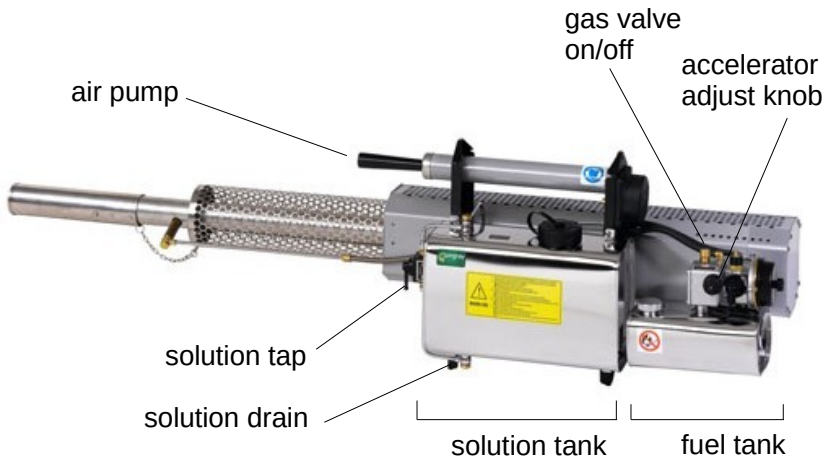


LONGRAY

User Manual



LR-TS36S

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1 Warnings

- Do not use the machine to spray humans or animals.
- After spraying, use water to clean the solution tank and pipeline. This is especially important for corrosive chemicals.
- Strongly corrosive chemicals (such as peroxyacetic acid) may damage the unit. Limit to occasional use, and spray 1/4 gallon of clean water afterwards.
- Do not fill or use fogger near flammables, explosives, or an open flame.
- Wear ear protection and a breathing mask.
- Some components, such as the fogging tube, get hot while spraying.
- Let the unit cool down before adding more solution or fuel. Do not transport or pack the unit while hot.
- Do not exceed the maximum fogging concentration for your solution.

2 Warnings for indoor operation

- In closed spaces, operator should wear a breathing mask.
- Do not leave a running fogger unattended.
- Some aerosol carriers become flammable at high concentrations. Do not exceed these limits per 1000 m³.

Special carriers

Nebal	3.0L
Glyzerine	2.5L
Ekomist	2.0L
Ethylengkole	2.0L
UK2-spezial	2.0L
VK1	1.5L
Nevolin/nevocol	1.5L

Fuels and white oils

Vegetable Oil	2.5L
Diesel/Heating Oil	2.0L
Kerosene	2.0L
Petropal	2.0L
Shell Risella	1.5L

The special carrier's volume must be calculated accurately according to the room's volume.

3 Tech specs

Exact specifications depend on altitude and temperature.

Solution flow rate	2.1-11.1 gal/hr
Solution capacity	1.6 gal
Solution pressure	0.2 bar
Engine	25.2 hp
Fuel consumption	0.4-0.5 gal/hr
Fuel capacity	0.4 gal
Fuel pressure	0.1 bar
Fuel type	regular gasoline
Batteries	4 × D batteries
Dimensions	53.9 × 10.6 × 12.2 in
Weight, empty	17.4 lb

Flow rates

Exact flow rate depends on carrier viscosity, which depends on temperature.

Nozzle diameter (mm)	2.0	3.0	3.5
Flow rate (L/h)	42	60	65
Flow rate (gal/h)	11	15.6	17

4 Operation

Prep

1. Install the cooling tube and secure it using the clip.



2. Install 4 x 1.5V batteries into the battery compartment at the base of the nozzle.
3. Fill the gas tank using the included gas funnel. Fill to between 1/4 and 3/4 full. *Tip: Tighten the lid lightly, to not damage the rubber seal inside the lid.*



4. Fill the solution tank using the included solution funnel.



5. The solution tap should be at OFF.



OFF



CLEAN



ON

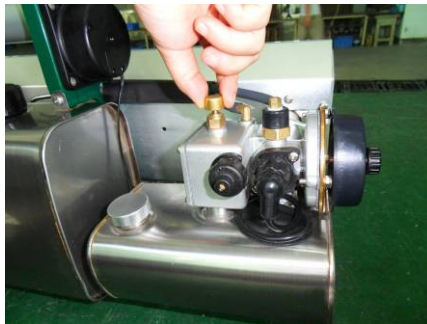
Reset

Ensure a clean startup by burning residual gas.

1. Close the gas valve by pressing down.
2. Use your left hand to push and pull the air pump.
3. Pump until there are no more engine pops, or after 8-10 pumps.

Startup

1. Open the gas valve by pulling up.



2. Use your left hand to make full-length pumps, 2 cycles per second.



3. Pump faster as you hear engine start, until it runs continuously. (If the engine does not start, repeat the Reset and Startup steps.)
4. Dial up engine power to 2 or more, but not beyond 4.
5. Wait 1 minute for the machine to warm up and build solution pressure.
6. To start fogging, turn the solution tap to ON.

Spraying tips

Spray behind you as you walk into the wind. Keep nozzle at least 2 meters away from objects.

Shutdown

1. Turn the solution tap to CLEAN.



OFF



CLEAN



ON

2. Wait for the fog to stop, then turn solution tap to OFF.
3. Close the gas valve by pushing down.

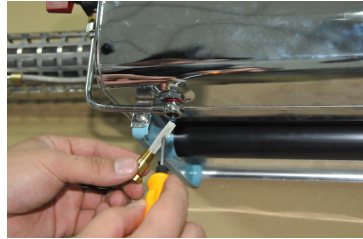
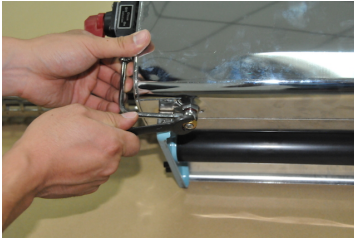


4. Turn engine power to factory setting.
5. Empty the solution tank and rinse with clean water.

5 Storage

If you will not be using the machine for a while:

1. Rinse the solution tank using clean water.
2. Rinse the solution feed using clean water.



3. Remove the batteries.

6 Troubleshooting

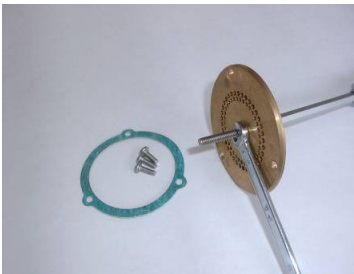
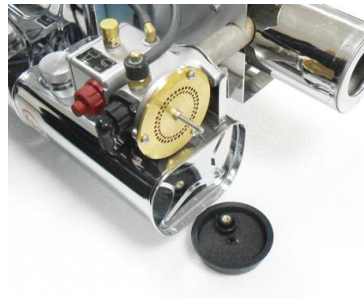
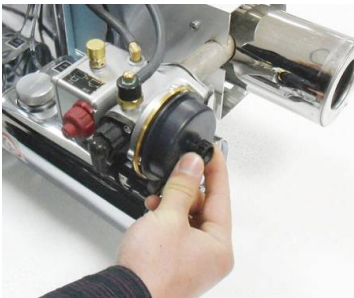
Engine does not start

1. **Check gas tank level.** Ensure it is 1/3 to 2/3 full.
2. **Check ignition system.** Remove the ignition cap and press the cap to the metal body.



Without touching the metal body, start pumping. If you can hear a sound like “Ta Ta Ta”, then the ignition system is functioning properly. Otherwise, replace the batteries.

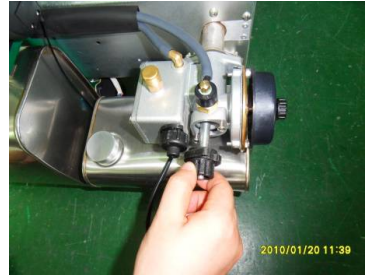
3. **Clean the air intake.** Take apart the air intake assembly in the back of the machine. Clean the spacer plates. Use a soft cloth to wipe the diaphragm. *The engine will not start if the diaphragm is wet.*



4. If the diaphragm was dry, skip to the next step. **If the diaphragm was wet**, decrease the accelerator setting. See Appendix. Through trial and error, find a setting that is low enough that the diaphragm isn't wetted during startup, but not so low that the engine won't start. You will need to dry the diaphragm in between tests.
5. **Check and clean swirl pole.**



1



2



3

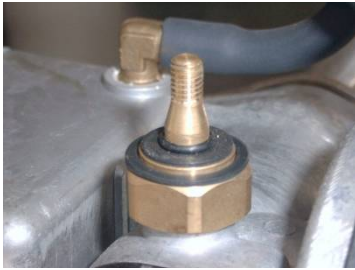


4

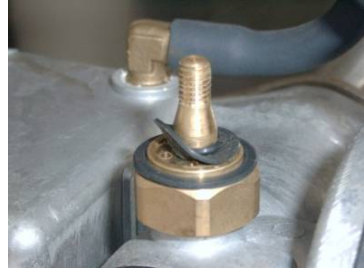
6. **Check one-way diaphragm for fitting/damage.** Detach the rubber tube from the diaphragm.



Inspect the diaphragm.



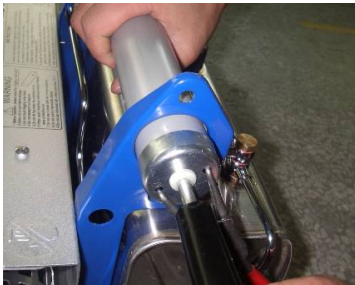
Good



Bad

Do not re-screw the one-way diaphragm too tightly.

7. Check pump seal for fitting/damage.



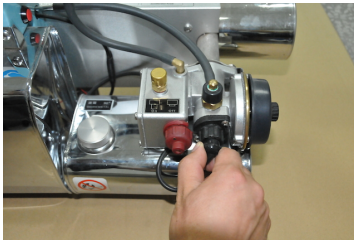
8. Check large rubber O-ring for fitting/damage.



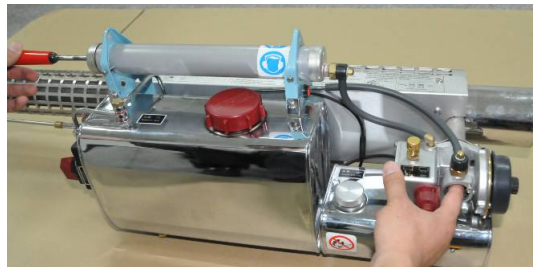
9. Clean fogging tube. Remove any deposited carbon.



10. **Check gas injection.** Remove ignition voltage cap, two screws, and the swirl pole..



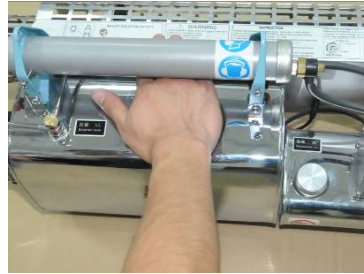
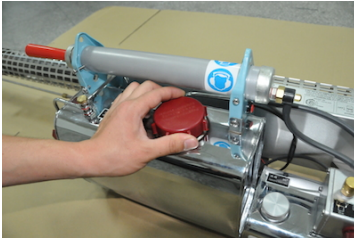
Insert finger into the swirl pole cavity, and begin pumping.



Increase the accelerator setting until you can feel the gas spray.

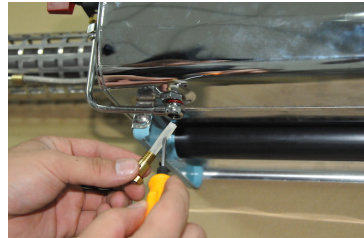
Engine starts, but does not spray fog

1. **Check solution tank pressure.** With the engine running and the solution tap in the ON position, remove the solution lid and place your palm over the opening.



If you can feel pressure, contact technical support. If there is no pressure, continue to the next step.

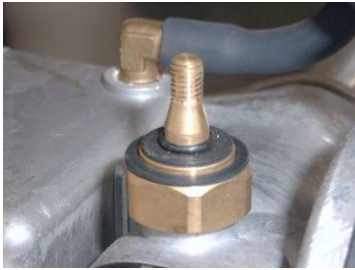
2. **Clean the solution line.** Remove and clean the connecting screw.



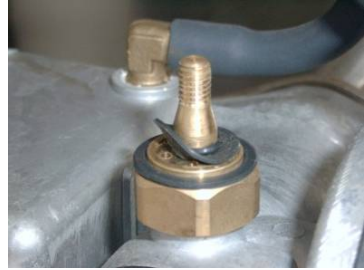
3. **Check the one-way diaphragm.** Detach the rubber tube from the diaphragm.



Inspect the diaphragm.



Good



Bad

4. Clean the solution filter.

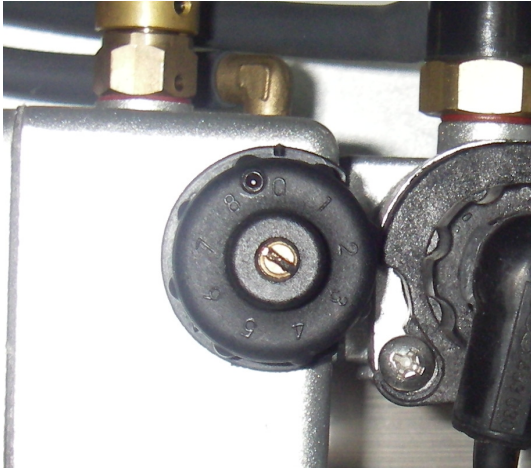


5. **Clean the nozzle.** Wait for fogging tube to cool. *Carefully* unscrew the nozzle. Clean out any clogs.



7 Appendix

Adjusting the accelerator



The notch at the top of the dial points to the current setting, here "0". The higher the setting, the higher the gas feed rate.

- **Do not use a setting above 4** unless specifically instructed.
- While adjusting, **stay at least 2 meters away from the front of the unit.**

If the accelerator is too low, the engine may not start. The accelerator is too high if:

- You can hear the engine pop noise as you pump the machine, or
- Gas wets the diaphragm.

Schematics

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