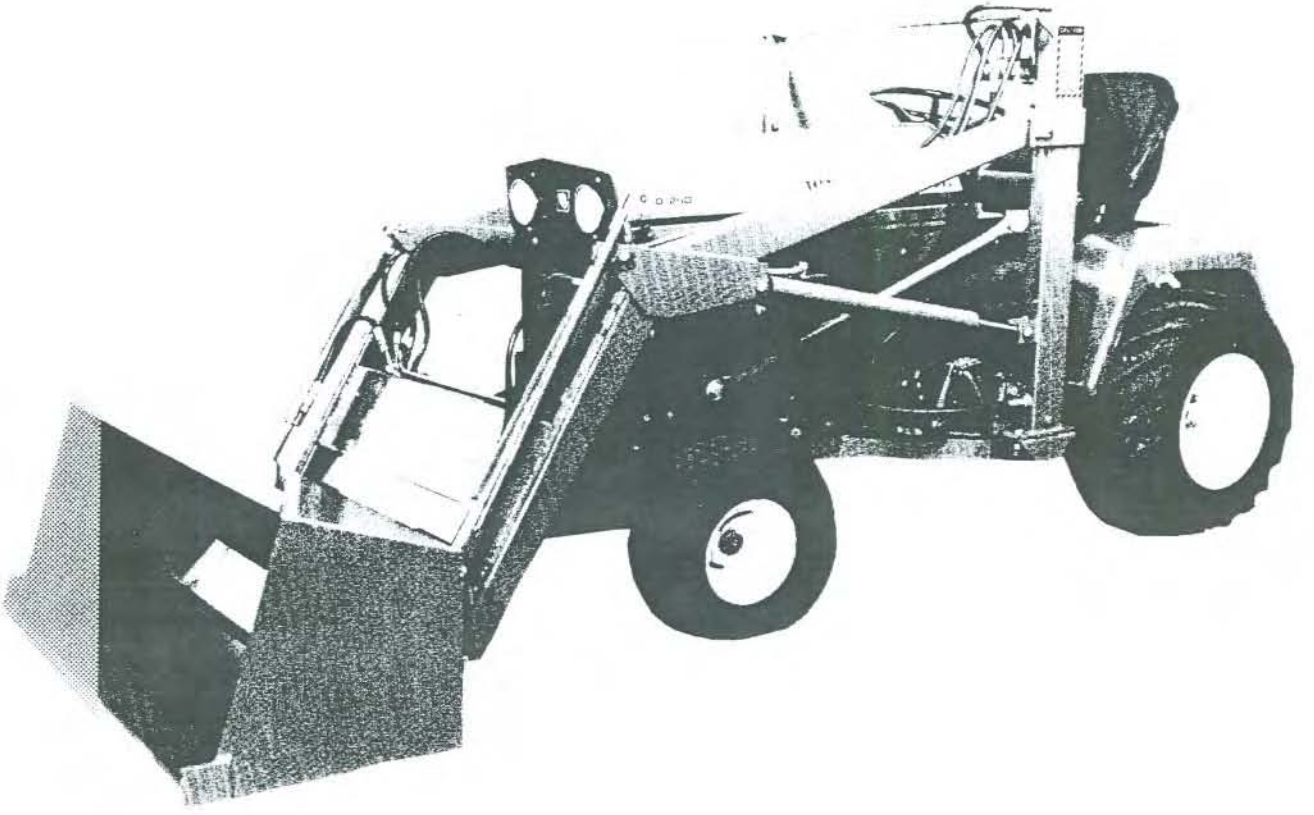
OPERATING
AND
MAINTENANCE INSTRUCTIONS
WITH
PARTS LIST



FRONT LOADER AND BUCKET

WHEEL HORSE
lawn & garden tractors

07-72FL01
07-48BK01

Printed in U.S.A. 0879

PART NO. 810096R1

VEHICLE IDENTIFICATION (VIN) NUMBER

Vehicle Identification Numbers identify your front loader attachment. These numbers should always be referred to when consulting with your dealer or Ark Manufacturing Co., Inc. concerning service, replacement parts, or questions you may have. If a VIN plate is removed during repair operations it should always be replaced. For your reference, record below the numbers from the VIN plate on the frame and bucket of your loader.

Loader Frame Number

Loader Bucket Number

This front loader is manufactured and warranted by Ark Manufacturing Co., Inc. and not Wheel Horse Products, Inc. All inquiries concerning warranty service and replacement parts should be directed to your servicing dealer or to the manufacturer at the following address:

ARK MANUFACTURING CO., INC.
Box 327
Sterling, Kansas 67579
Phone: 316-278-3641

SPECIFICATIONS*

A.	Height to bucket hinge pin	85 in. (215.9 cm)
B.	Reach @ maximum height, bucket dumped	24.5 in. (62.2 cm)
C.	Clearance, bucket dumped	67 in. (170.2 cm)
D.	Reach, bucket on ground	48 in. (121.9 cm)
E.	Bucket roll back	8 degrees
F.	Maximum dumping angle	45 degrees
G.	Digging depth	4 in. (10.2 cm)
H.	Reach, axle to bucket hinge pin	27 in. (68.6 cm)
I.	Overall maximum raised height	106 in. (269.2 cm)
	Lift capacity (payload)	600 lbs. (272.2 kg)**
	Dump bucket to full dump	5 sec.
	Raise bucket to full height	6 sec.
	48 in. (122 cm) material bucket capacity	6.7 cu. ft. (.19 cu.m)
J.	Hydraulic System:	
	Pressure	1000 PSI (70.3 kg/cm²)
	Capacity	5.5-6 qts. (5.2-5.7 /)
	Oil Type	10W30 or 10W40 Heavy Duty Motor Oil

**All measurements based upon tractor equipped with 26 x 12.00-12 rear tires and 18 x 8.50-8 front tires.*

***Loader is capable of lifting 600 lbs. (272.2 kg) to transport height, and 400 lbs. (181.4 kg) to full height.*

GENERAL SAFETY SUGGESTIONS

1. Always use the tractor with extreme care when operating the loader, as the loader may affect the stability of the tractor.
2. Never operate the loader with the tractor in motion, and never raise the bucket on inclines.
3. Do not pivot or turn the tractor sharply when the bucket is more than 20 in. (50 cm) above the ground.
4. Always carry the bucket low, accelerate, brake and turn the tractor with care.
5. Do not raise the bucket to full height under low clearance barns, sheds, etc.
6. When raising the bucket, watch out for low hung power lines, etc.
7. Use care when turning the tractor. The loader adds extra length to the tractor which increases the area needed to turn the vehicle.
8. When raising the bucket to extreme heights, tilt the bucket back to prevent spilling the load on the operator.
9. Use the tractor on solid ground. Loose fill, rocks, holes, etc., do not permit safe operations.
10. Do not try to load the bucket at high speed or full tractor power. Use a slow ground speed when loading the bucket. Ramming the bucket into hard packed material may result in operator injury and damage to equipment.
11. Always lower the bucket before leaving the operator's seat.
12. Use of rear wheel weights and the rear weight box is recommended when using the loader.
13. Never operate the loader unless the hydraulic pump is running.
14. Before performing any service or adjustment of the loader always:
    A) Lower the bucket to the ground.
    B) Disengage front/mid PTO and shut off engine.
    C) Remove ignition key.
    D) Relieve hydraulic pressure before disconnecting hydraulic lines.
15. Check all bolts for tightness frequently. If loader is used on a daily basis, check bolts before operating the tractor.

INSTALLATION

INSTALL H. D. FRONT AXLE

The bucket loader is shipped with either an 8-0481 or an 8-0482 Heavy Duty Front Axle Kit, which must be installed prior to installing the loader. Install the heavy duty components as described in the instructions supplied with the axle kit, except DISREGARD the "Special Instructions" at the bottom of Page 3. Information that applies to VIN 81-20RG01 should also be followed when installing the axle kit on tractors with VIN 91-20RG01, or 01-20RG01

INSTALL MOUNTING FRAME (Fig. 1 & 2)

Locate the mounting frame and three $\frac{5}{8}$-11 x $3\frac{1}{4}$ bolts, one $\frac{5}{8}$-11 x $2\frac{3}{4}$ bolt, seven $\frac{5}{8}$-11 nuts, and four $\frac{5}{8}$ lockwashers. Center the mounting frame under the middle of the tractor. Raise the front of the mounting frame so the mounting "ears" slip into the front hitch mounts of the tractor and install two $\frac{5}{8}$-11 x $3\frac{1}{4}$ bolts. The bolts are installed from the outside. Secure each bolt with a $\frac{5}{8}$ flat washer, a $\frac{5}{8}$ lockwasher and TWO $\frac{5}{8}$ nuts. DO NOT TIGHTEN THE NUTS.

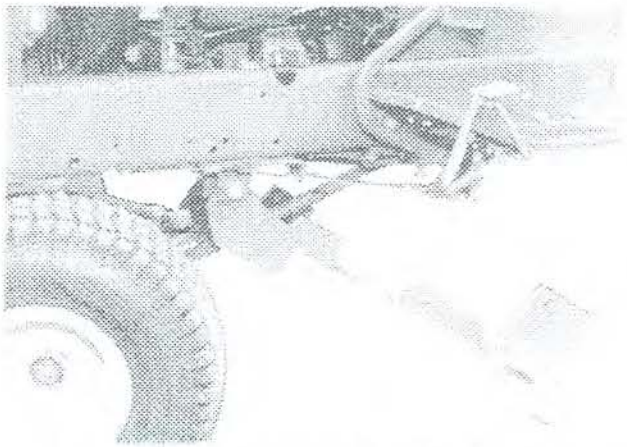


FIG. 1. Mount Front of Mounting Frame

Lift the rear of the mounting frame so the mounting "ears" slip into the rear hitch mounts of the tractor, and install a $\frac{5}{8}$-11 x $3\frac{1}{4}$ bolt on the left side and a $\frac{5}{8}$-11 x $2\frac{3}{4}$ bolt on the right side. The bolts are installed from the outside. Secure each bolt with a $\frac{5}{8}$ flat washer, a $\frac{5}{8}$ lockwasher and a $\frac{5}{8}$-11 nut. Add an additional $\frac{5}{8}$-11 nut to the bolt on the left side. TIGHTEN ALL FOUR MOUNTING BOLTS.

FIG. 2. Mount Rear of Mounting Frame

INSTALL SIDE FRAMES (Fig. 3)

Locate the two side frames, six 8 x 30 mm bolts, six $\frac{5}{16}$ lockwashers, and two 8 mm nuts.

Remove and discard the two bolts, lockwashers and flat washers that secure the left side of the front bumper to the tractor. Temporarily secure the left side frame to the bumper, using two of the bolts (Fig. 3).

VIN 61-20RG01 ONLY

Early production tractors with the above VIN require a spacer under the LH side frame. A piece of ¼" thick steel, 1¾ x 3½" should be obtained locally for this purpose. Check the RH side frame, which has a similar spacer welded in place, to position the spacer correctly. It is not necessary to weld the spacer in place.

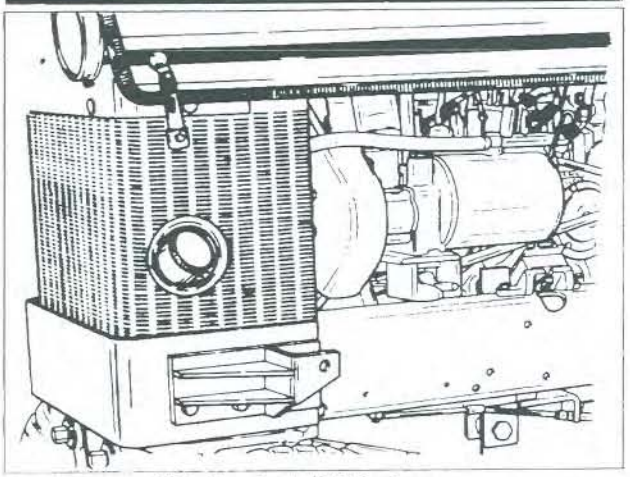


FIG. 3. Install Side Frames

Mark the tractor's frame at the remaining mounting hole location and remove the side frame. Drill a 11/32" mounting hole through the tractor's frame (and the ¼" spacer, if applicable).

Reinstall the side frame, using the new bolts with supplied lockwashers at the front mounting holes, and a bolt, nut and lockwasher at the rear mounting hole. If the tractor has dual front hydraulic couplers, it may be necessary to temporarily free the hydraulic hoses while the side frame is being installed. Be sure to keep the hoses away from moving parts when securing them to the frame.

Install the RH side frame in a similar manner.

PREPARE LOADER (Fig. 4)

Remove the loader lift frame, the two uprights, the dismount stands and the pump from the shipping container. Mount the uprights to the lift frame using two lift frame pins. Secure the lift frame pins using a bushing, a ⅜-16 x ¾ bolt, a ⅜ flat washer and a ⅜ lockwasher for each pin.

Attach the bucket to the lift frame using the two remaining lift frame pins to secure the bottom of the bucket. Secure the lift frame pins using a bushing, a ⅜-16 x ¾ bolt, a ⅜ flat washer and a ⅜ lockwasher for each lift pin. Attach the tilt cylinders to the top of the bucket, using a ½ x 2¼ clevis pin and a hairpin cotter at each side of the bucket.

Connect the four hoses from the control valve to the hydraulic lines, being sure to match the hoses connected to ports A-B-C-D of the valve to each identified line bearing the same letter. Tighten the fittings securely. Connect one end of large (suction) hose to the large fitting on the left side of the hydraulic pump. Connect the other end of the suction hose to the bottom of the left upright. Connect the remaining (pressure) hose to the small fitting on the right side of the hydraulic pump. Connect the other end of the pressure hose to the front of the hydraulic valve. Tighten the fittings securely.

Lift the rear of the loader and install the dismount stands into the base of the uprights so the loader is in the position shown in Fig. 4.

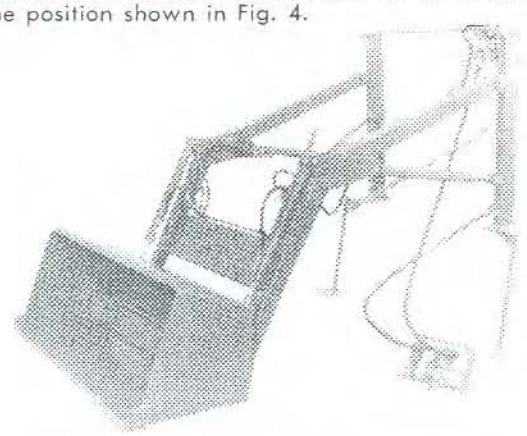


FIG. 4. Prepare Loader for Installation

MOUNT THE LOADER ON THE TRACTOR (Fig. 5)

Push the tractor under the lift frame until the uprights are directly above the mounting pads. Remove the dismount stands and lower the unit onto these pads. Install the four ½-13 x 1½ bolts through the vertical holes to secure the uprights to the pads. Retain each bolt with a ½ lockwasher and a ½-13 nut. DO NOT TIGHTEN NUTS. Install two more ½-13 x 1½ bolts into the horizontal holes and retain each with a ½ lockwasher and ½-13 nut. DO NOT TIGHTEN NUTS.

Mount the 2 side brace arms to the two side frames using two ⅝-11 x 1¾ bolts on each side. The bolts are installed from the outside and are double nutted.

Tighten the four bolts holding the side braces to the side frames, and the six bolts that hold the uprights to the pads.

FIG. 5. Mount Loader on Tractor

MOUNT HYDRAULIC PUMP (Fig. 6)

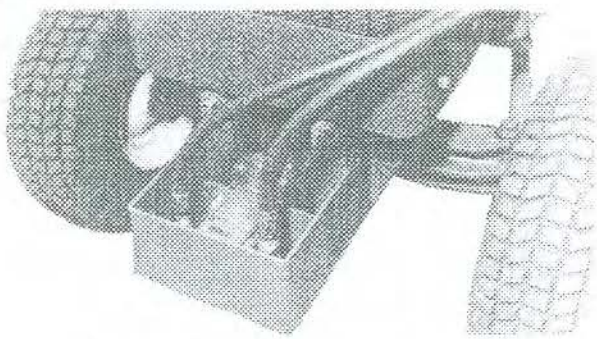


FIG. 6. Install the Pump on the Tractor

Remove the front PTO cover from the tractor. Apply a light coating of grease to the PTO shaft. Slip the flexible pump coupling onto the PTO shaft.

The pump bracket is mounted to the front of the tractor using the four 14 mm x 30 mm bolts and four 14 mm lockwashers. Tighten the set screws against the PTO and the pump shafts.

Mount the ballast box to the 3-point hitch (dealer installed option). Hitches with a Factory Order Number of 8-5401 require modification to accommodate the weight box; refer to Service Bulletin 236. THE BALLAST BOX MAY BE FILLED WITH A MAXIMUM OF 165 LBS. (74.8 kg).

Do not add fluid to the tires, such as water or calcium chloride, or use more than 165 lbs. (74.8 kg) in the rear weight box. This additional weight can cause extensive internal transmission damage AND WILL VOID THE TRANSMISSION WARRANTY!

Grease all four lift frame pins using a general purpose pressure gun grease. Apply a coating of grease or motor oil to the pivot points at both sides of all four cylinders.

Remove the oil fill breather cap located on top of the left upright. Fill the oil reservoir with 3 quarts (2.8 liters) of 10W30 or 10W40 Heavy Duty Motor Oil. Start the engine and engage the front/mid PTO clutch. Operate both tilt and lift cylinders. Lower the bucket and disengage front mid PTO. Stop the engine and add 2½-3 more quarts (2.3-2.8 liters) of oil. Start the engine and engage the front PTO. Operate the cylinders to their limits several times to clear the cylinders and the lines of air.

Roll the bucket back and lower the loader. Disengage PTO, shut off engine and remove ignition key. Loosen the stove bolt in the upright just below the control valves. If oil seeps out of the hole, there is sufficient oil in the reservoir to operate the loader.

Adjust tire pressure in all four tires to 20-25 PSI (1.4-1.8 kg/cm²). Tire pressure may be increased or decreased within the given range to maximize operator control and comfort.

OPERATION

⚠ CAUTION ⚠

Before starting the engine, become familiar with all controls and their function. Read this owner's manual, and the owner's manual provided with the tractor, thoroughly.

Become familiar with the equipment before attempting to use it.

To operate the loader, start the engine and engage the front/mid PTO clutch. Disengage the PTO clutch when starting the engine, and whenever the loader is not being used.

The loader is controlled by 2 hydraulic valve levers located just above the operator's left knee. The left, or outside, valve handle controls the bucket height. To raise the bucket, pull back on the L.H. lever. To hold the bucket at a set height, release the lever. To lower the bucket, push the lever in. The lift valve is equipped with a "float" position. The float position can be used to lower the bucket to the ground. Push the lever in all the way so the handle "locks" to use the float position. The right, or inside handle, controls the dumping action of the bucket. Push the handle in to dump the bucket. Pull the handle out to return the bucket to it's normal position. The center position will hold the bucket in any position from fully dumped to fully back.

The loader is equipped with a bucket position indicator that is located on the forward left hand cylinder. The bucket is level with the ground when the white indicator rod is even with the stationary indicator.

To load the bucket, approach the material with the tractor in low range. Move the lift lever (left or outside lever) all the way in to the "float" position. Operate the bucket dump lever (right or inside lever) to align the white indicator rod with the stationary indicator.

⚠ CAUTION ⚠

Do not force the bucket into hard packed material. Use a slow ground speed when loading the bucket. Ramming the bucket into hard packed material may result in operator injury and damage to equipment.

Once the bucket is loaded, tilt the bucket back. Lift the bucket approximately 15 in. (40 cm) off the ground for transport.

⚠ CAUTION ⚠

Do not pivot or turn the tractor sharply when the bucket is over 20 in. (50 cm) from the ground. Carry the bucket low when transporting a loaded bucket. Accelerate, stop and turn slowly and cautiously.

Stop the tractor just short of where you intend to dump the load. If necessary, raise the bucket enough to clear side walls, side boards, etc. Shift the tractor into low range and proceed forward with extreme caution.

⚠ CAUTION ⚠

Do not leave the loader in a raised position. The only time the bucket should be raised is when a load is being dumped.

Use of the tractor's rear axle lock will help improve rear tire traction. This use should be restricted to situations where wider than normal turns can be made.

⚠ CAUTION ⚠

Do not use the tractor's turning brakes when operating this attachment. Application of turning brakes could cause loss of control and/or tipping of the tractor.

MAINTENANCE AND STORAGE

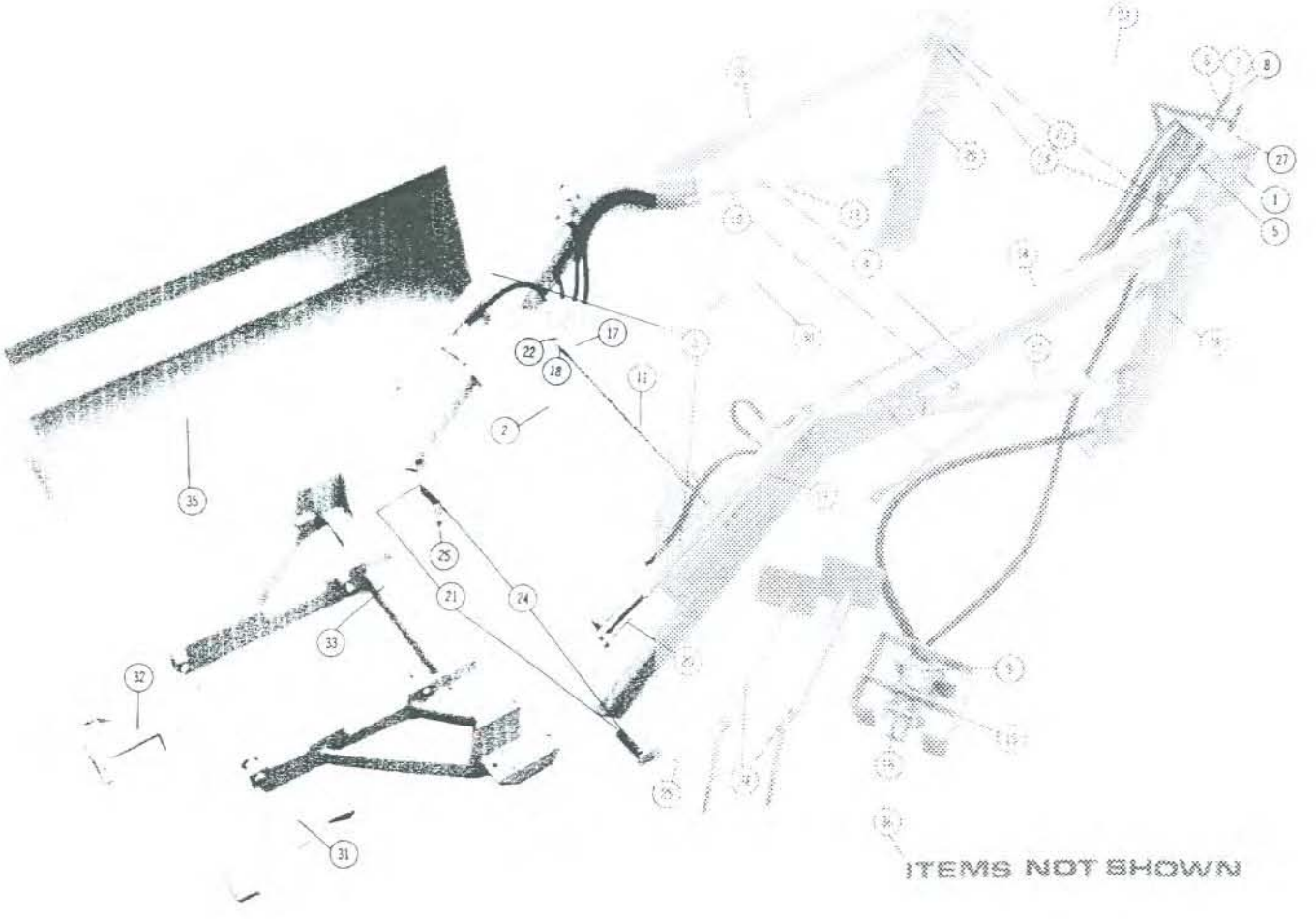
Wash the loader with a garden hose after each use. An automotive type detergent may be used to remove stubborn dirt. Touch up painted surfaces with a fresh coat of "Wheel Horse Red", available from your authorized dealer in aerosol cans.

After cleaning, lubricate moving parts with motor oil or grease. Check that all fasteners are tight. The loader has 4 zerk fittings that should be lubricated with a pressure type grease gun, and general purpose grease. Lubricate any exposed portion of the hydraulic cylinder rods with light machine oil to prevent rusting of the polished surfaces.

Store the loader in a clean, dry place, or protect it with a weatherproof cover if stored outdoors.

⚠ CAUTION ⚠

Whenever loader is removed from the tractor, remove the dismount stands and lower the uprights to the ground.



PARTS LIST FOR FRONT LOADER

VEHICLE IDENTIFICATION NUMBERS 07-72FL01 / 07-48BK01

All part numbers shown are Ark Manufacturing Co., Inc. part numbers.

Parts are available through authorized Wheel Horse dealers, or from Ark Manufacturing.

(Specifications subject to change without notice.)

ITEM NO.	ARK PART NO.	DESCRIPTION	NO. REQ'D.
1	20001	Decal, Caution	1
2	20028	Decal, Wheel Horse	1
3	21030	Tilt Cylinder	2
4	21031	Lift Cylinder	2
5	22001.1	Control Valve	1
6	22003	Handle Linkage	2
7	22016	Black Vinyl Cover	2
8	22020	Valve Handle (with Cover)	2
9	23001	Hydraulic Pump	1
10	23042	Hose Clamp	2
11	23705	Front Lift Frame Hydraulic Line	4
12	23709-L	Lift Cylinder Hydraulic Line (Left)	1
13	23709-R	Lift Cylinder Hydraulic Line (Right)	1
14	230915	Left Lift Frame Hydraulic Line	4
15	230943	Pump Mounting Bracket	1
16	230944	Pump Coupling	1
17	24027	Hydraulic Line Bracket (Top)	3
18	24028	Hydraulic Line Bracket (Bottom)	3
19	24036	Bucket Guide Tube	1
20	24039	Bucket Guide Rod	1
21	24043	Grease Fitting	4
22	24044	Foam Cushion	3
23	24052	Stabilizer Bar	1
24	24053	Lift Frame Pin	4
25	24055	Lift Frame Pin Bushing	4
26	24906	Lift Frame Assembly	1
27	25009	Breather Cap	1
28	250947-L	Left Upright	1
29	250947-R	Right Upright	1
30	260915	Brace Arm	2
31	260916-1L	Front Mounting Bracket (Left)	1
32	260916-1R	Front Mounting Bracket (Right)	1
33	270967	Underframe Assembly	1
34	28013	Dismount Stand	2
35	28600	48 in. (122 cm) Heavy Duty Bucket	1
36	290321	Ballast Box	1
	290320	Upper Link (3-Point Hitch)	1
	290322	Clevis Pin $\frac{5}{8}$ x $2\frac{1}{2}$ (Ballast Box Mounting)	1
	290323	Lynch Pin (Ballast Box Mounting)	2

HYDRAULIC HOSE LOCATION CHART

ARK PART NO.	LOCATION	NO. REQ'D.
23838	Right Tilt Cylinder, Front Hose	1
23831	Right Tilt Cylinder, Rear Hose	1
23837	Left Tilt Cylinder, Front Hose	1
23835	Left Tilt Cylinder, Rear Hose	1
23839	Right Lift Cylinder, Front Hose	1
23890	Right Lift Cylinder, Rear Hose	1
23867	Left Lift Cylinder, Front Hose	1
23871	Left Lift Cylinder, Rear Hose	1
231007	Valve Ports A & C to Metal Lines	2
231006	Valve Ports B & D to Metal Lines	2
23889	Return Hose, Valve to Reservoir	1
230940	Suction Hose, Pump to Reservoir	1
230941	Pressure Hose, Pump to Valve	1

HYDRAULIC ADAPTER LOCATION AND DESCRIPTION CHART

ARK PART NO.	DESCRIPTION — LOCATION	NO. REQ'D.
23907	Male SAE O-Ring to Male JIC 90, Valve & Outlet Side of Pump	2
23908	Tee-Male JIC, Connector to Hydraulic Lines	4
23909	Male SAE O-Ring to Female Swivel 90, Pump Inlet Side	1
23910	Male Pipe to Male JIC 90, Hydraulic Cylinders and Reservoir	7

MOUNTING HARDWARE (obtain locally)

SIZE AND LOCATION	NO. REQ'D.
3/16 x 2 Cotter Pin	1
1/4-20 x 1 1/2 Machine Screw	1
1/4-20 x 2 Hex Head Cap Screw, Grade 2	2
1/4-20 Hex Nut	2
1/4 Lockwasher	2
1/4 Rubber Seal	1
5/16-18 Hex Nut	3
5/16 Lockwasher	9
3/8-16 x 3/4 Hex Head Cap Screw, Grade 5	4
3/8-16 x 1 Hex Head Cap Screw, Grade 5	2
3/8-16 x 1 1/4 Hex Head Cap Screw, Grade 5	6
3/8-16 Hex Nut	8
3/8 Lockwasher	12
3/8 Flatwasher	10
1/2-13 x 1 Hex Head Cap Screw, Grade 2	1
1/2-13 x 1 1/2 Hex Head Cap Screw, Grade 5	6
1/2-13 Hex Nut	6
1/2 Flatwasher	5
1/2 Lockwasher	6
1/2 x 2 Clevis Pin	2
1/2 x 2 1/2 Clevis Pin	4
1/2 x 3 Clevis Pin	2
1/2 Rubber Seal	1
14 mm x 30 mm Metric Cap Screw	4
14 mm Lockwasher	4
5/8-11 x 1 3/4 Hex Head Cap Screw, Grade 5	4
5/8-11 x 2 3/4 Hex Head Cap Screw, Grade 5	1
5/8-11 x 3 1/4 Hex Head Cap Screw, Grade 5	3
5/8-11 Plain Nut	15
5/8 Flatwasher	8
5/8 Lockwasher	8
#3 Hairpin Cotter	10
8 mm Nut (M8 Din 985)	2
8 mm x 30 mm Bolt Grade 10.9	6