

# 1500 Series Roll Off Hoist

## Owner's Manual

(5-06)



# **Table of Contents**

## **Section 1: General Information**

- **Introduction**
- **Safety Information**
- **Warranty Information**

## **Section 2: Operation**

- **Operating the P.T.O.**
- **Operating the Control Valves**
- **Accelerating the Engine**
- **Loading, Dumping and Unloading a Container**
- **Options**

## **Section 3: Maintenance**

- **Inspections and Schedules**
- **Torque Specifications for Fittings**
- **Pressure Settings**
- **Grease Points**
- **Hydraulic Oil**
- **Quick Change Rear Roller Removal/Installation**
- **Cable Replacement**
- **Main Hydraulic Control Valve**

**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.

©Copyright 2006 – This manual may not be reproduced in whole or part, in any manner, without the express written permission of G & H Manufacturing.

# 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](http://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 hoist in the raised position. The hoist must be in the full down position for over the road travel.
- Do not adjust pressures to exceed recommended settings and do not exceed the rated lifting capacity.
- Do not leave the hoist raised or partially raised while unattended or during performance of maintenance unless the hoist is propped to prevent accidental lowering.
- Make sure hoist is empty before performing any maintenance or service.
- Do not attempt to raise a container when trailer is on unlevelled ground.
- Keep area around the unit clear when the hoist 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

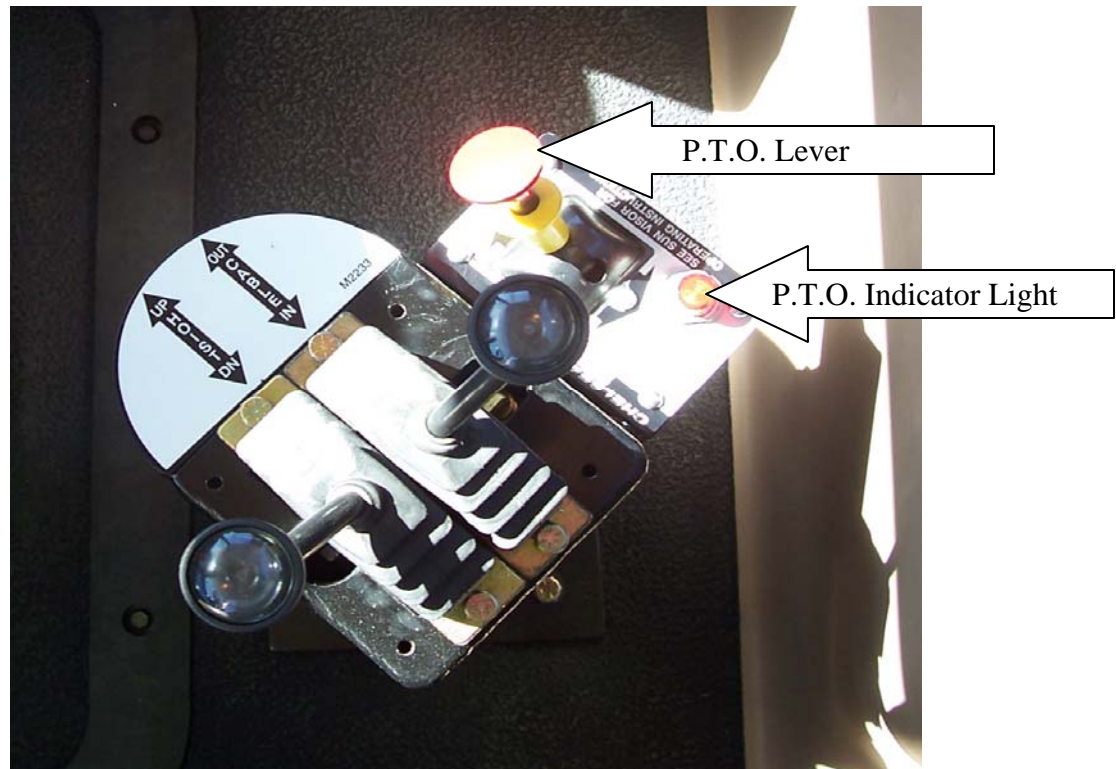
This section contains information and instructions for operating the 1500 Series Roll Off Hoist. Anyone operating a 1500 Series Roll Off Hoist needs to read and fully understand this section prior to operating the unit.

### Operating the P.T.O.

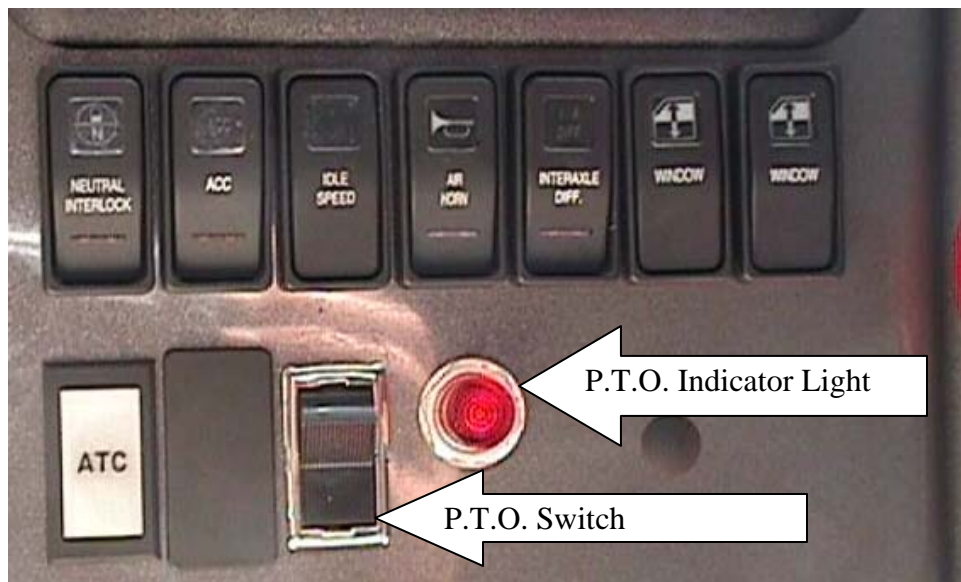
**Warning:** The P.T.O. must be shifted out before driving the truck. Also, make sure the engine is off before performing any maintenance on the P.T.O.

**Caution:** When shifting the P.T.O., do not shift too quickly. This will clash the gears which can damage the P.T.O. and/or transmission.

**Note:** P.T.O. controls can be either air shift or electric shift. Also, they can either be mounted to the right of the driver on a floor mounted pedestal (Ref. Figure 1) or in the dashboard (Ref. Figure 2). All P.T.O. controls will have a P.T.O. Indicator Light to let you know when the P.T.O. is shifted “in” or “out”.



**Figure 1**



**Figure 2**

### **Manual Transmission**

To shift the P.T.O. “in” with a Manual Transmission:

- Depress the clutch pedal.
- Wait for the transmission to stop rotating.
- Shift the P.T.O. control to “in”.
- Release the clutch pedal.

To shift the P.T.O. “out” with a Manual Transmission:

- Depress the clutch pedal.
- Wait for the P.T.O. to stop rotating.
- Shift the P.T.O. control to “out”.

### **Automatic Transmission**

On Automatic Transmissions, the gears in the transmission turn when the transmission is in neutral. Therefore, the gears will clash if the P.T.O. is shifted into gear while in neutral.

To shift the P.T.O. “in” with a Converter Driven Gear:

- Shift the transmission into any drive position.
- Shift the P.T.O. control to “in”.
- Shift the transmission into neutral.

To shift the P.T.O. “out” with a Converter Driven Gear:

- Shift the transmission into any drive position.
- Shift the P.T.O. control to “out”.
- Shift the transmission into neutral.

## **Automatic Transmission with Hot Shift P.T.O.**

To shift the Hot Shift P.T.O. “in” and “out”:

- Shift the P.T.O. “in” and “out” while the engine is at idle speed.
- See transmission manufacture’s instructions for special procedures.

## **Operating the Control Valves**

Most Roll Off Hoists are equipped with both outside and inside controls. Inside controls can be either “Lever” or “Joy Stick” depending on the option selected and/or Driver preference. Both styles perform the same function(s) however their movements are different. If your Roll Off Hoist does not have inside cab controls, skip the section which describes its operation.

### **Outside Controls (Ref. Figure 3):**

The Outside Controls are located at the front end of the Hoist, directly behind the cab on the driver’s side. The first two controls are used for operating the Hoist and Cable. Any other controls are auxiliary and will operate the options such as a Stinger, Tarper, Stabilizer and Wet Line Kit if your Hoist came equipped with them. The instructions for these options can be found in the Options Section.

- Use the first control labeled “Hoist” to raise or lower the Hoist. Pull the handle to make the Hoist go “up” and push the handle to make the Hoist go “down”.
- Use the second control labeled “Cable” to let the cable in or out. Pull the handle to bring the Cable “in” and push the handle to let the Cable “out”.



**Figure 3**



### **Inside Controls (Ref. Figure 4):**

The Inside Controls are located in the cab between the seats to the right of the driver. The first two controls are used for operating the Hoist and Cable. Any other controls are auxiliary and will operate the options such as a Stinger, Tarper and Stabilizer if your Hoist came equipped with them. The instructions for these options can be found in the Options Section.

- Use the first control labeled “Hoist” to raise or lower the Hoist. Pull the handle to make the Hoist go “down” and push the handle to make the Hoist go “up”.
- Use the second control labeled “Cable” to let the cable in or out. Pull the handle to bring the Cable “in” and push the handle to let the Cable “out”.



**Figure 4**

### **Accelerating the Engine**

The G & H Roll Off Hoist has been designed to operate with the engine speed set at 1500 RPM. On most modern trucks, this is accomplished using the Cruise Control. The location and operation of the Cruise Control varies between truck manufacturers. In general, most will have a “Speed Control” switch for turning the Cruise Control “on” and “off”, and, an “Accelerate/Decelerate” toggle switch for increasing or decreasing the engine’s RPM. These controls will normally be mounted in the Dashboard or on the Steering Wheel.

For older model trucks without Cruise Control, a Throttle Control cable for setting the engine speed will be mounted to the left side of the Outside Controls (Ref. Figure 5). To operate, rotate

the handle counterclockwise and pull out until the engine speed reaches 1500 RPM and then rotate the handle clockwise to lock it in position. To return the engine speed back to idle, rotate the handle counterclockwise, push the cable in until it stops and then rotate clockwise to lock it.



**Figure 5**

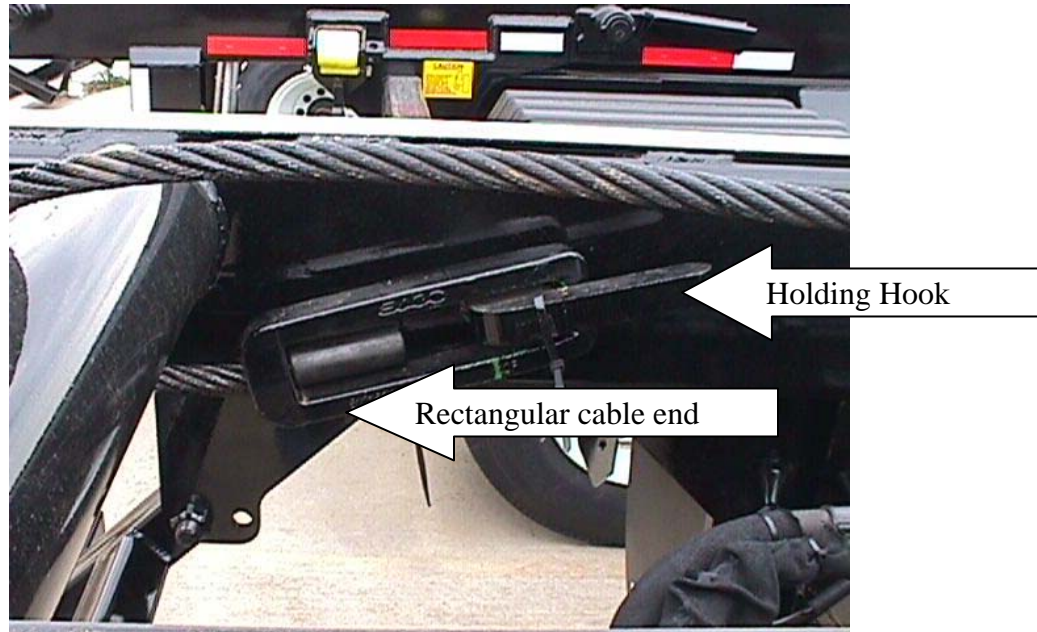
## **Loading, Dumping and Unloading a Container**

Prior to operating the Roll Off Hoist, be sure to read and understand the instructions for shifting the P.T.O., using the Control Valve(s) and setting the engine RPM. When the Hoist is raised, an alarm light will come on and an alarm buzzer will sound in the driver's cab. DO NOT tamper with or remove these alarms. Also, when lowering the Hoist, make sure the P.T.O. is in gear to prevent creating air in the system or overflowing the oil tank.

### **Loading:**

- Back the truck up until it is close to the front of the container.
- Turn the P.T.O. "on" and raise the Hoist until the rear roller is touching the ground.
- Back the truck up until the Hoist rails touch the container's guide rollers.
- Unhook the rectangular cable end from the holding hook (Ref. Figure 6) and let out enough cable to attach the cable end to the hook on the container.
- Increase the engine speed to 1500 RPM.
- Pull the cable in until the container guide rollers are past the hinge point on the Hoist.
- Lower the Hoist to the angle of the container.
- Continue to pull the cable in while gradually lowering the Hoist. Stop lowering the Hoist when it is approximately 3 inches from the chassis frame.
- Pull the container to the front stops.

- Lower the hoist completely to engage the front container lock.
- Reduce engine speed to idle and turn P.T.O. “off”.
- Secure the container on both sides to the Hoist by attaching and tightening the ratchet tie down hooks using the ratchet handle located on the Driver’s side at the rear of the rear fenders (Ref. Figures 7 & 8).



**Figure 6**



**Figure 7**



**Figure 8**

**Dumping:**

- Back the truck up to the dump site.
- Open the end gate on the container.
- Turn the P.T.O. “on” and increase the engine’s speed to 1500 RPM’s.
- Raise the Hoist high enough to empty the contents of the container.
- Lower the Hoist completely.
- Reduce engine speed to idle and turn P.T.O. “off”.
- Close the end gate on the container.

**Unloading:**

- Back the truck up to the off load site.
- Remove the ratchet tie downs from the container.
- Turn the P.T.O. “on” and increase the engine’s speed to 1500 RPM’s.
- Slowly raise the Hoist while letting the cable out until the back of the container is resting on the ground.
- Move the truck forward and continue to let the cable out until the entire container is resting on the ground.
- Reduce engine speed to idle.
- Unhook the rectangular cable end from the container hook.
- Lower the Hoist completely
- Hook the rectangular cable end to the holding hook on the Hoist (Ref. Figure 6) and pull the cable tight.
- Turn the P.T.O. “off”.

## **Options**

**Tarping System** – If your Hoist was equipped with a Tarping System, G & H will either install additional properly labeled valve sections to the Outside Control valve for tarper operation, or, install Tarper Manufacturer controls. For either, refer to the Tarper Manufacturer’s Owners Manual for proper operation.

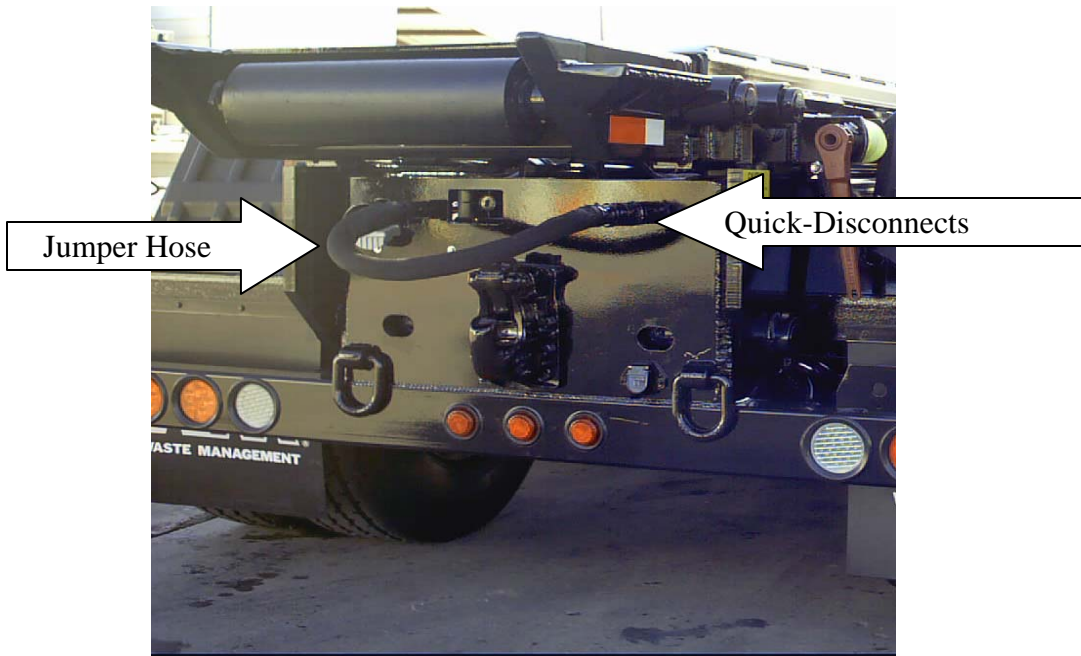
**Stinger** – Stingers are normally installed on Hoist’s that will be used in areas where there is limited overhead clearance. If your Hoist was equipped with a Stinger, G & H installed an additional properly labeled valve section to the Outside Control valve and/or the Inside Control valve to operate the Stinger.

**Wet Line Kit** – A Wet Line Kit is installed on a Hoist for hydraulically operating external item(s) from the Hoist’s Outside Control valve. Wet Line Kits can be either Single Acting or Double Acting depending on the option ordered. If your Hoist was equipped with a Wet Line Kit, G & H installed an additional properly labeled valve section to the Outside Control valve and run a line(s) to the rear for hook-up.

**Power Beyond** – Power Beyond is installed on a Hoist to provide hydraulic pressure and flow to an external device that will be operated by an external Control valve. If your Hoist was equipped with Power Beyond, G & H installed an Outside Control valve that provides the Power Beyond capability. In addition, connections to the Hoist hydraulic system will be provided at the rear of the Hoist as follows (Ref. Figure 9):

- Mounted on the left or Driver’s side is a “Jumper Hose” with a female quick-disconnect mounted on one end. This is the “pressure” side.
- Mounted on the right or passenger side is a “male” quick-disconnect. This is the “return” side.
- To connect to an external device, disconnect the Hoist’s quick-disconnects and connect them to the corresponding quick-disconnects of the external device. MAKE SURE that the quick-disconnects are completely engaged.

**NOTE:** - When the Hoist is NOT connected to an external device, the “Jumper Hose” MUST BE completely connected to “male” quick-disconnect on the Hoist. Failure to do so may result in damage to the components of the Hoist’s hydraulic system.



**Figure 9**

**Pusher Axle** – A Pusher Axle is used for heavier loads and is activated from inside the cab. The control is located by the P.T.O. switch to the right of the driver (Ref. Figure 10).

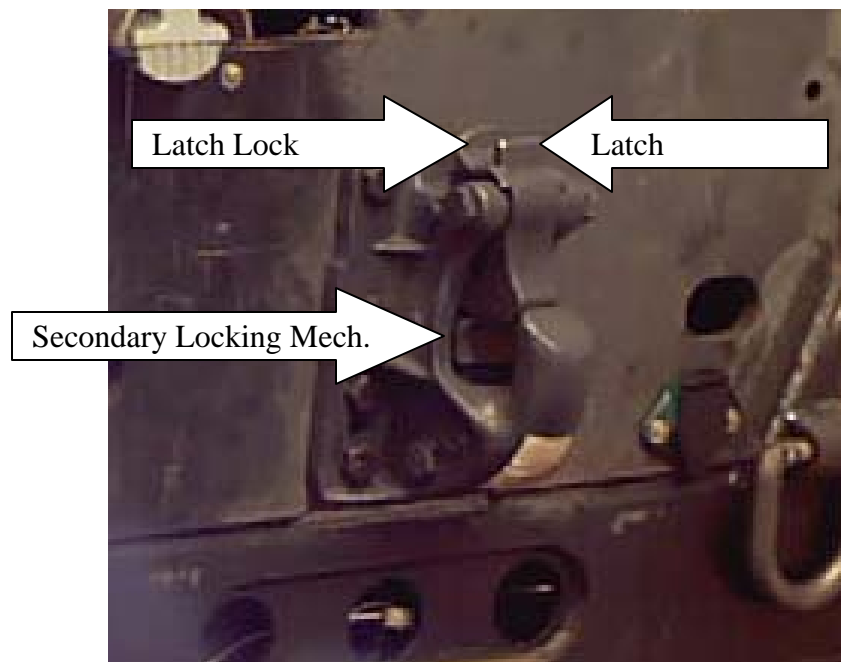


**Figure 10**

- Turn Pressure Control Knob to right or left to increase or decrease the pressure. Make sure the pressure is set correctly for the load weight (approximately 40 PSI).
- Use Up/Down Switch to raise and lower the axle.

**Pintle Hook** – A Pintle Hook is installed on a Hoist for pulling a trailer. The Pintle Hook uses a mechanical latching system and an air powered secondary locking mechanism.

- Opening the Latch – Grasp the “Latch Lock” and push back towards mounting plate until motion stops, while holding in this position, grasp top of “Latch” and pull forward to rotate the “Latch” into the body. Slowly release the “Latch Lock” until it has rotated to its forward most position which now holds the “Latch” open. Coupling is now open and ready for mating with the trailer’s drawbar eye.
- Closing the Latch – Pull top of “Latch” forward. While holding in this position, push “Latch Lock” back towards mounting plate. Slowly release “Latch” until fully forward and seated. Release “Latch Lock” making sure that it seats fully forward and down in slot on top of “Latch”.
- Secondary Locking Mechanism – The Pintle Hook is equipped with an air powered secondary locking mechanism which is connected to the chassis air system. When the chassis Parking Brake is released, air is supplied to the Pintle Hook’s air chamber which pushes the locking mechanism forward until it contacts the trailer’s drawbar eye. The locking mechanism retracts when the Parking Brake is applied.



**Figure 11**

## **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 – CCR
- 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.)**

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

### **Pressure Settings** – Main Hydraulic Control Valve

- 1500 Hoist @ **1900 PSI** @ 1500 RPM – 50,000 LB Capacity
- 1500 Hoist @ **2100 PSI** @ 1500 RPM – 60,000 LB Capacity
- 1560 Hoist @ **1900 PSI** @ 1500 RPM – 60,000 LB Capacity
- 1560 Hoist @ **2100 PSI** @ 1500 RPM – 75,000 LB Capacity
- 1580 Hoist @ **1900 PSI** @ 1500 RPM – 80,000 LB Capacity



## Grease Points

Apply Grease at the points shown in Figure 11 at the frequencies recommended in the Inspection Schedules. Recommended Grease: Heavy Duty EP Grease NLGI2.

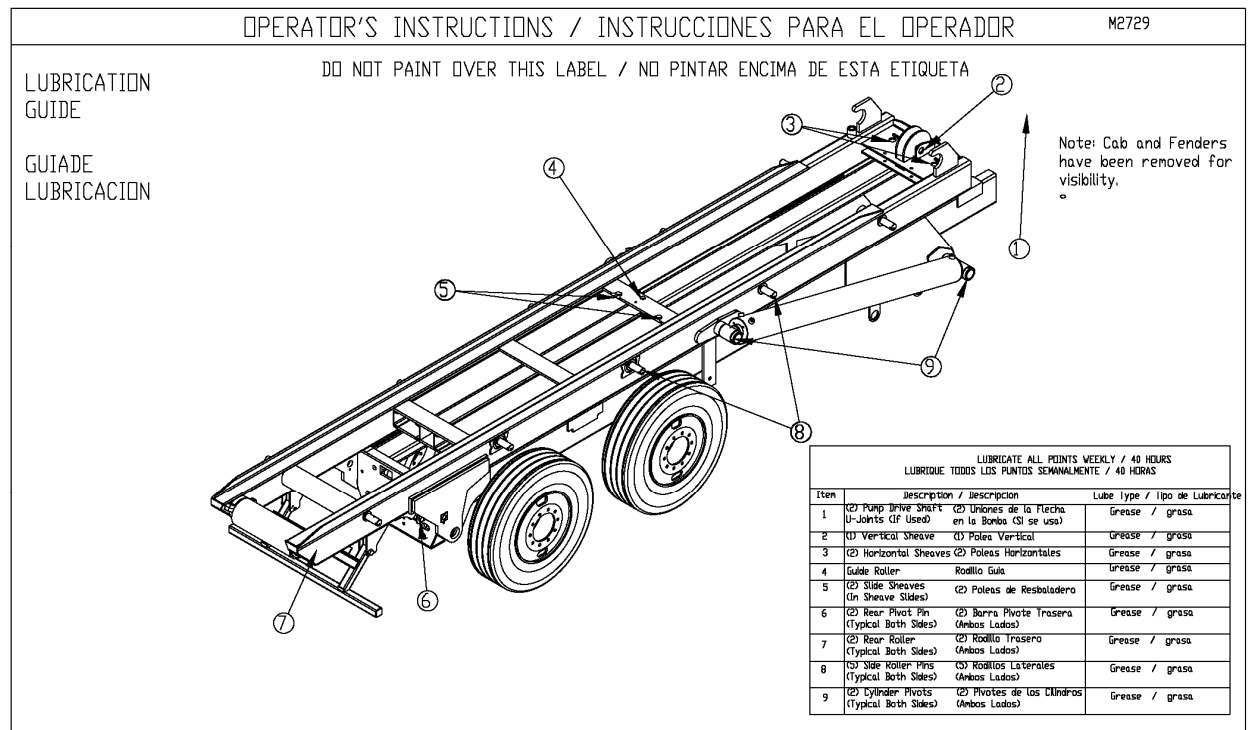


Figure 12

## Hydraulic Oil

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

## Quick Change Rear Roller Removal/Installation

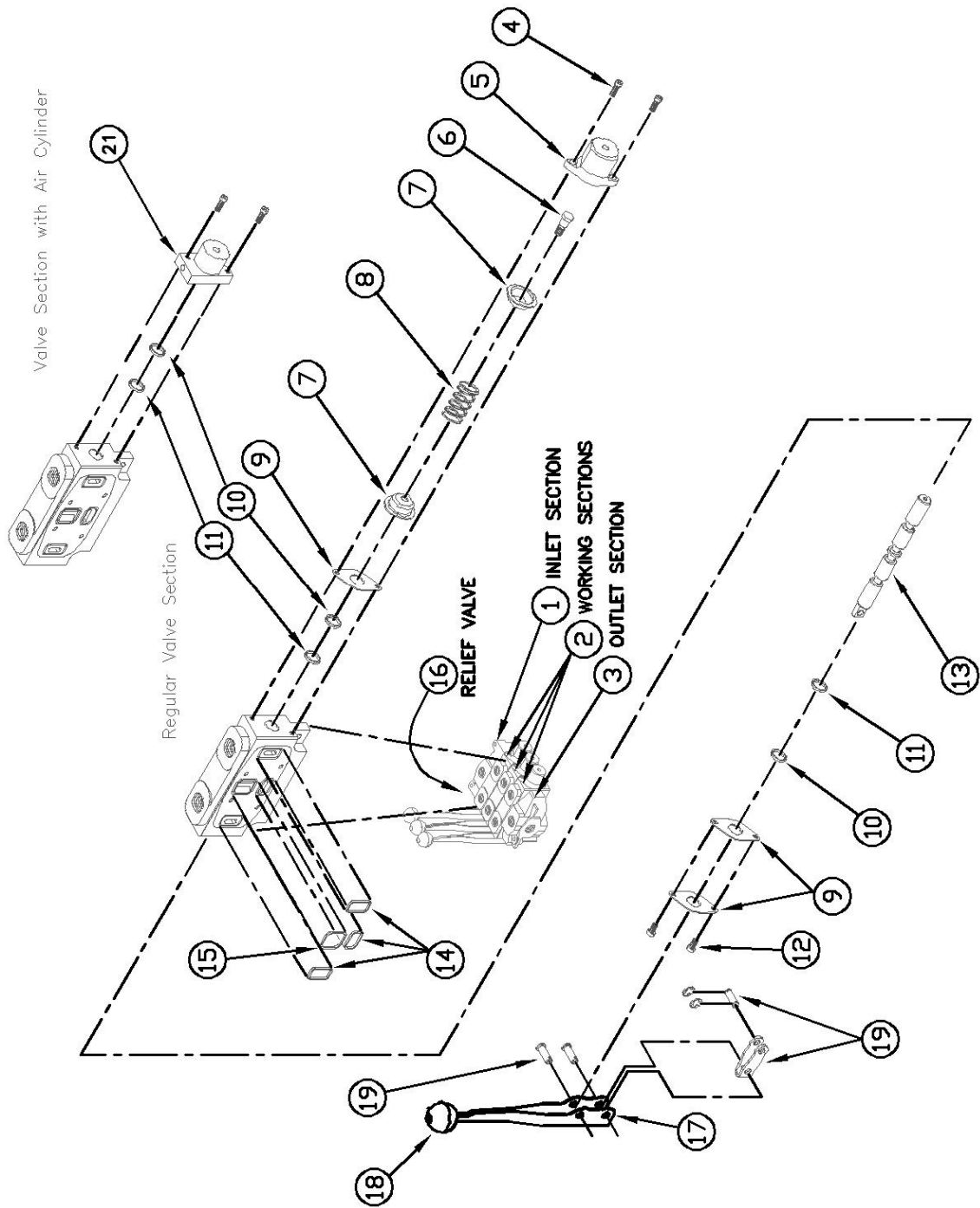
**Note:** Roller is heavy and must be properly supported during removal and installation.

- Prior to 11/05 – (Ref. attached Drawing A5436) Remove two ¾” bolts from bottom section of clamps on both sides. Roller and clamps will slide down for removal. Reverse for installation.
- After 11/05 – (Ref. attached Drawing A6489) Remove two 3/8” Flat Head Screws from left/drivers side. Slide shaft out right/passenger side. If necessary, a 3/8”-16 bolt can be installed in right side threaded hole of the shaft to help pull the shaft out. Reverse for installation.

## Cable Replacement

- Reference attached file titled “Cable Replacement 1500”

# Main Hydraulic Control Valve - A20



The Control Valve Assembly for A20 Valve consists of the following parts:

Item #	Part #	Description	Qty
1	H2769	Valve Inlet Section	1
2	H4003	Valve Working Section (Standard)	3
2A	H3927	Valve Working Section With Air Cylinder	1
2B	H3943	Valve Working Section Single Acting	1
3	H4284	Valve Outlet Section Standard	1
3A	H3925	Valve Outlet Section With Power Beyond	1
Valve Working Section			
4	H1920	Screw Cap (A20 Valve)	2
5	H2488	Cap (A20 Valve)	1
6	H2232	Stripper Bolt	1
7	H2480	Spring Guide	2
8	H2476	Centering Spring	1
9	H2489	Retainer Plate	3
10	H2758	Ring Back Up	2
11	H2759	Spool Seal	2
12	H2760	Screw Retainer	2
13		Reference Spool	
14	H2771	Seal Valve	3
15	H2772	Seal Valve	1
16	H2496	Relief Valve Cartridge Assembly	1
17	H2233	Handle 8 in. Old Style With Linkage	1
18	M1233	Knob Ball	1
19	H2231	Linkage	1
20	H2490	Section Seal Kit	1
20A	H2491	Section & Spool Seal Kit (Square seals, Spool seals, Backup Rings)	1
21	P1337	Air Cylinder	1