# MIST GENERATOR OPERATING INSTRUCTIONS

***Please Read These Instructions Fully Prior To Operating the Generator***

## GENERAL SPECIFICATIONS (approx.)

Weight.....44 lbs (20kg)
Usable fluid capacity .....10.14 pts (4800ml)
Maximum working pressure.....80 psi (5.5bar)
Optimum working pressure .....70 psi (4.8bar)
Duration at max. output .....85 min
Mist particle diameter from 0.2 micron
Electrical supply 120v, 20A, 50/60hz; or 230v, 10A, 50/60hz

## GENERAL INFORMATION

1. Use only $CO_2$ or Nitrogen as propellant gas. Do not use siphon $CO_2$ cylinders. **NEVER USE COMPRESSED AIR.**
2. The generator is factory set for CORONA SMOKE FLUID 180. If necessary refer below to 'Adjusting the Heat Exchanger Temperature'. Always keep the generator upright. **Only operate the machine if upright and on a level surface.**
3. When mist is to be ducted, always use an appropriate CORONA Ducting Adapter.
4. Use in well ventilated areas only. If used in confined spaces consult the gas supplier.
5. Ensure that the CO2 or Nitrogen hose is kept kink free and that the cylinder is properly restrained. Keep flames and sparks away from cylinder and hoses.

## PREPARATION

1. Confirm the reservoir and heat exchanger temperatures are correct for the fluid to be used.
2. Ensure that the reservoir contains fluid by checking sight-glass. **DO NOT OVERFILL beyond the maximum level shown on the sight-glass.** Replace the filler cap.
3. Check for sufficient inert gas supply: fit the regulator to the cylinder using the CO2 or Nitrogen gas adapter if needed; set the pressure adjusting knob to zero, and open up the stop valve on the cylinder. The cylinder gas pressure will now be displayed. A minimum of 400 psi (27 bar) is recommended.
4. Connect gas line to regulator.
5. Make sure all switches are in the OFF (0) position.

## ADJUSTING THE FLUID RESERVOIR TEMPERATURE

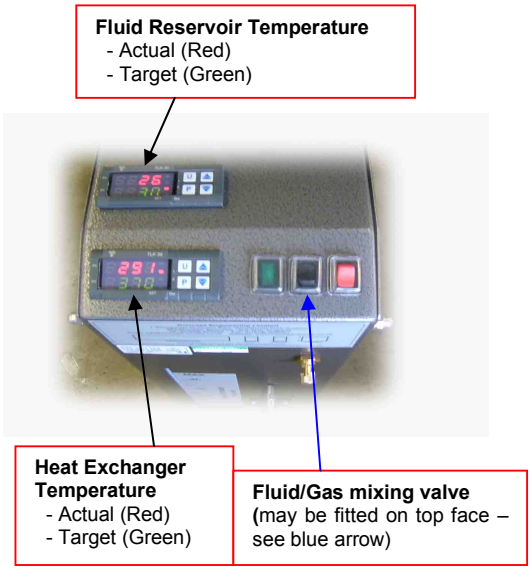
The Fluid Reservoir temperature is factory set to 30°C for use with CORONA SMOKE FLUID 180. **Adjustment should only be considered based on solid knowledge of the chemical characteristics of the alternative fluid.**
NOTE: Maximum target temperature is 70 °C

Adjustment procedure:
1. Turn on the RED power switch; the Reservoir Temperature Display will show the actual temperature in Red and the target is shown in GREEN
2. Press the "P" key; 'SP1' will be shown in RED
3. Use the ▲▼ keys to enter the desired fluid temperature
4. Leave the controller for 30 seconds; the new target temperature has now been set.

## ADJUSTING THE HEAT EXCHANGER TEMPERATURE

**This is a critical adjustment that should be made only if the physical characteristics of the alternative fluid are known. Inappropriate fluid or inappropriate heat exchanger temperature will have SEVERE SAFETY IMPLICATIONS and could interfere with the reliable operation of the generator.**

**Consult Corona before changing the heat exchanger temperature.**




## PARTICLE SIZE ADJUSTMENT

The Fluid/Gas mixing valve changes the ratio of fluid and gas.

Prior to adjusting this valve unscrew the locknut on the valve stem.
- To increase particle size and fluid concentration, turn valve clockwise.
- To reduce particle size and fluid concentration, turn valve anti-clockwise.

Because some inert gas must always be mixed with the fluid do not remove the nylon spacer collar from the valve stem and never fully close the valve.

Temperature changes affect fluid viscosity. The flow of fluid through the machine increases with increased temperature, therefore the Fluid/Gas mixing valve setting may need adjustment if the fluid reservoir temperature is adjusted.

## DUCTING

Use a CORONA Ducting Adapter to duct smoke. Do not connect a duct or hose directly to the generator and ensure that the air holes in the spout of the generator are not obstructed in any way. For a permanent installation the use of centrifugal blowers is recommended. The spacing between the fan and the generator is very important - Consult CORONA. For fan operation, a switched output is fitted to the front of the generator.

## OPERATION

1. Connect the generator to a suitable power supply.
2. Put the RED power to ON (1). The red indicator in the switch and the Digital Display will light up, indicating that the generator is powering up.
3. After 3-4 minutes the Ready Indicator will light up. For best results wait a further 10 minutes.
4. Connect the gas line to the generator, setting the output pressure on the regulator to 60 psi (4 bar).
5. To produce smoke push the BLACK smoke switch to ON (1). Alternatively if the Remote is used, leave the smoke switch OFF, connect the three pin plug of the remote to the socket on the back panel and activate the toggle switch at the end of the remote line.
6. Smoke volume can be varied by adjusting the gas pressure using the regulator valve. Do not exceed 80 psi (5.5 bar)
7. When mist is no longer required, put the smoke switch (or remote toggle) to OFF (0). The gas in the reservoir tank will now be exhausted through the heat exchanger, clearing it of fluid deposit. Mist production ceases within a few seconds.
8. SHUT DOWN: When the generator is no longer required, unscrew the regulator pressure adjusting screw to zero and close the cylinder stop valve. Turn the POWER switch to OFF (0).

## THERMAL CUT OUT

All CORONA Generators are fitted with a Thermal Cut Out. If the generator overheats for any reason the Thermal Cut Out will trip, cutting off all power to the heater and the DIGITAL MODULES.

## ROUTINE MAINTENANCE

1. The OMG incorporates a purging function when the fluid tank is de-pressurized minimizing the build up of carbon in the heat exchanger.
2. It is recommended that the nozzle of the heat exchanger be cleaned regularly, using the 0.08" (2mm) hand held twist drill to a depth of 1" (25mm). Under heavy use this should be done on a weekly basis. This process should only be carried out when the generator is cold.
3. Every 6 months, remove the side panels from the generator, check all compression joints for tightness, and wipe away any excess fluid.
4. Every 12 months the fluid reservoir should be drained, using the plug on the unit's under side.
5. Use of non-CORONA chemicals will void any warranties and may be hazardous.

## INSTALLATION

Consult CORONA before configuring the generator to interface with PLC's or Remote Consoles.

## HEALTH AND SAFETY

The mist produced by CORONA fluid in all CORONA Generators has been rigorously tested to ensure that it is non-toxic under normal circumstances. However, it is recommended that persons who are asthmatic or suffering from a respiratory complaint should not be subjected to dense mist concentrations. We recommend that breathing apparatus be worn upon prolonged exposure to the smoke. **Exercise extreme care if alternative fluids are used to produce mist**

## WARNING

**CORONA does not accept responsibility for any damage or malfunction to or by CORONA Machines, or for any consequential damage where these instructions are not observed, inappropriate fluids are used or ducting of mist or electrical switching is carried out other than upon explicitly documented acknowledgement of CORONA INTEGRATED TECHNOLOGIES INC.**

## TROUBLE SHOOTING

Apply solutions in sequence and only proceed with the next step if necessary

| Problem | Solution | |
|---|---|---|
| Mist Volume Poor | a | Check CO2 or Nitrogen pressure / supply and adjust to maximum |
| | b | Check fluid level and top up as necessary |
| | c | Clean nozzle of heat exchanger |
| | d | Remove cover; remove transfer tube, clean with wire, and replace |
| Mist thin and blue | a | Check fluid level and top up as necessary |
| | b | Clean nozzle of heat exchanger |
| | c | Turn Fluid/Gas mixing valve clockwise to reduce gas and increase fluid concentration |
| Mist dense but wet | a | Confirm that the unit is set to the appropriate reservoir and heat exchanger temperatures |
| | b | Generator overfilled. Drain away excess fluid and re-test |
| | c | Turn Fluid/Gas mixing valve anticlockwise to increase gas and decrease fluid concentration |
| No Power at generator | a | Disconnect from power. Remove the right hand side panel. Press Thermal Cut Out - the red rubber button on top of heat exchanger. Reconnect power. Monitor generator temperature. If temperature stabilizes below 421°C on warm up, continue operation. If Thermal Cut Out is tripped again, contact CORONA. |
| | b | Check fuse and replace if necessary. If fuse blows again, consult CORONA. |

Please contact Corona (1-888-878-9433 or admin@smokemachines.com) prior to shipping any equipment for servicing or repair.

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