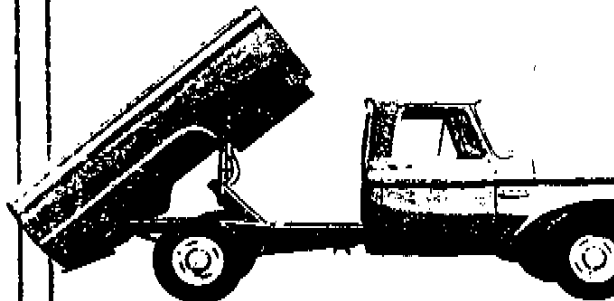
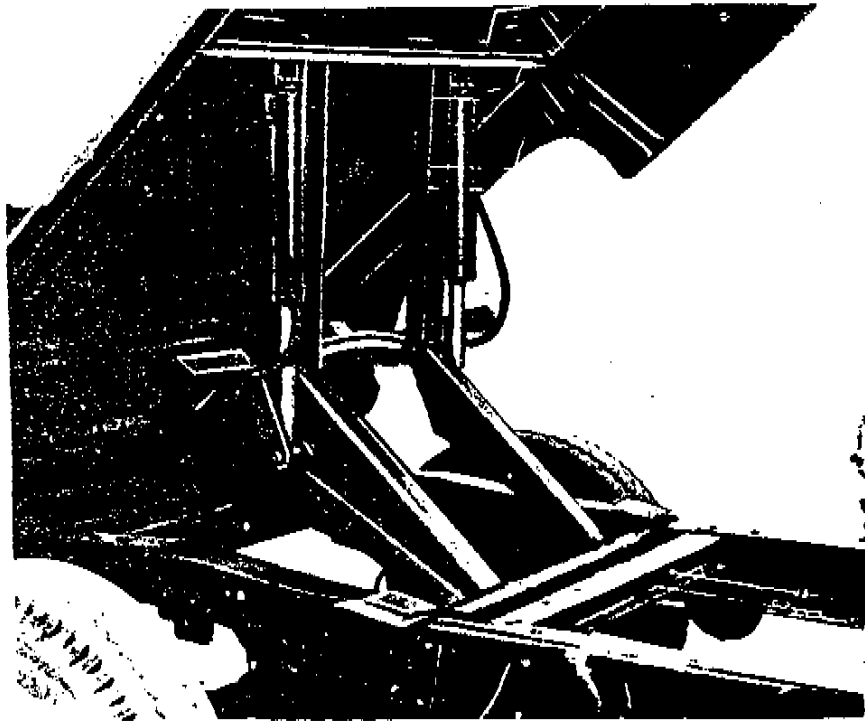


OPERATOR'S MANUAL

INSTRUCTIONS and REPAIR PARTS LIST FOR ASSEMBLING AND OPERATING LO-BOY Pick-Up Hoist



Read these instructions



Save them for reference

Crysteel Manufacturing, Inc.

Telephone: 507-726-2728

Highway 60 East
LAKE CRYSTAL, MINNESOTA 56055

DATE PURCHASED _____
HOIST MODEL NUMBER _____
HOIST SERIAL NUMBER _____
CYLINDER SERIAL NUMBERS _____
PUMP MODEL NUMBER _____
PUMP SERIAL NUMBER _____

FOREWORD

This manual contains information necessary for the proper installation and operation of the Lo-Boy Pickup Hoist. Study it carefully before attempting to mount the hoist. With proper installation and maintenance, the Lo-Boy Pickup Hoist will give many years of trouble-free service.

When ordering parts, be sure to state Model and Serial numbers of the components involved. For future reference and convenience, copy these numbers NOW in the spaces provided above. Order parts by number and description as given in the parts listings in this manual.

THE LO-BOY PICKUP HOIST IS DESIGNED AND INTENDED FOR USE ON 1/2 AND 3/4 TON LATE MODEL PICKUP TRUCKS WITH ORIGINAL EQUIPMENT TYPE BODIES UP TO 8½ FEET LONG.

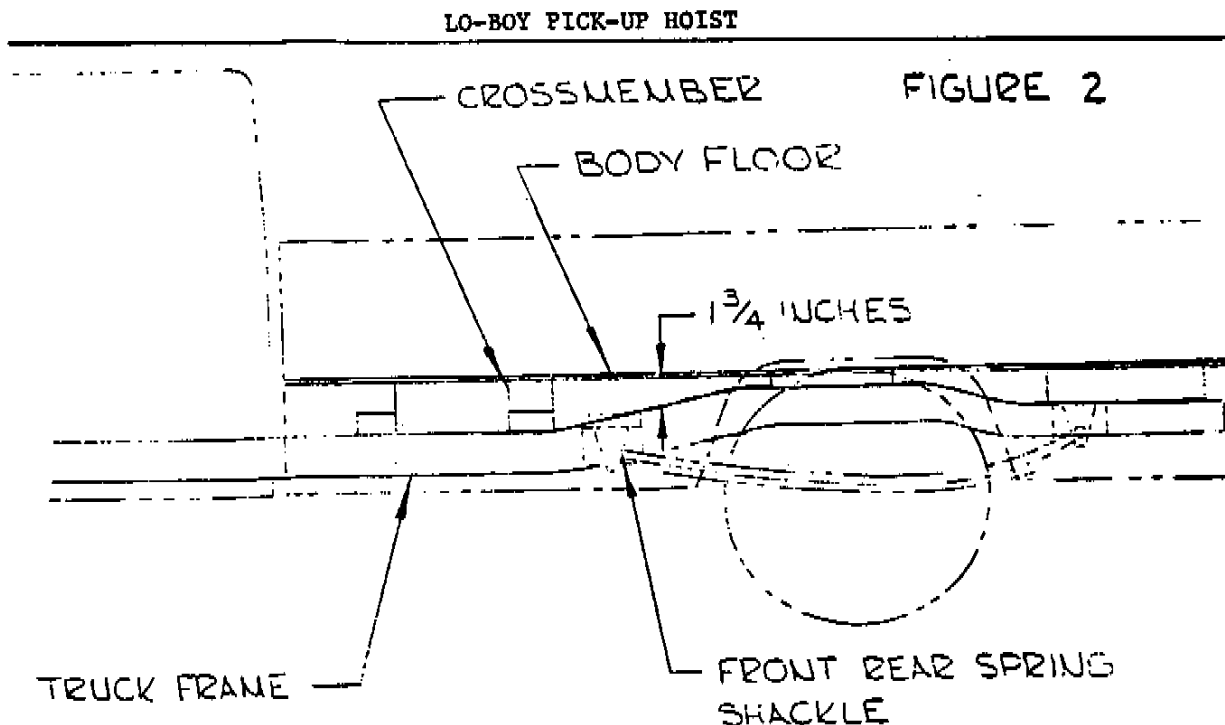
KEEP THIS MANUAL IN A SAFE PLACE FOR FUTURE REFERENCE.

SAFETY FIRST

NEVER EXCEED THE G.V.W. (GROSS VEHICLE WEIGHT) RATING, NOR THE G.A.W. (GROSS AXLE WEIGHT) RATING SPECIFIED FOR YOUR TRUCK.

CRYSTEEL MANUFACTURING, INC.

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MOUNTING INSTRUCTIONS

PREPARATION BEFORE INSTALLATION

(SEE FIGURE 2)

1. Because of the variation in different brands and models of pickup trucks, installations will vary somewhat, making it almost impossible to provide detailed and definite instruction for each. Therefore, it is necessary to take certain measurements before beginning the installation on any truck.
2. As shown here, the truck frame normally arches over the rear axle. At a point just behind the front shackle of the rear springs and approximately even with the front of the rear tires, make a mark on the truck frame where the clearance between the bottom of the body floor and the truck frame is at least 1-3/4 inches. This will be the location of the hoist crosstubes.
3. Mark on the truck frame the location of body crossmembers at the rear, where the rear hinge will be installed later. Rear of truck frame will be cut off so location of these body crossmembers should be recorded relative to a reference point or mark on the truck frame farther ahead.
4. Measure and record the clearance between the front of the box and the rear of the cab at the closest point. If there is less than 1 1/2 inches clearance, the box must be moved to the rear accordingly, in order for the hoist to operate so the box will clear the cab. This will be taken care of when installing the rear hinge as per later instructions.
5. Remove rear bumper, disconnect rear wiring to tail lights, removed all bolts holding box to frame, remove gas tank filler neck parts if filler neck is in side of box, remove box from truck.

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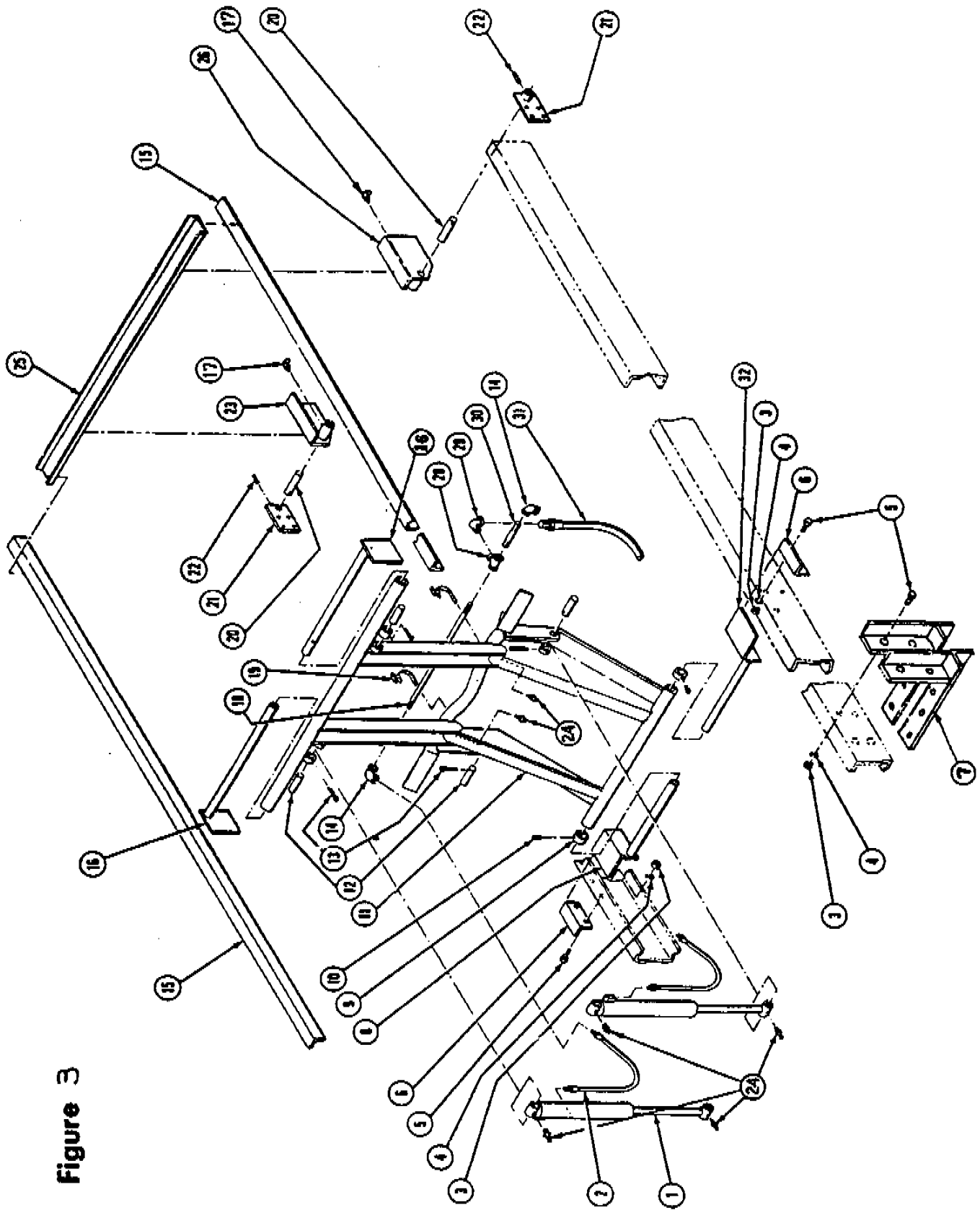


Figure 3

LO-BOY PICK-UP HOIST

Item	Part No.	Description	Qty.
1	100382	Cylinder Assembly	2
2	400516	Hydraulic Hose $\frac{3}{4}$ " x 24"	2
3	400182	Hex Nut $\frac{1}{2}$ - 13 NC	8
4	400161	Lock Washer $\frac{1}{2}$	8
5	400104	Cap Screw $\frac{1}{2}$ - 13 NC x 1 $\frac{1}{2}$	8
6	201380	Mount Angle	2
7	100162	Pump Bracket	2
8	100240	Lower Pivot Extension, Right	1
9	202192	Lock Collar	2
10	400130	Set Screw $\frac{3}{8}$ x $\frac{1}{2}$	2
11	100269	Hoist Assembly	1
12	201150	Pin 1" x 2 7/8"	4
13	400213	Roll Pin $\frac{1}{4}$ x 1 $\frac{1}{2}$	4
14	400417	Elbow $\frac{1}{4}$ x 90°	2
15	201383	Stringer	2
16	100138	Upper Pivot Extension	2
17	400117	Grease Fitting 1/8-27 90°	2
18	400569	Hydraulic Pipe $\frac{1}{4}$ x 19-3/4	1
19	400736	Hose Clamp	2
20	201151 -	Pin Hinge, 1 x 3-3/4	2
21	100189 -	Hinge Plate Assembly	2
22	400218	Roll Pin 3/8 x 2	2
23	100244 -	Hinge Angle, Right	1
24	400103	Grease Fitting 1/8 - 27 Straight	10
25	200060	Hinge Channel	1
26	100193 -	Hinge Angle, Left	1
28	400418	Reducing Tee 3/8 x $\frac{1}{4}$ x $\frac{1}{4}$	1
29	400412	Street Elbow 3/8 x 90°	1
30	400419	Nipple $\frac{1}{4}$ x 4	1
31	400515	Hydraulic Hose 3/8 x 60	1
32	100142	Lower Pivot Extension, Left	1

REAR HINGE INSTALLATION

CAUTION: Extreme care must be taken when cutting or welding near gas tanks. It is our recommendation to remove the tanks. If you chose not to remove them, cover them completely with several layers of wet burlap.

1. In a normal installation, the rear 8 $\frac{1}{2}$ inches of the truck frame channels will be replaced by the rear hinge angles (23 and 26, figure 3). The truck frame must be cut off as square as possible (not on a slant). If the cab clearance previously measured was less than 1 $\frac{1}{2}$ inches, cut off less than 8 $\frac{1}{2}$ inches accordingly. Example: If an additional half inch of clearance is needed, cut off only 8 inches of frame.
2. Assemble rear hinge parts 23 and 26 with pins 20 to the rear hinge plates (21 figure 3). Align with top and outside of truck frame and mark location of bolt holes for attaching plates 21 to truck frame.

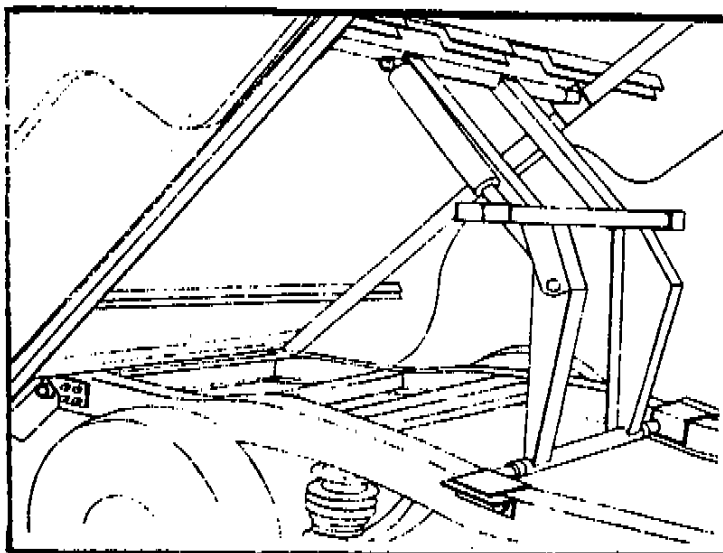
LO-BOY PICK-UP HOIST

REAR HINGE INSTALLATION - CONTINUED

3. Using the cut-off ends of the truck frame as templates mark the location of holes to drill in hinge angles (23 and 26 fig. 3) to match the bumper mounting holes and the hole in the top flange where the box was bolted. Be Sure of location of this hole relative to cab clearance because this will determine the fore-and aft location of the box when finished.
4. Some pickups will not have $8\frac{1}{2}$ inches of frame to cut off behind the rear truck frame crossmembers. In this case hinge angles (23 and 26 fig. 3) will have to be shortened to compensate. Also hinge plates 21 may not clear spring shackles and must be cut to fit. They may be bolted with only two bolts and welded in place or welded only, if necessary.
5. The rear hinge channel (25 fig. 3) is to be welded to hinge angles 23 and 26 between box crossmembers. For location of box crossmembers refer to your previous marks and measurements. It may need to be partly located farther ahead than the front edge of angles 23 and 26.

HOIST FRAME INSTALLATION

1. Slide locking collars 9 onto lower extension brackets (8 and 32 fig. 3). Slide extension brackets into lower hoist crosstube. Normally they will be as shown, lowering the hoist crosstube below truck frame level. Some trucks with more drop-frame will require that they be reversed, to raise the hoist above the truck frame. Also they can be interchanged side to side to clear spring shackles or other frame components.
2. The upper hoist crosstube should be aligned with the mark on the truck frame as located previously. Hoist can be moved fore and aft as required to fit best, but it should be remembered that the upper crosstube must have 1-3/4 inches above the truck frame and below the floor of the box, as measured before removing the box. Make sure hoist is square with truck frame. Clamp angle brackets (6 fig. 3) to extension brackets. Drill and bolt them to truck frame and weld to extension brackets. Center hoist and locate locking collars.

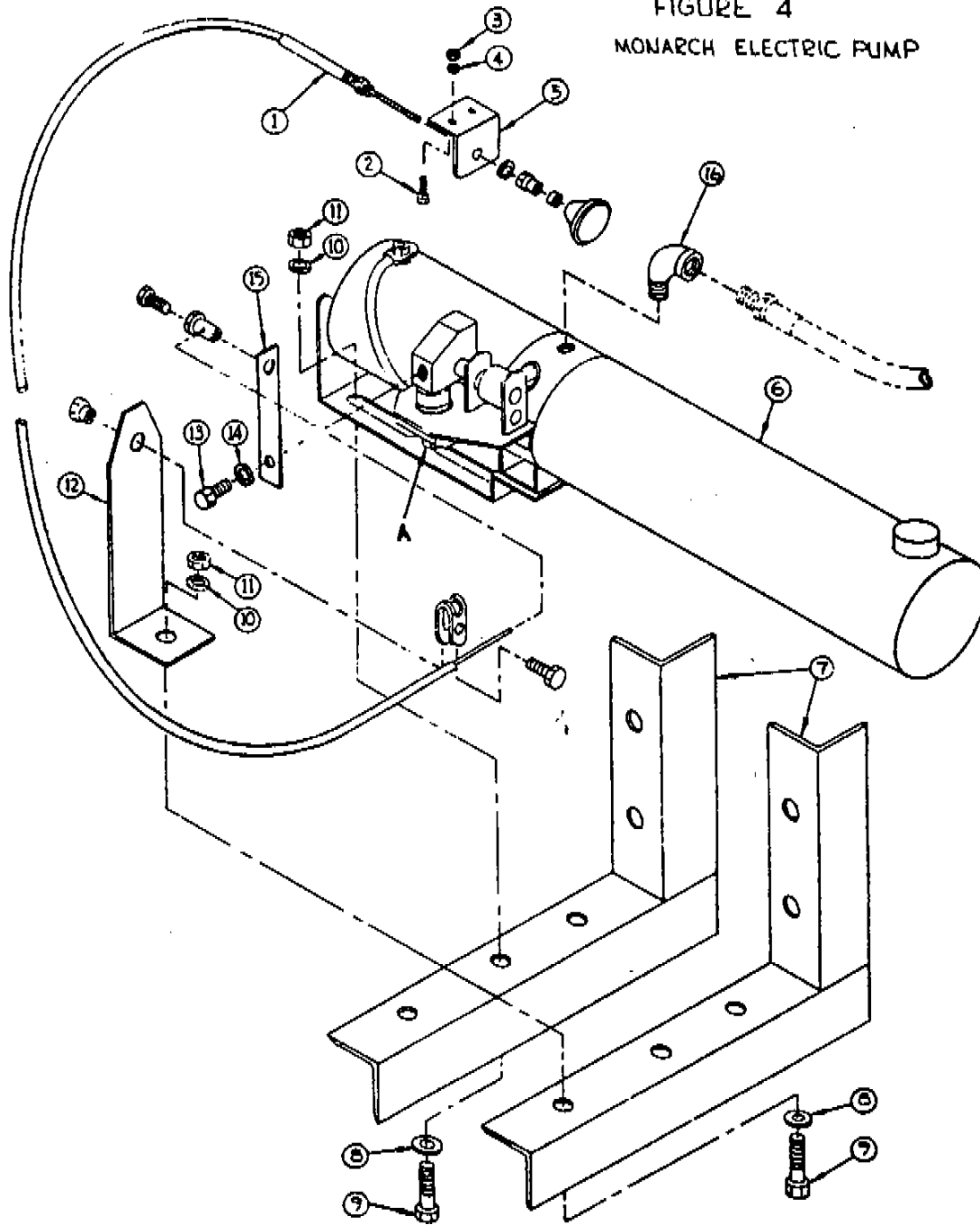


3. If necessary, reshape the tabs holding the rear of hoist frame up for maximum driveline clearance without interfering with body.
4. On some pickups it may be necessary to adjust or relocate shock absorber mounts, hand brake cables, exhaust systems or other components.
5. On older Chevrolet trucks with rear coil springs install hoist frame with scissors toward the front as shown. This is necessary because of the heavy central truck frame crossmember.

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LO-BOY PICK-UP HOIST

FIGURE 4
MONARCH ELECTRIC PUMP



ITEM	PART NO.	DESCRIPTION	QTY.	ITEM	PART NO.	DESCRIPTION	QTY.
1	400025	Cable Assbly. 12'	1	9	400121	Cap Screw, 3/8 x 1 NC	5
2	400101	Cap Screw, 1/2 x 3/4 NC	2	10	400162	Lock Washer, 3/8	5
3	400184	Hex Nut, 1/4 NC	2	11	400183	Hex Nut, 3/8	5
4	400163	Lock Washer, 1/2	2	12	201394	Cable Support	1
5	201391	Dash Mounting Angle	1	13	400106	Cap Screw, 5/16 x 3/4 NC	1
6	400328	Pump Assembly	1	14	400165	Lock Washer, 5/16	1
7	100162	Mounting Brackets	2	15	201396	Cable Control Arm	1
8	400164	Flat Washer, 3/8	5	16	400412	Street Elbow, 3/8 x 90°	1

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LO-BOY PICK-UP HOIST

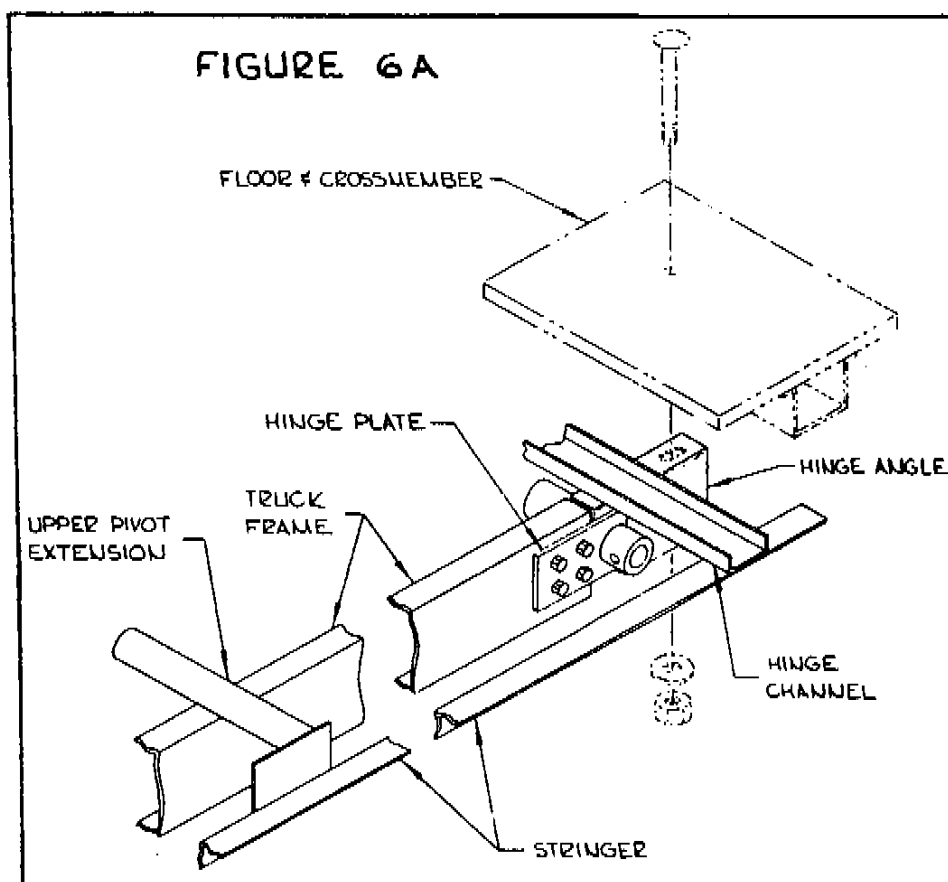
PUMP INSTALLATION

1. If the cable controlled electric hydraulic pump is used (hoist model 301-E) locate the pump mounting brackets at a convenient place on truck frame ahead of hoist. Normally the pump will be inside the frame. If absolutely necessary it can be located outside the frame, but this is not recommended. It sometimes can be mounted under the hood, also. (Note: Make sure that the pump will not interfere with hoist operation, and that the pressure hose, 31 fig. 3, will reach from the pump to the hoist plumbing connection.) Drill the truck frame and bolt the mounting brackets (7 fig. 4) to the truck frame with four 1/2 x 1 1/2 cap screws, lock washers, and hex nuts. Bolt the pump assembly to the mounting brackets with four 3/8 x 7/8 cap screws, flat washers, lock washers and hex nuts. Fasten the control arm (15 fig. 4) to the pump switch arm with one 5/16 x 3/4 cap screw and lock washer. Bolt the cable support (12 fig. 4) to the mounting bracket with one 3/8 x 7/8 cap screw, flat washer, and hex nut. Attach the dash mounting angle (5 fig. 4) at a convenient location on the truck dash with two 1/4 x 3/4 cap screws, lock washers and hex nuts. Thread the control cable through the firewall and attach to the cable support with the cable clamp. Position the anchor bolt in control arm and attach cable wire. Adjust the cable length so that when the knob is all the way in the pump is disengaged. Connect a one gauge or heavier cable between terminal on pump motor (A fig. 4) and the "hot" terminal on the truck battery. Also, it will be necessary to connect an additional ground strap between truck engine block and truck frame to assure the pump motor will have adequate power for correct operation.
2. If the toggle switch controlled electric hydraulic pump is used (hoist model 302-E). Install switch control box in cab and connect to pump unit as per instructions with pump, in lieu of cable control.

LO-BOY PICK-UP HOIST

PUMP INSTALLATION - CONTINUED

5. To complete the hydraulic plumbing assemble the $\frac{1}{4}$ " pipe (18 fig. 3), reducing tee (28 fig. 3), nipple (30 fig. 3), and elbows (14 fig. 3) as shown. Use teflon sealing tape on all connections. Do not tighten the connections excessively; very little wrench torque is required to make a tight seal. Position the pipe assembly on the center pivot tube as shown in fig. 3, and clamp in position with the two hose clamps (19 fig. 3). Install the two cylinder hoses (2 fig. 3) between the cylinders and the pipe elbows. Install the $\frac{3}{8}$ " hose between the hydraulic pump and tee.
6. Hydraulic Fluid: Approximately 3 U.S. Quarts of Hydraulic Fluid are required for proper operation. **KEEP IT CLEAN. USE CLEAN CONTAINERS AND EQUIPMENT.** Use a quality hydraulic fluid of 150SSU @ 100 degrees F. which contains corrosion and oxidation inhibitors and a foam depressant. A good quality SAE 10W non-detergent motor oil with the proper additives or Type A automatic transmission fluid can be used.

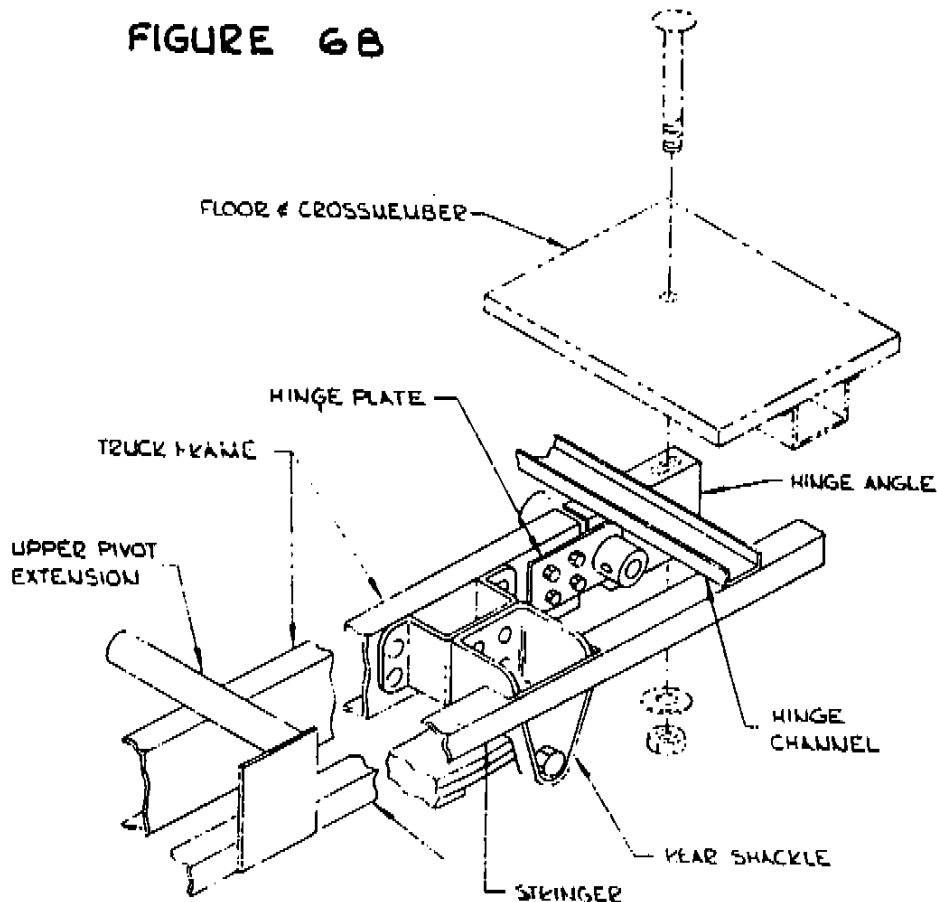


LO-BOY PICK-UP HOIST

INSTALLATION OF STRINGERS
(15 fig. 3) & PICKUP BOX

1. The 2 x 2 x $\frac{1}{4}$ " angle stringers are to be installed at the same level as the original box mountings front and rear. The top of the stringers at the rear should automatically be level with the top of the truck frame. Clamp them to the underside of the rear hinge channel (25 fig. 3) that was previously installed. Block up the front ends of the stringers level with the frame or box mounting pads, depending on make of truck. The stringers can be installed with the vertical flange on the inside, or on the outside, as they fit best, as shown in Fig. 6A and 6B. On some trucks the stringers must be notched around spring shackles or other frame components (Fig 6B). Be sure to maintain sufficient tire clearance. Weld stringers to rear hinge channel.
2. Install the upper pivot extension tube brackets (16 and 27 Fig. 3) into the upper crosstube of the hoist. If the stringers (15 Fig. 3) are installed with vertical flanges on the inside simply slide the extensions out to contact the stringers (Fig 6A). If stringers are installed with vertical flanges on the outside, the extension tubes will extend over the top of the stringers and attach to the stringers on the outside. (Fig. 6B) Clamp the flat plate part of the extension brackets to the stringers. DO NOT WELD. This is to be done later.

FIGURE 6B

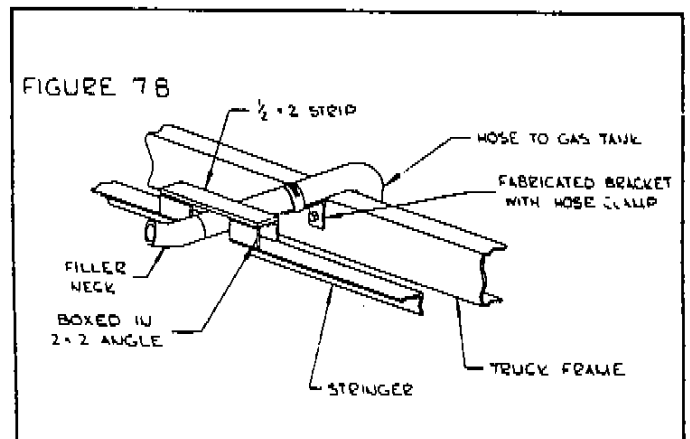
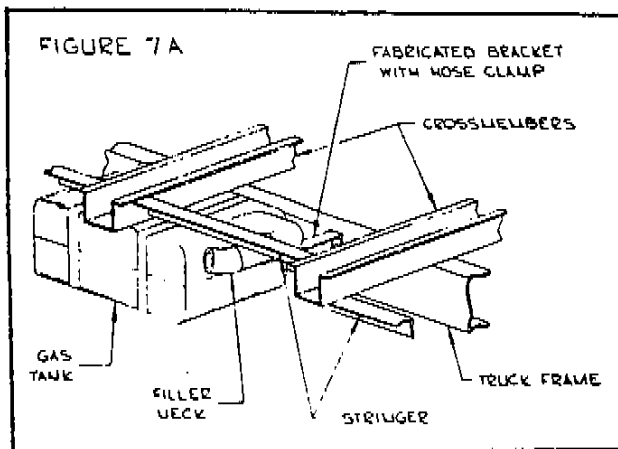


CRYSTEEL MANUFACTURING, INC.

LO-BOY PICK-UP HOIST

INSTALLATION OF STRINGERS - CONTINUED
(15 fig. 3) & PICKUP BOX

3. Figure 7A and 7B illustrate typical problems involved with frame mounted gas tanks. As shown in Fig. 7A, for gas tanks mounted outside the frame, as with Chevrolet, the front section of the stringer must be cut off ahead of the hoist mounting where it would interfere with tank and filler neck. It can then be cut and fitted between the box crossmembers to add strength to the understructure above the gas tank. Fig. 7B shows the rear center mounted gas tank as with Ford trucks. A section of the stringer has to be removed for the filler neck but must be replaced. It can be bridged over as shown with short lengths of angle boxed in and a length of $\frac{1}{2}$ x 2 flat over the top of the filler hose and between underbody crossmembers.
4. Replace the pickup box on the truck. Mark the crossmembers where they must be notched to fit over the hoist. Remove the box, notch the crossmembers and replace it on the truck. Align the box very carefully and install the two rear bolts to fasten the box to the rear hinge. Tack-weld the stringers to front and rear crossmembers. You may fill other bolt holes by cutting the original bolts and tack-weld them in place, preferably welded on the underside.
5. The upper pivot tube of the hoist should contact the bottom of the box. If it does not, remove the clamps holding upper pivot extensions to the stringers. Open the hoist until the upper pivot tube touches the bottom of the box. THIS IS IMPORTANT - because the upper pivot tube also serves as reinforcement for the center box crossmembers which is usually quite close and must be notched to clear the hoist. Weld pivot extensions to stringers.
6. Hoist should now operate. Watch closely and slowly raise box to full angle. Block it up so it is safe to work under it. Finish welding stringers to each crossmember. It will be necessary to add spacers between stringers and some of the center crossmembers.
7. Install and lubricate all grease fittings. Also check level of hydraulic oil in the reservoir. There should be $1\frac{1}{2}$ " of oil in the reservoir with hoist full open. Install rear bumper and re-connect wiring to tail-lights.



LO-Boy PICK-UP HOIST

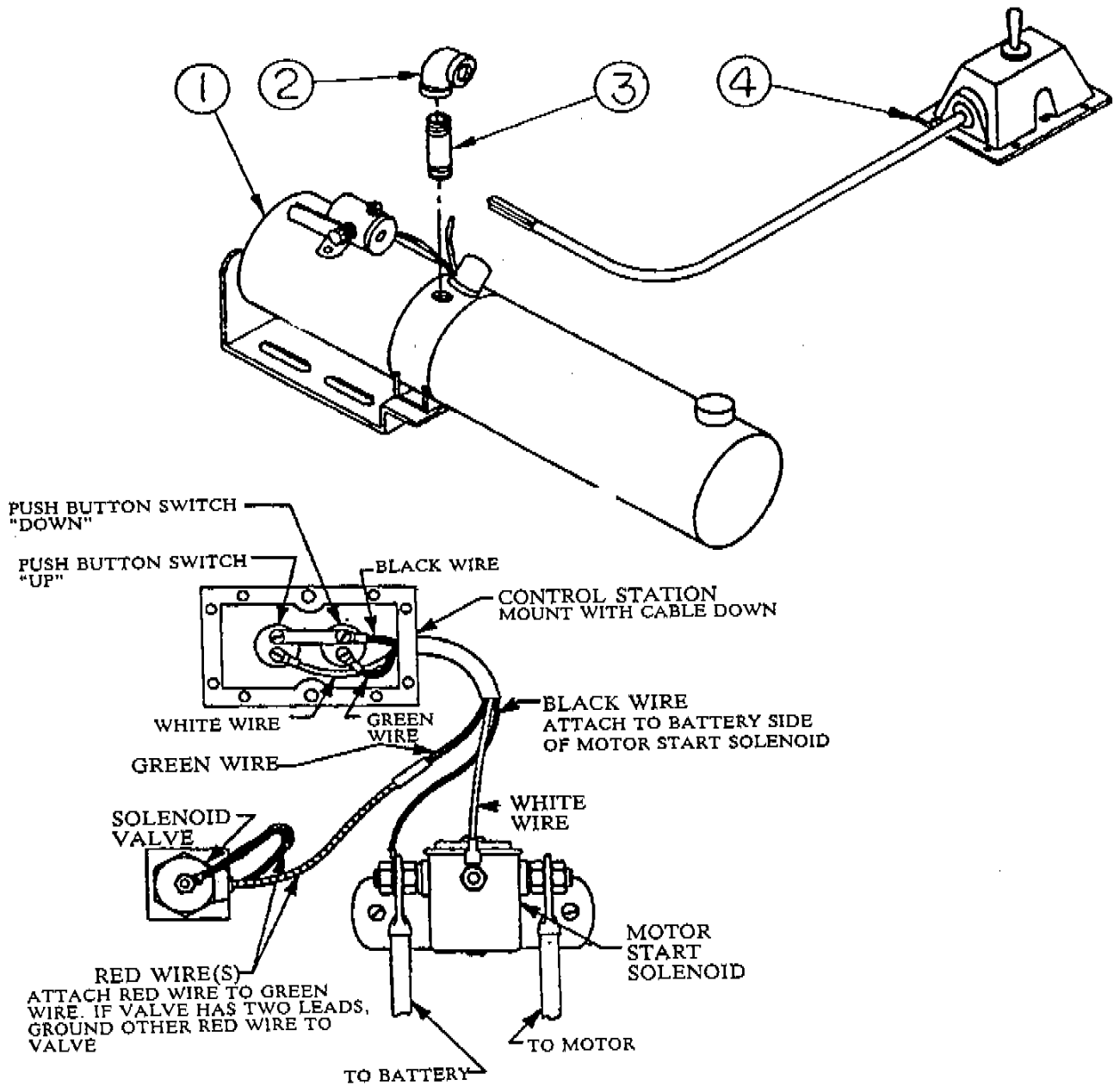
GAS TANK FILLER NECK

1. When replacing filler neck, it is necessary to shorten it by approximately seven inches so the skirt of the pickup box will clear when dumping. Fabricate a bracket, (usually a bent flat strap bolted to truck frame) to support the shortened filler neck. Clamp the filler neck to the bracket with a hose clamp. On some pickup models you may desire to relocate the filler neck in the wheel well in order to simplify fueling.
2. Enlarge the hole in the side of the pickup body and attach a hinged door of the type used with auxiliary gas tanks. These doors are available from Crysteel as an option.

OPERATION AND MAINTENANCE

1. Cycle the hoist several times to clear all air from cylinders and hydraulic lines.
2. With electric models, always have the engine running at fast idle when using the hoist so the battery will not become discharged.
3. Lubricate all grease fittings at regular intervals - preferably each time the truck is serviced.
4. ALWAYS BLOCK UP THE HOIST BEFORE WORKING UNDER IT!!
5. Do not race the engine when unloading.
6. Do not overload the hoist beyond its capacity.
7. DO NOT TAMPER WITH THE HYDRAULIC RELIEF VALVE. THIS WILL VOID THE WARRANTY. It can cause severe damage.
8. Check all bolts and setscrews regularly.
9. Change the hydraulic fluid at least once a year. NEVER USE HYDRULIC BRAKE FLUID IN THE HYDRAULIC SYSTEM.

FIGURE 4A
MONARCH ELECTRIC PUMP
WITH TOGGLE SWITCH



KEY	ITEM NO.	DESCRIPTION	QTY.
1	400341	Pump Assembly	1
2	400413	Elbow 3/8 NPT 90°	1
3	400872	Nipple 3/8 NPT x 2	1
4	400056	Toggle Switch Kit	1

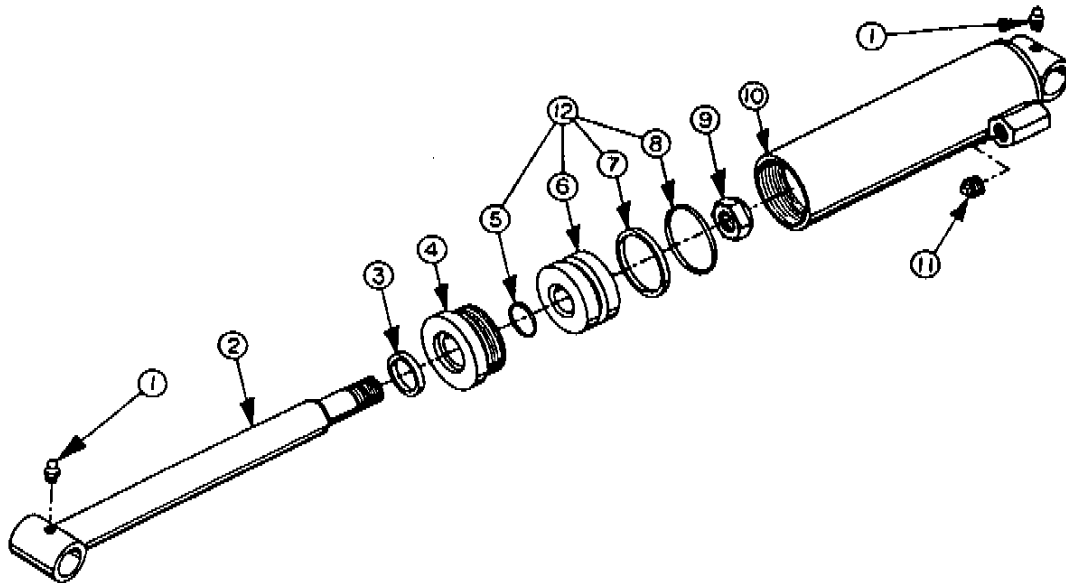
CRYSTEEL MANUFACTURING, INC.

LO-BOY PICK-UP HOIST

CYLINDER PARTS LIST

MODEL PICK-UP (SERIAL NUMBER 2-300-001 AND UP)

Key No.	Part No.	Description	Qty
1	400103	Grease Zerk	2
2	100387	Cylinder Shaft Assembly	1
3	400288	Wiper Seal	1
4	202459	Head	1
5	400268	O-Ring	1
6	202457	Piston	1
7	400294	Back-Up	1
8	400293	O-Ring	1
9	400201	Lock Nut 7/8-14	1
10	100385	Cylinder Tube Assembly	1
11	400428	Plug 1/4 NPT	1
12	100090	Seal Kit	1



CRYTEEL MANUFACTURING, INC.

LO-BOY PICK-UP HOIST

WARRANTY

WARRANTY

Crysteel Manufacturing, Inc., warrants its products for a period of one year from date of purchase.

The warranty provides that our products must perform satisfactorily or we will repair, replace, or refund the purchase price at the option of the purchaser. Hydraulic pumps, valves, hoses, and other purchased parts are covered by the warranties of their respective manufacturers.

Any parts returned to Crysteel Manufacturing, Inc. shall be shipped prepaid, and will be returned F.O.B. Lake Crystal, Minnesota.

We will not assume responsibility for shipping, labor, or travel expenses.

The warranty is void if the product has been obviously abused, or subjected to other than normal usage.

We reserve the right to make improvements without notice or obligation regarding models previously sold.

*SPECIALLY DESIGNED —
WITH QUALITY IN MIND*

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.



HIGHWAY 60 EAST • LAKE CRYSTAL, MINNESOTA 56055 TELEPHONE 507-726-2728