TRUCK BODIES & EQUIPMENT INTERNATIONAL, Inc.

Website: www.TBEI.com
E-mail: sales@TBEI.com

CRYSTEEL'S LO-BOY TRUCK HOIST LB520

CRYSTEEL

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

Web Site
www.crysteel.com

E-Mail
crysteel@tbei.com

Phone (507) 726-2728
Toll Free (800) 533-0494

1643725H (404416)

2020-09-28

DATE PURCHASED _____

HOIST SERIAL NUMBER _____

CYLINDER SERIAL NUMBER _____

DEALER _____

ADDRESS _____

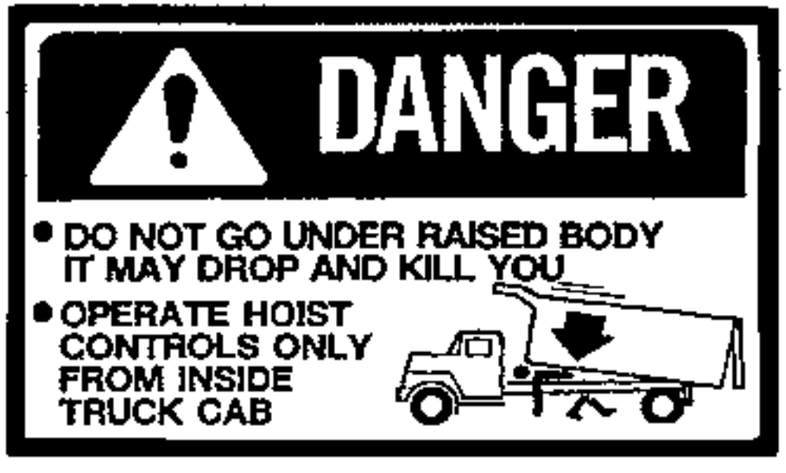
PHONE _____

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.



OPERATIONANDUSE

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.

SOMEDO'SANDDON'TSFORSAFEANDLONGSERVICE

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.

TABLE OF CONTENTS

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, 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 Ram trucks with a 52 gallon rear fuel tank, and GM trucks with a 40 gallon rear fuel tank, place the end of the subframe 3 inches ahead of the end of the truck frame.

For trucks where the rear fuel tank does not extend behind the rear spring hanger, 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.

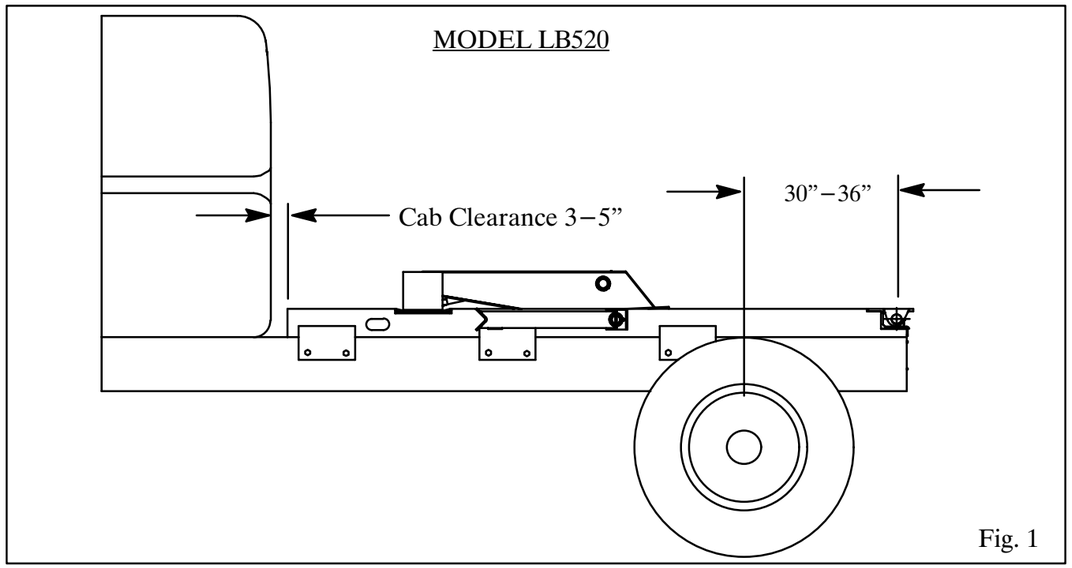


Fig. 1

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, the back edge of the rear hinge should be flush with the end of the truck frame. If the truck is a Ram 4500 or 5500, then the end of the subframe should be 3 inches ahead of the end of the truck frame.

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

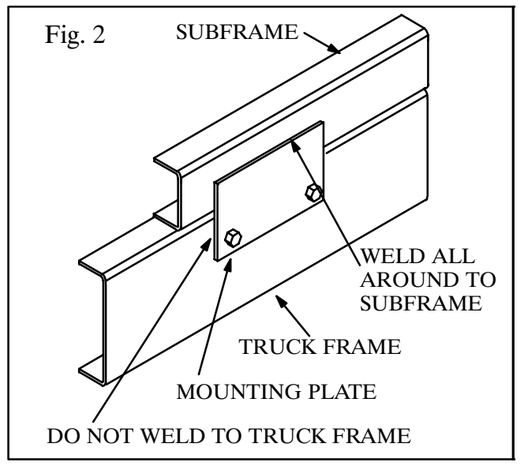
NOTE: If the truck frame has rivets in the top flange, add spacers between the truck frame and subframe, or counter sink the rivet heads into the subframe by drilling holes in the subframe. Do not remove the rivet heads!

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 subrame 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 foward from the end of the truck frame, be sure to locate the rear mounting plate within 2 inches of the rear hinge.

Fig. 2



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.

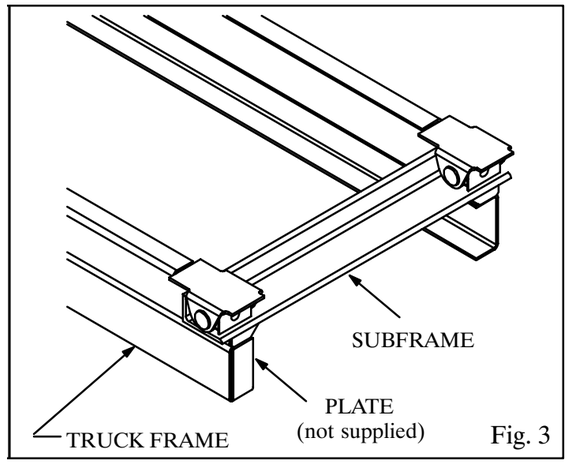


Fig. 3

SUPPORTFUELFILLTUBE

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:

MOUNT GEAR PUMP

The gear pump has an SAE `A' mounting configuration, an 11-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 `AD' or Muncie's output type `T'. 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.

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

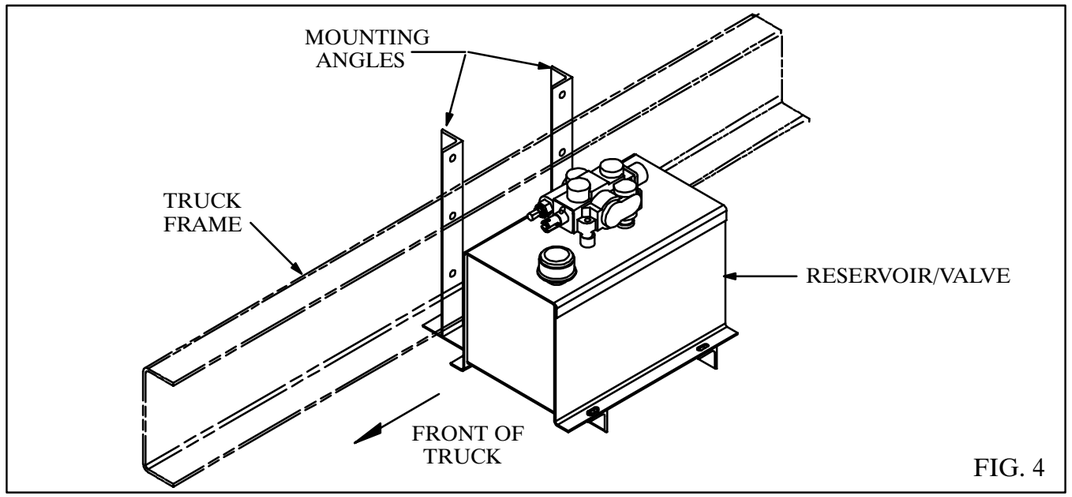


FIG. 4

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.

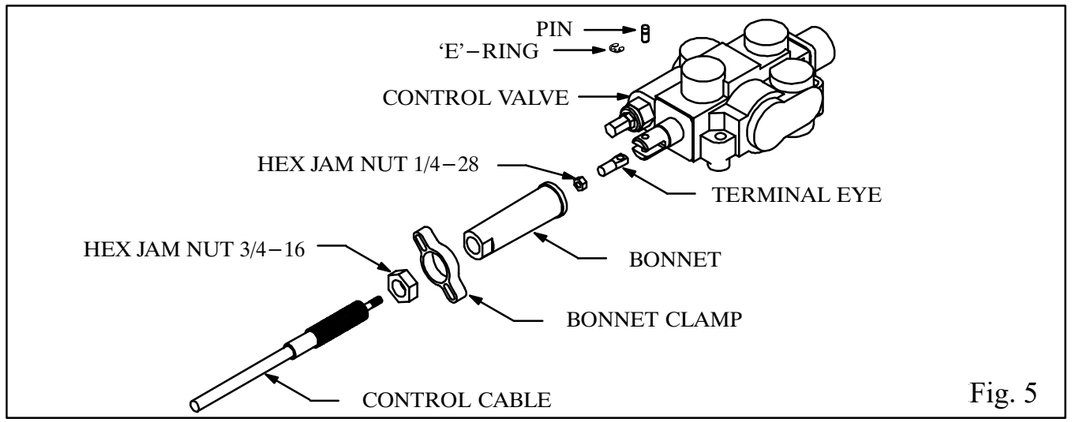


Fig. 5

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 1 1/16 ORBM x 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 1 1/16 ORBM x 1/2 adapter 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 at engine idle; the `B’ port has full system pressure.

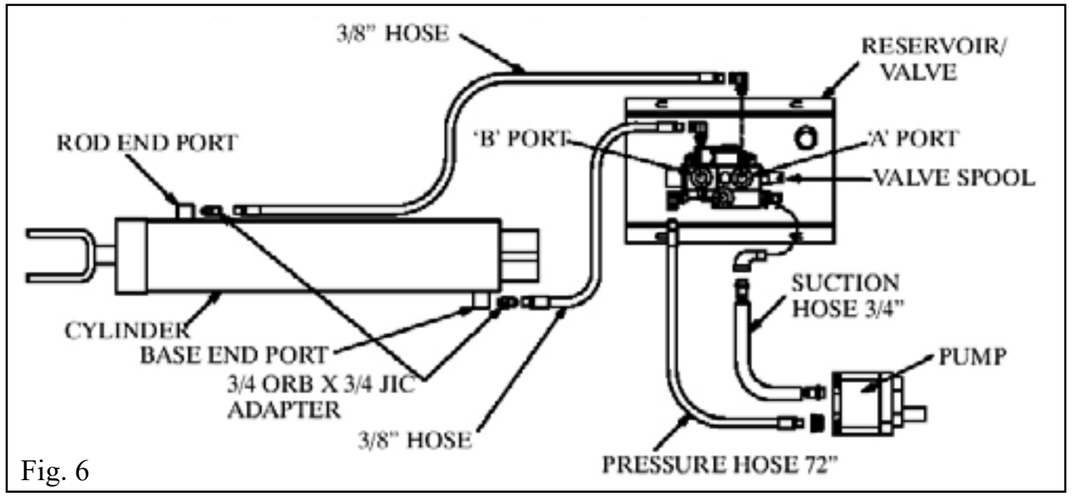


Fig. 6

ELECTRICPUMPMOUNTING-GENERAL

The electric power unit should be mounted behind the cab, either to a mounting bracket in the subframe or to mounting brackets bolted to the truck frame as shown in Fig. 7. If using the bracket in the subframe, bolt the double-acting power unit with the motor towards the passenger's side to the bracket provided using 3/8 x 1 cap screws and flat washers , tightening to 24 to 26 lb-ft. Bolt the single-acting power unit with the motor towards the driver's side to the bracket provided using 3/8 x 1 cap screws and flat washers. , tightening to 24 to 26 lb-ft Insert the 3 x 5 rubber pad under the end of the tank and clamp the tank to the mounting bracket with the 33" long cable tie.

If separate mounting brackets are used, chose the location for mounting 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. Insert a rubber pad between the mounting angle and the reservoir; and secure it in place with a tie strap. Mark the truck frame for drilling using the pump mounting angles as guides.

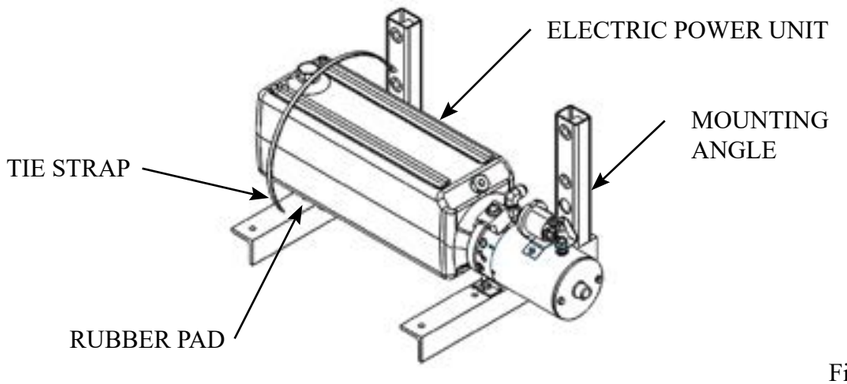


Fig. 7

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. Connect the negative terminal on the battery to the grounding hole on the power unit with a #0 gauge battery cable. See Figure 8. Check the voltage between the large terminal on the start solenoid and the power unit base.

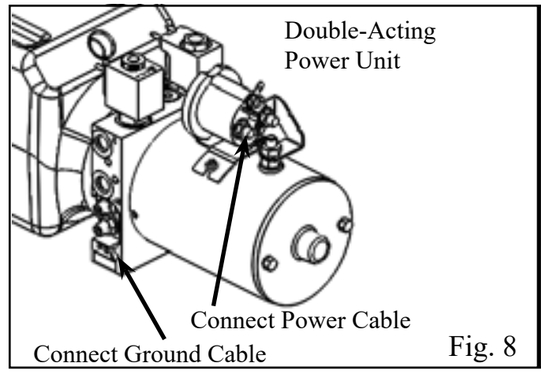


Fig. 8

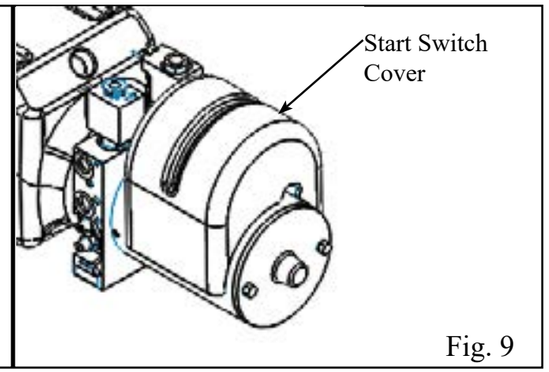


Fig. 9

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

After completing the wiring, install the motor start switch cover over the start switch and secure with a tie strap.

ELECTRICPUMPINSTALLATION-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.

ADDHYDRAULICOIL

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.

Hyd System	Reservoir Size	Fluid Required	Initial Fill
Gear Pump w/ Valve/Tank	6 Gal	5.5 Gallons	4 Gallons
Electric Double-Acting	7.5 Quarts	13.5 Quarts	7.5 Quarts

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. 10 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.

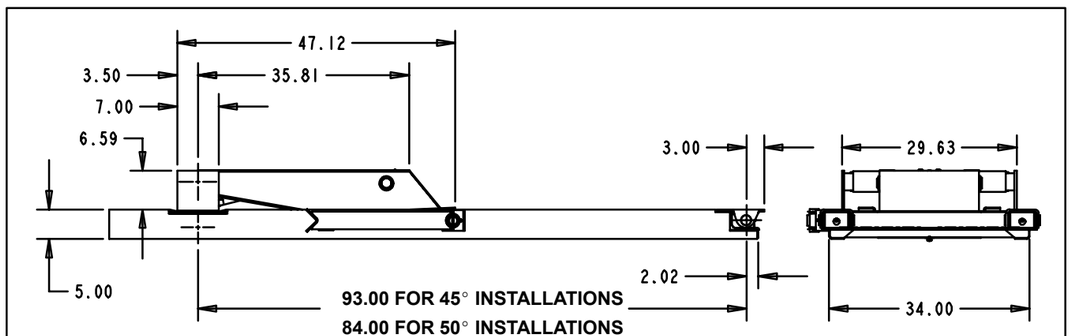


Fig. 10

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.

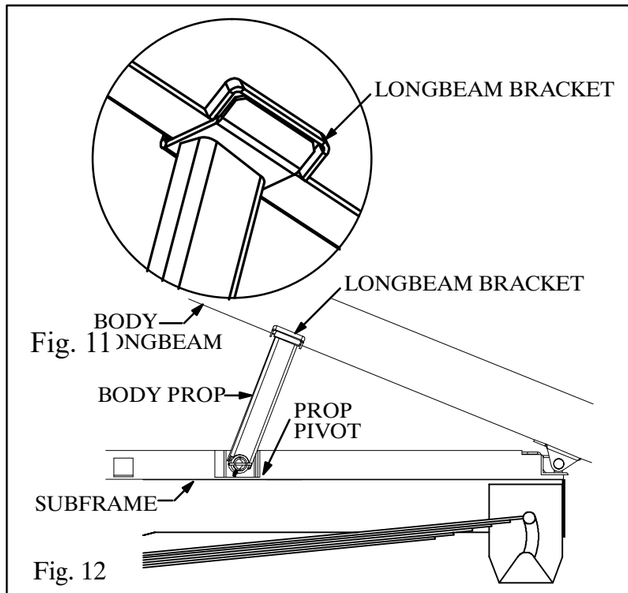


Fig. 12

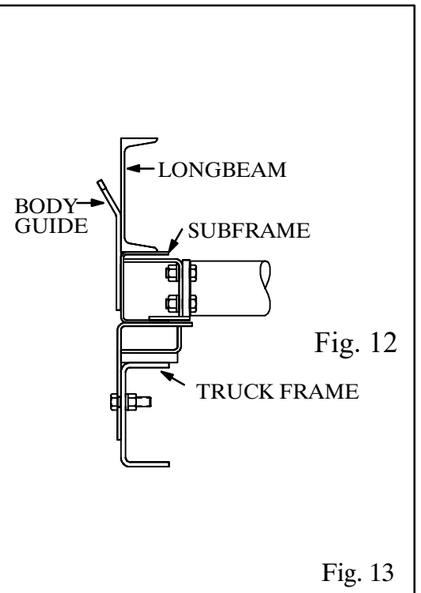


Fig. 13

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.

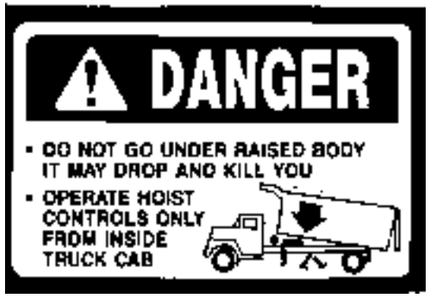
INSTALL DECALS

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

1. Decal 1642842 (400640) Mount in the cab above the valve control.
2. Decal 1642848 (400719) Mount on the body longbeam near the body prop. (one on each side)
3. Decal 1642846 (400661) Mount on the body prop arm.
4. Decal 1643067 (401576) Mount on the outside of the body longbeams near the front of the body. (one on each side).
5. Decal 1642844 (400643) Mount on the body longbeam on the drivers side.
6. Decal 1643068 (401577) Mount in the cab in a prominent location.
7. Decal 1642843 (400642) Mount in the cab in a prominent location.

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

1642848 (400719)

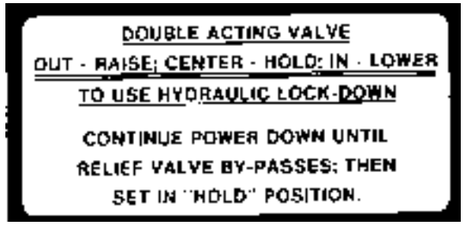


1643067 (401576)

1642844 (400643)

1643068 (401577)

1642843 (400642)

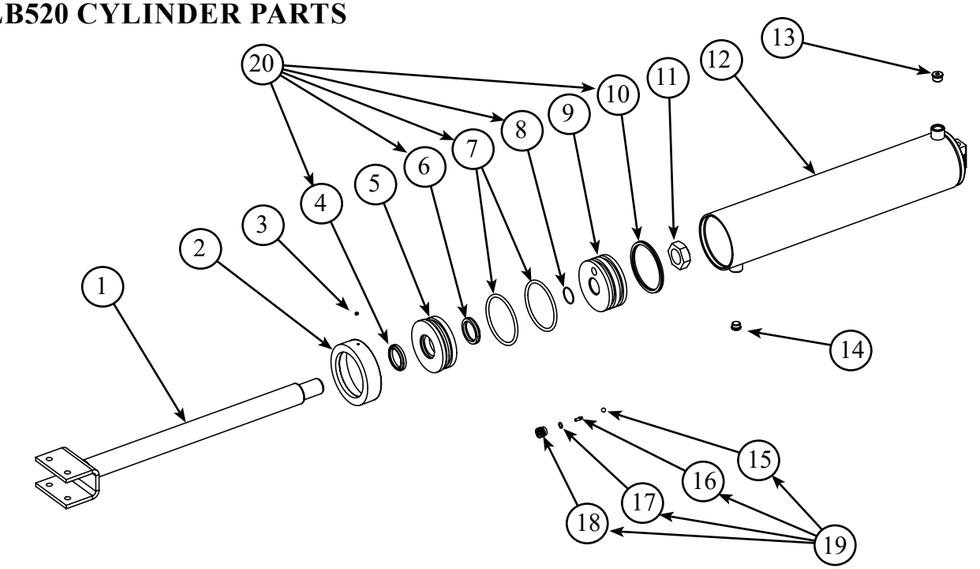


1642842 (400640)

1642846 (400661)

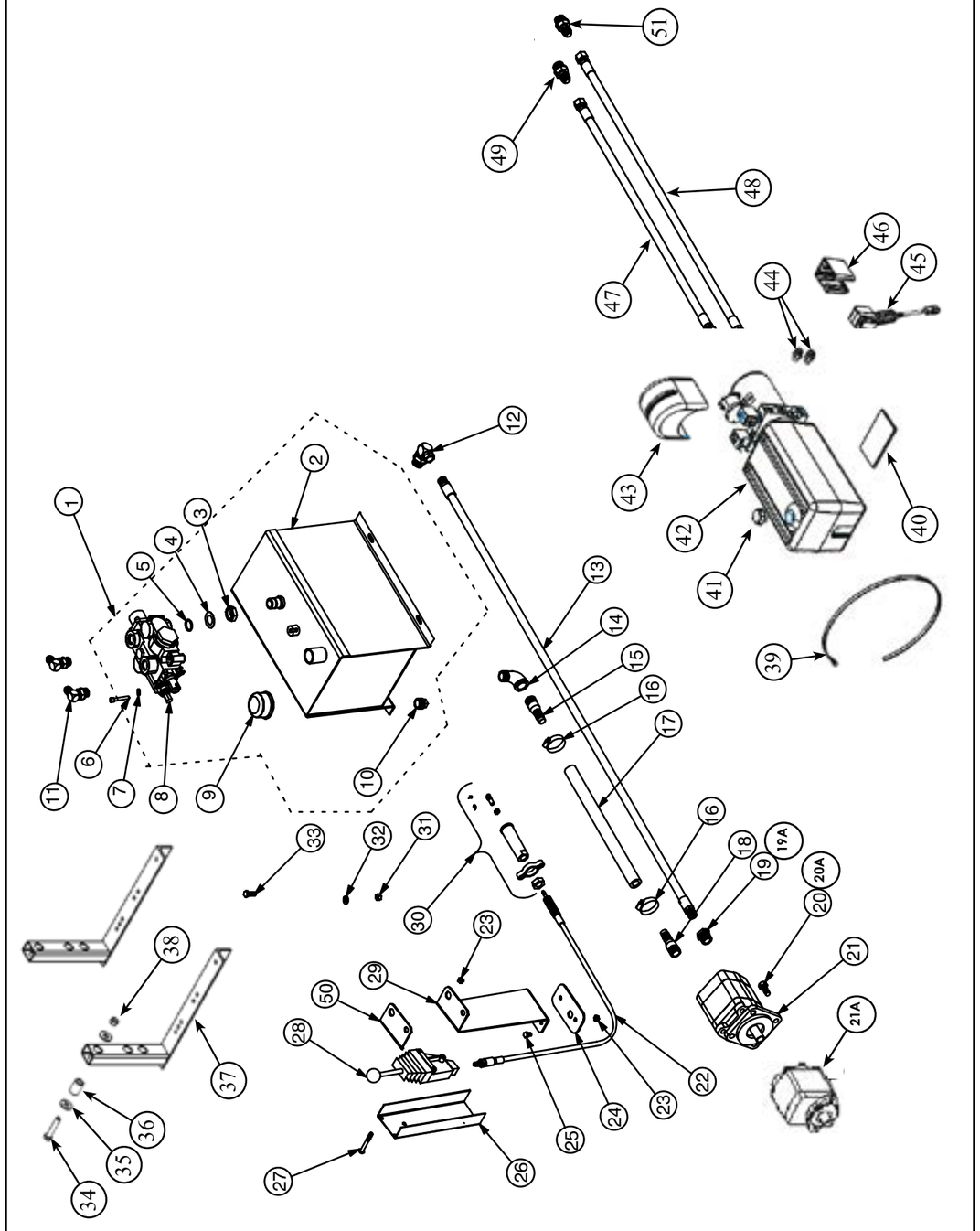
Fig. 13

LB520 CYLINDER PARTS



ITEM	DESCRIPTION	LB520	QTY
1.	Cylinder Shaft Assy	1621556	1
2.	Cap Ring	1635171	1
3.	Set Screw 1/4 x 3/16	1642724	1
4.	Wiper	1642878	1
5.	Cylinder Head	1637938	1
6.	Shaft Seal	1642765	1
7.	O-Ring	1642766	2
8.	O-Ring	1642767	1
9.	Cylinder Piston	1629601	1
10.	Piston Seal	1642764	1
11.	Hex Jam Nut	1642995	1
12.	Cylinder Tube Assy	1621554	1
13.	Plug 7/8-14 ORB	1642807	1
14.	Plug 3/4-16 ORB	1642805	1
15.	Ball 3/8	1642679	1
16.	Bypass Valve Pin	1642894	1
17.	O-Ring	1642907	1
18.	Bypass Valve Body	1642893	1
19.	Bypass Valve Kit	1621569	1
20.	Cylinder Seal Kit	1621640	1
21.	Cylinder Assy	1621532	

HYDRAULIC SYSTEM PARTS

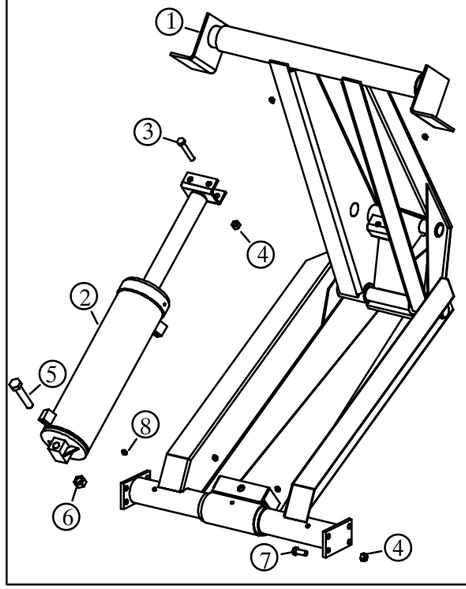


ITEM	DESCRIPTION	PART NO.	QTY.
1.	Reservoir/Valve Carton 6 Ga 3250 PSI (includes items 2 through 10)	1621943	1
2.	Reservoir Weldment 6 Ga	1621925	1
3.	Hex Jam Nut 7/8-14	1643196	1
4.	Cone Washer 7/8	1643197	1
5.	O-Ring .755 ID x .097 CS	1643198	1
6.	Cap Screw, Soc Hd 5/16-18 x 2	1643205	1
7.	Lock Washer 5/16	1642733	1
8.	Control Valve 30 GPM 3250 PSI -10 Port	1643185	1
9.	Breather Cap	1644723	1
10.	Pipe Plug 3/4 Magnetic	1642794	1
11.	Adapter 7/8 ORBM x 7/8 JICF 90°	1643724	2
12.	Adapter 7/8 ORBM x 1/2 NPTF 90°	1642969	1
13.	Hose 1/2 NPT x 72” RM/RM 3500 PSI	1643015	1
14.	Pipe Elbow 3/4 Street	1643226	1
15.	Hose Barb 3/4 NPTM x 3/4	1643017	1
16.	Hose Clamp #24	1643011	2
17.	Suction Hose 3/4 ID x 72”	1643805	1
18.	Hose Barb 1 1/16 ORBM x 3/4	1643228	1
19.	Adapter 1 1/16 ORBM x 1/2 NPTF	1283139	1
19A.	Adapter 7/8 ORM x 3/8 NPTF	1642813	1
20.	Cap Screw 1/2-13 x 1 1/4 Gr 8	1642726	4
20A.	Cap Screw 3/8-16 x 1 Gr 5	1642714	2
21.	Gear Pump 6 GPM B 4-Bolt	1644773	1
21A.	Gear Pump 4 GPM A 2-Bolt 11 Tooth	1645052	1
22.	Cable, Valve Control - 96”	1643210	1
	Cable, Valve Control - 72”	1643209	1
	Cable, Valve Control - 84”	1643332	1
	Cable, Valve Control - 120”	1643211	1
	Cable, Valve Control - 144”	1643212	1
	Cable, Valve Control - 180”	1643213	1
23.	Hex Lock Nut 5/16-18	1642962	5
24.	Clamp Plate, Pedestal	1631026	1
25.	Machine Screw 5/16-18 x 1/2	1643329	2
26.	Pedestal Channel, Short - RVC	1630851	1
27.	Machine Screw 5/16-18 x 2 1/2	1643233	3
28.	Remove Valve Control w/ Center Detent (RVC)	1643208	1
29.	Pedestal Bracket, Short - RVC	1630850	1
30.	Valve Connection Kit - Prince 5100	1643215	1
31.	Hex Lock Nut 3/8-16	1643177	4
32.	Flat Washer 3/8	1642732	4
33.	Cap Screw, Hex Hd 3/8-16 x 1 Gr 5	1642714	4
34.	Cap Screw 1/2-13 x 2 3/4 Gr 8	1643730	4
35.	Flat Washer 1/2	1642739	8
36.	Spacer VT Mounting	1632739	4
37.	Assy VT Mounting	1622700	2
38.	Hex Lock Nut 1/2-13	1642984	4

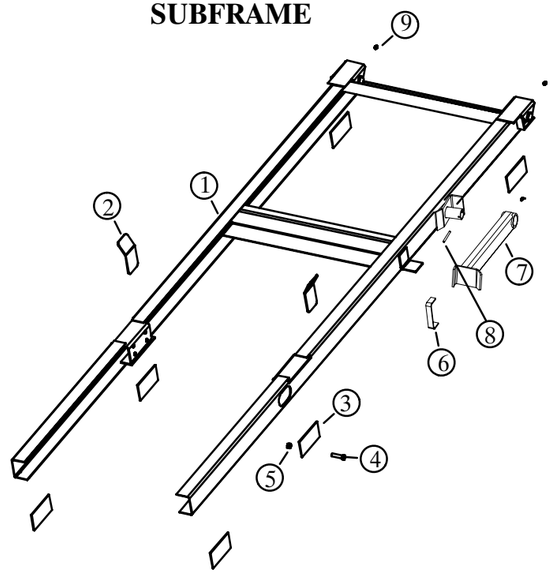
ITEM	DESCRIPTION	PART NO.	QTY.
39.	Cable Tie - 33”	1643817	1
40.	Rubber Pad 1/4 x 3 x 5	1643881	1
41.	Breather Cap, Splash Resistant	1644498	1
42.	Electric Power Unit - DA	2219241	1
43.	Cover Solenoid Service	1644330	1
44.	Adapter 9/16 ORBM x 3/4 JICM	1643375	2
45.	Control Station W/Cord, 4 Wire DA Pistol	2296414	1
46.	Keeper, Pistol Grip	2296415	1
47.	Hose 7/8 JIC x 48” SF/SF 4000 PSI	1643360	1
	Hose 7/8 JIC x 84” SF/SF 4000 PSI	1644009	1
48.	Hose 7/8 JIC x 72” SF/SF 4000 PSI	1643804	1
	Hose 7/8 JIC x 108” SF/SF 4000 PSI	1644010	1
49.	Adapter 7/8 ORBM x 7/8 JICM 90°	1643724	1
50.	Decal - Hoist Control	1643216	1
51.	Adapter 3/4 ORBM x 7/8 JICM 90°	1643723	1

FRAME&CYLINDERANDSUBFRAMEPARTS

FRAME / CYLINDER



SUBFRAME



ITEM	DESCRIPTION	LB520	QTY
1.	Hoist Frame Assy	1622670	1
2.	Cylinder Assy	1621532	1
3.	Cap Screw 1/2-13 x 3 3/4 Gr 8	1642721	2
4.	Hex Lock Nut 1/2-13	1642984	14
5.	Cap Screw 3/4-10 x 4 1/2 Gr 8	1642956	1
6.	Hex Lock Nut 3/4-10	1642957	1
7.	Cap Screw 1/2-13 x 1 1/4 Gr 8	1642726	8
8.	Grease Zerk 1/8 NPT	1642699	7
9.	Frame & Cylinder Assy	1622669	1

ITEM	DESCRIPTION	LB520	QTY
1.	Subframe Assy - 9’ 50°	1289363	1
	Subframe Assy - 10’ 50°	1289636	1
	Subframe Assy - 11’ 50°	1289616	1
	Subframe Assy - 12’ 50°	1289624	1
	Subframe Assy - 14’ 50°	1289620	1
	Subframe Assy - 10’ 45°	1289640	1
	Subframe Assy - 14’ 45°	1289628	1
2.	Body Guide	1630827	2
3.	Mounting Plate	1631206	2
4.	Cap Screw 5/8-11 x 2 Gr 8	1643313	12
5.	Hex Lock Nut 5/8-11	1643070	12
6.	Body Prop Longbeam Bracket	1634760	1
7.	Body Prop Arm Assy - Left	1623886	1
8.	Spring Pin 1/4 x 3	1642757	1
9.	Grease Zerk 1/8 NPT	1642699	2
10.	Grease Zerk 1/8 NPT 90°	1642713	1

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

CRYSTEEL MANUFACTURING, INC.