



TRUCK BODIES & EQUIPMENT INTERNATIONAL, Inc.

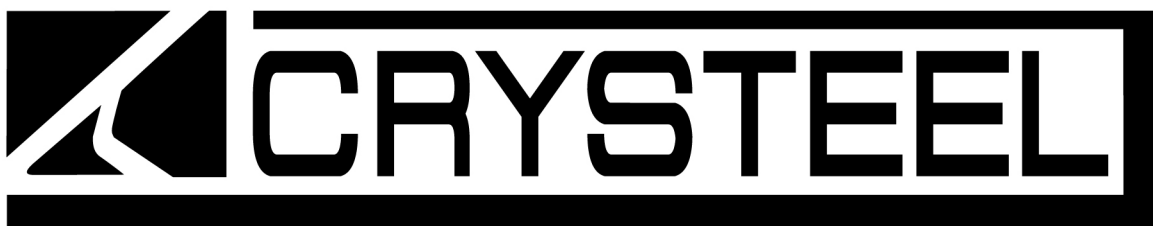
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# ***CRYSTEEL'S HIGH 'N SLIDE***

PATENT 8,414,083

## ***Multi-Purpose Dump Body Tailgate***



***THIS MANUAL MUST BE INCLUDED WITH THE VEHICLE  
AFTER COMPLETING THE INSTALLATION.***

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DATE PURCHASED \_\_\_\_\_

BODY SERIAL NUMBER \_\_\_\_\_

DEALER \_\_\_\_\_

ADDRESS \_\_\_\_\_

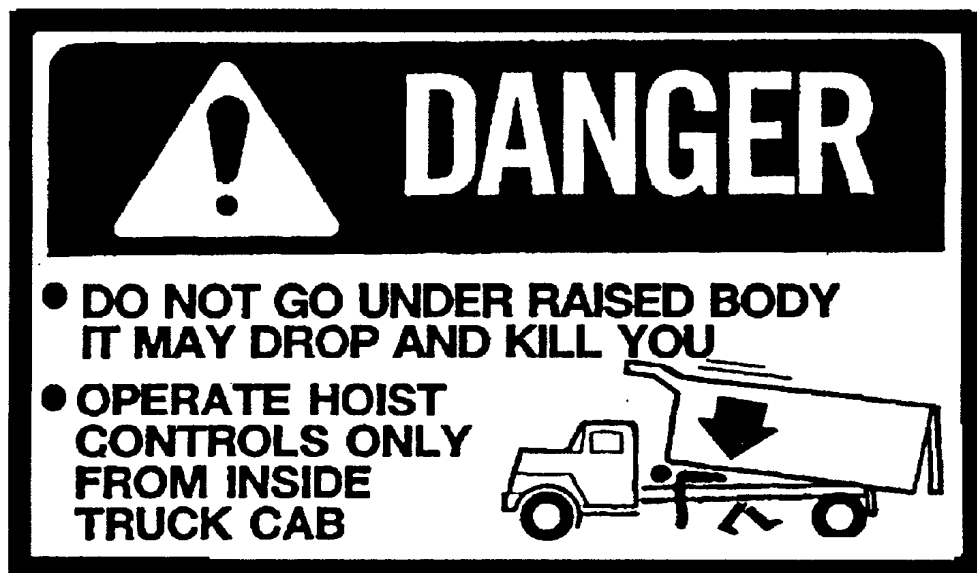
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## FOREWORD

The patent pending High and Slide dump body tailgate is multi-purpose. It can be used in conventional high lift or or metering modes. In high lift mode, hydraulic cylinders raise the tailgate high above bulky or heavy loads. This allows these types of loads to be easily dumped without hanging up on the tailgate or damaging it. In metering mode, hydraulic cylinders raise the tailgate straight up to control the amount of material flowing out of the body. The hydraulic cylinders could also be used to close the tailgate, stopping the flow.

This manual contains information for installing and connecting the hydraulic system to the High and Slide tailgate and for the operation of the tailgate. Study it carefully before attempting to install the hydraulic system or to use the High and Slide dump body tailgate. With proper installation, use, and regular maintenance, the High and Slide dump body tailgate will give many years of trouble free service.

When ordering parts, be sure to give serial number of the body. The serial number of the body is stamped into the front panel on the driver's side. For future reference, record this number NOW in the space provided above. Order parts by number and description as given in the parts listing in this manual.



## **OPERATION AND USE**

1. Engage PTO from cab and adjust engine speed to fast idle.
2. ALWAYS operate the hoist from inside the cab of the truck.
3. If the hydraulic hose connections are correct, the hoist should raise when the hoist control lever is pulled back, hold when the lever is in the center detent, and lower when the lever is pushed forward.
4. To raise the hoist, pull the control lever back. To hold the body in a raised position, place the control lever in its center detent position. To lower the hoist, push the control lever forward.
5. ALWAYS return the hoist control lever to its center detent position after each use.
6. When the hoist cylinder reaches the end of the stroke, oil will flow through the automatic bypass valve built into the piston inside the cylinder and return to the reservoir.
7. It is advisable to run the PTO to “power down” or lower the hoist because this will act as an hydraulic lock to hold the hoist in the lowered position. It is not necessary to do this, however, because the reservoir has sufficient capacity whether or not the hoist is powered down. You will benefit from the advantages of the double acting hoist only if you power down.
8. To make use of the hydraulic lock feature, place the hoist control lever in the center hold position after the hoist is powered down. This places the pressure on the valve, where it belongs, not on the pump.
9. DO NOT LEAVE THE PTO IN GEAR WHILE TRANSPORTING. THIS CAN CAUSE SEVERE DAMAGE TO THE PTO OR HYDRAULIC PUMP.
10. The hydraulic system should be drained, flushed and refilled with proper hydraulic fluid at regular intervals. CAUTION: NEVER use hydraulic BRAKE FLUID in the hydraulic system.
11. After adding or replacing the hydraulic fluid, cycle the hoist several times to remove air from the cylinders and hydraulic hoses.

## **SOME DO'S AND DON'TS FOR SAFE AND LONG SERVICE**

1. Use the proper hydraulic fluid. KEEP IT CLEAN. Remember to change it regularly.
2. Lubricate all grease fittings every 100 cycles or every two months. Infrequent or insufficient lubrication will cause hoist failure and possibly injury or death.
3. ALWAYS carefully block up the body, using the body prop, before working under it.
4. Do not “race” the engine when unloading.
5. Do not load the hoist beyond its capacity.
6. DO NOT tamper with the hydraulic relief valve. This will void the warranty. It can cause severe damage to the hoist and cylinder.
7. Never leave the PTO in gear while transporting. It could ruin the hydraulic pump, the PTO or the transmission.
8. Check all bolts and fittings regularly. Keep them tight. See table on page 4 for torque values.
9. Always operate hoist on a firm and level surface.
10. Always make sure area around truck is clear and safe for hoist operation and dumping.

## OPERATING THE HIGH AND SLIDE MULTI-FUNCTION TAILGATE

### **CAUTION!**

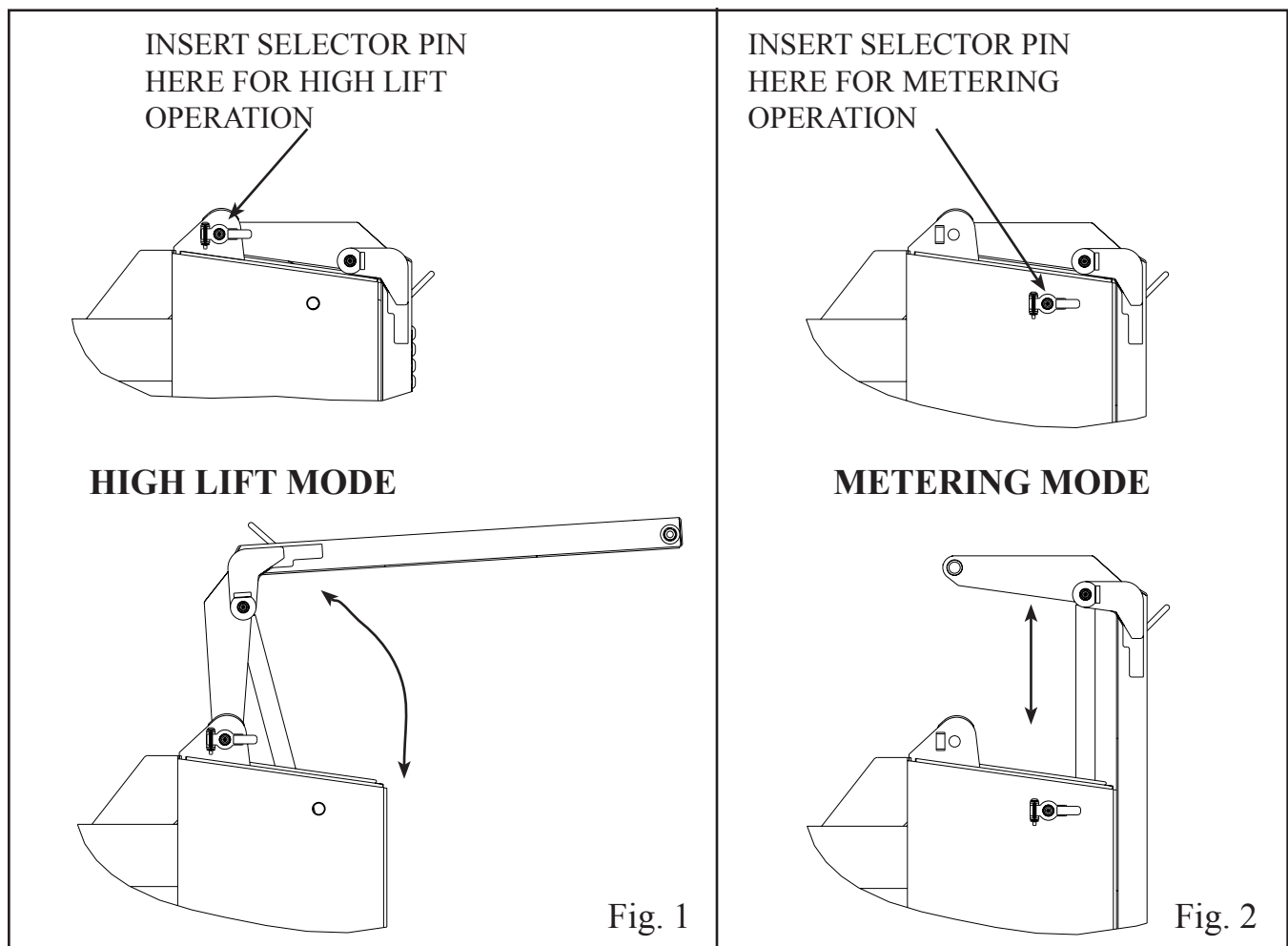
***MAKE SURE BOTH SELECTOR PINS ARE IN EITHER THE HIGH LIFT OR METERING LOCATIONS!***

***DO NOT OPERATE THE HIGH AND SLIDE IF ONE SELECTOR PIN IS IN THE HIGH LIFT POSITION AND THE OTHER PIN IS IN THE METERING POSITION!***

For normal tailgate operation, release the lower tailgate latch, raise the body to dump the load, lower the body and close the lower tailgate latch.

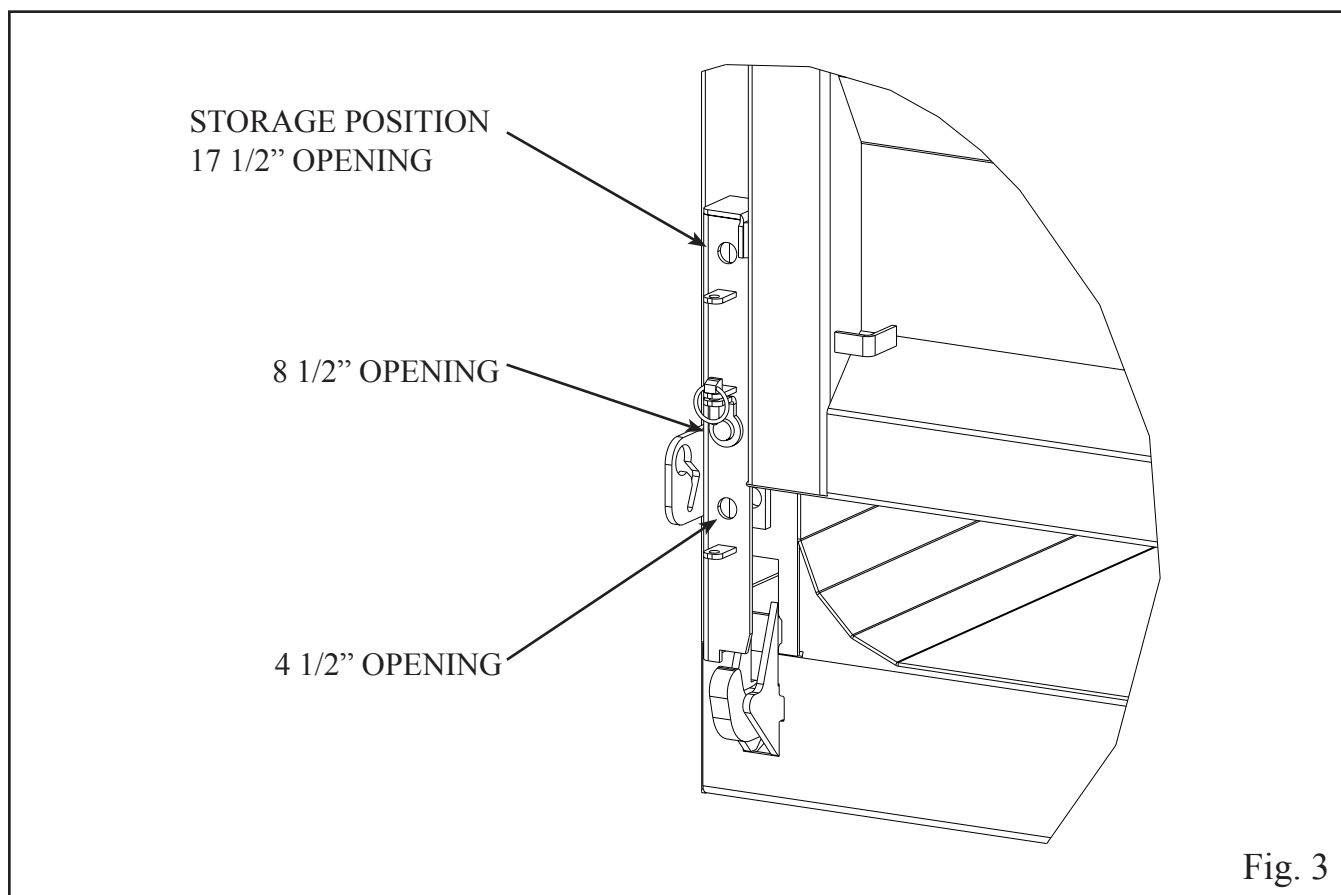
For high lift operation (See Fig. 1), insert the selector pins in the forward location as shown in Figure 1 in the following illustration, release the tailgate latch and actuate the switch to raise the tailgate. Raise the body to dump the load, lower the body, lower the tailgate and close the tailgate latch.

For metering operation (See Fig. 2), insert the selector pins in the rearward location as shown in Figure 2, actuate the switch to raise the tailgate. Do not release the tailgate latch. Raise the body to dump the load. In metering operation, the tailgate can be raised or lowered while the body is raised to increase or stop the flow of material out of the body.



In metering mode, stop pins can be inserted to limit the tailgate opening (See Fig. 3). The holes are located to provide openings of 4 1/2, 8 1/2 and 17 1/2 inches.

Insert the pins in the desired stop locations before raising the tailgate. Be sure both stop pins are located at the same height.



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


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# INSTALLATION INSTRUCTIONS

## GENERAL INFORMATION

It is a good idea to look through these installation instructions before beginning to mount the hoist and hydraulic system.

When welding, protect the truck's electrical, air and brake systems by disconnecting, removing or covering. Tighten all nuts and bolts to a consistent level. Use the following table for torque values.

| Size    | Grade 2 Torque  | Grade 5 Torque   | Grade 8 Torque  |
|---------|---|--|---|
|         |  |  |  |
| 1/4-20  | 3-4 lb-ft   | 6-7 lb-ft  | 10-11 lb-ft   |
| 1/4-28  | 4-5 lb-ft   | 8-9 lb-ft  | 11-12 lb-ft   |
| 5/16-18 | 8-9 lb-ft   | 14-15 lb-ft  | 21-22 lb-ft   |
| 5/16-24 | 9-10 lb-ft  | 15-16 lb-ft  | 21-22 lb-ft   |
| 3/8-16  | 17-18 lb-ft   | 24-26 lb-ft  | 37-40 lb-ft   |
| 3/8-24  | 19-20 lb-ft   | 28-30 lb-ft  | 40-43 lb-ft   |
| 1/2-13  | 38-42 lb-ft   | 60-65 lb-ft  | 90-100 lb-ft  |
| 1/2-20  | 43-47 lb-ft   | 70-75 lb-ft  | 95-105 lb-ft  |
| 5/8-11  | 75-80 lb-ft   | 122-130 lb-ft  | 180-190 lb-ft   |
| 5/8-18  | 85-90 lb-ft   | 145-150 lb-ft  | 200-210 lb-ft   |
| 3/4-10  | 132-140 lb-ft   | 220-230 lb-ft  | 315-330 lb-ft   |
| 3/4-16  | 152-160 lb-ft   | 250-260 lb-ft  | 355-370 lb-ft   |

The following abbreviations are used in describing hydraulic fittings.

|      |                           |
|------|---------------------------|
| ORBM | O-Ring Boss - Male Thread |
| NPTM | Pipe - Male Thread        |
| NPTF | Pipe - Female Thread      |
| JICM | JIC 37° - Male Thread     |
| JICF | JIC 37° - Female Thread   |

NOTE: TO MOUNT THE HOIST AND BODY, FOLLOW THE INSTRUCTIONS IN THE HOIST MANUAL. TO INSTALL THE HYDRAULIC SYSTEM, USE THE FOLLOWING INSTRUCTIONS.

## MOUNT VALVE MOUNT AND VALVE

The valve for the High and Slide dump body tailgate has two spools, one for the hoist, the second, solenoid operated, for the High and Slide tailgate. Determine where the valve should be located. Bolt the valve to the valve mounting bracket. Then clamp the valve mounting bracket to the truck frame. Mark the truck frame for drilling using the valve mounting bracket as a guide.

***CAUTION: BE CAREFUL OF BRAKELINES, WIRING. ETC. INSIDE THE TRUCK FRAME WHEN DRILLING THE TRUCK FRAME.***

Drill 17/32" holes in the truck frame and bolt the mounting brackets in place using 1/2 x 2 grade 8 cap screws and hex lock nuts, tightening to 90 to 100 lb-ft.

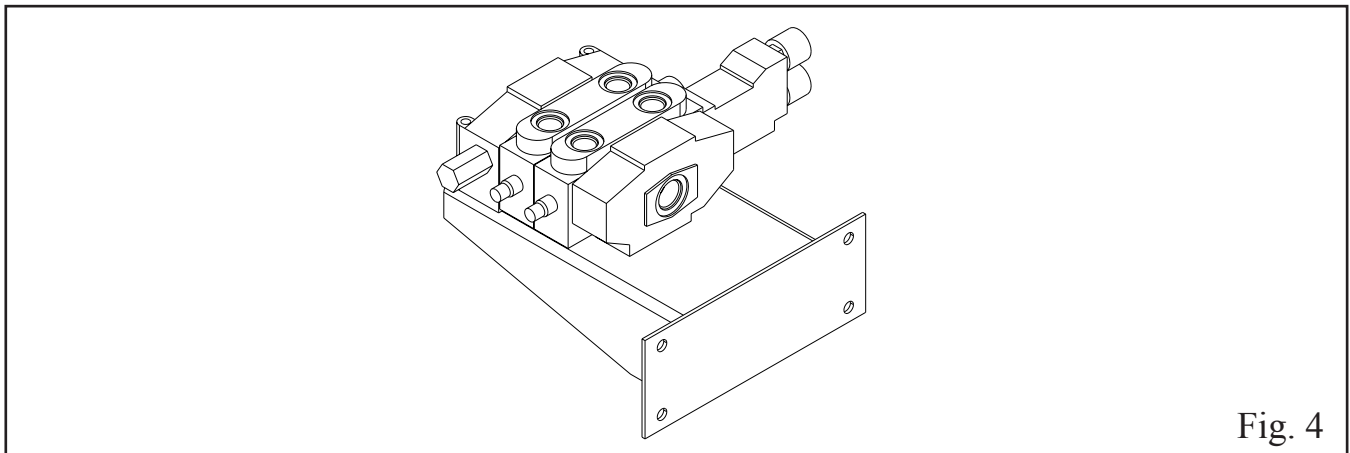


Fig. 4

## MOUNT RESERVOIR

Refer to the hoist installation manual for mounting the reservoir.



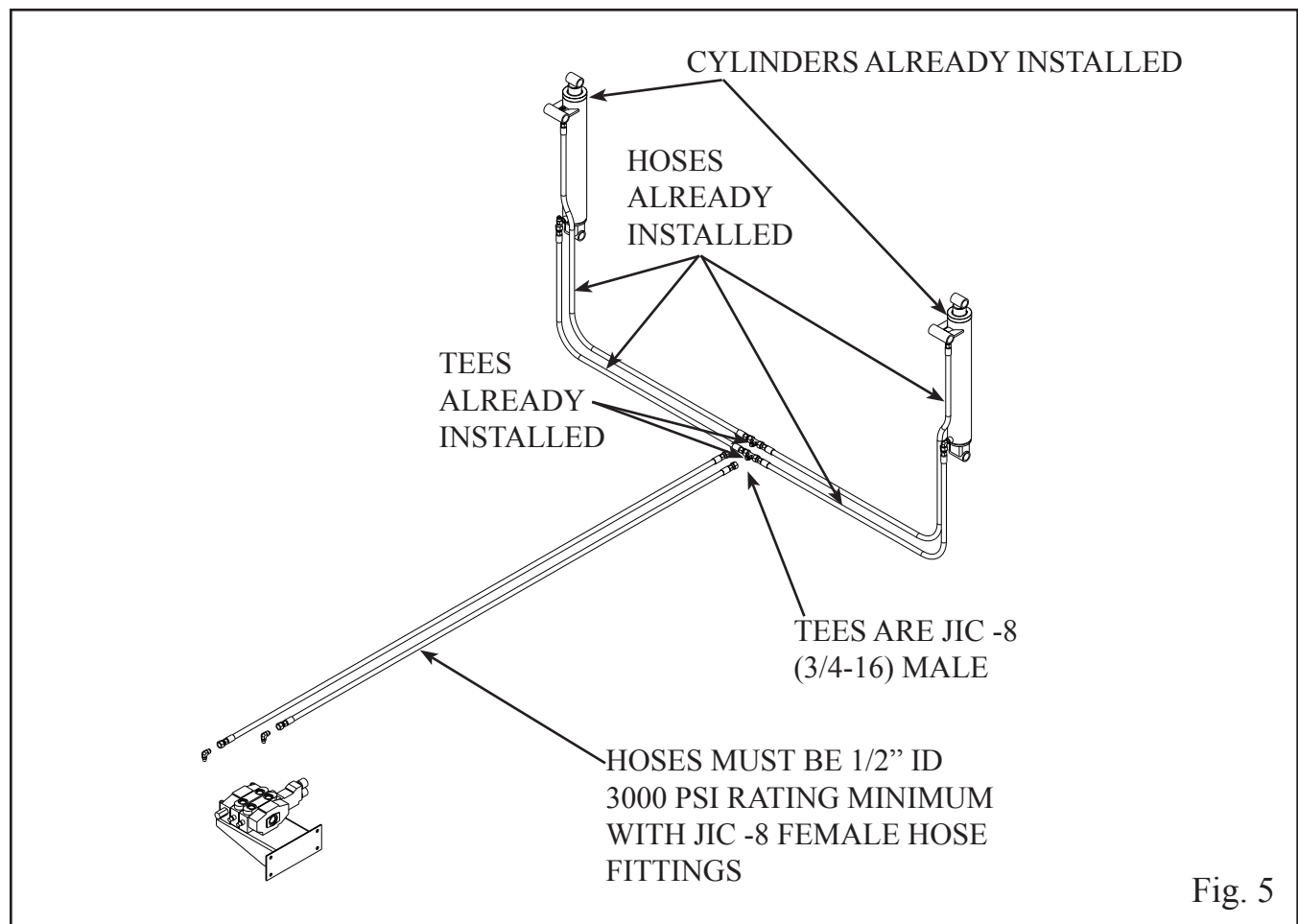
## INSTALL HOSES

Study the following illustration before installing any hoses.

Connect the suction hose from the bottom of the reservoir to the pump. Connect a hose from the pump to the PUMP port of the valve. Connect a return hose from the OUT port of the valve to the reservoir.

For the hoist, use the first valve section (next to the inlet section).

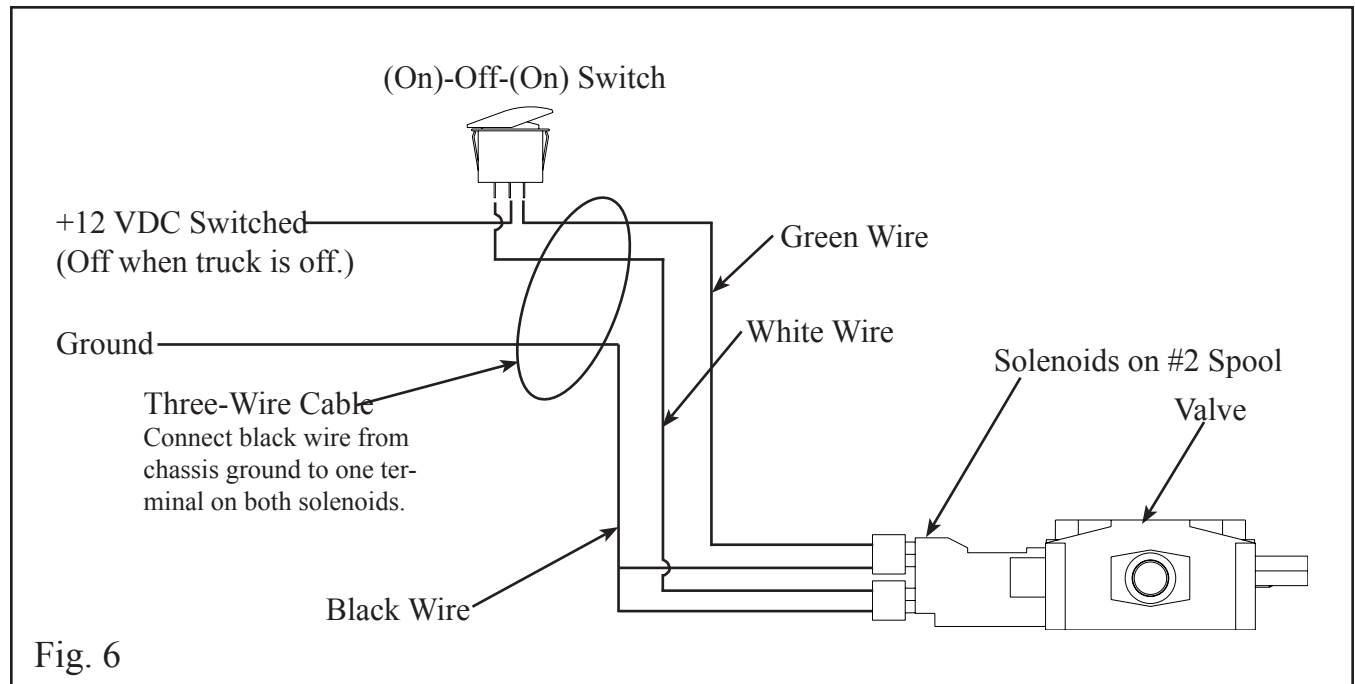
For the High and Slide cylinders, there are hoses already connected to the cylinders and joined with tees at the center of the body, near the rear of the body. Determine how the hoses between the valve and the tees should be routed along the truck frame. Then determine how long these hoses need to be. Make or have the hoses made and install them. See the illustration for the hose specifications.



## INSTALL WIRING

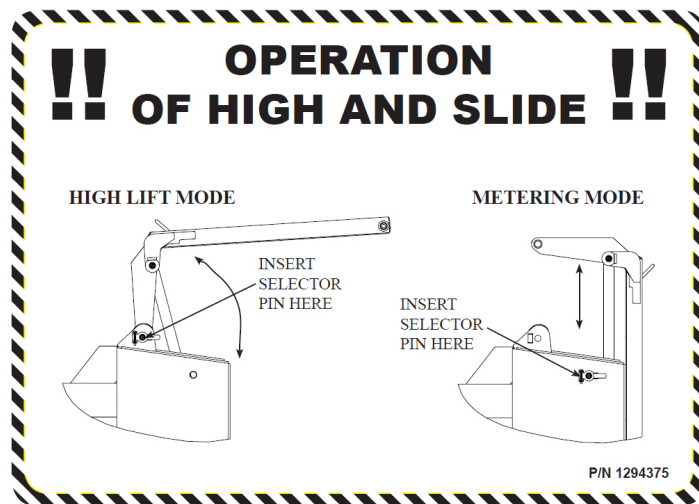
The following diagram shows the electrical connections necessary for operating the High and Slide tailgate.

Install a three position, momentary on, center off, momentary on, rocker switch in the control tower in the cab. Make a three-wire cable (16 ga minimum wires) to go from the control tower to the solenoids on the two spool valve. Connect the cable to the solenoids on the valve, to the switch and to chassis ground. Secure the cable to the chassis to prevent damage to the cable. Connect a wire from the middle terminal on the switch to a 12 volt power supply that is off when the truck is off.

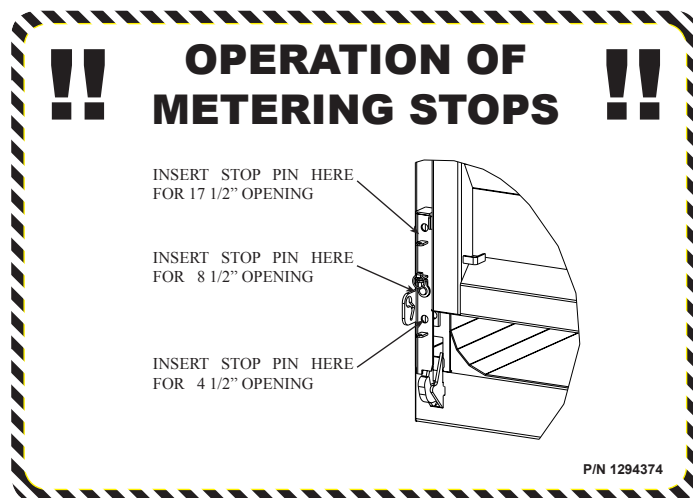


## MOUNT DECALS

Place on the side of the rear corner pillar, one on each side, near the selector pins.



Place on the tailgate, one on each side, near the stop pins.

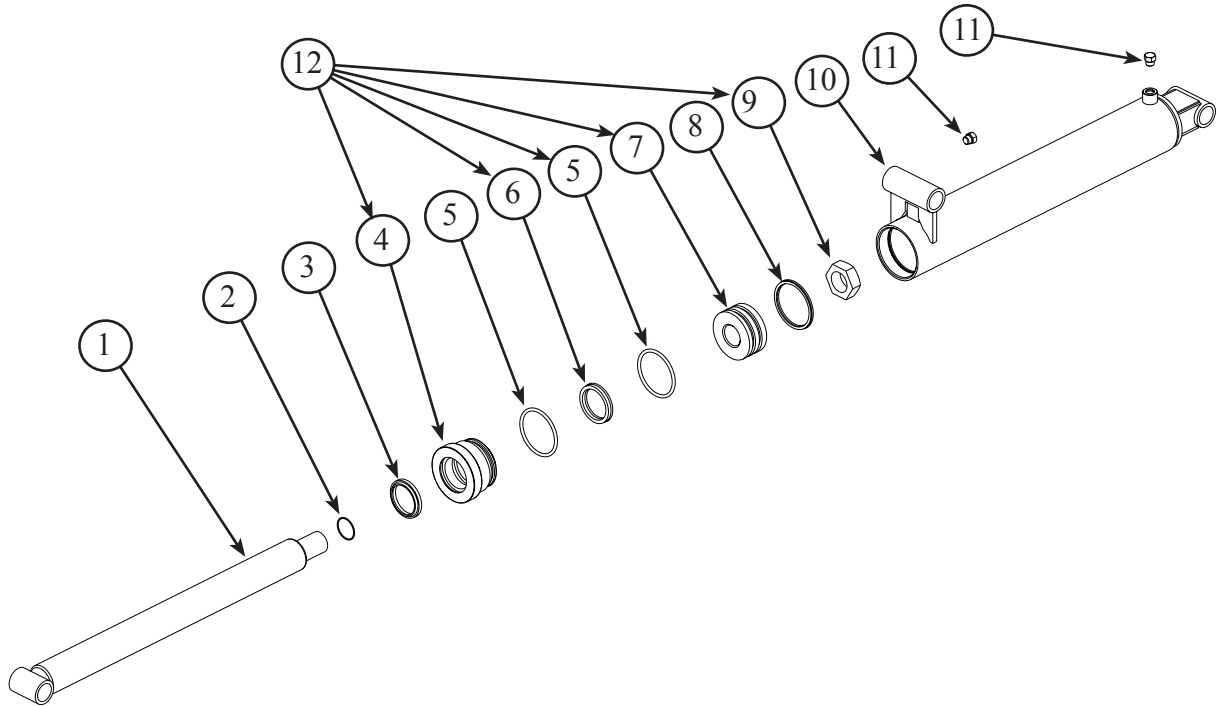


Place on the tailgate, in the middle, near the bottom.



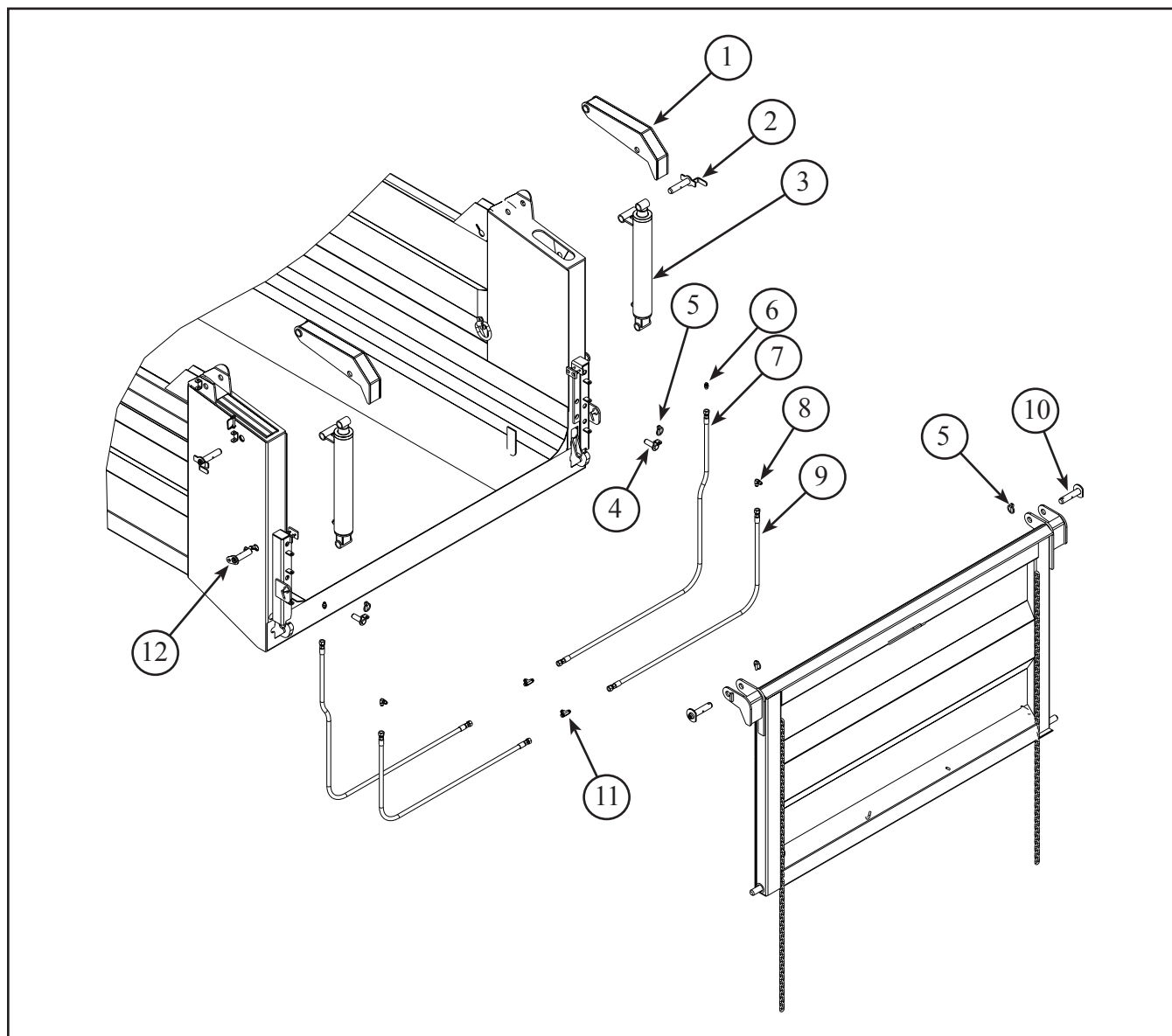
Fig. 7

## HIGH AND SLIDE CYLINDER PARTS



| ITEM | DESCRIPTION                      | NUMBER  | QTY |
|------|----------------------------------|---------|-----|
| 1.   | Cylinder Shaft Assy              | 1294348 | 1   |
| 2.   | O-Ring 1 1/2 ID X .070 CS        | 1642767 | 1   |
| 3.   | Wiper 2 1/4 ID                   | 1642879 | 1   |
| 4.   | Cylinder Head                    | 1272043 | 1   |
| 5.   | O-Ring 3 1/8 ID X .210 CS        | 1643381 | 2   |
| 6.   | Shaft Seal 2 1/4 ID X 1/4 X 38 B | 1642874 | 1   |
| 7.   | Cylinder Piston                  | 1272042 | 1   |
| 8.   | Piston Seal 3 1/2 OD X 1/4       | 1642782 | 1   |
| 9.   | Hex Jam Nut 1 1/2-12             | 1642995 | 1   |
| 10.  | Cylinder Tube Assy               | 1294347 | 1   |
| 11.  | Plug 9/16-18 ORB                 | 1642793 | 2   |
| 12.  | Cylinder Seal Kit                | 1294378 | 1   |

## HIGH AND SLIDE BODY PARTS



| ITEM | DESCRIPTION                     | NUMBER  | QTY |
|------|---------------------------------|---------|-----|
| 1.   | Assy Lift Arm Slct Hl Sldr      | 1291591 | 2   |
| 2.   | Assy Pin Upper Slct Hl Sldr     | 1272027 | 2   |
| 3.   | Assy Cylinder Slct Hl Sldr 10   | 1294346 | 2   |
| 4.   | Assy-pin-slider-stop            | 1279389 | 2   |
| 5.   | Pin Lynch 7/16 X 1 3/8          | 1643184 | 4   |
| 6.   | Adapter 9/16 Orbm X 3/4 Jicm    | 1643375 | 2   |
| 7.   | Hose 3/4 Jic X 84 Sf/sf 4000    | 1644007 | 2   |
| 8.   | Adapter 9/16 Orbm X 3/4 Jicm 90 | 1643544 | 2   |
| 9.   | Hose 3/4 Jic X 72 Sf/sf 4000    | 1643804 | 2   |
| 10.  | Assy Pin Tg Slct Hl Sldr        | 1272030 | 2   |
| 11.  | Tee 3/4 Jic Male                | 1644527 | 2   |
| 12.  | Assy Pin Lower Slct Hl Sldr     | 1272024 | 2   |

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## **CRYSTEEL MANUFACTURING'S 5 YEAR CUSTOMER SATISFACTION PLEDGE & WARRANTY**

Crysteel offers the most comprehensive warranty in the truck equipment industry. Crysteel warrants each product against defects in material and workmanship for 60 months from the in-service date.

For the full Customer Satisfaction Pledge and Warranty information, please visit our website.

<http://www.crysteel.com>

### **! CAUTION !**

- **BODY MUST BE BRACED BEFORE SERVICING HOIST OR WORKING IN AREA WITH BODY IN RAISED POSITION**
- **LUBRICATE HOIST GREASE FITTINGS OFTEN – AT LEAST EACH TIME TRUCK IS SERVICED**
- **TRUCK MUST BE LEVEL FOR DUMPING**
- **DO NOT OVERLOAD**

CRYSTEEL MFG, INC.

**CRYSTEEL MANUFACTURING, INC.**

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