



**FERGUSON
MANURE LOADER
L-UO-20**

**OPERATING
and ASSEMBLY
INSTRUCTIONS**



HARRY FERGUSON, INC.

DETROIT, MICH.

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HARRY FERGUSON, INC. DETROIT, MICHIGAN

All specifications are subject to change without notice.

Owner's Name _____

Your Ferguson Dealer _____

Dealer Address _____ Phone _____

Two-Way Plow Serial No. _____

Located on Name Plate as shown on Opposite Page

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FERGUSON MANURE LOADER

L-UO-20

Loading manure from barns, yards and manure piles is one of the most laborious jobs on the farm. The better the farming practices, the more manure handling there is to be done. When handling manure, more time and labor is consumed in loading than any other operation.

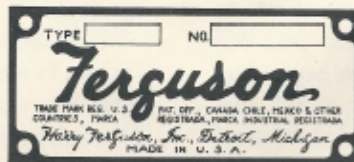
In answer to this problem, HARRY FERGUSON, Inc. has introduced the L-UO-20 Manure Loader. This front-end, tractor-mounted, hydraulically operated implement is used primarily for loading manure from barns, barnyards, field lots, shelter sheds and manure piles. When used in combination with the A-JO-20 Ferguson Manure Spreader and Lift Hitch, the entire loading and spreading operation can be performed by one man without the operator moving from the tractor seat.

Included in this manual is information concerning lubrication and maintenance, operation, adjustments, accessories, assembly instructions, and numerous illustrations of the Ferguson Manure Loader.

Read, study and follow these instructions to get longer life, maximum performance and the utmost satisfaction from your new implement.

Only GENUINE FERGUSON REPAIR PARTS should be used on your FERGUSON MANURE LOADER. These parts are designed and built to fit correctly and give maximum service. They may be purchased only from your AUTHORIZED FERGUSON DEALER.

All FERGUSON equipment is identified by a FERGUSON name plate. If this name plate is not attached, it is not FERGUSON equipment. Check for the name plate before purchasing the equipment. This name plate, shown below, also supplies the serial number, which should be noted when ordering parts.



FERGUSON L-UO-20 MANURE LOADER

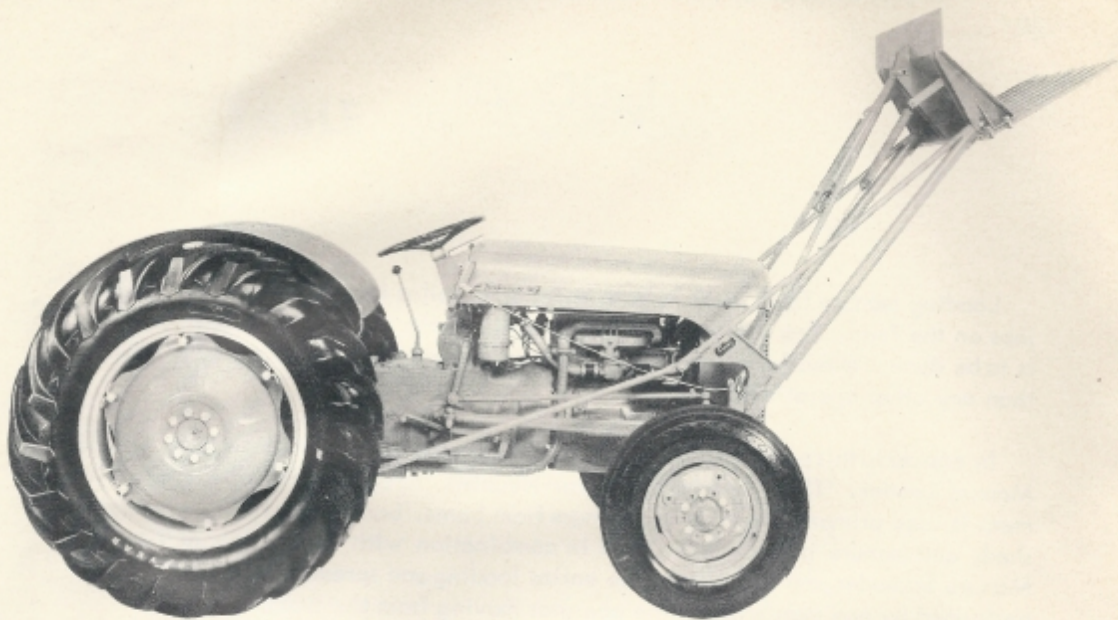


Fig. 1 Ferguson Manure Loader and TO-30 Tractor

The L-UO-20 Manure Loader is especially designed to be used in conjunction with the Ferguson Manure Spreader, employing the exclusive Ferguson Lift Hitch. The design and mounting of the loader and the Ferguson Lift Hitch are such that, when used simultaneously with the spreader, one operator can load, hitch, transport and spread manure without ever leaving the tractor seat. This important new performance feature makes it possible for the "one-tractor" farmer to load and spread manure fast, with the least amount of work, and a minimum investment in equipment. No competitive loader-spreader combination has all of these features.

The Ferguson Manure Loader will lift a 1,000 pound load at the start of the lift cycle. The normal capacity of the loader, however, is 600 pounds. The average weight of a fork full of manure is approximately 325 pounds. The 1,000 pound lift capacity at the beginning of the lift cycle is for "breaking away" the fork full of manure from the pile. This feature is very desirable inasmuch as greater effort is

usually required at the start of the lift stroke. The loader lifting capacity, however, is also dependent upon the condition of the tractor's hydraulic safety relief valve. This valve must be in good operating condition in order to obtain maximum performance from the loader. The mechanical linkage, combined with the different hydraulic piston areas, controls the lift cycle of the loader so that the oil supply from the Ferguson System pump is automatically shut off at the top of the lift stroke. This important operational feature eliminates extra shut-off, control and safety relief valves as well as unnecessary wear on the tractor system.

The Ferguson Manure Loader will operate in barns and sheds, and will pass through any opening through which the tractor alone can be driven.

The loader fork is designed with open sides for use in manure. This allows the fork to dig into the manure pile with minimum thrust. The fork is also well suited for general purpose work as it has a solid plate back. The fork

FERGUSON L-UO-20 MANURE LOADER

width is 40 inches, and it will lift a load to a height of approximately 6 feet. Fork teeth are round and pointed for ease of penetration. They are heat treated to resist abrasive wear and to give additional resistance to bending.

The built-in, Ferguson Hydraulic System is used to operate the Loader. During the first part of the lift stroke, the Ferguson System hydraulic pump forces hydraulic oil into the two auxiliary loader cylinders attached to the rear end of each Tension Rod. It is the action of these cylinders that gives the loader the 1,000 pound "break-away" at the start of the lift stroke. When the oil has filled these cylinders and moved the pistons the full length of their stroke, the pressure in the system is then sufficient to force the hydraulic piston out of the tractor ram cylinder. This action causes the Lift Arms of the tractor to raise. The motion is transferred through the Lift Arms to the auxiliary cylinders and Tension Rods, raising the fork to its top-most position.

The fluid from the Ferguson System pump travels through passages in the tractor to the tractor hydraulic outlet. From the outlet, the fluid passes through the intake hose to the loader Drop Valve. When the Drop Valve is closed (tractor Hydraulic Control Lever in the raised position) the fluid passes through a spring loaded check valve in the Drop Valve housing to the two hoses which lead it to the loader Cylinders. When the Hydraulic Control Lever is depressed completely, it pushes down on the Drop Valve which in turn opens the check valve allowing the fluid to return rapidly from the cylinders and empty into the Ferguson System through the discharge tube. The parts of the Loader Cylinders are shown in Fig. 3. The cylinders are of the simple, single-acting type with no valves to get out of order. The various parts of the cylinder assemblies are obtainable from your Ferguson Dealer in case of accidental damage or wear. These parts are precision made from special materials and should be treated with care. ALWAYS KEEP THE HYDRAULIC SYSTEM CLEAN.

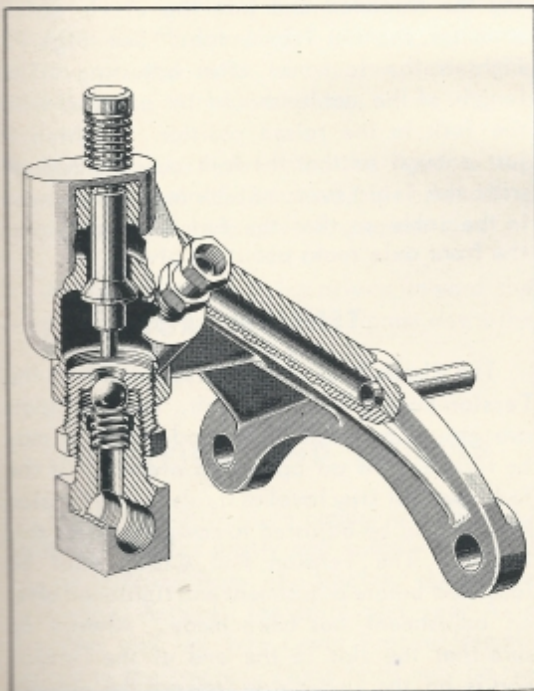


Fig. 2 Cross Section of Valve Assembly

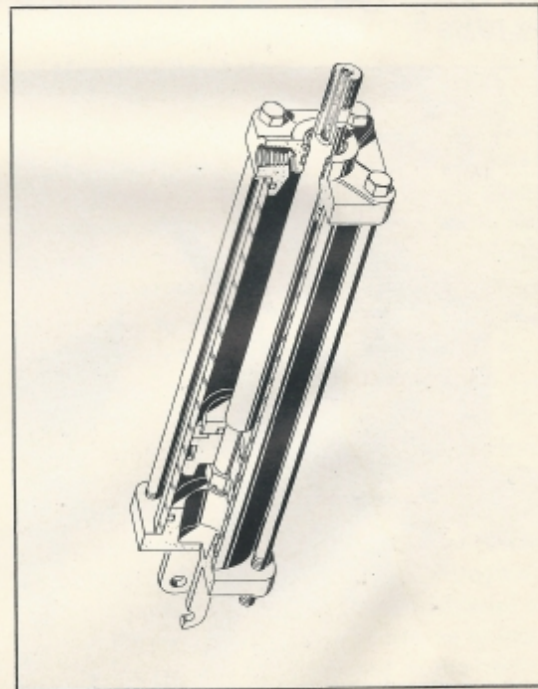


Fig. 3 Cross Section of Cylinder

ADJUSTMENTS

When your Ferguson Dealer delivers your L-UO-20 Manure Loader, he will mount it on your tractor or explain how this should be done. If you, the owner, desire to attach the complete loader to your tractor, you will find instructions for doing this in the Assembly Instructions on page 7. Your Dealer will explain the various adjustments which should be made on your loader. These adjustments are listed below.

FORK ANGLE

To adjust the suck or angle which the fork tines make with the ground, two holes have been provided in the top of the center vertical struts which support the backing plate. (See Fig. 4). When the clevis pin is placed in the upper hole, the fork tines will have a digging action. Placing the pin in the lower hole will cause the tines to be nearly level with the ground. The best setting of this adjustment for any particular job can be quickly determined by trying both positions.

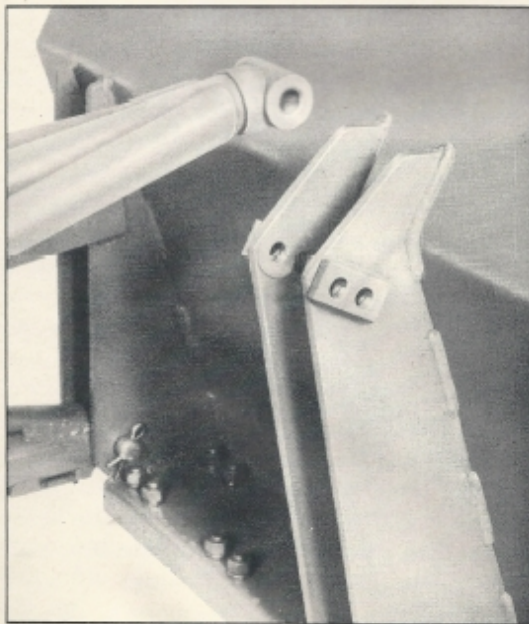


Fig. 4 Fork Angle Adjustment

FORK RETURN

The fork return spring can be adjusted by screwing the long bolt into or out of the cast spring plug. See Fig. 9. Be sure to lock the bolt securely to the plug by tightening the locking nut against the plug after making an adjustment. The spring should be just tight enough so that the fork always returns to a latched position after it has been tripped. Tightening the spring too much will cause improper dumping action of the fork. If the bucket attachment is used the heavier springs provided with the attachment must be installed to return the bucket to the latched position. Do not attempt to use the Fork Springs with the Bucket Attachment by tightening the adjustment, as the springs will be overloaded and ruined.

TRIP CABLE

The Trip Cable should be adjusted by screwing the threaded end into the clevis which attaches to the Trip Latch. See Fig. 9. Tighten the lock nut after adjusting. The length of the cable should be adjusted with the fork in the raised position. Tighten it just enough so that the fork may be dumped with the Trip Lever. Slack must be allowed in the cable so that the fork will not trip as the front axle rocks about its pivot.

TENSION RODS

The Piston Rods should be screwed into the Tension Rods at least $\frac{3}{4}$ inch. Two flat spots are ground on each piston rod so that it may be turned with an open end wrench. If the fork does not stay level as it raises, the Tension Rods should be adjusted to compensate for this trouble. The Tension Rod Clamp must be loosened before adjustment and tightened after an adjustment has been made. Always be sure that the slot in the end of the Tension Rod is on the under side (toward the ground) before tightening the clamp.

OPERATING INSTRUCTIONS

Listed below are several suggestions for operating your loader. Under most conditions, the tractor should be operated in second gear with the throttle open only enough to give good governor action. (Engine speed 1000 to 1200 rpm). The following procedure has been found to give good results when loading a manure spreader.

1. Drive the loader toward the pile with enough force to embed the fork firmly into the manure.
2. Apply the tractor brakes.
3. Depress tractor brake and clutch pedals simultaneously and place the gear shift lever in the neutral position.
4. Release the clutch pedal only and raise the Finger-Tip Control Lever causing the fork to "break-away" from the manure.
5. After the "break-away" is made, shift to reverse and back away, completing the lift stroke at the same time.
6. Load the spreader from the front to the rear to obtain the most efficient shredding of manure during spreading operation.
7. As the tractor is being driven toward the pile for the next fork load, press down the Finger-Tip Control Lever.

REMOVING AND STORING

The L-UO-20 Manure Loader was designed so that it can be easily and quickly attached to, or removed from, the tractor. Using the following method, the front and rear Axle Brackets and the Trip Lever Bracket remain bolted to the tractor. These parts may be removed, of course, if desired.

1. Remove both cylinder hoses from the Drop Valve. Remove the intake hose from the tractor center housing and replace the plug. **KEEP DIRT OUT OF THE HOSES.**
Note: On tractors where the hydraulic outlet is in the pump base, the small cast adapter may be left in place and plugged with the plug provided.
2. Remove the Drop Valve Assembly and replace the three Inspection Cover Bolts.
3. Remove Lift Arm Assemblies.
4. Remove the Trip Lever from its mounting bracket on the Instrument Panel.
5. Remove the clevis pins attaching the Tension Rods to the Side Frames and remove the Tension Rods and Cylinders as a unit. Be careful not to get dirt into the hoses.
6. Remove the clevis pins connecting the "A" Frame and Side Frames to the Front Mounting Brackets.
7. Whenever the loader is dismantled from the tractor, the hoses should be reattached to the cylinders and to the Drop Valve. A cap should be screwed onto the open end of the intake hose. The small tube which returns the fluid from the Drop Valve Housing to the Ferguson System should be securely covered to prevent any dirt from entering the hydraulic passages of the loader. Push the piston rods into the cylinders as far as they will go before storing the implement. **DO NOT SCRATCH THE PISTON RODS.** Replace any damaged or worn parts and clean and paint the loader before storing for long periods. Attach all loose parts to the main frame with wire so that they will not become scattered or lost. The loader may be remounted to the tractor by reversing the above procedure.

ACCESSORIES

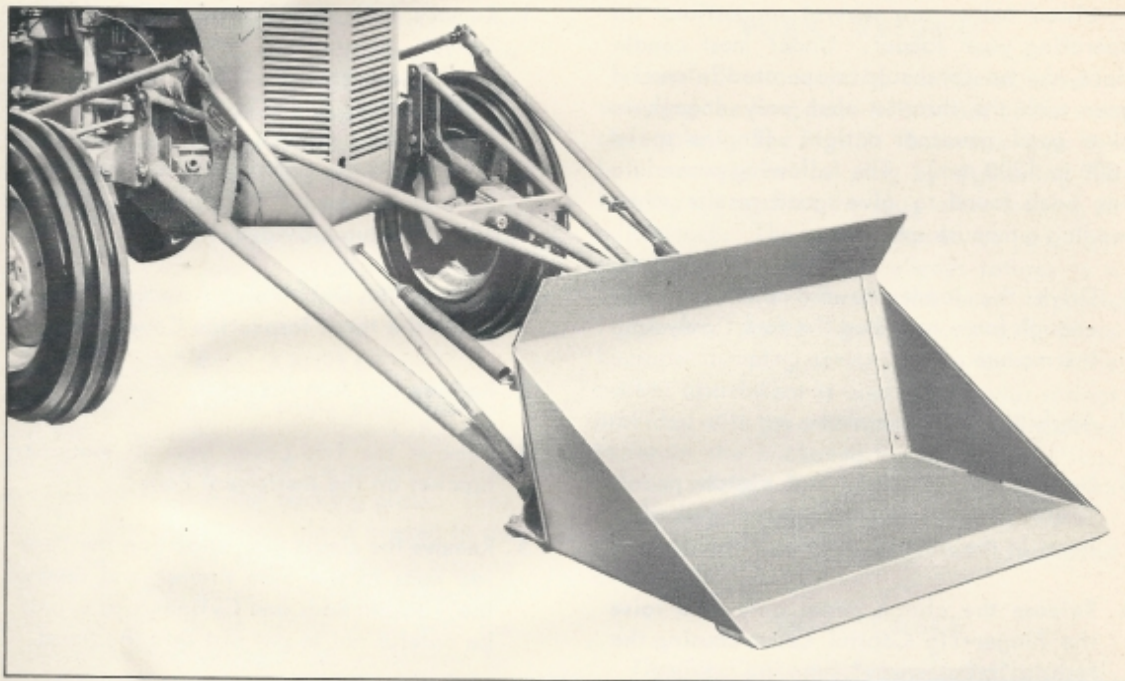


Fig. 5 Bucket Attachment

A Bucket Attachment is available for the L-UO-20 Manure Loader. This attachment was designed to handle fine, loose material such as dry manure, grain, corncobs, sand or similar material. It consists of a floor plate with sides and a hardened steel cutting edge, two heavier bucket return springs and the necessary nuts and bolts for attaching the bucket to the fork. The L-UO-61 Loader Bucket Attachment can be easily installed on the loader by following the steps listed below:

1. Remove the loader Fork Return Springs and Spring Plugs. Screw the heavier springs furnished with the bucket onto the cast Spring Plugs and install them in place of the original springs. This is necessary because the bucket is heavier than the Fork and more force is required to return it to the latched position.

2. Slide the bucket over the Loader Tines.
3. Bolt the sides of the bucket to the Loader Backing Plate using the carriage bolts provided.

CAUTION: Do not subject loader to unnecessary abuse. Your loader is designed for farm use only and should not be used for heavy industrial purposes. When the Loader Bucket Attachment is used, extreme care must be exercised to avoid overloading the implement or the tractor. Bucking into a bank of packed dirt, trying to force the bucket under heavy stones or other similar uses, may subject the implement and tractor to damaging loads. Care must be taken to make sure the bucket is latched in place before attempting to load, otherwise the side frame assemblies will be damaged.

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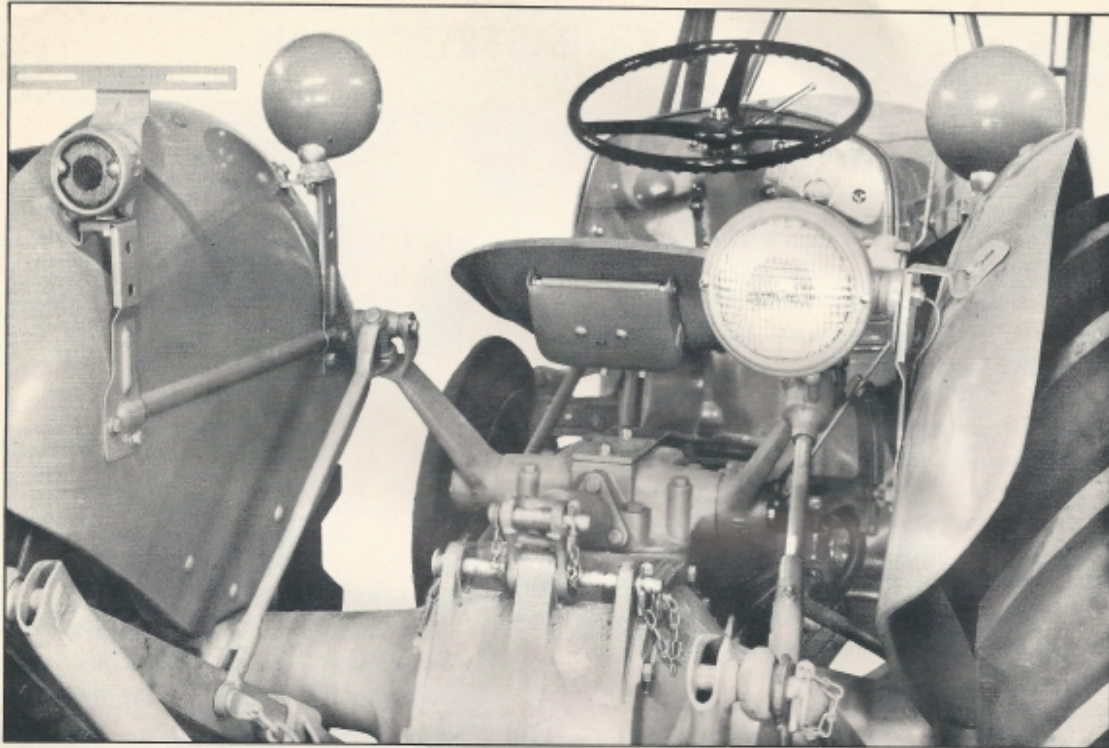


Fig. 6 Mounting Lights With Loader

When it is necessary to use lights with the loader they must be mounted on the rear fenders in order to avoid interference with the loader Side Frames. If the taillight and rear work lamp are to be used as well as the head lamps, two more fender mounting brackets will be needed in addition to those supplied with the A-TO-76-A1 Lighting Kit. The procedure below should be followed when attaching the lights to the fenders as shown in Fig. 6.

1. If head lamps are already installed on the tractor, remove them with their attached wires from the front of the tractor.
2. Bolt right-hand and left-hand light brackets to forward end of tractor fenders. Install headlamps on brackets. An extra

right-hand and left-hand bracket will be needed if headlamps, rear working light and taillight are being used at the same time.

3. Remove the original wiring for the headlamps and run to new position of lights on left-hand fender. One lead is to be made to the headlight and the other to the taillight.
4. Remove original taillight wire from left-hand fender and connect to headlight on right-hand fender. The other lead is already connected to the rear working light.
5. Rotate lenses 90° in lamp to give correct focus.

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ASSEMBLY INSTRUCTIONS

Certain checks should be made on the tractor before any attempt is made to attach an L-UO-20 Manure Loader.

1. The tractor governor should be checked to ascertain that it is operating properly. The proper method of checking the governor and making any necessary adjustments is outlined in the tractor Owner's Manual.
2. It is recommended that 6.00-16 tires be used on the front tractor wheels when the loader is attached. Rims for these tires are available from your Ferguson Dealer.
3. Check the level of the oil in the tractor hydraulic system. Follow the recommendations in the tractor Owner's Manual.
4. Set front wheel spacing to 52 inches.

After it has been determined that the tractor is in good operating condition, proceed to assemble and mount the loader as outlined in the following steps.

1. Level the tractor lower links by turning the Hydraulic Lift Leveling Lever until the groove on the upper part of the Lift Rod just emerges from the lower part of the rod. Attach a drawbar or Manure Spreader Lift Hitch Assembly.
2. Attach lynch pin chains to Anchor Brackets with the cotter pin provided. Remove the nuts from the fender bolts. Position the Anchor Brackets on the bolts, installing a flat washer on each bolt between the bracket and the axle. Install lock washers and nuts but do not tighten the nuts yet.
3. Attach the Lift Arms to the inner side of the Anchor Brackets using the link pins provided. The Lift Arms are left-hand and right-hand units and must be installed as

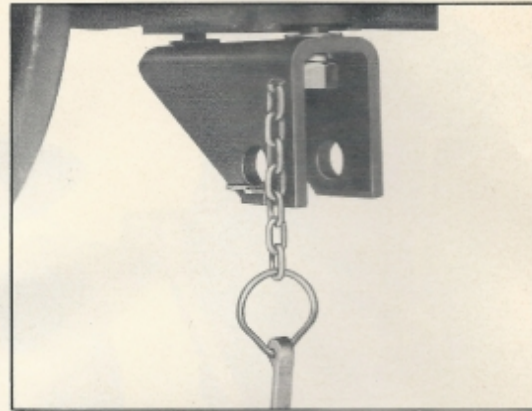


Fig. 7 Attaching Anchor Brackets

shown in Fig. 8. Attach the rear end of the Lift Arms to the ends of the drawbar. Raise and lower the drawbar to make sure there is no binding and tighten the bolts in the Anchor Brackets.

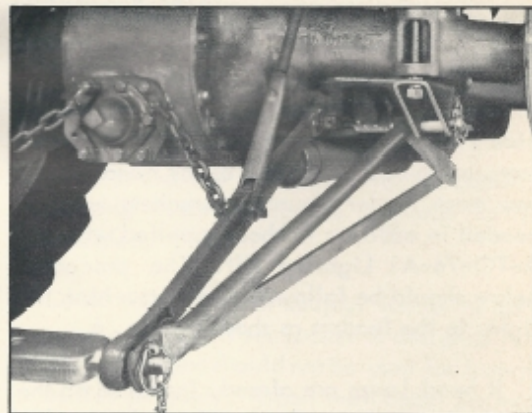


Fig. 8 Attaching Lift Arms

4. Use the 5/8 x 3-1/2 inch bolts to attach the left-hand and right-hand Front Brackets to the front axle.
5. Attach the Side Frames to the Front Brackets with the clevis pins and hair pins. The two small brackets on the frames should be toward the inside.

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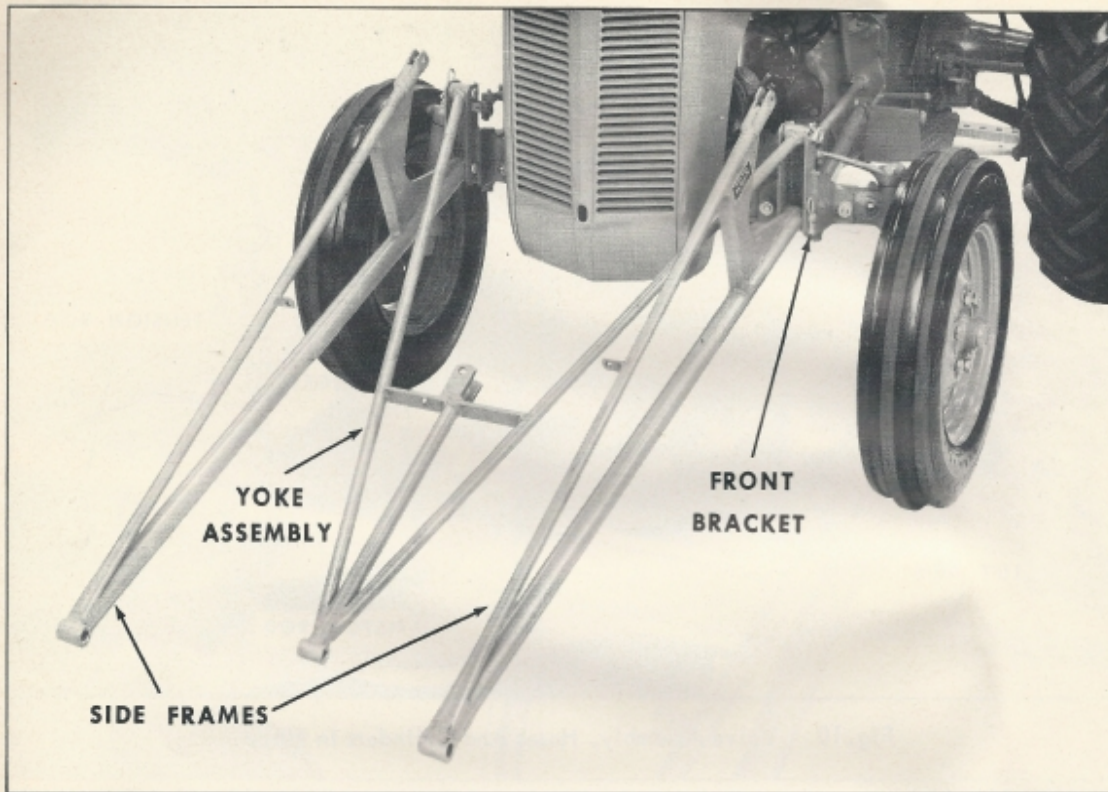


Fig. 9 Installing Side Frames And Yoke Assembly

6. Install the Yoke Assembly in the Front Brackets with the clevis pins and hair pins. The small hole in the cross brace of the Yoke Assembly should be on the right side.
7. Remove the upper three bolts from the right-hand cover plate. Position the Drop Valve Assembly, placing the rubber gasket over the small center tube, the thick spacer at the rear and the thin spacer at the front between the Drop Valve housing and the cover plate. Attach with the two 7/16 x 1-1/2 inch bolts.
Note: On some other makes of tractors these spacers will be replaced by the brake pawl and/or the step plate bracket.
8. Screw union adapters into the two lower outlets of the Drop Valve and into the hydraulic outlet of the tractor.
9. Remove plugs and screw 90 degree fittings into the Loader Cylinders. These fittings should face toward the rear as shown in Fig.10. Attach the lower end of the cylinders to the Lift Arms with the clevis pins and cotter pins.
10. Slip Clamps onto Tension Rods, screw Tension Rods onto Loader Cylinder piston rods at least 3/4 inch. Set Clamps so that they point downward and tighten in place with 3/8 x 1 inch bolts.
Note: Before tightening Clamps be sure the slot in the end of the Tension Rod is on the under side (toward the ground).
11. Attach hoses as shown. The longest hose goes over the seat spring to the left-hand cylinder. The medium length hose goes behind the brake rod to the right-hand cylinder.

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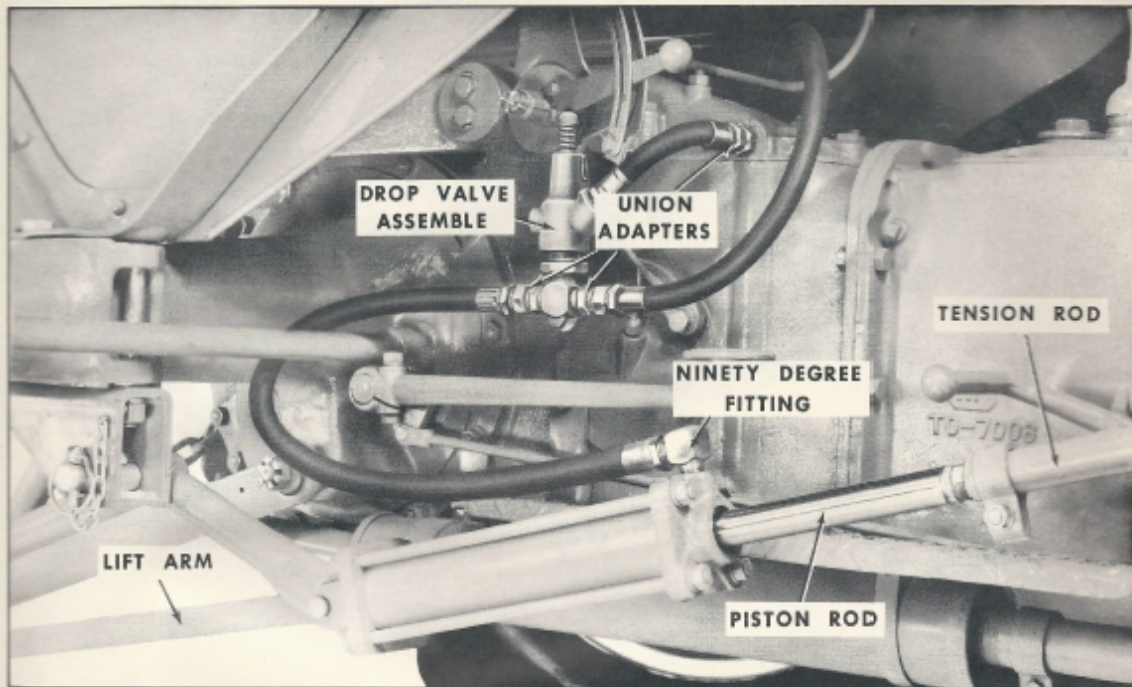


Fig. 10 Valve Assembly, Hoses And Cylinders In Place

Note: If the outlet is in the base of the hydraulic pump, it will be necessary to install an L-UO-98 Hydraulic Fitting Kit as shown in Fig. 11. Note that the gasket type washer goes next to the pump base.

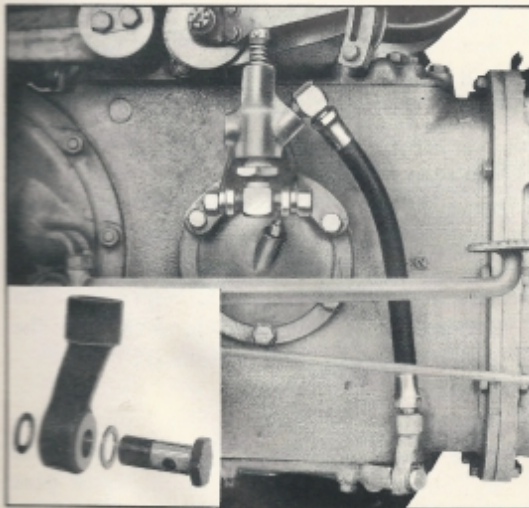


Fig. 11 L-UO-98 Hydraulic Fitting Kit

12. Attach Tension Rod to Side Frames with clevis pins and cotter pins.
13. Attach Fork Trip Latch to Yoke Assembly with $1/2 \times 2-1/8$ inch clevis pin and cotter pin. Attach Plunger and spring to Trip Latch as shown. Install a washer at each end of the spring. Any excessive paint should be removed from the latch mechanism so that it will return easily to the engaged position after each time the fork is tripped. If the latch spring is not strong enough to return the latch, additional washers may be used to compress it and give it more thrust.
14. Insert the Latch Shaft into the tube of the Yoke Assembly so that the locking notch engages the Latch.
15. Secure the Side Frames to the Backing Plate with the $3/4$ inch clevis pins and cotter pins.

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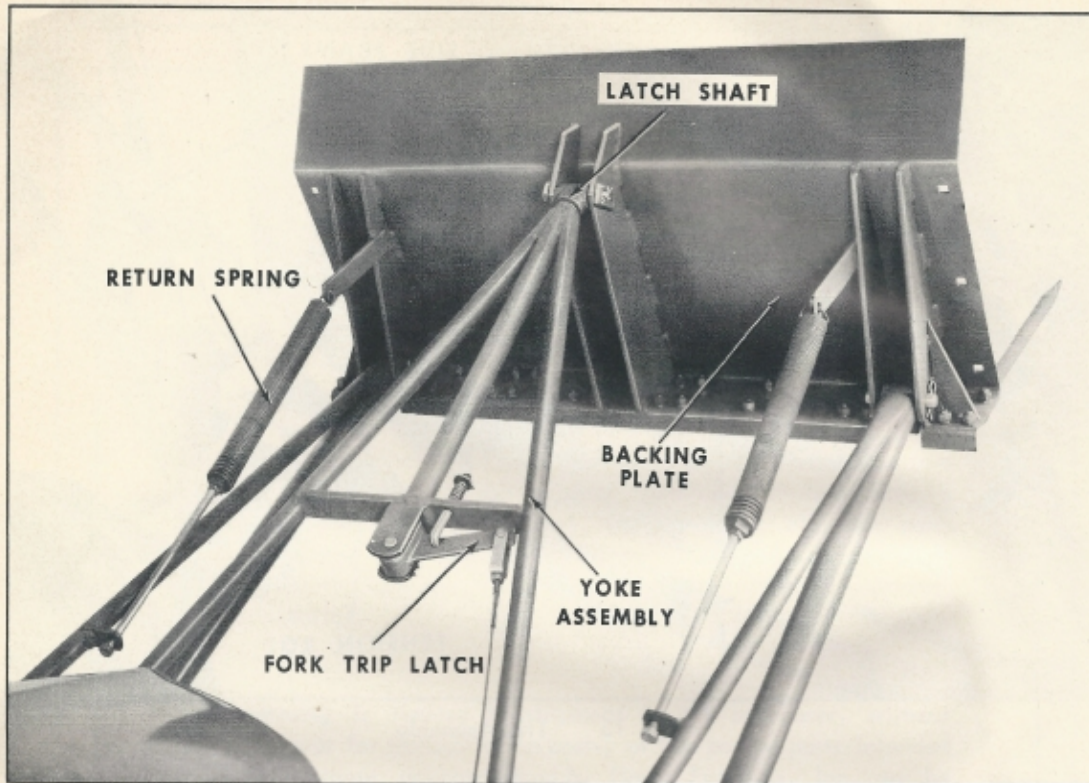


Fig. 12 Fork, Return Springs And Latch Assembly

16. Attach the Latch Shaft to the Backing Plate with the 1/2 inch clevis pin and cotter pin.
17. Screw the cast Spring Plugs into the end of the Return Springs. This may best be done by holding the square end of the plugs in a vise and turning the springs onto them. Hook the springs into the brackets on the back of the Backing Plate.
18. Insert the long bolts through the small brackets on the Side Frames, through the jam nuts and then screw them into the Spring Plugs. Tighten the bolts till the springs will return the empty fork to the locked position from the tripped position.
19. Bolt the Trip Lever Bracket to the Instrument Panel using the bolt already in the tractor panel. Secure the Trip Lever to the bracket.
20. Fasten Pulley to the right-hand Front Bracket with a 1/2 x 1-1/2 inch clevis pin and cotter pin.
21. Attach the Cable Assembly to the Trip Lever by inserting a 5/16 x 1 inch clevis pin through the handle and through the fixed clevis. Remove the Adjustable Clevis, pass the cable through the pulley and re-install the clevis. Screw the clevis onto the cable end just enough to remove the slack from the cable. Do not tighten so tight that the latch will trip as the axle rocks about its pivot pin.
22. Attach the Tines to the fork Backing Plate using the "U" bolts provided. The ends of the tines should butt against the lip on the Backing Plate.

FERGUSON L-UO-20 MANURE LOADER

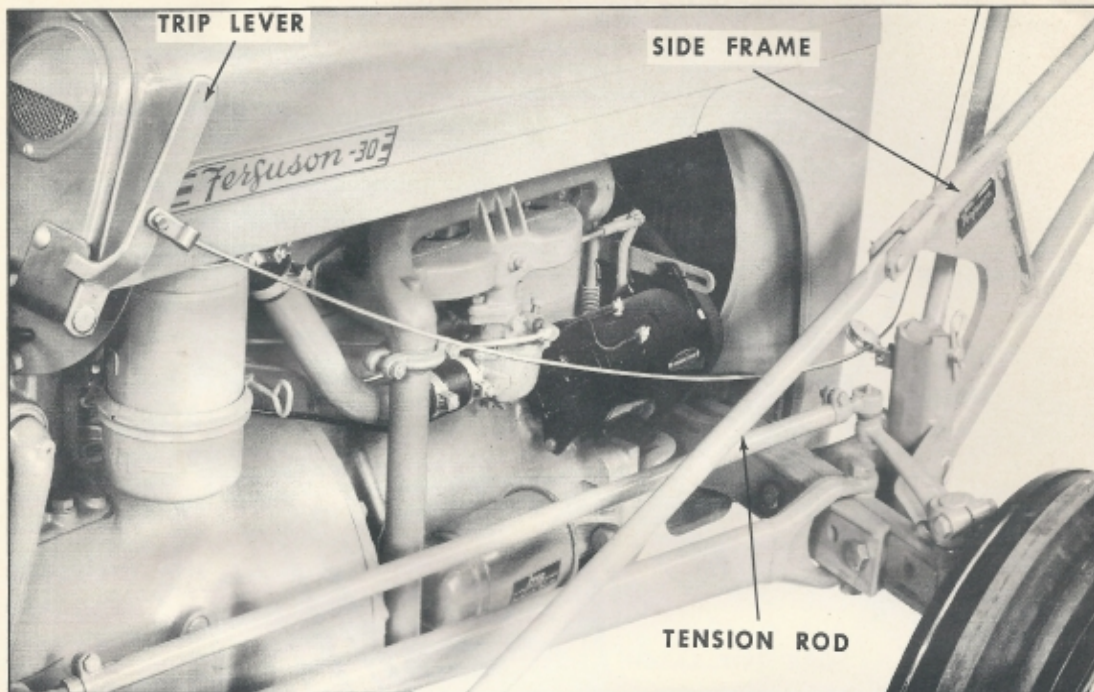


Fig. 13 Trip Assembly

FOR GREATER SATISFACTION

1. Read and study these instructions carefully.
2. Operate at normal working speeds. Excessive speeds will increase maintenance costs and shorten the lift of power-operated equipment.
3. Clean thoroughly and check the implement completely at the end of each season. Prepare a list of all maintenance items, order genuine Ferguson repair parts immediately, and apply a rust preventive to all working parts before storing the implement during the out-of-use period.
4. Maintain proper lubrication at all times.
5. Replace broken or worn parts with **GENUINE FERGUSON REPAIR PARTS** purchased from your Ferguson Dealer. Do this immediately while these items are fresh in your mind and not wait until the beginning of a new season. A delay in replacing broken or worn parts may result in excessive wear, work stoppages and delays in seed bed preparation.
6. Consult your nearest authorized Ferguson Dealer with your special problems.

HARRY FERGUSON, INC.

IMPLEMENT WARRANTY

For a period of ninety (90) days from the date of delivery of a new Ferguson Implement to the original purchaser thereof from a Ferguson Dealer, Harry Ferguson, Inc. warrants all such parts thereof (except tires) which, under normal use and service, shall appear to Harry Ferguson, Inc. to have been defective in workmanship or material.

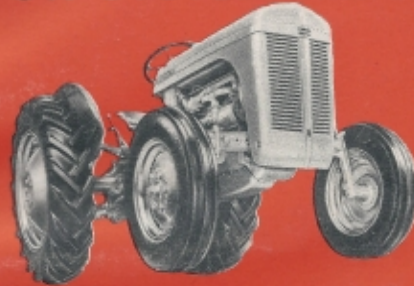
This warranty is limited to shipment to the purchaser, without charge except for transportation costs, of the part or parts intended to replace those acknowledged by Harry Ferguson, Inc. to be defective.

If the purchaser uses or allows to be used on a Ferguson Implement parts not made or supplied by Harry Ferguson, Inc., or if any Ferguson Implement has been altered outside of its own factories or sources of supply, or if attachments have been used which were unsuited and harmful to the Ferguson Implement, then this warranty shall immediately become void. Harry Ferguson, Inc. does not undertake responsibility to any purchaser of a Ferguson Implement for any undertaking, representation, or warranty beyond those herein expressed.

Harry Ferguson, Inc. reserves the right to make changes in design or changes or improvements upon Ferguson Implements without any obligation upon it to install the same upon Implement theretofore manufactured.

See Your Ferguson Dealer for Information
— ON —

THE FERGUSON TRACTOR AND FERGUSON SYSTEM IMPLEMENTS



THE FERGUSON LINE

Of Implements Includes

Mold Board Plows	Manure Spreaders
Disc Plows	Manure Loaders
Two-way Plows	Corn Pickers
Spike Tooth Harrows	Corn Planters
Spring Tooth Harrows	Lister Planters
Single Disc Harrows	Grain Drills
Tandem Disc Harrows	Side Delivery Rakes
Bush and Bog Harrows	Rotary Hoes
Off-set Disc Harrows	Cordwood Saws
Spring Tine Cultivators	Rear Cranes
Rigid Tine Cultivators	Middle Busters
Lister Cultivators	Ridgers
Agricultural Mowers	Stalk Cutters
Heavy Duty Mowers	Four-row Weeders
Disc Terracers	Four-Wheel Wagons
Blade Terracers	Soil Scoops
	Sub Soilers

