



Operational,
Maintenance
and Installation
Manual

TWO RAM BALERS

TR-8-40



Vernon, AL • Fayette, AL
Yerington, NV • Clearfield, PA
1-800-633-8974 • www.NEXGENbalers.com

CONTENTS

SECTION 1 - Operation

Introduction	1-1
Specifications For TR-8 (Control Locations)	1-2
Pre-Operation Instructions	1-3
The Baling Process	1-4
Main Control Panel	1-5
Control Description	1-6
Standard Operation - Baler Start Up	1-9
Standard Manual Operation	1-10
Baler Shutdown From Standard Manual Operation	1-11
Standard Automatic Operation	1-12
Baler Shutdown From Standard Automatic Operation	1-13
Standard Operation - Changing Materials	1-14
Jam Prevention	1-15
Decals	1-17
Decal Placement	1-19

SECTION 2 - Maintenance

Lock-Out & Tag-Out Instructions	2-1
Periodic Maintenance	2-2
Recommended Oils	2-3
Procedures (Filter, Cylinder Bypassing)	2-4
Procedures (Shear Bar Maintenance)	2-5
Procedures (Pressure Setting)	2-6
Procedures (Photocell Testing, Limit Switch Adjustment)	2-7
Charts	2-8
Panel Box - TR-8	2-9
Electrical Schematic	2-10
Power Unit Layout For TR-8, 40 HP.....	2-11
Power Unit Manifold Plumbing Connections	2-12
Typical Hydraulic Schematic For TR-8	2-13
Troubleshooting	2-14
Diagnostics Code	2-16
Parts List	2-18

SECTION 3 - Installation

Installation - General Requirements	3-1
General Installation	3-2
Baler Plumbing Diagram For TR-8	3-3
Electrical Installation	3-4
Start-Up Instructions	3-5

INTRODUCTION

THANK YOU FOR PURCHASING A MARATHON TWO-RAM BALER.

This product is designed to give you reliable service and superior performance for years to come. To guarantee top performance from the baler and the safest operation of the baler, each person involved in the operation, maintenance, and installation of the baler should read and thoroughly understand the instructions in this manual and follow all warnings.

This manual covers the operation, general maintenance, and installation of the TR-8 baler. A manual for the auto-tie mechanism is provided by the manufacturer of that item.

The employer involved in the operation, maintenance, and installation of the baler should read and understand the most current version of the following applicable standards:

ANSI Standard No. Z245.5, "Safety Requirements For Baling Equipment"
(a copy of this standard may be obtained from Marathon Equipment Company, Field Service Department, at 1-800-633-8974).

OSHA 29 CFR, Part 1910.147, "The control of hazardous energy (lockout and tagout)"

Any service or repairs that go beyond the scope of this manual should be performed by factory authorized personnel only.

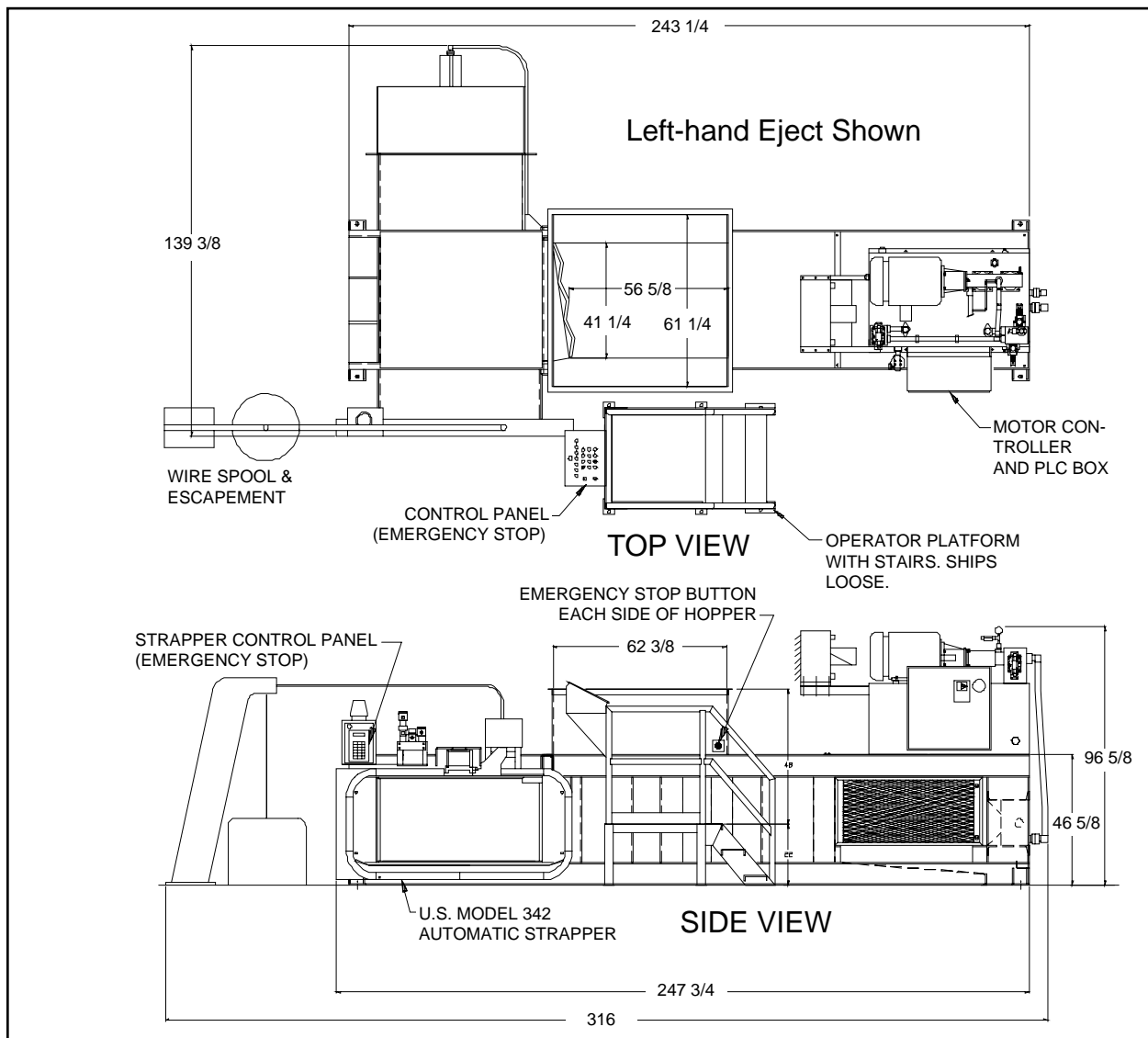
IF YOU SHOULD NEED FURTHER ASSISTANCE, PLEASE CONTACT YOUR DISTRIBUTOR. YOU WILL NEED TO PROVIDE THE BALER SERIAL NUMBER, INSTALLATION DATE, AND ELECTRICAL SCHEMATIC NUMBER TO YOUR DISTRIBUTOR.

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, AI 35592-1798
Attn: Field Service Department
1-800-633-8974**

1 OPERATION

SPECIFICATIONS FOR TR-8 (CONTROL LOCATION)



Specifications For TR-8

Shipping Weight	24,000 lbs
Bale Size (Expanded)	31" x 45" x 64"
Main Cylinder	8" Bore, 4.5" Rod
Power Unit	40 HP
Main Pump	75 GPM
Cycle Time	23 seconds
System Pressure	3000 PSI
Control Voltage	120 VAC
Main Voltage	460 VAC, 3 Phase

1 OPERATION

PRE-OPERATION INSTRUCTIONS

WARNING: DO NOT OPERATE BALER UNTIL OPERATING INSTRUCTIONS ARE THOROUGHLY UNDERSTOOD.

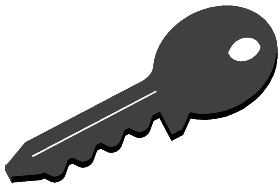
DANGER

**DO NOT
ENTER**

STAY CLEAR OF ALL INTERNAL PARTS OF THE BALER AND ALL MOVING EXTERNAL PARTS OF THE BALER WHEN IN OPERATION. FAILURE TO DO SO COULD RESULT IN SERIOUS PERSONAL INJURY OR DEATH!

NEVER ENTER ANY PART OF THE BALER UNLESS THE DISCONNECT SWITCH HAS BEEN TURNED OFF AND PADLOCKED AND ALL STORED ENERGY SOURCES HAVE BEEN REMOVED. See Lock-Out & Tag-Out Instructions in the Maintenance section of this manual. Before starting the baler, be sure no one is inside. Be certain that everyone is clear of all points of operation and pinch point areas before starting.

THIS BALER IS CONTROLLED BY PHOTOCELLS AND WILL START AUTOMATICALLY WHEN THE PHOTOCELLS DETECT ANY OBJECT IN THE CHARGE BOX. THE COMPACTION RAM IN THIS BALER TRAVELS AT A FAST SPEED. STAND CLEAR OF THE BALER WHEN IN OPERATION.



THE EMPLOYER SHOULD ALLOW ONLY AUTHORIZED AND THOROUGHLY TRAINED PERSONNEL TO OPERATE THIS BALER. This baler is equipped with a key operated locking system. The key(s) should be in the possession of only authorized personnel. Federal regulation prohibits operation by persons under 18 years of age. Turn off and remove key after use.



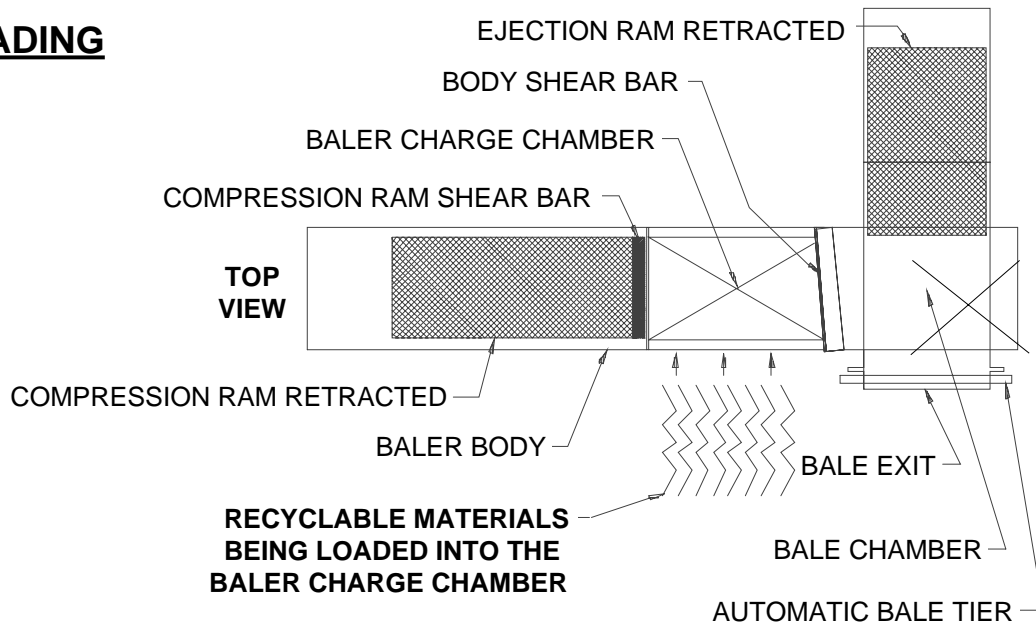
ONLY AUTHORIZED PERSONNEL SHOULD BE ALLOWED INSIDE THE PANEL BOX. The panel box contains high voltage components. See Lock-Out & Tag-Out instructions in the Maintenance section.

DANGER

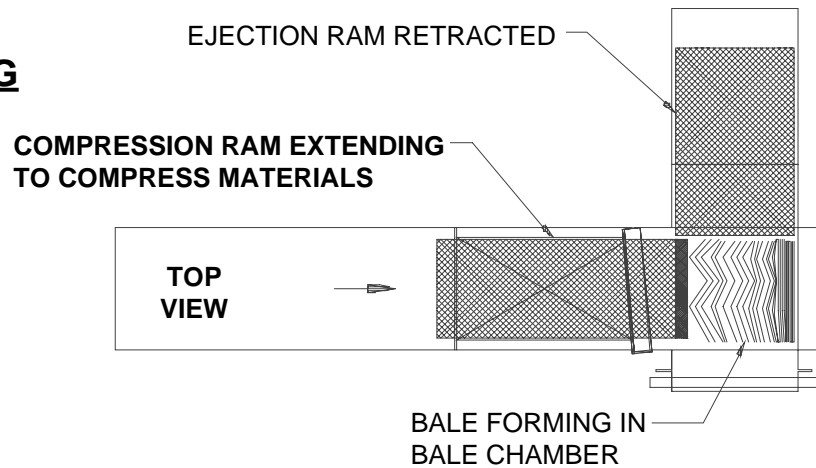
460 VOLTS

THE BALING PROCESS

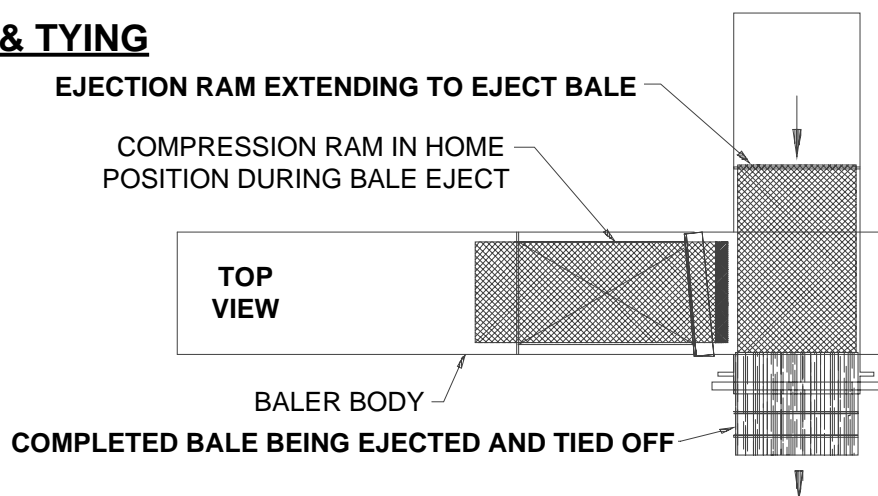
LOADING



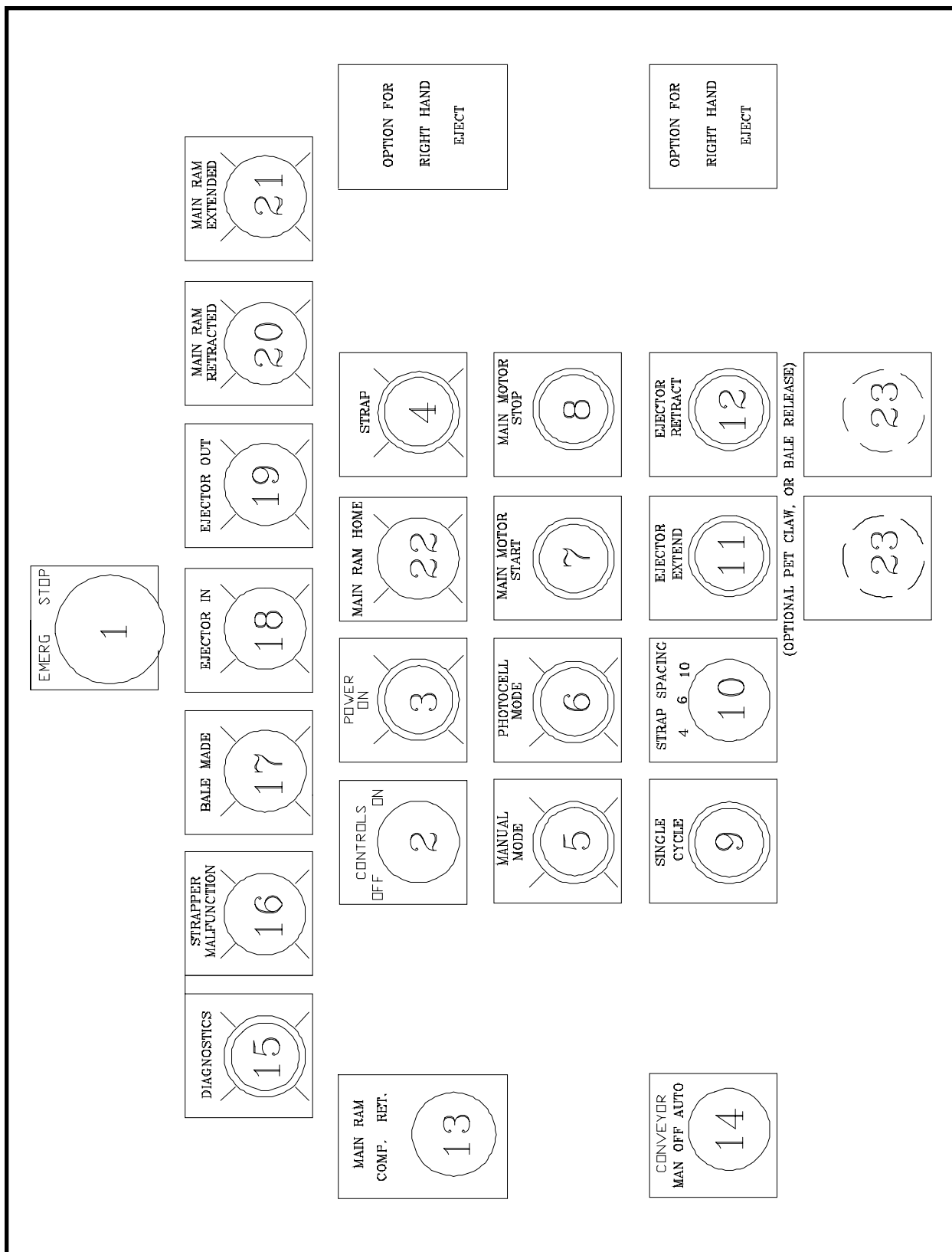
COMPRESSING



EJECTING & TYING



MAIN CONTROL PANEL



CONTROL DESCRIPTION

1. **EMERGENCY STOP** - When pushed, this button stops all of the baler functions and shuts the baler down. When pushed, the button remains depressed and the baler will not operate until the button has been pulled back out. After the EMERGENCY STOP BUTTON is depressed, the baler must be restarted using the start-up procedure. There are four EMERGENCY STOP BUTTONS strategically located on the baler.
2. **CONTROLS, ON/OFF SELECTOR SWITCH** - This key operated selector switch is used to turn the power to the operating controls on and off. The key can be removed only when the switch is in the OFF position.
3. **POWER ON** - Pressing this illuminated pushbutton causes the master control relay to energize. This allows power to flow to the PLC inputs and outputs, which allows the baler to operate. Anytime an E-Stop is pressed or an interlock is broken, the POWER ON button must be reset. If the button does not light up when depressed, generally this will indicate that one of the E-Stop buttons is depressed. If the button lights up when pressed, but goes out when released, generally this will indicate that an interlock is open somewhere on the baler.
4. **STRAP** - This illuminated push button is used to manually apply wire tie straps. When the light is on, the button is operational.
5. **MANUAL MODE** - Pressing this button will allow the manual controls to be used. MANUAL MODE will turn off if no manual control is used within 20 seconds. MANUAL MODE can be deactivated by pressing the EMERGENCY STOP button.
6. **PHOTOCELL MODE** - Pressing this pushbutton sets the machine to operate automatically (i.e., when the photocell is blocked, the ram will move). Pressing this button will also start the automatic eject and tie sequence if the main ram is at the home position when the PHOTOCELL MODE button is pressed. PHOTOCELL MODE can be turned off by pressing the MANUAL MODE button to start manual baling or by pressing the EMERGENCY STOP button.
7. **MAIN MOTOR START** - Pressing this pushbutton will start the main electric motor/hydraulic system. This button must be held for the entire 20 second alarm period.
8. **MAIN MOTOR STOP** - Pressing this button will stop the main electric motor/hydraulic system.

CONTROL DESCRIPTION

9. **SINGLE CYCLE** - When the photocell mode is active, pressing this button will cause the main ram to compress the material and retract. If this button is pressed when the main ram is retracting, the main ram will change direction and compress the material.
10. **STRAP SPACING** - This switch allows the automatic setting of the number of straps to be applied to a bale. The selections are for 4, 6, or 10 straps.
11. **EJECTOR EXTEND** - This pushbutton is used to manually extend the ejector ram. This button will not function if the compression ram is not at HOME position or in full retract position, to prevent possible machine damage.
12. **EJECTOR RETRACT** - This pushbutton is used to manually retract the ejector ram.
13. **MAIN RAM, COMP. RET.** - This joy-stick is used to manually extend and retract the compression ram. It allows the operator to position the ram in the desired location for service and repair, or to compress material in the manual mode. This lever will not function if the ejector ram is forward of the full retract position, to prevent possible machine damage.
14. **CONVEYOR, MAN/OFF/AUTO** - This selector switch operates the feed conveyors. Some models have more than one switch. In the MAN position, the conveyor will run continuously. In the OFF position, the conveyor does not run. In the AUTO position, the feed conveyors are controlled by photocells on the feed hopper. The photocells also signal to the conveyor when it is necessary to run and load the baler.

Lights

15. **DIAGNOSTICS** - This light will come on and blink an error code to indicate that there is a problem with the baler. If the error has been corrected, the light will stop blinking when pressed. See the DIAGNOSTICS CODE in the MAINTENANCE section of this manual.
16. **STRAPPER MALFUNCTION** - This red light is illuminated when there is a malfunction with the automatic strapper (bale tier).
17. **BALE MADE** - This yellow light is illuminated when enough material has been baled to complete a bale.
18. **EJECTOR IN** - This light indicates the ejector ram is fully retracted.
19. **EJECTOR OUT** - This light indicates the ejector is fully extended.

CONTROL DESCRIPTION

Lights - continued

- 20. MAIN RAM RETRACTED - This light indicates the compression ram is fully retracted.
- 21. MAIN RAM EXTENDED - This light indicates the compression ram is fully extended into the bale chamber.
- 22. MAIN RAM HOME - This light indicates the compression ram is in the home position at the edge of the bale chamber so the bale can be ejected.

Options

- 23. PET CLAW - This selector switch is used to put the pet claw in the automatic cycle or turn it off. In the AUTO position, the pet claw extends and retracts as required in the baling cycle.

BALE DOOR - This selector switch is used to raise, lower, and operate the bale door in the automatic baling cycle.

STANDARD OPERATION - BALER START UP



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

WARNING: DO NOT OPERATE BALER UNTIL OPERATING INSTRUCTIONS ARE THOROUGHLY UNDERSTOOD.

Prior to the start-up of the baler each day, check the items found in the Daily list of the Periodic Maintenance section of this manual, page 2-3.

Standard operation for the TR-8 includes Baler Start Up and either the Manual Operation or the Automatic Operation.

BALER START UP

1. Check the work area and make sure that all personnel are clear of the baler.
2. Insert the CONTROLS key and rotate the switch to the ON position.
3. Set the STRAP SPACING switch, and the CONVEYOR switch to the correct setting. Set any options to the correct setting.
4. Press the POWER ON pushbutton.
5. Press and hold the MAIN MOTOR START button.
 - a. An alarm will sound. The rotating beacon will start to flash for 5 seconds.
 - b. The alarm will silence. The rotating beacon will continue to flash for 15 seconds. The rotating beacon will flash, allowing the operator to make sure there are no personnel in the baler or on the feed conveyor at any point.
 - c. The main motor will start after the 20 second delay.
 - d. Release MAIN MOTOR START button after the motor starts.
6. This completes the BALER START UP sequence. See the following sections for MANUAL OPERATION or AUTOMATIC OPERATION.

STANDARD MANUAL OPERATION

After **Baler Start Up** the baler can also be operated in a manual mode.

Manual Operation

1. Rotate the automatic strapper selector switch to the ON position (on the automatic strapper control panel - See the factory-supplied operators manual shipped with the strapper).
2. Rotate the CONVEYOR selector switch to the OFF position.
NOTE: Set any options (pet claw, bale door) to their proper settings.
3. Rotate the CONVEYOR selector switch to the ON position allowing material to fill the charge chamber.
NOTE: Do not overfill the charge chamber. Overfilling causes excessive shearing action on the baler.
4. Move the MAIN RAM COMPRESS/RETRACT control lever to the COMPRESS position and hold until the compression ram is fully extended. The MAIN RAM EXTENDED light will illuminate when the ram is fully extended.
5. Move the MAIN RAM COMPRESS/RETRACT control lever to the RETRACT position and hold until the compression ram is fully retracted. The MAIN RAM RETRACTED light will illuminate when the ram is fully retracted.
6. Continue to cycle the ram until the job is complete or until the BALE MADE light comes on. When the BALE MADE light comes on, this indicates that the bale is complete and is ready for ejection.
7. Before ejecting the bale, retract the compression ram using the MAIN RAM control lever until the ram reaches the HOME position. At that time, the MAIN RAM HOME light will illuminate indicating proper compression ram position for bale ejection.
NOTE: Set any options to their proper settings.
8. Press the EJECTOR EXTEND button until the bale reaches the desired position for the first strap (wire tie). Next, press the STRAP button to apply the first strap. Continue to extend the ejector and apply straps at the desired spacing. The EJECTOR OUT light will illuminate when the bale has cleared the bale chamber.
9. Move the ejector to the fully retracted position.
10. Move the compression ram to the fully retracted position.
11. See the next page for complete shutdown instructions.

BALER SHUTDOWN FROM STANDARD MANUAL OPERATION

1. Eject 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 control 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 and Tag-out Instructions on page 2-1. NOTE: If any maintenance or service is to be performed on the baler, complete Lock-out and Tag-out is required.
7. Clean up around the bale exit and automatic wire tier. Perform any other clean up necessary, such as behind the main ram (requires complete Lock-out and Tag-out), around the baler and feed conveyor.

STANDARD AUTOMATIC OPERATION

AUTOMATIC OPERATION

1. Start the baler per the Start-Up procedure.
2. Retract main ram to the fully retracted position.
3. Retract ejector ram to fully retracted position.
4. Make sure the automatic strapper control switch is in the AUTOMATIC mode.
5. Depress the PHOTOCELL MODE pushbutton. The baler will cycle automatically when the selected photocell is blocked or when the SINGLE CYCLE pushbutton is depressed.
6. Turn the CONVEYOR selector switch to the AUTO position if you want the baler to control the flow of material. You may control the flow of material manually by turning the CONVEYOR switch ON and OFF as required.
7. Pressing the MANUAL MODE pushbutton will stop the PHOTOCELL MODE. To resume PHOTOCELL MODE, you will have to begin at step 1 of this procedure.
8. See the next page for complete shutdown instructions.

AUTOMATIC BALE EJECT AND TIE OFF

During automatic cycle, the TR-8 will automatically eject and tie off the bale when the preset baling pressure and BALE MADE position have been reached. It is possible, however, to have the TR-8 eject and tie a bale at any time by using the following procedure.

1. Using the manual controls, move the main ram to the HOME position.
2. The bale will be ejected and tied off (strapped). NOTE: The strapping will be done based on the selected baling mode.
3. See the next page for complete shutdown instructions.

BALER SHUTDOWN FROM STANDARD AUTOMATIC OPERATION

1. Eject 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 control 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 and Tag-out Instructions on page 2-1. NOTE: If any maintenance or service is to be performed on the baler, complete Lock-out and Tag-out is required.
7. Clean up around the bale exit and automatic wire tier. Perform any other clean up necessary, such as behind the main ram (requires complete Lock-out and Tag-out), around the baler and feed conveyor.

STANDARD OPERATION - CHANGING MATERIALS

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.

(NOTE: 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.

JAM PREVENTION

WARNING: DO NOT ENTER THE BALER FOR ANY REASON, UNTIL THE BALER HAS BEEN LOCKED-OUT AND TAGGED-OUT PER THE INSTRUCTIONS ON PAGE 2-1 OF THIS MANUAL.

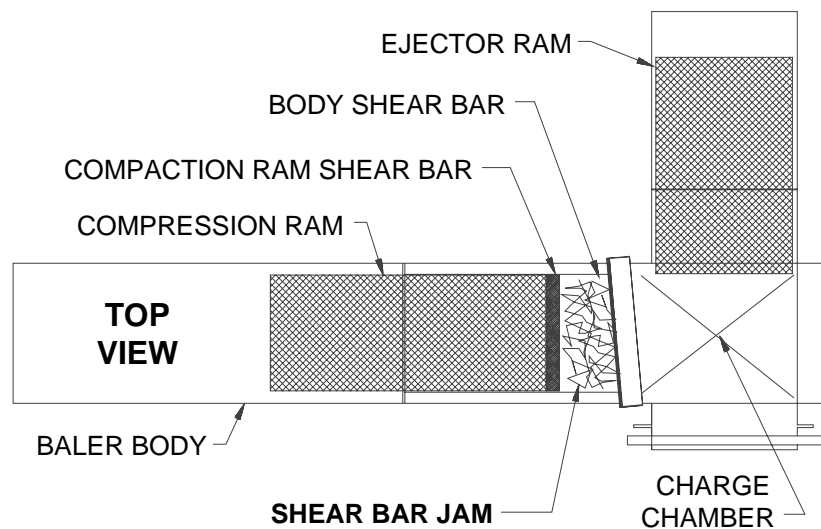
There are two types of jams which could occur with a two-ram baler, a jam at the shear bar, and an oversize bale which is difficult to eject.

Steps may be taken to prevent the likelihood of a jam:

1. Presort material. Remove any questionable objects or material. Make sure that the material is all the same general type and composition.
2. Regulate 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 judgement. An operator's familiarity with the material variances, baler limitations, and close attention to material flow will reduce 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.

SHEAR BAR JAM



If the shear bar fails to cut the material in the automatic mode, turn off the feed conveyors and switch the baler to manual. 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 COMP./RET. 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:

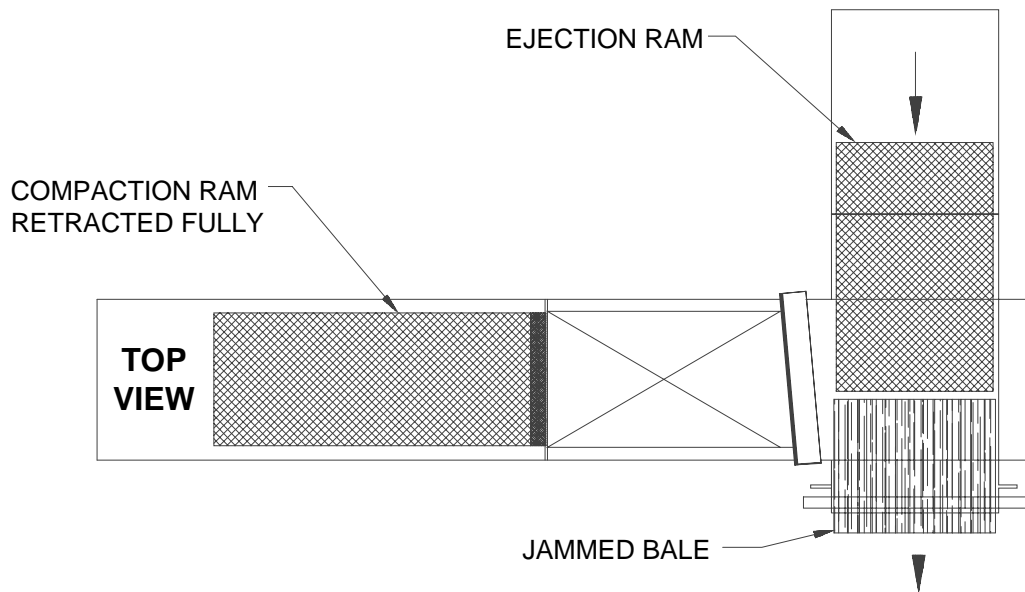
1. Retract the compression ram to the full retract position.
2. **Shutdown the machine and Lock-out and Tag-out per the instructions on page 2-1. NEVER ENTER THE BALER FOR ANY REASON UNTIL THE BALER HAS BEEN LOCKED-OUT AND TAGGED-OUT.**
3. Remove material from feed hopper and clear obstruction.

JAM PREVENTION

WARNING: DO NOT ENTER THE BALER FOR ANY REASON, UNTIL THE BALER HAS BEEN LOCKED-OUT AND TAGGED-OUT PER THE INSTRUCTIONS ON PAGE 2-1 OF THIS MANUAL.

OVERSIZE BALE JAM

The following instructions explain how to remove a jammed bale.



1. If the bale fails to eject in the automatic mode, set the baler to the 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 and Tag-out the baler per the Lock-out and Tag-out Instructions on page 2-1. NEVER ENTER THE BALER FOR ANY REASON UNTIL THE BALER HAS BEEN LOCKED-OUT AND TAGGED-OUT.**
6. Remove the excess material.

DECALS

WARNING DECAL REQUIREMENTS

When your baler leaves the factory, several WARNING DECALS are installed for 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.

Decal Number 06-0039 - DANGER: DO NOT ENTER.

Decal Number 06-0041 - CAUTION: THIS MACHINE STARTS AUTOMATICALLY.

Decal Number 06-0043 - DANGER: 208 VOLTS. or

Decal Number 06-0044 - DANGER: 230 VOLTS. or

Decal Number 06-0045 - DANGER: 460 VOLTS.

Decal Number 06-0101 - DANGER: 208 VOLTS. or

Decal Number 06-0102 - DANGER: 230 VOLTS. or

Decal Number 06-0103 - DANGER: 460 VOLTS.

Decal Number 06-0115 - CAUTION: GATE MUST BE CLOSED BEFORE OPERATING
BALER.

Decal Number 06-0116 - DANGER: KEEP HANDS OUT.

Decal Number 06-0117 - CAUTION: STAND CLEAR WHEN BALE IS EJECTED.

Decal Number 06-0120 - DANGER. DISCONNECT AND LOCK OUT POWER
BEFORE OPENING THIS PANEL.

Decal Number 06-0121 - WARNING: FEDERAL REGULATION PROHIBITS OPERA-
TION OF THIS EQUIPMENT BY PERSONS UNDER 18
YEARS OF AGE.

Decal Number 06-0126 - MARATHON EQUIPMENT COMPANY

continued on the following page

DECALS

WARNING DECAL REQUIREMENTS (continued)

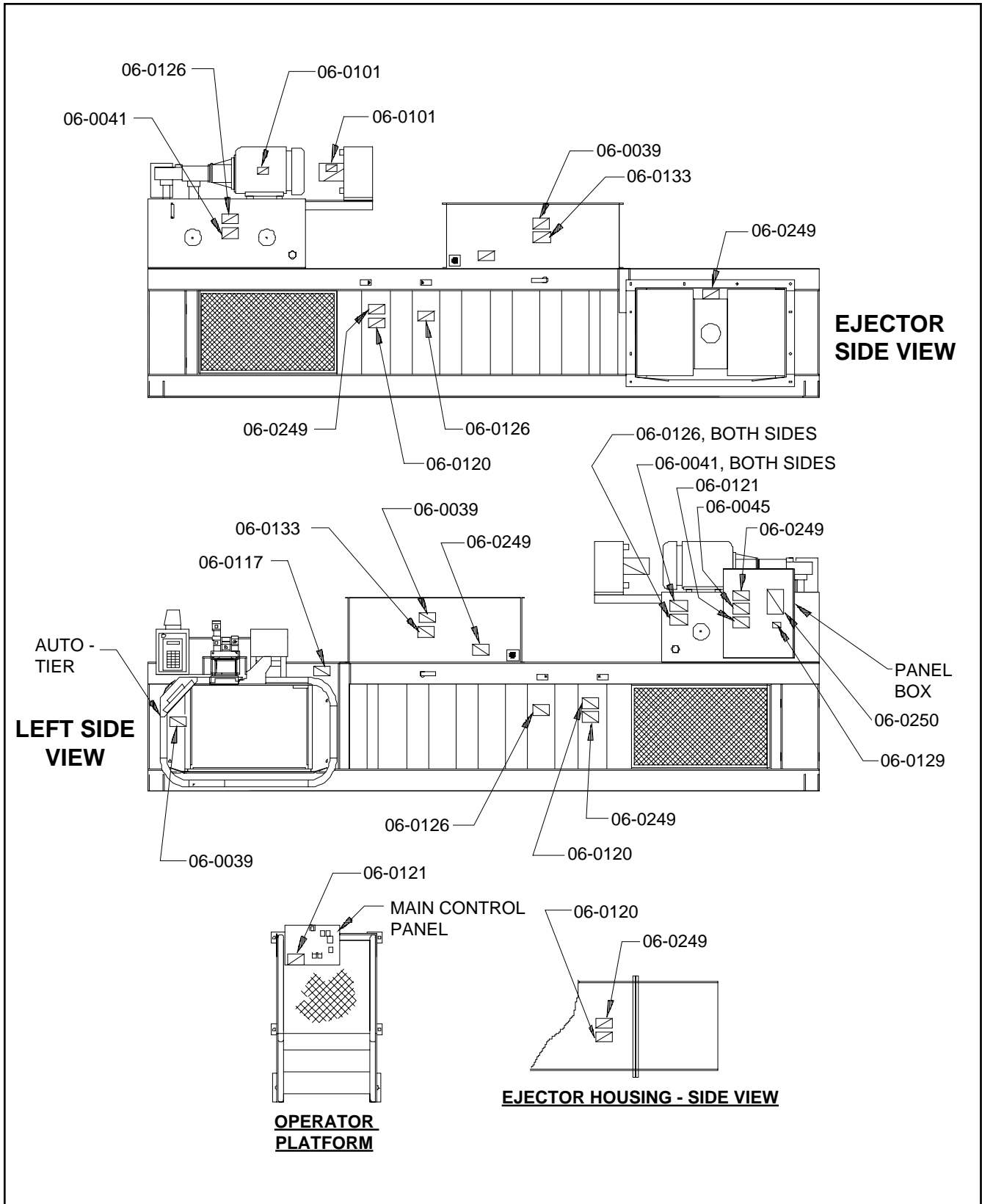
Decal Number 06-0129 - NOTICE: PERIODIC MAINTENANCE IS REQUIRED AND IS YOUR RESPONSIBILITY. FOR OPERATING INSTRUCTIONS CALL: 1-800-633-8974. FOR SERVICE CALL :_____.

Decal Number 06-0133 - DANGER: STAY OFF TOP BALER. DO NOT CLIMB ON SIDES. USE WORK PLATFORM FOR SERVICING.

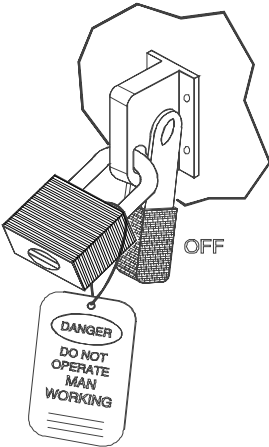
Decal Number 06-0249 - DANGER: LOCK OUT AND TAG OUT POWER BEFORE PERFORMING ANY MAINTENANCE, REPAIR, OR ADJUSTMENT. REFER TO SERVICE MANUAL FOR COMPLETE LOCK OUT AND TAG OUT PROCEDURE OR CALL 1-800-633-8974.

Decal Number 06-0250 - LOCK OUT POINT. DANGER: LOCK OUT AND TAG OUT POWER BEFORE ENTERING MACHINE. USE LOCK WITH ONLY ONE KEY AND TAKE KEY WITH YOU. FAILURE TO DO SO MAY RESULT IN INJURY OR DEATH!

DECAL PLACEMENT



LOCK-OUT & TAG-OUT INSTRUCTIONS



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

If the ram is pressing against a load, move the ram rearward before shutting the baler down. 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. Move the main disconnect lever to the OFF position.
2. Padlock the disconnect lever with a keyed padlock and take the key with you.
3. 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. Warning: Do not energize without the permission of _____.”
4. After locking and tagging the baler, 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 keyswitch and take with you.

ELECTRICAL: The panel box contains high voltage components. Only authorized service personnel should be allowed inside the box. Authorized service personnel should be allowed inside the box only after the baler has been locked-out and tagged-out.



HYDRAULIC: Stored hydraulic energy must be removed from the baler hydraulic circuit for complete lock-out and tag-out. Make sure that all personnel are clear of the compaction and ejection areas. To remove pressure from the system, make sure that the ram is not pressing against a load. Manually depress the solenoid valve pin located in the center of each solenoid valve on each manifold and hold the pin for a couple of seconds. See the power unit layouts in this section of the manual for solenoid and manifold location.

PERIODIC MAINTENANCE

DANGER: ONLY AUTHORIZED AND TRAINED PERSONNEL SHOULD PERFORM THE FOLLOWING PROCEDURES. LOCK-OUT AND TAG-OUT THE BALER PER THE INSTRUCTIONS ON PAGE 2-1 AS SPECIFIED.

DAILY

1. Check for any oil leaks. Keep all hydraulic fittings tight. Check oil level and temperature in hydraulic reservoir. Maintain oil level above 3/4 full in sight gauge. Temperature should be below 160 degrees F.
2. Check the oil filter indicator on the oil filter housing (filter/housing is located on the side of the reservoir at the end of the oil return line). If this indicator shows RED, change filter immediately.
3. Check all remote emergency stop locations. Make sure each emergency stop button is not obstructed, damaged or depressed.
4. Make sure the operators platform and access stops are free from hazards that could cause a slip, trip or fall.
5. Make sure that there is an adequate supply of wire in the wire tie strapper.

WEEKLY

1. Clean around power pack and machine to remove operator hazards.
2. Clean photocell heads and reflectors.
3. Check function of all emergency stop buttons and interlock switches.
4. Check start up alarm and rotating beacon. Clean light as required.

MONTHLY

1. Check all hoses for chaffing, rubbing, or other deterioration and damage.
2. Inspect breather cap on the hydraulic reservoir. Clean or replace as necessary.
3. Check cylinder pins and make sure they are secure.
4. Check shear bar on compression ram and baler body for sharpness and overall wear. Rotate or replace as necessary.
5. Check holddown bar clearance above ram. Clearance between the ram top and the holddown bars should not exceed 3/16". Rotate or replace bars as necessary.

PERIODIC MAINTENANCE

DANGER: ONLY AUTHORIZED AND TRAINED PERSONNEL SHOULD PERFORM THE FOLLOWING PROCEDURES. LOCK-OUT AND TAG-OUT THE BALER PER THE INSTRUCTIONS ON PAGE 2-1 AS SPECIFIED.

QUARTERLY

1. Change the return oil filter element in the oil filter housing (filter/housing is located on the side of the reservoir at the end of the oil return line from the oil cooler).
2. Inspect the cylinder rods of the compression and ejection ram cylinders for nicks and abrasions. Check cylinder rod seals for damage. Inspect cylinder pins for movement or missing cotter pins. Lubricate cylinder pinning sleeves and pins.

SEMI-ANNUALLY

1. Send oil sample out for evaluation.
2. Check baler structure for any signs of problems (i.e., cracked welds, bending, etc.).

ANNUALLY

1. Change the hydraulic fluid in the entire system. If existing oil is reused, it should be tested by a laboratory to insure it meets necessary specifications. Additives can be added to bring the oil back to standard. Before returning the oil to the tank it should be filtered through a minimum 5 micron filter. The hydraulic tank should be cleaned inside with a nonflammable solvent and thoroughly dried before replacing the oil.
2. Lubricate electric motor bearings as recommended by the manufacturer.

RECOMMENDED OILS

- | | |
|-----------------------------------|--|
| 1. Union-UNAX-46, UNAX-AW46 | 7. Citgo-Pacemaker 46, Tellus-AW46 |
| 2. Gulf-Harmony 47, Harmony 48-AW | 8. Conoco-Super Hydraulic Oil 46 |
| 3. Exxon-Teresstic 46, NUTO 46 | 9. Quaker State-Dextron II (ATF)
Automatic Transmission Fluid |
| 4. Texaco-Rando 46 | 10. Amoco-Rycon MV
Cold Weather Fluid |
| 5. Chevron-AW 46 | |
| 6. Shell-Turbo 46, Tellus 46 | |

PROCEDURES (FILTER, CYLINDER BYPASSING)

DANGER: ONLY AUTHORIZED AND TRAINED PERSONNEL SHOULD PERFORM THE FOLLOWING PROCEDURES. LOCK-OUT AND TAG-OUT THE BALER PER THE INSTRUCTIONS ON PAGE 2-1 AS SPECIFIED.

ANNUAL FILTER MAINTENANCE

Use the power unit drawings in this section to locate the access covers, clean-out covers, and suction filters for the various power units covered in this manual.

1. The hydraulic suction filter(s) should be cleaned at regular annual intervals.
2. On the TR-8 baler, the two filters may be removed from the power unit by two methods. One method is disconnecting the pump and suction flange and pulling the suction line and filter through the suction flange opening in the top of the reservoir. The other method which is more favorable is to remove the filters during the annual oil change through the cleanout covers in the sides of the reservoir. The filters can be removed by taking off the access covers in the sides of the reservoir and removing each filter with a large pipe wrench.
3. Care should be exercised in cleaning the filter to insure that the element is not torn. Clean the element with a soft brush and standard industrial solvent.
4. Replace the filter(s) after cleaning and check fittings for tightness. Pump noise and a "crackle" sound is most often caused by air entering the pump suction line. Tightening the suction fittings will usually eliminate the problem.

INTERNAL CYLINDER BYPASS TEST

If the ram (compaction or ejection) begins moving erratically, this may indicate that the cylinder is bypassing and needs to be serviced or replaced depending on the damage. To test the cylinder for bypassing, follow these steps:

1. Cover the compression ram extended photocell.
2. Using the manual controls, extend the cylinder to the end of its stroke.
3. Manually move the control lever to the extend position and hold.
4. If the cylinder has internal leakage, the bypassing oil will create a rushing or spraying sound similar to a waterfall.
5. If the cylinder is bypassing, immediately repair it.

PROCEDURES (SHEAR BAR MAINTENANCE)

DANGER: DO NOT PERFORM ANY MAINTENANCE TO THE RAM SHEAR BAR OR THE BODY SHEAR BAR UNTIL THE DISCONNECT SWITCH HAS BEEN TURNED OFF AND PAD-LOCKED PER THE LOCK-OUT AND TAG-OUT INSTRUCTIONS ON PAGE 2-1.

CAUTION: SHEAR BARS ARE SHARP. WEAR LEATHER GLOVES AND SAFETY GLASSES WHEN HANDLING THE BARS. USE "NEVER-SEIZE" ON ALL SHEAR BAR BOLTS WHEN REASSEMBLING THE SHEAR BARS.

BODY SHEAR BARS - AS TIME PASSES, IT IS NORMAL FOR THE BODY SHEAR BAR TO NEED SHARPENING. DUE TO THE HARDNESS OF THE BLADES, IT MAY BE NECESSARY TO HAVE THE BLADES SHARPENED AT A MACHINE SHOP. ONLY REMOVE THE LEAST AMOUNT OF MATERIAL REQUIRED TO SHARPEN THE EDGE. IT IS VERY IMPORTANT TO MAINTAIN THE GIVEN RAKE ANGLE OF THE BAR.

THE TR-8 HAS 1 BODY SHEAR BAR WITH 4 BOLTS. THESE BOLTS MAY NEED TO BE HEATED TO BREAK THEM LOOSE.

REPLACE THE BOLTS WITH NEW ONES WHEN INSTALLING THE BAR ON THE BALER. BOLT TYPE: 3/4"-10UNC **GR. 8**, CSK ALLEN HEAD X 2" LONG (TORQUE = 150 FT LB.)

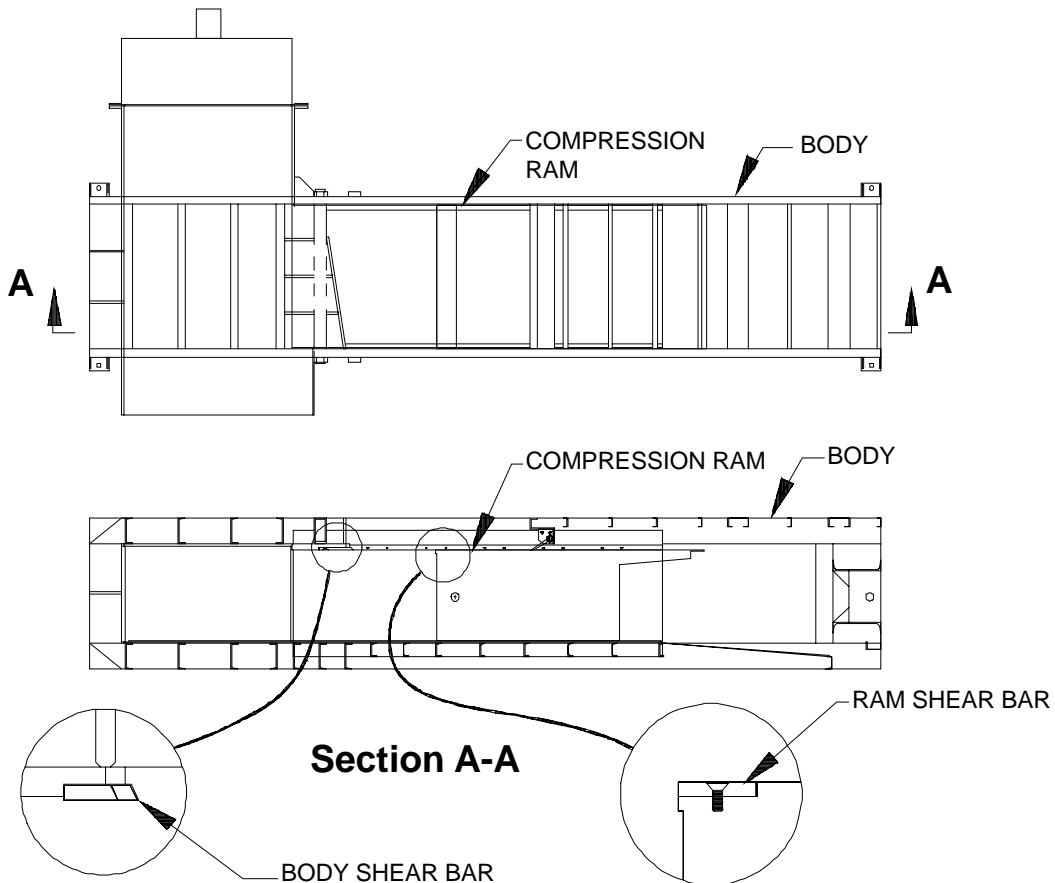
USE A JACK OR OTHER MECHANICAL MEANS TO RAISE AND LOWER THE BARS.

RAM SHEAR BAR - THE TR-8 HAS 1 RAM SHEAR BAR. THIS BAR IS DESIGNED SO THAT IT CAN BE ROTATED TO USE EACH OF THE FOUR EDGES ON THE BAR BEFORE REQUIRING SHARPENING. WHEN THE BAR IS SHARPENED, IT MAY BE NECESSARY TO HAVE IT SHARPENED AT A MACHINE SHOP. ONLY REMOVE THE LEAST AMOUNT OF MATERIAL REQUIRED TO SHARPEN EACH EDGE.

THE TR-8 HAS 5 BOLTS PER RAM SHEAR BAR. THESE BOLTS MAY NEED TO BE HEATED TO BREAK THEM LOOSE.

REPLACE THE BOLTS WITH NEW ONES WHEN INSTALLING THE BAR ON THE BALER. BOLT TYPE: 3/4"-10UNC **GR. 8**, CSK ALLEN HEAD X 2" LONG (TORQUE = 150 FT LB.)

USE A JACK OR OTHER MECHANICAL MEANS TO RAISE AND LOWER THE BAR.



PROCEDURES (PRESSURE SETTING)

DANGER: ONLY AUTHORIZED AND TRAINED PERSONNEL SHOULD PERFORM THE FOLLOWING PROCEDURES. MAKE SURE THAT ALL PERSONNEL ARE CLEAR OF THE BALER

SEE THE POWER UNIT DIAGRAMS LATER IN THIS SECTION FOR VALVE LOCATIONS.

1. In the MANUAL mode, fully extend the main ram and release the joystick.
2. Loosen the locknuts on relief valves RV1 and RV2, and rotate the adjusting screws counterclockwise to lower the pressure.
3. Remove the silver caps on top of pressure switch 1 and rotate the adjusting screws (circuit 1 and circuit 2) counterclockwise.
4. Place a cardboard sheet between the FULL EXTEND photocell (front photocell, see location next page) and its reflector.
NOTE: At this point, it takes two people to complete this procedure. One person should activate the joystick, and watch the programmable controller (PLC). The second person should watch the gauge and make the adjustments.
5. Remove output fuse Q4 from the PLC in the panel box.
6. In MANUAL mode, move the joystick to compress (or extend) and hold.
7. While watching GP2 or GA, turn the adjustment screw on RV2 clockwise until the gauge shows 1000 psi.
8. Using the joystick, move the ram backwards a short distance and then back to compress (full extend) to assure proper setting.
9. Release the joystick.
10. Put output fuse Q4 back into the PLC.
11. Remove output fuse Q6 from the PLC.
12. In MANUAL mode, move the joystick to compress and hold.
13. While watching GP1 or GA, turn the adjustment screw on RV1 clockwise until the gauge shows 900 psi. Rotate the adjusting screw (circuit 2) on pressure switch 1 clockwise until I16 illuminates on the PLC.
14. Using the joystick, move the ram backwards a short distance and then back to compress (full extend) to assure proper setting.
15. In MANUAL mode, move the joystick to compress (or extend) and hold.
16. While watching GP1 or GA, turn the adjustment screw on RV1 clockwise until the gauge shows 2300 psi. Rotate the adjusting screw (circuit 1) on pressure switch 1 clockwise until I15 illuminates on the PLC.
17. Using the joystick, move the ram backwards a short distance and then back to compress (full extend) to assure proper setting.
18. In MANUAL mode, move the joystick to compress (or extend) and hold.
19. While watching GP1 or GA, turn the adjustment screw on RV1 until the gauge shows 3000 psi.
20. Release the joystick. Remove the cardboard from in front of the photocell. Put output fuse Q6 back into the PLC.
21. Tighten the locknuts on the relief valves. Replace the silver caps on the pressure switch.

2 MAINTENANCE

PROCEDURES - PHOTOCELL TESTING, LIMIT SWITCH ADJUSTMENT

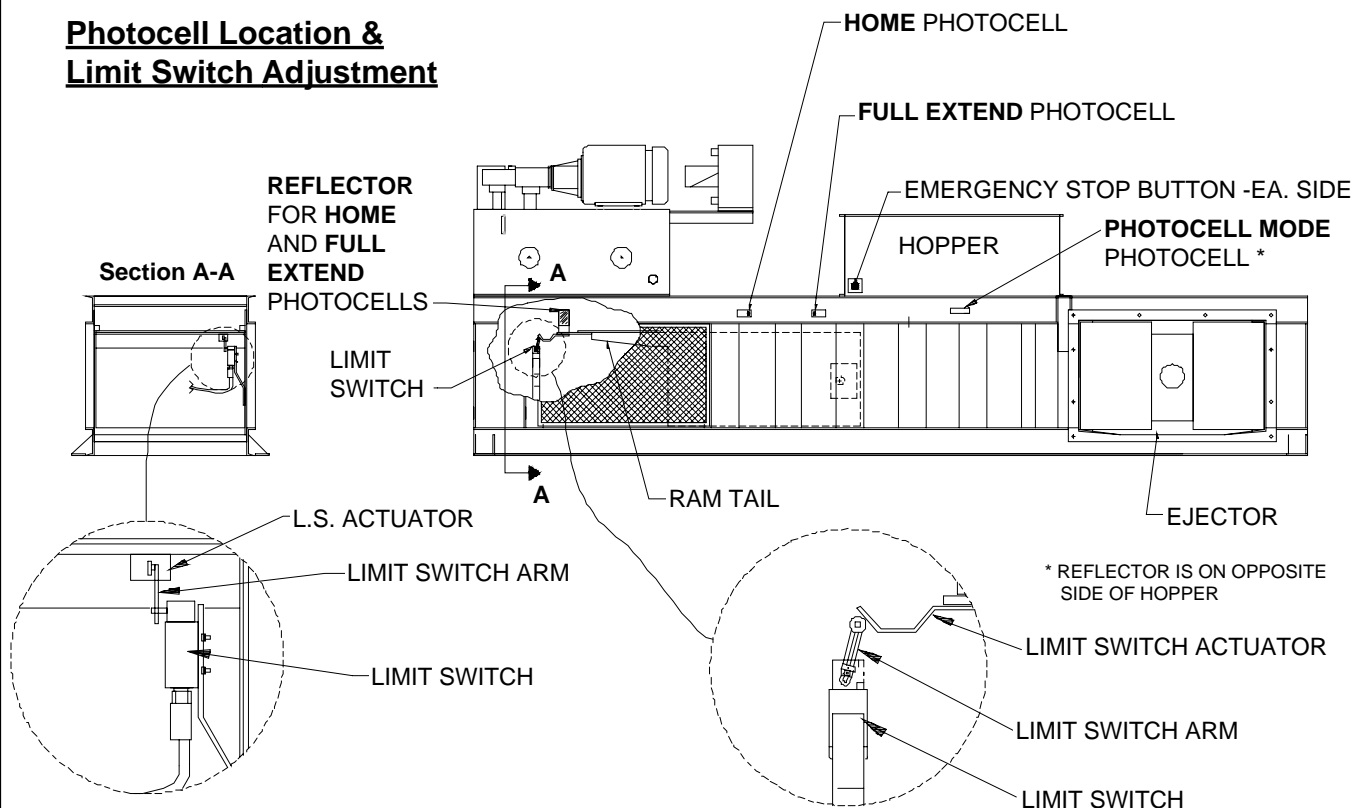
DANGER: NEVER OVERRIDE THE PHOTOCELLS OR INTERLOCKS FOR ANY REASON! TAMPERING WITH THESE ITEMS COULD RESULT IN SERIOUS DAMAGE TO THE BALER, SERIOUS PERSONAL INJURY, OR DEATH!

NEVER ENTER ANY PART OF THE BALER UNLESS THE DISCONNECT SWITCH HAS BEEN TURNED OFF AND PADLOCKED PER THE LOCK-OUT AND TAG-OUT INSTRUCTIONS ON PAGE 2-1.

PHOTOCELL TESTING

1. Depress the PHOTOCELL MODE pushbutton on the main control panel. The power unit will start after the warning buzzer and flashing light have been on for 20 seconds. The ram will not cycle until the light beam from the photocell to the reflector has been broken.
2. **To test the photocell**, place something solid (cardboard or equivalent) in front of the photocell. NOTE: The piece of cardboard will have to be long enough to reach the photocell from the top of the feed hopper or from whatever personnel barrier is installed around the feed hopper (i.e., handrails).
3. When the photocell is blocked, the input on the PLC controlled by the photocell should be on. If the photocell is not blocked, the input should be off. See the electrical schematic for the photocell input number to be checked.
4. **WARNING:** If a photocell is not working properly, clean the lense and reflector. After cleaning if the photocell is malfunctioning, lock-out and tag-out the baler and repair.

Photocell Location & Limit Switch Adjustment



THE LIMIT SWITCH ACTUATOR AND ARM SHOULD BE SET SO THAT THE LIMIT SWITCH IS ACTUATED (CLICKS) WHEN THE RAM IS 1" FROM THE REAR POSITION. TIGHTEN ALL FASTENERS WHEN THE PROPER ADJUSTMENT IS ACHIEVED.

2 MAINTENANCE

CHARTS

PRESSURE SETTINGS

MODEL	HP	GPM	RELIEF VALVE 1(psi)	RELIEF VALVE 2 (psi)	PRESSURE SWITCH 1(psi)	PRESSURE SWITCH 2 (psi)
TR-8-40	40	75	3000	1000	2300	900

FUSES AND CIRCUIT BREAKERS

MOTOR SIZE	VAC	FULL LOAD AMP.	DUAL ELEMENT FUSE MAX. SIZE	CIRCUIT BREAKER MAX. SIZE	SERVICE DISCONNECT AMP.
40 HP, 3 PH	208	116.4	200	250	200
	230	106.2	175	250	200
	460	53.1	90	125	100
	575	41.9	70	100	100

WIRE SIZES THW Copper 75°C (165°F)

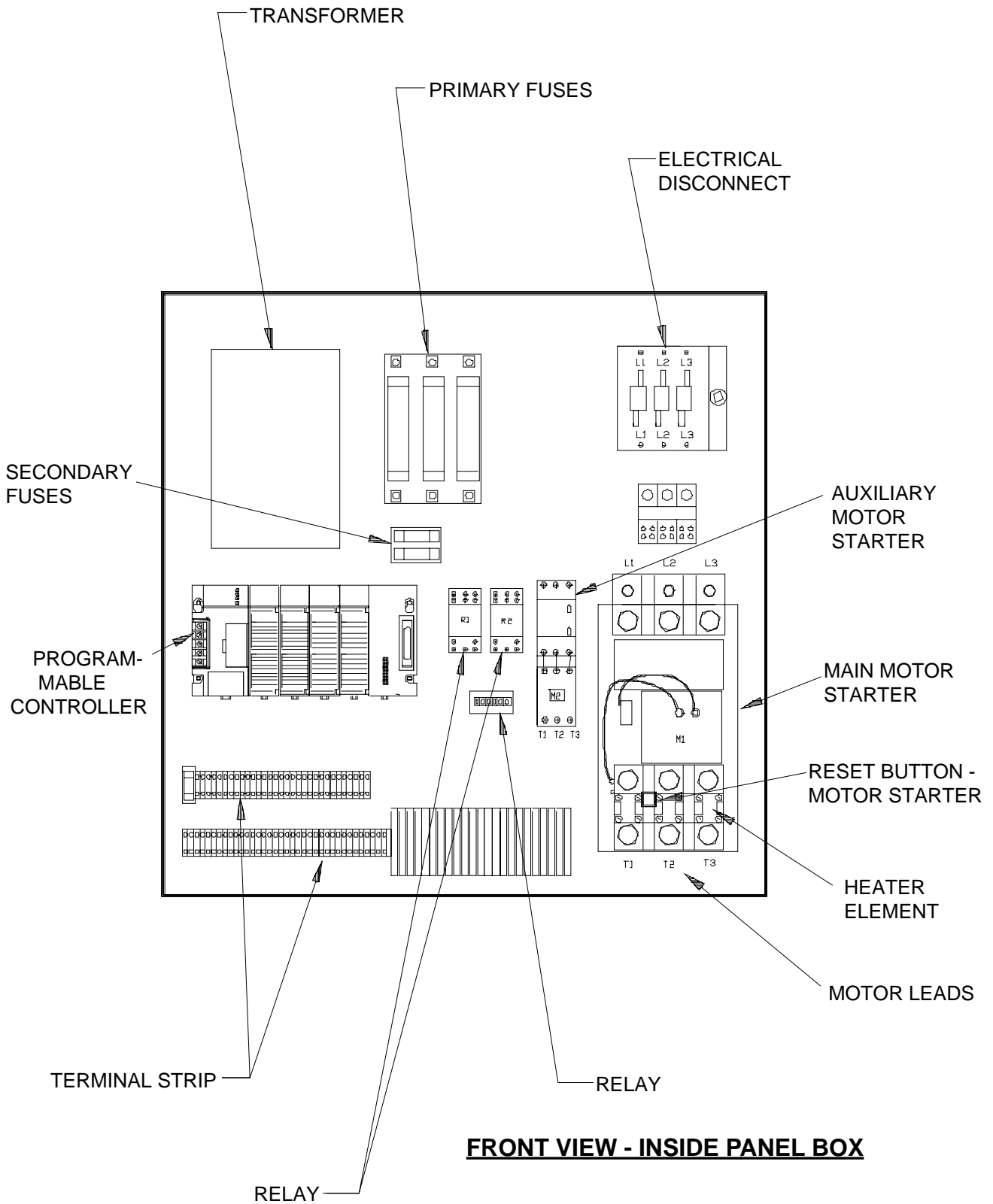
MOTOR SIZE	VOLTAGE	TO 100'	TO 200'	TO 300'
40 HP, 3 PH	208	1/0	3/0	4/0
	230	1/0	2/0	4/0
	460	#4	#4	#2
	575	#6	#6	#4

MOTOR STARTER & HEATER ELEMENTS

MOTOR SIZE	VOLTAGE	STARTER SIZE	HEATER ELEMENT (AB)
40 HP, 3 PH	208	4	W-79
	230	4	W-78
	460	3	W-69
	575	3	W-67
		(AB) IEC CONTACTOR	(AB) MANUAL STARTER AND PROTECTOR
1/2 HP, 3 PH	208	100-AO9ND3	140-MN-0250
	230	100-AO9ND3	140-MN-0250
	460	100-AO9ND3	140-MN-0100
	575	100-AO9ND3	140-MN-0100

2 MAINTENANCE

PANEL BOX - TR-8



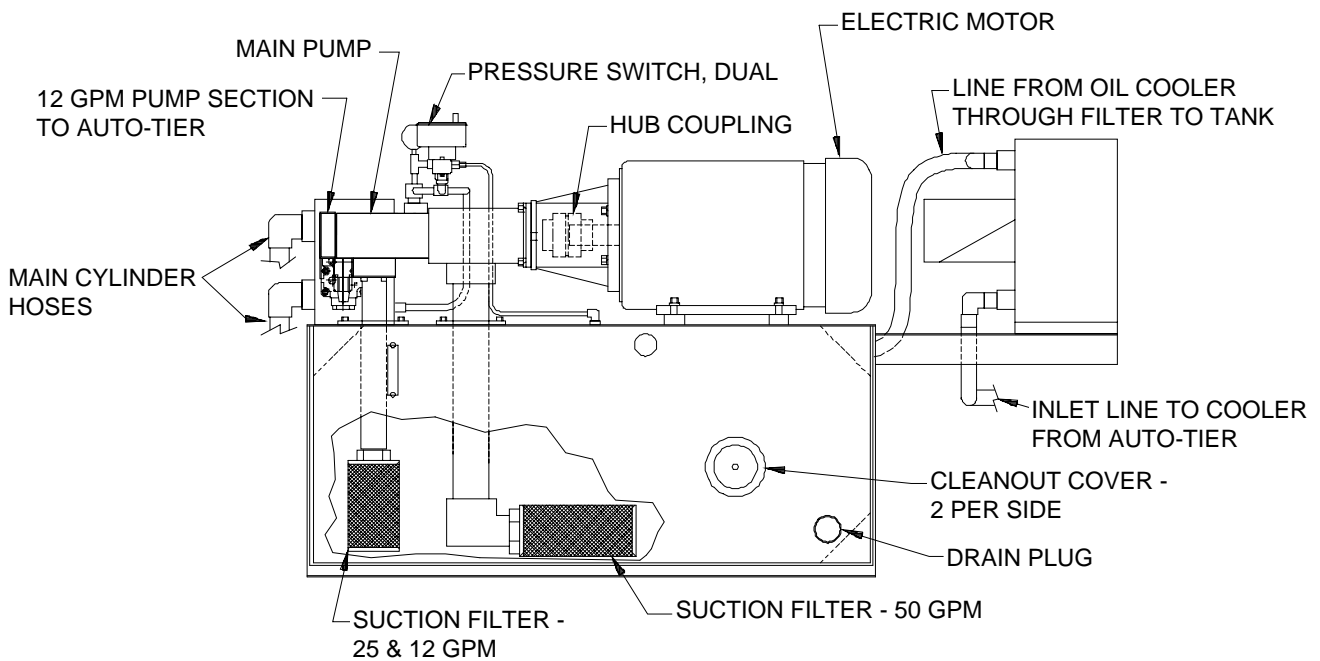
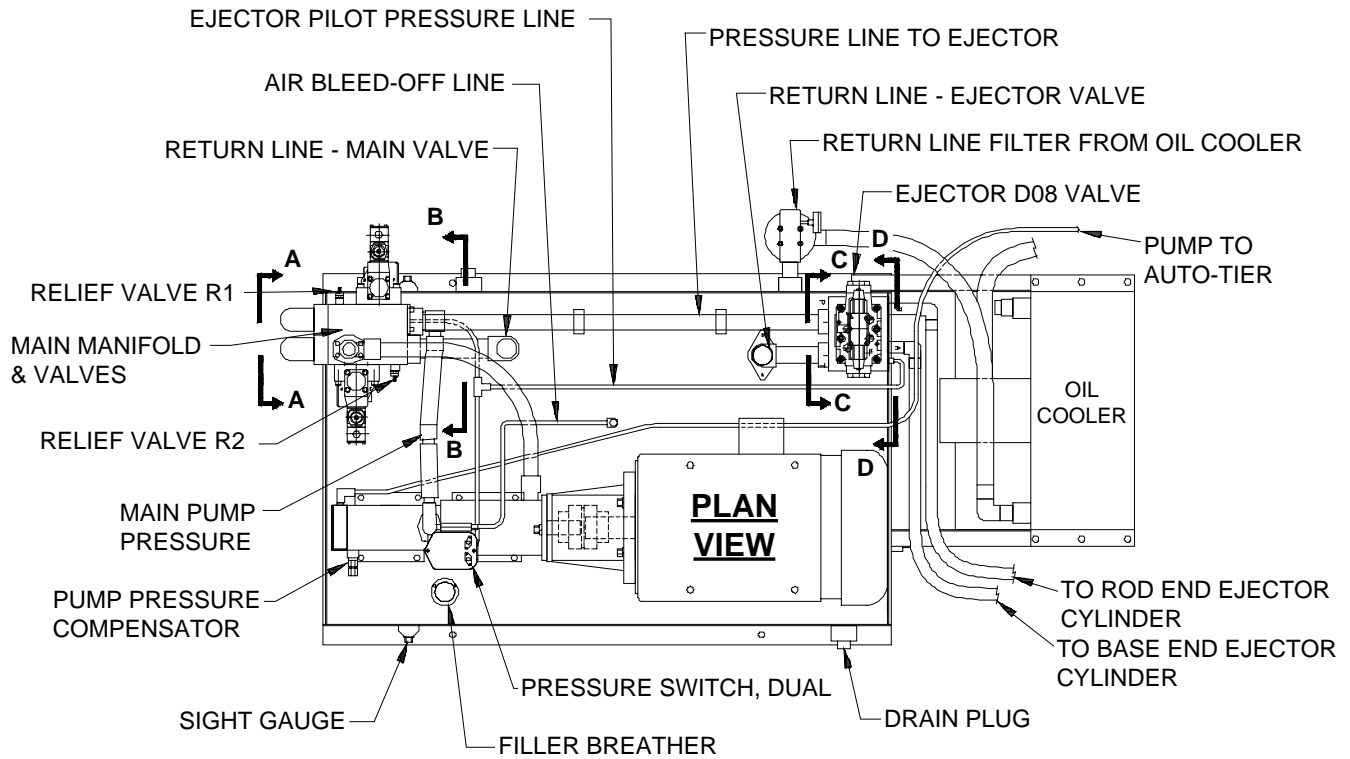
FRONT VIEW - INSIDE PANEL BOX

ELECTRICAL SCHEMATIC

Refer to the electrical schematic shipped with your TR-8 two-ram baler or contact Marathon Equipment Co. Service Department at 1-800-633-8974.

2 MAINTENANCE

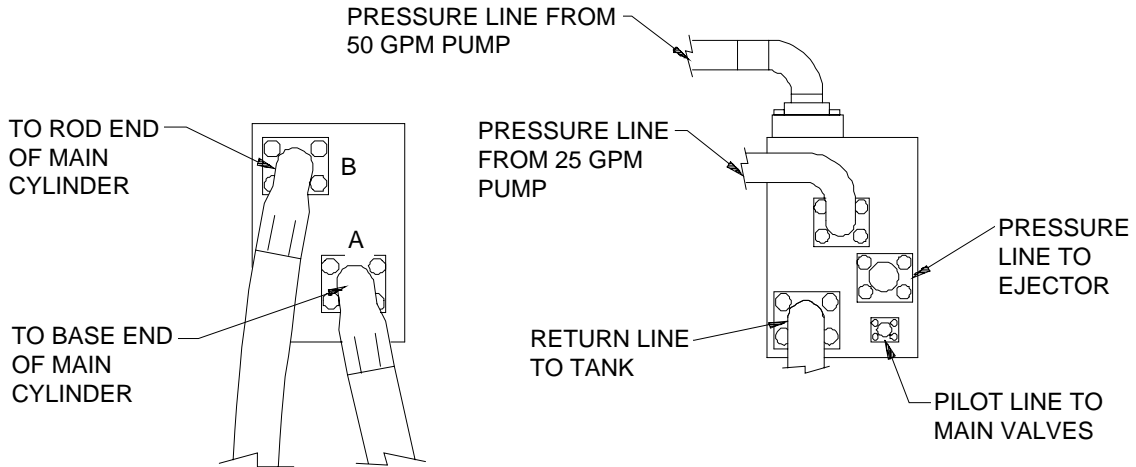
POWER UNIT LAYOUT FOR TR-8, 40HP



2 MAINTENANCE

POWER UNIT MANIFOLD PLUMBING CONNECTIONS

The following views are taken from the power unit layout on the previous page.

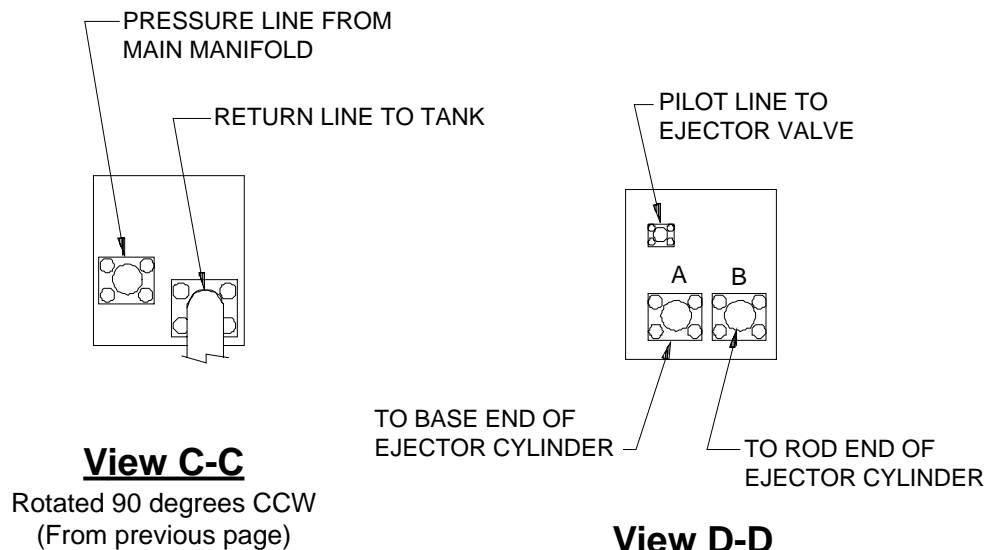


View A-A

Rotated 90 degrees CCW
(From previous page)

View B-B

Rotated 90 degrees CW
(From previous page)



View C-C

Rotated 90 degrees CCW
(From previous page)

View D-D

Rotated 90 degrees CW
(From previous page)

2 MAINTENANCE

TROUBLESHOOTING

Only thoroughly trained and experienced service personnel should perform troubleshooting and maintenance to this baler. DO NOT ENTER THE BALER FOR ANY REASON UNTIL THE BALER HAS BEEN LOCKED-OUT AND TAGGED-OUT PER THE LOCK-OUT AND TAG-OUT INSTRUCTIONS ON PAGE 2-1.

<u>Problem</u>	<u>Possible Cause</u>	<u>Solution</u>
MAIN MOTOR WILL NOT START/ RUN	<ol style="list-style-type: none"> 1)No incoming power. 2)No control circuit power. 3)Safety interlock switch. 4)Emergency stop button depressed. 5)Motor overload tripped. 6)Electrical system malfunction. 7)Programmable controller fault. 	<ol style="list-style-type: none"> 1)Check main disconnect switch. 2)Check primary and secondary fuses on control transformer. 3)Check for open hopper door. 4)Check E-Stop buttons. 5)Reset overload on motor starter. Check current load (AMPS). 6)Check electrical system. 7)Check fault lights on P.C. Make sure P.C. is in RUN mode.
PUMP NOISE	<ol style="list-style-type: none"> 1)Oil level low. 2)Air leakage in suction line. 3)Worn pump. 	<ol style="list-style-type: none"> 1)Check oil level in tank. Add if necessary. 2)Check suction line for leaks. Check pump shaft seal. 3)Repair or replace hydraulic pump.
MAXIMUM HYDRAULIC PRES- SURE NOT OBTAINABLE	<ol style="list-style-type: none"> 1)Pressure relief set too low. 2)Cylinder bypass. 3)Worn pump. 4)Check valve on unloading valve. 5)Machine not shifting out of regen. 	<ol style="list-style-type: none"> 1)Check relief valve pressure setting. 2)Check for internal cylinder leak. 3)Repair or replace hydraulic pump. 4)Repair or replace. 5)Cylinder rod relief set too low. Pressure switch or transducer malfunction.
COMPRESSION RAM WILL NOT MOVE FORWARD	<ol style="list-style-type: none"> 1)Photocell malfunction. 2)Ejector not fully retracted. 	<ol style="list-style-type: none"> 1)Replace photocell. 2)Retract ejector.
COMPRESSION RAM WILL NOT RETRACT (AUTO/MANUAL)	<ol style="list-style-type: none"> 1)Foreign material jamming ram. 2)Compression cylinder rod poppet malfunction. 3)Compression cylinder rod end pressure poppet not opening. 4)Compression cylinder rod relief pressure set too low 	<ol style="list-style-type: none"> 1)Check for foreign material wedging between ram and shear bar. 2)Check solenoid valve. Check for plugged orifice. 3)Check solenoid valve. Make sure valve spool is shifting.. 4)Reset pressure to correct setting.
EJECTOR WILL NOT MOVE FOR- WARD	<ol style="list-style-type: none"> 1)Compression ram not in HOME position. 2)Compression ram HOME position photocell malfunction. 3)Bale length counter malfunction. 4)Wire tie selector set on MANUAL. 5)Ejector out limit switch malfunction. 6)Ejector valve malfunction. 	<ol style="list-style-type: none"> 1)Move to HOME position. 2)Check for false signal. Replace photocell. 3)Check for wheel rotation. Adjust proximity switch. Replace switch. 4)Check controls. 5)Check limit switch arm adjustment. Replace limit switch. 6)Check solenoid valve.

2 MAINTENANCE

TROUBLESHOOTING

DO NOT ENTER THE BALER FOR ANY REASON UNTIL THE BALER HAS BEEN LOCKED-OUT AND TAGGED-OUT PER THE LOCK-OUT AND TAG-OUT INSTRUCTIONS ON PAGE 2-1.

<u>Problem</u>	<u>Possible Cause</u>	<u>Solution</u>
EJECTOR WILL NOT MOVE FORWARD (MANUAL)	<ol style="list-style-type: none"> 1) Compression ram out of position. 2) Pet Claw extended. 3) Wire tie mechanism out of sequence. 4) Ejector valve malfunction. 5) Control lever malfunction. 	<ol style="list-style-type: none"> 1) Move ram to home or retracted position. 2) Move Pet Claw selector switch to full retracted position. 3) Feed wire to HOME position. 4) Check solenoid valve. Make sure valve spool is shifting. 5) Repair or replace control lever.
EJECTOR WILL NOT RETRACT (AUTO/MANUAL)	<ol style="list-style-type: none"> 1) Ejector retracted limit switch malfunction. 2) Ejector valve malfunction. 3) Control lever malfunction. 	<ol style="list-style-type: none"> 1) Check limit switch arm adjustment. Replace limit switch. 2) Check solenoid valve. Make sure valve spool is shifting. 3) Repair or replace control lever.
BALE FULLY EJECTS IN AUTOMATIC CYCLE	<ol style="list-style-type: none"> 1) Ejector out limit switch malfunction 	<ol style="list-style-type: none"> 1) Check limit switch arm adjustment. Replace limit switch.
PET CLAW WILL NOT EXTEND	<ol style="list-style-type: none"> 1) Pet Claw extended limit switch malfunction. 2) Bale Made light on. 3) Pet Claw control valve malfunction. 4) Pet Claw selector switch malfunction. 	<ol style="list-style-type: none"> 1) Check limit switch arm adjustment. Replace limit switch. 2) Reset Bale Made light by fully retracting compression ram. 3) Check solenoid valve. Make sure valve spool is shifting. 4) Replace selector switch.
PET CLAW WILL NOT RETRACT	<ol style="list-style-type: none"> 1) Pet Claw retract limit switch malfunction. 2) Pet Claw control valve malfunction. 3) Pet Claw selector switch malfunction. 	<ol style="list-style-type: none"> 1) Check limit switch arm adjustment. Replace limit switch. 2) Check solenoid valve. Make sure valve spool is shifting. 3) Replace selector switch.
COOLER/FILTER PUMP WILL NOT START/RUN	<ol style="list-style-type: none"> 1) Motor overload tripped. 2) Cooler/filter pump fuses. 3) Electrical circuit malfunction. 	<ol style="list-style-type: none"> 1) Reset overload on motor starter. Check current load (AMPS). 2) Replace blown fuses. 3) Perform electrical system check.

2 MAINTENANCE

DIAGNOSTICS CODE

When the TR-8 baler experiences certain problems, the DIAGNOSTICS light located on the main control panel will flash in a specific pattern (code) to indicate what the problem involves.

The TR-8 is programmed with codes to identify six (6) different problems with the baler:

<u>CODE NUMBER & NAME</u>	<u>CODE DESCRIPTION</u>
Code 1-1 OIL PROBLEMS	ONE FLASH ONE SECOND PAUSE ONE FLASH FOUR SECOND PAUSE REPEAT PATTERN
Code 1-2 MAIN RAM JAM	ONE FLASH ONE SECOND PAUSE ONE FLASH 1/2 SECOND PAUSE ONE FLASH FOUR SECOND PAUSE REPEAT PATTERN
Code 1-3 EJECTOR JAM	ONE FLASH ONE SECOND PAUSE ONE FLASH 1/2 SECOND PAUSE ONE FLASH 1/2 SECOND PAUSE ONE FLASH FOUR SECOND PAUSE REPEAT PATTERN
Code 1-4 TWO LIMIT SWITCHES MADE	ONE FLASH ONE SECOND PAUSE ONE FLASH 1/2 SECOND PAUSE ONE FLASH 1/2 SECOND PAUSE ONE FLASH 1/2 SECOND PAUSE ONE FLASH FOUR SECOND PAUSE REPEAT PATTERN

continued next page

DIAGNOSTICS CODE

continued from previous page

<u>CODE NUMBER & NAME</u>	<u>CODE DESCRIPTION</u>
Code 2-1 TRAVEL TIME LONG	ONE FLASH 1/2 SECOND PAUSE ONE FLASH ONE SECOND PAUSE ONE FLASH FOUR SECOND PAUSE REPEAT PATTERN
Code 2-2 STRAPPER PROBLEM	ONE FLASH 1/2 SECOND PAUSE ONE FLASH ONE SECOND PAUSE ONE FLASH 1/2 SECOND PAUSE ONE FLASH FOUR SECOND PAUSE REPEAT PATTERN

2 MAINTENANCE

PARTS LIST

HYDRAULIC	
Part No.	Description
02-0647	Breather Cap
99-8214	Cylinder, 7 Bore, 4 Rod, 48 Stroke
04-0600	Cylinder, 8 Bore, 4 1/2 Rod, 78 Stroke
99-9124	Filter, Return Line, 1 1/4 NPTF
02-0623	Filter, Suction, 2 1/2, 100 Mesh
02-0668	Filter, Suction, 3 NPTF, 100 GPM
99-9121	Hub Coupling, 1 3/8 X 2 1/8
02-0863	Oil Cooler ADCH-20
99-8138	Pump, 75 GPM Vane, 3 Section
02-0215	Sight Gauge
02-0650	Valve, 4-way, 08T, 3 Pos
99-9122	Valve, 4-way, 08T, 3 Pos, F Series
02-0667	Valve, 4-way, 08T, 3 Pos, Hi-flow
02-1031	Valve, Check, #12 M JIC - #12 FM O-ring
02-0645	Valve, Relief, 50 GPM cart

HARDWARE	
Part No.	Description
05-0476	Bolt, 3/4-10 X 2 C.SK, Body/Ram Shear Bar
94-8792	Shear Bar, TR-8 Body

2 MAINTENANCE

PARTS LIST

HYDRAULIC	
Part No.	Description
02-0647	Breather Cap
99-8214	Cylinder, 7 Bore, 4 Rod, 48 Stroke
04-0600	Cylinder, 8 Bore, 4 1/2 Rod, 78 Stroke
99-9124	Filter, Return Line, 1 1/4 NPTF
02-0623	Filter, Suction, 2 1/2, 100 Mesh
02-0668	Filter, Suction, 3 NPTF, 100 GPM
99-9121	Hub Coupling, 1 3/8 X 2 1/8
02-0863	Oil Cooler ADCH-20
99-8138	Pump, 75 GPM Vane, 3 Section
02-0215	Sight Gauge
02-0650	Valve, 4-way, .08T, 3 Pos
99-9122	Valve, 4-way, .08T, 3 Pos, F Series
02-0667	Valve, 4-way, .08T, 3 Pos, Hi-flow
02-1031	Valve, Check, #12 M, JIC - #12 FM O-ring
02-0645	Valve, Relief, 50 GPM cart.

HARDWARE	
Part No.	Description
05-0476	Bolt, 3/4-10 X 2 CSK, Body/Ram Shear Bar
94-8792	Shear Bar, TR-8 Body

INSTALLATION - GENERAL REQUIREMENTS

CAUTION:

Review this manual before beginning the 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 the installation and as a completed system. Special attention is directed to the extract from the American National Standards Institute Z245.5-1990.

The operating instructions in Section 1 of this manual are not intended as a substitute for training and experience in proper use and safety procedures in operating this equipment.

This baler is designed for **INDOOR USE ONLY**.

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

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

CONCRETE PAD OR FLOOR

The pad or floor should be a minimum 3000 psi concrete, steel reinforced, 6" thick. It is recommended that the pad or floor be flush with the surrounding area.

Working clearance for the panel box must comply with state and local building codes. Allow enough space in front of bale exit for bale handling vehicle. Allow enough space for the installation and safe operation of the auto-tie mechanism. Allow enough space around the baler for any maintenance or service (including cylinder removal and liner replacement).

ANCHORING

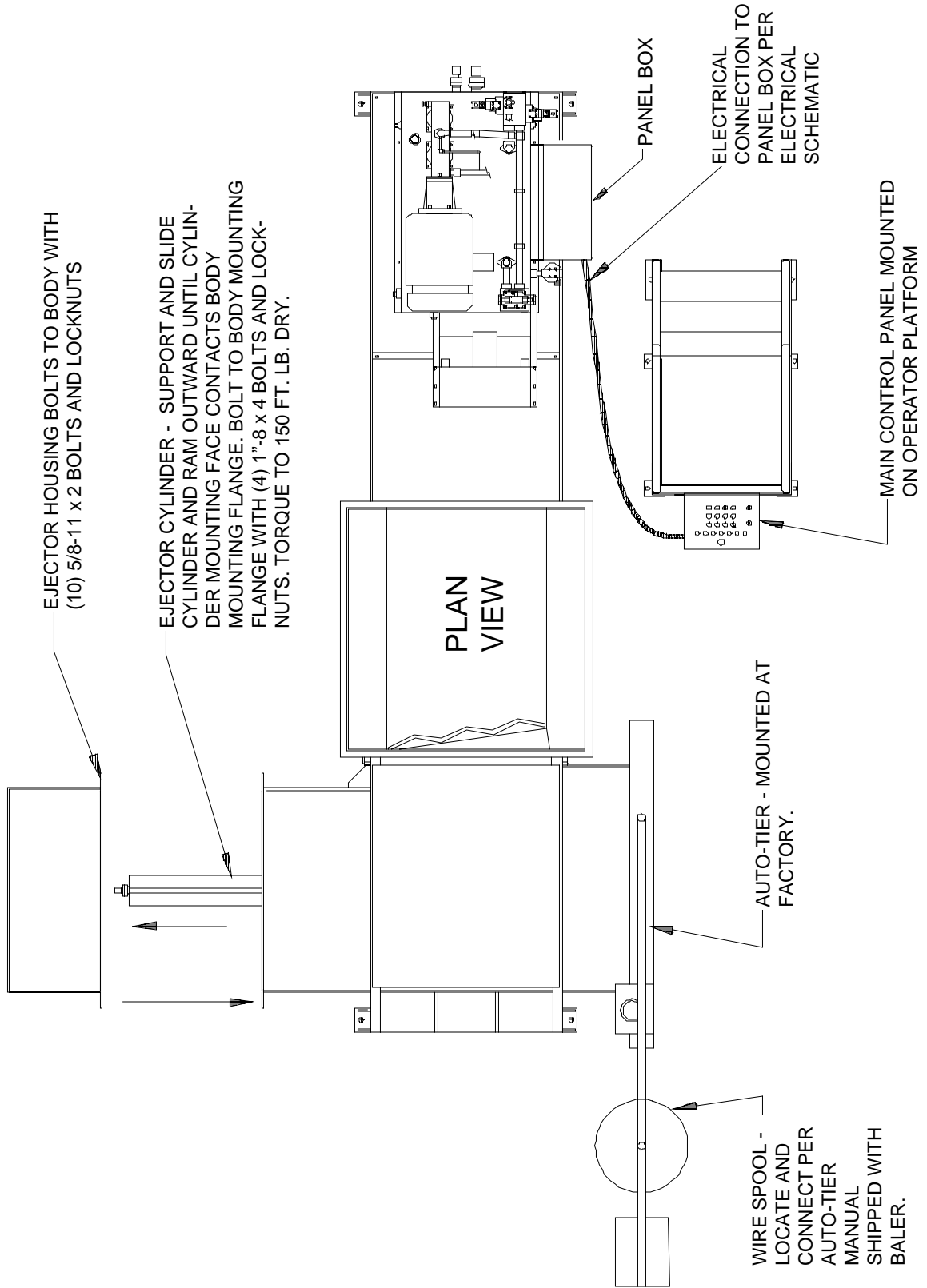
The two-ram baler should be anchored to concrete pad using (4) min. 3/4" x 6" long anchor bolts. These bolts can be secured to concrete pad using "Porok" or special concrete anchors. It is best if these holes are drilled in the concrete after prelocating the baler in its desired location. Holes in the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

DECALS

Installation of the baler is not complete until an inspection of the 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. For decal description and location, see Section 1 of this manual. Notify your distributor or Marathon Equipment Company if any of the warning decals are missing or become damaged and need replacing.

3 INSTALLATION

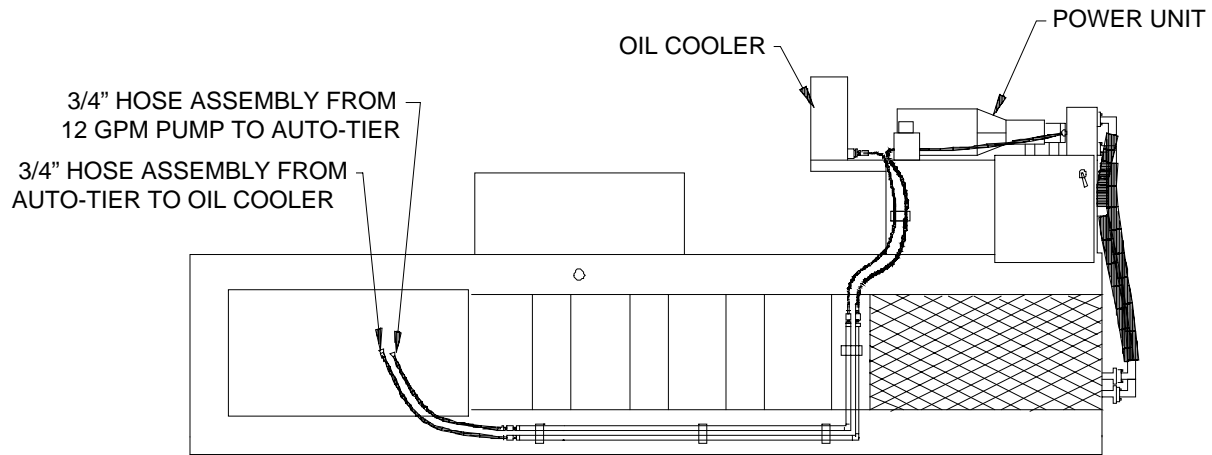
GENERAL INSTALLATION



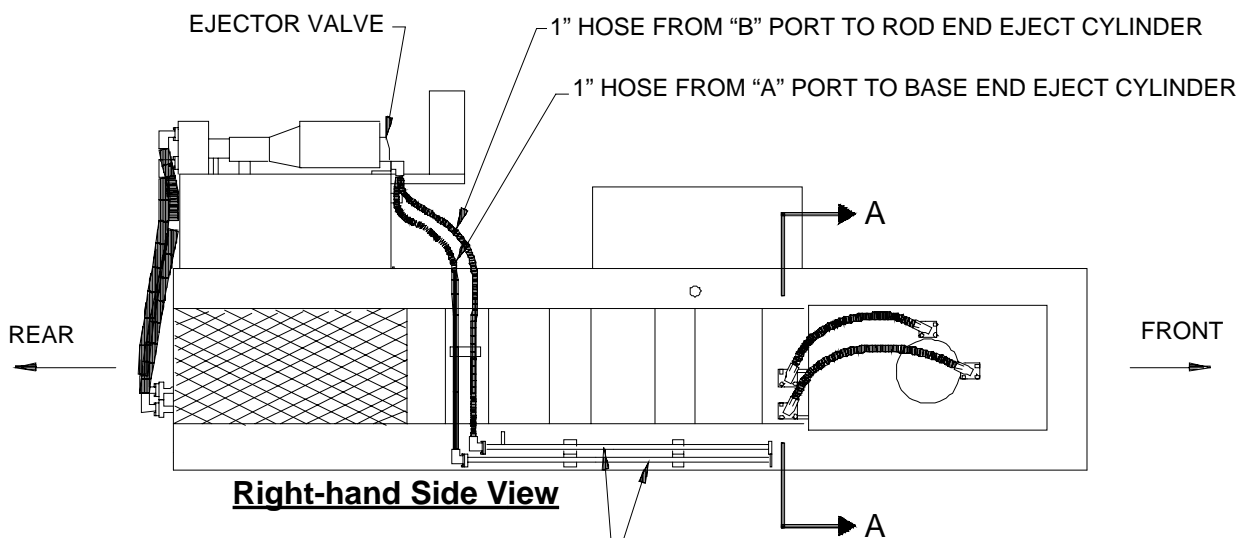
2 MAINTENANCE

BALER PLUMBING DIAGRAM FOR TR-8

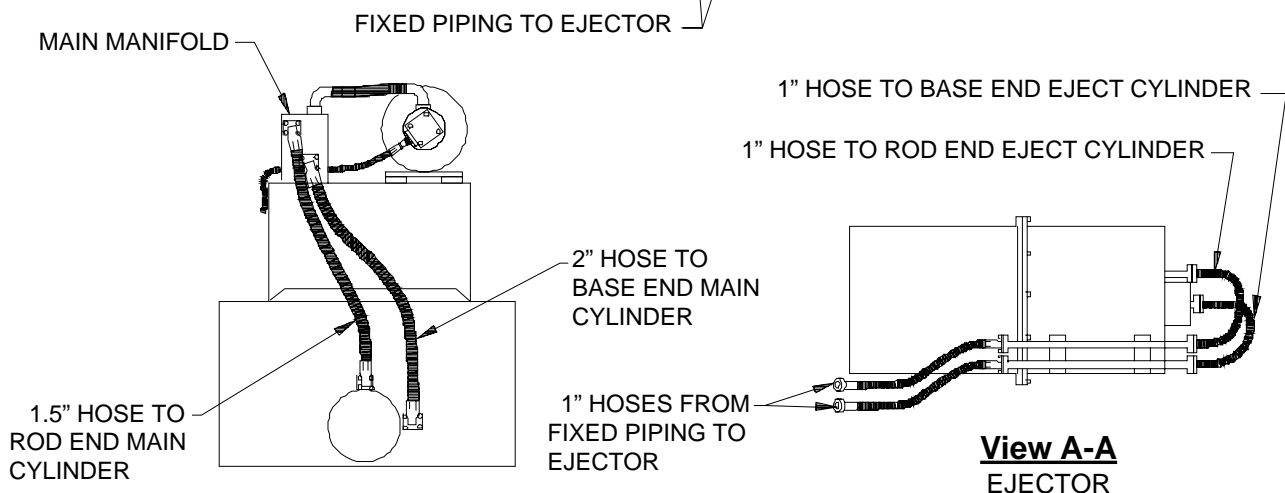
Left-hand eject shown. Right-hand is opposite.



Left-hand Side View



Right-hand Side View

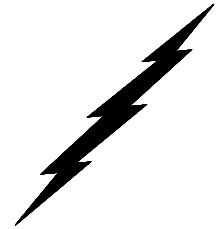


Rear View

ELECTRICAL INSTALLATION



The panel box contains high voltage components. Only authorized service personnel should be allowed inside. See Lock-Out & Tag-Out instructions in the maintenance section.



WARNING: BEFORE MAKING ANY ELECTRICAL CONNECTION, BE SURE THAT THE DISCONNECT SWITCH HAS BEEN LOCKED-OUT AND TAGGED-OUT PER THE LOCK-OUT AND TAG-OUT INSTRUCTIONS ON PAGE 2-1.

CAUTION:

All equipment should be grounded per the National Electric Code.

1. Use the FUSE AND CIRCUIT BREAKER chart and the WIRE SIZE chart in the MAINTENANCE section of this manual for reference during the electrical installation.
2. 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 the proper voltage, make necessary corrections before proceeding.
3. A lockable disconnect switch is provided on the baler 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 incoming wires touch each other. A properly sized equipment ground should be connected to the enclosure ground lug.
4. If the baler is supplied with a conveyor, the conveyor will be shipped with the wiring disconnected from the baler. When the conveyor is anchored into place, connect the Sealtite from the conveyor to the baler panel box. Next, connect the wires per the electrical schematic shipped with the baler.

START-UP INSTRUCTIONS

CAUTION: MAKE SURE ALL PERSONS AND INSTALLATION MATERIALS ARE CLEAR OF CHARGE BOX AREA.

1. Fill the hydraulic reservoir with hydraulic fluid to a level of 3/4 of the sight gauge located on the power unit reservoir (the main ram and the ejector ram must be retracted when measuring the correct oil level). See the RECOMMENDED OILS listed in section 2 of this manual for the correct oils that can be used in the hydraulic system.
2. After the electrical connections are complete, check motor rotation by the following:
 - a. Turn disconnect switch to the ON position.
 - b. Have someone turn ON the keyswitch and depress the MAIN MOTOR START button for one second and then immediately depress the EMERGENCY STOP button. Check motor rotation by watching the hub coupling through the slot in the pump-to-motor adapter. A rotation decal on the power unit shows correct rotation. In the event that this decal is missing, look at the hub coupling from the motor end. Rotation should be clockwise.

CAUTION: If the pump rotates backward, stop immediately!
The pump will be damaged if it is operated in reverse even for short periods. Reversing any two incoming power lines will change the motor/pump rotation.
3. With the rams in the full retract position, check to be sure the oil reservoir is filled to the 3/4 level on the sight gauge. Prime the hydraulic pump and purge any air from the hydraulic system. The hydraulic system pressure has been factory set.
4. The two-ram baler is equipped with 3 photocells, and a limit switch. These items have been factory adjusted. Check the proper function of each of these prior to operation start-up. See the procedures in Section 2 of this manual.
5. **MAKE SURE THAT THE OPERATORS ARE THOROUGHLY TRAINED IN THE PROPER USE OF THIS EQUIPMENT.**