

Operating manual

Cryo-Fog



a Look Solutions product

Set of Equipment supplied

- 1 **Cryo-Fog**
- 1 Connecting tube complete with connectors to link the machine with the CO₂-Tank, 5 m
- 1 Tank lid with Quick Coupling
- 1 Operating manual

Please check whether all the products you ordered are supplied.

Contents

1. Introduction	4
2. Safety instructions	5
3. Description of the parts	6
4. Fluid	8
4.1 General Notes	
4.2 Changing the fluid container	
5. Operating the Cryo-Fog	9
5.1 Selecting the location	
5.2 Putting into operation	
5.3 Switching the device off	
5.4 Disconnect the machine from the tank	
5.5 Control choices	
5.5.1 Control via DMX 512	
5.5.1.1 Adjusting the DMX start address	
5.5.1.2 Operation	
5.5.2 Control via 0 - 10 Volt (+) DC	
5.5.3 Stand alone mode	
5.6 Wiring of the connectors	
6. Cleaning, Care and Maintenance	16
7. Troubleshooting	17
8. Specifications	18
9. Warranty Conditions	19

1. Introduction

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

The **Cryo-Fog** 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 5ltr can of fluid.

To produce the low fog, it is necessary to use a low pressure tank (20 - 24 bar) with liquid CO₂. **Do not use tanks or bottles with higher pressure for this machine.**

We do not recommend extending the connecting tube from the tank to the machine. A longer distance means that the liquid CO₂ will be delayed in reaching the cooling chamber. It will then take the cooling chamber longer to reach the correct temperature to produce low fog.

The **Cryo-Fog** can be used as "normal" fog machine as well as a low fog machine.

When using it as a normal fog machine, the **Cryo-Fog** can be controlled via DMX512 only. A stand alone control or control with analog remote is not possible.

The internal fog machine 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 tank 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 that 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 for 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 fluid. 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 fluid or splashed fluid droplets can cause slip hazard. Mop up the fluid and dispose of it according to regulations.
- Fog may activate smoke detectors.

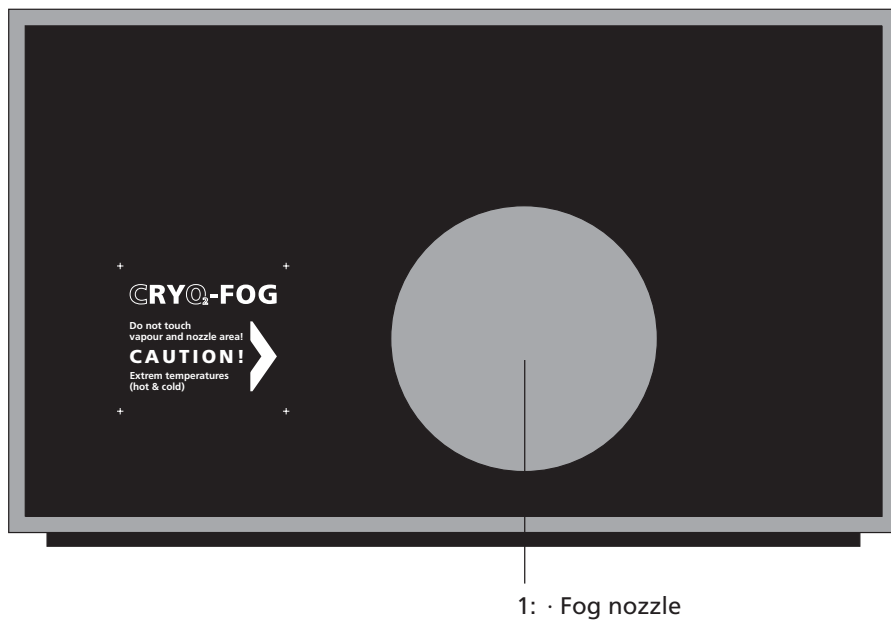
Artificially-made fog can be produced in many different ways. The method used here to produce fog, with a device which works according to the vaporizer principle, is the most harmless one.

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 accordingly, i.e. at the correct vaporization temperatures as well as with the correctly mixed fog fluid.

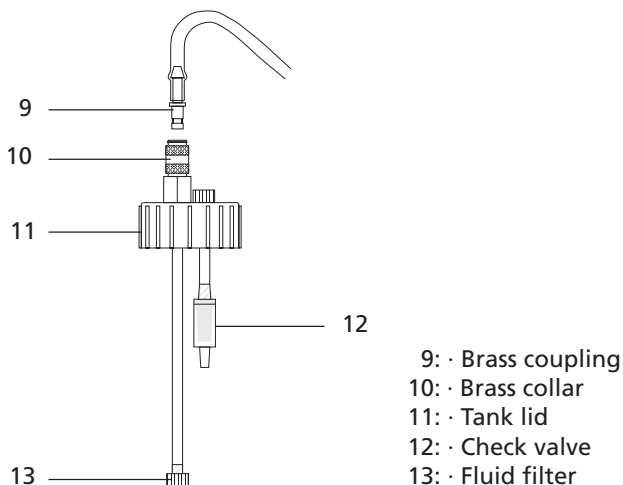
We, however, recommend: **People with health problems or problems of the respiratory tract or with an inclination for allergies should avoid any contact with artificially-made fog.**

3. Descriptions of the parts

Front view

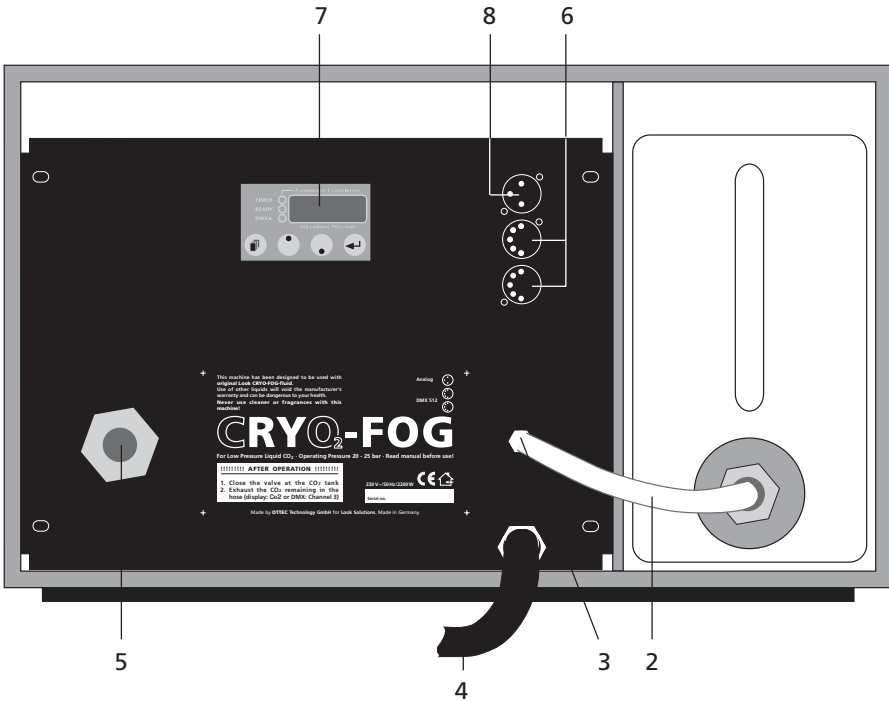


Tank lid



3. Description of the parts

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 Introduction

The **Cryo-Fog** can be used with the following Look-fog fluids:

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

For use as a normal fog machine:

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

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

PLEASE NOTE: The vaporizer 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** 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 retracting the brass collar [10] and removing the coupling [9].
- Unscrew the 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

5.1 Selecting the location

The location in which the **Cryo-Fog** 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
- Exhaust fittings and connecting tube with CO₂ before connecting to the **Cryo-Fog** (see point b. below).

- a. Connect the delivered safety tube for liquid CO₂ with the liquid valve at the tank.

Make sure that the tank is a low pressure tank (20 - 24 bar). Do not to use tanks or bottles with higher pressure with this machine.

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



- b. Open the liquid valve to exhaust fittings and connecting tube, then close the valve before you connect the tube to the machine.
- c. Connect the tube to the machine [5]. Avoid dust or dirt particles in the connectors.
- d. Open the liquid valve completely.
- e. Connect to the mains supply. Make sure the correct voltage is selected (230 V/ 50 Hz). A "P" and two figures appear on the display.



5. Operating the Cryo-Fog

- f. After a warm up time of approx. seven 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 machines 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 [18] 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** is not disconnected too early to allow the fan to run until the cooling chamber is dry.

5. Operating the Cryo-Fog

5.4 Disconnect the machine from the tank

Important:

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

- a. Close the liquid valve at the CO₂-tank. 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** 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 Cryo-Fog

Menue

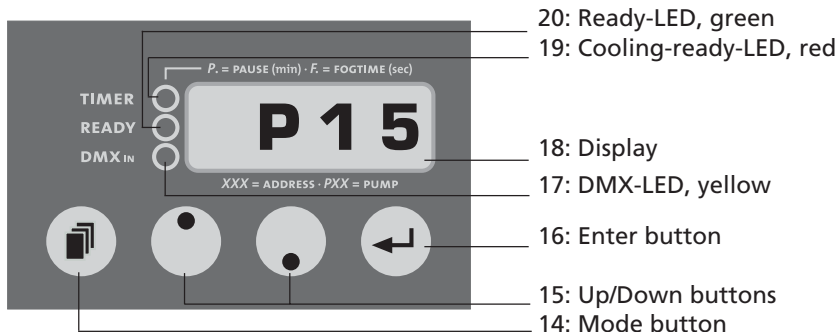


Fig. 1:
Display shown for adjusting the pump output

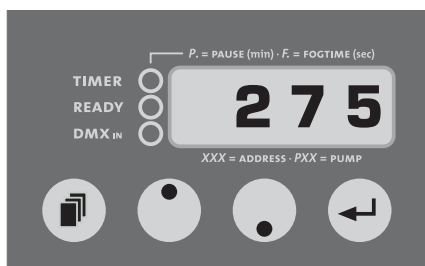


Fig. 2:
Display shown for adjusting the DMX start address

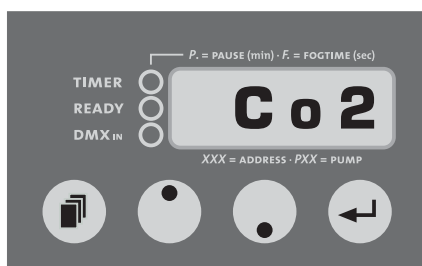


Fig. 3:
Display shown when the CO₂ is expelled

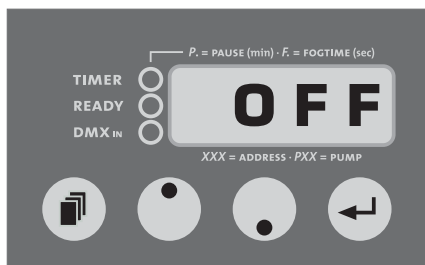


Fig. 4:
Display shown for switching off the device

5. Operating the Cryo-Fog

5.5 Control choices

You may control the **Cryo-Fog** 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 Operating via DMX 512

Connect the **Cryo-Fog** 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 [18].
- 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** uses three channels on your desk.

First channel = Pump, second channel = Fan, third channel = Cooling (CO₂).

5.5.1.2 Operation

When operating via DMX, the fan run 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.

5. Operating the Cryo-Fog

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

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 mode where the **Cryo-Fog** 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 fluid recommendation (see point 4.1).

5.5.2 0 - 10 Volt (+) DC control

Connect the **Cryo-Fog** to an analog desk or to a cable remote (available as an optional extra), using the 3pin XLR socket [6] 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 at the back of the machine [8].
- 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 and release the Mode-button [14] until a "P" and two figures appear on the display [18]. Adjust the pump output with the Up/Down-buttons [15].

5. Operating the Cryo-Fog

- 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 now 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

5pin XLR (DMX):

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

3pin 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 **Cryo-Fog** without any fluid, 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 old tank. This reduces the chances of the machine clogging up.
- If you install the **Cryo-Fog** make 100% sure that a permanent fog-free air supply for the unit is guaranteed. Cooling air with too high fog concentration (very often in Clubs and 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 vaporizer 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 fog machine **does not produce low fog**:

- Cooling chamber will not get cool enough
- CO₂ tank is empty or the pressure is too low
- CO₂ tube too long or too warm (no liquid CO₂ reach the machine)

The fog 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 fog machine **fogs uncontrollably**:

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

The fog 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 appears on the LED display:

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

8. Technical data

Procedure:	vaporizing fog generator + cooling system	
Power requirement:	2200 Watt	
Voltage:	230 V/ 50 Hz	
Fluid consumption:	at max. output	100 ml/min
	at 50% output	40 ml/min
Fluid tank capacity:	5 Liter	
Liquid CO₂-consumption at max. output:	2 kg/min	
Fog output:	adjustable in 99 steps, steps of 1 %	
Fogging time:	continuous	
Control:	DMX 512 0 - 10 V analog Stand alone mode	
Warm up time:	approx. 7 min.	
Temperature control:	Microprocessor controlled	
Overheating protection:	Heater block/Thermostat Pump/Thermal switch	
Dimensions (L x W x H):	67 x 51 x 30 cm	
Weight without tank:	28 kg	
Manufactured for:	Look Solutions - Fog machines made in Germany	

9. Warranty conditions

For the fog machine **Cryo-Fog** Look' guarantee 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 appearance 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. Guarantee 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 brought 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 this will not be guarantee service. Replaced parts become our property.
3. The customer loses all rights for guarantee 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 guarantee service is also lost if fluids other than 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 guarantee and also any faults and damages caused by undue force.
4. Certain parts of the machine are „consumable parts“ and are not covered by the warranty.
5. Guarantee services do not cause an extension of the guarantee time or the start of a new guarantee time. 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 guarantee 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.

