

PLAY IT SAFE!

OPERATIONAL, MAINTENANCE, AND INSTALLATION MANUAL

FOR

RJ-88SC

RJ-100SC

RJ-250SC

RJ-250VL

Includes HT (Hydraulic Tailgate) Units and SL
(StreamLine, Liquid Removal) Units

RAM-JET SELF-CONTAINED COMPACTOR CONTAINER



VERNON, AL • FAYETTE, AL
YERINGTON, NV • CLEARFIELD, PA

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THANK YOU FOR PURCHASING A MARATHON SELF-CONTAINED COMPACTOR/CONTAINER.

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

The employer involved in the operation, maintenance, and installation of the self-contained compactor/container should read and understand the most current version of the following applicable standards:

ANSI Standard No. Z245.2, "Stationary Compactors Safety Requirements"

A copy of this standard may be obtained from:

ENVIRONMENTAL INDUSTRIES ASSOCIATION

4301 Connecticut Avenue, NW Suite 300

Washington D.C. 20008

OSHA 29 CFR, Part 1910.147, "The control of hazardous energy (lockout/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 COMPACTOR 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

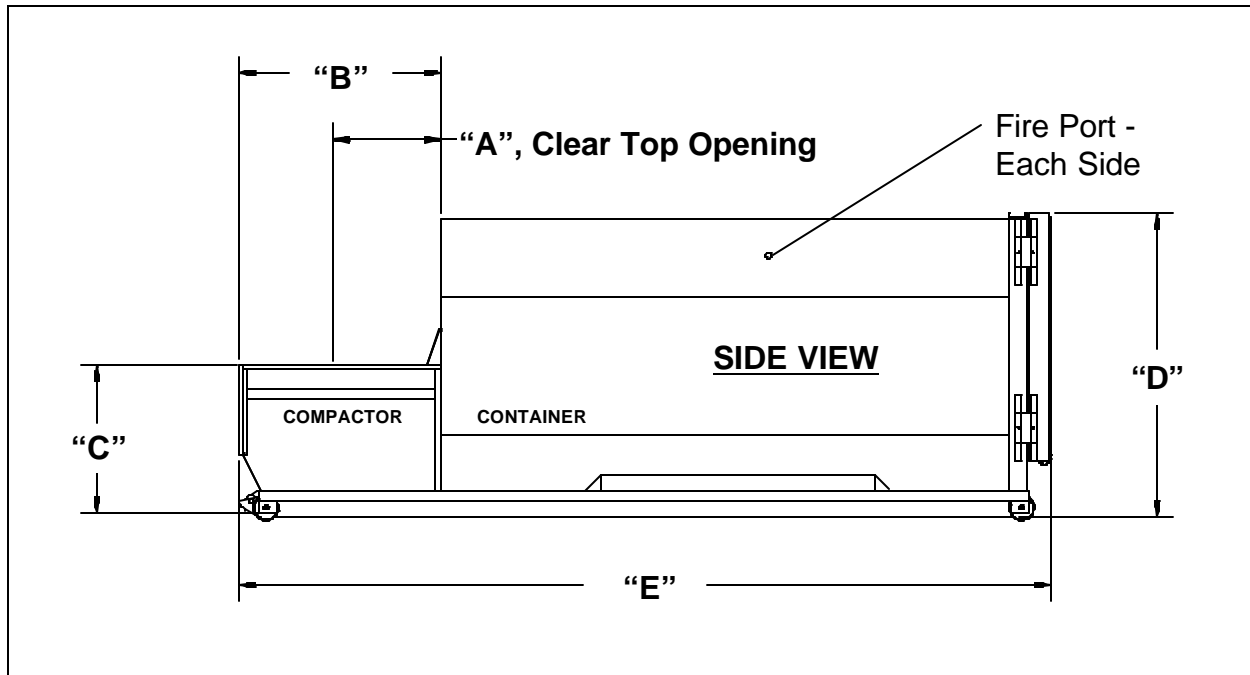
Attn: Field Service Department

1-800-633-8974

1 OPERATION

SPECIFICATIONS

1-2



	Model			
	88SC	100SC	250SC	250VL
"A", Clear Top Opening (L x W)	30 1/2 x 48	35 x 60	40.5 x 58	35 x 60
"B"	70	76 1/8	68	76 1/2
"C"	42	49 5/8	52 1/2	51 1/2
"D" (max.)	96*	104*	104*	104*
"E" (max.)	254 1/2*	276*	275*	288*
Charge Box Capacity (cubic yards)	1.00	1.50	1.90	1.90
WASTE C	.70	1.32	1.53	1.53
Cycle Time (sec)	44	37	33	37

* Determined by the size and capacity of the container.

1 OPERATION

PRE-OPERATION INSTRUCTIONS

1-3



FEDERAL REGULATION PROHIBITS THE USE OF THIS EQUIPMENT BY ANYONE UNDER 18 YEARS OF AGE.

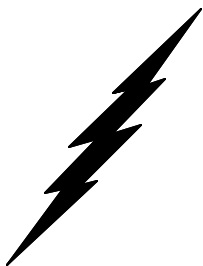
STAY CLEAR OF ALL INTERNAL PARTS OF THE SELF-CONTAINED COMPACTOR/CONTAINER DURING OPERATION. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH!

NEVER ENTER ANY PART OF THE COMPACTOR UNLESS THE DISCONNECT SWITCH HAS BEEN LOCKED-OUT AND TAGGED-OUT. See Lock-Out & Tag-Out instructions in the Maintenance section. Before starting the compactor, be sure no one is inside. Be certain that everyone is clear of all points of operation and pinch point areas before starting.



THE EMPLOYER SHOULD ALLOW ONLY AUTHORIZED AND TRAINED PERSONNEL TO OPERATE THIS COMPACTOR. This compactor is equipped with a key operated locking system. The key(s) should be in the possession of only authorized personnel.

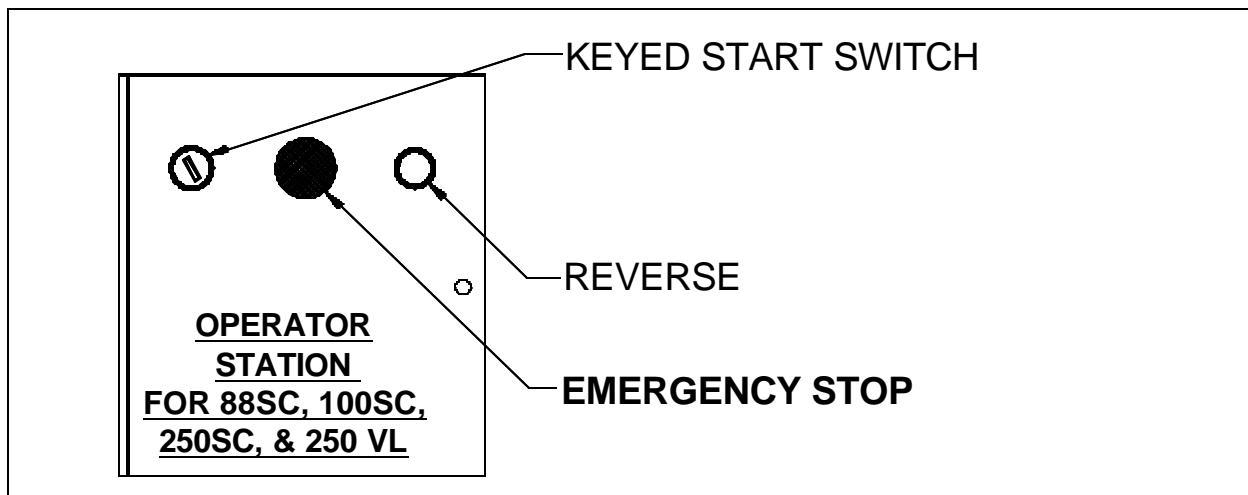
DO NOT REMOVE ACCESS COVERS EXCEPT FOR SERVICING. Only authorized service personnel should be allowed inside. All access doors on the compactor body should always be secured in place when the unit is operating. **See Lock-Out & Tag-Out instructions in the Maintenance section.**



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



If the compactor is equipped with a security gate or doghouse with security door, **BE SURE THAT THE SECURITY GATE OR DOOR IS CLOSED BEFORE THE COMPACTOR IS STARTED.**



CONTROL DESCRIPTION FOR 88SC, 100SC, & 250SC

1. **KEYED START SWITCH** - This switch requires a key for operation. Insert the key and turn clockwise to the start position. Depress and hold the key for one to two seconds and release. The compactor will cycle one time (complete extension and retraction of the ram) and stop. After use, turn the key to the counterclockwise position and remove the key.
2. **EMERGENCY STOP MUSHROOM HEAD PUSHBUTTON** - When depressed, this pushbutton will stop all powered operation of the compactor.
3. **REVERSE PUSHBUTTON** - This pushbutton will reverse the compaction ram when depressed. The Keyed Start Switch must be energized for the REVERSE button to operate. See the **MANUAL OVERRIDE INSTRUCTIONS** on the next page for details of the operation.

CONTROL DESCRIPTION FOR 250VL

1. **KEYED START SWITCH** - This spring-loaded switch requires a key for operation. Insert the key and turn clockwise to the start position and release. The compactor will cycle one time (complete extension and retraction of the ram) and stop. After use, remove the key.
2. **EMERGENCY STOP MUSHROOM HEAD PUSHBUTTON** - When depressed, this pushbutton will stop all powered operation of the compactor.
3. **REVERSE PUSHBUTTON** - This pushbutton will reverse the compaction ram when depressed. The Keyed Start Switch must be energized for the REVERSE button to operate. See the **MANUAL OVERRIDE INSTRUCTIONS** on page 1-6 for details of the operation.

OPERATING INSTRUCTIONS FOR RJ-88SC, RJ-100SC, & RJ-250SC

1-5

1. First, place the material to be discarded into the compactor.

Note: If you are loading the compactor through a door or gate, close it before starting the compactor. Refer to "Optional Loading Configurations" in the Decal Placement section to determine how your compactor is set up.



2. Insert the key into the key switch. Turn it clockwise and depress for 1 to 2 seconds and release. The unit will make one complete cycle, then stop.
3. Repeat, if necessary, after the compactor has stopped.
4. When you have finished using the compactor, remove the key from the key switch.

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

MANUAL OVERRIDE INSTRUCTIONS (RAM STOP REAR ONLY - 88SC, 100SC, & 250SC)

If the ram is stopped in any position:

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

While the ram is moving:

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

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

1. First, place the material to be discarded into the compactor.

Note: If you are loading the compactor through a door or gate, close it before starting the compactor. Refer to "Optional Loading Configurations" in the Decal Placement section to determine how your compactor is set up.



2. Insert the key into the key switch. Turn it clockwise and release. The unit will make one complete cycle, then stop.
3. Repeat, if necessary, after the compactor has stopped.
4. When you have finished using the compactor, remove the key from the key switch.

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

MANUAL OVERRIDE INSTRUCTIONS (RAM STOP REAR ONLY - RJ-250VL)

If the ram is stopped in any position:

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

While the ram is moving:

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

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

OPTIONAL CONTROLS

1-7

1. **SUSTAINED MANUAL PRESSURE CONTROL BUTTON (Hold-To-Run, Release-To-Stop)** - This option requires the compactor operator to remain at the push button station while the compactor is in use. Actuation requires depressing the "Hold-To-Run" and "Start" buttons. After the unit has started, the "Start" button is released. If the "Hold-To-Run" button is released, the unit will stop instantly.
2. **CONTAINER FULL LIGHT** - When the light is on, the container is full and is ready to be emptied before its next use. To deactivate the light, depress the illuminated emergency stop button. (The unit will not run while the light is on.)
3. **ADVANCE WARNING LIGHT** - When the light is on, the container is nearing the full level and a pick up call should be made. At this time 200 PSI is left before the pressure switch is activated to shut the unit off and container is full. (Unit will run with light on.)
4. **RAM STOP FORWARD** - When a machine with this option has been stopped, the ram automatically begins to move rearward when restarted.

For the RJ-88SC, RJ-100SC, or RJ-250SC, to move the ram forward (when it is stopped), hold the FORWARD button down, turn the key switch clockwise, depress and release the key switch, then release the FORWARD button. To reverse the ram while it is moving forward, depress the key switch. To cause the ram to move forward while it is moving rearward, press the FORWARD button.

For the RJ-250VL, to move the ram forward (when it is stopped), hold the FORWARD button down, turn and release the key switch, then release the FORWARD button. To reverse the ram while it is moving forward, turn and release the key switch. To cause the ram to move forward while it is moving rearward, press the FORWARD button.

5. **CYCLE TIMER** - This option is used when more than one cycle is desired. The factory setting is for three strokes (adjustable).
6. **ACCESS INTERLOCK** - This is optional with units equipped with doors, chutes, or access gates. It prevents the unit from operating while a door or gate is open.

WARNING DECAL REQUIREMENTS

When your compactor leaves the factory, several WARNING DECALS are installed for protection. These labels are subject to wear and abuse due to the nature of the refuse handling operation. **THESE DECALS MUST BE MAINTAINED.** Additional decals may be purchased from your distributor or from Marathon Equipment Company.

Decal Number 06-0002 - RAM JET - MARATHON EQUIPMENT COMPANY

Decal Number 06-0003 - PATENT PENDING

Decal Number 06-0011 - MOTOR ROTATION

Decal Number 06-0038 - CAUTION: DO NOT REMOVE ACCESS COVER EXCEPT FOR SERVICING. FOLLOW LOCK OUT- TAG OUT PROCEDURES.

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

Decal Number 06-0040 - CAUTION: KEEP OUT. (used on hoppers)

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 06-0052 - CAUTION: GATE MUST BE CLOSED BEFORE OPERATING COMPACTOR. (used on access gates)

Decal Number 06-0057 - CAUTION: STAND CLEAR WHEN CONTAINER IS BEING LIFTED.

Decal Number 06-0058 - 'A' PORT

Decal Number 06-0059 - 'B' PORT

Decal Number 06-0067 - CAUTION: DO NOT REMOVE THIS CONTAINER UNTIL REAR STOP IS INSTALLED.

Decal Number 06-0072 - QUICK CLEAN TANK

Decal Number 06-0093 - FIRE HOSE PORT.

Decal Number 06-0094 - NOTICE: WIPE OFF SEAL AFTER DUMPING.

Decal Number 06-0104 - HYDRAULIC TAILGATE OPERATING INSTRUCTIONS

Decal Number 06-0105 - DANGER: STAND CLEAR OF TAILGATE WHEN LIFTED.

Decal Number 06-0364 - SERIAL NUMBER PLATE

Decal Number 06-0121 - FEDERAL REGULATIONS PROHIBITS THE USE BY PERSONS UNDER 18 YEARS OF AGE.

Decal Number 06-0124 - CYCON

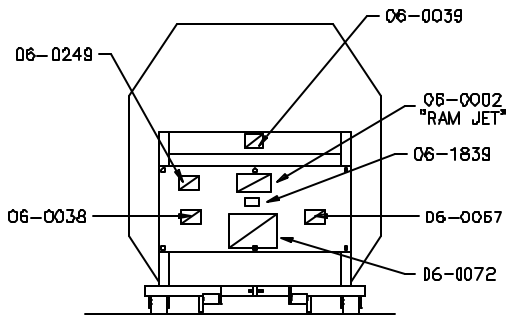
Decal Number 06-0249 - DANGER: HAZARDOUS VOLTAGE ... LOCK OUT & TAG OUT.

Decal Number 06-1839 - AMERICAN FLAG

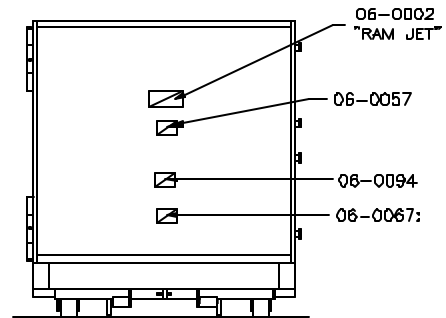
1 OPERATION

DECAL PLACEMENT for RJ-88SC, RJ-100SC, RJ-250SC, or RJ-250VL

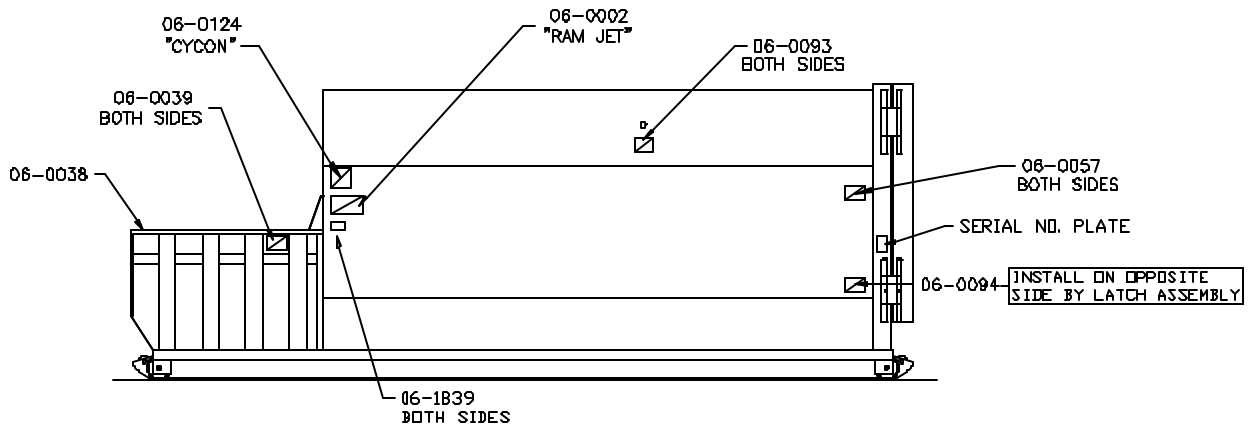
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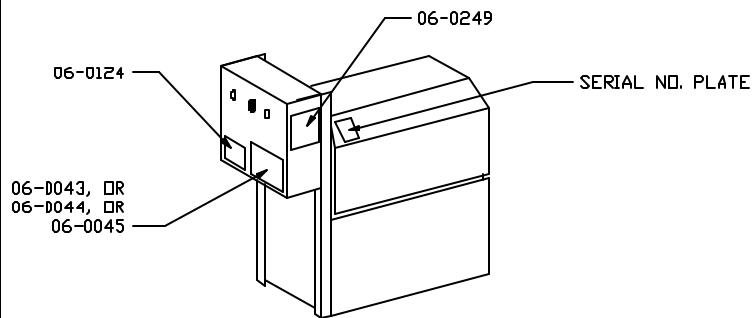
FRONT VIEW



REAR VIEW



SIDE VIEW

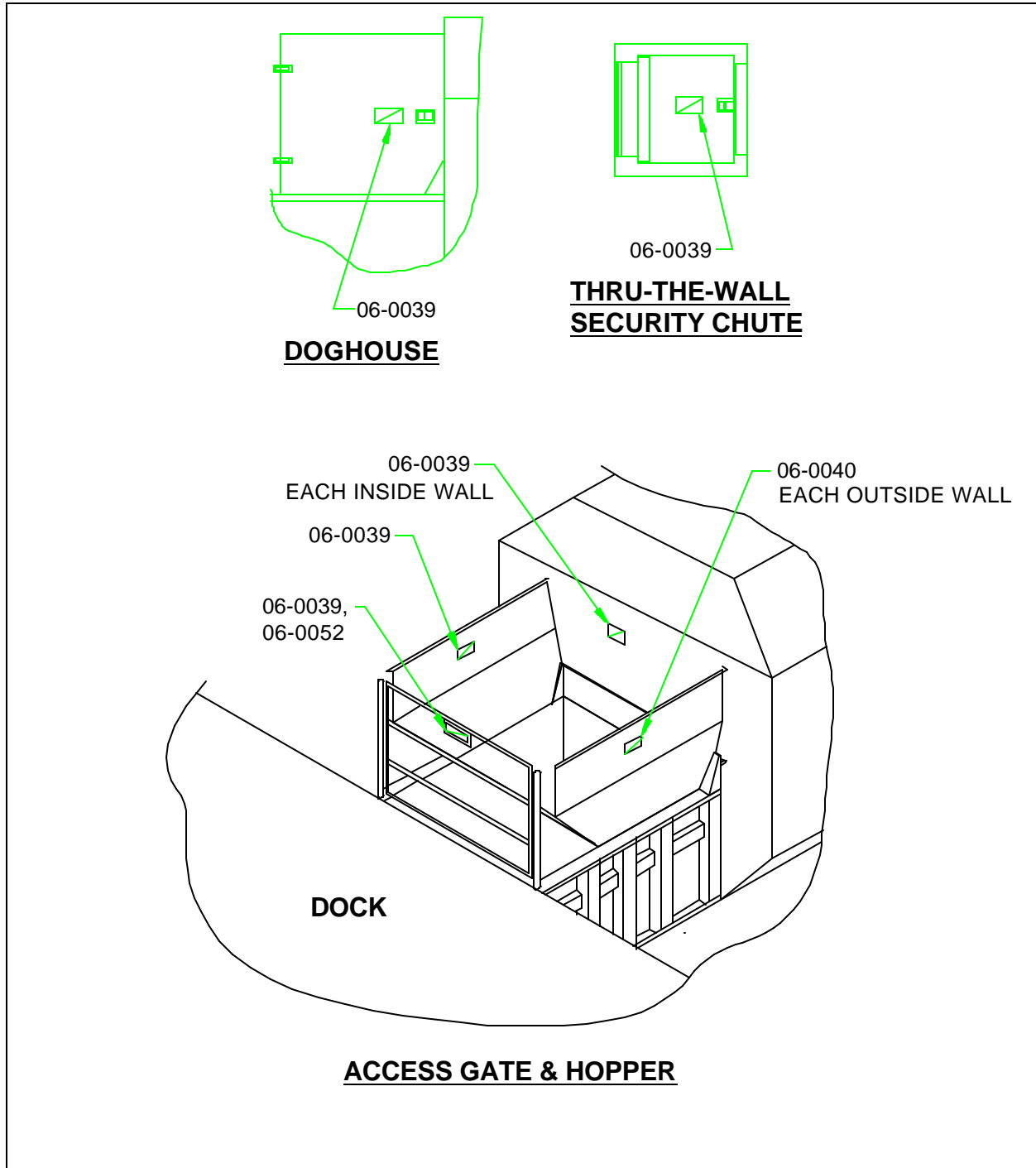


REMOTE POWER UNIT

**DECAL PLACEMENT for RJ-88SC, RJ-100SC, RJ-250SC,
or RJ-250VL**

1-10

OPTIONAL LOADING CONFIGURATIONS



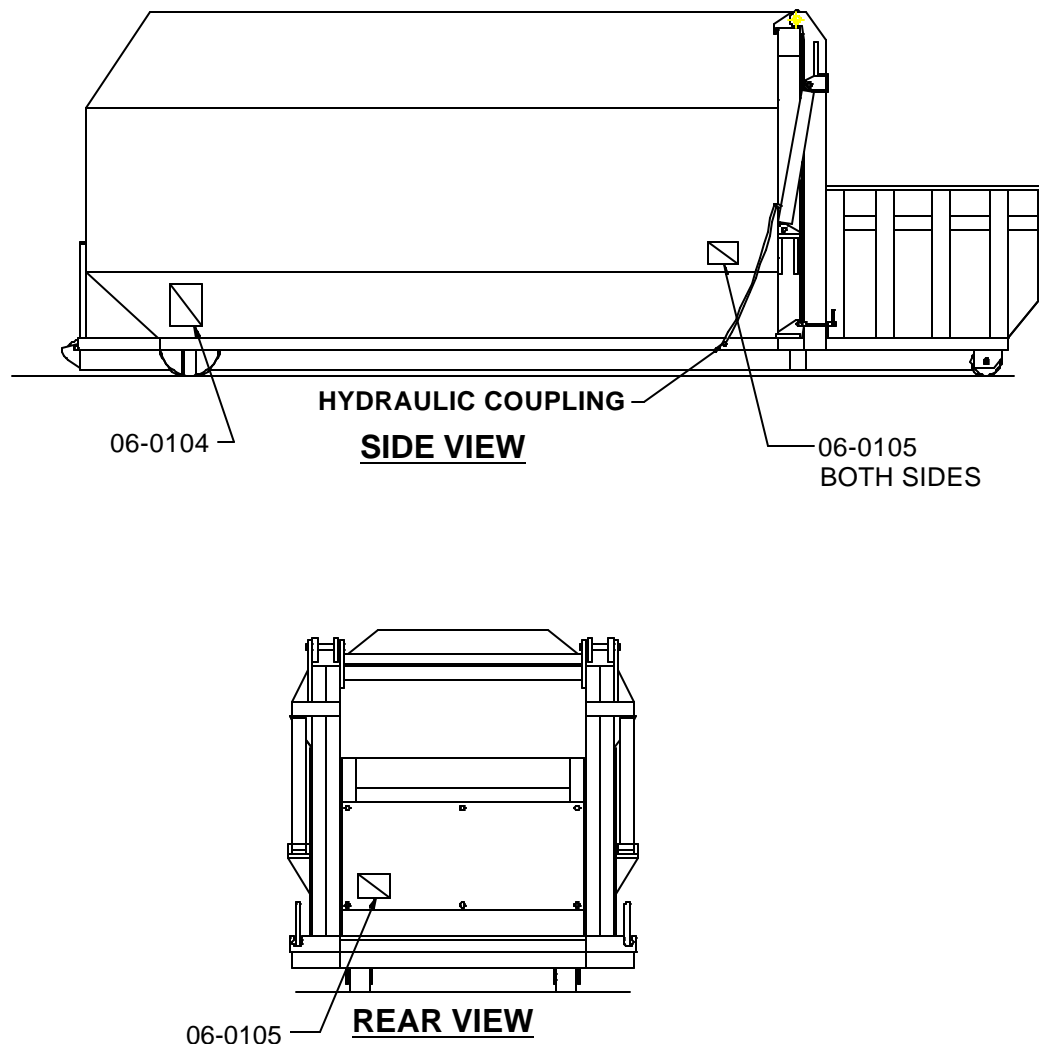
ADDITIONAL DECALS and DECAL PLACEMENT for HYDRAULIC TAILGATE (HT) UNITS

1-11

In addition to the decals and their placement specified on the previous pages, the self-contained units with the hydraulic tailgate option require the following decals located as shown below.

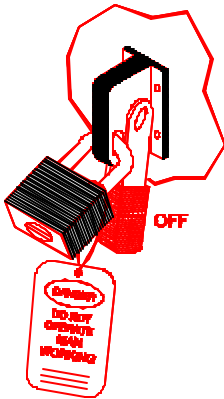
Decal Number 06-0104 - CAUTION: STAND CLEAR OF TAILGATE WHEN LIFTED. TRUCK MUST BE ON FIRM, LEVEL SURFACE BEFORE LIFTING GATE. FRONT AND REAR HOLD DOWNS MUST BE ENGAGED. TILT HOIST BEFORE LIFTING TAILGATE. (Also, includes Operating Instructions for tailgate)

Decal Number 06-0105 - DANGER: STAND CLEAR OF TAILGATE WHEN LIFTED.



LOCK-OUT & TAG-OUT INSTRUCTIONS

2-1

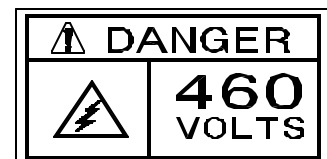


FOREWORD: Before entering any part of the compactor, be sure that all sources of energy have been shut off, all potential hazards have been eliminated, and the compactor is locked-out and tagged-out in accordance with OSHA and ANSI requirements. If the ram is pressing against a load, move the ram rearward before shutting the compactor 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.

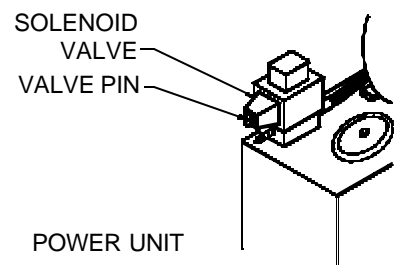
INSTRUCTIONS

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." or "Warning: Do not energize without the permission of _____."
4. After locking and tagging the compactor, try to start and operate the compactor (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 motor control panel contains high voltage components. Only authorized service personnel should be allowed inside the panel. Authorized service personnel should be allowed inside the panel only after the compactor has been locked-out and tagged-out.



HYDRAULIC: Stored hydraulic energy must be removed from the compactor hydraulic circuit for complete lock-out and tag-out. Make sure that this energy has been relieved by manually depressing the solenoid valve pin located in the center of each coil end of the directional control valve.



WARNING: RAM SPEED ACCELERATES AS RAM RETRACTS. NEVER ENTER ANY PART OF THE SELF-CONTAINED COMPACTOR/CONTAINER UNTIL THE UNIT HAS BEEN LOCKED OUT AND TAGGED OUT.

MONTHLY

1. Check external hoses for chafing, rubbing, or other deterioration and damage.
2. Check for any obvious unsafe conditions in the compactor area.
3. Check oil level in hydraulic reservoir. Level should be 3/4 of sight gauge.
4. Clean out or wash out debris from behind compactor ram.
5. Lubricate the ram guidance tracks using the grease fittings on the compactor side (For guided ram machines only), and check guide shoes for wear.

THREE MONTHS

1. Check functional operation of controls and options (stop button, timers, lights, etc.).
2. Check hydraulic cylinder, internal hoses, and connections for leakage; check hoses for chafing and wear.
3. Lubricate the container door hinges.

ANNUALLY

1. Lubricate electric motor bearings annually per the manufacturers instructions.

FILTER MAINTENANCE

1. The hydraulic filter should be cleaned at regular yearly intervals.
2. The filter may be removed from the unit by disconnecting the union on the suction side of the pump, removing the four bolts retaining the cover plate, and lifting the filter from the reservoir.
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 after cleaning and tighten the union securely. 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.

RECOMMENDED OILS FOR THE HYDRAULIC SYSTEM

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

PROCEDURES

2-3

PRESSURE SETTING

When the hydraulic cylinders used in the RJ-88SC, RJ-100SC, RJ-250SC, and RJ-250VL are fully extended or retracted, they bypass internally. This makes it impossible for the hydraulic system to reach relief pressure. Follow the recommendations below for proper pressure setting.

1. Disconnect and lock out power using the procedure on page 2-1.
2. Using the quick disconnects, disconnect the hydraulic hoses from the compactor.
3. Remove the 1/4" plug from the check valve and install a 0-3000 psi pressure gauge.
4. Loosen the lock nut on the relief valve and turn the adjustment screw several turns counter clockwise.
5. Remove the lock out provisions and turn the disconnect to the ON position. Start the power unit using the OPERATING INSTRUCTIONS on page 1-5 or 1-6.
6. With the hoses disconnected, the power unit will build pressure. Adjust the relief pressure up by turning the relief adjustment screw clockwise. Adjust the relief valve to the desired pressure setting and tighten the lock nut. See chart below.
7. Press the EMERGENCY STOP button to stop the power unit, and relieve the stored hydraulic energy as described on page 2-1.
8. Disconnect and lock out power as described in Step 1.
9. Remove the pressure gauge and replace the 1/4" plug in the check valve.
10. Reconnect the hydraulic hoses, and remove the lock out provisions.

PRESSURE SETTINGS

MODEL NO.	HP	GPM	RELIEF VALVE SETTING	RES. CAP.	CYLINDER		
					BORE	ROD	STR
RJ-88SC	5	6	1700	15	4	2 1/2	25
RJ-100SC	10	10	1850	20	5	2 1/2	42
RJ-250SC	10	10	1850	20	4	2 1/2	31 5/8
RJ-250VL	10	10	1850	20	5	2 1/2	42

On units with the Advance Warning Light, set the pressure 200 PSI below pressure switch setting.

Includes HT units & SL units.

RAM CONTROL TIMER ADJUSTMENT

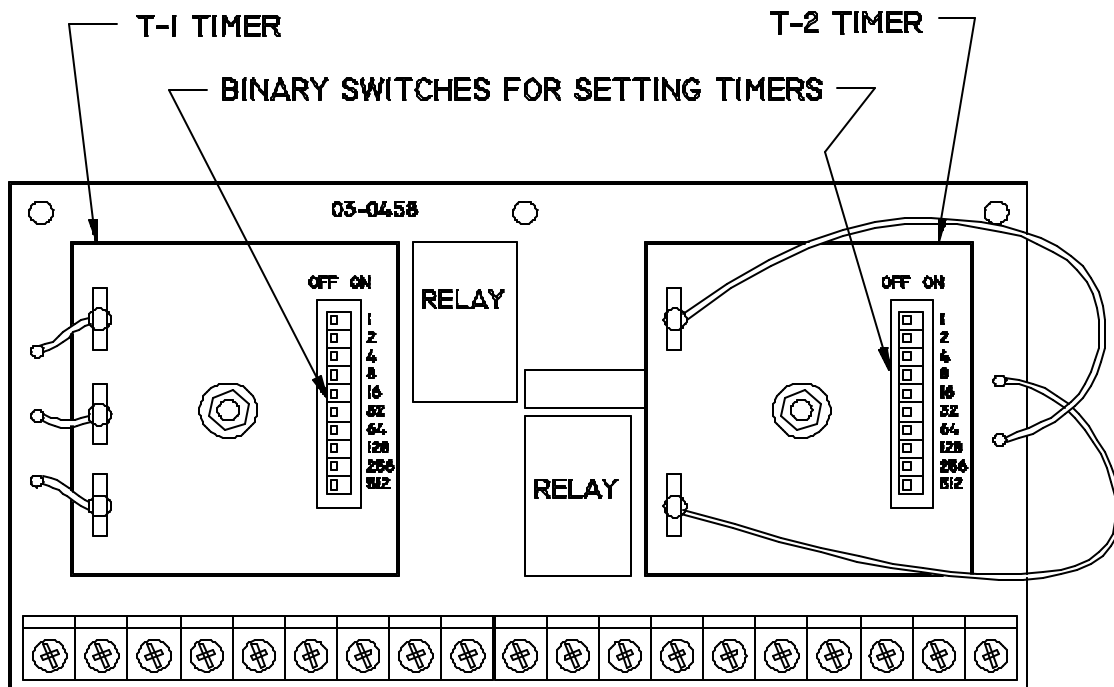
Determine the cycle time of your machine. This can be found in the "CHARTS" section of this manual under "TIMER SETTINGS". Set the timers as shown in the chart.

When the switches are properly set, the ram will fully extend, stop for one-half to one second, then fully retract, stop and the unit will shut down.

NOTE: As time passes, the cycle time may change and need to be readjusted.

To set a timer, move the appropriate binary switches to the ON position. The timer switch settings are cumulative (all switches in the ON position add up to the total number of seconds for the timer setting).

Ex. :	Switch 1 (1 sec)	= OFF	
	Switch 2 (2 sec)	= OFF	
	Switch 3 (4 sec)	= ON	4 sec
	Switch 4 (8 sec)	= ON	8 sec
	Switch 5 (16 sec)	= ON	16 sec
	Switch 6 (32 sec)	= OFF	
	Switch 7 (64 sec)	= OFF	
	Switch 8 (128 sec)	= OFF	
	Switch 9 (256 sec)	= OFF	
	Switch 10 (512 sec)	= OFF	
	Timer Setting	=	28 sec



PRINTED CIRCUIT BOARD (LOCATED IN MOTOR CONTROL PANEL)

CYLINDER REMOVAL INSTRUCTIONS

1. Remove access covers from compactor.
2. Remove hoses (4, for 88SC & 250SC, 100SC & 250VL).
3. Remove cylinder pins.
4. Remove cylinders (2, for 88SC & 250SC, 1, for 100SC & 250VL).
5. To install the cylinders, reverse the above steps.

MULTI-CYCLE TIMER ADJUSTMENT - OPTION

Determine the cycle time of your machine. This can be found in the CHARTS section of this manual under TIMER SETTINGS. Next multiply the cycle time by the number of cycles the machine should run **and** subtract one fourth of the cycle time. This is the cumulative number of seconds for which to set the switches.

EXAMPLE: Cycle time of machine = 28 sec
Desired number of cycles = 3
Total seconds for 3 cycles (28 X 3) = 84 sec
One fourth of cycle time (28/4) = 7 sec
Number of seconds to set timer (84 - 7) = 77 sec

RAM STOP FORWARD - OPTION

To convert the RJ-88SC, RJ-100SC, RJ-250SC, and RJ-250VL to Ram Stop Forward, move the purple solenoid wire from terminal # 8 to terminal # 10. Reset timers by the settings shown in the TIMER SETTINGS section under CHARTS in this manual. Change the "START-FORWARD" key lock push button legend to "START-REVERSE". Change the "REVERSE" button legend to "FORWARD".

WARRANTY AND SERVICE ON MOTORS

If the compactor motor fails under warranty, have it checked by a qualified electrician or service person. If there is no problem with fuses or wiring, the motor should be taken to the nearest authorized motor warranty shop. If you do not have a list of qualified shops, contact Marathon Equipment Co. The motor warranty shop will be able to inspect the motor and determine if it is factory defective. If the motor failed due to defects in material or workmanship, the warranty shop will repair or replace the motor at the manufacturer's expense. If motor failure was not due to defective material or workmanship, it will be repaired only if customer agrees to pay for expenses. Marathon Equipment Co. will not absorb cost for pickup and delivery to service centers. Removal and reinstallation are covered in the standard warranty policy.

STANDARD SYSTEM OPERATING CHARACTERISTICS, 5 hp & 10 hp

The system uses special cylinders to move the ram and two timers to control the operation of the ram. When the hydraulic cylinders used in the RJ-88SC, RJ-100SC, RJ-250SC, and RJ-250VL are fully extended or retracted, they bypass internally. This makes it impossible for the hydraulic system to reach relief pressure. The sequence of operation for this system is as follows:

Upon startup, a contact is made that energizes the motor starter, starting the electric motor and at the same time energizing T1 timer coil. When T1 is energized, the valve solenoid shifts the valve so that the hydraulic oil is directed to extend the cylinder which extends the ram. When T1 timer times out, the contacts reverse causing T2 timer to energize and the solenoid to shift the valve into the reverse position. In this position, the valve directs the hydraulic oil into the front end of the cylinder causing the cylinder to retract, therefore causing the ram to retract. When T2 timer times out, the motor starter contact is opened causing the motor starter to shut down, therefore causing the motor/power unit to shut down.

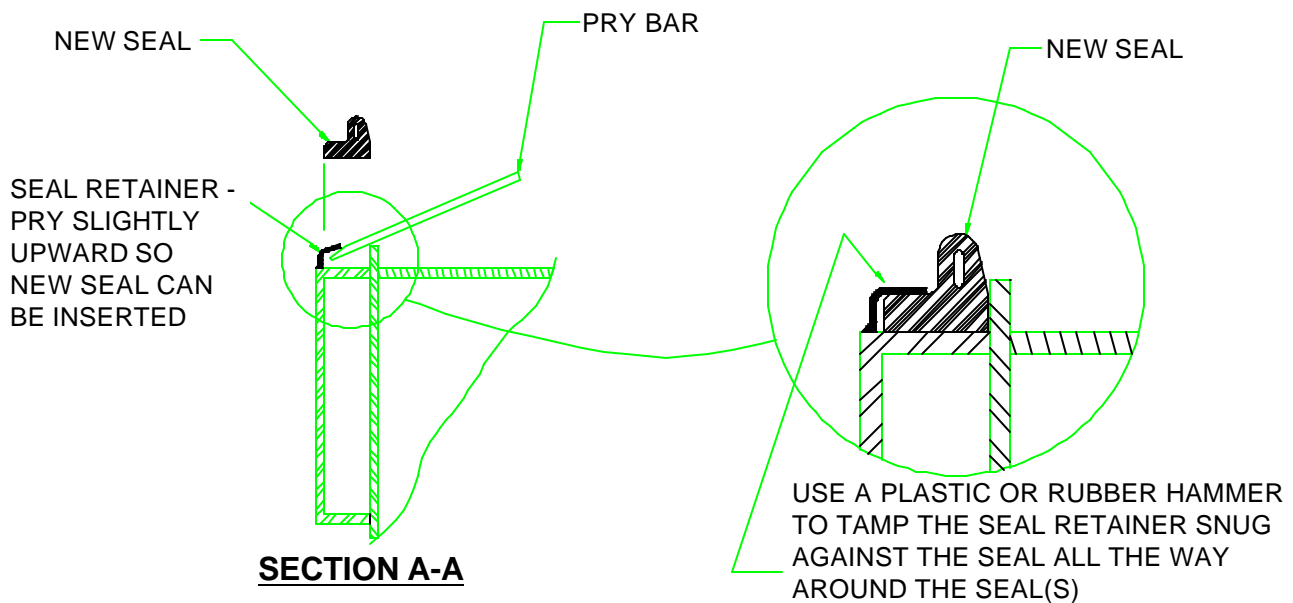
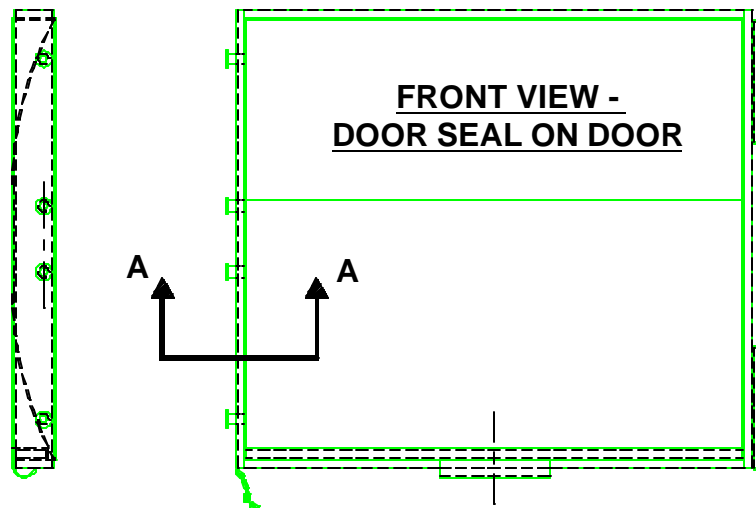
TAILGATE SEAL REPLACEMENT

2-7

When the door/tailgate seal becomes damaged or worn, replace the seal.

WARNING: For units with hydraulic tailgates, before performing any inspection or maintenance on the seal, support the raised tailgate with a crane, forklift, or other positive maintenance prop.

- WHEN REMOVING THE OLD SEALS (TOP & BOTTOM), MARK THE POSITION OF THE SEAL JOINTS. PRY THE SEAL RETAINER UP SLIGHTLY TO ALLOW REMOVAL OF THE OLD SEALS.
- WHEN INSTALLING THE NEW SEALS, JOIN THE SEALS AT THE SAME POSITIONS.



CHARTS

2-8

TIMER SETTINGS

MODEL NO.	RAM STOP REAR		RAM STOP FORWARD	
	T1	T2	T1	T2
RJ-88SC	27	17	17	27
RJ-100SC	21	16	16	21
RJ-250SC	19	13	13	19
RJ-250VL	21	16	16	21

Includes HT units and SL units.

FUSES AND CIRCUIT BREAKERS

MOTOR SIZE	VAC	FULL LOAD AMP.	DUAL ELEMENT FUSE MAX. SIZE	CIRCUIT BREAKER MAX. SIZE	SERVICE DISCONNECT AMP.
5 HP, 1 PH	208	22.0	50	80	60
	230	20.8	45	70	60
5 HP, 3 PH	208	13.8	30	40	30
	230	13.4	25	40	30
	460	6.7	15	20	30
	575	5.4	10	15	30
10 HP, 1 PH	208	43.0	100	125	100
	230	39.0	90	125	100
10 HP, 3 PH	208	27.5	50	80	60
	230	26.4	50	70	60
	460	13.2	25	35	30
	575	11.4	20	30	30

CHARTS

2-9

WIRE SIZES

THW Copper 75°C (165°F)

MOTOR SIZE	VOLTAGE	LENGTH		
		TO 100'	TO 200'	TO 300'
5 HP, 1 PH	208	8	6	4
	230	8	6	4
5 HP, 3 PH	208	10	6	4
	230	10	8	6
	460	12	12	10
	575	12	12	12
10 HP, 1 PH	208	4	1	1/0
	230	4	2	1/0
10 HP, 3 PH	208	6	4	2
	230	8	4	3
	460	12	10	8
	575	12	12	10

MOTOR STARTERS AND HEATER ELEMENTS

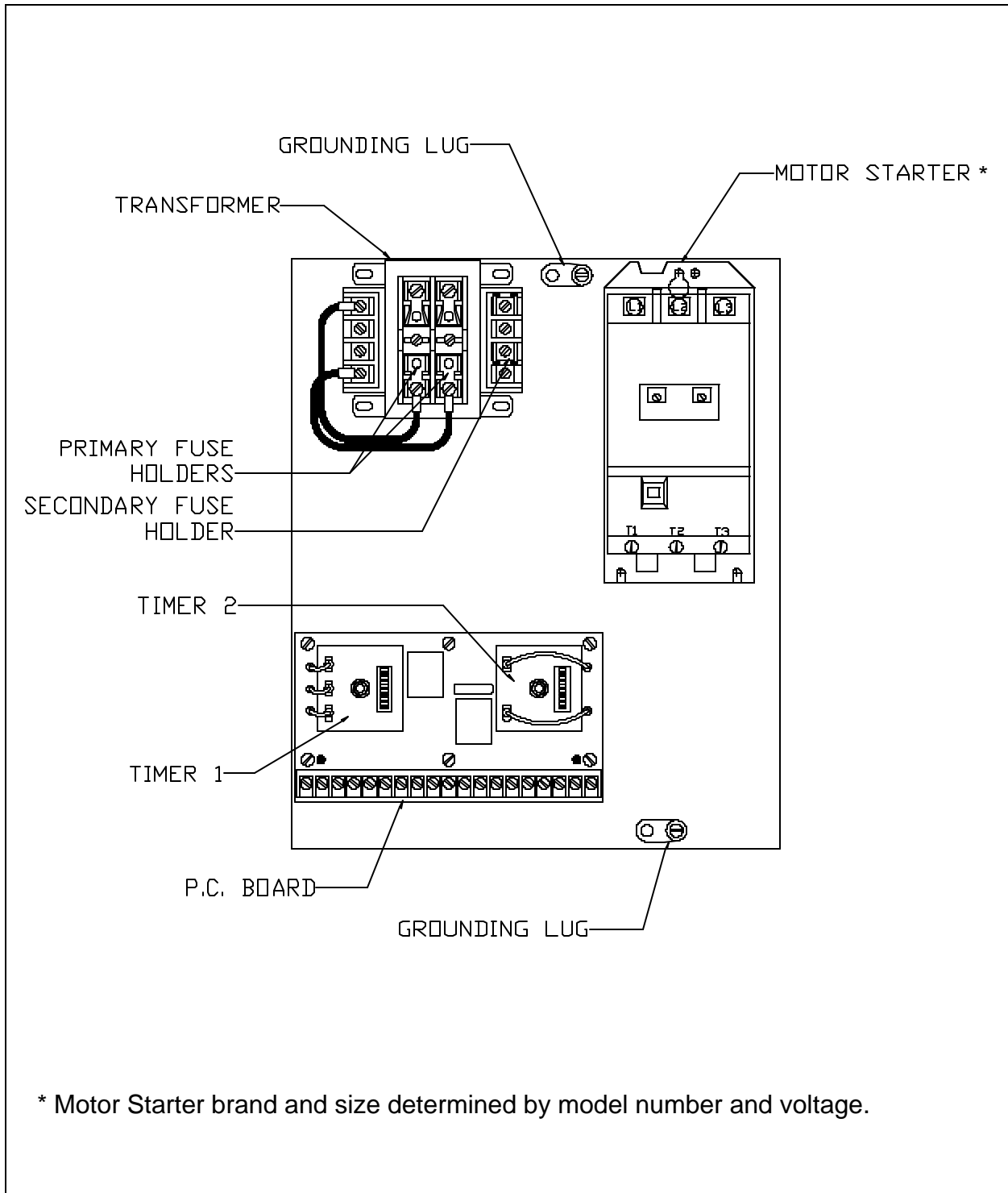
MOTOR SIZE	VOLTAGE	STARTER SIZE	HEATER ELEMENT	
			A-B	JOSLYN CLARK
5 HP, 1 PH	208	2	W-61	2452
	230	2	W-60	2451
5 HP, 3 PH	208	1	W-55	2447
	230	1	W-55	2446
	460	1	W-46	2438
	575	1	W-44	2435
10 HP, 1 PH	208	3	W-66	N/A
	230	3	W-65	N/A
10 HP, 3 PH	208	2	W-63	2454
	230	2	W-62	2454
	460	1	W-55	2446
	575	1	W-53	2445

2 MAINTENANCE

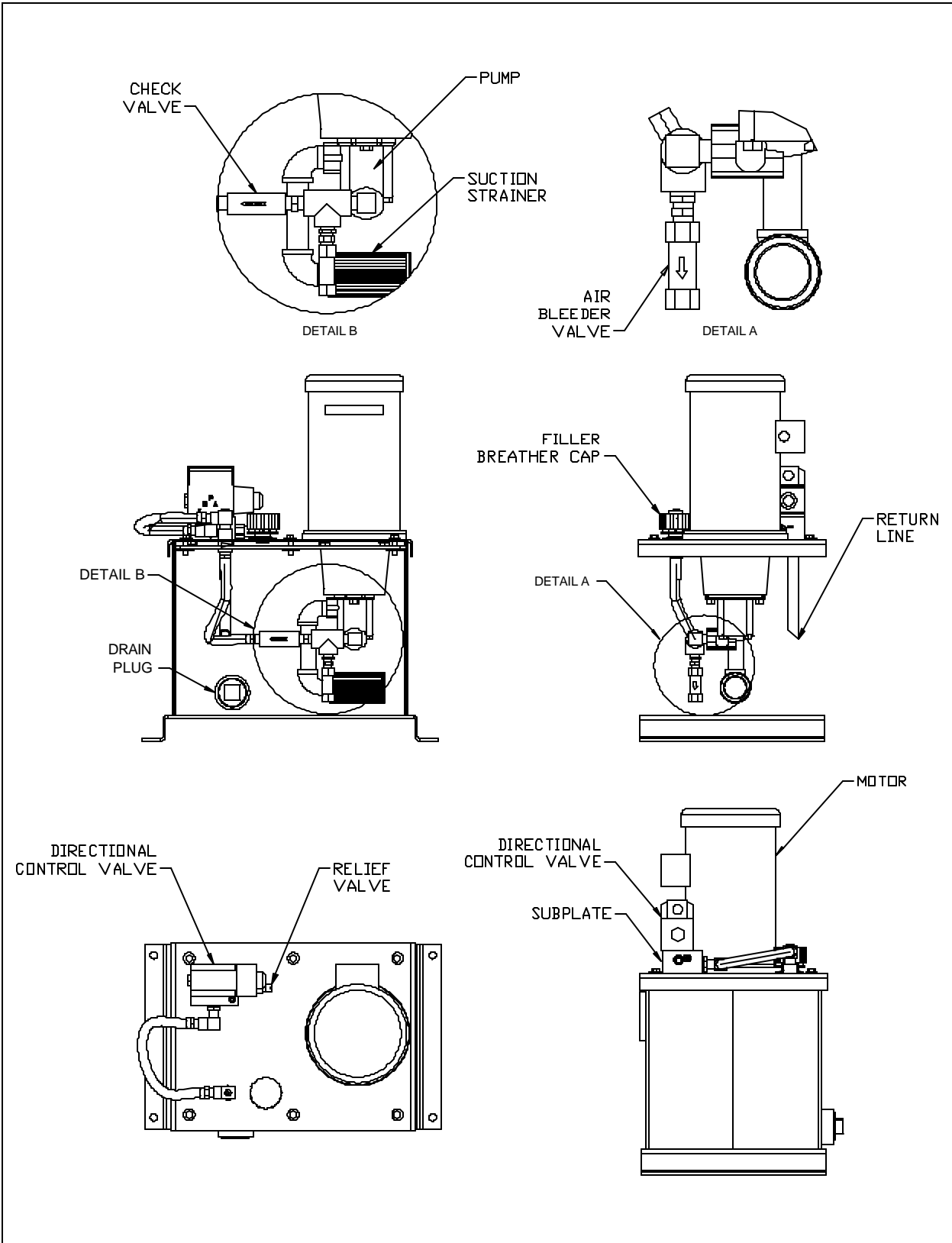
PARTS LIST

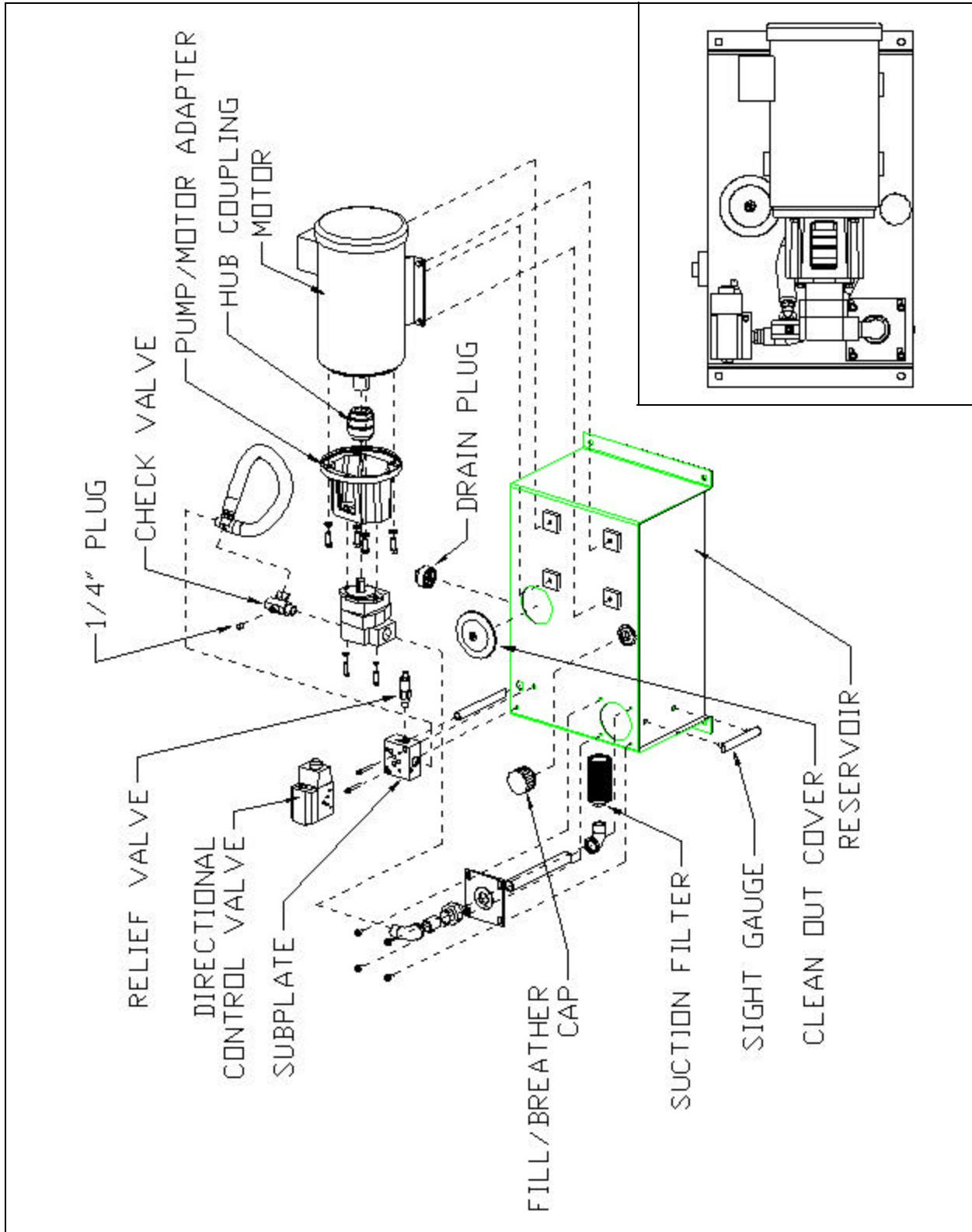
2-10

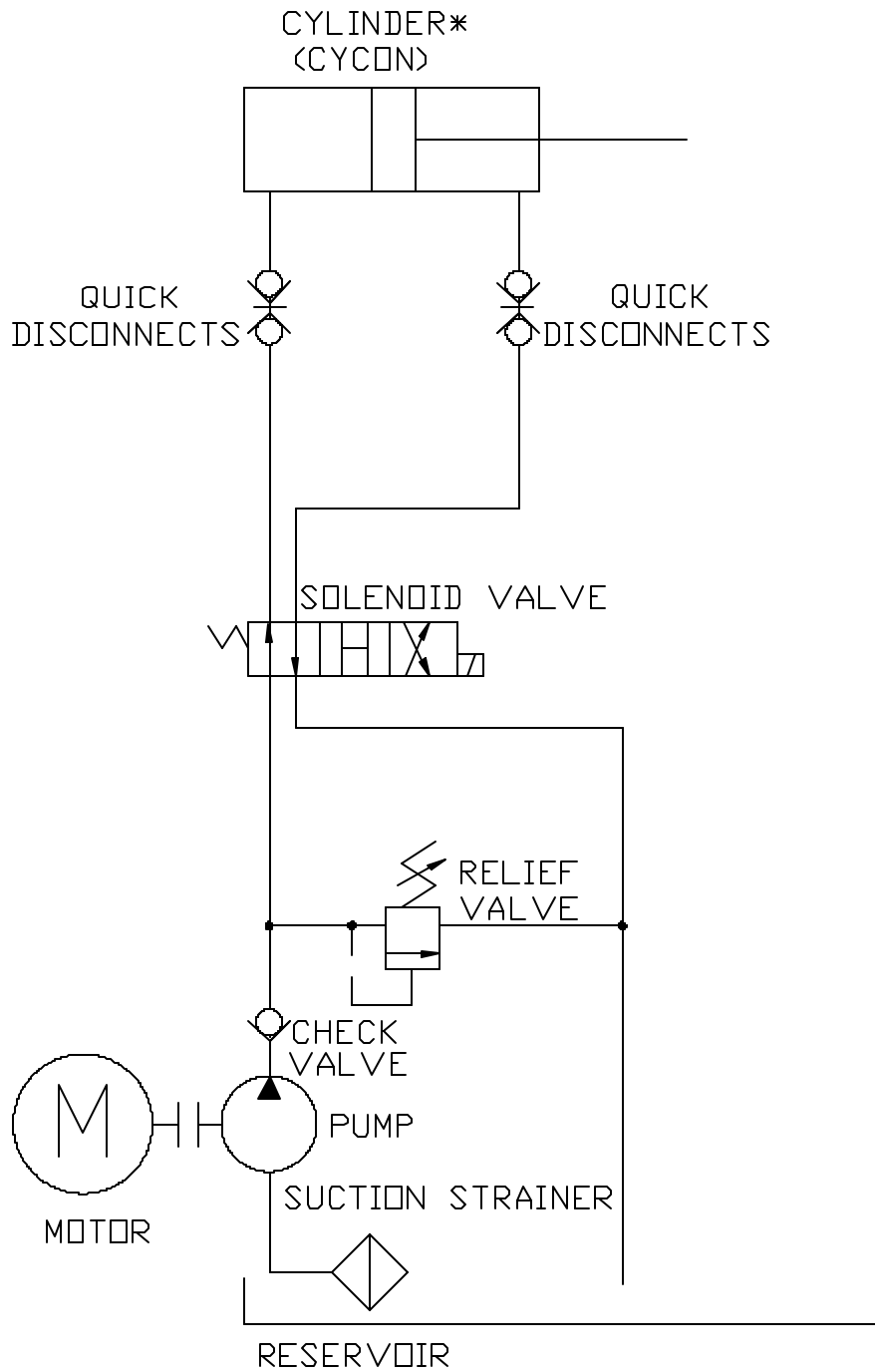
PART #	PART DESCRIPTION	88SC	100SC	250SC	250VL	88HT	250HT
02-0050	SUCTION FILTER	X	X	X	X	X	X
02-0157	DIRECTIONAL VALVE	X	X	X	X	X	X
02-0184	CHECK VALVE		X	X	X		X
02-0197	BREATHER	X	X	X	X		
02-0198	SIGHT GAUGE	X				X	
02-0204	CHECK VALVE	X				X	
02-0214	RELIEF VALVE	X	X	X	X	X	X
02-0215	SIGHT GAUGE		X	X	X		X
02-0244	HUB COUPLING		X	X	X		X
02-0267	PUMP, 10 GPM		X	X	X		X
02-0284	FLOW CONTROL VALVE					X	X
02-0295	COIL, SOLENOID	X	X	X	X	X	X
02-0305	BREATHER					X	X
02-0242	HUB COUPLING	X				X	
99-7778	PUMP, 6 GPM	X				X	
02-4037	PUMP/MOTOR ADAPTER	X					
03-0191	FUSE, 2 AMP.	X	X	X	X	X	X
03-0195	SWITCH, KEYLOCK START	X	X	X		X	X
03-0196	SWITCH, MUSHROOM STOP	X	X	X		X	X
03-0197	SWITCH, BLACK REVERSE	X	X	X		X	X
03-0288	TRANSFORMER	X	X	X	X	X	X
03-0345	MOTOR, 10 HP		X	X	X		X
03-0458	P.C. BOARD	X	X	X	X	X	X
03-0488	FUSE, 1 1/2AMP.	X	X	X	X	X	X
03-0927	SWITCH, KEYED START				X		
03-0928	SWITCH, BLACK REVERSE				X		
03-0929	SWITCH, MUSHROOM STOP				X		
03-0936	CONTACT, N.O. F/CONTROL SWITCH				X		
03-0937	CONTACT, N.C. F/CONTROL SWITCH				X		
03-1187	MOTOR, 5 HP	X				X	
04-0210	CYLINDER F/TAILGATE					X	X
04-0211	SEAL KIT F/04-0210					X	X
04-0300	CYLINDER			X			X
04-0301	SEAL KIT F/04-0300 & 04-0330	X		X		X	X
04-0310	CYLINDER		X		X		
04-0311	SEAL KIT F/04-0310		X		X		
04-0330	CYLINDER	X				X	
05-0001	TURNBUCKLE, DOOR LATCH	X	X	X	X		
05-0224	SWINGBOLT, DOOR LATCH					X	X
05-0247	TAILGATE SEAL	X	X	X	X	X	X
06-0006	SHOE, CAST IRON, SHORT	4	4	4	4	4	4



* Motor Starter brand and size determined by model number and voltage.







* SINGLE CYLINDER UNIT SHOWN. FOR DUAL CYLINDER UNITS, CONNECT IDENTICAL CYLINDER IN PARALLEL.

TROUBLE-SHOOTING CHART

2-15

PROBLEM	CAUSE	SOLUTION
UNIT WILL NOT START	<ul style="list-style-type: none"> (1) No electrical power to unit (2) No electrical power to control circuit (3) No electrical power to motor 	<ul style="list-style-type: none"> (1A) Turn on main disconnect (1B) Replace fuses or reset breakers (2A) Check primary and secondary sides of transformer (2B) Check for correct voltage. Check control fuses. (2C) Check stop button (2D) Check start button to be sure contact closes when depressed (3A) Check heater resets
UNIT WILL NOT CONTINUE RUNNING WHEN START BUTTON IS RELEASED	<ul style="list-style-type: none"> (1) Motor starter is in-operative (2) Motor starter auxiliary contacts are inoperative (3) Reverse Button is inoperative (4) Secondary contact on start button is inoperative 	<ul style="list-style-type: none"> (1A) Check motor starter coil & wiring (2A) Check motor starter contacts and wiring (3A) Check reverse button to be sure contacts are closed (3B) Check wiring (4A) Check contact, wired black and orange, to be sure it is operating properly (4B) Check wiring
MOTOR RUNS BUT RAM DOES NOT MOVE NORMALLY	<ul style="list-style-type: none"> (1) Insufficient oil in reservoir (2) Low relief pressure (3) Oil leakage in cylinder (4) Defective pump (5) Oil leakage from hose fittings (6) Low voltage (7) Pump may be driven in the wrong direction of rotation (8) Shaft broken, or shaft key sheared (9) Intake pipe from reservoir blocked, or oil viscosity too heavy to prime (10) Intake air leaks (foam in oil or sounds like gravel in pump) (11) Units shift slowly (12) Valve response sluggish (13) Loose hub coupling 	<ul style="list-style-type: none"> (1A) Fill reservoir with oil (2A) Check relief pressure (refer to PROCEDURES-HYDRAULIC PRESSURE CHECK and PRESSURE SETTINGS for correct pressure. (2B) Clean orifice in relief valve and reset pressure (2C) Check 'O' rings on relief valve for damage or leakage (3A) Check cylinder for bypassing (3B) Replace seal kit, inspect rod and cylinder tube for scoring or nicks (3C) Replace cylinder (4A) Replace pump (5A) Tighten hose fittings (6A) Check voltage (7A) Stop immediately to prevent seizure. Check direction of drive rotation (proper rotation direction is indicated by arrow on motor) (8A) Visually inspect motor and pump shaft and hub couplings for damage. Replace if necessary. (9A) Drain system. Add clean fluid of proper viscosity and specifications. Filter as recommended. Check system filter for cleanliness. (10A) Check intake connections. Tighten securely (11A) Flow control valve (restrictor) clogged, remove and clean orifice. (12A) Contaminated oil-drain and flush system. (12B) Inadequate voltage, check voltage, check coil (12C) Disassemble valve and clean (13A) Tighten set screws on hub coupling halves
UNIT WILL NOT REVERSE	<ul style="list-style-type: none"> (1) Solenoid valve is in-operative (2) Reverse button in-operative 	<ul style="list-style-type: none"> (1A) Check coil in solenoid valve (2A) Check reverse button contacts

TROUBLE-SHOOTING CHART

2-16

PROBLEM

PUMP MAKES NOISE-SOUNDS
LIKE GRAVEL

CAUSE

- (1) Partly clogged intake strainer or restricted intake pipe
- (2) Defective bearing
- (3) Air leak at pump intake pipe joints

SOLUTION

- (1A) Pump must receive intake fluid freely or cavitation results. Drain system, clean intake pipe and clean or replace strainer
- (2A) Replace pump
- (3A) Tighten joints as required.

PUMP SHAFT SEAL LEAKING

- (1) Seal worn or damaged

- (1A) Replace seals or pump.

EXCESSIVE HEAT

- (1) Continuous running

- (1A) When over 140 degrees F or hot in comparison with circuit lines, pump should be shut down immediately. Before restarting, insure that fluid cooling capacity is adequate to remove system generated heat.
- (1B) Install oil cooler (air or water type)
- (1C) Install oil temperature shut down switch
- (1D) Check to be sure CYCON Power Pack has not been exchanged for Pressure Shifting Power Pack.
- (2A) Replace with larger hydraulic lines
- (3A) Use lower viscosity oil
- (4A) Check system for bypassing or leaks

RAPID WEAR

- (1) Abrasive matter in the hydraulic oil being circulated through pump
- (2) Viscosity of oil too low at working conditions
- (3) Pressure too high
- (4) Air recirculation causing pump noise

- (1A) Install adequate filter or clean.
- (1B) Replace oil more often and clean tank
- (2A) Replace oil with factory recommended .
- (3A) Reduce pump pressures to factory specifications.
- (4A) Tighten all fittings.

ERRATIC OPERATION

- (1) Valve sticking or binding
- (2) Viscosity of oil too high
- (3) Air in system
- (4) Low oil
- (5) Low voltage

- (1A) Disassemble & clean as necessary
- (2A) Change oil to factory recommended viscosity
- (3A) Check for leaks, tighten fittings
- (4A) Fill reservoir with oil
- (5A) Check primary & secondary sides of transformer for correct voltage.

OVERLOADS TRIP FREQUENTLY

- (1A) Check for correct voltage (incoming power.)
- (1B) Check fuses or breakers at disconnect
- (1C) Check heater elements to be sure they are tight
- (1D) Check wiring from starter to motor to make sure all connections are tight
- (1E) Check motor leads to be sure all connections are tight surges or voltage

NOTE: Excessive overload tripping and/or motor or coil failures may occur if voltage surges or voltage drops are frequent in your area. This circumstance can be remedied by the installation of phase protectors which drop power to the motor if surges are present.

CONCRETE PAD REQUIREMENTS

3-1

CAUTION:

REVIEW THIS MANUAL BEFORE MAKING THE INSTALLATION. STUDY THE JOB-SITE 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 AMERICAN NATIONAL STANDARDS INSTITUTE Z245.2 .

These operating instructions are not intended as a substitute for training and experience in proper use and safety procedures in operating this equipment.

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

CONCRETE PAD

1. Preferred dimensions of the concrete pad are 10'0" wide and a length of 5'0" greater than the length of the compactor/container. It should be level and of minimum 3000 PSI concrete steel reinforced, 6" thick. It is preferred that the concrete pad be flush with the surrounding ground level. NOTE: Units with four ground rollers must be installed on a level pad.
2. To provide accessibility, concrete pad should be positioned to allow 2'0" between machine and building wall if installed parallel with building. Allow a minimum of 45' of clear space from end of pad for container handling vehicle.

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

CONTAINER GUIDES

If container guides (optional) are used with the self-contained units, the guides should be anchored to the concrete pad using 3/4" X 6" anchor bolts. These bolts should be concrete anchors or expansion type anchor bolts. To allow for construction variations, it is best if these holes are drilled in the concrete after prelocating the container guides in their desired location. Drill holes and place anchor bolts in each location provided on the guides. When the guides have been placed in position, and the anchor bolts have set, tighten all nuts securely.

DOCK INSTALLATION

If the appropriate accessories are ordered from Marathon Equipment Co., the compactor/container will be furnished with either a four-sided hopper or a three-sided hopper with a hinged gate. THESE ACCESSORIES SHOULD NOT BE ALTERED AS THEY ARE MANUFACTURED IN ACCORDANCE WITH THOSE STANDARDS WHICH PREVAIL AT THE TIME OF MANUFACTURE.

If the compactor/container cannot be directly abutted to the dock or if there is any difference in height between the dock and the compactor/container, an appropriately sturdy transition section should be provided by the customer and securely affixed to the dock. Along with the transition section, a compactor/container guidance/stop mechanism should be installed to assure that the unit does not bottom out against the transition section or dock during dock placement (See ANSI Z245.2 Safety Standards). Optional container guides with stops are available from Marathon and are recommended for proper dock placement of the compactor/container.

CHUTE-FED INSTALLATION

Compactors installed in this arrangement are normally fed "through-the-wall". The lower edge of the access hole in the wall should be a MINIMUM of 42" (and, if possible, not more than 58") from the inside floor level. A security door (in accordance with local code) should be installed in the wall opening. In the absence of a local code, this door should be constructed of 3/16" thick steel or of steel hollow core design and be lockable from the inside of the building .

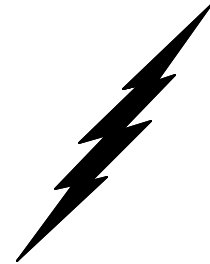
DECALS

Be certain that the appropriate decals are in their proper locations at all times on the machine. For decal locations, see "DECALS" and "DECAL PLACEMENT" in the Operation section of this manual.

NOTE: Installation is not complete until all decals are in place.



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



A lockable fused disconnect switch (customer furnished) must be installed and be within sight of the compactor motor control panel location, not to exceed 50'0" from the compactor. This fused disconnect switch should be sized in accordance with the compactor (see Fuse and Circuit Breaker Chart).

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

REMOTE POWER PACK INSTALLATION

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

CAUTION: Operator Station must be located so that the Mushroom (Emergency) Stop Button is readily accessible to the operator and within three (3) feet of the charging chamber access door. If installation requires the operator station to be located in a more remote area, a second Emergency Stop Button should be added and installed in the manner described above.

2. For a through-the-wall power pack installation, see the diagram THROUGH-THE-WALL POWER UNIT INSTALLATION at the end of this manual. Special care should be taken to protect the hoses from abrasive objects.
3. Connect the hydraulic hoses to the power pack, exercising care to follow the port decals (A or B) on the packer and the power pack. In the event the decals have been obliterated, the hose leading from the rear of the cylinder should be installed in the side port of the block to which solenoid valve is bolted (A Port). The hose leading from rod end of the cylinder should be connected to the end of the block to which the solenoid valve is bolted (B Port). Refer to Power Unit diagrams in the Maintenance section of this manual.

PUSHBUTTON OPERATOR STATION

If a remote operator station is furnished, it will be factory wired using Sealtite. If it is necessary to disconnect it from the wires (to install the operator station inside a building), exercise care that these wires are reconnected as originally furnished. (Check local codes to be certain that Sealtite is acceptable.)

CAUTION: Operator Station must be located so that the Mushroom (Emergency) Stop Button is readily accessible to the operator and within three (3) feet of the charging chamber access door. If installation requires this operator station to be located in a more remote area, a second Emergency Stop Button should be added and installed in the manner described above.

ELECTRICAL CONNECTIONS

1. Run power lines, between fused disconnect switch (customer furnished) and compactor's motor control panel, in accordance with local electrical codes, using knock-outs in bottom of motor control panel. See Fuse & Circuit Breaker Chart for Motors and Wire Size Chart, in the Maintenance Section, to determine the proper service disconnect amperage rating and the proper wire size.

NOTE: High legs should be installed to L3 on motor starter.

2. Check voltage at fused disconnect switch to be certain it is the same as is shown on compactor or remote power pack. If voltage is correct, put fused disconnect switch in "ON" position.

START-UP INSTRUCTIONS

1. With the ram fully retracted, check to be sure the oil reservoir is full to the 3/4 level on the sight gauge (Refer to the maintenance chart for hydraulic oil recommendations). The hydraulic system pressure has been factory set and the entire unit has been operated prior to shipment.

2. **CAUTION: MAKE SURE PERSONS AND MATERIAL ARE CLEAR OF CHARGE BOX AREA.**

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

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.

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

3 INSTALLATION

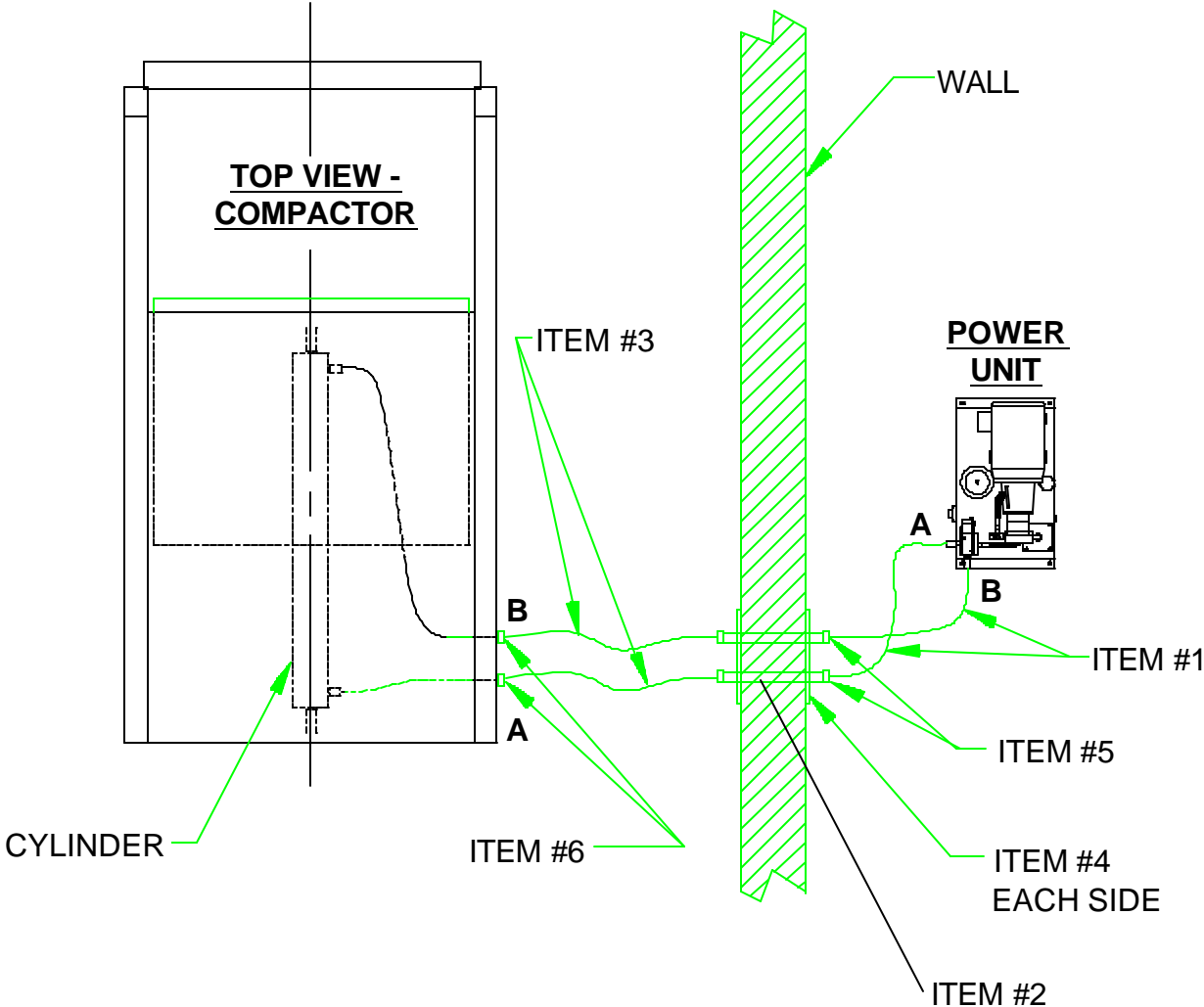
THROUGH-THE-WALL POWER UNIT INSTALLATION 3-5

If the remote power unit is to be mounted through-the-wall, the following list of material and diagram is the suggested method.

List of Material

Item No.	Quantity	Description
1	2	Hydraulic Hose, Hi-Pressure (sized to power unit*), 36" long
2	2	Pipe, Sch 80 (sized to power unit*), 36" long
3	2	Hydraulic Hose, Hi-Pressure (sized to power unit*), 48" long
4	2	Steel plate with holes for Item No. 2, 3/16" x 8" x12"
5	4	Coupling, Female (sized to fit hose & pipe*)
6	3	Coupling, Male x Female Swivel

* 1/2" for runs of 20'-0" or less. Consult factory for longer runs.



Before hauling to the landfill:

1. Disconnect all hoses and electrical connections (if applicable) between the power unit and the compactor. Make sure they are laid in an area where they will not get damaged.
2. Close and secure any hopper doors or gates.
3. Make sure that the container door safety chain is secured in the keyhole on the latch side of the container floor.
4. If the unit is a Streamline model (SL), disconnect any drain hose(s) connected to the unit and plug all ports.
5. **Make sure that the hoist lifting the unit is compatible with the understructure on the unit.**

NOTE: Hold-downs should be used to secure the front and rear of the of the container understructure to the hoist.

At the landfill:

SEE THE NEXT PAGE FOR DOOR AND LATCH OPERATION INSTRUCTIONS.

1. To prevent leakage, the door seal and mating surface should be wiped clean and inspected after the unit has been emptied. When cleaning the seal on units with the hydraulic tailgate option,

WARNING: NEVER place any part of your body between the tailgate and the container. Use a mop or similar cleaning device with a long handle to clean the seal. Close inspection of the seal should be done only after the container has been lowered to a level position and the raised tailgate has been supported with a crane, forklift, or other positive maintenance prop.

Replace the seal if damaged.

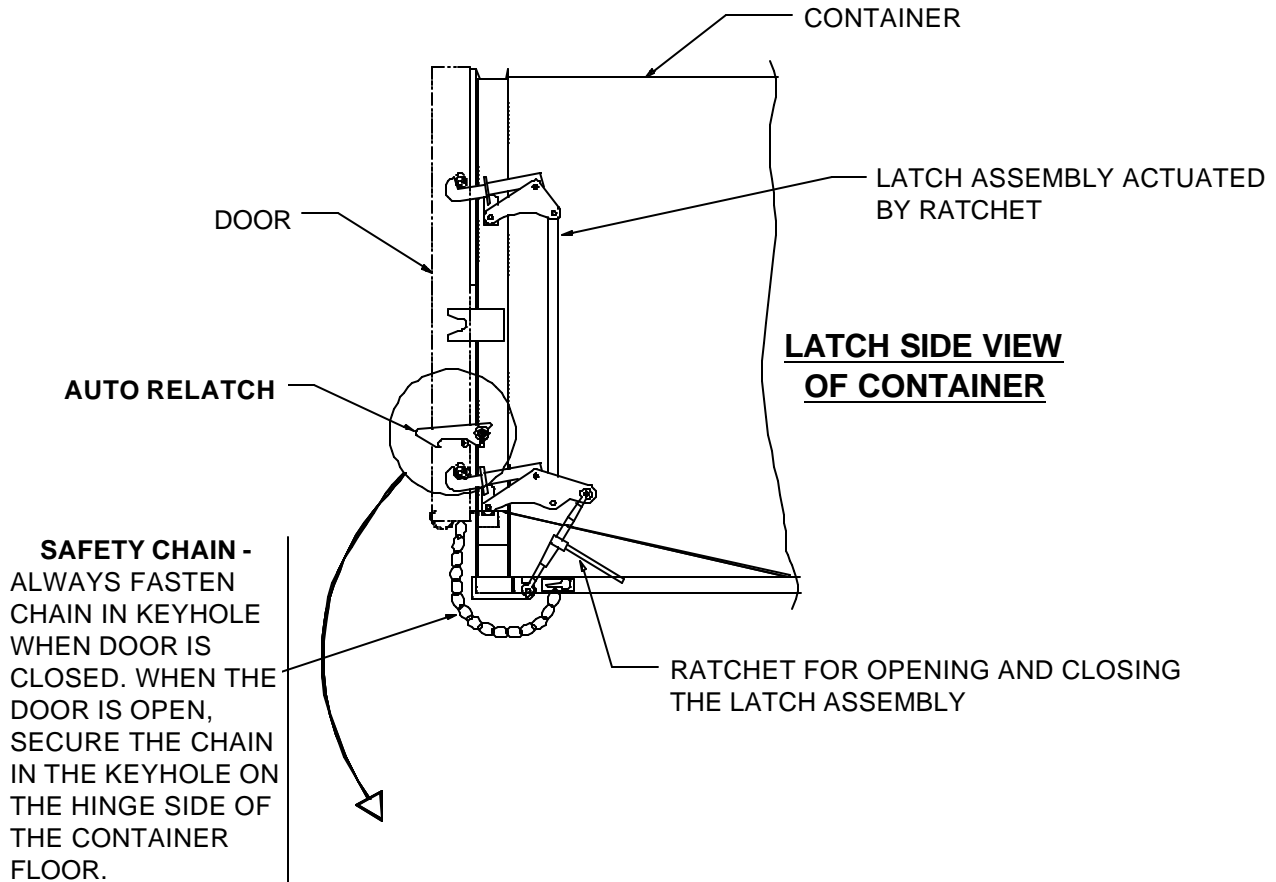
After returning from the landfill:

1. After setting the unit down, reconnect all hoses and electrical connections (if applicable) to the compactor. Make sure they are not laying across sharp corners or any abrasive surface.
2. Close and secure any hopper doors or gates.
3. Make sure that the container door safety chain is secured in the keyhole on the latch side of the container floor.
4. If the unit is a Streamline model (SL), connect any drain hose(s) to the unit.

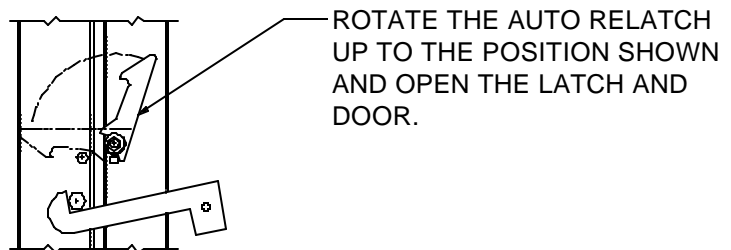
4 HAULER INFORMATION

HAULER INSTRUCTIONS - DOOR/LATCH OPERATION

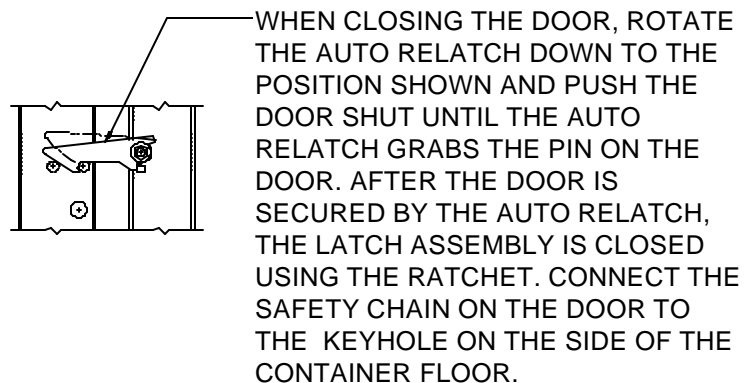
4-2



AUTO RELATCH **IN POSITION TO** **OPEN DOOR**



AUTO RELATCH **IN POSITION TO** **GRAB AND HOLD** **DOOR DURING** **DOOR CLOSING**



4 HAULER INFORMATION

HAULER INSTRUCTIONS - HYDRAULIC TAILGATE OPERATION (FOR OPTIONAL HT UNITS)

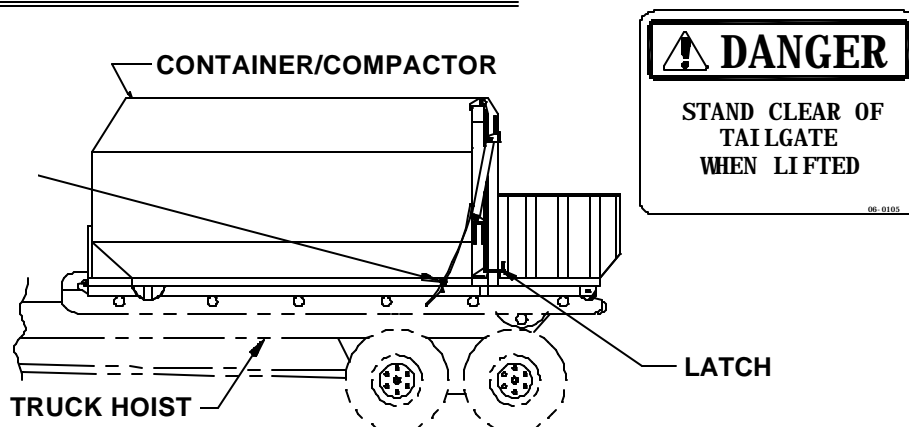
4-3

The truck hoist must have a hydraulic selector valve with 1500 psi, min. to operate the hydraulic tailgate. The hydraulic tailgate is supplied with one 1/2" NPTF male quick disconnect mounted on the drivers side of the unit. A 1/2" female quick disconnect is supplied for use on the truck hoist valve plumbing.

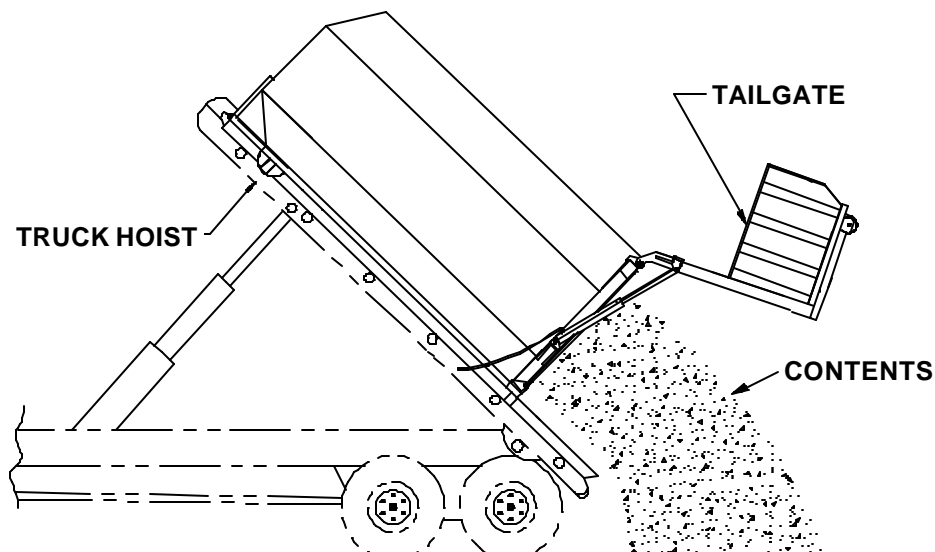
CAUTION

- * STAND CLEAR OF TAILGATE WHEN LIFTED.
- * TRUCK MUST BE ON FIRM, LEVEL SURFACE BEFORE LIFTING TAILGATE.
- * FRONT AND REAR HOLD DOWNS MUST BE ENGAGED.
- * TILT HOIST BEFORE LIFTING TAILGATE.

1. ATTACH HYDRAULIC CONNECTION.
2. DISENGAGE LATCH.
(EACH SIDE)



3. RAISE HOIST.
4. LIFT TAILGATE.
5. EMPTY CONTENTS.



6. CLEAN SEAL AS DESCRIBED IN THE "HAULER INSTRUCTIONS - GENERAL" IN THIS SECTION OF THE MANUAL. NOTE WARNINGS.
7. LOWER TAILGATE AS LOW AS POSSIBLE.
8. LOWER HOIST.
9. LOWER TAILGATE COMPLETELY.
10. ENGAGE AND TIGHTEN LATCHES.
11. REMOVE HYDRAULIC CONNECTION.

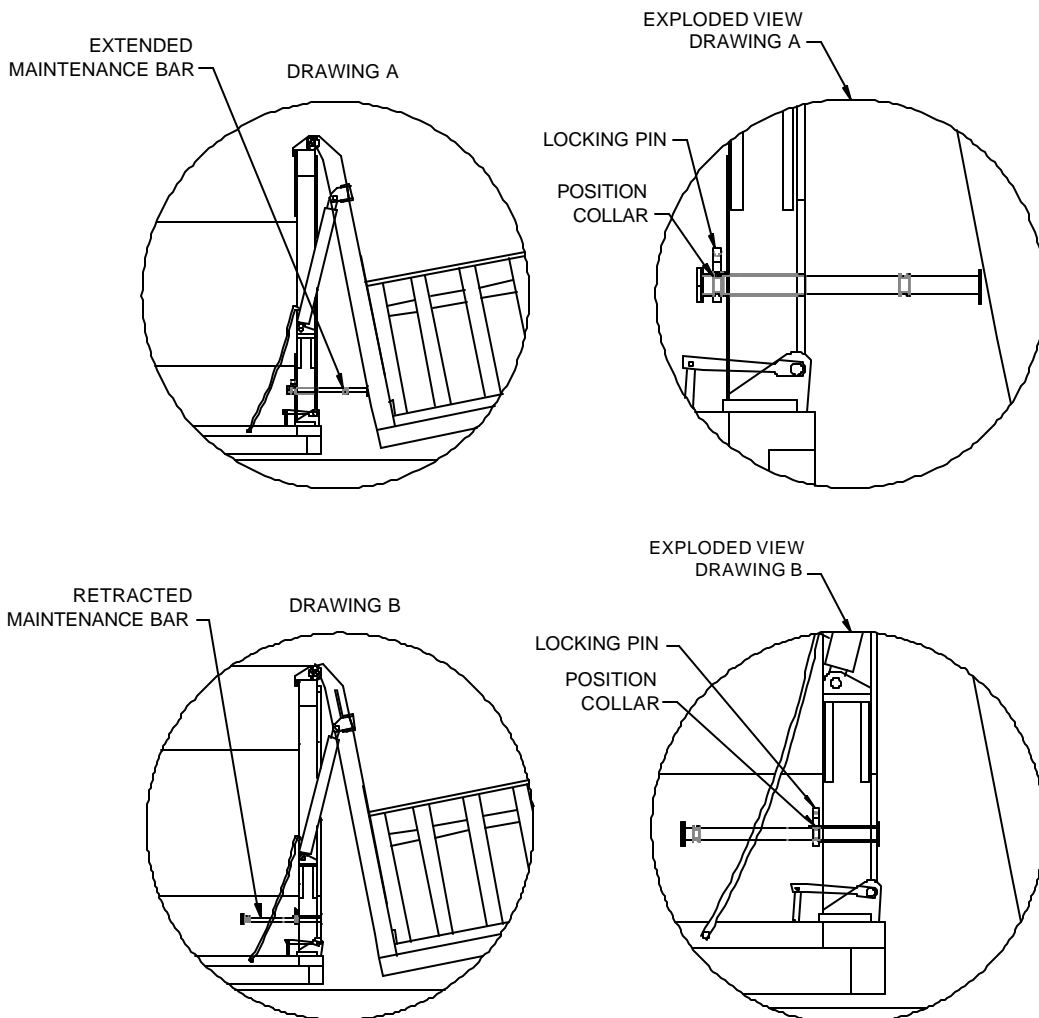
HAULER INSTRUCTIONS - HYDRAULIC TAILGATE OPERATION (FOR OPTIONAL HT UNITS)

4-4

WARNING: NEVER PLACE ANY PART OF YOUR BODY BETWEEN THE TAILGATE AND THE CONTAINER.

INSTRUCTIONS FOR USING MAINTENANCE BAR.

1. Lower tailgate approximately 24" between container bottom and compactor tailgate.
2. Remove locking pin from maintenance bar and slide bar toward compactor.
3. Align holes in the position collar and bar and insert pin.
4. Use a mop or similar cleaning device with a long handle to clean the seal.
5. Raise tailgate to relieve pressure on maintenance bar, remove pin, return bar to retracted position and insert pin through collar and bar.



4 HAULER INFORMATION

HAULER INSTRUCTIONS - LIQUID REMOVAL

(FOR OPTIONAL SL UNITS)

4-5

The Ram Jet Self-Contained Streamline compactor/containers are designed with an internal drain system for liquid removal, ported to each corner of the machine. The unit comes standard with one ball valve. This valve can be moved to any of the four drain outlets on the machine. The valve should be located at the lowest outlet on the machine for proper drainage. The customer can attach a drain hose with a 3" NPT male fitting to the drain valve.

