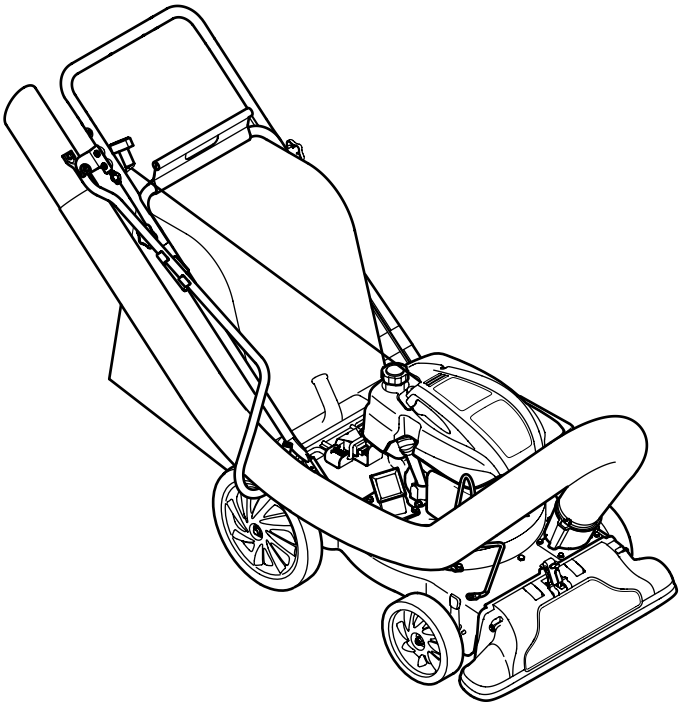
Safe Operation Practices • Set-Up • Operation • Maintenance • Service • Troubleshooting • Warranty

Cub Cadet.

OPERATOR'S MANUAL



Yard Vacuum/Chipper/Shredder with Vacuum/Hose
Model CSV 050

⚠ WARNING

READ AND FOLLOW ALL SAFETY RULES AND INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE THIS MACHINE.
FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY.

CUB CADET LLC, P.O. BOX 361131 CLEVELAND, OHIO 44136-0019

Printed In USA

Form No. 769-05182
(July 8, 2009)

To The Owner

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Thank You

Thank you for purchasing a Chipper/Shredder Vacuum manufactured by Cub Cadet LLC. It was carefully engineered to provide excellent performance when properly operated and maintained.

Please read this entire manual prior to operating the equipment. It instructs you how to safely and easily set up, operate and maintain your machine. Please be sure that you, and any other persons who will operate the machine, carefully follow the recommended safety practices at all times. Failure to do so could result in personal injury or property damage.

All information in this manual is relative to the most recent product information available at the time of printing. Review this manual frequently to familiarize yourself with the machine, its features and operation. Please be aware that this Operator's Manual may cover a range of product specifications for various models. Characteristics and features discussed and/or illustrated in this manual may not be applicable to all models. Cub Cadet LLC reserves the right to change product specifications, designs and equipment without notice and without incurring obligation.

If you have any problems or questions concerning the machine, phone your local Cub Cadet dealer or contact us directly. Cub Cadet's Customer Support telephone numbers, web site address and mailing address can be found on this page. We want to ensure your complete satisfaction at all times.

Throughout this manual, all references to *right* and *left* side of the machine are observed from the operating position.

Table of Contents

Record Product Information

Before setting up and operating your new equipment, please locate the model plate on the equipment and record the information in the provided area to the right. You can locate the model plate by standing at the operator's position and looking down at the rear of the deck. This information will be necessary, should you seek technical support via our web site or with your local Cub Cadet dealer.

MODEL NUMBER

SERIAL NUMBER

Customer Support

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

◊ Visit us on the web at www.cubcadet.com

◊ Locate your nearest Cub Cadet Dealer at (877) 282-8684

◊ Write us at Cub Cadet LLC • P.O. Box 361131 • Cleveland, OH • 44136-0019

Important Safe Operation Practices

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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!**

CALIFORNIA PROPOSITION 65

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 safe operation practices 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 fingers, hands, toes and feet and throwing debris. 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 of age to operate this machine. Children 16 and over should read and understand the instructions and safe operation practices in this manual and on the machine and be trained and supervised by an adult.
4. Never allow adults to operate this machine without proper instruction.
5. Keep bystanders, 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 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.

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.
2. Always wear safety glasses or safety goggles during operation and while performing an adjustment or repair, to protect your 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.

Safe Handling of Gasoline:

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.

1. Use only an approved gasoline container.
2. Never fill containers inside a vehicle or on a truck or trailer bed with a plastic liner. Always place containers on the ground away from your vehicle before filling.
3. When practical, remove gas-powered equipment from the truck or trailer and refuel it on the ground. If this is not possible, then refuel such equipment on a trailer with a portable container, rather than from a gasoline dispenser nozzle.
4. Keep the nozzle in contact with the rim of the fuel tank or container opening at all times until fueling is complete. Do not use a nozzle lock-open device.
5. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
6. Never fuel machine indoors.
7. Never remove gas cap or add fuel while the engine is hot or running. Allow engine to cool at least two minutes before refueling.
8. Never over fill fuel tank. Fill tank to no more than ½ inch below bottom of filler neck to allow space for fuel expansion.
9. Replace gasoline cap and tighten securely.
10. If gasoline is spilled, wipe it off the engine and equipment. Move unit to another area. Wait 5 minutes before starting the engine.
11. To reduce fire hazards, keep machine free of grass, leaves, or other debris build-up. Clean up oil or fuel spillage and remove any fuel soaked debris.
12. Never store the machine or fuel container inside where there is an open flame, spark or pilot light as on a water heater, space heater, furnace, clothes dryer or other gas appliances.

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. Vacuum bag must be kept closed at all times during operation.
9. Never operate without either the inlet nozzle or optional hose attachment (if applicable) 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 paved, gravel or non-level 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.
17. If situations occur which are not covered in this manual, use care and good judgement. Contact Customer Support for assistance and the name of the nearest service dealer.

Maintenance & 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. Allow machine to cool at least 5 minutes before storing.
9. Always refer to the operator's manual for proper instructions on off-season storage.
10. If the fuel tank has to be drained, do this outdoors.
11. Observe proper disposal laws and regulations for gas, oil, etc. to protect the environment.
12. According to the Consumer Products Safety Commission (CPSC) and the U.S. Environmental Protection Agency (EPA), this product has an *Average Useful Life* of seven (7) years, or 60 hours of operation. At the end of the *Average Useful Life* have the machine inspected annually by an authorized service dealer to ensure that all mechanical and safety systems are working properly and not worn excessively. Failure to do so can result in accidents, injuries or death.

Do not modify engine

To avoid serious injury or death, do not modify engine in any way. Tampering with the governor setting can lead to a runaway engine and cause it to operate at unsafe speeds. Never tamper with factory setting of engine governor.

Notice Regarding Emissions

Engines which are certified to comply with California and federal EPA emission regulations for SORE (Small Off Road Equipment) are certified to operate on regular unleaded gasoline, and may include the following emission control systems: Engine Modification (EM), Oxidizing Catalyst (OC), Secondary Air Injection (SAI) and Three Way Catalyst (TWC) if so equipped.

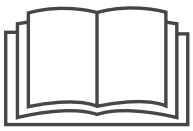
Spark Arrestor

WARNING: This machine is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brushcovered 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.

Safety Symbols

This page depicts and describes safety symbols that may appear on this product. Read, understand, and follow all instructions on the machine before attempting to assemble and operate.

Symbol	Description
	READ THE OPERATOR'S MANUAL(S) Read, understand, and follow all instructions in the manual(s) before attempting to assemble and operate
	WARNING— ROTATING BLADES Keep hands out of inlet and discharge openings while machine is running. There are rotating blades inside
	BYSTANDERS Keep bystanders, pets, and children at least 75 feet from the machine while it is in operation. Stop machine if anyone enters the area.
	WARNING— THROWN OBJECTS This machine may pick up and throw and objects which can ricochet.
	EYE PROTECTION Always wear safety glasses or safety goggles when operating this machine.
	WARNING— GASOLINE IS FLAMMABLE Allow the engine to cool at least two minutes before refueling.
	WARNING— CARBON MONOXIDE Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.

WARNING: Your Responsibility—Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.

SAVE THESE INSTRUCTIONS!

Assembly & Set-Up

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Contents of Carton

- One Chipper/Shredder Vacuum
- One Upper and Lower Handle
- One Bottle of Oil
- One Operator's Manual
- One Hose Assembly
- One Bag
- One Safety Glasses

Assembly

NOTE: This unit is shipped without gasoline or oil in the engine. Fill up gasoline and oil as instructed in the accompanying engine manual BEFORE operating your chipper shredder vacuum.

Handle

1. Remove the hairpin clips from the handle brackets and the carriage screws and wing nuts from the lower handle.
   a. Place the bottom holes in lower handle over the pins on the handle brackets and secure with hairpin clips. See Fig. 3-1.

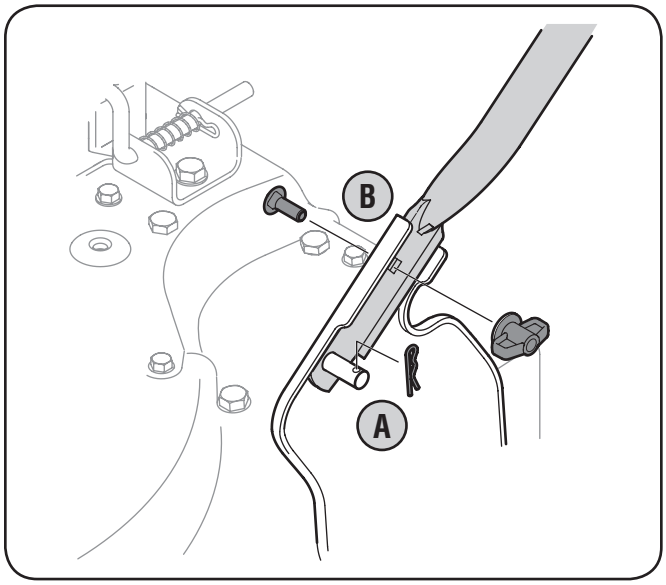


Figure 3-1

   b. Insert carriage screws through upper hole in lower handle from the inside and secure with wing nuts. See Fig. 3-1.

2. Unfold the upper handle until it aligns with lower handle. Make sure the rope guide is on the right side of upper handle. See Fig. 3-2A.

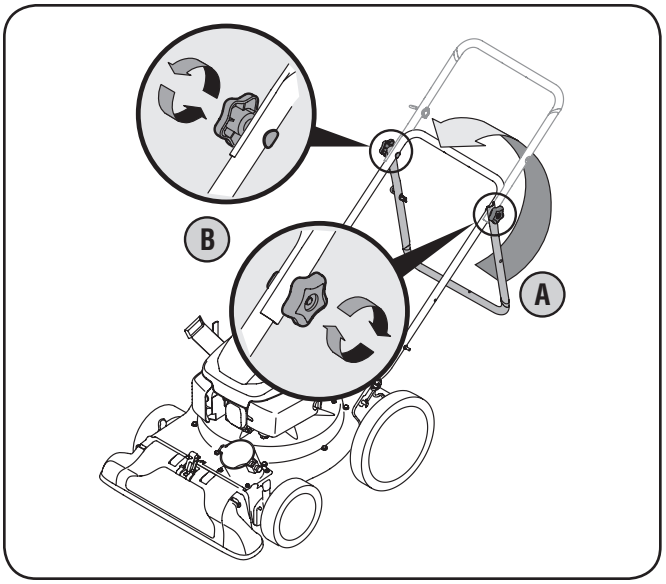


Figure 3-2

3. Secure the two handles by tightening the star knobs (carriage bolts must be seated properly into the handle). See Fig. 3-2B.

4. Loosen the wing nut that secures the rope guide to the right side of upper handle.
    a. Slowly pull starter rope out of engine.
    b. Slip the starter rope into the rope guide. Tighten the wing nut. See Fig. 3-3.

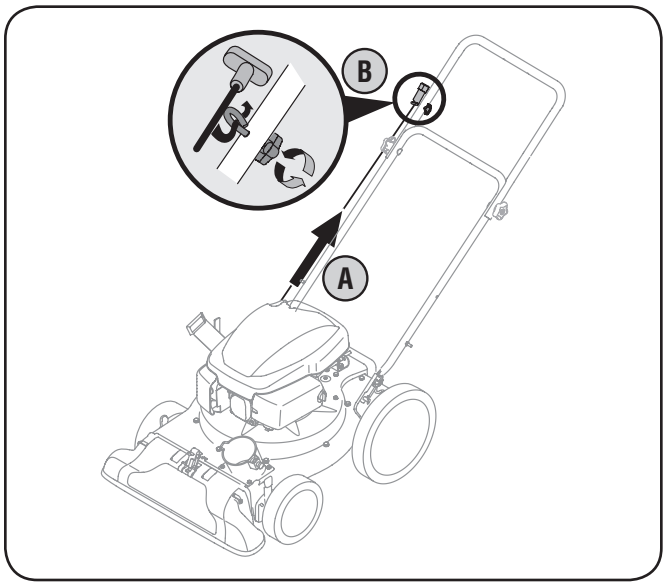


Figure 3-3

Hose Assembly

1. Slide hose adapter of hose assembly into the base adapter located on the left front of the Chipper shredder Vacuum. See Fig. 3-4A.

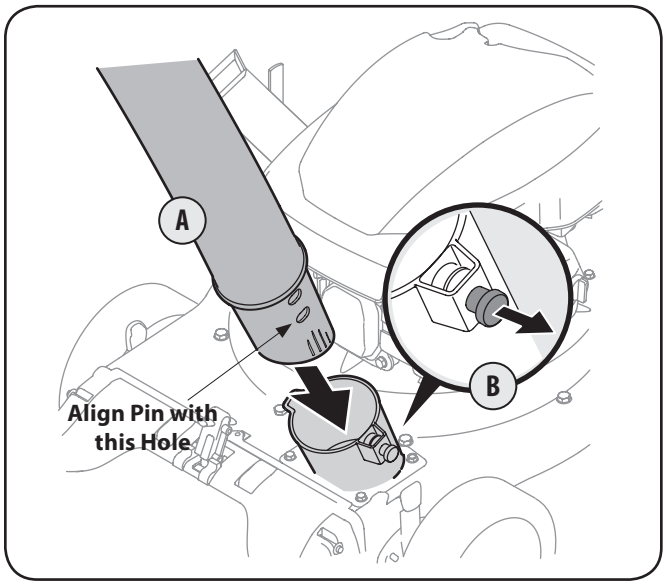


Figure 3-4

2. 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. See Fig. 3-4B.
3. Release the pin to lock the hose in place.
4. Lay hose tubing in curved end of hose handle next to chipper chute and into hose cradle. See Fig. 3-5A & B.

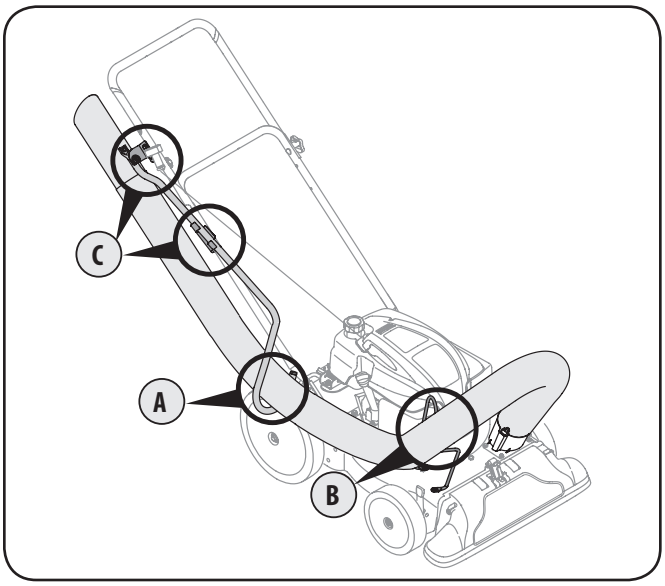


Figure 3-5

5. Snap the hose handle first into the upper hose handle bracket and then into the lower hose handle bracket. See Fig. 3-5C.

Bag

1. 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 Fig. 3-6.

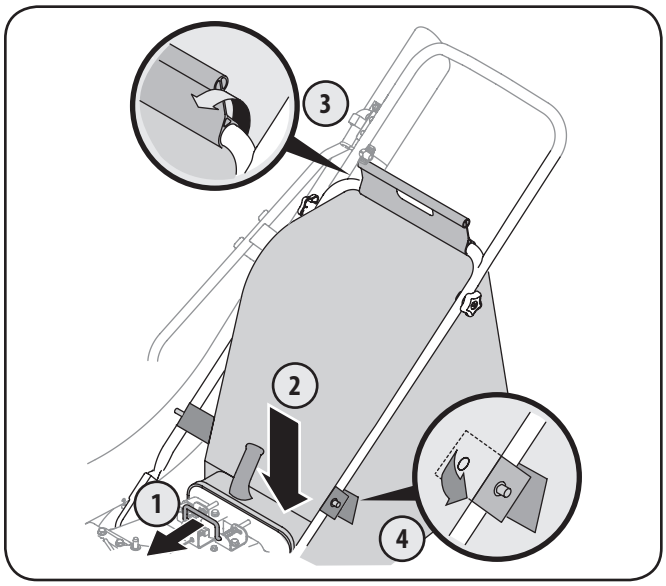


Figure 3-6

2. Slip bag over the rim of the discharge opening and release locking rod to secure bag in place.
3. Snap bag clip to the top of the lower handle.
4. Place the lower straps on the bag over the top of lower handle, hooking them on the studs. See Fig. 3-6.

   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.

Adjustments

Nozzle Height

The nozzle can be adjusted to any six positions, ranging from 5/8" to 4 1/8" ground clearance. The nozzle height has to be adjusted according to chipper shredder conditions.

1. Depress nozzle height adjustment lever towards wheel. See Fig. 3-7.

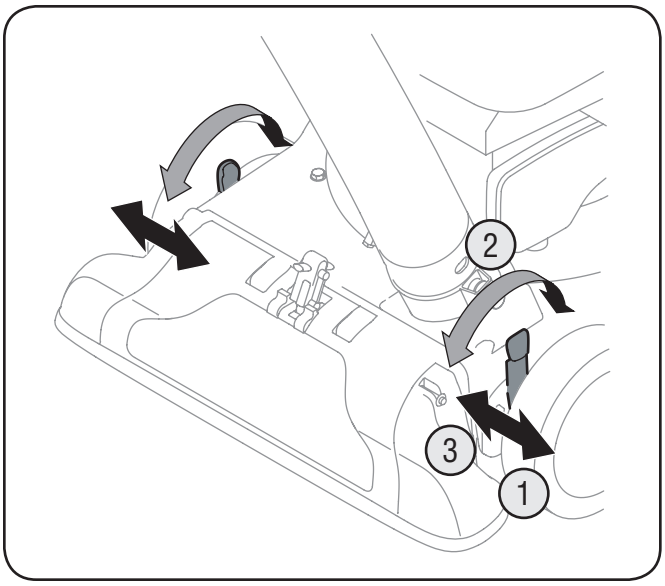


Figure 3-7

2. Move the height adjustment lever forward or backward to adjust the nozzle upwards or downwards. Make sure both levers are in the same position.
3. Release lever towards deck. See Fig. 3-7.

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

Set-Up

Gas and Oil Fill-Up

Refer to the Engine Operation section in this manual for additional engine information.

1. Add oil provided before starting unit for the first time out of the box.
2. Service the engine with gasoline as instructed in the Engine Operation section of this manual.

WARNING: Use extreme care when handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Never fuel the machine indoors or while the engine is hot or running. Extinguish cigarettes, cigars, pipes and other sources of ignition.

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.

Controls and Features

4

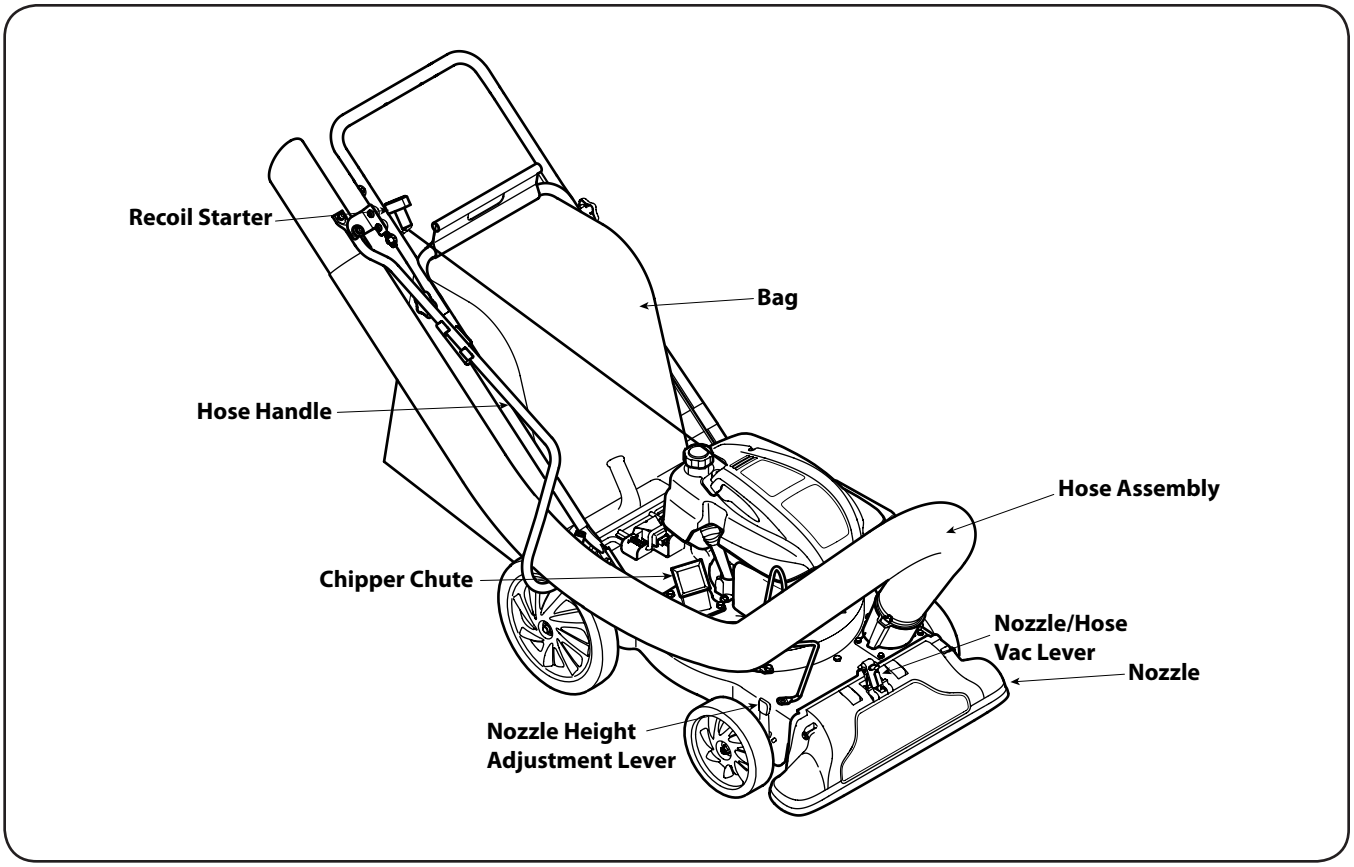


Figure 4-1

WARNING: The operation of any chipper shredder 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 while operating or while performing any adjustments or repairs.

Chipper Chute

Allows twigs and small branches up to 1-1/2" in diameter to be fed into the impeller for chipping. See Fig. 4-1.

Nozzle Height Adjustment Lever

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

Nozzle

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

Hose Assembly

Used as an alternative to the nozzle to vacuum yard waste such as leaves or pine needles in hard to reach places. See Fig. 4-1.

Nozzle/ Hose Vac Lever

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

Hose Handle

Used to guide hose assembly when vacuuming.

Engine Switch

The engine switch is located on the engine. Turn it on when starting the engine and use it to turn off the engine.

Choke

The choke is located on the engine and when activated, closes the choke plate on the carburetor and aids in starting the engine.

Recoil Starter

The recoil starter is attached to the right upper handle. Stand behind unit and pull the recoil starter to start engine.

Operation

5

Starting Engine

1. Pull out the choke knob located on the engine. See Fig. 5-1 inset.

   NOTE: Use of the choke may not be necessary if the engine is warm or the air temperature is high.

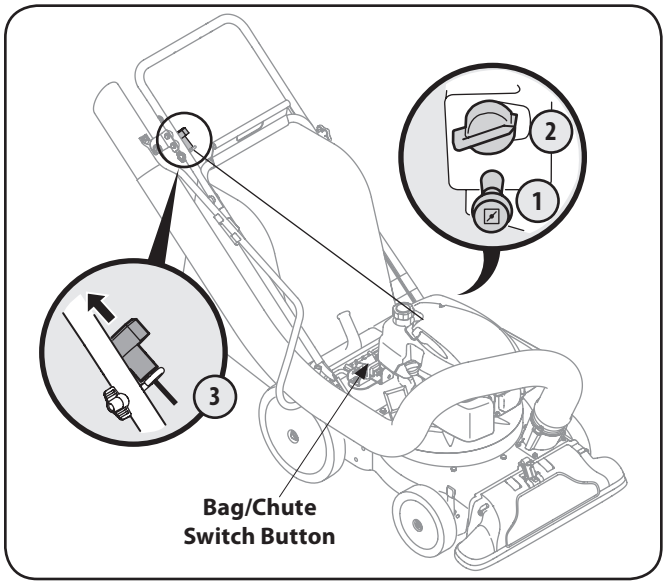


Figure 5-1

2. Turn the engine switch to on. See Fig. 5-1 inset.
3. Make certain the bag/chute switch button is fully depressed. Pull the starter grip lightly until resistance is felt, then pull rapidly to overcome compression, prevent kickback and start the engine. See Fig. 5-1 . If engine does not start after ten seconds of repeated pulls, wait a few minutes and repeat.

   NOTE: Do not allow the starter grip to snap back against the rope guide. Return it gently to prevent damage to the starter.

   NOTE: The unit will not start if the bag/chute switch is not fully depressed.
4. When the engine warms up, push in the choke knob.

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

Stopping Engine

1. Turn off the engine switch.
2. Disconnect spark plug wire and ground against the engine to prevent unintended starting.

To Empty Bag

1. Unhook bag straps from the lower handle.
2. Unsnap bag clip from the top of lower handle. See Fig. 5-2.

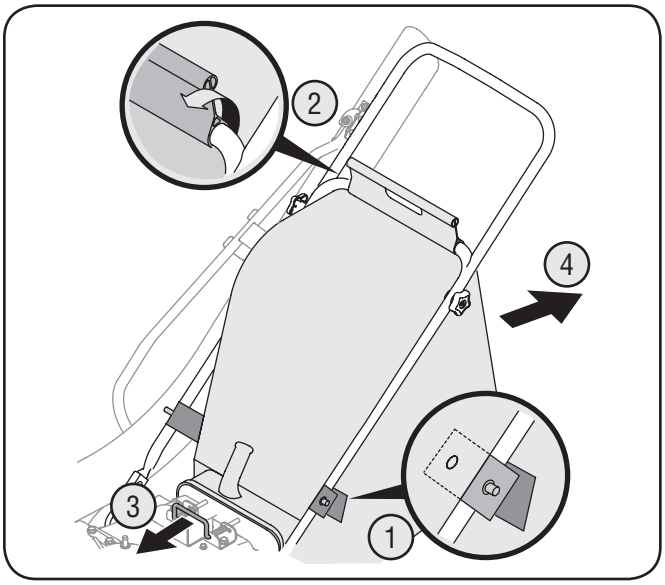


Figure 5-2

3. Grasp bag handle with one hand and pull lock rod on mounting bracket with other hand toward engine to release.
4. Lift bag off back of unit.
5. Twist the two buttons on the back of the bag to unlock and empty contents. See Fig. 5-3. Hold bag handle and bag clip while emptying the contents.
6. Compress bag opening and fold inner flap over opening.
7. Fold outer flap over inner flap and insert buttons on the bag through metal outlets. See Fig. 5-3.

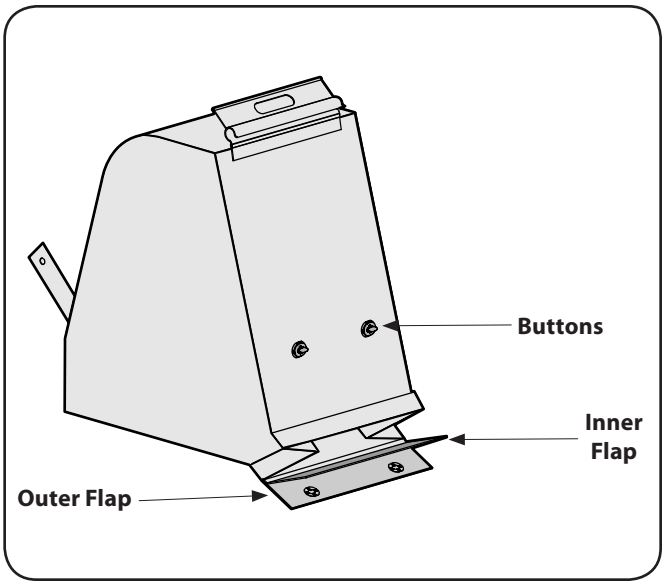


Figure 5-3

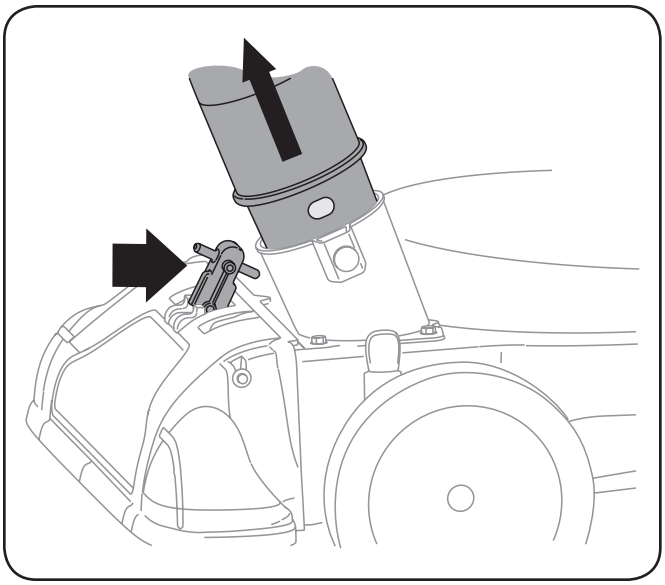


Figure 5-4

8. Twist the buttons to lock bag. Place bag back onto unit as instructed in Assembly & Set-Up.

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

Using The Nozzle 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. 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.

1. Place nozzle/hose vac lever in the top position on the nozzle to vacuum through nozzle. See Fig. 5-4.
2. 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. See Fig. 5-4.
3. Place both hands on top of upper handle to push unit over yard waste.

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 Maintenance & Adjustments. For best performance, it is also important to keep the chipper blade sharp.

Using The Hose Assembly

1. Place nozzle/hose vac lever in the bottom position on the nozzle to redirect vacuum to the hose assembly. See Fig. 5-5A.

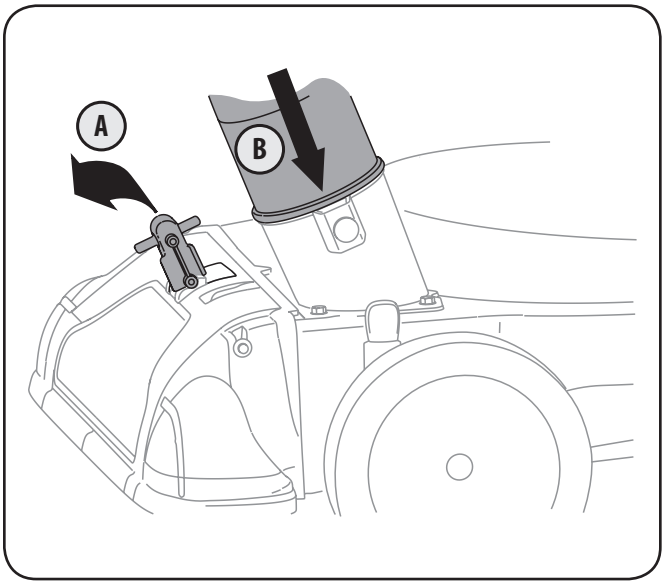


Figure 5-5

2. The spring loaded pin must be in the second hole of the hose adapter to operate the hose assembly. See Fig. 5-5B.
3. 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.

Maintenance & Adjustments

6

Maintenance

General Recommendations

- Always observe safety rules when performing any maintenance.
- The warranty on this chipper/shredder vacuum does not cover items that have been subjected to operator abuse or negligence. To receive full value from warranty, operator must maintain the equipment as instructed here.
- Changing of engine-governed speed will void engine warranty.
- All adjustments should be checked at least once each season.
- Periodically check all fasteners and make sure these are tight.

WARNING: Always stop engine, disconnect spark plug, and ground against engine before performing any type of maintenance on your machine.

Lubrication

1. Lubricate each wheel shoulder screw (rear wheel) and pivot arm axle (front wheel) once a season with light oil.
2. Lubricate the pivot points of the nozzle height adjustment levers once a season with light oil.
3. Lubricate the locking rod with light oil to ease the application of attaching on or removing bag.
4. Lubricate the nozzle/hose vac lever on top of the nozzle once a season with light oil. See Fig. 6-1.

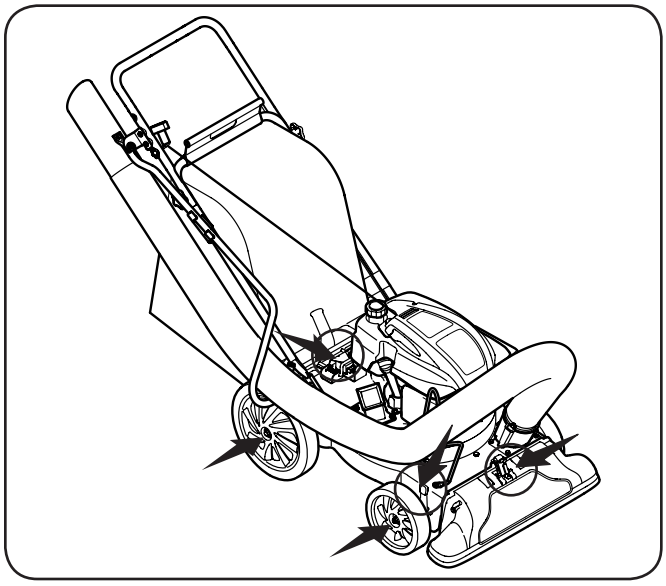


Figure 6-1

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

Equipment Care

- Clean the chipper/shredder vacuum thoroughly after each use.
- Wash bag periodically with water. Allow to dry thoroughly in shade.
- If the flail screen becomes clogged, remove and clean as instructed below.

  NOTE: Cleaning with a forceful spray of water is not recommended as it could contaminate the fuel system.

Engine Care

NOTE: Refer to the engine operation and maintenance sections in this manual for detailed instructions.

- Maintain oil level.
- Service air cleaner every 100 hours or once a season under normal conditions. Clean more frequently under extremely dusty conditions.
- Clean spark plug and reset the gap every 25 hours or once a season.
- Clean engine regularly with a cloth or brush. Keep the area around the top of the engine clean to permit proper air circulation. Remove all grass, dirt, and combustible debris from muffler area.

WARNING: Before performing any type of maintenance on the machine, wait for all parts to stop moving and disconnect the spark plug wire. Failure to follow this instruction could result in personal injury or property damage.

Removing the Flail Screen

If the discharge area becomes clogged, remove the flail screen and clean area as follows:

1. Stop the engine. Make certain the chipper/shredder vacuum has come to a complete stop.
2. Before unclogging the discharge chute, disconnect and ground the spark plug wire to retaining post.
3. Remove the vacuum bag from the unit as instructed in the OPERATION section to obtain access to flail screen.
4. Remove self tapping screw on right side of unit that attaches to the flail screen. See Fig. 6-2.

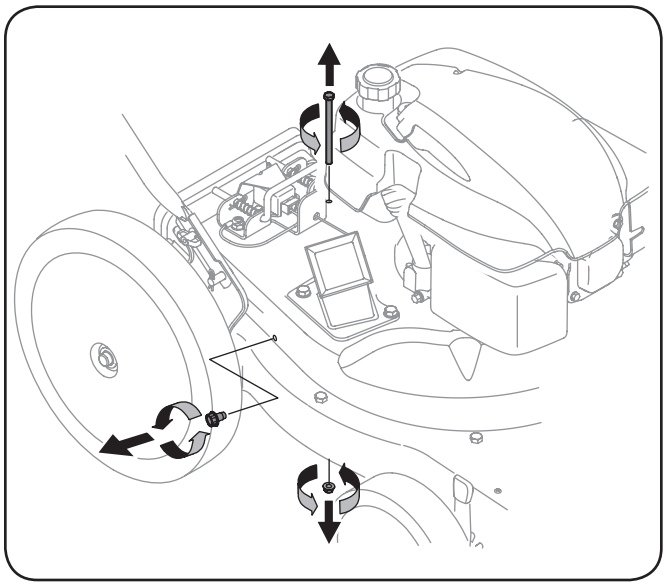


Figure 6-2

5. Remove hex screw on top of rear housing near mounting bracket and the flange lock nut that secures flail screen. See Fig. 6-2.
6. Remove and clean the screen by scraping or washing with water. See Fig. 6-3.

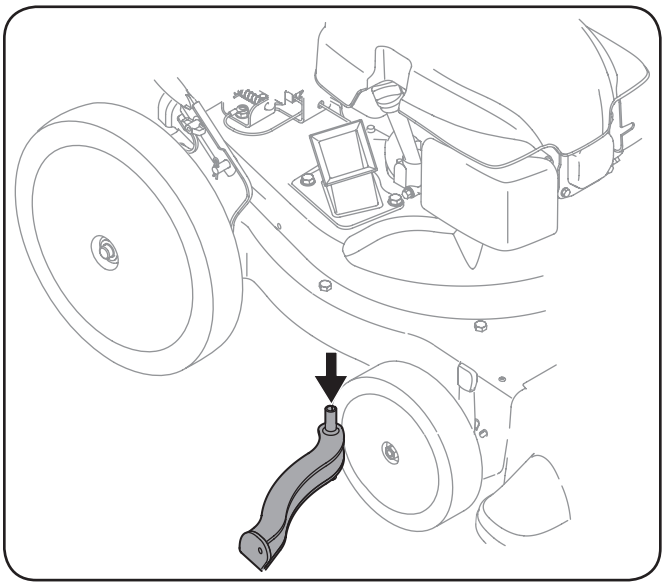


Figure 6-3

7. Reinstall the screen.

Blade Care

WARNING: Before performing any type of maintenance on the machine, wait for all parts to stop moving and disconnect the spark plug wire. Failure to follow this instruction could result in personal injury or property damage.

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

1. Disconnect and ground the spark plug wire to retaining post.
2. Remove bag assembly or blower chute.
3. Remove the three hex cap screws holding the chipper chute to the upper housing. See Fig. 7-1.

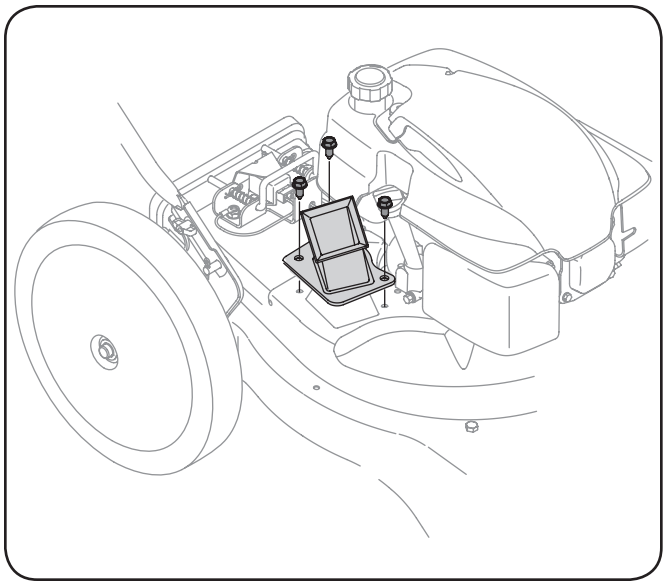


Figure 7-1

4. Remove the flange lock nuts, front wheels, and wave washers that attach to the pivot arm assemblies. See Fig. 7-2.

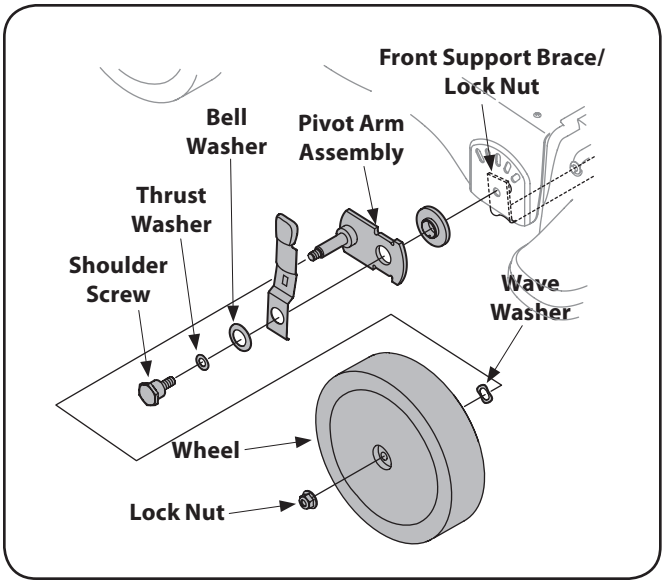


Figure 7-2

5. 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.
6. Remove the four screws on the upper housing that secure the nozzle cover. See Fig. 7-3.

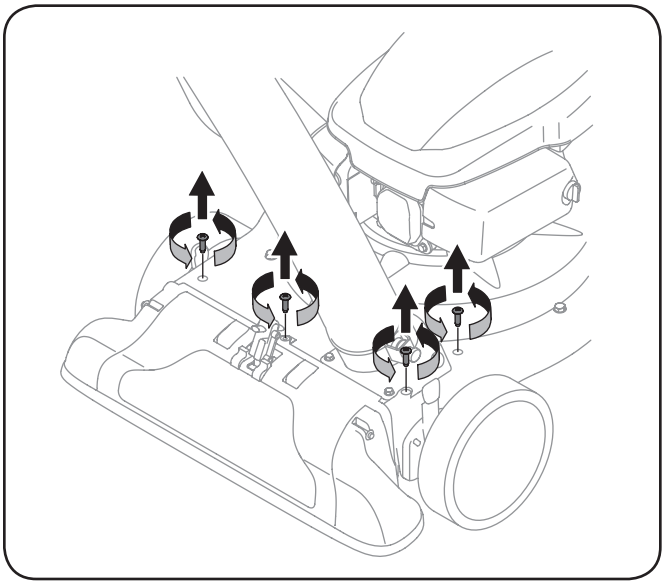


Figure 7-3

7. 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 lower flail housing to the lower housing. Refer to Fig. 7-4.

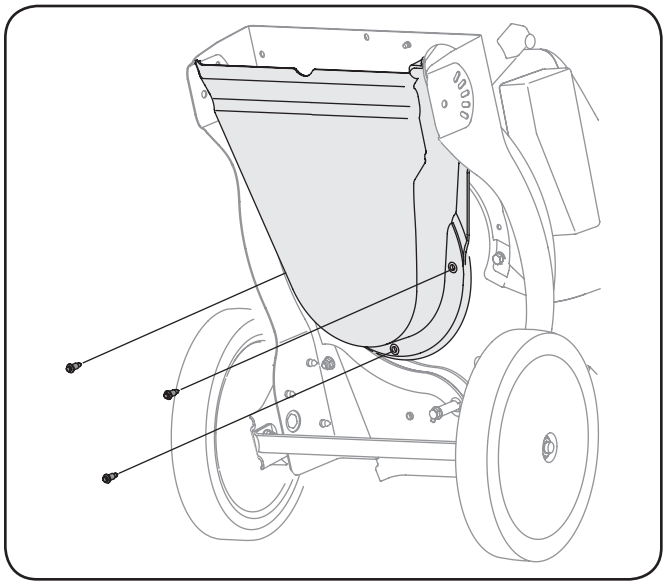


Figure 7-4

8. Tilt top of black plastic lower flail housing toward the engine to remove.
9. 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 Fig. 7-5.

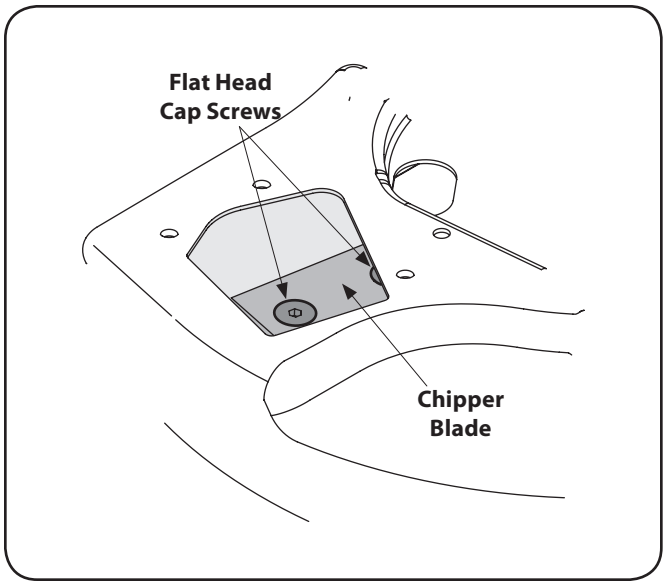


Figure 7-5

10. The nuts on the flat head cap screws can be reached from underneath using a 1/2-inch socket, universal, and extension. See Fig. 7-6.

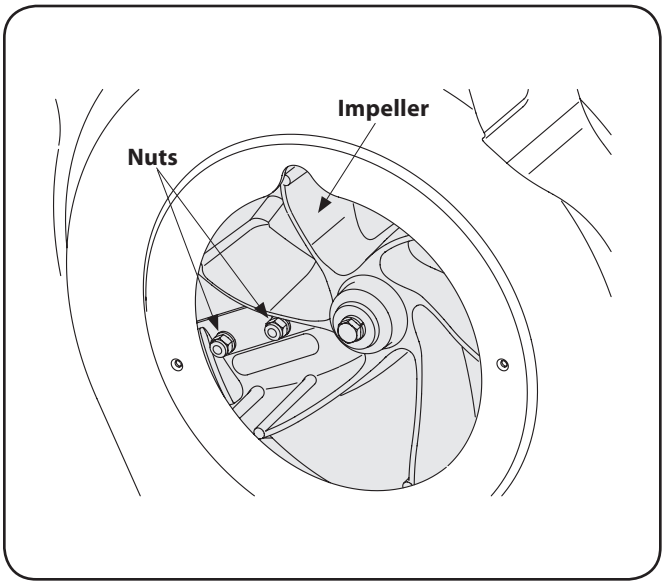


Figure 7-6

11. Replace or sharpen chipper blade. The blade can be sharpened with a file or on a grinding wheel.

WARNING: The chipper blade is sharp. When sharpening blade, wear leather work gloves to protect your hands and follow the original angle of grind.

12. Reassemble by performing the previous steps in the opposite order and manner of removal.

NOTE: Tighten blade screws to 210 - 250 in-lbs. Make certain chipper blade is reassembled with the sharp edge facing upward.

Off-Season Storage

- When storing the chipper/shredder vacuum in an unventilated or metal storage shed, care should be taken to rustproof the non-painted surfaces. Using a light oil or silicone, coat the equipment, especially any springs, bearings, and cables.
- Remove all dirt from exterior of engine and equipment.
- Follow lubrication recommendations.
- Refer to engine maintenance section for correct engine storage instructions.
- Store equipment in a clean, dry area. Do not store in an area where equipment is present that may use a pilot light or has a component that can create a spark.

Troubleshooting

8

Problem	Cause	Remedy
Engine Fails to start	1. Throttle lever (if equipped) not in correct starting position. 2. Engine switch (if equipped) in OFF position. 3. Spark plug wire disconnected. 4. Choke not in CHOKE position (if equipped). 5. Fuel tank empty or stale fuel. 6. Engine not primed (if equipped). 7. Faulty spark plug. 8. Bag/chute switch button is not fully depressed.	1. Move throttle lever to FAST or START position. 2. Move engine switch to ON position. 3. Connect wire to spark plug. 4. Move choke lever to CHOKE position. 5. Fill tank with clean, fresh gasoline. 6. Prime engine as instructed in Engine Manual. 7. Clean, adjust gap, or replace. 8. Make certain the bag is correctly secured, and the bag/chute switch button is fully depressed.
Engine runs erratic	1. Spark plug boot loose. 2. Unit running on CHOKE (if equipped). 3. Blocked fuel line or stale fuel. 4. Low engine RPM. 5. Water or dirt in fuel system. 6. Dirty air cleaner. 7. Carburetor out of adjustment.	1. Connect and tighten spark plug boot. 2. Move choke lever to OFF position. 3. Clean fuel line; fill tank with clean, fresh gasoline. 4. Always run engine at full throttle (if equipped). 5. Drain fuel tank. Refill with fresh fuel. 6. Refer to engine manual. 7. See authorized service dealer.
Engine overheats	1. Engine oil level low. 2. Dirty air cleaner.	1. Fill crankcase with proper oil. 2. Refer to engine manual.
Occasional skips (hesitates) at high speed	1. Spark plug gap too close. 2. Carburetor idle mixture adjustment improperly set.	1. Remove spark plug and adjust gap to .030". 2. See authorized service dealer.
Excessive Vibration	1. Loose parts or damaged impeller.	2. See authorized service dealer.
Unit does not discharge	1. Discharge area clogged. 2. Foreign object lodged in impeller. 3. Low engine RPM. 4. Vacuum bag is full.	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	1. Low engine RPM. 2. Chipper blade dull.	1. Always run engine at full throttle. 2. Replace chipper blade or see your authorized service dealer.

Engine Operation

9

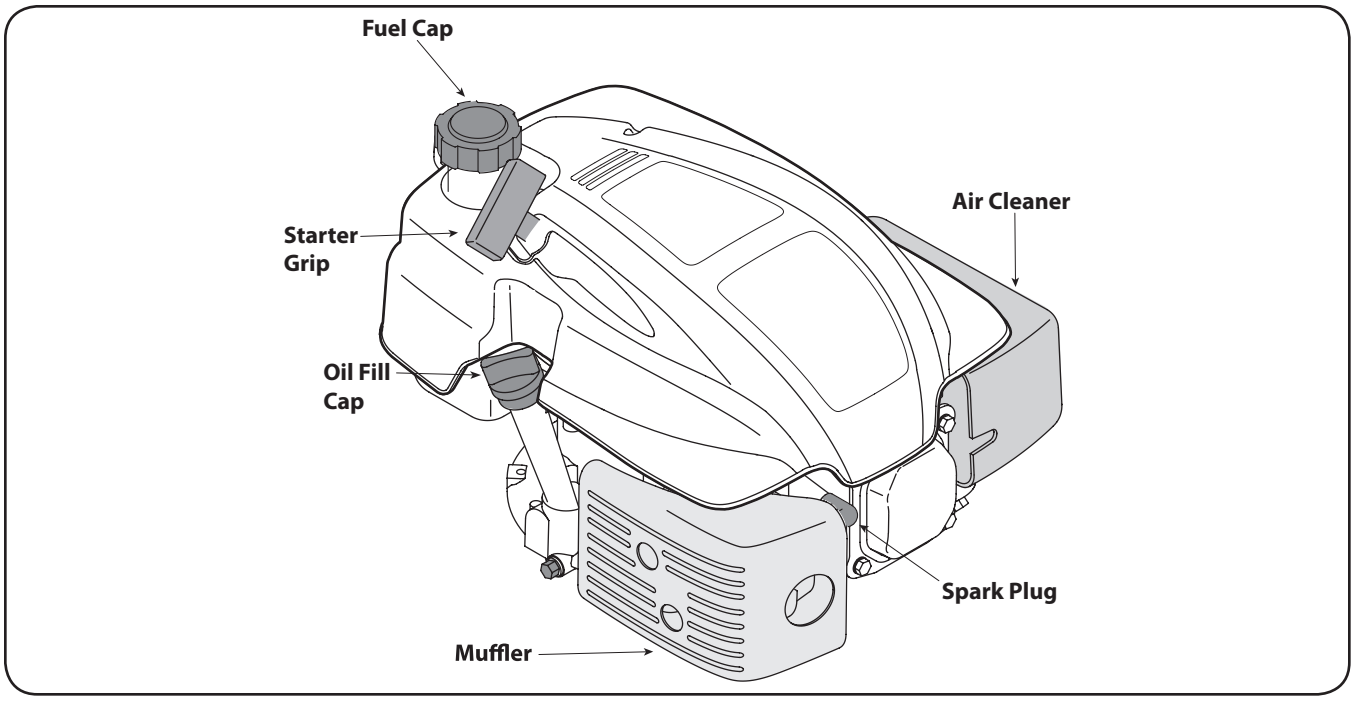


Figure 9-1

Pre-Operation Check

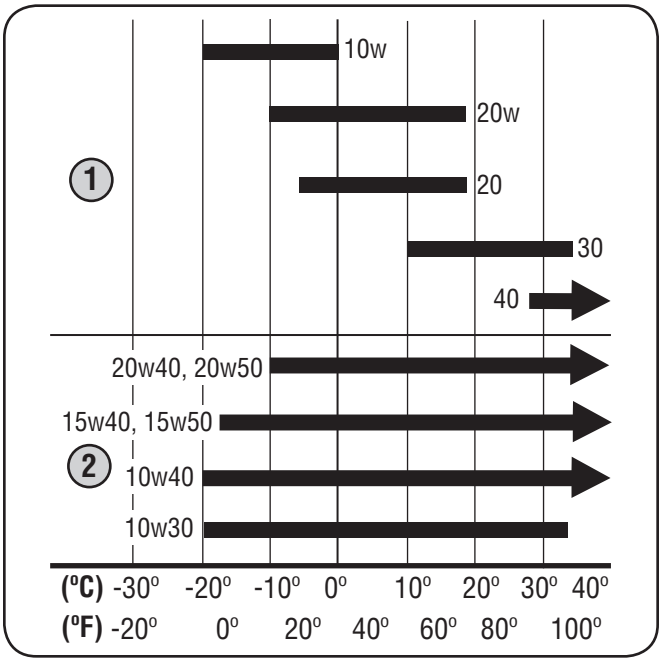
Oil Recommendations

NOTE: This engine is shipped without gasoline or oil in the engine. Running the engine with insufficient oil can cause serious engine damage and void the engine warranty.

- Before starting engine, fill with oil. Do not over-fill. Oil capacity is about 20 oz.

Use a 4-stroke, or an equivalent high detergent, premium quality motor oil certified to meet or exceed U.S. automobile manufacturer's requirements for service classification SG/SF. Motor oils classified SG/SF will show this designation on the container.

SAE 10W-30 is recommended for general, all temperature use. If single viscosity oil is used, select the appropriate viscosity for the average temperature in your area from the chart to the right.



Ambient Temperature

1. Single Viscosity
2. Multi Viscosity

NOTE: Using non detergent oil or 2-stroke engine oil could shorten the engine's service life.

Check Oil Level

NOTE: Be sure to check the engine on a level surface with the engine stopped.

1. Remove the oil filler cap and wipe the dipstick clean. See Fig. 9-2.

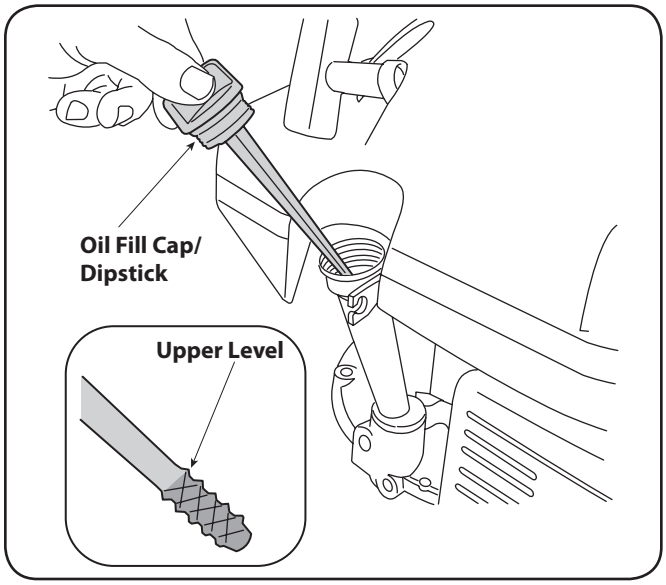


Figure 9-2

2. Insert the dipstick into the oil filler neck, but do not screw it in. Refer to Fig. 10-1B on page 21.
3. If the level is low, slowly add oil to the upper limit on the dipstick. See Fig. 9-2 inset.
4. Tighten dipstick firmly before starting engine.

   NOTE: Do not overfill. Overfilling with oil may cause smoking, hard starting, spark plug fouling, or oil saturation of air cleaner.

Fuel Recommendations

Use automotive gasoline (unleaded or low leaded to minimize combustion chamber deposits) with a minimum of 87 octane. Gasoline with up to 10% ethanol or 15% MTBE (Methyl Tertiary Butyl Ether) can be used. Never use an oil/gasoline mixture, dirty gasoline, or gasoline over 30 days old. Avoid getting dirt, dust, or water in the fuel tank. **DO NOT USE E85 GASOLINE**.

WARNING: Gasoline is extremely flammable and is explosive under certain conditions. Refuel in a well-ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the area where the engine is refueled or where gasoline is stored. Avoid repeated or prolonged contact with skin or breathing of vapor.

WARNING: Do not overfill the fuel tank (there should be no fuel in the filler neck). After refueling, make sure the tank cap is closed properly and securely. Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.

Check Fuel Level

1. Clean around fuel fill before removing cap to fuel.
2. Fill tank to approximately 1-inch below lowest portion of neck to allow for fuel expansion. Be careful not to overfill.

   NOTE: Before refueling, allow engine to cool 2 minutes.

Starting The Engine

WARNING: Always keep hands and feet clear of equipment moving parts. Do not use a pressurized starting fluid. Vapors are flammable.

1. Pull out the choke knob located on the engine. See Figure 9-3 inset.

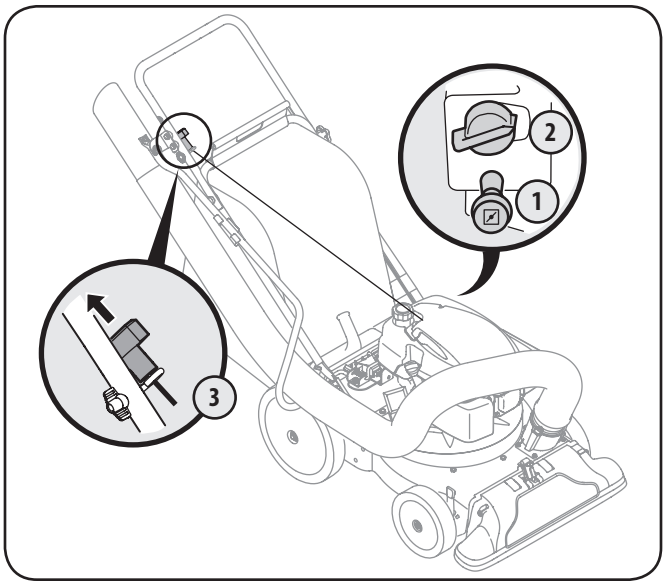


Figure 9-3

   NOTE: Use of the choke may not be necessary if the engine is warm or the air temperature is high.
2. Turn engine switch to on.
3. Pull the starter grip lightly until resistance is felt, then pull rapidly to overcome compression, prevent kickback and start engine. See Figure 9-3. If engine does not start after ten seconds of repeated pulls, wait a few minutes and repeat.

   IMPORTANT: Do not allow the starter grip to snap back against the rope guide. Return it gently to prevent damage to the starter.
4. When engine warms up, push in the choke knob.

Stopping The Engine

1. Turn off the engine switch.

Engine Maintenance

10

WARNING: Shut off the engine before performing any maintenance. To prevent accidental start-up, disconnect the spark plug boot.

IMPORTANT: If engine must be tipped to transport equipment or to inspect or remove grass, keep spark plug side of engine up. Transporting or tipping engine spark plug down may cause smoking, hard starting, spark plug fouling, or oil saturation of air cleaner.

Periodic inspection and adjustment of the engine is essential if high level performance is to be maintained. Regular maintenance will also ensure a long service life. The required service intervals and the kind of maintenance to be performed are described in the table below. Follow the hourly or calendar intervals, whichever occur first. More frequent service is required when operating in adverse conditions.

WARNING: If the engine has been running, the muffler will be very hot. Be careful not to touch the muffler.

Maintenance Schedule

	First 5 Hours	Each Use or Every 5 Hrs.	Every Season or 25 Hours	Every Season or 50 Hours	Every Season or 100 Hours	Service Dates
Check Engine Oil Level		✓				
Change Engine Oil ††	✓			✓		
Check Air Cleaner		✓				
Service Air Cleaner †					✓	
Check Spark Plug			✓			
Replace Spark Plug					✓	
Clean Engine Shroud		✓				
Clean around muffler		✓				
Replace Fuel Filter					✓	

† Service more frequently when used in dusty areas.

†† Every season or 25 hours if operating under heavy load or high ambient temperature.

Oil Service

- Check oil level regularly.
- Be sure correct oil level is maintained. Check every five hours or daily before starting engine. See oil checking procedure in the Operation section.

Oil Change

IMPORTANT: Be sure to check engine on a level surface with the engine stopped. Drain the oil while the engine is still warm to assure rapid and complete draining.

1. Remove all fuel from tank by running engine until it stops from lack of fuel.
2. Remove vacuum hose assembly.
3. Remove oil fill cap. See Fig. 10-1A.

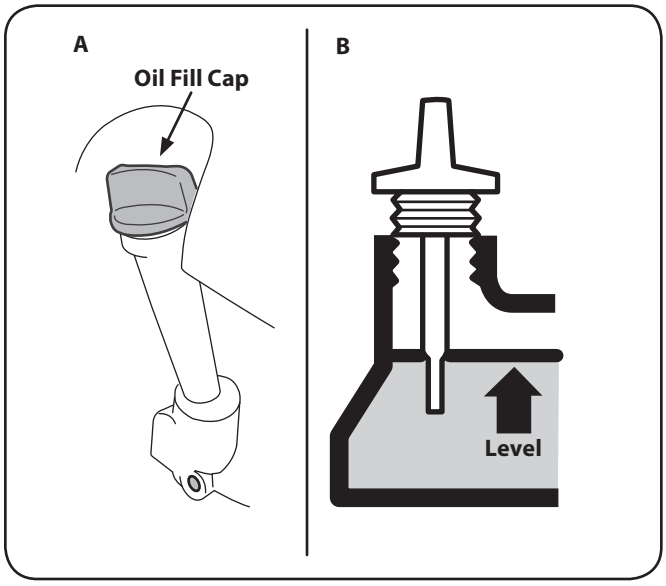


Figure 10-1

4. Tip unit to the right and allow oil to drain out of oil filler tube into a suitable pan or container.

WARNING: Before tipping engine or equipment to drain oil, drain fuel from tank by running engine until fuel tank is empty.

5. Refill with the recommended oil (see Operation section) and check the oil level. See Fig. 10-1B.
6. Reinstall the oil fill cap securely.
7. Reinstall vacuum hose assembly.

IMPORTANT: Used motor oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

NOTE: Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you take it in a sealed container to your local service station for reclamation. Do not throw it in the trash or pour it on the ground.

Air Cleaner Service

Paper filters cannot be cleaned and must be replaced once a year or every 100 operating hours; more often if used in extremely dusty conditions.

WARNING: Never use gasoline or low flash point solvents for cleaning the air cleaner element. A fire or explosion could result.

IMPORTANT: Never run the engine without the air cleaner. Rapid engine wear will result.

1. Remove the wing bolt and the air cleaner cover. Remove the elements and separate them. See Fig. 10-2. Replace paper element when dirty or damaged. Clean foam element or replace when damaged.

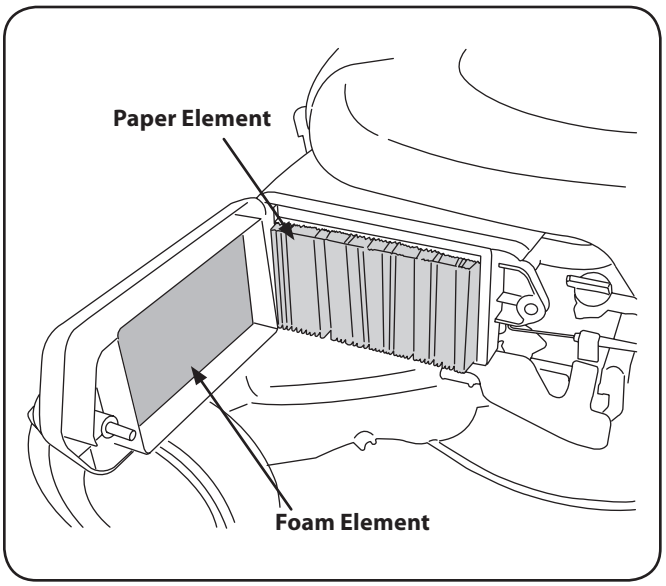


Figure 10-2

2. To clean foam element, separate it from the paper element and wash in liquid detergent and water. Allow to dry thoroughly before using. Do not oil the foam element.

Spark Plug Service

WARNING: DO NOT check for spark with spark plug removed. DO NOT crank engine with spark plug removed.

To ensure proper engine operation, the spark plug must be properly gapped and free of deposits.

1. Remove the spark plug boot and use a spark plug wrench to remove the plug. See Fig. 10-3.

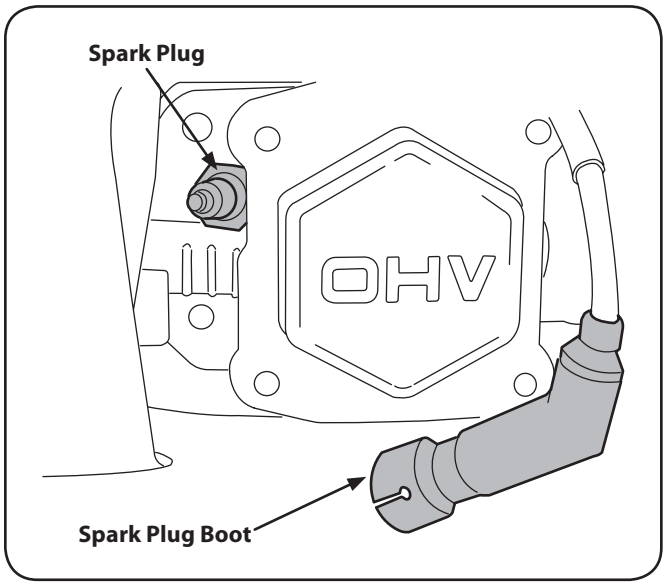


Figure 10-3

WARNING: If the engine has been running, the muffler will be very hot. Be careful not to touch the muffler.

2. Visually inspect the spark plug. Discard the spark plug if there is apparent wear, or if the insulator is cracked or chipped. Clean the spark plug with a wire brush if it is to be reused.

3. Measure the plug gap with a feeler gauge. Correct as necessary by bending side electrode. See Fig. 10-4. The gap should be set to 0.030 in.

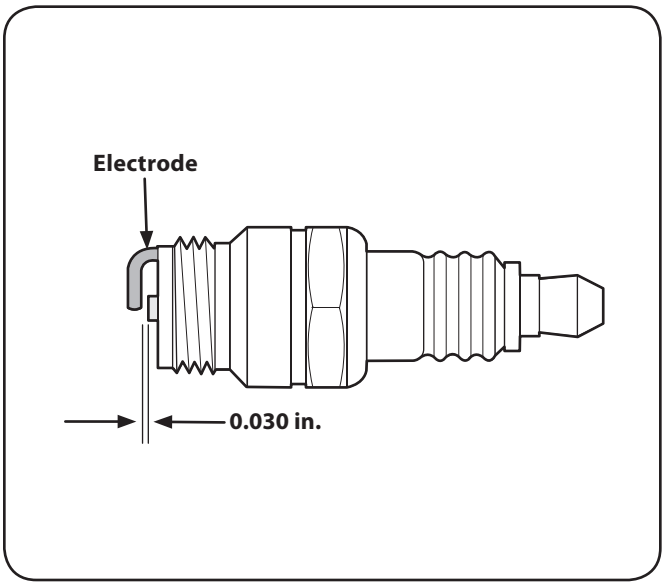


Figure 10-4

4. Check that the spark plug washer is in good condition and thread the spark plug in by hand to prevent cross-threading.

5. After the spark plug is seated, tighten with a spark plug wrench to compress the washer.

   NOTE: When installing a new spark plug, tighten 1/2 turn after the spark plug seats to compress the washer. When reinstalling a used spark plug, tighten 1/8-1/4 turn after the spark plug seats to compress the washer.

   IMPORTANT: The spark plug must be securely tightened. An improperly tightened spark plug can become very hot and may damage the engine.

Fuel Filter Service

The fuel filter cannot be cleaned and must be replaced once a year or every 100 operating hours; more often if run with old gasoline.

1. Remove all fuel from tank by running engine until it stops from lack of fuel.
2. Remove c-clamp from fuel line and remove fuel line from tank outlet. See Fig. 10-5.

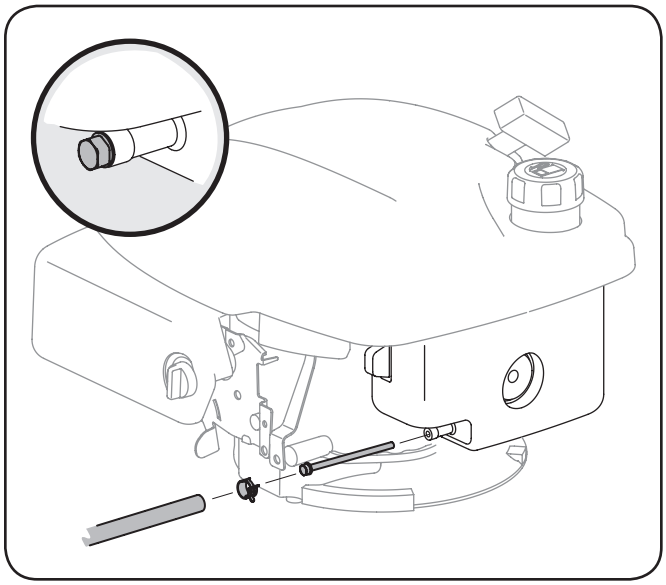


Figure 10-5

3. Pull out old fuel filter from tank outlet. Replace when dirty or damaged.
4. Grasp new fuel filter from shouldered end and insert it completely to the shoulder into the tank outlet. See Fig. 10-5 inset.
5. Replace fuel line and c-clamp.

Clean Engine

If the engine has been running, allow it to cool for at least half an hour before cleaning. Periodically remove dirt build-up from engine. Clean finger guard and around muffler. Clean with a brush or compressed air.

IMPORTANT: Do not spray engine with water to clean because water could contaminate fuel. Using a garden hose or pressure washing equipment can also force water into the air cleaner or muffler opening. Water in the air cleaner will soak the paper element, and water that passes through the element or muffler can enter the cylinder, causing damage.

WARNING: Accumulation of debris around muffler could cause a fire. Inspect and clean before every use.

Storage

Engines stored between 30 and 90 days need to be treated with a gasoline stabilizer and engines stored over 90 days need to be drained of fuel to prevent deterioration and gum from forming in fuel system or on essential carburetor parts. If the gasoline in your engine deteriorates during storage, you may need to have the carburetor, and other fuel system components, serviced or replaced.

1. Remove all fuel from tank by running engine until it stops from lack of fuel.

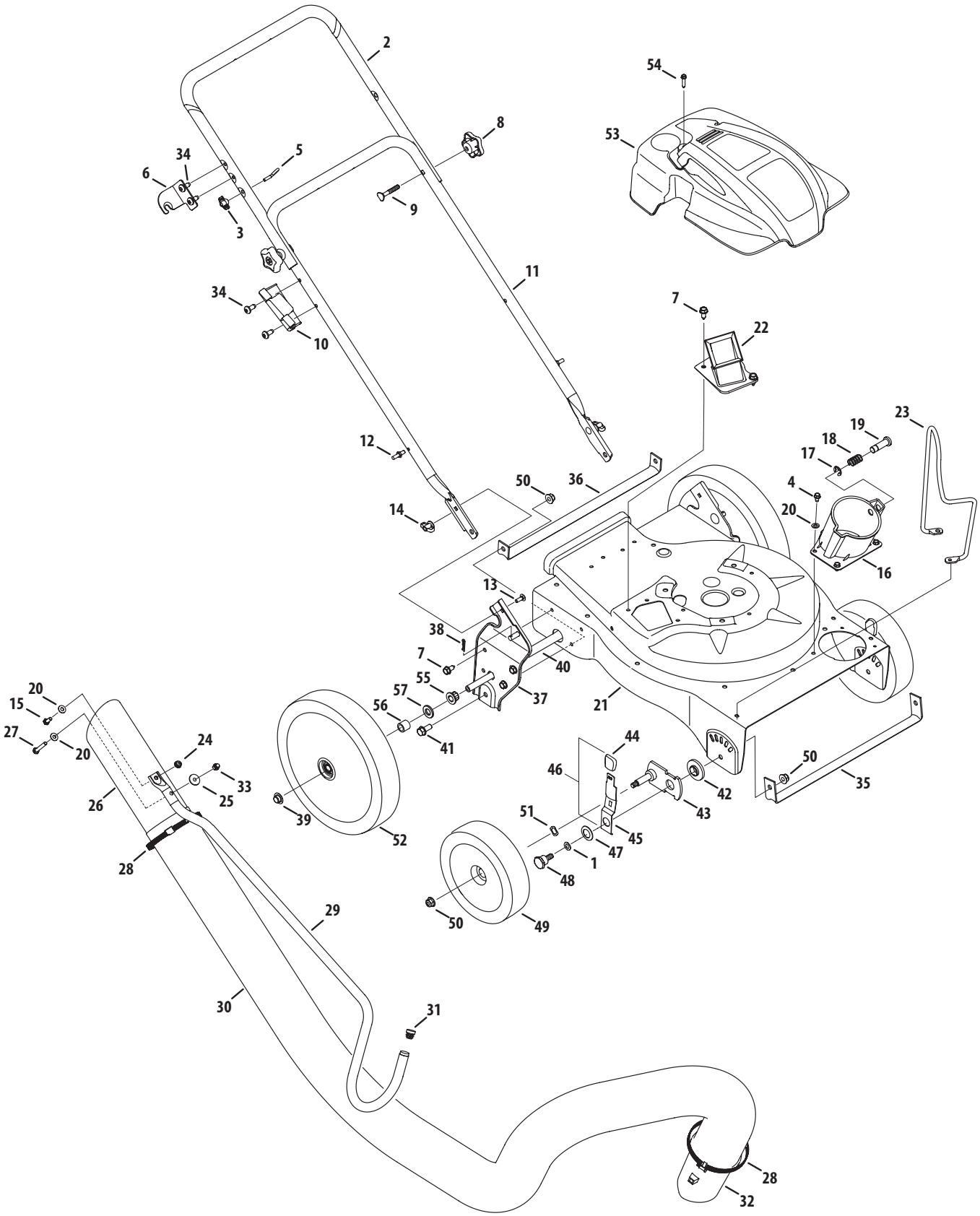
WARNING: Never leave engine unattended while running.

2. Change oil. See Oil Change section.
3. Remove spark plug and pour about 1/2 an ounce of engine oil into cylinder. Replace spark plug and crank slowly to distribute oil.
4. Clean debris from around engine, under finger guard, and under, around and behind muffler. Touch up any damaged paint, and coat other areas that may rust with a light film of oil.
5. Store in a clean, dry and well ventilated area away from any appliance that operates with a flame or pilot light, such as a furnace, water heater, or clothes dryer. Also avoid any area with a spark producing electric motor, or where power tools are operated.
6. If possible, also avoid storage areas with high humidity, because that promotes rust and corrosion.
7. Keep the engine level in storage. Tilting can cause fuel or oil leakage.

Removing From Storage

1. Check your engine as described in the Pre-Operation Check section of this manual.
2. If the fuel was drained during storage preparation, fill the tank with fresh gasoline. If you keep a container of gasoline for refueling, make certain it contains only fresh fuel. Gasoline oxidizes and deteriorates over time, causing hard starting.
3. If the cylinder was coated with oil during storage preparation, the engine will smoke briefly at startup. This is normal.

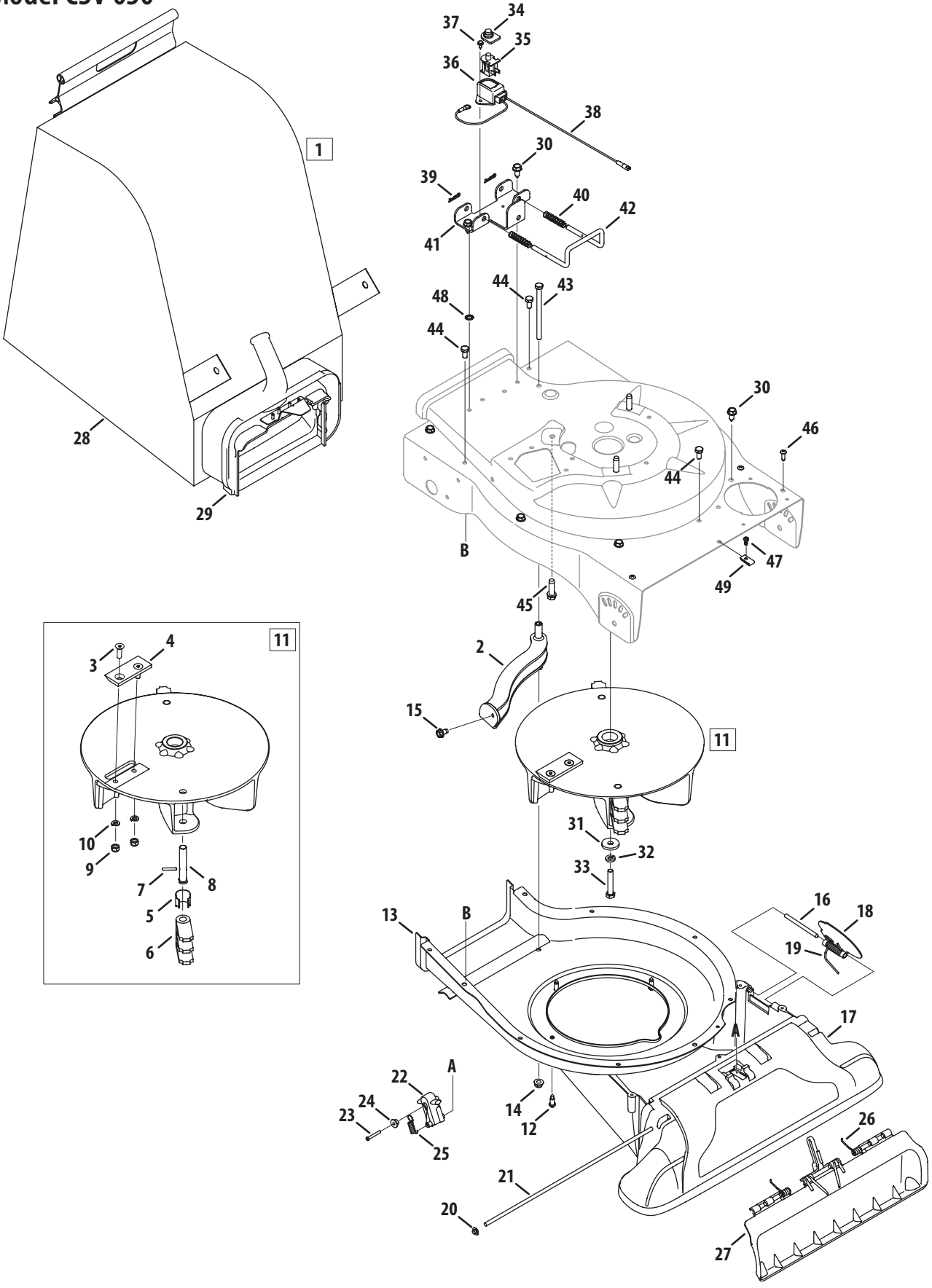
Model CSV 050



Ref No.	Part Number	Description
1	936-0314	Thrust Washer.375 ID x.70 OD
2	749-04172-0637	Upper Handle
3	720-0279	Knob
4	710-0599	Screw, 1/4-20 x.500
5	710-1205	Eye Bolt
6	781-1056-0637	Upper Handle Bracket
7	710-0726	Hex Cap Screw 5/16-12 x.750
8	720-04072A	Star Knob
9	710-1174	Carriage Bolt
10	731-04911	Nozzle Handle Clip
11	749-04165-0637	Lower Handle
12	711-1293	Studs
13	710-0703	Carriage Screw 1/4-20 x.75
14	912-0397	Wing Nut 1/4-20
15	710-0751	Hex Cap Screw 1/4-20 x.620
16	681-0195	Hose Base Adapter Assembly
		(Incl. Ref.# 17-19)
17	916-0104	E Ring.500 Dia
18	932-3035	Compression Spring
19	711-1571	Clevis Pin
20	936-3020	Flat Washer.271 ID x.630 OD
21	781-04223-4021	Upper Flail Housing
22	681-04088-4021	Chipper Chute Assembly
23	747-04985	Hose Cradle
24	712-04064	Flange Lock Nut, 1/4-20
25	748-0457	Spacer
26	731-2478	Hose Nozzle
27	710-3288	Hex Cap Screw 1/4-20 x 2.625
28	723-0295	Adjustment Clamp
29	749-1270A	Nozzle Handle

Ref No.	Part Number	Description
30	764-0648A	Vacuum Hose
31	720-0369	Handle Plug
32	731-06469	Hose Adapter
33	912-0442	Cap Lock Nut, 1/4-20
34	710-1611B	TT Screw, 5/16-18 x .750
35	781-04082-0637	Front Wheel Support Brace
36	781-04081-0637	Rear Wheel Support Brace
37	981-0156A-4021	Handle Bracket Ass'y RH
	981-0155A-4021	Handle Brkt Ass'y LH
38	914-0104	Cotter Pin
39	726-0299	Push Cap
40	711-04908	Axle
41	710-04482	HHflg, 3/8-16 x .875
42	741-04242	Height Adjustment Bearing
43	687-02342	Pivot Arm Assembly
44	720-0426	Height Adjustment Knob
45	732-1026	Spring Lever
46	987-02051	Height Lever Assembly
		(Incl. Ref.# 44-45)
47	736-0741	Bell Washer.760 ID x.25 OD
48	738-1172	Shoulder Screw,.750 x.500
49	634-04347	Front Wheel
50	712-04065	Flange Lock Nut, 3/8-16
51	936-0232	Washer, Wave, .531 x .781 x .013
52	634-04367	Rear Wheel
53	931-04232A	Engine Shroud
54	710-04744	Screw, #12-16 x 1.00
55	741-04108	Brg. Flg, Hex
56	748-0190	Spacer
57	936-0369	Washer, Flat, .508ID x 1.00 OD

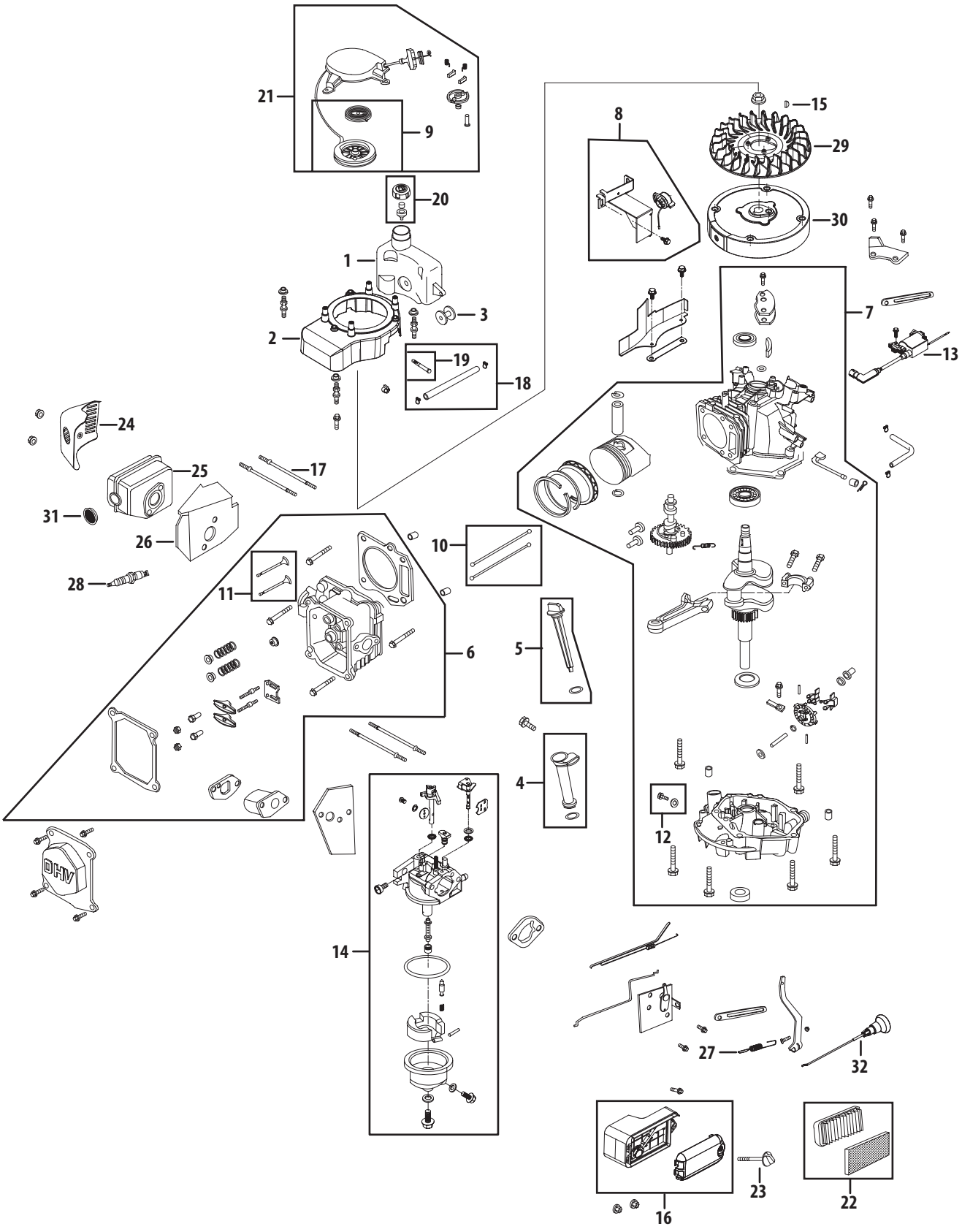
Model CSV 050



Ref No.	Part Number	Description
1	664-04040	Bag Assembly
2	681-0154-0637	Screen Assembly
3	710-1054	Hex Screw 5/16-24 x 1.0
4	981-0490	Chipper Blade
5	781-0735	Pin Clip
6	719-0329	Flail
7	715-0166	Spiral Pin
8	711-1401	Clevis Pin
9	912-0411	Lock Nut, 5/16-24
10	936-0119	Lock Washer, 5/16
11	981-0152	Impeller Assembly
		(Incl. Ref.# 3 – 10)
12	710-1650	Shoulder Screw, #12-24 x.30 x.46
13	781-0721B-4021	Lower Flail Housing
14	712-04063	Flange Lock Nut 5/16-18
15	710-0607	Screw, 5/16-18 x.500
16	747-04297	Hinge Pin
17	981-04031	Nozzle
18	781-1064	Base Adapter Door
19	732-1156	Torsion Spring
20	926-0106	Cap Speed Nut 1/4
21	711-1551	Pivot Rod
22	731-2485A	Nozzle Door Lever
23	710-1256	Hex Screw, #8-18 x 1.25
24	750-1294	Shoulder Spacer
25	732-3118	Extension Spring

Ref No.	Part Number	Description
26	732-1151A	Nozzle Door Torsion Spring
27	731-2294A	Nozzle Door
28	664-04040	Bag
29	631-0083	Chute Assembly
30	710-0726	Hex Index Screw, 5/16-12 x.750
31	736-0247	Flat Washer.375 ID x 1.25 OD
32	936-0217	Lock Washer 3/8
33	710-0818	Hex Cap Screw 3/8-24 x 2.0
34	925-1700	Switch Cover
35	925-3166	Safety Switch
36	931-1613	Safety Switch Cover
37	910-0224	Hex Washer Screw #10-16 x.50
38	629-0920A	Wire Harness
39	914-0104	Cotter Pin
40	732-0962	Compression Spring
41	781-0778A-0637	Mounting Bracket
42	747-1153	Lock Rod
43	710-3195	Hex Cap Screw 5/16-18 x 4.5
44	710-3025	Hex Cap Screw 5/16-18 x.625
45	710-0654A	Hex Washer Screw 3/8-16 x 1.00
46	710-1220	Screw, #12-16 x.750
47	710-0351	Screw #10 - 16 x.500
48	736-0607	External L-Washer 5/16
49	726-0139	Speed Nut
—	723-0400	Safety Glasses (Not Shown)

Engine Model - 1P70C0



Ref No.	Part Number	Description
1.	951-10368	Fuel Tank
2.	951-10369	Flywheel Shroud
3.	951-10335	Rubber Fuel Tank Mounting Washer
4.	951-10334	Oil Filler Tube Assembly
5.	951-10852	Dipstick Assembly
6.	951-10413	Cylinder Head Complete
7.	951-10932	Short Block Assembly
8.	951-10936	On/Off Switch and Bracket Assembly
9.	951-10319	Recoil Spring and Pulley Assembly
10.	751-10344	Push Rod Kit
11.	951-10345	Valve Kit
12.	951-10370	Oil Drain Plug and Washer Assembly
13.	951-10931	Ignition Coil
14.	951-10929	Carburetor Assembly
15.	951-10307	Flywheel Key
16.	951-10412A	Air Cleaner Housing Assembly Complete
17.	951-10342	Muffler Stud Assembly
18.	951-10364	Fuel Line Kit – Inc. hoses, clamps & filter
19.	951-10358	Fuel Filter
20.	951-10300	Fuel Cap Assembly
21.	951-10299	Recoil Starter Assembly
22.	951-10298	Air Cleaner Kit
23.	951-10297	Air Cleaner Thumb Screw
24.	951-10411	Muffler Guard
25.	951-10403	Muffler
26.	951-10402	Muffler Gasket /Heat Shield
27.	951-10387	Governor Return Spring
28.	951-10292	Spark Plug
29.	951-10934	Cooling Fan
30.	951-10935	Flywheel
31.	951-10351	Spark Arrestor
32.	951-10933	Choke Control Knob
–	952Z1P70C0	Engine – Complete
–	951-10930	Carburetor Kit – Major
–	951-10859	Cylinder Head Service Kit
–	951-10416	Gasket Kit – Complete
–	951-10417	Gasket Kit – External

NOTE: Illustrated parts without a numeric call-out are not servicable components.

Cub Cadet LLC (Cub Cadet), the California Air Resources Board (CARB) and the United States Environment Protection Agency (U. S. EPA)

Emission Control System Warranty Statement

(Owner's Defect Warranty Rights and Obligations)

EMISSION CONTROL SYSTEM COVERAGE IS APPLICABLE TO CERTIFIED ENGINES PURCHASED IN CALIFORNIA IN 2005 AND THEREAFTER, WHICH ARE USED IN CALIFORNIA, AND TO CERTIFIED MODEL YEAR 2005 AND LATER ENGINES WHICH ARE PURCHASED AND USED ELSEWHERE IN THE UNITED STATES.

California and elsewhere in the United States Emission Control Defects Warranty Coverage

The California Air Resources Board (CARB), U. S. EPA and Cub Cadet LLC are pleased to explain the emissions control system warranty on your model year 2006 and later small off-road engine. In California, new small off-road engines must be designed, built and equipped to meet the States anti-smog standards. Elsewhere in the United States, new non-road, spark-ignition engines certified for model 2005 and later, must meet similar standards set forth by the U. S. EPA. Cub Cadet LLC must warranty the emission control system on your engine for the period of time listed below, provided there has been no abuse, neglect or improper maintenance of your small off-road engine.

Your emission control system may include parts such as the carburetor, fuel-injection system, the ignition system, and catalytic converter, fuel tanks, fuel lines, fuel caps, valves, canisters, filters, vapor hoses, clamps, connectors, and other associated emission-related components.

Where a warrantable condition exists, Cub Cadet LLC will repair your small off-road engine at no cost to your including diagnosis, parts and labor.

MANUFACTURER'S WARRANTY COVERAGE:

This emissions control system is warranted for two years. If any emission-related part on your engine is defective, the part will be repaired or replaced by Cub Cadet LLC.

OWNER'S WARRANTY RESPONSIBILITIES:

As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your Owner's Manual. Cub Cadet LLC recommends that you retain all your receipts covering maintenances on your small off-road engine, but Cub Cadet LLC can not deny warranty solely for the lack of receipts or for your failure to ensure the performance to all scheduled maintenance.

As the small off-road engine owner, you should however be aware that Cub Cadet LLC may deny your warranty coverage if your small off-road engine or part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road engine to an Authorized Cub Cadet LLC Service Dealer as soon as a problem exists. The warranted repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact a Cub Cadet LLC Service Representative at (877) 282-8684 and address is Cub Cadet LLC, P.O. Box 361131, Cleveland OH, 44136-0019.

DEFECTS WARRANTY REQUIREMENTS FOR 1995 AND LATER SMALL OFF-ROAD ENGINES:

This section applies to 1995 and later small off-road engines. The warranty period begins on the date the engine or equipment is delivered to an ultimate purchaser.

(a) General Emissions Warranty Coverage

Cub Cadet LLC must warrant to the ultimate purchaser and each subsequent purchaser that the engine is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board pursuant to its authority in Chapters 1 and 2,Part 5, Division 26 of the Health and Safety Code; and

(2) Free from defects in materials and workmanship that cause the failure of a warranted part to be identical in all material respects to the part as described in the engine manufacturer's application for certification for a period of two years.

(b) The warranty on emissions-related parts will be interpreted as follows:

(1) Any warranted part that is not scheduled for replacement as required maintenance in the written instructions required by Subsection (c) must be warranted for the warranty period defined in Subsection (a)(2). If any such part fails during the period of warranty coverage, it must be repaired or replaced by Cub Cadet LLC according to Subsection (4) below. Any such part repaired or replaced under the warranty must be warranted for the remaining warranty period.

(2) Any warranted part that is scheduled only for regular inspection in the written instructions required by Subsection (c) must be warranted for the warranty period defined in Subsection (a)(2). A statement in such written instructions to the effect of "repair or replace as necessary" will not reduce the period of warranty coverage. Any such part repaired or replaced under warranty must be warranted for the remaining warranty period.

(3) Any warranted part that which is scheduled for replacement as required maintenance in the written instructions required by Subsection (c) must be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part must be repaired or replaced by Cub Cadet LLC according to Subsection (4) below. Any such part repaired or replaced under warranty must be warranted for the remainder of the period prior to the first scheduled replacement point for the part.

(4) Repair or replacement of any warranted part under the warranty provisions of this article must be performed at no charge to the owner at a warranty station.

(5) Notwithstanding the provisions of Subsection (4) above, warranty services or repairs must be provided at all Cub Cadet LLC distribution centers that are franchised to service the subject engines.

(6) The owner must not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a warranty station.

(7) The engine manufacturer is liable for damages to other engine components proximately caused by a failure under warranty of any warranted part.

(8) Throughout the engine's warranty period defined in Subsection (a)(2), Cub Cadet LLC will maintain a supply of warranted parts sufficient to meet the expected demand for such parts.

(9) Any replacement part may be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner. Such use will not reduce the warranty obligations of Cub Cadet LLC.

(10) Add-on or modified parts that are not exempted by the Air Resources Board may not be used. The use of any non-exempted add-on or modified parts shall be grounds for disallowing a warranty claim made in accordance with this article. The engine manufacturer shall not be liable under this article to warrant failures of warranted parts caused by the use of non-exempted add-on or modified part.

(c) Cub Cadet LLC will include a copy of the following emission warranty parts list with each new engine, using those portions of the list applicable to the engine.

(1) Fuel Metering System

- Cold start enrichment system (soft choke)
- Carburetor and internal parts
- Fuel Pump
- Fuel Tank

(2) Air Induction System

- Air cleaner
- Intake manifold

(3) Ignition System

- Spark plug(s)
- Magneto Ignition System

(4) Exhaust System

- Catalytic converter
- SAI (Reed valve)

(5) Miscellaneous Items Used in Above System

- Vacuum, temperature , position, time sensitive valves and switches
- Connectors and assemblies

(6) Evaporative control

- Fuel Hose certified for ARB evaporative emission of 2006.
- Fuel Hose Clamps
- Tethered fuel cap
- Carbon canister
- Vapor lines

CUB CADET LLC
MANUFACTURER'S LIMITED WARRANTY FOR
CHIPPER-SHREDDERS & CHIPPER-SHREDDER VACUUMS

The limited warranty set forth below is given by Cub Cadet LLC with respect to new merchandise purchased and used in the United States, its possessions and territories, and by MTD Products Limited with respect to new merchandise purchased and used in Canada and/or its territories and possessions.

"Cub Cadet" warrants this product (excluding its *Normal Wear Parts* as described below) against defects in material and workmanship for a period of two (2) years commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in materials or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water, or damage because of other peril or natural disaster. Damage resulting from the installation or use of any part, accessory or attachment not approved by Cub Cadet for use with the product(s) covered by this manual will void your warranty as to any resulting damage.

Normal Wear Parts are warranted to be free from defects in material and workmanship for a period of thirty (30) days from the date of purchase. Normal wear parts include, but are not limited to items such as: belts, blades, debris collection bags, wheels and tires.

HOW TO OBTAIN SERVICE: Warranty service is available, WITH PROOF OF PURCHASE, through your local authorized service dealer. To locate the dealer in your area:

In the U.S.A.

To locate the dealer in your area, check your Yellow Pages, or contact Cub Cadet LLC at P.O. Box 361131, Cleveland, Ohio 44136-0019, call 1-877-282-8684, or log on to our Web site at www.cubcadet.com.

In Canada

Contact MTD Products Limited, Kitchener, ON N2G 4J1, call 1-800-668-1238 or log on to our Web site at www.mtdcanada.com.

This limited warranty does not provide coverage in the following cases:

a. Log splitter pumps, valves, and cylinders have a separate one year warranty.

b. Routine maintenance items such as lubricants, filters, blade sharpening, tune-ups, brake adjustments, clutch adjustments, deck adjustments, and normal deterioration of the exterior finish due to use or exposure.

c. Cub Cadet does not extend any warranty for products sold or exported outside of the United States and/or Canada, and their respective possessions and territories, except those sold through Cub Cadet's authorized channels of export distribution.

d. Replacement parts that are not genuine Cub Cadet parts.

e. Service completed by someone other than an authorized service dealer.

f. Transportation charges and service calls.

g. Cub Cadet does not warrant this product for commercial use.

No implied warranty, including any implied warranty of merchantability of fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product, shall bind Cub Cadet. During the period of the warranty, the exclusive remedy is repair or replacement of the product as set forth above.

The provisions as set forth in this warranty provide the sole and exclusive remedy arising from the sale. Cub Cadet shall not be liable for incidental or consequential loss or damage including, without limitation, expenses incurred for substitute or replacement lawn care services or for rental expenses to temporarily replace a warranted product.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. **Alteration of safety features of the product shall void this warranty.** You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser or to the person for whom it was purchased as a gift.

HOW STATE LAW RELATES TO THIS WARRANTY: This limited warranty gives you specific legal rights, and you may also have other rights that vary in different jurisdictions.

IMPORTANT: Owner must present Original Proof of Purchase to obtain warranty coverage.

Cub Cadet LLC, P.O. BOX 361131 CLEVELAND, OHIO 44136-0019; Phone: 1-877-282-8684
MTD Canada Limited - KITCHENER, ON N2G 4J1; Phone 1-800-668-1238

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