

CRYSTEEL'S

TURBO

TELESCOPIC HOIST

MOUNTING AND OPERATING INSTRUCTIONS



**HIGHWAY 60 EAST
LAKE CRYSTAL
MINNESOTA 56055
TELEPHONE 507-726-2728
OUT OF MN 800-533-0494**

DATE PURCHASED _____
 BODY SERIAL NUMBER _____
 HOIST SERIAL NUMBER _____
 CYLINDER SERIAL NUMBER _____
 DEALER _____
 ADDRESS _____
 PHONE _____

TABLE OF CONTENTS

Purchase Record 1
 Table of Contents 1
 Foreword 2
 Operation and Use 3
 Some Do's and Don't's 3
INSTALLATION INSTRUCTIONS
 Locate Hoist Frame and Rear Hinge 4
 Mounting Dimensions for Different Angles 6
 Install Hoist Frame 6
 Install Rear Hinge 7
 Mount Pump-Standard 7
 Reverse Pump Rotation 8
 Mount Reservoir 9
 Install Valve Control 9
 Install Cylinder and Hoses 10
 Optional Return Line Filter Kit 10
 Add Hydraulic Oil 11
 Mount Body 11
 Install Body Guides 11
 Bleed Telescopic Cylinder 12
 Install Body Props 12
 Install Grease Zerks and Lubricate 13
 Install Lights, Reflectors and Decals 13
 OEM Installation 14
 Parts Lists and Diagrams 15-20
 Decals 21

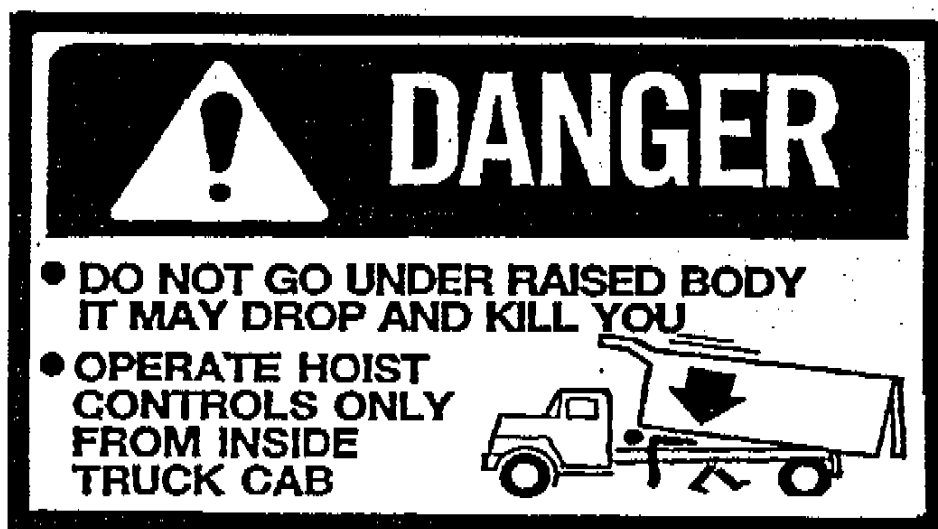
- FOREWORD -

The Crysteel Turbo Hoists are heavy duty, front mounted, telescopic hoists designed and intended for use under dump bodies. They are designed for single or tandem axle trucks with 9' to 23' bodies. The Turbo Hoist line provides hoists from model 4382 in NTEA class 50, to model 74200 in NTEA class 120.

This manual contains the information needed for the proper installation and operation of these hoists.

These instructions are for standard installations using a pump/valve unit in conjunction with a separate reservoir. Other hydraulic packages will come with additional instruction sheets. With proper installation, use, and regular maintenance, Crysteel's Turbo Hoists will give many years of trouble free service.

When ordering parts, be sure to give serial number of hoist, pump, and cylinder. The serial number of the pump is found on the plate on the pump. 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 on page 1. 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. 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.
3. 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.
4. **ALWAYS** return the hoist control lever to its center detent position after each use.
5. **DO NOT LEAVE THE PTO IN GEAR WHILE TRANSPORTING. THIS WILL CAUSE SEVERE DAMAGE TO THE HYDRAULIC PUMP/VALVE.**
6. 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.**

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 at regular intervals.
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 will ruin the hydraulic pump.
8. Check all bolts and fittings regularly. Keep them tight.

INSTALLATION INSTRUCTIONS

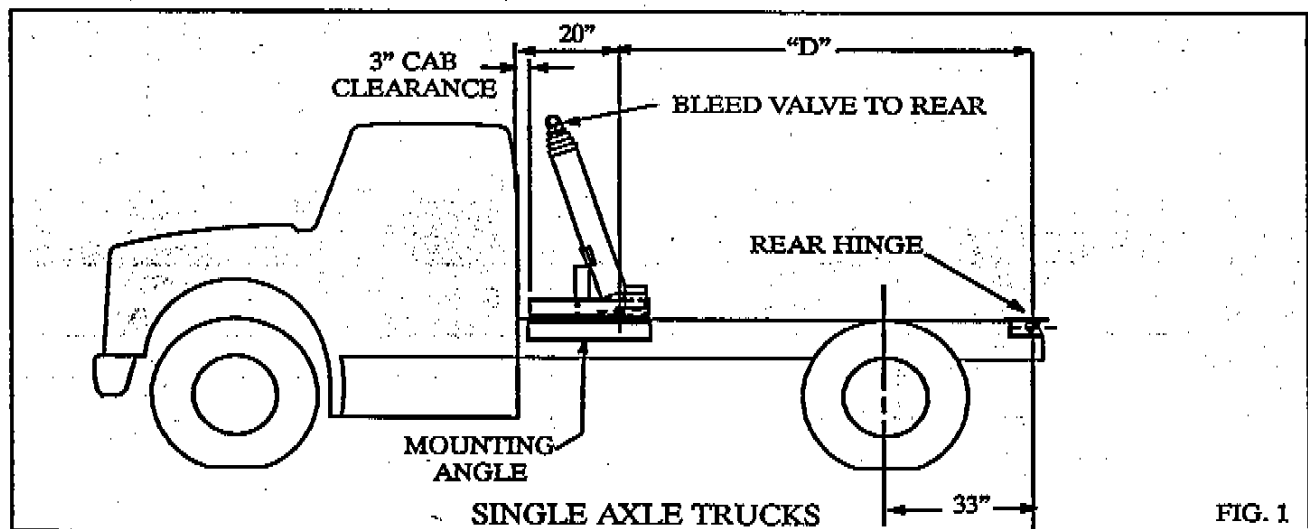
LOCATE HOIST FRAME AND REAR HINGE

The hoist frame assembly and the rear hinge must be located relative to each other as shown in Fig. 1 and Fig. 2. These illustrations show the mounting distance "D", with the actual number found in the corresponding tables. The mounting distance is measured from the center of the rear hinge pin to the center of the lower pin on the cylinder.

The mounting distance must never be less than the number given in the OEM table on page 6 under the 60° dump angle column. Mounting the hoist with less distance than this will cause damage to the rear hinge, the cylinder, and **VOID THE WARRANTY.**

Place the hoist frame and rear hinge on the truck frame and determine the proper placement of both before doing any cutting or drilling.

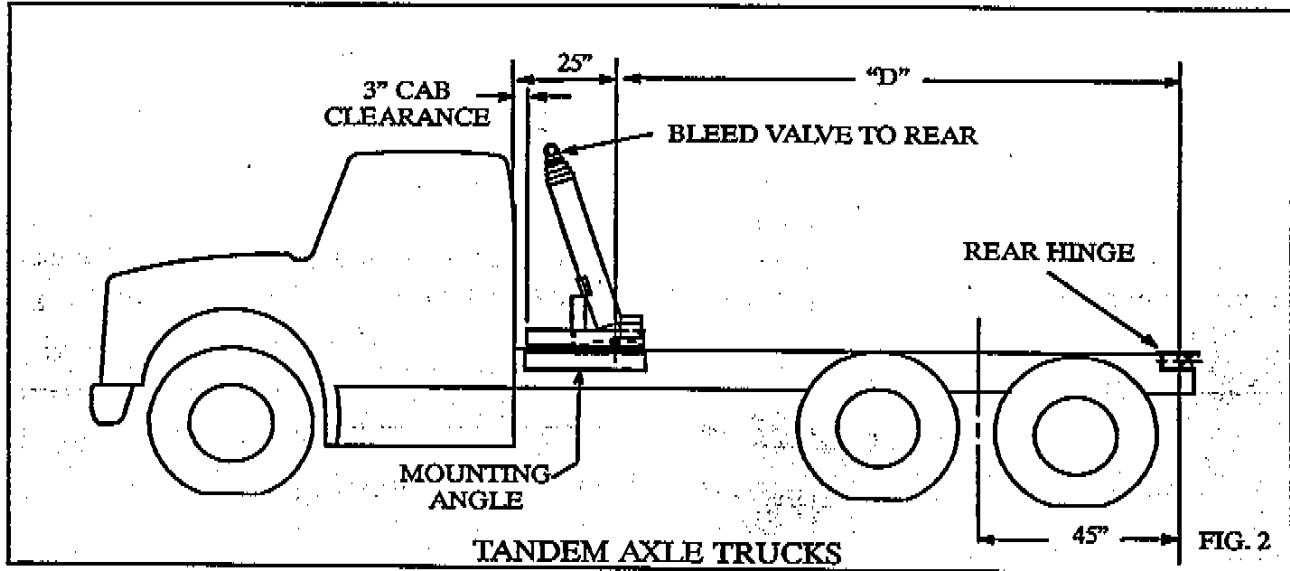
Place the hoist frame on the truck frame with the cylinder mounting holes to the rear and with at least 3" clearance from the cab of the truck as shown in Fig. 1 or 2. The front of the body will be even with the front of the hoist frame. If the body must be moved back to clear the transmission or vertical exhaust stack, move the hoist frame back the same amount so that they will be even in front. (cont. next page.)



STANDARD MOUNTING					
HOIST MODEL	BODY LENGTH	CA or CT DIM.	OVERHANG	DUMP ANGLE	"D" DIM.
4382	9'	72" CA	6"	58°	85"
5382	10'	84" CA	6"	50°	97"
5397	11'	96" CA	6"	53°	109"
	12'	102" CA	12"	50°	115"
	12'	96" CT	6"	47°	121"

Place the rear hinge on top of the frame and determine its proper location. The rear hinge must be located as close as possible behind the rear spring hanger. For single axle trucks, this will be approximately 33" behind the center of the rear axle, but not greater than 38". For tandem axle trucks, this will be approximately 45" behind the center of the tandem, but not greater than 50".

Using the mounting distance given for your particular model of Turbo Hoist (from Fig. 1 or Fig. 2 and the corresponding mounting tables), measure the mounting distance on your truck, after locating the hoist frame and rear hinge as discussed above. If you have a standard type installation these numbers should be similar. Before doing any cutting or drilling make sure the mounting distance, as measured from center of the rear hinge pin to the center of the lower cylinder pin, IS NOT LESS THAN the distance given in the OEM table (page 6) under the 60° dump angle column for your hoist model.



TANDEM MOUNTING					
HOIST MODEL	BODY LENGTH	CT DIM.	OVERHANG	DUMP ANGLE	"D" DIM.
CT53115 CT63115	13'	108"	6"	53°	128"
	14'	114"	12"	50°	134"
CT63135	15'	126"	12"	55°	146"
	16'	138"	12"	50°	158"
CT63153	17'	150"	12"	53°	170"
	18'	162"	12"	50°	182"
	19'	174"	12"	46°	194"
CT74176	19'	174"	12"	54°	194"
	20'	186"	12"	50.5°	206"
	21'	198"	12"	47.5°	218"
CT74200	20'	186"	12"	58°	206"
	21'	198"	12"	54.5°	218"
	22'	210"	12"	51.5°	230"
	23'	222"	12"	48.5°	242"
	24'	234"	12"	46°	254"

MOUNTING DIMENSIONS FOR DIFFERENT ANGLES

These "D" dimensions are for non standard installations or as a reference for non-standard truck frames. More information for OEM installations is on page 14.

"D" DIMENSION FOR OEM INSTALLATION			
HOIST MODEL	DUMP ANGLE		
	45°	50°	60°
CT5382	107"	97"	84"*
CT5397	127"	115"	98"*
CT63115	149"	136"	115"*
CT63135	176"	160"	135"*
CT63153	199"	181"	154"*
CT74176	230"	206"	178"*
CT74200	260"	236"	202"*

*This is absolute minimum "D" dimension. Less than this will result in damage to cylinder and rear hinge and VOID THE WARRANTY. DUMP ANGLE MUST NEVER EXCEED 60 DEGREES!

INSTALL HOIST FRAME

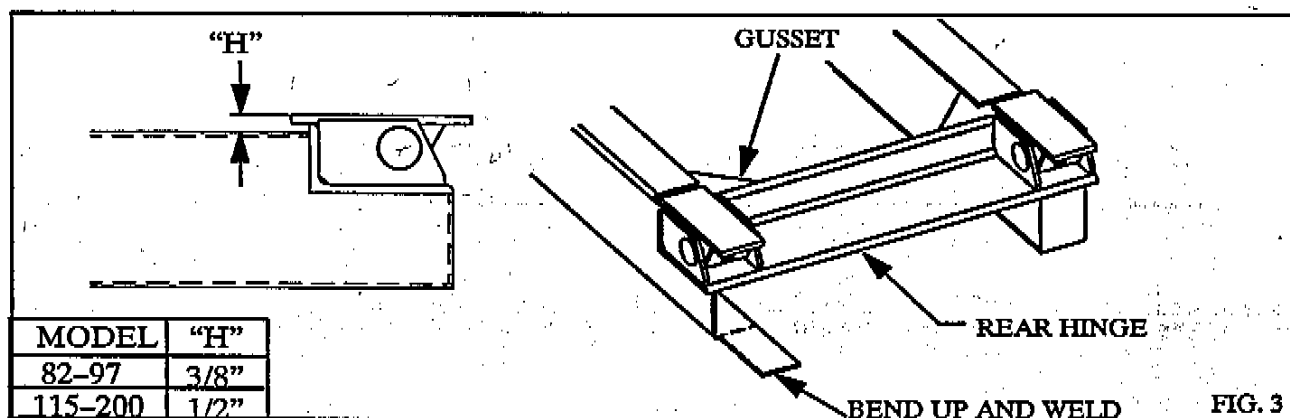
Make sure the hoist frame is correctly located (as determined by the previous instructions), centered, and square with the truck frame. If there are rivets or frame bolts in the way, a small hole can be torched in the side angles to allow the frame to sit down upon the truck frame. Clamp the frame mounting angles to the bottom of the hoist frame and to the outside of the truck frame rails. Mark the truck frame for drilling using the mounting angles as guides.

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

Drill 21/32" diameter holes in the truck frame and bolt the mounting angles in place using 5/8 x 1 3/4 long cap screws, lock washers and hex nuts. Securely weld the hoist mounting assembly to the mounting angles.

INSTALL REAR HINGE

Make sure the rear hinge is correctly located, centered and square with the frame, then mark the frame for notching. The rear hinge must be located so that the top of the pads are even with the top of the horizontal leg of the hoist frame angle. Refer to Fig. 3 below for the correct height for your model. Notch the truck frame as shown in Fig. 3, leaving enough of the bottom flange of the truck frame to be bent up to box in the truck frame. Place the rear hinge in the notch, making sure it is properly located, square, centered, and correct height above the frame, then weld securely in place. Bend the bottom flange up and weld all around to box in the rear of the truck frame. Place the gussets in the corners formed by the truck frame rail and the rear hinge frame angle. Raise the front end of the gusset until it touches the top frame rail. Be careful so that the gusset will not interfere with the rear hinge operation. Securely weld the gussets to the rear hinge, the truck frame rail, and the top flange of the truck frame.



MOUNT PUMP - STANDARD

The standard pump is intended to be mounted directly to a two-gear PTO with a direct mount flange. This saves time and effort and simplifies the installation. The pump has an SAE-B 4-bolt flange and a 13 tooth splined shaft. The pump is assembled with a counter-clockwise rotation when looking at the shaft end of the pump.

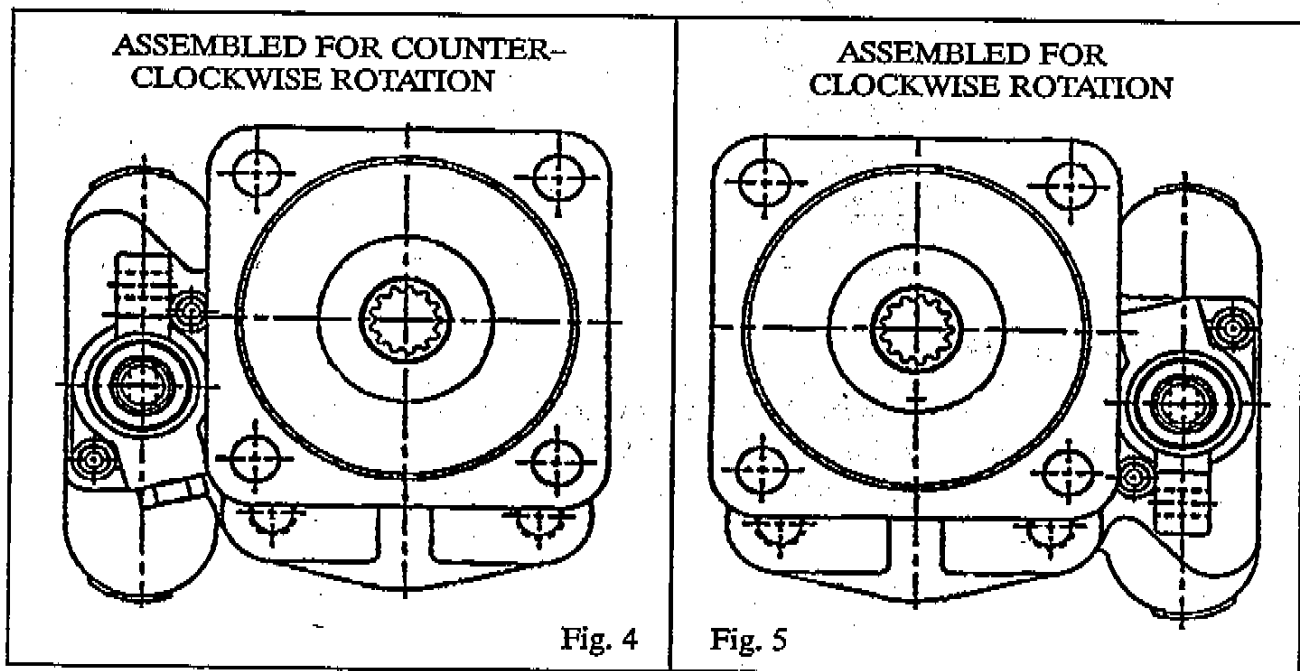
IMPORTANT: Before mounting the pump/valve unit, check the rotation of the PTO and make sure it matches the rotation of the pump. If it is opposite, the pump rotation will have to be reversed. To reverse the pump rotation, follow the pump reversing procedure on page 8. Make sure the pump has plenty of clearance and that the hoses are kept clear of hot mufflers and exhaust pipes.

IMPORTANT: The C102D pump/valve supplied for the 74176 and 74200 can be mounted directly to a PTO but **MUST** be supported externally to the transmission. Long mounting studs and extra nuts are provided with each unit for this purpose.

REVERSING PUMP ROTATION

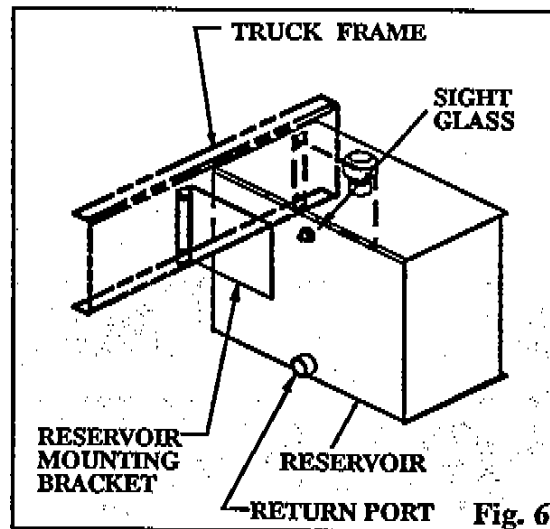
The pump is assembled with a counter-clockwise rotation when looking at the shaft end of the pump. (Looking at the shaft end of the pump with the drive shaft on top and the idler gear on the bottom, the valve spool will be on the left side. See Fig. 4.) If the pump needs to rotate in the opposite direction, then follow these steps to reverse the pump:

1. Remove the four 9/16-12 capscrews holding the pump together.
2. CAREFULLY remove the valve body assembly from the pump.
3. CAREFULLY remove the gear housing. Rotate the housing 180° and replace it. The drive shaft gear bore becomes the idler gear bore.
4. Rotate the valve body 180° from its original position and replace it.
5. Replace the four 9/16-12 capscrews and torque to 2400in-lbs.
6. To verify that the pump is now assembled for clockwise rotation, look at the shaft end of the pump with the drive shaft on the top and the idler gear on the bottom, the valve spool will be on the right side. (See Fig. 5.)
7. Fill the suction port with hydraulic oil and rotate shaft to fill the gears with oil.



MOUNT RESERVOIR

To mount the reservoir, determine which side of the truck to mount the reservoir. There are four ports on the reservoir – a fill tube on the top, a suction port on the bottom (2" NPT), a return port near the bottom on one side (1 1/4 NPT) and one smaller port near the top on one side for a sight glass. Clamp the reservoir mounting brackets to the sides of the reservoir and place the reservoir against the outside of the truck frame. (See Fig. 6.) Mark the truck frame for drilling using the mounting brackets as guides. Drill 17/32" holes in the truck frame (See caution note on page 6) and bolt the mounting brackets in place using 1/2 x 1 3/4 cap screws, lock washers and hex nuts. Securely weld the reservoir to the reservoir mounting brackets. Install the sight glass in the port provided.



INSTALL VALVE CONTROL

Place the control pedestal assembly on the floor of the cab in a convenient location next to the drivers seat. Mark the floor using the pedestal as a template and drill 1/4 inch holes for the mounting screws and a 3/4 inch hole for the control cable. (Check below the floor for obstructions and cable routing before drilling.)

Insert the control cable through the hole in the bottom of the pedestal and attach it to the valve control. Bolt the valve control to the pedestal using 1/4 X 1/2 slotted screws. Install the cover on the side of the pedestal using #10 x 3/8 self-tapping screws. Mount the pedestal to the floor using 5/16 x 3/4 self tapping screws. Connect the other end of the cable to the control valve using the parts and instructions in the valve connection kit. **NOTE:** The two spool seal retaining plates must remain installed on the pump/valve unit. If they are removed, oil can be pumped past the spool into the control cable and into the cab of the truck.

INSTALL CYLINDER AND HOSES

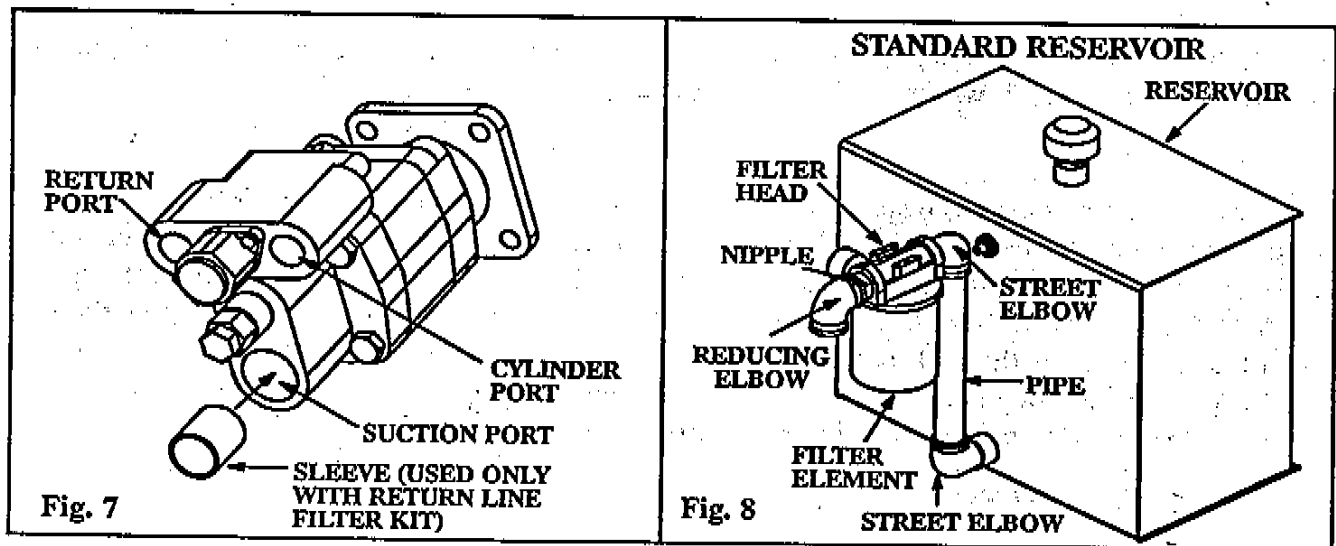
Install the cylinder in the hoist frame with the cylinder port towards the cab and the bleed plug towards the rear. Secure the cylinder using the lower cylinder pin supplied (see Fig. 12, page 15) and bolt the pin in place with a 1/2" bolt, lockwasher, and hex nut. Securely brace the cylinder to prevent it from hitting the cab and with it tilted slightly forward to aid in mounting the body. Install grease fittings in the top and bottom bushing of the cylinder.

Hose and fitting sizes for your specific model of Turbo Hoist can be found in the parts table on page 15. Install ORB swivel adapters in the cylinder port of the control valve and in the port on the cylinder. Using the 60" long hose, connect the cylinder port on the valve to the cylinder.

NOTE: If the return line filter kit is used, install it before installing the suction hose. See the following section.

Install the proper hose barb in the bottom of the reservoir and the other hose barb in the suction port on the back of the pump/valve unit. Connect the two hose barbs with the suction line hose provided and secure it with hose clamps.

At the top of the cylinder is a temporary 1/8" NPT plug. Replace it with the bleed valve assembly supplied. Be sure that the bleed valve points towards the rear of the truck.



OPTIONAL RETURN LINE FILTER KIT

A return line filter is available and consists of a filter, a return line hose, a sleeve for the pump and fittings. Install the sleeve in the suction port of the pump. (See Fig. 7.) Install a 1 1/4 street elbow in the return port on the reservoir. (See Fig. 8.) Install a 1 1/4 x 13" long pipe in the street elbow and a 1 1/4 street elbow on the top of the pipe. Install the OUT port of the filter head on this street elbow. Install a 1 1/4 pipe nipple in the IN port of the filter head and install a 1 1/4 x 1 reducing elbow in this pipe nipple. Remove the plug from the return port on the control valve and install a 90° swivel adapter in its place. Install a 60" long 1" ID hose from the return port on the control valve to the IN port of the filter head. Install the filter element on the filter head.

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, or use Type A automatic transmission oil for improved performance in cold weather. Initially fill the reservoir with the quantities given below. After 2 or 3 cycles, refill the reservoir to the sight glass level with the body down. **DO NOT OVERFILL THE RESERVOIR!**

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

With normal use and working conditions the hydraulic oil should be changed annually. The breather cap should be cleaned every time the hydraulic oil is changed. With heavy use or very dusty working conditions the hydraulic oil should be changed more often.

MODEL	RES. SIZE	INITIAL FILL	REFILL TO SIGHT GLASS WITH BODY DOWN.
82-97	16 GAL.	12 GAL.	
115-153	31.5 GAL.	24 GAL.	
176-200	40 GAL.	30 GAL.	

NOTE: If the pump does not pump oil, pressurize the reservoir and engage the pump with the engine at slow idle. Once the pump is working, release the pressure and install the breather cap.

MOUNT BODY

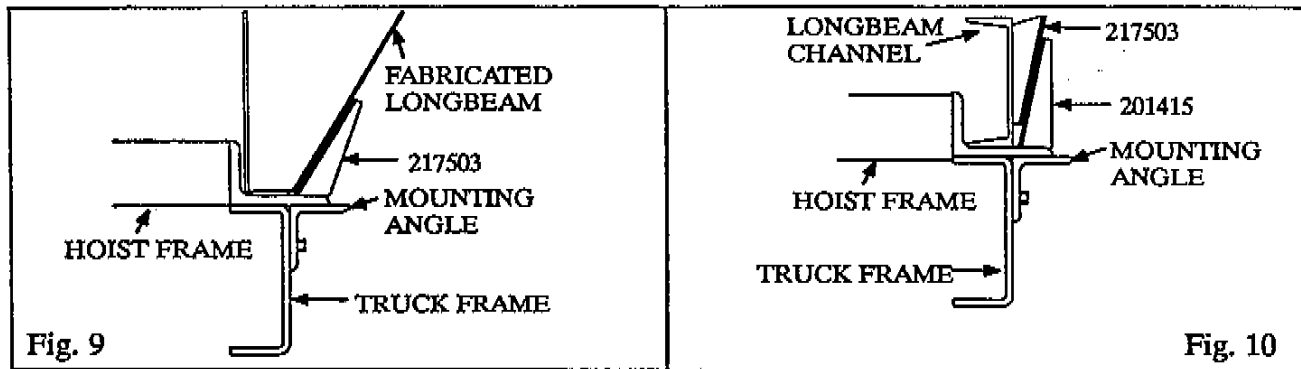
It is recommended that the body be painted before it is mounted on the truck. Remove the top cover of the doghouse. Place the rivet strip mounting pads on the truck frame between the hoist frame and rear hinge. Space them evenly with one over the front spring shackle or over the center tandem pivot. Place the body on the truck with 2" of cab clearance. Attach the body to the cylinder using pin and bolt shown in Fig. 12, page 15. Slide the body back until the body longbeams are even with the front of the hoist frame. Make sure the body is centered over the truck frame in front and in back. Securely weld the longbeams to the rear hinge, and weld the rivet strips to the longbeam.

INSTALL BODY GUIDES

The four body guides supplied with your hoist are of two types. Part number 217503 has an obtuse angle that allows it to match the angle of fabricated longbeams. Position this type as shown in Fig. 9 with wide end down, pushed against the longbeam, and centered over the hoist lower mounting angle. Weld securely to the mounting angles. **DO NOT** use the other body guides with fabricated longbeams.

Part number 201415 body guide is used with channel type longbeam and has a right angle that allows it to be positioned as shown in Fig. 10. Position this guide 1/4" away from the longbeam, centered over the lower mounting angle. Place the 217503 body guide inside of it as shown so that the flat sides of the guides fit together. Weld number 201415 to the lower mounting angle and 217503 to the longbeam.

There should be **NO SIDEPLAY** when the truck body is in the lowered position.



BLEED TELESCOPIC CYLINDER

The following procedure will bleed all the air from the cylinder when it is first installed and should be followed carefully.

1. Engage the pump at a slow idle.
2. Raise the body to its full height. Shut off the truck engine.
3. Lower the body until only the largest stage is still extended.
4. Loosen the bleed valve on the cylinder to let the trapped air escape. When oil starts to come out, retighten the bleed valve.

After bleeding the cylinder, check the oil level in the reservoir. There should be 2 or more inches of oil in the bottom of the reservoir when the body is raised to its full height.

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

INSTALL BODY PROPS

The body prop is designed and intended to support an **EMPTY** truck body in the raised position. Use of the body prop permits service to be performed safely beneath a raised body. One body prop is included with Turbo Hoist models 4382 through 5397; two body props (one pair) are included with models 53115 through 74200. Be sure to install each prop on the correct side of the truck as explained below.

1. Raise the body to a 30° to 35° angle and brace it securely before beginning installation.
2. Assemble the prop arm to the prop pivot mount with a 1/4 x 3 roll pin. Clamp the prop pivot mount against the outside of the truck frame just behind the rear axle. Raise the body prop arm to a free standing position. Place the body prop bracket in the prop arm saddle. Reposition if needed to locate the prop bracket on the longbeam. It may be necessary to raise or lower the body to get the best location for the prop pivot mount. Using the prop pivot mount as a guide, mark the location of holes on the truck frame and drill 17/32 inch holes. Assemble the prop pivot mount to the frame using 1/2 x 1 3/4 cap screws, lock washers and hex nuts. Raise the prop arm to a free standing position, place the body prop bracket in the saddle and securely weld the bracket to the longbeam.
3. When mounting two body props, repeat steps 1 and 2 for the other side. Use the body prop already mounted to assure that both body props hold the body at the same height. The left and right body props should pivot toward the front of the truck in the storage position.

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 body prop bracket contacts the prop arm saddle.
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.

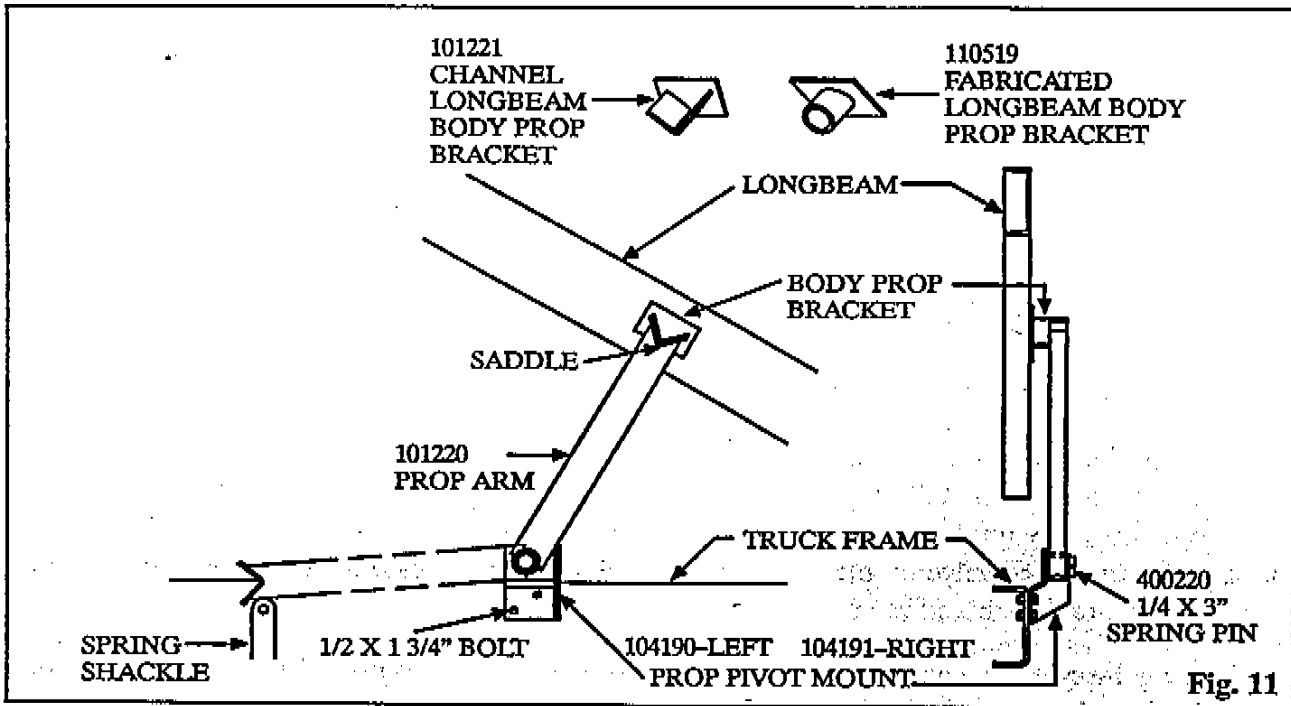


Fig. 11

INSTALL GREASE ZERKS AND LUBRICATE

Install grease zerks in the body props. Lubricate all fittings at regular intervals, at least every 150 cycles or every two months. The grease fittings are located as follows:

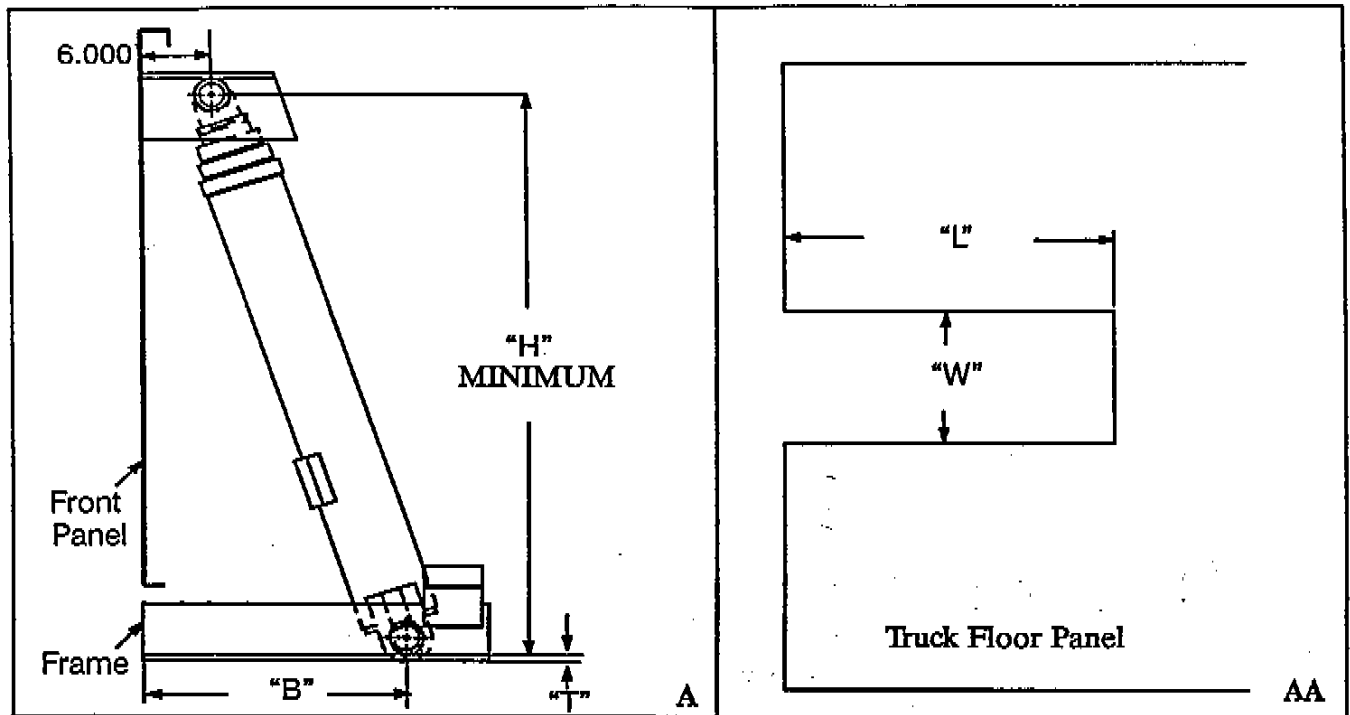
- | | |
|--------------------------------|--------------------------------|
| B. Body Prop | 1 fitting per-prop |
| C. Rear Hinge | 2 fittings |
| D. Latch Lever | 1 fitting |
| E. Tailgate Latch Pivot | 2 fittings |
| F. Tailgate Hinge Pivot | 2 fittings |
| G. Cylinder Top Pivot | 1 fitting under doghouse cover |
| H. Cylinder Bottom Pivot | 1 fitting |

After the air has been bled out of the cylinder and the hoist greased, replace the top cover of the doghouse using 3/8 x 3/4 cap screws and lock washers.

INSTALL LIGHTS, REFLECTORS AND DECALS

Install the lights and connect the wiring using the connectors supplied. Mount the amber reflectors near the front on the sides. Mount the red reflectors near the rear on the sides and on the tailgate. Slip the rubber hand grip over the end of the latch control lever. MOUNT DECALS IN THE PROPER PLACES. See the illustrations on page 21 for decal identification and placement.

OEM INSTALLATIONS



In Fig. A the front of the body must line up with the front of the hoist frame, this puts the cylinder lower pivot, Dim "B" back from the front of the body. The upper pivot must be located 6" back from the front of the body and no lower than the dimension "H" given for the particular model being installed. Dimension "H" is referenced from the bottom of the body longbeam which rests upon the lower frame mounting angle, dimension "T" off the truck frame.

Fig. AA shows the minimum opening in the body floor to give proper clearance for the cylinder when fully extended and allow clearance to the side for some body twisting. These dimensions allow the doghouse panels to be up to 1/4" thick when extended through the floor opening.

Crysteel has doghouse kits available for all models.

MODEL	DIM "T"	DIM "H"	DIM "B"	DIM "L"	DIM "W"	CYLINDER WORKING DISPLACEMENT
4382	3/8"	30 1/16" ^{40 3/8}	17"	26 1/2"	15 3/16"	4.1 Gal.
5382	3/8"	30 1/16" ^{40 7/8}	17"	26 1/2"	15 3/16"	5.8 Gal.
5397	3/8"	35 1/4" ^{46 1/8}	17"	26 1/2"	15 3/16"	6.9 Gal.
53115	1/2"	50 1/8"	22"	36"	18 3/16"	8.1 Gal.
63115	1/2"	50 1/8"	22"	36"	18 3/16"	11 Gal.
63135	1/2"	57 1/4"	22"	36"	18 3/16"	13 Gal.
63153	1/2"	63 3/8"	22"	36"	18 3/16"	15 Gal.
74176	1/2"	57 1/4"	22"	38"	18 3/16"	20 Gal.
74200	1/2"	63 3/8"	22"	38"	18 3/16"	23 Gal.

TURBO HOIST FRAME PARTS

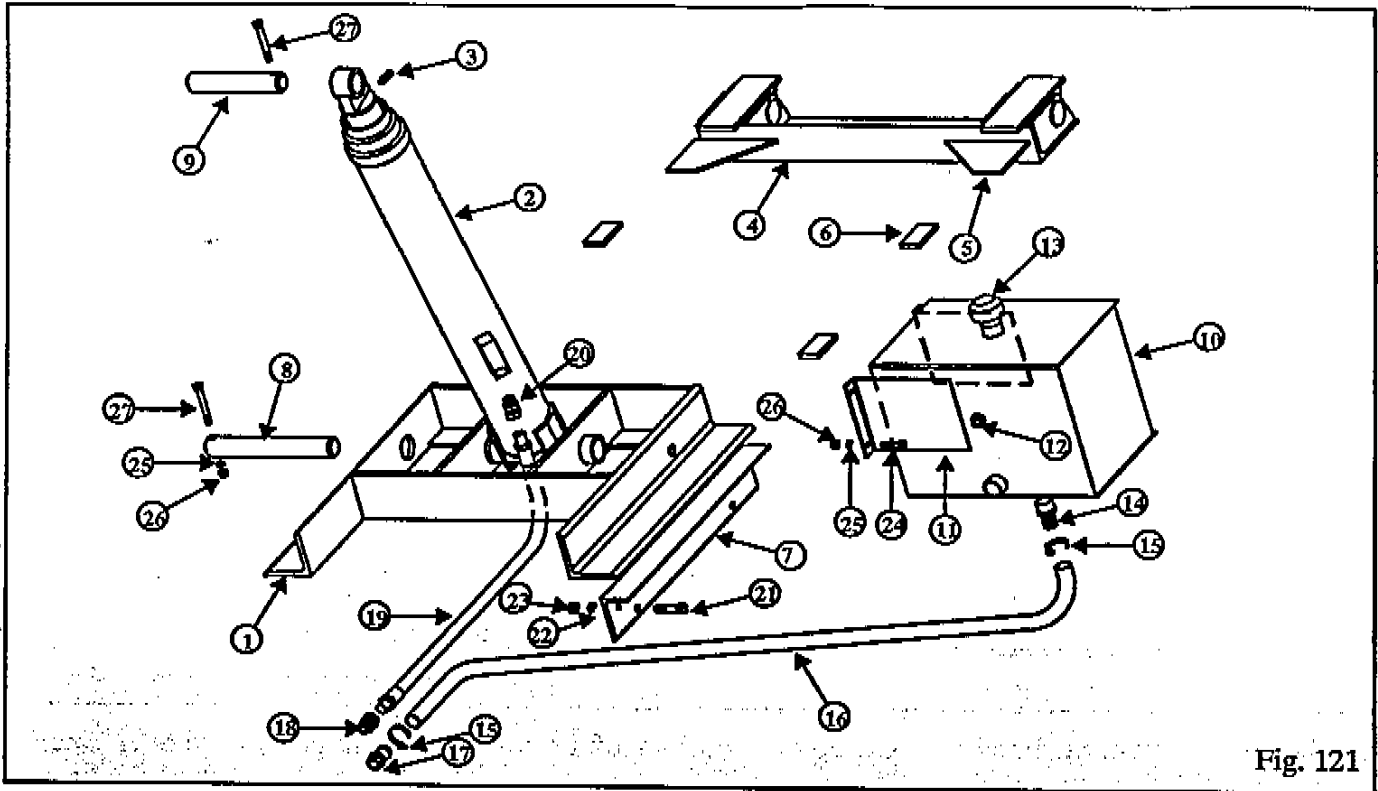


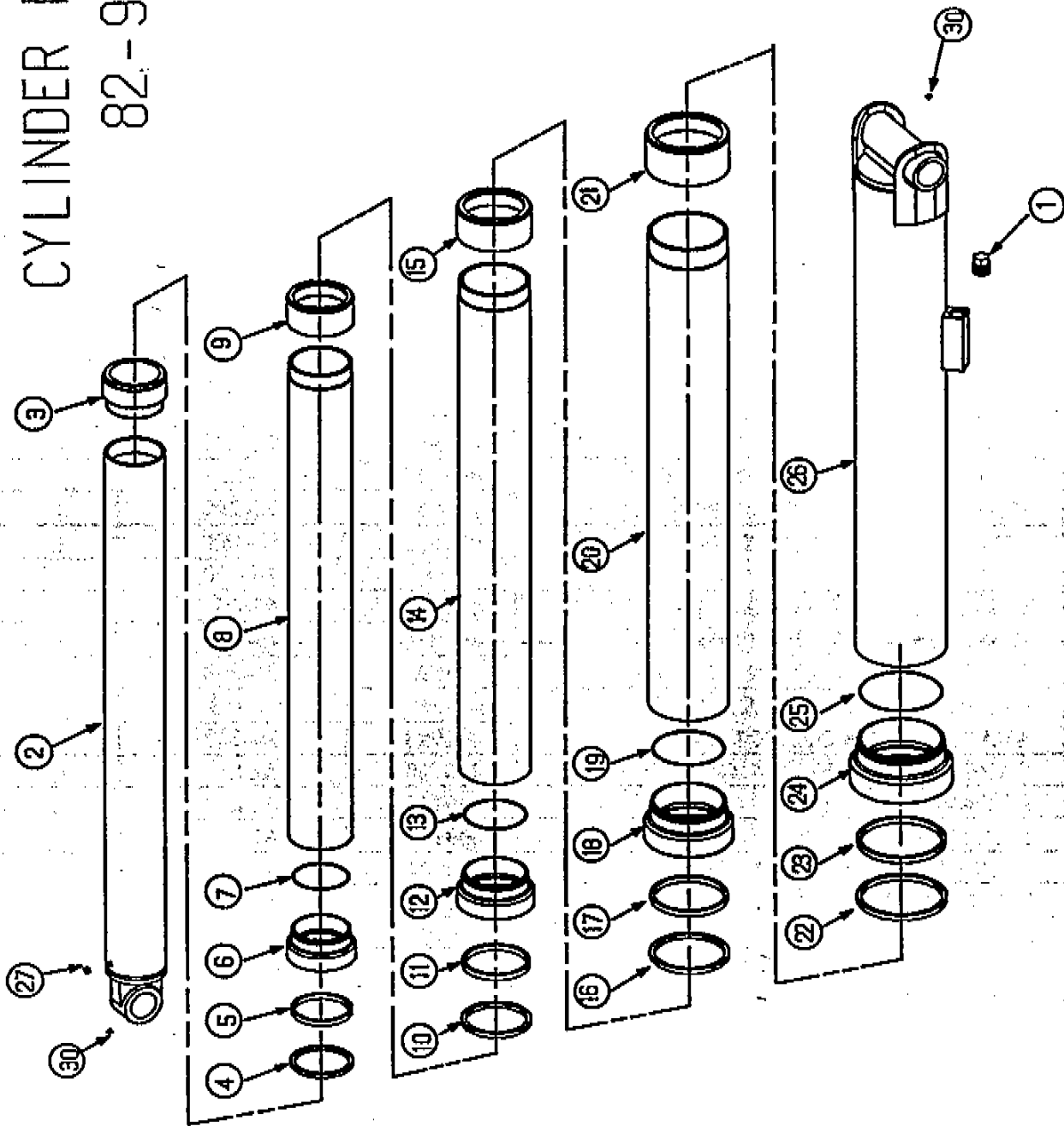
Fig. 121

PARTS LIST

ITEM	DESCRIPTION	PART #	MODEL	QTY.
1.	HOIST FRAME	107269	115-200	1
		107270	82-97	1
2.	CYLINDER ASSY	107285	4382	1
		107276	5382	1
		107273	5397	1
		107266	53115	1
		107251	63115	1
		107260	63135	1
		107261	63153	1
		107283	74176	1
		107284	74200	1
		3.	BLEED VALVE	115311
4.	REAR HINGE	106060	82-97	1
		107037	115-200	1
5.	REAR HINGE GUSSET	208075	ALL	2
6.	RIVET STRIP	200892	82-97	6
		200890	115-200	6
7.	MOUNTING ANGLE	208483	82-97	2
		208439	115-200	2

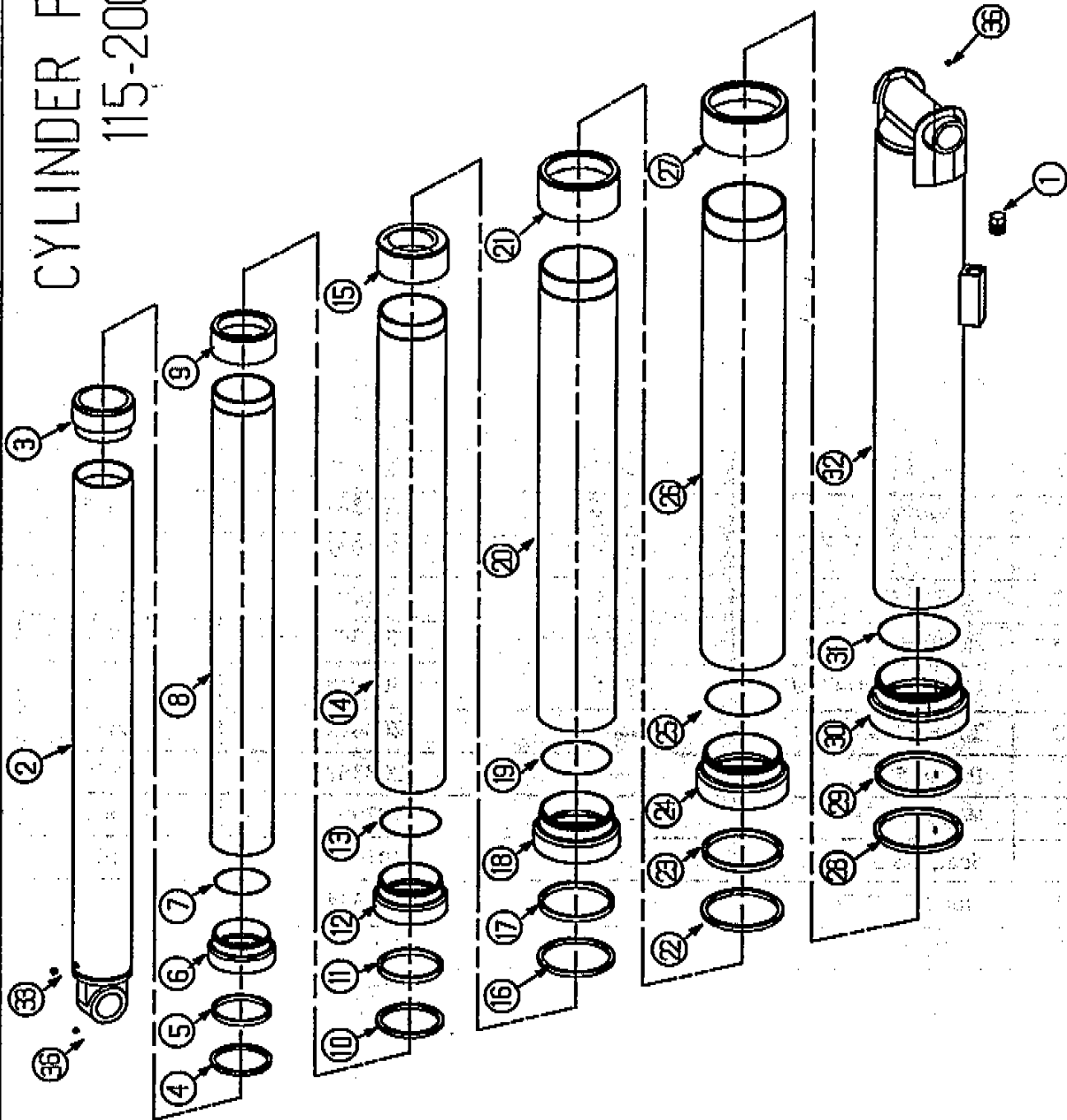
ITEM	DESCRIPTION	PART#	MODEL	QTY.
8.	LOWER CYLINDER PIN	208481	82-97	1
		208436	115-200	1
9.	UPPER CYLINDER PIN	208482	82-97	1
		208437	115-200	1
10.	RESERVOIR ASSY	113744	82-97	1
		113746	115-153	1
		115465	176-200	1
11.	RESERVOIR MOUNTING ANGLES	205764	ALL	2
12.	SIGHT GLASS	401453	176-200	1
13.	BREATHER CAP	400764	ALL	1
14.	HOSE BARB 2" NPT X 1 1/2	401724	82-153	1
	HOSE BARB 2" NPT X 2"	401994	176-200	1
15.	HOSE CLAMP 1 1/4"	401441	82-153	2
	HOSE CLAMP 2"	401995	176-200	2
16.	SUCTION LINE HOSE 1 1/4"	401727	82-153	1
	SUCTION LINE HOSE 2"	401996	176-200	1
17.	HOSE BARB 1 1/4 NPT X 1 1/2"	401725	82-153	1
	HOSE BARD 1 1/4 NPT X 2"	401997	176-200	1
18.	ADAPTER 1 1/16 ORB X 3/34	401657	82-153	1
		N/A	176-200	
19.	HOSE 3/4 NPT X 72 X 3/4" ID	401982	82-97	1
	HOSE 3/4 NPT X 72 X 1" ID	401856	115-153	1
	HOSE 1 1/4 NPT X 72 X 1 1/4" ID	401993	176-200	1
20.	ADAPTER 1 1/16 ORB X 3/4"	401657	82-153	1
	ADAPTER 1 5/8 ORB X 1 1/4"	401998	176-200	1
21.	CAPSCREW 5/8 X 1 3/4 G5	400100	ALL	10
22.	LOCKWASHER 5/8"	400160	ALL	10
23.	HEX NUT 5/8"	400181	ALL	10
24.	CAPSCREW 1/2 X 1 3/4 G5	400104	ALL	4
25.	LOCKWASHER 1/2"	400161	ALL	5
26.	HEX NUT 1/2"	400182	ALL	5
27.	CAPSCREW 1/2 X 3 1/4"	401140	82-97	1
	CAPSCREW 1/2 X 3 3/4"	400138	115-200	1

CYLINDER PARTS 82-97



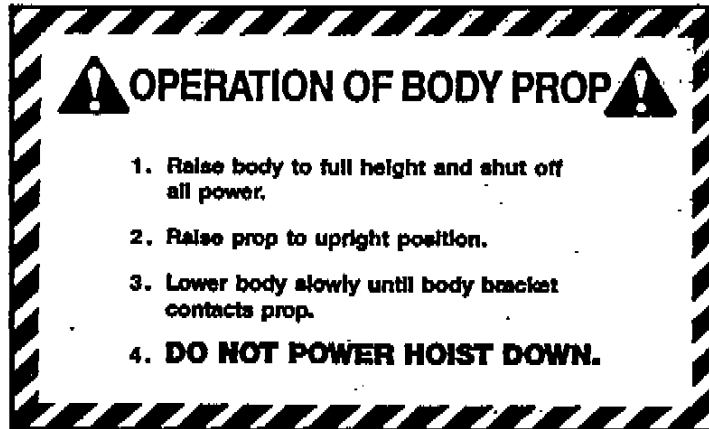
ITEM	DESCRIPTION	CT4382	CT5382	CT5397
1.	Hex Plug 1 1/16	401572	401572	401572
2.	Inner Tube Assy	107287	107278	107275
3.	Piston 2 3/4"	213683	—	—
4.	Wiper 2 3/4" I.D.	401690	—	—
5.	Seal, BS 2 3/4" I.D.	401695	—	—
6.	Head 2 3/4" I.D.	208341	—	—
7.	O-Ring 2 7/8" I.D.*	400956	—	—
8.	Tube 3 1/2" O.D.	208507	—	—
9.	Piston 3 1/2"	208360	213684	213684
10.	Wiper 3 1/2" I.D.	401691	401691	401691
11.	Seal 3 1/2" I.D.*	401696	401696	401696
12.	Head 3 1/2" I.D.	208342	208342	208342
13.	O-Ring 3 1/2" I.D.*	400957	400957	400957
14.	Tube 4 1/4" O.D.	208508	208493	208489
15.	Piston 4 1/4"	208361	208361	208361
16.	Wiper 4 1/4" I.D.	401692	401692	401692
17.	Seal, BS 4 1/4" I.D.*	401697	401697	401697
18.	Head 4 1/4" I.D.	208343	208343	208343
19.	O-Ring 4 1/4" I.D.*	400958	400958	400958
20.	Tube 5" O.D.	—	208494	208490
21.	Piston 5"	—	208362	208362
22.	Wiper 5" O.D.	—	401693	401693
23.	Seal, BS 5" O.D.	—	401698	401698
24.	Head 5" O.D.	—	208344	208344
25.	O-Ring 5" O.D.	—	400959	400959
26.	Outer Tube Assy	107286	107277	107274
27.	Bleed Valve	115311	115311	115311
28.	Seal Kit (items with *)	114348	107219	107219
29.	Assy Cylinder	107285	107276	107273
30.	Grease Zerk	400103	400103	400103

CYLINDER PARTS 115-200

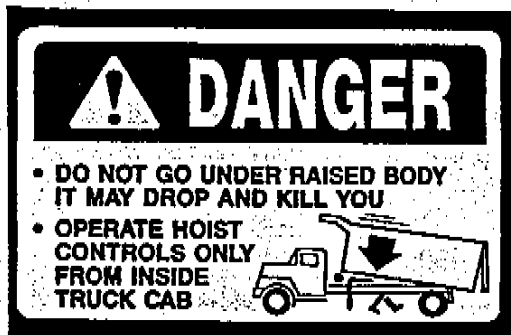


ITEM	DESCRIPTION	CT53115	CT63115	CT63135	CT63153	CT74176	CT74200
1.	Hex Plug 1 1/16	401572	401572	401572	401572	401572	401572
	Hex Plug 1 5/8						
2.	Inner Tube Assy	107268	107253	107264	107265	107264	107265
3.	Piston 3 1/2	213684	—	—	—	—	—
4.	Wiper 3 1/2"	401691	—	—	—	—	—
5.	Seal, BS 3 1/2 I.D.	401696	—	—	—	—	—
6.	Head 3 1/2" I.D.	208342	—	—	—	—	—
7.	O-Ring 3 1/2" I.D.	400957	—	—	—	—	—
8.	Tube 4 1/4" I.D.	208467	—	—	—	—	—
9.	Piston 4 1/4"	208361	208334	208334	208334	208334	208334
10.	Wiper 4 1/4" I.D.	401692	401692	401692	401692	401692	401692
11.	Seal, BS 4 1/4" I.D.	401697	401697	401697	401697	401697	401697
12.	Head 4 1/4" I.D.	208343	208343	208343	208343	208343	208343
13.	O-Ring 4 1/4" I.D.*	400958	400958	400958	400958	400958	400958
14.	Tube 5" O.D.	208468	208442	208461	208462	208461	208462
15.	Piston 5"	208362	208362	208362	208362	208362	208362
16.	Wiper 5" I.D.	401693	401693	401693	401693	401693	401693
17.	Seal 5" I.D.*	401698	401698	401698	401698	401698	401698
18.	Head 5" I.D.	208344	208344	208344	208344	208344	208344
19.	O-Ring 5" I.D.*	400959	400959	400959	400959	400959	400959
20.	Tube 5 3/4" O.D.	—	208443	208463	208464	208463	208464
21.	Piston 5 3/4"	—	208363	208363	208363	208363	208363
22.	Wiper 5 3/4" I.D.	—	401694	401694	401694	401694	401694
23.	Seal, BS 5 3/4" I.D.*	—	401699	401699	401699	401699	401699
24.	Head 5 3/4" I.D.	—	208345	208345	208345	208345	208345
25.	O-Ring 5 3/4" I.D.*	—	401236	401236	401236	401236	401236
26.	Tube 6 1/2" I.D.	—	—	—	—	208497	208498
27.	Piston 6 1/2" I.D.	—	—	—	—	208501	208501
28.	Wiper 6 1/2" I.D.	—	—	—	—	401981	401981
29.	Seal, BS 6 1/2 I.D.	—	—	—	—	401980	401980
30.	Head 6 1/2" I.D.	—	—	—	—	208502	208502
31.	O-Ring 6 1/2 I.D.	—	—	—	—	401235	401235
32.	Outer Tube Assy	107267	107252	107262	107263	107281	107282
33.	Bleed Valve	115311	115311	115311	115311	115311	115311
34.	Seal Kit (items with *)	107219	107220	107220	107220	107296	107296
35.	Assy Cylinder	107266	107251	107260	107261	107283	107284
36.	Grease Zerk	400103	400103	400103	400103	400103	400103

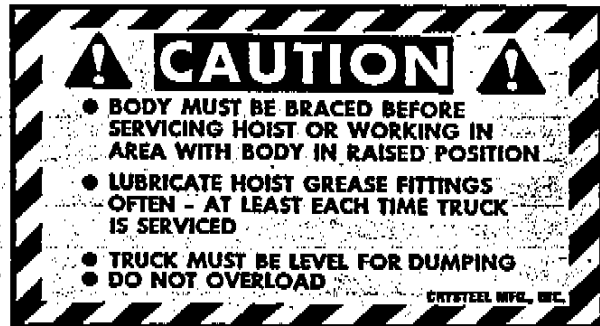
AFTER THE HOIST IS INSTALLED AND THE BODY HAS BEEN PAINTED INSTALL THE DECALS IN THE FOLLOWING LOCATIONS:



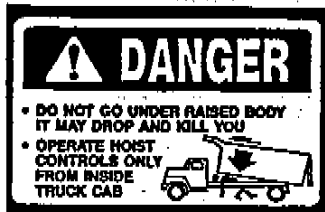
400719-Mount on the body longbeam near the body prop



401576-Mount on the outside of the body longbeams near the front of the body (one on each side).



400643-Mount on the longbeam on the drivers side.



401577-Mount in the cab in a prominent location



400642-Mount in the cab in a prominent location



400661-Mount on the body prop arm.

*SPECIALLY DESIGNED – WITH QUALITY IN MIND***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.

! 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.**HIGHWAY 60 EAST LAKE CRYSTAL, MN 56055**