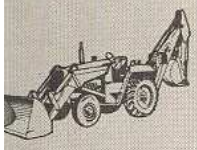
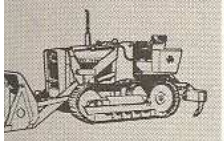
Operator's Manual

MF 550 ROTARY TILLER

MF Massey Ferguson





MF Massey Ferguson

TO OUR CUSTOMER:

Congratulations on your selection of a Massey-Ferguson Product. We believe you have exercised excellent judgment in the purchase of your Massey-Ferguson machine. We are most appreciative of your patronage.

Your Dealer has performed every pre-delivery service on your new machine.

He will be happy to acquaint you with the operating and maintenance instructions given in this manual, and to instruct you in the proper and varied applications of this machine. Call on him at any time when you have a question, or need equipment related to the use of your machine.

We recommend that you ***carefully read this entire manual*** *before operating the unit. Also, time spent in becoming fully acquainted with its performance features, adjustments and maintenance schedules will be repaid in a long and satisfactory life of the product.*

This piece of equipment is covered by warranty. The warranty agreement is printed in the back of this manual.

Massey-Ferguson Inc.
1901 BELL AVENUE, DES MOINES, IOWA 50315

Massey-Ferguson Industries Limited
915 KING STREET WEST, TORONTO, CANADA

INDEX

SAFETY PRECAUTIONS

Always practice safety first!

Familiarize yourself with information contained in the MF 14 Operator's Manual and MF 550 Operator's Manual before operating the Tractor and Tiller.

- Always shut off tractor engine before adjusting or performing any type of service on Tiller or Tractor.
- Never operate equipment without shields or guards installed.
- Disengage Tiller, lower to ground and shut off engine before dismounting from Tractor.
- Do not allow anyone near Tiller when tines are engaged.
- Disengage Tiller tines when transporting or at any other time they are not required to be engaged.
- Do not run Tractor or Tiller over any type of debris or large stones.
- Do not operate Tiller on steep hillsides.
- Use approved drawbar only for pulling or towing.
- If Tiller must be in raised position when making adjustments, block up securely.
- Adhere to all safety precautions contained in the MF 14 Operator's Manual.

Look for this symbol to point out important safety precautions. It means – ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED.

TILLER ASSEMBLY AND INSTALLATION

The MF 550 Tiller drive belt, belt shield and attaching hardware is contained in one shipping carton, Figs. 1 and 2. Shipping weight is approximately 268 lbs.

An additional 8" tine extension kit is available as an accessory and packaged in a separate carton, Fig. 3. Shipping weight is approximately 20 lbs.

The MF 14 Tractor must be equipped with a front mower drive for mounting the MF 550 Rotary Tiller. Mower anchor plates must also be installed, Fig. 4.

The following operations are required to assemble and attach Tiller to Tractor:

I. Tractor preparation:

1. Remove mower, drawbar and 3-point hitch from Tractor (if so equipped) and remove 3-point hitch if installed.

2. Leave anchor plates and hanger straps, Fig. 4, installed on Tractor.

3. Remove pull bar from belt tensioner assembly. See Fig. 4.

4. Remove drawbar (1) and link pins (2), Fig. 5.

5. Install upper link attaching bracket (1) on tractor, as shown in Fig. 6. Leave bolts loose, bracket will be positioned and bolts tightened later.

6. Install lower link pins (2), Fig. 6. Secure with four 1/8" hairpins supplied with Tiller.

II. Assemble drive belt shield and attach to Tractor:

1. Lay out parts and attaching hardware, as shown in Fig. 7.

2. Assemble belt shield sections and attaching hangers, as shown in Fig. 8. Install carriage bolts with round heads toward belt. Leave bolts loose on front hanger, tighten after installation and adjustment has been made.

FIG. 1

FIG. 3

FIG. 2

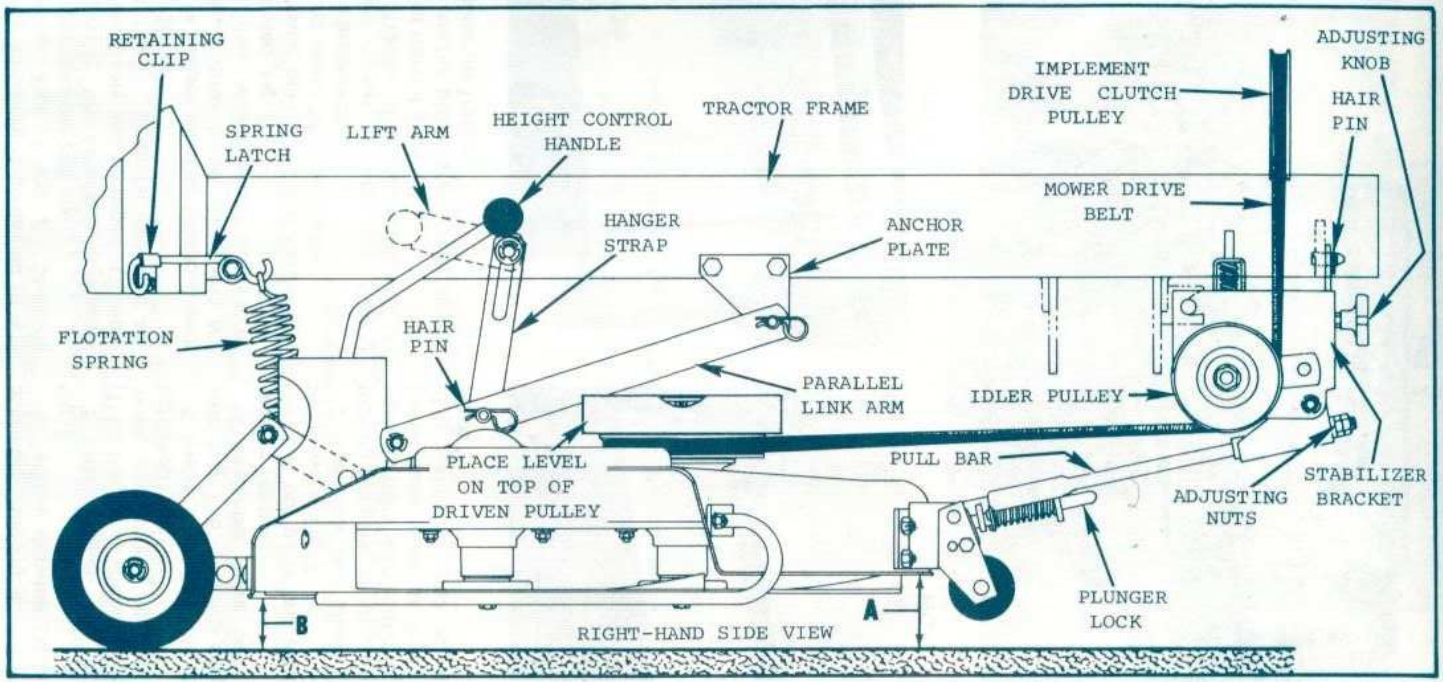

RETAINING CLIP
SPRING LATCH
LIFT ARM
HEIGHT CONTROL HANDLE
TRACTOR FRAME
IMPLEMENT DRIVE CLUTCH PULLEY
ADJUSTING KNOB
HAIR PIN
MOWER DRIVE BELT
HANGER STRAP
ANCHOR PLATE
FLOTATION SPRING
HAIR PIN
PARALLEL LINK ARM
IDLER PULLEY
PLACE LEVEL ON TOP OF DRIVEN PULLEY
PULL BAR
STABILIZER BRACKET
ADJUSTING NUTS
PLUNGER LOCK
B
A
RIGHT-HAND SIDE VIEW

FIG. 4

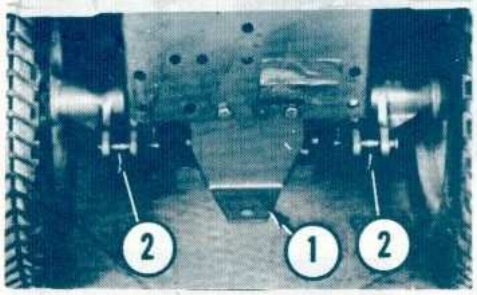


FIG. 5

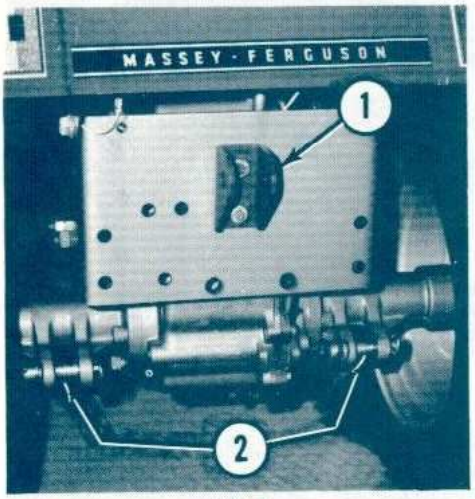


FIG. 6

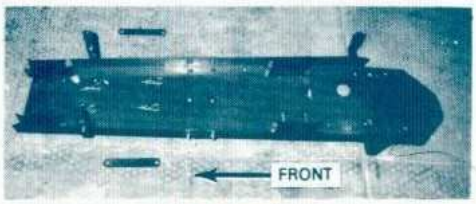


FIG. 8

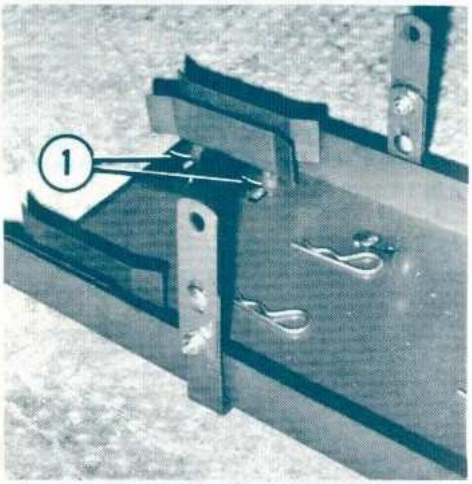


FIG. 9

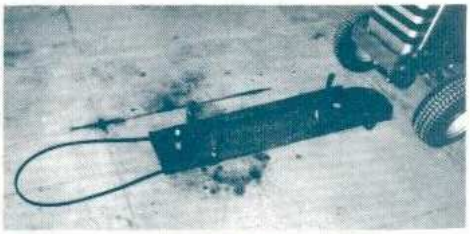


FIG. 10

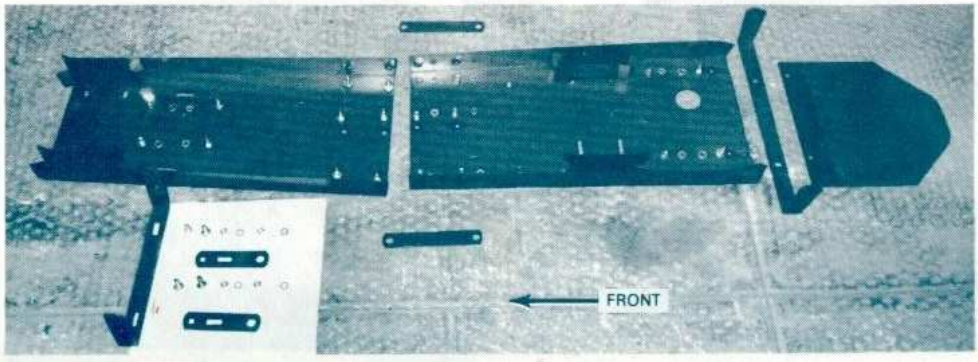


FIG. 7

NOTE: Two spacers have been installed under the right front belt guide (1), Fig. 9. Two additional spacers are supplied with Tiller to be used, if required.

3. Lay out shield with belt in front of Tractor, as shown in Fig. 10. Roll Tractor forward over shield.

4. Attach belt shield to rear of Tractor, as shown in Fig. 11, and secure with 1/8" hairpins (1).

5. Attach shield to front of Tractor, as shown in Figs. 12, 13 and 14. Tighten front hanger screws. Secure mower hanger straps, as shown, using retainer straps supplied with Tiller. Failure to secure mower hanger straps could result in belt damage.

6. Attach Tiller lift link to hydraulic lift arm and secure with hairpin, as shown in Figs. 14 and 15.

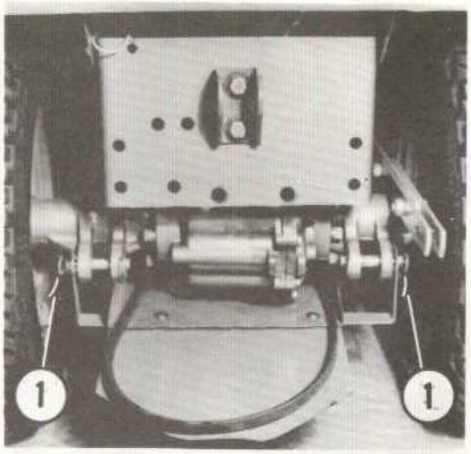


FIG. 11

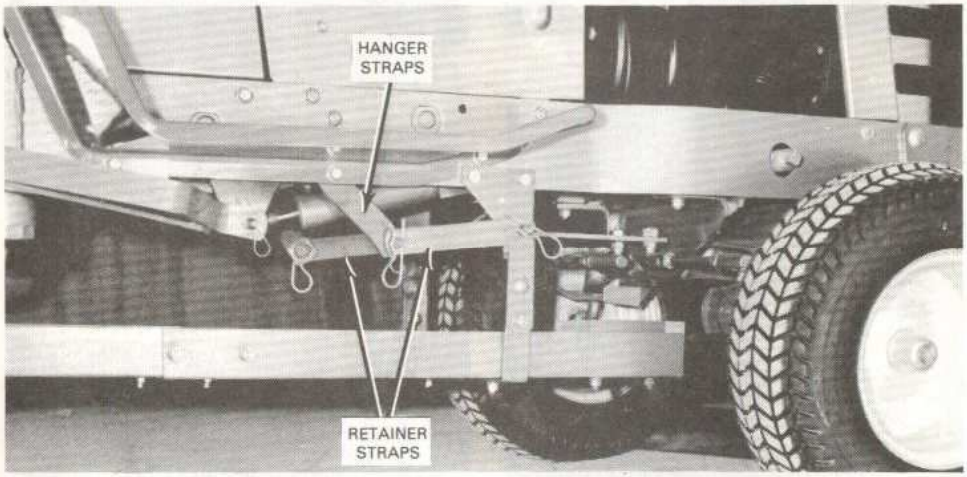


FIG. 12

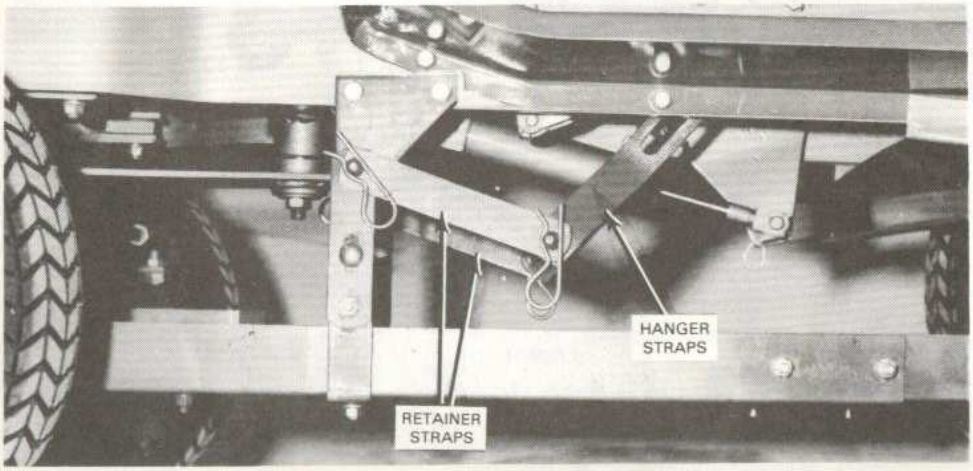


FIG. 13

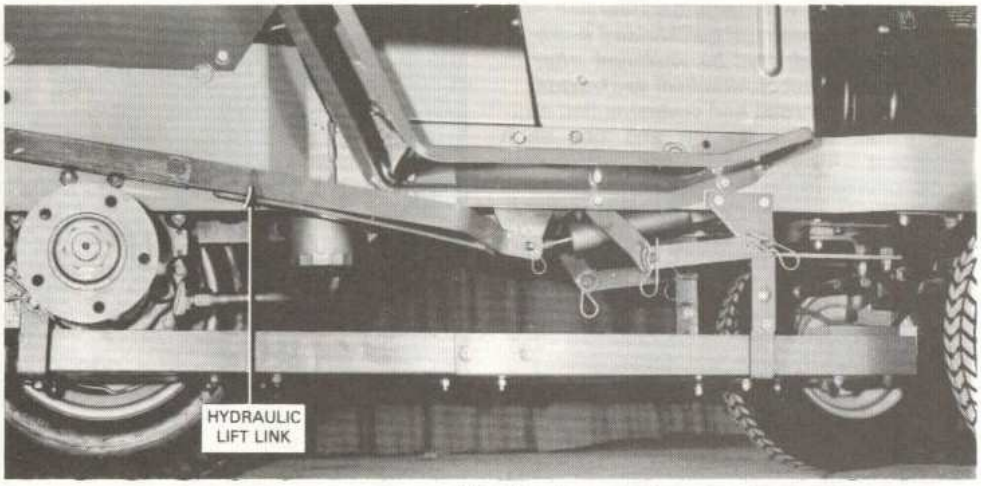


FIG. 14

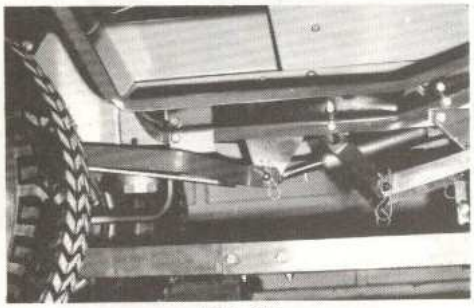


FIG. 15

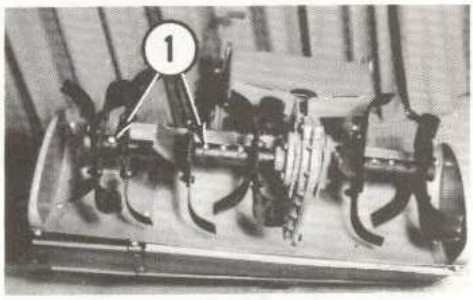


FIG. 16

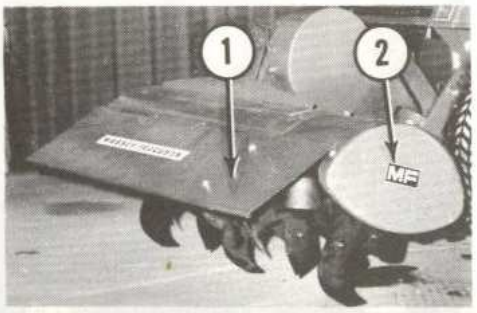


FIG. 17

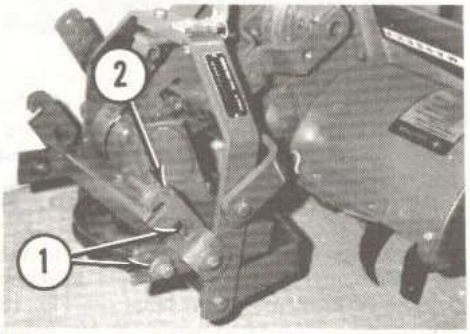


FIG. 18

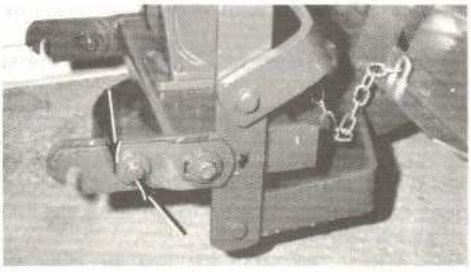


FIG. 19

FIG. 20

III. Install 8" extension on Tiller:

NOTE: Extension is quickly and easily installed and can be installed after Tiller has been attached to Tractor.

1. Remove shroud end cover.

2. Install tine extension and tine shaft extension. Install pins (1) and secure with cotter pins as in Fig. 16.

NOTE: The extension is normally installed on the right-hand side of Tiller. However, it may be installed on either side. Installation procedures are the same for both sides.

NOTE: When extension is mounted on right side of Tiller, the double blades will be on the other end. When mounted on left side of Tiller, the single blade will be on the outer end. Do not reverse extension, to do so will place cutting side of extension tines on the wrong side. Tine rotation is clockwise viewed from right-hand side of Tractor. Cutting edge must be on the leading edge of tine.

3. Install shroud extension, leveller blade extension (1) and shroud end cover (2), Fig. 17. Use 5/16" x 1/2" carriage bolts. Install bolts with round heads on the inside of shroud and leveller blade.

IV. Position and adjust lower links on Tiller:

The Tiller's lower links (1) will be positioned, as shown in Fig. 18, to facilitate shipping.

Remove front mounting bolts (2), Fig. 18, and position links, as shown in Fig. 19. Adjust link to center mounting bolts in slots. Be sure that heavy belville cup washers are positioned as shown, with sharp edges against slotted strap.

V. Attach Tiller to Tractor and install drive belt:

1. Position Tiller with kickstand down, as shown in Fig. 20. Pull hitch ball rearward to raise lower strap hooks. Roll Tractor rearward until the Tiller's lower links engage hitch pins on Tractor. Be sure lower links are fully engaged with pins.

2. Attach hydraulic lift link to Tiller lift lever (bottom hole) and secure with hairpin, as shown in Fig. 21.

3. Raise Tiller and install top link pin and secure with hairpin.

4. Lower Tiller slowly. Raise operator's seat and tighten top link bracket mounting bolts.

5. Check alignment of Tiller to Tractor. Measure distance between Tiller and Tractor rear tires. This distance must be equal on both sides. Tiller must also be level with Tractor. To adjust, loosen lower link mounting bolts, Fig. 19, and adjust lower links accordingly.

6. Install belt on tiller pulley. Remove belt tensioner. Pull belt forward, Fig. 22. Be sure

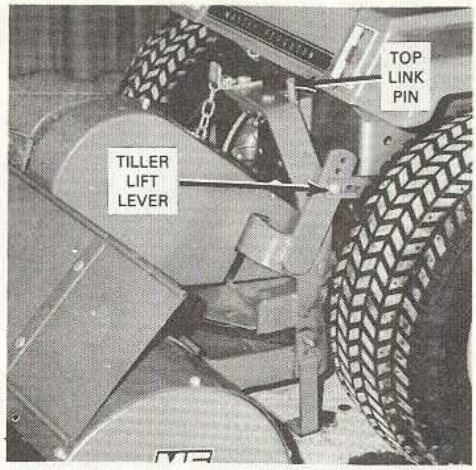


FIG. 21

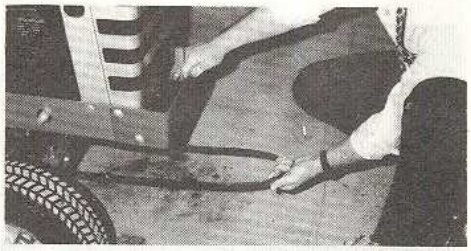


FIG. 22

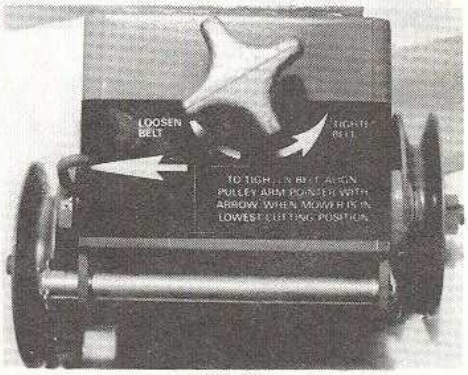


FIG. 23

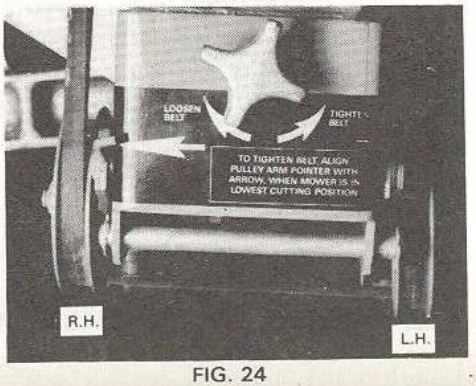


FIG. 24

belt is properly positioned (not twisted) on Tiller puller. Install belt on Tractor front PTO drive pulley.

7. Install belt tensioner assembly and secure with hairpins, Fig. 23. Loosen belt tensioner by turning adjusting knob clockwise. Install belt on right-hand side of pulley first, then install belt on left-hand side of pulley, Fig. 24.

8. Adjust belt tension by turning adjusting knob on tensioner counterclockwise. Correct belt tension will be indicated when metal pointer aligns with arrow on tensioner decal. See Figs. 23 and 24.

9. Check belt guides for proper alignment with drive belt.

a. Lateral adjustment of belt guides is made by repositioning guides on shield. Bolt holes in shield are slotted, Fig. 9.

b. Vertical adjustment of belt guides is made by raising or lowering the belt shield. The front hanger mounting strap extensions are slotted, Fig. 9.

c. When belt guides are properly adjusted, belt will be centered in guides and top of belt will be even with or lower than top of belt guide. See Fig. 25.

d. Check entire belt throughout drive. Be sure belt is not twisted or rubbing guides on belt shield.

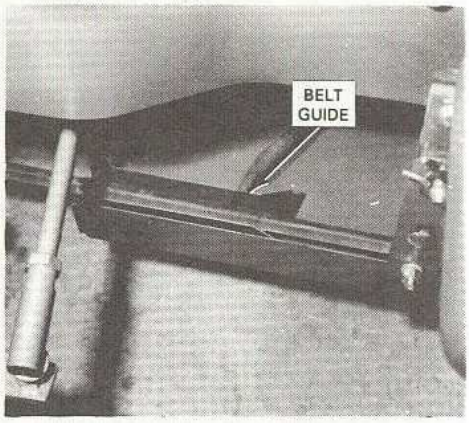


FIG. 25

HYDRAULIC LIFT LINK ADJUSTMENT

With Tiller blocked up as high as it will go and the hydraulic lift cylinder in the full raised (collapsed) position, loosen bolts, No. 1, Fig. 26, on the hydraulic lift link. Shorten lift link as short as possible without removing pins from lift link. Lift link is slotted on Tiller end of link. Tighten bolts.

NOTE: Wheel has been removed for clarity.

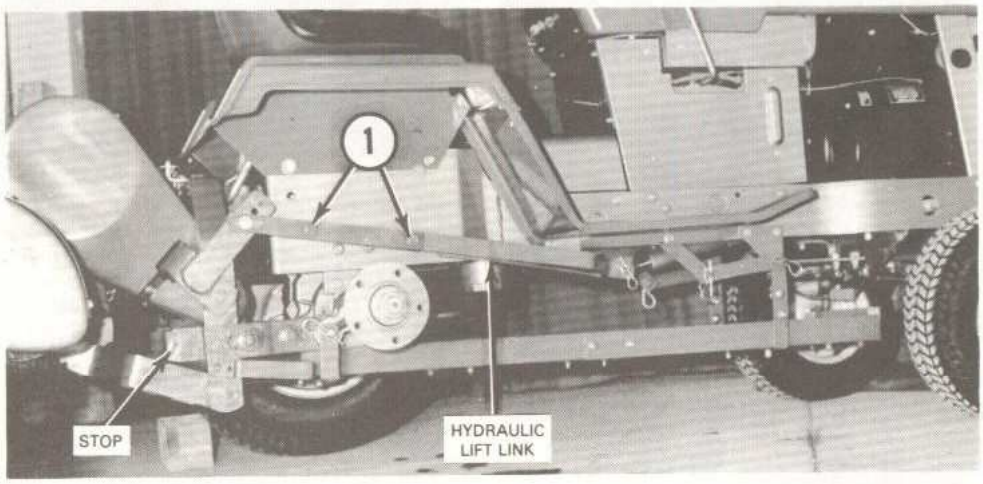


FIG. 26

TINE EXTENSION KIT

An 8" tine extension kit consisting of parts shown in Fig. 27, is available as an accessory.

The extension kit increases cutting width of the basic tiller equipped with standard extension from 34" to 42", number of tines are increased from 22 to 28 and overall width of Tiller is increased from 36" to 44".

The accessory extension kit is intended for shallow cultivation in loose soil.

To install extension on left-hand side of Tiller:

1. Remove shroud end cover by removing 3 carriage bolts.
2. Attach tine extension to Tiller using tine shaft extension with pins and cotter keys.
3. Attach shroud extension, shroud end cover, and level blade extension, using the five 5/16" x 1/2" carriage bolts and locknuts.

IMPORTANT: Do not install tine extension in reversed position, to do so will reverse the tine cutting edges. Tine cutting edges must face toward direction of tine rotation.

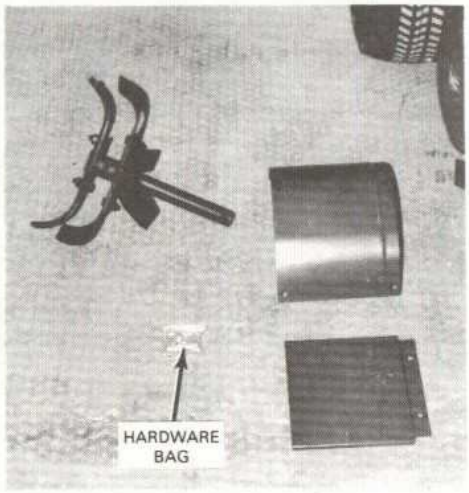


FIG. 27

OPERATION

To operate MF 14 Tractor equipped with Tiller proceed as follows:

Starting Tractor — Fig. 28

1. Push PTO switch in to off position.
2. Depress neutral return brake pedal.
3. Shift the High-Low range lever to the neutral position.
4. Advance throttle to 1/4 open and use choke as required.
5. Turn key to the right to activate starting motor. Release key as soon as engine starts.
6. Place High-Low range lever in High or Low (for tilling use low only).
7. To move Tractor forward release neutral return brake pedal and push hydra-speed lever forward. To move Tractor rearward pull hydra-speed lever rearward.

NOTE: Never turn Tractor when Tiller is in lowered or working position.

Operating Tiller

1. Raise or lower the Tiller with the implement lift lever.
2. To engage Tiller pull PTO switch out to the on position.
3. Place the High-Low range lever in the Low position for tilling operations.
4. Advance throttle to full open position.
5. Apply neutral return brake pedal and lower Tiller slowly to engage the soil.
6. When Tiller has broken through the soil, move implement lever all the way down to the "Float" position.
7. Release neutral return brake lever and move hydra-speed lever forward.
8. Always raise Tiller when turning or when reversing Tractor.
9. The lift chain on Tiller can be used as a depth gauge for regulating depth of cut. Each link on chain represents approximately 1" on depth of cut.
10. Lower the level blade when tilling to produce a finer and smoother seedbed. For course bed or when cultivating raise the level blade and secure with latch.

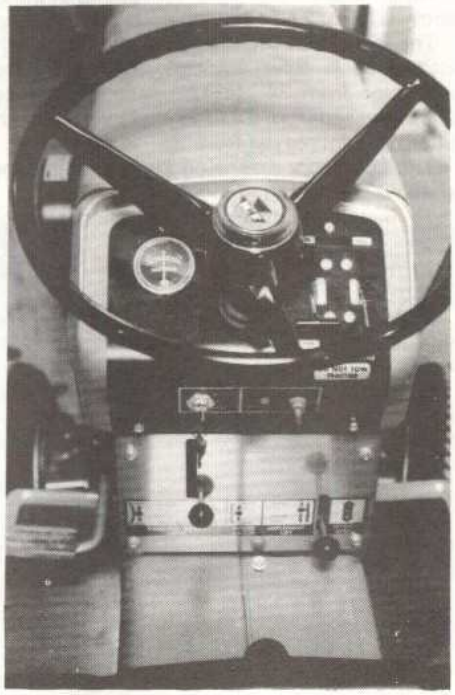


FIG. 28

11. It is recommended that tall grass or weeds be moved with a rotary mower before attempting to till the area.
12. The recommended forward speed for tilling is 0.5 mph and 1.0 mph for cultivating.

Transport Position

Raise Tiller all the way up. Hook chain, as shown in Fig. 29. Move hydraulic lift lever down to the center position. The weight of the Tiller will be carried by the lift chain, relieving strain on the hydraulic lift system.

NOTE: Chain can also be used to regulate cutting depth of Tiller.

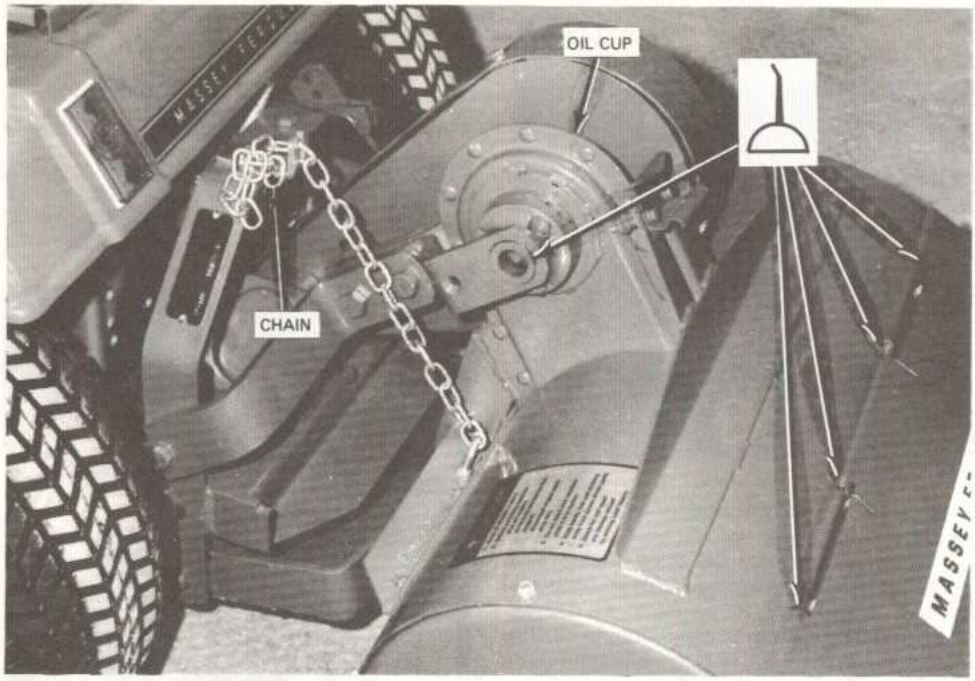


FIG. 29

LUBRICATION

Daily

1. Lubricate pivot points with a few drops of engine oil. See Fig. 30. Lubricate upper pivots also. See Fig. 29.
2. Apply a few drops of engine oil through oil cup, located on top of enclosed drive chain case, Fig. 29.
3. Oil leveller blade hinges, use engine oil, Fig. 29.
4. Lubricate lower link pivot (1) with grease gun, Fig. 31.

Annually

Annually or at the end of each working season:

1. Remove the external drive chain, clean thoroughly with cleaning solvent or diesel fuel.
2. Submerge chain in clean engine oil. Remove excessive oil before reinstalling on Tiller.

IMPORTANT: Do not allow oil or grease to come in contact with clutch discs, this could render the discs unserviceable.

3. At the end of each season or annually clean entire Tiller thoroughly. Sand all rust spots and paint with MF original paint (available at your MF Dealer).
4. Replace all unserviceable or multilated decals.

OPTIONAL: The tines may be oiled rather than painted, if desired.

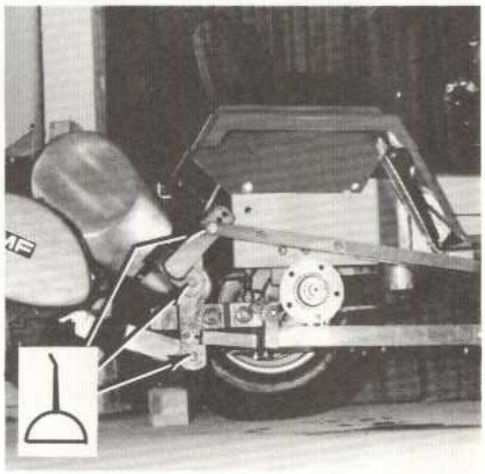


FIG. 30

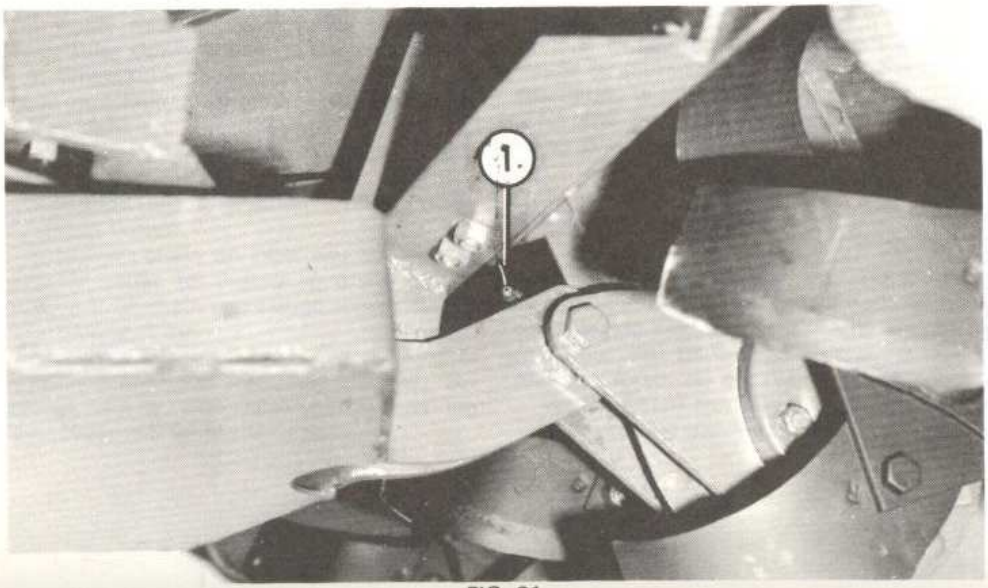


FIG. 31

SERVICE

External Drive Chain Tension Adjustment

The external drive chain tension is properly adjusted when compressed spring length measures approximately 1-3/4", Fig. 32.

To adjust chain tension:

1. Lower Tiller to ground.
2. Remove chain guard.
3. Loosen link arm pivot bolts (1), Fig. 33.
4. Move link arms rearward to increase chain tension. This can be done by inserting pry bar between link arms and adjoining members at location (2), Fig. 33. Check compression spring length, Fig. 32. Chain tension adjustment is correct when spring measures 1-3/4".
5. Tighten link arm pivot bolts.

NOTE: Keep top of link arms flush with joining members to maintain proper alignment of Tiller with Tractor.

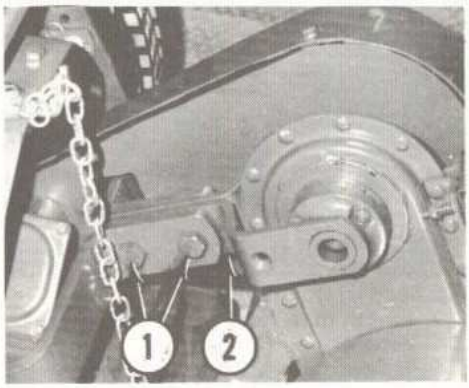


FIG. 33

Replacing External Drive Chain

1. Remove chain guard by removing 4 capscrews.
2. Raise Tiller and hook chain.
3. Rotate chain to position master link, as shown in Fig. 32.
4. Compress tension spring by attaching vise grips (1), Fig. 36.
5. Remove spring lock on master link, Figs. 32 and 34. Remove chain from sprocket.

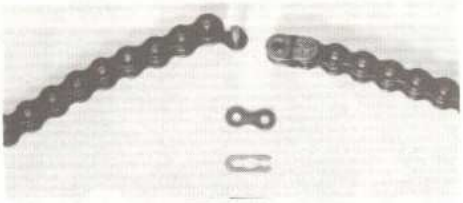


FIG. 34

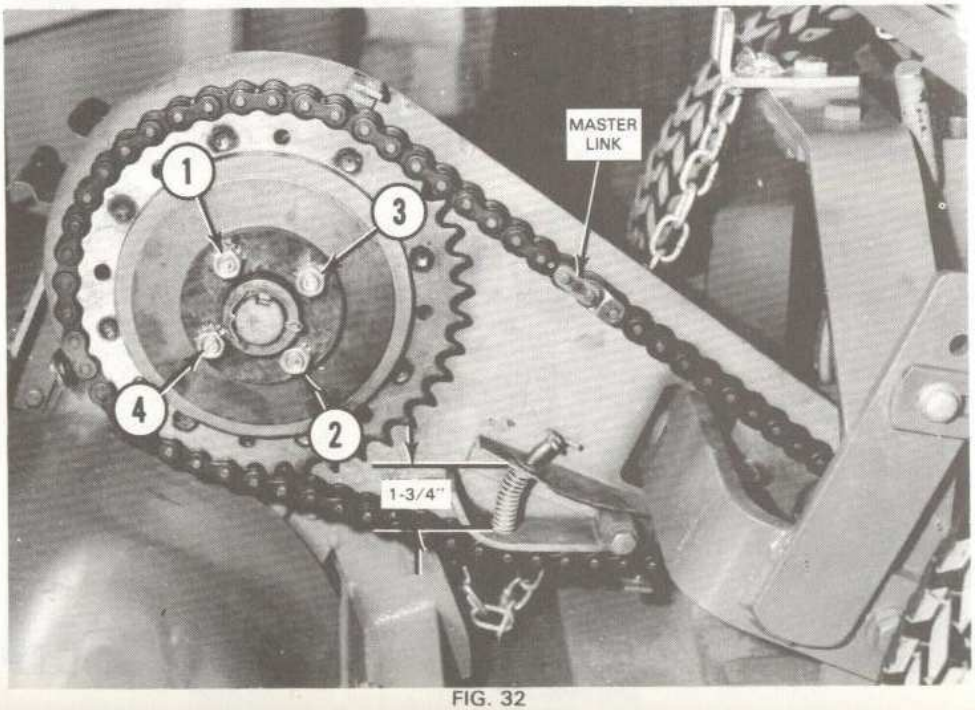


FIG. 32

6. When installing new chain, check chain tension adjustment as outlined under subhead "External Drive Chain Tension Adjustment".

Clutch Pressure Adjustment

A Belleville type spring washer is used to maintain pressure on clutch discs. If clutch slips excessively, check spring tension adjustment as follows:

1. Remove chain guard.
2. Remove drive chain tension by compressing spring tension with vise grips (1), Fig. 36.
3. Loosen nuts, Nos. 1, 2, 3 and 4, Fig. 32.
4. Retighten nuts finger tight.
5. Tighten nuts 1/2 turn at a time, using a cross pattern sequence — Example: Tighten nut, No. 1, 1/2 turn, then tighten nut, No. 2, 1/2 turn, then No. 3 and No. 4, until all nuts have been tightened 2-1/2 turns.
6. Replace chain guard and test clutch adjustment by placing Tiller under normal load. If clutch continues to slip excessively check clutch discs and replace if worn.

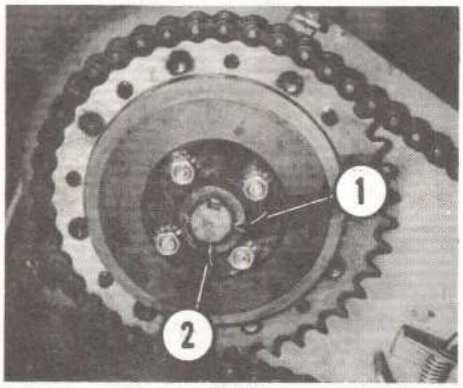


FIG. 35

NOTE: Tiller could also be overloaded due to excessive cutting depth or excessive width of cut (for ground conditions). Remove one or both extensions.

Replacing Clutch Discs

To replace clutch discs:

1. Remove chain guard.
2
2. Remove cotter key (1) and ring (2), Fig. 35.
3. Remove drive chain tension by compressing spring with vise grips (1), Fig. 36.

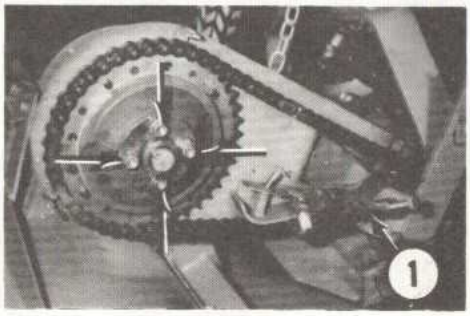


FIG. 36

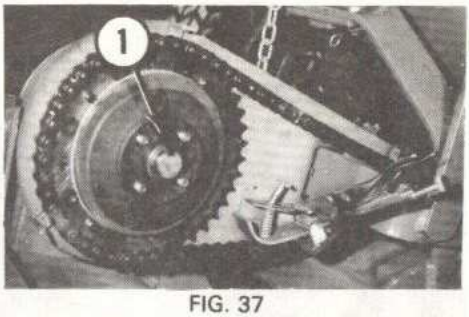


FIG. 37

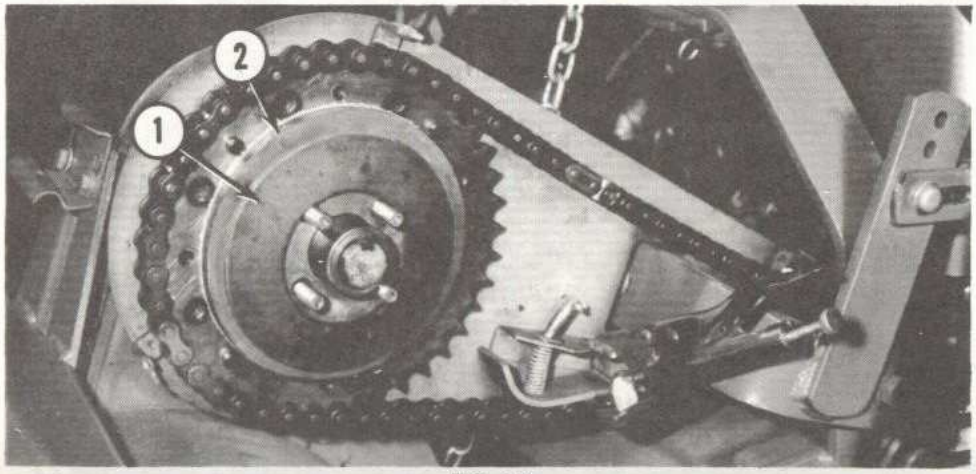


FIG. 38

4. Disassemble clutch assembly.

a. Remove the four retaining nuts, Fig. 32. Loosen nuts 1/2 turn at a time, until spring pressure is released.

b. Remove spring deflector (1), Fig. 37.

c. Remove spring washer (1), Fig. 38.

d. Remove pressure plate (1), Fig. 39.

e. Remove outer disc (1), Fig. 40.

f. Remove driving sprocket (1), Fig. 41.

g. Remove inner driving disc (1), Fig. 42.

5. Install new clutch discs using reverse sequence outlined in paragraph 4. Handle new clutch discs with care, do not allow discs to come in contact with grease or oil.

NOTE: Fig. 43 illustrates clutch parts.

6. When installing the spring washer (1), Fig. 38, center spring washer on pressure plate (2), Fig. 38, before tightening spring deflector (1), Fig. 37.

7. Adjust clutch as outlined under subhead "Clutch Pressure Adjustment".

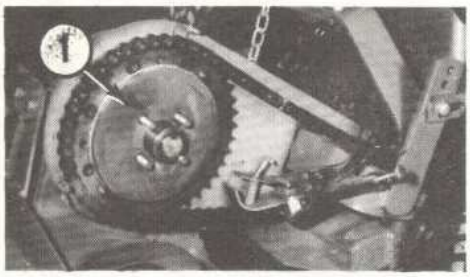


FIG. 39

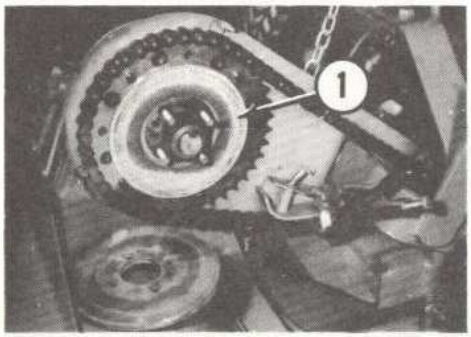


FIG. 40

FIG. 41

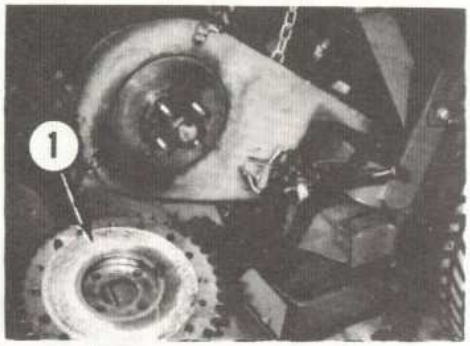


FIG. 42

Enclosed Drive Chain Tension Adjustment

To adjust tension on enclosed drive chain proceed as follows:

1. Raise Tiller. Tines must clear ground. Shut-off engine and disengage PTO clutch.

2. Loosen jam nut (1), Fig. 44, and turn adjusting screw "in" until a slight drag is felt on chain.

3. Move the tines back and forth by hand until chain slack or "backlash" is felt. Continue to turn the adjusting screw "in" while moving the tines until the backlash is removed and a slight drag is felt on chain.

4. Turn the adjusting screw out approximately 1/2 turn or as necessary until tines turn freely. Tighten jam nut.

Replacing Drive Chain Bearings

LOWER LEFT-HAND BEARING

1. Remove left-hand shroud end cover and remove left-hand tine section by removing cotter keys and pins.

2. Remove four nuts and remove bearing cap (1), Fig. 45.

3. Loosen allen setscrew (1) in locking collar, Fig. 46, and turn collar in opposite direction of shaft rotation to loosen.

4. Remove four nuts (2), Fig. 46, and remove outer bearing flange (3), Fig. 46. Clean shaft with emery cloth before removing bearing. Shaft must be free of burrs or nicks.

5. Remove locking collar, bearing and flanges from shaft. See Fig. 47.

6. To replace bearing reassemble parts in reverse order of removal.

LOWER RIGHT-HAND BEARING

To remove and replace lower right-hand bearing use same procedures as used for left-hand side.

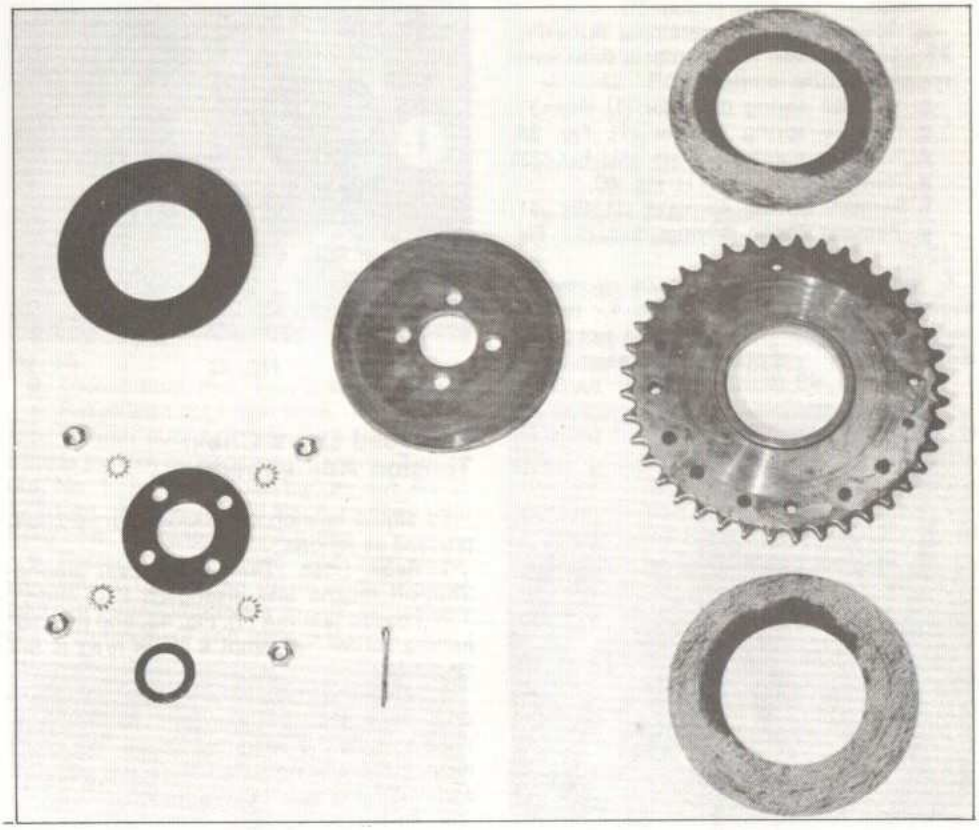


FIG. 43

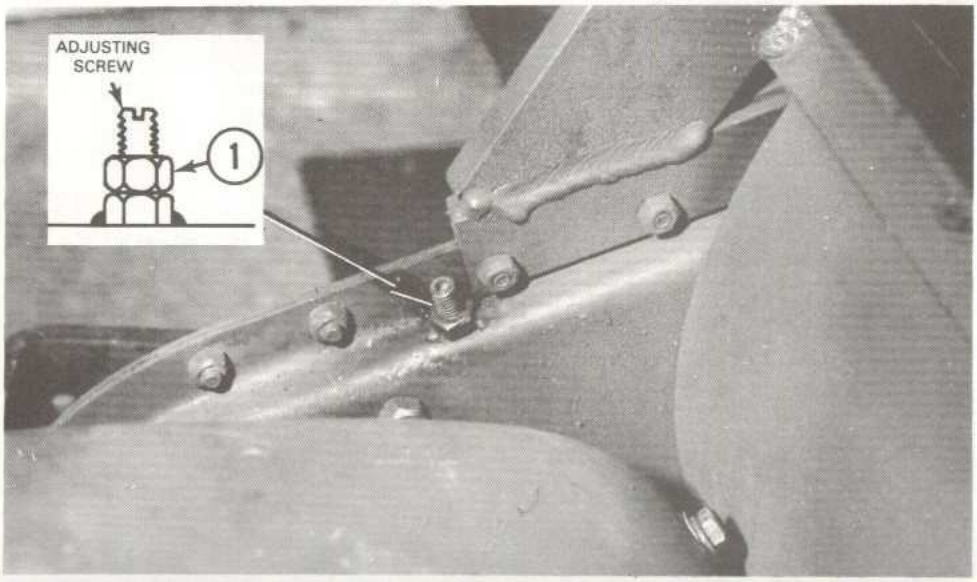


FIG. 44

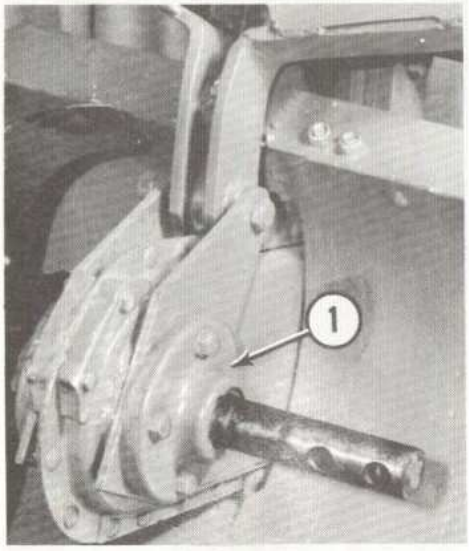


FIG. 45

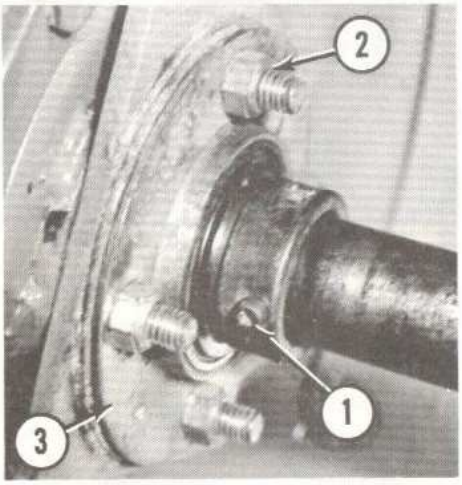


FIG. 46

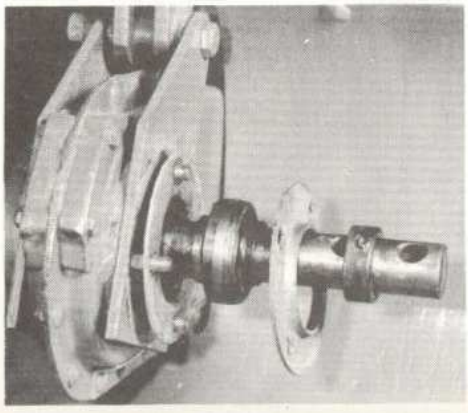


FIG. 47

UPPER LEFT-HAND BEARING

1. Remove upper link arm, Fig. 48.
2. Remove three nuts and remove pivot hub, Fig. 49.
3. Loosen setscrew on locking collar, Fig. 50, and turn collar in opposite direction of shaft rotation to loosen. Remove collar.
4. Remove 3 inner nuts and remove outer bearing flange, Fig. 50.

NOTE: Do not let bolts drop into chain case. Secure with tape or wire.

5. Clean shaft. Shaft must be free of burrs and nicks. Remove bearing, Fig. 51.
6. It is not necessary to remove spacer (1) located behind bearing, Fig. 52; although if spacer is removed be sure it is reinstalled with the counterbore side (1) of spacer, Fig. 53, "in" toward the drive chain sprocket.

NOTE: The upper bearing inner cone protrudes on one side of the bearing only. See Figs. 54 and 55. When installing bearing, install with protruding inner cone toward the outside. Fig. 56 shows related parts.

UPPER RIGHT-HAND BEARING

1. Remove chain guard.
2. Remove sprocket and slip clutch assembly.
3. Remove back plate of chain guard case.
4. Refer to procedures for removal and installation of upper left-hand bearing and continue.

Replacing Gearbox Bearings and Seals

1. Loosen two setscrews on Tiller belt pulley and remove pulley. See Figs. 57, 58 and 59.

NOTE: Belt pulley is keyed to shaft and is installed with hub side of pulley facing upwards, Figs. 58 and 59.

2. Remove chain guard. Remove chain. Remove cotter key (1) and retaining washer (2), Fig. 60.
3. Loosen two allen setscrews (1), and remove chain sprocket (2) and key (3), Fig. 61.
4. Remove four mounting bolts (1), Fig. 62, and remove gearbox. Gearbox cover may be removed before or after removing gearbox.

NOTE: Gearbox is packed with grease. When reinstalling bearings and gears use new grease. N.L.G.I. No. 0 grease is recommended.

5. Remove snap rings (1) from gear shafts, Fig. 63. Shaft can be removed from gearbox by carefully tapping on end of shaft with a brass drift. Drive shaft from inside toward outside of gearbox.

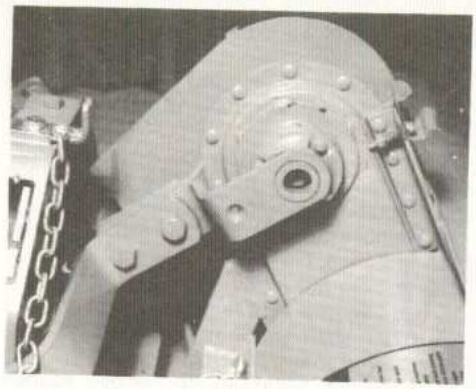


FIG. 48

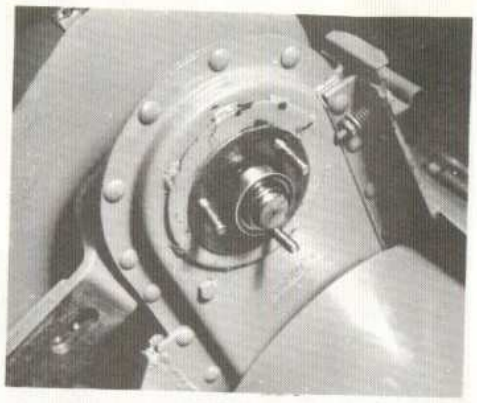


FIG. 51

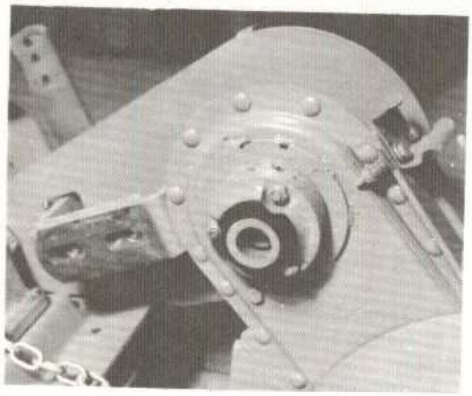


FIG. 49

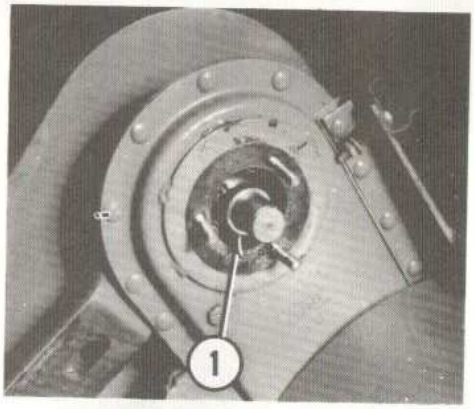


FIG. 52

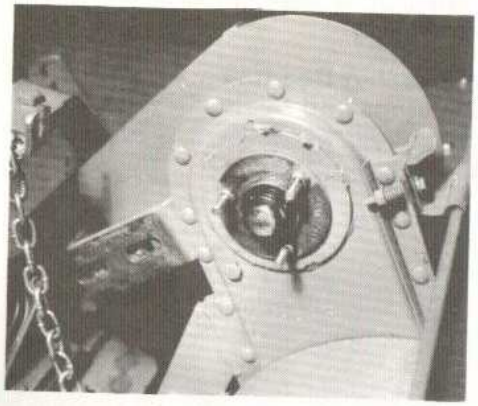


FIG. 50

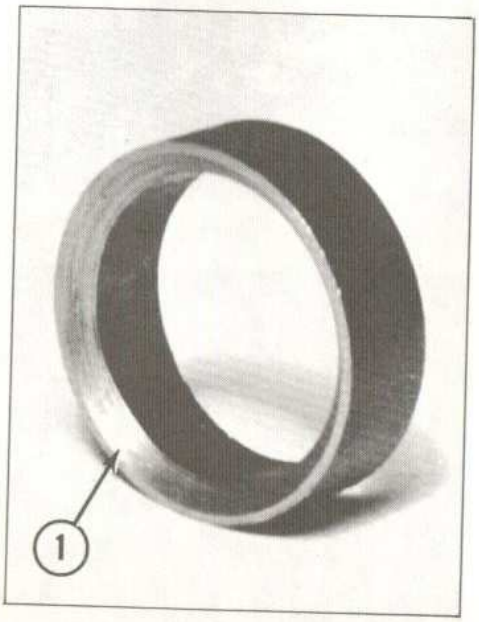


FIG. 53

FIG. 54

FIG. 55

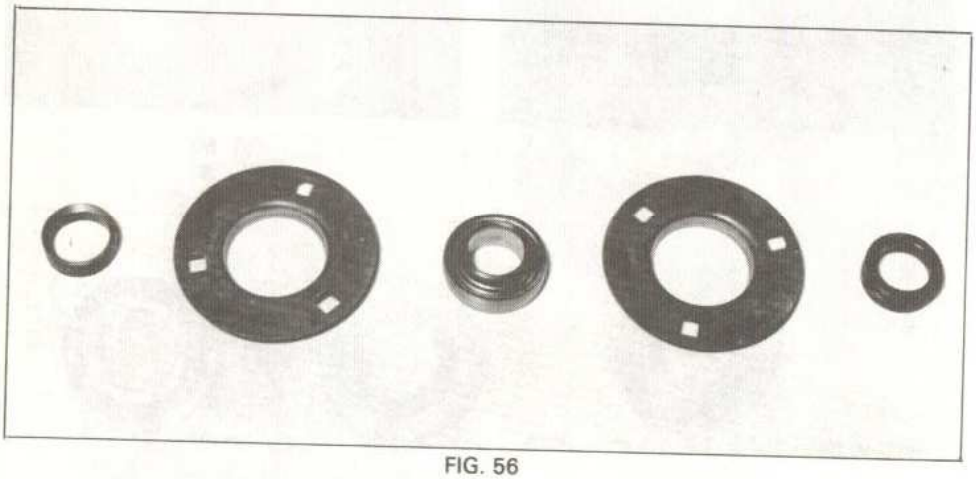


FIG. 56

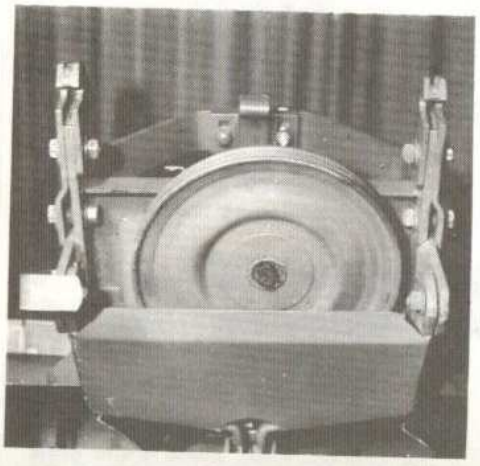


FIG. 57

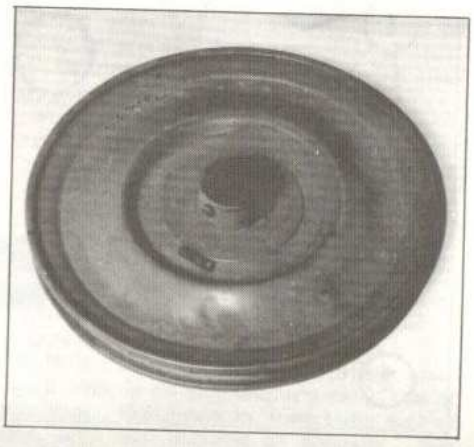


FIG. 58

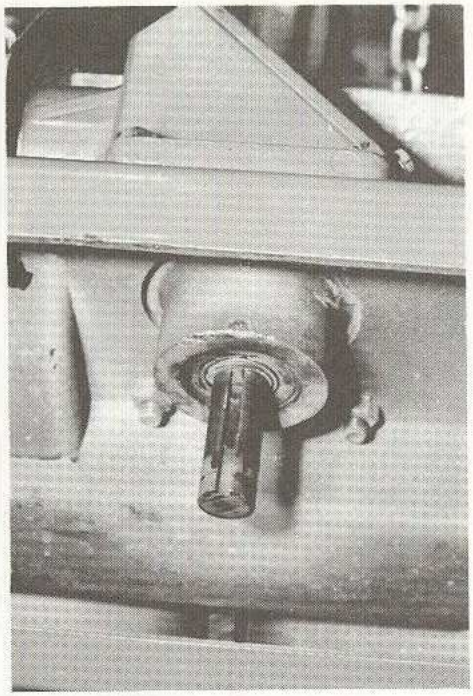


FIG. 59

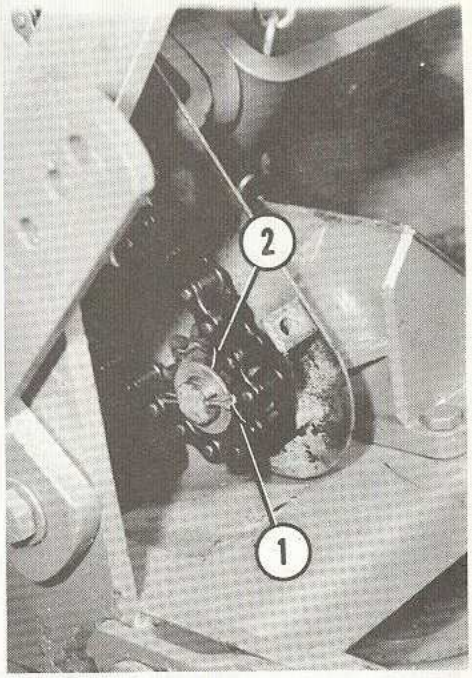


FIG. 60

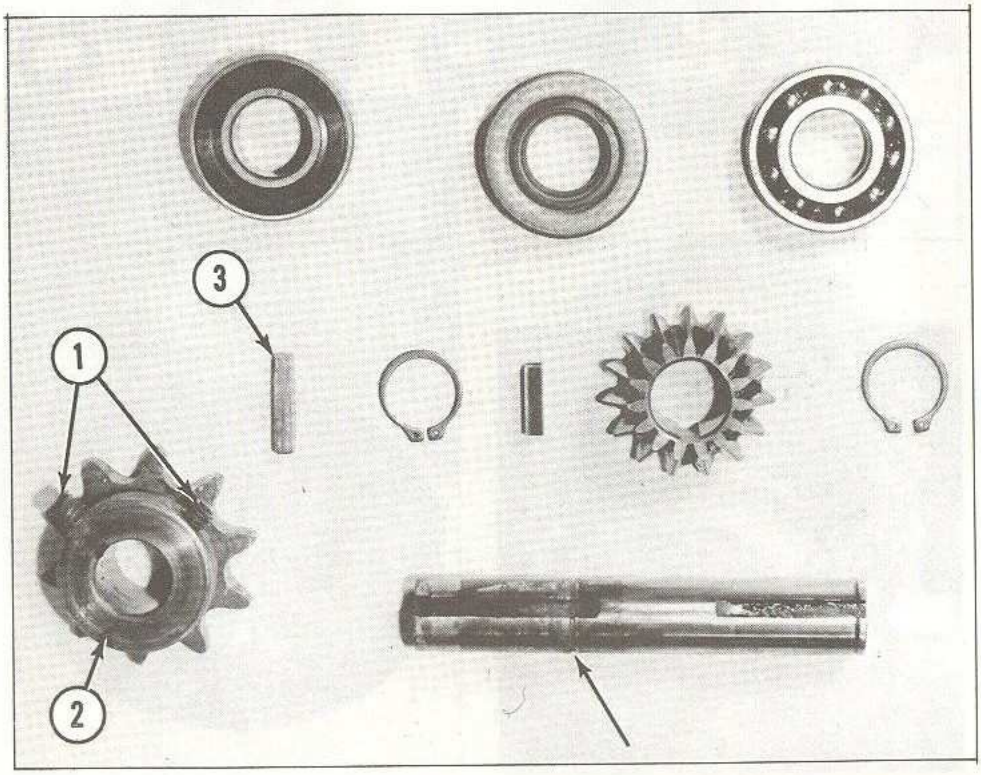


FIG. 61

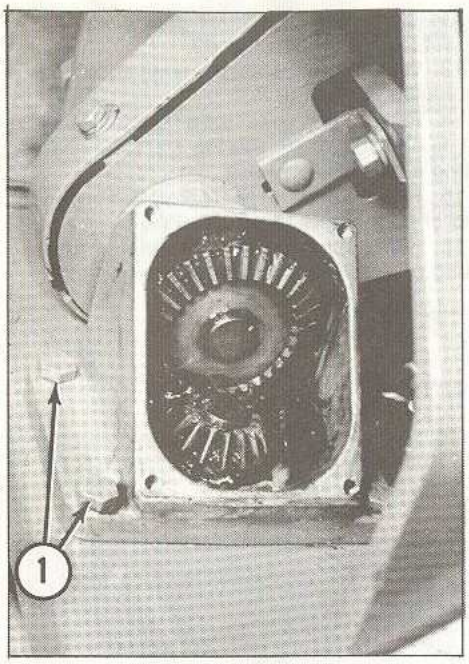


FIG. 62

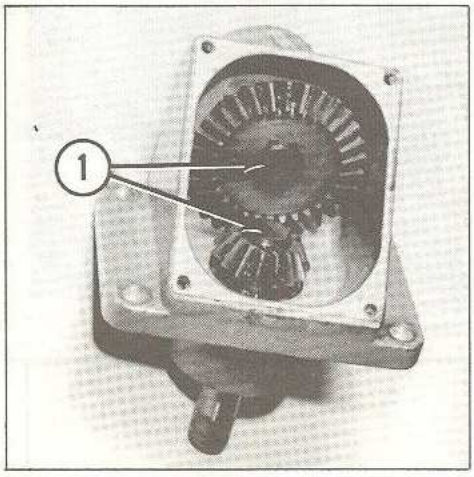


FIG. 63

NOTE: Use care when removing or installing parts in gearbox. Gearbox can be damaged by careless working procedures.

NOTE: The larger gear (30 teeth) is installed on the output shaft and the smaller shaft (15 teeth) is installed on the input shaft.

6. When shaft is removed from case the outer (sealed) bearing will most likely be removed with shaft, Fig. 64.

NOTE: Bearing can be pressed off either end of shaft. Snap ring must be removed if pressed off outer end of shaft. See Fig. 64. Shaft must be free of burrs and nicks.

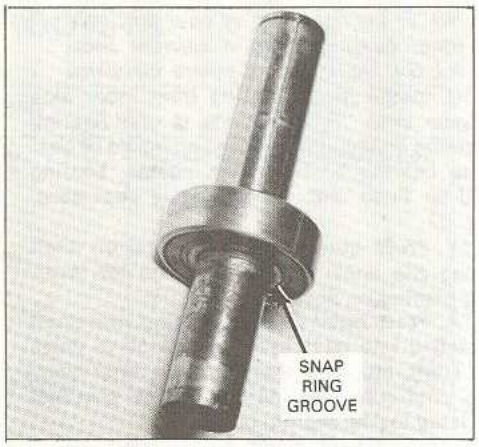


FIG. 64

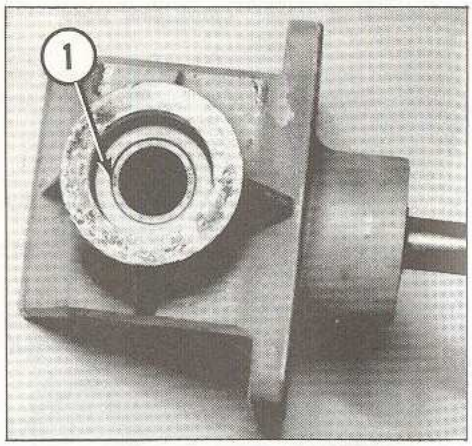


FIG. 65

7. When removing and installing grease seal (1), Fig. 65, remove and install from outer side of gear case.

8. The inner bearing can be removed by driving or pressing from back side of bearing. Bearing must be removed and installed from inner side of gear case.

NOTE: Removal and installation procedures for the output shaft, bearings and seal are covered in this section. Removal and installation procedures for the input shaft, bearing and seal are similar.

NOTE: Clean bearings and remove all existing grease from gearbox before commencing reinstallation. Use new grease.

9. When installing the new grease seal, install with lip on seal towards inner side of gear case. Press seal in, from outer side of case, until seal bottoms on shoulder. See Fig. 66.

NOTE: Lubricate lip of seal and pack inner bearings with a calcium soap, N.L.G.I. No. 0 grease before installing.

10. Install inner bearing from inner side of gear case. Press bearing in until bearing bottoms on shoulder located on inside of gear case bearing bore. When seated, bearing will be flush with inner side of gear case, Fig. 67.

11. Press outer (sealed) bearing on shaft using the snap ring as a gauge for locating bearing on shaft. See Fig. 68.

12. Press outer (sealed) bearing with shaft installed into gear case. Continue to press on shaft, pressing shaft through inner bearing until outer bearing bottoms on shoulder (located inside bearing bore).

NOTE: Gears must be installed on shafts before shafts are completely pressed into place. Large gear goes on input shaft and small gear goes on output shaft. See Fig. 62.

13. With gears installed, install snap rings, as shown in Fig. 63.

14. Pack gear case with calcium soap, N.L.G.I. No. 0 grease. See Fig. 62. Install cover using a new cover gasket.

15. Be sure snap rings are installed on outer end of both shafts. See Fig. 68.

16. Reinstall gearbox and related items using reversed removal procedures.

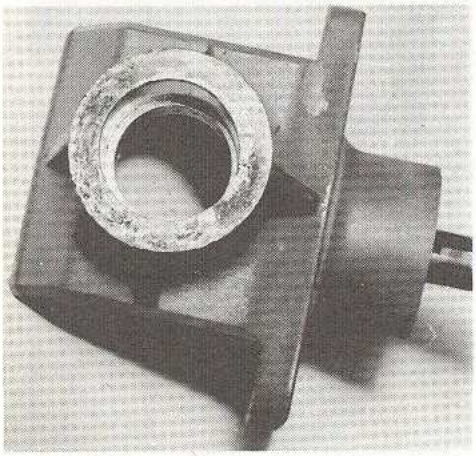


FIG. 66

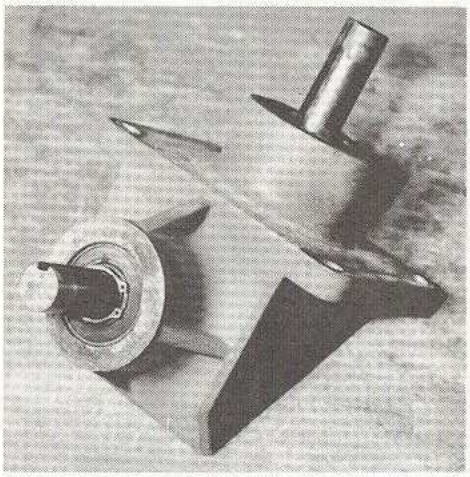


FIG. 68

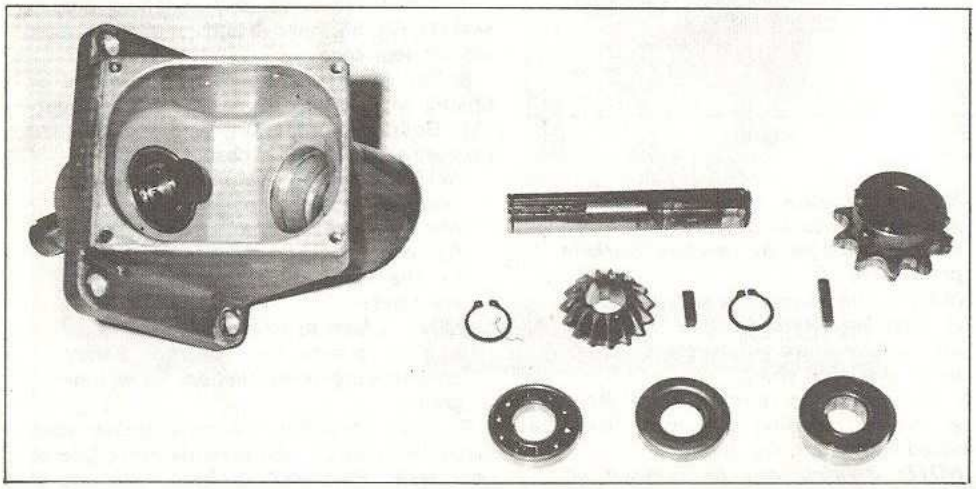


FIG. 67

TROUBLE-SHOOTING

Problem	Probable Cause	Remedy
Tines do not rotate	Drive belt off pulley	Check drive belt installation
	Drive belt slipping	Adjust drive belt
	Slip clutch spinning	Adjust slip clutch
	Drive chain jumping on sprockets	Check chain tension adjustment
	Material wrapped around tine shaft	Clean and free up tine shaft
Tines do not dig	One or more tines are reversed	Check tine installation cutting edges must be toward direction of rotation
Tiller climbs out of ground	Attempting to cut too deep for ground conditions on first pass	Make shallow cut on first pass — make successive passes — use check chain to regulate depth of cut
	Too high a forward speed	Reduce forward speed
	Ground conditions severe	Remove one or both tine extensions
Tines will not clear ground in raised position	Hydraulic lift link pin installed in wrong hole	Install hydraulic lift link pin in bottom hole on Tiller lift lever
	Hydraulic lift link is out of adjustment	Adjust hydraulic lift link
	Excessive build-up of soil and plant material on shield and tine assemblies	Remove build-up of material

SPECIFICATIONS

	Basic Tiller	With Standard Extension	With Standard Plus Extra Extension
Cutting Width	26"	34"	42"
Number of Tines	16	22	28
Overall Width	28"	36"	44"
Tilling Depth	7" Maximum		
External — Drive Chain	ASA No. 50		
Internal — Drive Chain	ASA No. 50		
Drive	From front PTO with single "V"-Belt		
Tine Size	1/4" x 2" x 13-1/2"		
Tine Material	High Carbon, heat treated steel		
Tine Speed	140 rpm at 3600 engine rpm		
Weight	233 lbs.		
Shipping Weight	268 lbs.		

NOTES

NOTES

WARRANTY AND AGREEMENT

All new Massey-Ferguson Lawn & Garden Tractors and attachments (hereinafter called Products) are sold by the Dealer to the purchaser upon the following warranty and agreement, WHICH IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES AND CONDITIONS EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR PURPOSE, AND ANY OTHER OBLIGATION ON THE PART OF THE DEALER OR MASSEY-FERGUSON. Neither the Dealer or Massey-Ferguson assumes or authorizes any person to assume for it any liability in connection with the sale of such Products. The obligation of the Dealer, under this warranty, is limited to replacing parts at no charge to the Customer, which prove defective with normal and proper use of the Product for the purpose intended.

This warranty applies only to new, unused, Massey-Ferguson Products, there being no warranty of any nature in respect to used products or new products that have been modified, altered, repaired, adjusted, neglected or used in any way which, in the opinion of the Dealer or Massey-Ferguson, adversely affects in performance.

All such new, unused Massey-Ferguson Products are warranted to be free from defects in material or workmanship, which cause failure, for a period of twelve months from date of delivery to purchaser, with the following exceptions:

1. Warranty on V-belts shall be limited to 90 days from date of delivery to the purchaser.

2. Warranty on rental or leasing unit is limited to 90 days from the date of delivery to the purchaser-lessor.

3. Warranty on units used for commercial purposes is limited to 90 days from the date of delivery to the purchaser.

4. Filters, light bulbs and spark plugs are not warranted.

It is the responsibility of the retail purchaser, at his expense, to transport the machine or attachment to the Dealer's service shop, or alternatively, to reimburse the Dealer for any travel or transportation expense involved in fulfilling this warranty. When requested by the Dealer, part or parts shall be returned for inspection, transportation prepaid, to a place designated by the Dealer. IN NO EVENT SHALL THE PURCHASER BE ENTITLED TO RECOVER FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO INCONVENIENCE, RENTAL OR REPLACEMENT EQUIPMENT, LOSS OF PROFITS, OR OTHER COMMERCIAL LOSS.

REPLACEMENTS PARTS WARRANTY – Massey-Ferguson repair or replacement parts, supplied by the Dealer, will be warranted for ninety days from date of replacement or the balance of the unexpired warranty period of the Product, whichever period shall be longer. The exchange of a new part for the defective part shall constitute compliance with this warranty.

MASSEY-FERGUSON ORIGINAL EQUIPMENT BATTERY WARRANTY – Notwithstanding any other provisions hereof the original equipment batteries are warranted for full replacement for first three months and on a pro-rated basis for 9 months.

OTHER MANUFACTURERS – Allied Attachments, parts and accessories are warranted by the respective manufacturers thereof and not by the Dealer or Massey-Ferguson.

RECREATION PRODUCTS

When it comes to service . . . see your Massey-Ferguson dealer for all your service needs. He has the facilities and the training to provide the kind of service that will keep your MF equipment on the job.

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