

FERGUSON SUBSOILER

MODEL D-BO-22



*Owner's
Manual*



Ferguson DIVISION

MASSEY-HARRIS-FERGUSON INC.
RACINE, WISCONSIN

FORM No. 199 045 M92

INTRODUCTION

The Ferguson D-80-22 Subsoiler is a deep tillage implement designed to take advantage of the power, traction and control made possible by the use of the Ferguson System. The Subsoiler is used primarily for breaking up the plow sole and hard pan so that greater moisture and root penetration is possible. This loosening effect is of great assistance to the farmer in conserving moisture on slopes or hillsides and improving drainage and aeration of the soil where excessive moisture is a problem. With the addition of the tube and cable laying attachment, which is available as an accessory, the Subsoiler may be used to install electrical cable or plastic tubing to a depth of sixteen inches.

The Subsoiler is a light-weight implement consisting of a single reversible beam, two stabilizer struts, a telescoping upper link and a socket mounted, easily removable tip beam with a reversible share plate. The reversible feature greatly increase the life of the share and the beam. Ground clearance is increased by the action of the telescoping upper link, giving the unit good transportability.

This Subsoiler mounts on a standard tractor drawbar with four bolts and is then attached to the tractor in the usual manner. The telescoping top link replaces the standard top link and is attached to the tractor hydraulic lift rocker.

The Subsoiler is placed in operation in the same way that other Ferguson tillage implements; that is, the hydral lever is used to raise and lower while the draft lever controls the working depth. A furrow or narrow trench is cut to a depth of eighteen to twenty inches. The soil surface is left in nearly undisturbed condition with only slight ridging on either side of the cut.

Included in this manual is information concerning operation, service and maintenance and illustrations of the Subsoiler.

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 Subsoiler. 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.



MAINTENANCE

The implement is designed for normal operation. It should never be stored for an extended period of time. The soil engaging parts should be stored with a rust preventive. When stored it should be stored at the end of the season, and when the point is utilized or used should be retouched. The rusted outer ends of the top link should be protected from rust; however, this protective covering should be removed before using.

NOTE: The upper link should not be left covered, as dirt and dust will adhere to it, causing rusting.

Maintenance needed on the subsoiler consists of an occasional check to see that all

links are tight and that the cutting edge of the share plate is sharp. When the share plate becomes worn to the extent that penetration is poor, the share plate should be reversed. This is accomplished by removing the pin bolts holding it in place on the beam and turning it end for end.

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The beam may also be reversed to take advantage of the cutting edge formed on the full length of the beam. To reverse the beam, the top link and the tip link are removed and the beam is turned end for end. It is not necessary to remove the subsoiler from the tractor, as they will be correctly positioned by reattaching the subsoiler to the

IMPORTANT NOTICE

MODEL D-BO-22 SUBSOILER AND TUBE LAYER

While the Manual reads: "Model D-BO-22", it also applies to the new No. 22 Subsoiler and Tube Layer.

All instructions on operation, adjustments and assembly covered in this manual are applicable to the use of this implement with TO-35 and MF-50 Tractors.

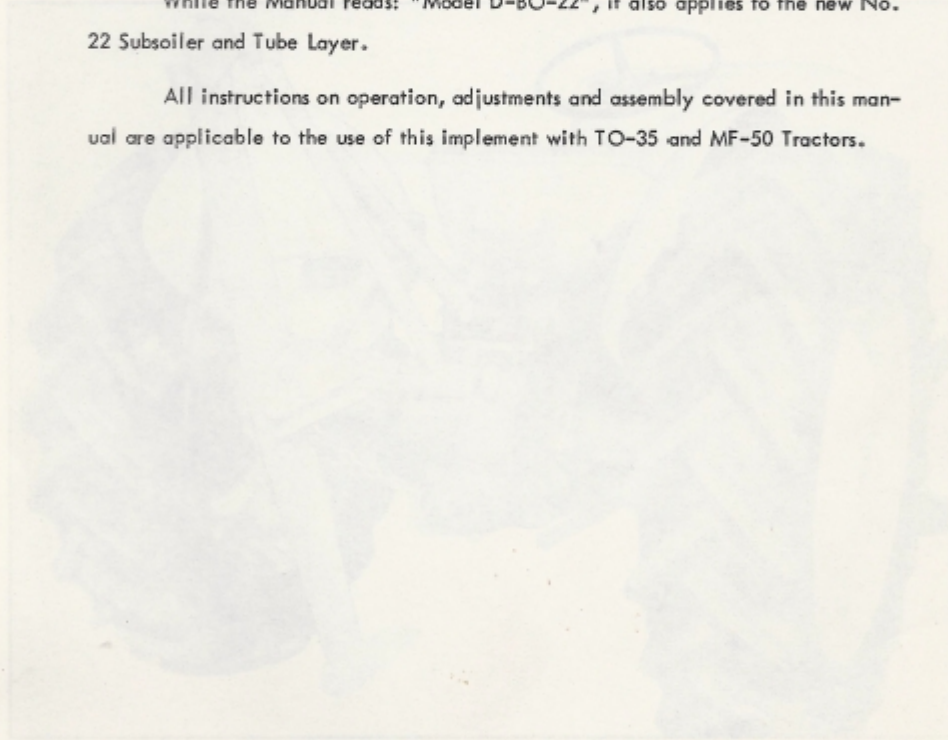


Fig. 1 Ferguson D-BO-22 Subsoiler

MAINTENANCE

No lubrication is necessary for normal operation. If the subsoiler is to be stored for an extended period of time, the soil engaging parts should be covered with a rust preventive. When the unit is to be stored at the end of the season, any areas where the paint is chipped or worn should be retouched. The exposed wear areas of the top link should be protected from rust; however, this protective covering should be removed before using.

NOTE: The upper link should not be lubricated, as grit and dust will adhere to the lubricant causing excessive wear of the mating parts.

Maintenance needed on the subsoiler consists of an occasional check to see that all

bolts are tight and that the cutting edge of the share plate is sharp. When the share plate becomes worn to the extent that penetration is poor, the share plate should be reversed. This is accomplished by removing the two bolts holding it in place on the tip base and turning it end for end.

The beam may also be reversed to take advantage of the cutting edge formed on the full length of the beam. To reverse the beam, the top link and the tip base are removed and interchanged. It is not necessary to remove the mounting plates or the drawbar, as they are interchangeable and will be correctly positioned for reattaching the subsoiler to the tractor.

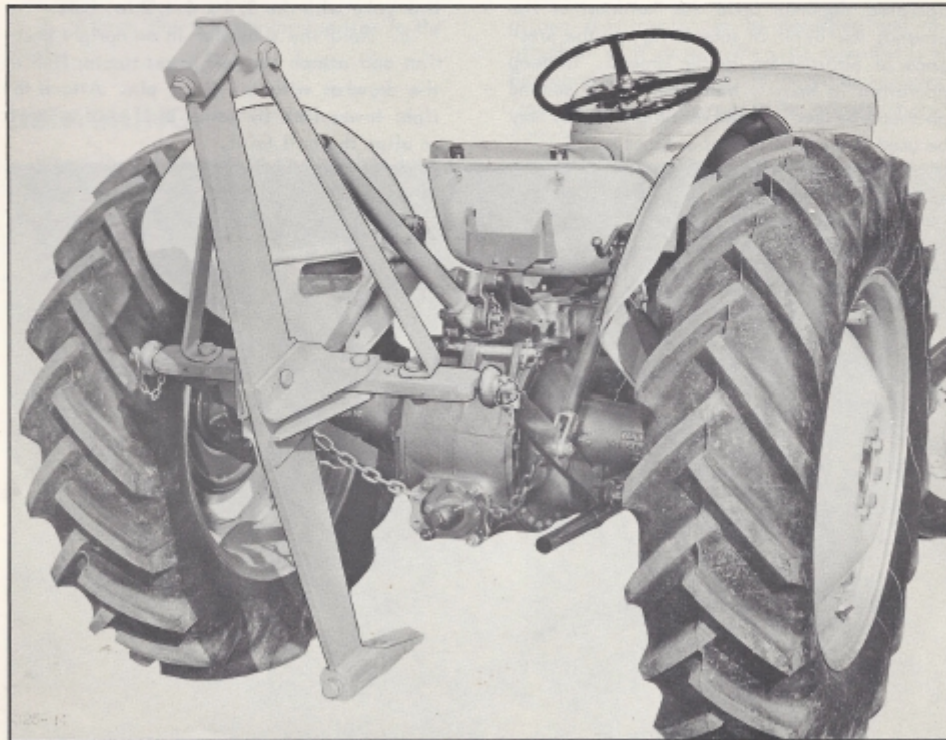


Fig. 1 Ferguson D-BO-22 Subsoiler

OPERATION

The D-BO-22 Subsoiler is used for deep tillage where an undisturbed surface is desired. While it will operate under any soil conditions, the ground is loosened and broken up most effectively in hard, dry soils. It is especially suitable for breaking up hard pan and plow sole conditions in cultivated fields prior to plowing or for renovating pasture and grass land.

Depth of operation is controlled by the draft lever while the hydral lever raises and lowers the implement. Lowering the hydral lever, in turn, lowers the implement and allows the share plate to readily penetrate the soil as the tractor moves forward. The draft lever is adjusted to locate the desired depth and then left in this position. The speed at which the tractor is operated depends upon the hardness of the ground, the depth of subsoiling and the presence of obstructions in the ground. In deep operation in heavy, hard soil first or second gear must be used. However, higher gears may be used in shallow depths or light soils.

Since subsoiling has no set pattern of operation, it is suggested that the local soil conservation service, county agent or similar agency be consulted for recommendations as to depth of cut and distance between furrows. Depending on local conditions a depth of 12 to 18 in. and a spacing of 3 to 7 ft. seems to be common throughout the country.

ATTACHING

The subsoiler is attached to the tractor as follows:

1. Bolt the tractor drawbar to the mounting plates with the two $5/8 \times 2-3/4$ in. bolts. Attach the stabilizer struts to the drawbar with the $3/4 \times 2-1/2$ in. bolts and to the top link yoke with the $3/4 \times 4-1/2$ in. bolt.

2. Hold the subsoiler in an upright position and attach the left lower tractor link to the drawbar with the linch pin. Attach the right lower link by using the leveling crank to align the ball joint.



Fig. 2 Renovating Pasture

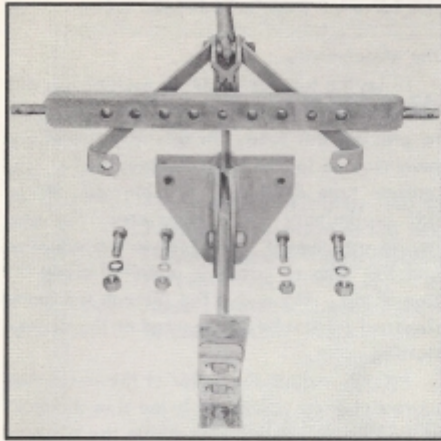


Fig. 3 Drawbar Installation

3. Attach the telescoping top link to the tractor.

DETACHING

When the subsoiler is to be detached for a short time only, it may be left in the ground. The soil holds it in an upright position and



Fig. 4 Breaking Up Hard Pan

allows the tractor to be detached and re-attached with ease. When the subsoiler is to be detached and stored, it should be removed from the tractor by reversing the attaching procedure.

CAUTION: Since the subsoiler has no supporting stand, it must be steadied as it is detached and then lowered to the ground.



Fig. 5 Laying Plastic Pipe with the Tube and Cable Laying Attachment

TUBE AND CABLE LAYING ATTACHMENT

A tube and cable laying attachment is available for use with the subsoiler. With this attachment, plastic tubing or cable up to 1-1/2 in. pipe diameter may be laid to a depth of 16 in. The attachment consists of two guide rings, which are attached to the left front axle and the left rear fender, and a guide tube which is attached to the subsoiler beam. The location of the guide rings and the method of installing the tube and cable laying attachment are shown in Figs. 6 and 7.

To mount the attachment:

1. Bolt the ring with the longer shank to the left front axle with the 5/8 x 3-3/8 in. bolt.

NOTE: Do not mount the ring on the TO-35 so as to restrict the movement of the front axle spindle arm when the wheels are turned.

2. Bolt the second ring to the left rear tractor fender brace with the 3/8 x 1-1/4 in. bolt.

3. Remove the beam to base bolt and the lower plate to beam bolt from the subsoiler and attach the guide tube with the 3/4 x 3-1/2 in. and 5/8 x 3-1/8 in. bolts supplied with

the attachment.

In laying tube or cable, a preliminary cut with the basic subsoiler should be made prior to placing the tube. In this way, rocks and roots may be located and removed and a more uniform tube depth will be obtained. When this preliminary cut is completed, the tube laying attachment is fastened to the subsoiler and the tube or cable is uncoiled along the line of cut. The end is fed through the guide rings and guide tube and secured at the desired starting point.

NOTE: Adjust the roller at the lower rear extremity of the guide tube to the size diameter of the tube or cable by loosening the two nuts and pushing the roller assembly down for smaller diameters and raising it up for larger diameters. It is important that sufficient clearance is allowed to permit the tube or cable to pass freely through the opening.

With the cable laying attachment assembled, make a second pass having the hydraulic lever set to give the desired tube depth and the tube will be placed in the ground as shown in Fig. 5.



Fig. 6 Guide Rings Installed

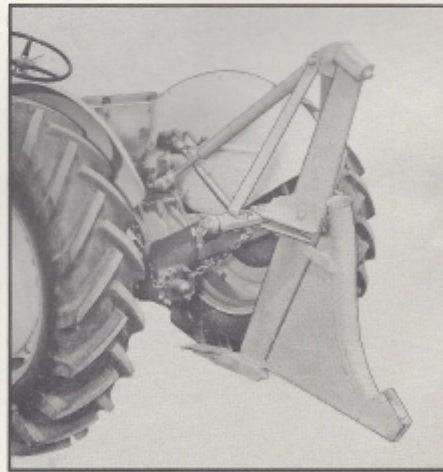


Fig. 7 Guide Tube Assembly

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, Massey-Harris-Ferguson Inc. warrants all such parts thereof (except tires) which, under normal use and service, shall appear to Massey-Harris-Ferguson Inc. to have been defective in workmanship or material.

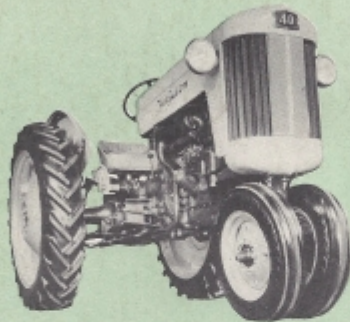
This warranty is limited to shipment to the purchaser, without charge except for transportation costs, of the part or parts intended to replace those acknowledged by Massey-Harris-Ferguson Inc. to be defective.

If the purchaser uses or allows to be used on a Ferguson Implement parts not made or supplied by Massey-Harris-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. Massey-Harris-Ferguson Inc. does not undertake responsibility to any purchaser of a Ferguson Implement for any undertaking, representation, or warranty beyond those herein expressed.

Massey-Harris-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 Implements theretofore manufactured.

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