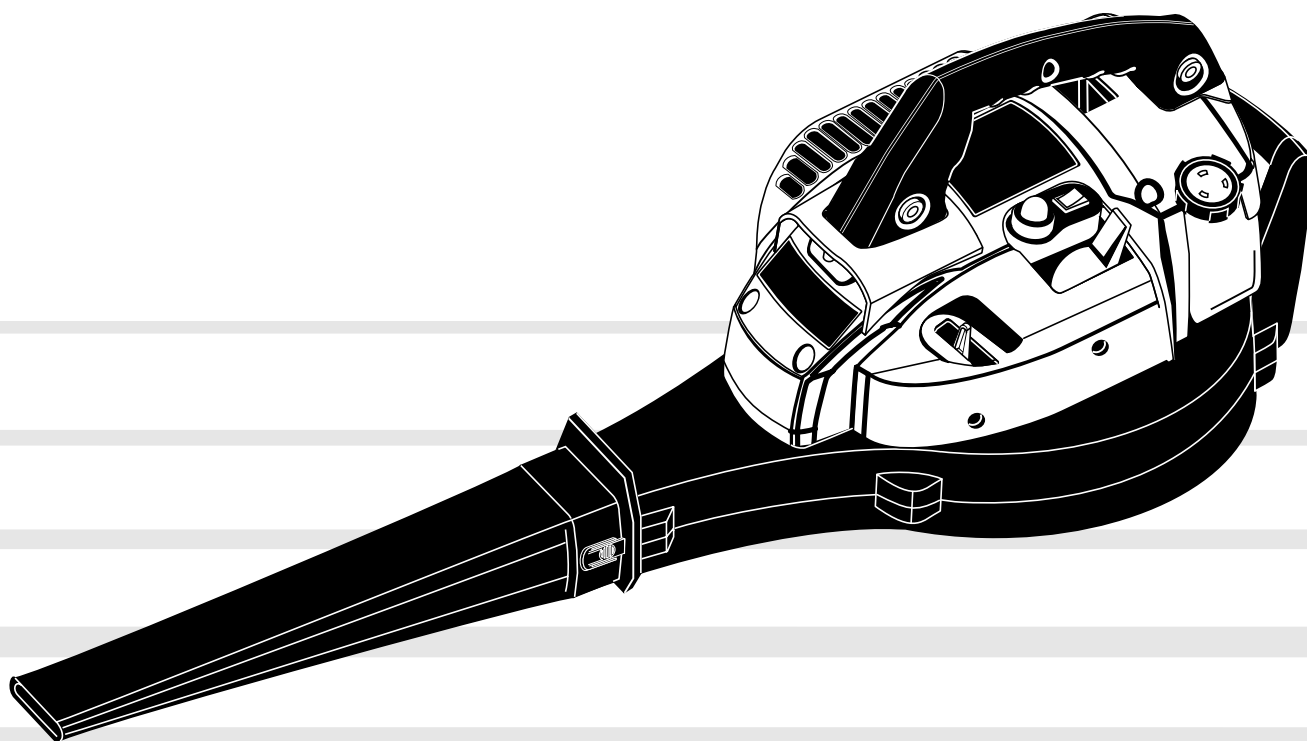


RYOBI®

330B – 340BV

2-Cycle Blower – Blower/Vac

OPERATOR'S MANUAL



FOR QUESTIONS, CALL 1-800-345-8746 in U.S. or
1-800-265-6778 in CANADA
www.ryobi.com

IMPORTANT MANUAL

DO NOT THROW AWAY

INTRODUCTION

THANK YOU

Thank you for buying this quality product. This modern outdoor power tool will provide many hours of useful service. You will find it to be a great labor-saving device. This operator's manual provides you with easy-to-understand operating instructions. Read the whole manual and follow all the instructions to keep your new outdoor power tool in top operating condition. The other manual that came with your power tool, the parts manual, contains all the information that you need to order parts.

PRODUCT REFERENCES, ILLUSTRATIONS AND SPECIFICATIONS

All information, illustrations and specifications in this manual are based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice.

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SERVICE INFORMATION

Service on this unit both within and after the warranty period should be performed only by an authorized and approved service dealer.

Dial:

1-800-345-8746 in the United States or
1-800-265-6778 in Canada

to obtain the listing of the authorized service dealer nearest you.

DO NOT RETURN THE UNIT TO THE RETAILER.

NOTE: PROOF OF PURCHASE WILL BE REQUIRED FOR WARRANTY SERVICE.

Make sure this manual is carefully read and understood before starting or operating this equipment.

THIS PRODUCT IS COVERED BY ONE OR MORE US PATENTS, OTHER PATENTS PENDING.

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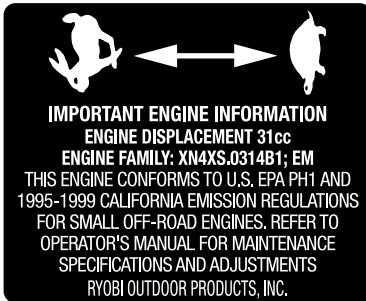
This unit should consist of the following:

- Model 330B Blower or Model 340BV Blower/Vac
- Blower Nozzle
- Δ Upper Vacuum Tube
- Δ Lower Vacuum Tube
- Δ Vacuum Bag
- Bottle of 2-Cycle Oil
- Operator's Manual
- Parts Manual
- Product Registration Card
- Δ These items are only with the Model 340BV. A vacuum accessory kit with these items is available for the Model 330B.

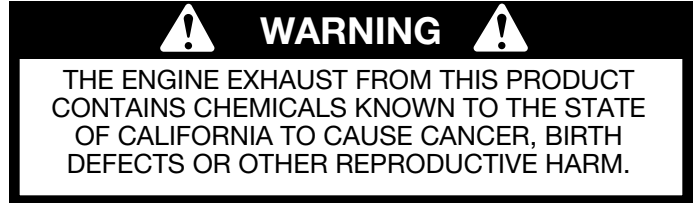
CALIFORNIA EMISSION REGULATIONS

This unit meets the 1999 and later California emissions regulations for small off-road engines. These units are identified by the label on the engine of your product. A typical identification label is shown.

To ensure that your unit continues to meet these regulations, refer to the following information and instructions in this operator's manual.



California Proposition 65 Warning:



SPARK ARRESTOR

NOTE: For users on U.S. Forest Land and in the states of California, Maine, Oregon and Washington. All U.S. Forest Land and the states of California (Public Resources Codes 4442 and 4443), Oregon and Washington require, by law that certain internal combustion engines operated on forest brush and/or grass-covered areas be equipped with a spark arrestor, maintained in effective working order, or the engine be constructed, equipped and maintained for the prevention of fire. Check with your state or local authorities for regulations pertaining to these requirements. Failure to follow these requirements could subject you to liability or a fine. **This unit is factory equipped with a spark arrestor.**

WARNING!

Read the Operator's Manual(s) and follow all warnings and safety instructions. Failure to do so can result in serious injury to the operator and/or bystanders.

FOR QUESTIONS, CALL 1-800-345-8746 IN U.S. OR 1-800-265-6778 in CANADA

RULES FOR SAFE OPERATION

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols, and their explanations, deserve your careful attention and understanding. The safety warnings do not by themselves eliminate any danger. The instructions or warnings they give are not substitutes for proper accident prevention measures.

SYMBOL MEANING



SAFETY ALERT SYMBOL: Indicates danger, warning, or caution. Attention is required in order to avoid serious personal injury. May be used in conjunction with other symbols or pictographs.

NOTE: Advises you of information or instructions vital to the operation or maintenance of the equipment.



DANGER: Failure to obey a safety warning will result in serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock, and personal injury.



WARNING: Failure to obey a safety warning can result in injury to yourself and others. Always follow the safety precautions to reduce the risk of fire, electric shock, and personal injury.



CAUTION: Failure to obey a safety warning may result in property damage or personal injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock, and personal injury.

RULES FOR SAFE OPERATION

• IMPORTANT SAFETY INFORMATION •

READ ALL INSTRUCTIONS

BEFORE OPERATING

- Read the instructions carefully. Be familiar with the controls and proper use of the unit.
- Do not operate this unit when tired, ill, or under the influence of alcohol, drugs, or medication.
- Children and teens under the age of 15 must not use the unit, except for teens guided by an adult.
- All guards and safety attachments must be installed properly before operating the unit.
- Inspect the unit before use. Replace damaged parts. Check for fuel leaks. Make sure all fasteners are in place and secure. Replace parts that are cracked, chipped, or damaged in any way. Do not operate the unit with loose or damaged parts.
- Carefully inspect the area before starting the unit. Remove all debris and hard or sharp objects such as glass, wire, etc.
- Clear the area of children, bystanders, and pets. At a minimum, keep all children, bystanders and pets outside a 50 feet (15 m.) radius; there still may be a risk to bystanders from thrown objects. Bystanders should be encouraged to wear eye protection. If you are approached, stop the unit immediately.

SAFETY WARNINGS FOR GAS UNITS

WARNING: Gasoline is highly flammable, and its vapors can explode if ignited. Take the following precautions:

- Store fuel only in containers specifically designed and approved for the storage of such materials.
- Avoid creating a source of ignition for spilled fuel. Do not start the engine until fuel vapors dissipate.
- Always stop the engine and allow it to cool before filling the fuel tank. Never remove the cap of the fuel tank, or add fuel, when the engine is hot. Never operate the unit without the fuel cap securely in place. Loosen the fuel tank cap slowly to relieve any pressure in the tank.
- Mix and add fuel in a clean, well-ventilated area outdoors where there are no sparks or flames. Slowly remove the fuel cap only after stopping engine. Do not smoke while fueling or mixing fuel. Wipe up any spilled fuel from the unit immediately.
- Move the unit at least 30 feet (9.1 m) from the fueling source and site before starting the engine. Do not smoke, keep sparks and open flames from the area while adding fuel or operating the unit.

WHILE OPERATING

- Never start or run the unit inside a closed room or building. Breathing exhaust fumes can kill. Operate this unit only in a well ventilated area outdoors.
- To reduce the risk of injury associated with thrown objects, wear safety glasses or goggles that are marked as meeting ANSI Z87.1-1989 standards,
- To reduce the risk of hearing loss associated with sound level(s), always wear ear/hearing protection when operating this unit.
- Wear heavy, long pants, boots and gloves. Do not wear, short pants, sandals or go barefoot.
- To avoid static electricity shock, do not wear rubber gloves or any other insulated gloves while operating this unit.
- To reduce the risk of injury associated with objects being drawn into rotating parts, do not wear loose clothing, jewelry, scarves, and the like. Secure hair above shoulder level.
- Wear a face or dust mask if the operation is dusty. Long sleeve shirts are recommended.
- Use the unit only in daylight or good artificial light.
- Keep outside surfaces free from oil and fuel.
- Avoid accidental starting. Be in the starting position whenever pulling the starter rope. The operator and unit must be in a stable position while starting. See Starting/Stopping Instructions.
- Do not set unit on any surface except a clean, hard area while engine is running. Debris such as gravel, sand, dust, grass, etc. could be picked up by the air intake and thrown out by the discharge opening, damaging unit, property, or causing serious injury to bystanders or operator.
- Use the right tool. Only use this tool for the purpose intended.
- Do not force unit. It will do the job better and with less likelihood of injury at a rate for which it was designed.
- Do not overreach or use from unstable surfaces such as ladders, trees, steep slopes, rooftops, etc. Always keep proper footing and balance.
- Always hold the unit with a firm grip when operating.
- Keep hands, face, and feet at a distance from all moving parts. Do not touch or try to stop the impeller when it is rotating. Do not operate without guards in place.

RULES FOR SAFE OPERATION

- Do not put any object into openings. Do not use with any opening blocked; keep free of dirt, debris and anything that may reduce the air flow.
- Do not touch the engine or muffler. These parts get extremely hot from operation. When turned off they remain hot for a short time.
- Do not operate the engine faster than the speed needed to do the job. Do not run the engine at high speed when not in use.
- Always stop the engine when operation is delayed or when walking from one location to another.
- Stop the engine for maintenance, repair, to install or remove the blower tubes or vacuum attachments. The unit must be stopped and the impeller no longer turning to avoid contact with the rotating blades.
- Use only genuine Ryobi® replacement parts when servicing this unit. These parts are available from your authorized service dealer. Do not use parts, accessories or attachments not authorized by Ryobi® for this unit. Doing so could lead to serious injury to the user, or damage to the unit, and void your warranty.
- Never use this unit for spreading chemicals, fertilizers, or other substances which may contain toxic materials.
- To reduce fire hazard, replace faulty muffler and spark arrestor, keep the engine and muffler free from grass, leaves, excessive grease or carbon build up.

WHILE OPERATING UNIT AS A BLOWER

- Never run the unit without the the proper equipment attached. When using unit as a blower, always install blower tubes.
- Never point the Blower in the direction of people or pets, or in the direction of windows. Always direct the blowing debris away from people, animals, glass, and solid objects such as trees, automobiles, walls, etc.

WHILE OPERATING UNIT AS A VACUUM (optional vacuum kit)

- Never run the unit without the the proper equipment attached. When using unit as a vacuum, always install vacuum tubes, vacuum bag and make sure the vacuum bag is completely zipped closed.
- Avoid situations that could catch the vacuum bag on fire. Do not operate near an open flame. Do not vacuum warm ash from fireplaces, barbecue pits, brush piles, etc. Do not vacuum discarded cigars or cigarettes unless the cinders are completely cool.
- The unit is designed to pickup dry material such as leaves, grass, small twigs and bits of paper. Do not attempt to vacuum wet debris and/or standing water as this may result in damage to the Blower/ Vacuum. To avoid severe damage to the impeller, do not vacuum metal, broken glass, etc.

OTHER SAFETY WARNINGS

- Never store the unit, with fuel in the tank, inside a building where fumes may reach an open flame or spark.
- Allow the engine to cool before storing or transporting. Be sure to secure the unit while transporting.
- Store the unit in a dry place, either locked up or up high to prevent unauthorized use or damage. Keep out of the reach of children.
- Never douse or squirt the unit with water or any other liquid. Keep handles dry, clean and free from debris. Clean after each use, see Cleaning and Storage instructions.
- Keep these instructions. Refer to them often and use them to instruct other users. If you loan someone this unit, also loan them these instructions.

SAVE THESE INSTRUCTIONS

RULES FOR SAFE OPERATION

SAFETY AND INTERNATIONAL SYMBOLS

This operator's manual describes safety and international symbols and pictographs that may appear on this product. Read the operator's manual for complete safety, assembly, operating and maintenance and repair information.

SYMBOL

MEANING



- **SAFETY ALERT SYMBOL**

Indicates danger, warning, or caution. May be used in conjunction with other symbols or pictographs.



- **WARNING - READ OPERATOR'S MANUAL**

Read the Operator's Manual(s) and follow all warnings and safety instructions. Failure to do so can result in serious injury to the operator and/or bystanders.



- **FOR SERVICE INFORMATION, CALL:**

USA: 1-800-345-8746
CANADA: 1-800-265-6778



- **WEAR EYE AND HEARING PROTECTION**

WARNING: Thrown objects and loud noise can cause severe eye injury and hearing loss. Wear eye protection meeting ANSI Z87.1-1989 standards and ear protection when operating this unit.



- **KEEP BYSTANDERS AWAY**

WARNING: Keep all bystanders, especially children and pets, at least 50 feet (15 m) from the operating area.



- **PRIMER BULB**

Push primer bulb, fully and slowly, 5 to 7 times.



- **UNLEADED FUEL**

Always use clean, fresh unleaded fuel.



- **THROWN OBJECTS CAN CAUSE SEVERE INJURY**

WARNING: Keep clear of blower outlet. Never point the blower at yourself or others. Objects can be thrown from blower. Do not operate unit without proper attachments and guards in place.



- **ON/OFF STOP CONTROL**

ON / START / RUN



- **ON/OFF STOP CONTROL**

OFF OR STOP

RULES FOR SAFE OPERATION

SYMBOL

MEANING

- **HOT SURFACE WARNING**

Do not touch a hot muffler or cylinder. You may get burned. These parts get extremely hot from operation. When turned off they remain hot for a short time.

- **INDICATES OIL**

Refer to operator's manual for the proper type of oil.

- **CHOKE CONTROL**

A • FULL CHOKE position.
B • PARTIAL CHOKE position.
C • RUN position.



- **THROTTLE CONTROL**

Indicates "HIGH" or "FASTEST" speed.

- **THROTTLE CONTROL**

Indicates "IDLE", "LOW" or "SLOWEST" speed.

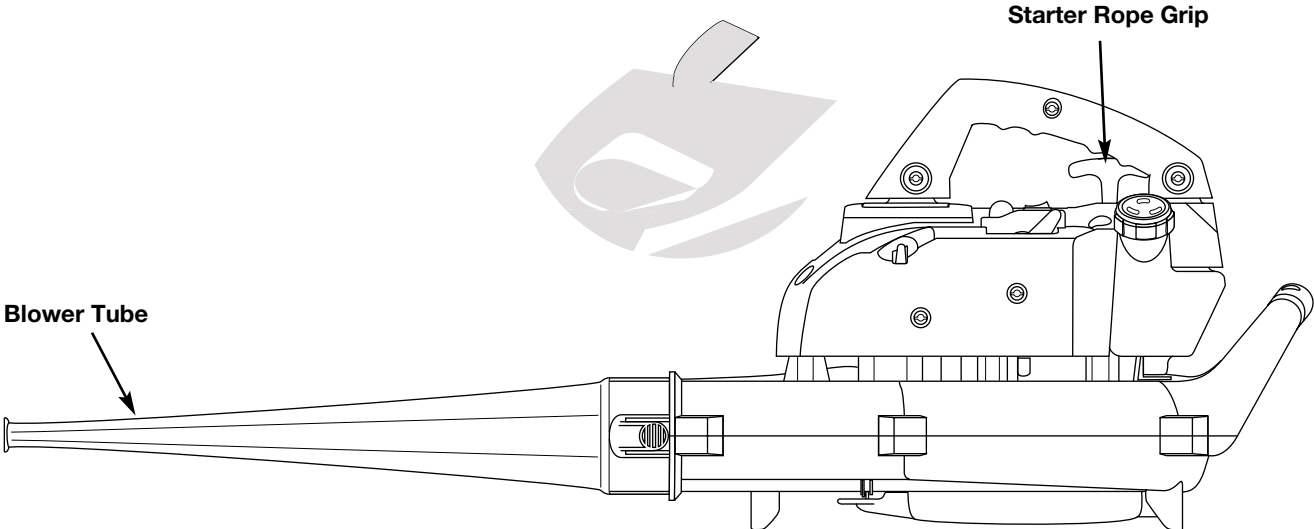
- **BLOWERS AND BLOWER/VACUUMS – ROTATING IMPELLER BLADES CAN CAUSE SEVERE INJURY**

WARNING: Stop the engine and allow the impeller to stop before opening the vacuum door, installing or changing tubes or bag, or before cleaning or performing any maintenance.

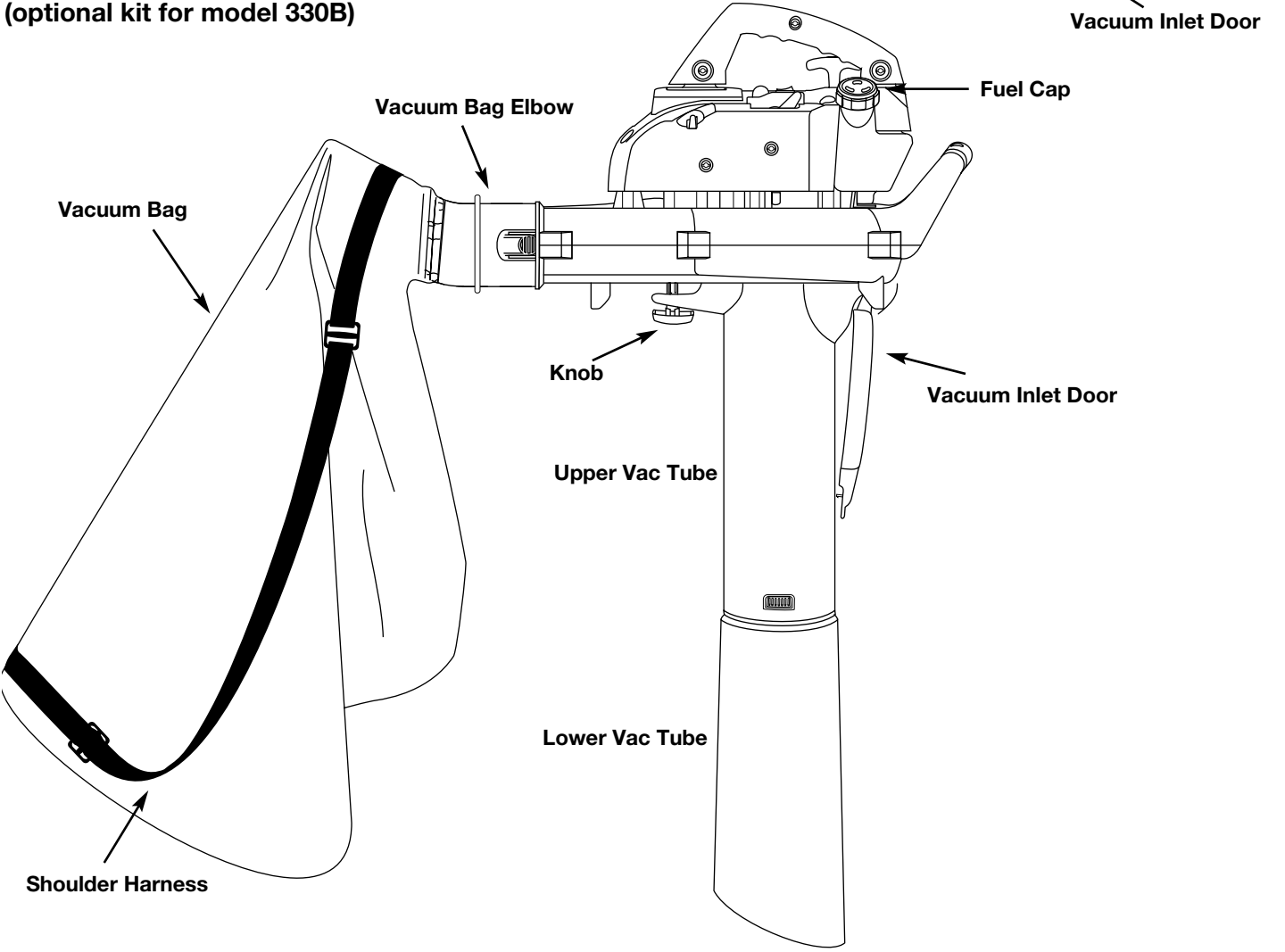
RULES FOR SAFE OPERATION

KNOW YOUR UNIT

Assembled as a Blower



Assembled as a Vacuum
(optional kit for model 330B)



ASSEMBLY INSTRUCTIONS

ASSEMBLING UNIT AS A BLOWER

Blower Tube Assembly



WARNING: To prevent serious personal injury, stop the engine and allow the impeller to stop before installing or changing tubes.



WARNING: To prevent serious personal injury or damage to the unit, the blower tube must be installed while operating this unit as a blower.

NOTE: If the unit was assembled as a vacuum unit, remove all vacuum parts and store away in a secure place for later use.

Installing

- Install the blower tube over the blower outlet and push on until both tabs snap into place (Fig. 1).

Removing

- Remove the blower tube by pressing both tabs at the same time and pulling off the blower (Fig. 1).

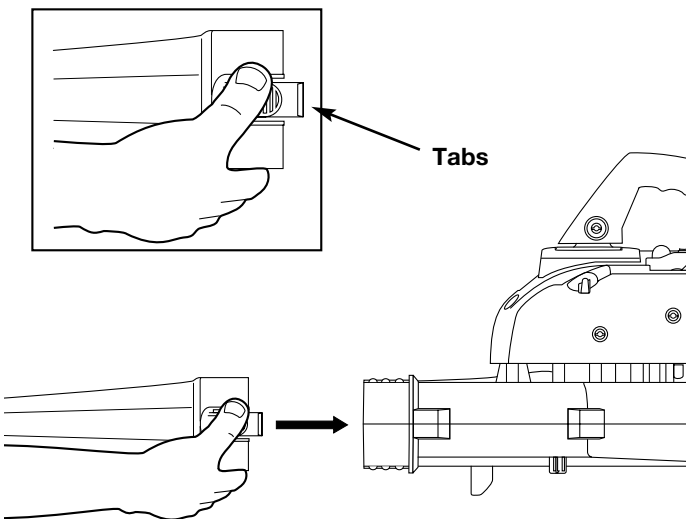


Fig. 1

ASSEMBLING UNIT AS A VACUUM (Optional Vacuum Kit)

Vacuum Tube Assembly



WARNING: To prevent serious personal injury, stop the engine and allow the impeller to stop before installing or changing tubes.



WARNING: To prevent serious personal injury or damage to the unit, always install vacuum tubes, vacuum bag and make sure the vacuum bag is completely zipped closed when operating this unit as a vacuum.

NOTE: If the unit was assembled as a blower unit, remove all blower parts and store away in a secure place for later use.

Installing

1. Assemble the vacuum tube by installing the lower tube into the upper tube with the tab on the lower tube aligning with the notch on the upper tube. Push the lower tube down and snap into place (Fig. 2)

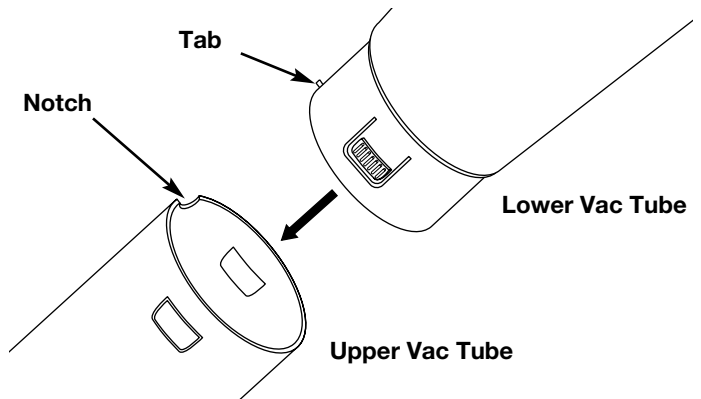


Fig. 2

2. Turn the unit over and open the vacuum door by pressing the tab button and swinging the door open (Fig. 3).

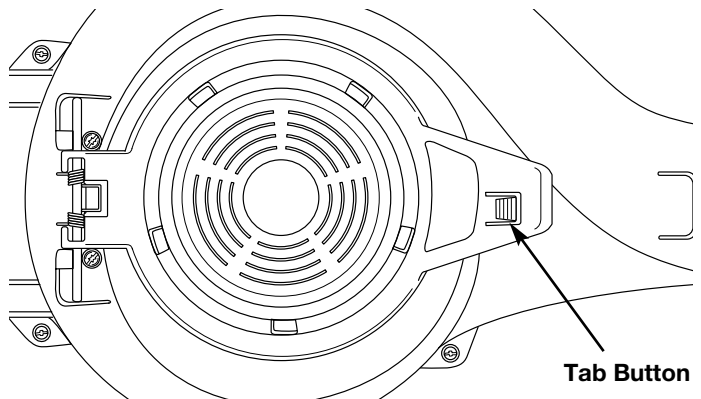


Fig. 3



OIL AND FUEL INFORMATION

OIL AND FUEL MIXING INSTRUCTIONS

Old and/or improperly mixed fuel are the main reasons for the unit not running properly. Be sure to use fresh, clean unleaded fuel. Follow the instructions carefully for the proper fuel/oil mixture.

Definition of Blended Fuels

Today's fuels are often a blend of gasoline and oxygenates such as ethanol, methanol or MTBE (ether). Alcohol-blended fuel absorbs water. As little as 1% water in the fuel can make fuel and oil separate. It forms acids when stored. When using alcohol-blended fuel, use fresh fuel (less than 60 days old).

Using Blended Fuels

If you choose to use a blended fuel, or its use is unavoidable, follow recommended precautions.

- Always use fresh fuel mix per your operator's manual.
- Use the fuel additive STA-BIL® or an equivalent.
- Always agitate the fuel mix before fueling the unit.
- Drain the tank and run the engine dry before storing the unit.

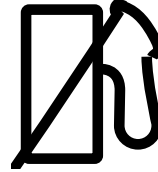
Using Fuel Additives

The use of fuel additive, such as STA-BIL® Gas Stabilizer or an equivalent, will inhibit corrosion and minimize the formation of gum deposits. Using a fuel additive can keep fuel from forming harmful deposits in the carburetor for up to six (6) months. Add 0.8 oz. (23 ml.) of fuel additive per gallon of fuel according to the instructions on the container. NEVER add fuel additives directly to the unit's fuel tank.

CAUTION: For proper engine operation and maximum reliability, pay strict attention to the oil and fuel mixing instructions on the 2-cycle oil container. Using improperly mixed fuel can severely damage the engine.

Thoroughly mix the proper ratio of 2-cycle engine oil with unleaded gasoline in a separate fuel can. Use a 32:1 fuel/oil ratio. Do not mix them directly in the engine fuel tank. See the table below for specific gas and oil mixing ratios.

NOTE: One gallon (3.8 liters) of unleaded gasoline mixed with one 4 oz. (120 ml.) bottle of RYOBI 2 CYCLE OIL makes a 32:1 fuel/oil ratio.



WARNING: Gasoline is extremely flammable. Ignited Vapors may explode. Always stop the engine and allow it to cool before filling the fuel tank. Do not smoke while filling the tank. Keep sparks and open flames at a distance from the area.

WARNING: Remove fuel cap slowly to avoid injury from fuel spray. Never operate the unit without the fuel cap securely in place.

WARNING: Add fuel in a clean, well ventilated area outdoors. Wipe up any spilled fuel immediately. Avoid creating a source of ignition for spilt fuel. Do not start the engine until fuel vapors dissipate.

NOTE: Dispose of the old fuel/oil mix in accordance to Federal, State, and Local regulations.

STARTING/STOPPING INSTRUCTIONS

STARTING INSTRUCTIONS

WARNING: Avoid accidental starting. Be in the starting position whenever pulling the starter rope. The operator and unit must be in a stable position while starting.

Also, Do not set unit on any surface except a clean, hard area while starting. Debris such as gravel, sand, dust, grass, etc. could be picked up by the air intake and thrown out by the discharge opening, damaging unit, property, or causing serious injury to bystanders or operator.

WARNING: Operate this unit only in a well ventilated area outdoors. Carbon monoxide exhaust fumes can be lethal in a confined area.

1. Mix gas with oil. Fill fuel tank with fuel/oil mixture. See Oil and Fuel Mixing Instructions Pg. 11.

NOTE: Have the vacuum bag harness adjusted prior to starting the unit as a vacuum. See **Adjusting the Shoulder Harness**.

NOTE: The On/Off Stop Control is a momentary switch and is always in the **ON** position (Fig. 9).

Fig. 10

Fig. 9

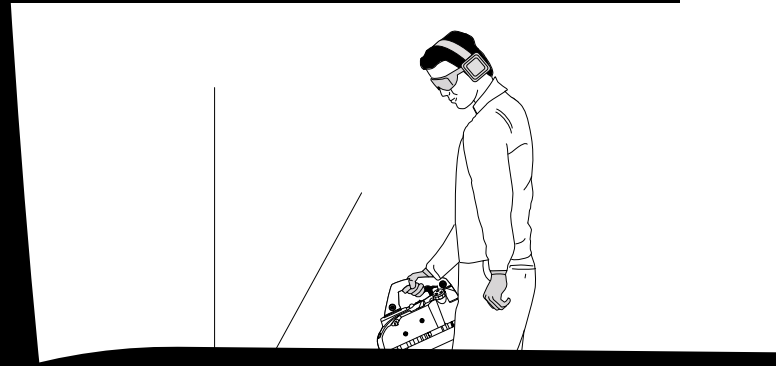
2. Fully press and release primer bulb slowly 5 to 7 times. Fuel should be visible in the bulb (Fig. 9). If fuel is not visible, press three (3) more times, or until it is.
3. Place the choke control in the **FULL** choke position (A) (Fig. 9).
4. Place the throttle control in the **FAST** position (B) and pull starter rope until engine attempts to start (1-3 pulls **MAXIMUM**) (Figs. 10 & 11).
5. Place the choke control in the **PARTIAL** choke position (B) (Fig. 9).

NOTE: The unit will not run in the **FULL** choke (A) position.

6. Pull starter rope until engine attempts to run (1-3 pulls **MAXIMUM**) (Fig. 10 & 11).

Fig. 11

INSTRUCTIONS



OPERATING INSTRUCTIONS

OPERATING AS A VACUUM



WARNING - Hot Surface: To prevent serious personal injury when operating the unit as a vacuum, hold the unit to the left side of the body (Fig. 15). The muffler becomes extremely hot during operation and can cause burns.



WARNING: To prevent serious personal injury or damage to the unit, always install vacuum tubes, vacuum bag and make sure the vacuum bag is completely zipped closed when operating this unit as a vacuum.

Check for the following before operating the unit:

- Operator is wearing proper clothing, such as boots, safety glasses or goggles, ear/hearing protection, gloves, long pants and long sleeve shirt.
 - If the conditions are dusty, a dust mask or face mask is being worn.
 - The unit is in good working condition. The vacuum tubes and vacuum bag are in place and secure.
 - The vacuum bag harness is in place and correctly adjusted.
1. Use the unit for vacuuming up light debris, leaves, paper, etc..

Hold the vacuum, tilting the suction tube slightly, and use a sweeping action to collect light debris (Fig. 15). The debris will flow into the vacuum bag. Things such as small leaves and small twigs will be mulched as they pass through the fan housing, allowing the vacuum bag to hold more debris.

When the bag is full, suction will noticeably decrease. Turn off the unit and allow the impeller to stop before you unzip the bag. Unzip the bag and empty the contents before continuing. See **Emptying the Vacuum Bag**.



WARNING: To avoid serious personal injury, never unzip the vacuum bag without first stopping the unit.



WARNING: As a vacuum, the unit is designed to pick up dry material such as leaves, grass, small twigs and bits of paper. To avoid serious personal injury, do not attempt to vacuum wet debris and/or standing water as this may result in damage to the Blower/ Vacuum. To avoid severe damage to the impeller, do not vacuum metal, broken glass, etc.



WARNING: Avoid situations that could catch the vacuum bag on fire. Do not operate near an open flame. Do not vacuum warm ash from fireplaces, barbecue pits, brush piles, etc. Do not vacuum discarded cigars or cigarettes unless the cinders are completely cool.



WARNING: When the upper and lower vacuum tubes are removed, make sure the vacuum door is snapped closed before using the unit, to avoid injury from the impeller.

Emptying the Vacuum Bag



WARNING: To avoid serious personal injury, turn off the unit and allow the impeller to stop before opening vacuum door or installing or removing vacuum bag.

1. Remove the vacuum bag by pressing the tabs on the elbow tube and pulling it out of the unit, See **Assembling Unit as A Vacuum**.
 2. Wearing eye protection and a dust mask, unzip the vacuum bag and empty the contents into a garbage bag or container.
 3. Turn the bag inside out after initial emptying and vigorously shake out dust and debris.
- NOTE:** If additional cleaning of the bag is required, see **Cleaning the Vacuum Bag in Maintenance**.
4. Zip close and reinstall the vacuum bag.



Fig. 15

MAINTENANCE AND REPAIR INSTRUCTIONS

NOTE: Some maintenance procedures may require special tools or skills. If you are unsure about these procedures take your unit to an authorized service dealer.

MAINTENANCE SCHEDULE

These required maintenance procedures should be performed at the frequency stated in the table. They should also be included as part of any seasonal tune-up.

FREQUENCY	MAINTENANCE REQUIRED	REFER TO:
Before Starting Engine	Fill fuel tank with correct oil and fuel mixture.	Page 11
Every 10 Hours	Clean and re-oil air filter.	Page 15
Every 50 Hours	Check spark plug condition and gap.	Page 17



WARNING: To prevent serious personal injury, never do maintenance or repairs with unit running. Always do maintenance and repairs on a cool unit. Disconnect spark plug wire to ensure the unit will not start.

AIR FILTER MAINTENANCE

NOTE: Clean and re-oil the air filter after every 10 hours of operation. Your unit's air filter is one of the most important areas to maintain. If it is not maintained, you will VOID the warranty. Before cleaning, make sure the unit is turned off.

1. Wipe down the air filter cover and surrounding area. This will help prevent any debris entering the carburetor when the cover is removed.
2. Remove the screws on each side of the carburetor/air filter cover assembly. Remove the carburetor/air filter cover (Fig. 16).

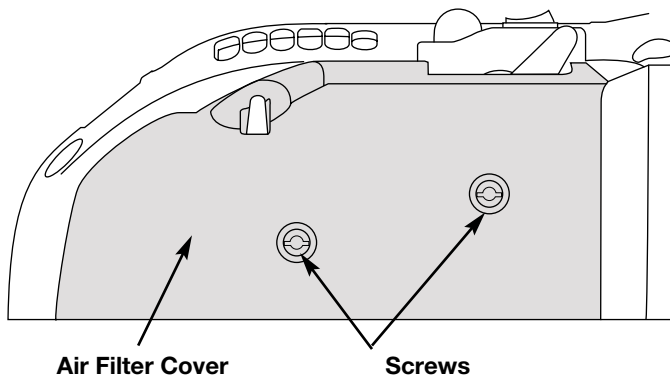


Fig. 16

3. Remove the air filter (Fig. 17).
4. Wash the filter in detergent and water (Fig. 18). Rinse the filter thoroughly and allow it to dry.
5. Apply enough clean SAE 30 oil to lightly coat the filter (Fig. 19).

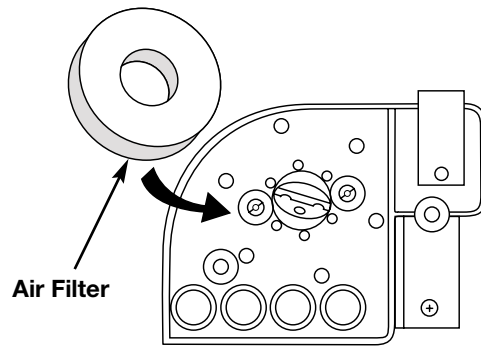


Fig. 17

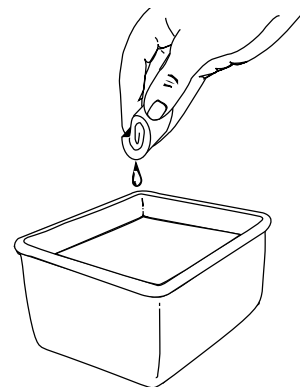


Fig. 18

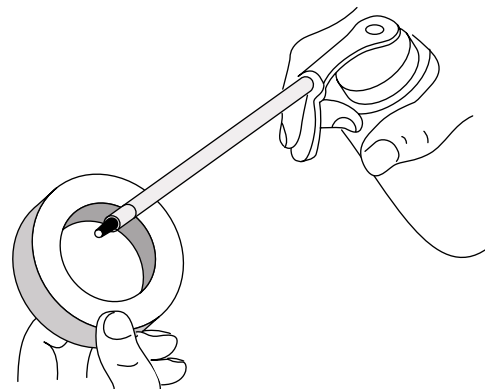


Fig. 19

MAINTENANCE AND REPAIR INSTRUCTIONS

6. Squeeze the filter to spread the oil (Fig. 20).
7. Reinstall the filter (Fig. 17, Pg 15)
8. Reinstall the carburetor/air filter cover and screws (Fig. 16, Pg 15). **Do not over tighten.**

NOTE: Operating the unit without the air filter or carburetor/air filter cover assembled will VOID the warranty.

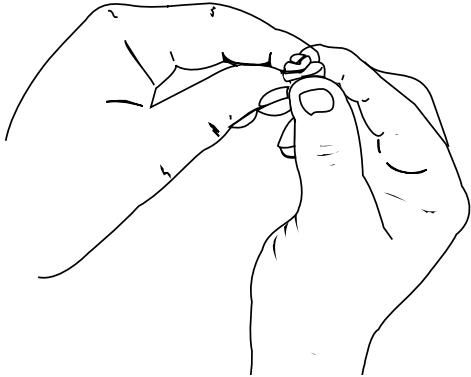


Fig. 20

CARBURETOR ADJUSTMENT

The idle speed of the engine is adjustable, the air filter cover must be removed to do so. Only make adjustments while the unit is assembled as a blower.

NOTE: Careless adjustments can seriously damage your unit. An authorized service dealer should make carburetor adjustments.

Check Fuel Mixture

Old and/or improperly mixed fuel is usually the reason for the unit not running properly. Drain and refill the tank with fresh, properly mixed fuel prior to making any adjustments. Refer to Oil and Fuel Information Pg. 11.

Clean Air Filter

The condition of the air filter is important to the operation of the unit. A dirty air filter will restrict air flow and change the air/fuel mixture. This is often mistaken for an out of adjustment carburetor. Check the condition of the air filter before adjusting the idle speed screw. Refer to Air Filter Maintenance Pg. 14.

Adjust Idle Speed Screw



WARNING: The unit will be running during idle speed adjustments. Wear protective clothing and observe all safety instructions to prevent serious personal injury.

Also, Do not set unit on any surface except a clean, hard area during these adjustments. Debris such as gravel, sand, dust, grass, etc. could be picked up by the air intake and thrown out by the discharge opening, damaging unit, property, or causing serious injury to bystanders or operator.

If after checking the fuel mixture and cleaning the air filter the engine still will not idle, adjust the idle speed screw as follows.

1. Start the engine and let it run with the throttle control in fast for a minute to warm up. See Starting/Stopping Instructions, Pg. 12.
2. Shut the unit off and remove the carburetor/air filter cover. See steps 1 and 2 of Air Filter Maintenance Pg. 14.
3. Restart the unit, move the throttle control to the idle position. If the engine stops, insert a small phillips or flat blade screwdriver into the idle speed screw (Fig. 21). Turn the idle speed screw in, clockwise, 1/8 of a turn at a time (as needed) until the engine idles smoothly.
4. If the engine seems to idle fast, turn the idle speed screw counterclockwise 1/8 of a turn at a time (as needed), to reduce idle speed.
5. Before reinstalling the carburetor/air filter cover, turn the idle speed screw in, clockwise, 1/8 of a turn. This will compensate for the speed reduction when the carburetor/air filter cover is back in place.
6. Reinstall the filter (Fig. 17, Pg. 15), carburetor/air filter cover and screws (Fig. 16, pg. 15).

Checking the fuel mixture, cleaning the air filter, and adjusting the idle speed screw should solve most engine problems.

If not and:

- The engine will not idle,
- The engine hesitates or stalls on acceleration,
- There is a loss of engine power,

have the unit checked and adjusted by an authorized service dealer.

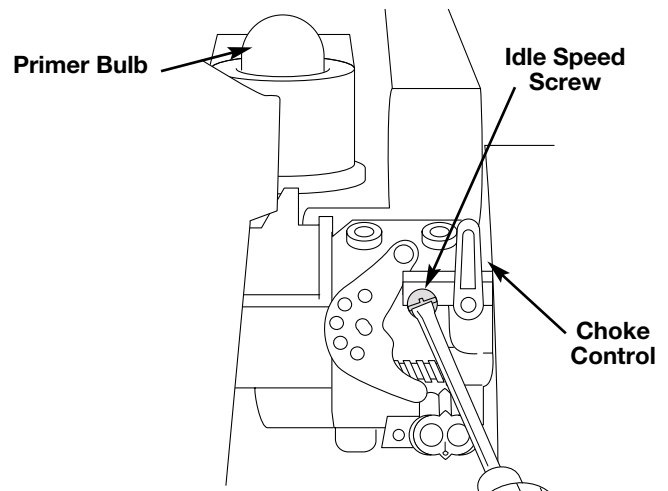



Fig. 21

MAINTENANCE AND REPAIR INSTRUCTIONS

REPLACING THE SPARK PLUG

Use a Champion RDJ7Y spark plug (or equivalent). The correct air gap is **0.020 inch (0.5 mm.)**. Remove the plug after every 50 hours of operation and check its condition.

1. Stop the engine and allow it to cool. Grasp the plug wire firmly and pull it from the spark plug.
2. Clean around the spark plug. Remove the spark plug from the cylinder head by turning a 5/8 in. socket counterclockwise.
3. Replace cracked, fouled or dirty spark plug. Set the air gap at **0.020 in. (0.5 mm.)** using a feeler gauge (Fig. 22).

 **CAUTION:** Do not sand blast, scrape, or clean electrodes. Grit in the engine could damage the cylinder.

4. Install a correctly gapped spark plug in the cylinder head. Tighten by turning the 5/8 in. socket clockwise until snug.

If using a torque wrench torque to;

110-120 in.·lb. (12.3-13.5 N·m).

Do not over tighten.

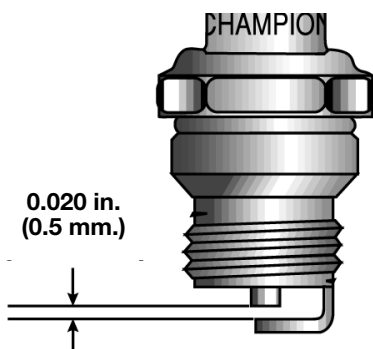


Fig. 22

CLEARING A BLOCKED IMPELLER



WARNING: During normal operation, parts of this unit become hot. Wear protective clothing and observe all safety instructions to prevent serious personal injury.

1. Shut off the unit and wait for the engine to come to a complete stop.
2. Remove the vacuum tubes. See Assembling Unit as a Vacuum. The vacuum bag can also be removed for easier handling of the unit.
3. Carefully remove material blocking the impeller. Inspect the blades to assure no damage has occurred. Rotate the blades by hand to assure the blockage is completely cleared.
4. Replace the vacuum bag and vacuum tubes.
5. Restart unit and resume use.

ACCESSORIES/REPLACEMENT PARTS

2-Cycle Oil	147543
Spark Plug	610311
Vacuum Tube Assembly	182480
Vacuum Bag Assembly	182476
Vacuum Accessory Kit	300031
Blower Tube	182478
Fuel Cap	180000
Air Filter	182500

CLEANING AND STORAGE

CLEANING



WARNING: To avoid serious personal injury, always turn your unit off and allow it to cool before you clean or do any maintenance on it.

- Use a small brush to clean off the outside of the unit and to keep the air vents free of obstructions.
- Do not use strong detergents or petroleum based cleaners, such as kerosene. Some household cleaners contain aromatic oils such as pine and lemon that can damage the plastic housings or handles. Wipe off any moisture with a soft cloth.

CLEANING THE VACUUM BAG

1. Empty the bag after each use to avoid deterioration and obstructing air flow, which will reduce the performance of the vacuum.
2. Wearing eye protection and a dust mask, clean the bag as needed. Turn the bag inside out after initial emptying and vigorously shake out dust and debris.
3. Wash the bag once a year or more often if needed as follows:
 - a. Remove the vacuum bag.
 - b. Turn bag inside out.
 - c. Hang up.
 - d. Hose down thoroughly.
 - e. Hang to dry.
 - f. Turn bag right side out.

STORAGE

- Never store the unit with fuel in the tank where fumes may reach an open flame or spark.
- Allow the engine to cool before storing.
- Store the unit locked up to prevent unauthorized use or damage.
- Store the unit in a dry, well ventilated area.
- Store the unit out of the reach of children.

LONG TERM STORAGE

If the unit will be stored for an extended time, use the following storage procedure.

1. Drain all fuel from the fuel tank and drain into a container with the same 2-cycle fuel mixture. Do not use fuel that has been stored for more than 60 days. Dispose of the old fuel/oil mix in accordance to Federal, State, and Local regulations.
2. Start the engine and allow it to run until it stalls. This ensures that all fuel has been drained from the carburetor.
3. Allow the engine to cool. Remove the spark plug and put 1 oz. (30 ml.) of any high quality motor oil or 2-cycle oil into the cylinder. Pull the starter rope slowly to distribute the oil. Reinstall the spark plug.

NOTE: Remove the spark plug and drain all of the oil from the cylinder before attempting to start the unit after storage.

4. Thoroughly clean the unit and inspect for any loose or damaged parts. Repair or replace damaged parts and tighten loose screws, nuts or bolts. The unit is ready for storage.

TRANSPORTING

- Allow the engine to cool before transporting.
- Secure the unit while transporting.
- Drain fuel from unit.
- Tighten fuel cap before transporting.

TROUBLESHOOTING

ENGINE WILL NOT START

CAUSE

Empty fuel tank
Primer bulb wasn't pressed enough
Engine flooded

Old or improperly mixed fuel
Fouled spark plug

ACTION

Fill fuel tank with properly mixed fuel
Press primer bulb fully and slowly 5-7 times
Use starting procedure with choke lever in the RUN position, Pg. 12
Drain gas tank / Add fresh fuel mixture
Replace or clean the spark plug

ENGINE WILL NOT IDLE

CAUSE

Air Filter is Plugged
Old or improperly mixed fuel
Improper carburetor adjustment

ACTION

Replace or clean the air filter
Drain gas tank / Add fresh fuel mixture
Adjust per instruction Pg. 16

ENGINE WILL NOT ACCELERATE

CAUSE

Old or improperly mixed fuel
Dirty air filter
Improper carburetor adjustment

ACTION

Drain gas tank / Add fresh fuel mixture
Clean or replace the air filter
Take to an authorized service dealer for carburetor adjustment

ENGINE LACKS POWER OR STALLS WHEN UNDER LOAD

CAUSE

Old or improperly mixed fuel
Dirty air filter
Fouled spark plug
Improper carburetor adjustment

Plugged spark arrestor

ACTION

Drain gas tank / Add fresh fuel mixture
Clean or replace the air filter
Replace or clean the spark plug
Take to an authorized service dealer for carburetor adjustment
Take to an authorized service dealer for service.

ENGINE SMOKES EXCESSIVELY

CAUSE

Choke partially on
Dirty air filter
Too much oil in fuel mixture
Improper carburetor adjustment

ACTION

Adjust choke
Clean or replace the air filter
Drain gas tank / Add fresh fuel mixture
Take to an authorized service dealer for carburetor adjustment

SPECIFICATIONS

ENGINE

Engine Type	Air-Cooled, 2-Cycle
Displacement	28 cc
Operating RPM (Maximum)	8,000-8,600 rpm
Idle Speed	3,400-4,000 rpm
Blower Output (Maximum) Model 330B	up to 200 MPH
Blower Output (Maximum) Model 340BV	up to 210 MPH
Vacuum Air Flow (Maximum) Model 340BV	up to 510 CFM
Ignition Type	Electronic
Ignition Switch	Momentary Rocker Switch
Spark Plug	Champion DJ7Y
Spark Plug Gap	0.020 in. (0.50 mm)
Lubrication	Fuel/Oil Mixture
Fuel/Oil Ratio	32:1
Carburetor	Diaphragm, All-Position
Starter	Auto Rewind
Muffler	Baffled with Guard
Throttle	Lever
Fuel Tank Capacity	18 oz. (530 ml)
Weight (Assembled as a Blower)	10.8 Lbs. (4.9 kg)

VACUUM OPTION

Mulching Ration	Up to 16:1
Vacuum Bag Capacity	2.1 Bushels (40.7 L)
Weight (Assembled as a Vacuum, Vacuum Bag Empty)	12.5 Lbs. (4.9 kg)

CALIFORNIA EMISSION CONTROL WARRANTY STATEMENT YOUR WARRANTY RIGHTS AND OBLIGATIONS

The California Air Resources Board and Ryobi Outdoor Products (ROP), are pleased to explain the emission control system warranty on your 1999 and later small off-road engine. In California, new small off-road engines must be designed, built and equipped to meet the State's stringent anti-smog standards. ROP must warrant the emission control system on your small off-road engine for the periods 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 or fuel injection system, the ignition system, and catalytic converter. Also included may be hoses, belts, connectors and other emission-related assemblies.

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

The 1999 and later small off-road engines are warranted for two years. If any emission-related part on your engine is defective, the part will be repaired or replaced by ROP.

OWNER'S WARRANTY RESPONSIBILITIES:

- As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your operator's manual. ROP recommends that you retain all receipts covering maintenance on your small off-road engine, but ROP cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.
- As the small off-road engine owner, you should however be aware that ROP may deny you warranty coverage if your small off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.
- You are responsible for presenting your small off-road engine to a Ryobi Authorized Service Center as soon as a problem exists. The warranty 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 call 1-800-345-8746.

MANUFACTURER'S WARRANTY COVERAGE:

- The warranty period begins on the date the engine or equipment is delivered to the retail purchaser.
- The manufacturer warrants to the initial owner and each subsequent purchaser, that the engine is free from defects in material and workmanship which cause the failure of a warranted part for a period of two years.
- Repair or replacement of warranted part will be performed at no charge to the owner at an Authorized Ryobi Service Center. For the nearest location, please contact Ryobi at: 1-800-345-8746.
- Any warranted part which is not scheduled for replacement, as required maintenance which is scheduled only for regular inspection to the effect of "Repair or replace as necessary" is warranted for the warranty period. Any warranted part which is scheduled for replacement as required maintenance will be warranted for the period of time up to the first scheduled replacement point for that part.
- The owner will not be charged for diagnostic labor which leads to the determination that a warranted part is defective, if the diagnostic work is performed at an Authorized Ryobi Service Center.
- The manufacturer is liable for damages to other engine components caused by the failure of a warranted part still under warranty.
- Failures caused by abuse, neglect or improper maintenance are not covered under warranty.
- The use of add-on or modified parts can be grounds for disallowing a warranty claim. The manufacturer is not liable to cover failures or warranted parts caused by the use of add-on or modified parts.
- In order to file a claim, go to your nearest Authorized Ryobi Service Center. Warranty services or repairs will be provided at all Authorized Ryobi Service Centers.
- Any manufacturer approved replacement part may be used in the performance of any warranty maintenance or repair of emission related parts and will be provided without charge to the owner. Any replacement part that is equivalent in performance or durability may be used in non-warranty maintenance or repair and will not reduce the warranty obligations of the manufacturer.
- The following components are included in the emission related warranty of the engine, air filter, carburetor, primer, fuel lines, fuel pick up/fuel filter, ignition module, spark plug and muffler.

LIMITED TWO-YEAR WARRANTY

RYOBI OUTDOOR PRODUCTS warrants each new RYOBI Product for two (2) years according to the following terms.

This warranty extends to the original retail purchaser only and commences on the date of original retail purchase.

Any part of the RYOBI Product manufactured or supplied by RYOBI and found in the reasonable judgement of RYOBI to be defective in material or workmanship will be repaired or replaced by an authorized RYOBI service dealer without charge for parts and labor.

The RYOBI Product including any defective part must be returned to an authorized service dealer within the warranty period. The expense of delivering the RYOBI Product to the dealer for warranty work and the expense of returning it back to the owner after repair or replacement will be paid for by the owner. RYOBI's responsibility in respect to claims is limited to making the required repairs or replacements and no claim of breach of warranty shall be cause for cancellation or rescission of the contract of sale of any RYOBI Product. Proof of purchase will be required by the dealer to substantiate any warranty claim. All warranty work must be performed by an authorized RYOBI service dealer.

This warranty is limited to ninety (90) days from the date of original retail purchase for any RYOBI Product that is used for rental or commercial purposes, or any other income-producing purpose.

This warranty does not cover any RYOBI Product that has been subject to misuse, neglect, negligence, or accident, or that has been operated in any way contrary to the operating instructions as specified in the RYOBI Operator's Manual. This warranty does not apply to any damage to the RYOBI Product that is the result of improper maintenance or to any RYOBI Product that has been altered or modified so as to adversely affect the product's operation, performance or durability or that has been altered or modified so as to change its intended use. The warranty does not extend to repairs made necessary by normal wear or by the use of parts or accessories which are either incompatible with the RYOBI Product or adversely affect its operation, performance or durability.

In addition, this warranty does not cover:

- A. Tune-ups - Spark Plugs, Carburetor Adjustments, Filters

RYOBI reserves the right to change or improve the design of any RYOBI Product without assuming any obligation to modify any product previously manufactured.

ALL IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE TWO (2) YEAR WARRANTY PERIOD OR NINETY (90) DAYS FOR PRODUCTS USED FOR ANY COMMERCIAL PURPOSE. ACCORDINGLY, ANY SUCH IMPLIED WARRANTIES INCLUDING MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, ARE DISCLAIMED IN THEIR ENTIRETY AFTER THE EXPIRATION OF THE APPROPRIATE TWO-YEAR OR NINETY DAY WARRANTY PERIOD. RYOBI'S OBLIGATION UNDER THIS WARRANTY, IS STRICTLY AND EXCLUSIVELY LIMITED TO THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS, AND ROP DOES NOT ASSUME OR AUTHORIZE ANYONE TO ASSUME FOR THEM ANY OTHER OBLIGATION. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

RYOBI ASSUMES NO RESPONSIBILITY FOR INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES INCLUDING, BUT NOT LIMITED TO EXPENSE OF RETURNING THE RYOBI PRODUCT TO AN AUTHORIZED SERVICE DEALER AND EXPENSE OF DELIVERING IT BACK TO THE OWNER, MECHANIC'S TRAVEL TIME, TELEPHONE OR TELEGRAM CHARGES, RENTAL OF A LIKE PRODUCT DURING THE TIME WARRANTY SERVICE IS BEING PERFORMED, TRAVEL, LOSS OR DAMAGE TO PERSONAL PROPERTY, LOSS OF REVENUE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, OR INCONVENIENCE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This warranty applies to all RYOBI Products manufactured by RYOBI and sold in the United States and Canada.

To locate your nearest service dealer dial 1-800-345-8746 in the United States or 1-800-265-6778 in Canada.

RYOBI®

RYOBI OUTDOOR PRODUCTS

550 N. 54th Street
Chandler, AZ 85226 U.S.A.

RYOBI CANADA INC.

275 Industrial Rd
Cambridge, Ontario N1R 6K2 CANADA

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

FOR QUESTIONS CALL 1-800-345-8746 IN U.S.

OR 1-800-265-6778 IN CANADA