



Operating instructions

Type

TEKA-ZING

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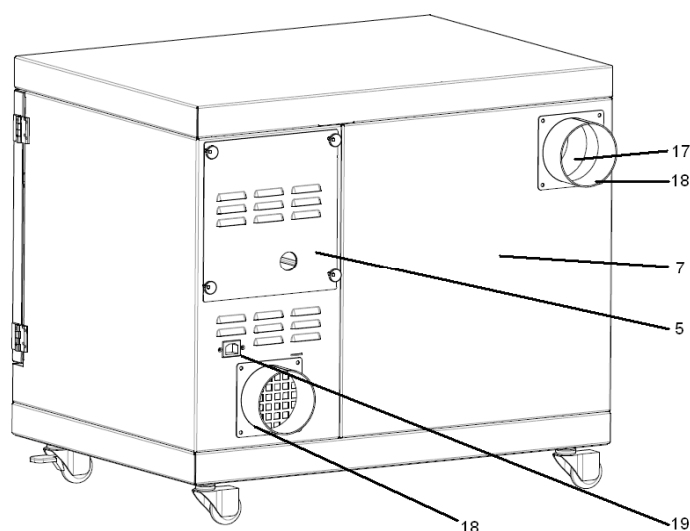
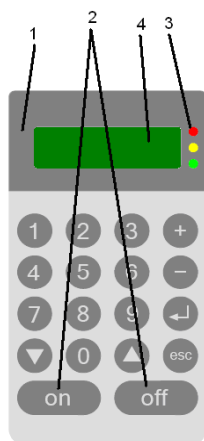
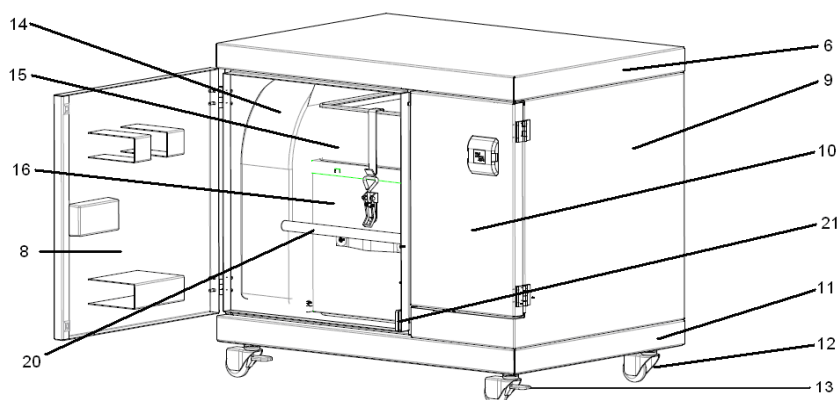
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1 Drawing/description of the components



Pos.1	Remote control Uni-Control	Pos.12	Swivel castor
Pos.2	On-off switch	Pos.13	Swivel castor with brake
Pos.3	Indicator light for the filter: red	Pos.14	Pocket filter
Pos.4	Display for menu control	Pos.15	Particle filter
Pos.5	Maintenance door for vacuum pump (optional)	Pos.16	Activated carbon cartridge
Pos.6	Housing cover	Pos.17	Suction nozzle
Pos.7	Filter housing	Pos.18	Connection for hose (hose added separately)
Pos.8	Filter door	Pos.19	Mains supply (mains cable included)
Pos.9	Fan housing	Pos.20	Lifting device
Pos. 10	Maintenance door (only for mechanics)	Pos.21	Guide angle
Pos.11	Housing floor		



2 Preface

Due to the thermal and photolytic charge of the applied material, the laser working process involves the development of specific emissions according to the chosen process. The type and quantity of the developed emissions depend heavily on the laser working process such as cutting, welding, or ablation, as well as on the material used. Whereas working of metallic material only emits aerosol emissions that constitute the oxidation product of the base material or of the alloy components, the working of polymer materials emits aerosol emissions as well as varying quantities of gaseous decomposition products that partially present a very complex structure.

In case of an insufficient extraction at the work place, the emissions generated during the working process can lead to the exceedance of the obligatory limit values for immissions.

The successful application of the laser technology supposes besides the technological optimization of the working process especially measures in order to assure the protection of the environment and the occupational safety. In the context of a growing awareness and stricter regulations, the task is to evaluate the risk potential at an early stage and to reduce it if necessary.

The extraction unit TEKA-ZING has been specially developed for the use in combination with a laser and to exhaust small quantities of dust, fumes and gases. It separates the pollutants and therefore contributes to create better and healthier working conditions.

3 Operation of TEKA-ZING

The filter unit TEKA-ZING is supposed to be applied at laser units in order to extract and filter dust, fumes, and gases.

Restrictions of application:

welding fumes containing oil, aluminum dust, grinding dust, extraction of metallic dusts, water, etc. (In case of doubt, please contact the manufacturer.)

The polluted air is captured by the laser unit and transported to the filter unit in passing by the suction hose. The gross particles are separated within the pocket filter (pos. 14). The consecutive particle filter (pos. 15) separates very fine fume particles with a degree of separation of more than 99%. At another filter level, the gaseous pollutants are adsorbed in passing by the activated carbon filter (pos. 16). The cleaned air is taken in by the turbines and returned to the environment in passing the outlet lamellas at the backside of the filter unit.

Attention:

As soon as the airflow resistance of the filters has increased to an extent that the extraction performance is reduced due to the separated particles, the filters have to be replaced.

(see chapter 7.1: „Replacing the pocket filter“, chapter 7.2: „Replacing the particle filter“, and chapter 7.3: „Replacing the activated carbon filter“)



4 Safety instructions

When using electrical equipment, the following general safety measures have to be taken for the protection against electric shock, risk of injury and fire:

- Read and observe these instructions before using the device!
- Keep this operating and maintenance manual in a safe place!
- Do not use the device to extract easily inflammable or explosive gases!
- Do not use the device in explosive zones, e.g. zone 0, zone 1, zone 2, zone 20, zone 21, zone 22!
- Do not use the device to extract burning or glowing materials, such as cigarettes, matches, metallic dust or splinters, paper, cleaning cloths etc.!
- Do not use the device to extract burning or inflammable materials, e.g. oil or oil mist, grease, release agents (e.g. silicone spray), cleaning agents, etc.!
- Do not use the device to extract aggressive media!
- Do not use the device to extract burning or glowing materials!
- Do not use the device to extract liquids of all kind!
- Do not use the device to extract organic materials without a written authorization of the manufacturer!
- Protect the connection plug from heat, humidity, oil and sharp edges!
- Pay attention to the permitted supply voltage!
(Respect the indications on the nameplate!)
- Only use TEKA spare parts!
- Do not use the device without filter inserts!
- Disconnect the filter unit from the power supply before opening it!
- The outlet nozzle must not be covered or blocked!
- Always take care that the device is in a safe position and that the brakes at the swivel castors are activated!
- When cleaning and maintaining the device, replacing parts or when changing to another function, the filter unit has to be disconnected from the power supply!
- The filter inserts cannot be reused!
- Dispose of the filter according to the legal prescriptions!
- The unit must not be used if the ground cable is not in perfect condition!
- When using an external filter control, the control cable has to be checked for possible damage before every operating session!



- The unit must not be used if the control cable is not in a perfect condition!
- The mains cable of the device must be regularly checked for possible damage!
- The unit must not be used if the mains cable is not in perfect condition!
- Do not use the filter unit if one or more parts of the unit are faulty, missing or damaged. In every of these cases, please contact the TEKA service department at the phone number +49 28 63 92 82 0.
- When extracting carcinogenic welding fume, e.g. materials containing nickel or chrome, the ventilation requirements of the TRGS 560 (Air return during handling of carcinogenic hazardous substances) have to be observed!

For further information concerning TRGS 560, please contact the German Institute for Occupational Safety and Health (BIA) in 53754 Sankt Augustin.

5 Start-up

- Only instructed staff members are supposed to handle the filter unit and the applied materials. To this end, every employee who is destined to handle the filter unit has to be instructed according to the instruction protocol (see form in the annex).
- Respect the indications on the nameplate.
- The capturing elements and any other accessories have to be installed before starting up the device.
- Respect the manufacturer's indications or contact the manufacturer.

5.1 Connection of the capturing elements

The suction hose (pos.18) has to be fixed to the suction nozzle (pos.17).

5.2 Connection of the vacuum pump (optional)

The vacuum pump is an optional accessory of the laser. In order to integrate the pump, please observe the indications of the laser / vacuum pump manufacturer.

For integration in the TEKA-ZING, unscrew the knurled screws at the maintenance door (pos. 5), pull out the maintenance door with the plug-in plate and install the pump on the plate. The pump is connected via the mains connection at the interior. The pump can be controlled separately, to this end see the separate instruction manual of the control unit.

5.3 Connection of the unit

- Put the mains cable into the mains plug (pos. 19).
- Connect the filter unit to the mains supply. (Respect the indications on the nameplate!)

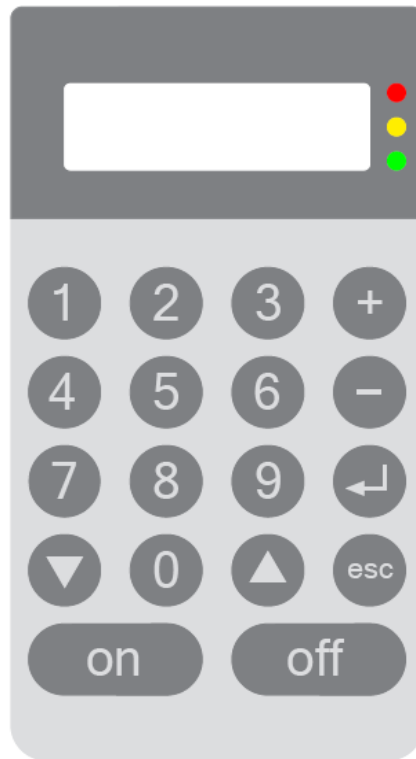
Attention:

Only authorized staff is allowed to carry out works concerning electric connections!
Respect the indications on the nameplate!

6 Description of the remote control




TEKA-Zing is operated by means of the control unit "UniControl".







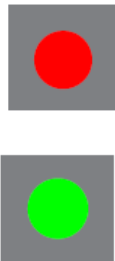
"UniControl" is a universal remote control interacting with the control unit "Airfilter03v2".



When you switch on the device for the first time in pressing "ON", the ID of the control unit is requested. When logging in to the unit, all required parameters for the control are transferred.

On the membrane control panel, you find the following control elements:

 	<p><i>ON/OFF button</i></p> <p>The ON button switches the unit and the remote control on. The turbine starts running and the extraction process begins.</p> <p>The OFF button switches the unit and the remote control off. The turbine stops running and the extraction process is deactivated.</p>
	<p><i>Enter button</i></p> <p>For all menu items enabling a change of settings, the modified setting can be sent to the control unit with the help of the Enter button. In addition, the Enter button allows updating the parameters indicated on the display.</p> <p>Please note: Do not carry out any modifications on your own unless they are explicitly authorized by TEKA GmbH.</p>

	<p><i>Button +</i></p> <p>This button serves to increase the number of revolutions of the turbine(s) in per percent. The modified value is directly adopted.</p> <p>In addition, this button serves to increase the values of the respective parameters in the submenus.</p>
	<p><i>Button -</i></p> <p>This button serves to reduce the number of revolutions of the turbine(s) in per percent. The modified value is directly adopted.</p> <p>In addition, this button serves to reduce the values of the respective parameters in the submenus.</p>
	<p><i>Button esc</i></p> <p>For all menu items allowing a modification, once you have started a modification, you can cancel it in pressing esc.</p> <p>If you navigate within a menu item belonging to the service menu, you can leave the service menu in pressing esc.</p>
	<p><i>Buttons 0-9</i></p> <p>For all menu items allowing a modification, the new value can be entered with the help of these buttons. The values are confirmed in pressing the Enter button.</p> <p>For instance, the percentage for the frequency of rotation of the turbines can be regulated this way.</p>
	<p><i>Button Up</i></p> <p>In pressing the button Up, you can navigate to the top in the menu.</p>
	<p><i>Button Down</i></p> <p>In pressing the button Down, you can navigate down in the menu.</p>
	<p><i>LED Error (red)</i></p> <p>If the LED Error lights up, there is a fault at the device. You can find details concerning the fault notices in the manual of the control unit.</p> <p><i>LED Run (green)</i></p> <p>The green LED indicates that a sending progress from the remote control to the control unit is in progress.</p>



7 Maintenance

The filtration of the dust particles has the effect that the pocket filter and the particle filter become more and more polluted and hence that the suction performance decreases.

The mechanical filter insert guarantees that more than 99 % of the extracted pollutants remain in the filter even if the filter insert is entirely or partially saturated. However, when the saturation of the filter increases, the suction performance of the filter unit is reduced.

The saturation degree of the filter is electronically monitored. To maintain the required suction performance of the unit, the filters have to be replaced when the red indicator lights for the filters (pos. 3) light up.

The pocket filter (pos. 14) has to be replaced regularly. (see chapter 7.1: "Replacing the pocket filter")

As soon as due to the separated dust particles the resistance of the filters has increased to an extent that the suction performance is reduced, the particle filter (pos. 15) has to be replaced. (see chapter 7.2: „Replacing the particle filter“)

The activated carbon filter (pos. 16) has to be replaced as soon as gases reappear on the clean air side. At the latest when replacing the particle filter, the activated carbon filter should be replaced as well. (see chapter 7.3: „Replacing the activated carbon filter“)

The lifetime of the pocket filter, the particle filter, and the activated carbon filter heavily depends on the conditions of application. That is why it cannot be determined in advance.

Attention:

The operation session of the filter unit has to be interrupted when replacing the filters.

Replacing of the filters and disposal may only be carried out in ventilated spaces and when wearing an appropriate respiration mask!

We recommend a respiration half mask according to DIN EN 141/143 protection level P3.

Only an instructed staff member is allowed to replace the filters!

Dispose of the filter according to the legal regulations!

If the filter is manually beaten, washed or blown out, the filter medium may be destroyed. The pollutants spread into the ambient air.



7.1 Replacing the pocket filter

The pocket filter (pos.14) has to be replaced after a certain amount of operating hours. The amount can be determined depending on the quantity of separated dust. However, at the latest when replacing the particle filter (pos. 15), the pocket filter (pos. 14) has to be replaced as well.

Proceed as follows:

- Disconnect the filter unit from the mains supply.
- Open the filter door (pos. 8).
- Pull the pocket filter out to the front (pos. 14).
- Introduce a new pocket filter all the way into the nozzle.

Attention:

Only use TEKA pocket filters!

- Close the filter door (pos. 8).
- Connect the filter unit to the mains supply. (Respect the indications on the nameplate!)

7.2 Replacing the particle filter

As soon as the suction performance is reduced, the particle filter (pos. 15) has to be replaced as follows:

- Disconnect the filter unit from the mains supply.
- Open the filter door (pos. 8).
- Pull down the handhold of the lifting device (pos. 20) so that the entire filter part consisting of the particle filter (pos. 15) and the activated carbon filter (pos. 16) is lifted up.
- Pull the filter part out and lift it out of the unit.
- Release the toggle clamp and separate the particle filter (pos. 15) from the activated carbon filter.
- Put the sealing side of the new particle filter onto the activated carbon filter.

Attention:

Only use TEKA particle filters!

- Put the fasteners onto the particle filter and tighten them with the toggle clamps of the activated carbon filter.
- Before inserting the filter element, take care that the handle of the lifting device is in lower position.
- Insert the filter element completely into the filter unit via the guide angles.



- Lift the handle of the lifting device up in order to lower the filter element.
- Close the filter door (pos. 8).
- Connect the filter unit to the mains supply. (Respect the indications on the nameplate!)

7.3 Replacing the activated carbon filter

As soon as gases reappear on the clean air side or when replacing the particle filter (pos. 15), the activated carbon filter (pos. 16) has to be replaced as follows:

- Disconnect the filter unit from the mains supply.
- Open the filter door (pos. 8).
- Pull down the handhold of the lifting device (pos. 20) so that the entire filter part consisting of the particle filter (pos. 15) and the activated carbon filter (pos. 16) is lifted up.
- Pull the filter part out and lift it out of the unit.
- Release the toggle clamp and separate the particle filter (pos. 15) from the activated carbon filter.
- Put the sealing side of the particle filter onto the new activated carbon filter.

Attention:

Only use TEKA activated carbon filters!

- Put the fasteners onto the particle filter and tighten them with the toggle clamps of the activated carbon filter.
- Before inserting the filter part, take care that the handle of the lifting device is in lower position.
- Insert the filter element completely into the filter unit via the guide angles.
- Lift the handle of the lifting device up in order to lower the filter part.
- Close the filter door (pos. 8).
- Connect the filter unit to the mains supply. (Respect the indications on the nameplate!)

8 Disposal

In order to guarantee a proper operation of your filter unit TEKA-ZING as well as an appropriate disposal of the separated dust, we offer you the following services:

- We help you to find a waste disposal company within your reach.
- On demand and free of charge, we provide a list with all disposal companies in Germany.
- A maintenance and service contract.
- A customer help-line.

For these options, please contact our service department that is at your disposal 24 hours a day.

Phone: +49 28 63 92 82 0

Fax: +49 28 63 92 82 72



9 Technical data

Attention:

Respect the indications on the nameplate!

Filter unit		TEKA - ZING
Supply voltage	V	115 / 230
Type of current	Ph	1
Frequency	Hz	50 / 60
Engine performance	kW	0,6
Max. volumetric flow	m ³ /h	170
Max. depression	Pa	15.000
Type of protection		IP 54
ISO class		F
Control voltage	V	10
Duty factor	%	100
Width x Depth x Height	mm	745 x 546 x 666
Weight	kg	75
Filter element		pocket filter, particle filter, activated carbon
Degree of separation	%	>99

10 List of spare parts

Designation:	Reference:
Turbine 0,6kW 115/230V 50/60Hz one-stage	200421160060003
Pocket filter G4, 125 x 380 x 450 mm	200421205041345
Particle filter H13 Type LMD 519 / 518 / ZING	200421202133310
Activated carbon filter Type FK for ZING, 305 x 305 300 mm	97055
Remote control Uni-Control	211493
Hose FLEXTRACT 9000 DN 100, 80 cm	511241007



11 Declaration of conformity for TEKA-ZING



TEKA

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We hereby declare under our sole responsibility that the product mentioned above, from the machine number 110000000 on, is in conformity with the following directives:

Machinery directive:	2006/42/EC
Electromagnetic compatibility:	2004/108/EC
Pressure equipment directive:	97/23/EC
Low voltage directive:	2006/95/EC (1.GSGV)

Applied harmonized norms:

- DIN EN 349
- DIN EN 983
- DIN EN 12100 part 1 and part 2
- DIN EN 60204 part
- DIN EN ISO 13857
- DIN EN ISO 14121

Plus further national norms and specifications:

- DIN 45635 part 1

This declaration will become void if the suction and filter unit is exposed to modifications that are not approved by the manufacturer in written form.

Velen, December 18, 2009

TEKA

Absaug - und Entsorgungstechnologie GmbH



Instruction record for TEKA ZING

The employee approves by his signature that he has been instructed about the following points:

Instruction	completed
Description of the filter unit	
Mode of operation and fields of application of the filter unit	
Explanation of the safety instructions	
Explanation of the control elements of the filter unit	
Maintenance, replacing, and dedusting of the filter elements	
Appropriate disposal	

Instruction realized by:

Name of the employee (legible)	Signature

Signature _____.