

SPIRIT OPERATING INSTRUCTIONS

Please Read These Instructions Fully Before Operating Your Smoke Machine

GENERAL INFORMATION

1. Use only CORONA Smoke Fluid. Other fluids may cause injury or damage. **ALL WARRANTIES WILL BE VOID IF OTHER CHEMICALS ARE USED.**
2. Always keep the machine upright and allow adequate ventilation to the machine. Use the machine only in well ventilated areas. **DO NOT COVER OR OBSTRUCT THE LOUVRES IN ANY WAY.**
3. To duct smoke, attach a CORONA Ducting Adapter to fit over the smoke opening of the machine. The Adapter serves to provide a 3" (75mm) or 2" (52mm) bore connection with any ducting system, directly or via a flexible hose and serves to collect any incidental smoke fluid droplets. At regular intervals the Ducting Adapter must be cleaned. Certain principles have to be observed to ensure the most satisfactory use of smoke in a ducted system. Please contact CORONA as required.
4. Store and use the Spirit only in dry conditions.
5. When the machine is to be wired into a customer's control panel or system, separate instructions and wiring diagrams should be obtained from CORONA.

PREPARATION

1. Remove inner sealing cap from the Internal Reservoir. This cap protects against fluid spillage during transit. Fill the Internal Reservoir as required with CORONA Smoke Fluid. Do not mix Smoke Fluids. Take care not to overfill or cause a spillage. Refit the reservoir top tightly.
2. Check that all switches are in the OFF (0) position.
3. Ensure that the Output Rate Control (if fitted) is fully open (fully anticlockwise)

OPERATION

1. Connect the Spirit to a suitable electrical supply and put the Power Switch to the ON (1) position. The built-in Red/Amber Indicator light will illuminate.
2. After 3-4 minutes the Green Temperature light will illuminate, indicating that the correct operating temperature has been reached. For optimum performance allow the Spirit to warm up for an additional 3 minutes before smoke is produced.
3. To produce smoke, turn the Smoke Switch to ON (1).
4. The smoke output is adjustable by means of the Output Rate Control
5. When smoke is no longer required, turn Smoke Switch to OFF (0).
6. When shutting down disconnect the machine from power supply.

REMOTE CONTROL

When connected to the Spirit the Remote Smoke Switch performs exactly the same function as the Smoke Switch on the machine (which should be left in the OFF (0) position).

EXTERNAL RESERVOIR (Optional Extra)

The Spirit can be ordered with the facility to pump CORONA Smoke Fluid from an external source. In

machines with this option there is a simple Ball Valve attached to a quick-connect coupling at the side of the machine. To access the Ball Valve the cover of the Spirit must be removed.

When pumping from the Spirit's Internal Reservoir, the handle of the Ball Valve should be parallel to the centreline of the Valve. When pumping from an External Reservoir the handle should be turned at right angles.

QUICKLY DISPERSING OR PERSISTENT SMOKE

The Spirit is capable of producing two distinctly different types of smoke. **When first delivered, the Spirit is calibrated for its prime use as stipulated by the customer.** A change of fluid and an adjustment of the Electronic Temperature Module to the appropriate temperature ensure the desired alternative effect.

For the best performance and to avoid damage to the generator, the following combinations of fluid and temperature settings apply:

- ❖ **Persistent smoke:** CORONA Smoke Fluid 100A and temperature setting of high 335°C (635°F) and low 270°C (518°F)
- ❖ **Quickly dispersing smoke:** CORONA Smoke Fluid 200B and temperature setting of high 265°C (510°F) and low 200°C (392°F).

When converting from one type of smoke fluid to the other, drain the Internal Reservoir and make the correct temperature adjustments before refilling the machine and producing smoke. Consult Corona on the use of the Electronic Temperature Module.

CONTINUOUS OPERATION

The Spirit produces smoke continuously subject to adequate Smoke Fluid supply. If smoke production cuts out for short intermittent periods of time simply close the Output Rate Control slightly (turn clockwise) until continuous smoke production is achieved.

MAINTENANCE

CORONA Smoke Generators require only minimal regular maintenance:

1. After approximately 2 hours of smoke generation, carefully insert the supplied drill into the nozzle of the heat exchanger to a maximum depth of 1" (25mm) and gently ream out by hand any deposit.
2. Ensure that the machine is kept clean and dry.
3. Access to the inside of the Spirit:
 - a. Remove the screws, located either side of the machine.
 - b. Remove the lock nut from the Output Control Valve.
 - c. Lift the cover off the machine chassis. Detach the ground wires.
4. Ensure that the Internal Reservoir (and External if used) contains only clean CORONA Smoke Fluid. The coupling at the base of the Internal Reservoir (and brass coupling on the end of the External suction hose, if used) contains a fine mesh protective filter that may need cleaning.

- a. Remove the machine cover from the chassis.
 - b. Drain the Internal Reservoir.
 - c. Open up the white latch of the Pump Cartridge (note the arrow mark). This allows the release of the tubing from the Pump.
 - d. Disconnect the Transfer Tube from the Output Rate Control Valve.
 - e. With the Output Rate Control valve fully open, blow air through the valve in the opposite direction to the normal fluid flow, while observing the inside of the Internal Reservoir. Any filter contamination will be blown back into the Reservoir and can be cleaned by rinsing the Reservoir with water.
 - f. Refit the tubing into the Pump Cartridge making certain that it is stretched to slightly flatten the tube over the Pump roller mechanism before closing the Pump Cartridge. Do not adjust the tube gripping clamps on either side of the Cartridge (which should be set at 4).
5. Should it be necessary to remove the Heat Exchanger completely:
- a. Remove Transfer Tube from the Heat Exchanger, taking care not to kink or damage the tube.
 - b. Disconnect the Heater and Thermal Cut-out wires at insulated bullet connectors.
 - c. Disconnect the Thermocoupler leads at insulated bullet connectors.
 - d. Remove the mounting screws under the Heat Exchanger and lift the unit from machine base.
 - d. To refit the unit, reverse the removal procedure, making sure that the Nozzle is in line with the cover opening and that the identification numbers on the wires are correctly matched.
6. After every 1000 - 1500 hours of operation the Heater Block should be stripped and cleaned. This operation takes approximately 15 minutes and full instructions are available from CORONA.

THERMAL CUT OUT

Should the machine overheat, the built-in 'Thermal Cut Out' (TCO) trips before any further damage is done. All lights on the machine will go out. To check if TCO has operated, leave power supply connected and power switch in the ON (1) position. Raise the cover and carefully depress the red button on TCO. If it clicks and lights come on, the Thermal Cut Out has operated - consult CORONA. If the TCO has not operated, check the supply is live and that the fuse in plug is intact.

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

FAULT FINDING

If smoke is poor or not produced at all:

- a. Check that the power supply is live and the fuses are intact.
- b. Check that the Reservoir contains CORONA Smoke Fluid and that the filter is clean.
- c. If the Spirit is used in the External Pumping Mode, ensure that the External Suction Hose is correctly connected.
- d. Check that the Output Rate control is fully open.
- e. Check that the Heat Exchanger Nozzle is clear by carefully drilling out to a depth of 1" (25 mm) with the .0787" (2mm) drill and pin chuck supplied.
- f. If smoke is still not produced, remove the Transfer Tube and blow through both ways using an air line. If there is no flow-through, straighten the Transfer Tube and push through a length of fine piano wire e.g. .028" (0.7mm). Refit Transfer Tube, leaving the Heat Exchanger end disconnected. Switch machine on. When 'Temp' indicator comes on, place a cup under the open end of the Transfer Tube and put the Smoke Switch to ON (1) to ensure that there is a flow of fluid. Switch the machine off and reconnect the Transfer Tube to Heat Exchanger when it has cooled. If smoke is still not produced satisfactorily, consult CORONA.

NOTE - If, as in (f), the machine is operated with the cover removed, ensure to keep clear of connections and cooling fan.

HEALTH AND SAFETY

The smoke produced by all CORONA Smoke Generators has been rigorously tested to ensure that in normal circumstances it is non toxic. However it is recommend that persons who are asthmatic or who suffer from a respiratory complaint should not be subjected to dense smoke concentrations.

WARNING

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



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