



**Low fog generator
to be used with high pressure bottle**



Set of Equipment supplied

- 1 **Cryo-Fog High Pressure**
- 1 Connecting tube complete with connectors to connect the machine to the CO₂-bottle, 5 m
- 1 Tank lid with Quick coupling
- 1 Operating manual

Please check whether all the products you ordered are supplied.

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1. Introduction

The **Cryo-Fog High Pressure** is a powerful 2200 Watt low fog machine.

The **Cryo-Fog High Pressure** is a fog generator, a fan and a cooling chamber built into a compact flightcase (67 x 51 x 30 cm) with space next to the fog generator to hold a 5 ltr can of fluid.

To produce the low fog, it is necessary to use a CO₂-bottle with siphon tube.

The **Cryo-Fog High Pressure** can be used as a „normal“ fog machine as well as a low fog machine. When using it as a normal fog machine, the **Cryo-Fog High Pressure** can be controlled via DMX 512 only. A Stand-Alone control or control with analog remote is not possible.

The internal fog generator has a powerful output, producing every desired effect from a tiny puff of smoke to the thickest fog.

Digital technology makes fine adjustments of the pump possible. The output can be adjusted from 1 - 99% in steps of 1%.

Thus, the machine can be used in small and large places.

Please read the manual carefully to ensure a proper operation!

2. Safety instructions

A fog machine is not a toy!

- Make sure, that all persons who work with the bottle and the gas are professionals. Incorrect use can cause the risk of suffocation!
- Carbon dioxide is not toxic but may cause asphyxiation in high concentrations.
- Carbon dioxide is heavier than air. The highest concentration is therefore at floor level. The maximum allowed concentration is 0.5 Vol% (MAK: 5.000 ppm).
- Ensure adequate ventilation.
- Ensure all national/local regulations for handling and storage of liquid carbon dioxide (CO₂) are observed.
- Extreme temperatures at the nozzle (hot/cold)! Danger of burning/frostbite.
- Occasionally very hot droplets of fluid may escape when in operation. Never aim at persons directly and keep a minimum distance of 3 m from the nozzle.
- Never touch the nozzle when in operation. Danger of getting burnt.
- The location of the machine must be non-flammable, non-combustible and not sensitive to heat. It must be twice as big as the machine.
- Keep a minimum distance of 60 cm to all flammable, combustible objects and objects sensitive to heat.
- Glycol is alcohol and burns with a slightly bluish, almost invisible flame. Never point the fog at strong sources of ignition like fire or pyrotechnic effects.
- Never open the machine and leave the machine unattended when connected to a power supply.
- The visibility must be more than 2 m in rooms where people walk around.
- Do not swallow the fog liquid. Keep it away from children. In case of eye contact, rinse with a lot of water. Consult a doctor should you accidentally swallow some fluid.
- Spilled liquid or splashed liquid droplets can cause slip hazard. Mop up the fluid and dispose of it according to regulations.
- Fog may activate smoke detectors.

2. Safety instructions

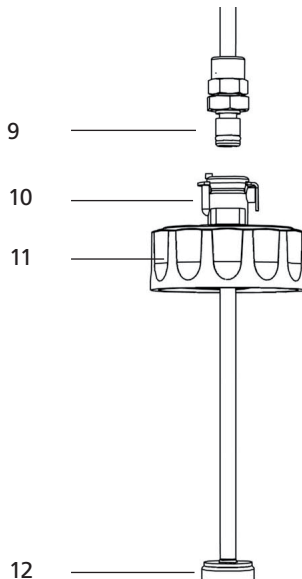
Artificially-made fog can be produced in many different ways. The method used here to produce fog, with a device which works according to the vaporizer principle, is the most harmless one.

No case has so far been reported in which a healthy human being has been harmed because of using our device to produce artificial fog. However, this can only be guaranteed if the professional fog generators are used appropriately, i.e. at the correct vaporization temperatures as well as with the correctly mixed fog fluid.

We, however, recommend: People with health problems or problems of the respiratory tract or with an inclination for allergies should avoid any contact with artificially-made fog.

3. Description of the parts

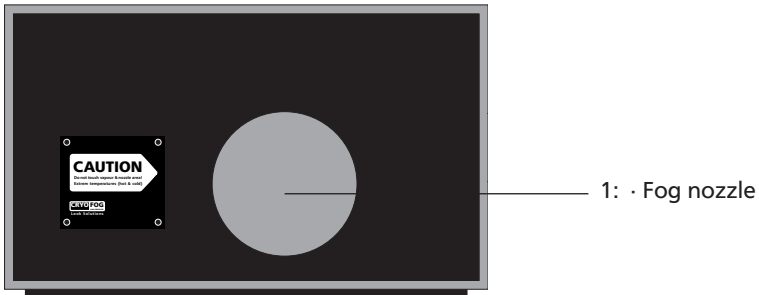
Tank lid



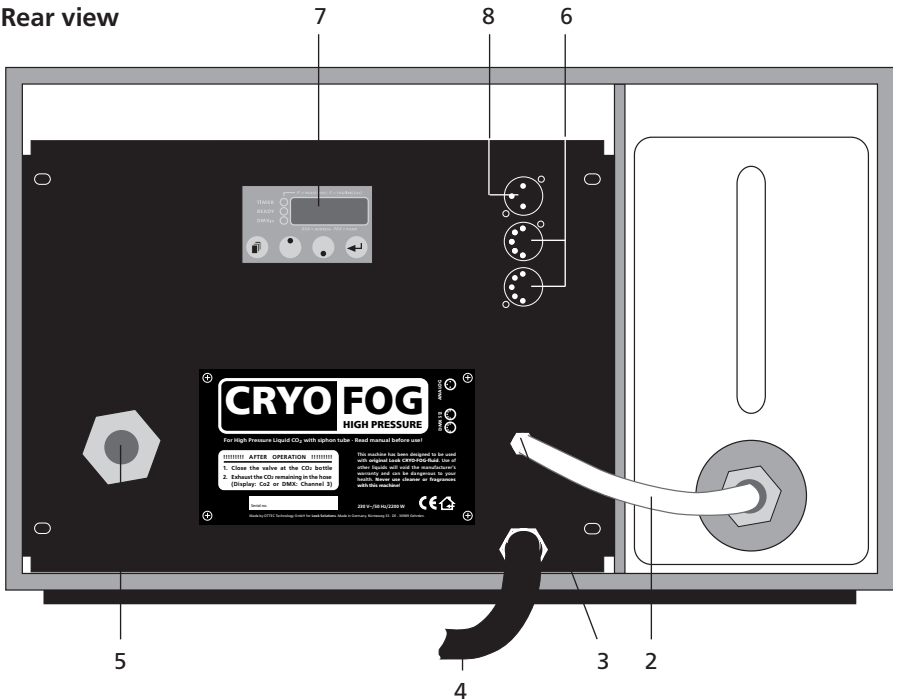
- 9: · Plastic spigot
- 10: · Quick coupling
- 11: · Tank lid
- 12: · Check valve

3. Description of the parts

Front view



Rear view



- 2: · Fluid tube
- 3: · Fluid tube inlet
- 4: · Main cable
- 5: · Connector for liquid CO₂-tube

- 6: · DMX in/out
- 7: · Control panel for adjusting the DMX start address and the output
- 8: · XLR socket for 0 - 10 V (+) DC

4. Liquid

4.1 General notes

The **Cryo-Fog High Pressure** can be used with the following Look fog liquids:

For low fog use **only** the recommended **Cryo-Fog Fluid**. This is a special, high concentrated and quick disappearing liquid.

For use as a normal fog machine:

Quick-Fog	thick, quick disappearing fog liquid
Regular-Fog	thick, long lasting fog liquid

Use of liquids other than Look fog fluids will invalidate warranty on parts that have been in contact with the fluid.

Please note: The vaporizers of our machines does not have to be cleaned! Cleaners, available on the market, can damage the vaporizer. Use of cleaners will invalidate warranty.

Please note: After using the **Cryo-Fog High Pressure** as a normal fog machine, all Quick- or Regular fog must be removed from the fluid tube!

4.2 Changing the fluid container

- Disconnect the fluid tube from the lid by pressing the brass collar [10] and removing the coupling [9].
- Remove the empty canister from the tank housing.
- Unscrew the tank lid [11] of the empty container and screw it onto the new container.
- Place the full container into the tank housing.
- Push the brass coupling [9] into the brass collar [10] until you hear a click. The brass collar is now locked firmly.

5. Operating the Cryo-Fog High Pressure

5.1 Selecting the location

The location, in which the **Cryo-Fog High Pressure** is to be operated, must

- be dry,
- be free from dusty or polluted air,
- be free from vibrations,
- be a non-flammable place or surface,
- be well-ventilated with fog-free air keeping the ambient operating temperature between 5° C and 45° C and the relative air humidity below 80%.

5.2 Putting into operation

Please note:

- Avoid dust or dirt particles inside the CO₂-tube
- Always ensure complete purity of all CO₂-connectors and fittings

- a. Connect the delivered safety tube for liquid CO₂ to the bottle.

Tighten the connection to make sure that no gas can escape.

- b. Connect the tube to the machine.

- c. Open the liquid valve at the bottle.



5. Operating the Cryo-Fog High Pressure

- d. Connect to the mains supply.
Make sure the correct voltage is selected (230 V/50 Hz or 120 V/60 Hz).
A "P" and two figures appear on the display.



- e. After a warm up time of approx. 10 minutes the machine is ready to start. The green Ready-LED [20] blinks when the working temperature is reached. As soon as the final temperature is reached, the LED illuminates permanently.

The machine is now ready to use. For adjustments please see chapter 5.5.

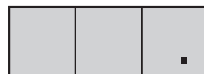
5.3 Switching the device off

- a. Press the Mode-button [14] til "OFF" appears on the display. After 15 seconds the machine switches into the post-run-mode automatically.
You can also switch the machine into the post-run-mode within these 15 seconds by pressing the Enter-button [16].

The fan increases to the maximum output to dry the cooling chamber and switch off automatically after three minutes. During this time lines appear on the LED display which move from the upper left edge down to the lower right edge.



Then a little red point in the lower right edge of the display appears to show that a voltage is present.



- b. When you switch off the DMX signal, the machine will be switched into the post-run-mode automatically after 15 seconds.

Note:

Please make sure that the **Cryo-Fog High Pressure** is not disconnected too early to allow the fan to run until the cooling chamber is dry.

5. Operating the Cryo-Fog High Pressure

5.4 Disconnect the machine from the bottle

Important:

Before you disconnect the tube, the CO₂ in the tube must ALWAYS be removed!

- a. Close the liquid valve at the CO₂-bottle. Make sure that the valve is closed properly.
- b. Remove the CO₂ completely from the tube by doing the following:

At operation via DMX:

The **Cryo-Fog High Pressure** needs three channels on your desk (first channel = Pump, second channel = Fan, third channel = Cooling).

Run the cooling channel (third channel) at full until no noise can be heard from the machine - at a minimum for one minute.

Put the fader of your desk back into position "0" and switch off the machine or your desk.

At Stand-Alone mode or operating via analog XLR-remote:

Press the Mode-button [14] until „Co₂“ appears at the display.

Press the Enter-button [16] once. The fan starts to run automatically and three seconds later the valve will open. The CO₂ is now expelled.

After all CO₂ is expelled, press the Mode-button again to close the valve. Switch off the machine as described (point 5.3).

5. Operating the Cry-Fog High Pressure

Menue

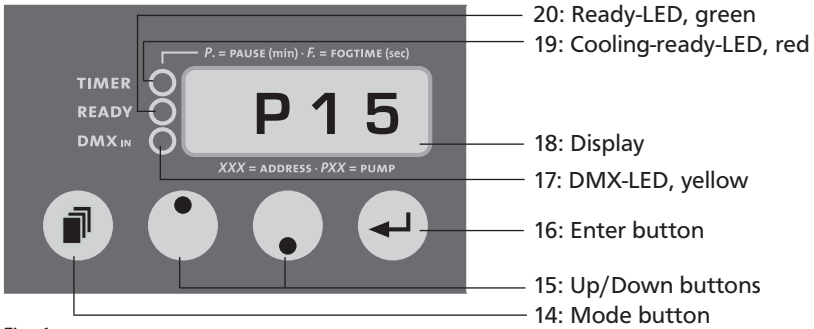


Fig. 1:
Display shown for adjusting the pump output

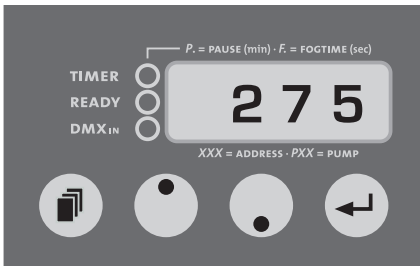


Fig. 2: Display shown for adjusting the DMX start address



Fig. 3:
Display shown when the CO2 is expelled



Fig. 4: Display shown for switching off the device

5. Operating the Cryo-Fog High Pressure

5.5 Control choices

You may control the **Cryo-Fog High Pressure** externally through the XLR-sockets [6 and 8].

Please note: DMX takes priority. That means: when the machine is controlled via DMX 512 this data takes priority over 0 - 10 V (+) DC and Stand-alone operation.

5.5.1 Control via DMX 512

Connect the **Cryo-Fog High Pressure** to a DMX desk using the 5pin XLR-socket [8] on the back of the machine. As soon as the machine receives a correct DMX signal, the yellow DMX-LED [17] is illuminated.

5.5.1.1 Adjusting the DMX start address

- Press the Mode-button [14] at the control panel, until three figures appear on the LED display.
- Adjust the requested start address by pressing the Up/Down-buttons [15].
- Save the start address by pressing the Enter-button [16] once. The start address will also be saved when you disconnect the machine from the mains supply.

Please note: The **Cryo-Fog High Pressure** needs three channels on your desk (first channel = Pump, second channel = Fan, third channel = Cooling (CO₂)).

5.5.1.2 Operating

When operating via DMX, the fan runs automatically on minimum as soon as the pump or cooling channel is opened.

- Put the channel for the cooling to the maximum (it depends on the adjusted DMX start address which channel this will be. The channel for the cooling is always the next but one channel from the DMX start address. For example: Start address and pump = 350, fan = 351, cooling = 352).

The fan starts to run and after three seconds the CO₂-valve opens. The CO₂ flows into the cooling chamber. As soon as the chamber is cold enough, the red LED lights [19] at the display.

Please note: When first started there is a small delay until the red LED is lit. This is because the tube from the tank to the machine has to be filled with liquid CO₂. This is also the reason why the tube should not be extended, because this will cause delay in operation.

- Turn the channel for the pump on to start the fogging process.

5. Operating the Cryo-Fog High Pressure

Please note: Although the channel for the pump is fully opened, the machine will not start the fogging process until the cooling chamber has reached the right cooling temperature.

c. If necessary, also the fan can now be regulated via the desk.

Important: If you activate the pump first - before you start the cooling process - the machine will produce normal, warm fog that goes up. If you start the cooling process afterwards, the machine will continue to fog, although the cooling chamber is not cold enough!

The DMX mode is the only modewhere the **Cryo-Fog High Pressure** can be used as a normal fog machine. In this case, use only the first two channels for pump and fan and leave the third one in position "0". Please take a look at the liquid recommendation (see 4.1)!

5.5.2 Control via 0 - 10 Volt (+) DC

Connect the **Cryo-Fog High Pressure** to an analog desk or to a cable remote (available as an optional extra), using the 3pin XLR-socket [8] at the back of the machine. The fan will be adjusted automatically in this mode.

- a. Connect the cable from the desk or the cable remote into the 3pin XLR-socket [8] at the back of the machine.
- b. Switch the XLR-remote on. The cooling process starts as soon as the cooling chamber is cold enough and the red LED [19] illuminates.
- c. The knob on the cable remote or the fader on the analog desk will control the level of the pump.

The machine will start the fogging process as soon as the cooling chamber is cold enough.

5.5.3 Stand alone mode

In the Stand alone mode the control of the pump must be adjusted at the machine. The fan will be adjusted automatically.

- a. Press the Mode-button [14] until a "P" and two figures appear on the display [18]. Adjust the pump outputwith the Up/Down-buttons [15].

5. Operating the Cryo-Fog High Pressure

- b. Press the Enter-button [16] once. The fan start to run and after approx. three seconds the valve for the CO₂ opens. The machine now starts cooling the chamber but will not start to fog. As soon as the cooling chamber is cold enough, the red LED [19] illuminates and the fogging process starts.
- The machine will produce low fog at the adjusted output until the Enter button [16] is pressed again.
- The pump can be adjusted during the fogging process by pressing the Up/Down-buttons [15].

5.6 Wiring of the connectors

5pol XLR (DMX):

Pin 1 = Ground, Pin 2 = DMX -, Pin 3 = DMX +, Pin 4 u. 5 = nc

3pol XLR (analog):

Pin 1 = Ground, Pin 2 = 0-10 V + DC in, Pin 3 = 12 V + DC out, max. 50 mA

6. Cleaning, Care and Maintenance

- Avoid dust or dirt particles inside the CO₂-tube
- Always ensure complete purity of all CO₂-connectors and fittings
- Exhaust fittings and connecting tube with CO₂ before connecting to the **Cryo-Fog**.
- Take care that the machine can not get overheated.
- Do not run the die **Cryo-Fog** without any liquid, as the pump will run dry.
- Wipe up spilled fluid immediately. Moisture - also fluid - can destroy the electric parts of the machine.
- Check the state of the air valve filter from time to time and clean or replace it when necessary. Always replace the whole fluid canister rather than pouring new fluid into the new tank. This reduces the chances of the machine clogging up.
- If you install the Cryo-Fog make 100% sure that permanent fog-free air supply for the unit is guaranteed. Cooling air with too high fog concentration (very often in Clubs or Discos) can condense inside the machine and cause moisture damage.
- For cleaning the surface of the device use a suitable, solvent-free cleaner.
- **Please note:** The vaporizers of our machines does not have to be cleaned! Cleaners, available on the market, can damage the vaporizer. Use of cleaners will invalidate warranty.

7. Troubleshooting

The machine **does not produce low fog**

- Cooling chamber will not get cool enough
- CO₂ bottle is empty

The machine **does not fog**

- Check external control signals
- Check mains supply
- Check fluid tank (empty?)
- Check for correct connections at the fluid bottle
- Check for fluid in the fluid tube
- Check if fluid filter is clogged
- Check that pump setting on the machine is > 1

The machine **fogs uncontrollably**

- Check mains supply
- Check unit for moisture (moisture inside the machine, especially on the PCB can cause fogging).

The machine **switches off suddenly**

- The “temperature cutout” has switched off due to overheating.
- Remove external heat source (for instance projector shining right onto the housing) and/or make sure sufficient fresh air supply. After 15 to 30 minutes the unit should switch back to “on” again.

Loud **droning sound during fogging**

- The pump is running dry. Avoid this absolutely!
- Refill (or better: replace) fluid bottle
- Double check connection fluid tube and fluid bottle.

E-4 appears on the LED Display

- The machine is getting too hot. The heating switches off and the machine cools down.
Solution: Disconnect the machine from the main supply for a moment and then re-connect it.



E-1/E-2/E-3 appears on the Display

- Please send the machine to the service-station or your local dealer.



8. Specifications

Procedure	Vaporizing fog generator + cooling system	
Power requirement	2200 Watt / 1600 Watt (at 60 Hz)	
Voltage	230V/ 50 Hz, 110V/ 60Hz or 90V/ 50Hz	
Warm up time	approx. 10 min.	
Fluid tank capacity	5 Liter	
Fluid consumption	at max. output	100 ml/min
	at 50% output	40 ml/min
Liquid CO₂ consumption at max. output	1 kg/min.	
Fog output	adjustable in 99 steps, steps of 1%	
Fogging time	continuous	
Control	DMX 512 0 - 10 V analog Stand alone mode	
Temperature control	Microprocessor controlled	
Overheating protection	Heater block/Thermostat Pump/Thermal switch	
Dimensions (L xW x H)	67 x 51 x 30 cm	
Weight without canister	28 kg	

Manufactured for

Look Solutions - Fog machines made in Germany · Bünteweg 33 · DE-30989 Gehrden

9. Warranty conditions

For the low fog machine **Cryo-Fog High Pressure Look'** warranty is:

1. Free of charge, subject to the following conditions (No. 2 - 6) we will repair any defect or fault in the unit if it is caused by a proven factory fault and has been advised immediately after identification and within 24 months of delivery to the end user. Insignificant deviations of the regular production quality does not guarantee replacement rights, nor do faults or defects caused by water, wrong fog fluid, by generally abnormal environment conditions or Force Majeure.
2. Warranty Service will be done in the following way: Faulty parts will be repaired or replaced (our choice) with correct parts. Faulty units have to be returned to us or our service centres or to be sent to us or our service centres at customer's expense. The invoice and/or receipt showing the purchase date and the serial number has to come with the faulty unit, otherwise the repair will not be covered under warranty. Replaced parts become our property.
3. The customer loses all rights for warranty services if any repairs or adjustments are done to the units by unauthorized persons and/or if spare parts are used which are not approved by us. The right of warranty service is also lost if liquids/fluids other than the original Look fog fluids have been used or if units are sent to us with full fluid bottles. Also non compliance with the instructions in this manual or mistakes by incorrect handling/treating of the machine will lead to a loss of warranty and also any faults and damages caused by undue force.
4. Any freight costs arising in connection with the warranty services have to be born by the customer.
5. Warranty services do not cause an extension of the warranty time or the start of a new warranty period. The warranty for replaced parts ends with the guarantee time of the whole unit.
6. If a defect/fault can not be repaired by us in a satisfactory time, we will, within 6 months after sale of the unit, on choice of the customer, either:
 - replace the whole unit for free or
 - refund the lesser value or
 - take back the whole unit and refund the purchase price, but not more than the usual market price at the time of the refund.
7. Further claims, especially for damages, losses etc. outside the unit are excluded.

Other warranty regulations may be valid outside Germany. Please check with your dealer!

If you should send the unit for service, do not forget to remove any liquid from the fluid bottle.

Wir/we/nous OTTEC Technology GmbH

Anschrift/address/adress Bünteweg 33
DE – 30989 Gehrden
Germany

erklären in alleiniger Verantwortung, daß das Produkt
declare under our sole responsibility, that the product
declarons sous notre seule responsabilité, que le produit

Bezeichnung/ name/ nom **Nebelmaschine**
Fog machine
Générateur de fumée

Typ/type/type **CryoFog High Pressure**

mit den Anforderungen **EN 55014 Teil 1/Part 1** : Generic emission standard
der Normen übereinstimmt **EN 55014 Teil 2/Part 2** : Generic immunity standard
fulfills the requirements of the standard **EN 60335-1** : Electrical safety
satisfait aux exigences des normes **VDE 0700 Teil 245/Part 245** : Electrical safety

Das Produkt erfüllt somit die Forderungen der EG-Richtlinie
Therefore the product fulfills the demands of the following EC-Directive
Le produit satisfait ainsi aux conditions des directives suivantes de la CE

2004 / 108 / EG

Richtlinie über die elektromagnetische Verträglichkeit
Directive relating to electromagnetic compatibility
Directive relatives à la compatabilité électromagnétique

2006 / 42 / EG

Maschinenrichtlinie
Machinery directive
Directive relative aux machines

Gehrden, 21.11.2013

Jörg Pöhler 

Ort, Datum der Ausstellung
Place and Date of Issue
Lieu et date d'établissement

Name u. Unterschrift/Name a. signature/Nom et signature
des Geschäftsführers u. Dokumentationsbevollmächtigten
of the Director and Agent for documentation
de la Directeur et Agent de documentation

