

→ Operation Manual

Atmos



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English
Original manual

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**Technical
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1 General Information

The operating instructions are a substantial assistance for the successful and safe operation of the Atmos.

The operating instructions contain important notes, in order to operate the Atmos safely, properly and economically. Their attention helps to avoid dangers, to decrease repair costs and down-times and to increase the reliability and the life span of the Atmos.

The operating instructions must be constantly available at the Atmos and have to be read and used from each person, who is assigned to work with/and on the Atmos e.g.:

- operation, disturbance recovery in the work routine, disposal of operating and auxiliary materials,
- maintenance (maintenance, care, repair) and/or
- transport.

1.1 Service and Warranty

The Trotec Laser GmbH is endeavoured to work on your questions and order as fast as possible. We ask you to indicate your names as acknowledging address and serial number as well before each inquiry.

The warranty of the manufacturing firm for the Atmos extends within the implied warranty period to damage which can be proved on construction – to lead back material or production defects.

The time of warranty begins with the delivery e.g. start-up time of the Atmos.

A warranty is transferred only in its entirety if:

- the distribution inspection, the delivery and the instructions are to be implemented correctly
- the Atmos is for intended use only
- the maintenance and servicing instructions be strictly obeyed (with dirty turbine no warranty claim exists).

In the case of a warranty the manufacturing firm transfers the material costs which result directly from the remedy at the Atmos.

Only spare part prices and the fee of the current price list is valid.

We refer to the regulations as well as the general trading conditions of the Trotec Laser GmbH.

2 Safety

2.1 General Information

These operating instructions are a substantial component of the Atmos. The operator ensures that the operating personnel take these guidelines to the knowledge.

Since the operating instruction is presumably exposed to a strong demand at the place of work of the Atmos it is incumbent on the operator:

- to keep the original safe
- to concern for the fact that a copy of the operating instructions is constantly available at the Atmos
- that each user reads the operating instructions attentively and considers and follows all instructions.

The operating instructions are to be supplemented around operating instructions due to the existing national regulations for accident prevention (BGV D27) and to the environmental protection including the information of the duty to supervision and obligations to register, the consideration of operational characteristics e.g. regarding working particularity relating to the work sequences and assigned personnel by the operator.

Beside the operating instructions and the in the user country and at the employment place valid obligatory regulations for accident prevention are to be considered also the recognised specialised technical rules for security and professional working.

After one year at the latest the examination of the Atmos is to be made by experts. The test report is to be documented in writing.

The operator/user may not make changes at the Atmos, which could impair security, without permission of the manufacturing firm! This applies in particular to the installation and the attitude of safety devices.

Spare parts must correspond to the technical requirements specified by the manufacturing firm. This is always ensured with original spare parts.

Only trained or instructed personnel may work on/with the Atmos. Specify the competencies of the personnel for serving, controlling and repairing clearly!

Operating staff to be trained may become active only under constant supervision of an experienced person at the Atmos.

The maintenance of the Atmos may take place only via particularly trained personnel of the Trotec Laser GmbH and/or a service company authorised in addition.

2.2 Instructions and Training

As operator of the Atmos you are obliged to inform and/or to instruct the operating/maintenance staff about existing rules for the prevention of accidents and on the rights as well as about existing safety devices to and around the Atmos. Different technical qualifications of the personnel are to be considered.

The operating/maintenance staff must have understood the instructions and it must be guaranteed that the instruction is considered.

Only in such a way you can achieve security and the danger-conscious working of your staff. Each co-worker should confirm the participation in the training course and instructions in writing.

2.3 Duty of Information

For your Security!

As operator of the filter system Atmos please, consider absolutely the data given in the CE manufacturer explanation, CE - declaration of conformity, the data and information in the user manual and in particular the operating and safety instructions.

Residual risk

Filter systems and suction units contain inflammable construction parts (filter material, seals, plastic parts, etc.). Consider in your work place evaluation after the law for employee protection (AschG) the residual risk of a case of fire. It is important to have **the approval of us with changes** in the use of the filter system **in writing**.

CE – Declaration of conformity

As a rule we deliver the filter system with a CE - declaration of conformity. When assembled with other parts it becomes a higher - ranking filter system for which you, as operator, have the duty to make a danger analysis and you must provide a CE - declaration of conformity for the whole filter system.

Duty of information

Sparks, cigarette stubs or similar may not be sucked into the filtering device.

Our plants may be used only as in the operating manual described and as intended. Changes in the use require our express written permission.

Each use going beyond it is not considered as intended, the manufacturer / supplier is made not liable for developing damages which result from it. The risk carries the operator.

Intended use of the filter system Atmos

It is not allowed to suck off dust, smoke, gases and media which do not correspond with the chapter 2.4 Intended Use in this operating instruction. The media exhausted must not be classified in any dust explosion class (St-Class).

Start-up, maintenance work and service

Refer to maintenance and safety instructions in the operating manual.

All repair and maintenance work may only be carried out with complete standing still of the machine/plant (separate all poles by switching off from the mains; pull the plug out of the socket). Only trained and authorised personnel may operate, make maintenance work service at the machine/plant. Work within the electrical range may be implemented by authorised specialists only!

The Atmos must at least be examined per § 32 1-4 GKV annually.

2.4 Intended Use

The Atmos of the Trotec Laser GmbH exclusively serves for sucking off gases and smoke with pollutants which is developed with:

- Stamp production
- Marker/sign production, and engraving procedure

We recommend **using the H13 filter unit** for the following applications:

- Special materials (metal alloys with particle size $<1 \mu\text{m}$)

OR

- under employment legislation

No statements can be made for other fields of activity than in this operating instructions specified regarding the endangerment of humans and environment. No overall statement can be made to the suitability of the Atmos, if loaded gases and smoke with pollutants in another than here mentioned purposes are sucked off.

In this case the Trotec Laser GmbH is to be addressed otherwise any warranty claim is void.

Consider also while handling dangerous material the rules for the prevention of accidents and here in particular the safety rules for extractor equipment for air pollution control on the job, ZH 1/140.

The Atmos may be operated only with accessory/with the equipment which are intended and approved from the Trotec Laser GmbH. The data in chapter **3.4 technical data** are to be considered and kept.

Valid as not intended is the extraction of:

- damp, liquid or vaporous materials,
- explosive or inflammable gas/material/material air mixtures,
- in air-impermeable layers crystallising materials,
- sticky or statically responsible materials or
- incandescent or burning substances.

Another or beyond it going use e.g. as an industrial extractor is considered as not intended.

If gases and smoke on production conditions are to be extracted in the course of which carcinogenic materials after BIA TRGS 900 are developed and/or be contained, you may not use the Atmos!

Alone the operator of the Atmos is responsible for the from not intended use resulting damage. This implies arbitrarily accomplished changes on the Atmos.

Imperfect construction unit/spare parts are to be exchanged immediately. Use only original spare parts. In particular with non original filter devices it is not ensured that they filter the pollutants from the extracted gas/smoke completely!

To the intended use also belongs keeping the references:

- for safety,
- to the operation,
- to maintenance and servicing

which are described in this operating instructions.

2.5 Residual risk

Also with attention to all safety regulations a residual risk remains with the operating of the Atmos.

All persons who work on and with the Atmos must know these residual risks and must obey the instructions which prevent that these residual risks lead to accidents or damage.



Caution!

By the inhalation of poisonous gases and types of dust poisoning damage can occur. Likewise long-term damage can occur to internal organs by repeated inhalation, sips and contact with gases and dust contained in the filter-unit and suction hose itself.

Before all work on the inside of the Atmos, in particular at the filter devices as well as on the dust extraction hose the personal protect equipment is to put on.

In addition belongs:

1. Protection gloves (one-way gloves from polyethylene, long version),
2. Protection mask (purifying dust respirator with examination of the protection stage 3),
3. Eye protector.

2.6 Safety References for the Operation of the Atmos

The Atmos may be used only in technically perfect condition and as intended. Safety and danger-consciously considering of this operating instruction is supposed! All disturbances in particular such which can impair security are immediately to be eliminated!

Each person, who is assigned to the assemble, start-up, maintenance or repair at the Atmos must have completely read and understood this operating instruction in particular the chapter security before beginning with the operation.

During the work it is too late.

This applies in particular to personnel used only occasionally at the Atmos.

Each person who is assigned to work on the Atmos must confirm by signature that he/she read and understood the operating instructions before first handling the Atmos.

Work on the Atmos may be accomplished only by reliable personnel. The legal permissible minimum age must be considered!

Use only trained or instructed personnel!

Personnel in training or in the context of general training personnel who is to be trained may become active at the Atmos only under constant supervision of an experienced person!

The operating instructions must be at hand constantly at the Atmos.

For damage and accident by neglecting the instructions no responsibility will be taken over.

The relevant rules for the prevention of accidents as well as the other general recognised safety-relevant rules according to industrial medicine are to be kept.

The competencies for the different activities in the context of the operation, the maintenance of the Atmos must be clearly fixed and kept. Only then miss-actions in particular danger situations can be avoided.

The operator has to obligate the serving and maintenance staff to carry personal protection equipment. In addition protection gloves, purifying dust respirator mask. This affects in particular the change of the filter!

Are there safety-relevant changes at the operational behaviour or disturbances at the Atmos so it has to be stopped immediately and announced to the competent authority!

Keep first aid facilities (first aid box, eye rinsing bottles etc.) within reach!

Make known the location and operation of fire extinguishers and the possibilities of fire reporting and fire fighting.

Absolutely consider the notes for maintenance, service and safety equipment chapter **7. Maintenance** with maintenance work, servicing or repairing!

With all work concerning:

- the operating,
- the re-equipment or the adjustment of the Atmos and its safety devices,
- the inspection,
- the maintenance and
- the repairing

consider the turn on and turn off processes in accordance with the operating instructions and the references to the maintenance!

The Atmos only may be operated if all protection and safety devices e.g. solvable protection devices, housing bolts etc. are on its place and functional!

Before starting up the personnel have to make itself familiar around the Atmos.

The Atmos may never remain unsupervised during the operation!

At least once per shift the Atmos must be examined for outwardly recognisable damage. Changes (including that of the operational behaviour) have to be announced immediately to the responsible shift leader and/or the plant manager.

Stop and secure immediately with malfunctions at the Atmos. Disturbances are to be eliminated immediately through trained specialists.

2.7 Safety References to the Maintenance

Before beginning inform the operating personnel about the execution of special- and maintenance work.

Keep the prescribed periods for tests/inspections in these operating instructions.

For the execution of maintenance work appropriate workshop equipment is absolutely necessary.

Illuminate maintenance ranges to the necessary extent additionally with hand or stand lamps.

For maintenance or repair the Atmos must be switched off and secured against unexpected restarting by:

- switching off at the circuit breaker and afterwards
- disconnecting the device from the mains by pulling out the plug of the mains cable.

After switching off/stopping the Atmos wait for the stop of the turbine.

To avoid current impacts do not open electrical construction units as well as housings and covers. Work on electrical equipment must be made only by trained specialists!

Do not touch damaged, torn life (voltage) parts.

Make no program modifications at programmable control systems. Modifications at programmable control systems may only made after consultation and with the permission of the Trotec Laser GmbH.

Work on electrical equipment must be made only by trained specialists or by personnel who is to be trained under constant supervision of a trained specialist!

Check regularly for damage on cable and hose connections particularly such at mobile construction units and if necessary exchange.

Exchange the filter in the indicated and/or in appropriate time/intervals even if no safety relevant lack is recognisable!

Tighten always again solved screwed joints with maintenance and repairs!

If the disassembly of safety devices is necessary with servicing or repairing the assembly and examination of safety devices must take place immediately after conclusion of maintenance and repair work!

At the beginning of maintenance/repair/care the Atmos and here in particular connections and screw connections are to be cleaned of all contamination and residues e.g. dust, fuels or preservative agents.

Do not use aggressive cleaning agents containing solvent. Do not use organic solvents since fire and danger of explosion exists! Use only mild cleaning agents on water basis. Consider the data of the manufacturers.

Use lint free cleaning cloths.

Provide for safe and environmental careful disposal of operating and auxiliary materials as well as replacement parts!

2.8 Referring to Special Danger Kinds

2.8.1 Electricity

Work on the electrical equipment of the Atmos must be made only by an electrical specialist or personnel instructed by/under line and supervision of an electrical specialist in accordance with the electrical rules!

It must always be waited five minutes after switching off for the inserted condenser in the control board to unload themselves. Opening of the housing is only permissible at the end of this time.

Do not use the Atmos if the mains cable is damaged. Replace it immediately (see: spare part list).

Use only original fuse/original safety devices with prescribed amperages!

Never accomplish work on live parts!

With repairs pay attention to the fact that constructional characteristics are not to be safety reducing changed in particular: allowed air creeping and air clearance as well as distances are not to be made smaller by isolations.

The perfect grounding of the electrical system must be ensured by a protective grounding system.

With disturbances at the electrical power supply separate immediately the Atmos from the net by:

- switching off the Atmos at the transparency keyboard and thereafter
- disconnecting the plug from the mains.

2.8.2 Types of Dust and Other Chemical Substances

With the Atmos partial toxic types of dust from contaminated air are filtered. Depending upon the kind of the assigned materials these types of dust can be health-endangering and/or carcinogenic.

While handling toxic types of dust special caution is required.

Consider and keep valid regulations and safety data sheets of the manufacturers concerning storage, handling, employment and disposal while handling chemical substances.

With eye or skin contact with the types of dust in the filter or the suction hose the part concerned must be flushed immediately with much water. Suitable mechanisms (eye wash bottle, wash basin, shower) must be available at hand!

By cleaning and disinfectants loaded skin should be maintained after washing. Irritation can be avoided by the preventing use of skin protection means and a suitable skin care. The preservative agent who can be used is to be selected as a function of the pollution impact and the individual condition of the skin. Containing fat preservative agents are predominantly applicable.

Eating, drinking, smoking and keeping food in areas in which chemicals are is forbidden!

Keep dangerous materials never in bottles or containers for food. Mark always clearly for the respective material use certified containers.

Depending upon pollution impact particle and gas filters are subjects to the special hazardous waste regulation and are to be disposed accordingly.

The inappropriate exchange of the pollutant-loaded filter-units represents a health risk for the implementing persons and their environment. Consider therefore with the exchange of the filter parts absolutely the section **8. Service** in this operating instruction.

2.8.3 Noise

The A-weighted one equivalent continuous sound pressure level on the operation job of the Atmos lies during normal operation below 68 dB(A), depending upon type of device.

Dependent on the local conditions a higher sound pressure level in the surrounding field of the Atmos can prevail. This increased sound pressure level can be caused by neighbouring machines and may cause deafness.

3 Product Description Atmos

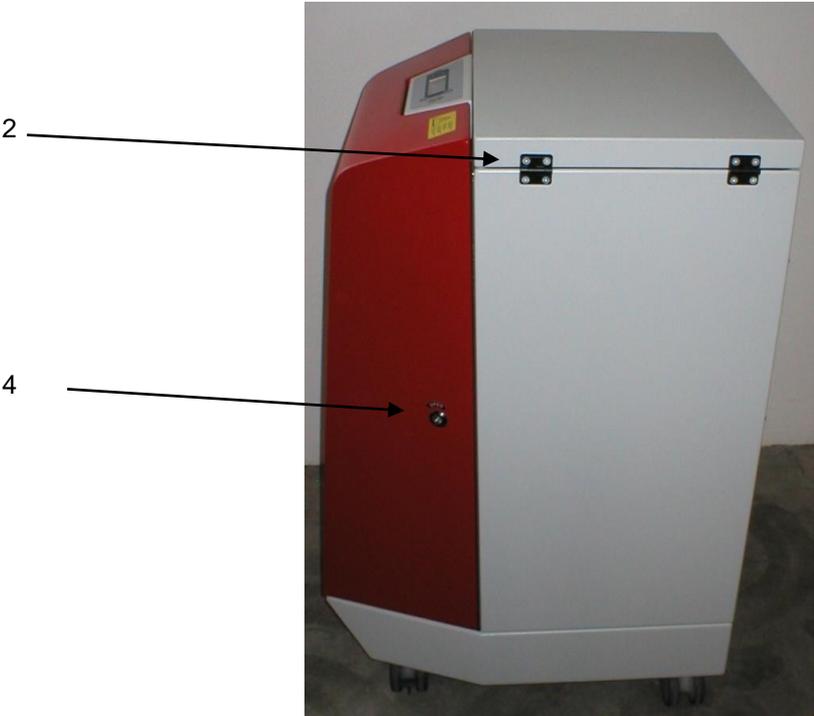


Fig. 2

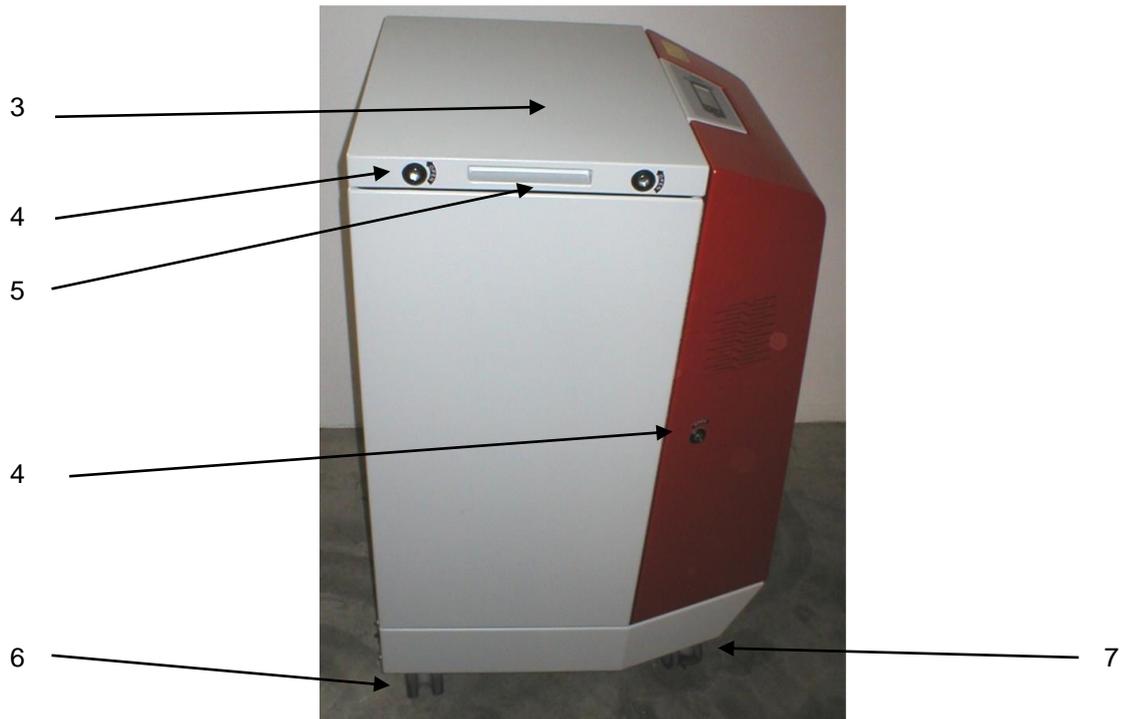


Fig. 3

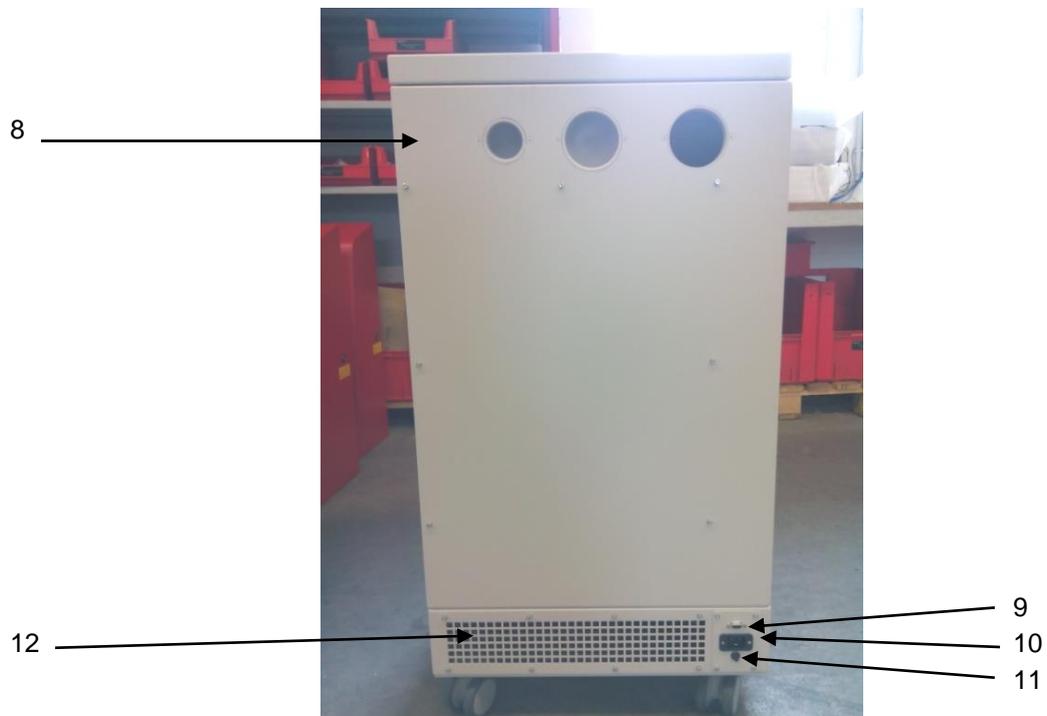
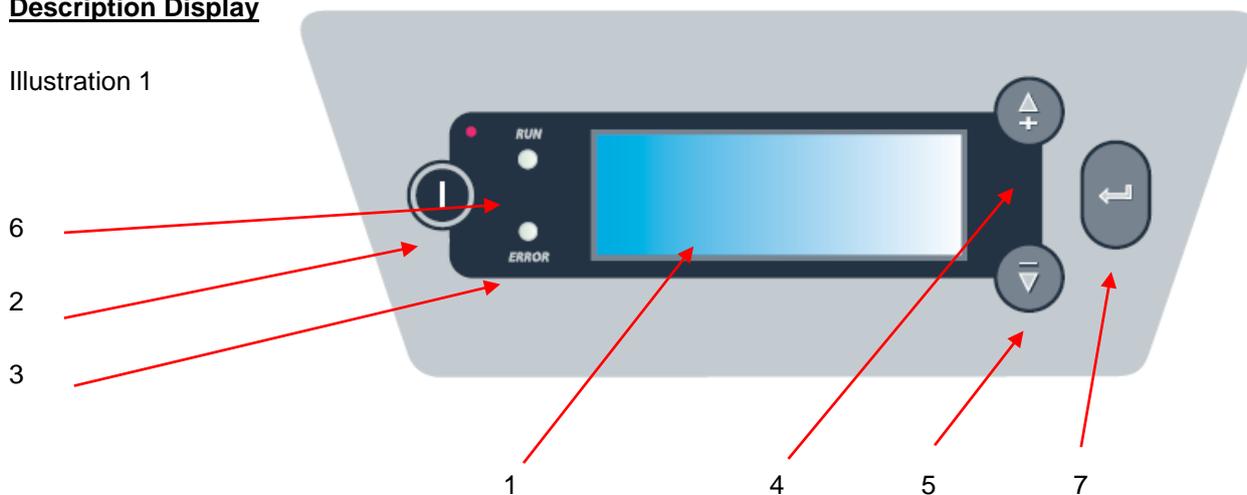


Fig. 4

Pos. 1	Transparent announcement transparency keyboard	Pos. 7	Guiding roller with brake
Pos. 2	Hinge black	Pos. 8	Extraction tube 1xNW50 / 2xNW75
Pos. 3	Covering	Pos. 9	Sub-D-9 connection
Pos. 4	Espagnolette lock	Pos. 10	Mains connection
Pos. 5	Hand recess	Pos. 11	Fuse push button
Pos. 6	Guiding roller without brake	Pos. 12	Exit grille
		Pos. 13	filter mat for cooling air in the ground

Description Display

Illustration 1



Pos. 1	Transparent announcement	Pos. 5	Key -
Pos. 2	Key EIN/AUS	Pos. 6	LED Announcement: "Run"
Pos. 3	LED-announcement "Failure"	Pos. 7	Key ENTER
Pos. 4	Key +		

3.1 Description of Function

The Atmos serves for extraction of gases and smoke loaded with pollutants with a connected suction hose between the machine, which can be exhausted, and the Atmos.

The Atmos is switched on and/or headed for either at its transparency keyboard or by the controlling of the machine which can be exhausted (remote switching mechanism).

The gas/smoke is sucked in by the suction hose into the filter housing with the assigned filter-unit. The Atmos consists of the following filter stages:

- Atmos Comfort Box (compact filter)
- Atmos Comfort Bag (pocket filter)
- Atmos Comfort Carbon (Activated Carbon)
- HEPA-Filter H13

The contaminated air is sucked in through the filter by the turbine. The cleaned air is blown out through the exit grille attached on the back side into the ambient air.

3.2 Connection to External Control

For the operation of the Atmos with a remote switching mechanism a control cable with a Sub-D9-plug is needed. The PIN-allocation of the Sub-D9-plug (see in section **5.1 Connection of an External Control**) is to be considered!

3.3 Protective Device

So that with intended use of the Atmos no dangers for security and health of the operator and/or third exist is the Atmos with protection device equipped.

The entire Atmos is designed and manufactured according to the current state-of-the-art and the recognised safety-relevant rules. In order to ensure the safe operation for personnel and environment, the precautions/safety devices described in the following were taken and/or installed.

Unauthorised removing or bridging (go around) of protection device represents a punishable action. In the case of loss each liability claim expires.

The turbine is secured by a door, which can be opened only with tool.

All elements of the control system place themselves with power failure into a safe condition for operators, Atmos and environment.

All live construction units are secured against contact (isolated) and with sufficient estimate distance installed. Live building groups are built in the turbine case, which can be opened only with tool.

All electrical construction units carry the CE characteristic for low-voltage and/or EMV.

For the grounding of the Atmos a potential equalisation ($\varnothing > 1.5 \text{ mm}^2$) of all leading components is installed.

The Atmos is implemented according to the type of protection IP 40.

Electrical connection diagrams with associated parts lists are in the appendix.

3.4 Technical Data Atmos

Product description:	Atmos
Housing:	Breadth 560 mm Height 1050 mm Depth 700 mm
Surrounding:	Surrounding temperature, perm. + 5 °C to + 35 °C Relative air humidity max. 65 %
Motor related data 115 V	Max. air-flow 320 m ³ /h Power of the motor 0,8 kW Negative pressure 5.800 Pa
Current 115 V	Connection voltage 115 VAC / 50/60 Hz Type of current 1 Ph Control voltage 24 V Type of protection IP 40 ISO-Class F
Motor related data 230 V	Max. air-flow 320 m ³ /h Power of the motor 1,2 kW Negative pressure 8.500 Pa
Motor related data 2x230 V	Max. air-flow 2x320 m ³ /h Power of the motor 2,4 kW Negative pressure 8.500 Pa
Current 230 V	Connection voltage 230 VAC / 50/60 Hz Type of current 1 Ph Control voltage 24 V Type of protection IP 40 ISO-Class F
Kind of	<u>Filter material</u>
	compact filter: Atmos Comfort Box
	Activated carbon 1 Bag: Atmos Comfort Carbon about 9 kg
	Activated carbon 2 Bag: Atmos Comfort Carbon about 18 kg
optional	HEPA-Filter H 13
optional	pocket filter Atmos Comfort Bag (Version 1.0)
Filter <u>before</u> and <u>behind</u> activated carbon:	Filter mat G3

4 Transport, Storage and Start Up

4.1 Transport on Wooden Palette

The Atmos is transported on a wood pallet. The following corridor promotion vehicles are permissible for the transport of the wood pallet:

- Fork lift and
- Fork truck.

Hard impacts of the Atmos (e.g. on the loading area of a transport vehicle) must be avoided when setting off.

Secure the wood pallets with the Atmos in the case of transport against tilting.

Consider the valid accident prevention and industrial safety regulations.

Consider absolutely danger warnings and information on the packing!

The Atmos and/or the wood pallet with the Atmos is to be secured on the transport vehicle against slipping and tilting.



Information!

Unpack the Atmos only at the place of assembly.

Do not set up the Atmos in direct proximity of heating/heating elements.

Consider sufficient area for the exchange of the filter when setting up.

Proceed when unpacking and setting up the Atmos as follows:

- Lift the Atmos off the wood pallet and/or from the transportation packing only at the place of assembly. Remove the packing carefully.
- Examine the completeness of the supply on the basis of the packing list. If parts should be missing or supplied wrongly, contact immediately the Trotec Laser GmbH. The same applies to transport damages.
- Also check the complete delivery for external damage as they can be created for example during transport.
- Transport the Atmos afterwards attentively and prudently on its guiding rollers up to the place of assembly.
- Set up the Atmos to even, firm underground.
- Always check that the Atmos stands secured and that the guiding roller's brakes are set.
- Set up the Atmos in such a way, that the attached suction hoses between the Atmos and machine which can be exhausted do not lie in through ways and/or generally do not have to be exceeded.

4.2 Scope of Supply

Examine with the delivery of the Atmos the scope of supply in every detail and announce immediately if parts are missing or should be damaged. Later complaints are not accepted.

To the regular scope of supply belong:

- Atmos completely (with inserted filter-unit); mains cable (cold equipment cable);
- Inserted filter (with 1 or 2) Activated Carbon Bag, filter-mats and Atmos Comfort Box or HEPA H 13 or Atmos Comfort Bag
- Blind cover ND 50 (inserted in the extraction inlet)
- Hose kit ND 70.

Please note that the scope of supply can deviate in individual cases from this list. In this case the list in the delivery document is binding.

4.3 Storage and Operating Conditions

The Atmos must be stored at vibration-less, dry and as dust free a place as possible. It may not be stored outside of closed areas.

The air temperature must be in a temperature range between + 5 °C and + 35 °C.

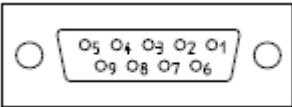
The relative air humidity may not amount to any more than 65 %. The condensation of air humidity on the surface of the Atmos must absolutely be avoided.

5 Start Up of the Atmos

5.1 Connection of an External Control

The Atmos is switched on and/or headed either at the transparency keyboard or by an external/remote control (e.g. the machine which can be exhausted). With the manual switching on, push ON/OFF key about 0,5 seconds.

At the Atmos the connection of the remote control is made by a nine-pole cable with Sub-D9-plugs.

Illustration	Pin	Designation	Declaration
 <p>Connector Sub-D9, device sided</p>	1	Start-/stop contact 24 V DC	Input signal for Start-/Stop contact from the external machine: High: Start (24 V DC) Low: Stop (0 V DC)
	2	Operational status indicator	Output signal for operation of the filter unit: High: Filter unit is in operation (24 V DC) Low: Filter unit is out of operation (0 V DC)
	3	"Filter full"	Output signal for failure alarm from the filter unit: High: pocket-filter, activated carbon are correct (24 V DC) Low: Filter, pocket-filter, activated carbon must be changed (0 V DC)
	4,5		Not occupied
	6	24 V DC	Output signal with permanently 24 V DC
	7,8		Not occupied
	9		Common masse for PIN 1 to PIN 6

Schedule 1: Connection of an external control (arrangement of plug contact / connection location).

5.2 Connecting the Atmos

Attach the Atmos as follows:

- Connect the mains cable of the Atmos with the power supply.
- If an external control of the Atmos is intended, connect the external control with the Sub-D9-connector on the rear side.



Fig. 5

- Push the suitable flexible connection tube till the stop into the extraction opening (on the rear side of the unit).

Examine all connections for a correct and firm seat. After connecting the hose and the examination of the connections the Atmos can be taken in operation (consider chapter **6. Operation**).

5.3 Unplug the Mains Cable

To avoid damage of the power socket attached to the Atmos fix the socket with one hand and unplug the connector without twisting.

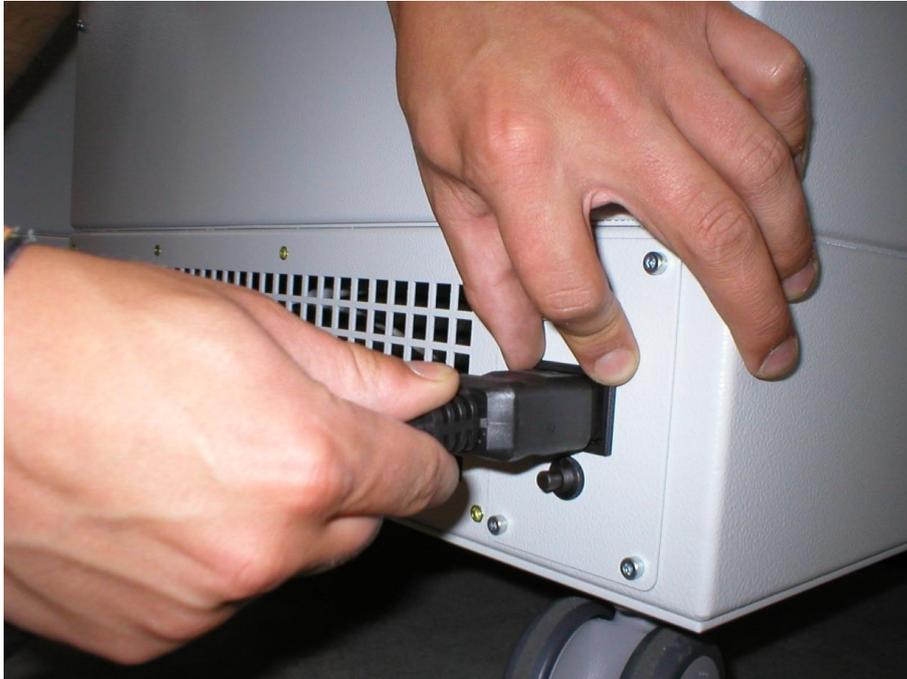


Fig. 6

6 Operation

6.1 Operation of the Control Panel

The operation of the Atmos takes place at its clear view control panel with plain language announcement. All functions of the Atmos can be adjusted here.



Fig. 7: Clear view control panel (Standard announcement)

You will find the following control elements at the control panel:

	Key ON / OFF
---	--------------

The key ON/OFF serves for switching the Atmos on and/or off. When switching on push the key for about 0,5 seconds the turbine starts audibly and the sucking of the gas/or of the smoke begins.

	Key Enter
---	-----------

With this key you arrive the setup menu which shows the system-parameter consider chapter **6.3.2 Sub-menu for Language Selection**

	Key Plus
---	----------

Adjusting (increase) of the suction volume in steps of 5 m³/h.

	Key Minus
---	-----------

Adjusting (decrease) of the suction volume in steps of 5 m³/h.

	LED Error (red)
---	-----------------

If the LED error light is red and has reported a disturbance see chapter **6.2.5 Status Announcement**.

	LED Run (green)
---	-----------------

LED run indicates that the Atmos is switched on.

6.1.1 How to Switch the Atmos ON / OFF

Manual: With the ON / OFF key the Atmos is switched ON manually.

External Control: Start-contact 24V DC, via potential-free contact from the external machine.

6.1.2 Suction Volume (nominal value)

"+" Key – Press to increase suction volume

"-" Key – Press to decrease suction volume

When the Atmos is restarted the turbine runs at the last adjusted volume.

6.1.3 Flow-Control – Adjustment Suction Volume

(Definition see chapter **6.3 Announcing and Adjusting the System Parameter**).

The volume-flow rate (suction volume) is automatically kept constant. The control adjusts the turning speed of the turbine and accommodates itself automatically to changing conditions e.g. filter pollution.

The max. volume-flow rate is preset and not to exceed and will be displayed with "MAX VOL".

We recommend: Select the smallest possible setting to extend the filter life.

It is possible to change the "MAX VOL" setting in the setup menu (see Chapter **6.3.1 Setup for Menu with code**).

This adjustment is stored even after turning off. The Atmos runs with the same volume-flow rate when restarted.

6.2 Program

LANGUAGES:

German, English, French

TYPES OF LASER:

Select according to your laser.

TYPES OF SUCKTION UNIT:

Select according to your suction unit

6.2.1 Keypad

e.g.: Version 1.0

Operating button: ON / OFF

Confirmation button: Enter

Turning speed button: "+" and "-"

6.2.2 Display

With the first operation the Setup assistant appears.

Key all information concerning the type of the connected machine(s) in.

This data may be changed later (see chapter Display **6.2.3 Starting Announcement**).

With each further starting the starting announcement will appear first, then the standard announcement will be displayed.

6.2.3 Starting Announcement

Announcement after starting in sequence:

A	t	m	o	s							
S	p	e	e	d	y	1	0	0	P	R	E
V	e	r	s	i	o	n	1	.	0		

Type aspirator (e.g. Atmos)

Type of laser (e.g. Speedy 100), with/without Prefilter

No. of version

The announcement switches automatically into the standard announcement after 5 seconds.

6.2.4 Standard Announcement

V	o	l	u	m	e						m ³ /h				
F	i	l	t	e	r						%				
A	c	t	i	v	a	t	e	d	C	a	r	b	o	n	%
							h				O	K			

- Volume (nominal value) in m³/h
- Filter in %
- Activated carbon 0% to 100% (hours of activated carbon in percent).
- Operating hours so far from 0 h to 999999 h (The system counts operating hours as long as the turbine receives a control-system signal.). Status "OK" or failure announcement.

After replacing the activated carbon the alarm must be cancelled by pushing "+" and "-" simultaneously for 3 seconds – to the adjustment 0. The announcement reads "Activated Carbon OK".

With this action the signal will be reset to the fix pre-set data and the status announcement displays "OK".

6.3 Announcing and Adjusting the System Parameter

Access to the setup menu is gained direct after the first operation of the Atmos or by pushing the key Enter.

"Language.....	< "
"Laser type.....	"
"Exhaust type.....	"
"Prefilter	"
"Reset coal	" only if "coal time" diverse 0
"Code	"
"Exit	"

The key "+"/"-" moves the cursor ("<") up and down, "Enter" selects the data.

- If there is a sub-menu (marked by ...) you get into the sub-menu.
- If the parameter is changeable, the cursor switches to "#". Afterwards the data may be modified by pressing "+" / "-". By pressing the key "Enter" the selection will be stored. The cursor switches to ("<").
- If there are only two data available (e. g. yes/no, on/off, selected/not selected) by pushing the key "Enter" the selection changes. A checkmark shows yes/on/selected.
- Within a submenu the selection is performed by pressing the key "Enter" (instead of the cursor) and returns into the previous menu.

With more than four menu items the announcement scrolls.

6.3.1 Setup for Menu with Code

Can be adjusted by a technician only (Quoted data are example data)

"Filter	3500Pa	< "
"Coal time	1000h	"
"Brush time	0h	"
"Min Vol	20%	"
"Max Vol	100%	"
"Max RPM	100%	"
"Orifice	68mm	"
"Zeta	2.00	"
"Delay time	60s	"
"No of blowers	1	"
"Exit		"

6.3.2 Sub-menu for Language Selection

“Language: German < “
 “Language: English “
 “Language: French “

“+“/“-” Key moves the cursor (“<“) “Enter“ key accepts the selection. Than the setup menu will be displayed. With more than four languages the announcement scrolls.

6.3.3 Sub-menu for Laser Type Selection

“Speedy 100 < “
 “Speedy 300 “
 “Rayjet “
 “ProMarker “
 “SpeedMarker “

“+“/“-“ key moves the cursor (“<“) with more than four types the announcement scrolls.
 “Enter“ key accepts the selection. By pushing the exit key the standard menu will be displayed.

6.3.4 Parameter

“*Coal time*“ is the durability of the activated carbon (0h deactivates the monitoring of the activated carbon).

“*Brush time*“ is the durability of the brushes (0h deactivates the monitoring of the brushes).

“*Min vol*“ is the minimal tolerable volume flow in m³/h.

“*Max vol*“ maximum volume-flow rate for the selected laser type.

“*Max rpm*“ limit possibility of the revolutions.

“*Orifice*“ diameter in the orifice in mm.

“*Zeta*“ coefficient in the orifice.

“*Delay time*“ release delay in seconds, if the on and off process will be performed via remote control.

“*No of turbines*“ Atmos is with one or two turbines.

6.4 Diagnosis Display

After consulting a support-technician different data may be displayed on the diagnosis display.

Push the key "Enter" for three seconds. Information of your Atmos will be announced. Inform a technician if necessary.

With the key "+" your reach the next announcement and with the key "-" respectively the previous.

To quit the diagnosis display push the key "Enter" for three seconds or push the key "+" twice.

6.5 Remote Control

Apart from the operation with the transparency keyboard there is still additionally the possibility to control the Atmos over a lead to an external control console (e.g. at the machine which can be exhausted).

Depending upon execution of the remote control all or only one part of the functions described in the previous section can be implemented.

Attach the external control console with a shielded cable at the Sub-D9-plug at the back of the Atmos. Consider the references in the section **5.1 Connection of an External Control**.



Reference!

If you switch off the Atmos externally via the remote control, the turbine runs the pre-set time and switches off only then.

This delay ensures that a majority of the gas/smoke are sucked off.

6.6 Test Operation



Reference!

Accomplish the test operation, if you have acquired the Atmos and want to know/learn the functions.

Accomplish the test operation in addition, if you attached the Atmos to a (new) remote control or disturbances at the Atmos have been repaired before.

Accomplish the test of the Atmos as follows:

- Examine first all connections at the Atmos for correctness and a firm seat.
- Connect the Atmos to the mains supply.
- Switch on the Atmos at the transparency keyboard with the key  .

Important: when switching on at the keypad press ON-/OFF key for about 0,5 sec.
Alternatively switch on the machine which will be exhausted. The Atmos will be turned on automatically.

- Increase the number of revolutions of the turbine by touching lightly the key  .
- and keep pressed. You can notice the increase of the number of revolutions at the noise increase. In addition the flow announcement (m³/h) increases on the display.
- Increase the number of revolutions of the turbine to 100 %. The flow (m³/h) announcement must rise.
- Reduce afterwards the number of revolutions of the turbine by touching the key  .
- and keep the key pressed. You can notice the reduction of the number of revolutions at the noise acceptance. In addition the flow (m³/h) announcement will be reduced.
- If you operate the Atmos at a remote control, examine now also all existing functions. These can be:
 - direct OFF/and again switching ON of the Atmos,
 - automatic switching OFF of the Atmos, if the machine will be switched off,
 - automatic switching ON of the Atmos, if the machine will be switched on.
- Afterwards switch the Atmos off at the transparency keyboard with the key  .

Alternatively switch off the machine which will be exhausted. The Atmos is switched off automatically after the adjusted time.

If the test operation ran off to your satisfaction and without malfunctions the Atmos is now ready for operation.

7 Maintenance

7.1 In General

The chapter maintenance covers the ranges servicing, visual inspection (inspection) and maintenance by the operating personnel as well as those of the service of the Atmos by particularly trained maintenance personnel. The arrangement of these ranges into different maintenance intervals is to facilitate the planning of each necessary maintenance for you.

The instructions described in this chapter are to be understood as minimum recommendations. Depending upon operating conditions expansions can become necessary, in order to remain the high quality of the Atmos. The indicated time intervals refer to the operation hours of the Atmos indicated at the display.

	<p>Warning!</p>
---	------------------------

Endangerment of humans and real values possible!

By inappropriate inspection, maintenance or repair damages to property and person arising direct or in the future are possible.

All maintenance and repair at the Atmos may be implemented only by qualified technical personnel (consider chapter **2. Safety**).

References to repairs and orders of spare parts please take from the product description and spare parts list.

	<p>Information!</p>
---	----------------------------

For the preservation of the warranty claim the regular work for the maintenance must be proven by maintenance and operating personnel by record.

Use only approved original spare parts!

With the use of unapproved spare or replacement parts and operational funds the Trotec Laser GmbH does not take over warranty!

Provide for careful and safe environmental disposal.

	<p>Reference!</p>
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To avoid damages at the Atmos pay attention to a normal disassembly and assembly of construction units.

With all dismantle and disassembling applies therefore in principle:

- Mark parts.
- Note the installation position and place.
- Disassemble, clean and keep building groups separately.

After repairs applies in principle:

- Control all bolt connections for tightness.
- Control all hose and fittings as well as connections for tightness.

If the disassembly of protection devices is necessary for maintenance the reattachment and the examination of the protection devices has to take place immediately after conclusion of the work.

	Reference!
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Consider also the safety references in section **2.7 Safety References to the Maintenance** as well as the referring to special danger kinds in section **2.8 Referring to Special Danger Kinds**.

7.2 Operating Conditions

Depending upon kind and range of the maintenance the Atmos must be stopped and/or switched completely dead.

For execution of cleaning and repair the Atmos is to be separated in principle from mains supply.

	Warning!
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High voltage! It causes death or lethal injuries.

With cleaning and maintenance work disconnect the Atmos from the power supply.

7.3 Care and Visual Inspections

Task of the operating personnel is it to check the accessible ranges of the Atmos daily for contamination and damages. Contamination should so far accessible be removed and damages announced to the responsible maintenance personnel.

	Reference!
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By unavoidable dirt deposits the inscription of control elements or warning references can become illegible. Thus it can come to faulty operations, which can cause damages.

- Always control the Atmos at the beginning of work.
- Remove dust and other impurity from all control elements, announcements and warning sticker once a week by wiping off with a damp cloth.

With the selection of the cleaning agent it is to be made certain that no surfaces, keyboards, plastics or seals are attacked.

All aqueous industrial cleaners are usable without restriction.

7.3.1 Visual Inspection

Kind of Control		✓
Control of the operation behaviour	Observe the Atmos on normal operational behaviour: - Operation noise, - Heating up, - Smell development. Stop immediately with irregular operational behaviour if necessary and inform maintenance personnel.	
Control for residue	Check the Atmos and surrounding for residues of material and fuels and if necessary remove it.	
Remove contamination	- Corridor, work surfaces, descriptions	
Wear control	- Mobile supplying and extraction pipes, - Outward recognisable sealing etc. Renew construction units if necessary.	
Control for damage	Outwardly recognisable damages on all construction units.	
Examine for leakage	- Hoses for supplying and extraction of the Atmos.	

8 Service

8.1 In General

All service work must be accomplished in the indicated period and with the appropriate care.

The life span and good quality of the Atmos can be preserved by the maintenance of the components.

Apart from the regular cleaning the precautionary exchange of wearing parts is recommended urgently.

In special cases the Trotec Laser GmbH designates you a service bureau in your proximity which accomplishes the repairs.

8.2 Filter Pollution Atmos

8.2.1 Exchange of the Atmos Comfort BOX / HEPA (optional) / pocket filter (optional)



Fig. 8

During the operation of the Atmos you have to observe the status announcement constantly. With the announcement CHANGE FILTER you must replace the Atmos Comfort BOX / HEPA (Fig.8) or pocket filter (Version 1.0).

An acoustic buzzer (acoustic alarm) indicates the change of filter.



Warning!

Destruction of the filter unit!

Destruction of the turbine! If the turbine is dirty no warranty claim is given!

Possibility of direct skin contact or the inhalation of the dust!

If the filter alarm is not noticed, it can come to tearing of the Atmos Comfort Box / HEPA in the housing of the filter-unit. The active carbon will be polluted with odour development.

Exchange the Atmos filter unit at once!

**Attention!**

Poisonous types of dust!

When working with/on the filter the danger of inhaling or coming into contact with whirling up types of dust exist.

- Put on therefore before beginning the work a purifying dust respirator of the protection stage 3 and one-way gloves from polyethylene (long execution).

If the announcement "CHANGE FILTER" appears even though the Atmos Comfort Box and the activated carbon are new, the measuring hose must be controlled if chinked or blocked!

Proceed with the filter exchange as follows:

Switch off the Atmos

- Turn off the Atmos on the transparency keyboard with the key .

Alternatively switch off the machine which will be exhausted. After the adjusted time, the Atmos is switched off automatically.

- Secure the Atmos against unexpected restarting by:
Disconnect the mains cable from the power supply main.
- Disconnect the suction hose.
- Open the covering of the Atmos with a suitable tool. Flap the cover to the side.
- Lift out the frame (Fig 9).



Fig. 9

- Lift out the Atmos Comfort BOX / HEPA / pocket filter of the housing (Fig. 8).
- Push the Atmos Comfort BOX / HEPA / pocket filter completely into a tight sealed plastic bag and lock it.
- Supply the Atmos Comfort BOX / HEPA / pocket filter immediately to the disposal.

Put in a new Atmos Comfort BOX / HEPA / pocket filter

- Unpack the new Atmos Comfort BOX / HEPA / pocket filter and put the filter into the filter drawer, the frame must lie flat on the filter drawer.
- Insert the frame (Fig. 9).
- Examine rubber gasket plate for cracks. (Fig. 9)
- Shut the cover and lock it.
- Connect the suction hose to the Atmos.
- Connect the Atmos to the mains.

8.2.2 Exchange of the Atmos Comfort Carbon

Replace the activated carbon if the status announcement displays Change Active Carbon. The announcement shows 100% and the LED-Error (red) shines.

An acoustic buzzer indicates the failure.

	Reference!
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The acoustic signal can be switched off by the operation of the keys “+”, “-“ or ENTER at the transparency keyboard.

	Warning
---	----------------

Poisonous types of dust!

When working with/on the filter the danger of inhaling or coming into contact with whirling up types of dust exist.

- Put on therefore before beginning the work a purifying dust respirator of the protection stage 3 and one-way gloves from polyethylene (long execution).

Proceed with the activated carbon exchange as follows (consider chapter **8.2.1 Exchange of the Atmos Comfort BOX / HEPA / pocket filter**):

Turn off the Atmos

- Turn off the Atmos on the transparency keyboard with the key  .

Alternatively switch off the machine which will be exhausted. The Atmos is switched off automatically after the adjusted time.

- Secure the Atmos against unexpected restarting by:
Disconnect the mains cable from the power supply main.
- Disconnect the suction hose.
- Open the covering of the Atmos with a suitable tool. Flap the cover to the side.
- Lift out the frame (Fig. 9).
- Lift the Atmos Comfort Box / HEPA / pocket filter out of the housing (Fig. 8).
- Lift the filter mat out of the housing and dispose it in a tight sealed plastic bag.



Fig. 10

- Lift out the activated carbon completely with the synthetic net into the tight sealed plastic bag.
- Lift out the second filter mat and dispose it in the tight sealed plastic bag and lock it.
- Supply the activated carbon and filter mats immediately to the disposal.

Fill in the new Atmos Comfort Carbon

- Unpack the new activated carbon with the synthetic net and the filter mats (Fig. 10).
- Place one filter mat into the filter-insert (clean gas side – blue imprint must direct down).
- Insert the activated carbon completely with the synthetic net into the activated carbon housing.
- Place the second filter mat on top of the activated carbon (clean gas side – blue imprint directs down).
- Put the Atmos Comfort BOX / HEPA / pocket filter into the filter drawer, the frame must lie flat on the filter drawer.
- Insert the frame (Fig. 9).
- Shut the cover and lock it.
- Connect the suction hose to the Atmos.
- Connect the Atmos to the mains.

Reset the failure announcement:

After replacing the activated carbon the alarm must be cancelled by pushing "+" and "-" simultaneously for 3 seconds – to the adjustment 0. The announcement reads "Activated Carbon OK".

With this action the signal will be reset to the fix pre-set data and the status announcement displays "OK".

8.2.3 Exchange of the filter mat for cooling air

During the operation of the Atmos, you must inspect the filter mat for cooling air at the bottom plate regularly. When working on wood or similar organic material the filter mat for cooling air contaminates heavier the Atmos will not get enough cooling air and will overheat.



Warning

Proceed with the activated carbon exchange as follows

- Turn off the Atmos on the transparency keyboard with the key  .
Alternatively switch off the machine which will be exhausted. The Atmos switched off automatically after the adjusted time.
- Secure the Atmos against unexpected restarting by:
Disconnect the mains cable from the power supply main.
- Please wear protective gloves
- Carefully remove the cooling air filter mat from the grate at the bottom plate and allow it to be disposed of.
- Insert a new filter mat into the grate at the bottom plate.

9 Error Tracing and Troubleshooting

Error	Cause	Elimination
<p>No suction power (Smoke/gas are not sucked off).</p>	<p>Suction hose not attached at the Atmos.</p>	<p>Attach the suction hose at the Atmos.</p>
	<p>Suction hose not attached at the machine.</p>	<p>Attach the suction hose at the industrial laser.</p>
	<p>Damage of the suction hose.</p>	<p>Exchange the suction hose.</p>
<p>No suction power and/or error announcement "Change Filter" also with a new filter inserted.</p>	<p>Inlet clogs.</p>	<p>Examine inlet. If necessary repair disturbance.</p>
	<p>Clean gas way clogs.</p>	<p>Examine clean gas way. If necessary repair disturbance.</p>
	<p>Suction air way too long.</p>	<p>Test the Atmos with a short length of hose. If necessary, use only a hose no longer than 2,5 m.</p>
<p>Suction power too small (Smoke/gases are hardly sucked off).</p>	<p>Atmos Comfort Box/Bag is full.</p>	<p>Exchange Atmos Comfort Box/Bag, deposit old filter-unit duly!</p>
	<p>Damage of the suction hose.</p>	<p>Exchange the suction hose.</p>
	<p>The suction hose is not attached correctly at the machine.</p>	<p>Examine the fitting of the suction hose on the machine; if necessary attach the suction hose again.</p>
	<p>The suction hose is not attached correctly at the Atmos.</p>	<p>Examine the fitting of the suction hose on the Atmos; if necessary attach the suction hose again.</p>
	<p>Clean gas way narrows.</p>	<p>Examine clean gas way, if necessary repair disturbance.</p>
	<p>Inlet narrows.</p>	<p>Examine inlet, if necessary repair disturbance.</p>

Error	Cause	Elimination
Suction power too small (Smoke/gases are hardly sucked off) the turbine does not reach the necessary speed.	Overheating through huge filter pollution.	Turn off the Atmos, exchange the Atmos Comfort Box. Switch on the Atmos only after the turbine has cooled itself.
	Failure on the Atmos.	Contact the Trotec Laser GmbH. If necessary send the Atmos to Trotec.
The Atmos does not start.	Plug connection of the current supply is not put in.	Examine the connection of the current supply.
	No current on plug socket.	Examine current mains, if necessary repair disturbance.
	Connecting cable for external control not or wrongly plugged in.	Examine the connecting cable for the external control if necessary plug in correctly.
	No control signal for remote control of the machine.	According to the manual eliminate disturbance.
	Failure on the Atmos.	Contact the Trotec Laser GmbH. If necessary send the Atmos to Trotec.
Motor stops within operation.	Overheating through huge filter pollution. The thermal protection of the turbine is released.	Turn off the Atmos, exchange the Atmos Comfort Box. Switch on the Atmos only after the turbine has cooled itself.
	The turbine is stalled through tearing of the filter!	No warranty claim is given! The exchange of the turbine is necessary. The Atmos Comfort Box/Bag and the Atmos Comfort Carbon must be exchanged also. It is absolutely necessary that all parts of the Atmos have to be cleaned, in particular the housing inside.
Atmos Compact Unit has developed smell although the motor runs and smoke/gases are sucked off.	Rubber gasket plate is damaged (has formed cracks).	Examine rubber gasket plate (see Fig. 12) for cracks.

10 Disposal

With the operation of the Atmos waste material and replacement parts result which have to be deposited according to the laws and environmental protection.

10.1 Environmental Protection



Caution!

With all work on and with the Atmos the legal obligations for waste avoidance and duly utilisation/removal are to be kept in particular with repair and maintenance work.

In particular with repair and maintenance work water-endangering materials like:

- lubricating oils and –fats as well as
- solvent containing cleaning agents

may not load the soil or arrive into the drains!

These materials must caught, kept and transported in suitable containers and be deposited!

10.2 Filter and Types of Filter Dust



Caution!

Poisonous dust!

While handling toxic types of dust special caution is required. When working with/on the filter exists the danger that you inhale or come into contact with whirling up types of dust.

- Put on therefore before beginning the work a purifying dust respirator of the protection stage 3 and one-way gloves from polyethylene (long execution).

The exchange filters as hazardous waste generated the appropriate specialist companies must be supplied in your area.

10.3 Final Putting Out of Operation

Will the Atmos finally put out of operation for the management of the components and equipment complies with the then valid laws and regulations for disposal.