



**OPERATOR'S MANUAL
MANUEL D'UTILISATION
BEDIENUNGSANLEITUNG
MANUALE D'ISTRUZIONI**

**MODEL
PB-2155
PB-2455**

ENGLISH

FRANÇAIS

DEUTSCH

ITALIANO



**WARNING, SEE OPERATOR'S MANUAL
LIRE SOIGNEUSEMENT CE MANUEL AVANT TOUTE UTILISATION
ACHTUNG SIEHE BEDIENUNGSANLEITUNG
ATTENZIONE, LEGGETE IL MANUALE D'ISTRUZIONI**

INTRODUCTION

Welcome to the ECHO family. This ECHO product was designed and manufactured to provide long life and on-the-job dependability. Read and understand this manual. You will find it easy to use and full of helpful operating tips and SAFETY messages.

WARNING DANGER

Read rules for safe operation and instructions carefully. ECHO provides this Operator's Manual which must be read and understood for proper and safe operation.

THE OPERATOR'S MANUAL --

contains specifications and information for operation, starting, stopping, maintenance, storage and assembly specific to this product.

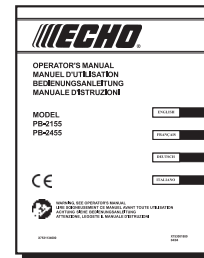


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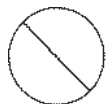
Specifications, descriptions and illustrative material in this literature are as accurate as known at the time of publication, but are subject to change without notice. Illustrations may include optional equipment and accessories, and may not include all standard equipment.

MANUAL SAFETY SYMBOLS AND IMPORTANT INFORMATION

Throughout this manual and on the product itself, you will find safety alerts and helpful, information messages preceded by symbols or key words. The following is an explanation of those symbols and key words and what they mean to you.



This symbol accompanied by the words **WARNING** and **DANGER** calls attention to an act or condition that can lead to serious personal injury to operator and bystanders.



The circle with the slash symbol means whatever is shown within the circle is prohibited.

IMPORTANT

The enclosed message provides information necessary for the protection of the unit.

NOTE

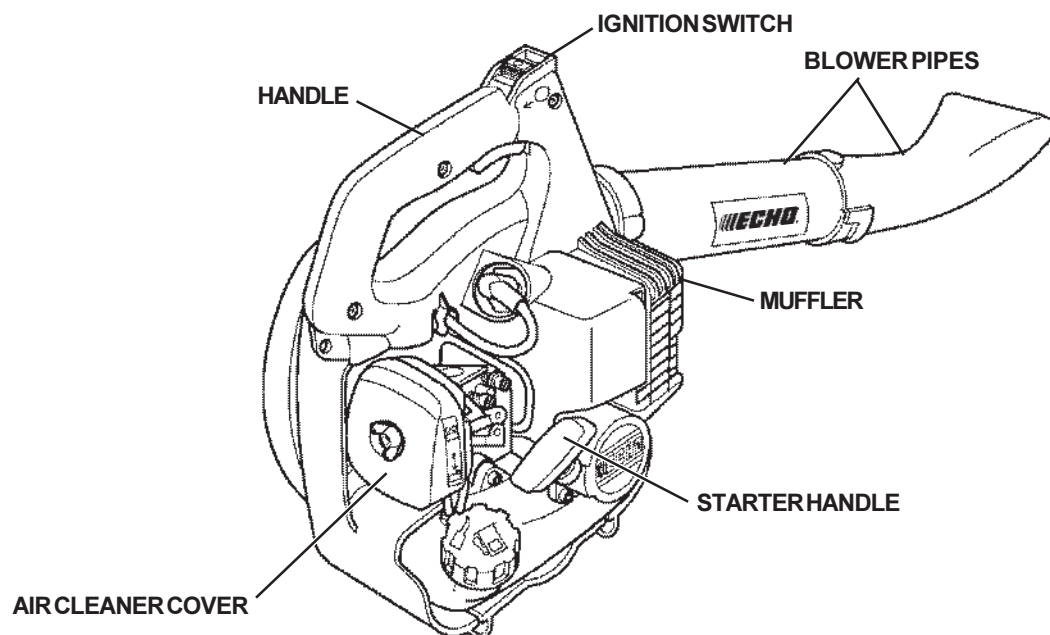
This enclosed message provides tips for use, care and maintenance of the unit.

SAFETY

GENERAL DESCRIPTION

IMPORTANT

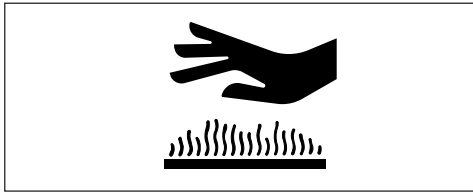
See Description and Specification sections and Decals in this section for full description and illustration of power head, and blower assembly.



DECALS

Locate these safety decals on your unit. The illustration shows their location. Make sure the decals are legible and that you understand and follow the instructions on them. If a decal cannot be read, a new one can be ordered from your ECHO dealer. See PARTS ORDERING instructions for specific information.








HOT DECAL



**-WARNING-
-DANGER-** 

Read and follow all safety precautions in the operator's manual. Operators, helpers & bystanders can be severely injured by blown objects and must wear specified ANSI Z87.1 eye protection. Always wear hearing protection when operating.

INTERNATIONAL SYMBOLS

| Symbol form/shape | Symbol description/application | Symbol form/shape | Symbol description/application |
|---|-------------------------------------|---|--|
|  | "WARNING, SEE OPERATOR'S MANUAL" |  | Petrol and oil mixture |
|  | Wear eyes, ears and head protection |  | Finger Severing |
|  | Emergency stop | L | Carburettor adjustment - Low speed mixture |
|  | Hot Surface | H | Carburettor adjustment - High speed mixture |
|  | Guaranteed sound power level | T | Carburettor adjustment - Idle speed |

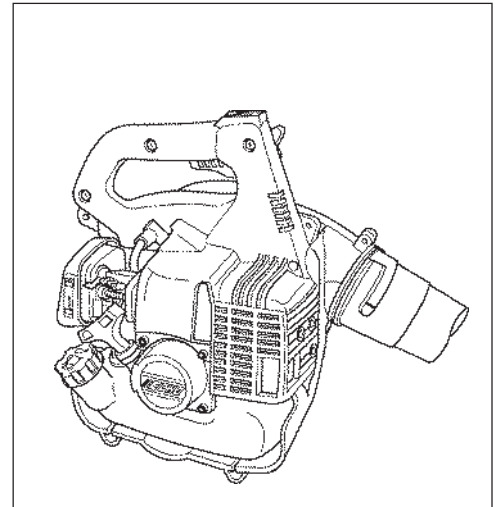
EQUIPMENT

Before operation a complete check of the unit must be performed:

- Check unit for loose/missing nuts, bolts and screws. Tighten and/or replace as needed.
- Inspect fuel lines, tank and area around carburettor for fuel leaks. **DO NOT** operate unit if leaks are found.

Spark Arrestor Muffler

- The spark arrestor muffler controls the exhaust noise and prevents hot, glowing particles of carbon from leaving the muffler. Make sure the spark arrestor screen is in good repair and properly seated in the muffler. (Refer to Exhaust System Maintenance pg. 19.)




Parts

- Do not use blower if any part is missing or damaged.
- Have repairs done only by an authorized ECHO Service dealer.
- Do not use any attachment, accessory or replacement part unless it is recommended in this Operator's Manual.



FUEL

WARNING  DANGER

Fuel is VERY flammable. Use extreme care when mixing, storing or handling or serious personal injury may result.

- Use an approved fuel container.
- DO NOT smoke near fuel.
- DO NOT allow flames or sparks near fuel.
- Fuel tanks/cans may be under pressure. Always loosen fuel caps slowly allowing pressure to equalize.
- NEVER refuel a unit when the engine is HOT!
- NEVER refuel a unit with the engine running.
- DO NOT fill fuel tanks indoors. ALWAYS fill fuel tanks outdoors over bare ground.

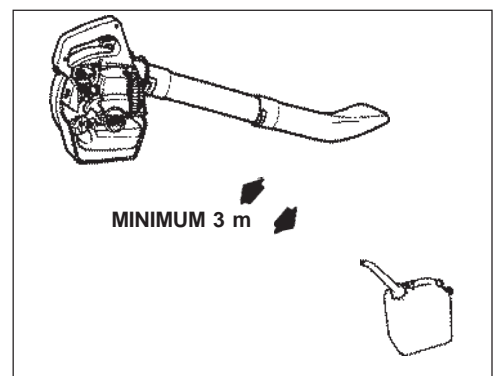


After Refuelling:

- Wipe any spilled fuel from the unit.
- Move at least 3 m from refuelling location before starting.

After use:

- **DO NOT** store a unit with fuel in its tank. Leaks can occur. Return unused fuel to an approved fuel storage container.



PERSONAL CONDITION AND SAFETY EQUIPMENT

WARNING DANGER

Power Blower users risk injury to themselves and others if the power blower is used improperly and or safety precautions are not followed. Proper clothing and safety gear must be worn when operating a blower.

Physical Condition --

Your judgment and physical dexterity may not be good:

- if you are over tired or sick,
- if you are taking medication,
- if you have taken alcohol or drugs.

Operate unit only if you are physically and mentally well.



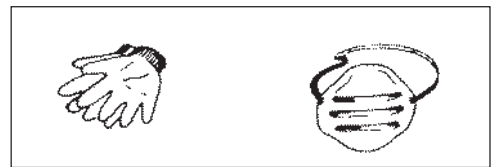
Eye Protection --

Wear goggles that meet ANSI Z 87.1 eye protection requirements whenever you operate the blower.



Hand Protection --

Wear no-slip, heavy duty work gloves to improve your grip on the blower handle. Gloves also reduce the transmission of machine vibration to your hands.

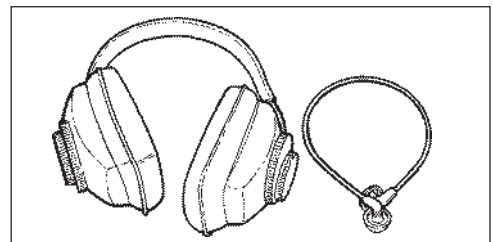


Breathing Protection --

Wear a face mask to protect against dust.

Hearing Protection --

ECHO recommends wearing hearing protection whenever unit is used.



Proper Clothing --

Wear snug fitting, durable clothing;

- Pants should have long legs, shirts with long sleeves.
- DONOT WEAR SHORTS,
- DONOT WEAR TIES, SCARVES, JEWELRY.

Wear sturdy work shoes with nonskid soles;

- DONOT WEAR OPEN TOED SHOES,
- DONOT OPERATE UNIT BAREFOOTED.



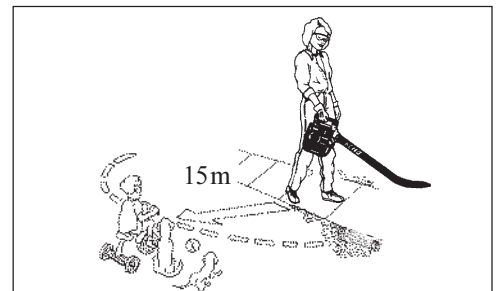
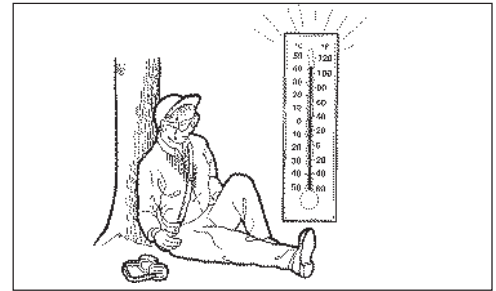
Hot Humid Weather --

Heavy protective clothing can increase operator fatigue which may lead to heat stroke. Schedule heavy work for early morning or late afternoon hours when temperatures are cooler.

SAFE OPERATION

Setup/Check Operation Area --

- Review area to be cleared. Look for potential hazards such as stones or metal objects.
- Spectators and fellow workers must be warned, and children and animals prevented from coming nearer than 15 m while the blower is in use.
- Operate only in well ventilated areas: do not operate in enclosed areas such as inside garages, sheds or buildings.
- Take wind conditions into account: avoid open doors and windows.



Use Proper Clothing and Equipment

- Before starting the unit, equip yourself and any other person working within the 15 m Safety Zone with the required Protective Equipment and clothing.
- Start unit on ground with throttle at idle. Check that blower pipe is not blocked by the ground or by any objects.
- Do not point blower at people or animals.



Keep A Firm Grip and Solid Stance

- Hold handle with fingers together encircling the handle.
- Maintain footing and balance at all times. Do not stand on slippery, uneven or unstable surfaces. Do not work in odd positions or on ladders.
- Do not perform Maintenance or Assembly procedures with engine running.

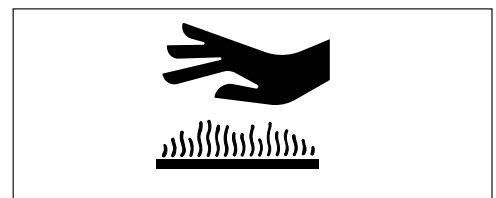
Noise Control

- Follow local noise regulations on sound levels and hours of operations. Use only during appropriate hours.
- Never use a higher speed setting than necessary to perform a task. The higher the engine speed the louder the blower noise.
- Be a good neighbor.



Avoid Hot Surfaces

- During operation, the exhaust area may become very hot, too hot to touch. Avoid contact during and immediately after operation.



EXTENDED OPERATION/EXTREME CONDITIONS***Vibration and Cold --***

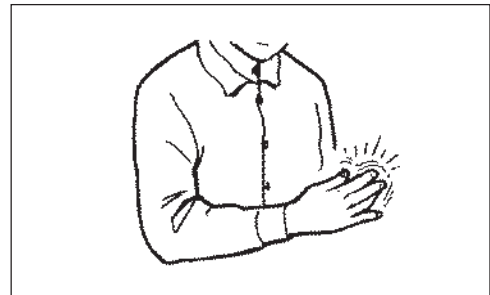
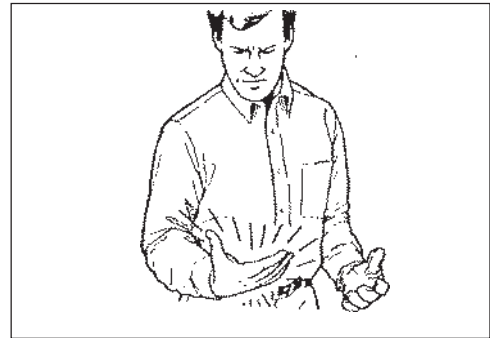
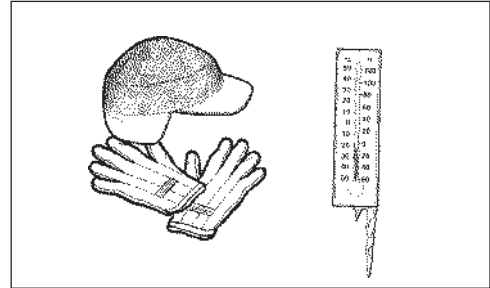
It is believed that a condition called Raynaud's Phenomenon, which affects the fingers of certain individuals may be brought about by exposure to vibration and cold. Exposure to vibration and cold may cause tingling and burning sensations followed by loss of color and numbness in the fingers. The following precautions are strongly recommended because the minimum exposure which might trigger the ailment is unknown.

- Keep your body warm, especially the head, neck, feet, ankles, hands and wrists.
- Maintain good blood circulation by performing vigorous arm exercises during frequent work breaks and also by not smoking.
- Limit the hours of operation. Try to fill each day with jobs where operating the blower or other hand-held power equipment is not required.
- If you experience discomfort, redness and swelling of the fingers followed by whitening and loss of feeling, consult your physician before further exposing yourself to cold and vibration.

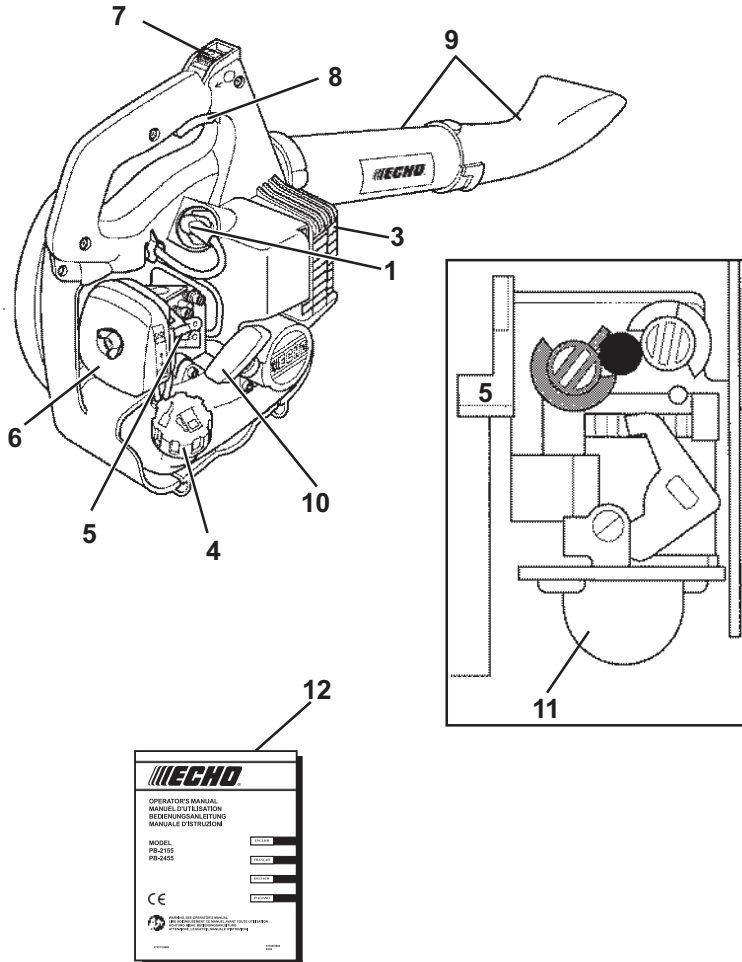
Repetitive Stress Injuries --

It is believed that overusing the muscles and tendons of the fingers, hands, arms and shoulders may cause soreness, swelling, numbness, weakness and extreme pain in those areas. Certain repetitive hand activities may put you at a high risk for developing a Repetitive Stress Injury (RSI). An extreme RSI condition is Carpal Tunnel Syndrome (CTS), which could occur when your wrist swells and squeezes a vital nerve that runs through the area. Some believe that prolonged exposure to vibration may contribute to CTS. CTS can cause severe pain for months or even years. To reduce the risk of RSI/CTS, do the following:

- Avoid using your wrist in a bent, extended or twisted position. Instead try to maintain a straight wrist position. Also, when grasping, use your whole hand, not just the thumb and index finger.
- Take periodic breaks to minimize repetition and rest your hands.
- Reduce the speed and force in which you do the repetitive movement.
- Do exercises to strengthen the hand and arm muscles.
- See a doctor if you feel tingling, numbness or pain in the fingers, hands, wrists or arms. The sooner RSI/CTS is diagnosed, the more likely permanent nerve and muscle damage can be prevented.

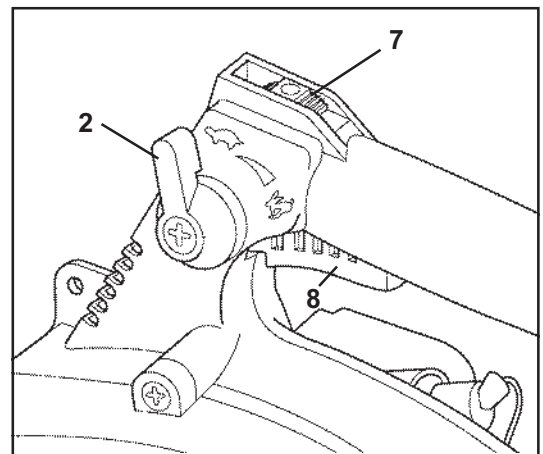


DESCRIPTION



CONTENTS

- 1- Power Head
- 1- Blower Pipe Assembly
- 1- Plastic Bag
- 1- Operator's Manual



1. **SPARK PLUG** - Provides spark to ignite fuel mixture.
2. **THROTTLE POSITION LEVER** - Pull back to increase engine speed. Friction washers maintain throttle trigger setting.
3. **MUFFLER/SPARK ARRESTER** - The spark arrester muffler controls the exhaust noise while the spark arrester prevents hot, glowing particles of carbon from leaving the muffler.
4. **FUEL TANK CAP** - For closing the fuel tank.
5. **CHOKE LEVER** - Lever is located on right side of the air cleaner. Move lever **UP** to close choke (starting position) and for emergency stopping. **Move down** choke (run position).
6. **AIR CLEANER** - Contains replaceable felt element.
7. **IGNITION SWITCH** - "SLIDE SWITCH" mounted on top of handle. Slide **forward** to **start** and **run**. Slide **back** to stop.
8. **THROTTLE TRIGGER** - Spring loaded to return to idle when released if throttle position lever is not engaged.
9. **BLOWER PIPES** - Twist lock design.
10. **STARTER HANDLE** - Pull handle to start the engine. **DO NOT** let handle snap back or damage to unit will occur.
11. **PURGE BULB** - Pumping purge bulb before starting draws fresh fuel from fuel tank to carburetor replacing air and old fuel. Before starting, pump repeatedly (normally 3-4 times) until fuel is visible in "Clear" fuel return line.
12. **OPERATOR'S MANUAL** - Included in plastic bag (co-pack). Read before operation and keep in a safe place for future reference, i.e., operation, maintenance, storage and specifications.

SPECIFICATIONS

| | | PB-2155 | PB-2455 |
|--|-----------------------|--|-----------------|
| Dimensions : Length x Width x Height | mm | 330 x 215 x 340 | 330 x 215 x 340 |
| | kg | 4.0 | 4.3 |
| Engine : | | Air cooled Two stroke single cylinder | |
| Type | | | |
| Engine displacement | mL (cm ³) | 21.2 | 23.6 |
| Maximum power | kW | 0.51 | 0.69 |
| Engine speed | r/min | 7,000 - 8,000 | 7,000 - 8,000 |
| Engine idle speed | r/min | 2,800 - 3,400 | 2,800 - 3,400 |
| Carburettor | | ZAMA Diaphragm model CIU type with purge | |
| Ignition | | Flywheel magneto - CDI system | |
| Spark plug | | CHAMPION RCJ-7Y | |
| Starter | | Automatic recoil system | |
| Air Volume with straight pipe : | m ³ /min | 8.7 | 9.0 |
| Fuel : | | Regular grade petrol. Minimum 89 Octane unleaded petrol is recommended. Do not use fuel containing methyl alcohol or more than 10 % of ethyl alcohol. | |
| Oil | | Two stroke, air cooled engine oil. ISO-L-EGD Standard (ISO/CD 13738), JASO FC grade and ECHO Premium 50 : 1 oil. | |
| Ratio | | 50 : 1 (2 %) | |
| Tank Capacity : | L | 0.5 | |
| Sound Pressure Level : (Referred to EN27917) LpAav = | dB (A) | 101 | 103 |
| Guaranteed Sound Power Level : (2000/14/EC) LWA = | dB (A) | 107 | 109 |
| Vibration : (Referred to ISO 7916) | m/s ² | 7.2 | 10.1 |
| Blower pipe | | Standard | |
| Vacuum kit | | Optional | |

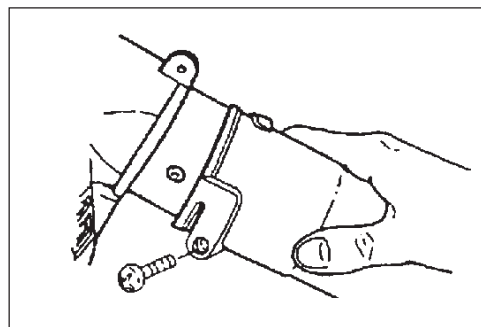
ASSEMBLY

WARNING DANGER

Never perform maintenance or assembly procedures with engine running or serious personal injury may result.

INSTALL BLOWER PIPES

1. Remove tube retaining screw from blower housing. Align grooves in straight pipe with pegs of blower housing and slide pipe onto housing.

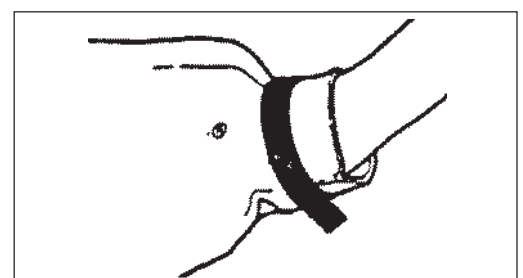
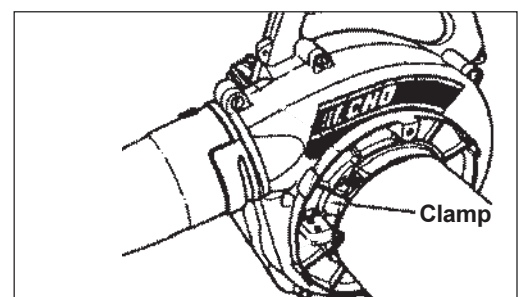
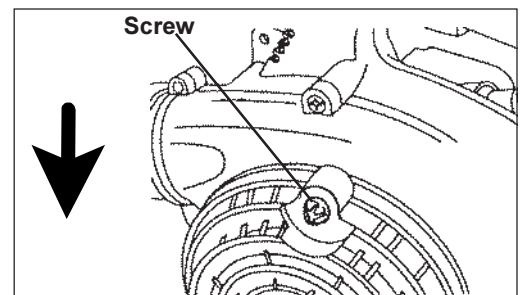


2. Turn straight pipe clockwise to lock it into place.
3. Tighten screw securely.
4. Remove tube retaining screw from the straight tube. Align grooves in fan head nozzle with pegs on straight pipe and slide fan head nozzle onto straight pipe.
5. Turn fan head nozzle clockwise to lock it into place.
6. Tighten screw securely.

INSTALL VACUUM TUBE (OPTIONAL)

WARNING  **DANGER**
NEVER PERFORM MAINTENANCE OR ASSEMBLY PROCEDURES WITH ENGINE RUNNING. WHEN REMOVING GRID, STOP ENGINE. WHEN APPLYING AS BLOWER, FASTEN GRID SECURELY.

1. Remove a screw until fan grid is free. Pull fan grid out for access to tube clamp.
2. Hold the fan grid open, and slide the vacuum tube into the housing mount until completely seated. Position the tube so that the bevel faces down in the operating position.
3. Secure vacuum tube with clamp.
4. Align grooves in vacuum elbow with pegs on air outlet and install vacuum elbow.
5. Turn vacuum elbow clockwise to lock it into place, pointing backward.
6. Place vacuum bag opening over end of vacuum elbow and secure with velcro strap.



PRE-OPERATION

FUEL

Fuel Requirements --

- Fuel is a mixture of regular grade petrol and an air-cooled 2-stroke engine oil of reputable brand name. Minimum 89 Octane unleaded petrol is recommended. Do not use fuel containing methyl alcohol or more than 10 % of ethyl alcohol.
- Recommended mixture ratio; 50 : 1 (**2%**) for ISO-L-EGD Standard (ISO/CD 13738), JASO FC grade and ECHO Premium 50 : 1 oil.

Mixing - Follow directions on the oil container.

Handling Fuel --

WARNING **DANGER**

Fuel is **VERY** flammable. Use extreme care when mixing, storing or handling or serious personal injury may result.

- Use an approved fuel container.
- DO NOT smoke near fuel.
- DO NOT allow flames or sparks near fuel.
- Fuel tanks/cans may be under pressure. Always loosen fuel caps slowly allowing pressure to equalize.
- NEVER refuel a unit when the engine is HOT!
- NEVER refuel a unit with the engine running.
- DO NOT fill fuel tanks indoors. ALWAYS fill fuel tanks outdoors over bare ground.

After Refuelling -

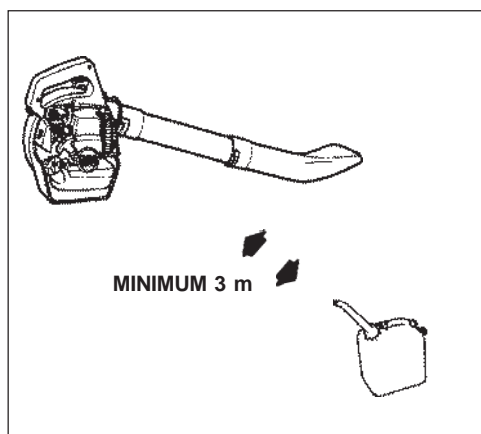
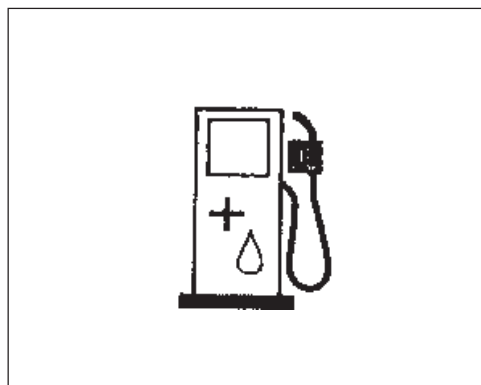
- Wipe any spilled fuel from the unit.
- Move at least 3 m from refuelling location before starting.

After use -

- DO NOT store a unit with fuel in its tank. Leaks can occur. Return unused fuel to an approved fuel storage container.

Storage -

Fuel storage laws vary by locality. Contact your local government for the laws affecting your area. As a precaution, store fuel in an approved, air tight container. Store in a well ventilated, unoccupied building, away from sparks and flames. Do not store fuel longer than 30 days.



| S | M | T | W | T | F | S |
|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | | | | |

OPERATION

IMPORTANT

Check unit for loose nuts, bolts and screws daily.

IMPORTANT

Recoil starter: Use short pulls - only 1/2-2/3 of rope length for starting. Do not allow the rope to snap back in. Always hold the unit firmly.

STARTING COLD ENGINE

1. Move ignition switch to START/RUN position.
2. Push purge bulb 3-4 times (or until fuel is visible in fuel return line).
3. Close choke (move choke lever up) and pull starter handle until engine fires.
4. Open choke and if necessary, restart engine.

NOTE

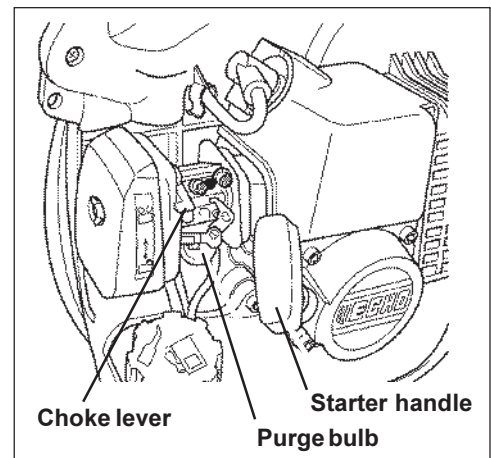
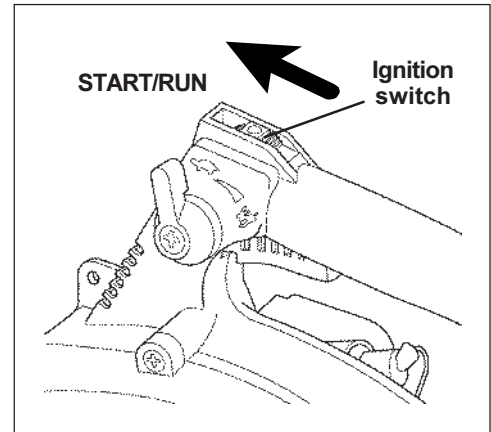
Allow engine to warm up before use.

STARTING WARM ENGINE

1. Move ignition switch to start, pull starter handle 1-3 times and engine should start. Do not use choke.

NOTE

If engine does not start after 4 pulls, use cold start procedures.

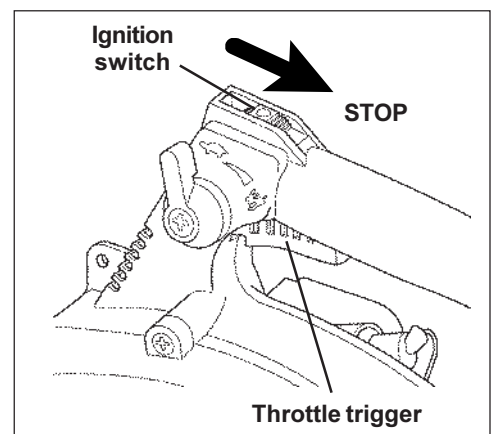


STOPPING ENGINE

1. Release throttle trigger and allow engine to run at idle for a few minutes.
2. Move ignition switch to "STOP" position.

WARNING DANGER

If engine does not stop, shift choke lever to closed position. Check and repair ignition switch before starting engine again or serious personal injury may result.



OPERATING BLOWER

WARNING DANGER

Always wear safety glasses, hearing protection and a face filter mask or serious personal injury may result.

Do not point the blower pipe in the direction of people or pets.

Read the Safety Section carefully.

IMPORTANT

To avoid engine damage due to over revving, do not block blower pipe.

1. Use only during appropriate hours.
2. Make sure bevel at end of pipe faces downward.
3. Allow the engine to warm up at a fast idle for a few minutes.
4. Set engine speed with throttle position lever.

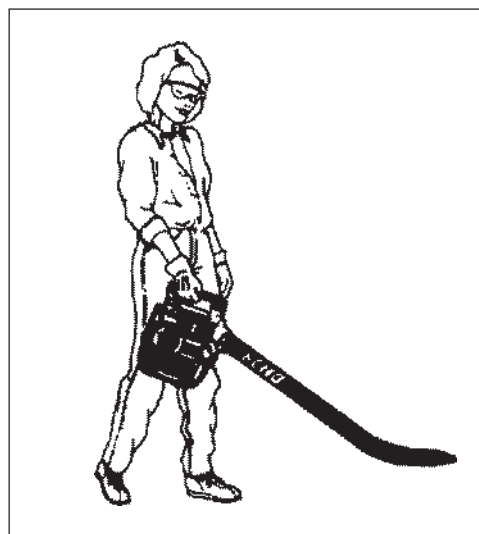
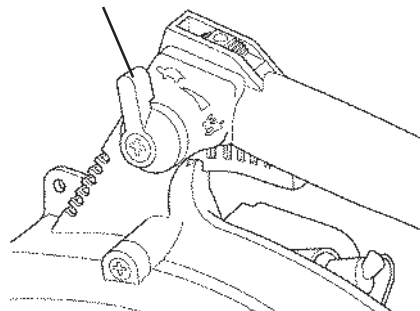
NOTE

Use lower speed to blow dry leaves from a lawn or flower bed. Additional speed may be necessary to clean grass and leaves from walks, patios and drives or to move gravel, dirt, snow, bottles or cans from a driveway, street, parking lot or stadium.

NOTE

Never use a higher speed setting than necessary to perform a task. Remember, the higher the engine speed, the louder the blower noise. Minimize dust by using blower at lower speeds. Keep debris on your property.
Be Smart - be a good neighbor.

Throttle position lever



OPERATING VACUUM (OPTION)

WARNING **DANGER**

- Always wear safety glasses and use a face filter mask. (Read the safe operation section carefully.)
- Do not point the blower pipe in the direction of people or pets.
- Never operate unit without fan grid secured by thumb nut, otherwise bodily harm may result.

NOTE

Do not block blower pipe to avoid engine damage due to over speed.

1. Allow the engine to warm up at a fast idle for a few minutes.
2. Engine speed can be easily controlled by throttle trigger with fingers or throttle position lever.

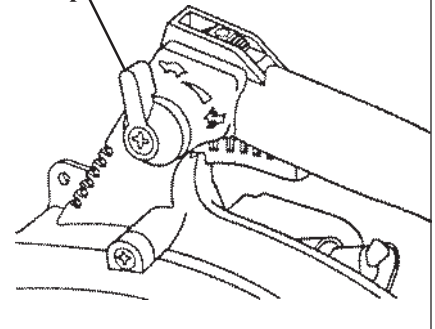
NOTE

Never use a higher speed setting than necessary to perform a task. Remember, the higher the engine speed, the louder the blower noise.

NOTE

Use a low speed to blow dry leaves from a lawn or flower bed. Additional speed may be necessary to clean grass and leaves from walks, patios and drives or to move gravel, dirt, snow, bottles or cans from a driveway, street or parking lot.

Throttle position lever



MAINTENANCE

Your ECHO blower is designed to provide many hours of trouble free service. Regular scheduled maintenance will help your blower achieve that goal. If you are unsure or are not equipped with the necessary tools, you may want to take your unit to an ECHO Service Dealer for maintenance. To help you decide whether you want to DO-IT-YOURSELF or have the ECHO Dealer do it, each maintenance task has been graded.

Level 1 = Easy to do. Most required tools come with unit.

Level 2 = Moderate difficulty. Some specialized tools may be required.

Level 3 = Experience required. Specialized tools are required.

ECHO offers **REPOWER** Maintenance Kits and Parts to make your maintenance job easier. Just below each task heading are listed the various part numbers required for that task. See your ECHO dealer for these parts.

MAINTENANCE INTERVALS

| Component/System | Maintenance Procedure | Before Use | Every Refuel | Daily or Every 4 hours | 3 Months or 100 hours | 6 Months or 300 hours | Yearly or 600 hours |
|------------------------|---------------------------------|---|--------------|------------------------|-----------------------|-----------------------|---------------------|
| Air Filter | Inspect/Clean/Replace | • | | • | R | | |
| Fuel Filter | Inspect/Clean/Replace | | | | • | | R |
| Fuel Line | Inspect/Replace | | | | • | | |
| Carburettor | Adjust/ Replace and adjust | | | | | • | R(1) |
| Choke System | Inspect/Clean/Replace | | • | | | | |
| Cooling System | Inspect/Clean | • | | • | | | |
| Muffler Spark Arrester | Inspect/Tighten/Clean | • | | | • | | |
| Vacuum Bag | Inspect/Replace | • | | | | | |
| Starter Rope | Inspect/Replace | • | | | | | |
| Fuel Leaks | Inspect/Repair | • | • | | | R | |
| Spark Plug | Inspect/Clean Adjust/Replace | | | | • | R | |
| Ignition System | Clean/Relace | No Maintenance required for coil and flywheel | | | | | |
| Screws/Bolts/Nuts | Inspect/Tighten/ Replace | • | | | | | |

IMPORTANT

Time intervals shown are maximum. Actual use and your experience will determine the frequency of required maintenance.

*Record dates of monthly and yearly inspections.

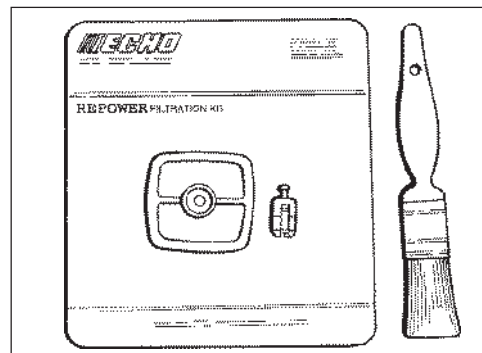
(1) Replacement will be required for Commercial use after 600 hours. For Consumer use, cleaning every 6 months is required. Cleaning includes Rebuild Kits.

AIR FILTER

Level 1.

Tools required: Cleaning brush, 25 mm or 50 mm medium bristle paint brush.

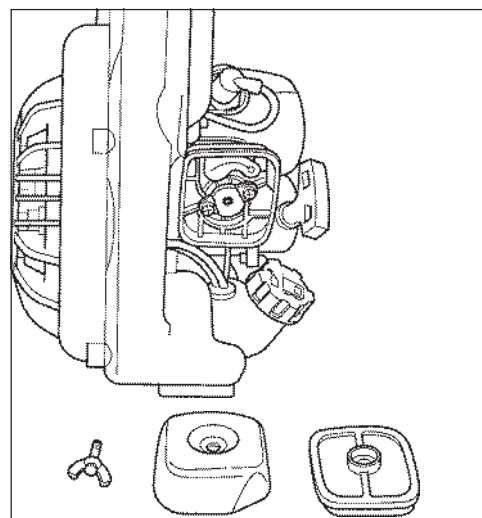
Parts required: 90008 REPOWER AIR & FUEL FILTER KIT.



NOTE

Clean daily.

1. Close choke, remove wing nut, air cleaner cover and air filter.
2. Brush dust off filter.



CARBURETTOR ADJUSTMENT - GENERAL

Level 2.

Tools required: Screwdriver, tachometer.

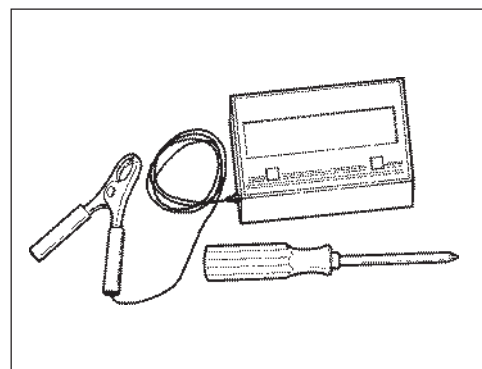
Parts required: none.

NOTE

Do not adjust carburetor unless necessary. If you have difficulty, see your ECHO dealer.

Adjusters

| | |
|---------------------------------|---|
| Idle Speed Adjuster (T) | Control throttle opening at idle. |
| Low Speed Mixture Adjuster (L) | Controls amount of fuel at low speed and supplementary fuel for smooth progression from idle to high speed. |
| High Speed Mixture Adjuster (H) | Controls amount of fuel at full throttle |



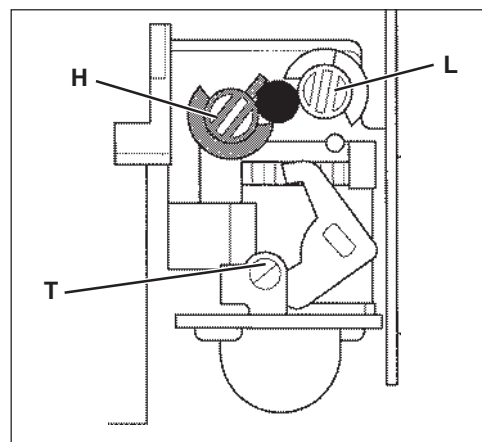
Before Adjustment

Check that:

- Air filter is clean and properly installed.
- Spark arrestor screen and exhaust port are free of carbon
- Blower pipes are installed

Initial Adjustment

1. With engine off, turn H adjuster anticlockwise to stop.
2. Turn L adjuster midway between stops.
3. Turn T adjuster until tip of adjuster just touches throttle plate; then turn three turns clockwise.



Final Adjustment

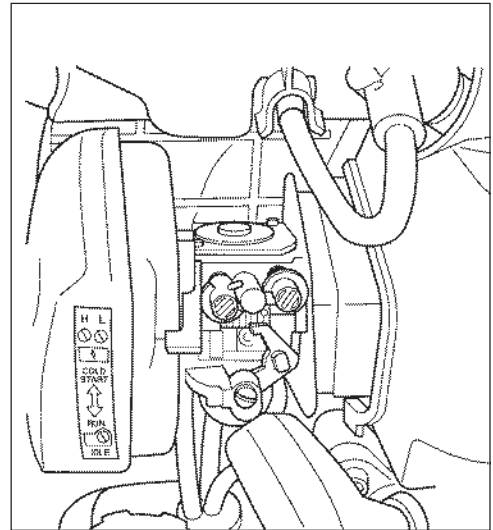
IMPORTANT

Limiter caps prevent exceeding emission limits and over rich adjustment, but not over lean adjustment, which can cause engine failure: Do not exceed recommended high speed engine rev during operation, or for long periods during adjustment.

1. Start engine, run at idle for one minute.
2. Complete warm up by running at full throttle for 5 minutes, operating choke twice to clear air from carburettor chambers.
3. Run at idle and accelerate to check for smooth transition from idle to high speed; if engine hesitates, turn L adjuster anticlockwise 1/8 turn at a time until acceleration is smooth.
4. Adjust T adjuster to 3,000 r/min, using tachometer.

NOTE

When there is some trouble with the carburettor, contact your distributor or dealer.



COOLING SYSTEMS

Level 2.

Tools required: 19 mm Spark Plug deep socket, 3 mm Allen wrench, Phillips Screwdriver, Pointed Wood Stick, Cleaning Brush, 25 mm - 50 mm medium bristle paint brush.

Parts Required: None if you are careful.

IMPORTANT

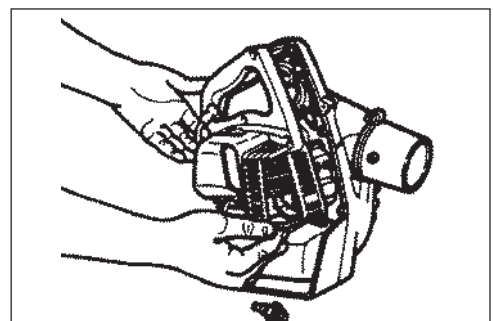
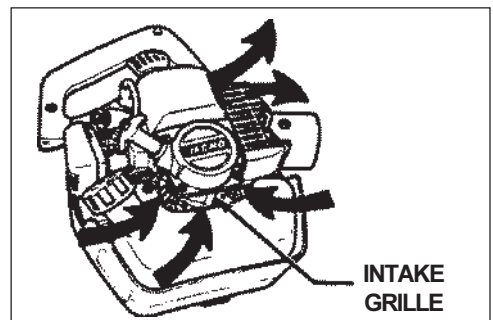
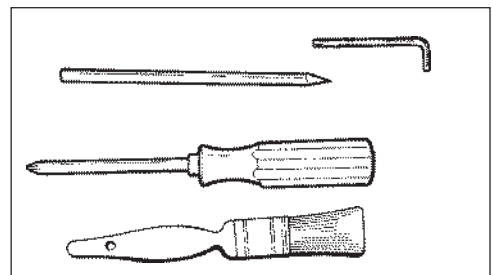
To prevent overheating and engine seizure, cooling air comes through the grille and is pushed by a cooling fan through the cylinder fin area to an opening in the front of the engine cover, taking away combustion heat. The grille and cylinder fins must be kept clean of grass, dust and any debris. Engine failure due to lack of this "Normal Maintenance" is not covered by warranty.

Cleaning Grille

Remove accumulated debris from crankcase intake grille above the fuel tank.

Cleaning Cylinder Fins

1. Remove spark plug.
2. Remove engine cover (seven screws) and clean cylinder fins to allow cooling air to pass freely.

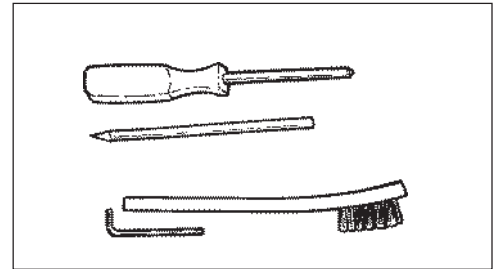


EXHAUST SYSTEM

Level 3.

Tools Required: Phillips Screwdriver. Srench. 10 mm Open end wrench. Soft metal brush. Wooden carbon scraper. 3 mm Allen wrench, 4 mm Allen wrench.

Parts Required: Spark arrester screen, gasket.

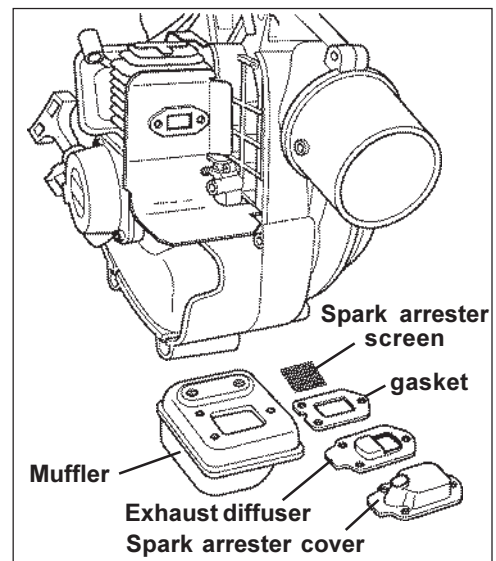


Muffler and Exhaust Port

IMPORTANT

Carbon deposits in cylinder exhaust port and muffler will cause a drop in engine output and overheating. Muffler exhaust port and spark arrester screen must be checked periodically.

1. Remove spark plug and engine cover (seven screws).
2. Remove muffler.
3. Clean cylinder exhaust port being careful not to scratch cylinder or piston, using a wooden or plastic scraper.
4. Remove spark arrester cover, exhaust diffuser, gasket and spark arrester screen from muffler. Replace screen if plugged with carbon deposits.
5. Install spark arrester screen, gasket, diffuser and cover.
6. Be sure gasket seals muffler spark arrester screen to muffler.

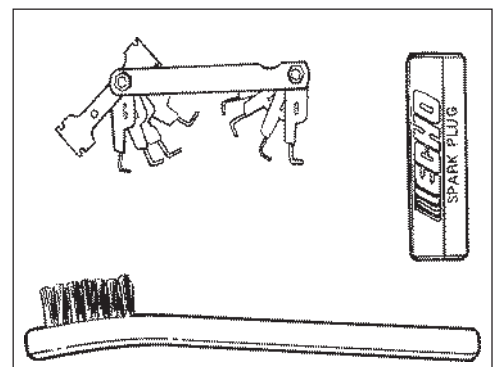


SPARK PLUG

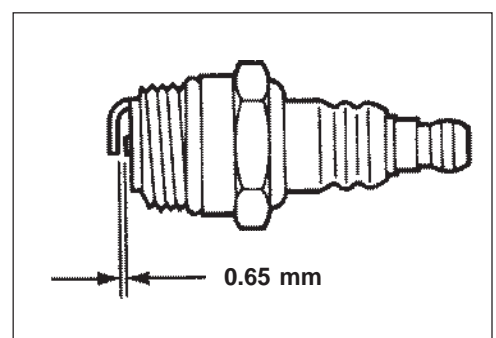
Level 2.

Tools Required: 19 mm Spark Plug deep socket, Feeler gauge. Preferably a wire gauge.

Parts Required: Spark Plug, Champion RCJ-7Y



1. Remove spark plug and check for fouling, worn and rounded center electrode.
2. Clean the plug or replace with a new one. DO NOT sand blast to clean. Remaining sand will damage engine.
3. Adjust spark plug gap by bending outer electrode.



FUEL FILTER

Level 1.

Tools required: Fuel line hook. 203-254 mm length of wire with one end bent into a hook. Clean cloth, funnel, and an approved fuel container.

Parts required: 90008 REPOWER AIR & FUEL FILTER KIT

NOTE

Check fuel filter periodically.

IMPORTANT

Keep fuel tank clean - do not allow dirt or debris to enter fuel tank.

NOTE

A clogged fuel filter will cause hard starting or poor engine performance.

1. Pick up the fuel filter through fuel tank opening with a piece of steel wire.
2. Remove old filter.
3. Install new filter.

VACUUM BAG (OPTIONAL)

Shake dust from bag and inspect for holes or tears.

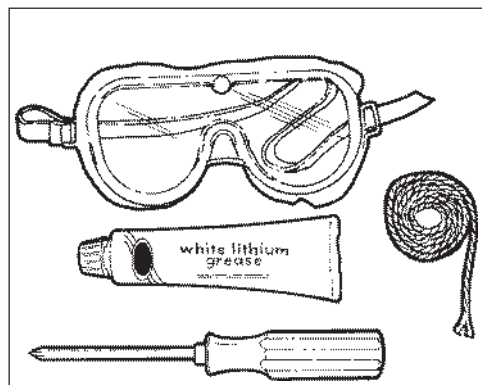
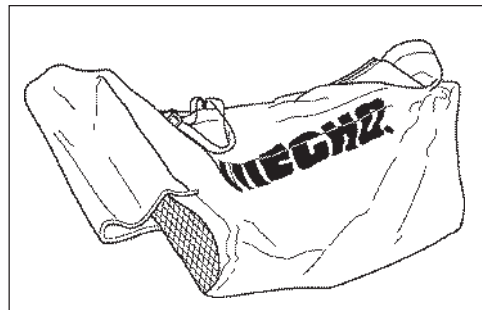
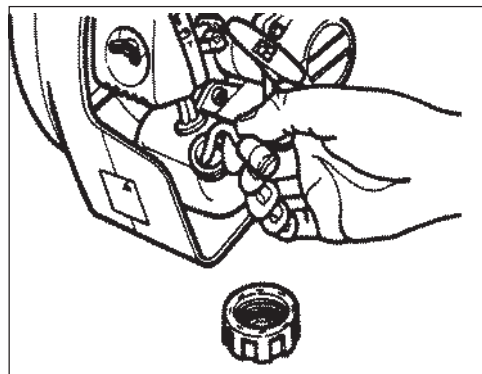
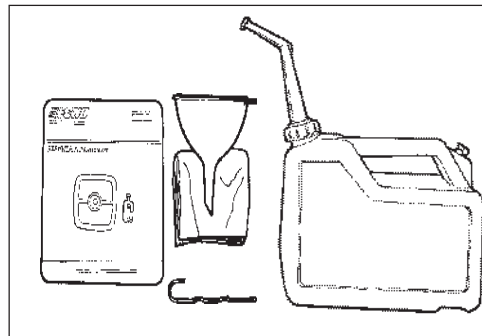
Inspect zipper and clean debris from teeth to assure complete closing of zipper.

STARTER ROPE REPLACEMENT


Level 3.

Tools required: SAFETY GOGGLES, Screwdriver, 3mm Allen wrench.

Parts Required: 890 mm ECHO Starter Rope, Lithium based grease.



1. Remove four (4) screws holding starter assembly on engine, remove starter.
2. Hold starter drum in place and cut off or untie knot. Allow the drum to slowly turn until all spring tension is relieved.

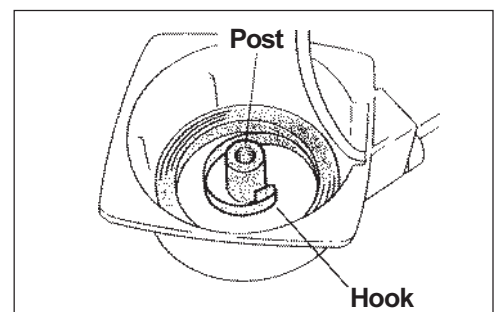
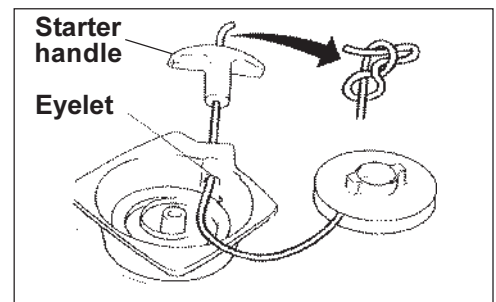
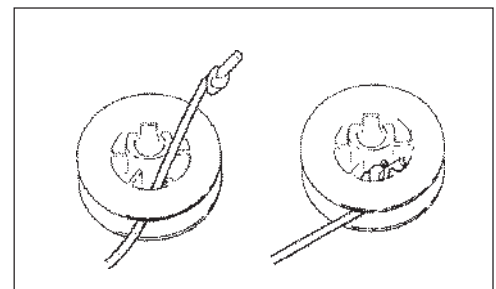
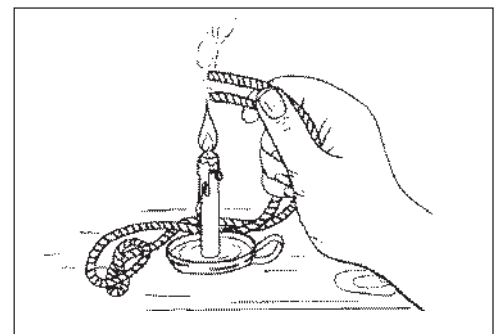
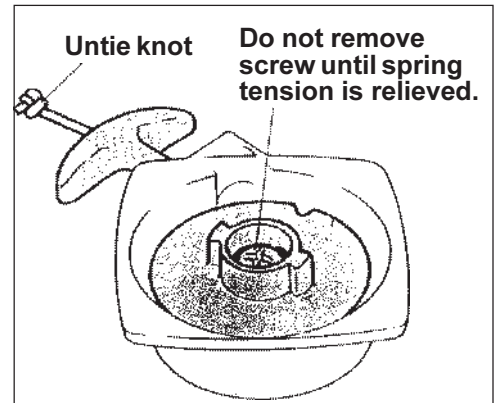
WARNING  **DANGER**

The spring inside the starter is under tension. **DO NOT** remove screw until spring tension is relieved or serious personal injury may result.

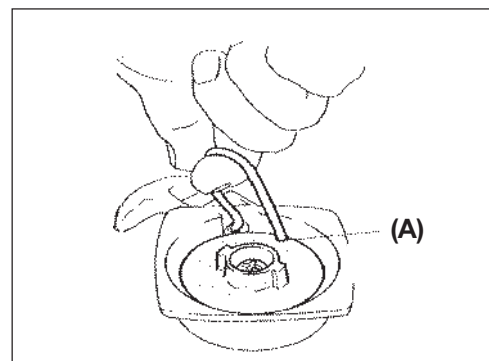
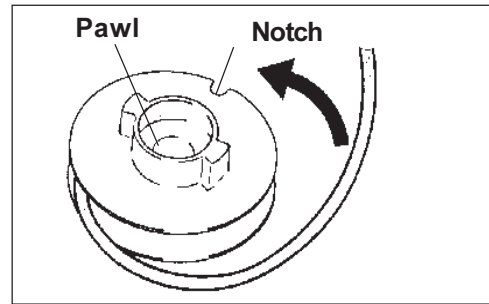
IMPORTANT

The spring must not come out with the drum. If resistance is felt when lifting the drum, **STOP!** See your Authorized ECHO Service Dealer for help.

3. Remove screw, turn drum slightly clockwise and lift carefully and slowly.
4. Remove the old starter rope and prepare the new rope by first heating both ends to prevent fraying.
5. Pass one end of the rope through the opening of the drum and tie a knot. Press knot and end of rope in cavity of drum.
6. Thread the rope through the eyelet in the housing then through the starter handle. Follow the illustration and tie another knot in the free end of the rope. Pull the knot into the handle.
7. Check that the hook on the end of the spring touches the post. Lightly grease the top of the spring and the post.



8. Hold the drum pawl side up and wind the rope on the drum anticlockwise, four (4) turns.
9. Install drum. The loop in the spring must engage the slot in the drum. Replace the screw and washer.
10. Hold the rope in the notch and rotate the drum anticlockwise several turns.
11. Hold the drum to prevent it from rewinding, pull the excess rope taut with the handle and allow to rewind slowly.
12. Pull rope several times to check spring tension. If rope does not rewind fully, repeat 10.
13. Pull rope out all the way. Drum must be able to turn an additional 1/2 turn anticlockwise. If drum does not turn, see your Authorized ECHO Service Dealer.
14. Install starter and test.



TROUBLESHOOTING

| Trouble | | | Cause | Remedy |
|--|----------------------------|------------------------------|--|--|
| Engine - starts hard - does not start | | | | |
| Engine Cranks | Fuel at carburettor | No fuel at carburettor | <ul style="list-style-type: none"> Fuel filter clogged Fuel line clogged Carburettor | <ul style="list-style-type: none"> Clean or replace. Clean. See your Echo dealer. |
| ↓ | Fuel at cylinder | No fuel at cylinder | <ul style="list-style-type: none"> Carburettor | <ul style="list-style-type: none"> See your Echo dealer. |
| | ↓ | Silencer wet with fuel | <ul style="list-style-type: none"> Fuel mixture is too rich | <ul style="list-style-type: none"> Open choke. Clean/replace air filter. Adjust carburettor. See your Echo dealer. |
| ↓ | Spark at end of plug wire | No spark at end of plug wire | <ul style="list-style-type: none"> Ignition switch off Electrical problem Safety interlock | <ul style="list-style-type: none"> Turn switch on. See your Echo dealer. Tighten grid cover, check vacuum not engaged tube attachment |
| | ↓ | No spark at plug | <ul style="list-style-type: none"> Spark gap incorrect Covered with carbon Fouled with fuel Spark plug defective | <ul style="list-style-type: none"> Adjust 0.6-0.7 mm Clean or replace. Clean or replace. Replace plug. |
| Engine does not crank | | | <ul style="list-style-type: none"> Internal engine problem | <ul style="list-style-type: none"> See your Echo dealer. |
| Engine runs | Dies or accelerates poorly | | <ul style="list-style-type: none"> Air filter dirty Fuel filter dirty Fuel vent blocked Spark plug Carburettor Cylinder fins blocked Exhaust port/spark arrestor screen blocked | <ul style="list-style-type: none"> Clean or replace. Clean or replace. Clean. Clean and adjust/replace. Adjust. Clean. Clean. |

STORAGE

Long Term Storage (Over 30 Days)

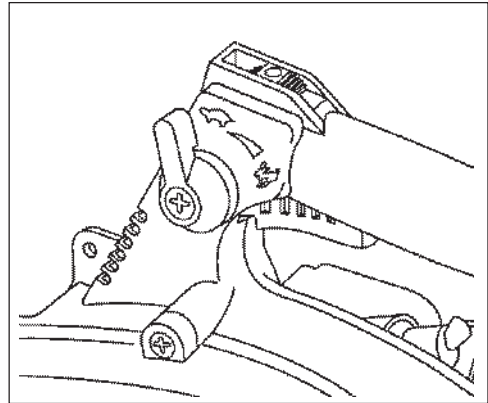
Do not store your unit for a prolonged period of time (30 days or longer) without performing protective storage maintenance which includes the following:

1. Store unit in a dry, dust free place, out of the reach of children.

WARNING **DANGER**

Do not store in enclosure where fuel fumes may accumulate or reach an open flame or spark or serious personal injury may result.

2. Place the ignition switch in the "STOP" position.
3. Remove accumulation of grease, oil, dirt and debris from exterior of unit.
4. Perform all periodic lubrication and services that are required.
5. Tighten all screws and nuts.
6. **Drain** the fuel tank **completely** and pull the recoil starter handle several times to remove fuel from the carburettor.
7. Remove the spark plug and pour 1/4 oz. (1/2 tablespoon) of fresh, clean ECHO 2-stroke engine oil into the cylinder through the spark plug hole.
 - A. Place a clean cloth over the spark plug hole.
 - B. Pull the recoil starter handle 2-3 times to distribute the oil inside the engine.
 - C. Observe the piston location through the spark plug hole. Pull the recoil starter handle slowly until the piston reaches the top of its travel and leave it there.
8. Install the spark plug (do not connect ignition cable).
9. Remove blower pipe assembly from unit.



DECLARATION "CE" OF CONFORMITY

The undersigned manufacturer:

KIORITZ CORPORATION
7-2 SUEHIROCHO 1-CHOME
OHME ; TOKYO 198-8711
JAPAN

declares that the hereunder specified new unit:

PORTABLE POWER BLOWER

Brand: **ECHO**
Type : **PB-2155**
PB-2455

assembled by:

ECHO, INCORPORATED
400 Oakwood Road,
Lake Zurich Illinois 60047-1564
U.S.A.

complies with:

- * the requirements of Directive **98/37/EC (1998)**
- * the requirements of Directive **89/336/EEC**
(use of harmonized standards **EN 50081-1, EN 50082-1, EN 55014 & EN 55022**)
- * the requirements of Directive **2002/88/EC**
- * the requirements of Directive **2000/14/EC**

Conformity assessment procedure followed **ANNEX V**

| | | PB-2155 | PB-2455 |
|------------------------------|--------------|----------------|----------------|
| Measured sound power level | dB(A) | 104 | 106 |
| Guaranteed sound power level | dB(A) | 107 | 109 |

Tokyo,
April 1st 2004
KIORITZ CORPORATION



F. AIYAMA, GENERAL MANAGER









KIORITZ CORPORATION

7-2 SUEHIROCHO 1-CHOME, OHME, TOKYO, 198, JAPAN
PHONE: 81-428-326118 FAX: 81-428-32-6145



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