Semi-Trash Pumps

Operator's Manual

MODELS: **TP-2001**
TP-3001
All Units

WARNING ⚠ DANGER

The muffler or catalytic muffler and surrounding cover may become extremely hot.
Always keep clear of exhaust and muffler area, otherwise serious personal injury may occur.

⚠ 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.

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INTRODUCTION

The ECHO Semi-trash pump is a lightweight, high performance, gasoline powered unit.

This manual provides the information necessary for operation and maintenance.

WARNING ⚠ DANGER

Improper use or care of this unit, or failure to wear proper protection can result in serious injury. Read and understand the rules for safe operation and all instructions in this manual.

SAFETY AND SPECIAL INFORMATION

WARNING ⚠ DANGER

This symbol is used to call attention to procedures that must be followed to avoid the risk of serious, immediate and irreversible human injury or death.

IMPORTANT
Indicates a situation that may cause damage to equipment.

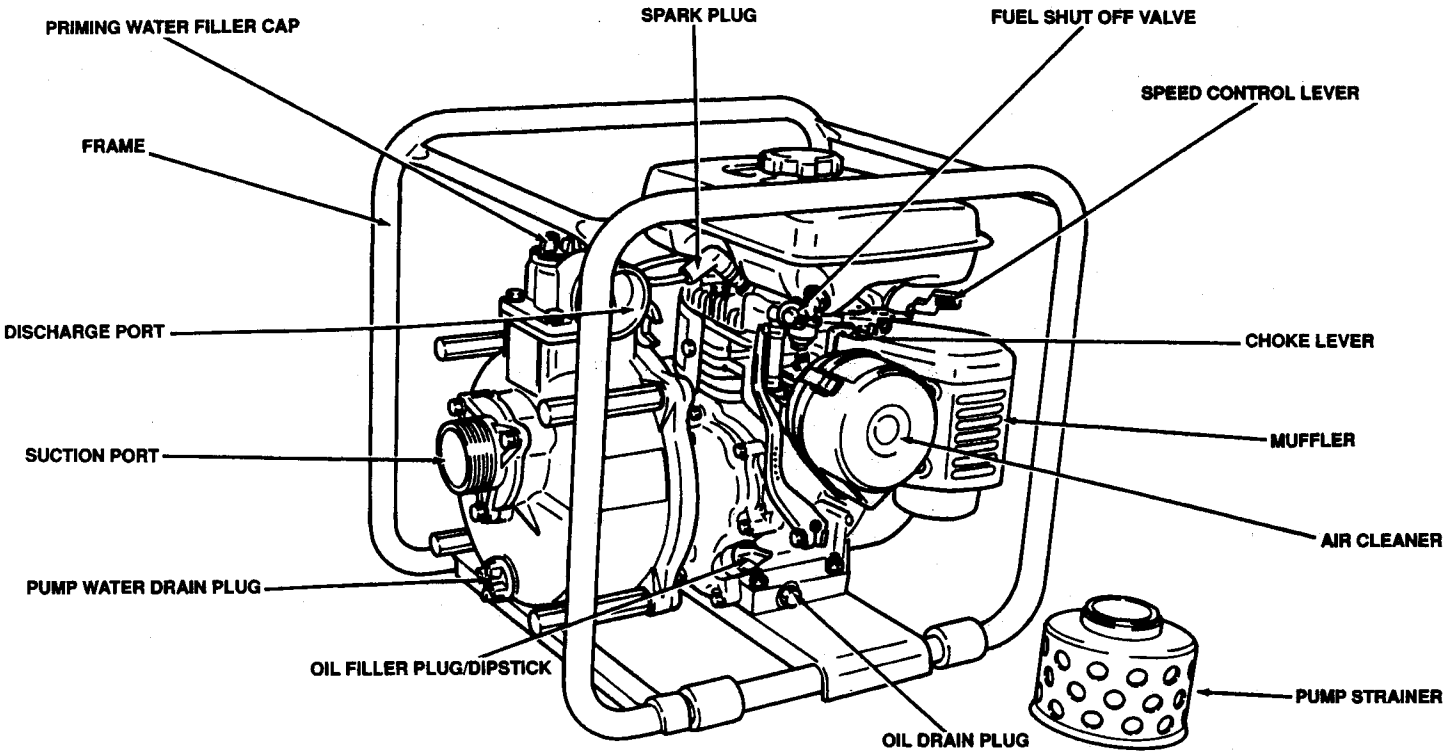
NOTE:
Draws attention to special information.

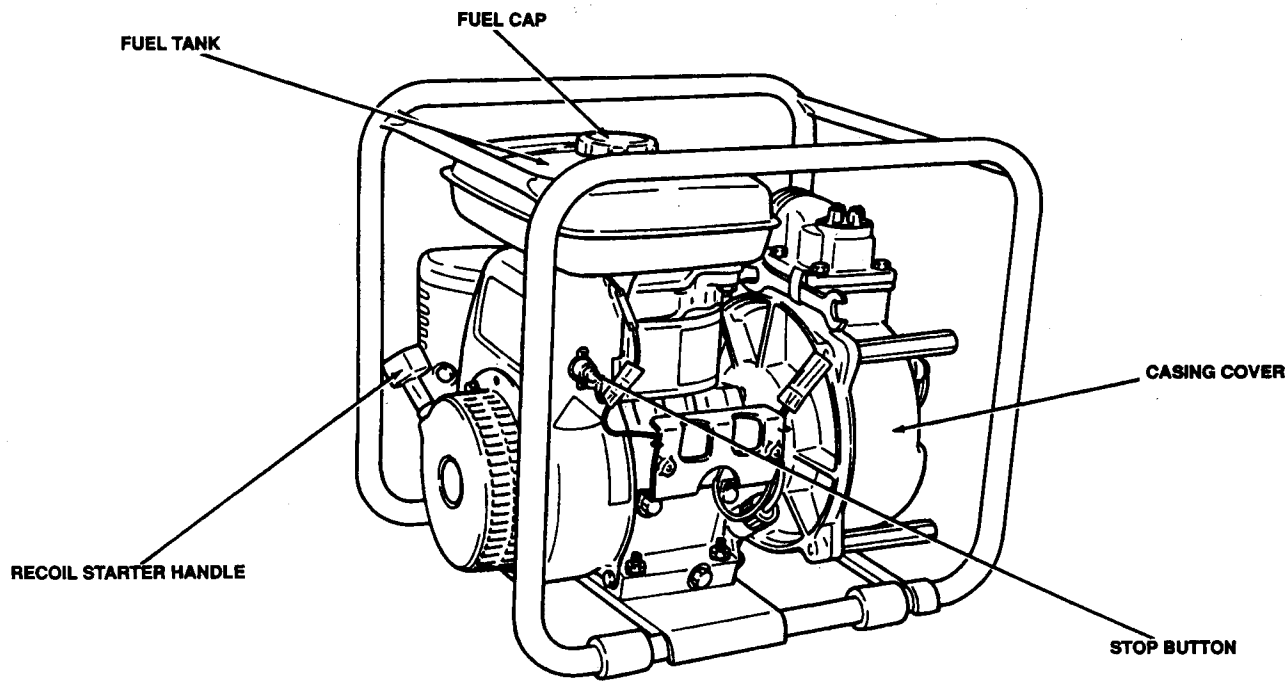
- Read and understand the entire operator's manual before using this machine.
- Follow all danger warnings in this manual.
- Locate all safety decals on your pump. Make sure the decal is legible and that you understand and follow it.

IMPORTANT
BEFORE STARTING ENGINE FOR THE FIRST TIME, ADD OIL AS UNIT IS SHIPPED DRY.

CONTENTS

DESCRIPTION





SAFETY

LEARN PUMP SAFETY

Improper use or maintenance by the operator can result in injury. Follow these safety suggestions.

Carefully read this manual. Learn how to operate your pump correctly. Know and understand the location and operation of the controls. Also pay close attention to point of use safety messages in this manual.

IMPORTANT
Unauthorized modifications to the pump may impair the function and/or safety and affect machine life. Use only approved accessories on the pump.

DO NOT let anyone operate the pump without proper instruction.

DO NOT pump flammable substances with this pump.

DO NOT pump corrosive chemicals with this pump. Exposure to chemicals can be hazardous.

PROTECT PEOPLE AND PETS

KEEP PEOPLE AND PETS OUT OF THE AREA WHERE YOU ARE USING THE PUMP.

DO NOT let children operate the pump, or handle hoses.

OPERATION OF A PUMP SHOULD BE RESTRICTED to mature, properly instructed individuals.

DO NOT OPERATE while under the influence of alcohol or medication.

OPERATE ENGINE SAFELY

1. DO NOT RUN ENGINE in an enclosed or poorly ventilated areas (inside a room, garage, barn, etc.). Exhaust gas contains carbon monoxide, an odorless and deadly poisonous gas.

IMPORTANT

THIS UNIT IS NOT EQUIPPED WITH A SPARK ARRESTER MUFFLER

NOTE:
Compliance with local, state and federal laws is the user's responsibility. Replacement spark arrester screen parts areavailable for your pump from your Wisconsin Robin dealer. If you have any questions concerning spark arrester screens or their use, please contact your Wisconsin Robin servicing dealer.

OPERATE PUMP SAFELY

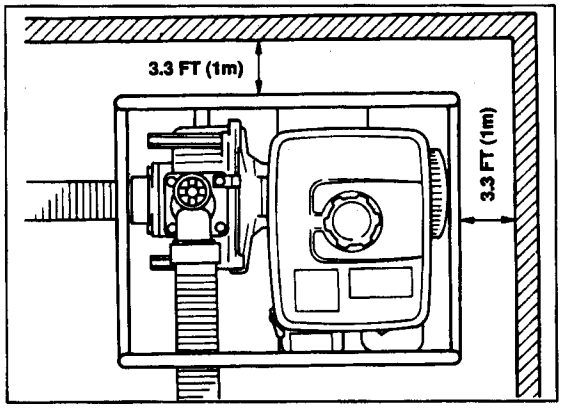
1. DO NOT ATTEMPT TO CARRY PUMP when engine is running.

2. DO NOT OPERATE PUMP ON AN INCLINE. It should be placed on a firm, dry, level surface for proper engine operation and lubrication. Keep the area free of any flammable material such as leaves, brush or fuels.

WARNING ⚠ DANGER
DO NOT operate pump near flammable materials.

3. DO NOT aim engine exhaust at materials that could catch fire.

4.Face cooling air intake (recoil start area) and muffler side of engine 3.3 ft. (1m) away from buildings, obstructions and other burnable objects.



5.DO NOT ENCLOSE UNIT, as it relies on free air circulation to cool the engine. Enclosing the unit can create a fire hazard resulting from entrapped gas fumes and overheating which can result in damage to the engine and other components.

6.AVOID accidental fires and engine overheating.

7.DO NOT examine equipment when mentally or physically stressed.

8.DO NOT, under any circumstances, use the pump for purpose that exceeds its rated capacity.

INSPECT PUMP CAREFULLY

•INSPECT THE PUMP CAREFULLY before you operate it.

•GUARDS AND SHIELDS must be in place.

•KEEP NUTS, BOLTS AND SCREWS TIGHT. Loose parts may result in personal injury or damage to the unit.

•DO NOT operate the pump without an air filter. Rapid engine wear will result.

•DO NOT operate the pump if the oil level is low.

•VENTILATING OPENINGS such as the pump cover, air filter and muffler exhaust outlet must be cleaned periodically and kept free of debris to ensure proper operation and adequate cooling of the pump.

SERVICE PUMP SAFELY

KEEP pump clean.

BEFORE you service or remove parts, let the engine cool.

DO NOT work on pump while it is being operated.

WAIT until pump is stopped before you service it.

USE ONLY identical replacement parts when servicing unit.

DO NOT ALTER EXHAUST SYSTEM. Use only ECHO approved exhaust mufflers.

DO NOT ALTER ENGINE SETTINGS. The engine speed is controlled by a pre-set governor to deliver maximum H.P. and engine life. Changing governor setting voids the warranty. Consult your ECHO servicing dealer if in doubt.

STORE PUMP SAFELY

Before you leave the pump unattended:

1.Stop engine.

2.Turn fuel valve to OFF position.

3.Disconnect spark plug wire.

4.Do not store pump where fuel fumes could reach an open flame or spark.

WHEN NOT IN USE, STORE PUMP in a cool, dry place and AWAY FROM POSSIBLE SOURCES of ignition such as gas water heaters, furnaces, clothes dryers, etc.

WHEN TRANSPORTING your pump, make sure it is in an upright position and that gasoline is not leaking. Secure it from sliding.

COMPLY WITH ALL FIRE PREVENTION REGULATIONS. We recommend you keep a fire extinguisher and long-handle shovel close by whenever using a pump in areas where dry grass, leaves or other flammable materials are present.

HAVE AN EXTINGUISHER NEARBY

HAVE A MULTIPURPOSE DRY CHEMICAL FIRE EXTINGUISHER filled and handy. Know how to use it.

FUEL & LUBRICANTS

HANDLING FUEL

WARNING ⚠ DANGER

Handle fuel carefully. It is extremely flammable. Follow all rules listed below to help prevent fire or explosion which may result in severe injury or death.

•Never smoke or allow flame or sparks near fuel.

•Always fill the fuel tank outdoors. Never pour fuel indoors.

•Never refuel the engine when it is hot or running.

•Always use an approved, safe fuel container.

•After fueling, always wipe up spilled fuel.

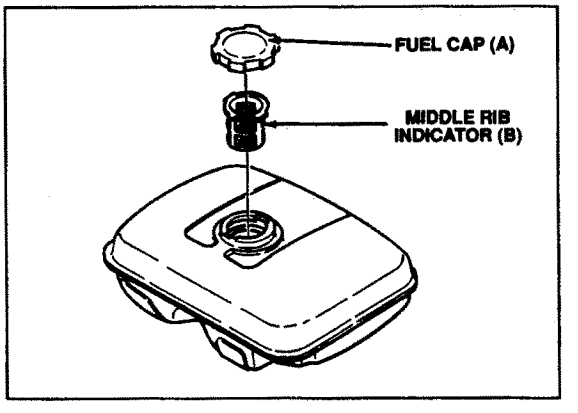
•Do not overfill the tank. Always move at least 10 feet away from the fueling spot and make sure there is no fuel leakage before starting the engine.

•Never store pump with fuel in the tank - a fuel leak could start fire.

•Always remove the fuel cap slowly to relieve any pressure buildup in the tank.

•Always tighten fuel caps on pump and fuel container.

•Fill fuel tank only to middle rib of fuel strainer insert.



FUEL

IMPORTANT

Fuels containing alcohol are corrosive to the fuel system components and will absorb water.

Engine damage may result. Damage to the engine or performance problems caused by alcohol fuels will not be covered by the ECHO limited warranty.

1.Use unleaded automotive gasoline. Do not use gasoline that has been stored for a long period of time. (30 days maximum) Use gasoline with 87 to 92 octane rating.

2.Remove fuel cap (A) and fill only to middle rib indicator (B) in fuel filter insert.

IMPORTANT

Fuel additives or special starting fluids should not be used because seals and other rubber composition parts may be damaged.

PUMP SET-UP

ENGINE OIL

IMPORTANT
Before starting engine for first time, add oil as unit is shipped dry.

Engine oil greatly effects engine performance and service life. Do not use non-detergent or vegetable oils. Always check the engine oil on level surface with engine stopped.

IMPORTANT
Use premium quality engine oils meeting minimum performance requirements of API Service Classification SE or SF.

Quality engine oils are blended, so additives are neither required nor recommended.

	LUBRICATION CHART		
SEASON	TEMPERATURES	OIL	
		SAE	API
Summer	Above 30° C Above 86° F	SAE 30	SE
	20° to 29° C 68° to 85° F	SAE 30	SF
Spring	10° to 19° C 44° to 67° F	SAE 20 or 10W-30	
Winter	Below 10° C Below 44° F	SAE 10 or 10W-30	

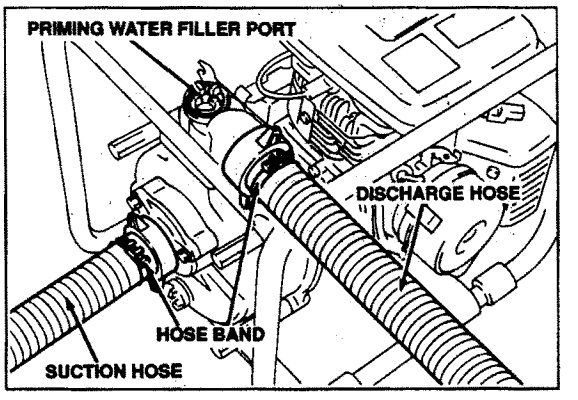
IMPORTANT
Change engine oil after the first 20 hours of operation (break in). Change every 50 hours of operation following break in. Always change the oil when engine is warm for complete drainage.

Check crankcase oil level frequently (each time the fuel tank is refilled). Make sure crankcase is full before starting generator.

TP-2001	TP-3001
U.S. Fl. Oz. 21.0 liter 0.6	U.S. Fl. Oz. 21.0 liter 0.6

IMPORTANT
Operating a pump with a low oil level will cause serious engine damage.

HOSES AND CONNECTIONS



IMPORTANT
- Make sure that all hose and pipe connections are AIR TIGHT. An air leak in the SUCTION LINE or SUCTION FITTINGS may prevent priming and will reduce the pumps capacity or efficiency.
- Keep priming port plug and pump drain plug tightly secured in place to prevent entry of air into the pump.
- Use an acceptable pipe thread sealant on all nipple connections and hose clamps at all hose connections.

PORT DIMENSIONS

MODEL	TP-2001	TP-3001
Suction Port Diameter	2 inches	3 inches
Discharge Port Diameter	2 inches	3 inches
Suction Strainer Nipple Diameter	2 inches	3 inches

NOTE:
All thread dimensions are N.P.T. National Pipe Thread.

SUCTION HOSE

1. Use only a reinforced wall or wire braided hose to prevent walls of the hose from suction collapse during operation (Maximum suction hose length 25 feet).

NOTE:
The pumps self priming time is directly proportional and depends upon the length and diameter of suction pipe or hose and suction lift. Maximum pump efficiency can be obtained by using suction hose that is as short as possible and practical. Never exceed a suction lift of 26 feet.

2.Always use a strainer on the end of the suction line. If the strainer is likely to clog with debris, tie the suction hose so the strainer stays off the bottom or place the strainer in a prepared protected area, i.e. in a bucket or basket.

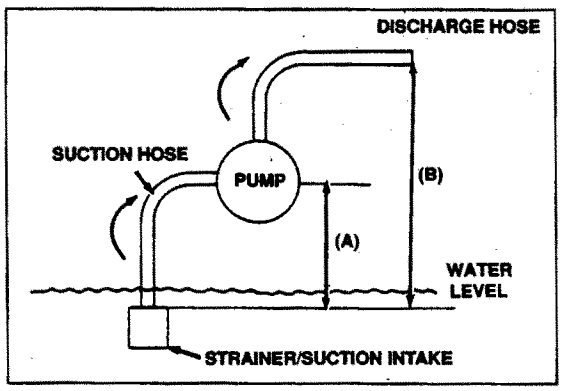
IMPORTANT
Always use the strainer with the suction hose. Gravel or debris sucked into the pump will cause serious impeller and housing damage.

DISCHARGE HOSE

Rubber, nylon, or fabric hose may be used, always use hose band type clamps to prevent the hose from disconnecting at the nipple under high pressure.

NOTE:
- short discharge hose will provide lower fluid friction and improve pump efficiency.
- protect flexible hoses from vehicles running across them. This will result in longer hose life and prevent pump damage due to instantaneous pressure loss.

USING THE PUMP DISCHARGE HOSE

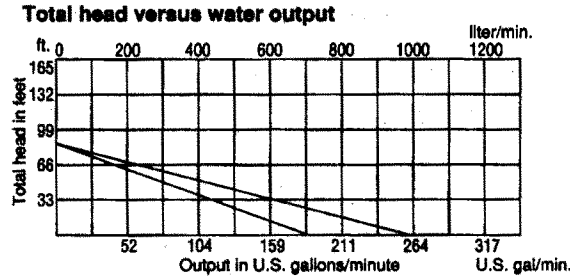


MAXIMUM VERTICAL

A = Suction lift = 26 feet (suction head) all units
B = Vertical total head

NOTE:
Suction lift and total head are measured from the top of the strainer that is connected to the bottom of the suction hose.

Total head versus water output



PREPARING FOR PUMPING

NOTE:
If the pump is inclined by more than 20°, the engine may stop automatically.

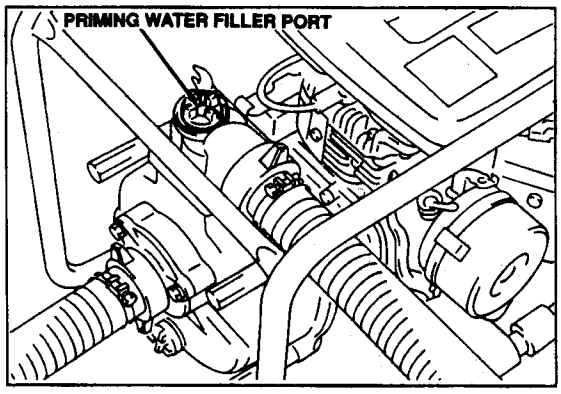
1. Select a firm, level site as near the water source as possible. Never exceed a suction lift of 26 feet. Make sure pump will not move due to vibration and/or the pull from the weight of suction hose when full of water.
2. Make sure all hoses and pipe connections are air tight, and all hose coupling gaskets or O-rings are installed.
3. Keep pump priming plug and pump drain plug tightly secured in place during operation.
4. Make sure strainer is in place.
5. Maximum pump efficiency is obtained by:
   - •keeping hoses straight and avoiding kinks and sharp bends in hoses.
   - •using shortest suction lift practical.
   - •using as few connectors, elbows, and adapters as possible.
   - •keeping the pump and associated equipment in good operating condition.

PRIMING THE PUMP

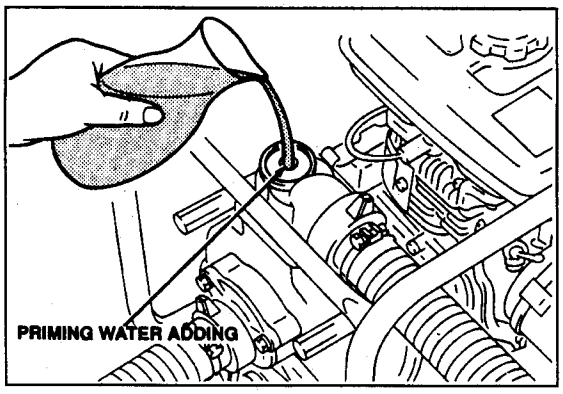
1.All ECHO pumps are self-priming centrifugal pumps. Only a single priming operation at the beginning is needed to allow the pump to be used continuously or intermittently.

2.The rubber flap valve is used in the suction port to seal off the port so that the water inside the pump is not lost due to the siphoning effect of the suction hose when the pump is stopped. By retaining the water in the pump the pump will start pumping immediately after short periods of shut down.

3.Remove priming water filler cap.



4.Fill the pump chamber with water.



5.Replace filler cap securely making sure the gasket is on and in good condition.

6.With suction intake and strainer in the water to be pumped, start the engine. (See Starting the Engine section.)

NOTE:
With engine running approximately 3400-3600 rpm the priming time depends upon the length of suction hose. Priming time can be as short as 30 seconds when lift is less than 5 feet or as long as 5-7 minutes when pump is some distance from the water and using maximum lift of 26 feet.

Typical Pump Applications

DRAINING

Cellers
Basements
Flooded Areas
Sumps
Swimming Pools

IRRIGATION

Field Crops
Lawns

TRANSFERRING

Water

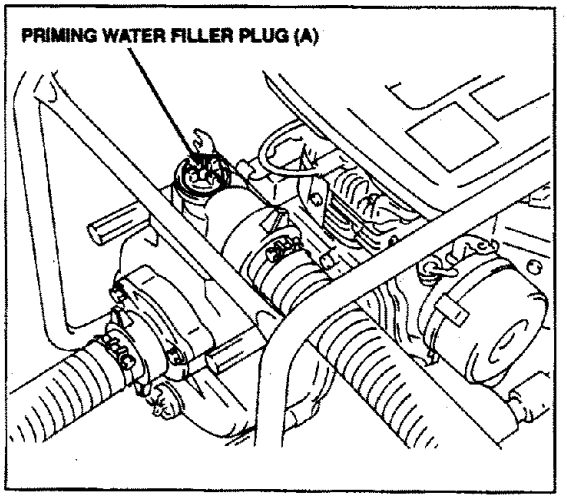
IMPORTANT

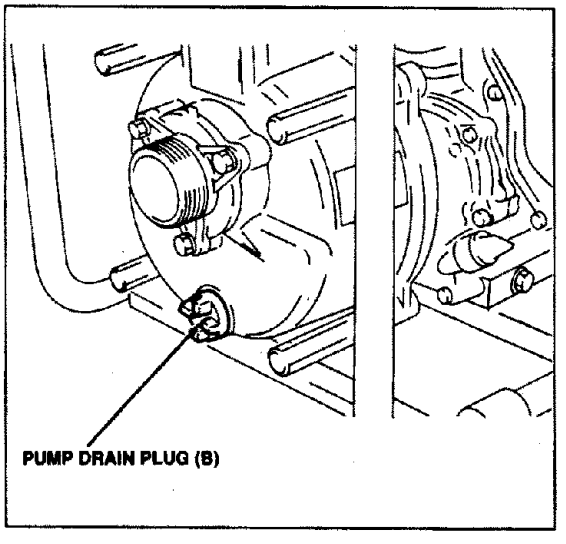
- Prolonged pumping of water containing sludge mud and gravel will cause rapid wear to impeller or internal pump parts.
- Trash pumps suction lift is affected by water temperatures. Maximum temperature of water should be 60°C, (140°F) or lower.
- Internal pump body components will corrode if the pump is used to pump liquids with acidity greater than PA7.

OPERATION

COLD WEATHER OPERATION

Pumps will not freeze when running. However, in freezing weather, remove drain plug (B) and fill plug (A) and drain the water from pump completely after use. All hoses exposed to freezing temperatures should also be drained. Before restarting the pumps, replace the drain plug and fill plug securely making sure the gaskets are in place and in good condition to prevent air entry into the pumps.





PRESTART CHECKS AND OPERATING THE ENGINE

Starting the Engine

WARNING ⚠ DANGER

Do not run engine in an enclosed area. Exhaust gas contains carbon monoxide, an odorless and deadly poison.

IMPORTANT

Do not start or run the pump without priming the pump with water. Serious damage to the pump seals will occur when the pump is run dry.

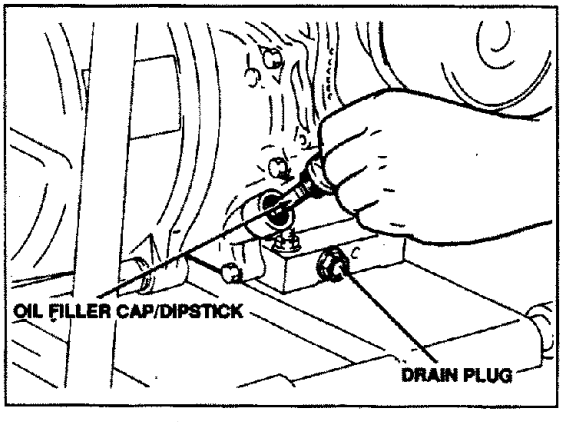
IMPORTANT

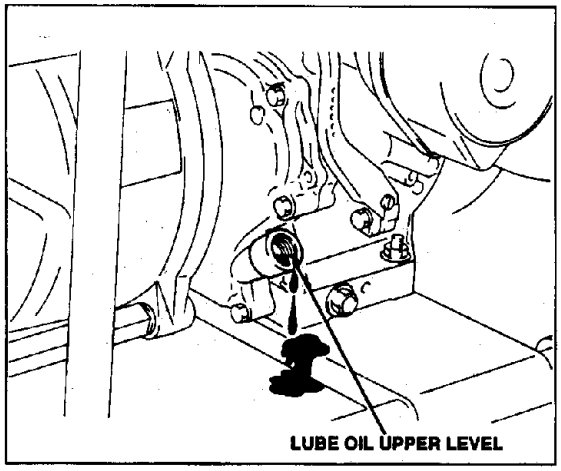
Before starting engine for first time, add oil as unit is shipped dry.

1.Check engine oil level before each use.

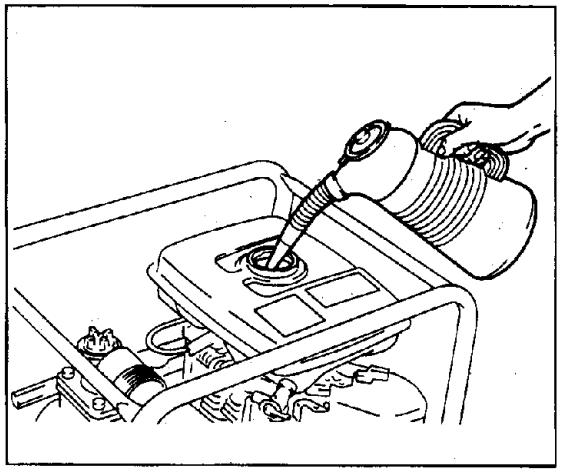
NOTE:
This model is equipped with an automatic low oil shut-down system. The engine will automatically stop before the oil level falls below the safe limit. To avoid the inconvenience of unexpected shut down, it is advisable to inspect the oil level before each use.

2.Never check or add oil while engine is running.

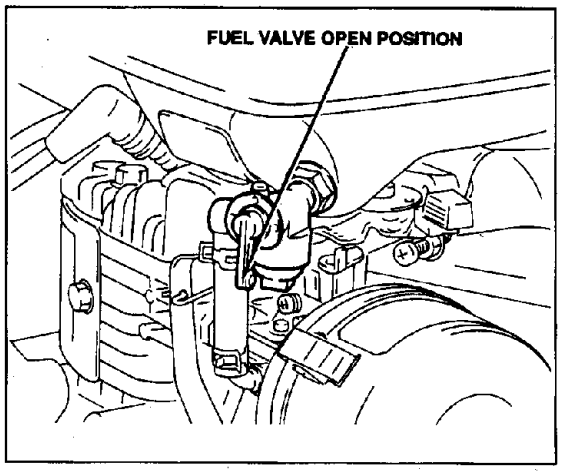




3.Fill fuel tank (See Fuels and Lubricants section.)



4.Open fuel valve by pushing lever (A) down.



5.Set the speed control lever to "START".

Breaking in a New Engine

Breaking in a new engine is very important. During the first 20 hours (considered the breaking in period), the engine will require special operating attention.

Avoid subjecting the pump to heavy or maximum usage during the breaking in period.

Engine Break In Requirements

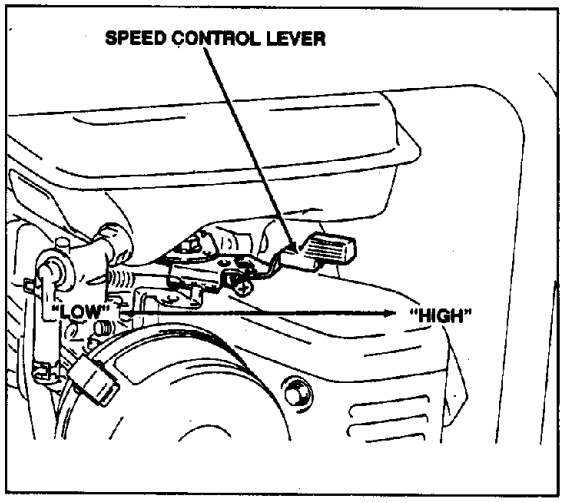
- Allow engine to warm up at idle no-load for 5 minutes after starting engine.
- Avoid unnecessary over reving of engine.
- Change engine oil after first 20 hours of operation.

Starting The Engine (Cold Start)

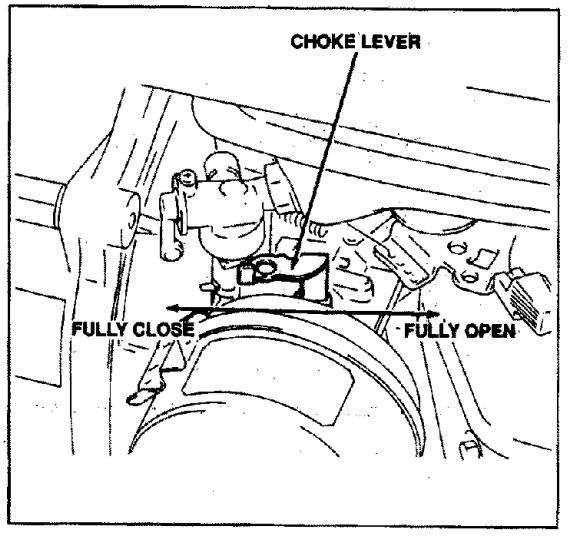
WARNING ⚠ DANGER

Do not run engine in an enclosed area. Exhaust gas contains carbon monoxide, an odorless and deadly poison.

1.Set the speed control lever to a starting position between "Low" and "High."



2.Set the choke lever. The choke is used only to start cold engines. In very cold weather it may be necessary to leave the choke lever in the fully closed position for a brief period after the engine STARTS.



3. a) For moderate air temperatures, set the choke lever in the half closed position.

   b) A warm or hot engine requires no choke, the choke lever should be placed in the open position

NOTE:
After the engine starts the choke should be gradually opened until the engine reaches it's maximum rated speed (if the choke is opened suddenly in a cold climate, the engine may stop).

Starting The Engine — Recoil Starting System

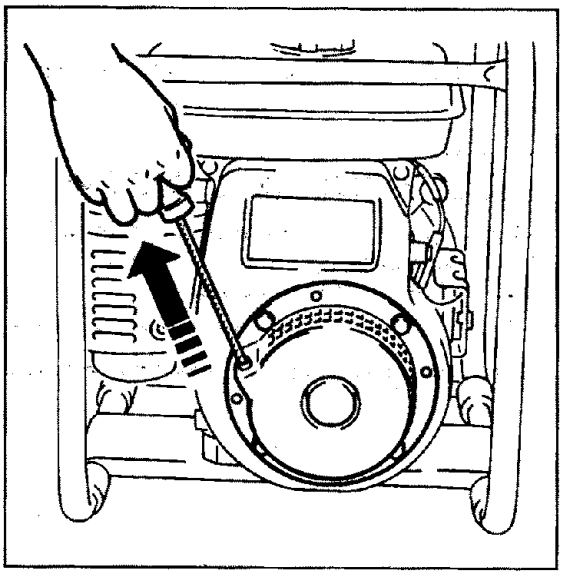
IMPORTANT
Recoil starter may be damaged if starter handle is pulled abruptly, is allowed to snap back, or is pulled while engine is running.

1.Pull the starter handle slowly until resistance is felt. This is the "Compression" point. Return the handle to its original position and pull rapidly.

2.Do not pull out the rope fully.

3.After starting, allow the starter handle to return to its original position while holding the handle.

4.If the engine fails to start after several attempts, repeat above procedures with choke lever returned to "OPEN" position.



5.After the engine starts place the throttle lever in the "LOW" speed position and let the engine warm up for 2-3 minutes.

6.(All units) After the engine warms up:

   a) Place the pick up hose with the strainer in the water to be pumped.

   b) Place the throttle control lever in the "HIGH" position and the pump will begin pumping.

Stopping The Engine

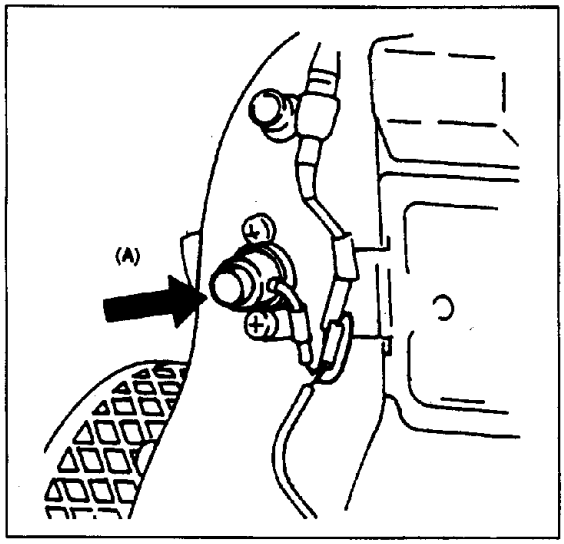
1.Place throttle lever in the "LOW" speed position and let the engine cool by idling for 2-3 minutes.

2.Push stop button "A" until the engine stops completely.

3.Close fuel valve by moving lever to horizontal position.

WARNING ⚠ DANGER

Allow engine to cool before touching the unit or transporting the pump. Never touch a hot engine or muffler.



TROUBLESHOOTING

Symptom	Problem	Correction
Engine Fails to start.	•Engine Fails to start. •Fuel tube clogged. •Spark plug wire loose or disconnected. •Spark plug improperly gapped. •Pump not drained in freezing weather. Contents frozen.	•Fill tank with lead-free or leaded "regular" grade automotive gasoline •See your Wisconsin Robin dealer. •Secure good connection. •Regap spark plug. •Allow pump and contents to thaw. Always drain pump in freezing temperatures.
Engine falters or stalls.	•Air cleaner dirty or plugged.	•Clean and re-oil element.
Engine overheats.	•Crankcase oil level low. •Cooling fins dirty or plugged	•Keep oil at proper level. •Clean cooling fins.
Engine running erratically.	•Carburetor adjustment.	•See your Wisconsin Robin dealer.
No water delivered or not enough water delivered.	•Pump not primed. •Speed too low. •Suction line clogged. •Suction lift too high. •Air leak in suction line. •Impeller plugged. •Suction end not submerged deep enough. •Flapper valve damaged by material being pumped.	•Fill pump body with water. •Pump should operate at 3600 rpm. •Clean suction opening. •Locate pump closer to water. •Tighten connections or replace with new hose or pipe. Use pipe compound to seal threads. •Clean impeller. •Submerge suction hose or piping enough so no air enters while pump is operating. •Replace flapper valve.
Not enough pressure.	•Speed too low. •Worn impeller.	•Engine should operate at 3,600 rpm. •Replace impeller.
Pumps water, then stops.	•Suction line out of water. •Suction lift too high. •Pump clogs with debris. •Suction strainer clogs. •Pump seal worn.	•Lower suction line into water. •Locate pump nearer water. •Clean pump and impeller. •Clean strainer. •Replace seal. (ECHO Dealer)
Pumps water, then stops.	•Foreign matter settled or solidified inside the pump Impeller is clogged by solid debris	•Remove pump casing and clean the pump

TROUBLESHOOTING

When the engine will not start:

1.Is there enough fuel?

2.Is the fuel valve on?

3.Is gasoline reaching the carburetor?
To check, loosen the drain screw at the carburetor float bowl with the fuel valve on.

4.Is the engine ignition switch "ON"?

5.Is there enough oil in the engine?
If not, the oil alert lamp will go on when the starter grip is being pulled.

6.Is there a spark at the spark plug?

a) Remove the spark plug cap. Clean any dirt from around the spark plug base, then remove the spark plug.

b) Install the spark plug in the plug cap.

c) Ground the side electrode of the spark plug to any engine ground, pull the recoil starter to see if sparks jump across the gap.

d) If there are no sparks, replace the plug. If OK, try to start the engine according to the instructions.

7.If the engine still does not start, take the pump to the nearest ECHO dealer.

Carburetor or Govenor Adjustments —

NOTE:
The carburetor and governor have been adjusted prior to shipment from the factory to provide maximum engine performance and engine life. There is no need for adjustment upon delivery. If adjustments to carburetor or governor are needed, they should be performed by an Wisconsin Robin dealer. Tampering with the governor or carburetor adjustment VOIDS WARRANTY COVERAGE.

WARNING ⚠ DANGER

If any fuel is spilled, make sure the area is dry before testing the spark plug or starting the engine. Fuel vapor or spilled fuel may ignite.

When The Pump Does Not Pump Water

1.Is the pump fully primed?

2.Is the suction head too high? (Max. 26 ft.)

3.Is the strainer clogged?

4.Is the suction end of the pump air tight?

a) Check hose connections

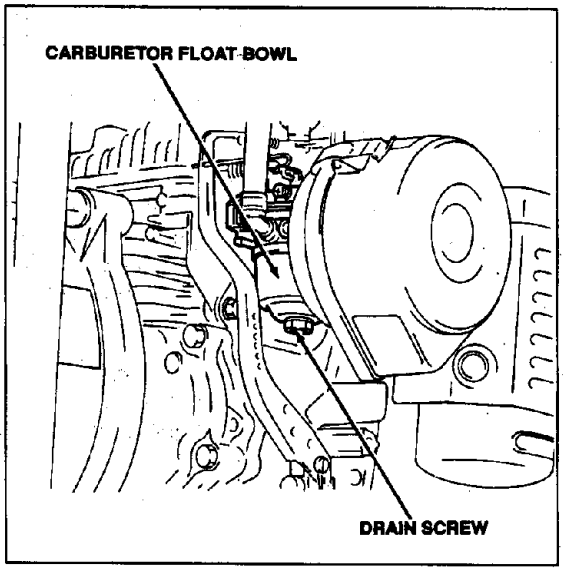
b) Check coupler gaskets

c) Check fill and drain plug gaskets

5.Are the hose bands tight?

6.Are the hoses cracked? Broken?

7.If the pump still does not operate, take the pump to the nearest ECHO dealer.



SERVICE

SET UP OF NEW UNIT OR CHANGING ENGINE OIL

IMPORTANT
Before starting engine for first time add oil, as unit is shipped dry.

NOTE:
Change engine oil after first 20 hours of operation and every 50 hours thereafter.

1.Set pump on level surface.

2.Fill pump housing with water.

IMPORTANT
Running the pump dry will cause mechanical pump seal damage or failure.

3.Run engine a few minutes to warm oil.

4.Stop engine and place the unit on wooden blocks about six inches high.

5. a) Remove oil fill plug/dipstick (A) to break vacuum
   b) Remove oil drain plug (B)
   c) Drain OLD oil into container. Do not pollute, dispose of waste oil properly.

6.Install and tighten oil drain plug. (B)

7.Add oil (See engine oil in Fuels and Lubricants section for correct oil and oil capacity).

8.Insert dipstick to check oil level.
   a) The oil level should be measured without screwing the dipstick in.

   b) The engine must be on an even, level plane.

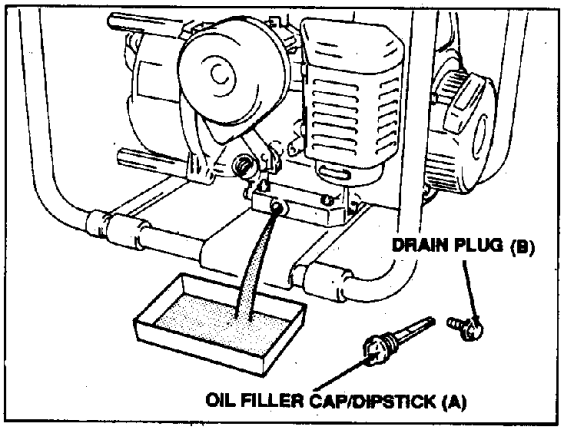
   c) Remove dipstick to check oil level.

9.Add oil if necessary.

10.Check O-ring placement and condition on dipstick before installing.

11.Install and tighten dipstick.

NOTE:
Checking engine oil level see Prestart Checks and Engine Operation section.



SERVICE/BEFORE EACH USE
Checking Engine Oil Level

IMPORTANT
Do not attempt to make any part repairs or alter the unit in any way. All repairs and maintenance, other than what is explained in the Service section of your owner's manual, should be made by an authorized Wisconsin Robin or ECHO servicing dealer.

IMPORTANT
Never check or add oil while engine is running.

1.Stop engine and place pump on a level surface.

2.Wipe dirt and dust from around dipstick area.

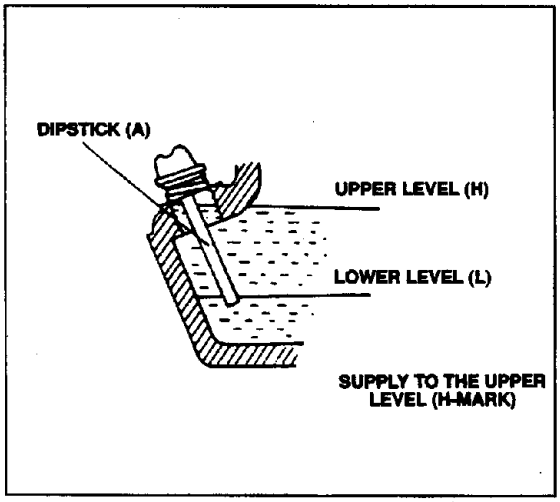
3.Remove dipstick (A) and wipe clean.

4.Install dipstick, the level should be measured without screwing the dipstick in.

5.Remove dipstick to check oil level.

6.Oil must be in between L and H marks.

IMPORTANT
If oil level is at or below bottom of L mark on dipstick, do not run the engine.



7.If oil level is low, add oil to bring oil level no higher than H mark area of dipstick. (See Engine Oil in Fuels and Lubricants section for correct oil)

8.Check O-ring placement and condition on dipstick before installing.

9.Install dipstick and tighten finger tight.

IMPORTANT
The pump should be placed on a flat surface when refilling the crankcase. If the pump is tilted, over filling will result, causing the oil temperature to increase to the danger level during operation. If too little oil is added, serious engine damage could result.

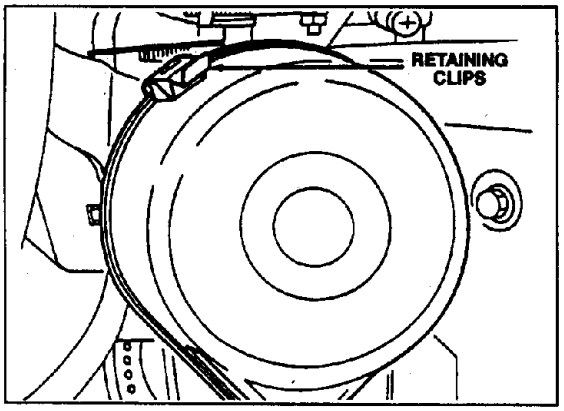
Air Filter Service

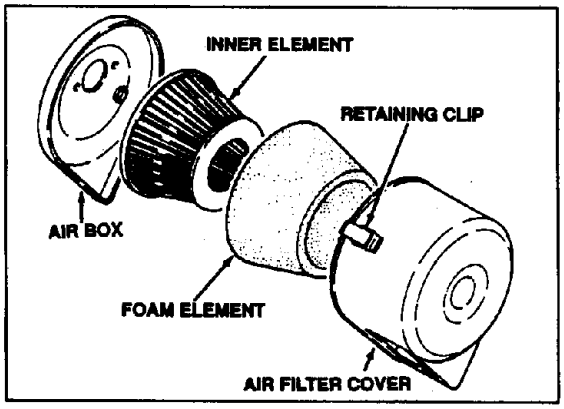
The air filter function is to keep dust and dirt out of the engine. Operating the pump with a dirty or defective filter can lead to costly engine damage. Always replace the filter if torn or damaged. A dirty air filter will restrict the flow of air to the carburetor. To prevent carburetor problems, service the air filter regularly (25 hrs.). Service the filter more frequently when operating the pump in extremely dusty areas.

WARNING ⚠ DANGER
Never use gasoline or low flash point solvent for cleaning the air cleaner element, a fire or explosion could result.

1.Brush or wipe away any dust, dirt or debris from around the air filter cover.

2.Unsnap two air cleaner cover retaining clips and pull the cover off.





NOTE:
The air cleaner assembly is equipped with a two piece air filter element.

3. Remove foam outer element from around the air filter.

4. Wash the foam element in liquid detergent and warm water. Wrap the foam element in cloth and squeeze dry.

5. Soak the foam element in clean SAE-30 weight engine oil. Squeeze to remove excess oil, then wrap in clean cloth and squeeze as dry as possible (be careful not to tear element).

6. Clean the inner air cleaner element by gently tapping it on a flat surface. If possible, use compressed air and clean the air filter by blowing air from inside of the air cleaner to the outside. If the inner element is very dirty, replace it.

7. Dampen a clean cloth in solvent and clean the interior of the air box and air cleaner cover.

8. Install outer foam element around inner element.

9. Reinstall air filter.

10. Reinstall air filter cover. Make sure cover fits flush and is fastened securely.

NOTE:
Air filter should be cleaned periodically. Replace filter if torn or damaged.

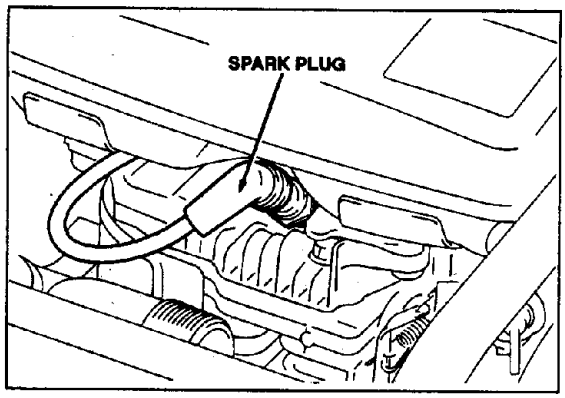
SPARK PLUG MAINTENANCE

The spark plug should be cleaned periodically and changed as required.

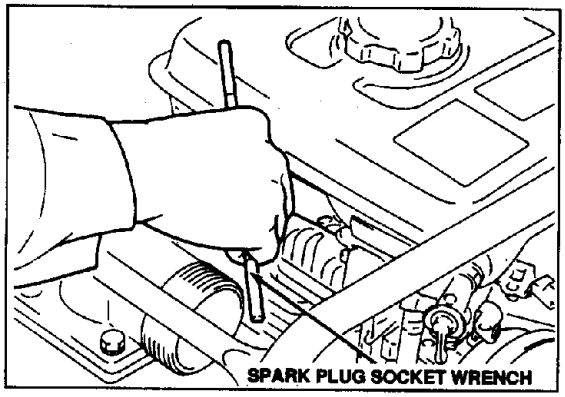
1. To remove spark plug:
   A. Turn engine On/Off switch to STOP position.

WARNING ⚠ DANGER

Before checking spark plug:
- **Stop engine**
- **Wait for engine to cool**



B. Disconnect rubber spark plug boot connecting by twisting and pulling at the same time. Clean any dirt from around the spark plug base.



C. Remove spark plug with a spark plug socket wrench. Do not use any other type tool.

IMPORTANT
Do not clean spark plugs in a machine using abrasives.

WARNING ⚠ DANGER

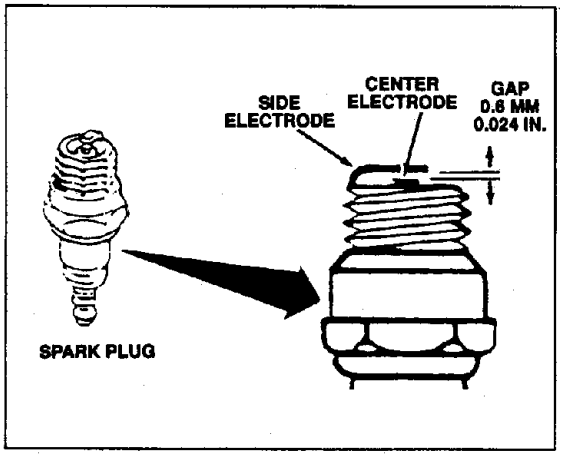
Wear full eye protection during following operations.

2. Clean spark plug by scraping carefully or using a wire brush.

3. Visually inspect the spark plug. Discard it if the porcelain insulator is cracked, chipped. Discard if electrodes are pitted or damaged.

4. Check plug gap with a wire feeler gauge. Gap must be 0.6 ~ 0.7 mm (0.024 ~ 0.028 in.).

5. To change gap bend only side electrode, using spark plug tool.



6. Attach the plug washer and thread the plug in by hand to prevent cross threading.

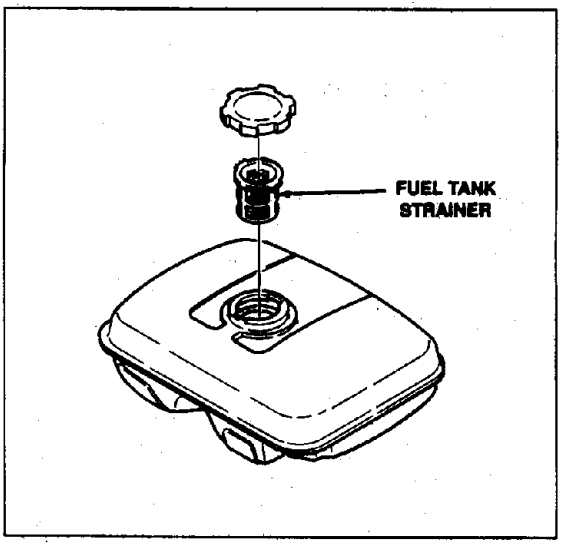
7. After a new spark plug has been seated by hand it should be tightened 1/2 turn with a wrench to compress the seat washer. If a used plug is being reinstalled, it should only be tightened 1/8 ~ 1/4 turn after being seated.

IMPORTANT
Never use a spark plug with improper heat range.

TP-2001 TP-3001	NGK B6HS or equivalent

FUEL TANK STRAINER

The fuel tank strainer should be cleaned after 50 hours as required with clean solvent.



1. To clean fuel strainer, remove fuel tank cap and lift out filter.

   - Wash in clean solvent.
   - Reinstall.

FUEL VALVE/FUEL BOWL

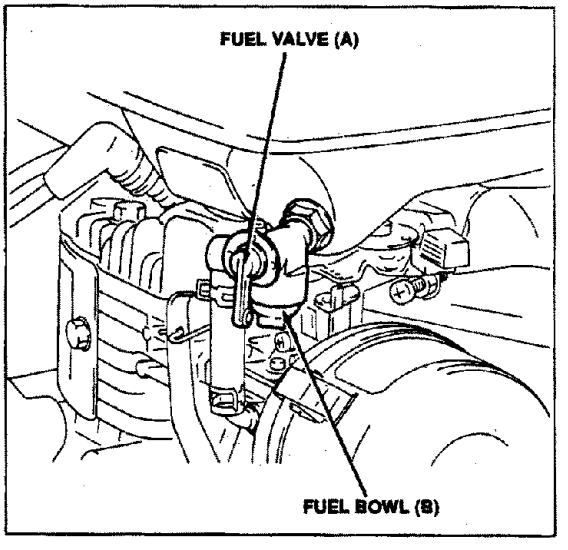
The fuel bowl should be removed and cleaned after 100 hours of operation or more frequently if water is visible.

WARNING ⚠ DANGER

Before checking spark plug:
- **Stop engine**
- **Wait for engine to cool**

1.Close fuel valve by turning lever (A) to horizontal position.

2.Loosen and remove fuel bowl (B).



3.Remove filter insert from fuel bowl and clean all parts.

IMPORTANT

Check seal placement and condition on filter insert before installing.

4.Reassemble filter insert and seal into fuel bowl.

5.Install fuel bowl assembly on pump and tighten.

6.Open fuel valve.

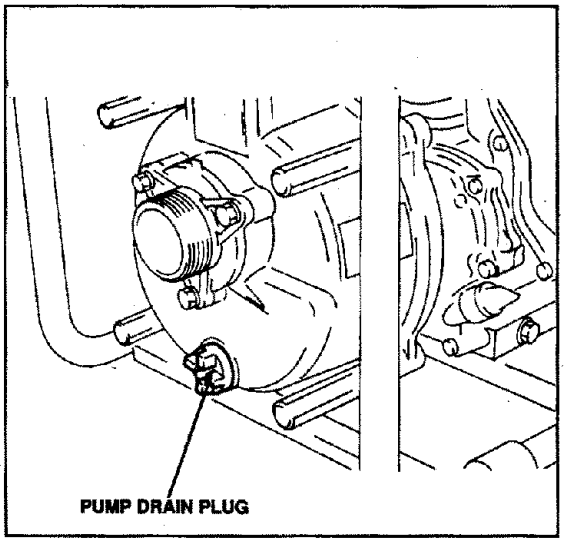
7.Start engine and check for leaks.

SERVICING THE PUMP CASING

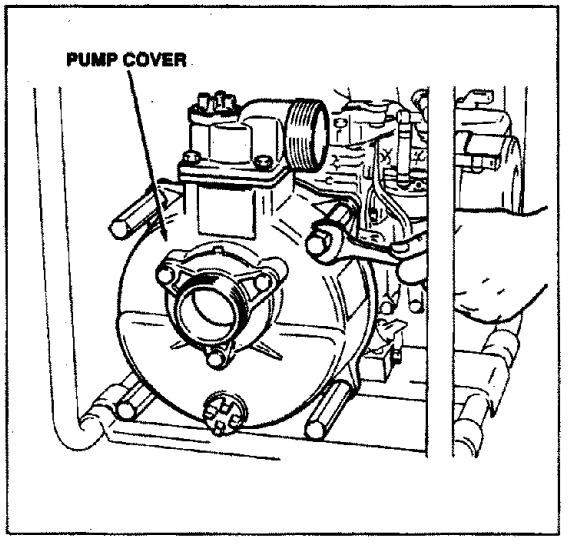
Should the pump become clogged with debris:

1.Disconnect the spark plug wire.

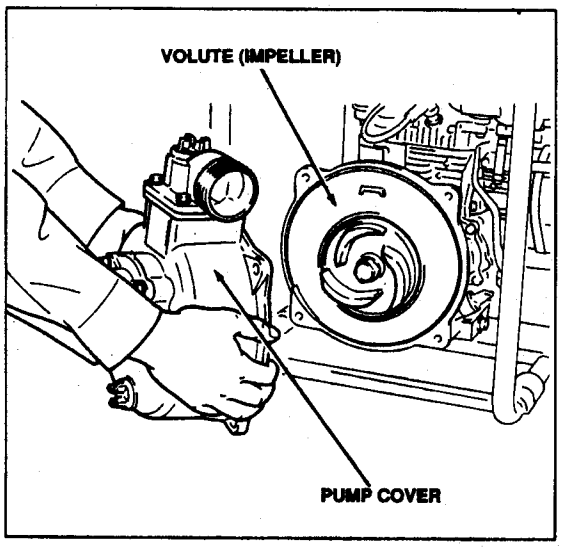
2.Remove the priming water filler plug and drain plugs from the pump cover and drain the water from the pump.



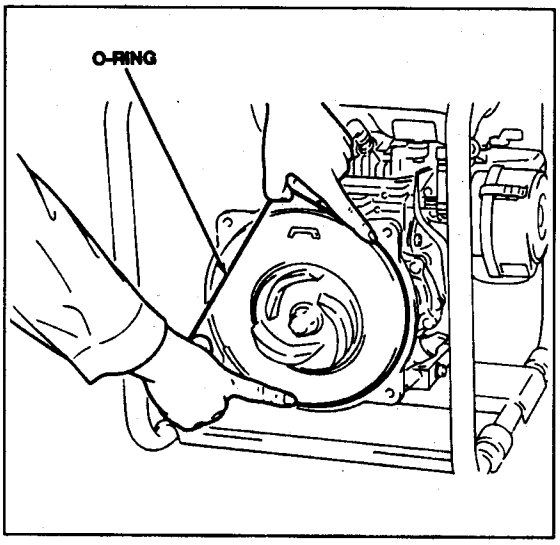
3.Remove the four bolts securing the pump cover to the pump case.



4.Remove the pump cover, pump volute and remove any debris from the pump casing and pump volute.



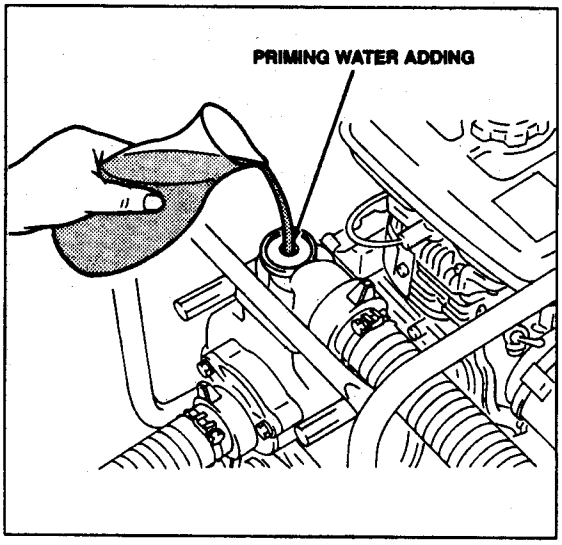
5.Install the O-rings taking care not to damage them (coat O-ring with lithium base grease).



6.Install the volute and the pump cover to the pump casing. Insert four bolts and tighten evenly in a criss-cross fashion, to M8 120-150 kg-cm (8.7 - 10.9 ft.-lbs). (DO NOT overtighten, to prevent case or cover deformation.)

7.Install the priming water filler plug and drain plugs in the pump cover.

8.Fill the pump with water and check to insure that there is no leakage.



9.Reinstall the spark plug wire.

PREVENTATIVE MAINTENANCE CHECK CHART

ITEM	MAINTENANCE	DAILY	EVERY 50 Hrs.	EVERY 100 Hrs.	EVERY 300 Hrs.	EVERY 1000 Hrs.	As Req
Screws/Nuts/Bolts	Inspect & Tighten	●					
Fuel Tank	Check & Refill	●					
	Clean						●
Spark Plug	Clean & Adjust			●			
	Change						●
Engine Oil	Check	●					
	Change		●				
Air Filter	Inspect	●					
	Replace						●
Spark Arrester	Inspect	●					
Screen	Replace						●
Exhaust Port	Clean		●				
Fuel Tank Filter	Clean			●			
Fuel Bowl/Strainer	Clean			●			
Fuel/Oil Hoses	Inspect	●					
	Replace*						●
Starter Rope	Inspect	●					
	Replace*						●
Carburetor	Clean*				●		
Piston Ring	Replace*						●
Shock Mounts	Inspect	●					
	Replace*						●
Starter Cover	Clean	●					
Controls	Inspect	●					
Ignition Switch	Inspect	●					
Intake Valves	Reface						
	Replace*						●
Exhaust Valves	Reface						
	Replace*						●
Pump casing	Clean						●

** First oil change at 20 hours
* Recommended for maintenance by an authorized ECHO servicing dealer.

NOTE: Should you have any problems with your engine or pump, please contact you nearest Wisconsin Robin or ECHO servicing dealer. The dealer will need the following information to assist you:
— Name & Address
— Model # & Serial #
— Date and place of purchase
— Nature of problem

STORAGE

STORING FOR SHORT TIME BETWEEN JOBS

(90 days or less)

WARNING ⚠ DANGER

Store pump in a dry place, out of reach of children. Do not store in an enclosure where fuel fumes may accumulate or reach an open flame or spark.

1. Clean exterior of pump to remove all accumulations of grease, oil, dirt or debris.
2. Perform any periodic lubrication or services as required.
3. Tighten all cap screws and nuts.
4. Touch-up paint as required.
5. Remove spark plug cable to help prevent accidental starting.
6. Close fuel valve.
7. Using garden hose run clear water through the pump, hoses and strainer.
8. Remove priming plug and drain plug from the pump housing and drain the pump completely.
9. Disconnect suction and discharge hoses.
10. Place a suitable cover over pump.

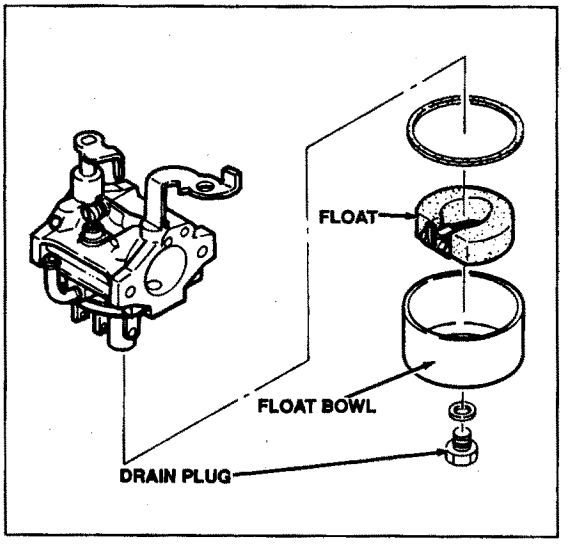
STORING FOR LONG TIME BETWEEN JOBS

(Longer than 90 days)

NOTE:
Follow all procedures above plus the following steps: Do not store pump for a prolonged period of time (3 months or longer) without performing protective storage maintenance which includes following procedures:

- Changing engine oil.
- Lubricating combustion chamber.
- Draining and cleaning fuel tank and filter.
- Draining carburetor and cleaning fuel bowl and strainer.

1. Change engine oil.
   (See Changing Engine Oil in Service section.)
2. Remove spark plug and pour 1/3 oz. (10 ml) of fresh engine oil into cylinder.
3. Place clean rag over spark plug hole.
4. Pull recoil starter handle twice to distribute oil.
5. Install spark plug leaving cable detached.
6. Close engine valves by pulling recoil starter handle until compression is felt, then pull handle 3 ~ 4 cm (1 ~ 2 in.) further.
7. Remove fuel bowl and drain fuel from tank and lines into an approved fuel container. Reinstall fuel bowl and tighten.
8. Drain fuel from carburetor float bowl by loosening drain plug screw then retighten.



REMOVING PUMP FROM STORAGE

1. Check engine oil level.
2. Remove spark plug. Cover spark plug hole with clean rag.
3. Pull recoil starter handle several full strokes to remove oil from cylinder.
4. Check spark plug gap; install plug. Connect spark plug cable.
5. Check that guards and shields are fastened in place.
6. Fill fuel tank with correct gasoline (See Fuels and Lubricants section)
7. Turn the fuel valve "ON".
8. Install suction and discharge hoses making sure the connections are air tight.
9. Be sure to reinstall pump drain plug securely and prime the pump before starting.
10. Install priming plug securely.
11. Start and run the engine for 5 minutes before pumping water.

SPECIFICATIONS

ENGINE

MODEL		TP-2001	TP-3001
Model No.		EY15D	EY20D
Type		Single cylinder 4 stroke	
Bore	in (mm)	2.48 (63)	2.64 (67)
Stroke	in(mm)	181 (46)	2.05 (52)
Displacement	cu-in (cc)	8.7 (143)	11.2 (183)
Horsepower at 3600 rpm	PS	2.7	3.5
Engine speed - continuous	rpm	3600	3600
Starting		Recoil	
Governor		Mechanical	
Automatic low oil shutdown system		Electronic	
PTO shaft rotation		Counter-clockwise	
Driving system		Direct crankshaft	
Cooling system		Forced air	
Cylinder block type of material		Die cast aluminum	
Air cleaner		Polyurethane foam	
Muffler		Spark arresting	
Ignition type		Electronic (Transistorized)	
Ignition module		Contactless magnet	
Air gap	in (mm)		
Spark plug type		NGK–B6HS Champion–L86C	
Spark Plug Gap	in (mm)	0.024 - 0.027 (0.6 - 0.7)	
Spark Plug torque	ft. lbs (kg-cm)	13.03 - 15.92 - (180 - 220)	
Carburetor		Mikuni "float"	
Fuel tank capacity	oz (lit)	94.6 (2.8)	128.4 (3.8)
Continuous operation per tank	hrs	2.1	2.4
Fuel		Unleaded automotive gasoline (min octane 87 - 92)	
Oil Capacity	oz (lit)	20.2 (0.6)	20.2 (0.6)

PUMP

MODEL		TP-2001	TP-3001
Impeller		Cast iron	
Volute		Cast aluminum (ADC12)	
Pump housing		Cast aluminum (ADC12)	
Shaft seal material		SIC ceramics	
O-ring material		NBR	
Flapper valve material		Synthetic rubber	
Port size:			
a) Suction diameter	in (mm)	2.0" (50)	3.0" (80)
b) Discharge diameter	in (mm)	2.0" (50)	3.0" (80)
Maximum capacity	gal/minute (L /min)	179 (670)	267 (1000)
Maximum suction lift (head) upto	ft (meters)	26 (8)	26 (8)
Maximum total head	ft (meters)	76 (23)	76 (23)
Strainer hole diameter		0.75 in.	0.75 in.
Transport mode		Frame	
Length	in (mm)	18.2 (462)	20.7 (527)
Width	in (mm)	14.0 (356)	14.5 (368)
Height	in (mm)	15.6 (397)	16.4 (417)
Weight	lbs (kg)	52.9 (24.0)	61.3 (27.8)

IMPORTANT

THIS UNIT IS NOT EQUIPPED WITH A SPARK ARRESTER MUFFLER

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 these numbers on 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 (3246). Dealer information is also available on our Web Site. When presenting your unit for Warranty service/repairs, proof of purchase is required.

DEALER?
Call
1-800-432-ECHO
or
www.echo-usa.com

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 8:30 am to 4:30 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.

CONSUMER PRODUCT SUPPORT
1-800-673-1558
8:30 - 4:30 Mon - Fri C.S.T.

WARRANTY REGISTRATION

You may register your Echo equipment using the warranty registration card or register on-line at www.echo-usa.com. Registering provides a direct link between you and ECHO if we find it necessary to contact you.

ADDITIONAL OR REPLACEMENT MANUALS

Safety Manuals in English/Spanish or English/French are available, free of charge, from your ECHO dealer or at www.echo-usa.com.

Operator's and Parts Manuals are available by:

- Downloading free from www.echo-usa.com
- Purchasing from your Echo Dealer.
- Sending 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 the 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.

Safety Videos are available from your Echo dealer. A $5.00 shipping charge will be required for each video.

Available Parts Catalog

TP-2001 / TP-3001 All Units Part Number 99922201911

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