



# POWER BLOWER

## *Operator's Manual*

**MODELS:**

**PB-600**

Serial Number 001001 & Up

**PB-601**

Serial Number 001001 & Up



### **WARNING**



The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

**WARNING**



**DANGER**

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

## INTRODUCTION

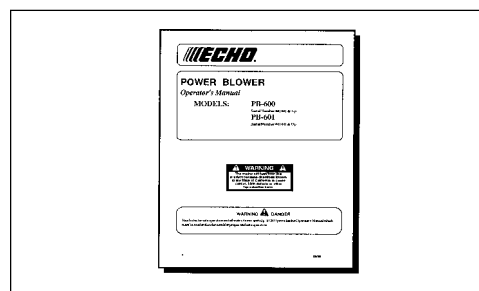
Welcome to the ECHO family. This ECHO product was designed and manufactured to provide long life and on-the-job-dependability. Read and understand this manual. You will find it easy to use and full of helpful operating tips and SAFETY messages.

### 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**



**NOTE**

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

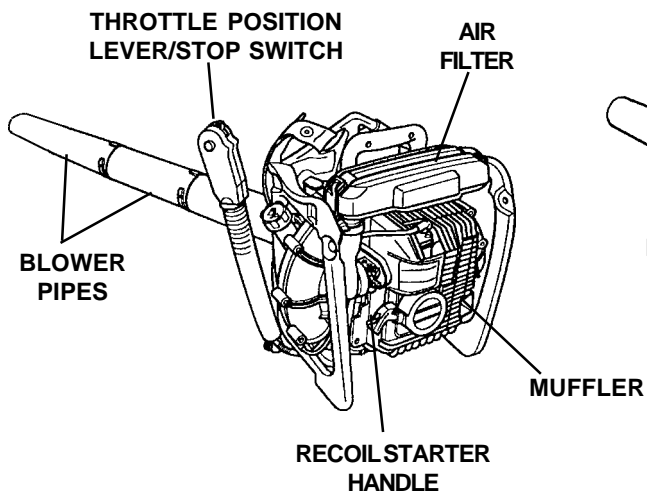
**NOTE** This enclosed message provides tips for use, care and maintenance of the unit.

## SAFETY

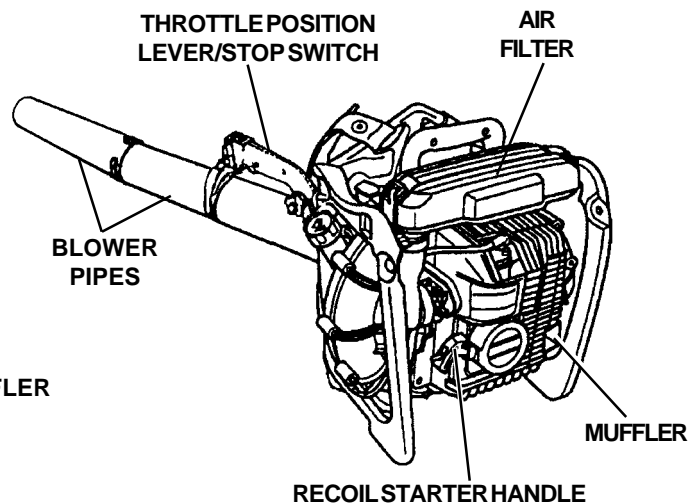
### GENERAL DESCRIPTION

#### IMPORTANT

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



**PB-600**

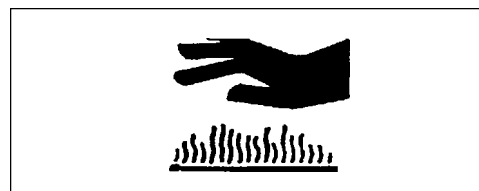


**PB-601**

## DECALS

Locate these safety decals on your unit. The complete unit illustration, found in the "DESCRIPTION" section, will help you locate them. 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 (near muffler)



## GENERAL WARNING DECAL (located on top of blower housing)



## INTERNATIONAL SYMBOLS

Symbol form/shape	Symbol description/application	Symbol form/shape	Symbol description/application
	Read and understand Operator's Manual.		Fuel and oil mixture
	Wear eyes, ears and head protection		Finger Severing
	Hot Surface		Wear hand protection. Use two handed.
	Safety/Alert		Wear slip resistant foot wear.
	DO NOT allow flames or sparks near fuel.		DO NOT smoke near fuel.

Symbol form/shape	Symbol description/application	Symbol form/shape	Symbol description/application
	Engine choke control.		Ignition ON/OFF
	Emergency stop		Primer bulb
	Carburetor adjustment - Low speed mixture		Carburetor adjustment - High speed mixture
	Carburetor adjustment - Idle speed		

## **EQUIPMENT**

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

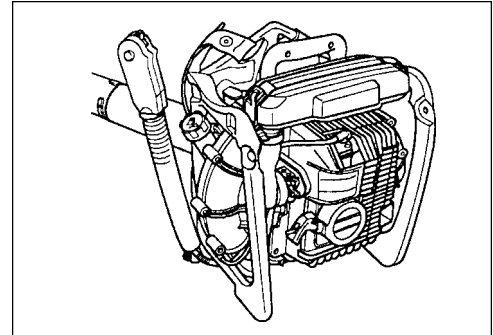
- Check unit for loose/missing nuts, bolts and screws. Tighten and/or replace as needed.
- Inspect fuel lines, tank and area around carburetor for fuel leaks. **DO NOT** operate unit if leaks are found.

### ***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. 23.)

### ***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.



**ATTACHMENTS  
AND  
ACCESSORIES**

## **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.
- Securely tighten fuel cap after refueling.
- Inspect for fuel leakage. If fuel leakage is found, do not start or operate unit until leakage is repaired.

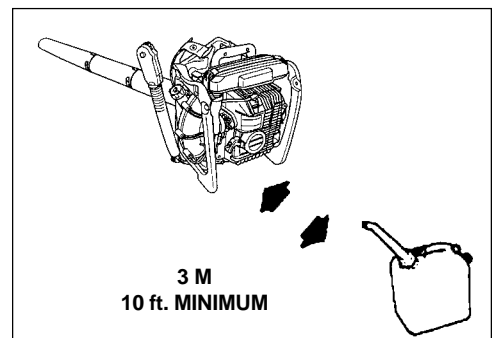


### **After Refueling:**

- Wipe any spilled fuel from the unit.
- Move at least 3 M (10 ft.) from refueling 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 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 eye protection that meets ANSI Z87.1 or CE 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 --***

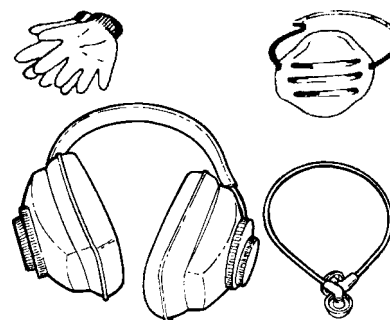
Wear snug fitting, durable clothing;

- Pants should have long legs, shirts with long sleeves.
- **DONOTWEARSHORTS,**
- **DONOTWEARTIES,SCARVES,JEWELRY.**

Wear sturdy work shoes with nonskid soles;

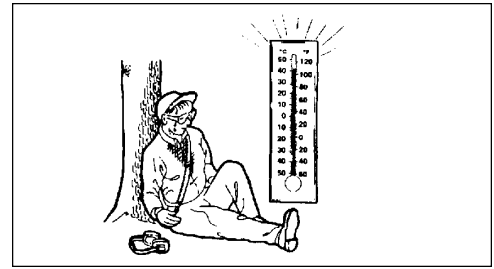
- **DONOTWEAROPENTOEDSHOES,**
- **DONOTOPERATEUNITBAREFOOTED.**

Keep long hair away from engine and blower intake. Retain hair with cap or net.



### ***Hot Humid Weather --***

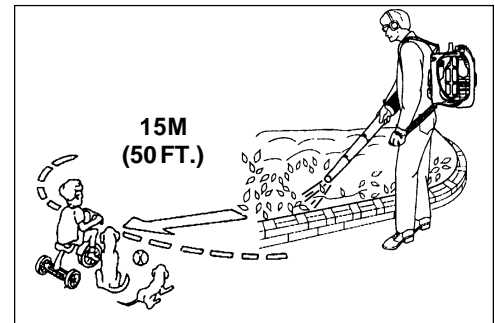
Heavy protective clothing can increase operator fatigue which may lead to heat stroke. Schedule heavy work for early morning or late afternoon hours when temperatures are cooler.



## **SAFE OPERATION**

### ***Determine 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 15M (50 ft.) while the blower is in use.
- Do not operate this product indoors or in inadequately ventilated areas..
- Take wind conditions into account: avoid open doors and windows.
- Provide all operators of this equipment with the Operator's Manual and instructions for safe operation.
- Do not point blower at people or animals.



### **Use Proper Clothing & Equipment**

- Before starting the unit, equip yourself and any other person working within the 15M (50 ft.) Safety Zone with the required Protective Equipment and clothing.
- Keep long hair away from engine and blower intake. Retain hair with cap or net.
- Start unit on ground with throttle at idle. Check that blower pipe is not blocked by the ground or by any objects.



### **Keep A Firm Grip**

- Hold handle with fingers together encircling the handle.

### **Keep A Solid Stance**

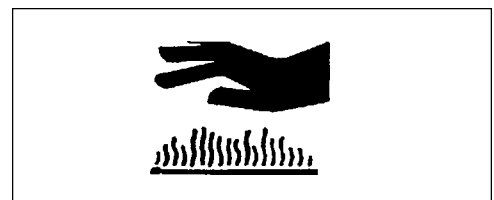
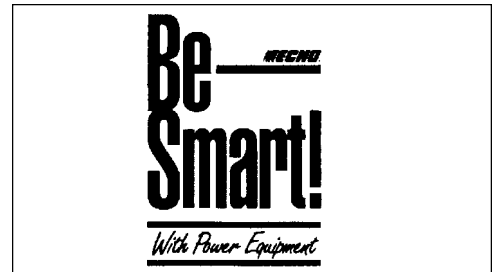
- Maintain footing and balance at all times. Do not stand on slippery, uneven or unstable surfaces. Do not work in odd positions or on ladders.
- Do not perform Maintenance or Assembly procedures with engine running.

### **Noise Control**

- Follow local noise regulations on sound levels and hours of operations. Use only during appropriate hours.
- Never use a higher speed setting then 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.

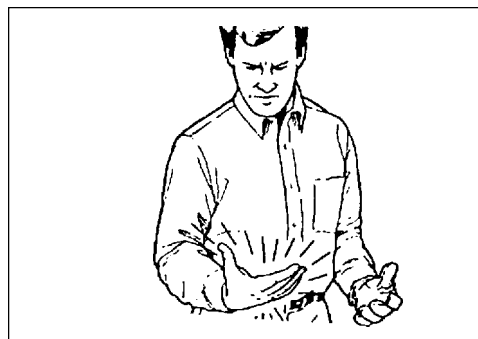
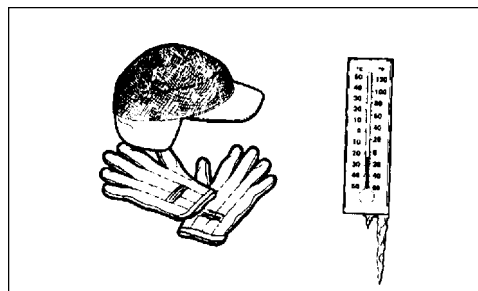


## EXTENDED OPERATION/EXTREME CONDITIONS

### 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.

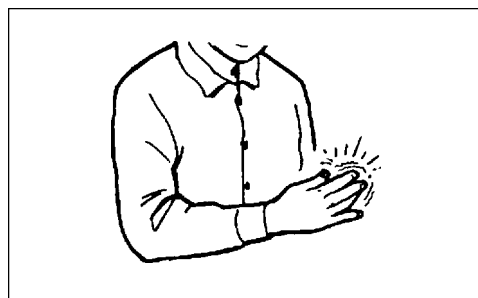
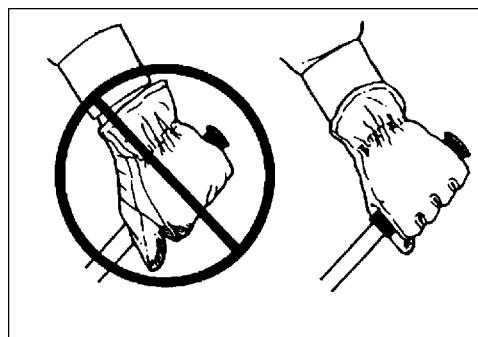
- Keep your body warm, especially the head, neck, feet, ankles, hands and wrists.
- Maintain good blood circulation by performing vigorous arm exercises during frequent work breaks and also by not smoking.
- Limit the hours of operation. Try to fill each day with jobs where operating the blower or other 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 & force in which you do the repetitive movement.
- Do exercises to strengthen the hand and arm muscles.
- Immediately stop using all power equipment and consult 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.



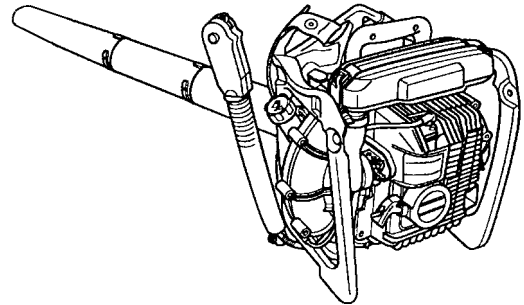


## DESCRIPTION

### EMISSION CONTROL

The emission control system for this engine is EM (Engine Modification).

**An Emission Control Label** is located on the unit. (This is an EX-AMPLE ONLY, information on label varies by engine FAMILY).



#### IMPORTANT ENGINE INFORMATION

ENGINE FAMILY: TEHO58UB25RA

DISPLACEMENT: 58.2 cc

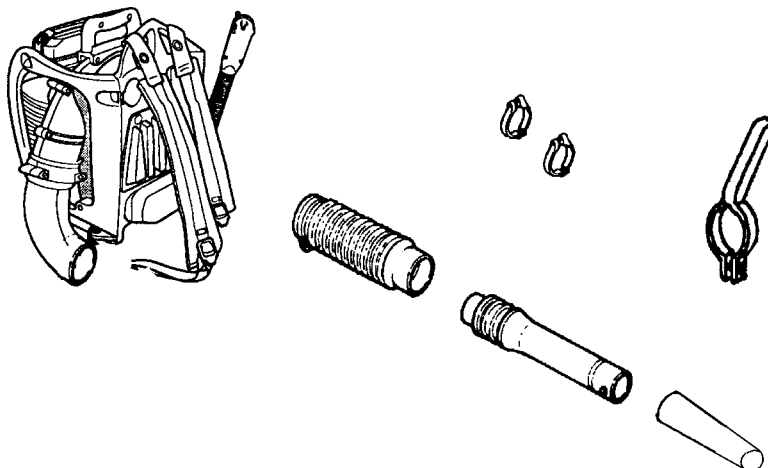
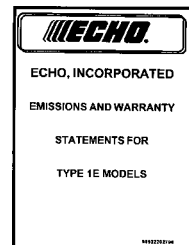
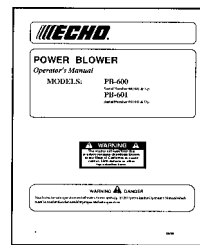
THIS ENGINE MEETS U.S. EPA PH1 EMISSION REGULATIONS FOR SMALL NON ROAD ENGINES. REFER TO OWNER'S MANUAL FOR MAINTENANCE SPECIFICATIONS AND ADJUSTMENTS.



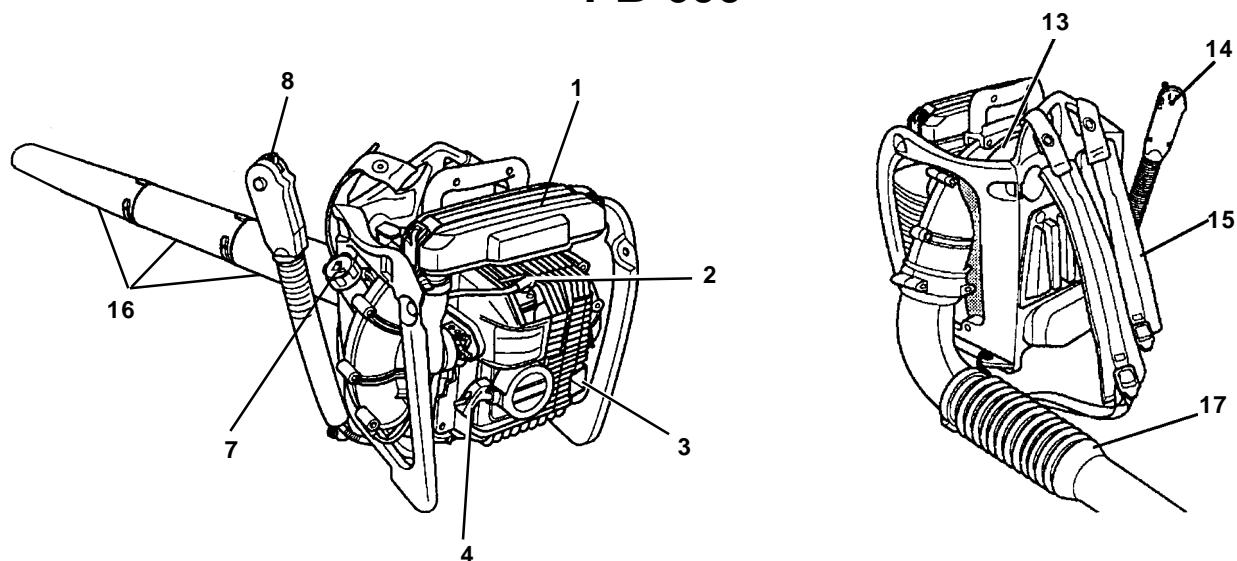
**KIORITZ CORP.** \*\*\*

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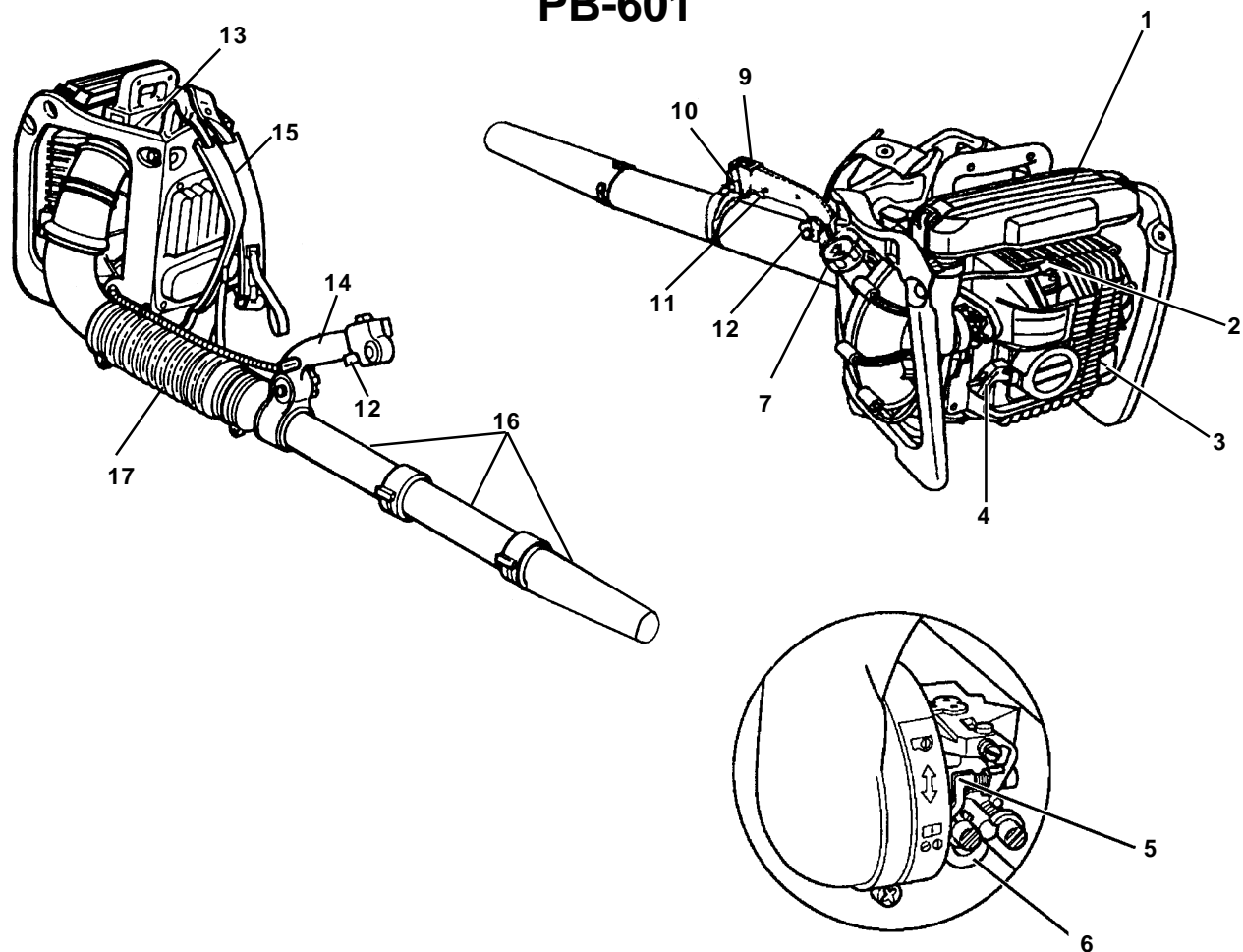
- 1-Power Head
- 1-Blower Pipe Assembly
- 1-Plastic Bag
  - 1- Operator's Manual
  - 1- Warranty Registration Card
  - 1- ECHO Emissions and Warranty Statement
- 2- Clamps w/screws
- 1- Stick Handle Assembly (PB-600 Only)
- 1-Bottle ECHO 2-Stroke Oil Mix



## PB-600



## PB-601



1. **AIR CLEANER** - Contains replaceable air filter element.
2. **SPARK PLUG** - Provides spark to ignite fuel mixture.
3. **MUFFLER/SPARK ARRESTOR** - The spark arrestor muffler controls the exhaust noise while the spark arrestor prevents hot, glowing particles of carbon from leaving the muffler where they could possibly start a fire.
4. **RECOIL STARTER HANDLE** - Pull recoil handle slowly until starter engages, then quickly and firmly. When engine starts, return handle slowly. **DO NOT** let handle snap back or damage to unit will occur.
5. **CHOKE** - Move lever **DOWN** to close choke (starting position) and for emergency stopping. Move **UP** to open choke (run position).
6. **PRIMER BULB** - Pumping primer bulb before starting engine draws fresh fuel from the fuel tank priming the carburetor for starting. Pump the bulb 10 times until fuel is visible in clear fuel return line.
7. **FUEL TANK CAP** - Covers and seals fuel tank.
8. **THROTTLE POSITION LEVER/STOP SWITCH (PB-600)** - Combination stop switch and variable speed throttle lever. When the lever is moved all the way forward the blower is at Wide Open Throttle (W.O.T.). When the lever is moved rearward to detent, the blower is at idle. When the lever is moved rearward past the idle detent the blower will stop.
9. **STOP SWITCH (PB-601)** - Slide switch mounted on top of handle. Move forward to run, back to stop.
10. **THROTTLE POSITION LEVER (PB-601)** - Pull back to increase engine speed. Friction washers maintain throttle lever setting.
11. **THROTTLE TRIGGER (PB-601)** - Spring loaded to return to idle when released. During acceleration, press trigger gradually for best operating technique.
12. **LOCKING KNOB (PB-601)** - Allows operator to adjust handle position for optimum comfort and control.
13. **SAFETY DECAL** - Lists important safety precautions.
14. **HANDLE-** (PB-600) Rotates downward for throttle control access. Spring loaded for flexible operation.  
(PB-601) Used by operator to direct and control air flow.
15. **SHOULDER HARNESS** - Used to support unit on operator's back. The straps are adjustable.
16. **BLOWER PIPES** - Twist lock design.
17. **FLEXIBLE PIPE** - Allows for full range of movement.

## SPECIFICATIONS

MODEL	PB-600	PB-601
Length	320 mm (12.6 in.)	
Width	460 mm (18.1 in.)	
Height	440 mm (17.3 in.) (in blower configuration w/side handle)	
Weight (dry)	10.8 kg (23.9 lb.)	
Engine Type	Air cooled, two-stroke, single cylinder gasoline engine	
Displacement	58.2 mm (3.56 in.)	
Bore	46.0 cc (1.81 cu. in.)	
Stroke	35.0 mm (1.38 in.)	
Carburetor	Zama Diaphragm, model C1M w/primer bulb	
Ignition System	Flywheel Magneto, capacitor discharge ignition type	
Spark Plug	NGK BPM-7Y Gap 0.65 mm (0.026 in.)	
Exhaust System	Spark Arrestor Muffler	
Fuel	Mixed (Gasoline and Two-stroke Oil)	
Fuel/Oil Ratio	50:1 ECHO High Performance, two-stroke air cooled engine oil	
Gasoline	89 Octane unleaded. DO NOT use fuel containing methyl alcohol, more than 10% ethyl alcohol or 15% MTBE	
Oil	50:1 ECHO High Performance, two-stroke air cooled engine oil	
Fuel Tank Capacity	1.9 lit. (64.3 US fl. oz.)	
Recoil Starter System	Automatic Recoil Starter Centrifugal Type	
Idle Speed	2600 - 2800 (RPM)	
Wide Open Throttle Speed	7400 - 7600 (RPM)	
Maximum Air Speed (Measured at pipe end)	313.8 KM/H (195 mph)	
Average Air Volume (Measured at pipe end)	12.4 cu. m/min. (440 cu. ft./min.)	
Maximum Air Volume (Measured at housing)	13 cu. m/min. (960 cu. ft./min.)	

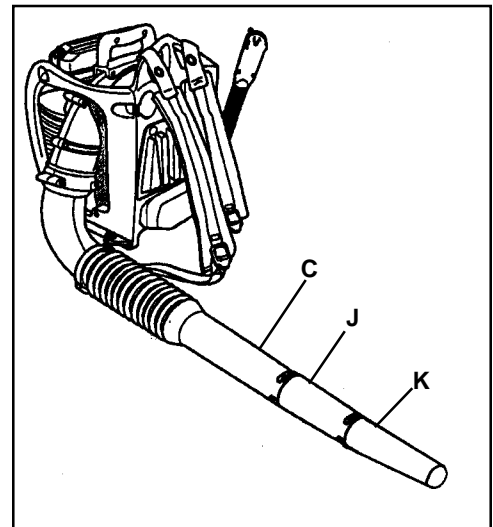
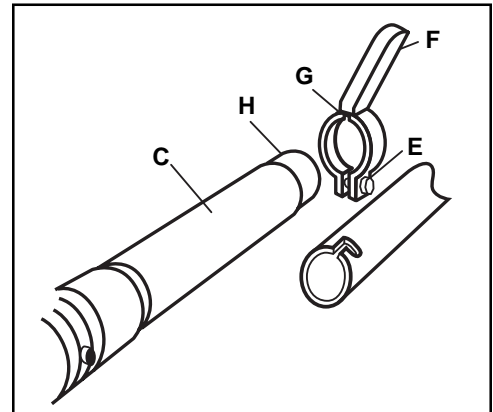
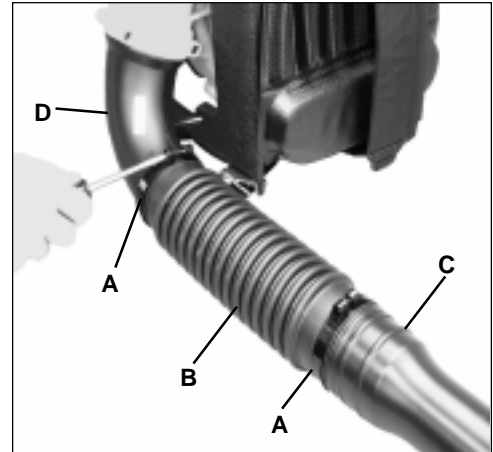
## ASSEMBLY

### **WARNING** **DANGER**

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

### **INSTALL BLOWER PIPES / STICK HANDLE PB-600**

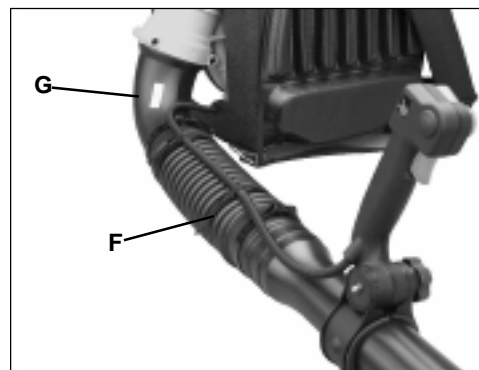
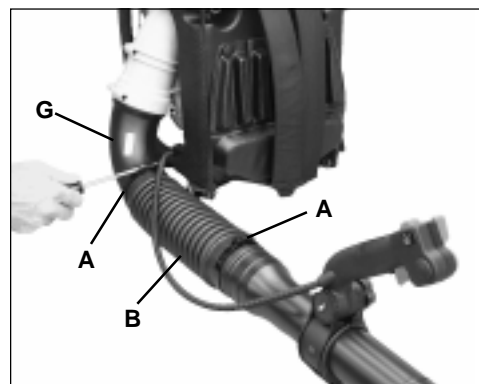
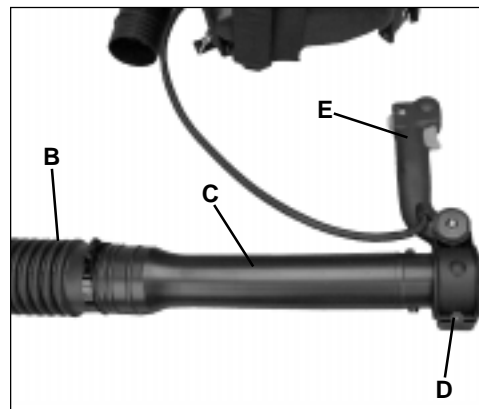
1. Assemble straight pipe with swivel (C) into flexible pipe (B).
2. Assemble flexible pipe (B) to elbow (D) on blower.
3. Assemble clamps (A) onto both ends of flexible pipe (B) and tighten.
4. Loosen wing nut (E) completely and expand open, stick handle clamp (F).
5. Align notches (G) in handle clamp with pipe pegs (H). Stick handle should be angled away from operator.
6. Slide stick handle onto swivel tube (C).
7. Position stick handle for comfortable operation and tighten wing nut (E).
8. Assemble straight pipe (J) to pipe with swivel (C), turning straight pipe counter-clockwise to lock in place.
9. Assemble straight pipe (K) to straight pipe (J) turning straight pipe (K) counter-clockwise to lock in place.



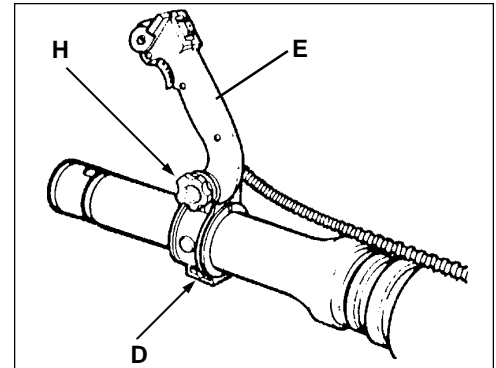
## INSTALL BLOWER PIPES

### *PB-601*

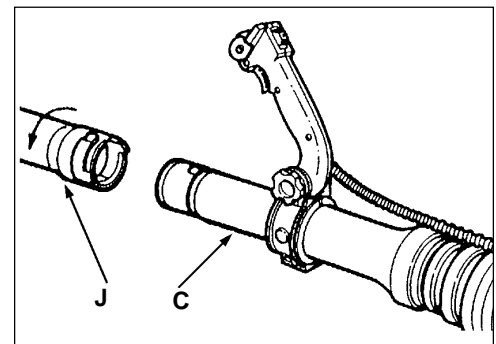
1. Assemble straight pipe with swivel (C) into flexible pipe (B).
2. Remove clamp screw (D) on handle (E). Spread clamp and install onto straight pipe with swivel (C).
3. Assemble flexible pipe (B) to elbow (G) on blower.
4. Assemble clamps (A) onto both ends of flexible pipe (B) and tighten.
5. Install throttle wire ties in second groove (F) at each end of flexible pipe. Position throttle linkage so cable passes between the elbow (G) and frame and runs along the top of the flexible pipe.



6. Move handle (E) to desired position. Tighten knob (H) hand tight and tighten clamp screw (D).



7. Assemble straight pipe (J) to pipe with swivel (C), turning straight pipe counter-clockwise to lock in place. Assemble straight pipe to straight pipe the same way.



8. Make sure all clamps are tight.

## PRE-OPERATION

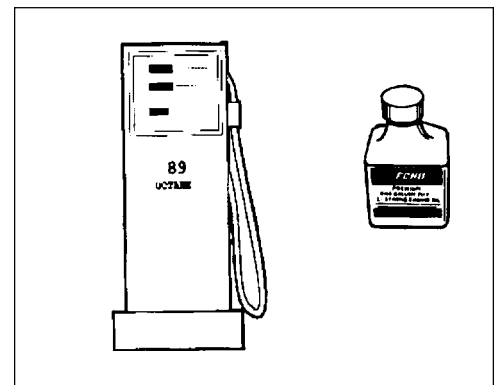
### FUEL

#### Fuel Requirements

**Gasoline** - Use 89 Octane [ $\frac{R+M}{2}$ ] gasoline or gasohol known to be good quality. Gasohol may contain up to 10% Ethyl (grain) alcohol or 15% MTBE (methyl tertiary-butyl ether). Gasohol containing methyl (wood) alcohol is **NOT** approved.

**Two Stroke Oil** - A two-stroke engine oil meeting ISO-L-EGD Standard (ISO/CD 13738), must be used. Echo brand Premium 50:1 oil meets this standard. Engine problems due to inadequate lubrication caused by failure to use an ISO-L-EGD approved oil, such as Echo Premium 50:1 Two-stroke Oil, will void the two-stroke engine warranty. (Emission related parts only are covered for two years, regardless of two-stroke oil used, per the statement listed in the EPA Phase I/California Emission Defect Warranty Explanation.)

**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.
- Securely tighten fuel cap after refueling.
- Inspect for fuel leakage. If fuel leakage is found, do not start or operate unit until leakage is repaired.

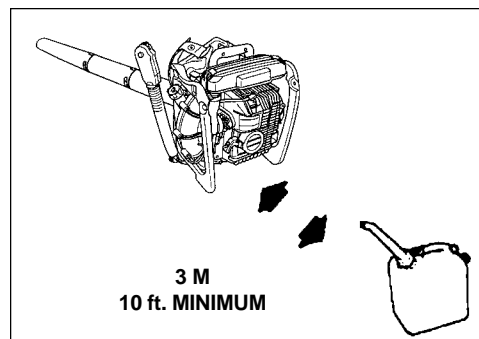


### After Refueling -

- Wipe any spilled fuel from the unit.
- Move at least 3M. (10 ft.) from refueling location before starting.

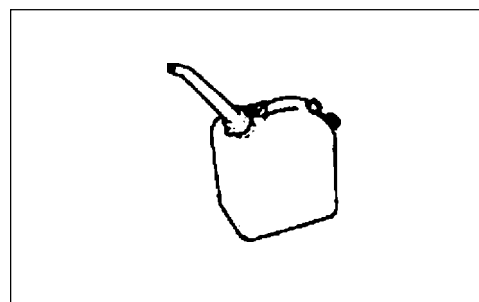
### After use -

- 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.



### IMPORTANT

Stored fuel ages. Do not mix more fuel than you expect to use in thirty (30) days, ninety (90) days when a fuel stabilizer is added.

Stored two-stroke fuel may separate. ALWAYS shake fuel container thoroughly before each use.

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

- Provide all operators of this equipment with the Operator's Manual and instructions for safe operation.
- Check unit for loose nuts, bolts and screws daily.
- 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.
- Rotate spring loaded throttle handle downward to a comfortable operating position (PB-600 only).

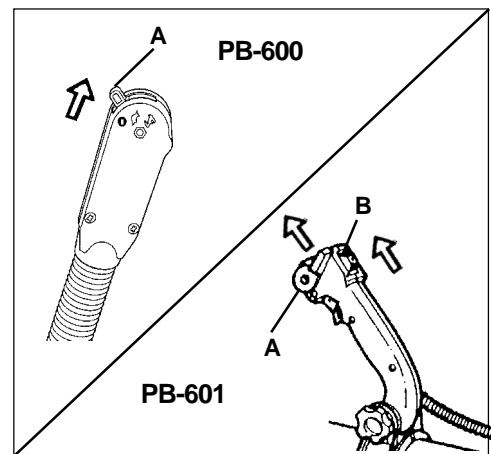
## STARTING COLD ENGINE

### (PB-600)

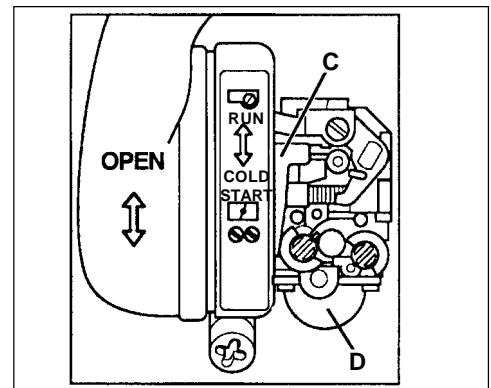
- 1A. Move throttle lever (A) to START/IDLE DETENT position.

### (PB-601)

- 1B. Move throttle lever (A) forward to idle position. Slide stop switch (B) forward to run position.

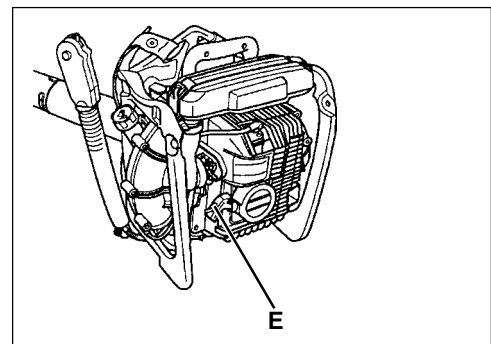


2. Close Choke - Cold Start.  
Move choke (C) to "Cold Start" position.
3. Primer Bulb-Prime.  
Pump primer bulb (D) 15 times. Fuel will be visible and flow freely in the clear fuel tank return line.
4. Pull recoil starter handle (E) and engine should start.
5. Move choke (C) to run position and if necessary, restart engine.



### NOTE

Allow engine to warm up before use.



## STARTING WARM ENGINE

### (PB-600)

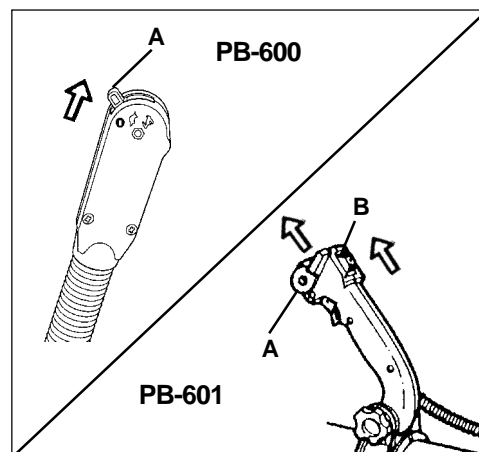
- 1A. Move throttle lever (A) to start/idle detent position.
2. Pull recoil starter handle (E) and engine should start. Do not use choke (C).

### (PB-601)

- 1B. Move throttle lever (A) forward to idle position.
2. Slide stop switch (B) forward to run position. Pull recoil starter handle (E) and engine should start. Do not use choke (C).

#### NOTE

If engine does not start after 5 pulls, use cold start procedures.



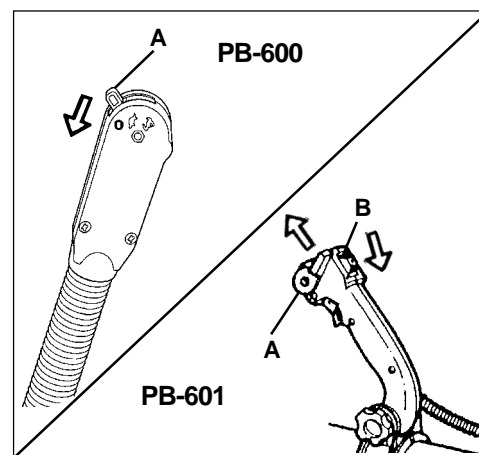
## STOPPING ENGINE

### (PB-600)

1. Move throttle lever (A) to idle detent position and allow engine to idle for a few minutes.
2. Move throttle lever (A) to "O" (Stop) position.

### (PB-601)

1. Move throttle lever (A) forward to idle position and allow engine to idle a few minutes.
2. Move stop switch (B) to "Stop" position.



### WARNING DANGER

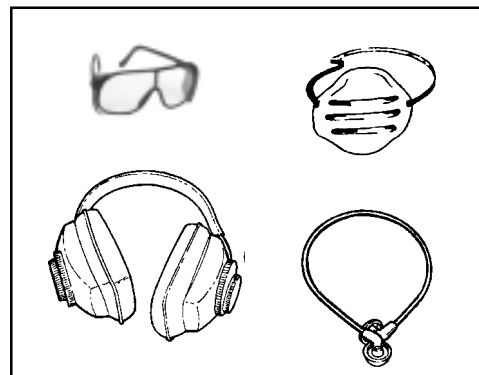
If engine does not stop when stop switch is moved to STOP position, close choke - COLD START position - to stall engine. Have your ECHO dealer repair stop switch before using blower again.

## OPERATING BLOWER

### WARNING DANGER

Always wear safety glasses, hearing protection, a face filter mask and take all safety precautions 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 opening.

1. Use only during appropriate hours.
2. Allow the engine to warm up at a fast idle for a few minutes.
3. Set engine speed with throttle lever (A).

**NOTE**

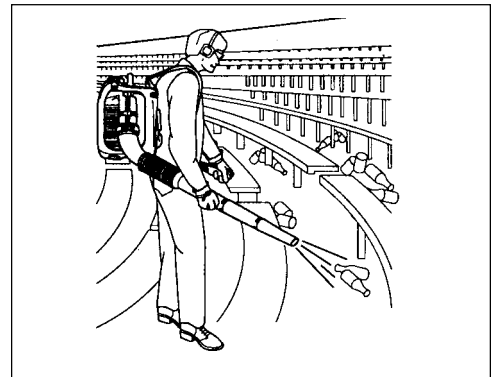
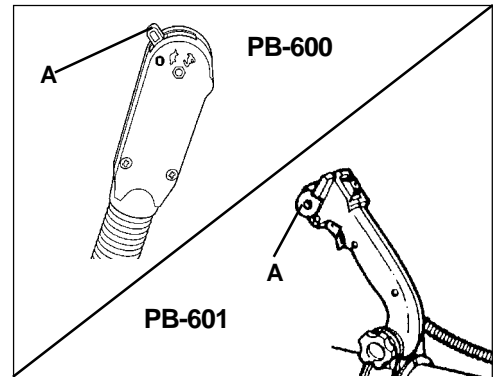
The blower can be run at any speed between 2600 rpm to 7600 rpm once the engine has broken in after approximately 3 fuel tanks of running time.

4. Use lower speed to blow dry leaves from a lawn or flower bed.
5. Additional speed may be necessary to clean grass and leaves from walks, patios and drives.
6. Higher speed may be necessary 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 and by dampening material with water/mist when necessary. Keep debris on your property.

Be Smart - be a good neighbor.



**Be** — HSCHE  
**Smart!**  
*With Power Equipment*

## 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. If task is not listed, see your ECHO Dealer for repairs.

### SKILL LEVEL

- 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 recommends the unit be returned to your Echo Dealer for servicing.

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/Replace	I/C		I/C		R*	
Fuel Strainer	Inspect/Replace				I		R
Fuel Line	Inspect/Replace	I	I				R*
Carburetor	Inspect/Replace					I/C	R(1)
Choke System	Inspect/Replace		I				
Cooling System	Inspect/Clean	I/C		I/C			
Muffler Spark Arrestor	Inspect/Clean/Replace				I/C*		R*
Recoil Rope	Inspect/Clean	I					I*
Fuel Leaks	Inspect/Repair	I					I
Spark Plug	Clean/Replace				I/C*	R	
Ignition System	Clean/Replace	No Maintenance required for coil and flywheel					
Screws/Nuts/Bolts	Inspect/Tighten/Replace	I*					

**I = INSPECT, C = CLEAN, R = REPLACE**

### IMPORTANT

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

\*All recommendations to replace are based on finding damaged or wear during inspection.

(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.

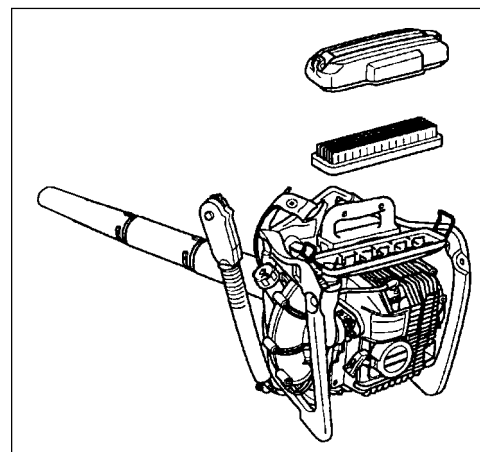
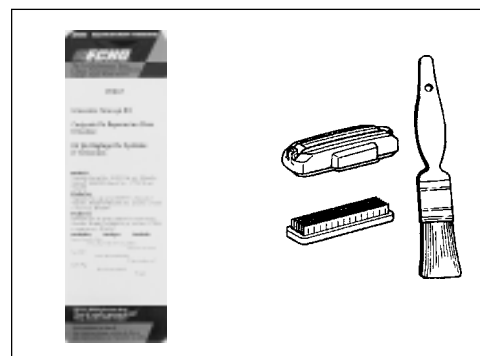
*Tools required:* 25mm - 50mm (1 in. - 2 in.) medium bristle paint brush.

*Parts required:* Tune-up Kit P/N 90067

#### NOTE

Clean daily.

1. Close choke (Cold Start Position). This prevents dirt from entering the carburetor throat when the air filter is removed. Brush accumulated dirt from the air cleaner area.
2. Remove the air cleaner cover. Clean and inspect the element for damage. If element is fuel soaked and very dirty, replace.
3. If element can be cleaned and reused, be certain it:
  - still fits the cavity in the air cleaner cover.
  - is installed with the original side out.



## FUEL FILTER

### Level 1.

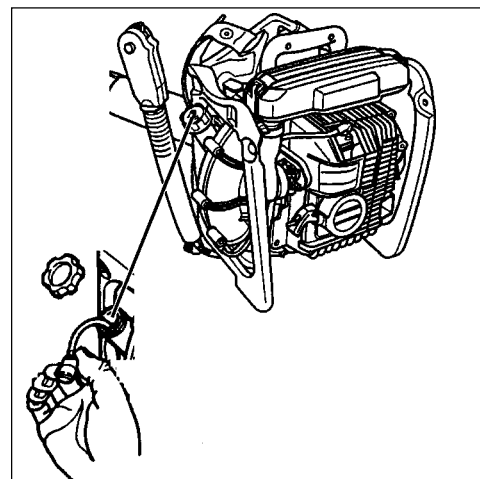
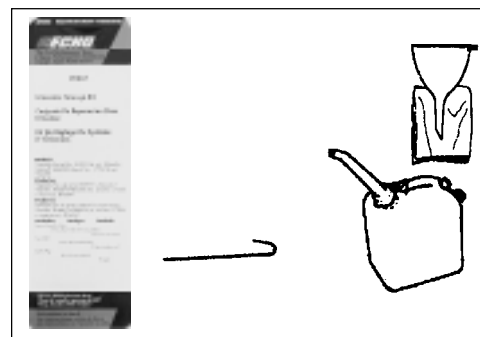
*Tools required:* Fuel line hook, 203-254mm (8in.-10in.) length of wire with one end bent into a hook. Clean rag, funnel, and an approved fuel container.

*Parts required:* Tune-up Kit P/N 90067

#### WARNING DANGER

Fuel is **VERY** flammable. Use extreme care when mixing, storing or handling.

1. Use a clean rag to remove loose dirt from around fuel cap and empty fuel tank.
2. Use the "fuel line hook" to pull the fuel line and filter from the tank.
3. Remove the filter from the line and install the new filter.



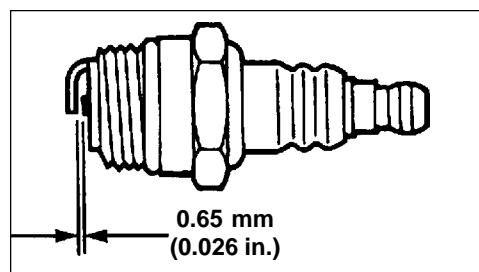
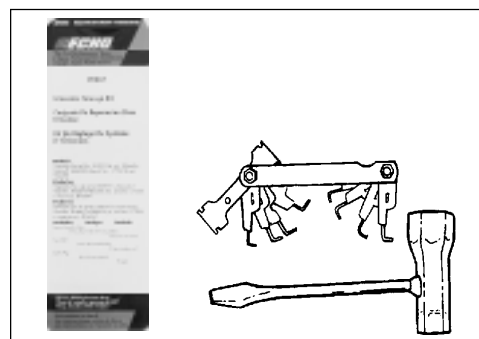
## SPARK PLUG

### Level 1.

*Tools required:* 3/4" Spark Plug deep socket, Feeler gauge (preferably a wire gauge),

*Parts Required:* Tune-Up Kit P/N 90067

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.
4. Tighten spark plug to 145-155 kg/cm (125-135 in. lb.).



## COOLING SYSTEMS CLEANING

### Level 2.

*Tools required:* 25mm-50mm (1in.-2in.) medium bristle paint brush, Cross Head Screwdriver, Pointed Wood Stick.

*Parts Required:* None, if you are careful.

### IMPORTANT

To maintain proper engine operating temperatures, cooling air must pass freely through the cylinder fin area. This flow of air carries combustion heat away from the engine.

Overheating and engine seizure can occur when:

- Air intakes are blocked, preventing cooling air from reaching the cylinder.
- Dust and grass build up on the outside of the cylinder. This build up insulates the engine and prevents the heat from leaving.

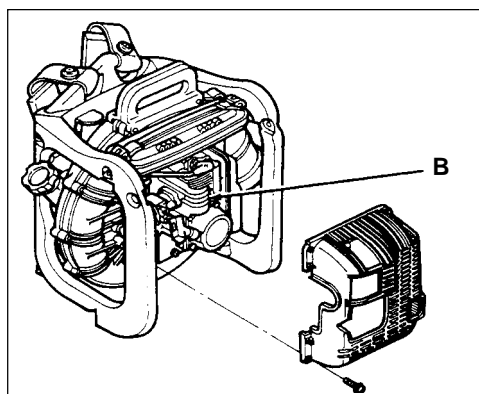
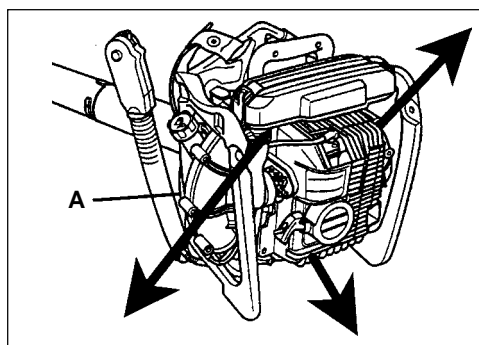
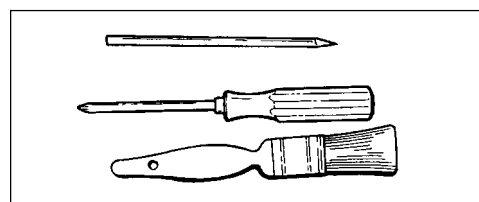
Removal of cooling passage blockages or cleaning of cooling fins is considered "Normal Maintenance". Any failure attributed to lack of maintenance is not warranted.

### Cleaning Grill

1. Remove accumulated debris from intake grill (A) between back-pack frame and blower housing.

### Cleaning Cylinder Fins

1. Remove engine cover (five screws), pull cover away from engine. Clean cylinder fins (B) to allow cooling air to pass freely.



## EXHAUST SYSTEM

### Spark Arrestor Screen

#### Level 2.

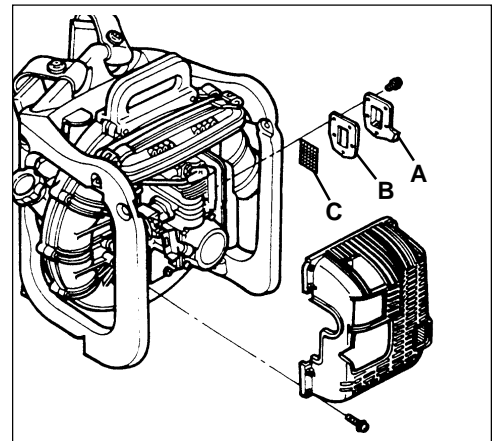
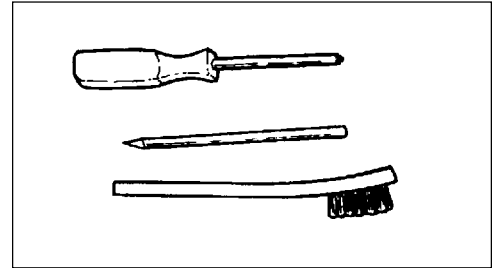
*Tools required:* Cross Head Screwdriver, Pointed Wood Stick, Soft metal brush,

*Parts Required:* Spark arrestor screen P/N 14586206720,  
(2) Gaskets P/N 14586604261

#### IMPORTANT

Carbon deposits in muffler will cause a drop in engine output and overheating. Spark arrestor screen must be checked periodically.

1. Remove spark plug and engine cover (five screws).
2. Remove spark arrestor cover (A), gasket (B) and spark arrestor screen (C) from muffler. Replace screen if plugged with carbon deposits.
3. Install spark arrestor screen, gaskets, and cover.
4. Install spark plug and engine cover.



## CARBURETOR ADJUSTMENT - GENERAL

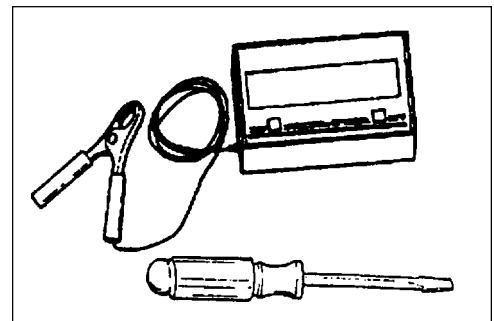
#### Level 2.

*Tools required:* Screwdriver, tachometer (Echo P/N 99051130017)

*Parts required:* none.

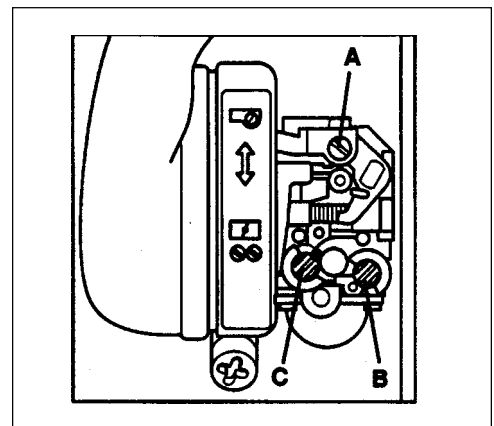
#### NOTE

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



### Adjustment Screws

- |                     |   |
|---------------------|---|
| Idle Speed (A)      | Control throttle opening at idle.   |
| Low (LO) Speed (B)  | Controls amount of fuel at low speed and supplementary fuel for smooth progression from idle to high speed. |
| High (HI) Speed (C) | Controls amount of fuel at full throttle  |



## Before Adjustment

Check that:

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

## Initial Adjustment

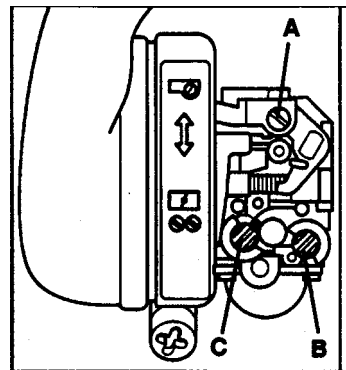
1. With engine off, turn HI speed screw (C) counterclockwise to stop.
2. Turn LO speed screw (B) midway between stops.
3. Turn idle screw (A) until tip of screw just touches throttle plate; then turn three (3) turns clockwise.

## Final Adjustment

### IMPORTANT

Limiter caps prevent exceeding C.A.R.B. and E.P.A. emission limits and over rich adjustment, but **not** over lean adjustment, which can cause engine failure: Do not exceed recommended HI speed engine R.P.M. 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 carburetor chambers.
3. Run at idle and accelerate to check for smooth transition from idle to high speed; if engine hesitates, turn LO speed screw (B) counterclockwise 1/8th of a turn at a time until acceleration is smooth.
4. Use a tachometer to adjust idle speed to specifications found on page 12.





## TROUBLESHOOTING

Proble				
Engine - starts hard				
Engine - does not start			Cause	Remedy
Engine Cranks ↓	Fuel at carburetor	No fuel at carburetor	Fuel strainer clogged Fuel line clogged Carburetor	Clean Clean See your ECHO dealer
	Fuel at cylinder	No fuel at cylinder	Carburetor	See your ECHO dealer
		Muffler wet with fuel	Fuel Mixture is too rich	Open choke Clean/replace air filter Adjust carburetor See your ECHO dealer
	Spark at end of plug wire	No spark at end of plug wire	Stop switch off Electrical problem Interlock switch	Turn switch on See your ECHO dealer See your ECHO dealer
	Spark at plug	No spark at plug	Spark gap incorrect Covered with carbon Fouled with fuel Spark plug defective	Adjust 0.65mm (0.026in.) Clean or replace Clean or replace Replace plug
Engine does not crank			Internal engine problem	See your ECHO dealer
Engine runs ↓			Air filter dirty Fuel filter dirty Fuel vent plugged Spark plug Carburetor Cooling system plugged Spark arrestor screen plugged	Clean or replace Replace Replace Clean and adjust/replace Adjust Clean Clean
Engine runs properly	Blower does not work is weak or uneven		Blower Pipe clogged, loose or damaged	Unclog Tighten Replace

### WARNING DANGER

Fuel vapors are **extremely** flammable and may cause fire and/or explosion. **Never** test for ignition spark near an open spark plug opening, otherwise serious personal injury may result.

## STORAGE

### *Long Term Storage (Over 30 Days)*

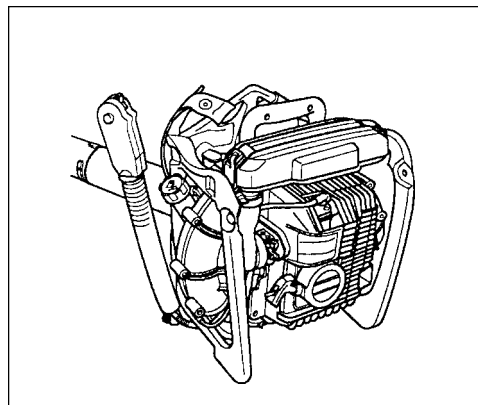
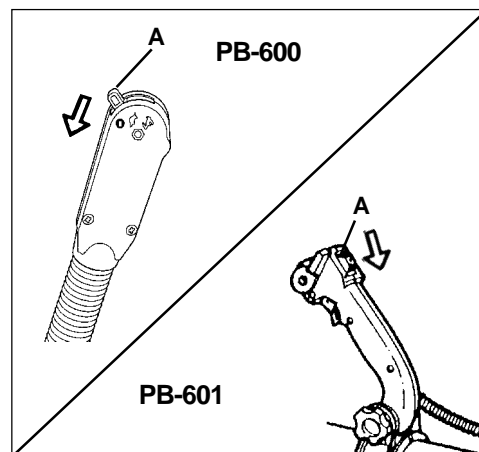
Do not store your unit for a prolonged period of time (30 days or longer) without performing protective storage maintenance which includes the following:

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.

2. Place the stop switch (A) 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 carburetor.
7. Remove the spark plug and pour 7cc (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 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.



## NOTES

# SERVICING INFORMATION

## PARTS

Genuine ECHO Parts and ECHO REPOWER™ Parts and Assemblies for your ECHO products are available only from an Authorized ECHO Dealer. When you do need to buy parts **always** have the Model Number and Serial Number of the unit with you. You can find this information on the engine below the engine housing. For future reference, write them in the space provided below.

Model No. \_\_\_\_\_

SN. \_\_\_\_\_

## SERVICE

Service of this product during the warranty period must be performed by an Authorized ECHO Service Dealer. For the name and address of the Authorized ECHO Service Dealer nearest you, ask your retailer or call: 1-800-432-ECHO. When presenting your unit for Warranty service/repairs, proof of purchase is required.

## ECHO CONSUMER PRODUCT SUPPORT

If you require assistance or have questions concerning the application, operation or maintenance of this product you may call the ECHO Consumer Product Support Department at 1-800-673-1558 from 8:00 am to 5:00 pm (Central Standard Time) Monday through Friday. Before calling, please know the model and serial number of your unit to help your Consumer Product Support Representative.

## WARRANTY CARD

This card is our means of registering all original owners of ECHO equipment. The card plus proof of purchase provides you the assurance that authorized warranty work will be done. It also provides a direct link between you and ECHO if we find it necessary to contact you.

## ADDITIONAL OR REPLACEMENT MANUALS

**Operator's and Parts Manuals** are available for purchase from your ECHO dealer or directly from ECHO. [See ordering instructions at the end of this manual.]

## ORDERING INSTRUCTIONS

To obtain a Parts Catalog or Operator's Manual send a check or money order for \$2.00 per Parts Catalog or \$1.50 per Operator's Manual made payable to ECHO, INCORPORATED. State on a sheet of paper model number and serial number of the ECHO unit you have, part number of the manual (if known), your name and address and mail to address above:

### Available Parts Lists

PB-600

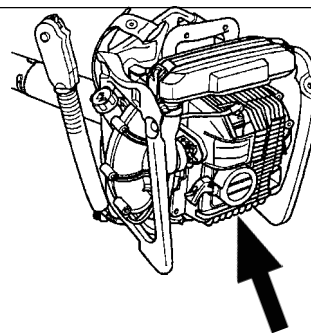
Serial Number 001001 & Up

Part Number 99922203179

PB-601

Serial Number 001001 & Up

Part Number 99922203180



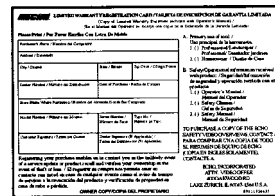
## DEALER?

Call

1-800-432-ECHO  
1-800-432-3246

## Consumer Product Support

1-800-673-1558  
8 - 5 Mon - Fri C.S.T.



ECHO Incorporated

400 Oakwood Road  
Lake Zurich, IL 60047

Technical Publications Orders



ECHO, INCORPORATED

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