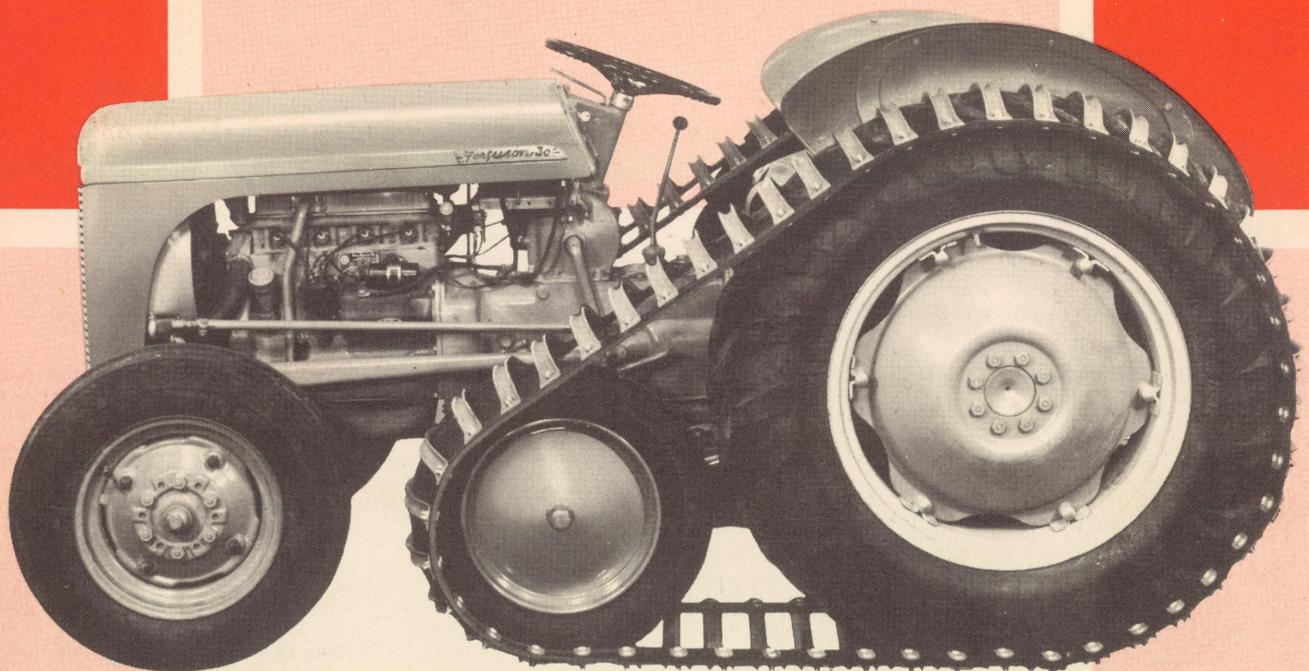




**BOMBARDIER  
TRACTOR TRACK  
ATTACHMENT  
B-TTA-21**

OPERATING  
and ASSEMBLY  
INSTRUCTIONS



**HARRY FERGUSON, INC.**

**DETROIT, MICH.**

# TABLE OF CONTENTS

	Page
Operating Instructions . . . . .	1
Lubrication . . . . .	2
Idler Wheel Bearings . . . . .	2
Rocker and Spindle Assembly . . . . .	2
Body Spindle Cross Tube . . . . .	2
Chain Pulley on Spring Holder . . . . .	2
Assembling and Adjusting Instructions . . . . .	3
Installation Procedure . . . . .	3
Removal . . . . .	6
Adjustments . . . . .	6

**HARRY FERGUSON, INC. • DETROIT, MICHIGAN.**

*All specifications are subject to change without notice.*

Owner's Name \_\_\_\_\_

Your Ferguson Dealer \_\_\_\_\_

Dealer Address \_\_\_\_\_ Phone \_\_\_\_\_

Bombardier Tractor Track Attachment Serial No. \_\_\_\_\_

# BOMBARDIER TRACTOR TRACK ATTACHMENT

## B-TTA-21

The Bombardier Tractor Track Attachment is designed and built to give greater floatation and traction to the Ferguson Tractor. Through the use of this attachment, tractor operation is made practical and efficient under such adverse conditions as deep, loose snow, heavy, wet soil, loose sand or wherever tractor wheels would normally sink in and spin. The Tractor Track will make it possible to plow wet land earlier in the spring so that it will dry out in time to grow a crop. It will enable the tractor to load and haul manure out of a wet barnyard or in the deep snow. It will convert the tractor into an ideal tool for working in the woods during the winter when the snow is deep. It will permit working light, loose sand where wheels would soon bury themselves. In short, the Tractor Track will greatly increase the usefulness of your tractor if you are ever faced with traction or floatation problems.

The Tractor Track may be attached to the tractor in a short time without any special tools. Two idler wheels supplied with the attachment are mounted on arms which are carried by brackets mounted to the underside of the rear axle housings. Endless tracks, consisting of rubber belts re-inforced with steel cables and connected by formed steel cross links, pass around the rear tractor wheel and the idler wheel. The cross links are formed to fit the contour of the tires and every third link has a stud welded to it to prevent wheel slippage within the track.

Included in this manual is information concerning lubrication and maintenance, operation, adjustments, accessories, assembly instructions, and numerous illustrations of the Ferguson Bombardier Tractor Track Attachment.

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 BOMBARDIER TRACTOR TRACK ATTACHMENT. 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 or decal. If this identification is not attached, it is not FERGUSON equipment. Check for it before purchasing the equipment.

## OPERATING INSTRUCTIONS

The Bombardier Tractor Track Attachment consists of two endless tracks, two idler wheels equipped with tires, the body spindles to carry the idler wheels and brackets to mount the spindles to the tractor rear axle housings. Each track is made up of two endless rubber belts in the center of which are molded three 1/8 inch steel cables. Since these belts are endless, there are no joints or connections to wear out or cause trouble. Because they are re-inforced with steel cables, they never stretch any appreciable amount. Connecting the two belts are 48 forged steel cross links. To the inside surface of every third cross link is welded a stamped steel button or stud. These studs engage the cleats of the rear tractor tire and prevent the tire from slipping or spinning inside the track. Each cross link is attached to the belts with four hardened steel bolts which pass through a small re-inforcement cleat. The cross links are formed to fit the contour of the tractor tire and if they are properly adjusted as recommended under "Adjustments", they will not jump off or cause any other trouble.

The idler wheels consist of tires and tubes mounted on welded, pressed-steel wheels. They are carried on automotive type spindles and turn on tapered roller bearings. The spindles are part of the rocker and spindle assemblies. These assemblies rotate on replaceable bronze bushings about axle shafts welded to the end of the body spindles. The rocker and spindle assemblies allow the idler wheels to rotate against the tension produced by compression springs mounted under the rear axle of the tractor. It is the adjustable pressure of these springs which keep the idler wheels always pulling the tracks tight.

As previously mentioned, the body spindles carry the rocker and spindle assemblies,

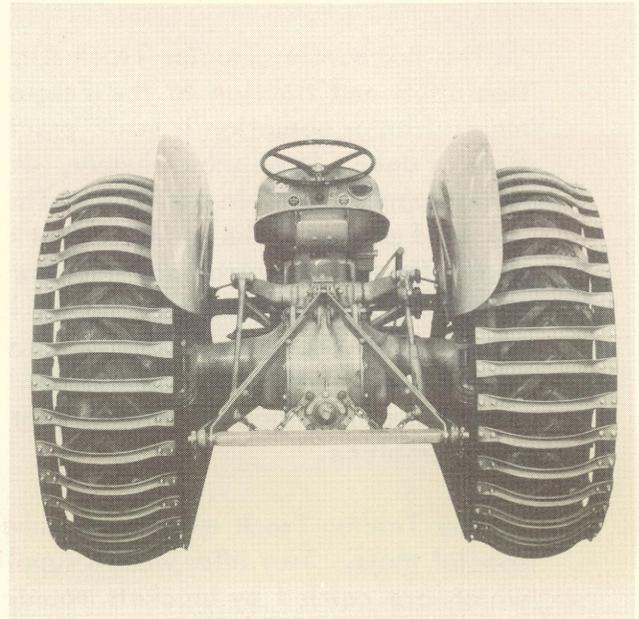


Fig. 1 - Bombardier Track Attached to Tractor

and thus the idler wheels, at their forward ends. The rear ends of the body spindles are attached to the housing brackets which are mounted under the rear axle housings of the tractor. The body spindles are supported by chains attached to the tractor fenders. These chains act as stoppers or snubbers, limiting the downward travel of the idler wheels. They may also be used to support the wheels for assembly purposes or to hold the wheels up out of the way for temporary operation without the tracks.

The housing brackets are attached under the rear axle housing by the fender mounting bolts and by large U-bolts. On the U-bolts are fitted eccentric spacers which may be adjusted to fit individual tractors. Two split spacers are fitted on the shafts about which the body spindles rotate. The position of these spacers must correspond to the tread

## BOMBARDIER TRACTOR TRACK ATTACHMENT B-TTA-21

width at which the rear tractor wheels are set. The cups which carry the compression springs are also attached to the housing brackets so that they correspond to the tread width selected.

This has been a brief description of the principal parts of the Tractor Track Attachment. Following is information concerning lubrication, installation and adjustment.

### LUBRICATION

Proper lubrication is especially important on equipment which operates under such adverse conditions as those encountered by the Tractor Track. Any lubrication recommendations for equipment of this nature must be modified to suit the operating conditions. If the Track is used under water, in mud, or in fine sand or silt, it will need more frequent inspection and attention than would be necessary in snow operations. Although many precautions have been taken to protect the moving parts of this unit against the washing and grinding action of snow, water, mud and sand, it is essential that the lubrication procedure outlined below be faithfully followed to assure long, trouble-free service from the Tractor Track.

### IDLER WHEEL BEARINGS

Remove tracks and idler wheels and inspect bearings once a month when operating under adverse conditions, less often in good operating conditions. If bearings lack lubricant or are dirty, wash all parts with white gasoline and repack with wheel bearing lubricant. Re-install the parts in their proper position and tighten the slotted hex nut until a slight drag is felt as the wheel is turned. Loosen the nut until the cotter pin may be installed, spread the pin and screw on the hub cap.

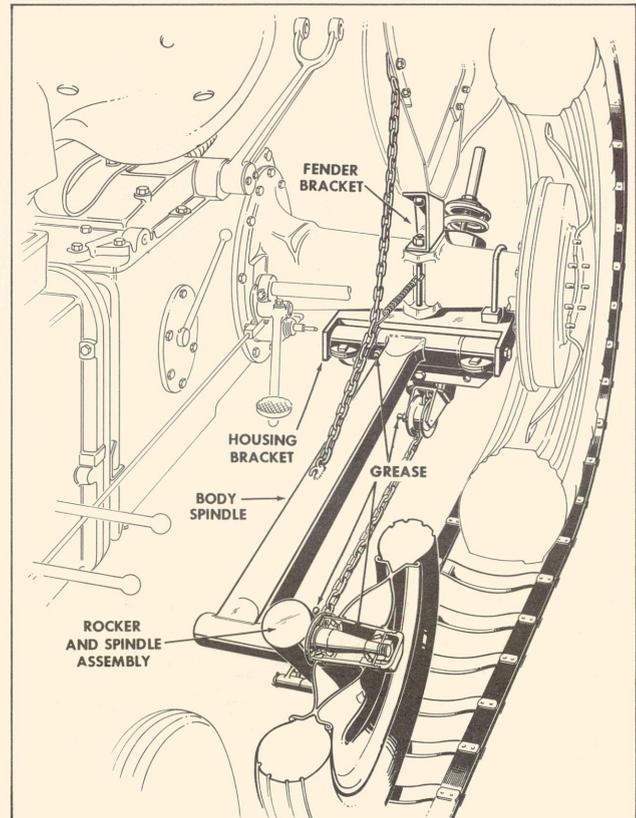


Fig. 2 - Cross-section of Track Installed

### ROCKER AND SPINDLE ASSEMBLY

Once every ten hours of operation, wipe the grease fitting clean and with a pressure grease gun, pump in grease until old grease is forced out around joints.

### BODY SPINDLE CROSS TUBE

Once every ten hours of operation, wipe the grease fitting clean and with a pressure grease gun, pump in grease until old grease is forced out around joints.

### CHAIN PULLEY ON SPRING HOLDER

Once each week of operation, wipe grease fitting clean and with a pressure grease gun, pump in grease until old grease is forced out around joints.

# ASSEMBLING AND ADJUSTING INSTRUCTIONS

## INSTALLATION PROCEDURE

1. Adjust the tread width of the tractor rear wheels to 52, 56, or 60 inches.

2. When the Tractor Track is shipped, the body spindles are attached to the housing brackets and set for a 56 inch wheel spacing. If the tractor wheel setting is to be 52 inches, the two split spacers should be on the outside of the bracket as shown in the illustration. If the setting is to be 56 inches, install one spacer on each side of the body spindle. For a 60 inch setting, both spacers must be inside the body spindle.

3. Install the six grease fittings. The fittings with the off-set go in the rocker and spindle assemblies. A small straight fitting goes in the cross tube of each body spindle where it rotates about its axle. A fitting also should be installed in the end of the axles for the chain pulleys on the spring cups.

4. Remove both tractor fenders. Attach housing brackets (with body spindle attached)

and fender brackets using the regular fender mounting bolts. The bolts should be inserted from below and the nuts left loose.

5. Install the U-bolts from above. The legs of the U-bolts should straddle the axle housing and pass through the adjusting spacers and then through the brackets as shown. Secure with lock washers and nuts but leave nuts loose.

6. If the idler wheels are not already attached to the body spindles they should be mounted now. The hub parts go on the wheel spindles in the following order: mud excluder, felt washer, grease seal, inner bearing cone and cup, outer bearing cone and cup, spindle washer, slotted hex nut, cotter pin and hub cap. Cover the felt washer with heavy oil or grease. Pack the hubs with wheel bearing grease and tighten the nuts until a slight increase in drag is felt as the wheels are turned. Loosen the nuts till the cotter pins can be installed, spread cotter pins and tighten hub caps.

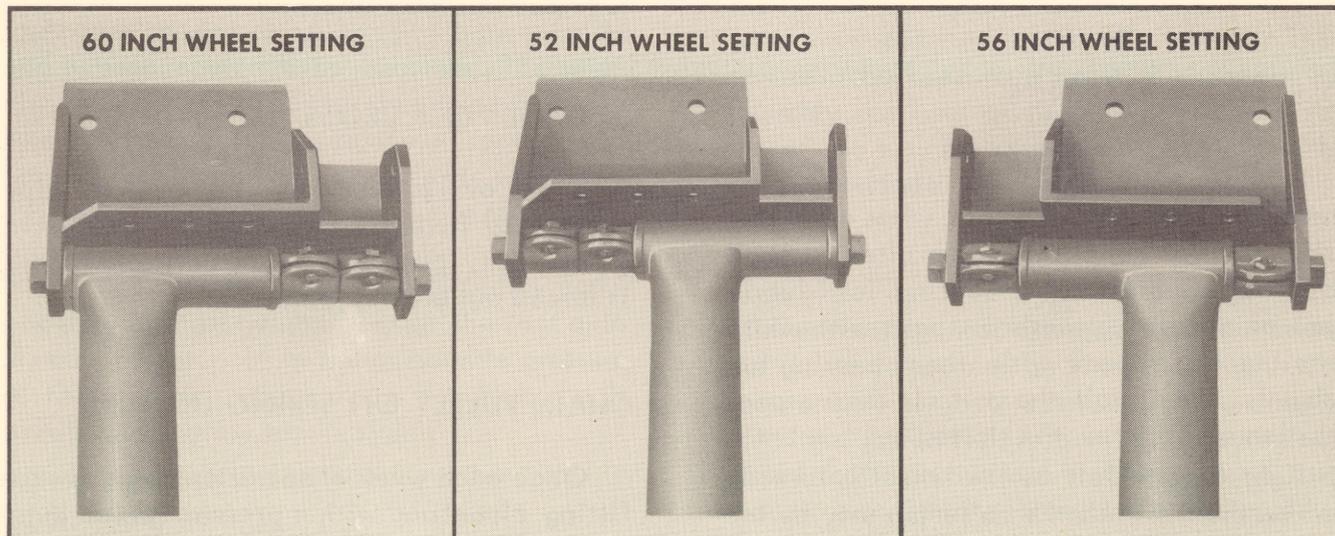


Fig. 3 - Location of Spacers for Different Wheel Settings

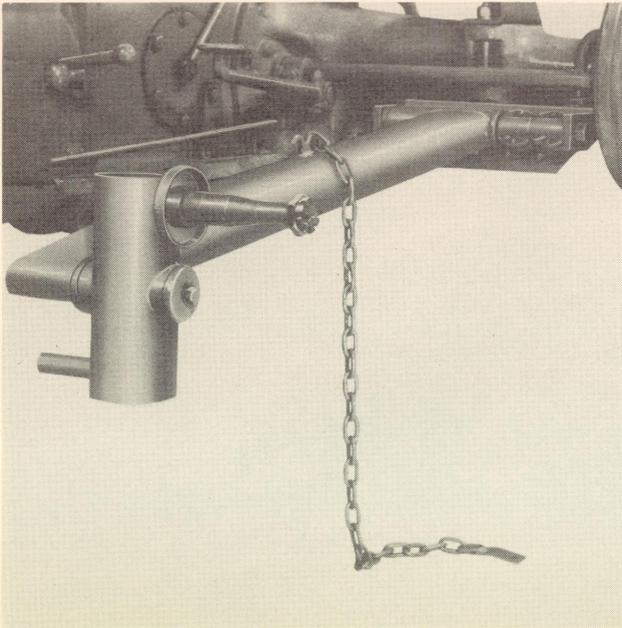


Fig. 4 - Housing Bracket and Body Spindle

7. Insert a heavy screw driver or cold chisel between the rear axle housing and the housing brackets at a point close to the U-bolt rear leg. Tilt the brackets until the idler wheels are vertical and push the idler wheels toward the center of the tractor so as to get one-half to one inch clearance between the tractor tire and the body spindle. The spacers on the U-bolts are now rotated until they will wedge between the axle housing and the brackets and hold the brackets in position when the U-bolts and fender bolts are tightened. After tightening the bolts, recheck the alignment of the wheels and re-adjust if necessary. These attaching bolts must be tightened very tight and kept tight at all times. It may be necessary to insert a light or heavy washer (or both) under the adjusting spacers in order to obtain the proper setting. These washers are furnished with the attachment. This is the most critical adjustment to be made on the Tractor Track and it must be accurate if the track is to stay on the wheels and the body spindles are to clear the tractor tires during operation.

8. Hook the spring holder brackets over the rear edge of the housing brackets as shown and install the bolt, lockwasher and nut at-

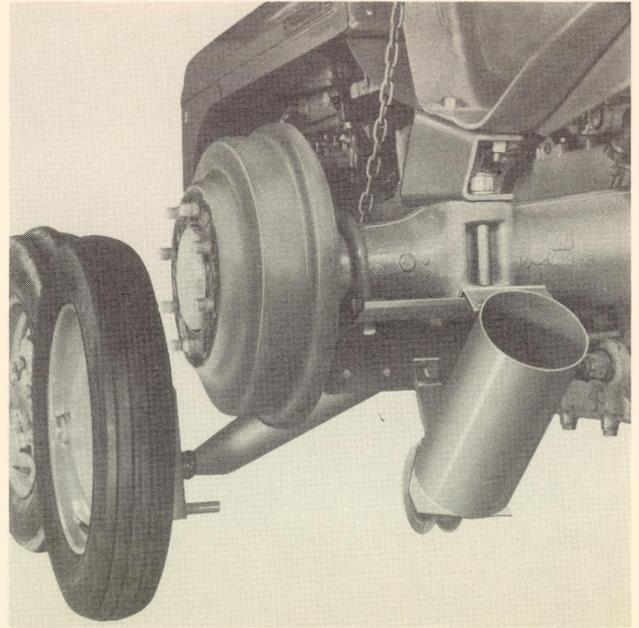


Fig. 5 - Idler Wheel and Spring Holder Bracket

taching the brace to the forward vertical leg of the housing bracket. The brace may be bolted to any of three holes in the bracket depending on tread width setting. The inside hole (nearest the center of the tractor) is used for 52 inch setting, the center hole for 56 inch setting, ( See Fig. 5 ), and the outside hole for the 60 inch setting.

9. The fenders are now bolted to the fender brackets with the short 5/8 inch bolts provided. Remove the forward fender brace bolt. The tab on the end of the body spindle support chain is slipped between the fender and the brace and the bolt re-installed.

10. To install the track proceed as follows: Lift the idler wheels as high as they will go and support them in this position by hooking the support chains which have been bolted to the fenders, onto the hooks of the body spindles. Jack up one rear wheel of the tractor enough to allow the track to slip under the tire. Place the track over the idler wheel and over the top of the tractor tire, sliding it under the tire and adjusting it so that the tire is centered in the track. It may help to stand on the track and force it over the bottom of the tire with your feet.

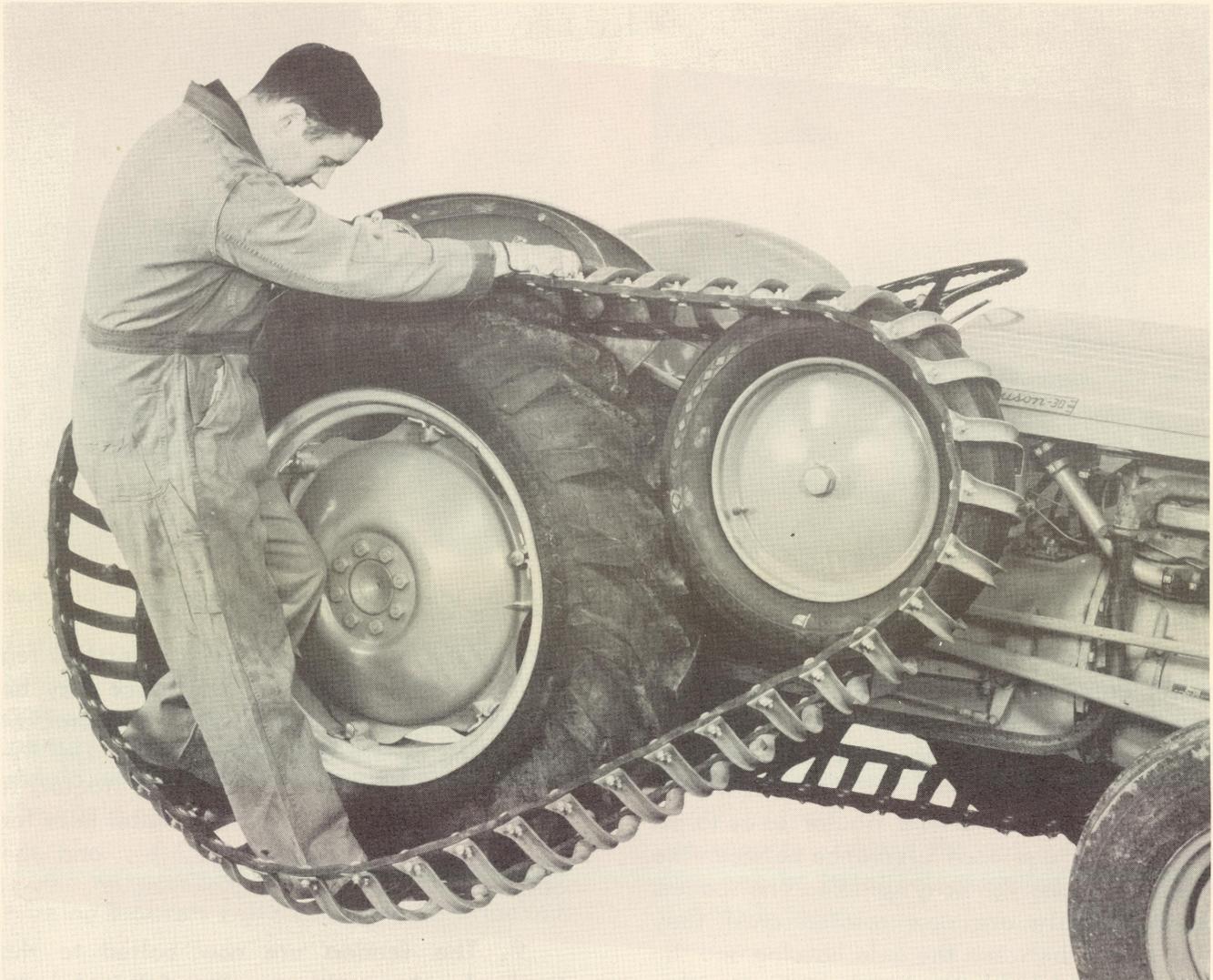


Fig. 6 - Installing Track

On eleven inch tires, the track fits quite snugly. It may be necessary to deflate the idler wheel tire to facilitate installation of the track. Unhook the body spindle chain and allow the idler wheel to drop to the ground. Install chain take-up spring as shown in Fig. 2 with large hook around fender bolt and small hook in chain.

11. Place the compression springs in the spring holders and feed the clevis end of the tension chains down through the springs. Put some heavy grease in the adjusting screw tube, place the spring discs on the adjusting screws and screw on the adjusting screw tubes a few turns. Pass the chain over the chain roller

wheel and slip the clevis end onto the rocker and spindle assembly stud. Be sure the chain is not twisted and install the cotter pin to hold the clevis in place. It may be necessary to insert the handle of the starting crank or other similar rod into the open end of the rocker and spindle assembly tube and use it as a lever to rotate the rocker so that the chain clevis can be installed.

12. Holding the chain where it passes over the pulley to prevent its twisting, tighten the adjusting screw tube until the spring is compressed to a length of 11 1/2 inches. This pressure may be varied to suit ground conditions and should be increased for soft condi-

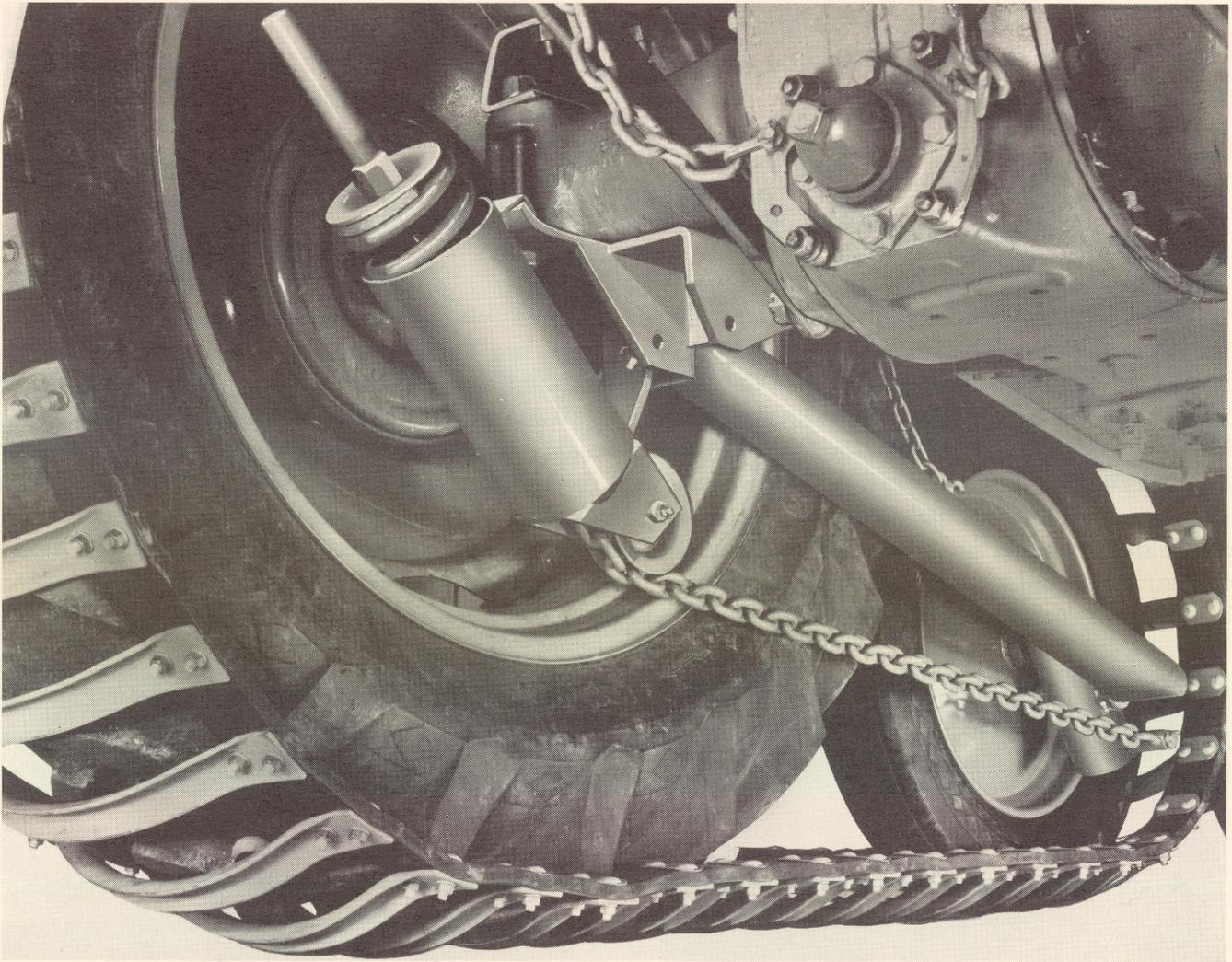


Fig. 7 - View from Under Tractor Showing Completed Installation

tions or whenever the track tends to jump off the wheels.

13. Check to see that all nuts are tight, all cotter pins spread and all the necessary points lubricated.

## REMOVAL

The complete Tractor Track may be removed from the tractor by reversing the procedure outlined for attaching. In some cases, it may be desirable to merely remove the tracks, the compression spring and the tension chain leaving the rest of the assembly attached to the tractor. The tractor may be used with the idler wheel held in the raised position by the support chain.

## ADJUSTMENTS

1. Air pressure should be maintained at 35 pounds in the idler wheel tire and at 30 pounds in the rear tractor tires.

2. Proper tension of the tracks is necessary to prevent them from jumping off or spinning of the wheel within the track. Check frequently to see that the spring is compressed to 11 1/2 inches.

3. The idler wheel must be in line with the center of the rear tractor wheel at all times. If the wheels are not properly aligned, the tractor will tend to pull to one side or to throw off the tracks.

4. Keep all nuts tight all the time, especially those which secure the housing bracket to the rear housing.

5. Never operate the Tractor Track without the chains which support the body spindle to the fenders securely fastened in place.

### ACCESSORIES

When Ferguson implements, which require the use of an A-TO-59 Stabilizer Assembly, are to be used with the B-TTA, it is only necessary to install a Link Stay Anchor Pin, (A-TO-9661) and its linch pin (S-9552) and locking ring (S-9563) in the outer vertical leg which extends downward from the underside of the axle housing brackets. The Link Stay Anchor Pin should be bolted in place so that it points toward the center of the tractor.

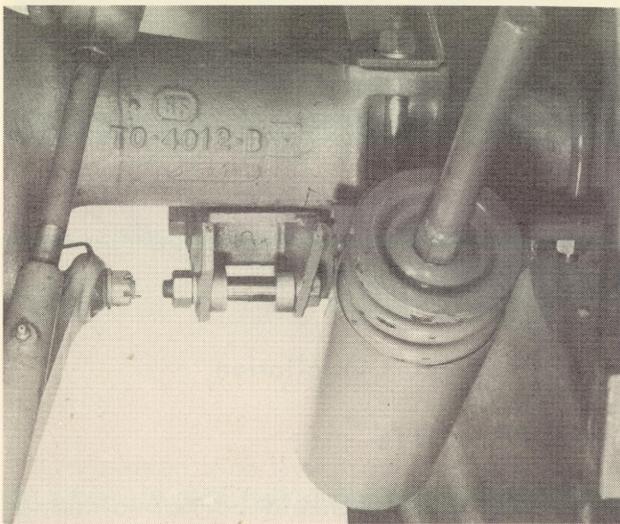


Fig. 8 - L-UO-97 Adapter Kit

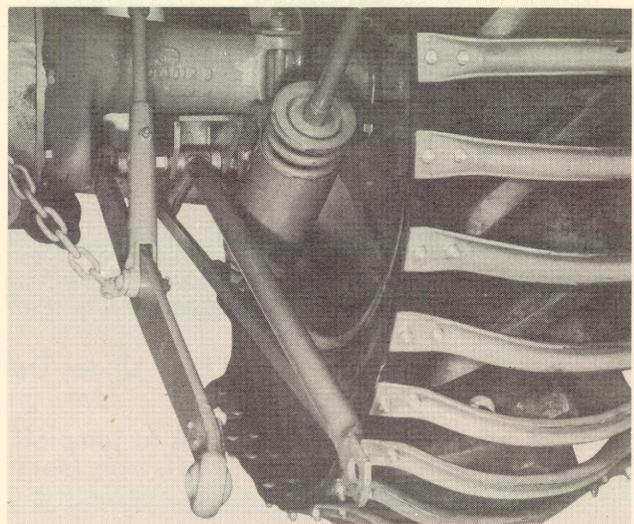


Fig. 9 - Loader Arm and Adapter Kit in Place

**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.

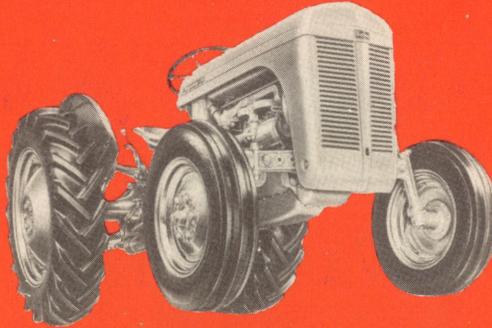
If the purchaser uses or allows to be used on a Ferguson Implement parts not made or supplied by Harry Ferguson, Inc., or if any Ferguson Implement has been altered outside of its own factories or sources of supply, or if attachments have been used which were unsuited and harmful to the Ferguson Implement, 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

Moldboard Plows  
Disc Plows  
Two-Way Plows  
Spike Tooth Harrows  
Spring Tooth Harrows  
Lift Type Disc Harrows  
Tandem Disc Harrows  
Heavy Duty Harrows  
Spring-Tine Cultivators  
Rigid-Tine Cultivators  
Lister Cultivators  
Agricultural Mowers  
Heavy-Duty Mowers  
Multi-Purpose Blades  
Sub Soilers

Manure Spreaders  
Manure Loaders  
Corn Pickers  
Corn Planters  
Lister Planters  
Grain Drills  
Side Delivery Rakes  
Rotary Hoes  
Cordwood Saws  
Rear Cranes  
Tillers  
Middlebusters  
Four-Row Weeders  
Four-Wheel Wagons  
Soil Scoops



**FERGUSON TRACTOR**  
and FERGUSON SYSTEM IMPLEMENTS