

# SAMSAN FOGGER



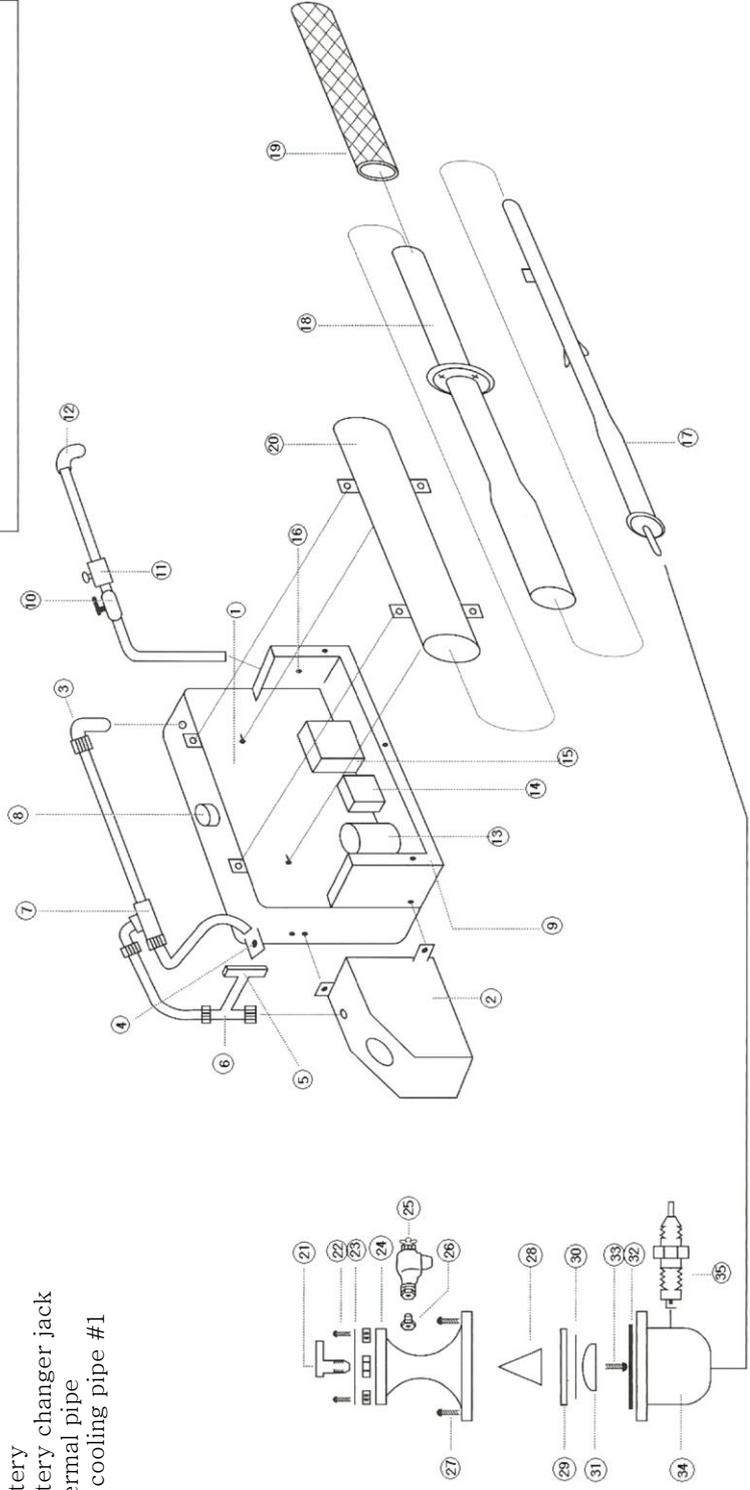
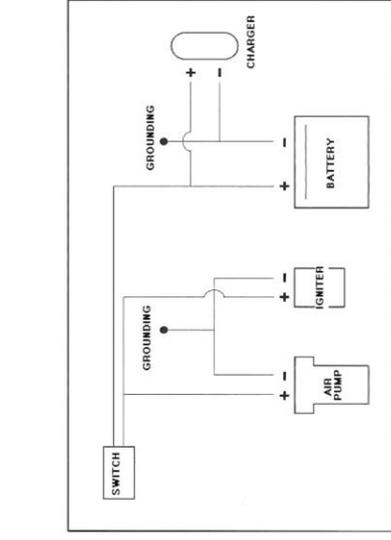
## User's Operating Manual



## Description of fogging machine – portable

- ① Chemical tank
- ② Fuel tank
- ③ Chemical tank elbow nipple
- ④ Start button
- ⑤ Fuel check valve
- ⑥ Fuel T nipple
- ⑦ Chemical check valve
- ⑧ Chemical tank cap
- ⑨ Battery case
- ⑩ Chemical valve
- ⑪ Chemical control valve
- ⑫ Chemical nozzle
- ⑬ Air pump
- ⑭ Igniter
- ⑮ Battery
- ⑯ Battery changer jack
- ⑰ Thermal pipe
- ⑱ Air cooling pipe #1

- ⑲ Air cooling pipe case
- ⑳ Air cooling pipe #2
- ㉑ Air nozzle
- ㉒ Air nozzle bolt
- ㉓ Air nozzle board
- ㉔ Carburetor(above)
- ㉕ Fuel valve
- ㉖ Fuel nozzle
- ㉗ Carburetor bolt
- ㉘ Petal bolt
- ㉙ Petal plate



## 1.Part Names and Functions

Name of Part	Function
①Chemical tank	Hold and stores chemicals
②Fuel tank	Holds and stores fuel
④Start button	Button used to start-up the machine
⑥Fuel check valve	Keeps air flowing in one direction within the fuel tank
⑦Chemical check valve	Keeps air following in one direction within the chemical tank
⑩Chemical valve	Controls the flow of chemicals
⑪Chemical control valve	Controls chemical quantity
⑫Chemical nozzle	Injects chemicals into the thermal pipe
⑬Air pump	Pumps air into the carburetor and fuel tank when starting in automatic mode
⑭Igniter	Changed low voltage into high voltage during when start button is pushed
⑯Battery	Runs the air pump and igniter
⑰Thermal pipe	Where fuel is burned
⑱Air cooling pipe #1	Bring in air to cool machine during operation
⑳Air cooling pipe #2	Bring in air to cool machine during operation
㉔~㉓Carburetor	Mixes fuel and air for ignition purposes
㉕ ~ ㉖ Fuel nozzle and fuel valve	Controls the amount of fuel into the carburetor
㉗Fuel filter	Removes impurities in the fuel
㉘Spark plug	Creates spark which ignites the fuel



## 2. Machine Features

### ① Simplicity of Operation

Air and fuel is automatically mixed in the 12V air pump. So it starts with the simply with the push button.

### ② Durability of the Machine

This machine is made almost entirely of Stainless Steel or polyethylene (chemical tank, fuel tank, etc), which prevents corrosion due to chemicals, and fuels

### ③ Re-chargeable Battery

It is a non-liquid, 12V DC, rechargeable Battery, which does not degrade and also avoids the user the hassle of constant battery changes.

### ④ Little Heat Generation

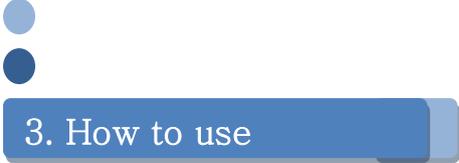
The Machine has been designed so it is cooled by two air-intake valves that are connected to the fuel ignition part of the machine. This allows the machine to remain cool during use.

### ⑤ Strong Igniter

The igniter uses a 12V DC battery so that starting the machine is quick and easy.

### ⑥ Easily Repaired

All components are designed for easy assembly/disassembly, the fuel line is made of a transparent material, and the spark plug is easily seen, so it is easy to spot problems when they happen.



## 3. How to use

### ① Items to be checked before use

- a. Add the fuel and chemicals and then check that the spark plug is installed tightly, this guarantees that there will be no air leakage, which would cause the machine not to work.
- b. Battery Charge: if you are not using the machine in the semi-automatic mode then you should check the 110V and 220V input power switch on the back of the machine. It should be in the middle position and then attach it to the power outlet.  
Set the charger at 'automatic', but if charging is not performing well at 'automatic', set it to 'manual'.  
To charge the machine, connect the charger jack to the charging outlet of the machine's main unit. The red light will go on during charging and then a green light will go on when the process is complete. The entire process takes between 10~12 hours.

### ② Starting

- a. Automatic  
Make sure the automatic/manual switch is in the automatic position.  
Open the fuel nozzle in a counter clockwise direction, then squeeze the nozzle at the same time as you press the start button. If the machine fails to start then you should close the fuel nozzle by turning it in a clockwise direction and pressing the start button until you hear a 'cough' like sound. This makes sure that any excess fuel in the carburetor is gone.  
Then repeat the steps to operate the machine.
- b. Manual  
Put the automatic/manual switch in manual position. Open the fuel nozzle in a counter clockwise direction and operate the machine by rapidly pressing the start button, which is located beside the automatic/manual switch. If the machine fails to start then you first should close the fuel nozzle and then continually press the start button until you hear a 'cough' like sound, which tells you that the carburetor has been cleared of any excess fuel.  
Then repeat the steps to operate the machine.

### ③ How to Spray the Chemicals

- a. Open the chemical valve while the machine is running
- b. Regulate the desired quantity of chemicals by adjusting the chemical control valve and then begin spraying.

### ④ How to Stop the Machine

- a. Close the chemical valve
- b. You should wait for 5 or 6 seconds.
- c. Close the fuel nozzle by turning it in a clockwise direction.
- d. Remove any air by turning the chemical cap. (Caution: the machine has the potential of causing a fire if the above steps are not conducted after every use.)

### ⑤ What to do when use is complete

- a. Clean the thermal pipe with the cleaning rod. Insert the rod then turn it in a clockwise motion, in order to prevent damage to the machine.
- b. Charge the battery.
- c. If carbon has collected in the spark plug, take out the plug and remove the carbon. (when replacing the plug make sure it maintains a 2-3mm gap)



## 4. Storage

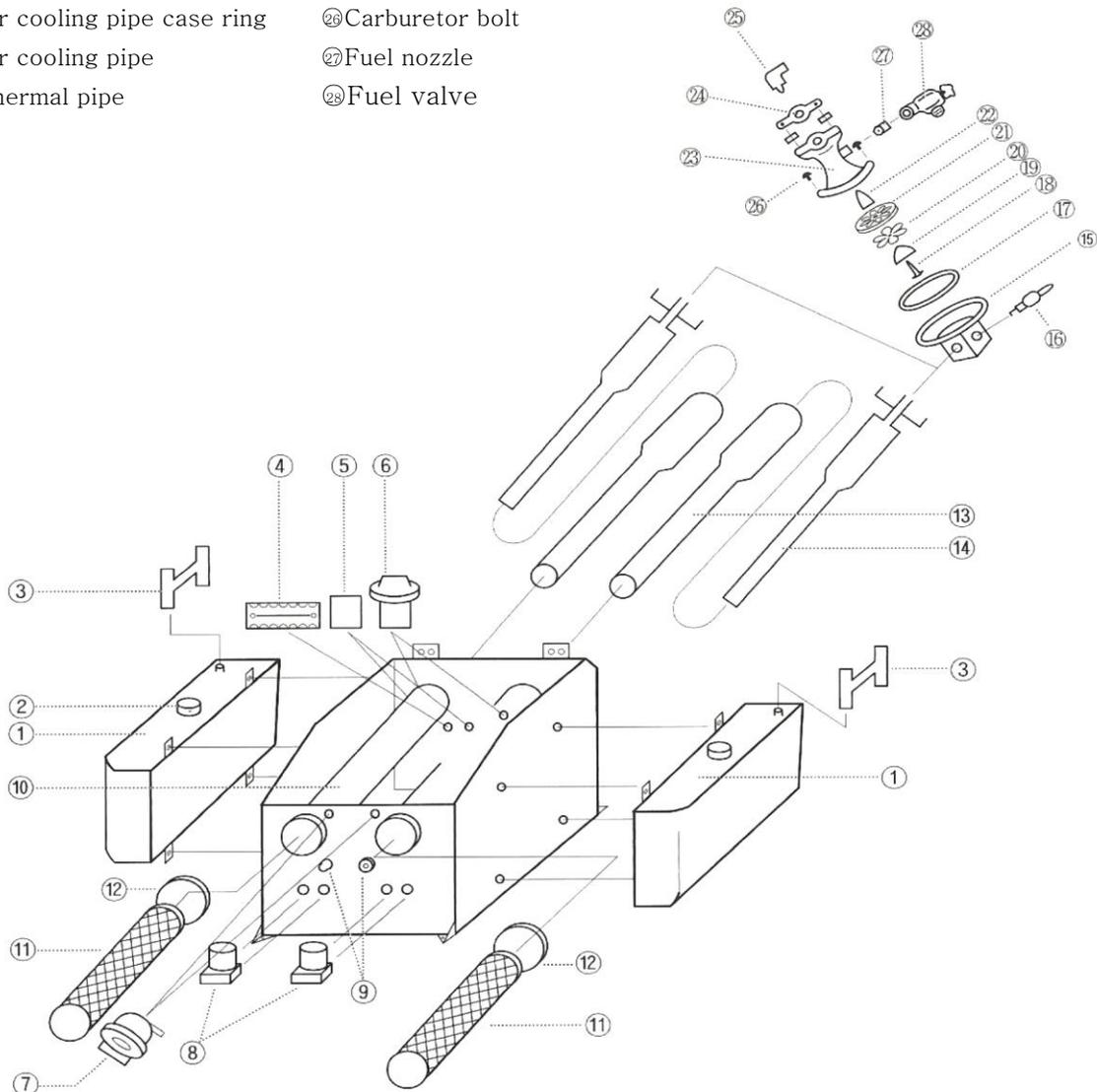
- ① Completely empty the chemical and fuel tanks then clean them thoroughly by the following method. Fill with acetone liquid, screw the caps completely shut and leave for one hour. Put light oil, or water in the chemical tank then operate it by spraying. Then clean any remaining sediment in the chemical tank.
- ② Clean the residue from the chemicals by using an acetone liquid. Clean the residue due to oil by using gasoline.
- ③ Charge the Battery. When the battery has not been used over an extended time it should be recharged every 2 or 3 months.
- ④ Set it in an upright position (with the start button pointing towards the ceiling) and cover it with vinyl to protect it from dirt and other foreign materials.

## 5. Caution

- ① Do not add gasoline or chemicals into the machine while it is hot.
- ② When spraying poisonous chemicals, wear a mask. If you are going to reuse the mask make sure it is thoroughly cleaned after every use.
- ③ When the machine is not running, turn the chemical valve and fuel nozzle to the close positions because there is possibility of fire.
- ④ Charge the battery after use.

## Description of machine – mounted on vehicle

- |                              |                             |
|------------------------------|-----------------------------|
| ① Fuel tank                  | ⑮ Carburetor(below)         |
| ② Fuel tank cap              | ⑯ Ignition plug             |
| ③ Fuel check valve           | ⑰ Carburetor gasket         |
| ④ Terminal board             | ⑱ Bolt                      |
| ⑤ Igniter                    | ⑲ Petal cone                |
| ⑥ Air pump                   | ⑳ Petal                     |
| ⑦ Pressure switch            | ㉑ Petal plate               |
| ⑧ Solenoid valve             | ㉒ Petal bullet              |
| ⑨ Connector                  | ㉓ Carburetor(above)         |
| ⑩ Air cooling pipe #2        | ㉔ Air nozzle board          |
| ⑪ Air cooling pipe case      | ㉕ Air nozzle for carburetor |
| ⑫ Air cooling pipe case ring | ㉖ Carburetor bolt           |
| ⑬ Air cooling pipe           | ㉗ Fuel nozzle               |
| ⑭ Thermal pipe               | ㉘ Fuel valve                |



## 1. Part Name and Function

Name of Part	Function
①Fuel Tank	Keeps and stores gasoline
②Fuel Check Valve	Keeps air flowing in one direction within the fuel tank
③Fuel Solenoid Valve	Opens and closes fuel aperture
④Terminal Board	Connects the electric wires to the main body of the machine
⑤Igniter	Ignition is created by changing the low voltage into high voltage
⑥Air Pump	Generates air during the operation of machine
⑦Pressure Switch	Continuously supplies gas by turning the solenoid valve while the machine is running
⑧Chemical solenoid valve	Opens and closes the chemical aperture
⑨Machine Main Body Connector	Connects the control box to the machine's main body
⑩Power Connector	Connects the battery to the machine's main body
⑪Air Cooling Pipe #2	Brings in air to cool machine during operation
⑫Air Cooling Pipe #1	Brings in air to cool machine during operation
⑬Thermal Pipe	Where fuel is burned
⑭~⑯Carburetor	Mixes fuel with air and ignites it
⑰Chemical coupling	Connects the machine's main body to the chemical tank
⑱~⑲Fuel Nozzle Valve	Adjusts quantity of fuel used by opening and closing the aperture



## 2. Machine Features

- ① **This machine has a control box, so the machine can be placed in the back of an open bed truck and operated by a passenger in the vehicle.**
- ② **Start-up is simple**

The 12V DC battery of the truck is used by connecting it to the control box. Then you simply press the start and fuel button at the same time, and the machine will start.
- ③ **Durability of the machine**

This machine is made almost entirely of Stainless Steel (chemical tank, fuel tank etc), which prevents corrosion due to chemical, and fuels.
- ④ **It is not necessary to use additional battery because you can use the battery of the vehicle.**
- ⑤ **Little Heat Generation**

The machine has been designed so it is cooled by two air-intake valves that are connected to the fuel ignition part of the machine.  
This allows the machine to remain cool during use.
- ⑥ **Strong Igniter**

The igniter uses a 12V DC battery so that starting the machine is quick and easy.
- ⑦ **Easily Repaired**

All components are designed for easy assembly/disassembly, the fuel line is made of a transparent material.  
And the spark plug is easily seen, so it is easy to spot problems when they happen.



## 3. How to Use

### ① Items to check before using

- a. Make sure fuel and chemical caps are tightly closed (The machine will not operate if they are not)
- b. Make sure the connecting wires are tightly connected to the main body. (main body connector, power connector, chemical coupling etc.)
- c. Open fuel valve and chemical adjustment valve on the machine.

### ② How to start-up

- a. Turn on power by flipping power switch up, red light is on the power lamp should come on.
- b. To start the machine, hold the start button down while continuously pumping the fuel button. It is operating when the green light appears on the control box.
- c. If it does not operate, press the start button repeatedly until it in makes a 'vroom' sound which means combustion is occurring in the carburetor.
- d. Repeat steps **a** to **c**, until it starts.

### ③ How to spray chemical

- a. Flip chemical switch up after the machine is started.
- b. Adjust the spray to the right amount of the chemical by using the chemical adjustment valve.

### ④ When you are finished using the machine

- a. Flip the chemical spray switch down.
- b. You should wait for about 10 seconds.
- c. And flip the fuel button down.
- d. Open the chemical tank cap.

### ⑤ What to do when use is complete

- a. Clean the heat pipe with the cleaning rod. Insert the rod then turn it in a clockwise motion, in order to prevent damage to the machine.
- b. If carbon has collected in the spark plug, take out the plug and remove the carbon. (when replacing the plug make sure it maintains a 2-3mm gap)



## 4. Storage

- ① Completely empty the chemical and fuel tanks, then clean them thoroughly by the following method. Fill with acetone liquid, screw the caps completely shut and leave for one hour. Put light oil, or water in the chemical tank then operate it by spraying. Then clean any remaining sediment in the chemical tank.
- ② Clean the residue from the chemicals by using an acetone liquid.  
Clean the residue due to oil by using gasoline.
- ③ Set it in an upright position (with the start button pointing towards the ceiling) and cover it with vinyl to protect it from dirt and other foreign materials.

## 5. Caution

- ① Do not add gasoline or chemicals into the machine while it is hot.
- ② When spraying poisonous chemicals, wear a mask. If you are going to reuse the mask make sure it is thoroughly cleaned after every use.
- ③ When the machine is not running, make sure the chemical valve and the fuel valve are closed on the control box because there is possibility of fire.

## 6. How to Check/Repair Machine in Case of Problems

### A. If there is a banging or coughing sound before machine it shuts itself off.

Cause	How to Check	Solution
1. Gasoline doesn't flow freely due to a blocked fuel nozzle.	It is normal when the gasoline flows evenly when the start button is pressed or pumped	Clean the fuel nozzle opening with a thin metal wire. Replace the o-ring of the fuel nozzle clean the fuel nozzle completely.
2. When gasoline does not go through the fuel filter.	Normally gasoline goes through the fuel filter right away when the start button is pressed or pumped.	Replace and clean the fuel filter if it does not.
3. Defective rubber liner of the fuel tank check valve.	①It is normal. If air goes in one direction but cannot go out the way it came in, does not leak from the check valve of the main body of the machine causing blowing or a sucking sound. ②It is defective if the side of the liner is torn or swollen.	Replacement should be performed carefully to guarantee that the air only exits the machine in one direction. To check the liner put your tongue in the middle of it and when blow, air should move freely through the liner. If you try to suck air through the liner using the same method as above no air should move through the liner.
4. The air pump is not working well when you don't have enough air exiting the machine.	①The machine is normal when strong wing exits the machine, when the start button is pressed. ②Check if air pump hose is properly inserted.	①Check to see if the air pump hose is securely attached. ② Replace air pump.
5. Insufficient battery charge is happening when the battery does not operate the motor and ignition after being changed.	①The charge is normal when a strong spark occurs when touching + and - terminals of the battery to each other. ②Check to see if the voltage falls in the following range: 9V+ for manual and 12V+ for automatic.	①Replace or recharge the battery. ②Charge the battery until the red signal light flickers in the automatic mode. If the signal light doesn't flicker then check the charger and connections.
6. Damaged rubber packing on the fuel cap or the cap doesn't screw closed tightly.	①The cap is defective when the user must hold the cap with his/her hand to start the machine. ②Rubber packing is swollen.	①Replace packing ②Make sure the cap is closed completely.
7. Leaking air from the nipple.	To check use soap and water to find where the air is leaking from then replace the nipple from which the air is leaking.	Replace the nipple
8. Insufficient gasoline or chemical/foreign materials in the fuel tank.	Check out fuel tank	①Clean the fuel tank completely ②Change the gasoline
9. Carbon build up in the thermal pipe.	Check to see if this is the problems by using a flashlight. If this is the problem then clean the thermal pipe completely with the cleaning rod.	Check the spark plug and if there is a carbon build-up remove it with a screwdriver.

**B. When air leaks and makes a puck or when sound and the machine won't start.**

Possible damage to the thermal pipe. Check to see what the damage is by using a flashlight. To correct this problem replace the thermal pipe.

**C. Chemical spraying won't work after the machine is started.**

Cause	How to Check	Solution
<b>1. Defective rubber liner in the chemical check valve</b>	Normally air enters the machine in only one direction, without any leaks. It is defective if the side of the packing is torn or swollen. You should then replace the packing in the chemical check valve. To check the liner, put your tongue in the middle of it and when you blow, air should move freely through the liner. If you try to suck air through the liner using the same method as above no air should move through the liner.	
<b>2. Blockage of the chemical spray pipe</b>	If you separate the chemical spray pipe from the chemical nozzle and the chemicals do not come out of the chemical tank then the chemical spray pipe could be blocked.	Using an air compressor, blow the obstruction out of the pipe.
<b>3. Blockage of the chemical nozzle</b>	If you separate the chemical spray pipe from the chemical nozzle and then chemicals do not come out of the chemical tank then the chemical nozzle could be blocked.	①Replace chemical nozzle. ②Clean chemical nozzle with a thin metal wire.
<b>4. Blockage of the chemical valve.</b>	If you separate the chemical spray pipe from the chemical valve and then the chemicals do not come out of the chemical tank then the chemical valve could be blocked.	①Replace chemical valve. ②Clean the chemical valve by using air compressor to force air through the blockage.
<b>5. Chemical cap refuses to close tightly</b>	①The cap is defective when the user must hold the cap with his/her hand to start the machine. ②Rubber packing is swollen.	①Replace packing ②Make sure the cap is closed completely.

**D. You can hear the air pump operating but the machine will not work.**

(That means the ignition is not working)

Cause	How to Check	Solution
1. Defective igniter or defective terminal wires.	It's normal if a spark occurs when you hold the spark plug 3-4min from the ignition terminal. Make sure the + terminal has firm contract with the ground wire.	①Replace the igniter ② Make sure terminal contract is firm.
2. Defective spark plug. Insufficient spark to start the machine	Normal when spark occurs when start button is pushed. The gap of the spark plug is normal when it is 3-4mm. Check to see if carbon has built up on the spark plug.	①Replace the spark plug ②Maintain 3mm gap. ③ Remove carbon from the spark plug
3. Too much gas in the carburetor has occurred when there is a knocking sound is coming from the carburetor.	Machine isn't working correctly if when you take the carburetor cover off and cover is very wet.	①Wipe the gasoline off the carburetor completely. ②Shut the fuel nozzle and wait until you hear a cough sound while operating the machine, then press the start button.
4. Thermal pipe coil damage	Check damage with a strong flashlight.	Have the thermal pipe coil repaired.
5. Insufficient battery charge.	Insufficient charge if the sound of the machine is weak.	Replace recharge the battery.

**E. When you can see large sparks in the carburetor then the machine is not working properly.**

Cause	How to Check	Solution
1.Damaged petal valve	To check the petal valve you must take a apart the carburetor, then replace the petal valve.	Make sure petal plate is not moved when removing the valve.
2. Uneven gap between the petal valve and the petal valve plate.	Check the gap by taking apart the carburetor.	Replace the petal valve or adjust the gap so it is even.

## 7. Product Specification

Division \ Type	SSF-150 Automatic	SSF-150P	SSF-200	SSF-200P	SSF-400
<b>TYPE</b>	Thermal Aerosol Fog	Thermal Aerosol Fog	Aerosol and U.L.V	Aerosol and U.L.V	Thermal Aerosol Fog Or U.L.V.
<b>Starting Method</b>	Push Button Start	Push Button Start	Push Button Start	Push Button Start	Fully Automatic Complete Control
<b>Power Supply</b>	12V DC Rechargeable Battery	12V DC Vehicle Battery			
<b>Dimensions (mm)</b>	W : 230 L : 1350 H : 340	W : 270 L : 1350 H : 320	W : 230 L : 1320 H : 340	W : 270 L : 1350 H : 320	W : 710 L : 1330 H : 490
<b>Weight (empty)</b>	9kg	8kg	10kg	8.5kg	45kg
<b>Gasoline Tank Capacity</b>	1.8L	1.5L	1.8L	1.5L	16L
<b>Gasoline Consumption</b>	1.5L/h	1.5L/h	1.8L/h	1.8L/h	3.3L/h
<b>Solution Tank Capacity</b>	8L	6L	8L	6L	100L~150L
<b>Solution Output</b>	40L/h	40L/h	50L/h	50L/h	85L/h
<b>Solution Tank Material</b>	Stainless Steel 304L	Plastic (Polyethylene)	Stainless Steel 304L	Plastic (Polyethylene)	Stainless Steel 304L
<b>Shipping Data (mm)</b>	W : 240 L : 1360 H : 350	W : 280 L : 1360 H : 330	W : 240 L : 1360 H : 350	W : 280 L : 1360 H : 330	W : 730 L : 1400 H : 510
<b>Shipping Data Weight(empty)</b>	12.9kg	12kg	13.3kg	12.7kg	50kg