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# **CRYSTEEL'S LO-BOY TRUCK HOIST LB520**



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

HOIST SERIAL NUMBER \_\_\_\_\_

CYLINDER SERIAL NUMBER \_\_\_\_\_

DEALER \_\_\_\_\_

ADDRESS \_\_\_\_\_

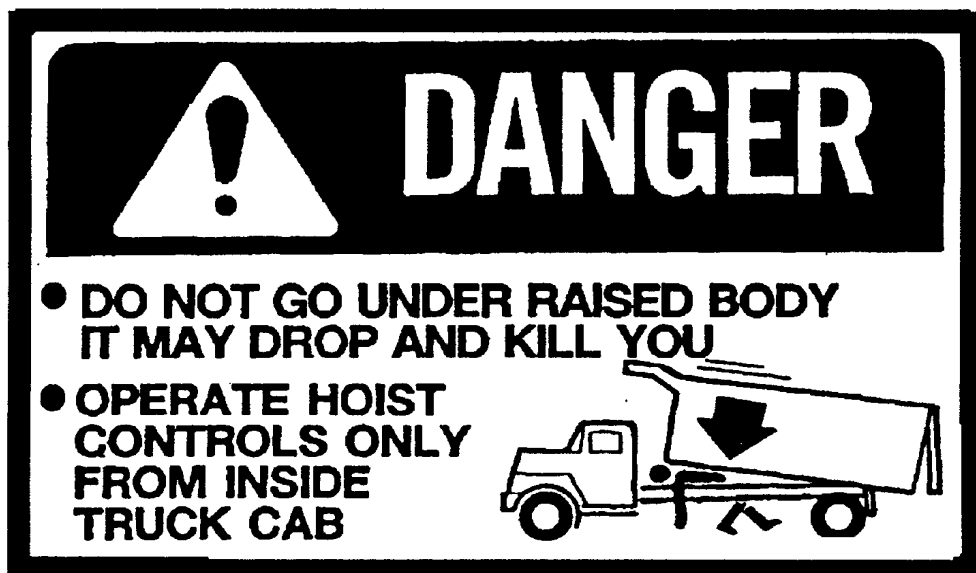
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### FOREWORD

Crysteel's LB520 Hoist has been designed and intended for use on single-axle trucks with cab-to-axle dimensions of 72 to 132 inches and body lengths of 9 to 16 feet.

This manual contains information necessary for the proper installation and operation of Crysteel's Model LB520 Hoist. Study it carefully before attempting to mount or use the hoist. With proper installation and maintenance, the Crysteel Model LB520 Hoist will give many years of trouble-free service.

When ordering parts, be sure to give serial number of hoist and cylinder. The serial number of the hoist is stamped into the hoist frame near the base end of the cylinder. The serial number of the cylinder is stamped on the barrel of the cylinder near the base. For future reference, copy these numbers 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.

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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

## INSTALLATION INSTRUCTIONS

### LOCATE HOIST-SUBFRAME ASSEMBLY ON TRUCK

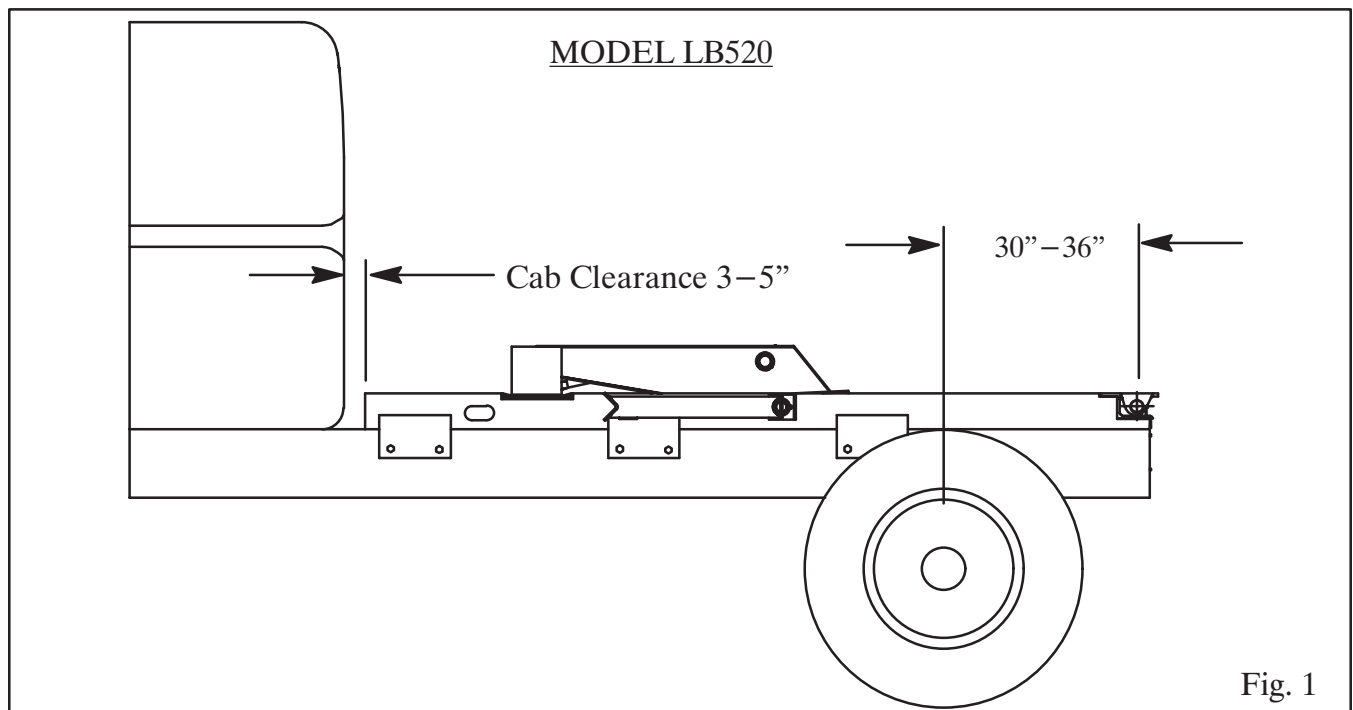
The hoist-subframe assembly is normally mounted to the truck before attaching it to the body.

For Ford trucks, with a 40 gallon rear fuel tank, and GM trucks, with a 32 gallon rear fuel tank, place the end of the subframe even with the end of the truck frame, 47 1/2 inches behind the center of the rear axle.

For Dodge trucks, with a 52 gallon tank, place the end of the subframe 3 inches ahead of the end of the truck frame.

For GM trucks with dual fuel tanks and for trucks with fuel tanks mounted under the cab or outside the frame just behind the cab, mark the truck frame 36 inches behind the center of the rear axle. This should be a minimum of 2 inches behind the rear spring hanger. The truck frame will be cut off at this mark.

*NOTE:* For GM trucks with a single 40 gallon, or larger, rear fuel tank, Crysteel recommends that no hoist be installed.



Make sure the marks for cutting the truck frame are accurate and even from side to side. Cut off the truck frame and grind the ends smooth. Place the subframe on the truck making sure it is even with the end of the truck frame, centered side to side and square with the truck frame. There should be 3 or 3 1/2 inches clearance between the back of the cab and the front end of the subframe.

*NOTE:* If the truck frame has rivets in the top flange, add spacers between the truck frame and subframe, or counter sink the rivet heads into the subframe by drilling holes in the subframe. Do not remove the rivet heads!

## LOCATE BODY/HOIST ASSEMBLY ON TRUCK

Use the following installation procedures when the body and hoist have been assembled at the factory.

Place the body and hoist assembly on the truck frame so there is 3 to 5 inches of cab clearance. Now, check the location of the back end of the subframe. It should be a minimum of 2 inches behind the rear spring hanger. The truck frame will need to be cut off even with the back end of the subframe rails, as shown in Fig. 3.

If the truck is a Ford F450 or F550 or a GM 4500 or 5500 with the 32 gallon fuel tank, then the back edge of the rear hinge should be flush with the end of the truck frame. If the truck is a Dodge Ram 4500 or 5500, then the end of the subframe should be 3 inches ahead of the end of the truck frame.

*NOTE:* For GM trucks with a single 40 gallon, or larger, rear fuel tank, Crysteel recommends that no hoist be installed.

Block up the back end of the body/hoist assembly and cut the truck frame as marked.

*NOTE:* If the truck frame has rivets in the top flange, add spacers between the truck frame and subframe, or counter sink the rivet heads into the subframe by drilling holes in the subframe. Do not remove the rivet heads!

## LOCATE MOUNTING PLATES

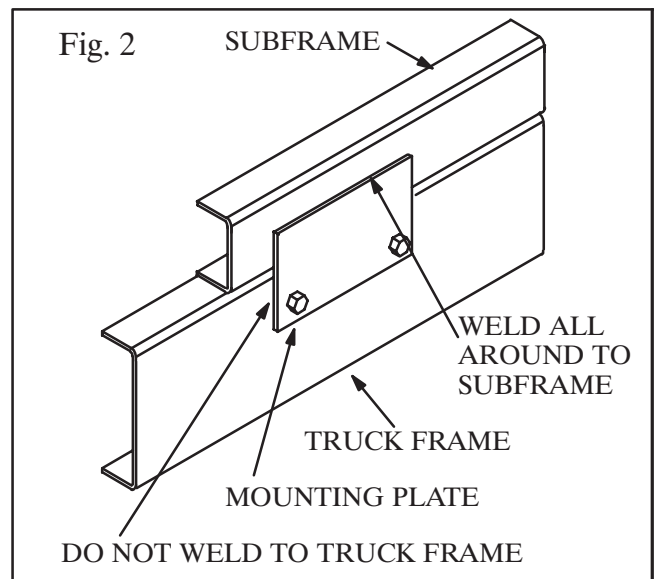
There are six mounting plates, three for each side - one at the front of the subframe, one at the hoist mount and one between the hoist mount and the rear hinge. Clamp the mounting plates to the truck frame and to the subframe as shown in Figures 1 and 2. If desired, locate the plates to use existing holes in the frame. Mark the mounting plates for drilling. Repeat this for the other side.

For Dodge trucks, where the subframe is offset forward from the end of the truck frame, be sure to locate the rear mounting plate within 2 inches of the rear hinge.

## DRILL TRUCK FRAME

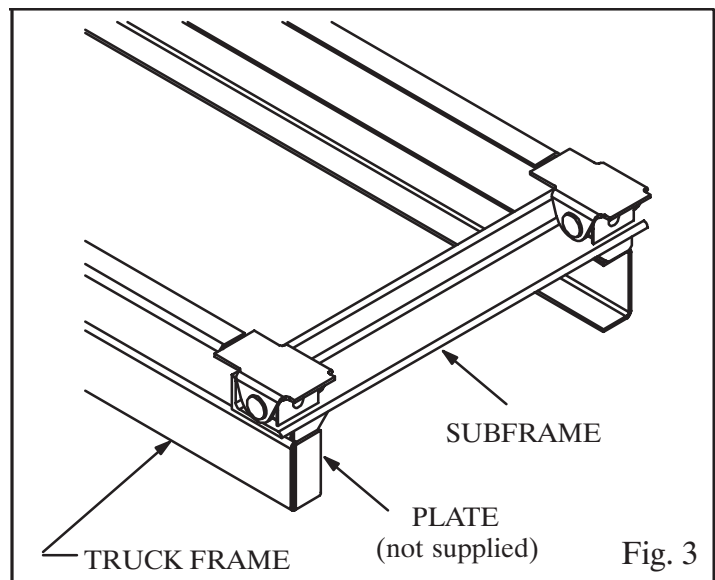
Drill 21/32" holes in the mounting plates and the truck frame. Bolt the mounting plates in place using 5/8 x 2 cap screws (grade 8) and hex lock nuts, tightening to 180-190 lb-ft.

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



## WELD REAR HINGE AND SUB-FRAME

Make sure the body/hoist assembly or hoist/subframe assembly is correctly located, centered on and square with the truck frame. Securely weld the mounting plates to the subframe. Add a plate (not supplied) to the end of the truck frame rail. (See Fig. 3.) Securely weld the plates to the end of the truck frame rails and to the back end of the subframe. Do this on both sides.



## SUPPORT FUEL FILL TUBE

If necessary, construct supports for the fuel tank fill tubes. Construct the support so that it does not interfere with any portion of the body or hoist operation.

## HYDRAULIC PUMPS

Crysteel offers two different hydraulic systems for use with the Model LB520 Hoist. Mounting instructions can be found on the pages shown:

PTO driven Gear Pump with Remote Reservoir/Valve  
Electric Pumps - General  
Electric Pumps - Double-Acting

Page 8  
Page 12  
Page 13

## MOUNT GEAR PUMP

The standard 4 GPM gear pump has an SAE 'A' mounting configuration, a 9 tooth splined shaft and a two-bolt mounting flange, and is assembled for counterclockwise rotation. NOTE: This pump will mount directly to Chelsea's output type 'XE' or Muncie's output type 'R'. Crysteel Manufacturing recommends a PTO ratio of 100-120%. This assures a minimum pump operating speed of 600 RPM. CHECK THE ROTATION OF THE PTO! If it is opposite of the engine, then the pump can be used as it is. If the PTO rotation is the same as the engine, then the pump will need to be reversed. (See instructions included with the pump.) Bolt the gear pump to the PTO output flange using 3/8 x 1" cap screws and lock washers.

A gear pump with an 11-tooth splined shaft is also available to fit the Muncie and Chelsea PTOs with 11-tooth splined outputs.

The optional 6 GPM gear pump has an SAE 'B' mounting configuration, a 13 tooth splined shaft and a four-bolt mounting flange, and is assembled for rotation in either direction. NOTE: This pump will mount directly to Chelsea's output type 'XK' or Muncie's output type 'D'. Crysteel Manufacturing recommends a PTO ratio of 100-120%. This assures a minimum pump operating speed of 600 RPM. Bolt the gear pump to the PTO output flange using 1/2 x 1 1/4 cap screws and lock washers.

## MOUNT RESERVOIR/VALVE ASSEMBLY

The reservoir/valve assembly should be mounted on the same side of the truck as the pump and as high as possible for reliable pump performance. The slotted end of the valve spool should be towards the front of the truck so the valve control cable can be easily connected. The mounting brackets for the reservoir/valve assembly can be used to mount the reservoir/valve assembly outside the truck frame or inside between the truck frame rail and the driveshaft. Determine where to mount the reservoir/valve assembly and bolt the mounting brackets to the reservoir/valve assembly using 3/8 x 1 cap screws, flat washers and hex lock nuts. Locate the reservoir/valve assembly and clamp the mounting brackets to the truck frame. See Fig. 4. If inside the truck frame, make sure there is enough clearance for the drive line and hot exhaust pipes. **THE ENGINE EXHAUST MUST NEVER BLOW DIRECTLY ONTO THE RESERVOIR/VALVE ASSEMBLY.** Insert the spacers in the mounting brackets and mark the truck frame for drilling using the pump mounting brackets as guides

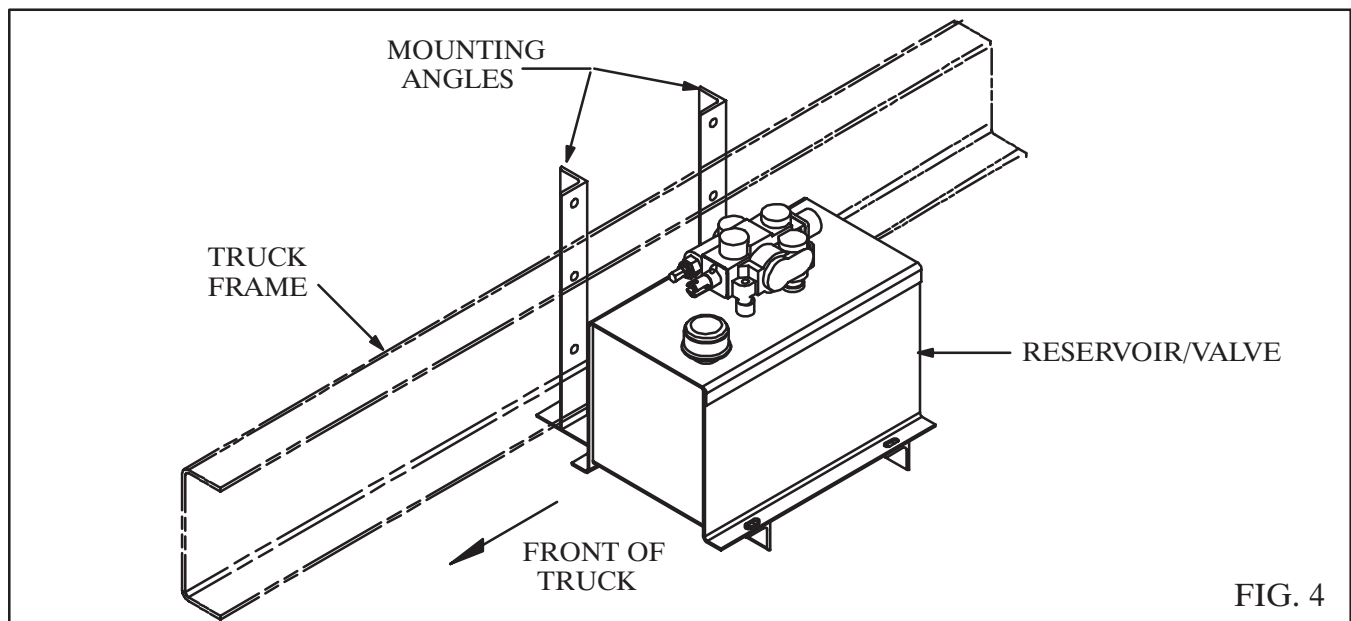


FIG. 4

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

## INSTALL REMOTE VALVE CONTROL

Temporarily assemble the valve control head to the pedestal using 5/16 x 2 1/4" machine screws and hex nuts. Place this assembly on the floor of the cab. Make sure there is enough room to operate the valve control and the gear shift lever and to adjust the seat. Check below the floor for obstructions and cable routing. Relocate the valve control if necessary. Mark the floor using the pedestal as a template and drill 1/4" holes for the mounting screws and a 3/4" hole for the control cable. Assemble the control cable to the valve control head and assemble the valve control head and cover to the pedestal using 5/16 x 2 1/4" cap screws and hex lock nuts. Insert the control cable through the hole in the floor and mount the pedestal to the floor using 5/16 x 1/2 machine screws and hex lock nuts. Make sure the valve control lever is in its center detent position. Keep the control cable away from hot exhaust pipes and rotating drive shafts. The control cable should not have any sharp bends or kinks in it (these will make the control harder to operate).

Install the 3/4" hex jam nut onto the valve end of the control cable and turn it past the threads. Insert the

end of the cable through the bonnet clamp. Install the bonnet onto the control cable and turn it past the threads also. Install the 1/4" hex jam nut and terminal eye on the core rod of the cable. Lock the terminal eye to the core rod of the cable using the hex jam nut. Place the terminal eye in the slot of the valve spool; insert the short pin through the valve spool and terminal eye and secure it in place with the 'E' ring.

Thread the bonnet onto the end of the cable so it firmly touches the end of the valve. (Do not over- or under-tighten the bonnet as either would move the valve spool out of its neutral position.) Remove two cap screws from opposite corners of the seal retainer plate. Slide the bonnet clamp onto the bonnet and secure it to the valve using the 1/4 x 1 1/4" cap screws, lock washers and flat washers. Lock the bonnet to the cable using the 3/4" hex jam nut. See Fig. 5.

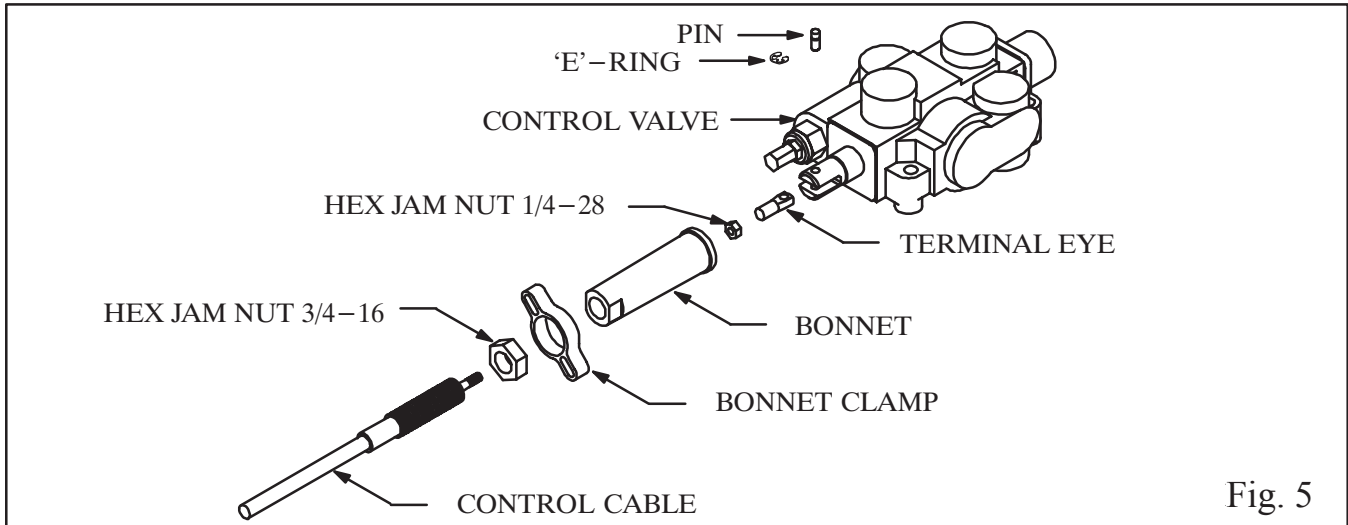


Fig. 5

### INSTALL PUMP HOSES - 4 GPM

Study Fig. 6 very carefully before connecting the hoses. Install a 3/4" 90° street elbow and a 3/4" hose barb in the suction port on the bottom of the reservoir. Install a 1 1/16 ORB x 3/4" hose barb in the suction port of the pump and install a 3/4" ID suction hose. Secure the suction hose in place using hose clamps. Install a 1 1/16 ORB x 1/2 NPT 90° swivel adapter in the 'IN' port of the control valve and a 7/8 ORB x 1/2 NPT adapter in the pressure port of the pump. Connect a 72" long 1/2" ID hose between the pump and the valve.

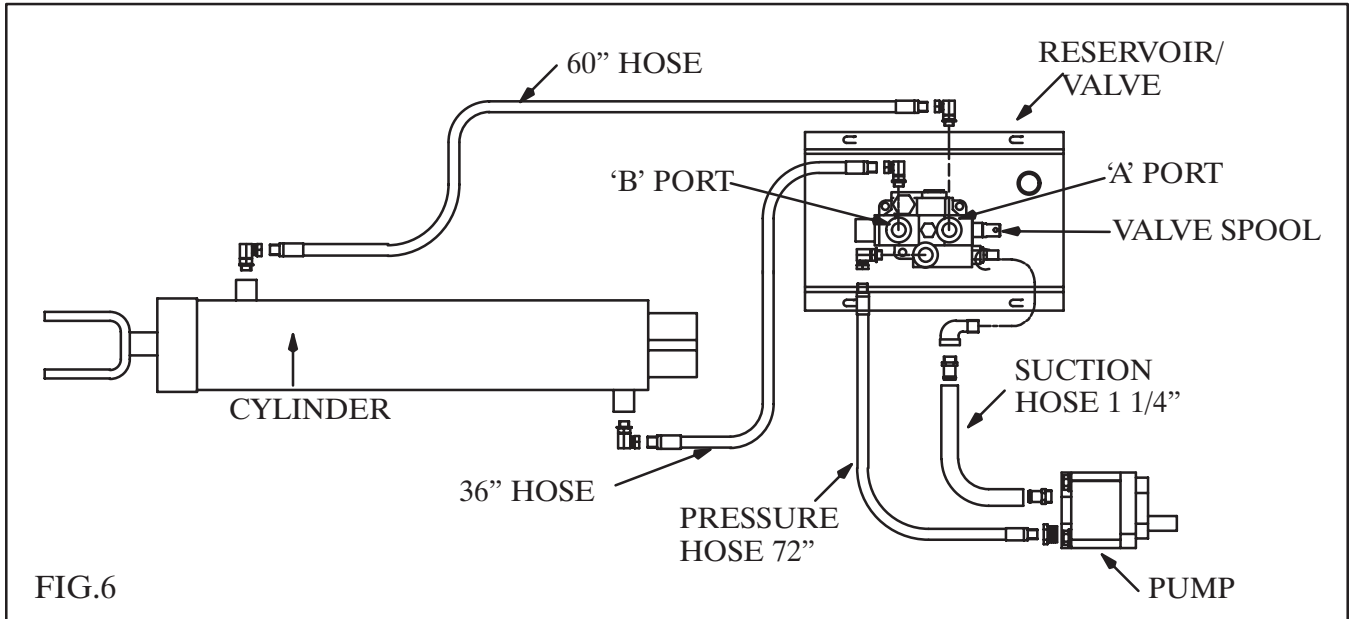
### INSTALL PUMP HOSES - 6 GPM

Study Fig. 6 very carefully before connecting the hoses. Install a 3/4" 90° street elbow and a 3/4" hose barb in the suction port on the bottom of the reservoir. Install a 3/4" hose barb in the suction port of the pump and install the suction hose. Secure the suction hose in place using hose clamps. Install a 1 1/16 ORB x 1/2 NPT 90° swivel adapter in the 'IN' port of the control valve and install a 3/4 x 1/2 hex reducer in the pressure port of the pump. Install a 72" long 1/2" ID hose from the pump to the valve.

## INSTALL CYLINDER HOSES - GEAR PUMP SYSTEMS

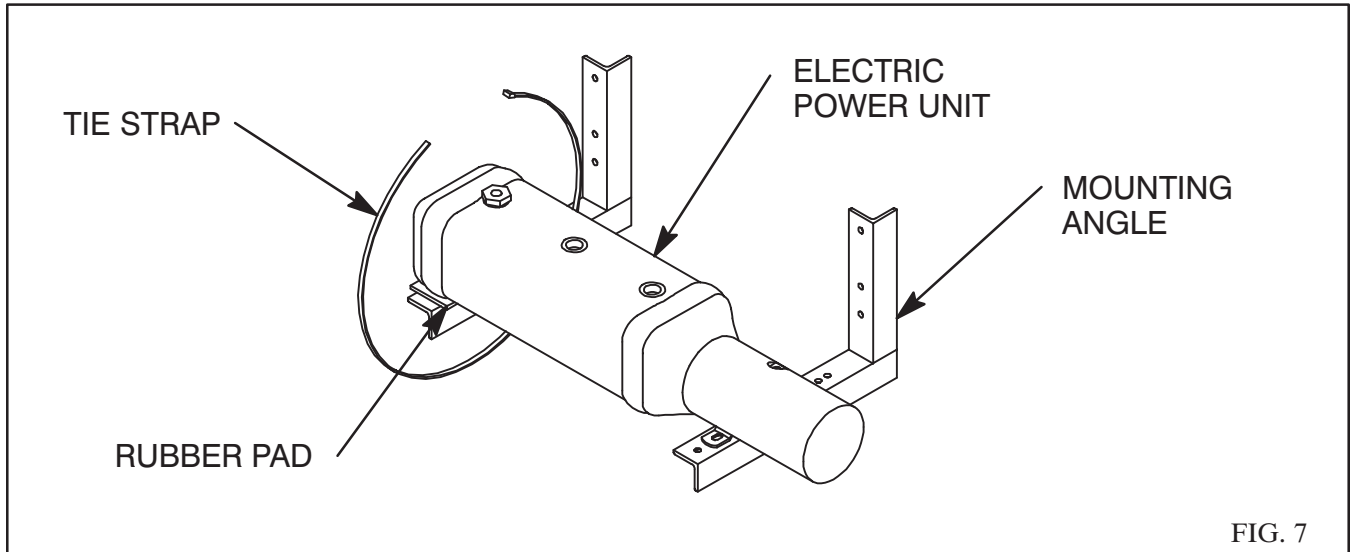
Install 90° swivel adapters in the work ports of the control valve and in the ports on the cylinder. Connect the 36" long 1/2" ID hose with 7/8 JIC fittings, from the 'B' port on the control valve to the base end port on the cylinder. Connect the 60" long 1/2" ID hose with 7/8 JIC fittings, from the 'A' port on the control valve to the rod end port on the cylinder. This will raise the hoist when the control lever is pulled back and lower it when pushed forward.

NOTE: The 'A' port is the 'power-down' port and has a pressure of only 500-1000 PSI; the 'B' port has full system pressure.



## ELECTRIC PUMP MOUNTING - GENERAL

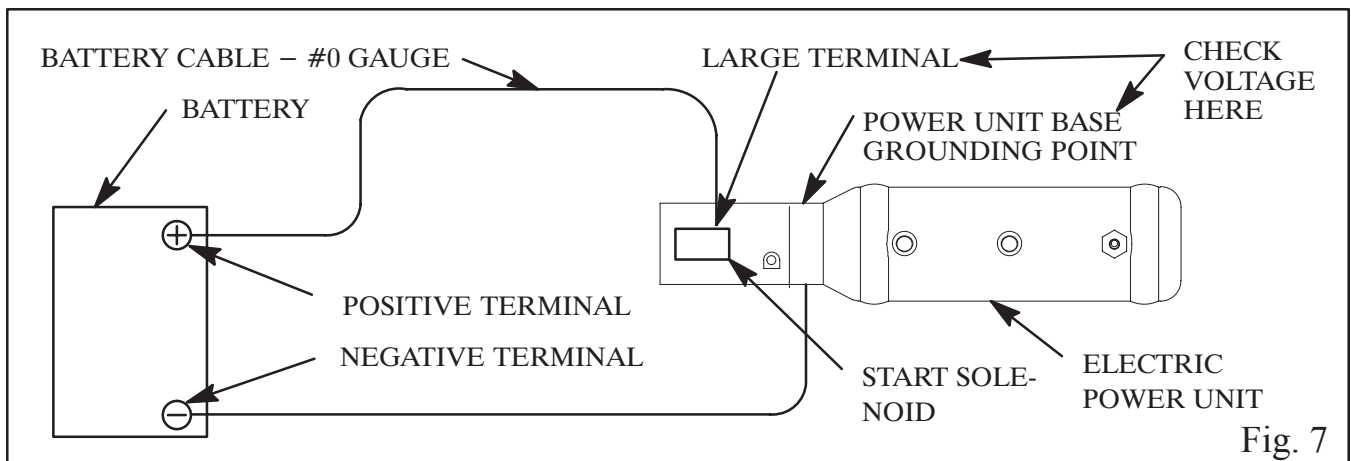
The electric power unit should be mounted close behind the cab, either inside or outside the truck frame. After determining where to mount the power unit, bolt one mounting angle to the power unit using the 3/8 x 1 hex head cap screws, tightening to 24 to 26 lb-ft. Clamp the mounting bracket to the truck frame. Clamp the second mounting angle to the truck frame so it supports the far end of the reservoir. Mark the truck frame for drilling using the pump mounting angles as guides.



***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 reservoir/valve assembly in place using 1/2 x 2 3/4 cap screws and hex lock nuts, tightening to 90 to 100 lb-ft.

For rated performance, the voltage at the power unit must be a minimum of 12VDC. This should be measured between the large terminal of the start solenoid (where the battery cable is connected) and the power unit base, where it is bolted to the mounting bracket. NOTE: Grounding of the power unit is just as important as the installation of the positive battery cable. It is easier to get a good ground by using a second battery cable.



Connect the large terminal on the motor start solenoid to the positive terminal on the battery with a #0 gauge battery cable. Grounding of the power unit can be completed either through the vehicle chassis or by a second battery cable. If grounding through the vehicle chassis, be sure to replace the light ground strap between the battery and the vehicle chassis with a #0 gauge cable. If grounding with a second battery cable, connect the negative terminal on the battery to the grounding hole on the power unit base using an #0 size battery cable. See Figure 7. Check the voltage between the large terminal on the start solenoid and the power unit base.

Locate the push-button control in the cab and route the cable out of the cab through a hole in the back of the cab. Connect the push-button control to the electric power unit using the 3- or 4-pin connector set.

## **ELECTRIC PUMP INSTALLATION - DOUBLE-ACTING**

Install 9/16 ORB x 3/4 JIC 90° swivel adapters in both work ports on the electric pump. If needed, for good hose routing, install 3/4 JIC x 3/4 JIC 90° swivel adapters to both of these adapters. Connect the shorter 3/8 ID hose with 3/4 JIC fittings from the 'C1' port on the pump to the base end port on the cylinder. Connect the longer 3/8" ID hose with 3/4 JIC fittings from the 'C2' port to the rod end port.

*NOTE: The 'C2' port is the power down port and has only 500 PSI maximum pressure.*

## **ADD HYDRAULIC OIL**

Use a quality hydraulic fluid of 150 SSU @ 100° F which contains corrosion and oxidation inhibitors and a foam depressant. This is approximately the equivalent of SAE 10W or lighter weight oil. Dexron automatic transmission fluid should be used in the electric pumps. Fill the hydraulic reservoir using the following table.

Standard Gear Pump w/Valve Tank .....	4 Gals.
Electric - Double Acting .....	7 Qts.

***KEEP THE OIL CLEAN. USE CLEAN CONTAINERS, FUNNELS AND OTHER EQUIPMENT!***

## **POWER HOIST DOWN**

Before mounting the body, the hoist must be completely closed to make certain that the hoist gives full lift height and performance. Make sure the lift angles are straight up and down.

For hydraulic systems with the direct mount gear pump, start the truck engine, engage the PTO and power down the hoist to "bottom-out" the hydraulic cylinder and the hoist frame. Place the hoist valve control in the "hold" position. Both the hoist frame and the hydraulic cylinder are now completely closed.

For hydraulic systems with the double-acting electric pump, press and hold the 'DOWN' push-button on the control to "bottom-out" the hydraulic cylinder and the hoist frame. Release the 'DOWN' push-button. Both the hoist frame and the hydraulic cylinder are now completely closed.

## INSTALL TIPPER BODY ON TRUCK

Place the Tipper body on the subframe so the front of the body and the front end of the subframe are even. Make sure there is sufficient clearance between the body and the reservoir/valve assembly. Relocate the reservoir/valve assembly if necessary. Carefully align the body longbeams to the subframe rails. Securely weld the rear hinge bracket to the longbeams. Securely weld the hoist lift plates to the boxed-in sections of the longbeams.

***DO NOT WORK UNDER A RAISED BODY UNLESS THE BODY IS SECURELY BLOCKED OR PROPPED IN THE RAISED POSITION.***

If the body and subframe have been assembled at the factory, finish welding the hoist lift brackets to the fill plates on the inside of the longbeams.

## INSTALL OTHER BODY ON TRUCK

Study the diagram in Fig. 7 before installing the body. Make sure there is enough clearance under the body for the hoist to fit. The inside of the longbeams should be boxed in to provide a flat surface for welding the body and hoist together. Carefully measure the location of the hoist lift plate and mark this location on the inside of the longbeams and box in the inside of the longbeams. Place the body on the truck with 3 to 5 inches of clearance behind the cab. Make sure there is sufficient clearance between the body and the reservoir/valve assembly. Relocate the reservoir/valve assembly if necessary. Carefully align the body longbeams to the subframe rails. Securely weld the rear hinge bracket to the longbeams. Securely weld the hoist lift plates to the boxed-in sections of the longbeams.

***DO NOT WORK UNDER A RAISED BODY UNLESS THE BODY IS SECURELY BLOCKED OR PROPPED IN THE RAISED POSITION.***

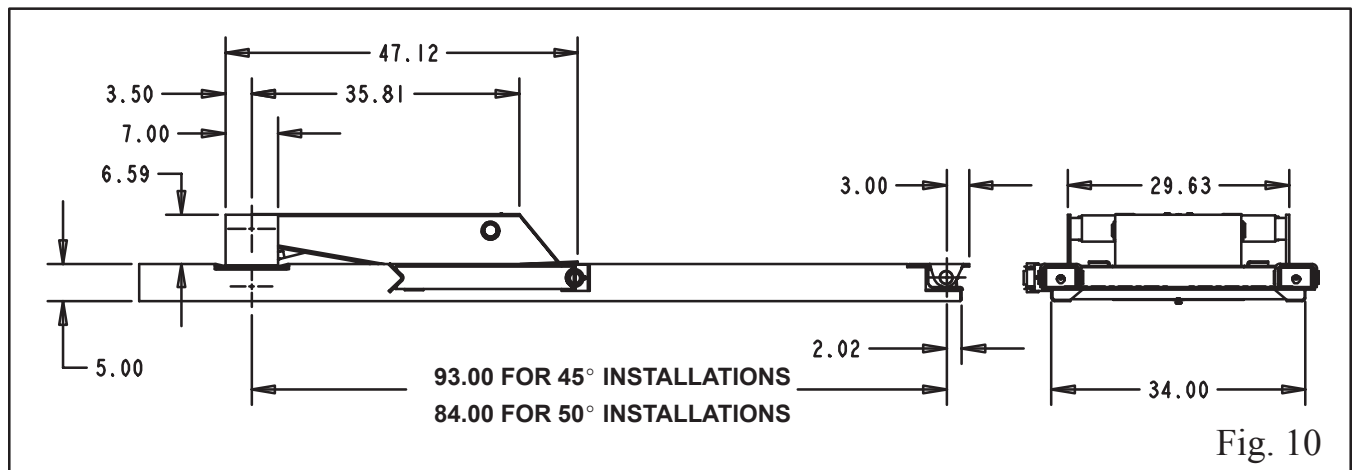
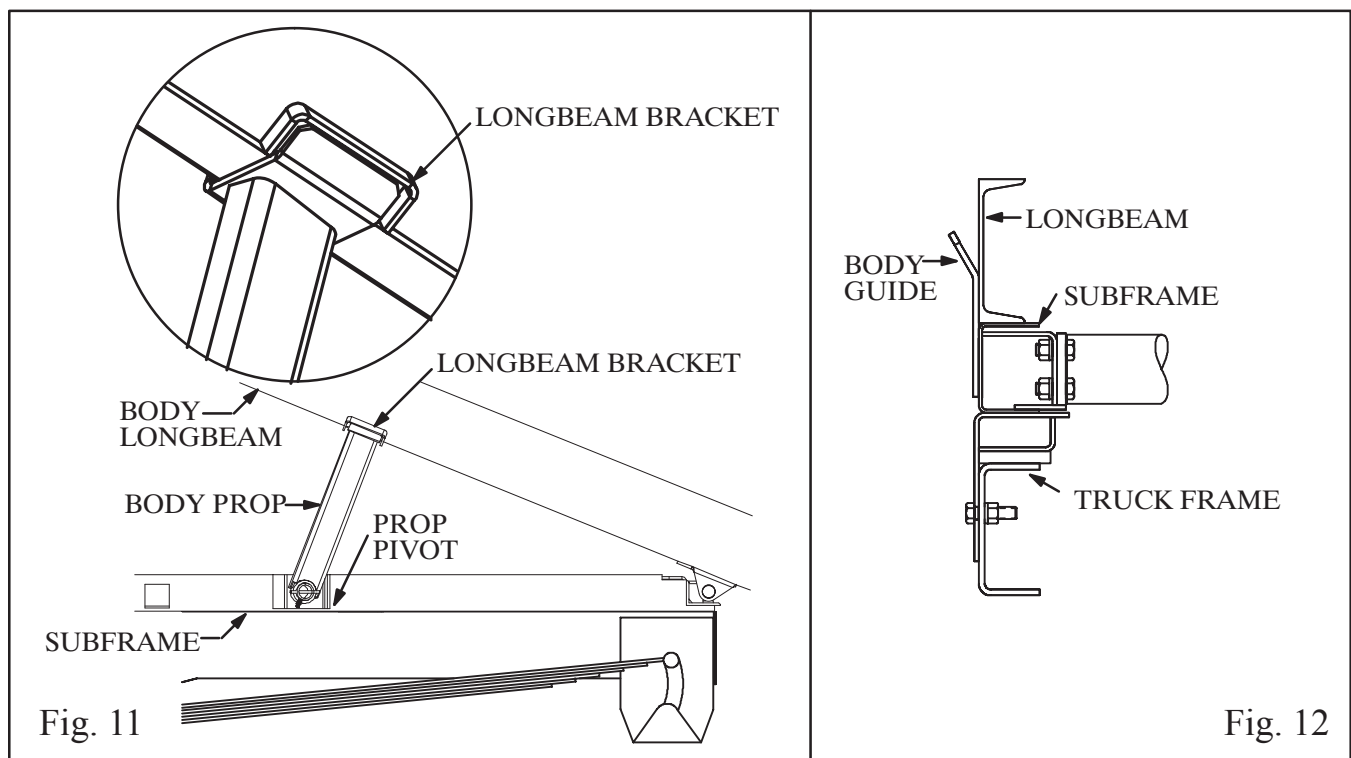


Fig. 10

## INSTALL BODY PROP BRACKET ON BODY LONGBEAM

The body prop is designed and intended to support an EMPTY truck body in the raised position. Using the body prop permits service work to be performed safely beneath a raised body. It is mounted on the outside of the subframe on the driver's side.

1. Raise the body more than half way up.
2. Raise the prop arm to a free standing position by allowing the prop arm to rest against the rear flange of the prop pivot. The top of the prop arm will swing in under the longbeam.
3. Slowly lower the body until the bottom of the longbeam rests on the body prop saddle. Place the longbeam bracket against the outside of the longbeam so the legs straddle the prop arm saddle. Securely weld this bracket to the body. (See Fig. 11.)
4. To operate the body prop, raise the body to the desired height, shut off all power, raise the prop arm to a free standing position. Lower the body slowly until the longbeam bracket contacts the prop arm saddle. **DO NOT POWER HOIST DOWN!**
5. To place the body prop in the storage position, raise the body to clear the body prop saddle, lower the body prop to the storage position and lower the body.



## INSTALL BODY GUIDES

Two body guides have been included and should be mounted near the front of the subframe. Clamp the body guides to the outside of the subframe as shown in Fig. 12. The body guide should be tight against the outside of the longbeams of the body. Securely weld the body guides to the subframe.

## INSTALL GREASE ZERKS AND LUBRICATE HOIST

Install grease zerks on the hoist and lubricate the hoist in the following locations:

Upper Crosstube.....	2	Fittings
Lower Crosstube.....	2	Fittings
Cylinder Base Pivot.....	1	Fitting
Rear Hinge.....	(already installed) 2	Fittings
Body Prop.....	(already installed) 1	Fitting

Lubricate all fittings at regular intervals, at least each time the truck chassis is lubricated. There are extremely high forces on the bearings surfaces within the hoist frame. It pays to be generous in lubricating the hoist to insure proper operation and long life.

The center hinge and the cylinder crosshead do not need to be greased. These pivot points are equipped with self lubricating composite bearings that do not need lubrication.

ONE OF THE MOST COMMON REASONS FOR HOIST PROBLEMS IS FAILURE BY THE OPERATOR TO LUBRICATE THE HOIST.

## INSTALL DECALS

After the body and hoist have been installed and painted, install the decals in the following locations:

1. Decal 400640 Mount in the cab above the valve control.
2. Decal 400719 Mount on the body longbeam near the body prop. (one on each side)
3. Decal 400661 Mount on the body prop arm.
4. Decal 401576 Mount on the outside of the body longbeams near the front of the body. (one on each side).
5. Decal 400643 Mount on the body longbeam on the drivers side.
6. Decal 401577 Mount in the cab in a prominent location.
7. Decal 400642 Mount in the cab in a prominent location.

See the illustrations on the following page for decal identification. (See Fig. 11.)


**⚠ OPERATION OF BODY PROP ⚠**

1. Raise body to full height and shut off all power.
2. Raise prop to upright position.
3. Lower body slowly until body bracket contacts prop.
4. **DO NOT POWER HOIST DOWN.**

400719

**⚠ DANGER**

- DO NOT GO UNDER RAISED BODY IT MAY DROP AND KILL YOU
- OPERATE HOIST CONTROLS ONLY FROM INSIDE TRUCK CAB



401576

**⚠ 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

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400643

**⚠ DANGER**

- DO NOT GO UNDER RAISED BODY IT MAY DROP AND KILL YOU
- OPERATE HOIST CONTROLS ONLY FROM INSIDE TRUCK CAB



401577

**⚠ CAUTION ⚠**

- BODY MUST BE BRACED BEFORE SERVICING HOIST OR WORKING IN AREA WITH BODY IN RAISED POSITION
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400642

**DOUBLE ACTING VALVE**  
**OUT - RAISE; CENTER - HOLD; IN - LOWER**  
**TO USE HYDRAULIC LOCK-DOWN**

CONTINUE POWER DOWN UNTIL RELIEF VALVE BY-PASSES; THEN SET IN "HOLD" POSITION.

400640

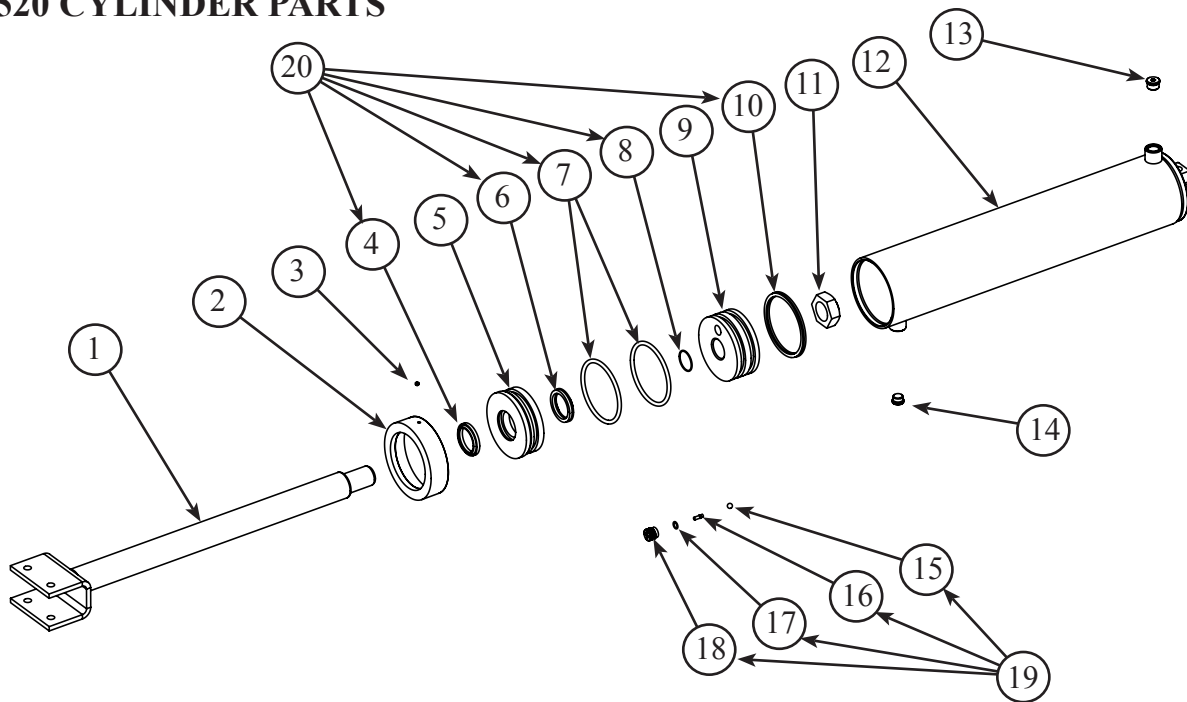
**⚠ CAUTION ⚠**

**UNLOAD BODY BEFORE USING BODY PROP.**

400661

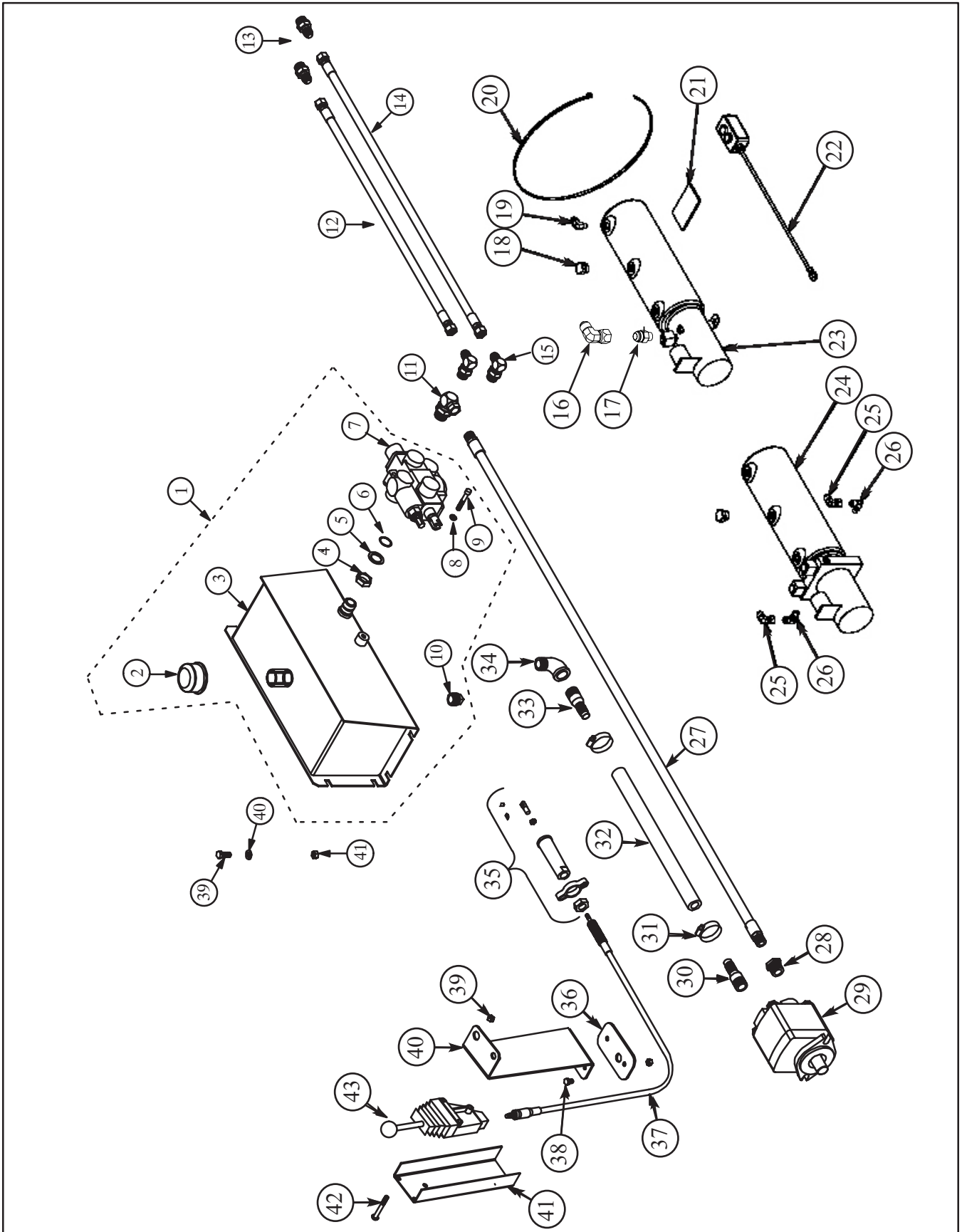
Fig. 13

## LB520 CYLINDER PARTS



ITEM	DESCRIPTION	LB520	QTY
1.	Cylinder Shaft Assy	104321	1
2.	Cap Ring	279990	1
3.	Set Screw 1/4 x 3/16	400149	1
4.	Wiper	400913	1
5.	Cylinder Head	289667	1
6.	Shaft Seal	400253	1
7.	O-Ring	400254	2
8.	O-Ring	400255	1
9.	Cylinder Piston	202461	1
10.	Piston Seal	400252	1
11.	Hex Jam Nut	401370	1
12.	Cylinder Tube Assy	104316	1
13.	Plug 7/8-14 ORB	400449	1
14.	Plug 3/4-16 ORB	400436	1
15.	Ball 3/8	400013	1
16.	Bypass Valve Pin	400979	1
17.	O-Ring	401017	1
18.	Bypass Valve Body	400978	1
19.	Bypass Valve Kit	105185	1
20.	Cylinder Seal Kit	107960	1
21.	Cylinder Assy	104242	

# HYDRAULIC SYSTEM PARTS

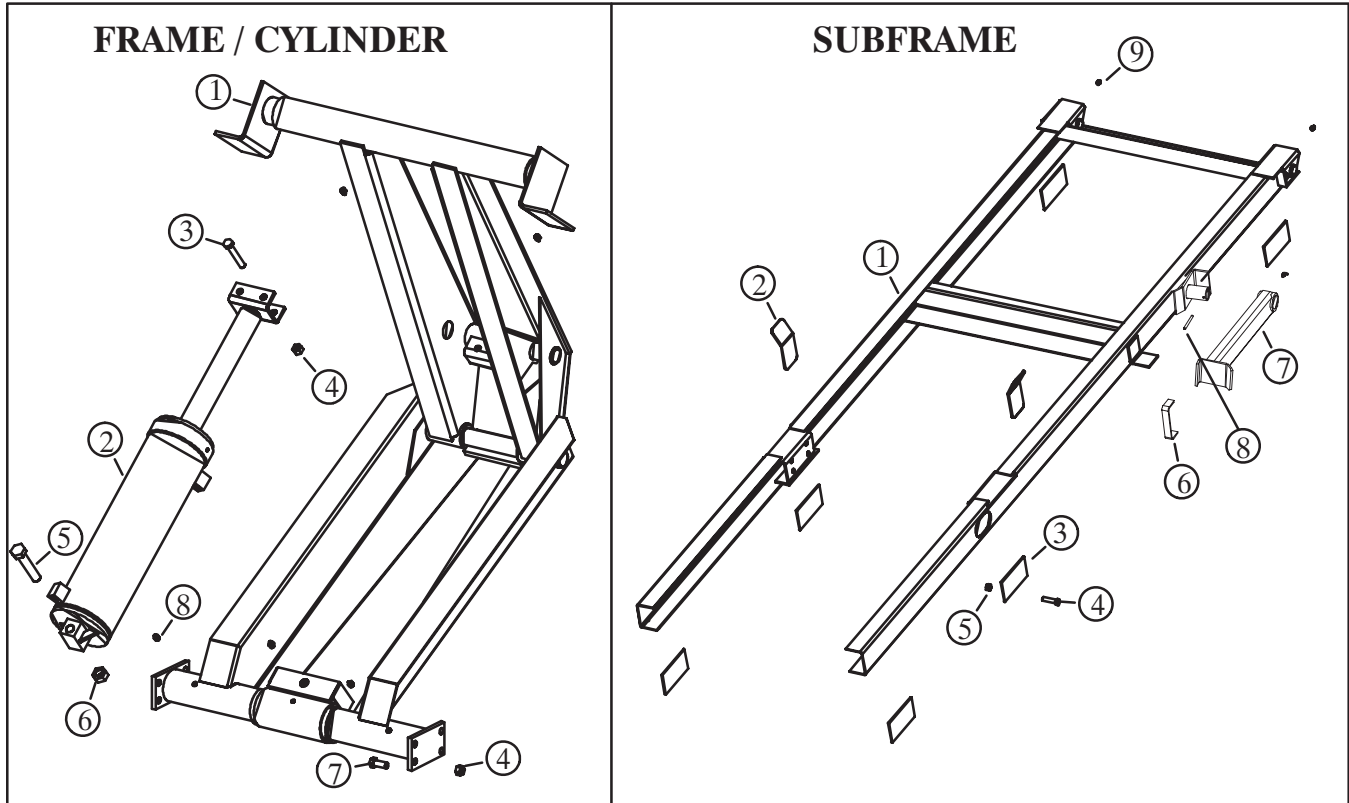


ITEM	DESCRIPTION	PART NO.	QTY.
1.	Reservoir/Valve Carton 15 Qt 3250 PSI (includes items 2 through 10)	125803	1
2.	Breather Cap	407125	1
3.	Reservoir Weldment 15 Qt	124998	1
4.	Hex Jam Nut 7/8-14	402094	1
5.	Cone Washer 7/8	402095	1
6.	O-Ring .755 ID x .097 CS	402096	1
7.	Control Valve 12 GPM 3250 PSI -8 Port	402813	1
8.	Lock Washer 1/4	400163	1
9.	Cap Screw 1/4-20 x 1 3/4 Gr 5	401546	1
10.	Pipe Plug 3/4 Magnetic	400405	1
11.	Adapter 7/8 ORBM x 3/8 NPTF 90°	401200	1
12.	Hose 3/4 JIC x 30" SF/SF 4000 PSI	405604	1
	Hose 3/4 JIC x 54" SF/SF 4000 PSI	405605	1
13.	Adapter 9/16 ORBM x 3/4 JICM	402516	2
14.	Hose 3/4 JIC x 48" SF/SF 4000 PSI	402490	1
	Hose 3/4 JIC x 72" SF/SF 4000 PSI	404906	1
15.	Adapter 3/4 ORBM x 3/4 JICM 90°	402487	2
16.	Adapter 3/4 JICM x 3/4 JICM 90°	403448	1
17.	Adapter 9/16 ORBM x 3/4 JICM	402516	1
18.	Breather Cap, Splash Resistant	406752	1
19.	Adapter 3/4 JICM x 1/4 NPTM 90°	402510	1
20.	Cable Tie - 33"	404956	1
21.	Rubber Pad 1/4 x 3 x 5	405319	1
22.	Push-Button Control - DA 78"	1200095	1
	Push-Button Control - SA 78"	1200093	1
23.	Electric Power Unit - SA	1200094	1
24.	Electric Power Unit - DA	1200097	1
25.	Adapter 3/4 JICM x 3/4 JICM 90°	403448	2
26.	Adapter 9/16 ORBM x 3/4 JICM 90°	403447	2
27.	Hose 3/8 NPT x 72" RM/RM 4000 PSI	401444	1
28.	Adapter 7/8 ORM x 3/8 NPTF	400478	1
29.	Gear Pump 4 GPM - 9 Tooth	407817	1
	Gear Pump 4 GPM -11 Tooth	407818	1
30.	Hose Barb 1 1/16 ORBM x 3/4	402146	1
31.	Hose Clamp #24	401441	2
32.	Suction Hose 3/4 ID x 72"	404911	1
33.	Hose Barb 3/4 NPTM x 3/4	401447	1
34.	Pipe Elbow 3/4 Street	402144	1
35.	Valve Connection Kit - Prince 4100	403171	1
36.	Clamp Plate, Pedestal	225127	1
37.	Cable, Valve Control - 96"	402122	1
	Cable, Valve Control - 72"	402121	1
	Cable, Valve Control - 84"	402419	1
	Cable, Valve Control - 120"	402123	1
	Cable, Valve Control - 144"	402124	1

ITEM	DESCRIPTION	PART NO.	QTY.
	Cable, Valve Control - 180"	402125	1
38.	Machine Screw 5/16-18 x 1/2	402415	2
39.	Hex Lock Nut 5/16-18	401240	5
40.	Pedestal Bracket, Short - RVC	223143	1
41.	Pedestal Channel, Short - RVC	223144	1
42.	Machine Screw 5/16-18 x 2 1/2	402154	3
43.	Remove Valve Control w/ Center Detent (RVC)	402120	1

### NOTES

## FRAME & CYLINDER AND SUBFRAME PARTS



ITEM	DESCRIPTION	LB520	QTY
1.	Hoist Frame Assy	134574	1
2.	Cylinder Assy	104242	1
3.	Cap Screw 1/2-13 x 3 3/4 Gr 8	400138	2
4.	Hex Lock Nut 1/2-13	401316	14
5.	Cap Screw 3/4-10 x 4 1/2 Gr 8	401225	1
6.	Hex Lock Nut 3/4-10	401226	1
7.	Cap Screw 1/2-13 x 1 1/4 Gr 8	400153	8
8.	Grease Zerk 1/8 NPT	400103	7
9.	Frame & Cylinder Assy	134573	1

ITEM	DESCRIPTION	LB520	QTY
1.	Subframe Assy - 9' 50°	150996	1
	Subframe Assy - 10' 50°	150997	1
	Subframe Assy - 11' 50°	150998	1
	Subframe Assy - 12' 50°	150999	1
	Subframe Assy - 14' 50°	151000	1
	Subframe Assy - 10' 45°	151001	1
	Subframe Assy - 12' 45°	151713	1
	Subframe Assy - 14' 45°	152960	1
2.	Body Guide	222812	2
3.	Mounting Plate	227988	2

ITEM	DESCRIPTION	LB520	QTY
4.	Cap Screw 5/8-11 x 2 Gr 8	402374	12
5.	Hex Lock Nut 5/8-11	401582	12
6.	Body Prop Longbeam Bracket	276942	1
7.	Body Prop Arm Assy - Left	150520	1
8.	Spring Pin 1/4 x 3	400220	1
9.	Grease Zerk 1/8 NPT	400103	2
10.	Grease Zerk 1/8 NPT 90°	400117	1

**NOTES**

## CUSTOMER SATISFACTION PLEDGE

Crysteel's Customer Satisfaction Pledge is designed to be the most comprehensive warranty in the truck equipment industry. This pledge covers new products for a period of five (5) years, and is not restricted by vehicle mileage or when product is invoiced to our distributors. Our warranty begins when our product is put into service by the final customer.

This warranty covers our products for defective material and/or workmanship at a rate of 100 % for the first (3) years and at a rate of 50 % for years 4 and 5. This warranty covers:

- Crysteel Manufactured product
- OEM Products purchased by Crysteel as part of our product
- The repair of warranted product
- The replacement of warranted product
- Labor to replace warranted product
- Freight for replacement product
- Warranted product return freight (if required)

This warranty is limited to product supplied under the Crysteel Mfg. name and does not cover distributor modifications. Repair or replacement is at Crysteel's option. Primer warranty is limited to adherence to metal surfaces only and does not include the inside or understructure of dump bodies. Crysteel will not assume responsibility for travel, loss of use, downtime expenses or other incidental or consequential damages. This warranty is void if the product has been obviously abused or subjected to other than normal usage. There are no other warranties except as described above, and Crysteel makes no warranty of fitness for a particular purpose.

## **! CAUTION !**

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