



Ingersoll

**HYDRAULIC VACUUM
MODEL HVFB, HVFC
Operator's Manual 8-56401**

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IF THIS MACHINE IS USED BY AN EMPLOYEE OR IS LOANED OR RENTED, MAKE ABSOLUTELY CERTAIN THAT THE OPERATOR(S), PRIOR TO OPERATING:

1. IS INSTRUCTED IN SAFE AND PROPER USE.
2. REVIEWS AND UNDERSTANDS THE MANUAL(S) PERTAINING TO THE MACHINE.

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BEFORE STARTING ENGINE

**STUDY OPERATOR'S MANUAL SAFETY MESSAGES
READ ALL SAFETY SIGNS ON MACHINE
CLEAR THE AREA OF OTHER PERSONS**

**LEARN & PRACTICE SAFE USE OF
CONTROLS BEFORE OPERATING**

IT IS YOUR RESPONSIBILITY TO UNDERSTAND AND FOLLOW MANUFACTURER'S INSTRUCTIONS ON MACHINE OPERATION, SERVICE, AND TO OBSERVE PERTINENT LAWS AND REGULATIONS. OPERATOR AND SERVICE MANUALS MAY BE OBTAINED FROM YOUR EQUIPMENT DEALER.

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See operator's manual before attempting to clear plugged discharge chute. Contact with blade can result in serious injury.



CAUTION: Either the entire grass catcher or the mower discharge chute guard must be in place before operating the mower.



1. Do not put hands, feet or probes into this chute (lower chute extension) while it is attached to mower.
2. Do not remove or install this chute until engine has been shut off, key removed, parking brake set, and all motion has stopped. Contact with blade can result in serious injury.



WARNING: Flying Debris.
Operate mower only with discharge chute guard/cover or complete grass catcher in place. Debris may cause injury.



CAUTION: Do not permit children or pets in the area while mowing.



Disengage attachment drive clutch and Hydraulic PTO, stop engine and wait for all motion to stop before opening bagger cover for any purpose. Contact with blade can result in serious injury.

IMPORTANT: Always install new decals whenever the old decals are destroyed, lost, painted over or illegible. When individual parts are replaced that have decals attached, be sure to install a new decal with the new part. Replacement decals are available from your Dealer.

INTRODUCTION

The Ingersoll Hydraulic Vacuums are designed for use with 14 HP, 16 HP, 18 HP or 20 HP Ingersoll hydraulic drive tractors.

Read this manual carefully before installing or operating the hydraulic vacuum. Obey all safety messages in this manual and on the machine before attempting to clean a clogged discharge chute.

The terms "Right, Left, Front and Rear" as used in this manual indicate directions when you are in the operator's seat in the normal operating position.

NOTE: Ingersoll Equipment Co., Inc., reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

APPLICATION CHART

VACUUM MODEL	TRACTOR MODEL	ADDITIONAL REQUIRED EQUIPMENT
HVFB	3014, 3016, 3018	HP30 Hydraulic PTO, RM 38, RM44, RM48 Mower
	4014, 4016, 4018, 4020	HP40 Hydraulic PTO RM44, RM48 Mower
HVFC	3014, 3016, 3018	HP30 Hydraulic PTO RM38, RM44, RM48 Mower DC1000 Dump Cart
	4014, 4016, 4018, 4020	HP40 Hydraulic PTO RM44, RM48 Mower DC1000 Dump Cart



FIGURE 1 Model HVFC Hydraulic Vacuum Shown Mounted on Model 4020 Tractor with Hydraulic PTO, Dump Cart and Required Mower.



FIGURE 2 Model HVFB Hydraulic Vacuum shown mounted on model 3016 tractor with Hydraulic PTO, and required mower.

OPERATION

OPERATING CONTROLS

The hydraulic vacuum is controlled with the hydraulic PTO lever.

Pull the lever forward to start the vacuum.

Push the lever rearward to the neutral position to stop the vacuum. The vacuum will coast to a stop shortly after the lever is moved to the neutral position.

IMPORTANT: The vacuum motor can not operate and excessive pressure will occur if the hydraulic PTO lever is pushed fully rearward for reverse direction or if hoses are incorrectly installed.

A special lock out plate is included to block the PTO lever from being pushed rearward. The PTO lever must be installed with the offset facing forward in order to use the lock out plate. To prevent the lever from being pushed rearward, install the lock out plate in the slot of the PTO valve lever bracket. See "Connect the Hydraulics" section.

PREPARATION

The area to be mowed should be cleared of all large twigs, sticks, rocks and other objects which might plug the discharge chute or damage the hydraulic vacuum.



CAUTION: Do not permit children or pets in the area while mowing.

MOWING AND VACUUMING GRASS

The vacuuming of grass clippings is dependent on high air movement from the mower through the chute to the dump cart or bags. To achieve proper vacuuming the following guidelines must be observed.

engine at maximum speed. Take several passes lowering the height adjust lever one notch after each pass.

3. Cut grass with height adjust lever in a higher cutting position:

This allows more air to enter under the mower deck to propel clippings into the dump cart or bags.

4. Cut grass at maximum engine speed and slow ground speed:

This provides maximum blade tip speed and vacuum speed to cut and propel clippings efficiently.

5. Cut and vacuum grass with clean deck, chute and dump cart cover fabric or bags.

Air must be expelled from the dump cart or bags through the fabric mesh, therefore, keep the fabric clean of accumulated clippings.

This will allow collected clippings to be moved with less resistance, and minimize chance for plugging.

6. Do not overfill the dump cart or bags.

As the dump cart or bags are filled, air discharge is reduced, thereby increasing the chance of plugging.

7. Level mower deck properly:

Follow mower deck leveling procedure as described in mower operator's manual. An incorrectly leveled mower deck will not cut grass correctly.

WARNING: Spinning Blade.

1. Do not put hands, feet or probes into this chute (lower chute extension) while it is attached to mower.



FIGURE 3

UNPLUGGING DISCHARGE CHUTE

1. a. Disengage mower.
- b. Put hydraulic PTO in the neutral position.
- c. SHUT OFF ENGINE.
- d. Remove key.
- e. Set parking brake.
- f. WAIT FOR ALL MOTION TO STOP.
2. Release chute clamp at mower deck (or at dump cart if plug is at dump cart).
3. Clear plugged material.
4. Install chute(s) and tighten clamp(s).



DANGER: Spinning Blade.
See operator's manual before attempting to clear plugged discharge chute. Contact with blade can result in serious injury.

2. Make sure the mower, hydraulic vacuum and engine are shut off and all motion has stopped before emptying the dump cart.
3. Release the chute clamp at the dump cart. Remove the chute from the deflector nozzle.
4. Remove the cover fabric from the top of the dump cart.
5. Slide the tail gate up to clear the dump cart side panels.
6. Release the trip latch and dump the cart.
7. After the debris is removed from the dump cart, rotate the cart forward. The trip latch will automatically secure the cart.
8. Install the chute on the deflector nozzle at the cart and secure with the clamp.



WARNING: Flying Debris.
Operate mower only with discharge chute guard/cover or complete grass catcher in place. Debris may cause injury.

EMPTYING THE DUMP CART

1. Back the dump cart to the desired dumping site.

IMPORTANT: Do not back up to or empty the dump cart near a fire. The contents of the dump cart may be flammable.

9. Install the tail gate. Make sure the retainers fully engage the side panels.
10. Install the cover fabric.

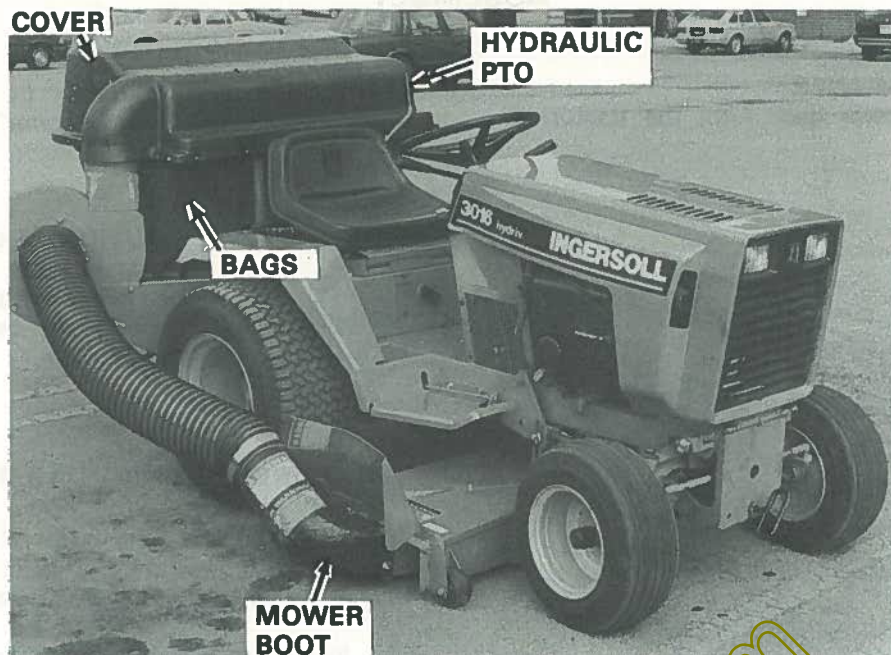


FIGURE 4

EMPTYING THE BAGS

1. Drive the tractor to the desired dumping site.

IMPORTANT: Do not back up to or empty the bags near a fire. The bags and their contents may be flammable.

2. Make sure the mower, hydraulic vacuum and engine are shut off and all motion has stopped before emptying the bags.



Disengage attachment drive clutch and Hydraulic PTO, stop engine and wait for all motion to stop before opening bagger cover for any purpose. Contact with blade can result in serious injury.

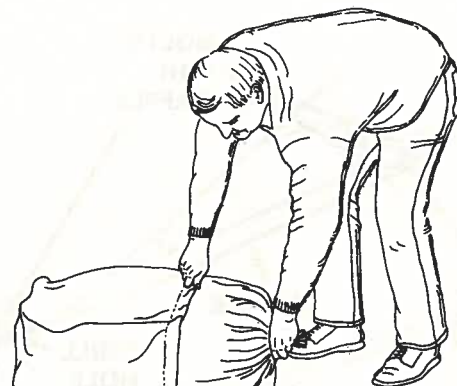
- b. Tie the top of the plastic bag closed.

- c. Lay the bag on its side.

- d. Hold the rim or the handle at the bottom of the fabric bag while pulling the plastic bag out.

3. Lift the cover and allow it to pivot over center to rest on the fenders or steering wheel of the tractor.

4. Remove and empty the two outside bags first and



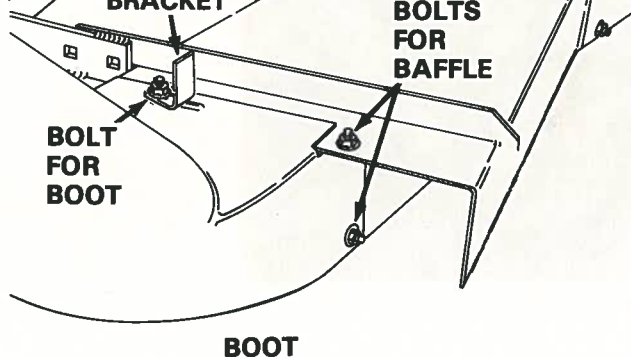


FIGURE 6

2. Attach baffle to boot with one bolt as shown in Figure 6. Leave bolt loose.
3. Attach boot and baffle to discharge opening using hardware provided. Install the support bracket for the discharge chute as shown in figure 6. Slide boot fully rearward and tighten bolts. Place the flat washers against the plastic.
4. Mark and drill hole in front of deck for second baffle bolt. Install and tighten the bolt.

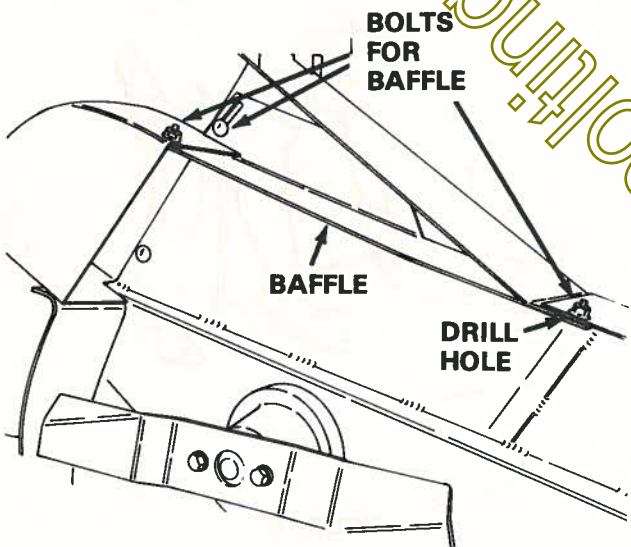


FIGURE 7

INSTALLING THE MOUNTING BRACKET

1. Attach adapter plate to rear of tractor as shown in Figure 8. Use the longer bolts provided to secure the draw bar. Reinstall the drawbar.
2. Install the shoulder bushings and bolts to the adapter plate.

For 3000 Series Tractors: use the second holes from the bottom.

For 4000 Series Tractors: use the bottom holes.

3. Attach the blower mounting bracket to the adapter plate. Install clevis pins from the outside in and safety pins in the upper holes to secure the unit.

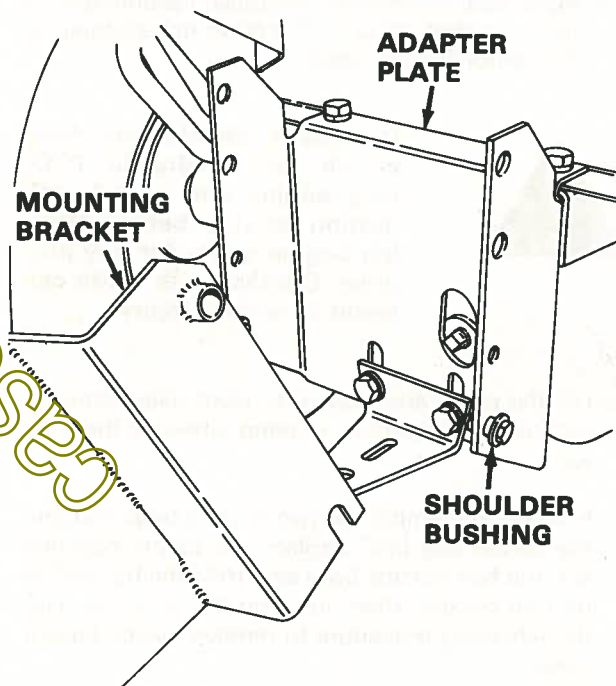


FIGURE 8

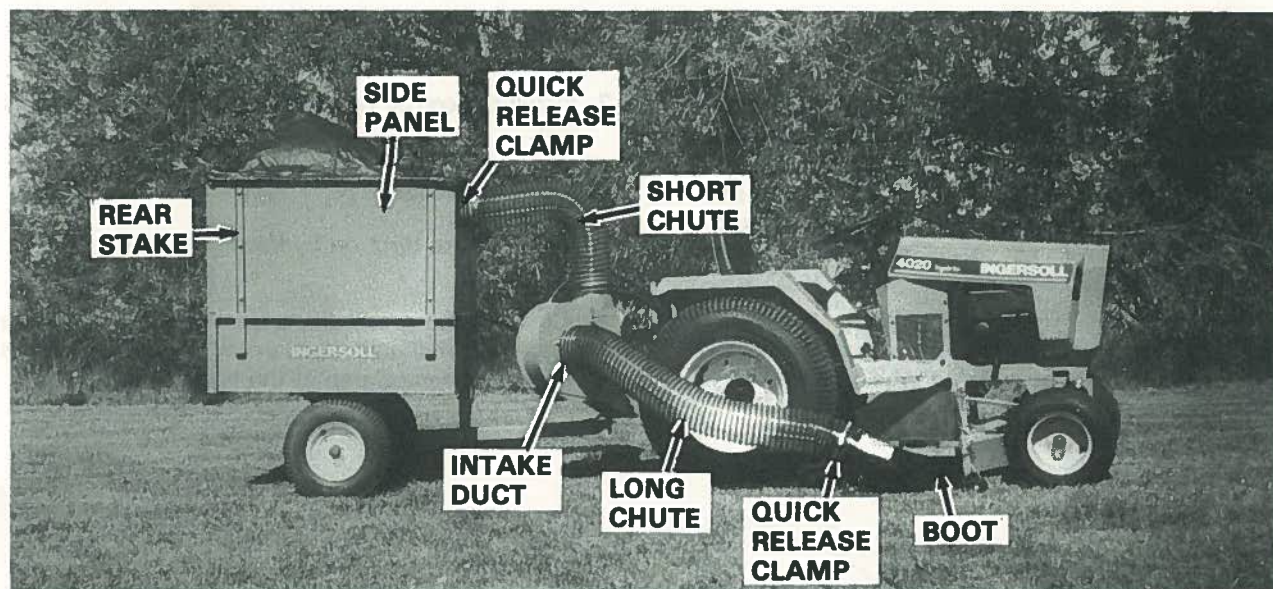


FIGURE 9

PREPARING THE DUMP CART MODEL HVFC

1. Attach the dump cart side panels to the rear stakes as shown in Figure 9. Leave bolts loose.
2. Attach the dump cart front panel so it laps to the inside, and attach to sides and front stakes as shown in Figure 11. Leave bolts loose.
3. Insert the rear tail gate as shown in Figure 10. Push the tail gate fully down until the retainers engage the side panels. This will align the sides.

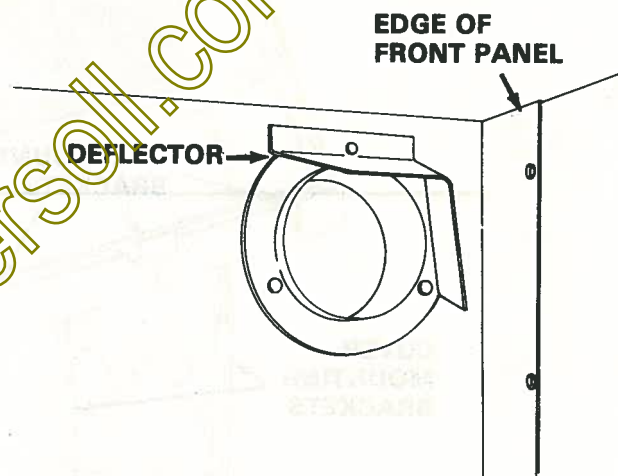
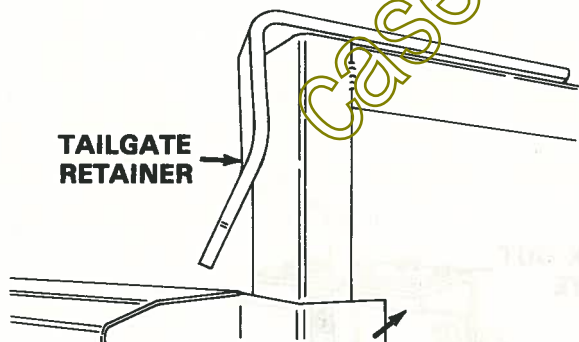


FIGURE 11



4. Tighten all bolts.
5. Install deflector nozzle from inside of front panel. (See Figure 11.)
6. Hitch the dump cart to the drawbar on the hydraulic vacuum.

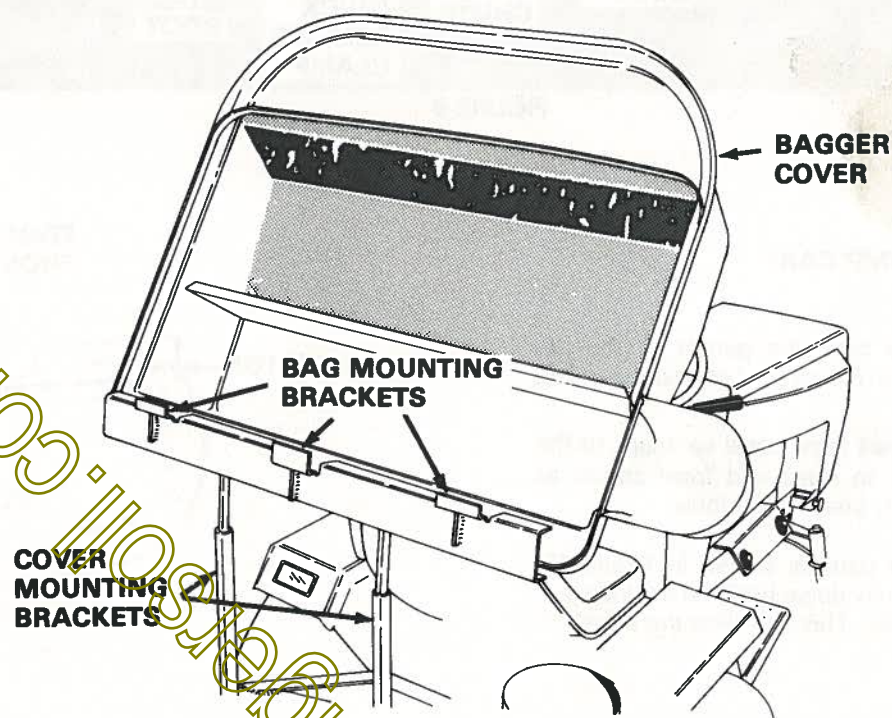


FIGURE 12

CONNECT THE HYDRAULICS

A special lock out plate is included with your Hydraulic vacuum to block the PTO lever from being pushed rearward.

The PTO lever must be installed with the offset facing forward in order to use the lock out plate.

To prevent the lever from being pushed rearward, install the lock out plate in the slot of the PTO valve lever bracket.

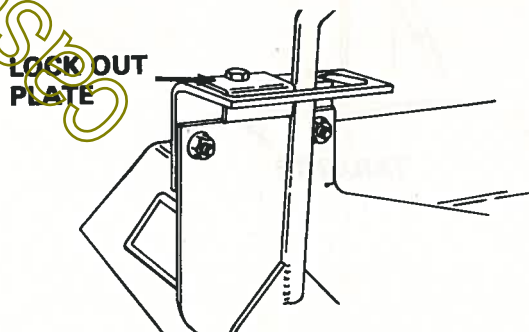


FIGURE 13

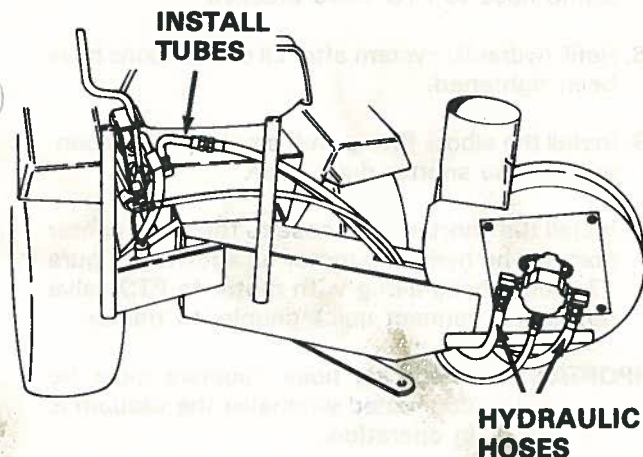


FIGURE 14

For model HVFB only:

1. Install the curved tubes to the PTO valve ports so they point to the right.
2. Route the hoses between the curved tubes and hydraulic vacuum motor through the slot in the vacuum mounting frame.

For model HVFB and HVFC:

1. Install the longer hose between the upper port on the PTO valve and the rear port on the hydraulic motor.
2. Install the shorter hose between the lower port on the PTO valve and the front port on the hydraulic motor.
3. Mark the hose end and motor fitting to provide an easy reference for correct installation in the future.

INSTALLING THE MOTOR DRAIN HOSE

1. Drain the hydraulic system.

NOTE: Go to step 5 if your tractor is equipped with

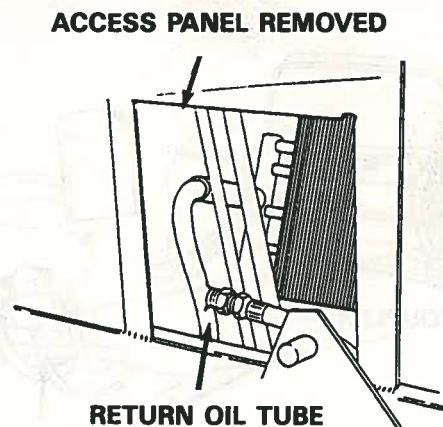
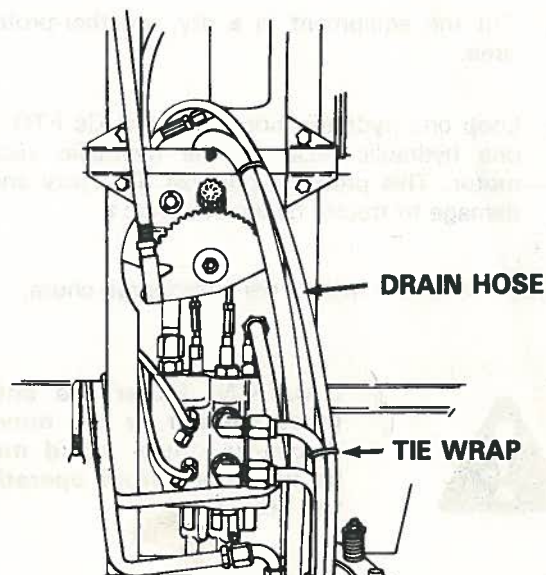


FIGURE 15

4. Install the new return tube between the travel valve outlet and oil cooler inlet using the short hose and clamps. This tube and hose may not be included.
5. Route the longer drain hose along the path of the hose from the pump to the hydraulic power take off. Secure it with tie wraps to insure that the hose can not be damaged. See Figure 16.
6. Connect this hose to the nipple on the return oil tube as shown in Figure 15.



DRAIN HOSE

IMPORTANT: The drain hose couplers must be connected whenever the vacuum is in operation.

FIGURE 17

STORAGE

1. Thoroughly clean and remove all clippings from the dump cart, cover fabric, bags, chutes, blower and lawn mower deck. An accumulation of grass clippings can retain moisture and will promote the formation of mildew or rust.
2. Use touch-up paint to protect any exposed material.
3. Put the equipment in a dry, weather-protected area.
4. Loop one hydraulic hose on hydraulic PTO, and one hydraulic hose on the hydraulic vacuum motor. This prevents possible dirt entry and/or damage to tractor hydraulic system.
5. Reinstall the mower deck discharge chute.



CAUTION: Either the entire grass catcher or the mower discharge chute guard must be in place before operating the mower.

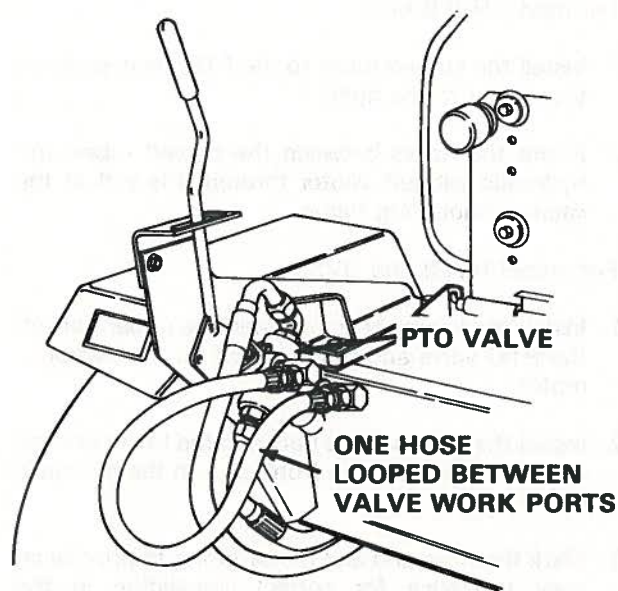


FIGURE 18

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