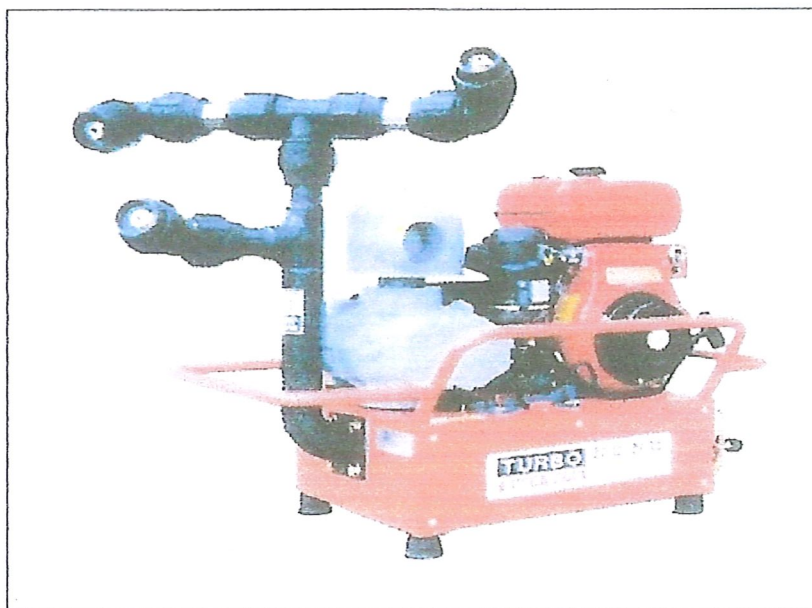


INSTRUCTION MANUAL



TURBO FOG 1200ULV

JANUARY 01, 2012

☼ SEA-HEA INDUSTRIES INC.

CERTIFICATE OF GUARANTEE

1. Contents of Guarantee

If the user maintain the machine as followed of the instruction manual and caution, and there is some defect on the machine before using it, we are changing all the spare parts and machine without any charge.

2. Period of Guarantee

Guaranteed for 1 year from purchased date.(If there is no purchasing date then it is from manufacturing date)

3. Exception of Guarantee

If the machine is on the guarantee term but there is the following conditions then we will not guarantee;

- 1) User treat machine wrong way so the machine is broken
- 2) Repair the machine and change the machine where it is not our agent.
- 3) After purchased machine, the damage caused of dropping, impact, moving
- 4) Defects of environmental disaster
- 5) Defects which user treat machine improper way and change the machine.
- 6) Defects which use improper fuel

4. Duty of the user

Please follow the instruction manuals. So check the machine, repaire the machine

5. The specification will be changed without notice because of improvement of the machine

6. Certificate of manufactured machine

Product name		Vehicle mounted ULV sprayer			
Size		<input type="checkbox"/> TURBO-1200U, <input type="checkbox"/> TURBO-1200UA(Please tick the proper machine)			
Manufacturing no.				Manufacturing date	
Sales office	Company name			Purchased place	Company name
	Address				Address
	Telephone				Telephone

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Thank you for choosing our machine.

Please read carefully this manual for the effective and safe use.

And please familiar with the contents of the caution then use the machine.

Explanatory Notes

This manual is for using the machine effective way and safe way. So please read carefully this manual and if you don't follow the manual then you will have severe damage of your body and even you will be dead.

Please pay attention on the followings;

!Warning

When you don't
follow this sign
then you will
have severe
injury or dead.

! Caution

When you don't
follow this sign
then you will
have injury or
dead

Caution

When you don't
follow this sign
then the machine
will not working
properly

C h e c k p o i n t

! W A R N I N G

Please don't use the machine in the closed place or the place where there is no ventilation device.

You will be suffocated by the gas of the engine.

While you are operating the machine please don't open the fuel cap or don't fill the fuel.

There will be caused the fire by the fuel or gas. And you will be dead.

Shouldn't be touched your body and finger where the spinning parts or power transmission device.

While transferring the machine please empty the fuel tank.

The fuel will cause the fire.

While starting or operating machine, please don't touch the plug.

You will get injury because of electric shock

Before starting the machine please don't control the engine output on purpose.

When you start the machine, the high spinning will cause the injury.

Please don't stock the suction parts with tree leaves, plant, or other material on purpose.

The machine will be severely damaged and there will be crack on the blower so the injury will be occurred.

Don't expose your body infront of the chemical nozzle for a long time.

The chemicals are very harmful for human being.

! C A U T I O N

After starting or stopping the machine, don't touch the engine body or silencer.

When you touch there, you will be burnt.

When operating the machine, hear the strange sounds or vibration, then please stop the machine and check the each parts carefully.

The strange sound and vibration mean to be defect. So you should check the machine then use it. Otherwise the performance will be low and will get some injury.

Check the leakages of fuel and chemical, and if any, please repaire it and use the machine.

If the leakages of fuel and chemical it will cause the fire or the chemical will harm your body.

Please don't impact on the machien or use the right spare parts to repaire.

Impact and using wrong spare parts will cuase the severe defects and it will harm.

After starting please don't touch the recoil starter(manual starting).

It will transmit the RPM of the engine. So it will harm.

Please don't touch the machine who is not expert on the machine.

Wrong use will cause the severe defects and harm

Don't leave the machine as operating

Leaving the machine as operating will harm the labour.

Check the chemical pipe line that there is some leaking points.

C A U T I O N

When you don't use the machine and store it for over 30 days, please take the fuel and chemicals out from their tanks and then store it in your warehouse.

If you leave the fuel and chemicals in the tank and store it then it will cause the error of starting and changing of the chemicals.

Before operating the machine, please check the engine oil and fuel. If it is lack then please fill it up.

If it is lack of the oil, then engine will be burnt or break down.

While operating the machine, please don't increase the RPM suddenly.

The part of the engine cannot supply the lubricating oil enough. So the engine will break down or the performance will be down.

When you pour the chemicals into the tank please don't spill out the chemicals to the human body or machine.

It will cause the improper working of the machine and the chemical will harm to your body.

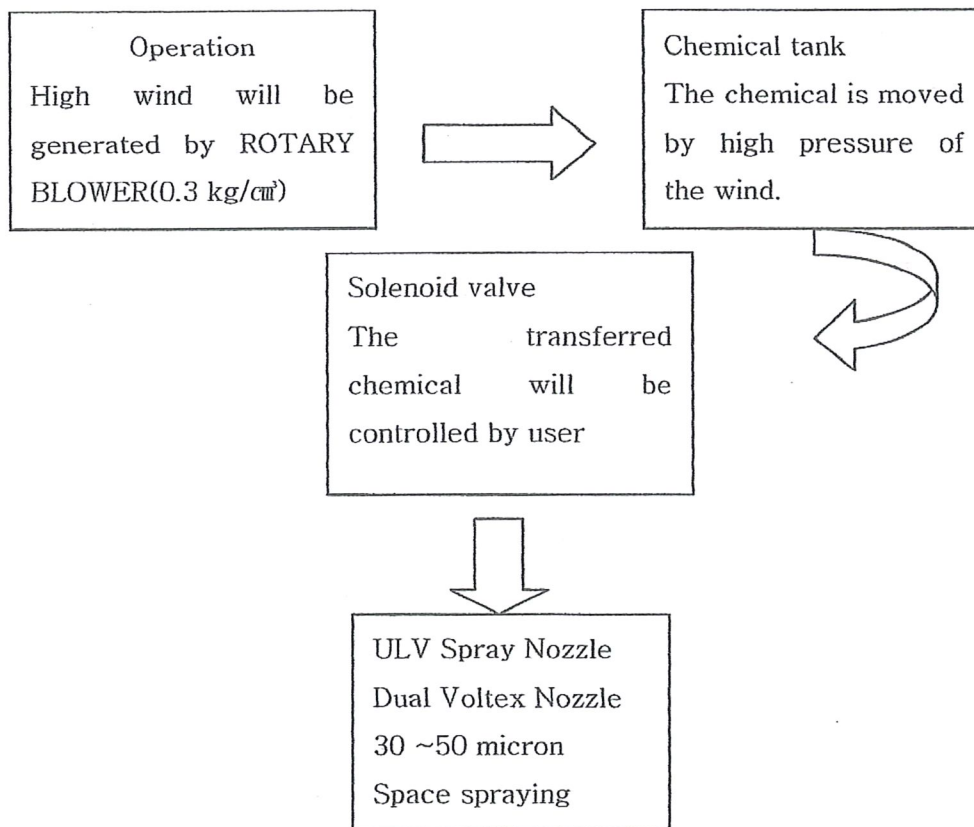
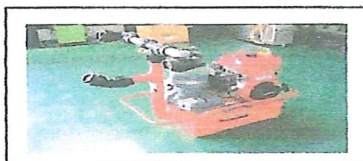
Check the battery that it is lack of the electrolsys liquid or charging status.

If the electrolsys liquid of the battery is lack or if the charging status is not good, then the machine will not work properly.

Please be careful of winter-sowing of the chemical pipe or chemical tank.

In winter if you store the machine as the chemical is in the tank then the winter-sowing will be caused so the machine will not working properly.

Principaly of the machine and main specifications

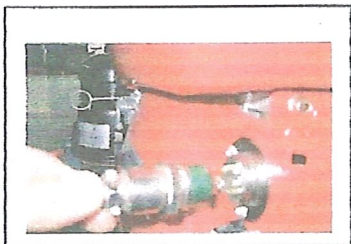


Main Specification

Class	TURBO-1200UA	TURBO-1200U
L X H X W(mm)	1110 X 760 X 720	1130 X 810 X 720
Starting method	Automatic and Manual way	Automatic and Manual way
Fuel tank capacity	5 liter	5 liter
Fuel consumption	2.16 ~ 2.64 liter/h	2.16 ~ 2.64 liter/h
Engine output	6.7 ~ 7.0 ps	6.7 ~ 7.0 ps
Engine RPM	1800 ~ 2000 RPM	1800 ~ 2000 RPM
Solution Tank capacity	100, 130 liter optional	100, 130 liter optional
Solution output	50 ~ 150 liter/h	50 ~ 150 liter/h
Blower pressure	0.3 kg/cm ²	0.3 kg/cm ²
Weight	98 kg	90 kg
Nozzles	3 nozzle automatic control	3 nozzles manual control

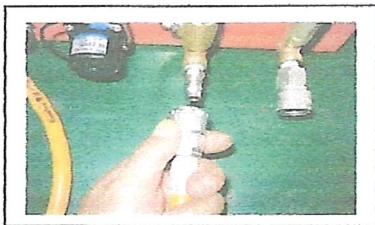
Connection of each contents

Connection of control box



Connect the power connection pin which is in the engine body and control box jack. Pin hole must be correctly connected then Tighten the connection nut. (If the connection Nut isn't tightly connected and there is some Vibrating of machine or bouncing of the machine Then the power will not be supplied.)

Connection of Solution tank



Connect the lines after checking left or right sets fixed as coupling into the machine body
(Chemical supply line, Air supply line)
The connection parts are fitted individually.

! WARNING: Machine and Solution tank must be fixed

1. Connect the machine as the above and while you are moving with machine the machine should be fixed into the car.
2. If the machine and solution tank is not fixed into the car then there will be big accidents and it will cause the low performance of the machine.

Check point before operating machine

Check the fuel and fill up the fuel

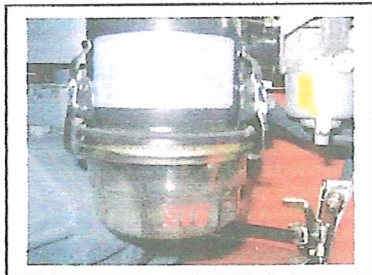


The fuel should be used unleaded petrol.
If there is some foreign matter in the fuel, then
It will cause the severe damage to the machine.
Fill up the fuel until the red stick is up
which it is located in the fuel gauge.
(Maximum: 5.0 liter)

! WARNING: Please follow the below when you fill up the gas.

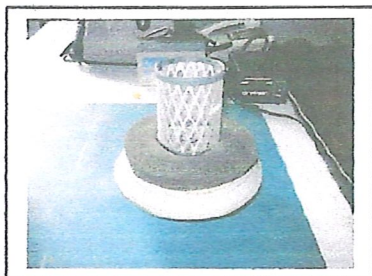
1. Please don't fill up the gas while operating or it is heated
2. Don't get rid of fuel filter when you fill up the gas
3. Don't leave any flammable material or flame near the machine while fill up the gas
4. Don't spill the fuel out to the machine or surround while fill up the gas

Check of air cleaner status



Engine Air cleaner

Check the engine filter if there is some foreign
Materials. If it is polluted with foreign materials
Then please change the oil.(Fill up the oil until
The line)



Rotary blower air cleaner

Please check the air cleaner there is tree leaves
Or other foreign materials. If there is some foreign
Materials then there will be severe damaged.

! WARNING: Check the air cleaners(Engine and rotary blower).

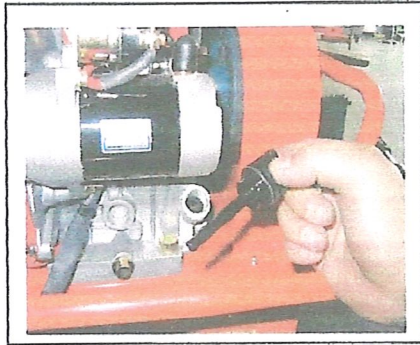
Fill up the chemical and check point

Caution: Please be careful of the chemical which it is not spilt out to your body

Please make the maximum air space when you fill up the chemical.

Don't leak of the chemical on to the body or machine, it will cause addiction of body and
mulfunction of machine.

Check Engine oil



Open oil gauge and check the oil that it is on the "FULL" level. If it is under standard level then fill up the oil.

Oil standard level: 0.9liter

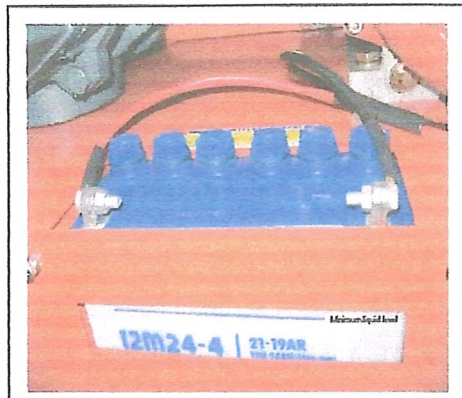
Please use the engine oil that it is over SC Level. And use the oil where the place are Different temperature.

TEMPERATURE	0℃		15℃	30℃
Oil level	SAE # 5W20 OR 10W	SAE #20W OR#20	SAE#30	SAE#40

Caution: Please check engine oil before start everyday.

- 1) If the engine starts, it consumes the oil. So if it is under standard level then please fill up the engine oil. Otherwise the engine will be damaged and it will be broke.
- 2) Please use the engine oil in standard oil.

Check the battery



Check the liquid of battery that it is standard Level line or not. If the liquid is short then

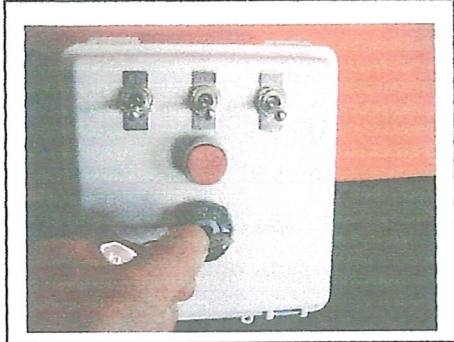
Please fill up the pure water till the standard Level.

Caution: Please check the battery everyday

1. When you store the machine for a long time without using, then please charge the battery time to time then start the engine. (About 10 minutes ~ 20 minutes)
2. If the battery is used up, then it is impossible to start or recharging.

H O W T O U S E

Method of starting (Start/Stop)



How to start

1. Insert the key into the control box where it
Located in the driver's cabin and ready to
Start.
2. Turn the key into the "ON" then hold that for
2 ~ 3 minutes to pre-heated of the engine.
3. Turn the key into the "START" and if the
engine is starting and leave the key then the key will go back to "ON" location.

How to stop

Turn the key "ON" location to "OFF" location then the power will be cut and the machine will be stopped.

Caution: Please check the followings before start/stop

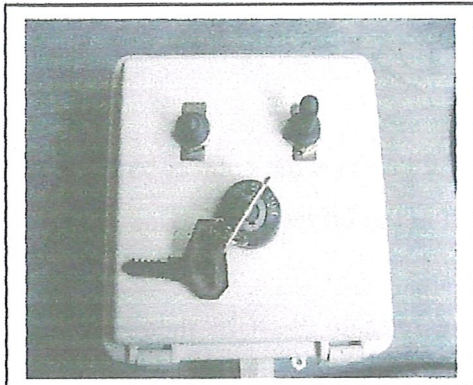
- 1) If the machine is not starting at once then there is some problem with the machine. So don't insist on trying to start the machine. (Repaire or check the machine throughly).

Overload of start motor. So it has a problem

We took the method of MTI(Mitshbishi Transistor Ignitor). So please treat the machine carefully.

- 2) If the machine is on and trying to start again then the power transmittor will have problem or broke.
- 3) If the machine is stopped and you left the key on the location of " ON" for a long time then the battery will be used up.
- 4) If you left the key on the location of "ON" of the chemical spraying device for a long time, then the power will be used up and battery will not work.

How to spray the chemical(Spraying or Stopping)



Spray the chemical

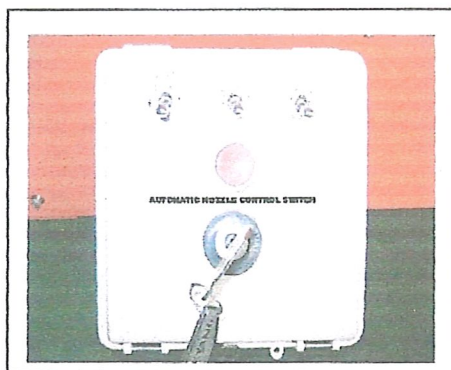
- 1) Start the machine as the method of starting machine.
- 2) Machine starts, there will be generated the pressure in the chemical tank (about 10 seconds) then "ON" the switch of spraying want to use only one nozzle then just push up one

"ON" switch of spraying chemical. If you want to open 2 nozzles then push up 2 "ON" switch.

How to stop

- 1) According to the place of use and purpose, just push down the "OFF" switch then the chemical will not be sprayed.
- 2) When you push down the switch as "OFF" then shouldn't turn "KEY" as "OFF" immediately. Just leave the chemical nozzle until the chemical is used up in the chemical nozzle. Then turn "KEY" to "OFF" location.

How to control automatic nozzle direction device(TURBO-1200UA)



- 1) Stop or start the spraying chemical as the same as the above instruction.
- 2) Trying to control the direction of the nozzle inside of the cabin, just press the red button which is automatic nozzle direction device button then the nozzle will be automatically moved any direction such as left or right. And if you release the button then the device will be stopped.

! WARNING Attention point before spraying the chemical

It is high concentration chemical. So please be careful when you spray.

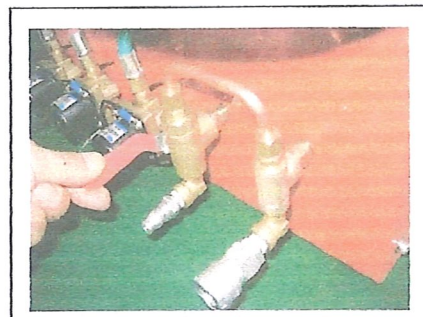
(Shouldn't expose your body or animal for a long time.)

Use the chemical as instructed and follow the dilution rate as instructed. So you can prevent the addiction to the chemical.

How to clean the pipe the chemical



- 1) After finishing day work, you must clean the chemical pipe. It will prevent the changing of the packing that it is in the pipe or solenoid valve.
- 2) After stop the machine, the three way valve should be like the picture
- 3) Spray switch on the remote control box should be "ON"
- 4) Start the machine (About 10 to 20 seconds)
- 5) When the machine starts the pressure which is generated from rotary blower will clean the inside of the pipe and solenoid valve.
- 6) When the chemical is used up in the pipe and solenoid valve then turn off the switch of whole machine.



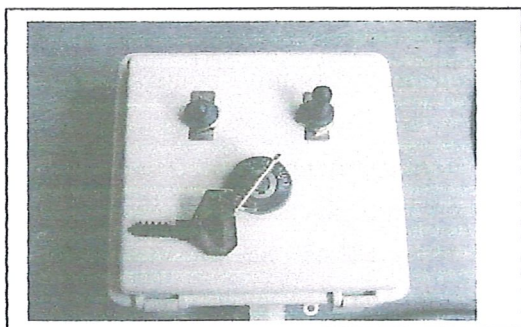
Please leave the three way valve as like the picture. Otherwise the chemical will not be sprayed.

CAUTION: You must follow the below instruction after working

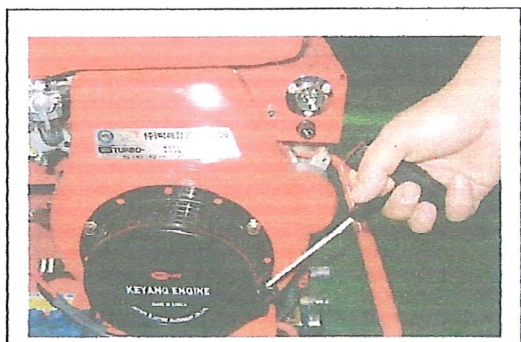
- 1) Please turn off the whole switches which are on the remote control box. Otherwise it will discharge the battery
- 2) If you don't clean the chemical pipe and solenoid valve then the main parts will be transformed.

How to start the machine manually

- 1) Battery must be fully charged for good start of the machine.
- 2) If you don't use the machine for a long time then machine is difficult to start.
- 3) If the battery is not enough to start, then just follow the below instruction.



Turn "KEY" into "ON" on the remote control box.



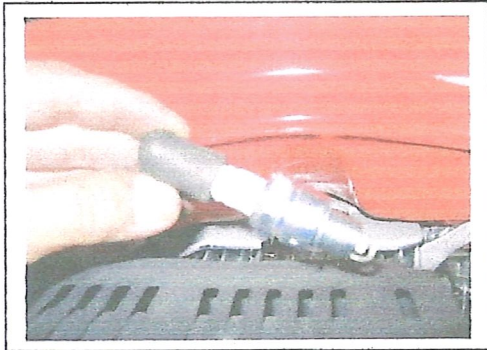
Pull the recoil start handle until you can feel some pressure. If you feel some pressure then pull the handle with power then the machine will be started.

- 4) When you start the machine please don't spray the chemical immediately. Just leave for 10 to 20 minutes for pre-starting.
- 5) While the engine is on, charge the battery from the regulator.(Please charge the battery fully).
- 6) Use the machine as the above the instruction and if you want to stop the machine then just turn "KEY" to "OFF"
- 7) The rest of the method of machine, just follow the instruction as mentioned the above.

How to treat emergency situation

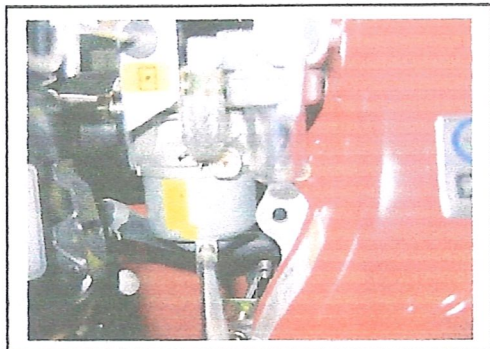
*The engine is not starting easily or stopping easily.

1) Check the gap status of engine plug



The gap of engine plug must be kept as 0.7 mm. Please check the gap of engine plug time to time and if there is some foreign material (Carbondioxide) then use the sand paper to remove it. And if the status of engine plug is no good condition then change the plug.

2) Clean the engine fuel cock.



Dismantle the engine fuel cock cup and remove The sediment and remove the dirt in the filter.

3) Clean the evaporizer



If the used fuel is bad quality, then open the Fuel bolt which is attached to the engine Evaporizer and then remove the foreign Material.

***If the chemical is not sprayed**

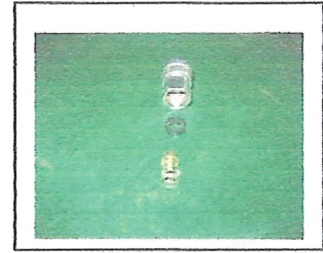
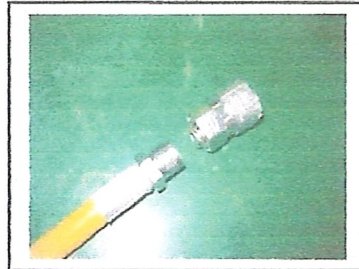
- 1) Check the status of closing of chemical tank cap and check the packing of the cap.



The principal of spraying chemical is the pressure Which is generated in the chemical tank and the Pressure transport the chemical. So if there is Leakage of the pressure then the chemical will not Be sprayed.(Cap of the chemical tank, cap packing Status of closing cap, leakage of chemical etc)

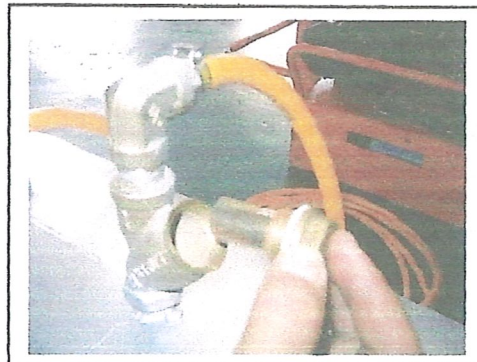
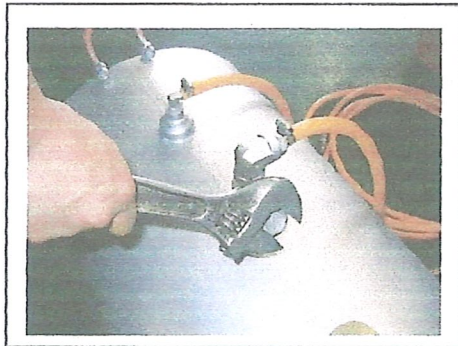
- 2) Check the status of coupling packing for chemical pipe and connection parts.

The coupling packing of the connection between chemical tank and chemical pipe can be transformed into other shape because of the chemical and the chemical pipe will be narrowed. So the chemical is not enough to transport the chemical into the pipe and the spraying q'ty will be lowered. So change the packing as the picture.



- 3) Check the chemical filter

If you don't clean the inside of the chemical tank frequently then there is some remnant of the chemical inside the chemical tank and formed foreign materials. And it will cause the blocking of chemical filter. So the chemical is not sprayed as usual. So clean the chemical tank as the picture.(Clean the chemical tank frequently)



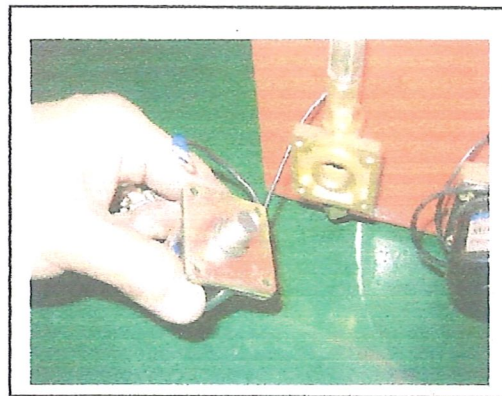
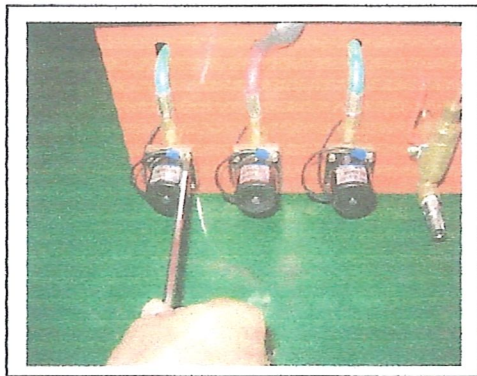
4) Check the solenoid valve and its packing.

Solenoid valve is easily damaged by moisture and water. So be careful of the status of the solenoid valve.

How to check the solenoid valve that it works or not.

Solenoid valve use the (+) and (-) (DC 12V). If the valve connect the power or blocking the power then there is sounds. So it must be clear sounds. Otherwise the solenoid valve is not working well. (If there is no sounds then change the solenoid valve sets)

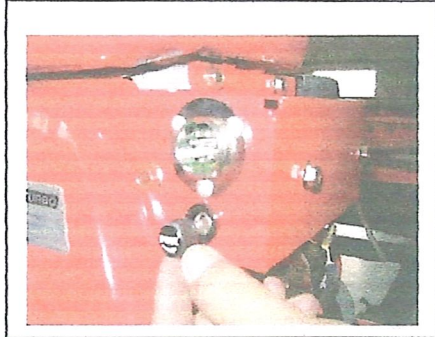
How to change the solenoid valve packing



If the packing of solenoid has been transformed then the chemical spraying q'ty is lower or cannot spray the chemical. So please change the packing as like the above picture.

* If the start key which is on the remote control box is not working

1) Check the main fuse.



There are the case that sudden start, rain, moisture will blow its fuse, then remote control box will not working. (Change the main fuse like the picture)

2. If the battery is weak so the automatic starting is not working

Start the machine using recoil start methods which explained in the front page.

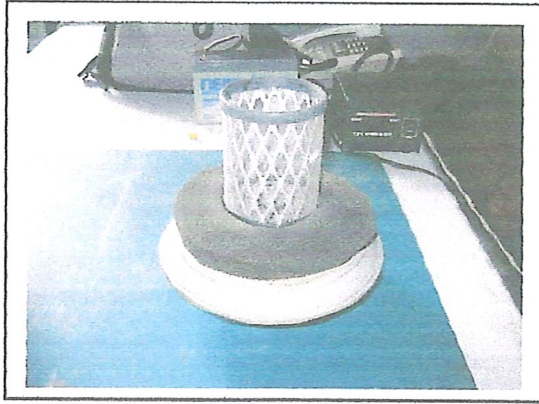
Make an engine idles for (10 to 20 minutes) after that start the machine in automatic way. But there is no reaction, then the battery is discharged fully. So change the battery and start the machine again.

If you start the machine in automatic way and you can hear the sounds of starter motor as small sounds then use the manual start(recoil starting method) and fully recharge then use the machine.

If use the above instruction and use the machine unnaturally and the engine is not starting but you use the machine continuously then the machine will be broken.

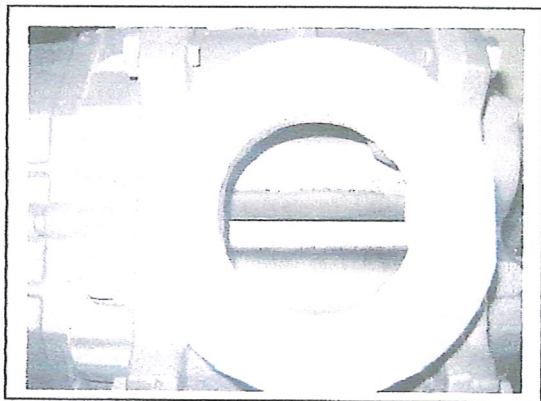
* If the rotary blower is not working

1) Check the air cleaner of rotary blower



Dismantle the air cleaner of the rotary Blower and check the air cleaner if there Is foreign materials. If there is, then clean The air cleaner. If there is foreign material Inside the air cleaner then it will cause the Broke down of the machine.

2) Check the fan of the rotary blower



If there are foreign materials, rain drops, Tree leaves, and any artificial materials in The inside of the rotary blower and air Cleaner then the fan will be over heated And there will be cracked and broken the Rotary blower. So check the inside of the Rotary blower and if there is cracking, then Change or repair it.

If the nozzle is moving un-purposely, check the followings;



If the nozzle is moving unpurposely Because vibration of the machine or other Conditions which cause moving nozzle, then use the repair kits like the picture and control the nozzle.