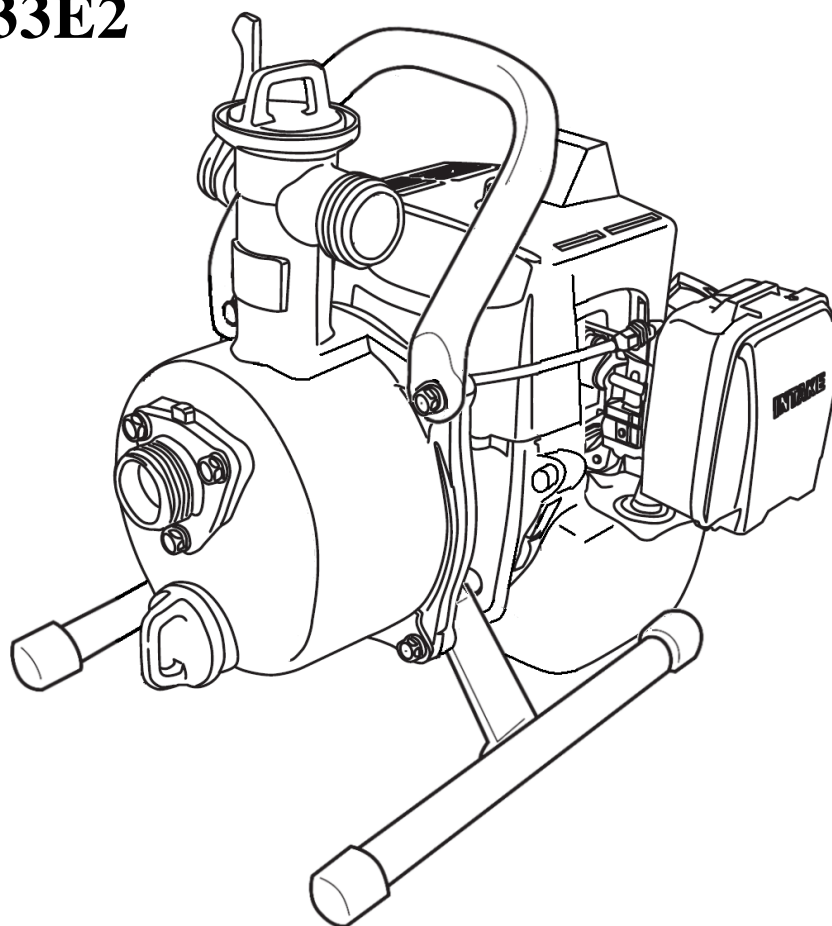




## **Water Pump**

**MP2533E2**



# **Owner's/Operator's Manual**

**Completely read and understand this manual before using this product.**

# Foreword

This Owner's/ Operator's Manual is designed to familiarize the operator with the various features and component parts of the equipment and to assist you with the assembly, operation and maintenance of your new Water pump.

It is essential that any operator of this Water pump reads and understands the contents this manual before using the Water pump.

For additional assistance, contact any local authorized MARUYAMA dealer.

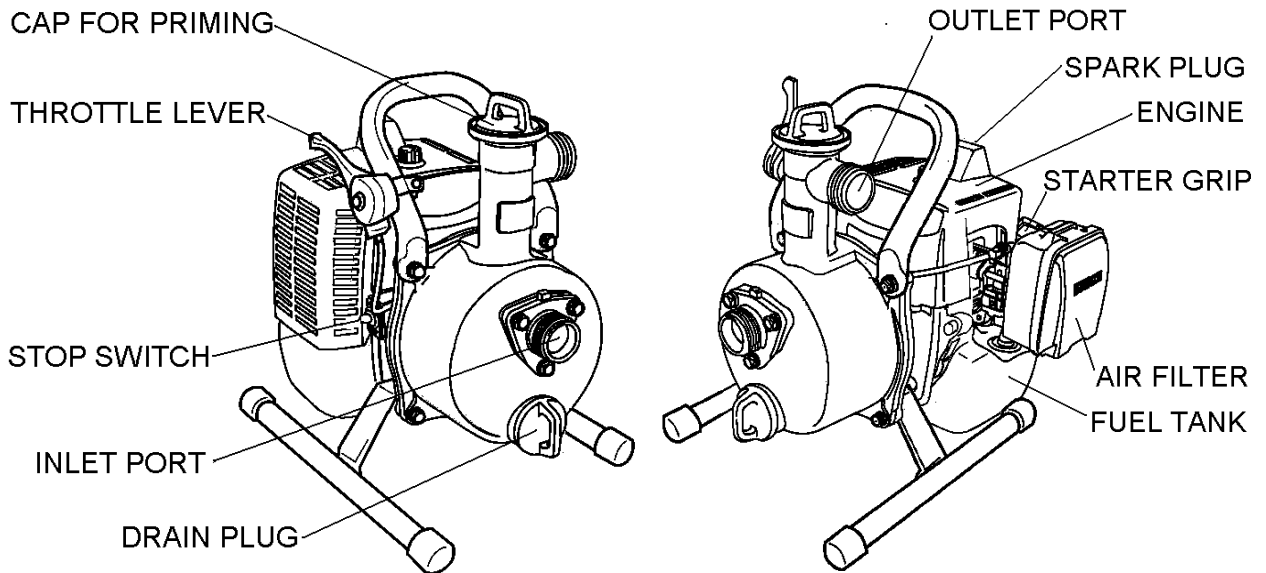
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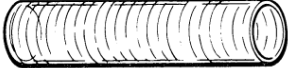






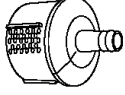


# Specifications

Model		MP2533E2
Pump	Length x Width x Height	320 x 266 x 309mm (12.6 x 10.5 x 12.2 in.)
	Dry Weight	5.7 kg (12.6 lbs.)
	Inlet/Outlet Dia	25 mm (1 in.)
	Connection Thread	PF 1
	Maximum Outlet Flow	113 ℓ/ min (30 gal/min)
	Maximum Head	36 m (118 ft.)
Engine	Displacement	31.8 cc
	Fuel Tank Capacity	1.0 ℓ (1.06 qts.)
	Carburetor	Walbro Diaphragm Type
	Ignition System	Solid State
	Spark Plug:	NGK BPM6Y
	Spark Plug Gap	0.6 ~ 0.7 mm (0.024 ~ 0.028 in.)
	Gas to Oil Ratio	25:1

## Product Description



# Standard Accessories

	Part Name	Q'ty	Remarks
	Suction Hose	1	3 m
	Nut	2	1 in.
	Packing	2	1 in.
	Coupling	2	1 in.
	Coupling	1	3/4 in.
	Coupling	1	5/8 in.
	One Touch Coupler	2	1 in.
	Strainer	1	
	Clamp	3	
	Box Spanner	1	13 x 19 x ⊕

# Safety Instruction

The warning system in this manual identifies potential hazards and has special safety messages that help you and others avoid personal injury, even death.

• **DANGER** , • **WARNING** and • **CAUTION** are signal words to identify the level of hazard.

• **DANGER** : signals an extreme hazard that will cause serious injury or death if the recommended precautions are not followed.

• **WARNING** : signals a hazard that may cause serious injury or death if the recommended precautions are not followed.

• **CAUTION** : signals a hazard that may cause minor or moderate injury if the recommended precautions are not followed. Two other words are also used to highlight information. “Important” calls attention to special mechanical information and “Note” emphasizes general information worthy of special attention.

## Operator Safety

1. Read and understand this Operator’s Manual before using this product. Be thoroughly familiar with the proper use of this product.

2. Never allow children to operate the Water Pump. It is not a toy. Never allow adults to operate the unit without first reading the Operator’s Manual.

3. Never operate this Water Pump when you are tired, ill, or under the influence of alcohol, drugs or medication.

4. Never start or run the engine inside a closed room or building. Breathing exhaust fumes can cause death.



## Fuel safety

1. Gasoline is highly flammable and must be handled and stored carefully. Use a container approved for fuel to store gasoline and/or fuel/oil mixture.

2. Mix and pour fuel outdoors, where there are no sparks or flames.

3. Do not smoke near fuel or the water pump, or while using the water pump.

4. Do not overfill the fuel tank. Stop filling 6mm-13mm (1/4-1/2 inch) from the top of the tank.

5. Wipe up any spilled fuel before starting the engine.

6. Move the water pump at least 3m (10 feet) away from the fueling location before starting engine.

7. Do not remove the water pump fuel tank cap while the engine is running or right after stopping the engine.

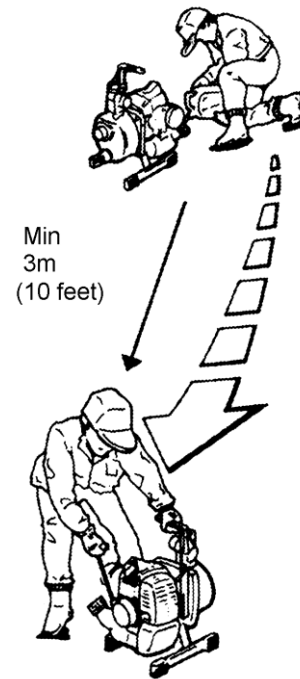


WIPE UP ANY FUEL SPILLAGE

8. Allow the engine the cool before refueling.

9. Empty the fuel tank before storing the water pump. Fuel should be emptied after each use. Fuel left in the tank during storage may leak.

10. Store fuel and water pump away from open flame, sparks and excessive heat. Make sure fuel vapors cannot reach sparks or open flames from water heaters, furnaces, electric motors, etc.



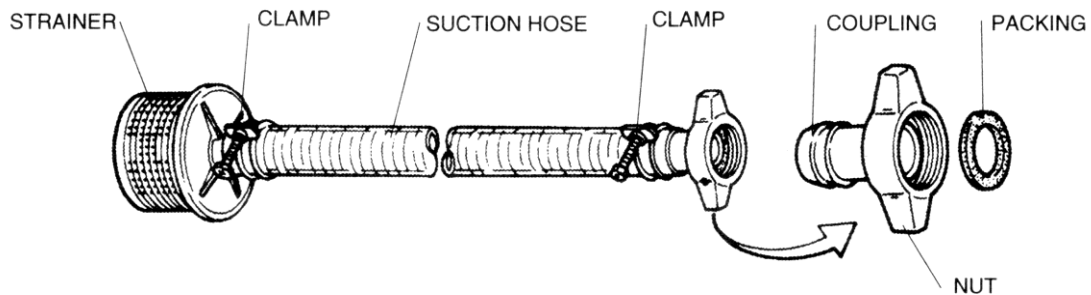
# Assembly

1. Install a rubber packing onto one of the 1 inch hose fittings. Slide a hose fitting nut over the fitting. Slide two hose clamps over the suction hose. Attach the hose coupler assembly and strainer to either end and tighten the hose clamps.

Due to different operator requirements, the discharge hose is not provided. Three hose fittings are supplied with water pump to be used with either 5/8, 3/4 or 1 inch inside diameter hose. Select a discharge hose that is the suitable diameter and length for your application.

Once you have selected the outlet hose, assemble the appropriate hose fitting, packing and nut and secure the fitting to the hose with the hose clamp.

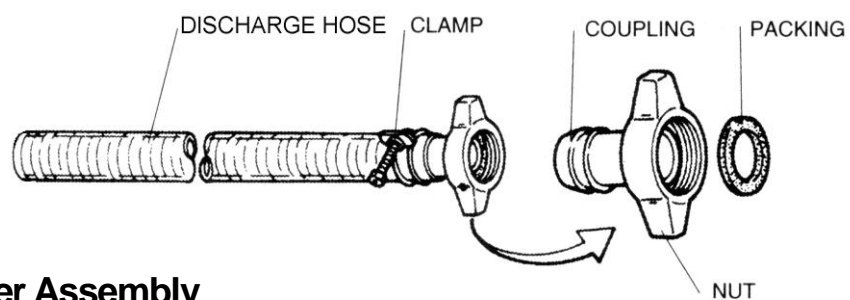
## Suction Hose Assembly (1 inch Hose Fitting)



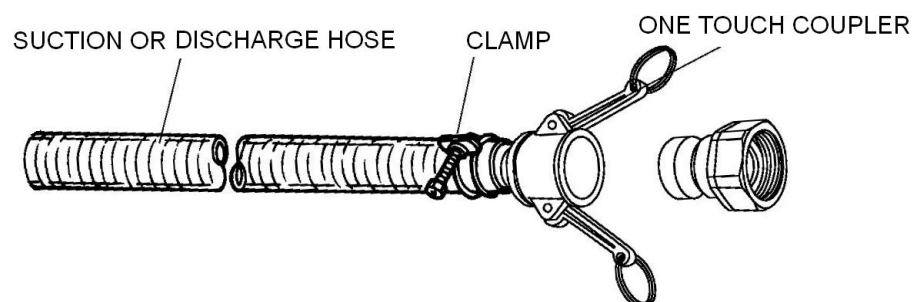
**WARNING:** Always use the strainer provided among the standard accessories. It must be used with a commercially available suction hose. A crush resistant hose is recommended.

※ During operation, if the suction hose is crushed, it can cause the pump to fail.

## Discharge Hose Assembly (1 inch Hose Fitting)



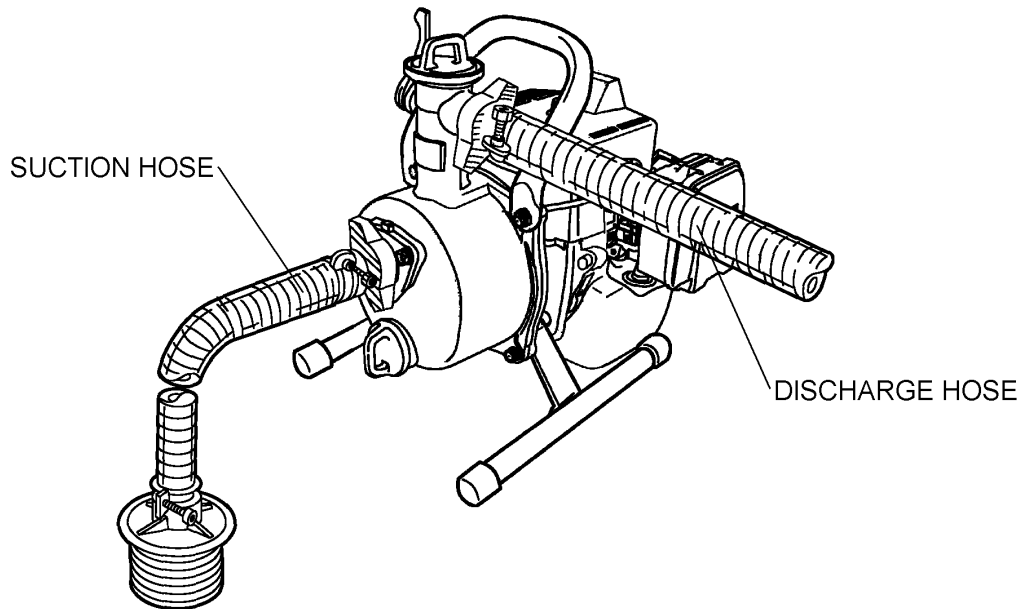
## One Touch Coupler Assembly



2. Fix the suction hose and the discharge hose to the pump, as shown.

**WARNING:** Always use the strainer provided among the standard accessories. It must be used with a commercially available suction hose. A crush resistant hose is recommended.

※ During operation, if the suction hose is crushed, it can cause the pump to fail.



## Before Operation

### Pump Section

1. Check that there are no loose screws or components on the machinery.
2. Place the pump on a level surface, but not immediately next to the water supply.  
If the pump must be placed on a sloping or inclined surface, a level platform must be used.  
Be sure to secure the pump adequately.
3. Where the weight of the suction hose causes the pump to tilt or move, secure the pump adequately.
4. Always attach the strainer to the end of the suction hose. If the pump is operated without the strainer, pebbles and other materials will be sucked into the pump and could cause damage and pump failure.
5. Be sure that the strainer is completely submerged, but not in contact with sandy or muddy bottom surfaces.
6. Secure the suction and discharge hoses tightly to the pump to avoid sucking air.



## Fueling

**WARNING!** The following precaution will lessen the risk of fire.

### WARNING

#### POTENTIAL HAZARD

- Gasoline contains gasses that can build up pressure inside a fuel tank.

#### WHAT CAN HAPPEN

- fuel can be sprayed on you when removing fuel tank cap.

#### HOW TO AVOID THE HAZARD

- Remove fuel tank cap slowly to avoid injury from fuel spray.

### DANGER

#### POTENTIAL HAZARD

- In certain conditions gasoline is extremely flammable and highly explosive.

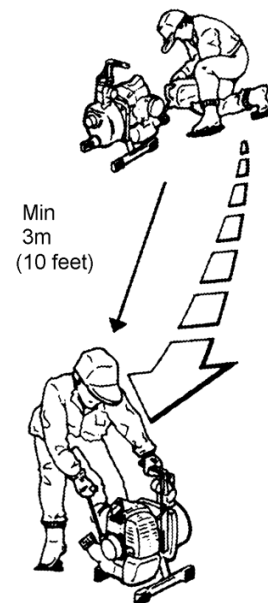
#### WHAT CAN HAPPEN

- A fire or explosion from gasoline can burn you, others and cause property damage.

#### HOW TO AVOID THE HAZARD

- Use a funnel and fill the fuel tank outdoors, in an open area, when the engine is cold. Wipe up any gasoline that spills.
- Do not fill the fuel tank completely full. Add gasoline to the fuel tank until the level is 6 mm -13 mm (1/4 -1/2 inch) below the bottom of the filler neck. This empty space in the tank allows gasoline to expand.
- Never smoke when handling gasoline, and stay away from an open flame with gasoline in an approved container and keep it out of the reach of children.
- Do not mix fuel for more than two month use.

1. Do not smoke near fuel.
2. Mix and pour fuel outdoors and where there are no sparks or flames.
3. Always shut off the engine before refueling. Never remove the fuel tank cap while the engine is running or just right after stopping the engine.
4. Always open the fuel tank cap slowly to release any possible overpressure inside the tank.
5. Do not overfill the fuel tank. Stop filling 6 mm -13 mm (1/4 -1/2 inch) from the top of the tank.
6. Tighten the fuel tank cap carefully but firmly after refilling.
7. Wipe up any spilled fuel before starting the engine.



8. Move the Water Pump at least 3 m (10 feet) away from the fueling location and fuel storage container before starting the engine.

## Mixing Gasoline And Oil

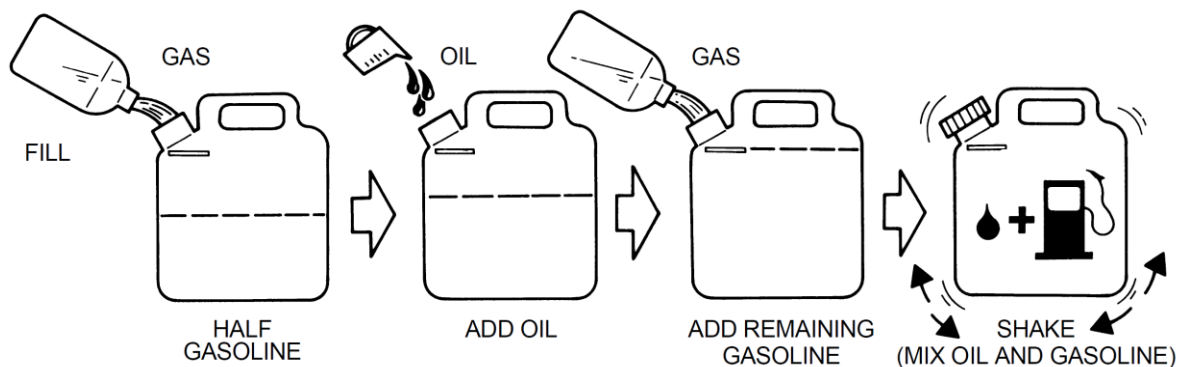
**WARNING!** The engine used on this Water pump is of a 2-cycle design. The internal moving parts of the engine, i.e., crankshaft bearings, piston pin bearings and piston to cylinder wall contact surfaces, require oil mixed with the gasoline for lubrication. Failure to add oil to the gasoline or failure to mix oil with the gasoline at the appropriate ratio will cause major engine damage which will void your warranty. For your fuel premix, only use a quality oil designed for 2-cycle air-cooled engine.

**FUEL MIXTURE:** Always use a good quality 2-cycle, air-cooled engine oil mixed at a ratio of 25:1.

### FUEL MIXTURE CHART:

2-Cycle Oil (25:1)		
With	1 liter gasoline mix	40 ml oil
	2 liter	80 ml
	5 liter	200 ml

**MIXING INSTRUCTIONS:** Always mix fuel and oil in a clean container approved for gasoline. Mark the container to identify it as fuel mix for the Water pump. Use regular unleaded gasoline and fill the container with half the required amount of gasoline. Pour the correct amount of oil into the container then add the remaining amount of gasoline. Close the container tightly and shake it momentarily to evenly mix the oil and the gasoline before filling the fuel tank on the water pump.



When refilling the Water pump fuel tank, clean around the fuel tank cap to prevent dirt and debris for entering the tank during cap removal. Always shake the premix fuel container momentarily before filling the fuel tank.

Always use a spout or funnel when fueling to reduce fuel spillage. Only fill the tank to within 10 ~ 20 mm (1/4 ~ 1/2 inch) from the top of the tank. Avoid filling to the top of the tank filler neck.

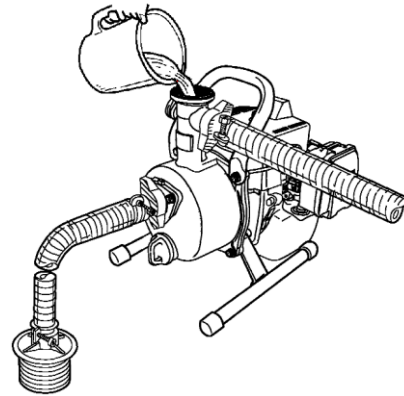
**NOTE:**

1. Never mix gasoline and oil directly in the Water pump fuel tank.
2. Do not use two-cycle oil intended for water cooled outboard motors. This type of 2-cycle engine oil does not have the proper additives for air-cooled, 2-cycle engines and can cause engine damages.
3. Do not use automotive motor oil. This type of oil does not have the proper additives for air-cooled, 2-cycle engines and can cause engine damage.

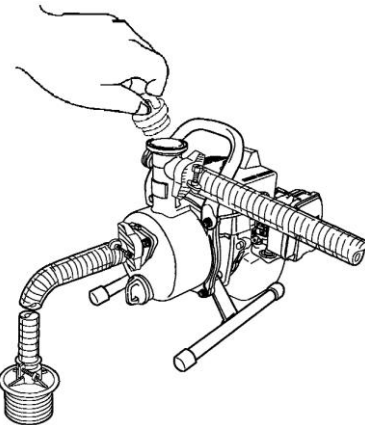
## Operating The Water Pump

1. Remove the water inlet cap

Fill the pump casing with priming water until it is full.  
Shake the equipment slightly so that trapped air is easily removed.



2. Fasten the cap tightly.



**WARNING:** (1) Never start the engine without first priming the pump. If the engine is started without first priming the pump with water, the water pump mechanical seal will be permanently damaged.

- (2) Before running the engine, be sure to immerse the suction hose in the water. Running the engine with only priming water will cause the temperature of the priming water to rise, damaging the mechanical seal.

3. After the engine starts, the pump will gradually start suction. Once suction starts, let the pump run 2-3 minutes to warm up, and then operate it at the specified rpm setting.
4. To stop water pump operation, press the engine stop button.
5. When the engine is restarted, the pump will operate without priming, but the level of the water inside the casing must be checked before starting in the event that the suction hose end is exposed, the installation site is changed, or the pump has not been used for a long time.

## Starting and Stopping

### Before Starting the Engine

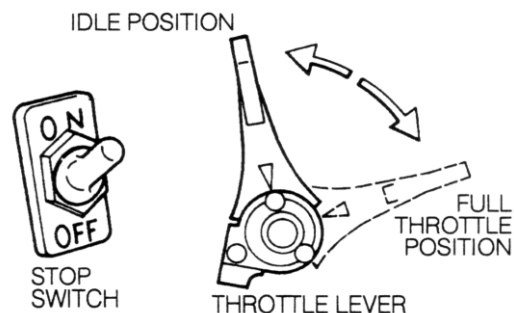
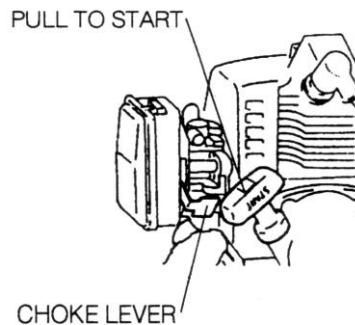
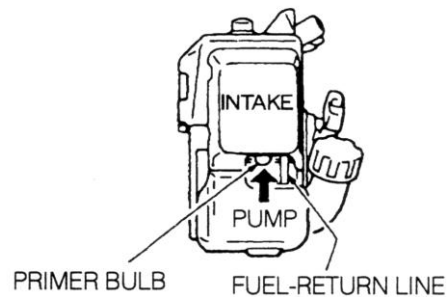
1. Fill the fuel tank as instructed in the Before Operation section of this manual (page 8).
2. Rest the Water Pump on the ground.
3. Keep all bystanders, children and animals away from the working area.

### Cold Starting Procedure

The carburetor on this engine is equipped with a fuel primer and a choke system.

To start a “cold” engine properly, perform the following procedure:

1. Pump the primer bulb at the bottom of the carburetor until fuel can be seen flowing through the fuel return line to the fuel tank. (Flowing fuel should be almost clear, not foamy or full of bubbles.)
2. Turn the choke lever to the Close position.
3. With the stop switch “ON”, and the throttle lever positioned at IDLE, pull the starter cord. After the engine is started, turn the choke lever to the Open position.



If the engine stops running before you turn the choke lever to the open position. Go ahead and open the choke, pull the starter cord with the throttle lever positioned at IDLE.

- NOTE:**
1. Don't pull the starter cord out completely. It may damage the machine.
  2. Don't rease the starter cord from the fully extended position.

## Hot Restart

To start the engine that is already warmed up (hot restart), or if the ambient temperature exceeds 20°C:

1. Pump the primer bulb at the bottom of the carburetor until fuel can be seen flowing through the fuel return line to the fuel tank. (Flowing fuel should be almost clear, not foamy or full of bubbles.)
2. Turn the choke lever to the Open position.
3. With the stop switch "ON" , and the throttle lever positioned at IDLE, pull the starter cord.
4. If the engine fails to start after three to four pulls, follow the instruction in the Cold Starting Procedure section (page 11).

If the engine fails to start after you follow the above procedures, contact an authorized Maruyama dealer.

## To Stop The Engine

1. Move the throttle lever to the idle position.
2. Move the stop switch to the "OFF" position.

**IMPORTANT:** Except emergency, do not stop engine while it runs fast. It may damage the engine. Move the throttle lever at idle position first, then move the stop switch to "OFF" position.

**IMPORTANT:** In case of the stop switch failure and the engine continue to run, move the choke lever to the closed position to stop the engine.

## Idle Speed Adjustment

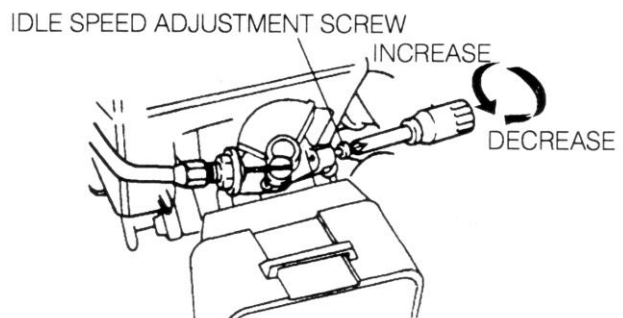
This water pump is equipped with non-adjustable fuel mixture carburetor. The engine idle speed is the only adjustment accessible to the Operator.

**CAUTION:** The water pump impeller is spinning during idle speed adjustment. Never start the engine without water in the pump housing. Running the engine without water in the pump housing will cause serious damage.

### Engine Idle Speed:

The engine idle speed should be 2,700-3,300 rpm.

The engine idle speed is adjusted by rotating the idle speed screw on the carburetor. Turning the idle speed screw in (clockwise) increase engine speed while turning the screw out decreases engine speed.



# Maintenance

## Pump

1. After the pump has been used with muddy water, be sure to run it with clean water for a few minutes to clean the interior of the pump before stopping operation.
3. Where outside temperatures drop to freezing or below, be sure to drain all water from the pump before storage.
4. When the unit is not to be used for a long period of time, clean the pump interior thoroughly, remove all remaining moisture, and then store it covered in a dry, cool, dark place.

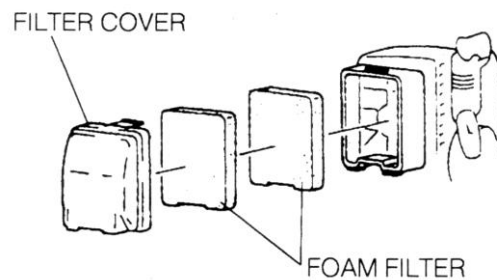
## Air Filter

### Maintenance Interval

- The air filter should be cleaned daily or more often when working in extremely dusty conditions.
- Replace after every 100 hours of operation.

### Air Filter Cleaning

1. Dismantle the air filter cover and remove the foam filter.
2. Clean the foam filter with warm, soapy water. Let the completely dry.
3. Apply a light coat of SAE 30 motor oil to the foam filter and squeeze out all excess oil.
4. Reassemble the foam filter and filter cover.



## Fuel Filter

### Maintenance Interval

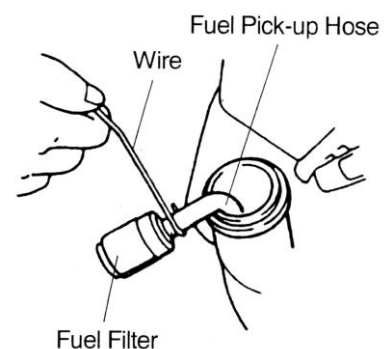
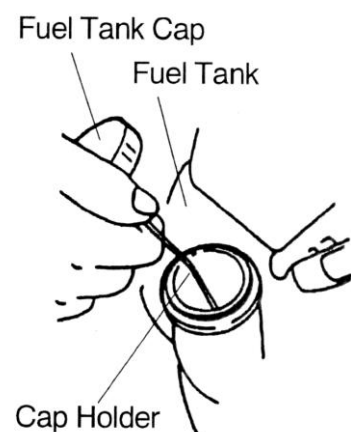
The fuel filter should be replaced after every 100 hours of operation.

### Fuel Filter Replacement

The fuel filter is attached to the end of the fuel pick-up hose inside the tank.

To replace the fuel filter:

1. Make sure the fuel tank is empty.
2. Loosen the fuel tank cap.
3. Using a wire hook, gently pull the fuel filter out through the fuel filler opening.
4. Grasp the fuel hose next to the fuel filter fitting and remove the filter, **but do not release the hose**.



5. While still holding on to fuel hose, attach the new fuel filter.
6. Drop the new fuel filter back into the fuel tank.
7. Make sure that the fuel filter is not stuck in a corner of the tank, and that the fuel hose is not doubled over (kinked) before refueling.

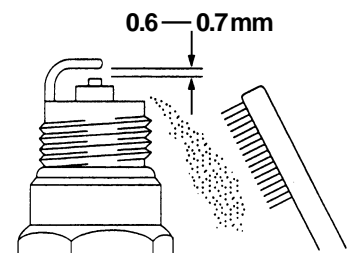
## Spark Plug

### Maintenance Interval

- The spark plug should be removed from the engine and checked after each 25 hours of operation.
- Replace the spark plug after every 100 hours of operation.

### Spark Plug Maintenance

1. Twist the high tension lead boot on the spark plug back and forth a couple of times to loosen the boot, then pull the boot off of the spark plug.
2. Remove the spark plug.
3. Clean the electrodes with a stiff brush.
4. Adjust the electrode air gap to 0.6-0.7 mm.
5. Replace the spark plug if it is oil-fouled, damaged, or if the electrodes are worn down.
6. Do not over tighten the spark plug when installing.  
The tightening torque is 10.7-16.6 N·m.



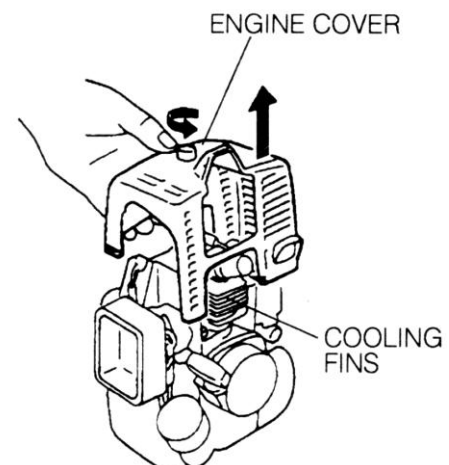
## Cylinder Cooling Fins

### Maintenance Interval

- The cylinder cooling fins should be cleaned after every 25 hours of operation, or once a week, whichever comes first.
- Air must flow freely around and through the cylinder cooling fins to prevent engine overheating. Leaves, grass, dirt and debris buildup on the fins will increase the operating temperature of the engine, which can reduce engine performance and shorten engine life.

### Cooling Fin Cleaning

1. Loosen the knob and lift off the cylinder cover.
2. Clean all dirt and debris from the cooling fins and from around the cylinder base.
3. Reinstall the cylinder cover.



## General Cleaning and Tightening

### WARNING

#### POTENTIAL HAZARD

- When engine is running, attached tool and other parts are moving.

#### WHAT CAN HAPPEN

- Contact with moving tool or other moving parts could cause serious personal injury or death.

#### HOW TO AVOID THE HAZARD

- Always turn off your Water pump before you clean or perform any maintenance on it.

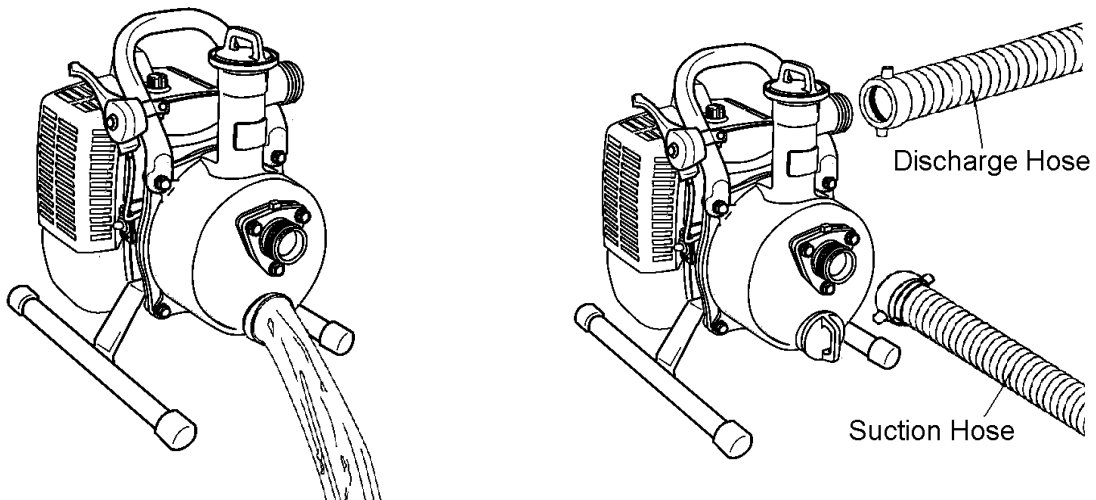
The MARUYAMA Water pump will provide maximum performance for many, many hours if it is maintained properly. Good maintenance includes regular checking of all fasteners for correct tightness, and cleaning the entire machine.

## Storage

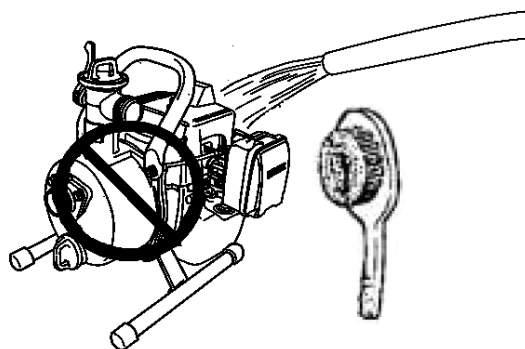
For long term storage of the Water pump:

### Pump Section

1. Drain water from the pump completely.
2. Remove Suction hose and Discharge hose from pump.



**IMPORTANT:** Do not wash the pump in water. It may damage the engine.



Do not wash the pump in water.



## Engine Section

### CAUTION

#### POTENTIAL HAZARD

- Oil may squirt out of the spark plug opening when you pull the starter grip.

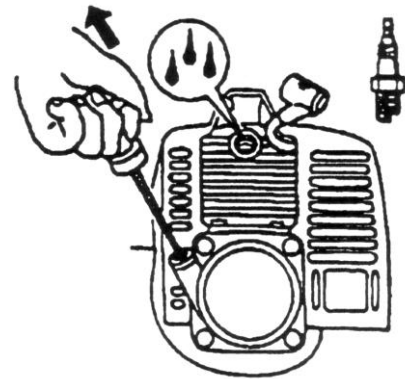
#### WHAT CAN HAPPEN

- Oil can cause eye injuries.

#### HOW TO AVOID THE HAZARD

- Protect your eyes and keep your face away from the spark plug opening.

1. Empty the fuel tank into a suitable fuel storage container.
2. Run the engine to remove any fuel that may remain in the carburetor.
3. Perform all regular maintenance procedures and any needed repairs.
4. Remove the spark plug and squirt a very small amount of engine oil into the cylinder.
5. Pull the starter grip once.
6. Slowly pull the starter grip to bring the piston to the top of the cylinder (TDC).
7. Reinstall the spark plug.
8. Store the Water pump in a dry place away from excessive heat, sparks or open flame.



# Troubleshooting

	Problem	Cause	Action
Pump	Pump doesn't rotate	Engine doesn't move	Refer to engine troubleshooting.
		Impeller rusted	Disassemble and repair
		Debris is stuck in Impeller.	Disassemble and clean
	No suction or suction time is long	Air is being drawn in	Check all connections and tighten them.
		Priming water is not sufficient	Fill the pump casing with priming water until it is full
		Mechanical seal failure	Replace mechanical seal
		Engine rpm is too low	Increase engine rpm
		Pump position is too high from water source	Place pump near water source
		Suction hose is damaged or folded	Replace suction hose
		Strainer or hose is clogged	Repair or replace
		Check and clean	
	Low discharge volume Low discharge pressure	Air is being drawn in	Check all connections and tighten them.
		Engine rpm is too low	Increase engine rpm
Pump position is too high from water source		Place pump near water source	
Impeller is worn		Replace Impeller	
Suction hose diameter is too small		Use bigger diameter suction hose	
Debris is stuck in Impeller.		Disassemble and clean	
Strainer or hose is clogged		Check and clean	
Engine	Engine Will Not Start	STOP switch set to off position	Move switch to on position
		Empty fuel tank	Fill fuel tank
		Primer bulb wasn't pushed enough	Press primer bulb until fuel flows through fuel return line
		Engine flooded	Use warm engine starting procedure
	Engine Will Not Idle	Idle speed set incorrectly	Set idle speed
	Engine Lacks Power or Stalls When Cutting	Throttle wire has come loose	Tighten throttle wire
		Dirty air filter	Clean or replace air filter
Clogged spark arrester or exhaust port.		Clean spark arrester or exhaust port	

**If further assistance is required, contact your local authorized Maruyama service dealer.**



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