OWNERS MANUAL

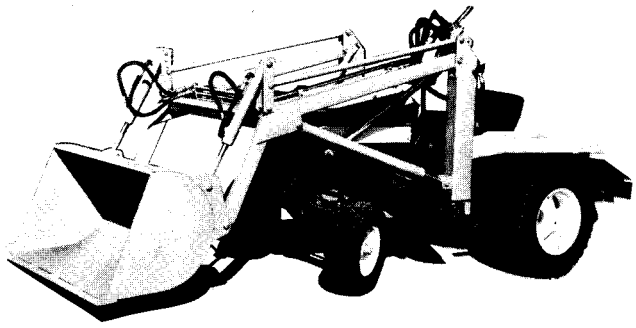
ASSEMBLY • OPERATING • MAINTENANCE • REPAIR PARTS LIST

KWIK-WAY
HYDRAULIC FRONT END LOADER

LOADER MODEL NUMBER LGR480-74

GRAVELY

FOR TRACTOR MODELS 400 AND 800 SERIES



HYDRAULIC LOADER MANUFACTURED BY K-W MANUFACTURING CO., INC.
800 S. MARION ROAD SIOUX FALLS, SOUTH DAKOTA 57106
(605) 336-6032

MANUAL NO. LGR480-11-75

PRINTED IN U.S.A.

LOADER MODEL NUMBER LGR480-74

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.

NOTE: WHEN INSTALLING FRONT END LOADER, TRACTOR MUST BE EQUIPPED WITH HEAT TREATED SPINDLE ACCESSORY, JAC 500884. WARRANTY FOR SPINDLE, FRONT WHEEL BEARINGS, AND AXLE IS VOID IF THIS PROCEDURE IS NOT FOLLOWED. ORDER SPINDLE THRU YOUR LOCAL DEALER.

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, LGR480-74**
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.

NOTE: The same loader is used for both the 400 and 800 series and both mount in the same manner; the only difference between the two is mounting the Sub-Frame to the tractor, so follow the instructions that fit your specific tractor model.

Mounting the Sub-Frame with Hydraulic Pump and Crossmember Attached

FOR 800 SERIES TRACTORS

1. Refer to FIG. 1.
The complete Pump unit for these tractor models mounts onto the loader Sub-Frame. The Crossmember, Pump with the Suction Hose, Hose Clamp and Pressure Hose attached has been pre-assembled at the factory. The loose ends of the Hoses will be dealt with later.

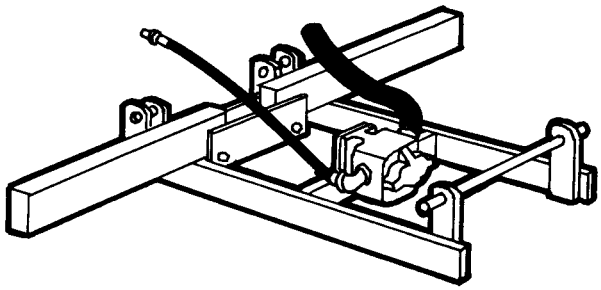


FIG. 1

2. Refer to FIG. 2.
Remove tape from around Hoses. Slide Sub-Frame under tractor and fasten front end (crossrod) onto tractor mower brackets. Lock hinged catches in place with a #11 Clip Pin (A) on both sides.

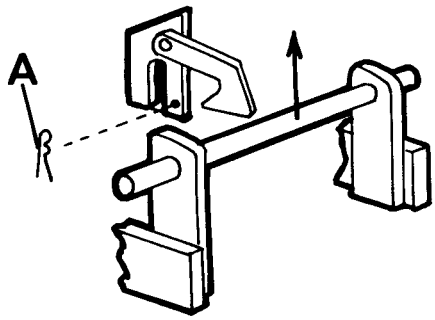


FIG. 2

3. Refer to FIG. 3.
Locate (2) Adapter Brackets and fasten to Sub-Frame as shown with (2) ¾ x 2½" Hitch Pins (A) and (2) #11 Clip Pins (B).

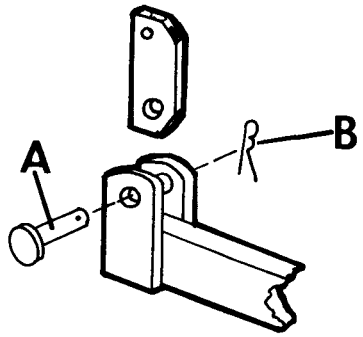


FIG. 3

4. Refer to FIG. 4.
Raise rear-end of Sub-Frame to an approximately level position. Be sure Adapter Brackets are fitted into slots at rear of foot rest as shown. Use blocks to hold Sub-Frame in this position. Do not drill hole yet. (see Step 6)

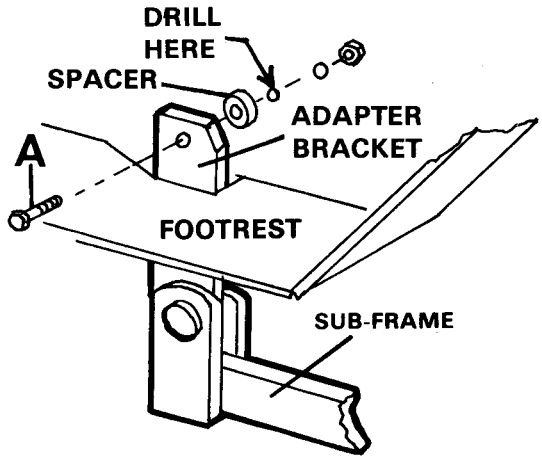


FIG. 4

5. Refer to FIG. 5.
Locate pre-assembled Drive Shaft assembly (A). Remove tape from around key. Remove Nut, Lockwasher, and Bolt (B) and slide shafts together to shortest length. This Bolt is a high strength bolt. Do not get it mixed up with other bolts of the same size.

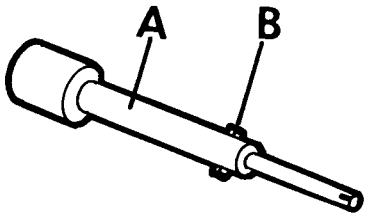


FIG. 5

Slide splined end of Drive Shaft over splined end of tractor PTO (underneath tractor). (see Fig. 6) Extend shaft length to reach chain coupling on end of Pump. Line up key and key-way and insert into chain coupling until drilled holes in Drive Shafts line up. Insert high strength bolt, lockwasher, and nut.

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Sub-Frame (continued)

FOR 800 SERIES TRACTORS

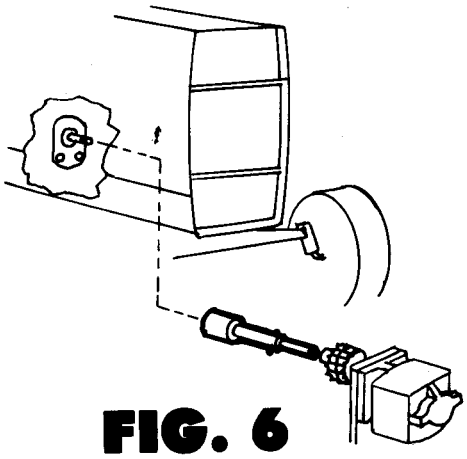


FIG. 6

6. Refer to FIG. 6.
Slightly raise or lower Sub-Frame until Drive Shaft, tractor PTO and Pump are lined up. (Drive Shaft will turn freely by hand when properly aligned.) Block Sub-Frame at this height. Position Adapter Brackets to a vertical position, center punch tractor frame in center of Adapter Bracket holes and drill a 17/32" dia. hole through tractor frame on both sides. (refer back to Fig. 4) Place spacer between Adapter Bracket and tractor frame and fasten all into place with a ½ x 1¼" Bolt, Lockwasher and Nut (A). Go back and tighten all Bolts.

CAUTION: Do not start engine from this point on until fluid has been placed into the loader reservoir.

Mounting the Sub-Frame with Hydraulic Pump and Crossmember Attached

FOR 400 SERIES TRACTORS

1. Refer to FIG. 7.
Locate the bolt that fastens the forward and reverse lever linkage to the tractor behind the R.H. foot rest. (see Fig. 7) Remove the self-locking nut and bolt. Re-assemble with Adapter Bracket (2 furnished with loader) next to tractor frame as shown. Do not tighten Nut securely. Fasten the other Adapter Bracket to the empty hole on L.H. side of tractor with a ½ x 1¼" Bolt, Lockwasher and Nut (A). Do not tighten Bolts yet.

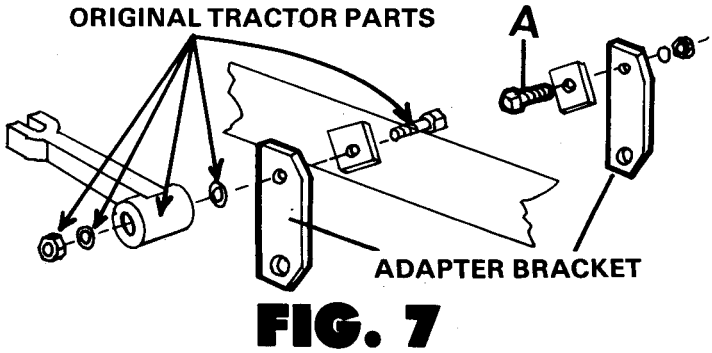


FIG. 7

2. Refer to FIGS. 8 and 2.
Take the Sub-Frame with Crossmember and Hydraulic Pump attached. Remove tape from around Hoses. Pin the rear end of the Sub-Frame to the Adapter Brackets just attached to tractor with (2) ¾ x 2½" Hitch Pins (A) and (2) #11 Clip Pins (B). Raise front end of Sub-Frame and fasten cross bar into the mower attachment brackets on tractor. Lock in place with (2) #11 Clip Pins (A). (see Fig. 2) Go back and tighten all Bolts.

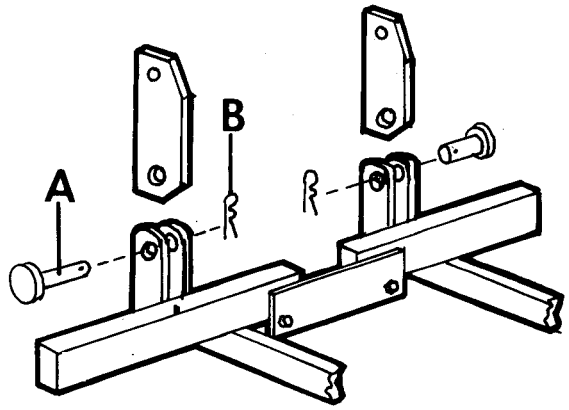


FIG. 8

3. Refer to FIGS. 5 and 6.
Locate pre-assembled Drive Shaft Assembly. (see Fig. 5) Remove tape from around key. Remove Nut, Lockwasher and Bolt (B). This Bolt is a high strength bolt, do not mix it up with other bolts. Slide shaft together to shortest length. Slide splined end of Drive Shaft over splined end of tractor PTO (underneath tractor). (see Fig. 6) Extend shaft length to reach chain coupling on end of pump. Line up key and key-way and insert into chain coupling until drilled holes on drive shaft line up. Insert high strength bolt, lockwasher and nut through shafts and tighten.

CAUTION: Do not start tractor engine from this point on until complete loader is assembled and fluid is in the reservoir.

Mounting the Uprights

FOR ALL 400 AND 800 SERIES TRACTORS

From this point on, the loader mounts the same for both 400 and 800 series tractors.

There are two Loader Uprights, (1) Reservoir Upright (with pipe fitting outlets) and (1) plain Upright.

The Reservoir Upright and Controls mount on the LEFT HAND SIDE of tractor.

1. Refer to FIG. 9.
Place Reservoir Upright (A) flush with outer end of crossmember

(continued next page)

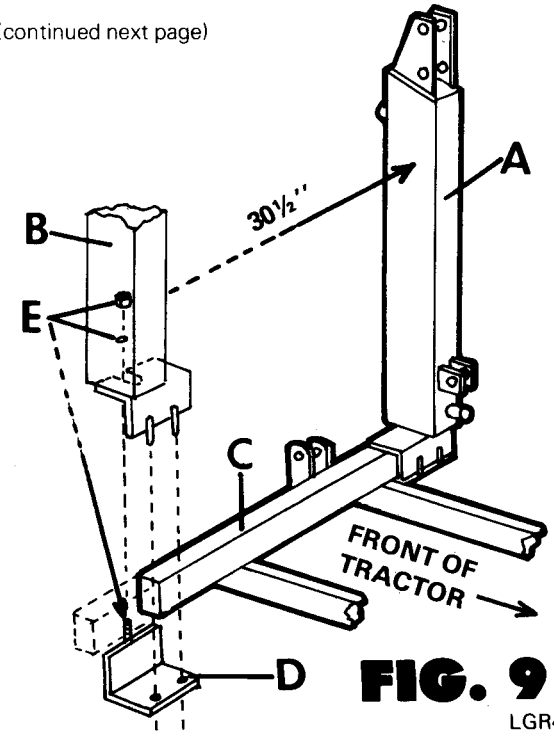


FIG. 9

Mounting the Uprights (continued)

part of Sub-Frame (C). Place upright Retainer Bracket (D) up tight around crossmember, connecting with feet of Upright. (the two pegs on front do not use bolts) Connect all with one ½" hex nut and lockwasher (E) onto welded bolt on back side of retainer bracket as shown. Place Upright (B) onto crossmember as before. Using Upright (A) as a reference point, the inside to inside measurement between the two Uprights should be 30½". Tighten bolts finger tight only, as this distance may have to be adjusted slightly when Main Frame is attached.

Connecting The Brace Arms

1. Refer to FIG. 10.
Attach the front or lower ends of the Brace Arms to the side of the tractor main frame, using the hole as shown, with a ½x1" Bolt, Lockwasher and Nut (A). Repeat on other side. Do not tighten Bolts yet.

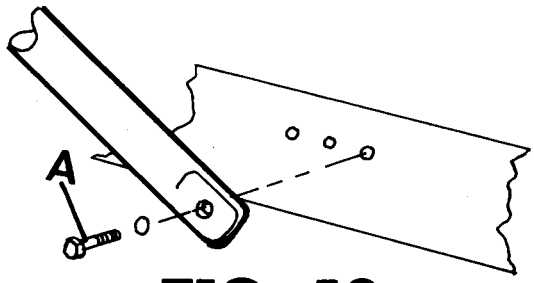


FIG. 10

2. Refer to FIG. 11.
Attach upper ends of Brace Arms (E) to Uprights (D) as shown with (1) ½x1½" Bolt (A), Spacer (B), Lockwasher and Nut (C).

NOTE: The Valve Mounting Plate is shown in its correct position on 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 this Bolt finger tight as the Valve Plate will be included later. Tighten all other Bolts being sure that the 30½" distance between uprights has been maintained.

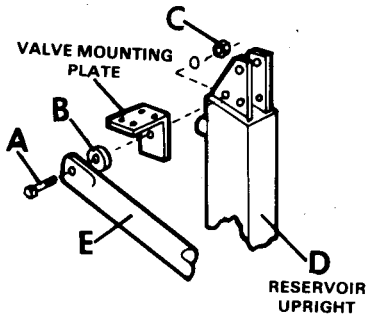


FIG. 11

Mounting the Main Frame

1. Refer to FIG. 12.
Hoist pre-assembled Main Frame into position and connect points (A), (B), and (C) to Upright (D). Points (B) and (C) both use (1) ¼x2½" Hitch Pin (E) and #11 Clip Pin (F). Point (A) is connected with (1) 5/8x2½" 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) Make sure all Bolts are tight.

Connecting Suction, Pressure and Return Hydraulic Hoses

The Pressure and Suction Hoses were connected to the Pump at the factory. Now connect the free ends of these hoses as shown in Fig. 13.

1. Refer to FIG. 13.
Slide the Hose Clamp (A) over the free end 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) (found in carton) and screw non-swivel end into Valve, where shown, and tighten. Use white lead or pipe sealing compound on all threads. Screw swivel end of Return Hose into Elbow located at rear of Reservoir as shown.

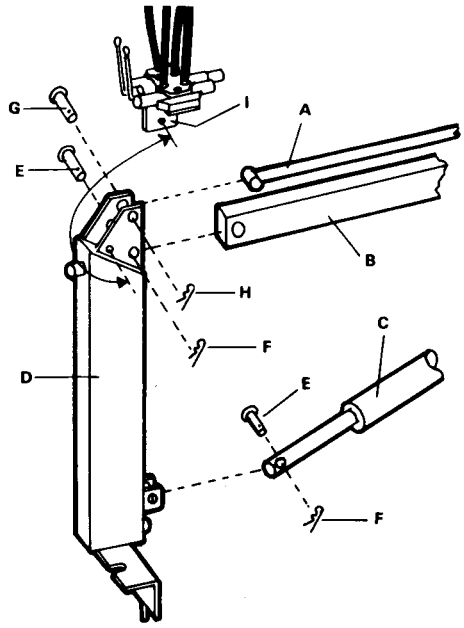


FIG. 12

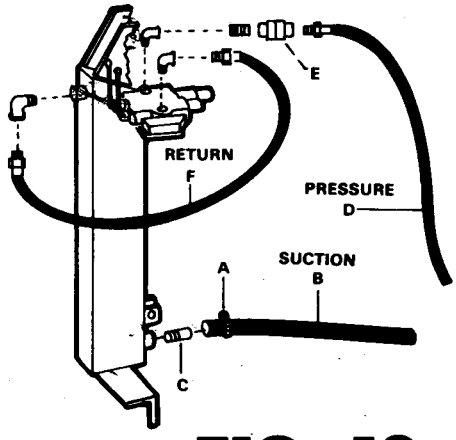


FIG. 13

THIS COMPLETES THE MOUNTING OF YOUR KWIK-WAY LOADER TO YOUR TRACTOR.

FILLING THE RESERVOIR AND OPERATION IS OUTLINED ON THE NEXT PAGE, AND REPAIR PARTS LIST ARE SHOWN ON THE PAGES THEREAFTER.

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.

6. Refer to FIG. 14.

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 ½ 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.

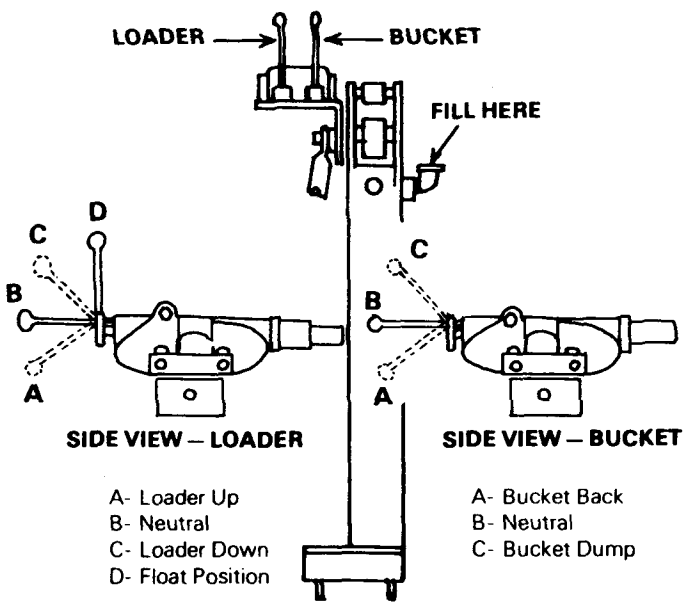


FIG. 14

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. 14)

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.

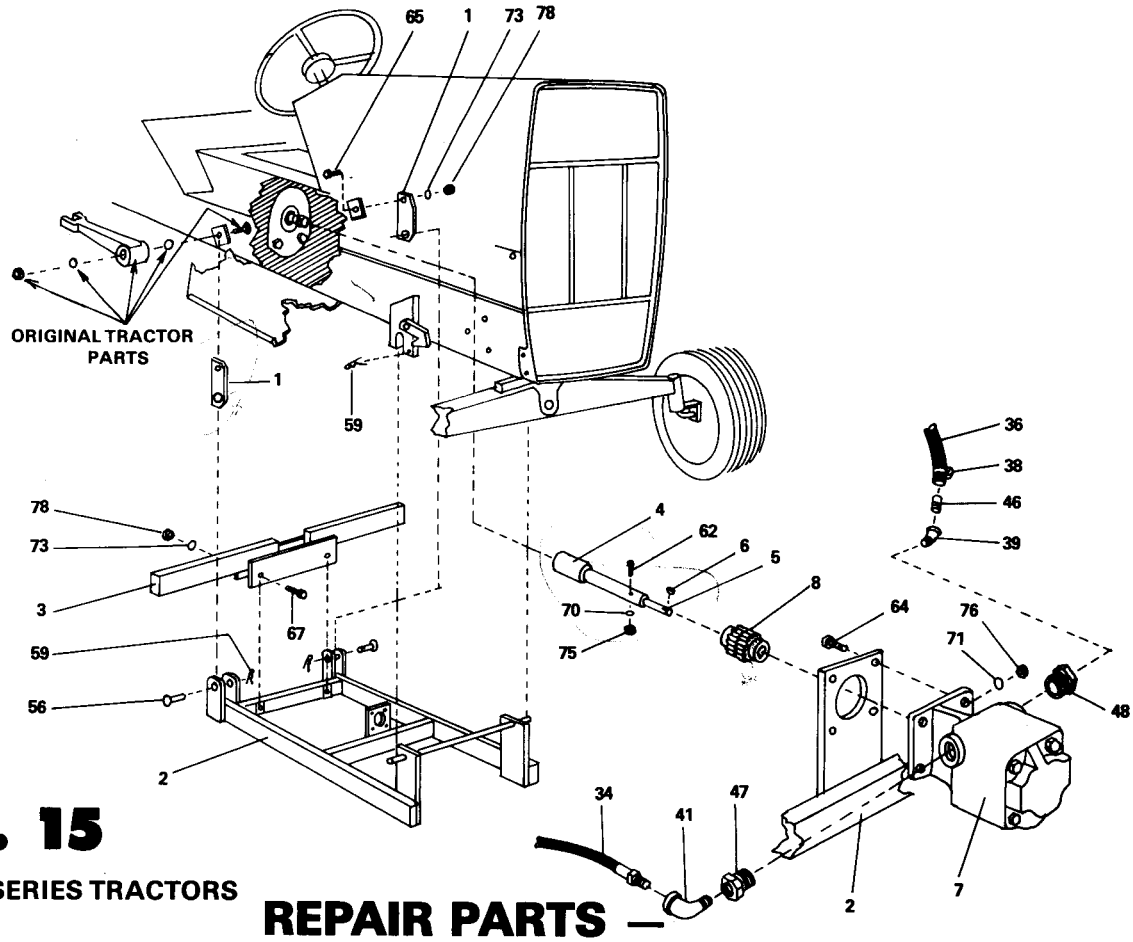


FIG. 15

FOR 400 SERIES TRACTORS

REPAIR PARTS — SUB-FRAME HYDRAULIC PUMP, DRIVE ASSEMBLY

REFERENCE NUMBER	DESCRIPTION	PART NUMBER	NUMBER REQUIRED
1	SUB-FRAME ADAPTER BRACKETS	10039	2
2	SUB-FRAME	10141	1
3	CROSSMEMBER	10145	1
4	SPLINE-ASSEMBLY	10173	1
5	SHAFT-PUMP DRIVE	10085	1
6	KEY-PUMP DRIVE 6-6-14K	100211	1
7	HYDRAULIC PUMP	100100	1
8	CHAIN COUPLING	100209	1
9	SPACER, ADAPTER BRACKETS	10168	2
34	52" HYDRAULIC HOSE, PRESSURE	100154-52	1
36	16" HYDRAULIC HOSE, SUCTION	100166-16	1
38	HOSE CLAMP	100138	1
39	½ X 45° STREET ELBOW	100117	1
41	3/8 X 90° STREET ELBOW	100108	1
46	½" PIPE END	100120	1
47	¾ TO 3/8" HEX HEAD BUSHING	100127	1
48	¾ TO ½" HEX HEAD BUSHING	100201	1
56	¾ X 2½" HITCH PIN	10021	2
59	#11 CLIP PIN	100172	2
62	¼ X 1¼" BOLT (HEAT TREATED)	100224	1
64	5/16 X 1¼" BOLT	100041	4
65	½ X 1¼" BOLT	100056	1
67	½ X 2½" BOLT	100058	2
70	¼" LOCKWASHER	100072	1
75	¼" N. C. NUT	100083	1
71	5/16" LOCKWASHER	100073	4
76	5/16" N. C. NUT	100084	4
73	½" LOCKWASHER	100076	3
78	½" N. C. NUT	100087	3

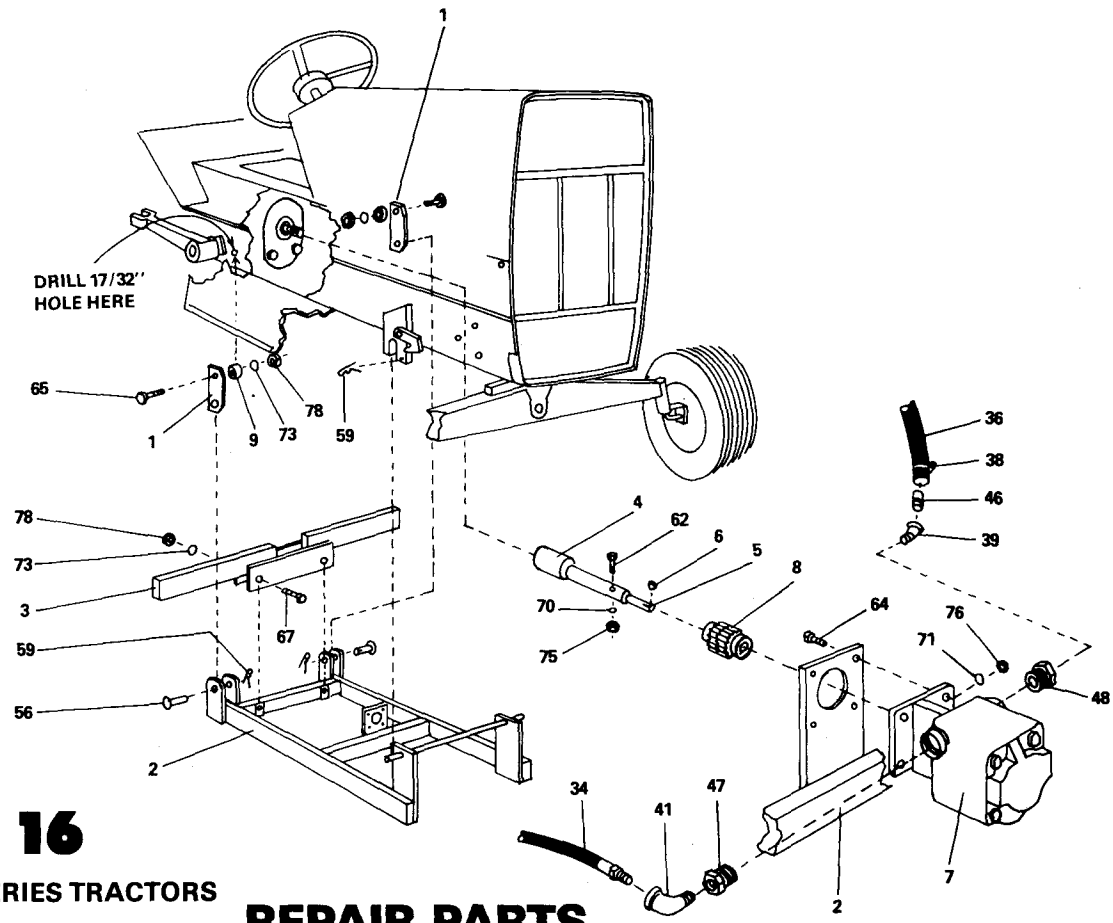


FIG. 16

FOR 800 SERIES TRACTORS

REPAIR PARTS — SUB-FRAME, HYDRAULIC PUMP, DRIVE ASSEMBLY

REFERENCE NUMBER	DESCRIPTION	PART NUMBER	NUMBER REQUIRED
1	SUB-FRAME ADAPTER BRACKETS	10039	2
2	SUB-FRAME	10141	1
3	CROSSMEMBER	10145	1
4	SPLINE-ASSEMBLY	10173	1
5	SHAFT-PUMP DRIVE	10085	1
6	KEY-PUMP DRIVE 6-6-14K	100211	1
7	HYDRAULIC PUMP	100100	1
8	CHAIN COUPLING	100209	1
9	SPACER, ADAPTER BRACKETS	10168	2
34	52" HYDRAULIC HOSE, PRESSURE	100154-52	1
36	16" HYDRAULIC HOSE, SUCTION	100166-16	1
38	HOSE CLAMP	100138	1
39	½ X 45° STREET ELBOW	100117	1
41	3/8 X 90° STREET ELBOW	100108	1
46	½" PIPE END	100120	1
47	¾ TO 3/8" HEX HEAD BUSHING	100127	1
48	¾ TO ½" HEX HEAD BUSHING	100201	1
56	¾ X 2½" HITCH PIN	10021	2
59	#11 CLIP PIN	100172	2
62	¼ X 1¼" BOLT (HEAT TREATED)	100224	1
64	5/16 X 1¼" BOLT	100041	4
65	½ X 1¼" BOLT	100056	1
67	½ X 2½" BOLT	100058	2
70	¼" LOCKWASHER	100072	1
75	¼" N. C. NUT	100083	1
71	5/16" LOCKWASHER	100073	4
76	5/16" N. C. NUT	100084	4
73	½" LOCKWASHER	100076	3
78	½" N. C. NUT	100087	3

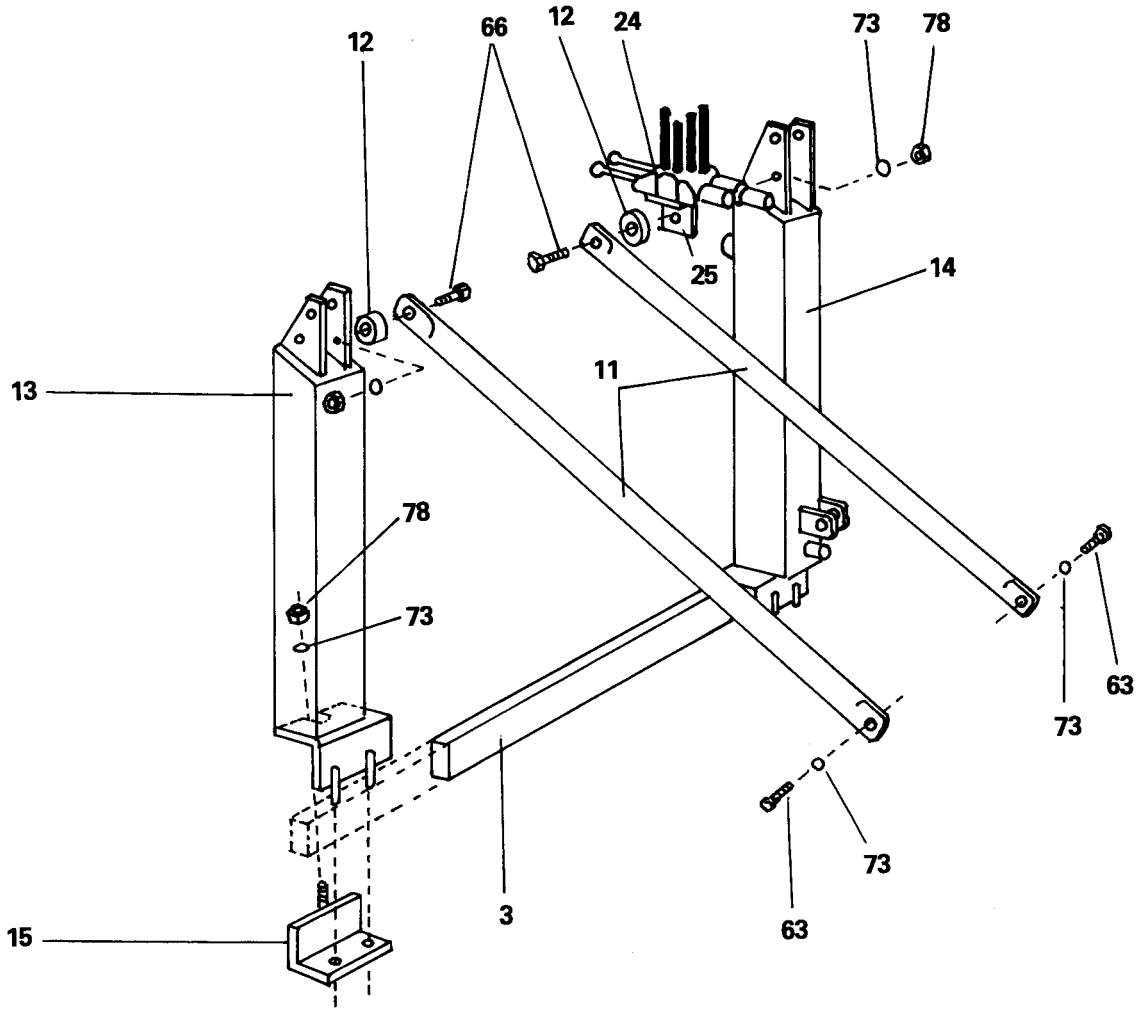


FIG. 17

REPAIR PARTS — UPRIGHT, BRACE ARMS

REFERENCE NUMBER	DESCRIPTION	PART NUMBER	NUMBER REQUIRED
3	CROSSMEMBER	10145	1
11	BRACE ARM	10165-3	2
12	BRACE ARM SPACER	16001	2
13	UPRIGHT, R. H.	10164-4R	1
14	RESERVOIR UPRIGHT, L. H.	10164-4L	1
15	UPRIGHT RETAINER BRACKET		2
24	CONTROL VALVE	100095	1
25	VALVE MOUNTING PLATE	10162	1
63	½ X 1" BOLT		2
66	½ X 1½" BOLT		2
73	½" LOCKWASHER	100076	4-2
78	½" N. C. NUT	100087	4

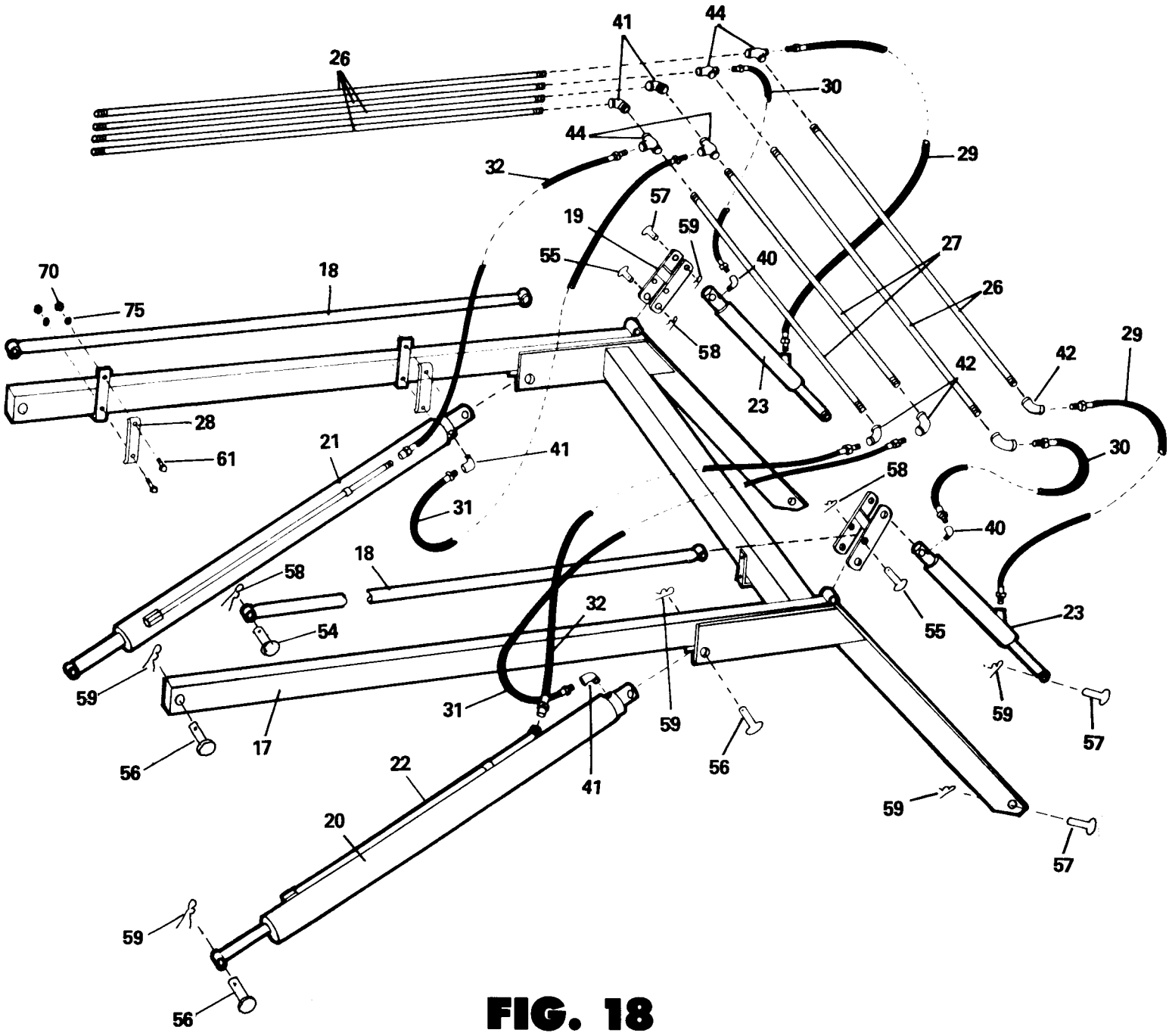


FIG. 18

REPAIR PARTS — LOADER MAIN FRAME

400 AND 800 SERIES

(SEE PARTS LIST ON PAGE NINE)

REFER TO
FIG. 18

REPAIR PARTS — LOADER MAIN FRAME

REFERENCE NUMBER	DESCRIPTION	PART NUMBER	NUMBER REQUIRED
17	MAIN FRAME	10166	1
18	LEVEL ARM	10167	2
19	LEVEL LINKAGE (H-ARM)	10147	2
20	LOADER LIFT CYLINDER, R.H.	100033-R	1
21	LOADER LIFT CYLINDER, L.H.	100033-L	1
22	LIFT CYLINDER FEED LINE	10174	2
23	BUCKET CYLINDERS	100032	2
26	FEEDLINE (LONG)	10180	6
27	FEEDLINE (SHORT)	10179	2
28	FEEDLINE RETAINER BRACKET	10014	3
29	24" HYDRAULIC HOSE	100149	2
30	21" HYDRAULIC HOSE	100146	2
31	16" HYDRAULIC HOSE, MALE TO MALE ENDS	100141	2
32	16" HYDRAULIC HOSE, MALE TO FEMALE ENDS	100140	2
40	¼" X 90° STREET ELBOW	100103	2
41	3/8" X 90° STREET ELBOW	100108	4
42	3/8" X 90° PIPE ELBOW	100107	4
44	3/8" PIPE T	100110	4
54	5/8 X 2½" HITCH PIN	10019	2
55	5/8 X 2¾" HITCH PIN	10020	4
56	¾ X 2½" HITCH PIN	10021	2
57	¾ X 2¾" HITCH PIN	10022	6
58	#3 CLIP PIN	100171	4
59	#11 CLIP PIN	100172	8
61	¼ X 1½" BOLT	100038	6
70	¼" LOCKWASHER	100072	6
75	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.

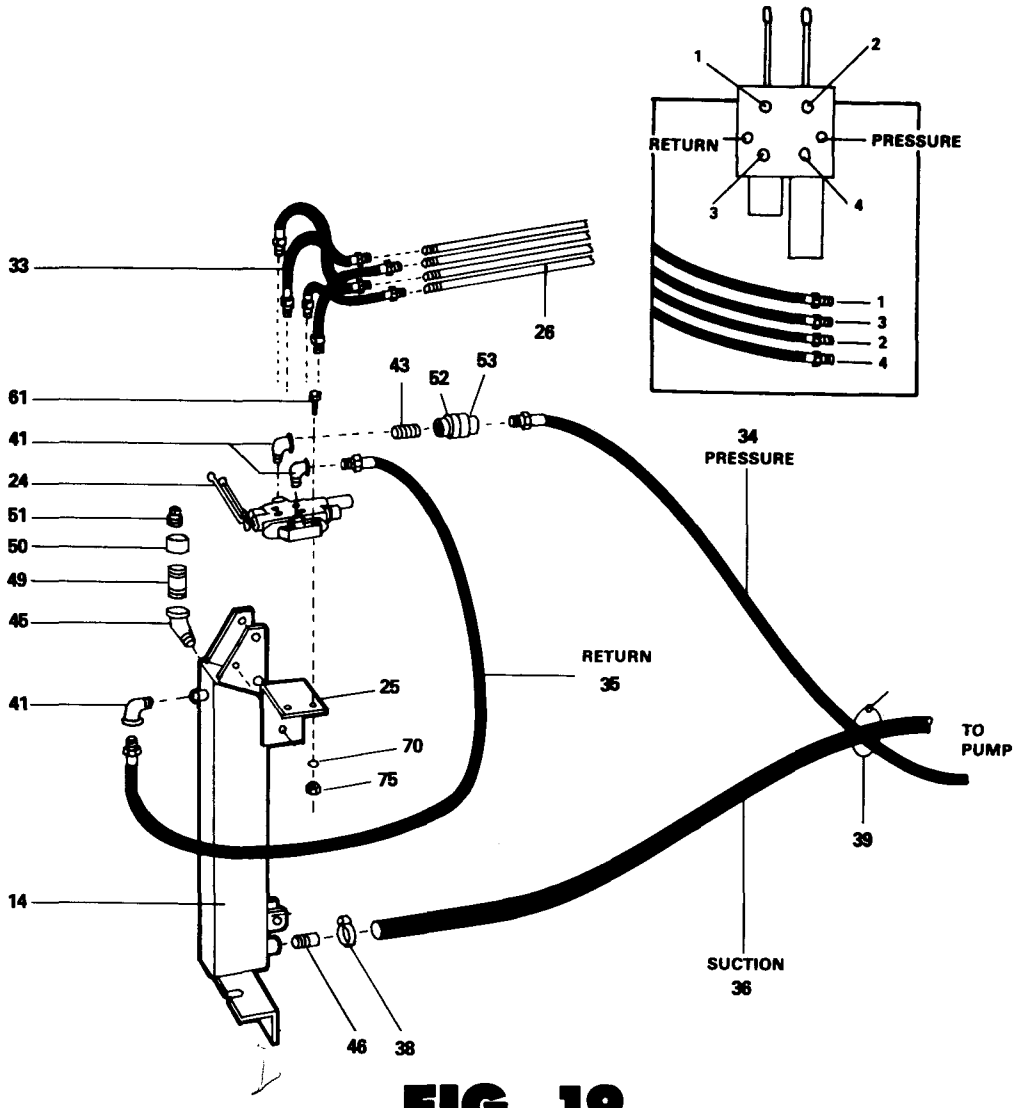


FIG. 19

REPAIR PARTS — UPRIGHT RESERVOIR, HYDRAULIC HOSES

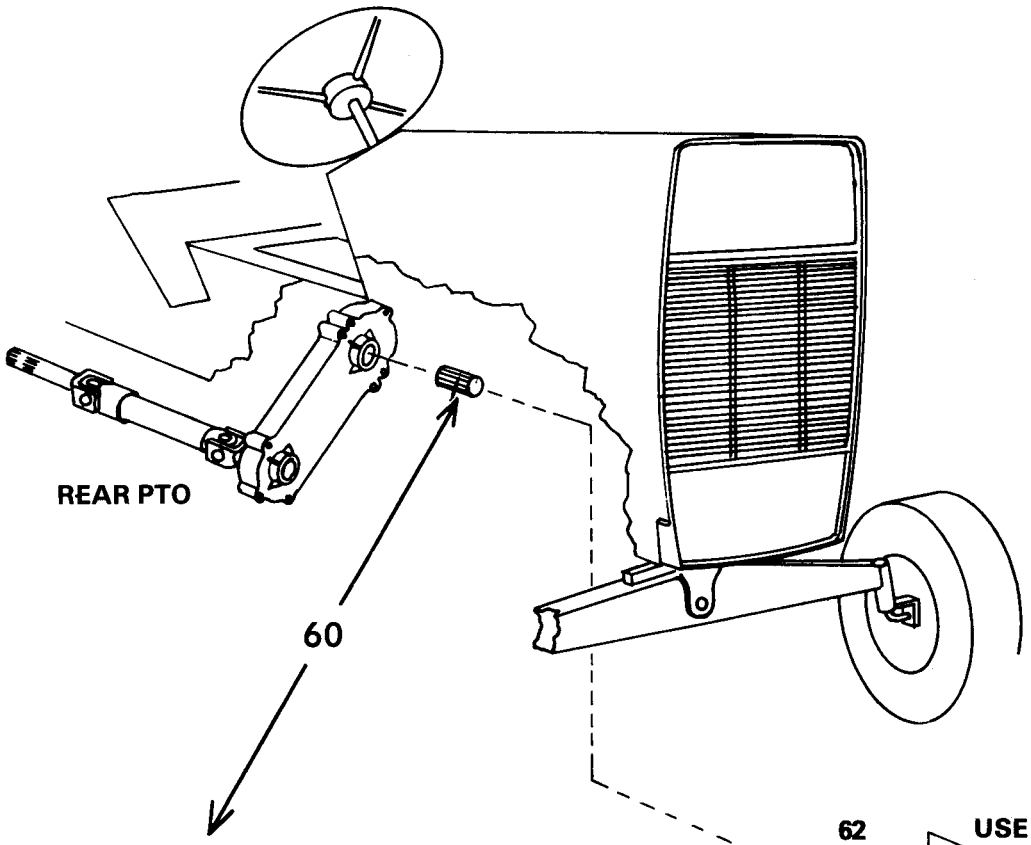
400 AND 800 SERIES

REFERENCE NUMBER	DESCRIPTION	PART NUMBER	NUMBER REQUIRED
14	RESERVOIR UPRIGHT, L.H.	10164-4L	1
25	VALVE MOUNTING PLATE	10162	1
24	CONTROL VALVE	100095	1
26	FEEDLINES (LONG)	10180	4
33	22" HYDRAULIC HOSES	100148	4
36	HYDRAULIC HOSE, SUCTION		1
34	52" HYDRAULIC HOSE, PRESSURE	100154-52	1
35	25" HYDRAULIC HOSE, RETURN	100151-25	1
38	HOSE CLAMP	100138	1
			1
41	3/8" X 90° STREET ELBOW	100108	3
43	3/8" CLOSE PIPE NIPPLE	100111	1
52	MALE QUICK-COUPLER	100096-M	1
53	FEMALE QUICK-COUPLER	100096-F	1
46	½" PIPE END	100120	1
45	½" X 90° STREET ELBOW	100115	1
49	½ X 4" PIPE NIPPLE	100198	1
50	½" HALF COUPLING	100125	1
51	½" FILLER PLUG	100124	1
61	¼ x 1½" BOLT	100038	4
70	¼" LOCKWASHER	100072	3
75	¼" N.C. NUT	100083	3

K-W PUMP DRIVE ATTACHMENT

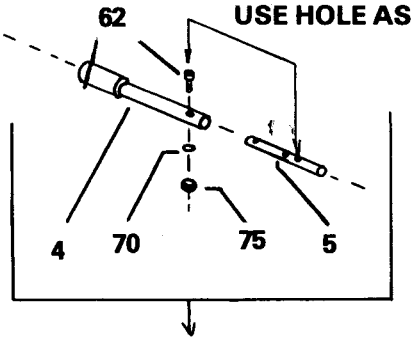
WHEN GRAVELY REAR PTO GEAR BOX HAS BEEN INSTALLED

TO OPERATE REAR MOUNTED EQUIPMENT AND HYDRAULIC PUMP SIMULTANEOUSLY



ADDITIONAL PART REQUIRED

REF. #	PART NAME	# REQD.	PART #
60	4" MALE SPLINE	1	100225



SEE PAGES 5 OR 6 WHEN REFERRING TO THESE PARTS.

FIG. 20