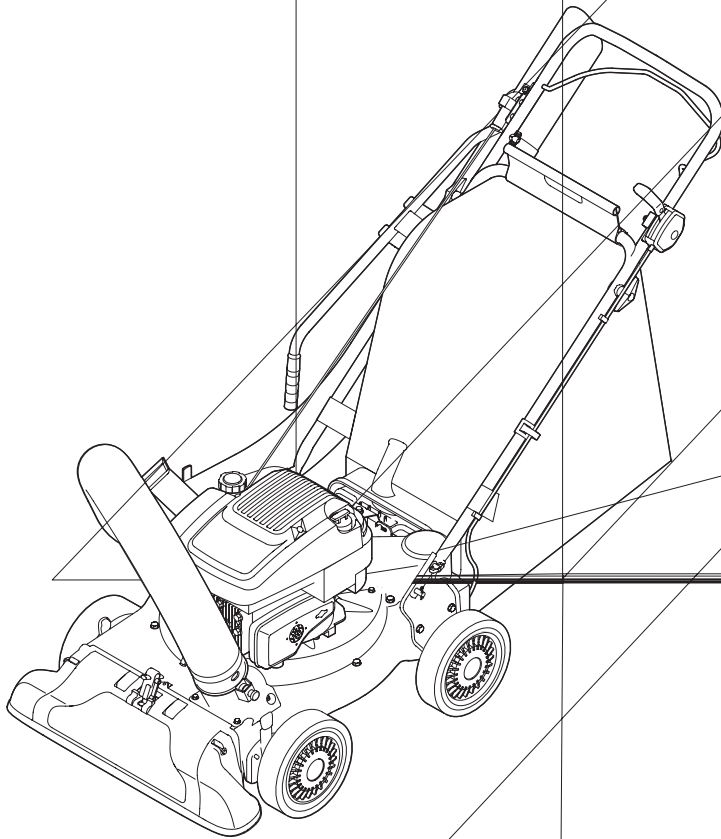




Operator's Manual



**Self Propelled
Yard Vacuum
Chipper/Shredder/
Vacuum/Hose**
Model Number
24A-070F766

IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

Warning: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 361131 Cleveland, Ohio 44136-0019.

TROY-BILT LLC P.O. BOX 361131 CLEVELAND, OHIO 44136-0019

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TABLE OF CONTENTS

Content	Page	Content	Page
Important Safe Operation Practices	3	Servicing Your Yard Vacuum	12
Assembling Your Yard Vacuum	5	Trouble Shooting	15
Know Your Yard Vacuum	8	Illustrated Parts List	16
Operating Your Yard Vacuum	9	Warranty	20
Maintaining Your Yard Vacuum	11		

FINDING MODEL NUMBER

This Operator's Manual is an important part of your new Yard Vacuum. It will help you assemble, prepare and maintain the unit for best performance. Please read and understand what it says.



Before you start assembling your new equipment, please locate the model plate on the equipment and copy the information from it in the space provided below. A sample model plate is also given below. You can locate the model plate by looking down at the rear of the Yard Vacuum. This information will be necessary to use the manufacturer's web site and/or help from the Customer Support Department or an authorized service dealer.



Copy the model number here: _____

Copy the serial number here: _____

CUSTOMER SUPPORT

Please do NOT return the unit to the retailer from where it was purchased, without first contacting Customer Support.

If you have difficulty assembling this product or have any questions regarding the controls, operation or maintenance of this unit, you can seek help from the experts. Choose from the options below:

	<p>Visit troybilt.com for many useful suggestions. Click on Customer Support button and you will get the four options reproduced here. Click on the appropriate button and help is immediately available.</p> <div style="text-align: center; margin: 20px 0;"> </div> <p style="text-align: center; color: gray; font-style: italic;">The answer you are looking for could be just a mouse click away!</p>	<p style="color: gray; font-style: italic;">The answer you are looking for could be just a mouse click away!</p>
	<p>If you prefer to reach a Customer Support Representative, please call 1-800-520-5520.</p>	
	<p>The engine manufacturer is responsible for all engine-related issues with regards to performance, power-rating, specifications, warranty and service. Please refer to the engine manufacturer's Owner's/Operator's Manual, packed separately with your unit, for more information.</p>	

SECTION 1: IMPORTANT SAFE OPERATION PRACTICES



WARNING: This symbol points out important safety instructions which, if not followed, could endanger the personal safety and/or property of yourself and others. Read and follow all instructions in this manual before attempting to operate this machine. Failure to comply with these instructions may result in personal injury. When you see this symbol - **heed its warning**.



WARNING: Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to State of California to cause cancer and birth defects or other reproductive harm.

DANGER: This machine was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

TRAINING

1. Read, understand, and follow all instructions on the machine and in the manual(s) before attempting to assemble and operate. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
 2. Be familiar with all controls and their proper operation. Know how to stop the machine and disengage them quickly.
 3. Never allow children under 16 years old to operate this machine. Children 16 years old and over should read and understand the operation instructions and safety rules in this manual and should be trained and supervised by a parent.
 4. Never allow adults to operate this machine without proper instruction.
 5. Keep bystanders, helpers, pets, and children at least 75 feet from the machine while it is in operation. Stop machine if anyone enters the area.
 6. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
 7. Do not put hands and feet near rotating parts or in the feeding chambers and discharge opening. Contact with the rotating impeller can amputate fingers, hands, and feet.
 8. Never attempt to unclog either the feed intake or discharge opening, remove or empty vacuum bag, or inspect and repair the machine while the engine is running. Shut the engine off and wait until all moving parts have come to a complete stop. Disconnect the spark plug wire and ground it against the engine.
2. Always wear safety glasses or safety goggles during operation or while performing an adjustment or repair, to protect eyes. Thrown objects which ricochet can cause serious injury to the eyes.
 3. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Loose fitting clothes or jewelry can be caught in movable parts. Never operate this machine in bare feet or sandals. Wear leather work gloves when feeding material in the chipper chute.
 4. Before starting, check all bolts and screws for proper tightness to be sure the machine is in safe working condition. Also, visually inspect machine for any damage at frequent intervals.
 5. Maintain or replace safety and instructions labels, as necessary.
 6. To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Serious personal injury can occur when gasoline is spilled on yourself or your clothes which can ignite. Wash your skin and change clothes immediately.
 - a. Use only an approved gasoline container.
 - b. Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
 - c. Never fuel machine indoors.
 - d. Never remove gas cap or add fuel while the engine is hot or running.
 - e. Allow engine to cool at least two minutes before refueling.
 - f. Never over fill fuel tank. Fill tank to no more than 1/2 inch below bottom of filler neck to provide space for fuel expansion.
 - g. Replace gasoline cap and tighten securely.
 - h. If gasoline is spilled, wipe it off the engine and equipment. Move machine to another area. Wait 5 minutes before starting the engine.
 - i. Never store the machine or fuel container inside where there is an open flame, spark, or pilot light (e.g. furnace, water heater, space heater, clothes dryer, etc.)

PREPARATION

1. Thoroughly inspect the area where the equipment is to be used. Remove all rocks, bottles, cans, or other foreign objects which could be picked up or thrown and cause personal injury or damage to the machine.

- j. To reduce a fire hazard, keep machine free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage and remove any fuel soaked debris.
- k. Allow machine to cool at least 5 minutes before storing.

OPERATION

1. Do not put hands and feet near rotating parts or in the feeding chambers and discharge opening. Contact with the rotating impeller can amputate fingers, hands, and feet.
2. Before starting the machine, make sure the chipper chute, feed intake, and cutting chamber are empty and free of all debris.
3. Thoroughly inspect all material to be shredded and remove any metal, rocks, bottles, cans, or other foreign objects which could cause personal injury or damage to the machine.
4. If the impeller strikes a foreign object or if your machine should start making an unusual noise or vibration, immediately shut the engine off. Allow the impeller to come to a complete stop. Disconnect the spark plug wire, ground it against the engine and perform the following steps:
 - a. Inspect for damage.
 - b. Repair or replace any damaged parts.
 - c. Check for any loose parts and tighten to assure continued safe operation.
5. Do not allow an accumulation of processed material to build up in the discharge area. This can prevent proper discharge and result in kickback of material through the feed opening.
6. Do not attempt to shred or chip material larger than specified on the machine or in this manual. Personal injury or machine damage could result.
7. Never attempt to unclog either the feed intake or discharge opening while the engine is running. Shut the engine off, wait until all moving parts have stopped, disconnect the spark plug wire and ground it against the engine before clearing debris.
8. Never operate without vacuum bag and discharge chute properly attached to the machine. Never empty or change vacuum bag while the engine is running. Zippered end of vacuum bag must be kept closed at all times during operation.
9. Never operate without either the inlet nozzle or optional hose attachment properly attached to the machine. Never attempt to attach or change either attachment while the engine is running.
10. Keep all guards, deflectors and safety devices in place and operating properly.
11. Keep your face and body back and to the side of the chipper chute while feeding material into the machine to avoid accidental kickback injuries.
12. Never operate this machine without good visibility or light. Always be sure of your footing and keep a firm hold on the handles.
13. Do not operate this machine on a gravel surface.
14. Do not operate this machine while under the influence of alcohol or drugs.
15. Muffler and engine become hot and can cause a burn. Do not touch.
16. Never pick up or carry machine while the engine is running.

MAINTENANCE AND STORAGE

1. Never tamper with safety devices. Check their proper operation regularly.
2. Check bolts and screws for proper tightness at frequent intervals to keep the machine in safe working condition. Also, visually inspect machine for any damage and repair, if needed.
3. Before cleaning, repairing, or inspecting, stop the engine and make certain the impeller and all moving parts have stopped. Disconnect the spark plug wire and ground it against the engine to prevent unintended starting.
4. Do not change the engine governor settings or overspeed the engine. The governor controls the maximum safe operating speed of the engine.
5. Maintain or replace safety and instruction labels, as necessary.
6. Follow this manual for safe loading, unloading, transporting, and storage of this machine.
7. Never store the machine or fuel container inside where there is an open flame, spark or pilot light such as a water heater, furnace, clothes dryer, etc.
8. Always refer to the operator's manual for proper instructions on off-season storage.
9. If the fuel tank has to be drained, do this outdoors.
10. Observe proper disposal laws and regulations for gas, oil, etc. to protect the environment.



WARNING: YOUR RESPONSIBILITY - the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.

NOTE: *Not all safety labels may apply to your Yard Vacuum.*



SECTION 2: ASSEMBLING YOUR YARD VACUUM

IMPORTANT: This unit is shipped without gasoline or oil in the engine. Be certain to service engine with gasoline and oil as instructed in the separate engine manual before operating your machine.

NOTE: Reference to right or left hand side of the Yard Vacuum is observed from the operating position.

This Yard Vacuum has been completely assembled at the factory, except for the handle, bag, and blower chute. These parts are shipped loose in the carton. A pair of safety glasses, a bottle of engine oil, and the operator's manual are also included in the carton. See Figure 1.

Opening Carton

- Cut each corner of the carton vertically from top to bottom.
- Remove all loose parts.
- Remove loose packing material.

Removing Unit From Carton

- Lift unit from the rear to detach it from underlying carton material and roll unit out of carton.
- Check carton thoroughly for any other loose parts.

NOTE: Make sure not to crimp cables while removing loose parts or the entire unit from the carton.

Loose Parts In Carton (See Figure 1)

- Handle Assembly
- Bag
- Blower Chute
- Hose Assembly
- Safety Glasses
- A Bottle of Engine Oil (may be located in bag)
- Operator's Manual

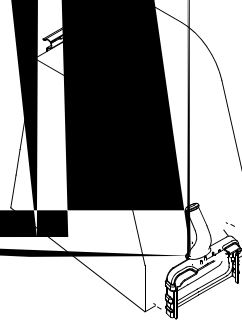


Figure 1

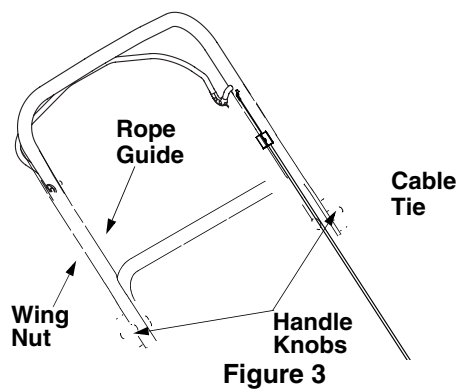
Disconnecting Spark Plug Wire

Before proceeding with assembly of your new Yard Vacuum, disconnect the spark plug wire from the spark plug and ground onto the retaining post on the engine. This will prevent accidental starting of the engine. See Figure 2.

Figure 2
Hose Assembly
Bag
Upper Handle
Blower Chute

Attaching The Handle

- Remove the hairpin clips from the handle brackets and remove the carriage screws and wing nuts from the lower handle. See Figure 3A.



- Place the bottom holes in lower handle over the pins on the handle brackets and secure with hairpin clips.
- Insert carriage screws through upper hole in lower handle from the inside and secure with wing nuts.
- Unfold the upper handle until it aligns with lower handle. Make sure the rope guide is on the right side of upper handle. See Figure 3B.

IMPORTANT: Make sure the cables are routed outside the lower handle. Also, do not crimp the cables while lifting the handle up.

- Secure the two handles by tightening the handle knobs (carriage bolts must be seated properly into the handle). See Figure 3B.
- Pull the two cable ties attached to the cables tight approximately 8 inches from each cable end and place the cables into the cable guide. See Figure 3A and B.
- Loosen the wing nut that secures the rope guide to the right side of upper handle.
- Pull the starter rope out of the engine slowly and slip the starter rope into the rope guide. Tighten the wing nut. See Figure 5A.

Attaching The Hose Assembly

- Slide hose adapter of hose assembly into the base adapter located on the left front of the Yard Vacuum. See Figure 4.

Figure 4

- Pull spring loaded pin out on the base and align pin with the first hole (closest to the end of the tube) in the hose adapter.
- Release the pin to lock the hose in place.
- Snap the hose handle first into the upper hose handle bracket and then into the lower hose handle bracket. Refer to Figure 5A.

Figure 5

- Lay hose tubing on hanger bracket next to chipper chute. Refer to Figure 5B.

Attaching The Bag

- Grasp bag handle with one hand and slide locking rod on mounting bracket with other hand toward engine. Use the end of mounting bracket as leverage when sliding the locking rod. See Figure 6.

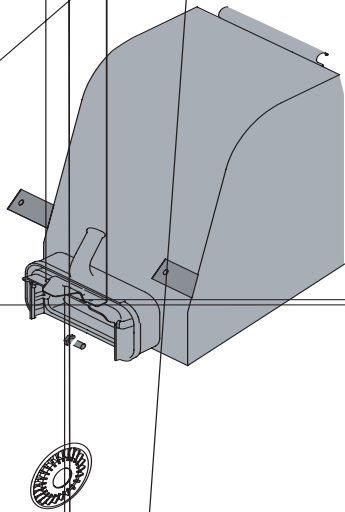


Figure 6

- Slip bag over the rim of the discharge opening and release locking rod to secure bag in place.
- Snap bag clip to the top of the lower handle.
- Place the lower straps on the bag **over** the top of lower handle, hooking them on the studs.

NOTE: The bag/chute switch button attached to the mounting bracket must be fully depressed by the tip of front tab on bag handle when securing the bag or engine will not start.

Attaching The Blower Chute

NOTE: The bag must be removed before installing the blower chute.

- Grasp blower chute with one hand and slide locking rod on mounting bracket with other hand toward engine. Use the end of mounting bracket as leverage when sliding the locking rod. See Figure 7.
- Slip blower chute **over** rim of discharge opening and release locking rod to secure chute in place.
- Raise the nozzle height to the highest setting when using the blower chute. Refer to nozzle height adjustment in the OPERATION section on page 10.

NOTE: The bag/chute switch button attached to the mounting bracket must be fully depressed by the tip of front tab on the blower chute or engine will not start.

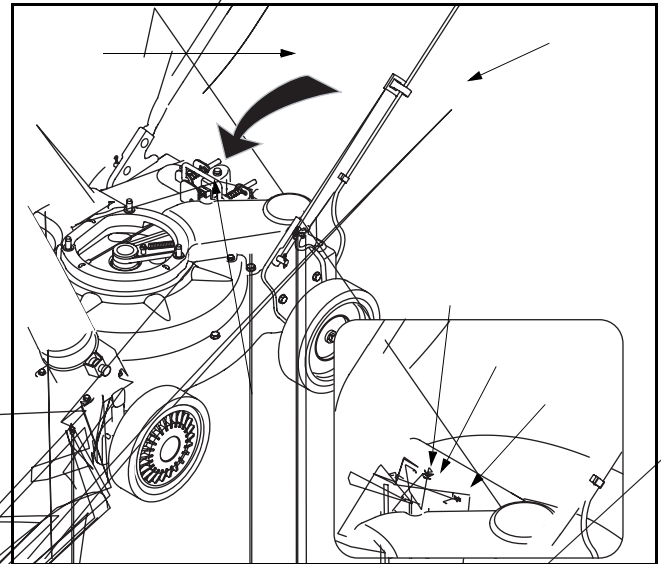


Figure 7

SECTION 3: KNOW YOUR YARD VACUUM

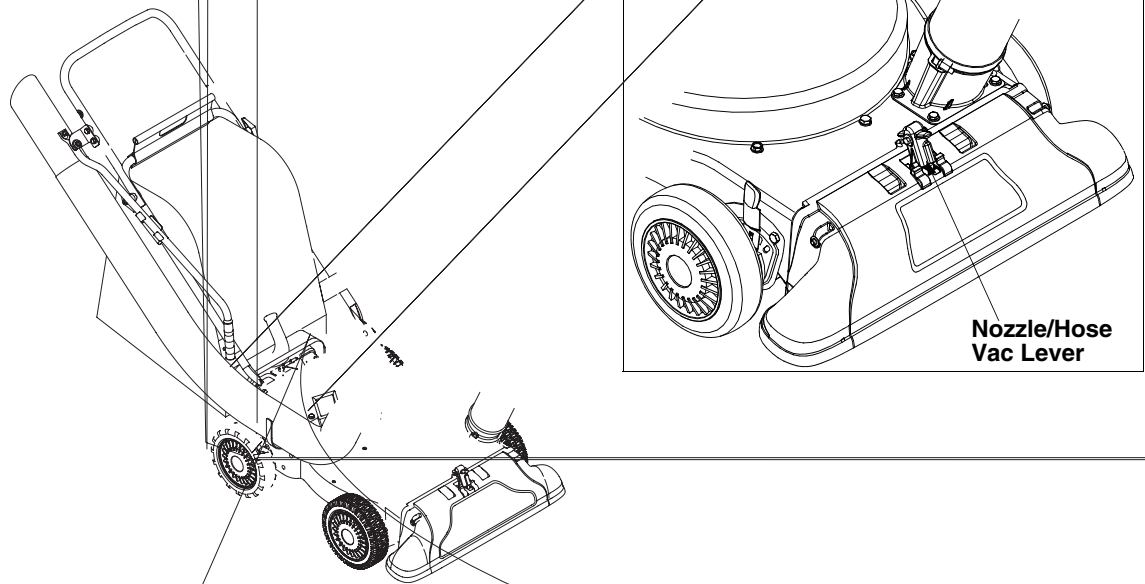


Figure 8

Read this operator's manual and safety rules before operating your Yard Vacuum. Compare the illustrations in Figure 8 with your unit to familiarize yourself with the location of various controls and adjustments.

WARNING: The operation of any Yard Vacuum can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety glasses, provided with the Yard Vacuum, for operating this equipment or while performing any adjustments or repairs on it.

Chipper Chute

Allows twigs and small branches up to 1-1/2" in diameter to be fed into the impeller for chipping.

Drive Control

Located on the underside of the upper handle, the drive control is used to engage/disengage wheels. Fully squeeze the drive control against the upper handle to engage the wheels; release to disengage. (DO NOT slip clutch).

Speed Control

Located on the left side of the upper handle, the speed control is used to select the forward speed of the yard vacuum.

IMPORTANT: Move the speed control only when the engine is running. Changing the speed control setting with the engine off can damage the yard vacuum.

Nozzle Height Adjustment Lever

Used to adjust the nozzle ground clearance ranging from 5/8" to 4-1/8".

Hose Assembly

Used as an alternative to the nozzle to vacuum yard waste such as leaves or pine needles in hard to reach places.

Hose Handle

Used to guide hose assembly when vacuuming.

Blower Chute

When attached to unit, the blower chute is used to blow or scatter yard waste such as leaves, pine needle, or small twigs across yard.

Nozzle

Yard waste such as leaves and pine needles can be vacuumed up through the nozzle for shredding.

Bag Handle

Used to grasp bag in order to assist in attaching, removing, and emptying bag.

Bag

Collects shredded material fed in through the chipper chute or vacuumed in through the nozzle.

Nozzle/Hose Vac Lever

The nozzle/hose vac lever is located on top of the nozzle. Use it to switch vacuum suction between the nozzle and the hose assembly.

Throttle Control Lever (Not Shown)

The throttle control lever is located on the engine. It controls the engine's speed and stops the engine. See separate engine manual packed with unit for details.

Engine Controls

See the separate engine manual for the location and function of the controls on the engine.

SECTION 4: OPERATING YOUR YARD VACUUM



WARNING: The operation of the Yard Vacuum can result in foreign objects being thrown into the eyes, which can damage your eyes severely. Always wear the safety glasses provided with this unit or eye shields before chipping or blowing and while performing any adjustments or repairs.

Gas And Oil Fill-Up

Service the engine with gasoline and oil as instructed in the separate engine manual packed with your Yard Vacuum. Read instructions carefully.



WARNING: Never fill fuel tank indoors with engine running or until the engine has been allowed to cool for at least two minutes after running.

Starting Engine

- Attach spark plug wire to spark plug. Make certain the metal cap on the end of the spark plug is fastened securely over the metal tip on the spark plug.
- Make sure safety switch wire is connected to engine and properly grounded.
- **Engines with choke lever:**
Move choke lever on engine to CHOKE position. (A warm engine may not require choking).
- **Engines with primer:**
Prime engine as instructed in separate engine manual.
- The throttle control is located on the engine. Move engine throttle control lever to FAST or ON position.
- Stand behind unit, grasp starter handle and pull rope out slowly until engine reaches start of compression cycle (rope will pull slightly harder at this point).
- Pull rope with a rapid, continuous, full arm stroke. Keep a firm grip on starter handle. Let rope rewind slowly.
- Repeat previous steps until engine fires. When engine starts, move choke control (if equipped) gradually to RUN position.



WARNING: Never run the engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.

Stopping Engine

- Move throttle control lever to STOP or OFF position.

- Disconnect spark plug wire from spark plug and ground against the engine.

To Empty Bag

- Unhook bag straps from the lower handle and unsnap bag clip from the top of lower handle. See Figure 9.
- Grasp bag handle with one hand and pull lock rod on mounting bracket with other hand toward engine to release.
- Lift bag off back of unit. Refer to Figure 6.
- Twist the two buttons on the back of the bag to unlock and empty contents. See Figure 9.
- Hold bag handle and bag clip while emptying the contents.
- Compress bag opening and fold inner flap over opening.
- Fold outer flap over inner flap and insert buttons on the bag through metal outlets.
- Twist the buttons to lock bag.

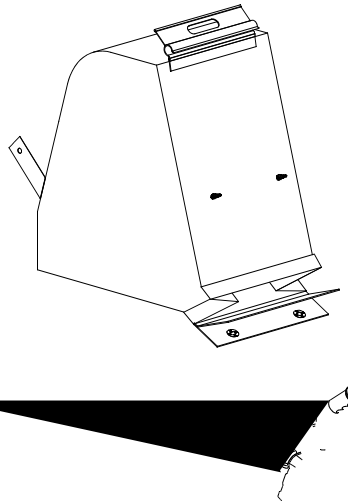


Figure 9

To Remove Blower Chute

- Grasp blower chute with one hand and pull lock rod on mounting bracket with other hand toward engine to release. Refer to Figure 7.
- Remove blower chute from rim of the discharge opening.

Using the Nozzle Vacuum

Place nozzle/hose vac lever in the top position on the nozzle to vacuum through nozzle. See Figure 10.

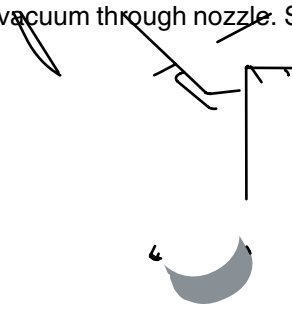


Figure 10

- The spring loaded pin must be in the first hole (closest to the end of the tube) of the hose adapter to operate the nozzle vac.
- Place both hands on top of the upper handle and fully lift the drive control against the upper handle to propel the unit over yard waste.
- Use the speed control to choose either the high or low speed. The speed control may be moved either while the unit is propelling or before engaging the wheels.

IMPORTANT: Move the speed control only when the engine is running. Changing the speed control setting with the engine off can damage the yard vacuum.

Yard waste such as leaves and pine needles can be vacuumed up through the nozzle for shredding. After material has been shredded by the flail blades on the impeller assembly, it will be discharged into catcher bag or through blower chute. Do not attempt to shred or chip any material other than vegetation found in a normal yard (i.e. branches, leaves, twigs, etc.) Avoid fibrous plants such as tomato vines until they are thoroughly dried out. Materials such as stalks or heavy branches up to 1-1/2" in diameter may be fed into the chipper chute.

WARNING: Do not attempt to shred, chip, or vacuum any material larger than specified on the machine or in this manual. Personal injury or damage to the machine could result.

IMPORTANT: The flail screen is located inside the housing in the discharge area. If the flail screen becomes clogged, remove and clean as instructed in the Maintenance section on page 12. For best performance, it is also important to keep the chipper blade sharp.

WARNING: Do not at any time make any adjustments without first stopping engine and disconnecting spark plug wire.

Using the Hose Assembly

- Place nozzle/hose vac handle in the bottom position on the nozzle to redirect vacuum to the hose assembly. See Figure 11.
- The spring loaded pin must be in the second hole of the hose adapter to operate the hose assembly.
- Unhook the hose from upper and lower hose handle brackets and grasp the hose handle to guide the hose while vacuuming yard waste such as leaves or pine needles in hard to reach places.

Figure 11

Nozzle Height Adjustment

The nozzle can be adjusted to any of five positions, ranging from 5/8" to 4-1/8" ground clearance. The nozzle height has to be adjusted according to yard conditions. Move the height adjustment levers forward or backward to adjust the nozzle upwards or downwards. Make sure both levers are in the same position. See Figure 12.

NOTE: In general, raise the nozzle height to vacuum a thick layer of leaves or to operate with the blower chute. Lower the nozzle height for smoother surfaces.

Figure 12

SECTION 5: MAINTAINING YOUR YARD VACUUM

Customer Responsibilities

MAINTENANCE SCHEDULE								SERVICE DATES				
		Before each Use	Every 25 hours	Every 50 hours	Every 100 hours	Once a season	Before storage					
PRODUCT	Lubricate Wheels					✓						
	Lubricate Nozzle Levers					✓						
	Lubricate Locking Rod					✓						
	Lubricate Nozzle/Hose Handle					✓						
	Check Chipper Blade		✓			✓						
ENGINE	Change Oil		✓				✓					
	Check Air Filter		✓			✓						
	Clean Engine	✓					✓					
	Check Spark Plug			✓		✓						



WARNING: Always stop engine and disconnect spark plug wire before cleaning, lubricating or doing any kind of maintenance on your machine.

Lubrication

Wheels: Lubricate each wheel shoulder screw once a season with light oil. Refer to Figure 17.

Nozzle height adjustment levers: Lubricate the pivot points of the nozzle height adjustment levers once a season with light oil. Refer to Figure 8.

Locking Rod: Lubricate the locking rod with light oil to ease the application of attaching on or removing bag or blower chute. Refer to Figure 7.

Nozzle/Hose Vac Lever: Lubricate the nozzle/hose vac lever on top of nozzle once a season with light oil. Refer to Figure 8.

Engine: Follow the separate engine manual packed with your unit for lubrication instructions.

Maintenance

Engine

Refer to the separate engine manual for all engine maintenance instructions.

- Check **engine oil level** before each use as instructed in the separate engine manual packed with your unit. Read and follow instructions carefully.
- Clean **air cleaner** every 25 hours under normal conditions or once a season. Clean every few hours under extremely dusty conditions. To service the air cleaner, refer to the separate engine manual packed with your unit.
- The **spark plug** should be cleaned and the gap reset once a season. Check engine manual for correct plug type and gap specifications.

SECTION 6: SERVICING YOUR YARD VACUUM

Drive Control Cable Adjustment

Adjust the drive control cable if the yard vacuum does not self propel with the drive control engaged, or if the unit hesitates while the engine maintains the same speed after approximately 20 hours of use.

To move the z-fitting of the drive control cable from its factory set position in the front hole of the drive control to the rear hole, proceed as follows:

- Remove the drive control by pushing the right side of the control out of the right hole in the upper handle. Pivot control down towards the lower handle and then straight up to remove it from the left hole in the upper handle. See Figure 13A.

Figure 13

- There is now sufficient slack in the drive control cable to grasp the z-fitting with your hand and move it from the front hole to the rear hole of the drive control. See Figure 13B.

IMPORTANT: Make sure to insert the z-fitting into the

- Remove self-tapping screw on right side of unit that attaches to the flail screen. See Figure 16.

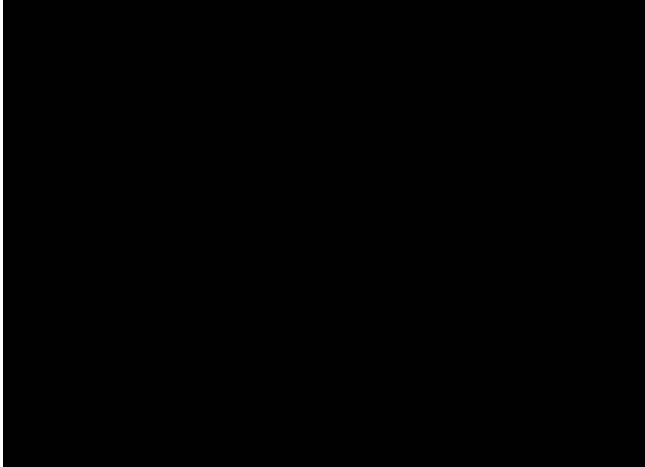


Figure 16

- Remove hex screw on top of rear housing near mounting bracket and the flange lock nut that secures flail screen. See Figure 14.
- Remove and clean the screen by scraping or washing with water. Reinstall the flail screen.

Sharpening Or Replacing Chipper Blade

NOTE: *When tipping the unit, empty the oil and fuel tank and keep engine spark plug side up.*

- **Disconnect and ground the spark plug wire to retaining post.**
- Remove hose assembly and bag assembly.
- Remove the three bolts holding the hose hanger bracket and chipper chute to the upper housing. See Figure 16.
- Remove the flange lock nuts, front wheels, and wave washers that attach to the pivot arm assemblies. See Figure 17.

Figure 17

- Remove the shoulder screws, thrust washers, and bell washers that go through the pivot arms to the front support brace. The front support brace and lock nut can be removed at this time as well.
- Remove the four screws on the upper housing that secure the nozzle cover. See Figure 18.

Figure 18

- Carefully tilt and support the unit up to provide access underneath to the nozzle mounting hardware and impeller. Remove the three shoulder bolts securing the black plastic nozzle to the lower housing. Refer to Figure 19.

Figure 19

- Tilt top of black plastic nozzle toward the engine to remove.

- Using a 3/16" allen wrench, remove the flat head cap screws that hold the chipper blade to the impeller. These screws are accessible through the opening created when the chipper chute was removed earlier. See Figure 20.

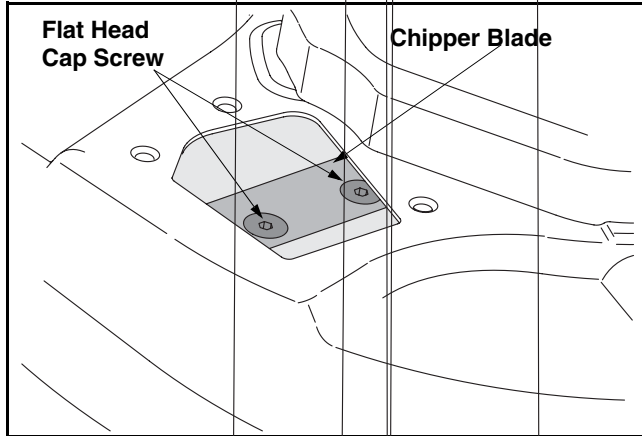


Figure 20

- The nuts on the flat head cap screws can be reached from underneath using a 1/2-inch socket, universal, and extension. See Figure 21.

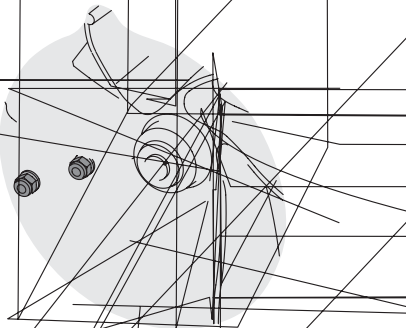


Figure 21

- Replace or sharpen chipper blade. The blade can be sharpened with a file or on a grinding wheel.
- When sharpening blade, protect hands by using gloves and follow the original angle of grind.

- Reassemble by performing the previous steps in the opposite order and manner of removal.
- Tighten blade screws to 210 - 250 in-lbs.

NOTE: Make certain chipper blade is reassembled with the sharp edge facing upward. See Figure 22.

**Impeller
Assembly**

Figure 22

Storing Your Yard Vacuum

- Clean the equipment thoroughly.
- Wipe equipment with a oiled rag to prevent rust.
- Refer to engine manual for correct engine storage instructions.
- Store unit in a clean, dry area. Do not store next to corrosive materials such as fertilizer.

SECTION 7: TROUBLESHOOTING

Problem	Cause	Remedy
Engine fails to start	<ol style="list-style-type: none"> 1. Spark plug wire disconnected. 2. Fuel tank empty or stale fuel. 3. Throttle control lever not in correct starting position. 4. Choke not in CHOKE position. (If Equipped) 5. Engine (if equipped with a primer) not primed properly. 6. Blocked fuel line. 7. Faulty spark plug. 	<ol style="list-style-type: none"> 1. Connect wire to spark plug. 2. Fill tank with clean, fresh gasoline. 3. Move throttle lever to FAST position. 4. Move choke to CHOKE position. 5. Prime engine. 6. Clean fuel line. 7. Clean, adjust gap, or replace.
Engine runs erratic	<ol style="list-style-type: none"> 1. Spark plug wire loose. 2. Unit running on CHOKE. (If Equipped) 3. Blocked fuel line or stale fuel. 4. Water or dirt in fuel system. 5. Dirty air cleaner. 6. Carburetor out of adjustment. 	<ol style="list-style-type: none"> 1. Connect and tighten spark plug wire. 2. Move choke lever to OFF position. 3. Clean fuel line; fill tank with clean, fresh gasoline. 4. Drain fuel tank. Refill with fresh fuel. 5. Clean or replace air cleaner. 6. See authorized service dealer.
Too much vibration	<ol style="list-style-type: none"> 1. Loose parts or damaged impeller. 	<ol style="list-style-type: none"> 1. See authorized service dealer.
Engine overheats	<ol style="list-style-type: none"> 1. Engine oil level low. 2. Dirty air cleaner. 3. Carburetor not adjusted properly. 	<ol style="list-style-type: none"> 1. Fill crankcase with proper oil. 2. Clean or replace air cleaner. 3. See authorized service dealer.
Occasional skip (hesitates) at high speed	<ol style="list-style-type: none"> 1. Spark plug gap too close. 	<ol style="list-style-type: none"> 1. Adjust gap to .030".
Unit does not discharge	<ol style="list-style-type: none"> 1. Discharge area clogged. 2. Foreign object lodged in impeller. 3. Low engine RPM 4. Vacuum bag is full. 	<ol style="list-style-type: none"> 1. Stop engine immediately and disconnect spark plug wire. Clean flail screen and inside of discharge opening. 2. Stop engine and disconnect spark plug wire. Remove lodged object. 3. Always run engine at full throttle. 4. Empty bag.
Rate of discharge slows considerably or composition of discharged material changes.	<ol style="list-style-type: none"> 1. Low engine RPM. 2. Chipper blade dull. 	<ol style="list-style-type: none"> 1. Always run engine at full throttle. 2. Replace chipper blade or see your authorized service dealer.
Unit fails to propel itself or slips when drive control is engaged	<ol style="list-style-type: none"> 1. Drive control cable out of adjustment. 2. Drive belt worn or damaged. 	<ol style="list-style-type: none"> 1. Follow adjustment procedure in Service and Adjustments section of manual. 2. See authorized service dealer.

NOTE: For repairs beyond the minor adjustments listed above, contact your nearest authorized service dealer.

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