

Model R90
Split Body Rear Loader
Two Compartments
Manual Curb Side Controls

Owner's Manual

(5-06)



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Drawings and Parts Information - G & H Manufacturing, Inc. does not include Drawing and Parts information with this manual unless specifically requested. This is done for various reasons however the primary one is to ensure that the Customer always receives the correct replacement parts.

Included in this CD is the Job Order Number that this Unit was built by. It contains the “Bill of Material” and part numbers. Use this for reference when requesting Drawing and Parts information. To obtain this information, contact the Parts Department at 817-467-9883. For all requests, please supply the Unit’s Serial Number.

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SECTION 1: GENERAL INFORMATION

Introduction

We have attempted to cover as much information as possible in this manual. The data provided is based on information that was current at time of release. If you cannot find the necessary information in this manual, call our office or email us through our web site as listed below.

G & H Manufacturing
1015 Commercial Blvd. South
Arlington, Texas 76001
(817) 467-9883
www.ghmfg.com

Safety Information

This section contains important safety information. Please read this section carefully to avoid serious injury or death. All safety precautions described in this section should be completely and thoroughly understood and used by all trained personnel using this equipment.

G & H Manufacturing designs and constructs its equipment by incorporating every possible safety provision into the unit at the time of manufacture. The equipment must be operated as installed and as intended by the Manufacturer and protected from tampering or misuse by unauthorized personnel.

Untrained operators and stray personnel, who may be tempted to play with the controls or equipment, are considered to be unauthorized personnel. Therefore, it is very important that the owner(s) and/or operator(s) take and enforce the following precautions:

- All individuals authorized to operate the equipment should be trained in the proper use of the controls. All potential danger points should be specifically pointed out to the operator(s).
- No adjustments, modifications, alterations or repairs should be made by anyone other than qualified personnel.
- All malfunctions or indications of improper operation should be reported to the owner(s) to allow for immediate inspection and repair.
- All indications of need of repair should be carefully monitored. These indicators include but are not limited to blown fuses, electrical equipment sparking, electrical shocks,

bulging or deformed structural members, cracked welds, oil leaks or abnormal performance of the equipment.

- Do not travel with the Tailgate(s) in the raised position. Tailgates must be in the full down and locked position for over the road travel.
- Do not go under a raised tailgate without first propping the tailgate to prevent accidental lowering.
- Do not leave the tailgate(s) raised or partially raised while unattended unless it is propped to prevent accidental lowering.
- Make sure unit is empty before performing any maintenance or service.
- Do not attempt to raise a tailgate(s) when vehicle is on unlevelled ground.
- Keep area around the tailgate(s) when the tailgate(s) is operating.

NOTE: G & H Manufacturing makes no warranties regarding the safety of the equipment unless these safety instructions are observed by the owner(s) and operator(s) at all times.

Warranty Statement

G & H Manufacturing warrants each new product of its own manufacture to be free from defects in material and workmanship, for a period of twelve (12) months from date of shipment. Our obligation under this warranty is limited to repair or replacement of any part of the product of our manufacture provided that, in our judgment, the part is defective. All other damages and claims, statutory or otherwise, being hereby expressly waived by the purchaser, this includes but is not limited to any towing cost and damage incurred from equipment down time.

This warranty shall not apply to any failure or damage incurred through misuse, neglect, lack of maintenance, accident or any other cause beyond the control of G & H Manufacturing.

This warranty shall not apply to major purchased components such as pumps, valves, cylinders, etc... Warranty for these components will be handled by the customer and covered under the warranty of the original major component manufacturer.

There are no warranties, expressed or implied, which extend beyond the warranty set forth in this Owner's Manual.

Warranty Procedure

Customer notifies G & H Manufacturing via phone at 817-467-9883 of warranty need. G & H Representative will determine with customer which of the following best serves the customers needs:

G & H Manufacturing Supplied Parts

If the warranty claim is for a part supplied by G & H Manufacturing, the customer will be instructed to ship the part, transportation charges prepaid, to the following address:

G & H Manufacturing
1015 Commercial Blvd. South
Arlington, Texas 76001

The G & H Representative will issue an RGA number to the customer. The customer shall ensure that the part and associated documentation contain this number. Following receipt of the part, G & H Manufacturing and/or the original vendor will inspect and evaluate the part. If the warranty is deemed valid, G & H Manufacturing will ship a replacement part to the customer.

Major Purchased Component Parts (pumps, valves, cylinders, etc.)

If the warranty claim is for a major purchased component part, the G & H Manufacturing Representative will provide the customer the original part Manufacturers contact information. The customer shall contact the original part Manufacturer to determine and follow the prescribed warranty procedures.

For all other warranty issues or questions, please contact G & H Manufacturing at the number shown above.

SECTION 2: OPERATION

Controls

For clarity, the operating controls for the R-90 will be separated into three groups; In Cab Controls, Main Hydraulic Control Valve and Tailgate Controls. Please make sure that you thoroughly read and fully understand all controls before operating this unit.

In Cab Controls

There are two sets of controls in the Cab; G & H Manufacturing controls and Chassis Manufacturer Dashboard controls that G & H Manufacturing uses to perform specific functions. The description and function for both sets are as follows (Ref. Figures 1 & 2):

- PTO switch “ON”- activates the Hydraulic Pump, enables the Throttle Advance and the PTO indicator light will come “ON”. (Note: Some Chassis come with a Dashboard mounted Neutral Interlock switch. This switch must be “ON” for the above items to be activated)
- Hopper Lights switch “ON”- turns “ON” both Tailgates Hopper lights.
- Ignition switch “ON”- turns “ON” Strobe Light on top of Right Tailgate.
- Each Tailgate has a lock cylinder with a proximity sensor which sense’s whether the Tailgate is locked or unlocked. If either or both of the Tailgates are unlocked, the “Red” Tailgate Ajar Light will be “ON”.



Figure 1

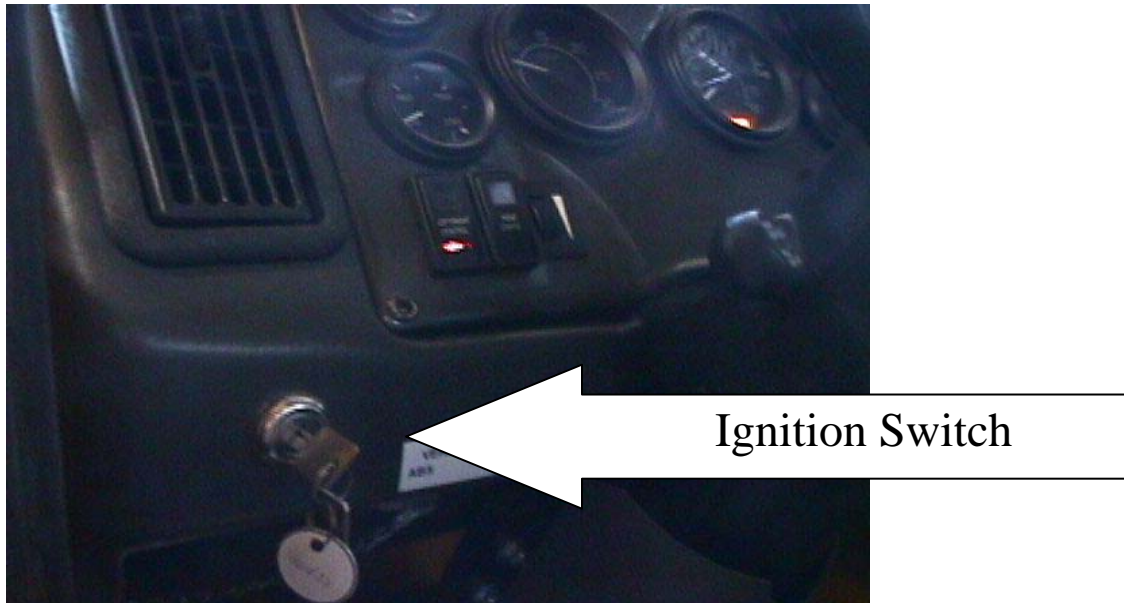


Figure 2

Main Hydraulic Control Valve (Ref. Figures 3 & 4 on page 7)

The Main Hydraulic Control Valve is located at the front of the R-90 Body on the Driver's side and is mounted to the Body Floor. It is a five (5) section hydraulic valve that is used to manually control the following by either pushing or pulling the valve handles: Left Ejector, Right Ejector, Tailgate Lift, Left Tailgate Lock and Right Tailgate Lock. The Valve also contains a Pressure Relief valve which is set at 2000 psi, a Power Beyond Section and a pressure gauge.

Located above the Main Hydraulic Control Valve is a Throttle Button which is used when operating the Main Hydraulic Control Valve. The Throttle Button must be pushed in and held in order to increase the engine RPM's to 1500 to allow for proper hydraulic pump performance. Once the engine reaches 1500 RPM's the Main Hydraulic Control Valve can be operated to perform the indicated functions.

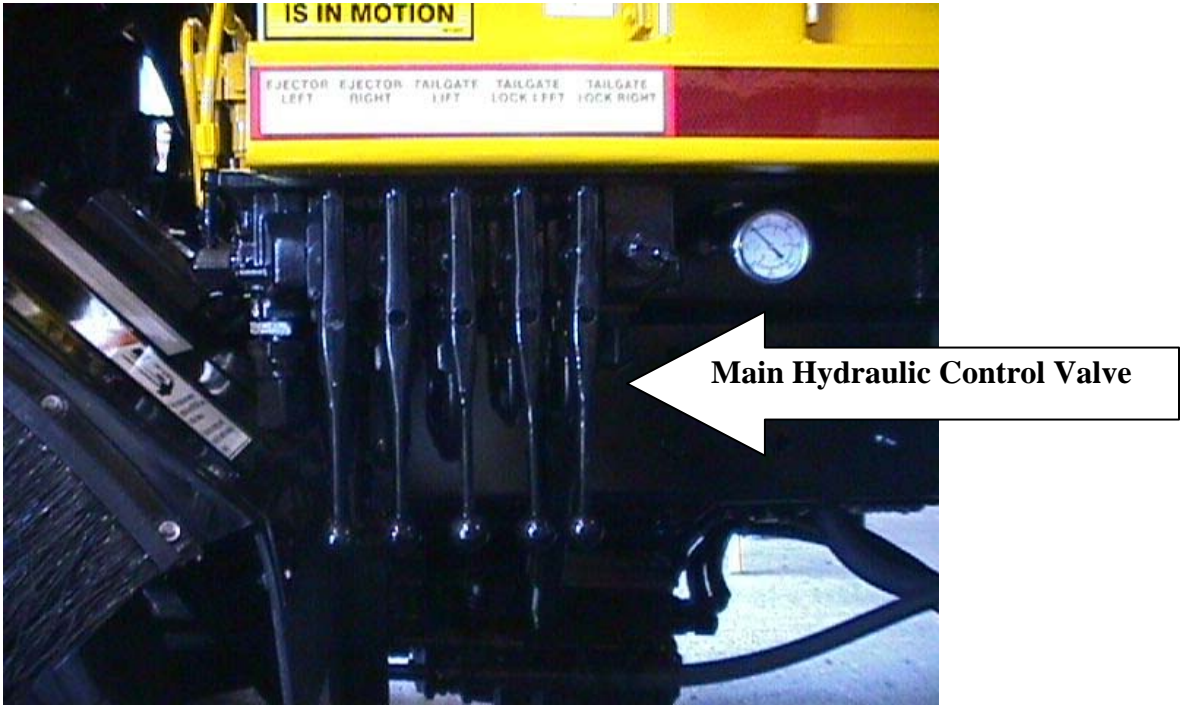


Figure 3



Figure 4

Tailgate Controls

- On the Left Side (Street Side) Tailgate there is a control panel which contains a Buzzer switch and Emergency Stop switch (Ref. Figure 5). The Buzzer switch, when pushed in, will activate the Buzzer in the Cab. This is normally used to notify the Driver that it is OK to move the unit. The Emergency Switch, when pushed in, will remove the power from the pump and stop all component movements. This is normally used to stop the Packing process when a problem is noticed. Additional detail is discussed in the Emergency Stop Section.



Figure 5

- On the Right Side (Curb Side) Tailgate there is a control panel which contains a Buzzer switch and Emergency Stop switch (Ref. Figure 6). The Buzzer switch and Emergency Switch perform the same functions as described in the previous paragraph.



Figure 6

- On the Right Side (Curb Side) Tailgate there are two set of manual control levers (Ref. Figure 7). The bottom two control levers operate the Carriage and Packer for the Left Tailgate (Street Side) and the top control levers operate the Carriage and Packer for the Right Tailgate (Curb Side). A detailed description of the control levers operation is explained in the Packing and Dumping section of this manual.



Figure 7

Packing and Dumping

Packing Operation (Ref. Figures 8 & 9)

On the Right Side (Curb Side) Tailgate there are two (2) sets of manual control levers. The bottom two (2) control levers operate the Carriage and Packer for the Left Tailgate (Street Side) and the top two (2) control levers operate the Carriage and Packer for the Right Tailgate (Curb Side). The control levers work by either pushing or pulling and it is not necessary to continue holding the levers after either action.

Note: The PTO and Neutral Interlock switches (if equipped) must be “ON” for Throttle Advance to operate.

- Independent Operation – Both Tailgates operate the same so only the Right Tailgate will be used for the following instructions. Looking at the top two (2) control levers, the top or right hand lever is used to operate the Carriage. Push this lever and release to make the Carriage go UP and pull and release to make the Carriage move Down. The bottom or left hand lever is used to operate the Packer. Push this lever and release to make the Packer go IN and pull and release to make the Packer go OUT.

Note: The standard operating practice is to keep the Carriage in the Up position and the Packer in the IN position at all times except during the packing operation. The following instructions are based on this practice.

- To begin the first half of the Packing Cycle, pull and release both levers of the selected Tailgate. The Packer will move OUT and then Carriage will move DOWN. The Throttle Advance will automatically advance during this cycle.
- To finish the last half of the Packing Cycle, push and release both levers of the selected Tailgate. The Packer will move IN and then Carriage will move UP. The Throttle Advance will automatically advance during this cycle.

For sequential Packing operation of both Tailgates, pull and release both levers for the Right then Left Tailgates. The Packer for the Right Tailgate will move OUT and then the Carriage will move DOWN, and then the Packer for the Left Tailgate will move OUT and then the Carriage will move DOWN. The second half of the Packing Cycle is sequentially performed by pushing and releasing both levers for the Right then Left Tailgates.



Figure 8

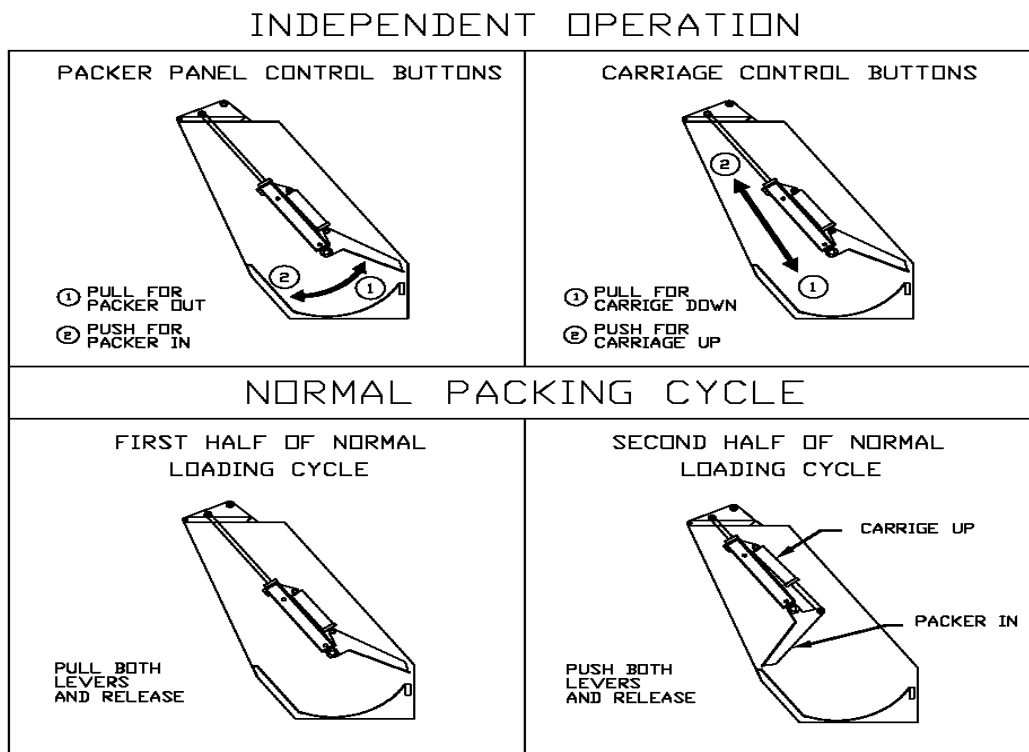


Figure 9

Emergency Stop

Each Tailgate has a “Red” Emergency Stop switch that can be pushed “IN” to stop the Packing process in case a problem is noticed. When the Emergency Stop switch is pushed “IN”, power is removed from the hydraulic pump which will stop all component movements. After the problem is corrected there are two (2) options for re-starting the Packing process which are as follows:

- Continue the Process – pulling “OUT” on the Emergency Stop switch will allow the Packing process to continue on in the same direction it was traveling.
- Reverse the Process – if it is necessary to reverse the direction of the Process operate the manual control levers for the selected Tailgate in the following order. First, push and release the upper control lever and then pull and release the lower control lever. This will make the Carriage move “UP” and the Packer to move “OUT”. When these movements are completed, pull “OUT” the Emergency Stop switch to reset the system.

Dumping Operation

The Main Hydraulic Control Valve is used to perform the Dumping Operation (Ref. Figure 10).

Note: The PTO and Neutral Interlock (if equipped) switches must be “ON” for the Throttle Advance to operate. Push in and hold the Throttle Button located above the Main Hydraulic Control Valve when operating the valve.

Warning: Only unlock one Tailgate at a time. Never unlock and raise both Tailgates at the same time. For the following instructions, the Left (Street Side) Tailgate will be used.



Figure 10

1. When ready to Dump, engage the Parking Brake and shift the Transmission into Neutral.
2. Turn the PTO and Neutral Interlock (if equipped) switches ON.
3. Unlock the Left Tailgate by pulling on the lever for approx. five (5) seconds.
4. Pull the Tailgate Lift lever until the Left Tailgate is fully open.
5. Pull the Ejector Left lever until the load has been ejected.
6. Disengage the Parking Brake, Shift the Transmission into gear and pull the truck forward until the Tailgate has cleared the dumped load.
7. Engage the Parking Brake and shift the Transmission into Neutral.
8. Push the Ejector Left lever for approx. two (2) seconds to retract the Ejector approx. one (1) ft.
9. Push the Tailgate Lift lever until the Tailgate is completely lowered.
10. Push the Tailgate Lock Left lever for approx. five (5) seconds to lock the Left Tailgate.
11. Repeat the above steps for the Right (Curb Side) Tailgate.
12. Turn the PTO and Neutral Interlock (if equipped) switches OFF.

Tailgate Props (Ref. Figure 11)

Each Tailgate has a Prop that is designed to hold the Tailgate partially open to allow for access to the back of the Body and back side of the Tailgate. Before propping a Tailgate, make sure it is clear of refuse. Always visually check the Props to be sure it is secure before attempting any work.

- To Prop the Tailgate – Raise the Tailgate slightly, release the Latch, rotate the Prop to the support position and then lower the Tailgate until the Prop rests on the Body Stop.
- To lower the Tailgate – Raise the Tailgate slightly, rotate the Prop to the stored position and secure the Prop in position with the latch.

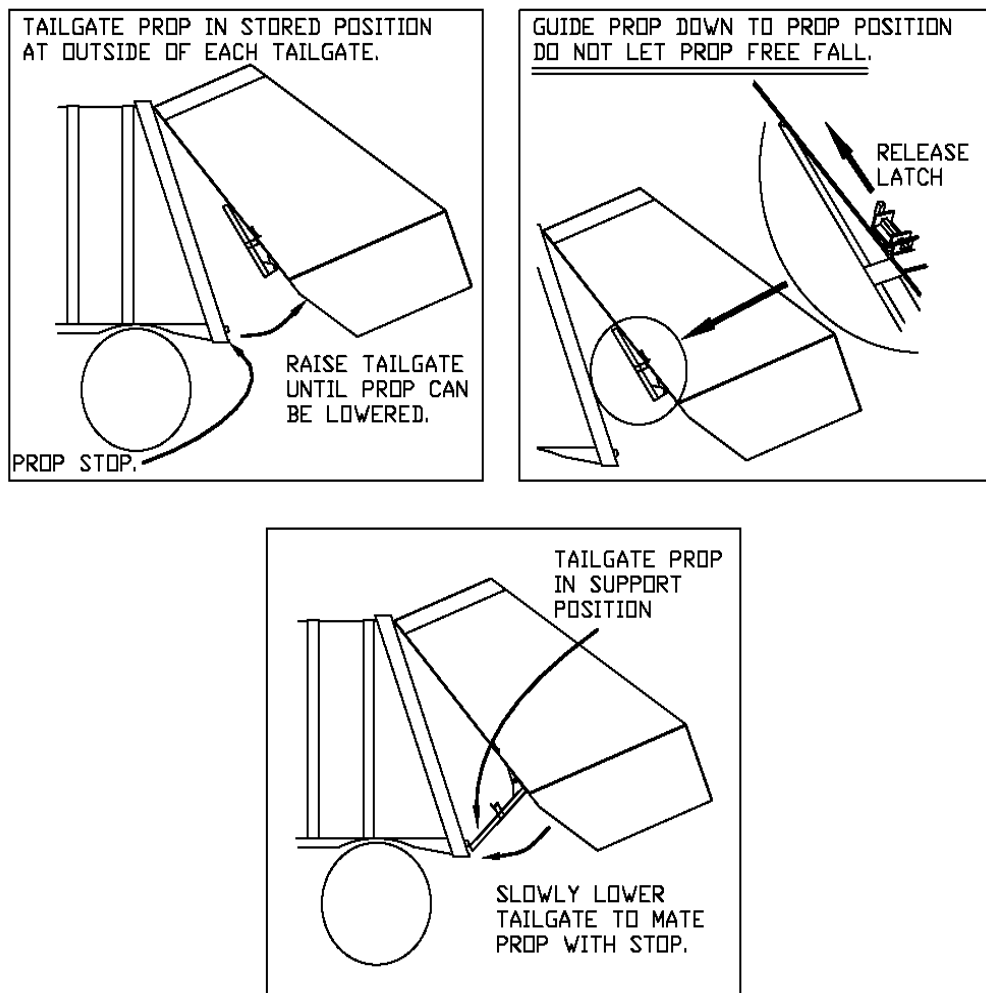


Figure 3

SECTION 3: MAINTENANCE

(Minimum Recommendations)

Inspections and Schedules

G & H Manufacturing has developed two inspection forms which indicate the items to be inspected and the frequency of the inspections. It is important for the life of the unit and for warranty purposes that both forms be used as indicated. The forms are as follows:

- Q1021 – Daily Driver Vehicle Inspection Report – R90
- Q1024 – Preventative Maintenance Inspection Form – 150 HR, 1200 HR, and 2400 HR

A copy of both inspections is included with this manual.

Torque Specifications for Fittings (Ft.-Lbs.)(Min. – Max.)

| SIZE | 37° JIC | FLAT FACE “O” RING |
|---------------|----------------|---------------------------|
| 1/4” | 10-11 | 10-12 |
| 3/8” | 17-19 | 18-20 |
| 1/2” | 34-38 | 32-40 |
| 3/4” | 70-78 | 65-80 |
| 1” | 94-104 | 92-105 |
| 1 1/4” | 124-138 | 125-140 |
| 1 1/2” | 156-173 | 150-180 |

Packing – Hydraulic and Electrical Description

In order to help perform maintenance and troubleshooting, it is important to understand the hydraulic and electrical sequence of events of the Packing process. The following is a basic description of the events. Additional details can be found in the Drawings and Bill of Materials.

1. Pull and release both levers for the Right (Curb Side) Tailgate. This will cause the Sequencing Valve with attached Limit switches, located on top of the Tailgate to do the following:
 - a. The spools in the first two (2) sections of the valve will shift in one direction.
 - b. The spools are mechanically attached to electrical Limit switches. When the spools shift, the Limit switches shift and send an electrical signal to the Throttle Advance to increase the engine’s RPM.

- c. Since this is a Sequencing Valve, section one (1) will receive hydraulic oil flow first. This will cause the Packer to move OUT until the cylinders reach end of stroke. At end of stroke, pressure will cause section one (1) to “kick-out” and the spool will return to the center position.
 - d. Section two (2) will now get hydraulic oil flow. This will cause the Carriage to move DOWN until the cylinders reach end of stroke. At end of stroke, pressure will cause section two (2) to “kick-out” and the spool will return to the center position.
 - e. When the spools return to the center positions, the Limit switches will also return back to neutral which will stop the electrical signal to the engine’s Throttle Advance.
2. Push and release both levers for the same Tailgate to complete the Packing cycle. This will cause the same Sequencing Valve with attached Limit switches and Pressure switches to do the following:
 - a. The spools in the first two (2) sections of the valve will shift in the opposite direction as was done in step 1a.
 - b. The spools are mechanically attached to electrical Limit switches. When the spools shift, the Limit switches shift and send an electrical signal to the Throttle Advance to increase the engine’s RPM.
 - c. As above, since this is a Sequencing Valve, section one (1) will receive hydraulic oil flow first. This will cause the Packer to move IN until the cylinders reach end of stroke. At end of stroke, pressure will cause section one (1) to “kick-out” and the spool will return to the center position.
 - d. Section two (2) will now get hydraulic oil flow. This will cause the Carriage to move UP. As the Carriage moves up, the trash compaction process between the Packer and Ejector will cause the hydraulic pressure to increase. When the hydraulic pressure exceeds 400 psi, the Pressure switch, which is installed in section (2), will send an electrical signal to a Dump Valve, which is located at the front of the Body.
 - e. The Dump Valve is connected to the Rod End of the Ejector Cylinder. When the hydraulic pressure exceeds 200 psi, the Dump Valve will OPEN to allow hydraulic fluid from the Ejector Cylinder to flow back to the Hydraulic Reservoir. At this point, the forces from the trash compaction process will make the Ejector Cylinder retract which in turn makes the Ejector move towards the front of the Body. The Ejector will continue to move until either the hydraulic pressure at the Dump Valve drops below 200 psi, or, the hydraulic pressure at the Pressure switch drops below 400 psi. This hydraulic/electrical cycle will continue back and forth until the Carriage Cylinders reach end of stroke.
 - f. When the Carriage Cylinders reach end of stroke, pressure will cause section two (2) to “kick-out” and the spool will return to the center position.
 - g. When the spools return to the center positions, the Limit switches will also return back to neutral which will stop the electrical signal to the engine’s Throttle Advance.

This process is also the same for the Left (Street Side) Tailgate except sections three (3) and four (4) of the Sequencing Valve are used.

Pressure Settings

| Component | Location | Pressure Setting |
|--------------------|--------------------------|------------------|
| Main Control Valve | Front of Body, Left Side | 2000 PSI |
| Pressure Switches | Sequencing Valve | 400 PSI |
| Dump Valve | Front of Body | 200 PSI |

Grease Points

Apply Grease at the points shown in Figure 12 at the frequencies recommended in the Inspection Schedules. Recommended Grease: Heavy Duty EP Grease NLGI2.

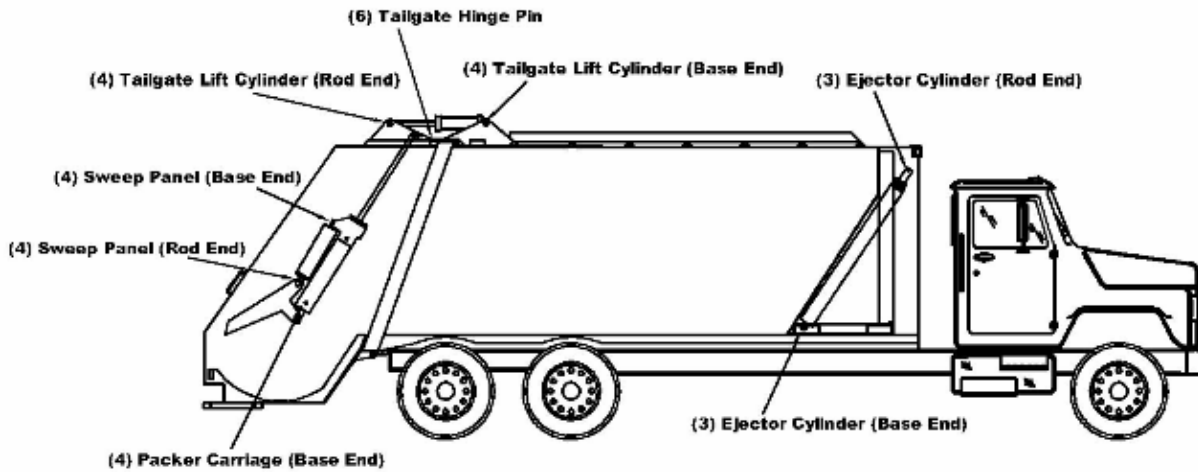


Figure 4

Hydraulic Oil

- Recommend ISO Grade 46
- Maintain Hydraulic Oil Cleanliness Level of ISO 18/15/13

Hydraulic Oil Reservoir and Suction Strainer Cleaning

1. Remove drain plug in bottom of Hydraulic Reservoir and drain oil.
2. Remove the Suction Line from the hose barb.
3. Remove Suction Strainer from the Reservoir by rotating the 3" hex counter clockwise.
4. Clean and check the Strainer for damage and make sure the bypass valve operates correctly.
5. Swab out the Reservoir to remove any sediment.
6. Wrap Strainer threads with Teflon tape
7. Reinstall the Strainer
8. Reconnect the Suction Line to the hose barb
9. Refill the Reservoir with hydraulic oil.

Changing External Filters

Note: Be sure that the hydraulic oil in the Reservoir is below the bottom of the filters before removing the filters.

1. Slide the Strap Wrench around the base of the filter and turn counter clockwise to remove.
2. Install new filter turning clockwise to tighten.
3. Repeat steps for second filter.