NEXGEN®
BALING SYSTEMS

Operational, Maintenance and Installation Manual

TWO RAM BALERS

TR-10-50
TR-10-75
TR-10-100A

MARATHON® A DOVER COMPANY

Vernon, AL • Fayette, AL
Yerington, NV • Clearfield, PA
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1 OPERATION

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 baler and safest operation of baler, each person involved in operation, maintenance, and installation of baler should read and thoroughly understand instructions in this manual and follow all warnings.

This manual covers operation, general maintenance, and installation of a TR-10 baler. A manual for the auto-tie mechanism is provided by the manufacturer of that item.

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

ANSI Standard No. Z245.5, “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 29 CFR, Part 1910.147, “control of hazardous energy (lockout and tagout)”

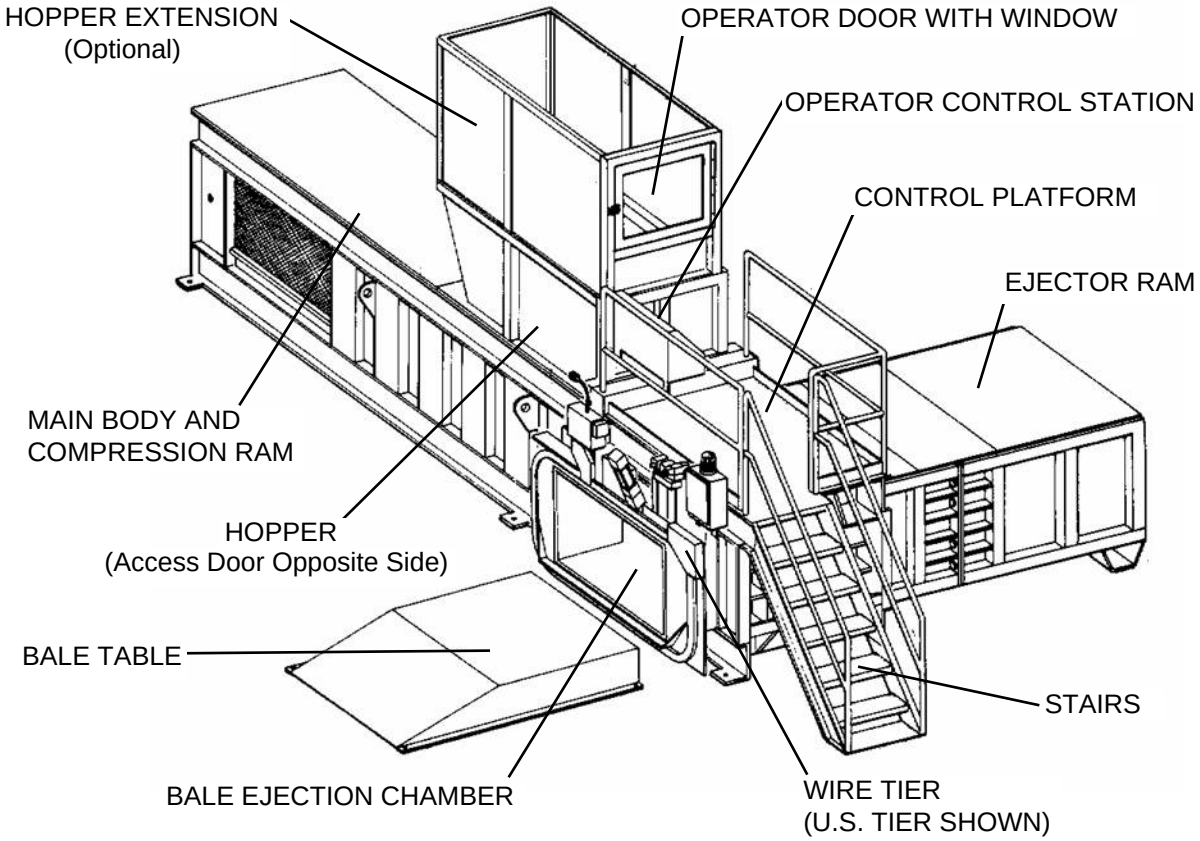
Any service or repairs that go beyond the scope of this manual should be performed by factory authorized personnel only.

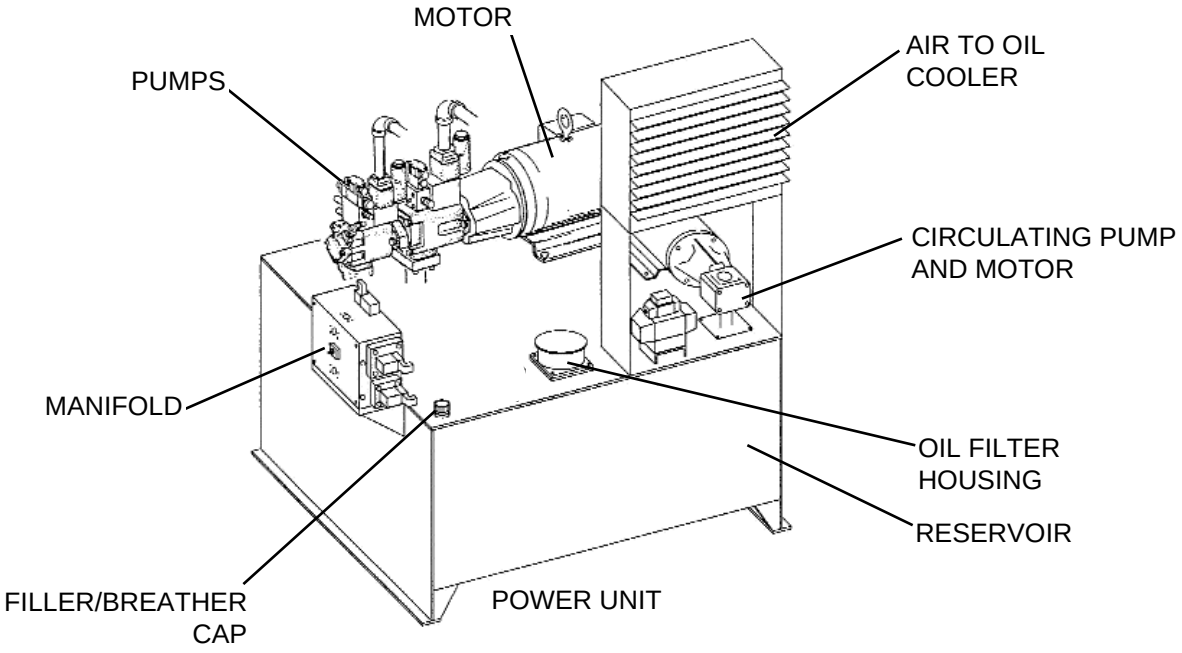
IF YOU SHOULD NEED FURTHER ASSISTANCE, PLEASE CONTACT YOUR DISTRIBUTOR. YOU WILL NEED TO PROVIDE THE BALER SERIAL NUMBER, INSTALLATION DATE, AND ELECTRICAL SCHEMATIC NUMBER TO YOUR DISTRIBUTOR.

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

GETTING TO KNOW YOUR BALER





PRE-OPERATION INSTRUCTIONS

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

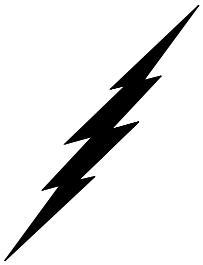
Federal regulation prohibits operation by persons under 18 years of age.

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

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

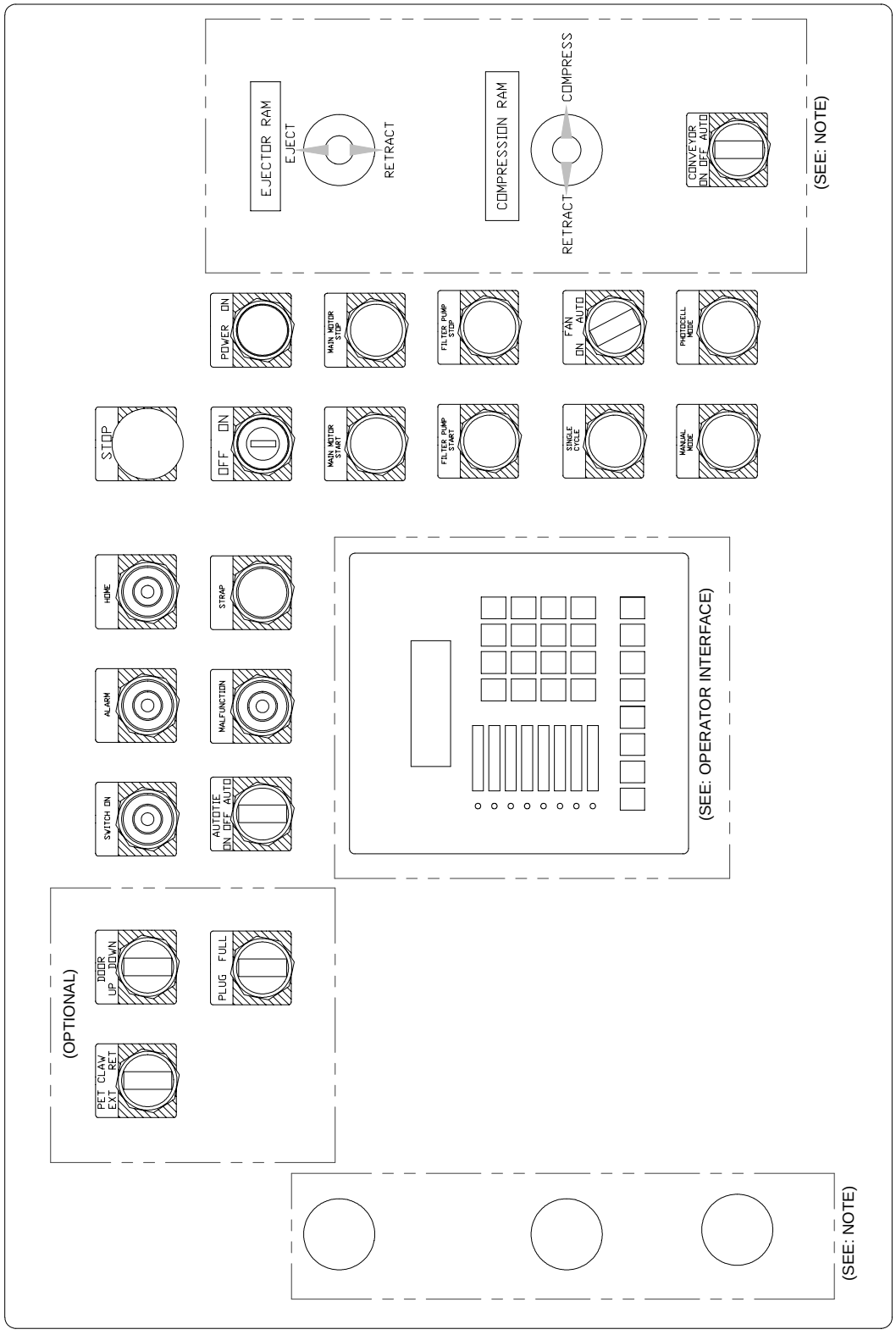
THIS BALER IS CONTROLLED BY PHOTOCELLS AND WILL START AUTOMATICALLY WHEN PHOTOCELLS DETECT <u>ANY OBJECT</u> IN CHARGE BOX. THE COMPACTION RAM IN THIS BALER TRAVELS AT A **FAST** RATE OF SPEED. STAND CLEAR OF BALER WHEN IN OPERATION.

EMPLOYER SHOULD ALLOW ONLY AUTHORIZED AND THOROUGHLY TRAINED PERSONNEL TO OPERATE THIS BALER. This baler is equipped with a key operated locking system. Key(s) should be in possession of only authorized personnel.
Turn off and remove key after use.



ONLY AUTHORIZED PERSONNEL SHOULD BE ALLOWED INSIDE MOTOR CONTROL PANEL. The panel contains high voltage components. **See Lock-Out & Tag-Out instructions in Maintenance section.**

OPERATOR STATION



Note: Compression Ram and Ejector Ram controls must move in same direction as ram they control, and should be mounted on panel side closest to feed hopper.

CONTROL DESCRIPTION

EMERGENCY STOP - When pushed, this button stops all baler functions and shuts baler down. When pushed, button remains depressed and baler will not operate until button has been pulled back out. After EMERGENCY STOP BUTTON is depressed, baler must be restarted using start-up procedure.
There are four EMERGENCY STOP BUTTONS strategically located on baler.

ON/OFF SELECTOR SWITCH - This key operated selector switch is used to turn power to operating controls on and off. The key can be removed only when switch is in OFF position.

POWER ON - Pressing this illuminated pushbutton causes master control relay to energize. This allows power to flow to PLC inputs and outputs, which allows baler to operate. Anytime an E-Stop is pressed or an interlock is broken, POWER ON button must be reset. If button does not light up when depressed, generally this will indicate that one of E-Stop buttons is depressed. If button lights up when pressed, but goes out when released, generally this will indicate that an interlock is open somewhere on baler.

MAIN MOTOR START - Pressing this pushbutton will start main electric motor/hydraulic system. This button must be held for entire 20 second alarm period.

MAIN MOTOR STOP - Pressing this button will stop main electric motor/hydraulic system.

STRAP - This illuminated push button is used to manually apply wire tie straps. When light is on, button is operational.

MANUAL MODE - Pressing this button will allow 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 CLEAR MODE button on Operator Interface, or by pressing EMERGENCY STOP button.

PHOTOCELL MODE - Pressing this pushbutton sets machine to operate automatically (i.e., when photocell is blocked, ram will move). Pressing this button will also start automatic eject and tie sequence if main ram is at home position when PHOTOCELL MODE button is pressed. PHOTOCELL MODE can be turned off by pressing MANUAL MODE button to start manual baling, pressing CLEAR MODE button on Operator Interface, or by pressing EMERGENCY STOP button.

SINGLE CYCLE - When photocell mode is active, pressing this button will cause main ram to compress material and retract. If this button is pressed when main ram is retracting, main ram will change direction and compress material.

CONTROL DESCRIPTION

EJECTOR EXTEND/RETRACT CONTROL LEVER - This control lever is used to manually extend or retract ejector ram when machine is in manual mode. To prevent possible machine damage, this lever will only operate with main ram in HOME position or fully retracted position.

COMPRESSION RAM COMPRESS/RETRACT CONTROL LEVER - This control lever is used to manually extend and retract compression ram. It allows operator to position ram in desired location for service and repair, or to compress material in manual mode. To prevent possible machine damage, this lever will not function if ejector ram is forward of full retract position.

CONVEYOR ON/OFF/AUTO - This selector switch operates feed conveyor(s). In MAN position, conveyor will run continuously. In OFF position, conveyor(s) will not run. In AUTO position, feed conveyors are controlled by photocells on feed hopper. Photocells also signal conveyor when it is necessary to run and load baler. Some models have more than one switch.

FILTER PUMP START - Pressing this button for 20 seconds starts filter pump. Under normal operating conditions, FILTER PUMP will start when ON/OFF key switch is turned to ON position.

FILTER PUMP STOP - Pressing this button will STOP filter pump.

AUTO TIE ON/OFF/AUTO - This switch allows control of wire tier from operator control panel. In AUTO position, wire tier is allowed to be controlled by wire tier panel box. ON position, allows operator to tie straps from operator platform. In OFF position, wire tier can not operate automatically, and operator can not tie straps from operator platform.

FAN ON/AUTO - In ON position oil cooler fan runs all time, or in AUTO position oil cooler fan will be controlled by oil cooler thermostat.

Lights

MALFUNCTION - This red light is illuminated when automatic strapper (wire tier) malfunctions.

HOME - This light indicates compression ram is in home position at edge of bale chamber so bale can be ejected.

SWITCH ON - Illuminates when POWER ON push button is pressed.

CONTROL DESCRIPTION

Options

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

DOOR UP/DOWN - This selector switch is used to raise, lower, and operate bale door in automatic baling cycle. If this switch is in UP position, PLUG/FULL switch needs to be in PLUG position. If this switch is in DOWN position, PLUG/FULL switch needs to be in FULL position.

PLUG/FULL - This selector switch indicates if machine will eject bale fully, or eject bale part way out and allow it to be a plug.

STANDARD OPERATION - BALER START UP

IN CASE OF EMERGENCY: Push large red button to STOP

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

Prior to start-up of baler each day, check items found in Daily list of Periodic Maintenance, Section 2 of this manual, Page 2-2.

Standard operation for TR-10 includes Baler Start Up and either Manual Operation or Automatic Operation.

BALER START UP

1. Check work area and make sure all personnel are clear of baler.

2. Insert CONTROL key and rotate switch to ON position.

3. Set CONVEYOR switch to correct setting. Set any options to correct setting.

4. Press POWER ON pushbutton.

5. Press and hold MAIN MOTOR START button.
   a. An alarm will sound and beacon light will flash.

   b. Alarm will silence after 5 seconds. Beacon will continue to flash for a full 20 seconds. Beacon will flash, allowing operator to make sure there are no personnel in baler or on feed conveyor.

   c. Main motor will start after 20 second delay.

   d. Release MAIN MOTOR START button after motor starts.

This completes BALER START UP sequence.
See following sections for MANUAL OPERATION or AUTOMATIC OPERATION.

STANDARD MANUAL OPERATION

Manual Operation

1. Rotate automatic strapper selector switch to ON position (on automatic strapper control panel - See factory-supplied operators manual shipped with strapper).

2. Rotate CONVEYOR selector switch to OFF position.
   NOTE: Set any options (pet claw, bale door) to their proper settings.

3. Rotate CONVEYOR selector switch to ON position allowing material to fill charge chamber.
   NOTE: Do not overfill charge chamber. Over filling causes excessive shearing action on baler.

4. Press MANUAL push button.
   NOTE: When MANUAL mode is activated, a timer on message display of operator interface will indicate 20 seconds and will count down to zero (0). If no controls are activated within 20 seconds, manual mode will become inactive.

5. Move COMPRESSION RAM COMPRESS/RETRACT control lever to COMPRESS position and hold until compression ram is fully extended. RAM EXTENDED light will illuminate when ram is fully extended.

6. Move COMPRESSION RAM COMPRESS/RETRACT control lever to RETRACT position and hold until compression ram is fully retracted. RAM RETRACTED light will illuminate when ram is fully retracted.

7. Continue to cycle ram until job is complete or until BALE MADE light comes on. When BALE MADE light comes on, this indicates that bale is complete and ready for ejection.

8. Before ejecting bale, retract compression ram using COMPRESSION RAM control lever until ram reaches HOME position. At that time, the HOME light will illuminate indicating proper compression ram position for bale ejection.
   NOTE: Set any options to their proper settings.

9. Move EJECTOR RAM EJECT/RETRACT control lever to EJECT position until bale reaches desired position for first strap (wire tie). Next, press STRAP button to apply first strap. Continue to extend ejector and apply straps at desired spacing. EJECTOR OUT light will illuminate when bale has cleared bale chamber.

10. Move ejector to fully retracted position.

STANDARD MANUAL OPERATION - (CONTINUED)

Manual Operation-(continued)

11. Move compression ram to fully retracted position.

12. Baling process is ready to be continued.

MANUAL OPERATION - SHUT DOWN

1. Eject bale.

2. Stop conveyors feeding baler.

3. Position ejector ram in retract position.

4. Position compression ram in full extend position.

5. **Rotate control key switch to OFF position and remove key.**

6. **If oil heater IS NOT being used:**
   Turn main disconnect switch to OFF position and lock as shown in Lock-out and Tag- out Instructions on page 2-1. NOTE: If any maintenance or service is to be performed on baler, complete Lock-out and Tag-out is required.

7. **If oil heater IS being used:**
   Main disconnect needs to be in ON position.

8. Clean up around bale exit and automatic wire tier. Perform any other clean up necessary, such as behind main ram (requires complete Lock-out and Tag-out), and around baler and feed conveyor.

STANDARD AUTOMATIC OPERATION

AUTOMATIC OPERATION

1. Start baler per Start-Up procedure. See Page 1-8.

2. Retract main ram to fully retracted position.

3. Retract ejector ram to fully retracted position.

4. Make sure automatic strapper control switch is in AUTOMATIC mode.

5. Depress PHOTOCELL MODE pushbutton. Baler will cycle automatically when selected photocell is blocked or when SINGLE CYCLE pushbutton is depressed.

6. Turn CONVEYOR selector switch to AUTO position if you want baler to control flow of material. You may control flow of material manually by turning CONVEYOR switch ON and OFF as required.

7. Pressing MANUAL MODE pushbutton, or pressing CLEAR MODE pushbutton, will stop PHOTOCELL MODE.

8. To resume PHOTOCELL MODE, main compression ram and ejector ram must be in full retracted positions, then press PHOTOCELL MODE push button again.

AUTOMATIC BALE EJECT AND TIE OFF

During automatic operation, the TR-10 will automatically eject and tie off bale when preset baling pressure and HOME position has been reached. Preset baling pressure is determined by setting in bale mode being used. If for any reason automatic ejection and tie off operation is disrupted, bale ejection and tie off will have to be completed manually.

STANDARD AUTOMATIC OPERATION - (CONTINUED)

AUTOMATIC OPERATION - SHUT DOWN

1. Stop conveyors feeding baler.

2. Press MANUAL pushbutton.

3. Eject bale.

4. Position ejector ram in retract position.

5. Position compression ram in full extend position.

6. **Rotate control key switch to OFF position and remove key.**

7. **If oil heater IS NOT being used:**
   Turn main disconnect switch to OFF position and lock as shown in Lock-out and Tag-out Instructions on page 2-1. NOTE: If any maintenance or service is to be performed on baler, complete Lock-out and Tag-out is required.

8. **If oil heater IS being used:**
   Main disconnect needs to be in ON position.

   Clean up around bale exit and automatic wire tier. Perform any other clean up necessary, such as behind main ram (requires complete Lock-out and Tag-out), and around baler and feed conveyor.

CHANGING MATERIALS

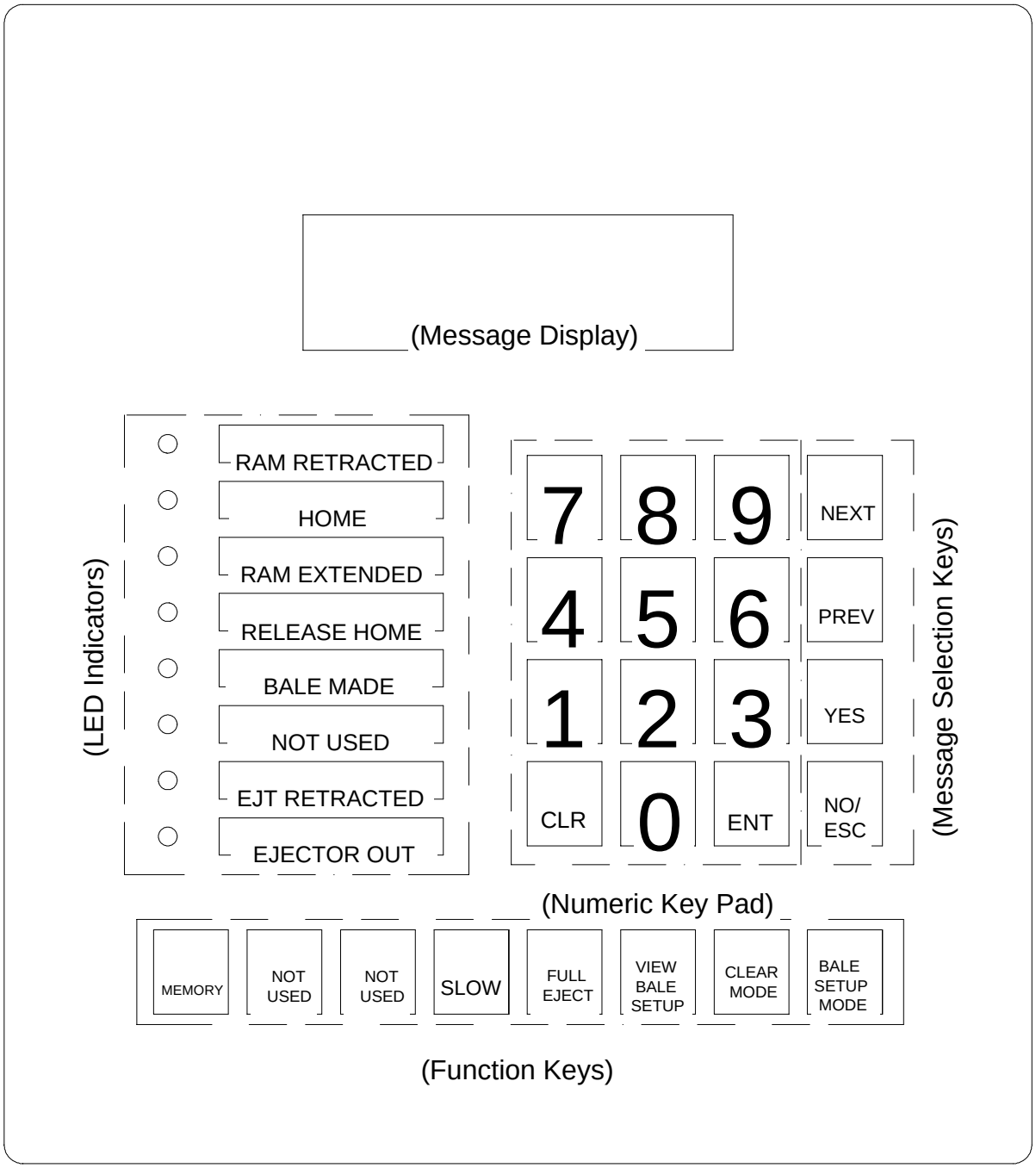
To prevent contamination between bales, stop supply of material to the feed conveyor. Run conveyor empty into baler feed hopper. Make sure conveyor is cleared of all material. Turn conveyor off.
(NOTE: If enough material remains to complete one bale, finish that bale.)

Make sure feed hopper is cleared of all material by manually cycling compression ram. Place compression ram in HOME position and then eject and tie off bale.

Change material. Restart feed conveyor and resume baling with next material.

OPERATOR INTERFACE

OPERATOR INTERFACE CONTROL PANEL



OPERATOR INTERFACE

Control Description - LED Indicators

RAM RETRACTED - Illuminates when main ram has retracted to initial hopper opening position.

HOME - Illuminates when main ram is at HOME position.

RAM EXTENDED - Illuminates when main ram has penetrated as far as possible into bale chamber.

RELEASE HOME (Optional) - Illuminates when bale release (optional) is fully extended.

BALE MADE - Illuminates when bale is ready to eject.

EJT RETRACTED (Ejector Retracted) - Illuminates when ejector ram is fully retracted.

NOTE: Main ram will not extend until ejector is retracted.

EJECTOR OUT - Illuminates when ejector has reached eject position.

Control Description - Function Keys

MEMORY - MEMORY function key is used to select a new baling setup or to save current setup to a memory location. There are nine memories that can be configured and used by operator. To clear memory message, press MEMORY key again.

SLOW - Pressing this key while using manual ejector or main ram controls will cause main ram or ejector ram to move using only high pressure pump. This causes rams to move much slower than they normally would move.

FULL EJECT - Pressing this key while using manual eject control will cause ejector ram to bypass ejector-at-wall limit switch (limit switch that stops ejector ram at normal stop position) and eject bale fully out of baler.

VIEW BALE SETUP - Pressing this key changes display to show current bale setup values. Press VIEW BALE SETUP key again to clear display.

CLEAR MODE - Pressing this key will turn off photocell mode, manual mode, or bale setup mode. It will also clear most alarm messages.

BALE SETUP MODE - Pressing this function key will display screens for baling setup. This allows you to display and change how the baler is currently configured. Press CLEAR MODE to exit BALE SETUP MODE.

NOTE: Baler can not be in manual mode or photocell mode when bale setup mode is activated.

OPERATOR INTERFACE

Control Description - Message Selection Keys

MEMORY, VIEW BALE SETUP, and BALE SETUP MODE keys have several different screens that may be displayed. Message selection keys are useful for navigating through available messages.

NEXT - If there is more than one message to be displayed, pressing NEXT key will cause next message in series to be displayed.

PREV (Previous) - PREVIOUS key will allow you to return to a screen which was bypassed by NEXT key.

YES - YES key is used to select a yes answer when display asks for a yes or no response.

NO/ESC (Escape) - When display asks for a yes or no response and you wish to respond NO, press NO/ESC key. This key can also be used as a quick way to return to first screen of BALE MODE SETUP screen when you are making changes to current baling setup.

Numeric Key Pad

Anytime display calls for a numerical entry desired number must be entered by using this key pad. As you press number keys, you will see numbers displayed on message display. When you have finished, check the number on display. If it is correct, press ENT (Enter) key. If it is not the number that you intended to enter, you may press CLR (Clear) key to erase numbers. Then you can enter correct numbers.

OPERATOR INTERFACE

BALE SETUP AND MEMORY OVERVIEW

TR-10 is equipped with a computerized menu driven baling setup control system. Operator can setup baler for a type of material and then save that setup to one of 9 (nine) memory locations. Setup can then be recalled anytime that material is processed.

There are two separate operations which must be completed in order to setup a memory.

Step #1 baler must be setup properly. This is done by using bale setup mode key. Once baler is in setup mode desired functions and settings can be entered (see "Bale Setup Mode" for more information). After baler has been setup, material can be processed to test setup. If baler does not operate as desired, go back to bale setup mode and change only functions needed to make baler operate properly. Step #1 is now complete. Baler is now setup to run a given material. However, up to this point all changes to bale setup have been in current operating setup. We have not saved setup to a location that can be retrieved at a later time.

Step #2 is to save current baling setup (the way baler is now operating) to a memory location. This is done by using memory key. Setup can be saved to memory location #1 through #9. Be sure to keep a list of memory numbers and their corresponding materials.
NOTE: If an existing memory is overwritten with current setup original information in memory can not be retrieved. See "Memory" for complete step by step instructions.

You will find in STRAP setup and STAT setup that an access code is required to continue.

ACCESS CODE for your TR-10 two-ram baler is: **8710**

OPERATOR INTERFACE

BALE SETUP MODE

Bale setup mode can be entered only if baler is not in "PHOTOCELL MODE" or "MANUAL MODE". Press "CLEAR MODE" to turn off "PHOTOCELL MODE" or "MANUAL MODE". You may exit "SETUP MODE" at anytime by pressing the "CLEAR MODE" key.

All fields where a number must be entered have a factory default setting. If you change a number and wish to return it to factory setting you may enter "0" in that field. machine will then read factory default and insert it in field.

To begin bale setup:
Press the "**BALE SETUP MODE**" key.

Display will read:

SETUP MODE MENU
WOULD YOU LIKE TO
SEE INSTRUCTIONS?
PRESS YES OR NO.

If you press "**YES**" display will read:

SETUP INSTRUCTIONS
PRESS CLEAR MODE AT
ANYTIME TO EXIT MODE
ENTER "0" IN ANY FIELD TO USE DEFAULT SETTING.

If you press "**NO**" display will read:

SETUP MODE
ENTER MENU NUMBER _
1 TIMERS 2 STRAP
3 PRESSURE 4 STATS

This is main menu for bale setup. Entering a number 1, 2, 3, or 4 will cause corresponding setup message to be dislayed. Number 1, 2, and 3 are used in actual control of baling functions. Number 4 shows statistics, such as baler run time and number of bales produced. If you are setting up baler for first time it is recommended that you page through all messages in options 1, 2, and 3. Once baler is setup for first time you may want to display only messages that need to be changed to accomplish desired operation.

OPERATOR INTERFACE

1. TIMER

If you press "**1**" and then "**ENT**" (enter) display will change to timer setup messages. Display will read:

TIMER SETUP
PRESS NEXT TO
CONTINUE

Press "**NEXT**" key to page through messages. You may press the "PREV" (previous) key to go back one message or the "ESC/NO" (escape) key to exit to main menu message. If you press "Next" display will now read:

TIMER SETUP

HIGH EYE DELAY __._
(5.0)

This is high or upper photo eye delay setting. Number in parenthesis is current value for this setting. This value may be changed by pressing number pad keys and then pressing "ENT". Maximum setting is 19.9 seconds. If you enter 0 factory default value will be retrieved.

Press **NEXT** key. Display will read:

TIMER SETUP

LOW EYE DELAY __._
(5.0)

This is low photo eye delay. low eye is positioned to activate when material fills chamber. Delay allows eye to be blocked for a period of time before main ram begins a cycle. Maximum setting is 19.9 seconds. If you enter 0 factory default value will be retrieved.

This completes timer setup press "**ESC/NO**" twice to return to main menu.

OPERATOR INTERFACE

2. STRAP

If you press "**2**" and then "**ENT**" (enter) , at main menu, display will change to strap setup messages. Display will read:

STRAP SETUP
 # STRAPS 4-10(10) __
PRESS"NEXT"F/ MULTI-
STRAP

This message allows you to enter number of straps per bale baler will tie when ejecting bale automatically. Number entered must be between 4 and 10. If you enter less than 4 factory default setting of 10 will be entered automatically.

Press the "**NEXT**" key. display will read:

MULTI-STRAP (1)_
ENTER # OF STRAPS
PER POSITION.
"NEXT" F/ DETAIL

This message allows you to enter number of straps per position baler will tie when ejecting bale automatically. Number entered must be between 1 and 4. If you enter 0 factory default setting of 1 will be entered automatically.

Press the "**NEXT**" key. display will read:

ENTER DETAILED SETUP
FOR STRAP PATTERN?
PRESS YES OR NO.

At this message you must enter yes or no. Using the "YES" or "ESC/NO" key. If you choose no screen will display main menu. If you choose yes display will change to a message where you must enter an access code.

Press the "**YES**" key. display will read:

ENTER ACCESS CODE:

If you wish to continue enter access code for your machine. Access code is located on Page 1-16.

Display will read: (see next page)

OPERATOR INTERFACE

STRAP DETAIL
ENTER # OF COUNTS
BETWEEN STRAPS FOR
EACH TIE SETTING.

This message will display for 7 seconds and then display will read:

4 STRAPS PER BALE.
COUNTS BETWEEN
STRAPS (8)__

Maximum setting is 12. If you enter 0 factory default value will be retrieved. Number entered here is number of counts between straps. Counts are measured by bale length counter wheel. Distance between teeth on wheel is one count. This is equal to about 1 1/4 ".

Each time you press "**NEXT**" another message will be displayed until 10 strap message is displayed.

Messages are listed below.

5 STRAPS PER BALE.

COUNTS BETWEEN
STRAPS (7)__

6 STRAPS PER BALE.

COUNTS BETWEEN
STRAPS (6)__

7 STRAPS PER BALE.

COUNTS BETWEEN
STRAPS (6)__

8 STRAPS PER BALE.

COUNTS BETWEEN
STRAPS (5)__

OPERATOR INTERFACE

9 STRAPS PER BALE.

**COUNTS BETWEEN
STRAPS (4)__**

10 STRAPS PER BALE.

**COUNTS BETWEEN
STRAPS (3)__**

The next group of messages to be displayed are the "END OF BALE" and "START OF BALE" values.

**4 STRAPS PER BALE.
PLUG
COUNTS TO END OF
PLUG BALE (20)__**

The "END OF BALE" setting is number of counts bale wheel makes from first push of ejector until plug bale is pushed out of bale chamber.

4 STRAPS PER BALE.

**COUNTS TO START OF
NEW BALE (20)__**

The "START OF NEW BALE" setting is number of counts the bale wheel makes from end of plug bale until first strap is applied to new bale in bale chamber.

These messages will repeat for 5-10 straps per bale.

5 STRAPS PER BALE.

**COUNTS TO END OF
PLUG BALE (20)__**

5 STRAPS PER BALE.

**COUNTS TO START OF
NEW BALE (20)__**

OPERATOR INTERFACE

6 STRAPS PER BALE.

COUNTS TO END OF PLUG BALE (20)__

6 STRAPS PER BALE.

COUNTS TO START OF NEW BALE (20)__

7 STRAPS PER BALE.

COUNTS TO END OF PLUG BALE (20)__

7 STRAPS PER BALE.

COUNTS TO START OF NEW BALE (20)__

8 STRAPS PER BALE.

COUNTS TO END OF PLUG BALE (20)__

8 STRAPS PER BALE.

COUNTS TO START OF NEW BALE (20)__

9 STRAPS PER BALE.

COUNTS TO END OF PLUG BALE (20)__

9 STRAPS PER BALE.

COUNTS TO START OF NEW BALE (20)__

OPERATOR INTERFACE

10 STRAPS PER BALE.

COUNTS TO END OF
PLUG BALE (20)__

10 STRAPS PER BALE.

COUNTS TO START OF
NEW BALE (20)__

This completes strap setup.

3. PRESSURE

When baling in automatic, the TR-10's programmable logic controller monitors main ram's hydraulic pressure for purpose of determining when a bale is completed without bale going oversize. In order to accomplish this you must provide the PLC the following information.

From main menu select **3** PRESSURE display will read:

PRESSURE SETUP
BALE MADE ____ PSI
CURRENT 2200 PSI
ENTER BALE MADE PSI

This is Bale Made pressure entry message. This is maximum pressure the baler will generate against bale. This setting does not affect pressure generated at shear blade. Shear blade pressure will always be maximum relief valve setting. Pressure entered will depend on material being baled and your preference for bale density. Normally it should be set 300-500 psi lower than maximum relief setting on your model baler. In no case should setting be higher than relief setting.

Press "**NEXT**" display will read:

PRESSURE SETUP
START IFM ____ PSI
CURRENT 1800 PSI
INFEED MGT SYS PSI

OPERATOR INTERFACE

This is pressure at which baler will begin In Feed Management. When this pressure is reached main ram will begin stopping at fully extended position while waiting for material to fill charge chamber.

This completes Pressure setup.

4. STATS (Statistics)

It is not necessary to enter STATS to setup the TR-10. STATS messages are included for your information. Information in STATS messages should not be considered to be completely accurate since there are ways to trick the counters in STATS. However, STATS is a handy reference that can provide information about how your baler and baler operator are performing.

From main menu enter "**4**".

Display will read:

STATS (NONRESETABLE)
BALE HOURS 0000056
MOTOR HOURS 000099
 # BALES 000956

These numbers cannot be reset from operator interface. Bale Hours is total time in hours that main ram and ejector ram have been in motion since baler and PLC was put into operation. Motor Hours is total time in hours that baler motor has run since baler's PLC was put into operation. Number of bales is total number of times that ejector ram has moved from fully retracted position to bale ejected position.

Press the "**NEXT**" key. display will read:

STATS (RE-SETABLE)
BALE HOURS 000005
MOTOR HOUR 000010
 # BALES 000300

These numbers can be reset from operator interface.

OPERATOR INTERFACE

Bale Hours is total time in hours that main ram and ejector ram have been in motion since last reset. Motor Hours is total time in hours that baler's motor has run since last reset. Number of bales is total number of times that ejector ram has moved from fully retracted position to bale ejected position since last reset.

Press the "**NEXT**" key. display will read:

ENTER ACCESS CODE:

If you wish to continue enter access code for your machine. Access code is located on Page 1-16.

Display will read:

CLEAR STATS
PRESS YES TO CLEAR
ALL RE-SETABLE STATS

If you want to reset statistics press the "YES" key. If you do not want to reset statistics press the "NO" key.

If you press the “YES” key, display will read:

ARE YOU SURE YOU
WANT TO CLEAR STATS?
PRESS YES OR NO.

If you want to reset statistics press the "YES" key. If you do not want to reset statistics press the "NO" key.

If you press "**YES**", display will read:

ALL STATISTICS HAVE
BEEN CLEARED!

Reset is now complete. This message will be displayed for 7 seconds and then resetable statistics will be displayed.

Press ESC/NO key to return to main menu.

This completes STATS.

OPERATOR INTERFACE

MEMORY

The "MEMORY" key is used to recall a baling memory that has been previously saved or to save current baling setup to a memory location. There are 9 (nine) memory locations. They are identified by numbers 1 through 9. You should keep a record of material to be baled and corresponding memory number. Keep a copy near baler control station and another copy in a safe place. Also keep a record of baling setup for each memory. This will allow you to re-enter information if a memory is accidentally overwritten or if PLC memory fails.

SELECTING A MEMORY

Pressing the "**MEMORY**" key will cause following screen to be displayed:

CURRENT MEMORY 1
SELECT A NEW MEMORY?
PRESS"YES"OR"NO"OR
MEMORY TO EXIT.

If you wish to select a previously saved memory to use press the "YES" key. If you wish to save current bale setup to a memory press the "NO/ESC" key.

If you press the "**YES**" key following message will be displayed:

ENTER A NEW MEMORY _
CURRENT MEMORY 1

Enter number of memory you want to use by pressing number key and then press the "ENT" key. If number was entered correctly the "CURRENT MEMORY" number will change to number you entered. You can now press the "MEMORY" key again to turn off memory message display. Baler should now be ready to begin baling using selected memory.

If you press "NO", you will enter "SAVING CURRENT BALE SETUP TO A MEMORY" section.

SAVING CURRENT BALE SETUP TO A MEMORY

If you press "**NO**", display will read:

SAVE CURRENT VALUES
TO A MEMORY?
YES OR NO.

OPERATOR INTERFACE

If you press the "YES" key following message will be displayed:

ENTER ACCESS CODE:

If you enter your baler's access code from page 1-16 of this manual display will change to:

ENTER MEMORY # TO
SAVE VALUES (1-9) _
PRESS NEXT TO
CONTINUE.

This message is prompting you to enter a memory number to which you want to save the current bale setup. For example, if you enter number "1" and press "ENT" key, baler's PLC will save way baler is presently operating to memory location 1. The number entered can be any number 1 through 9.
WARNING: If you enter a memory number which has been setup previously, information in that memory will be replaced with the current bale setup. Old setup will be lost and cannot be recovered.
If you do not want to save current bale setup to a memory, exit this message by pressing "NO/ESC", "PREV" or press "MEMORY" key to exit memory message.

If you do want to save current bale setup to a memory press the "**YES**" key. following message will be displayed:

ARE YOU SURE YOU
WANT TO SAVE CURRENT
VALUES TO MEMORY 1?
YES OR NO.

Number “1” in this message will actually be number of memory you entered. This is your last chance to stop before information in memory is replaced with current bale setup. If you press the "NO/ESC" key you will exit to first memory message and memory will not be overwritten. If you press the "**YES**" key following message will be displayed:

MEMORY 1 HAS BEEN
OVERWRITTEN!

OPERATOR INTERFACE

Information in selected memory has been replaced with current bale setup information. Old information in memory cannot be retrieved. This message will display for 5 seconds. Then first memory message will display:

CURRENT MEMORY 1
SELECT A NEW MEMORY?
PRESS"YES"OR"NO"OR
MEMORY TO EXIT.

Current memory number will now be number you selected for saving. You can press the "**MEMORY**" key to exit this message.

This completes memory section.

Following is a chart designed to help operators of TR-10 baler. As bale memory's are setup, settings can be written down in this chart for future reference. In event of memory loss, this chart can be helpful.

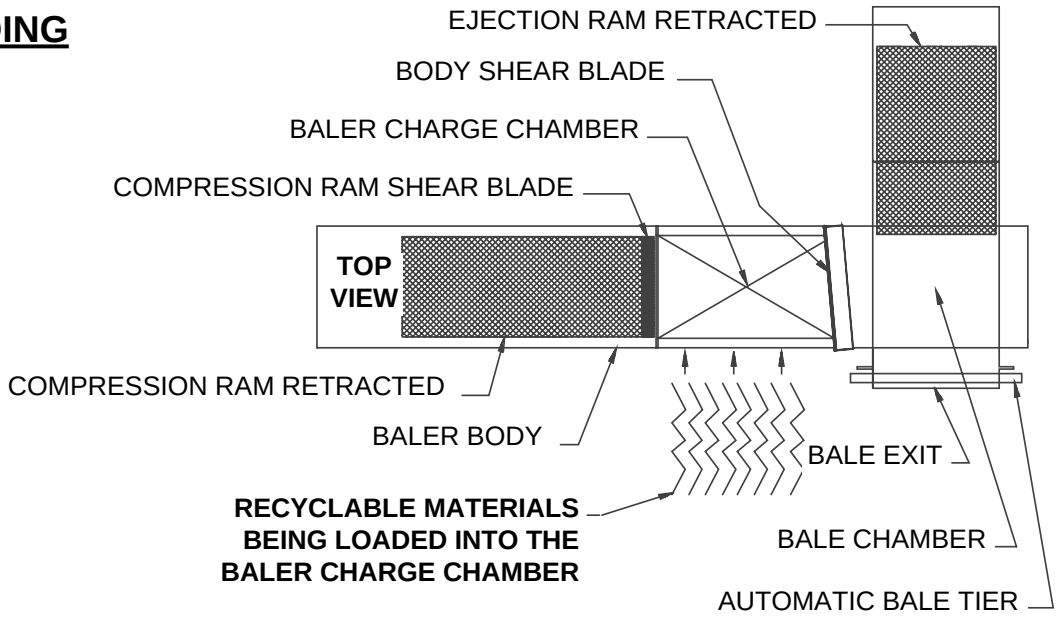
BALE SETUP MEMORY REFERENCE

MEMORY NUMBER	MATERIAL	BAILING PRESSURE	TIES PER BALE
1			
2			
3			
4			
5			
6			
7			
8			
9			

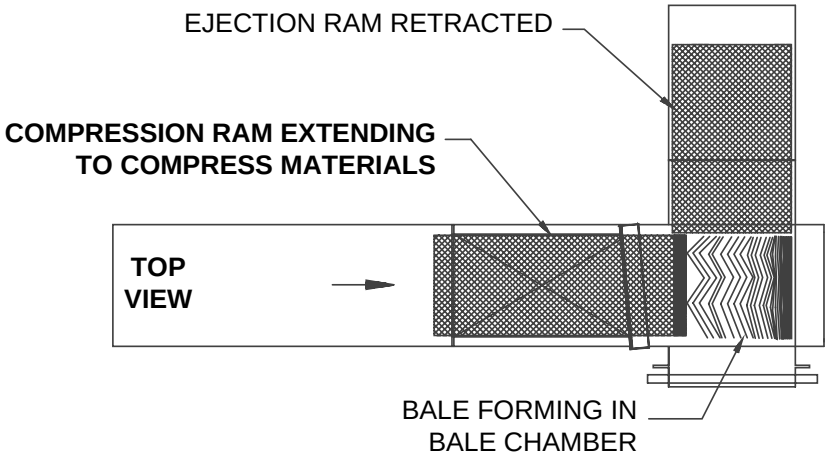
NOTES:

BALING PROCESS

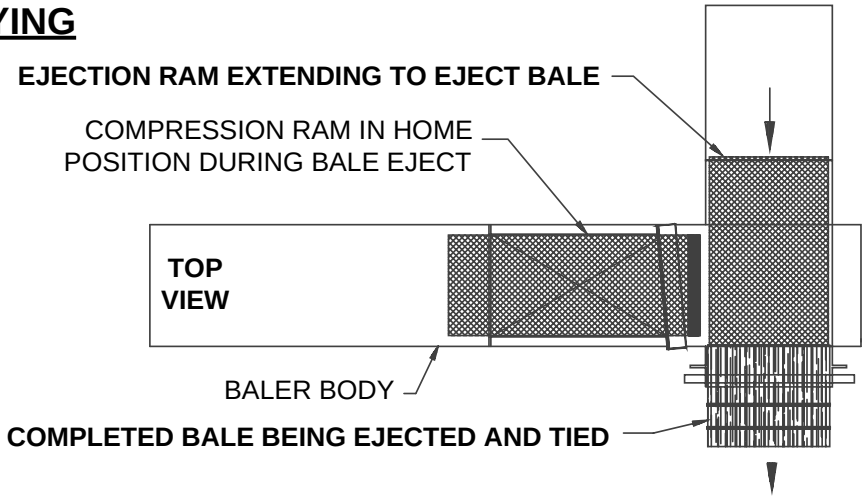
LOADING



COMPRESSING



EJECTING & TYING



JAM PREVENTION

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

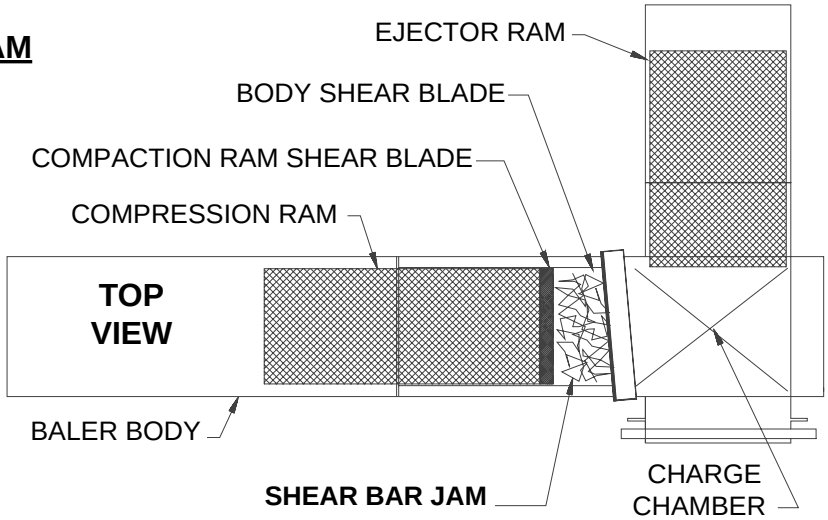
There are two types of jams which could occur with a two-ram baler, a jam at shear blade, and an oversize bale which is difficult to eject.

Steps may be taken to limit the possibility of a jam:

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

The best prevention of baler jams is good judgement. An operators familiarity with material variances, baler limitations, and close attention to material flow will reduce possibility of a jam. It is easier to make a couple of extra strokes with the compression ram than it is to clear out a jam.

SHEAR BLADE JAM



If shear blade fails to cut material in automatic mode, turn off feed conveyors and switch baler to manual. USE COMPRESSION RAM COMPRESS/RETRACTCONTROL LEVER to operate main ram. Retract main ram to allow material to fall away from shear blade on baler body, then cycle ram forward. Watch ram to see if it moves forward and shears jam. This procedure may have to be repeated to clear jam.

If jam fails to clear:

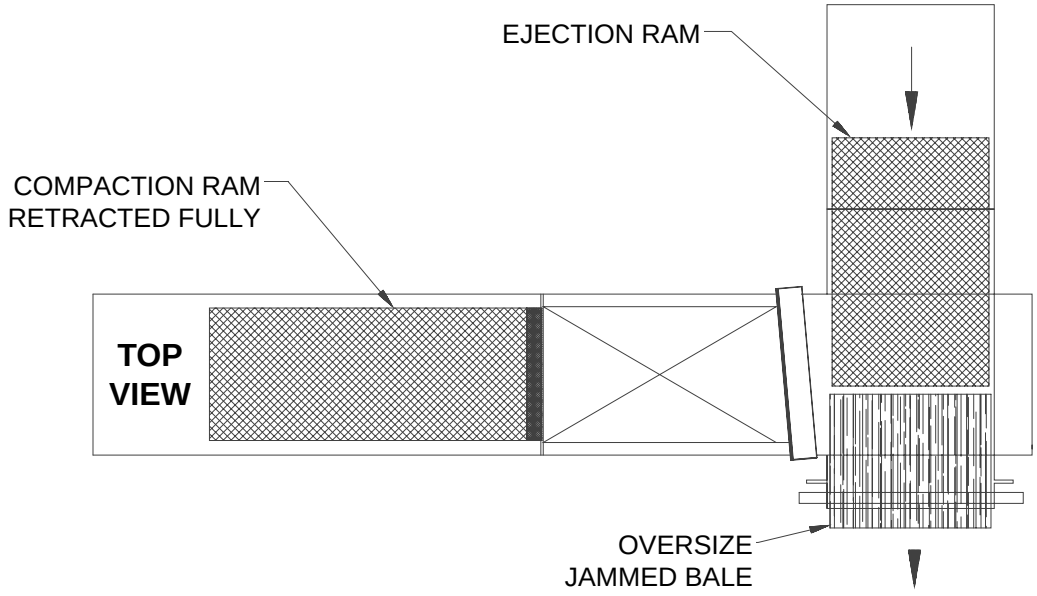
1. Retract compression ram to full retract position.
2. **Shutdown machine and Lock-out and Tag-out per instructions on page 2-1. NEVER ENTER BALER FOR ANY REASON UNTIL BALER HAS BEEN LOCKED-OUT AND TAGGED-OUT.**
3. Remove material from feed hopper and clear obstruction.

JAM PREVENTION - (CONTINUED)

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

OVERSIZE BALE JAM

Following instructions explain how to remove a jammed bale.



1. If bale fails to eject in automatic mode, set baler to manual mode.

2. Retract compression ram to full retract position to relieve pressure on bale.

3. Use EJECTOR RAM EXTEND/RETRACT control lever to eject bale, and use STRAP button to apply wire tie straps manually as bale is ejected.

4. In an unlikely event that bale does not eject using EJECTOR RAM EJECT/RETRACT control lever, shut baler down.

5. **Lock-out and Tag-out baler per Lock-out and Tag-out Instructions on page 2-1.**
   NEVER ENTER BALER FOR ANY REASON UNTIL BALER HAS BEEN LOCKED-OUT AND TAGGED-OUT.

6. Remove 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 baling operation. The FOLLOWING DECALS MUST BE MAINTAINED. Additional decals may be purchased through your distributor or from Marathon Equipment Company.

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

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

3. Decal Number 06-0043 - DANGER: 208 VOLTS (4.5” x 6.5”). or

4. Decal Number 06-0044 - DANGER: 230 VOLTS (4.5” x 6.5”). or

5. Decal Number 06-0045 - DANGER: 460 VOLTS (4.5” x 6.5”).

6. Decal Number 06-0101 - DANGER: 208 VOLTS (2” x 4”). or

7. Decal Number 06-0102 - DANGER: 230 VOLTS (2” x 4”). or

8. Decal Number 06-0103 - DANGER: 460 VOLTS (2” x 4”).

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

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

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

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

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

14. Decal Number 06-0126 - MARATHON EQUIPMENT COMPANY

continued on following page

DECALS

WARNING DECAL REQUIREMENTS (continued)

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

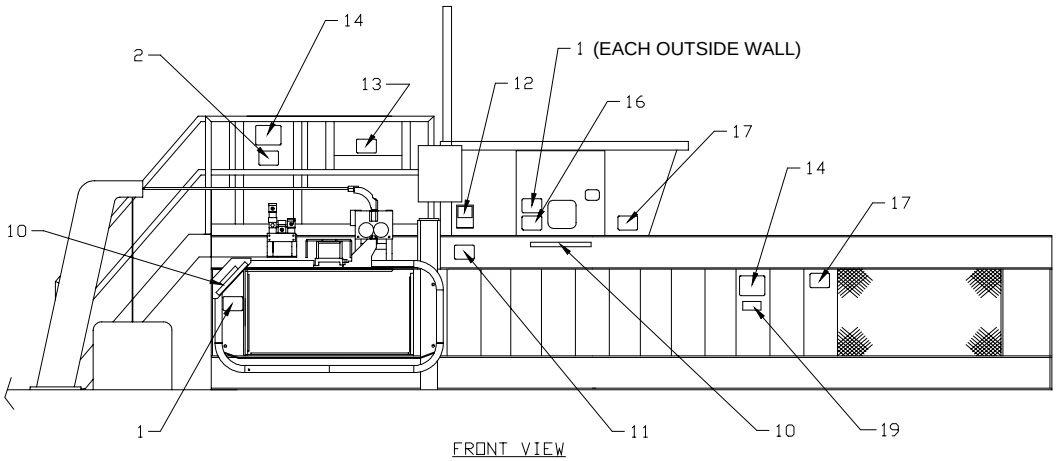
16. Decal Number 06-0133 - DANGER: STAY OFF TOP BALER. DO NOT CLIMB ON SIDES. USE WORK PLATFORM FOR SERVICING.

17. 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.

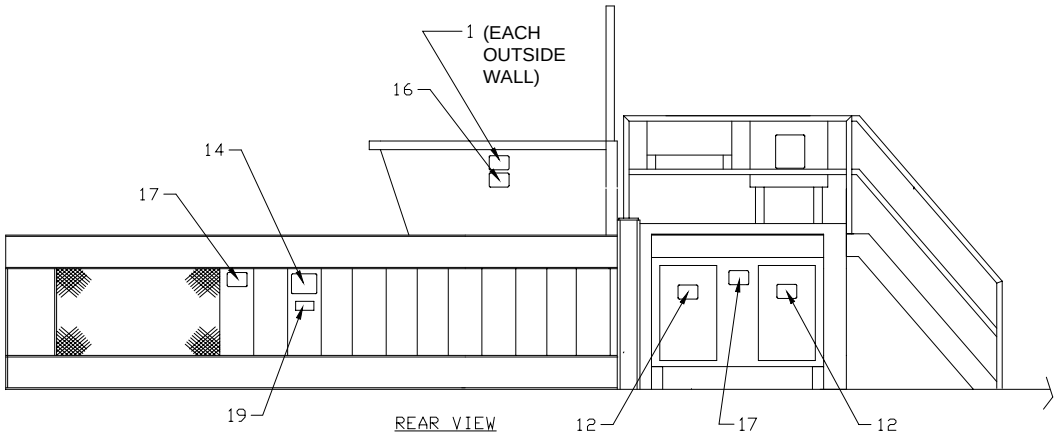
18. Decal Number 06-0250 - DANGER: LOCK OUT AND TAG OUT POWER BEFORE ENTERING MACHINE. USE LOCK WITH ONLY ONE KEY AND TAKE KEY WITH YOU. FAILURE TO DO SO MAY RESULT IN INJURY OR DEATH!

19. Decal Number 06-1839 - AMERICAN FLAG

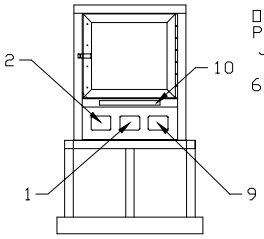
DECAL PLACEMENT



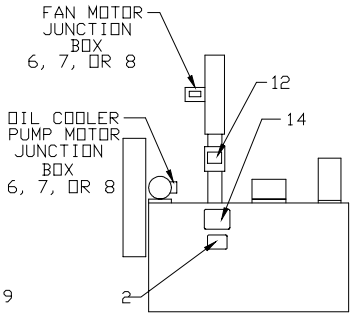
FRONT VIEW



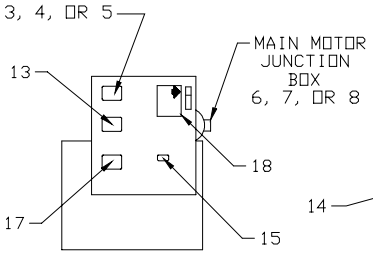
REAR VIEW



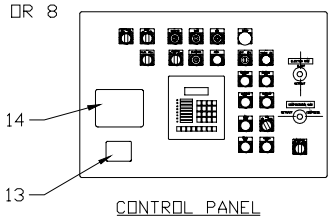
VIEW OF ACCESS GATE FROM OPERATOR STATION



POWER UNIT SIDE VIEW



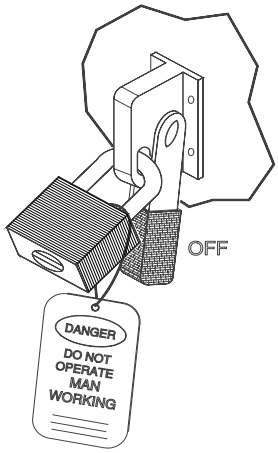
POWER UNIT END VIEW



CONTROL PANEL

2 MAINTENANCE

LOCK-OUT & TAG-OUT INSTRUCTIONS



Before entering any part of baler, be sure that all sources of energy have been shut off, all potential hazards have been eliminated, and baler is locked-out and tagged-out in accordance with OSHA and ANSI requirements. If ram is pressing against a load, move ram rearward before shutting baler down. 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 main disconnect lever to OFF position.

2. Padlock disconnect lever with a keyed padlock and take key with you.

3. Along with padlock, place an appropriate, highly visible, warning tag on disconnect lever. Tag should provide a warning such as " Danger: Do not operate equipment. Person working on equipment." or " Warning: Do not energize without permission of _____."

4. After locking and tagging baler, try to start and operate baler (as out lined in Operating Instructions) to make sure lock-out and tag-out is effective. If lock-out and tag-out is effective, remove key from keyswitch and take with you.

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

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

PERIODIC MAINTENANCE

DANGER: ONLY AUTHORIZED AND TRAINED PERSONNEL SHOULD PERFORM FOLLOWING PROCEDURES. LOCK-OUT AND TAG-OUT BALER PER 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. Oil level should be checked with Main Ram and Ejector Ram in retracted position. Temperature should be below 160º F.
2. Check all remote emergency stop locations. Make sure each emergency stop button is not obstructed, damaged or depressed.
3. Make sure operators platform and access steps are free from hazards that could cause a slip, trip, or fall.
4. Make sure that there is an adequate supply of wire in wire tie strapper.
5. Clean lenses of photocells. In a dusty application, it may be necessary to clean photocells and reflector several times a day.
6. Clean radiator of oil cooler.

WEEKLY

1. Clean around power pack and machine 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 as required.

MONTHLY

1. Check function of all controls (ie. lights, switches, etc.).
2. Check all hoses for chaffing, rubbing, or other deterioration and damage.
3. Inspect breather cap on hydraulic reservoir. Clean or replace as 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 as necessary.
6. Check holddown bars for wear. Adjust if necessary.
   Tighten holddown bolts. Rotate or replace holddown bars as necessary.
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 month of operation, return line filter needs to be changed. Then return line filter maintenance will be extended to quarterly.

PERIODIC MAINTENANCE

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

QUARTERLY

1. Change return line oil filter element in oil filter housing (filter/housing is located on side of reservoir at end of oil return line from oil cooler).
2. Inspect cylinder rods of 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 for evaluation.
2. Check baler structure for any signs of problems (i.e., cracked welds, bending, etc.).
3. Rotate main ram cylinder rod 180º.

ANNUALLY

1. Change hydraulic fluid in 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 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-flamma ble 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 at yearly intervals.
    b. Filters may be removed from unit by disconnecting union on the suction side of pump (circulating pump for oil cooler), or by removing four bolts that retain suction flange to main pump, and lifting the filter from reservoir.
    c. Care should be exercised in cleaning filter to insure that element is not torn. Clean filter with a soft brush and standard industrial solvent.
    d. Replace filter after cleaning. Tighten union, or bolts, securely. Pump noise and a “crackle” sound is most often caused by air entering the pump suction line. Tightening suction fittings will usually eliminate problem.

RECOMMENDED OILS

1. Union - Unax-46, Unax-AW46
2. Gulf - Harmony 47, Harmony 48-AW
3. Exxon - Teresstic 46, Nuto 46
4. Texaco - Rando 46
5. Chevron - AW 46
6. Shell -Turbo 46, Tellus 46
7. Quaker State - Dextron ll (ATF)
8. Citgo - Pacemaker 46, Tellus - AW46
9. Amoco - (Rycon)

SHEAR BLADE MAINTENANCE

DANGER: DO NOT PERFORM ANY MAINTENANCE TO RAM SHEAR BLADE OR BODY SHEAR BLADE UNTIL DISCONNECT SWITCH HAS BEEN LOCKED-OUT AND TAGGED-OUT PER INSTRUCTIONS ON PAGE 2-1.

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

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

TR-10 HAS ONE BODY SHEAR BLADE WITH 8 BOLTS. THESE BOLTS MAY REQIURE HEATING TO BREAK THEM LOOSE.

REPLACE BOLTS WITH NEW ONES WHEN INSTALLING BLADE ON 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 BLADES.

RAM SHEAR BLADE - TR-10 HAS ONE RAM SHEAR BLADE. THIS BLADE IS DESIGNED SO THAT IT CAN BE ROTATED TO USE EACH OF FOUR EDGES ON BLADE BEFORE REQUIRING SHARPENING. WHEN BLADE IS SHARPENED, IT MAY BE NECESSARY TO HAVE IT SHARPENED AT A MACHINE SHOP. ONLY REMOVE LEAST AMOUNT OF MATERIAL REQUIRED TO SHARPEN EACH EDGE.

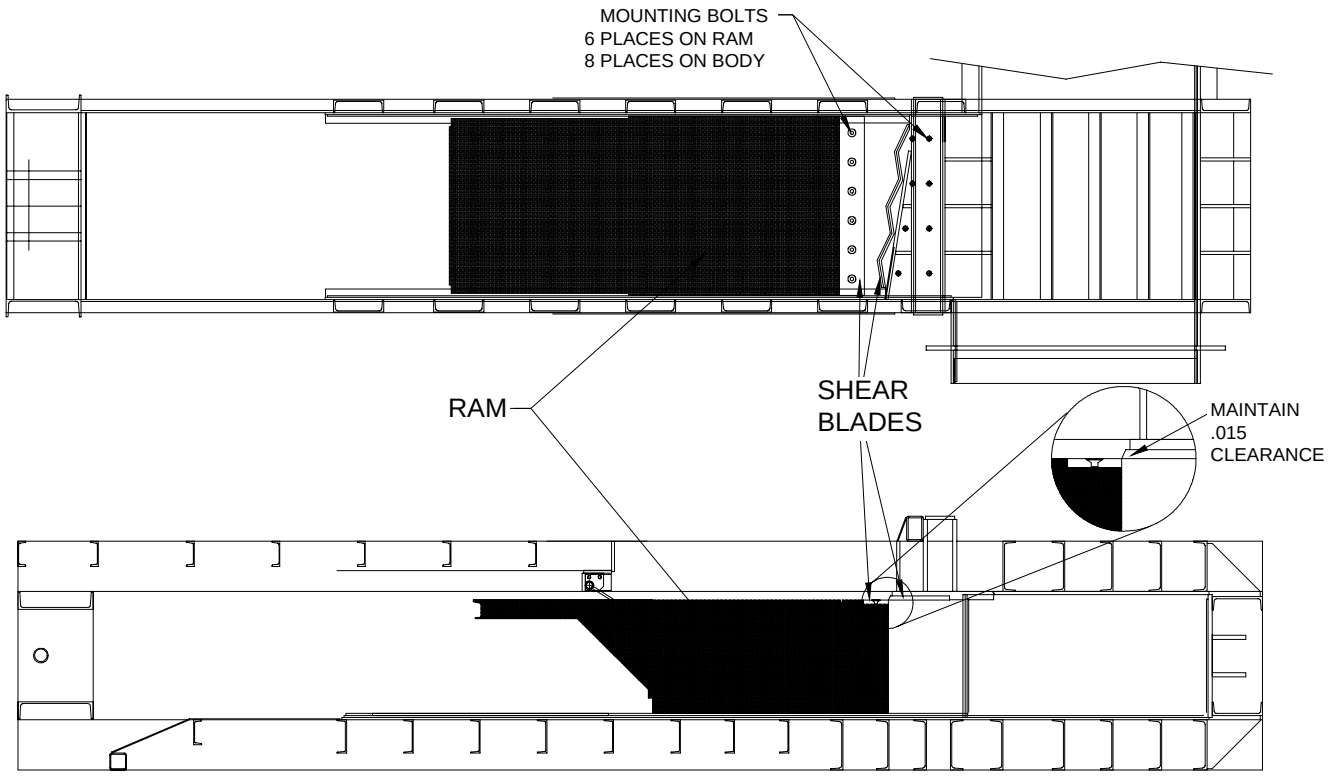
TR-10 HAS 6 BOLTS PER RAM SHEAR BLADE. THESE BOLTS MAY REQUIRE TO BE HEATED TO BREAK THEM LOOSE.

REPLACE BOLTS WITH NEW ONES WHEN INSTALLING BLADE ON 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 BLADE.

MAINTAIN .015 CLEARANCE BETWEEN RAM SHEAR BLADE AND BODY SHEAR BLADE.



HOLD DOWN BAR MAINTENANCE

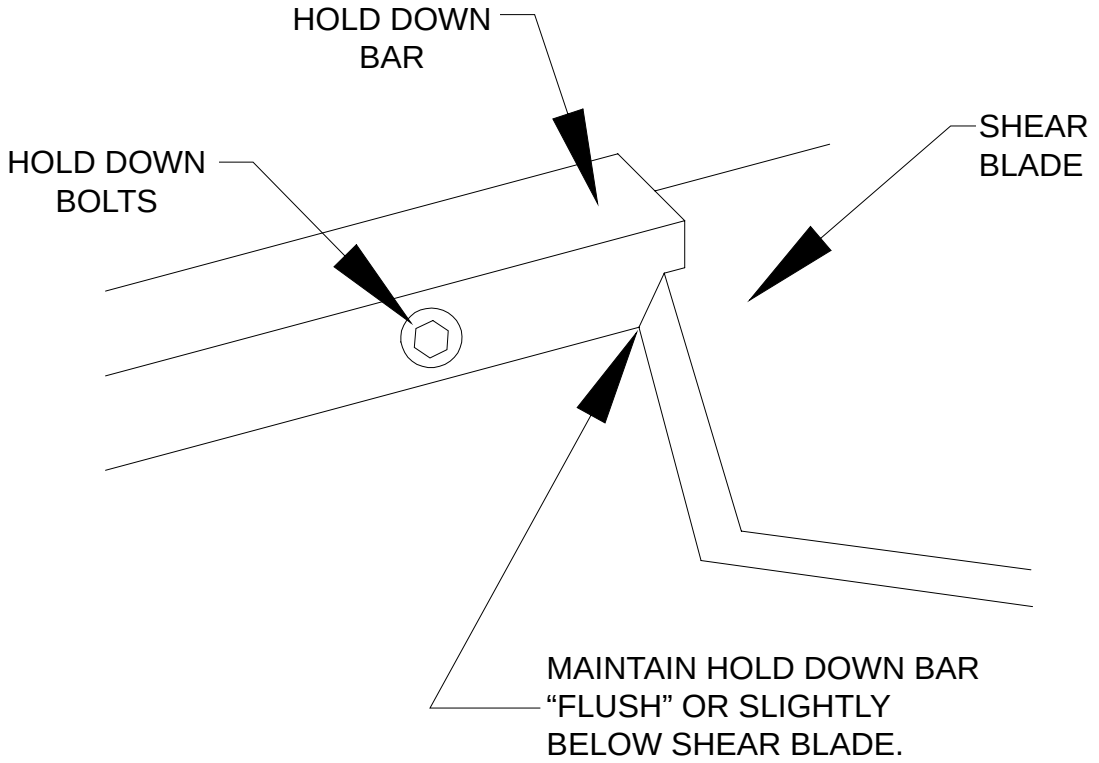
DANGER: ONLY AUTHORIZED AND TRAINED PERSONNEL SHOULD PERFORM FOLLOWING PROCEDURES. LOCK-OUT AND TAG-OUT BALER PER INSTRUCTIONS ON PAGE 2-1 AS SPECIFIED.

Hold Down Bars prevent ram from “Riding Up” over material in charge chamber. They also prevent ram shear blade from coming in contact with body shear blade. Maintenance on hold down bars should be performed when doing maintenance on shear blades.

Hold down bars can be adjusted by loosening lock nuts on outside walls of baler and allowing hold down bar to move downward toward top of ram.

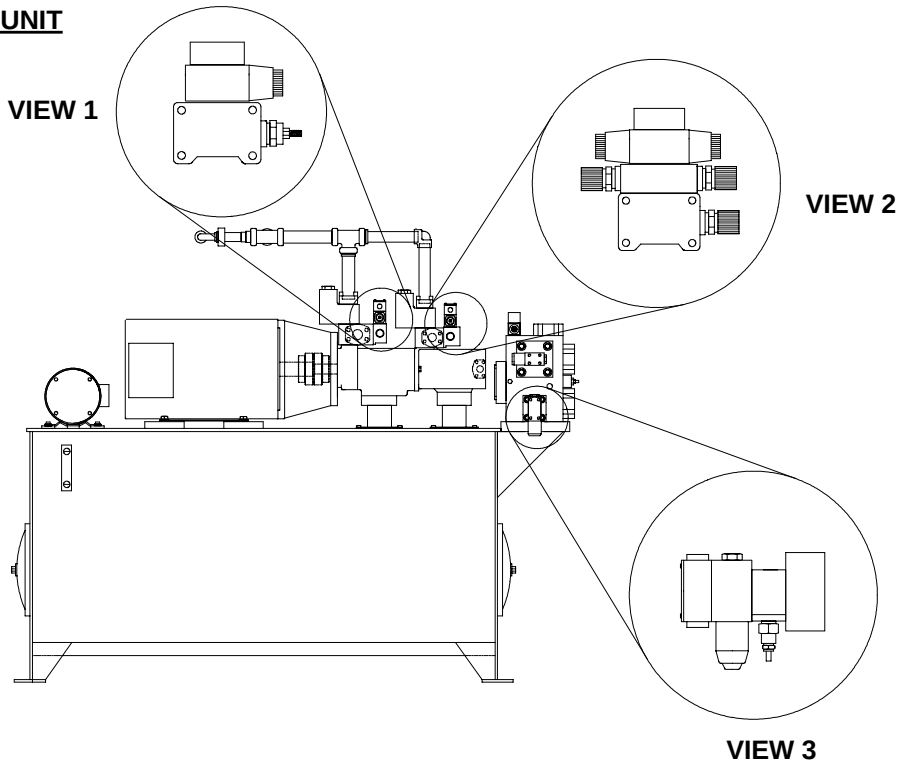
When adjusting hold down bar next to body shear blade, adjust hold down bar where it is “flush” with shear blade, or slightly below level of shear blade. This will prevent ram shear blade from coming in contact with body shear blade.

Hold down bars are considered a wear item for this machine. They are manufactured so when wear does occur hold down bar can be turned over and used on other side.

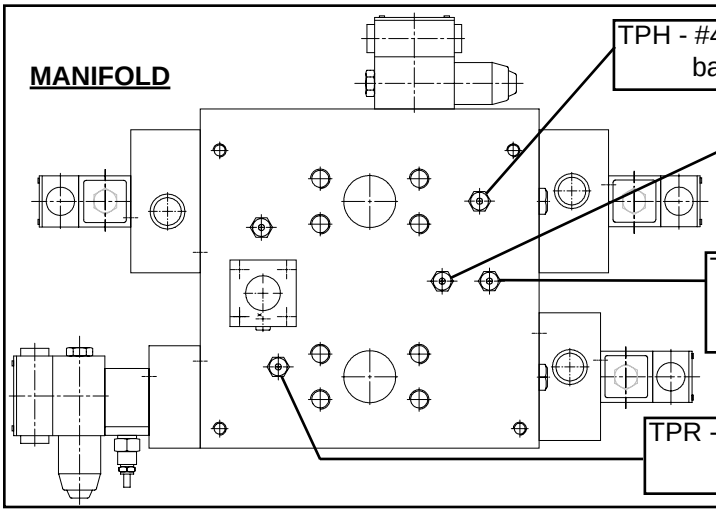


PRESSURE SETTING

POWER UNIT



MANIFOLD

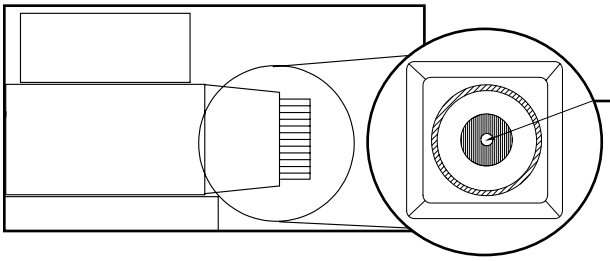


TPH - #4SAE PORT. Used to show pressure on base end of main cylinder. Gauge provided.

TPX - #4SAE PORT. Used to show pilot pressure for directional valves. No gauge provided.

TPP - #4SAE PORT. Used to show system pressure. Pressure Transducer used in this port. Gauge provided.

TPR - #4SAE PORT. Used to show pressure on rod end of main cylinder. Gauge provided.



Center point on end of coil on directional control valve either: 1. Shifts valve manually by physically shifting valve spool, or, 2. Releases stored hydraulic energy.

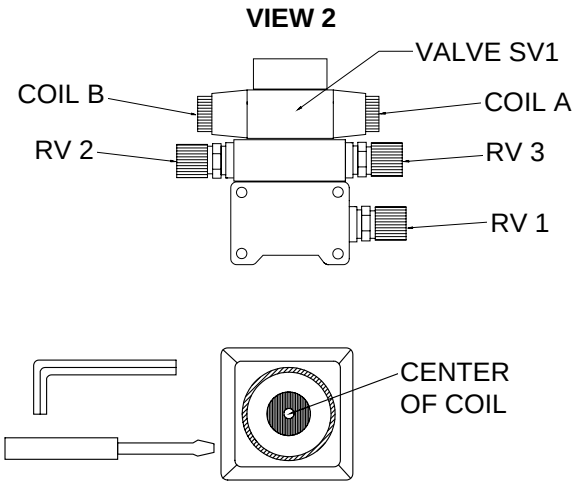
PRESSURE SETTING - continued

Following adjustments will need to be made with power unit running.
See TR-10 START-UP SEQUENCE in PRE OPERATING INSTRUCTIONS.

STEP 1

ADJUSTING SYSTEM PRESSURE RELIEFS

ADJUSTMENT FOR RV2
Using View 2 as reference, loosen the (3) three locking screws on sides of adjustment knobs of RV1, RV2 and RV3 with a 5/64" allen wrench. Remove small caps from pressure switches using a small phillips head screwdriver. Using a small blade screwdriver, or allen wrench, press actuator in center of Coil A to adjust RV2. RV2 adjustment knob can be turned clockwise to increase pressure, or counter clockwise to decrease pressure. Adjust RV2 to 3000 psi. Release and press actuator of Coil A again to test setting.
These pressures can be read at pressure gauge in port TPP of manifold.



Note: Pressure on RV1 may have to be increased before RV2 can be set.

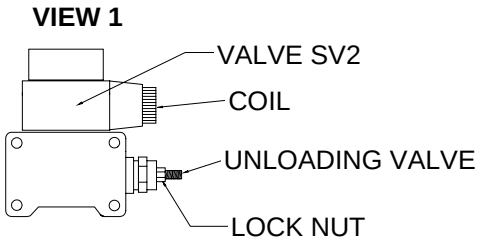
ADJUSTMENT FOR RV1 AND RV3
Using VIEW 2 as a reference, turn RV1 adjustment knob clockwise to fully closed position. Using a small blade screwdriver, or allen wrench, press actuator in center of Coil B. Adjust RV3 by turning adjustment knob clockwise to increase pressure, or counter clockwise to decrease pressure. RV3 should be set at, and not to exceed 3000 psi. This pressure can be read at pressure gauge in port TPP of manifold. Release actuator of coil, and press again to test setting. While holding 3000 psi, adjust RV1 counter clockwise until pressure starts to drop. Turn RV1 clockwise to increase pressure back up to 3000 psi.

After these settings have been made, tighten the (3) three locking screws on sides of adjustment knobs of RV1, RV2, and RV3.

STEP 2

ADJUSTING UNLOADING PRESSURE FOR HI- FLOW PUMP.

Using VIEW 1 as reference, Using a small blade screwdriver or allen wrench, press actuator in center of coil, shifting valve spool. Turn adjustment knob clockwise to increase pressure, or counter clockwise to decrease pressure. This pressure should be set at 750psi. Using gauge in TPP port of manifold, adjust pressure up or down as needed. After adjustment is made tighten lock nut on adjustment screw.



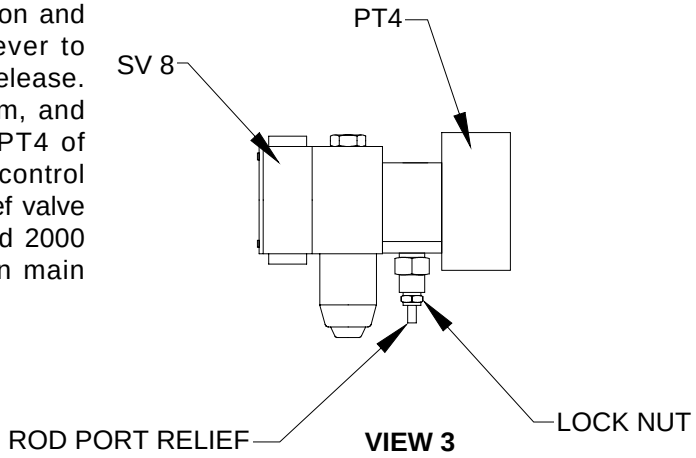
PRESSURE SETTING - continued

The Following steps will require (2) two people.

STEP 3

ROD PORT RELIEF

This setting needs to be done with main ram in fully retracted position. Press MANUAL MODE button and move RAM FORWARD/REVERSE control lever to REVERSE position to retract main ram and release. When this is done, lower rear limit switch arm, and loosen lock nut on rod port relief valve on PT4 of manifold. Move RAM FORWARD/REVERSE control lever to REVERSE position. Adjust rod port relief valve on PT4. This setting should be, and not exceed 2000 psi. Pressure can be read using TPR port on main manifold.
Tighten lock nut.

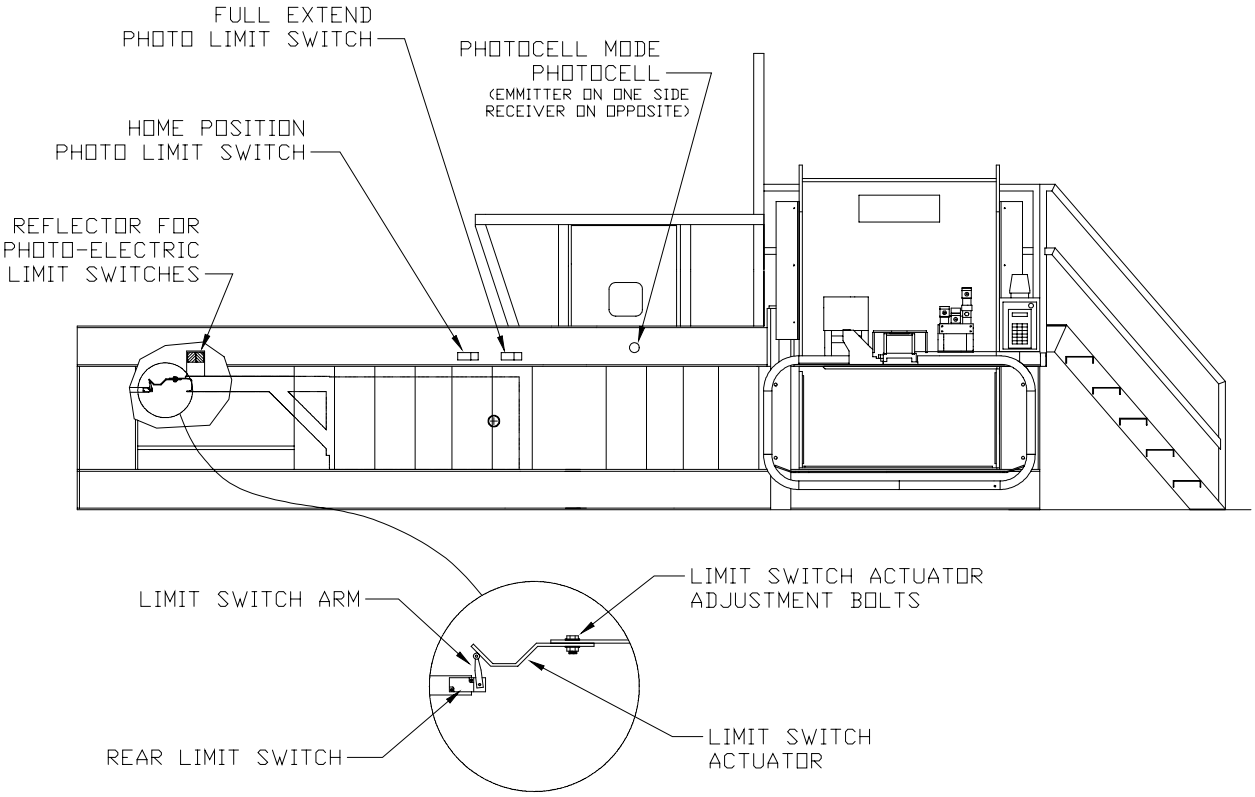


VIEW 3

RELIEF PRESSURES SETTINGS ARE NOW COMPLETE.

MAIN RAM LIMIT SWITCHES AND PHOTOCELL

DANGER: NEVER OVERRIDE PHOTOCELLS OR INTERLOCKS FOR ANY REASON! TAMPERING WITH THESE ITEMS COULD RESULT IN DAMAGE TO THE BALER, SERIOUS PERSONAL INJURY, OR DEATH!
NEVER ENTER ANY PART OF BALER UNLESS DISCONNECT SWITCH HAS BEEN TURNED OFF AND PADLOCKED PER LOCK-OUT AND TAG-OUT INSTRUCTIONS ON PAGE 2-1.



LIMIT SWITCH ACTUATOR AND ARM SHOULD ACTUATE (CLICK) WHEN RAM IS 1" FROM REAR POSITION. TIGHTEN ALL FASTENERS WHEN PROPER ADJUSTMENT IS ACHIEVED.

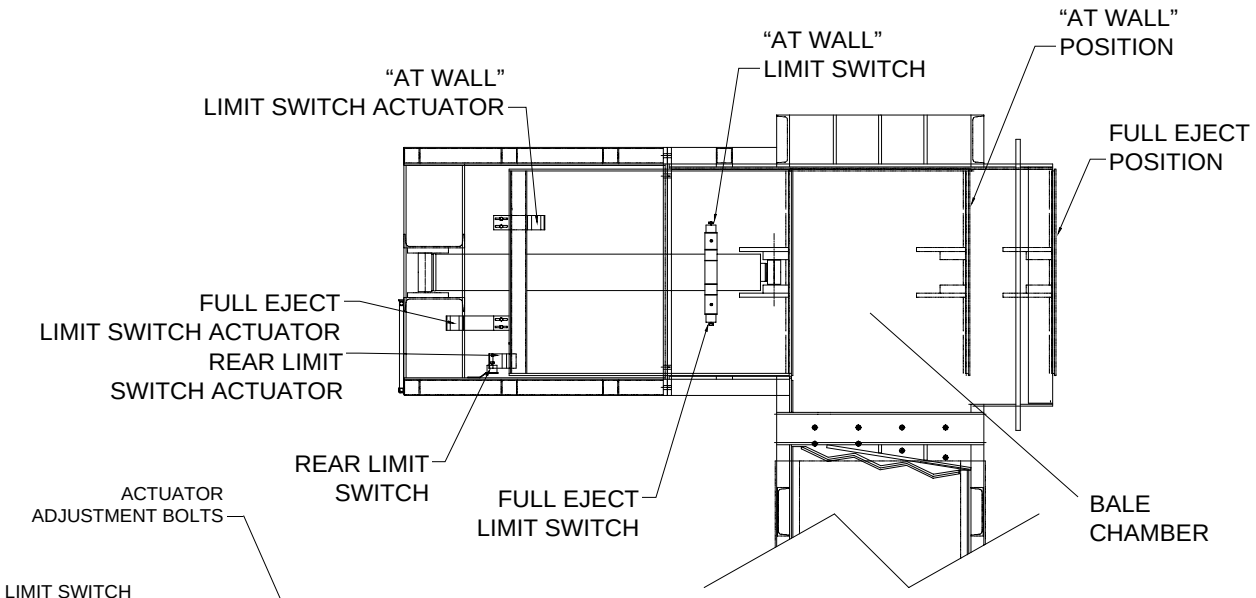
PHOTOCELL TESTING

Start main motor then depress PHOTOCELL MODE pushbutton on main control panel. Power unit will start after warning buzzer and flashing light have been on for 20 seconds. Ram will not cycle until light beam from photocell to reflector has been broken.

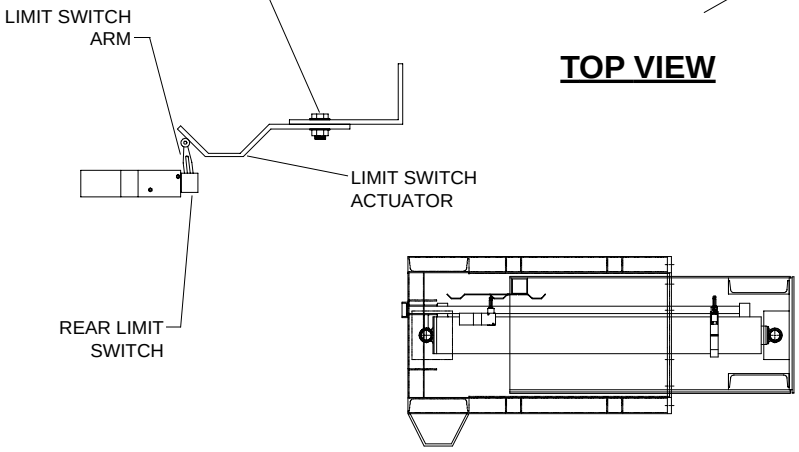
WARNING: If a photocell is not working properly, clean lens and reflector. After cleaning if photocell is malfunctioning, lock-out and tag-out baler and repair.

EJECTOR RAM LIMIT SWITCHES

WARNING: NEVER ENTER ANY PART OF MACHINE OR MAKE ANY ADJUSTMENTS UNTIL MACHINE HAS BEEN LOCKED OUT AND TAG OUT PER INSTRUCTIONS ON PAGE 2-1.



TOP VIEW



SIDE VIEW

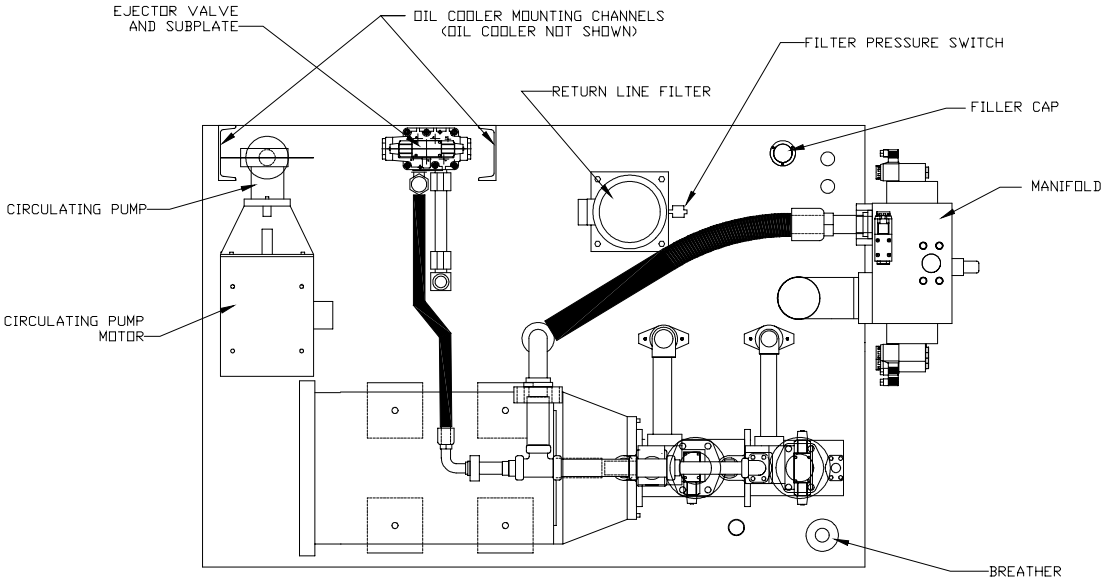
ADJUSTMENTS:

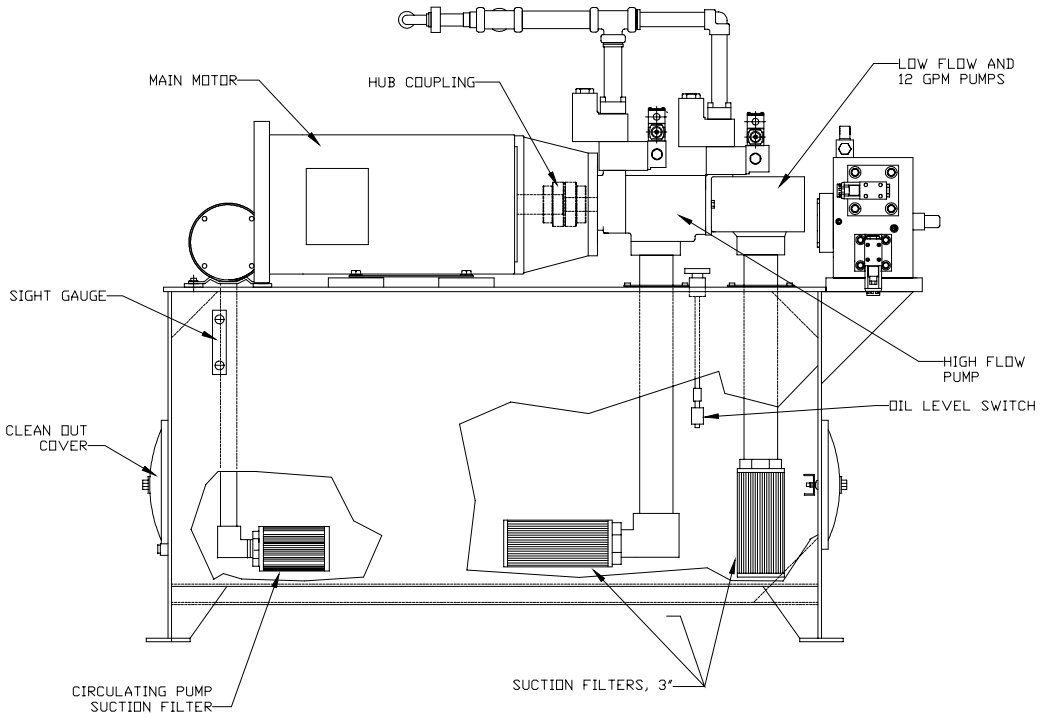
Adjust REAR LIMIT SWITCH and FULL EJECT LIMIT SWITCHES as not to allow cylinder to "bottom out" in forward or retracted position. In retracted position, ejector ram must be retracted out of bale chamber.

Adjust the "AT WALL" LIMIT SWITCH in forward direction so bale clears bale chamber and back edge of ejected bale can become the "4 th wall of bale chamber.

POWER UNIT LAYOUT TR-10-50 & 75 HP

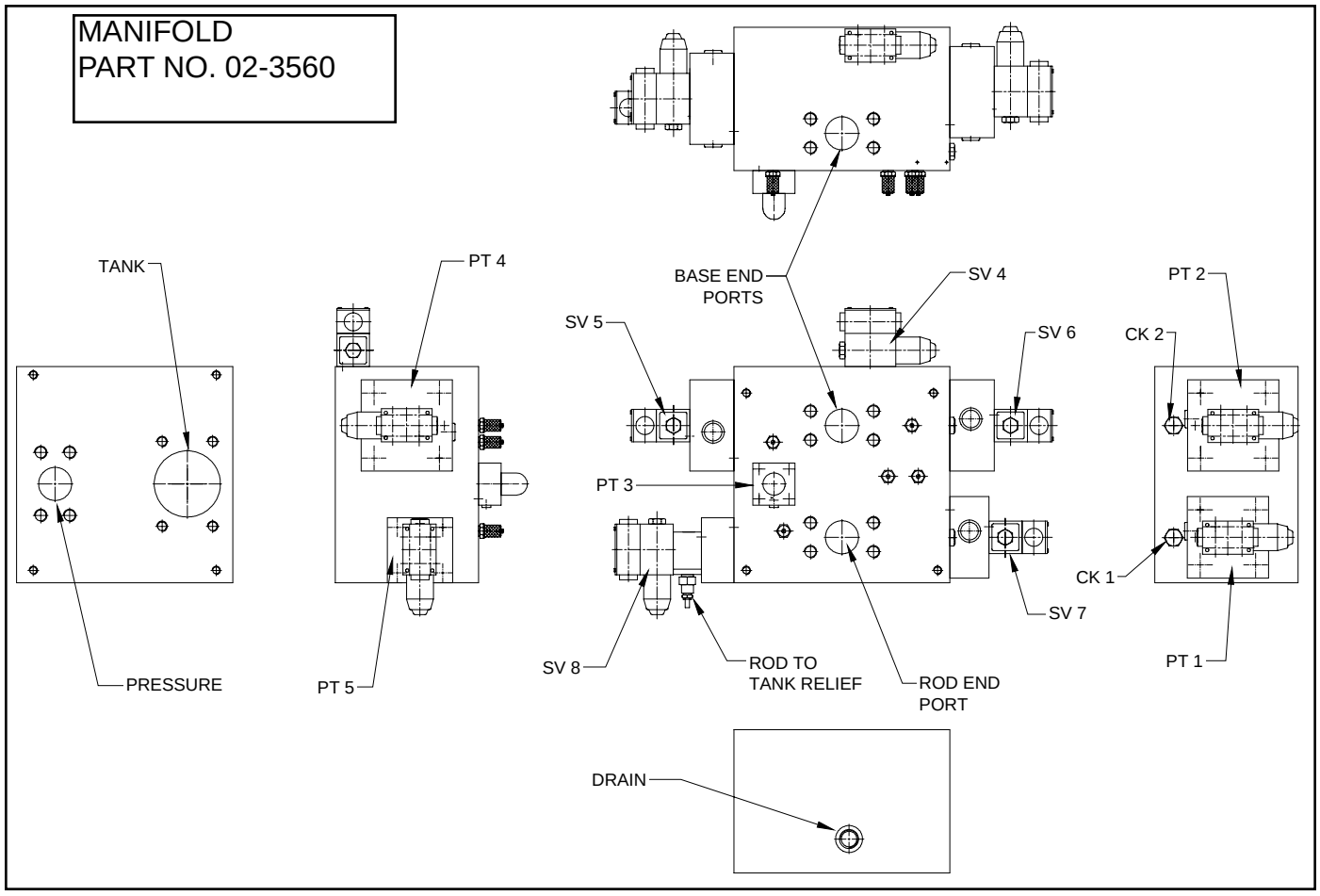
WARNING: DO NOT PERFORM ANY MAINTENANCE ON POWER UNIT UNTIL POWER HAS BEEN LOCKED OUT AND TAGGED OUT AS DESCRIBED ON PAGE 2-1.





HYDRAULIC MANIFOLD FOR TR-10-50 & 75

MANIFOLD
PART NO. 02-3560



PT1- Rod end pressure poppet. Controls fluid flow to rod end of cylinder.

PT2- Base end pressure poppet. Controls fluid flow to base (head) end of cylinder.

PT3- Decompression poppet. Controls how fast high pressure is released from the base end ports before cylinder can be retracted.

PT4- Base end to tank poppet. Controls fluid flow from base (head) end of cylinder back to tank.

PT5- Rod end to tank poppet. Controls fluid flow from rod end of cylinder back to tank.

SV4- 4-way valve. Opens and closes decompression poppet (PT3).

SV5- 4-way valve. Opens and closes base end to tank poppet (PT4).

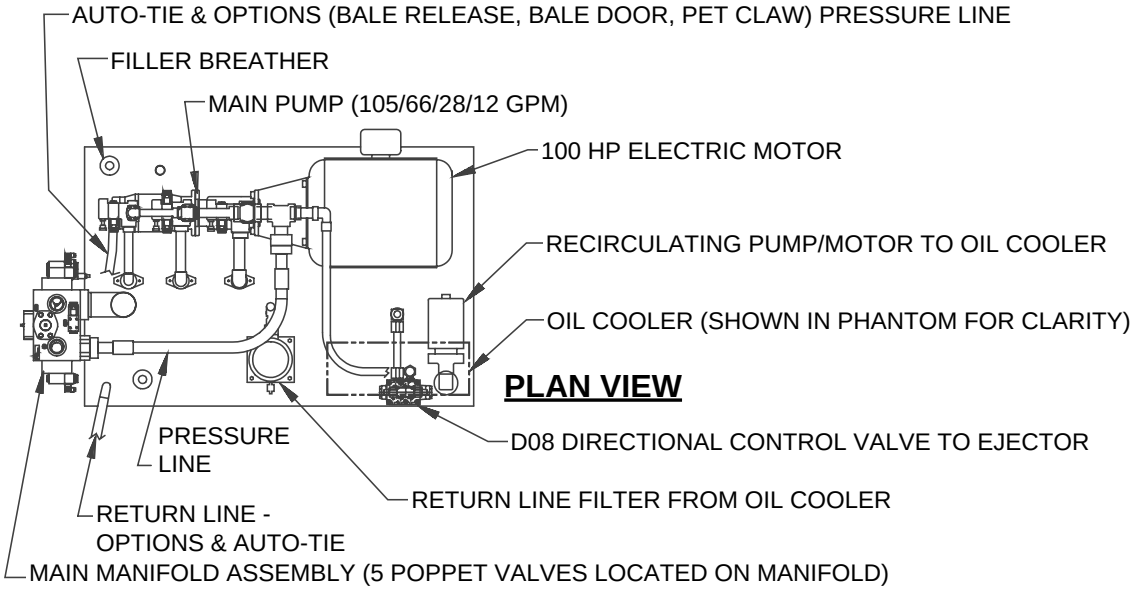
SV6- 4-way valve. Opens and closes base end pressure poppet (PT2).

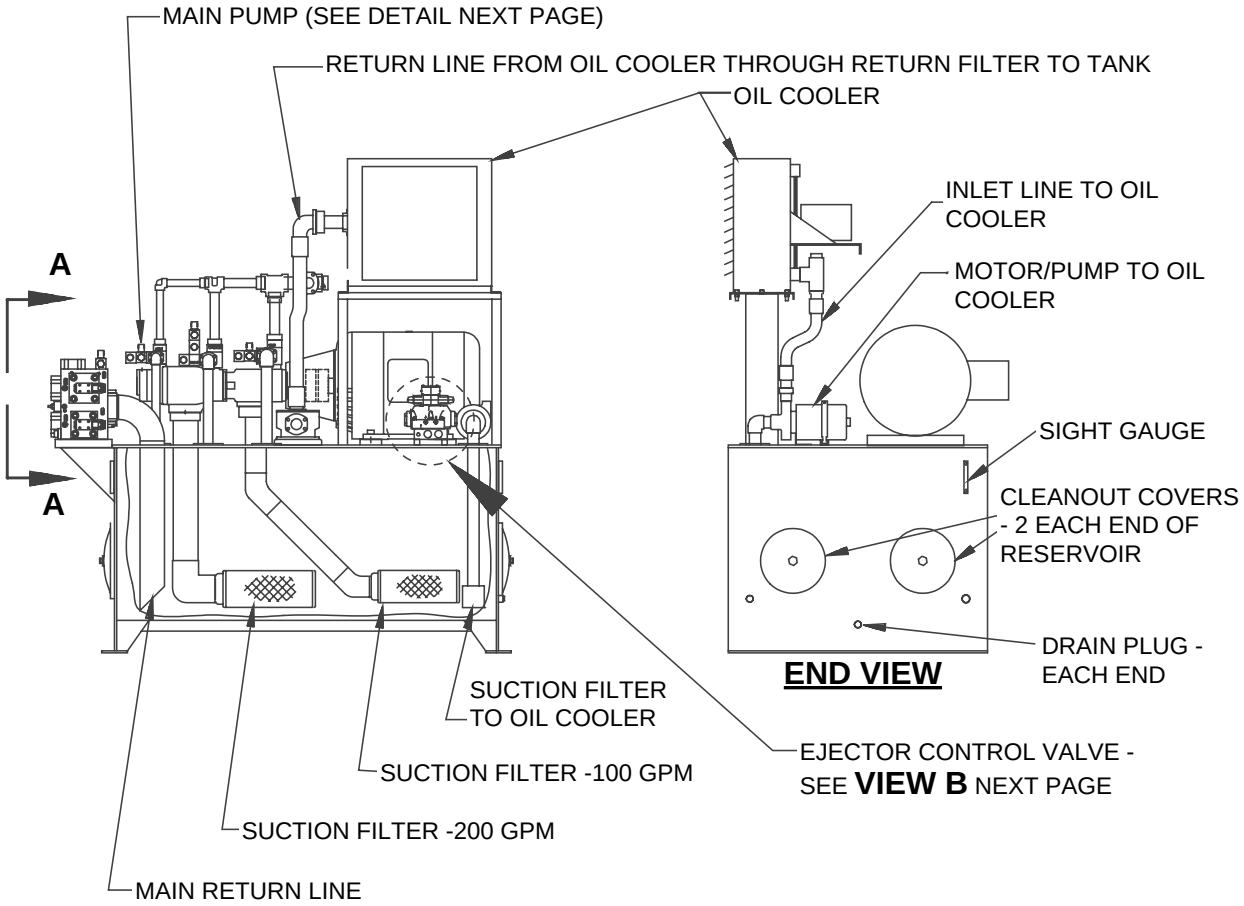
SV7- 4-way valve. Opens and closes rod end pressure poppet (PT1).

SV8- 4-way valve. Opens and closes rod end to tank poppet (PT5).

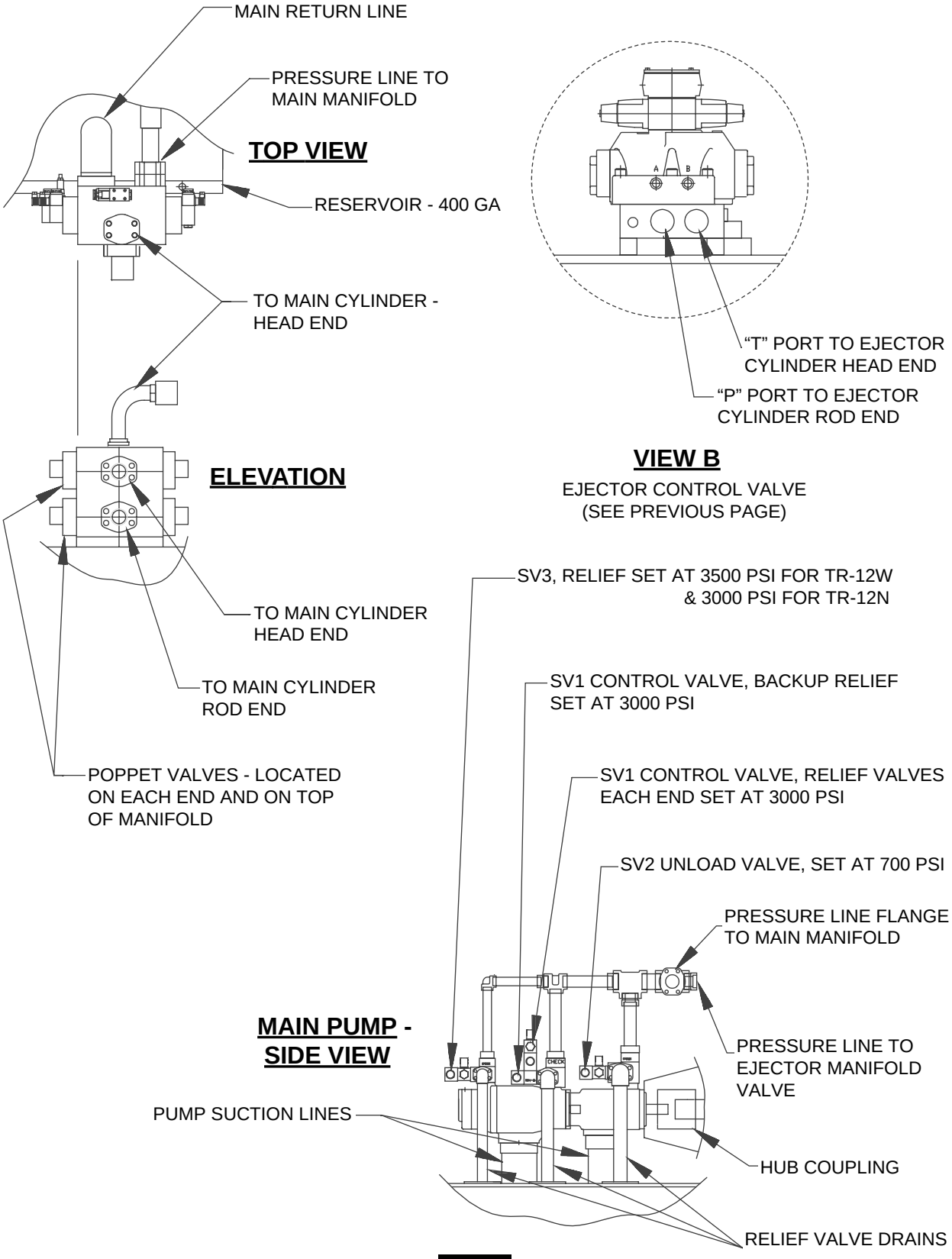
CK1 & CK2- Check valves. Check flow of pilot pressure in manifold.

POWER UNIT LAYOUT FOR TR-10-100A

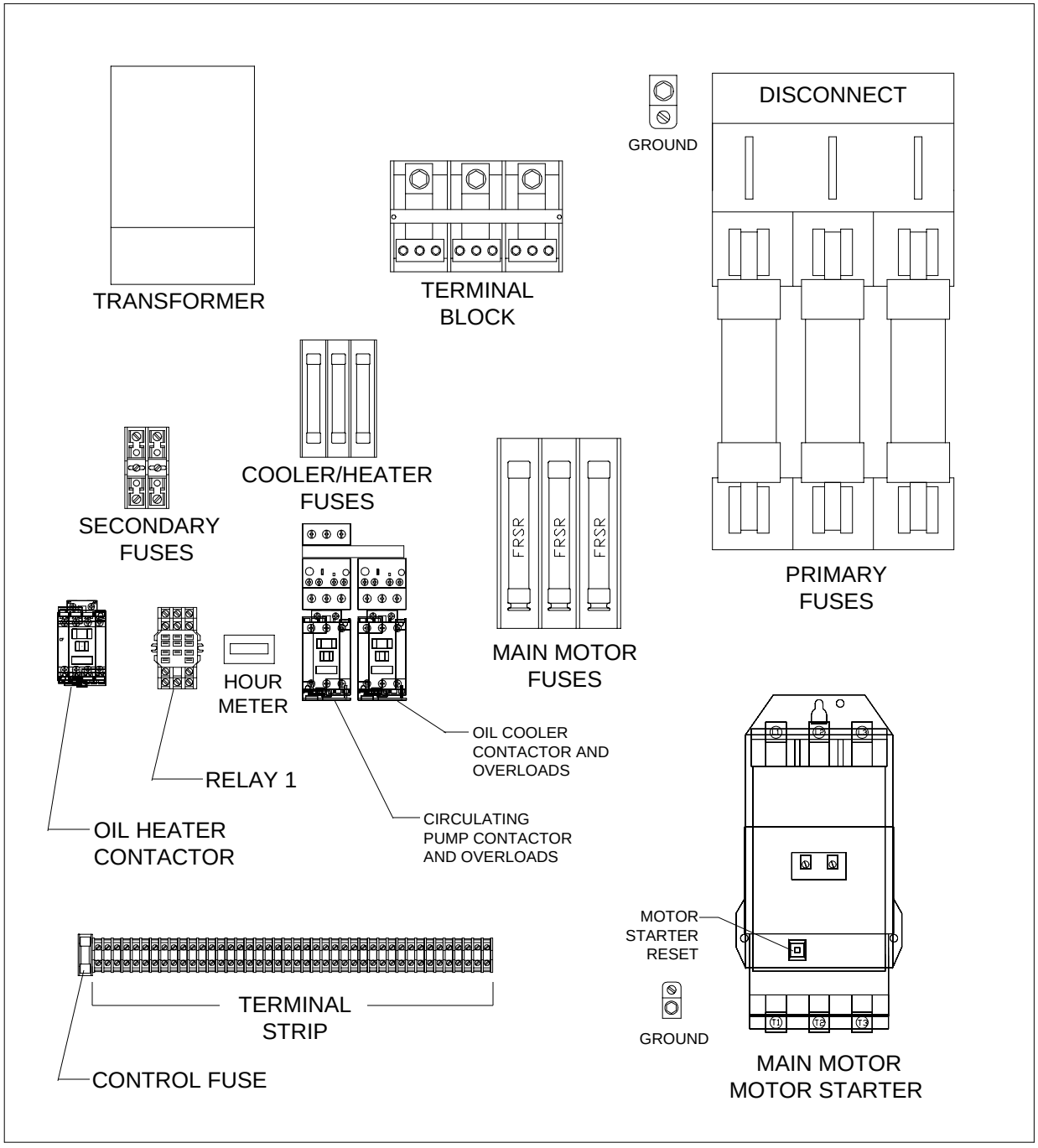




POWER UNIT DETAIL FOR TR-10-100A



MOTOR CONTROL PANEL - TYPICAL



SCHEMATICS

Refer to electrical and hydraulic schematics shipped with your TR-10 two-ram baler or contact Marathon Equipment Company, Technicial Service Department at 1-800-633-8974.

PARTS LIST

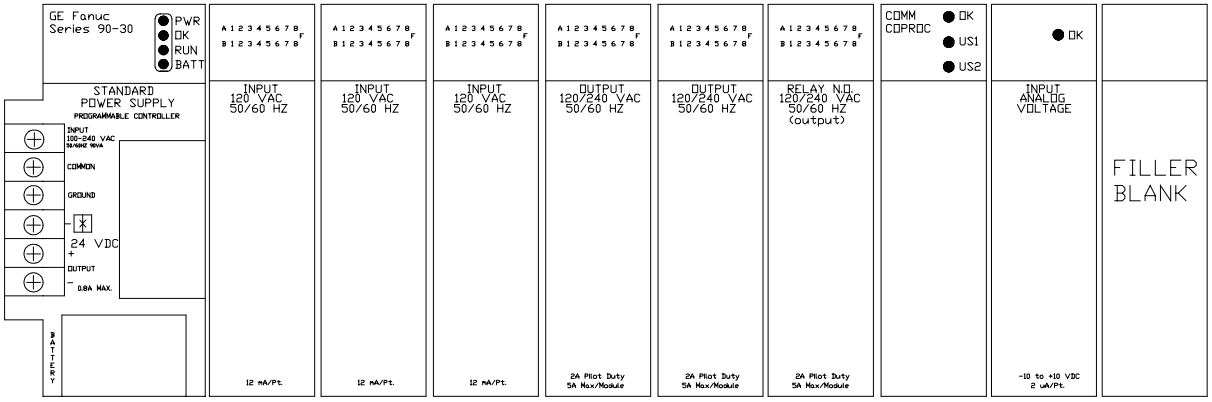
PART #	DESCRIPTION	50HP	75HP	100HP
02-0051	SUCTION STRAINER F/02-0259	X	X	
02-0215	SIGHT GAUGE	X	X	X
02-0259	PUMP, 18.5 gpm, CIRCULATING	X	X	
02-0276	HUB COUPLING F/02-0259	X	X	
02-0380	SUCTION FILTER	X	X	
02-0668	SUCTION FILTER	X	X	X
02-0700	PRESSURE GAUGE, 0-5000 psi.	X	X	X
02-0799	CIRCULATING PUMP			X
02-0804	OIL COOLER	X	X	X
02-0811	HUB COUPLING	X		
02-0812	PUMP, 90 gpm.	X		
02-0813	PUMP, 35/12 gpm.	X		
02-0814	UNLOADING VALVE	X	X	
02-0815	RELIEF VALVE	X	X	
02-0816	CHECK VALVE	X	X	
02-0817	VALVE, 4 WAY	X	X	
02-0818	SUBPLATE DO6	X	X	
02-0850	RELIEF VALVE, SANDWICH		X	X
02-0868	PRESSURE GAUGE, 4 1/2", 0-5000 psi.	X	X	X
02-0885	BREATHER	X	X	X
02-1053	SUCTION FILTER			X
02-1064	CHECK VALVE			X
02-1075	HUB COUPLING			X
02-1076	PUMP, 200gpm			X
02-2327	PUMP, 150 gpm		X	
02-2329	HUB COUPLING		X	
02-3050	MANIFOLD F/2 DO8 VALVES			X
02-3051	VALVE, 4 WAY			X
02-3560	MANIFOLD ASSEMBLY	X	X	X
03-0010	LIMIT SWITCH ARM W/ROLLER	X	X	X
03-0012	LIMIT SWITCH	X	X	X
03-0014	PRESSURE SWITCH, DUAL	X	X	X
03-0197	PUSH BUTTON SWITCH (BLACK)	X	X	X
03-0200	PUSH BUTTON SWITCH (GREEN)	X	X	X
03-0201	MAINTAINED PUSH/PULL STOP SWITCH	X	X	X
03-0245	OIL TEMPERATURE SWITCH	X	X	X
03-0256	RELAY BLOCK, 3 LINE	X	X	X
03-0269	KEY SWITCH	X	X	X
03-0284	RELAY BASE	X	X	X
03-0373	MOTOR STARTER, AB SIZE 3	*	*	*
03-0384	MOTOR, 3 HP	X		
03-0406	MOTOR STARTER, AB SIZE 4	*	*	*
03-0437	OIL LEVEL SWITCH	X	X	X
03-0498	MAGNETIC SWITCH	X	X	X
03-0517	MOTOR STARTER, AB SIZE 5	*	*	*

* Determined by incoming voltage

PARTS LIST

PART #	DESCRIPTION	50HP	75HP	100HP
03-0529	FUSE, 3 1/2 AMP	X	X	X
03-0543	PROXIMITY SWITCH	X	X	X
03-0582	HOUR METER	X	X	X
03-0583	ALARM HORN	X	X	X
03-0584	LIGHT, RED BEACON	X	X	X
03-0586	SELECTOR SWITCH, 2 POS. MAINTAINED	X	X	X
03-0675	MOTOR, 50 HP	X		
03-0676	PHOTO LIMIT SWITCH HEAD	X	X	X
03-0677	PHOTO LIMIT SWITCH BASE	X	X	X
03-0678	PHOTO LIMIT SWITCH RECEPTACLE	X	X	X
03-0681	OPERATOR JOYSTICK, L-R	X	X	X
03-0682	OPERATOR JOYSTICK, U-D	X	X	X
03-0683	SELECTOR SWITCH, 3 POS. MAINTAINED	X	X	X
03-0684	SELECTOR SWITCH, 4 POS. MAINTAINED	X	X	X
03-0686	SWITCH, P/B W/GUARD ILLUMINATED (AMBER)	X	X	X
03-0687	SWITCH P/B W/GUARD ILLUMINATED (GREEN)	X	X	X
03-0688	LIGHT, 120 V, LED, GREEN	X	X	X
03-0689	LIGHT, 120 V, LED, AMBER	X	X	X
03-0690	LIGHT, 120 V, LED, RED	X	X	X
03-0735	FUSE, 2 AMP	X	X	X
03-0736	PLC, 10 SLOT RACK	X	X	X
03-0737	PLC, INPUT MODULE, 16 PT	X	X	X
03-0738	PLC, OUTPUT MODULE, 16 PT	X	X	X
03-0739	PLC, OUTPUT MODULE, 8 PT	X	X	X
03-0740	PLC, EEPROM	X	X	X
03-0741	PLC, POWER SUPPLY	X	X	X
03-0742	PLC, FILLER BLOCK	X	X	X
03-0758	TRANSFORMER	X	X	X
03-0759	FUSE, 5 AMP	X	X	
03-0761	REFLECTOR F/PHOTO LIMIT SWITCH	X	X	X
03-0772	PRESSURE SWITCH, RETURN LINE	X	X	X
03-0833	MOTOR, 100 HP			X
03-0880	MOTOR, 75 HP		X	
03-0960	FUSE, 15 AMP	X	X	X
03-1265	MOTOR, 3 HP		X	
03-1540	RELAY,4 POLE	X	X	X
04-0430	CYLINDER, 8 B X 4 1/2 R X 68 S (EJECTOR RAM)	X	X	X
04-0670	CYLINDER, 10 B X 7 R X 96 S (MAIN RAM)	X	X	X
05-0531	SPROCKET, BALE COUNT	X	X	X
14-1150	HOPPER WINDOW, 1/4"X14 3/4"X14 3/4"	X	X	X
14-1491	OPERATOR WINDOW, 3/8" X 29" X 32"	X	X	X
99-8222	PHOTO CELL, HD, EMITTER	X	X	X
99-8223	PHOTO CELL, HD, RECEIVER	X	X	X

PROGRAMMABLE LOGIC CONTROLLER



This unit is controlled by a Programmable Logic Controller, or PLC, and uses program logic along with inputs and outputs to accomplish desired functions needed to cycle machine. The PLC will be ready for operation when power is turned on and three lights are lit up on power supply of PLC. These three lights are PWR (Power), OK, and RUN lights. If any of these three lights fail to illuminate, there is a problem with PLC and corrective action should be taken. If BATT (Battery) light illuminates, battery needs to be replaced. A battery is used by the PLC if the power is off (up to approximately 2 weeks), it supplies power to PLC to allow it to retain register information in program logic. The PLC also uses an EEprom which stores program logic. When the PLC is energized, it uploads program logic from EEprom to insure logic is correct.

As inputs are fed into PLC, the processor reads those inputs, along with program logic, and determines which outputs to turn on. When inputs or outputs come on, a designated light is illuminated indicating which input or output is energized. Inputs and outputs can be monitored by observing LED lights on top of input and output cards on the PLC.

A communications card is a link between PLC and Operator Interface. This card has a 25 pin pigtail plug that the cable from Operator Interface plugs into. Correct communications between the PLC and Operator Interface is indicated by US 1 light flashing.

Analog card is used for connection for transducers (pressure, position, or temperature). This card converts a voltage input to a logic form that can be recognized by PLC.

NOTE: If output light for an individual component is ON, but that individual component is not energized, check output fuse for that component. Output fuses are used to protect the outputs of the PLC in the event of a voltage spike orif a component fails.

TROUBLESHOOTING

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

Problem	Possible 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)Ejector not fully retracted.	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 poppet malfunction.	2)Check solenoid valve. Check for plugged orifice.
	3)Compression cylinder rod end pressure poppet 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.
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.

TROUBLESHOOTING

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

Problem	Possible Cause	Solution
EJECTOR WILL NOT MOVE FORWARD (MANUAL)	1)Compression ram out of position.	1)Move ram to home or retracted position.
	2)Pet Claw extended.	2)Move Pet Claw selector switch to full retracted position.
	3)Wire tie mechanism out of sequence.	3)Feed wire to HOME position.
	4)Ejector valve malfunction.	4)Check solenoid valve. Make sure valve spool is shifting.
	5)Control lever malfunction.	5)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.
PET CLAW WILL NOT EXTEND	1)Pet Claw extended limit switch malfunction.	1)Check limit switch arm adjustment. Replace limit switch.
	2)Bale Made light on.	2)Reset Bale Made light by fully retracting compression ram.
	3)Pet Claw control valve malfunction.	3)Check solenoid valve. Make sure valve spool is shifting.
	4)Pet Claw selector switch malfunction.	4)Replace selector switch.
PET CLAW WILL NOT RETRACT	1)Pet Claw retract limit switch malfunction.	1)Check limit switch arm adjustment. Replace limit switch.
	2)Pet Claw control valve malfunction.	2)Check solenoid valve. Make sure valve spool is shifting.
	3)Pet Claw selector switch malfunction.	3)Replace selector 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.

NOTE: IN ALL EVENTS, CHECK OUTPUT FUSES.

3 INSTALLATION

INSTALLATION - GENERAL REQUIREMENTS

CAUTION:

Review this manual before beginning installation. Study 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 ANSI standard Z245.5.

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 installation procedures of this equipment. Conformance to applicable local, state, and federal laws concerning installation is customer responsibility.

This section of the manual covers assembly and installation of a two-ram baler. The following pages cover general installation, plumbing installation, and electrical installation, see Section 1 for start-up and operating instructions.

CONCRETE PAD OR FLOOR

The pad or floor should be level and a minimum 3000 psi concrete, steel reinforced, 6" thick. It is recommended that pad or floor be flush with surrounding area. Working clearance for 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 installation and safe operation of auto-tie mechanism. Allow enough space around baler for any maintenance or service (including cylinder removal and liner replacement).

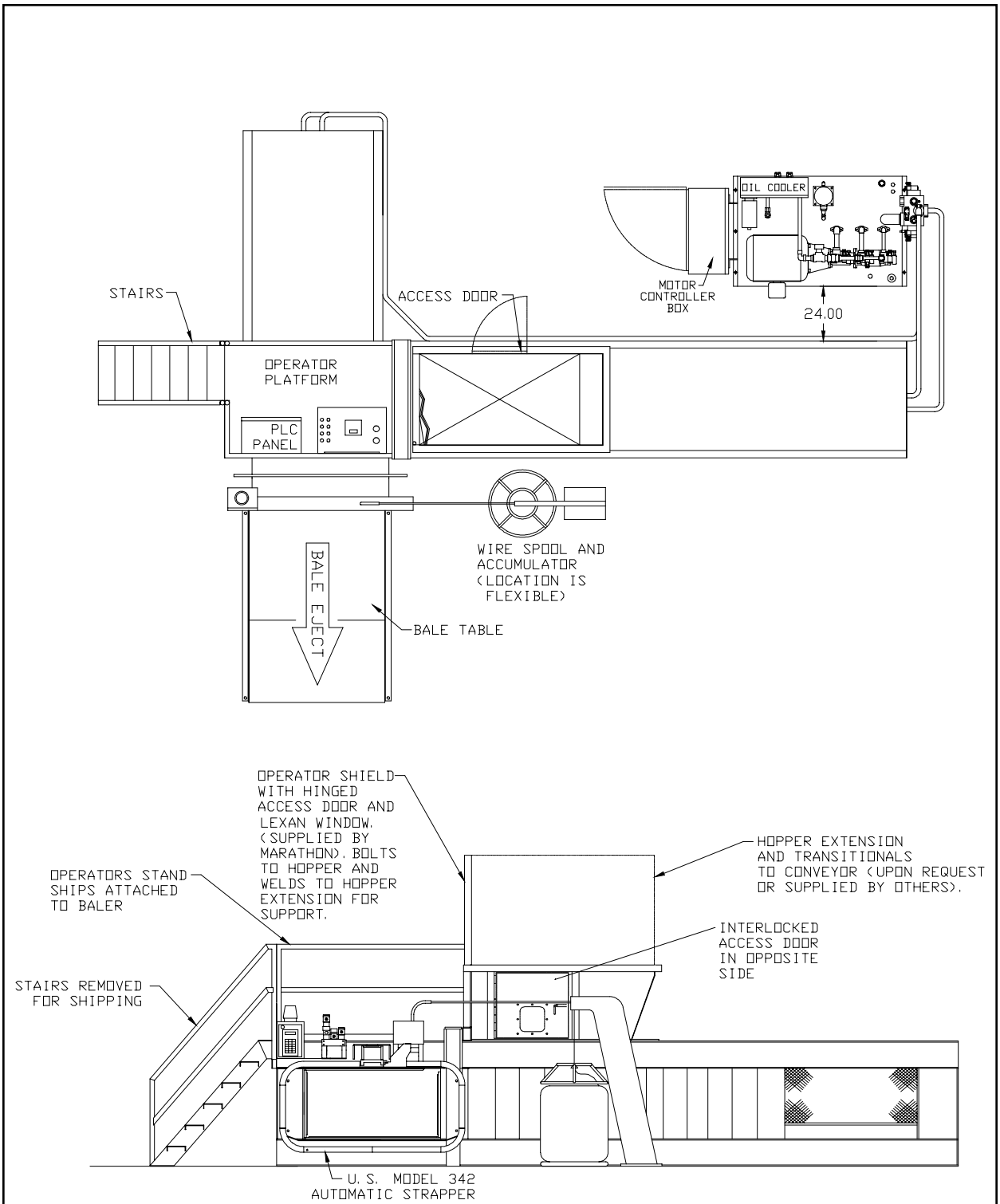
ANCHORING

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

DECALS

Installation of baler is not complete until an inspection of warning decals has been made. All warning decals must be in place prior to operating baler. Decals should be clearly visible, legible, securely applied and in proper location. For decal description and location, see Section 1 of this manual. Notify your distributor or Marathon Equipment Company if any warning decals are missing or become damaged and need replacing.

TR-10 LAYOUT (Typical Left Hand shown, Right Hand opposite)

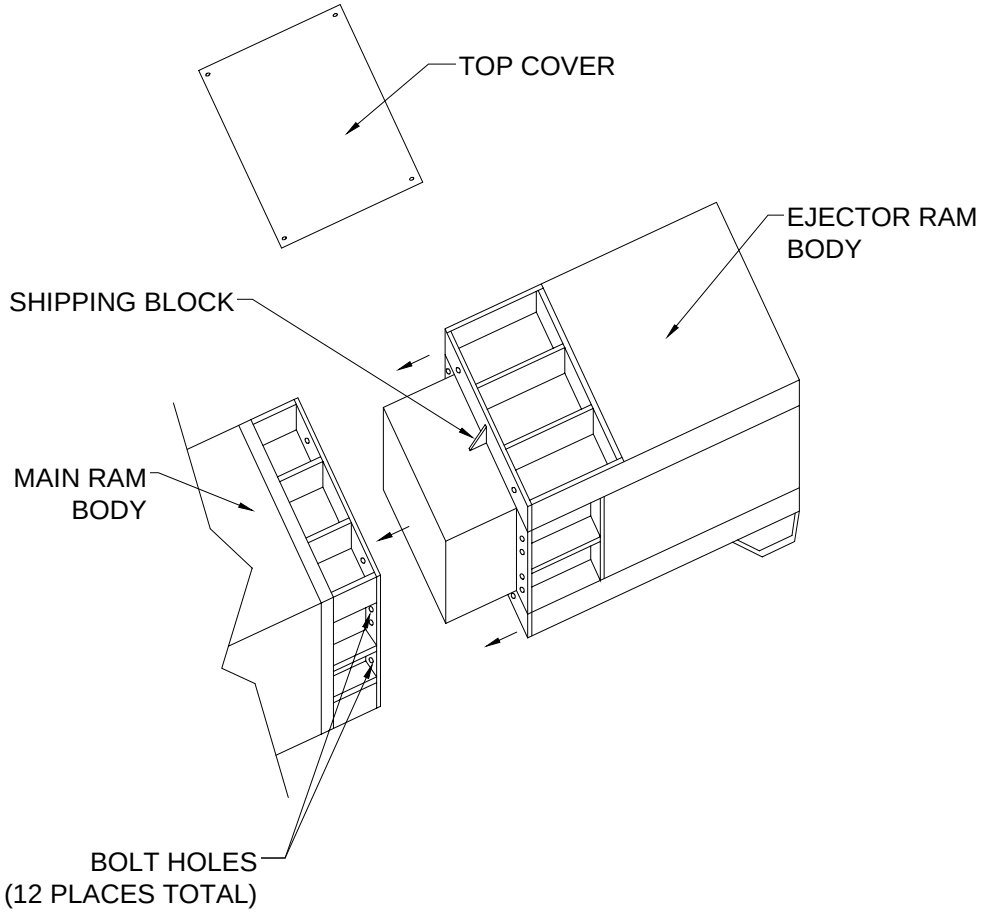


MACHINE ASSEMBLY

1. Using a crane, fork lift, or machine rollers, position Main Ram body into desired location.

2. Assemble Ejector Ram body to Main Ram body. Use a cutting torch to cut shipping blocks from Ejector Ram and Ejector body. Smooth with grinder if necessary. Slide Ejector Ram into Main Ram body until facing surface of Ejector Body contacts Main Ram body facing surface. Bolt Ejector Ram body to Main Ram body with 1" - 8 UNC X 3 1/2" bolts and nuts (provided). After this assembly has been done, bolt on top cover.
   Reference diagram below.

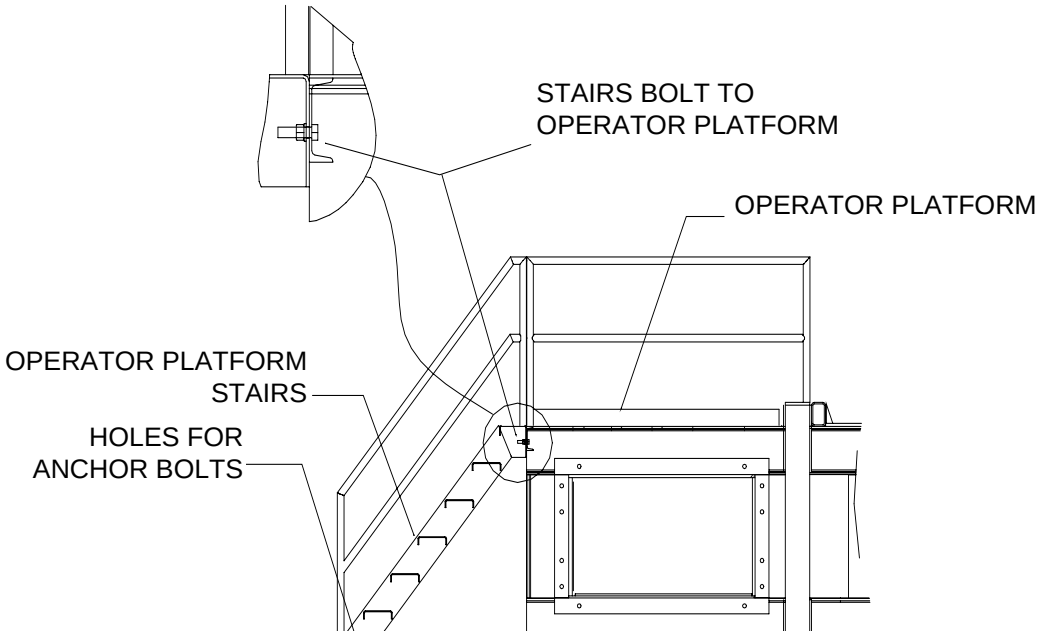
   NOTE: For Electrical and Hydraulic connections, see Electrical & Hydraulic Installation in this section.



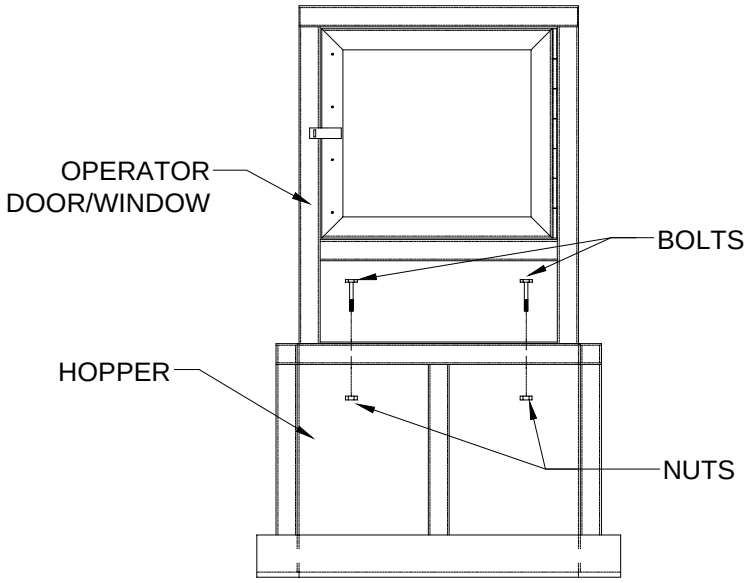
3. Level machine. Use shims under main ram body and ejector ram body to compensate for any unevenness in floor or pad.

MACHINE ASSEMBLY

4. Install stairs for Operator Platform. Connect stairs to operator platform with bolts provided. Holes have been pre-drilled for easy installation.
   While anchoring machine, anchor stairs to floor or pad. See diagram below.



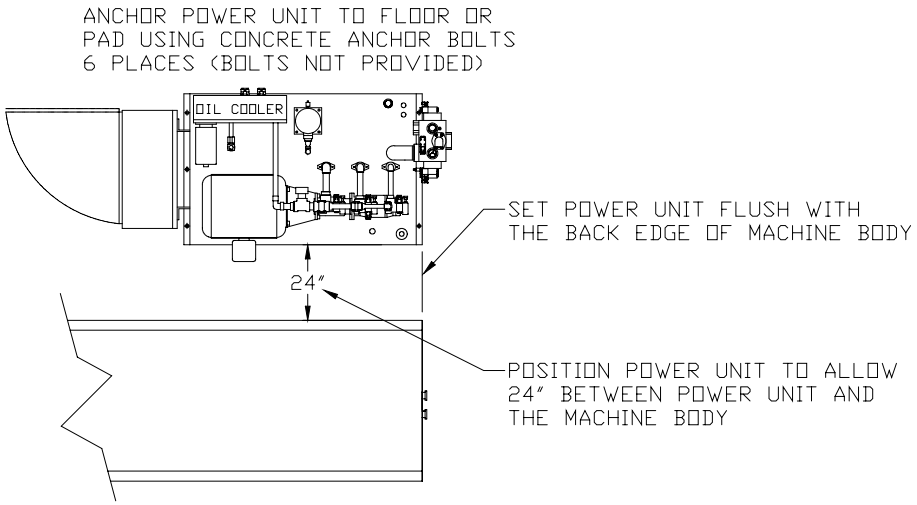
5. Install Operator Access Door/Window. Connect door/window to feed hopper of machine with bolts provided. Holes have been pre-drilled for easy installation. See diagram below.



For electrical connections, see Electrical & Hydraulic Installation in this section.

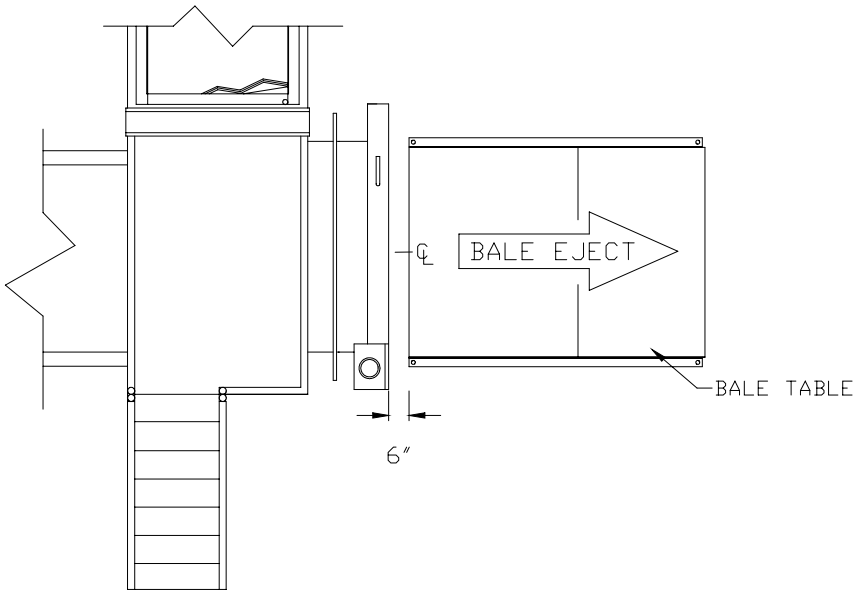
MACHINE ASSEMBLY

6. Set Power Unit into desired location and anchor to floor or pad. See below.



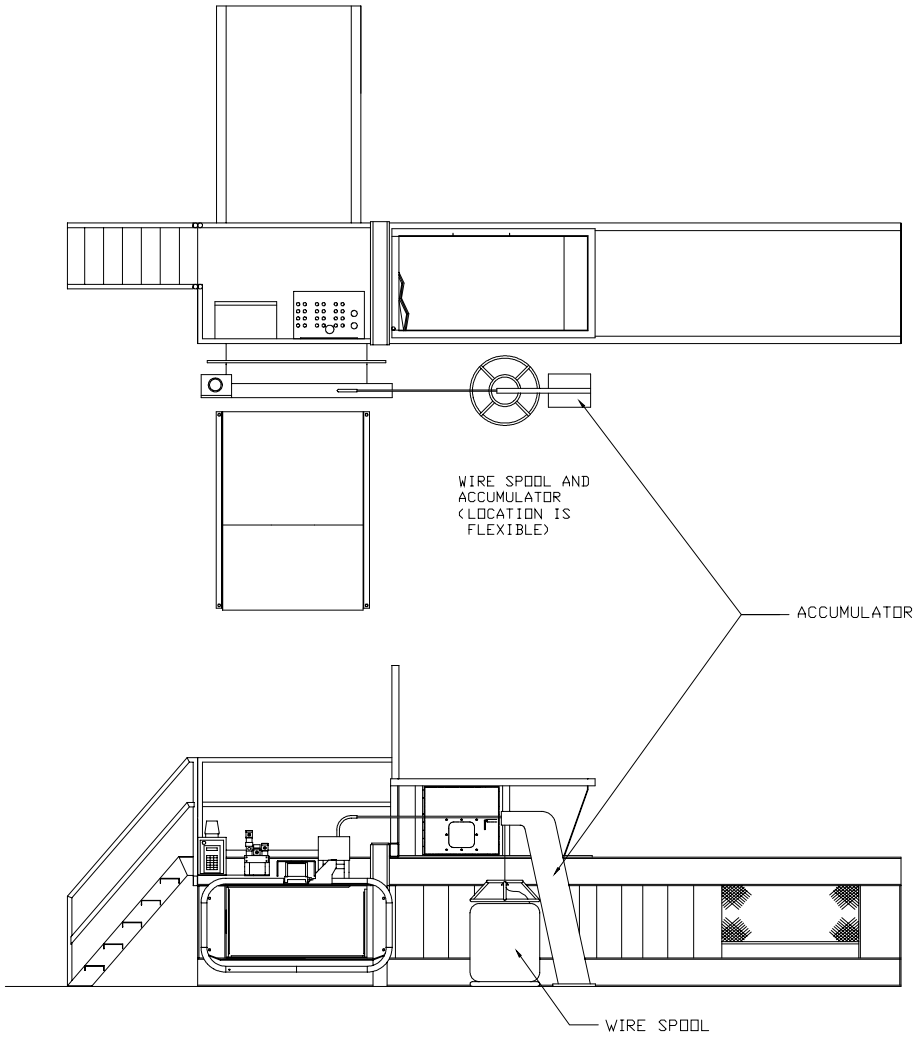
NOTE: Typical layout shown. Your installation may differ. See your approval drawing for exact dimensions.

7. Place Bale Table on floor or pad in front of ejector opening. Center bale table to bale eject opening. Allow a clearance of 6" between bale table and deflector of wire tier. Anchor bale table to floor or pad.



MACHINE ASSEMBLY

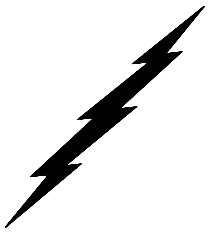
8. Set accumulator for wire tier in an out of way, but convenient location. Allow enough space for handling equipment for purpose of changing wire spools. Anchor accumulator to floor or pad.
   For more information on wire tie system, see wire tie manual.



NOTE: Typical layout shown. Your installation may differ. For more information on wire tie system, see wire tie manual.

ELECTRICAL & HYDRAULIC INSTALLATION

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



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

CAUTION:
All equipment should be grounded per National Electric Code.

1. Before connecting power to baler, check incoming line voltage with a volt meter. Also, check voltage wiring in baler panel box. If baler is not wired to proper voltage, make necessary corrections before proceeding.

2. A lockable disconnect switch is provided in baler motor control panel and is sized in accordance with baler. Three phase power should be connected to top of this disconnect switch. Be careful not to let incoming wires touch each other. A properly sized equipment ground should be connected to enclosure ground lug.

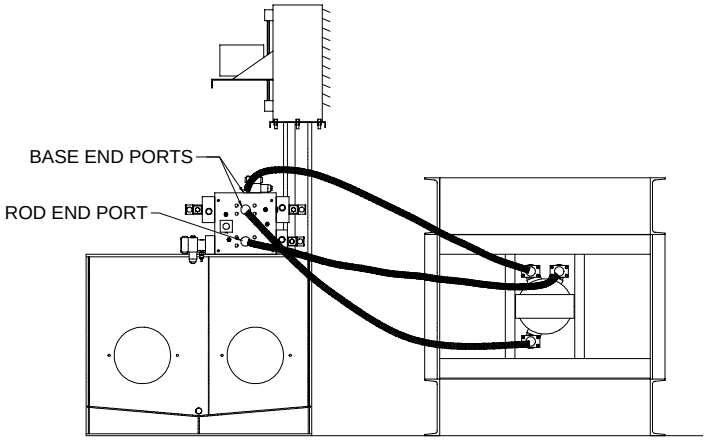
3. Reconnect all sealtite connections on baler and power unit. Also reconnect all electrical wires in sealtite to terminals indicated by the wire numbers on wires. In event wire numbers are missing, or not readable, refer to electrical schematic shipped with baler.

4. If baler is supplied with a conveyor, it will be shipped with wiring disconnected from baler. When conveyor is anchored into place, connect sealtite from conveyor to baler panel box. Next, connect wires per electrical schematic shipped with baler.

ELECTRICAL & HYDRAULIC INSTALLATION

5. Reconnect all hydraulic hoses. Refer to hydraulic schematic to insure proper connections.

   A. Install 2” Main Ram hoses as shown.



   B. Install 1 1/4” Ejector Ram hoses.
   “A” port hose (from power unit) connects to base end port of Ejector cylinder. “B” port hose (from power unit) connects to rod end port of Ejector cylinder.

   Install hoses between hard piping on Ejector Ram body and Main Ram body to complete Ejector Ram plumbing. Top to top, bottom to bottom.

   C. Install Wire Tier hoses.
   3/4” hose from pressure port on pump connects to tubing to pressure port on Wire Tier manifold. 3/4” hose from reservoir connects to tubing from return port of Wire Tier manifold. 3/8” hose from reservoir connects to 3/8” tubing from drain on Wire Tier.

6. Fill reservoir with hydraulic oil. See Recommended Oils in Maintenance Section of this manual. Fill until oil is 3/4 up in sight gauge. After Start-Up, it may be necessary to add more oil to reservoir. Maintain oil level to 3/4 in sight gauge with main ram retracted.

INSTALLATION START-UP

1. Check to insure all electrical and hydraulic connections have been made.

2. Turn disconnect switch to ON position

3. Check rotation of motor. This will require 2 people.

   A. Remove cover on pump/motor adapter.

   B. Insert CONTROLS key into key switch and turn it to ON position.

   C. Press POWER ON switch.

   D. Press and hold MAIN MOTOR START switch until motor starts (20 seconds).

   E. Allow motor to run for 1 second and press STOP button.

   F. Looking at HUB COUPLING from motor end, rotation should be counter clockwise.

   If motor turns in wrong direction, turn main disconnect switch to OFF position. Lock-out and Tag-out power and reverse any two incoming power wires in motor control panel.

   G. Replace cover on pump/motor adapter.

4. Restart machine.

5. Manually operate main ram and ejector ram in forward and reverse direction several times to fill cylinders and hydraulic lines with oil.

6. Check function of all interlock switches and stop switches. Check reflectors and operation of photocells.

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