Renfert

making work easy

EN

SILENT EC2 / TC2

TRANSLATION OF THE ORIGINAL INSTRUCTIONS FOR USE

Made in Germany

21-6813 09082018

Contents

EN

1 Introduction

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1.1 Symbols

In the instructions for use and on the unit itself you will find these symbols with the following meanings:

Danger
This indicates a direct risk of injury. Consult accompanying documents!

Electrical current
This indicates a risk of hazard due to an electrical current.

Attention
Disregarding this warning may result in damage to equipment.

Note
This provides the operator with useful information to improve and ease use.

The device complies with the requirements of the applicable EU directives.

The device is subject to the EU directive 2002/96/EG (WEEE directive).

► **List, particular attention should be paid**
• List
- List

⇒ Instructions / appropriate action / input / operational sequence:

You will be asked to carry out the action in a specified order.

♦ Result of an action / reaction of the device / reaction of the program:

The unit or program reacts as a result of your actions or when a specific incident occurs.

Other symbols are explained as they occur.

2 Safety

2.1 Intended Use

This device is designed to extract dry, non-explosive dust.

The unit is intended solely for use in a commercial dental laboratory and dental practice.

The intended use also includes compliance with the instructions specified by the manufacturer concerning operation, servicing and maintenance.

2.2 Improper Use

Fire-promoting, easily flammable, red-hot, burning or explosive materials must not be suctioned into the device.

It is not permitted to suction liquids.

This device is not intended for private, household use.

Any use other than specified in these instructions is deemed improper and constitutes a misuse of the device.

The manufacturer shall not be liable for damages caused by improper use.

Only spare parts and accessories supplied or authorized by Renfert GmbH may be used with this product. If other spare parts or accessories are used, this could have a detrimental effect on the safety of the device, increase the risk of serious injury and lead to damage to the environment or the device itself.

2.3 Ambient Conditions for Safe Operation

The device may only be operated:

- Indoors,
- Up to an altitude of 2,000 m above sea level,
- At an ambient temperature of between 5 - 40 ºC [41 - 104 ºF] *),
- At a maximum relative humidity of 80 % at 31 ºC [87.8 ºF], dropping to a linear of up to 50 % relative humidity at 40 ºC [104 ºF] *),
- With mains power where the voltage fluctuations do not exceed 10 % of the nominal value,
- Under contamination level 2 conditions,
- Under over-voltage category II conditions.

*) Between 5 - 30 ºC [41 - 86 ºF] the device can be operated at a relative humidity of up to 80 %. At temperatures between 31 - 40 ºC [87.8 - 104 ºF] the humidity must decrease proportionally in order to ensure operational readiness (e.g. at 35 ºC [95 ºF] = 65 % humidity, at 40 ºC [104 ºF] = 50 % humidity). The device may not be operated at temperatures above 40 ºC [104 ºF].

2.4 Ambient Conditions for Storage and Transport

For storage and transport the following specifications to ambient conditions apply:

- Ambient temperature - 20 – + 60 ºC [- 4 – + 140 ºF].
- Maximum relative humidity 80 %.

2.5 Hazard and Warning Information

2.5.1 General Information

- ► **If the device is not used in compliance with the supplied instructions, the safety of the device can no longer be guaranteed.**
- ► **The device may only be operated using a mains cable with the country-specific plug system. Any necessary alterations must be carried out by a qualified electrician.**
- ► **The device may only be operated if the information on the identification plate conforms to the specifications of your local mains power supply.**
  After removing the Dust Drawer, you can find the identification plate below, inside the device on the left side.
- ► **The device may only be plugged into outlets which are connected to the protective conductor system.**
- ► **The mains plug must be easily accessible.**
- ► **Disconnect the device from the mains before carrying out work on the electrical parts.**
- ► **Check connection cables (such as power supply cords), tubes and housing (i.e. the key-pad) regularly for damage (i.e. kinks, cracks and porosity) or signs of ageing. Devices with damaged connection cables, tubes or housing parts or other defects must not be operated!**
- ► **Defective devices must be put out of service immediately. Remove the mains plug and ensure the device is not used. Send the device for repair!**
- ► **Only operate the device under supervision.**
- ► **Please observe the national accident prevention regulations!**
- ► **It is the responsibility of the operator that national regulations during operation and regarding a repeated safety inspection of electrical equipment are complied with. For Germany these are the regulation 3 by DGUV (German Statutory Accident Insurance) in relation with VDE (Association for Electrical & Electronic Technology) 0701-0702.**

2.5.2 Specific Information

- ► **The mains socket on the device is only designed for purposes specified in the operating instructions. Connecting other devices may cause material damage.**
- ► **Please observe the national regulations and permitted exposure to dust in a working environment. Please ask the "National Institute for Occupational Safety and Health" or other responsible authority.**
- ► **Always refer to the relevant safety data sheets, when extracting hazardous materials.**
- ► **Always wear protective gear, when extracting hazardous materials.**
- ► **It is necessary to wear suitable personal protective equipment when emptying the dust drawer or cleaning, depending on the type of extracted material.**
- ► **When disposing of the extracted material or used filter, please observe the local specifications and accident prevention regulations!**
- ► **Make sure the dust drawer is fully closed during operation.**
- ► **Do not operate without a suction hose.**
- ► **Do not extract flammable or explosive gasses, fumes or dust.**
- ► **Do not extract hot materials.**
- ► **Do not extract liquids.**
- ► **If the dust extractor is employed to extract hazardous materials, appropriate personal protective gear must be worn and steps must be taken to ensure that the exhaust air is properly ventilated. Please refer to the associated safety data sheets for specific requirements.**
- ► **Dispose of extracted material according to local statutory regulations.**

2.6 Authorized Persons

Operation and maintenance of the device may only be performed by qualified personnel.

Minors and pregnant women may only operate and service the device if they are wearing appropriate protective gear, in particular if the device is being used to extract hazardous materials.

Any repairs not specifically described in these operating instructions may only be carried out by a qualified electrician.

2.7 Disclaimer

Renfert GmbH shall be absolved from all claims for damages or warranty if:

- ► **The product is employed for any purposes other than those specified in the operating instructions.**
- ► **The product is altered in any way other than those alterations described in the operating instructions.**
- ► **The product is not repaired by an authorized facility or if non-original Renfert parts are implemented.**
- ► **The product continues to be used despite obvious safety faults or damage.**
- ► **The product is subjected to mechanical impacts or is dropped.**
- ► **The product continues to be used despite obvious safety faults or damage.**
- ► **The product is subjected to mechanical impacts or is dropped.**

3 Product Description

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3.1 General Description

This is a workplace and appliance suction unit for extracting dust in dental laboratories.

The extraction unit comprises two suction channels, one suction point can be connect-ed to each channel.

The extraction unit can be operated both manually and automatically, depending on the connected, electrical, dust-generating equipment.

3.2 Component Groups and Functional Elements

1 SILENT EC2 / TC2
2 Control panel
3 On / Off switch
4 Dust drawer
4A Clamp fastener
5 Fine filters
6A Suction port channel A
6B Suction port channel B
7 Velcro® strip
8A Device socket A
8B Device socket B
9 Mains cable
10 Protective device switch (2 x)
11 Exhaust air filter / Exhaust air outlet
12 Suction hose and End bushings
13 Compressed air connection tube (incl. compressed air filter)
14 Connection set

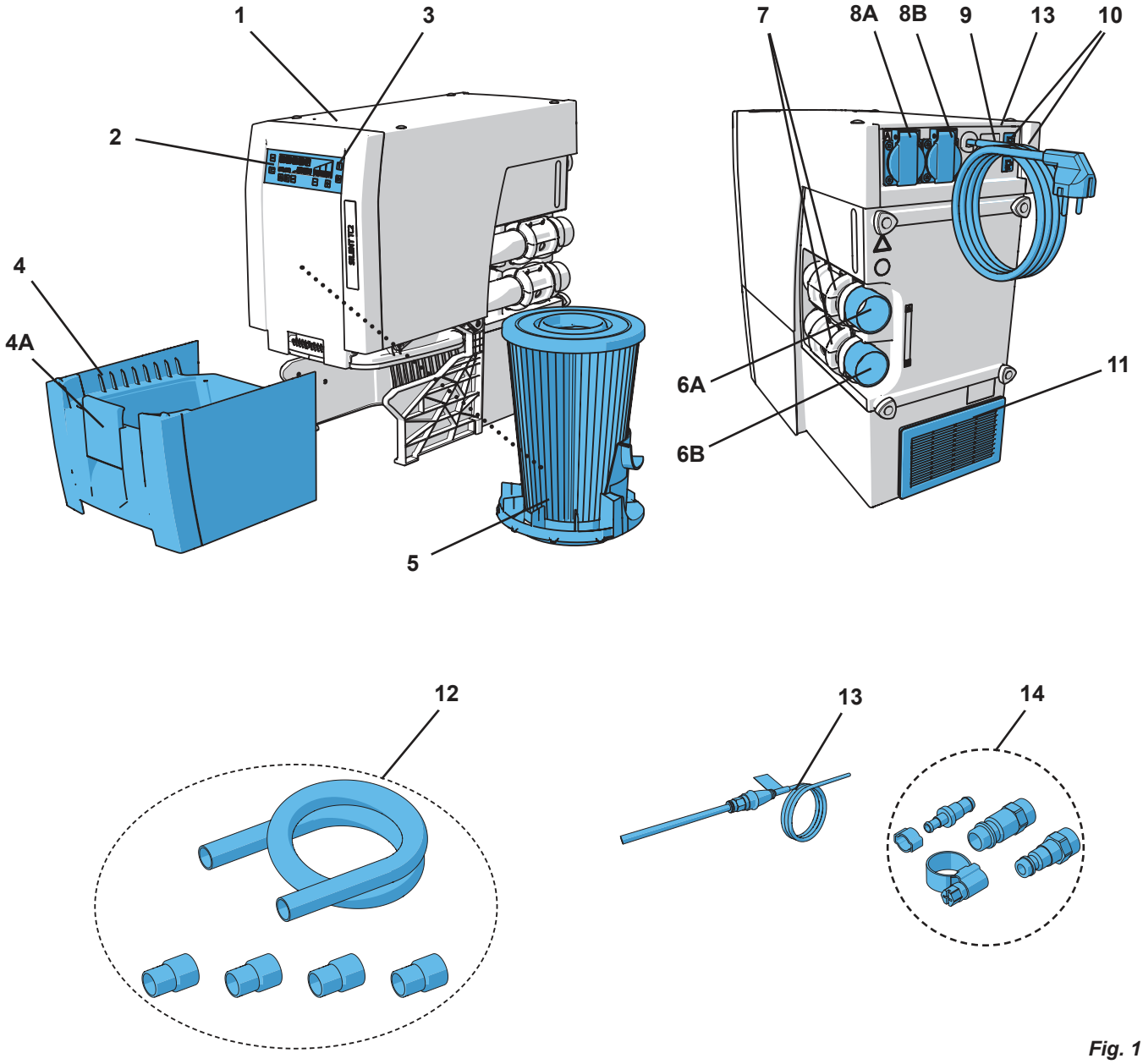

Fig. 1

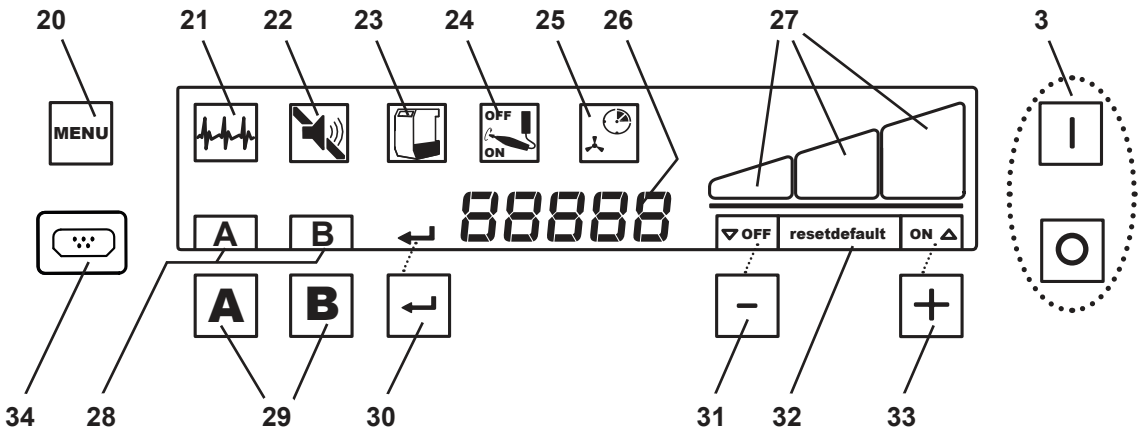

Fig. 2

3 On / off switch
20 Menu key
21 Symbol self-diagnosis
22 Symbol acoustic signal
23 Symbol dust drawer full
24 Set the switch-on threshold
25 Set the after-run time
26 7-segment display
27 Display of the suction levels
28 Suction channel indicator
29 Suction channel keys
30 Enter key, save input / display enter key
31 [-] key / display function of the [-] key
32 Display Factory setting
33 [+] key / display function of the [+] key
34 Cover (do not remove, service interface)

3.3 Delivery

1 SILENT EC2 / TC2
1 Quick Start Guide
1 Compressed air hose (fixed)
1 Connection set
2 Pinch valve with suction supports (already installed)
1 Suction hose, 4 m
4 End bushings

3.4 Accessories

2934 0014	Waste bag for TC, TC2, EC, EC2 & PowerCAM EC (25 pcs.)
2934 0015	Waste bag for SILENT TC, TC2, EC & EC2 Starter Kit
2921 0003	End bushing set, 2 pieces
90003 4240	Suction hose, 3 m, incl. 2 end mufflers
90003 4826	Suction hose, antistatic, 3 m, incl. 2 end mufflers
90115 0823	Suction hose inside diameter 38 mm, 6 m
90215 0823	Suction hose inside diameter 38 mm, 9 m
90003 4305	Adapter for hose connection
90003 4430	Universal suction hose adapter
90003 4314	Y-junction
2925 0000	Extractor clamp
2925 1000	Glass pane with attachment
2926 0000	Y-Junction for dust extractor
2937 0002	External exhaust air for Silent TC/EC/PowerCAM
2934 0007	90° angled connector Silent

For more details or further accessories, please see **www.renfert.com**

4 Initial Operation

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4.1 Unpacking

⇒ Remove the device and accessories from the package.

⇒ Check the delivery for completeness (compare the list included in delivery).

4.2 Setting-up

The suction unit is a standing device which must not be operated in a horizontal position.

Place the suction unit so that:

- the exhaust air outlet (11, Fig. 1) is not blocked.
- the front side is easily accessible for removing the dust drawer.

If the suction unit is placed in a closed cabinet, the warm exhaust air must be transported out of the cabinet using one of the measures shown in Figs. A, B, C at the start of this manual.

- External exhaust air duct (A) (see chapter 4.7).
- Opening in the cabinet wall (B), min. 250 x 120 mm, directly opposite the exhaust air outlet (11, Fig.1).
  - Distance of the cabinet back side to the wall: min. 100 mm.
  - Distance of the suction unit to the cabinet back side: max. 25 mm.
- Remove the back side of the cabinet (C), distance from the back of the cabinet to the wall min. 50 mm.

If the warm exhaust air is transported out through the openings to the rear, it is essential that the air can escape unhindered from there.

4.3 Electrical Connection

Before connecting to electricity, ensure that the voltage on the type plate conforms to the local voltage supply.

Ensure that the layout of live parts (socket, plug and coupling) and extension cables are arranged so that the protection class is maintained.

⇒ Switch the device off at the on / off switch (3, Fig. 2).

⇒ Unroll the mains cable (9, Fig.1) and insert the plug into the building's electrical socket.

4.4 Compressed Air Connection

The suction channels are opened and closed by means of pneumatic pinch valves. Compressed air is required for this. The compressed air tube is securely connected to the side of the device.

For connection to the compressed air network:

⇒ Select the appropriate tube coupling from the supplied connection set (14, Fig. 1) and attach it to the end of the tube.

⇒ Connect to the compressed air network

Observe the minimum / maximum connection pressure, see technical data!

The compressed air must be clean and dry (no condensation). Moist compressed air can cause damage to the device!

4.5 Connection to a Suction Point

Warning risk of injury!
When shortening the suction tube, please be sure to cut the integrated wire as straight as possible.

Long suction tubes, tight bends and kinks greatly reduce the suction power at the suction point.

When there are different tube lengths, the suction capacity at the suction points with longer tubes is lower.

Ensure that the suction tubes are the same length and diameter. Excess length should be shortened or tubes must be laid in large circles.

⇒ Shorten the suction tubes to the required length for both suction points.

⇒ Screw the end bushings onto the suction tubes (left turn thread).

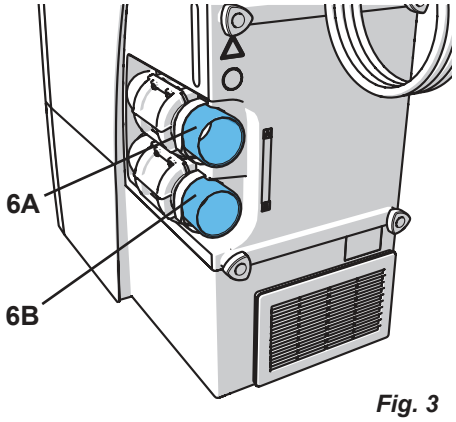

Fig. 3

⇒ Place the suction tube onto the suction port (6A / 6B).
Observe the allocation of the device sockets (A, B) – suction channel (A, B).

⇒ Connect the suction tube to the correct suction point.

If the diameter is not suitable, use an adapter (see accessories), to avoid loss of suction.

Avoid steep sloping and "sagging" of the tubes.

4.6 Connecting the Electrical Devices

⇒ Connect the electrical equipment to the device sockets (8A / 8B) on the back.

Observe the allocation of the device sockets (A, B) – suction channel (A, B).

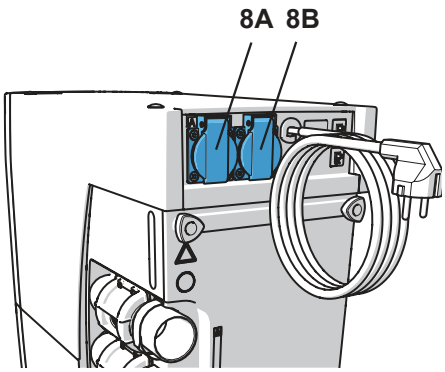

Fig. 4

When connecting the electrical equipment to the suction unit, ensure that the sum of the electrical power from the connected electrical appliances does not exceed the maximum permissible total power (see chapter 8 "Tech. Data").

4.7 External Exhaust Air Duct

The exhaust air can be transported out of the laboratory via an external exhaust air duct (see accessories).

The installation instructions are included in the external exhaust air duct.

When using suction devices in conjunction with an external exhaust air duct, a large amount of air is extracted from the room per hour.

This can lead to a negative pressure, whereby, when using air-dependent fireplaces with gas, liquid or solid fuels, poisonous gases (e.g. carbon monoxide) will be sucked into the (working) space.

Depending on the structural situation, it is therefore essential to ensure there is an additional air supply or negative pressure monitoring which is checked by the appropriate institutions (e.g. chimney sweep or heating engineer).

5 Operation

The suction is controlled by the keys on the control panel (Fig. 2).

5.1 Switching On

The suction unit is switched on and off via the on / off switch (3).

After activation:

♦ The suction unit performs an automatic filter cleaning (see chapter 5.3).

Then the unit is in standby mode.

From the standby mode the unit can be changed to:
- operation, with one or both suction channels (see chapter 5.2);
- programming (see chapter 5.4);
- standby mode (see chapter 5.1.1).

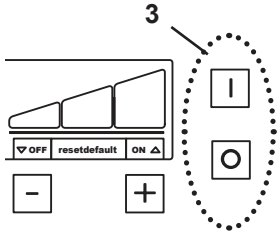

Fig. 5

5.1.1 Standby

In the standby mode the display is dark.

⇒ For the duration of 2 minutes, no key pressed and no suction channel opened.

♦ Change to standby mode.

⇒ Press any key.

or

⇒ Switch on an electrical appliance connected to the suction point. In this case, the suction channel is opened immediately and the suction turbine is switched on.

♦ Standby mode is exited.

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5.2 Operation

After switching on, the suction unit is in standby mode.

If a suction channel is activated, the suction turbine switches on with the last set suction power level and the associated pinch valve is opened.

If the second suction channel is then activated, the second pinch valve opens.

The opening / closing of the suction channels takes place:

- Automatically:
  An electrical appliance connected to a device socket (8A / 8B, Fig. 1) is switched on / off.
- Manually:
  By pressing a suction channel key (29).

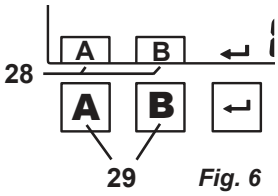

Fig. 6

The letters of the opened suction channels (28) are shown in the display.

If a connected device is switched on, the corresponding suction channel can NOT be closed manually with the suction channel key, but only by switching off the electrical device.

If the suction to a connected electrical appliance does not react as required (e.g. does not activate, even though a connected device is in operation) then the switch-on threshold for automatic operation has to be adjusted (see chapter 5.4.3).

5.2.1 Suction Power

The suction power for the suction unit can be set in 3 levels.

The current level is shown in the display (27).

Change the suction power:

⇒ Press the [-] key (31)

♦ Reduce suction

⇒ Press the [+] key (33)

♦ Increase suction

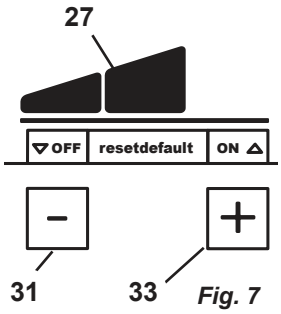

Fig. 7

The suction always starts with the last used suction level.

Adjustment of suction power:

The set suction level applies to all suction channels. Therefore, the power of the suction turbine is automatically readjusted when a further suction channel is opened or closed, in order to reach the adjusted suction power at the opened suction channels.

To disable the adjustment of the suction power:

In standby mode:

⇒ Press the [+] / [-] keys (33 / 31) at the same time for a duration of 3 sec.

♦ By pressing the [-] key (31), the display shows “OFF”.

The deactivated adjustment of the suction power is permanently indicated by the “OFF” indicator above the [-] key (31).

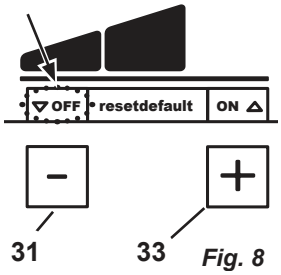

Fig. 8

To activate the adjustment of suction power:

In standby mode:

⇒ Press the [+] / [-] keys (33 / 31) at the same time for 3 sec.

♦ The display will delete “OFF” in the display field above the [-] key (31).

If the suction performance is deactivated, the suction power at a suction channel can drop noticeably when the second suction channel is activated.

When suction level “3” and both suction channels are opened, only a reduced suction capacity is available at the suction channels, since the performance of the suction turbine cannot be further increased.

5.3 Filter Cleaning

In order to ensure maximum suction performance, the suction unit has a device for cleaning the fine filter unit. The cleaning takes approx. 8 sec.

The cleaning is carried out:

- Automatically:
  - After the unit is switched on;
  - With insufficient suction power (flow velocity falls below an internal limit value);
  - If the unit has been operated for more than 8 hours (turbine running time) without switching it off;
- Manually, e.g. before removing the dust drawer to empty it (see chapter 6.2).

5.3.1 Automatic Filter Cleaning

- ♦ Suction turbine is stopped.
- ♦ The symbol “dust drawer” blinks.
- ♦ “CLEAn” is shown in the display.
- ♦ An acoustic signal indicates the cleaning is about to commence.
- ♦ The cleaning is carried out.
- ♦ Suction turbine starts again.

5.3.2 Manual Filter Cleaning

⇒ Press the Enter key (30) and keep pressed for 2 sec.

- ♦ The filter cleaning is performed.

5.4 Setting the Parameter

On delivery, there are parameters set, which in most cases, make it possible to work with the suction unit without problems. Only in individual cases, if this is not possible, the parameters can be changed.

The setting of various parameters and the execution of a self-diagnosis are carried out in the programming mode.

The display indicates which parameters are set:

Perform self-diagnosis (see chapter. 6.4)

Acoustic signal (buzzer) on / off

Time interval for full display (full) in the dust drawer

Set switch-on interval for automatic (calibration)

Set after-run (time) for the suction turbine

To set the different parameters, press the Menu key (20, Fig. 2). The settings are confirmed and saved with the Enter key (30, Fig. 2). Successful saving is acknowledged with an acoustic signal.

If a change is not accepted, pressing the Menu key (20) will abort the programming.

If the word “Default” (32) appears in the display, you can reset the value to the factory setting (see chapter 6.8) by pressing the [-] and [+] keys at the same time.

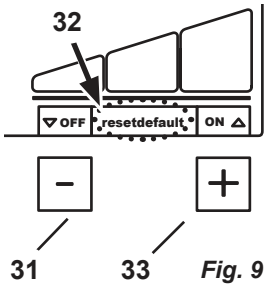

Fig. 9

5.4.1 Acoustic Signal

Various settings and warnings are confirmed or indicated by an acoustic signal. This beep can be switched on and off. The acoustic signal symbol (22) indicates whether is on or off.

To change:

⇒ Press the Menu key (20) 2 x.

- ♦ The symbol acoustic signal (22) blinks.

⇒ Switch the acoustic signal on or off with the [+] / [-] keys.

⇒ Press the Enter key (30).

- ♦ Save changes, exit programming mode.

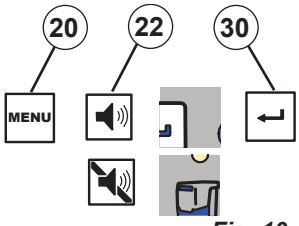

Fig. 10

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5.4.2 Time Interval for “Full” Display Dust Drawer

After reaching a set time interval, a request appears to empty the dust drawer.
You can select between 5 times (factory setting 50 hrs).

Time interval / hrs	Value in display (24, Fig. 2)
2	1
5	2
10	3
50	4
100	5

To change:

⇒ Press the Menu key (20) 3 x.
- ♦ The symbol dust drawer full (23) blinks.
- ♦ A number is shown in the display (see table).

⇒ Use the [+] / [-] keys to increase / decrease the value.

⇒ Press the Enter key (30).
- ♦ Save changes, exit programming mode.

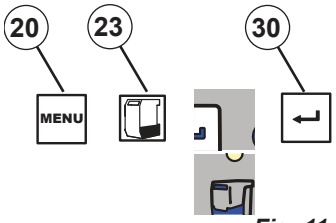

Fig. 11

In devices which generate large amounts of dust (e.g. sandblasting units) the time interval for the full display of the dust drawer should be set to 5 hours, if necessary, 10 hours.

5.4.3 Swtich-on Theshold for Automatic Operation

⇒ On delivery, the switch-on thresholds are provided for the two suction channels, which enable trouble-free operation with most handpieces.

⇒ If the suction function does not react correctly to a connected handpiece, the switch-on threshold can be set individually for each suction channel.

⇒ Press the Menu key (20) 4 x.
- ♦ The symbol - set switch-on threshold - (24) blinks.
- ♦ The letters A and B blink.

⇒ Press the suction key (29) of the suction channel which is to be set.
- ♦ The letter of the selected suction channel is displayed.
- ♦ The display shows “OFF”.

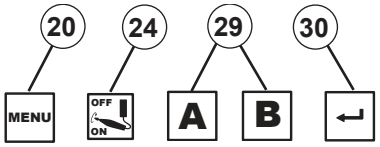

Fig. 12

⇒ Switch this off in an electrical device without standby mode

⇒ In an electrical device with a standby mode (e.g. handpieces), switch to standby mode (e.g. with a handpiece, switch only the control unit on without activating the handpiece).

⇒ Press the Enter key (30).
- ♦ The display shows “ON”.

⇒ Switch this on in an electrical device without standby mode

⇒ For handpieces, operate this at the speed at which the suction is to be started and run for approx. 3 - 5 seconds (so that overflow during start-up is not detected).

⇒ Press the Enter key (30) (whilst the handpiece is still running).
- ♦ The setting is saved.

⇒ Select the next suction channel to be set or exit with the Menu key (20).

For devices with standby mode, these should be switched on approx. 5 minutes before setting to avoid incorrect measurements.

If an error occurs during the setting of the switch-on threshold, the display will show “Cal” and an acoustic signal will sound 2 x. Set the changes again.

5.4.4 After-run Time of the Suction Turbine

After-run time = The period of time between switching a connected device off and the closing of the corresponding suction channel (= pinch valve).
A distinction is made between three after-run times, which can be set independently of one another:

- After-run time suction channel A ➔ only suction channel A is open:
  Time, until the pinch valve of suction channel A closes and the suction turbine switches off.
- After-run time suction channel B ➔ only suction channel B is open:
  Time, until the pinch valve of suction channel B closes and the suction turbine switches off.
- After-run time suction channel A and B ➔ both suction channels, A AND B, are open:
  Time, until the pinch valve of a suction channel closes and the suction performance for the other suction channel is adjusted.

In order to prevent the suction from being switched on / off too often, or the suction performance to be adjusted too frequently in the case of short interruptions (for example when working with the handpiece), a higher time value should be selected.

To change:

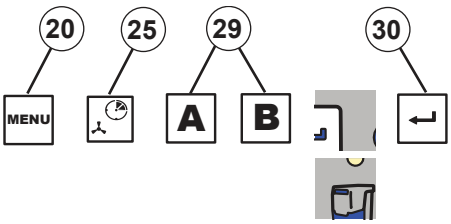

Fig. 13

⇒ Press the Menu key (20) 5 x.

♦ The symbol - after-run time - (25) blinks.

Setting after-run time suction channel A:

♦ The letter A is shown.

♦ In the display, the currently set after-run time for suction channel A is shown in seconds.

⇒ Set the required after-run time via the [+] / [-] keys.

⇒ Press the Enter key (30).

Setting the after-run time suction channel B:

♦ The letter B is shown.

♦ In the display, the currently set after-run time for suction channel B is shown in seconds.

⇒ Set the required after-run time via the [+] / [-] keys.

⇒ Press the Enter key (30)

Setting the after-run time suction channel A and B:

♦ The letters A and B are shown.

♦ In the display, the currently set after-run time is shown in seconds.

⇒ Set the required after-run time via the [+] / [-] keys.

⇒ Press the Enter key (30).

The setting after-run time can be exited at any time before or after saving the entered value via the Menu key (20).

6 Cleaning / Maintenance

The device does not contain any parts that require maintenance.
Opening the device other than described in the instructions is not permitted!

6.1 Cleaning

To clean the device wipe only with a damp cloth.

Do not use and solvent-based or abrasive cleaning agents.

6.2 Empty Dust Drawer

After reaching the set time interval (see chapter 5.4.2), the dust drawer is requested to be emptied:

♦ An acoustic signal sounds 3 x.

♦ The symbol “dust drawer full” is shown.

♦ In the display “FULL” is shown.

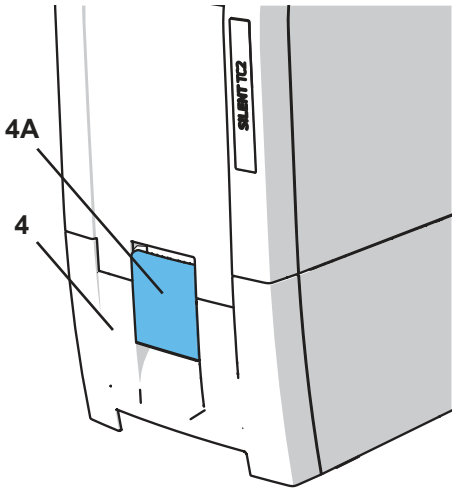

Fig. 14

Before removing the dust drawer, a filter cleaning function should be performed:

⇒ Press Enter key (30) for 2 seconds.

♦ The filter cleaning function is performed.

After the filter cleaning has finished:

⇒ Unlock the dust drawer with the clamp fastener (4A).

⇒ Pull the dust drawer (4) forward and empty.

⇒ Replace the dust drawer again until it locks into place.

⇒ Close the clamp fastener (4A).

⇒ Press the Enter key (30) (counter for recording the time interval is reset).

♦ Acoustic signal acknowledges the information.

♦ Dust drawer display (23) is deleted.

If the dust drawer is not emptied, the “Dust drawer full” and “FULL” symbols are still shown in the display. After switching the device off and on again, a 3 x acoustic signal is used to indicate the emptying of the dust drawer.

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6.3 Change Fine Filter

The effectiveness of the filter cleaning is determined by monitoring the flow rate (internal pressure sensor).
If a filter cleaning is required several times in succession after less than 2 hours, this means that the fine filter is so highly clogged that the filter cleaning does not show sufficient effect and the fine filter has to be changed.

This is indicated as follows:

- ♦ The display shows “FILt”
- ♦ For a period of 15 min., 2 long beeps are sounded for 3 min at a time.

The error message can be switched off by switching off the suction.

If requested to change the fine filter or the suction performance does not improve substantially or only for a short period, the fine filter must be changed soon.
Further operation can lead to damage to the device.

When replacing the fine filter, pay attention to the correct fit, otherwise leaks will occur. Please refer to the assembly instructions at the end of the manual, which are also included with the new fine filer.

6.4 Self-diagnosis

With the help of the self-diagnosis, the control system checks the function of the turbine and pinch valves as well as parts of the electronics.

Self-diagnosis can be started manually.

If no fault is detected, the suction is ready for operation after the self-diagnosis has finished.

If an error is detected, an indication is shown in the display.

Perform self-diagnosis:

⇒ Press Menu key (20) 1 x.

- ♦ The symbol - self-diagnosis - (21) blinks.

⇒ Press Enter key (30).

- ♦ Self-diagnosis starts.
- ♦ The self-diagnosis symbol is shown in the display and a dash flashes over the screen.
- ♦ The suction turbine runs at different suction levels and the pinch valves open and close in various combinations.

No error:

- ♦ Suction is in standby mode.

Error occurred

- ♦ The error is shown in the display.

⇒ Solve error (see chapter 7).

⇒ Press Enter key (30).

6.5 Clean Compressed Air Filter

The compressed air filter is integrated in the compressed air connection tube.
A clogged compressed air filter affects the safe function of the pinch valves, since these are no longer reliably closed. This can lead to reduced suction performance at the suction channel in use or acknowledged as leakage by the control.

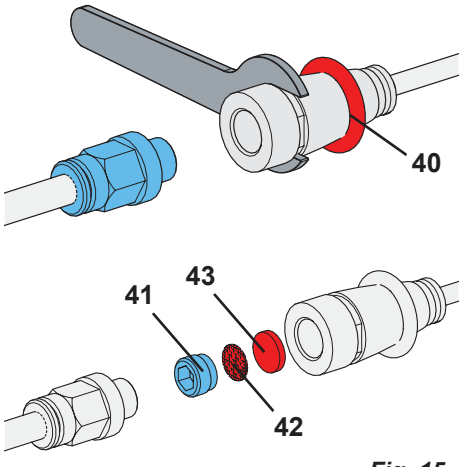

Fig. 15

To clean:

⇒ Detach from compressed air connection.

⇒ Roll the rubber ring (40) back.

⇒ Unscrew the filter housing (screwdriver SW13 mm), using the supplied special screwdriver on the filter housing.

⇒ Screw out the sleeve (41) with an Allen key.

⇒ Remove sieve (42) and filter liner (43).

⇒ Replace with a new filter liner and sieve, pay attention to the correct sequence.

⇒ Screw in the sleeve and tighten by hand.

⇒ Screw the filter housing closed.

⇒ Replace the rubber ring.

6.6 Fuses

The protection of the suction device is achieved by two device protection switches (10, Fig. 1).

A triggered device protection switch is reset by depressing the button.

Repeated triggering of a device protection switch is caused by a defect in the suction device. Send the device in for repair!

6.7 Spare Parts

You can find components subject to wear and the spare parts on the spare part list in the internet at **www.renfert.com/p918**.

Enter the following item number: EC2: 29370000, TC2: 29360000.

The components excluded from the warranty (such as consumables or parts subject to wear and tear) are marked on the spare part list.

Serial number and date of manufacturing are shown on the type plate of the unit.

6.8 Factory Settings

⇒ Switch device off (3, Fig. 1).

⇒ Press the [-] key (31) and [+] key (33) at the same time.

⇒ Switch device on and press the keys for 3 seconds.

- ♦ "rES" is shown in the display.
- ♦ All values are reset to the factory settings.
- ♦ An acoustic signal confirms the reset

Factory settings:

Function / Characteristic	Setting range	Factory setting
Operating mode	Automatic mode / Permanent operation	Automatic mode
Suction level	1 - 3	1
Time interval	2 - 100 hrs	50 hrs
After-run time	0 – 30 sec.	3 sec.
Switch-on threshold (automatic mode)	1 - 100 W	8 W

7 Troubleshooting

Trouble	Reason	Solution
An acoustic signal is emitted, the suction unit is switched off and a filter cleaning is performed	• The internal flow velocity limit was not reached.	• Repeat work after cleaning is finished.
	• After 8 hours of operation (turbine air time) without switching off, a filter cleaning is carried out.	• Switch off devices at the end of each working day at the on / off switch (3, Fig. 1) ausschalten.
After switching on, the display shows "Dust drawer" (23, Fig. 2) and a 3 x acoustic signal is heard.	• The time interval for emptying the dust drawer has expired and the dust drawer has not yet been emptied.	• Empty dust drawer and confirm by pressing the Enter key (30, Fig. 2).
	• The emptying of the dust drawer has not yet been confirmed.	• Confirm emptying the dust drawer by pressing the Enter key (30, Fig. 2).
"Cal" is shown in the display.	• No switch-on threshold can be determined. At the selected rotational speed on the handpiece, the difference between stand-by current and operating current is too low.	• Adjust the switch-on threshold to a higher speed on the handpiece.
	• No switch-on threshold can be determined.	• Operate the device manually (see chapter 5.2).
Air" is shown in the display.	• During self-diagnosis a lack of compressed air was detected.	• Check the air pressure connection. When compressed air is available again, clear error message pressing the menu key (20).

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Trouble	Reason	Solution
“HOT” is shown in the display.	• The electronics have become overheated.	• Switch off the device and let it cool down. • Provide adequate cooling, e.g. - Chapter 4.2. - Use external exhaust air duct (see chapter 4.7). - Change the fine filter (see accessories as well as chapter 6.3).
“ELEC” is shown in the display.	• Leakage: Dust drawer not airtight.	• Check the correct fit of the dust drawer (see chapter 6.2).
	• Leakage: Second channel open although it should be closed.	• Check compressed air pinch valves. • Clean the air filter (see chapter 6.5). • Check that the pinch valve in the unused channel is closed.
	• Turbine does not run even though electronics have been switched on.	• Check whether the turbine cable is properly plugged in (especially after changing the turbine).
	• Faults in electronics.	• Contact Renfert / Service.
“FILt” is shown in the display.	• The fine filter is so heavily clogged that the filter cleaning does not show sufficient effect.	• Change the fine filter (see accessories as well as chapter 6.3).
Dust drawer over full.	• Time interval to the “FULL” display of the dust drawer too high.	• Set a shorter time interval (see chapter 5.4.2).
The signal for emptying the dust drawer appears, even though it is not yet full.	• The set time interval to the “FULL” dust drawer is too low.	• Set a longer time interval (see chapter 5.4.2).
The suction performance is insufficient.	• Suction performance is set too low.	• Select a higher suction level.
	• Blockage in the Suction tube.	• Check suction tube.
	• High loss of suction due to unfavorable tube position.	• Read instructions on connection to the extraction point (see chapter 4.5).
	• Leakage: Dust drawer not airtight.	• Check the correct fit of the dust drawer (see chapter 6.2).
	• Leakage: Second channel open although it should be closed.	• Check pinch valves in compressed air. • Check that the pinch valve in the unused channel is closed.
	• Fine filter blocked	• Switch the device off and on again, so that a filter cleaning is carried out. • Change fine filter (see chapter 6.3) (if filter cleaning does not improve the performance).
Electrical equipment connected to the appliance socket cannot be operated.	• Suction not switched on.	• Switch suction on.
	• The device fuse has triggered because the power of the connected electrical device is too high.	• Observe the maximum connection capacity of the appliance socket. • Connect the electrical appliance to a separate socket and operate the extraction unit manually (see chapter 5.2).
Suction starts even though the electrical appliance connected to the socket is not being used.	• Switch-on threshold for automatic operation is too low.	• Adjust the switch-on threshold for automatic operation (see chapter 5.4.3).
Suction does not stop when the electrical appliance is switched off.	• Switch-on threshold for automatic operation too low.	• Adjust the switch-on threshold for automatic operation (see chapter 5.4.3).
Suction does not start even though the electrical appliance connected to the socket is in used.	• Switch-on threshold for automatic operation too high.	• Adjust the switch-on threshold for automatic operation (see chapter 5.4.3).

Trouble	Reason	Solution
Fuse triggers when a connected electrical device is switched on.	• Power consumption of the connected device too high.	• Observe the max. connection value (see chapter 8).
Suction stops suddenly in continuous or automatic mode.	• Suction turbine is overheated. • Suction turbine is defect.	• Switch off the device and leave to cool for at least 60 min. • Check whether suction tube is blocked, eliminate blockage. • Switch the device off and then on again to perform a filter cleaning. Change fine filter (see chapter 6.3) if filter cleaning does not improve the performance. • Change Suction turbine.
After the suction motor was changed, the suction unit stopped functioning or stops suddenly.	• The plug from the suction motor is not sufficiently clicked in place.	• Connect the suction motor plug correctly. Ensure that the plug is fitted correctly and clicked into place by pulling it.

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8 Technical Data

	SILENT EC2			SILENT TC2
	2937 0000	**2937 1000**	**2937 2000**	**2936 0000**
Working Voltage:	**230 V**	**120 V**	**100 V**	**230 V**
Permissible mains voltage:	220 - 240 V	120 V	100 V	220 - 240 V
Mains frequency:	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Suction turbine power: *)	1610 VA	1440 VA	1150 VA	850 VA
max. connecting power: *)	1840 W	430 W	350 W	2000 W
Total connected power: *)	3450 W	1800 W	1500 W	2850 W
Mains input fuse:	2 x 15 A (T)			
max. connection pressure:	8 bar [116 psi]			
min. connection pressure:	4.5 bar [65 psi]			
LpA **) (at max. volume flow):	55 dB(A)			
Number of suction hoses:	2			
Ø Suction fittings: - internal: - external:	45 mm [1.77 inch] 50 mm [1.97 inch]			
max. Volume flow:	3980 l/min [2.34 ft³/s]			
Vacuum pressure, max.:	257 hPa [3.73 psi]	262 hPa [3.8 psi]	170 hPa [2.47 psi]	200 hPa [2.9 psi]
Fine particle filter: - Filter surface area, approx.: - Filterquality:	0.9 m² [1390 sq inch] Class M according to EN 60335-2-69			
Fill level dust drawer, approx.:	7 l [1.85 US gal]			
Dimensions (Width x Height x Depth):	285 x 535 x 540 mm [11.2 x 21.1 x 21.2 inch]			
Weight (empty), approx.:	18.5 kg [40.8 lbs]			22,8 kg [50.3 lbs]

*) At nominal voltage
**) Sound pressure levels according to EN ISO 11202

9 Warranty

Provided the unit is properly used, **Renfert warrants all components for 3 years.**

SILENT EC2:

The suction motor is guaranteed for 3 years, or a maximum of 5000 operating hours (engine running time).

SILENT TC2:

The suction motor is guaranteed for 3 years, or a maximum of 1000 operating hours (engine running time).

Warranty claims may only be made upon presentation of the original sales receipt from the authorized dealer.

Parts which are subject to natural wear and tear (wear parts) and consumables are excluded from the guarantee. These parts are marked in the spare part list.

The warranty is voided in the case of improper use; failure to observe the operating, cleaning, maintenance and connection instructions; in case of independent repairs or repairs by unauthorized personnel; if spare parts from other manufacturers are employed, or in case of unusual influences or influences not in compliance with the utilization instructions.

Warranty service shall not extend the original warranty.

10 Disposal Information

10.1 Disposing of Consumables

Full dust bags and filters must be disposed of under compliance with locally applicable regulations. Depending on the material trapped by the filters, protective gear may need to be worn during disposal.

10.2 Disposing of the Unit

The unit must be disposed of by an authorized recycling operation. The selected firm must be informed of all possible health hazardous residues in the unit.

10.2.1 Disposal Instructions for countries in the EU

To conserve and protect the environment, prevent environmental pollution and improve the recycling of raw materials, the European Commission adopted a directive that requires the manufacturer to accept the return of electrical and electronic units for proper disposal or recycling.

Within the European Union, units with this symbol should not therefore be disposed of in unsorted domestic waste.

Please contact your local authorities for more information on proper disposal.