

# 310-H AND 310-M MOWERS



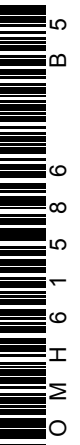
JOHN DEERE

## OPERATORS MANUAL 310-H AND 310-M MOWERS

OMH61586 B5 English

**OMH61586 B5**

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ENGLISH



## TO THE PURCHASER

This manual contains the necessary information to operate, lubricate, adjust, service, assemble and install the John Deere mower. It also contains a complete illustrated parts list.

If you should find that you require information not covered in this manual, consult your John Deere industrial dealer. He will be glad to answer any question that may arise regarding the operation and service of the mower. He has trained mechanics who are kept informed on the best methods of John Deere mower servicing and can give you prompt know-how service.

### KEEP THIS MOWER A JOHN DEERE MOWER

Should this mower require replacement parts, go to your John Deere industrial dealer where you will receive genuine John Deere parts—accept no substitutes. John Deere parts fit properly and insure satisfactory service because they are made from the original patterns and from the same material as used in new machines.

### LOCATION REFERENCE

"Right-hand" and "left-hand" sides are determined by facing in the direction the mower will travel when in use.

"Clockwise" refers to parts turning to the right like the hands of a clock.

"Counterclockwise" refers to parts turning to the left.

### SERIAL NUMBER

When ordering parts, refer to the model and serial number. By doing so, you will assist your John Deere industrial dealer in giving you prompt, efficient service.

The serial number plate is located on the front of the cutter bar yoke.

Record the serial number and purchase date in the spaces provided below.

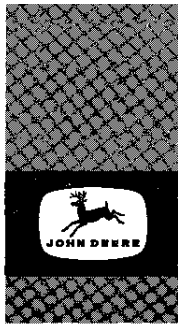
Serial No. \_\_\_\_\_

Date Purchased \_\_\_\_\_

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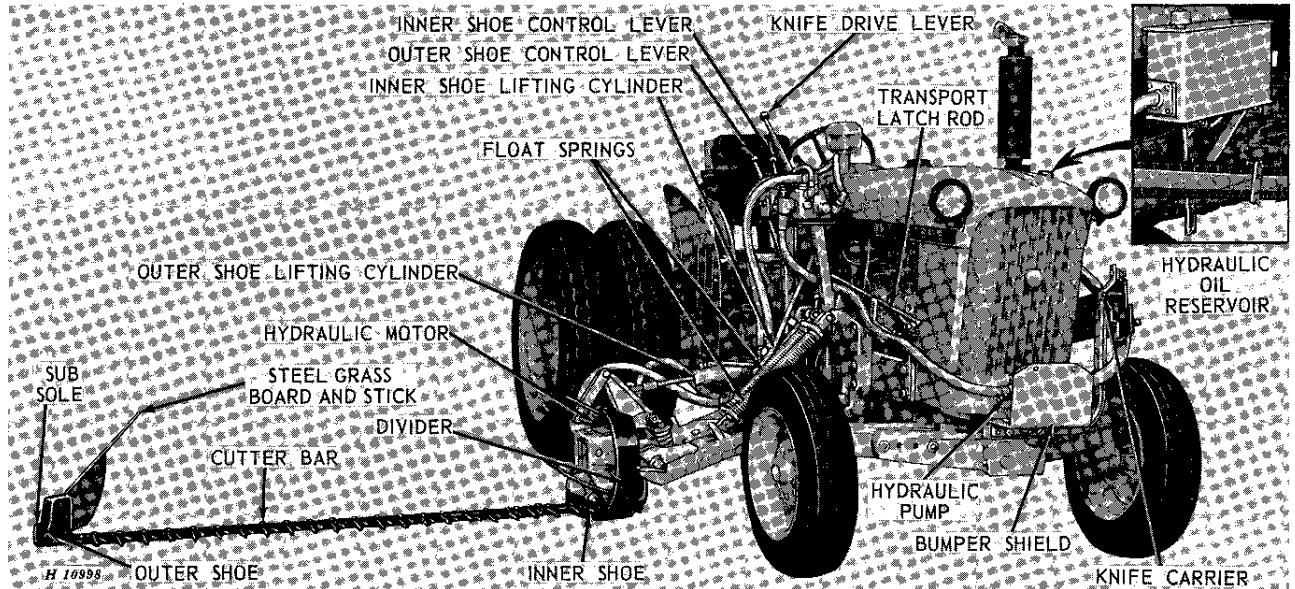
## CONTENTS

	Page		Page
Specifications . . . . .	1	Adjustment and service . . . . .	12
Controls . . . . .	3	Trouble shooting . . . . .	26
Operation . . . . .	4	Assembly . . . . .	30
Safety suggestions . . . . .	7	Installation . . . . .	31
Lubrication and periodic service . . . . .	8	Parts list . . . . .	51



# SPECIFICATIONS

## JOHN DEERE 310-H MOWER



John Deere 310-H Mower on 1010 Turf Tractor

**TRACTOR HOOK-UP .** Mounts on John Deere 320 Utility, 330 Utility, 420 Utility, 430 Utility, 1010 Turf, 1010 Wheel, and 1010 Highway Mower Tractors

**CUTTER BAR:**  
 Length . . . . . 5, 6, or 7-Foot  
 Type . . . . . Heavy-Duty  
 Stroke . . . . . 3-1/4 Inches with Built-In Knife Register and Lead  
 Tilt . . . . . 6 Degrees Up, 7 Degrees Down  
 Drive . . . . . Double-Throw Crankshaft, Counter-Balanced for Smooth, Quiet Operation  
 Breakaway . . . . . 60 Degrees

**BEARINGS:**  
 Crankshaft Main. . . . Tapered Roller  
 Connecting Rod . . . . Straight Roller

**APPROXIMATE SHIPPING WEIGHT LESS CUTTER BAR. . .** 670 Pounds

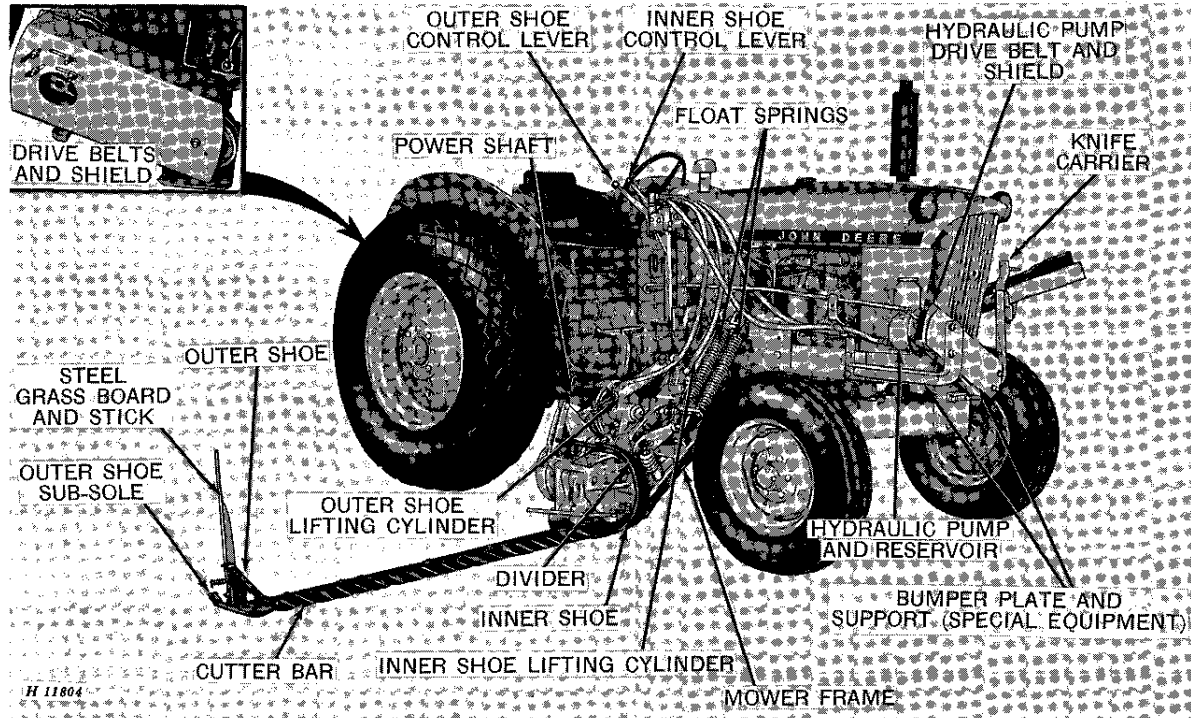
**HYDRAULIC SYSTEM:**  
 (Independent of Tractor Hydraulic System)  
 Pump . . . . . Front Mounted, 14 gpm  
 Valves . . . . . 2 Lifting Cylinder Valves and Cutter Bar Drive Valve

**Cylinders:**  
 Inner Shoe . . . . . One 2 x 6-1/2-Inch Single-Acting  
 Outer Shoe . . . . . One 2 x 6-1/2-Inch Single Acting  
 Filter . . . . . Full-Flow Micronic, Replaceable

**Cutter Bar Drive**  
 Motor . . . . . 10 h.p. - 800-900 rpm  
 Operating Pressure 500 psi (Average)  
 Pressure Relief . . 1250-1350 psi  
 Hoses . . . . . High Pressure

*(Specifications and design subject to change without notice.)*

**JOHN DEERE 310-M MOWER**



*John Deere 310-M Mower Mounted on 1010 Wheel Tractor*

**TRACTOR HOOK-UP . .** Mounts on John Deere 320 Utility, 330 Utility, 420 Utility, 430 Utility, 1010 Turf, 1010 Wheel, and 1010 Highway Mower Tractors

**CUTTER BAR:**  
 Length . . . . . 5, 6, or 7-Foot  
 Type . . . . . Heavy-Duty  
 Stroke . . . . . 3-1/4 Inches with Built-In Knife Register and Lead  
 Tilt . . . . . 6 Degrees Up, 7 Degrees Down  
 Drive . . . . . Double-Throw Crankshaft, Counter-Balanced for Smooth, Quiet Operation  
 Breakaway . . . . . 60 Degrees

**BEARINGS:**  
 Crankshaft Main. . . . Tapered Roller  
 Connecting Rod . . . . Straight Roller

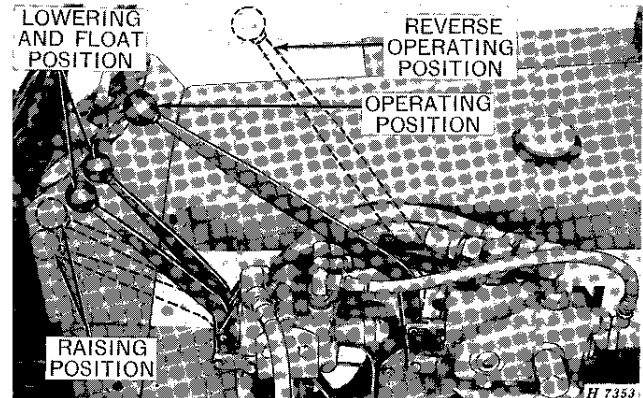
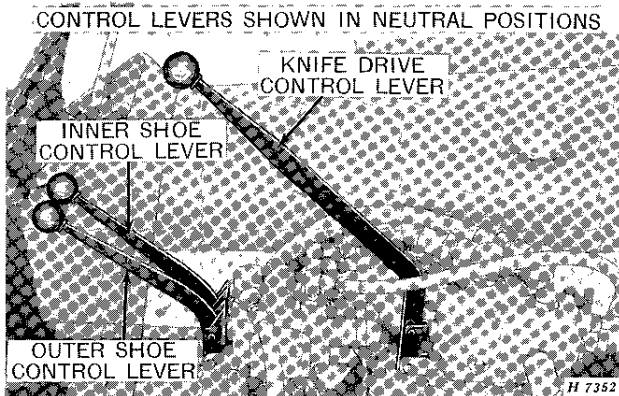
**APPROXIMATE SHIPPING WEIGHT LESS CUTTER BAR . .** 635 Pounds

**HYDRAULIC SYSTEM:**  
 (Independent of Tractor Hydraulic System)  
 Pump and Reservoir (Without Wheel Loader) . . . . . Front Mounted, Combination Unit, 2 gpm  
 Valves . . . . . 2 Lifting Cylinder Valves  
**Cylinders:**  
 Inner Shoe . . . . . One 2 x 6-1/2-Inch Single-Acting  
 Outer Shoe . . . . . One 2 x 6-1/2-Inch Single-Acting  
 Pressure Relief . . . . 1100-1200 psi  
 Hoses . . . . . High Pressure  
 Cutter Bar Drive . . . Power Take-Off on Tractor

*(Specifications and design subject to change without notice.)*



# CONTROLS



Controls on 310-H Mower

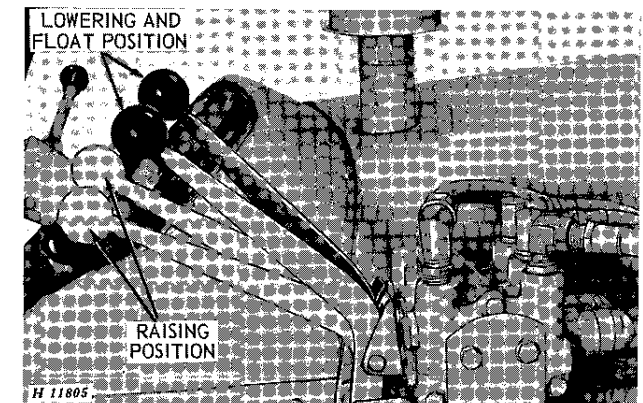
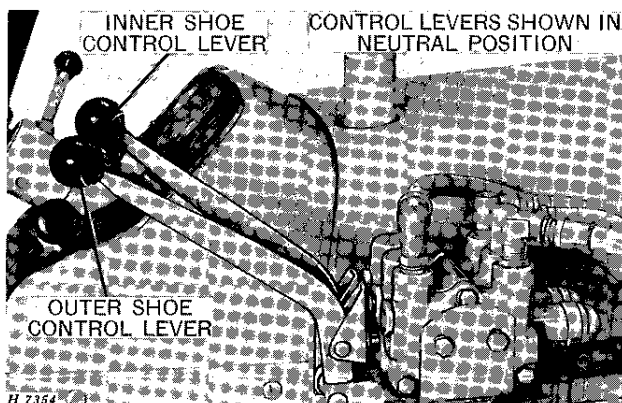
## CUTTER BAR CONTROL LEVERS

Pull the outer shoe control lever rearward to raise the outer shoe; push the lever forward to lower the outer shoe.

Pull the inner shoe control lever rearward to raise the inner shoe; push the lever forward to lower the inner shoe.

The cutter bar control levers operate the float control valves. The cutter bar is free to float when the control levers are pushed all of the way forward. The levers will remain in the float position until released by the operator.

When the lifting cylinders have been fully retracted, immediately release the control levers from the raising position so that they will return to neutral position. This will prevent oil from by-passing through the relief valve and becoming overheated.



Controls on 310-M Mower

## KNIFE DRIVE CONTROL LEVER (310-H Mower)

Pull the lever rearward to lock it in operating position. The lever will stay in this position until released by the operator.

If the cutter bar becomes clogged, the direction of the knife drive can be reversed by pushing the lever forward to the reverse operating position. The lever must be held in the reverse operating position; when released, it will return to neutral position.

## KNIFE DRIVE (310-M Mower)

The knife drive is controlled through the tractor PTO. See the tractor operator's manual for instructions.



# OPERATION

On the following pages, you will find information on how to operate the John Deere Mower. Read and follow these instructions carefully for dependable, economical service.

## PREOPERATION INSPECTION

Do not start the tractor until the mower has been carefully checked for correct assembly and installation. See that all nuts are tight and cotter pins spread. Be certain all moving parts work freely and are properly lubricated. On a 310-M Mower, check to see that the powershaft telescopes freely.



**CAUTION:** Protect against the risk of personal injury and machine damage by operating implement only on rpm PTO for which it is designed or converted. A 540 rpm implement should be operated only on a 540 rpm PTO. A 1000 rpm implement should be operated only on a 1000 rpm PTO.

Start tractor engine and while idling, slowly engage PTO for a 310-M Mower or knife drive control lever for a 310-H Mower. Let mower run slowly for awhile and observe knife and other moving parts to see that they operate freely and normally. Check levers and controls to see that they operate properly.

After mower has been operated at full speed for one hour, stop tractor and mower and check mower to see that all nuts and bolts are tight.



**CAUTION:** Always disengage power to cutter bar and shut off tractor engine before dismantling from tractor.

## FIELD OPERATION

### OPERATING SPEED

Under most conditions, the tractor can be driven at 4 to 5 miles per hour without causing undue wear on mower. Avoid excessive speeds. Reasonable speeds result in more accomplished by the end of the day.

Various mowing conditions require different mowing speeds. Best results will be obtained by running the tractor at the travel speed that will meet mowing conditions, or the speed where the smoothest mowing action results.

Operate engine to obtain the SAE-rated PTO speeds. Running the engine at slow speed reduces the knife speed and may cause the knife to clog where cutting is heavy. Where difficult conditions make it necessary to slow down the travel speed of tractor, shift to a lower gear rather than retard the engine speed. By shifting to a lower gear, the engine will maintain its rated speed, keeping the knife operating at the proper speed.

Mower crankshaft speed should never exceed 825 rpm. An average of 800 rpm (1600 strokes per minute) is ideal. The knife has a 3-1/4-inch stroke.

On a 310-M Mower, do not engage PTO with tractor engine running at high speed. To do so may cause undue wear or possible breakage.

### TURNING CORNERS

It is seldom necessary to raise the cutter bar at corners. This mower will cut neat, square corners. Turn quickly when near the end of cut, using brake to pivot right-hand wheel of tractor.

When turning corners to the left, run tractor in low gear. The cutter bar swings around faster when turning in this direction and this, of course, increases the possibility of striking an unnoticed post or some other obstacle.

Care should be exercised when turning on slopes.

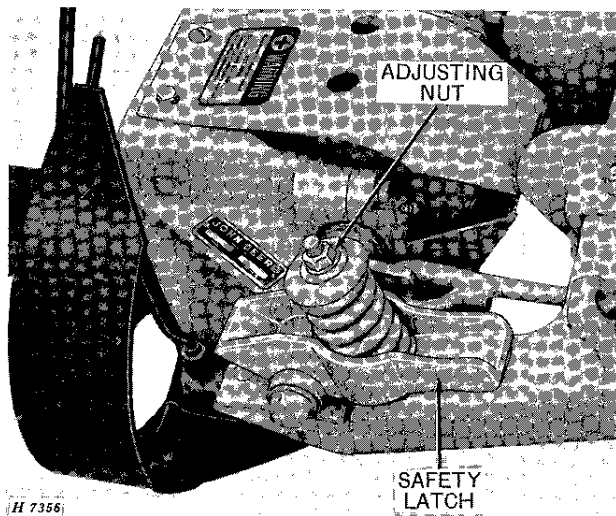
### GUMMY TRASH ON CUTTER BAR

To remove gummy trash that packs on wearing plates and guards, operate knife slowly and pour water on bar. Do not allow trash to harden.



**CAUTION:** Be extremely careful when removing gummy trash. Do not wear loose clothing and keep hands and feet at a safe distance.

**SAFETY SPRING RELEASE**



A safety spring release prevents damage to the mower by allowing the cutter bar to swing back when an obstruction is encountered during operation.

After the safety latch releases and the cutter bar swings back, it is not necessary to leave the tractor seat. Just cramp the front wheels to the left and back up the tractor until the mower is in normal position and the safety latch catches.

Spring tension may be adjusted by means of the adjusting nut. Do not tighten spring more than necessary for satisfactory operation.

**TRANSPORTING**



**CAUTION:** When transporting or driving on a road or highway at night or during the day, use accessory lights and devices for adequate warning to the operators of other vehicles. In this regard, check local government regulations.

When moving any considerable distance, place the cutter bar in its transport position.

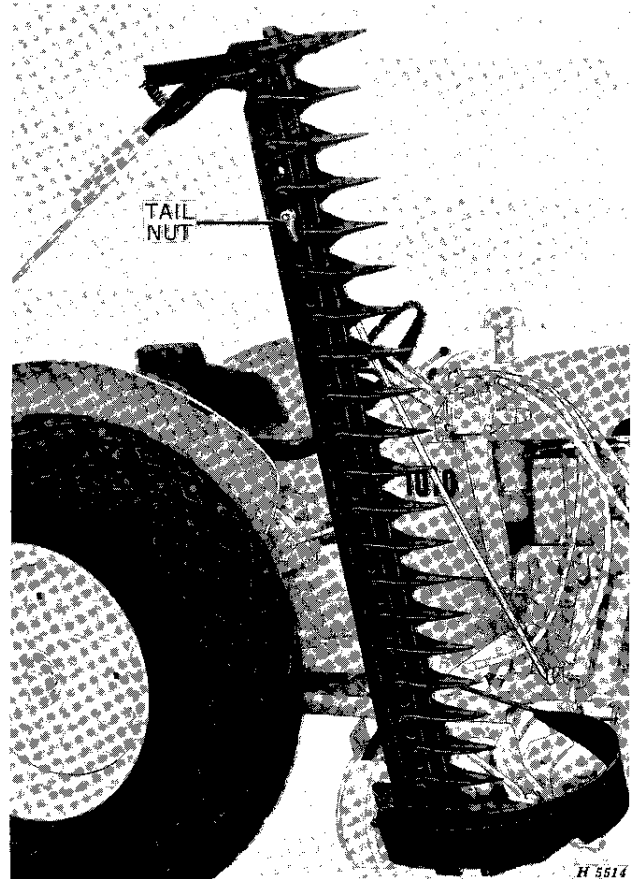
Raise cutter bar to its highest position and hook transport latch rod into eyebolt on main frame. Raise cutter bar to an upright position and fit other end of transport latch rod through hole in cutter bar. Secure with tail nut.



Be sure the power to cutter bar is disengaged and tractor engine is shut off before handling cutter bar.

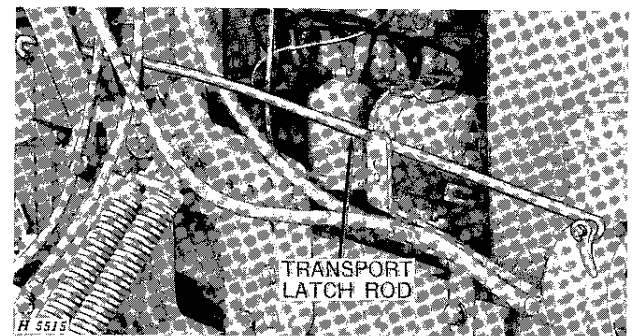


When raising cutter bar by hand, be certain to keep fingers away from cutting parts.



310-M Mower Illustrated

When not in use, transport latch rod fits into bracket on control valve support and clip on hose support.



310-M Mower Illustrated

**STORING FOR THE WINTER**

When storing mower for the winter, clean off dirt, tighten loose bolts, replace any missing cotter pins, and grease the knife and wearing parts on cutter bar.

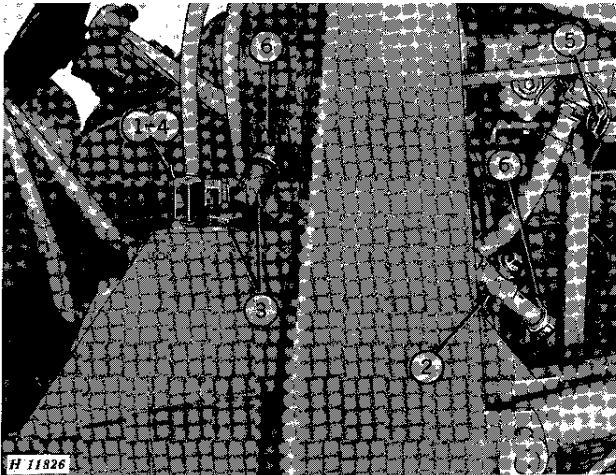
Order the new parts that will be needed before the mower is used again.

## 6 Operation

### OPERATING WHEEL LOADER WITH MOWER REMOVED

The following instructions for reworking the hydraulic system are given so the wheel loader can be operated with the mower removed.

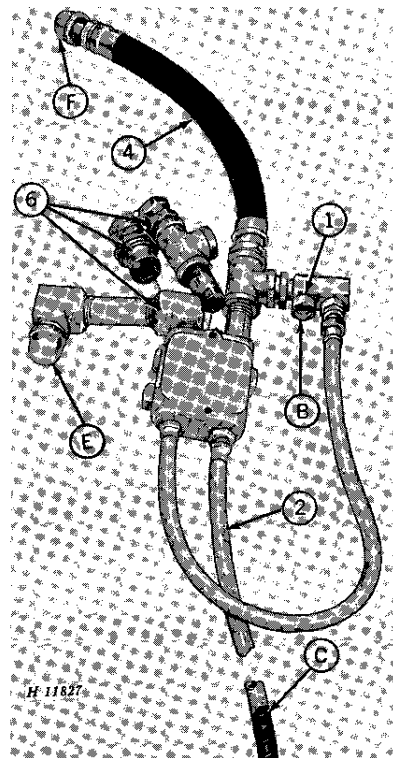
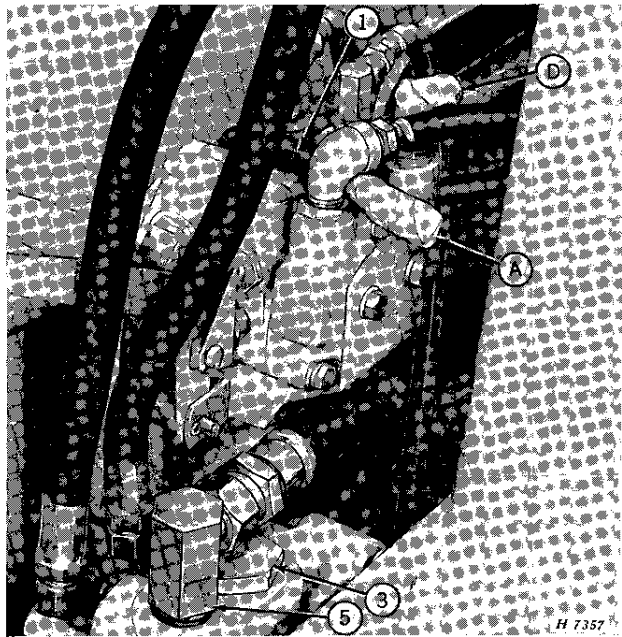
#### 310-H MOWER



1. Remove the wheel loader return hose from mower return hose assembly.
2. Remove mower return hose assembly from return outlet in wheel loader valve housing.
3. Remove mower pressure hose and sleeve from power beyond outlet in wheel loader valve housing and screw the special plug into opening.
4. Attach wheel loader return hose to rear opening in wheel loader valve housing.
5. Wire the sleeve onto motor control valve.
6. Seal ends of fittings removed with 3/4-inch pipe caps and a 3/4-inch pipe plug, or tape these openings to keep dirt from entering system.

#### 310-M MOWER

1. Disconnect control valve return hose from priority-type flow divider. Seal end of hose to prevent dirt from entering as shown at "A," and wrap hose around control valves. Seal opening in priority-type flow divider as shown at "B."
2. Remove pressure hose from control valves. Seal end of hose as shown at "C," seal opening in valves as shown at "D."
3. Disconnect priority-type flow divider from power beyond outlet in wheel loader valve housing. Remove coupling and bushing from outlet and screw special plug into opening. Cap or seal 90° adapter as shown at "E."



4. Disconnect mower return hose from rear outlet in wheel loader valve housing, remove assembly and seal or cap hose as shown at "F."
5. Remove coupling, tee and nipple from rear opening in loader valve housing and attach wheel loader return hose.
6. Wire the parts removed in Steps 3 and 5 to priority-type flow divider.



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