

OWNERS MANUAL

ASSEMBLY ● OPERATING ● MAINTENANCE ● REPAIR PARTS LIST

KWIK-WAY HYDRAULIC FRONT END LOADER

LOADER MODEL NUMBER LIH100A-75

INTERNATIONAL

FOR INTERNATIONAL CUB CADET
MODELS NUMBERED

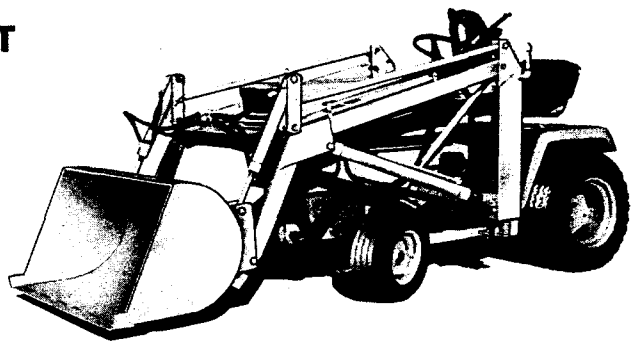
128, 129 and 149

for years 1972, 1973 and 1974

Also Models Numbered

1200, 1250, 1450, and 1650

for 1975



HYDRAULIC LOADER MANUFACTURED BY K-W MANUFACTURING CO., INC.

800 S. MARION ROAD

SIOUX FALLS, SOUTH DAKOTA 57106

(605) 336-6032

LOADER MODEL NUMBER LIH100A-75

The Model Number will be found on a Label attached to the right side of the main frame. Always mention the Model Number in all correspondence regarding your LOADER or when ordering repair parts.

All parts listed herein may be ordered through your local dealer. When ordering parts by mail selling prices will be furnished on request or parts will be shipped at prevailing prices and you will be billed accordingly.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION AS SHOWN IN THIS LIST:

1. THE PART NUMBER
2. THE PART DESCRIPTION
3. THE MODEL NUMBER, LIH100 A-75
4. THE NAME OF ITEM — — LOADER

GUARANTEE AND WARRANTY

All K-W PRODUCTS have been manufactured from the very finest materials and by skilled workmen, therefore, K-W Manufacturing Co., Inc. guarantees this PRODUCT against defective workmanship and materials for a period of six months. (Limited to 30 days if the Loader is used for commercial purposes.)

Hydraulic components such as valves, pumps, cylinders, hoses, etc., will carry only their respective manufacturer's warranty. This warranty does not cover any merchandise which, in the opinion of the company, has been subjected to negligent handling, misuse, or accident.

Warranty claims on components will not be approved and credit issued until defective items are returned to the factory (PREPAID) and our respective suppliers have approved our Warranty Claims. When credit is received by K-W Manufacturing Co., Inc., we will issue credit in an amount equal to that received from the component supplier. K-W cannot warranty any merchandise, which, in the opinion of the company, has been subjected to negligent handling, misuse, or accident. All Warranty Claims must be submitted in writing. Written approval from the company must be obtained before any merchandise and warranty parts are returned to the factory.

K-W Manufacturing Co., Inc., reserves the right to make changes, improvements, and modifications at any time without incurring the obligation to make such changes, improvements, and modifications on any products sold previously.

K-W MANUFACTURING CO., INC.
800 South Marion Road
Sioux Falls, South Dakota 57106
Telephone 605-336-6032

ASSEMBLY

IMPORTANT: READ THESE INSTRUCTIONS COMPLETELY BEFORE DOING ANYTHING, THEN GO BACK AND BEGIN STEP BY STEP.

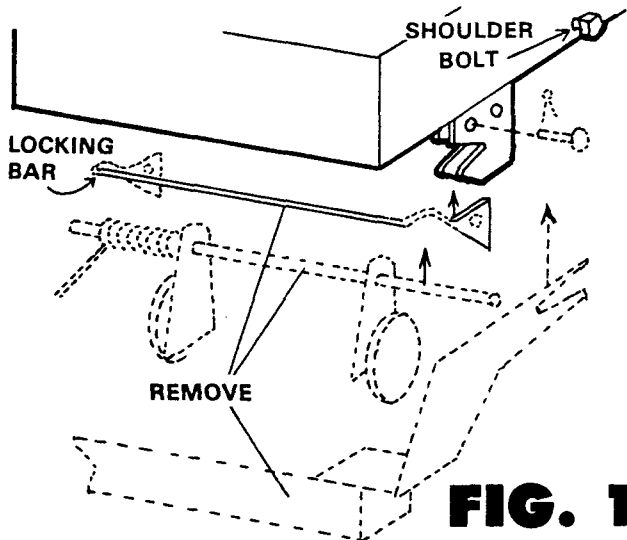
When R. H. (right hand) and L. H. (left hand) are used, it should be understood to mean from a position behind and facing the Loader (or direction of travel).

NOTE: Leave all nuts and bolts finger tight until tightening is specified.

Pre-Mounting Preparation

1. Refer to Fig. 1.

If your tractor is equipped with a mid-mounted lawn mowing unit, the brackets for attaching the mower must be removed before your front end loader can be attached to your tractor. IN ADDITION, the attachment locking bar, its retaining pins and springs must be removed from front of tractor below the grill, (see Fig. 1) because the pump mounting bracket will be bolted at this point. (BOTH SIDES OF TRACTOR)



Assembly of Pump Mounting Bracket with Pump and Drive Pulley Attached

2. Refer to Fig. 2.

The Hydraulic Pump and its Mounting Bracket are shipped as a pre-assembled unit. (see Fig. 2)

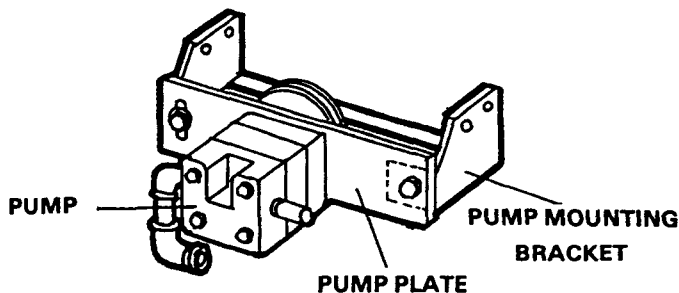


FIG. 2

ASSEMBLY OF PUMP (continued)

3. Refer to Fig. 3.

The Pump Unit attaches to the front of the tractor where the locking bar was removed. (see Fig. 3) Bolt into place using (2) $\frac{1}{2}$ x $1\frac{1}{2}$ " Bolts, Lockwashers and Nuts and (2) $\frac{3}{8}$ x $1\frac{1}{2}$ " as shown. Tighten these bolts wrench tight.

NOTE: The item number, as given, refers to the reference numbers given each item on the parts diagrams as illustrated on the back pages of this manual.

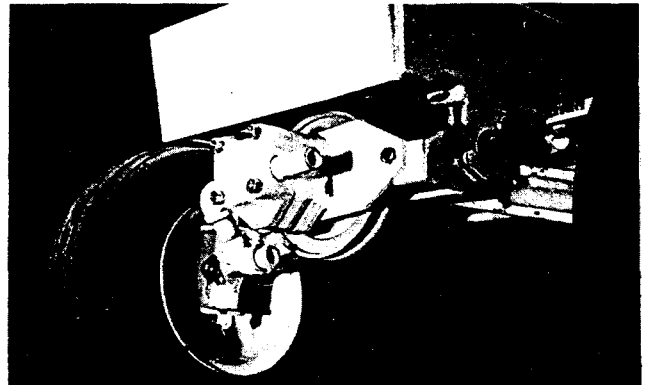


FIG. 3

Pump Belt

4. Refer to Fig. 4.

Loosen Bolts that hold Pump Plate to Pump Mounting Bracket, and place belt (item 5) around engine pulley and pump pulley. Use a bar as a lever to pry down on pump plate to tighten belt. Tighten pump plate Bolts previously loosened to apply tension on belt.

The belt is properly tightened when the belt "gives" about $\frac{1}{2}$ " to $\frac{3}{4}$ ". (see Fig. 4)

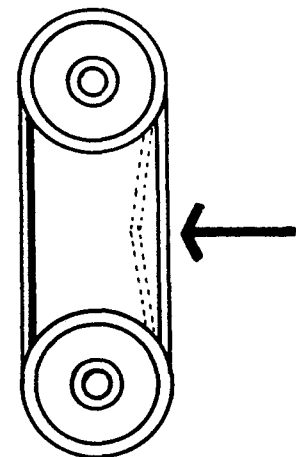


FIG. 4

CAUTION: Do not overtighten Belt, or severe damage to Pump and Bearings may be the result.

ASSEMBLY (continued)

Pressure and Suction Hose

5. Refer to Fig. 5.

The Pressure and Suction Hoses (items 30 and 31) which have been packed in the kit carton, should be attached next. Slide a Hose Clamp (item 33) over one end of the Suction Hose (item 31) (large hose without threaded fitting ends). Be sure tightening screw on hose clamp is accessible for tightening. Push Hose over Pipe Fitting on mounted Pump Unit (A). Tighten Hose Clamp to secure Hose to fitting. The Pressure Hose (item 30) has a swivel connection on one end and a ridged connection on the other end. Apply pipe thread sealant to ridged fitting and screw this end into elbow on mounted Pump Unit (B). Tighten with wrench. The free ends of these two hoses will be connected later.

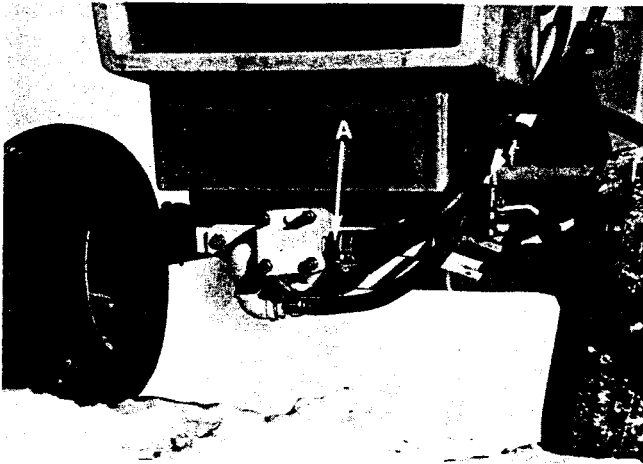


FIG. 5

Mounting the Sub-Frame Crossmember

6. Refer to Fig. 6.

Slide Sub-Frame under tractor with vertical ears toward the front of tractor. (see Fig. 6)

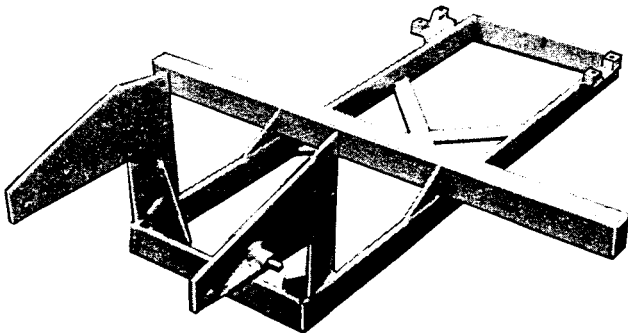


FIG. 6

7. Refer to Fig. 7.

The fasteners for holding the sub-frame into place consist of (2) 3/8" U-Bolts, Lockwashers and Nuts; (6) 3/8 x 1" Bolts, Lockwashers and Nuts; and (2) 1/2 x 1" Bolts and Lockwashers.

SUB-FRAME CROSSMEMBER (continued)

Remove the two shoulder bolts on side of tractor frame, (one on each side). These are not used when the Loader is mounted. (see Fig. 7)

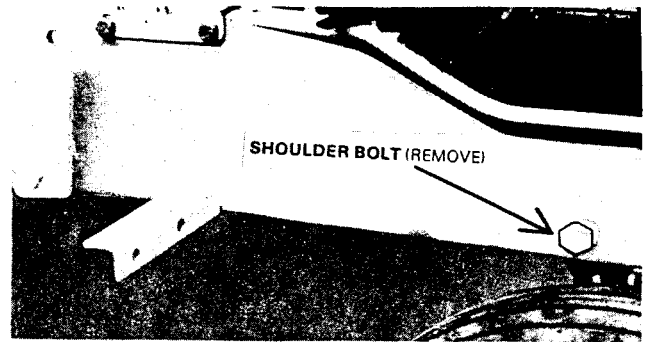


FIG. 7

8. Refer to Fig. 8.

Raise Sub-Frame up in front and hold in place with (6) 3/8" Bolts, Lockwashers and Nuts. (see Fig. 8) Leave these Nuts finger tight only.

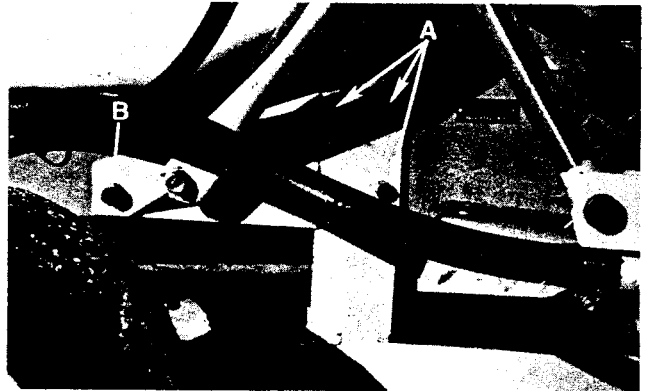


FIG. 8

9. Refer to Fig. 9.

Raise rear of Sub-Frame and place U-Bolts over axle and install Lockwashers and Nuts after dropping U-Bolts through holes in rear of Sub-Frame. Now go back to front of sub-frame and install (2) 1/2 x 1" Bolts, Lockwashers and Nuts where tractor shoulder bolts were previously removed. (see B as shown in Fig. 8) Tighten all Nuts and Bolts.



FIG. 9

ASSEMBLY (continued)

Mounting the Uprights

10. Ref. to Fig. 10.

Place Reservoir Upright (A) flush with outer end of cross-member part of Sub-Frame (C). Place upright Retainer Bracket (D) up tight around cross-member, connecting with feet of Upright. (the two pegs on front do not use bolts) Connect all with one $\frac{1}{2}$ " hex nut and lockwasher (E) onto welded bolt on back side of retainer bracket as shown. Place Upright (B) onto cross-member as before. Using Upright (A) as a reference point, the inside to inside measurement between the two Uprights should be $30\frac{1}{2}$ ". Tighten bolts finger tight only, as this distance may have to be adjusted slightly when Main Frame is attached.

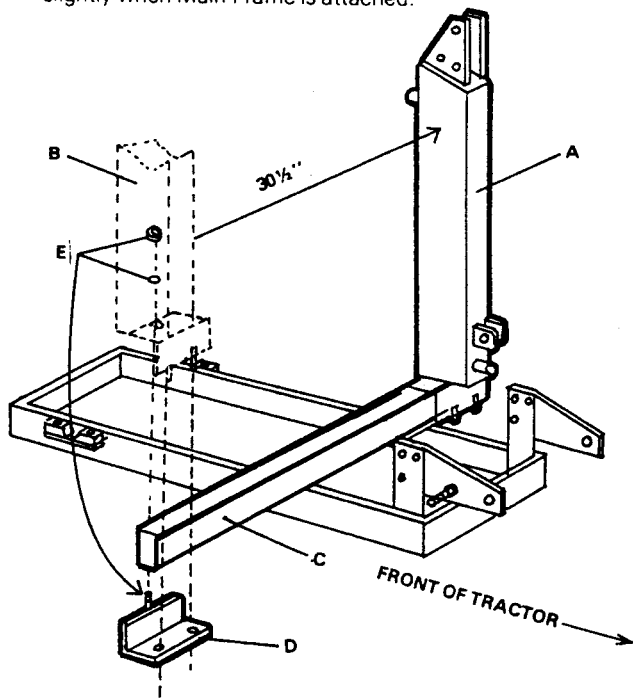


FIG. 10

Mounting the Brace Arms

11. Refer to Fig. 11.

Attach loader Brace Arms (E) to Upright (D) using $\frac{1}{2}$ x $1\frac{1}{2}$ " Bolt (A), Spacer (B), Lockwasher and Nut (C) as shown. NOTE: the Valve Mounting Plate is shown in its correct position (attached to the Reservoir Upright) but this cannot be included yet, as it is pre-assembled and connected to the loader Main Frame by the control valve and (4) hydraulic hoses. **DO** connect the Brace Arm and Spacer at this point, leaving the bolt finger tight as the Valve Plate will be included later.

MOUNTING THE BRACE ARMS (continued)

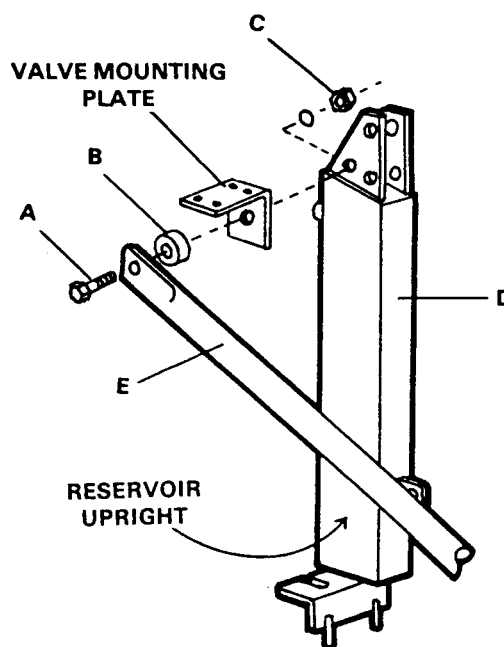


FIG. 11

12. Refer to Fig. 12.

Attach the front ends of the Brace Arms as follows. Attach lower end of Brace Arm (A) to welded bolt on sub-frame (B) with a $\frac{1}{2}$ " Lockwasher and Nut (C). Repeat on other side. Tighten all Bolts wrench tight except where Valve Mounting Plate must be inserted.

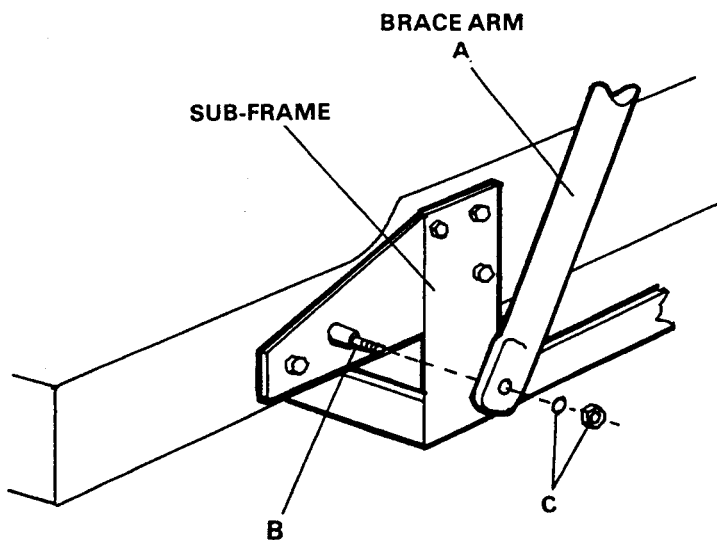


FIG. 12

ASSEMBLY (continued)

Mounting the Main Frame

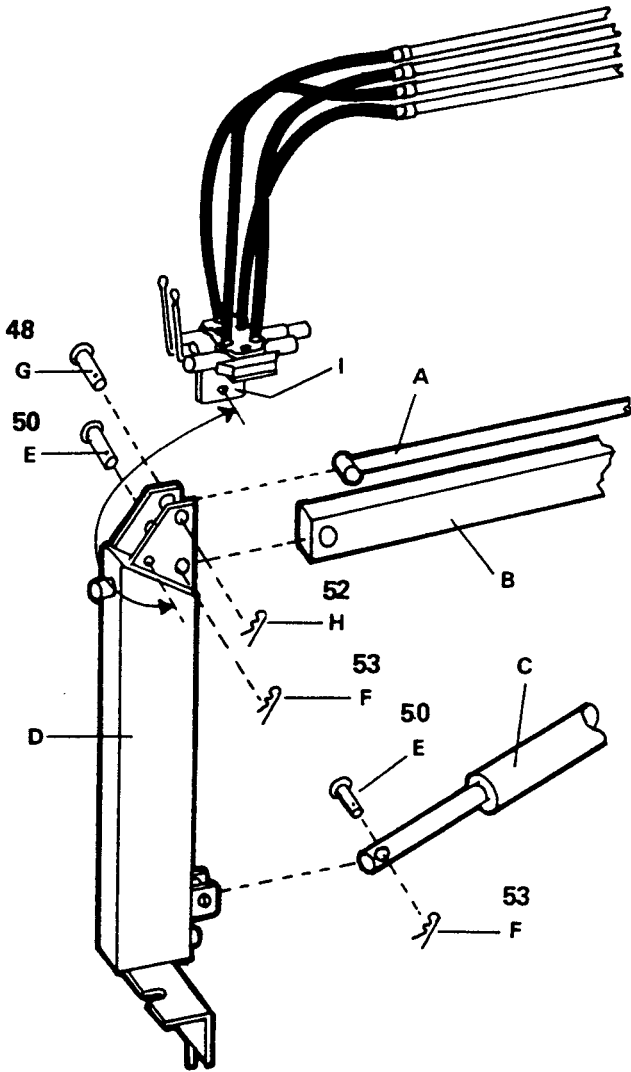


FIG. 13

13. Refer to Fig. 13.

Hoist pre-assembled Main Frame into position and connect points (A), (B), and (C) to Upright (D). Points (B) and (C) both use (1) $\frac{3}{4}$ x $2\frac{1}{2}$ " Hitch Pin (E) and #11 Clip Pin (F). Point (A) is connected with (1) $\frac{5}{8}$ x $2\frac{1}{2}$ " Hitch Pin (G) and #3 Clip Pin (H). Now connect the Valve Mounting Plate (I), with valve attached, to the Upright Reservoir. Refer back to FIG. 11.

NOTE: For detailed parts, fittings and assembly, refer to the detailed parts diagram found toward the back of this manual. Use pipe thread dope on all threads.

Connecting Suction, Pressure and Return Hydraulic Hoses

14. Refer to Fig. 14.

Hook up Pressure and Suction Hoses to Pump as shown in FIG. 14. For specific parts involved, see detailed diagram in FIG. 20.

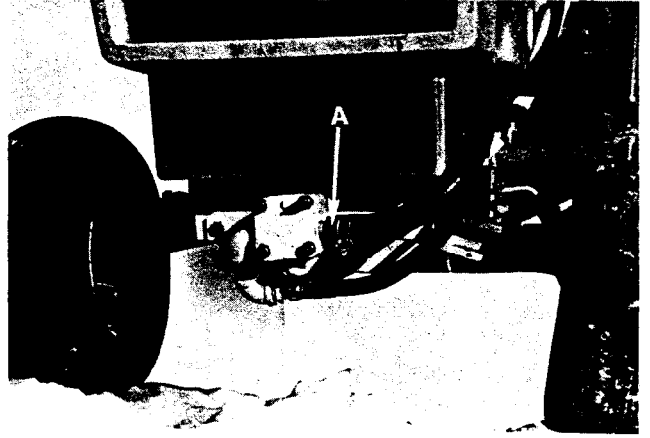


FIG. 14

15. Refer to Fig. 15.

Slide the Hose Clamp (A) over the free ends of the Suction Hose (B) and slip Suction Hose over pipe End (C) located at bottom of Upright Reservoir and tighten with screwdriver. Plug free end of Pressure Hose (D) into Quik Coupling (E) located on Valve. Locate Return Hose (F). Screw non-swivel end into Valve, where shown, and tighten. Use white lead or pipe sealing compound on threads. Screw swivel end of Return Hose into Elbow located at rear of Reservoir as shown.

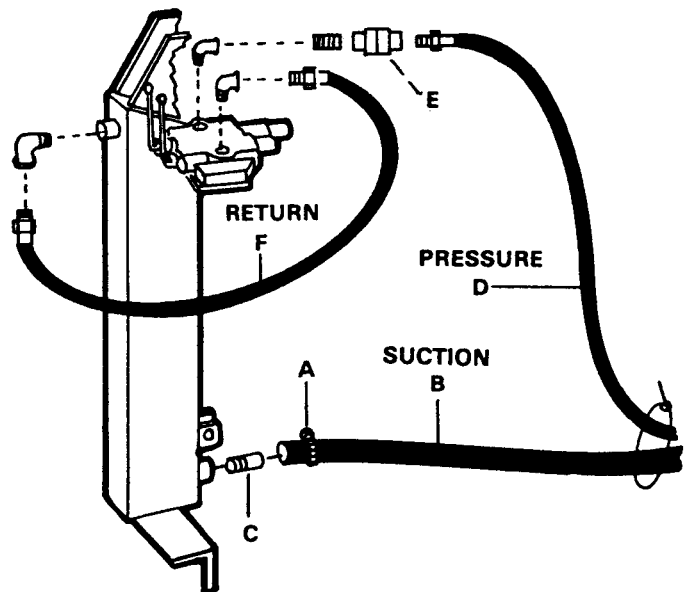


FIG. 15

INSTRUCTIONS BEFORE USING LOADER

DOUBLE CHECK:

1. Owner's Manual for recommended tire pressure (25 to 30 lbs. in front tires).
2. Check that all bolts have been tightened and that all wrenches, etc., have been removed from tractor.

16. Refer to Fig. 16.

Fill Upright Reservoir (filler plug on outside as shown) with 5 quarts of good grade hydraulic oil. (Type "A" automatic transmission fluid is a good hydraulic oil) Start tractor engine (set speed at 1/2 throttle) and operate loader and bucket Cylinders at least five or six times to remove entrapped air. Lower loader (NOTE, when lowering loader, DO NOT push L. H. handle all the way forward into FLOAT POSITION) and retract bucket Cylinders (pull back on R. H. handle) and ADD three more quarts of oil. Replace Filler Plug and attach Bucket or other accessory to front of loader frame with pins and clips furnished.

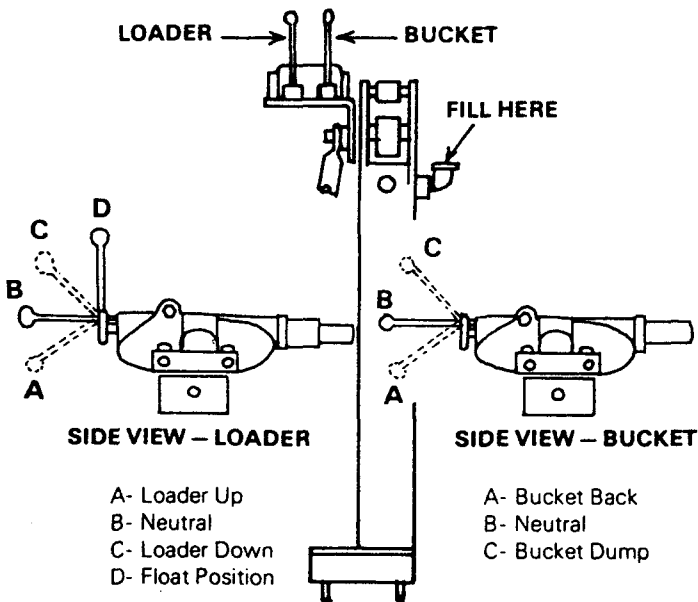


FIG. 16

NOTE: For best tractor stability and performance, we strongly recommend dual wheels and wheel weights be added. (weight box or wheel weights or both is desirable) These items can be purchased separately at your loader supplier. **CAUTION**, do not attempt to lift excessive loads.

OPERATING INSTRUCTIONS

Main lift cylinders and bucket cylinders are double acting type (both push and pull under hydraulic power). This means that the loader can be forced down as well as up. It means that the bucket can be tilted down or up with hydraulic pressure. Some other loaders have single acting systems where only the lifting operation is under power and downward movement is by gravity.

Your loader has what is termed a "self-leveling" feature on the bucket linkages. This means the bucket stays in the same attitude during the lifting cycle as it is at the start. Without this feature, it is necessary to tilt the bucket backward as it is raised to prevent material from spilling out during the lift cycle.

HYDRAULIC CONTROL VALVE

Your loader control valve is technically called a two spool, four way, two position stack valve with an added detent float position. Each spool has a handle. The left hand handle operates the lift cylinders and contains the detented float position. The right hand handle operates the bucket cylinders. Both handles will return to neutral except from float position when released.

VALVE OPERATION

(also refer back to Fig. 16)

- Position A** Right handle pulled back, bucket will roll back.
- Position C** Right handle pushed forward, bucket will dump.
- Position A** Left handle pulled back, loader frame will raise.
- Position C** Left handle pushed half way forward, loader frame will lower.
- Position D** Left handle pushed all the way forward (this is float position). Handle will stay until manually released.

To this position no hydraulic fluid is directed to the lift cylinders. If the loader frame is up off the ground, it will lower to the ground by gravity attraction. When the bucket is on the ground (and the valve is still in float position) the bucket will follow the contour of the ground when the tractor is moving forward or in reverse gear. This position allows hydraulic oil to flow back and forth in hydraulic system at will as loader is raised and lowered by ground contour.

CAUTION: Do not allow bucket lip to dig when tractor is moving forward with valve in the float position. Bucket bottom should be level with the ground or slightly rolled back.

The float position is most commonly used in conjunction with attachments in snow removal operations. It is a common practice with farm tractor loaders and commercial handling units to ram the bucket into the material to be moved in order to fill it. In operating small riding garden tractor loaders, tractor should be run in low gear high range and the hydraulic capabilities of the main and bucket cylinders used to work material loose and fill the bucket.

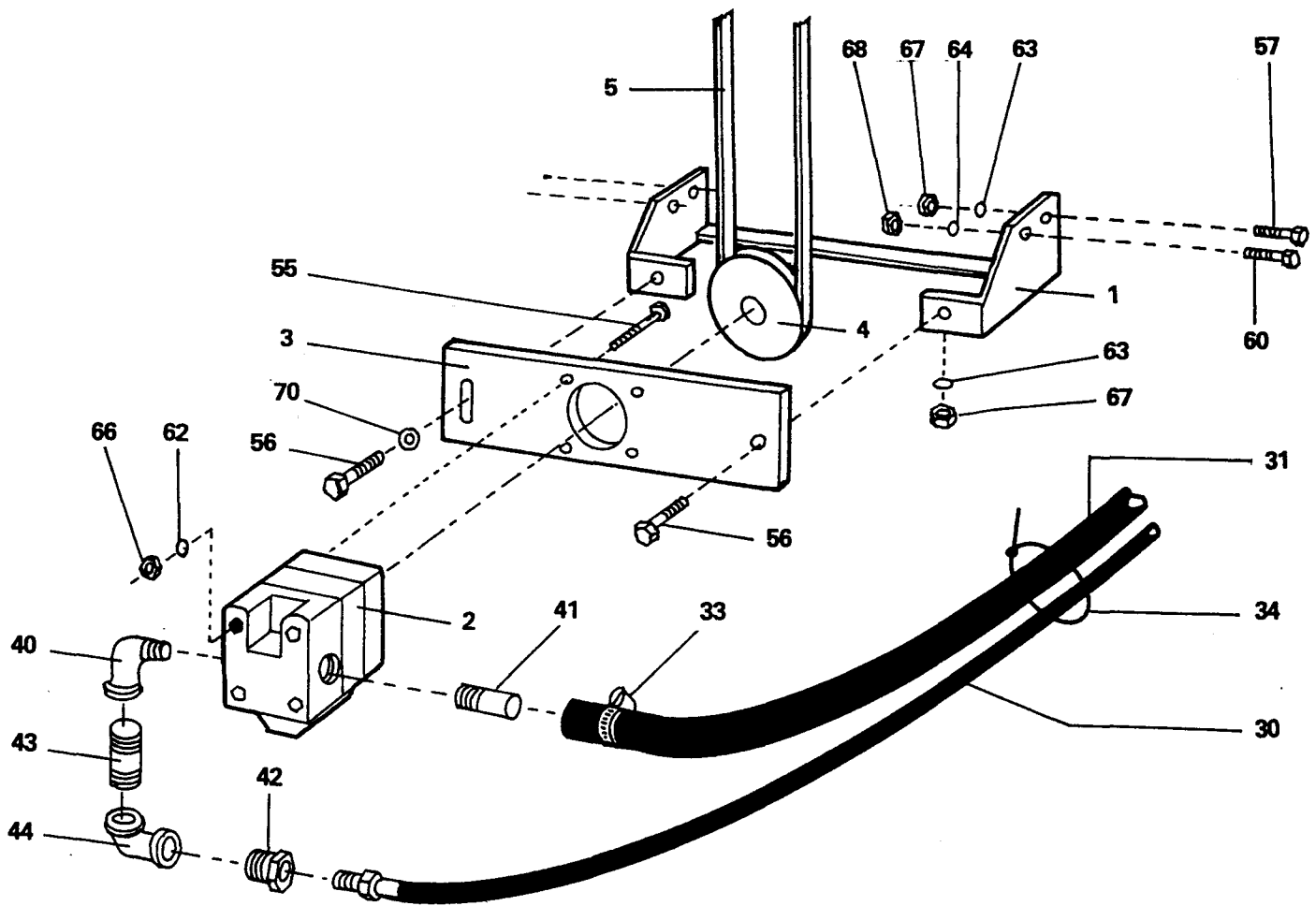


FIG. 17

REPAIR PARTS – PUMP MOUNTING UNIT

REFERENCE NUMBER	DESCRIPTION	PART NUMBER	NUMBER REQUIRED
1	PUMP MOUNTING BRACKET	10716	1
2	C210 PUMP	100098	1
3	PUMP MOUNTING PLATE	10721	1
4	5½" DIA. X 7/16" BORE PULLEY, "A" GROOVED	100371	1
5	4L310 BELT	100019	1
30	52" HYDRAULIC HOSE, PRESSURE	100134	1
31	HYDRAULIC HOSE, SUCTION, 55"	100166	1
33	HOSE CLAMP	100138	1
34	PLASTIC ZIP STRIP	100257	1
40	½" X 90° STREET ELBOW	100115	1
41	½" PIPE END	100120	1
42	½ TO 3/8" HEX HEAD BUSHING	100114	1
43	½ X 4" PIPE NIPPLE	100198	1
44	½" PIPE ELBOW		1
55	5/16 X 4" BOLT	100044	4
56	3/8 X 1¼" BOLT	100046	2
57	3/8 X 1½" BOLT	100047	2
60	½ X 1½" BOLT	100057	2
62	5/16" LOCKWASHER	100073	4
63	3/8" LOCKWASHER	100074	4
64	½" LOCKWASHER	100076	2
66	5/16" N. C. NUT	100084	4
67	3/8" N. C. NUT	100085	4
68	½" N. C. NUT	100087	2
70	3/8" FLAT WASHER	100079	1

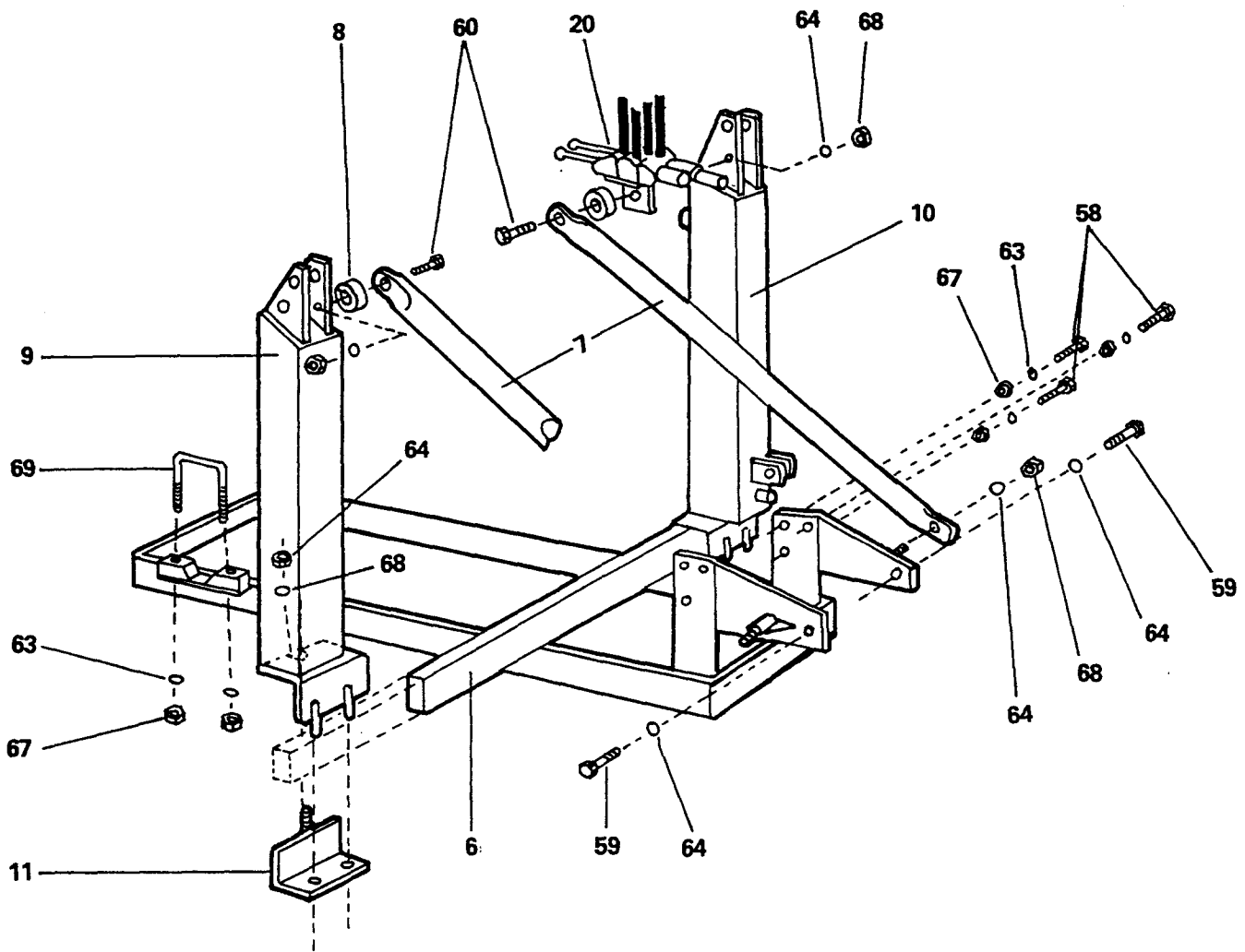


FIG. 18

REPAIR PARTS — SUB-FRAME — BRACE ARMS UNIT

REFERENCE NUMBER	DESCRIPTION	PART NUMBER	NUMBER REQUIRED
6	SUB-FRAME ASSEMBLY	10703	1
7	BRACE ARM	10165	2
8	BRACE ARM SPACER	100001	2
9	UPRIGHT, R. H.	10164-3R	1
10	UPRIGHT, RESERVOIR, L. H.	10164-4L	1
11	UPRIGHT RETAINER BRACKET	10095	2
20	CONTROL VALVE	100095	1
58	3/8 X 1" BOLT	100045	6
59	1/2 X 1" BOLT	100055	2
60	1/2 X 1 1/2" BOLT	100057	2
63	3/8" LOCKWASHER	100074	8
64	1/2" LOCKWASHER	100076	8
67	3/8" N. C. NUT	100085	8
68	1/2" N. C. NUT	100087	6
69	3/8" U-BOLT	100370	2

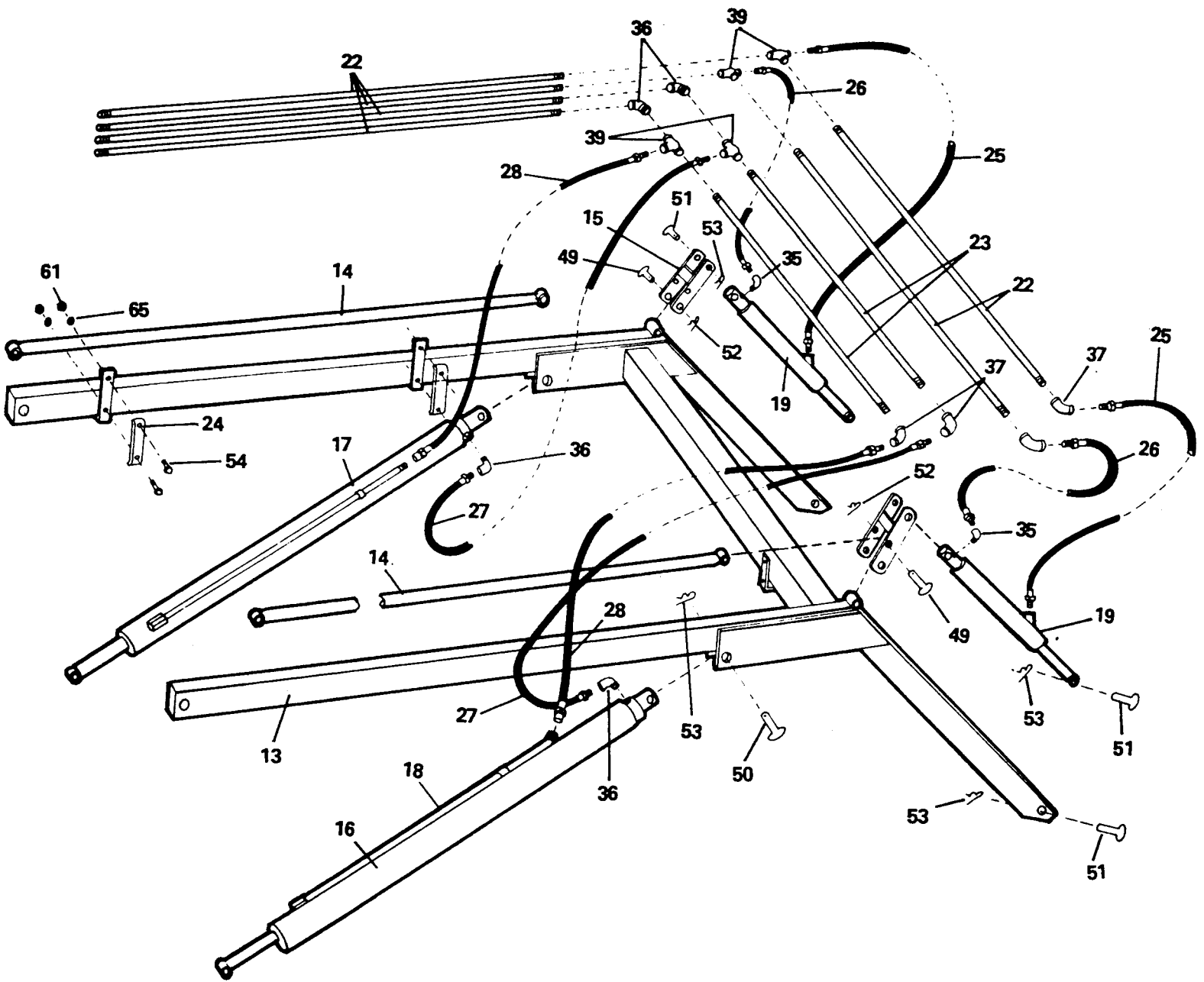


FIG. 19
REPAIR PARTS — LOADER MAIN FRAME

(SEE PARTS LIST ON PAGE NINE)

REFER TO FIG. 19

REPAIR PARTS — LOADER MAIN FRAME

REFERENCE NUMBER	DESCRIPTION	PART NUMBER	NUMBER REQUIRED
13	MAIN FRAME	10166	1
14	LEVEL ARM	10167	2
15	LEVEL LINKAGE (H-ARM)	10147	2
16	LOADER LIFT CYLINDER, R.H.	100033-R	1
17	LOADER LIFT CYLINDER, L.H.	100033-L	1
18	LIFT CYLINDER FEED LINE	10174	2
19	BUCKET CYLINDERS	100032	2
22	FEEDLINE (LONG)	10180	6
23	FEEDLINE (SHORT)	10179	2
24	FEEDLINE RETAINER BRACKET	10014	3
25	24" HYDRAULIC HOSE	100149	2
26	21" HYDRAULIC HOSE	100146	2
27	16" HYDRAULIC HOSE, MALE TO MALE ENDS	100141	2
28	16" HYDRAULIC HOSE, MALE TO FEMALE ENDS	100140	2
35	¼" X 90° STREET ELBOW	100103	2
36	3/8" X 90° STREET ELBOW	100108	4
37	3/8" X 90° PIPE ELBOW	100107	4
39	3/8" PIPE T	100110	4
48	5/8 X 2 ½" HITCH PIN	10019	2
49	5/8 X 2 ¾" HITCH PIN	10020	4
50	¾ X 2 ½" HITCH PIN	10021	2
51	¾ X 2 ¾" HITCH PIN	10022	6
52	#3 CLIP PIN	100171	4
53	#11 CLIP PIN	100172	8
54	¼ X 1 ½" BOLT	100038	6
61	¼" LOCKWASHER	100072	6
65	¼" N.C. NUT	100083	6

LIFT CYLINDER SEAL REPAIR KIT	100230
BUCKET CYLINDER SEAL REPAIR KIT	100229
CONTROL VALVE O-RING KIT	100285

RULES FOR SAFE OPERATION

1. Set engine throttle at about half speed (1800 RPM). This will give adequate hydraulic power.
2. Keep tractor speed slow. (in low range gear)
3. Keep bucket as low as possible during transport of load to place where bucket is dumped. This keeps center of gravity low and increases complete unit stability.
4. If material is being loaded into a truck, keep bucket low while traveling from pile to truck. When next to the truck, raise bucket and move unit forward as necessary before dumping. After dumping, back away from the truck and lower bucket before running tractor for another load.
5. Avoid quick fast turns. If it is necessary to turn unit with unit raised, use extreme care.
6. It is always important to slow tractor down while traveling over rough ground.

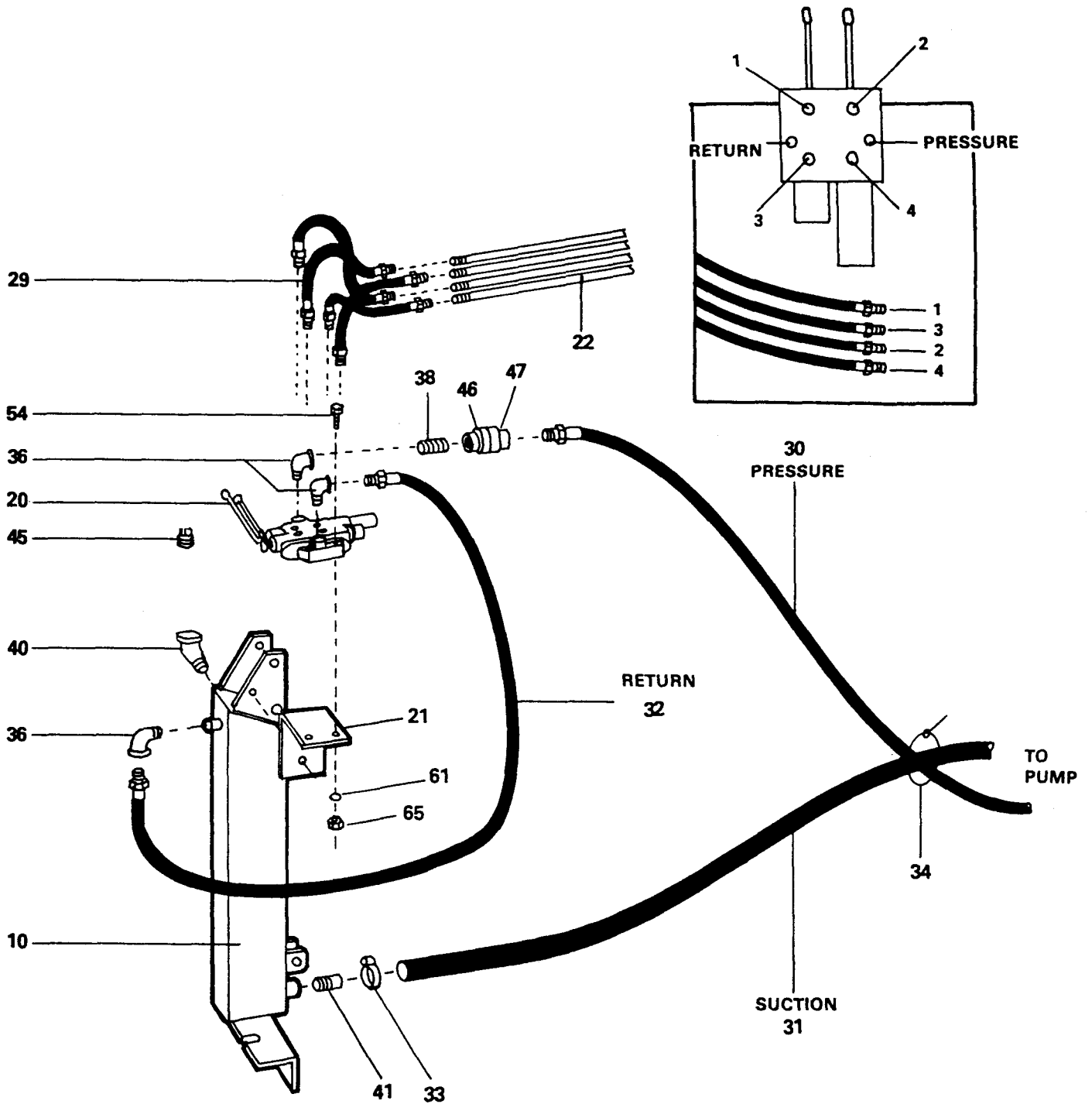


FIG. 20
REPAIR PARTS — UPRIGHT RESERVOIR-HYDRAULIC HOSES

(SEE PARTS LIST ON PAGE ELEVEN)

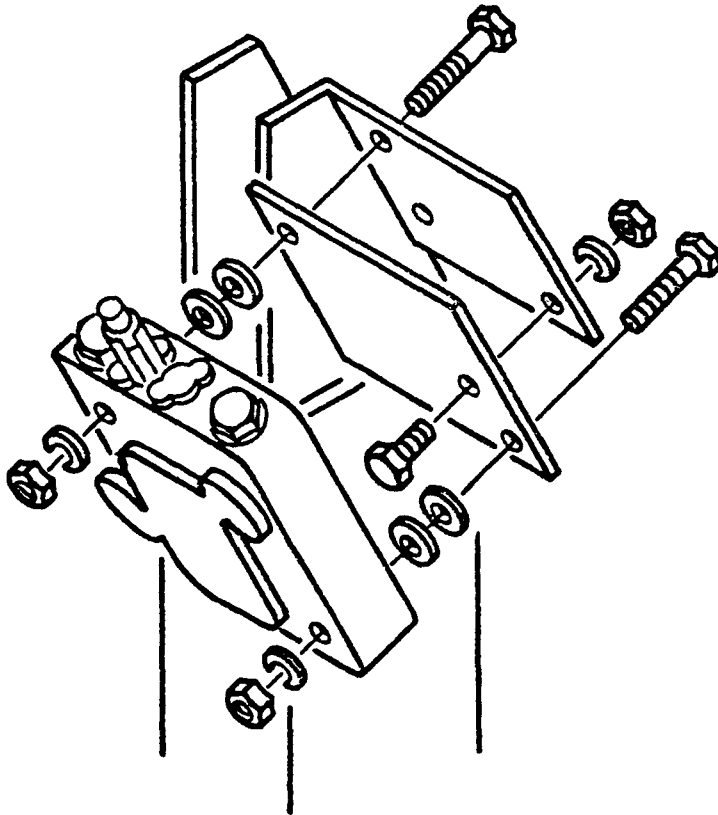
**REFER TO
FIG. 20**

REPAIR PARTS — UPRIGHT RESERVOIR-HYDRAULIC HOSES

REFERENCE NUMBER	DESCRIPTION	PART NUMBER	NUMBER REQUIRED
10	RESERVOIR UPRIGHT, L.H.	10164-4L	1
21	VALVE MOUNTING PLATE	10162	1
20	CONTROL VALVE	100095	1
22	FEEDLINES (LONG)	10180	4
29	22" HYDRAULIC HOSES	100148	4
31	HYDRAULIC HOSE, SUCTION, 55"	100166	1
30	52" HYDRAULIC HOSE, PRESSURE	100134	1
32	25" HYDRAULIC HOSE, RETURN	100151	1
33	HOSE CLAMP	100138	1
34	PLASTIC ZIP STRIP	100257	1
36	3/8" X 90° STREET ELBOW	100108	3
38	3/8" CLOSE PIPE NIPPLE	100111	1
46	MALE QUICK-COUPLER	100096-M	1
47	FEMALE QUICK-COUPLER	100096-F	1
41	1/2" PIPE END	100120	1
40	1/2" X 90° STREET ELBOW	100115	1
45	1/2" FILLER PLUG	100124	1
54	1/4 x 1 1/2" BOLT	100038	3
61	1/4" LOCKWASHER	100072	3
65	1/4" N.C. NUT	100083	3

Valve Conversion Amco to Dukes

1. Remove all hoses from the Amco, (original) valve.
2. Remove the Amco valve from the valve mount plate.
3. Mount the valve plate to the underside of the valve mount plate welded to the loader upright. Align the holes in the two plates and attach with a $\frac{1}{4}$ -20 x $\frac{3}{4}$ Hex Hd. capscrew, lockwasher and nut in the hole as shown. Tighten securely.
4. Mount the Dukes, (replacement) valve to the underside of the valve plate. Use a $\frac{1}{4}$ -20 x 2 Hex Hd. capscrew, two flatwashers, lockwasher, and nut in the lower hole. Use a $\frac{1}{4}$ -20 x $2\frac{1}{4}$ Hex Hd. capscrew, two flatwashers, lockwasher and nut in the upper hole. Tighten the capscrews.



5. Install four 9/16-18 ORB x 1/4 NPTF swivel unions into the working ports of the valve. These ports are shown in Figure 2 as ports 1, 2, 3, and 4.
6. Install two 9/16-18 ORB x 3/8 NPTF swivel unions into the pressure and return ports of the valve. These ports are shown in Figure 2 as ports A and B.
7. Connect the hoses as indicated below, and shown in Figure 2.

Valve port A to pressure (in) hose from the pump to the valve.
 Valve port B to return (out) hose from the valve to the reservoir.

WARNING: Reversing pressure (A) and return (B) connections will cause severe damage to the valve and pump and void the warranty.

Valve port 1 to hose from feed line supplying oil to bottom (rod end) of lift cylinders.
 Valve port 2 to hose from feed line supplying oil to top (barrell end) of lift cylinders.
 Valve port 3 to hose from feed line supplying oil to top (barrell end) of bucket cylinders.
 Valve port 4 to hose from feed line supplying oil to bottom (rod end) of bucket cylinders.

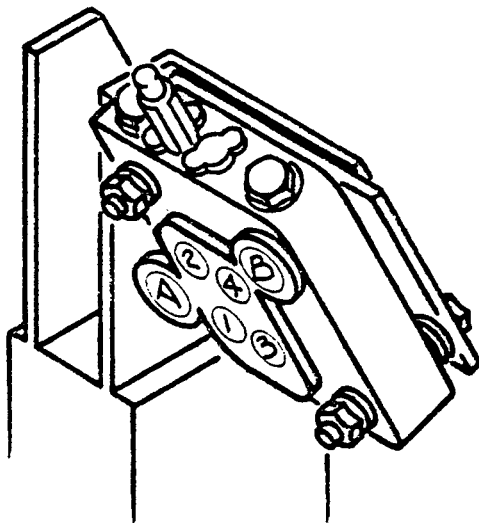


FIG. 2

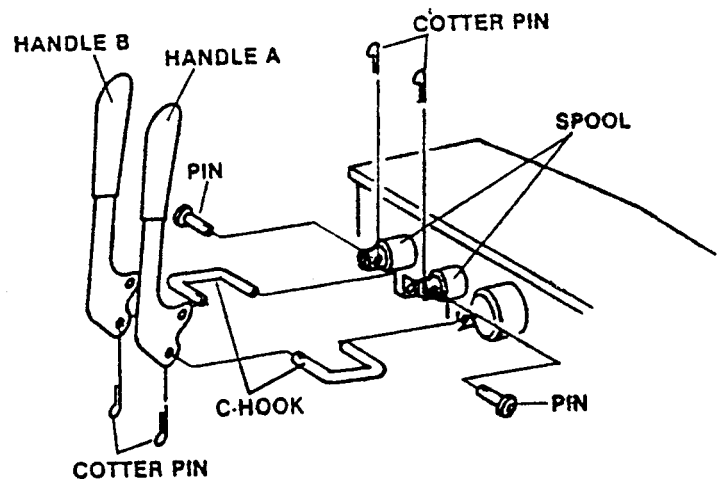


FIG. 3

8. Attach the valve handles. First, attach handle A to the spool used for loader operation. Attach handle B to the spool used for bucket operation as shown in Figure 3.
9. Make sure all fittings and hose connections are tight before pressurizing the hydraulic system.