 1 1/2 WELD	1
02-0065	48	PLUG 1/4 NPT SOCKET HEAD	1
02-4851	49	VALVE 4-WAY 10 M 3-POS INT P&D	1
02-1089	50	HOSE END 1 1/2 WB X 1 1/2 C61	3
02-1069	52	FLANGE C62 2 SPLIT W/BOLTS	1
99-0566	53	GAUGE SIGHT 18 OLG-18	2
02-0384	54	GAUGE TEMP 3	2
05-0148	56	BOLT 1/2- 13 X 1	48
02-1052	57	ELL 4 NPTM X 4 NPTF 90	1
99-7231	58	PIPE 4 SCH 40 X 34 THD ONE END	1
99-7232	59	PIPE 4 SCH 40 X 14 THD ONE END	2
02-1070	60	FLANGE C61 2 NPT COMP	3
02-0875	61	FLANGE C61 2 WELD W/O-RING & B	2
02-0901	62	FLANGE C61 2 SPLIT	4
02-0876	63	ELL 2 WELDF 90 SCH 160	2
02-0560	64	TEE 2 WELDF SCH 160	1
02-0657	65	FLANGE C61 32-24 O-RING	1
05-0338	67	BOLT 5/8 X 1 1/2 HHCS ZINC GR	8
05-0243	68	WASHER LOCK 5/8 GRADE 8	8
99-7235	69	BOLT 5/8-11 X 4 1/2 HHCS GR 5	8

POWER UNIT REFERENCE NUMBERS 2 X 100 HP

PART NO.	REF NO.	DESCRIPTION	QTY.
99-7229	70	BOLT 1-8 X 2 1/2 HHCS	4
05-0560	71	WASHER 1 LOCK	4
05-0018	72	NUT 1/2-13 HEX SELF-LOCKING	16
05-0474	73	BOLT GR 5, 1/2-13 X 1 3/4	4
30-3330	75	7 GA X 11 X 19	1
99-7296	76	BREATHER 2 1/2	1
99-7300	76	COUPLING HALF 2 1/2 NPT	1
99-7230	77	WASHER SEALING 1/2 NEOPRENE	48
99-7239	78	PIPE 1 1/4 SCH 40 X 4 SQ CUT	2
99-7240	79	PIPE 1 SCH 40 X 3 SQ CUT	1
99-7241	80	PIPE 1 1/2 SCH 40 X 4 SQ CUT	2
99-7238	81	L4 X 4 X 1/2 X 23 3/4 SQ CUT	3
05-0102	82	BOLT 3/4-10 X 2 1/2 HHCS	8
05-0226	83	WASHER 3/4 LOCK	12
99-7249	84	PIPE 5 SCH 40 X 25	1
99-7250	85	PIPE 5 SCH 40 40 X 41 1/8 STR	1
99-7251	86	PIPE 5 SCH 40 40 X 22 3/4 STR	1
99-6722	87	FLANGE C61 3 1/2 SAE WELD	1
99-7247	88	BOLT KIT F/ 99-7246	1
99-7154	89	OIL COOLER AIR 230/460 3PH AOC	1
27-9407	89	7 GA X 4 1/2 X 20 1/2	1
27-9408	89	7 GA X 4 1/2 X 20 1/2	1
05-0522	92	BOLT 3/4-10 X 3 SHCS	6
99-7293	93	1/2 PL X 7 X 7	2
99-7292	94	1 1/2 PL X 9 1/2 X 9 1/2	2
99-0853	95	FLANGE C62 1 1/2 SPLIT	8
02-0878	96	FLANGE C61 1 SPLIT W/BOLTS	9
02-0565	97	FLANGE C61 1 1/4 SPLIT	8
99-7311	98	2 SCH 160 X 21 5/8 STR CUT	1
99-7312	99	2 SCH 160 X 4 STR CUT	5
02-2326	101	HOSE END 2 WB X 2 C62 SF 90	1
99-7277	102	SOCKOLET 2 X 3-5 6000PSI	1
99-7332	103	2 SCH 160 PIPE X 3 1/2 STR CUT	1
05-2557	104	BOLT 3/4-10 X 1 3/4 HHCS GR 5	4
05-0049	105	WASHER 3/4 FLAT	4

POWER UNIT REFERENCE NUMBERS 2 X 100 HP

PART NO.	REF NO.	DESCRIPTION	QTY.
99-7331	107	PIPE 1 1/2 SCH 160 X 4 SQ CUT	2
02-3018	108	HOSE END 1 1/2 WB X 1 1/2 C61	2
99-7342	110	HOSE END 1 1/2 X 1 1/2 C62 90	1
99-7640	111	HOSE END 1 1/2 WB X 1 1/2 F62S	1
02-1088	112	HOSE END 1 1/4 WB X 1 1/4 C61	4
02-1098	113	HOSE END 1 1/4 WB X 1 1/4 C61	4
02-0908	114	HOSE END 1 WB X 1 C61 SPT	4
02-0879	115	HOSE END 1 WB X 1 C61 SPT 90	5
02-0914	116	HOSE END 2 WB X 2 C61 SPT	3
02-0913	117	HOSE END 2 WB X 2 C61 90 SF	1
99-5952	119	FLANGE C61 1 1/2 WELD COMPANIO	3
02-3076	120	HOSE END 1 WB X 1 NPTM	1
02-0970	121	VALVE CHECK 1 NPTF 65PSI CRACK	1
02-0958	122	ELL 1 NPTM 90 SCH 80	1
99-7339	123	PIPE 1 SCH 40 X 28	3
02-0238	124	ELL 1 NPTM X 1 NPTF 90 SCH 40	1
02-0656	126	ELL 24 ORM X 24 JICM 90	1
02-1045	127	FLANGE C61 2 WELD COMP	2
02-0335	129	HOSE 1 1/4 WIRE BRAID 5000	12
02-1091	130	HOSE 1 1/2 WB 5000PSI	3
99-7219	131	FLANGE C62 1 1/2 WELD COMP	2
99-7349	133	2 SCH 160 PIPE X 8	1
99-7338	134	VALVE CHECK 2 NPTF	1
02-0933	135	NIPPLE 2 NPT CLOSE SCH 40	1
02-0801	136	ELL 2 NPTF SCH 40	1
99-7177	137	3/4 PL X 18 X 27	1
05-0034	139	BOLT 3/4-10 X 2 HHCS GR 5	8
99-7253	141	7 GA X 26 X 46 5/8	1
99-7254	142	C6 X 8.2 X 30 STR CUT	2
99-7576	143	PIPE 3 1/2 SCH 40 X 2 SQ CUT	1
05-0061	144	BOLT 1/2- 13 X 1 1/4 HHCS GR 2	12
02-3051	150	VALVE 4-WAY 08 C 3-POS IN P &	2
02-0645	151	VALVE RELIEF 50 GPM CART RPGC-	4
02-4667	152	SUBPLATE 08 08 & 10 3 STN P F/	1

BODY RAM LINER REPLACEMENT PARTS LIST

2R 150, 190, 250, 310, and 450 Series

The Marathon® Galaxy2R Two-Ram Baler contains parts that will require replacement during the life of the baler. On the following pages are parts lists categorized by baler model and replacement part. The part number and quantity are listed for each part. To place an order, please call **1-800-633-8974** and ask for the **Marathon® Parts Department**.

	2R-150-57-N		2R-190-70-N		2R-250-84-N		2R-310-84-W		2R-310-102-W		2R-450-84-W		2R-450-102-W	
Body Side Liner - Discharge Side	1	34-2040	1	32-7632	2	33-3271	2	32-3910	2	32-7758	2	32-3910	2	32-7758
Body Side Liner - Ejector Side	1	34-2041	1	32-7633	2	33-3272	2	32-3911	2	32-7759	2	32-3911	2	32-7759
Body Floor Liner - Main	1	34-2037	1	34-2037	1	32-7317	1	34-0470	1	34-0470	1	34-0470	1	34-0470
Body Floor Liner - Rear		N/A		N/A	1	32-7323	1	33-6801	1	33-8207	1	33-6849	1	32-4107
Body End Wall Liner		N/A		N/A	1	33-3265	1	33-3541	1	33-3541	1	33-3541	1	33-3541
Body Side Liner - Door	1	34-2042	1	34-2042	1	33-9412	1	34-0473	1	34-0473	1	34-0473	1	34-0473
Floor Liner - BLDR	1	34-2036	1	34-2036	1	34-0182	1	34-0469	1	34-0469	1	34-0469	1	34-0469
Roof Liner - BLDR	1	34-2029	1	34-2029	1	33-9410	1	34-0465	1	34-0465	1	34-0465	1	34-0465
Body T & G Bar - Middle	3	33-4331	3	33-4331	4	32-7321	5	33-6802	5	33-8208	5	33-6850	5	32-7763
Body T & G Bar - Outside	2	33-4332	2	33-4332	2	32-7322	2	33-6796	2	33-8205	2	33-6845	2	32-7764
Roof Liner	1	34-2031	1	34-2031	1	32-7324	1	33-5789	1	33-5789	1	33-5789	1	33-5789
Floor Track - BLDR	1	34-2038	1	34-2038	1	32-7325	1	34-0471	1	34-0471	1	34-0471	1	34-0471
	1	34-2039	1	34-2039	1	34-0183	1	34-0472	1	34-0472	1	34-0472	1	34-0472
Roof Track - BLDR	1	34-2030	1	34-2030	1	33-9408	1	34-0466	1	34-0466	1	34-0466	1	34-0466
	1	34-2032	1	34-2032	1	32-7512	1	34-0467	1	34-0467	1	34-0467	1	34-0467
Bottom Door Track Liner	1	34-2052	1	34-2052	1	34-0192	1	33-9871	1	33-9871	1	33-9871	1	33-9871
Upper Door Track Liner	1	34-2051	1	34-2051	1	34-0191	1	33-9867	1	33-9867	1	33-9867	1	33-9867
Liner Package - Ram														
Ram Floor Liner	1	33-4273	1	33-4273	1	32-7460	1	32-6535	1	32-6535	1	31-7480	1	31-7480
Ram Face Liner		N/A		N/A	1	32-7459	1	33-6067	1	33-6067	1	31-9466	1	31-9466
Ram T & G Bars					2	32-7461								
	4	33-4345	4	33-4345	3	32-7462	6	33-6068	6	33-6068	6	31-7886	6	31-7886
Ram Tail Floor Liner	2	33-4274	2	33-4274	2	32-7463	2	32-6600	2	32-6600	2	29-0311	2	29-0311
Hold Down Bar		446589		446589		446898		447083		446976		447083		446976
Front	2	32-6254	2	32-6254	2	31-8056	2	31-7612	2	31-7612	2	31-7612	2	31-7612
Rear		N/A		N/A	2	32-7352	2	32-3921	2	32-4108	2	32-3921	2	32-4108
Bolt	22	05-3988	22	05-3988	32	05-3871	40	05-3871	46	05-3871	40	05-3871	46	05-3871
Washer Lock	22	05-0561	22	05-0561	32	05-0226	40	05-0226	46	05-0226	40	05-0226	46	05-0226

Galaxy 2R® Baler

Replacement Parts

	2R-150-57-N		2R-190-70-N		2R-250-84-N		2R-310-84-W		2R-310-102-W		2R-450-84-W		2R-450-102-W	
Washer Flat	22	05-0293	22	05-0293	32	05-0049	40	05-0049	46	05-0049	40	05-0049	46	05-0049
Main Cylinder	1	04-3697	1	04-3681	1	04-3665	1	04-3633	1	04-3636	1	04-3637	1	04-3638
Rear Pin	1	32-6906	1	32-6906	1	32-7399	1	33-6042	1	33-6042	1	33-0815	1	33-0815
Rod End Pin	1	33-4294	1	33-4294	1	33-3308	1	33-6043	1	33-6043	1	33-3563	1	33-3563
Ejector Cylinder	1	04-3699	1	04-3699	1	04-3667	1	04-3695	1	04-3695	1	04-3695	1	04-3695
Rear Pin	1	32-6303	1	32-6303	1	33-3309	1	29-7689	1	29-7689	1	29-7689	1	29-7689
Rod End Pin	1	30-3473	1	30-3473	1	29-7690	1	29-7690	1	29-7690	1	29-7690	1	29-7690
Door Cylinder	1	04-3669	1	04-3669	1	04-3675	1	04-3677	1	04-3677	1	04-3677	1	04-3677
Stamper Cylinder (optional)	1	04-3429	1	04-3429	1	04-3429	1	04-3429	1	04-3429	1	04-3444	1	04-3444

DECAL PARTS LISTS

Warning Decal Requirements

When your 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 the baling operation. The following decals must be maintained. Additional decals may be purchased through your distributor or from Marathon Equipment Company by calling the service department at 877-258-1105.

Refer to the following **Body Decal Placement** for locations of decals (match the reference numbers).

Body Decal Parts List

REF NO.	PART NO.	DESCRIPTION	QTY
1	06-2751	MARATHON COMPACTION & RECYCLING SOLUTIONS	4
2	06-1839	AMERICAN FLAG	4
3	06-0097	CONTAINER SERIAL NUMBER PLT N	4
4	06-0120	DANGER DISCONNECT & LOCK	1
5	06-0249	DANGER HAZARDOUS VOLTAGE	17
6	06-0121	NOTICE FEDERAL REGULATIONS	2
7	06-0117	WARNING STAND CLEAR WHEN BALE	1
9	06-0133	WARNING STAY OFF. DO NOT CLIMB	2
12	06-0116	DANGER KEEP HANDS OUT	2
16	06-0038	DANGER DO NOT REMOVE ACCESS	16
18	06-3051	GALAXY 2R	2
26	06-3977	WARNING DO NOT OPERATE	2
27	06-3978	DANGER DO NOT OVERRIDE	2
28	06-4011	MAINTENANCE SCHEDULE 7.3	1

Refer to the following **Standard Hopper Decal Placement** for locations of decals (match the reference numbers).

Standard Hopper Decal Parts List

REF NO.	PART NO.	DESCRIPTION	QTY
1	06-0039	DANGER DO NOT ENTER	6
2	06-0041	DANGER THIS MACHINE START	2
3	06-0116	DANGER KEEP HAND OUT	1
4	06-0249	DANGER HAZARDOUS VOLTAGE	2
5	06-3123	DANGER CONFINED SPACE	4

Refer to the following **Stamper Hopper Decal Placement** for locations of decals (match the reference numbers).

Stamper Hopper Decal Parts List

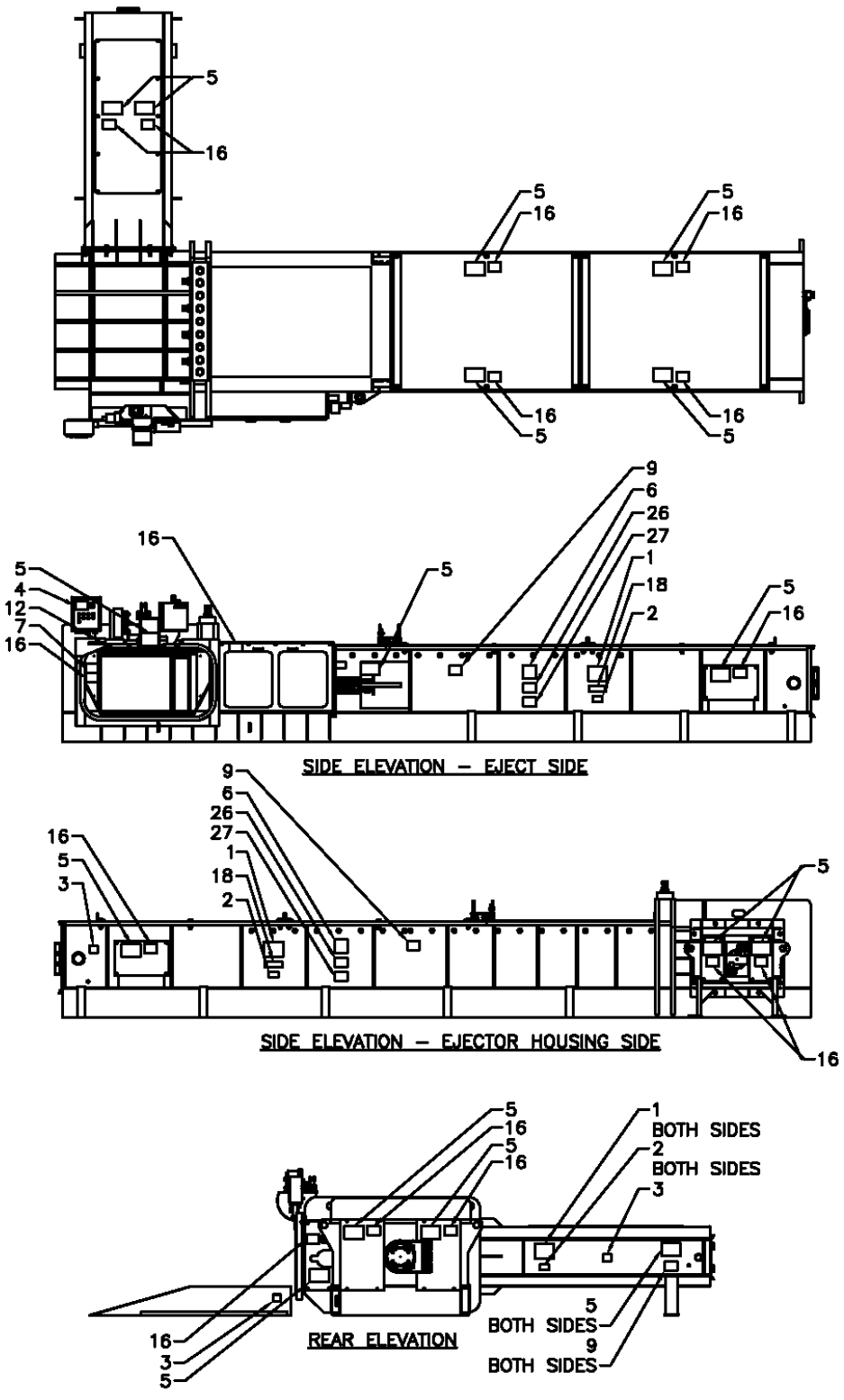
REF NO.	PART NO.	DESCRIPTION	QTY
1	06-0038	DANGER DO NOT REMOVE ACCESS	1
2	06-0039	DANGER DO NOT ENTER	6

Stamper Hopper Decal Parts List			
REF NO.	**PART NO.**	**DESCRIPTION**	**QTY**
3	06-0041	DANGER THIS MACHINE START	2
4	06-0116	DANGER KEEP HAND OUT	1
5	06-0249	DANGER HAZARDOUS VOLTAGE	3
6	06-3123	DANGER CONFINED SPACE	4

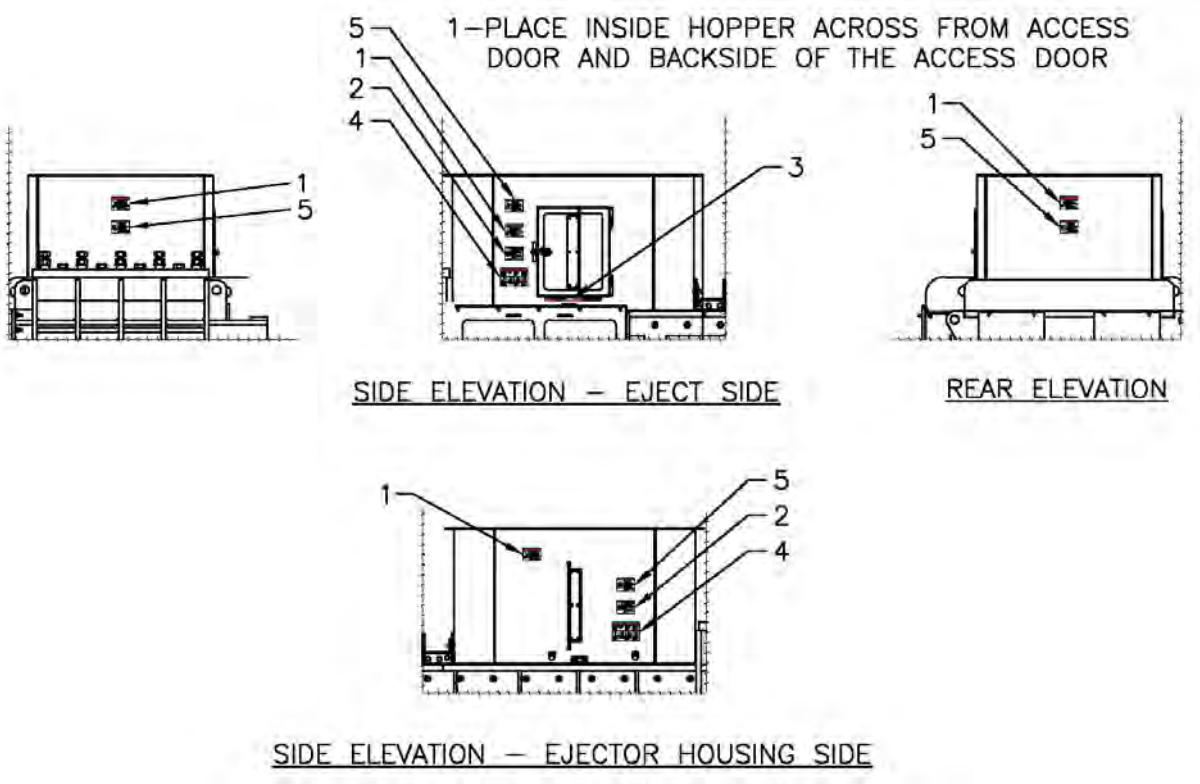
Refer to the following **Hand Feed Hopper Decal Placement** for locations of decals (match the reference numbers).

Hand Feed Hopper Decal Parts List			
REF NO.	**PART NO.**	**DESCRIPTION**	**QTY**
1	06-0039	DANGER DO NOT ENTER	2

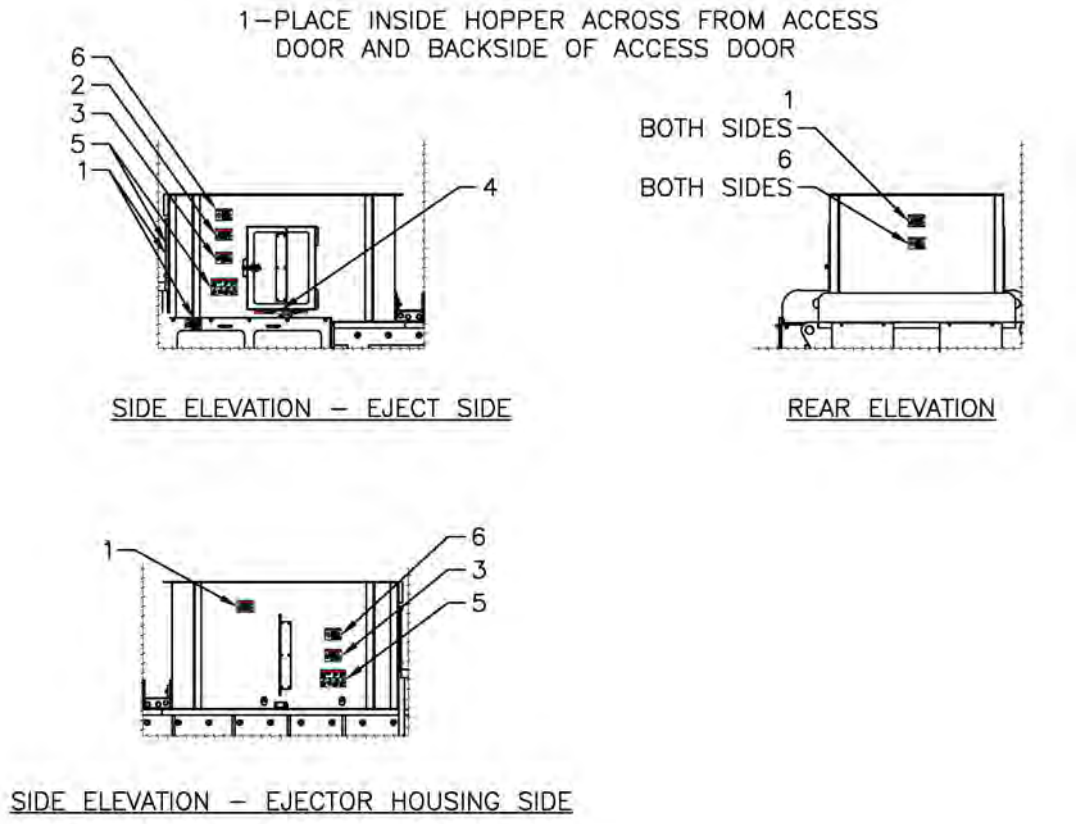
BODY DECAL PLACEMENT



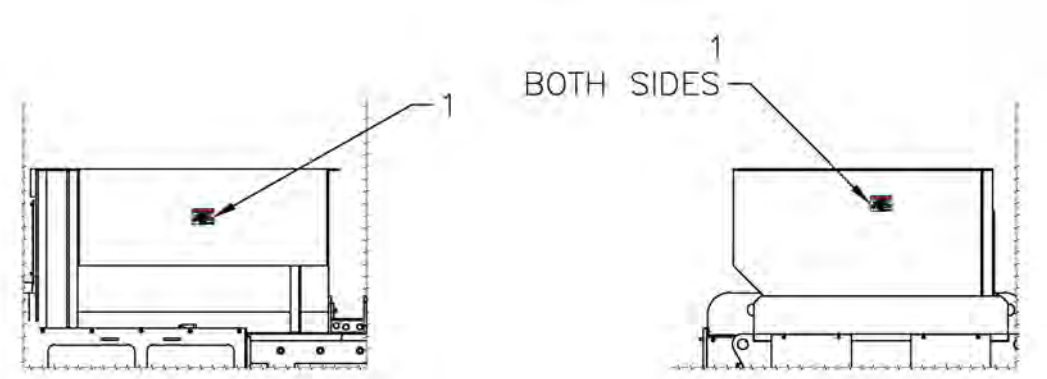
STANDARD HOPPER DECAL PLACEMENT



STAMPER HOPPER DECAL PLACEMENT



HAND FEED HOPPER DECAL PLACEMENT



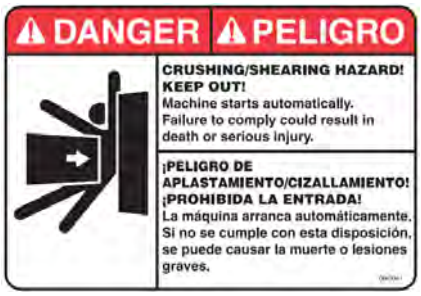
DECAL IMAGES

06-0116

06-0038

06-0039

06-0041



06-3123

06-0117

06-0120

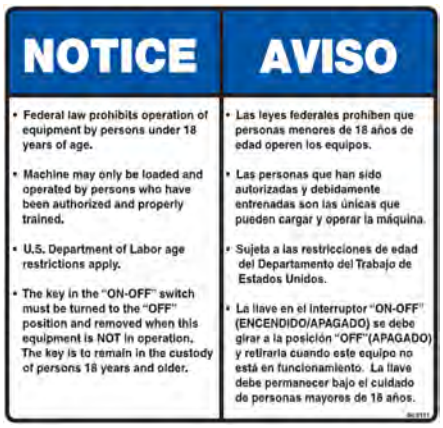
06-0133

06-0249

06-3044

DECAL IMAGES

06-0121

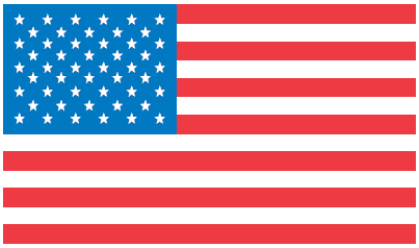


06-0129

06-0097

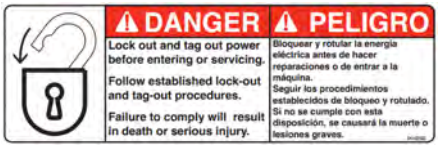
06-2751

06-1839



06-3051

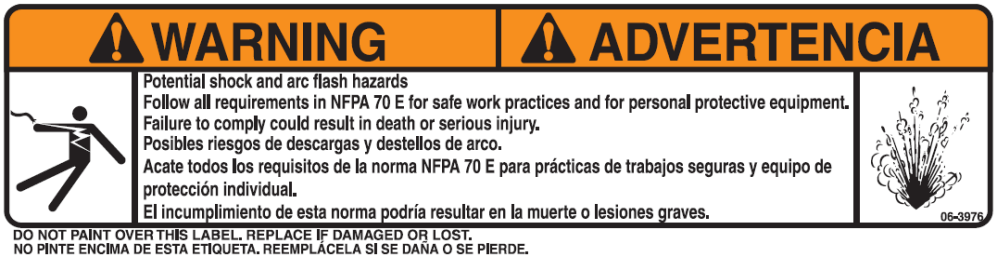
06-0250



06-3274

06-3977

06-3976



06-3978

DECAL IMAGES

06-2684

208

06-2686

230

06-2690

460

06-4011

MARATHON 2RAM BALERS

MAINTENANCE SCHEDULE

NOTICE

- ALWAYS LOCK-OUT AND TAG-OUT BALER BEFORE ATTEMPTING ANY MAINTENANCE OR REPAIR
- ONLY AUTHORIZED PERSONNEL SHOULD PERFORM THESE PROCEDURES
- NEVER OPERATE BALER WITH ANY GUARD OR INTERLOCK MISSING OR INOPERABLE
- USE PROPER SAFETY EQUIPMENT WHILE SERVICING BALER

EVERY 10 HOURS OF OPERATION:

1. Verify ALL guards are in place and secured.
2. Check for oil leaks.
3. Check oil level and temperature in hydraulic reservoir. Note: Maintain oil level above 3/4 full (in sight gauge). Oil level should be checked with main ram and ejector ram in retracted position. Oil temperature should be below 160°F.
4. Check all remote Emergency Stop locations. Note: Emergency Stops should not be obstructed, damaged, or depressed.
5. Make sure operator's platform and access steps (if so equipped) are free from hazards that could cause an accident.
6. Make sure there is an adequate supply of wire in wire tie strapper, and wire is correct gauge for tyer.
7. Clean lenses of photocells, sonic sensors, lasers and reflectors. Note: In a dusty application, it may be necessary to clean these devices and reflectors several times a day.
8. Clean radiator on oil cooler.
9. Oil wire tyer. Note: Under certain conditions it may be necessary to oil the wire tyer more often.

ADDITIONALLY EVERY 50 HOURS OF OPERATION:

1. Clean around power pack and baler to remove operator hazards.
2. Check function of all emergency stop buttons and interlock switches.
3. Check start-up alarm and flashing beacon. Clean light if required.

ADDITIONALLY EVERY 200 HOURS OF OPERATION:

1. Check function of all controls (i.e. lights, switches, joysticks etc.).
2. Check all hoses for chaffing, rubbing, leaking or other deterioration and damage.
3. Inspect air filter on hydraulic reservoir. Clean or replace if necessary.
4. Check cylinder pins and make sure they are secure.
5. Check shear blade on compression ram and baler body for sharpness, clearance (not to exceed .015"), and overall wear. Shim, rotate, or replace if necessary. The gap between the ram and body shear blades should be .015". The tolerance is +.005" and -.000"
6. Check hold-down bars for wear. Adjust if necessary. Tighten bolts. Rotate or replace hold-down bars if necessary. The bottom of the hold-down bars should be flush with the top of the ram.
7. Apply a light coating of all-purpose grease on hold down bars to prevent excessive wear.
8. Check seals on all cylinders for leaks.
9. After first 200 hours of operation replace return line/circulating pump filter. Thereafter, this filter maintenance interval will be extended to 500 hours.
10. Clean any debris, dust or grime from wire tyer gears and tracks. Note: In dusty conditions, it may be necessary to clean wire tyer more often.

ADDITIONALLY EVERY 500 HOURS OF OPERATION:

1. Change return line/circulating pump oil filter element in oil filter housing.
2. Inspect cylinder rods of compression and ejection ram cylinders for nicks and abrasions.
3. Check cylinder rod seals for damage.
4. Inspect cylinder pins for movement or missing cotter pins. Lubricate cylinder pinning sleeves and pins.
5. Grease wire tyer drive wheels (follow manufacturer's recommendations in Equipment Operation Manual).

ADDITIONALLY EVERY 1000 HOURS OF OPERATION:

1. Send oil sample for evaluation.
2. Check baler structure for any signs of problems (i.e., cracked welds, bending, etc.).
3. Rotate main ram cylinder rod 180°.

ADDITIONALLY EVERY 2000 HOURS OF OPERATION:

1. Change hydraulic fluid in entire system. If existing oil is reused, it should be tested by a laboratory to ensure it meets necessary specifications. Additives can be added to bring oil back to standards. Before returning oil to tank, it should be filtered through a minimum 5 micron filter. Hydraulic tank should be cleaned inside with a non-flammable solvent and thoroughly dried before replacing oil.
2. Lubricate electric motor bearings as recommended by manufacturer.
3. Filter maintenance:
   a. Hydraulic suction filters should be cleaned or replaced at yearly intervals.
   b. Care should be exercised in cleaning filter to ensure that element is not torn. Clean filter with a soft brush and standard industrial solvent.

FAILURE TO FOLLOW THE MAINTENANCE SCHEDULE ABOVE WILL RESULT IN LOWER OUTPUT PRODUCTION, REDUCED BALER LIFE and, MAY CAUSE UNSAFE CONDITIONS!

Technical Service & Warranty:
877-258-1105

Parts:
800-528-5308

MARATHON®

INTENTIONALLY LEFT BLANK

Galaxy 2R® Baler
INDEX

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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:

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Vernon, AL 35592-1798