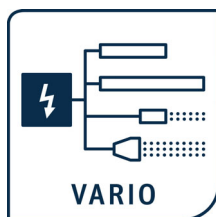


Operating Instructions



F01098y



pointCLEAN

Static Combi Cleaner SCC-P-P series

BA-en-2087-2507



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Dear customer

The Static Combi Cleaner pointCLEAN is a high-power ionization cleaning station for the non-contacting removal of dust and dirt deposits on three-dimensional or structured surfaces.

Static dust is discharged and blown off by a rotating nozzle with two air outlets. The rotation creates a pulsating effect on the surface. The nozzle diameter and the angle of the air jets can be adjusted independently of each other.

The effective elimination of static charges from cleaned surfaces prevents dust from settling back on product surfaces. The cleaning unit with concentric suction flow is designed for integration into flowing manufacturing processes; a relative movement between the component and the point-CLEAN is required for the desired cleaning effect.

Applications

- Electronics manufacturing
- Precision mechanics and optical industry
- Surface finishing
- Plastics industry
- Wood processing

Benefits in production

- Improved, consistent quality
- Higher productivity
- No reworkig
- Non-contact, dry cleaning process

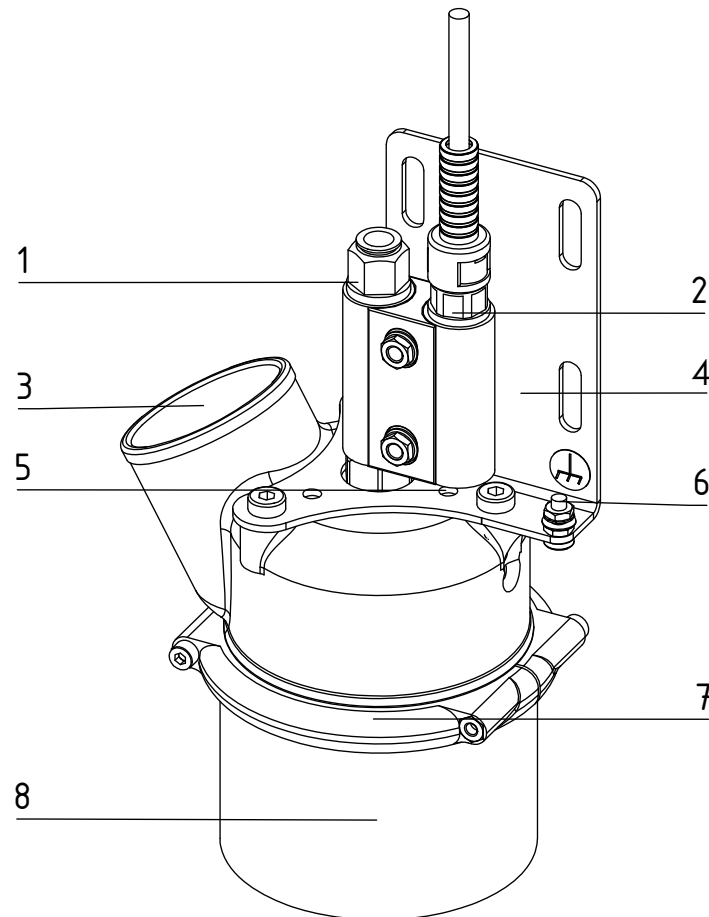
Engineering

- Optimised flow guidance, saves compressed air and extraction air volume
- Integrated discharge technology for perfect discharging performance and ultimate safety
- Long range
- Robust design
- Facilitated integration into production lines
- Easy installation
- Compact construction
- Adaptable for smallest components up to max. 70 mm width
- Ion balance adjustable in conjunction with Eltex power supply units type ES61 and P
- Shortenable apron for distance adjustment
- Bracket can be mounted in three positions
- Dischargeable enclosure
- Integrated speed monitoring, optional

Please read the operating instructions carefully before starting the instrument. This will help you prevent personal injuries and damage to property.

Please give us a call if you have any suggestions, proposals or ideas for improvements. We greatly appreciate the feedback from the users of our appliances.

1. Outline of appliance



*Fig. 1:
Overview Static
Combi Cleaner
pointCLEAN*

- 1 Compressed air connection
- 2 High voltage connection (non-detachable)
- 3 Suction connection
- 4 Mounting plate
- 5 Position speed sensor
- 6 Unit grounding bolt
- 7 Mounting clip
- 8 Suction apron (in various lengths) or position for mounting flange

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2. Safety

The units have been designed, built and tested using state-of-the-art engineering, and have left the factory in a technically and operationally safe condition. If used improperly, the units may nevertheless be hazardous to personnel and may cause injury or damage. Read the operating instructions carefully and observe the safety instructions.

For warranty conditions, please refer to the General Terms and Conditions (GTC), see www.eltex.de.

2.1 Identification of risks and hazards

Possible risks and hazards resulting from the use of the units are referred to in these operating instructions by the following symbols:



Warning!

This symbol appearing in the operating instructions refers to operations which, if carried out improperly, may result in serious personal injuries.



Caution!

This symbol appearing in the operating instructions refers to operations which, if carried out improperly, may result in damage to property.

2.2 Contact protection

The site of installation and/or use of the units is outside the control of Eltex, contact protection against inadvertent contact of the bars and of live components by personnel as specified by the employer's liability insurance association may have to be provided (e.g. DGUV V3 in Germany). Contact protection devices made of conductive material must be grounded.

2.3 Inspection of the protective resistors - contact protection

The function and the appearance of the protective resistors must be inspected at regular intervals. The inspection intervals are specified in the accident prevention regulations, as amended (e.g. in Germany DGUV V3).

The function of the series resistors must be checked using a suitable measuring device. The test voltage must be 1,000V. The measured resistance between the high-voltage connection and the individual emission tip must not fall below 80 MOhm and not exceed 120 MOhm.

Please additionally observe the operating instructions for the ion blower nozzles R36, BA-en-2043.

2.4 Technical advance

The manufacturer reserves the right to make changes to the technical specifications without prior notice in order to adapt the units to state-of-the-art engineering. Eltex will provide the latest information on any changes or modifications in the operating instructions on request.

2.5 Proper use

The Static Combi Cleaner may be used only as an ionization cleaning station for the non-contacting cleaning of surfaces and for cleaning and drying work pieces and tools.

The integrated ion blower nozzles R36 may only be operated with the Eltex power supply units with max. 6 kV AC. Only these allow optimum adaptation to the required operating conditions.

Other uses are not permitted. The manufacturers will not assume any liability and warranty if the units are used improperly or used outside the intended purpose.

Modifications or changes made to the devices are not permitted.

Use only original Eltex spare parts and equipment.

2.6 Work and operational safety



Warning!

Carefully observe the following notes and the complete [chapter 2 "Safety", page 6!](#)

- Before carrying out repairs, cleaning or maintenance work and before resetting after malfunctions, switch off the power supply and disconnect the mains supply voltage (see [chapter 5 "Maintenance", page 21](#), [chapter 5 "Maintenance", page 21](#)).
- Before carrying out any work involving the units, the machine which has the units fitted must not be in operation (see [chapter 5 "Maintenance", page 21](#), [chapter 5 "Maintenance", page 21](#)).
- Any work involving the units must be carried out by qualified electricians (see [chapter 5 "Maintenance", page 21](#), [chapter 6 "Troubleshooting", page 22](#)).
- For units with existing ground cables, these must be permanently connected to ground potential. The ground cable should have a minimum cross section of 1.5 mm² (see [chapter 3.8 "Connecting to ground", page 18](#)).
- In applications involving moving bars, the high voltage cable must be attached such that there is no cable movement near the connection zones of the devices (see [chapter 3.10 "Connecting the high voltage cable", page 18](#)).



- Seal unused connections with blanking plugs (see [chapter 3.10 "Connecting the high voltage cable", page 18](#))
- Check the units and the high voltage cables at regular intervals and before startup for any damage. Any damaged components must be repaired or replaced before continuing to operate the unit, or the units must be disabled.

Warning!

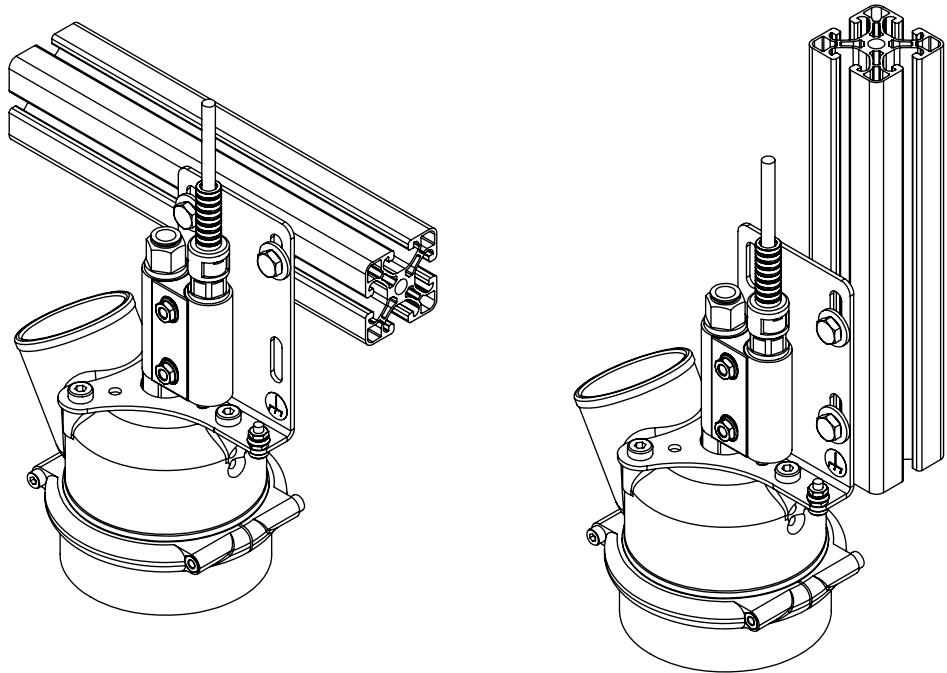
The cable is permanently fixed to the R36 ion blower nozzle and must on no account be changed; In the event of defects, please notify Eltex Service or return the unit for repair.

- The high voltage cable must be routed to make sure that it does not make contact with moving machine parts. Avoid mechanical deformations and bending radii smaller than 60 mm. The high voltage cable must not be installed on the floor, as it may break under load; the cable must also not be subjected to tensile stress (see [chapter 3.11 "Routing the high voltage cable", page 19](#)).
- The air hose must be routed to make sure that it does not make contact with moving machine parts. Avoid mechanical deformation and excessively small bending radii (see manufacturer's specifications); see [chapter 3.13 "Routing the air hose", page 19](#).
- Cleaned apparatuses air must be used as compressed air (see [chapter 3.14 "Compressed air properties", page 19](#)).
- To ensure that the permissible operating temperature is not exceeded, the blower nozzle must not be exposed to direct heat radiation (see [chapter 3.15 "Impact of heat radiation", page 19](#)).
- To avoid severe damage, keep other objects from hitting against the nozzle (see [chapter 4 "Operation", page 20](#)).
- Make sure that the units are clean at all times.
Dirt results in malfunctions and in premature wear of the units.
- When cleaning the units do not soak the units in solvent and do not damage the emission tips; allow the solvent to evaporate completely before restarting the unit (see [chapter 5 "Maintenance", page 21](#), [chapter 6 "Troubleshooting", page 22](#)).
- Do not touch the emission tips - risk of injury.
If the high voltage supply is connected, reflex responses to electrical irritation can lead to secondary accidents. The charging bar as such is safe to touch. If contact is made (single touch), the energy transferred is so low that there is no risk of injury.

3. Installation and Assembly

3.1 Installation

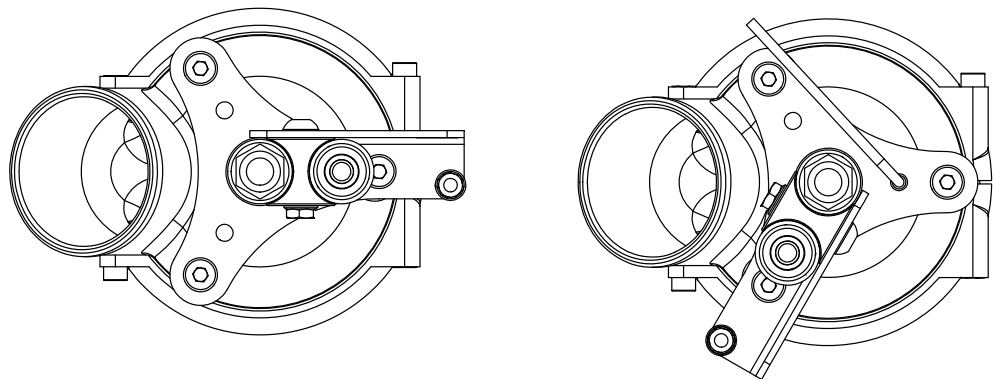
The cleaning unit can be attached to the mounting plate. The distance to the object is readjusted via the slotted holes.



*Fig. 2:
Mounting plate
attachment*

Z-118074by_4

The mounting plate can be rotated 120° in 3 positions.



*Fig. 3:
Rotating the
mounting plate*

Z-118074by_6

3.2 Connecting the suction line and suction volume

The unit is designed for a static conductive suction hose with a nominal diameter of 50 mm in a light version. (e.g. Airduc PUR 351 EC D=50 mm). Metal hose clamps must be grounded.

The suction volume should be around 10 to 20 times greater than the cleaning air supplied. For the design of the suction system, we recommend an air output of 120 Nm³/h at a negative pressure of 50 hPa (on an open suction line).

3.3 Adjusting the suction apron

The distance (A) of the rotation nozzle to the product in interaction with the air pressure must be adjusted individually. To prevent the dirt particles from reaching the surroundings, the apron should be guided as close as possible to the object or the support system. If the gap (C) is to 3 mm wide, complete suction is possible. If the gap is too small, the suction volume can be limited.

The screws of the mounting clip must be tightened up to the stop.

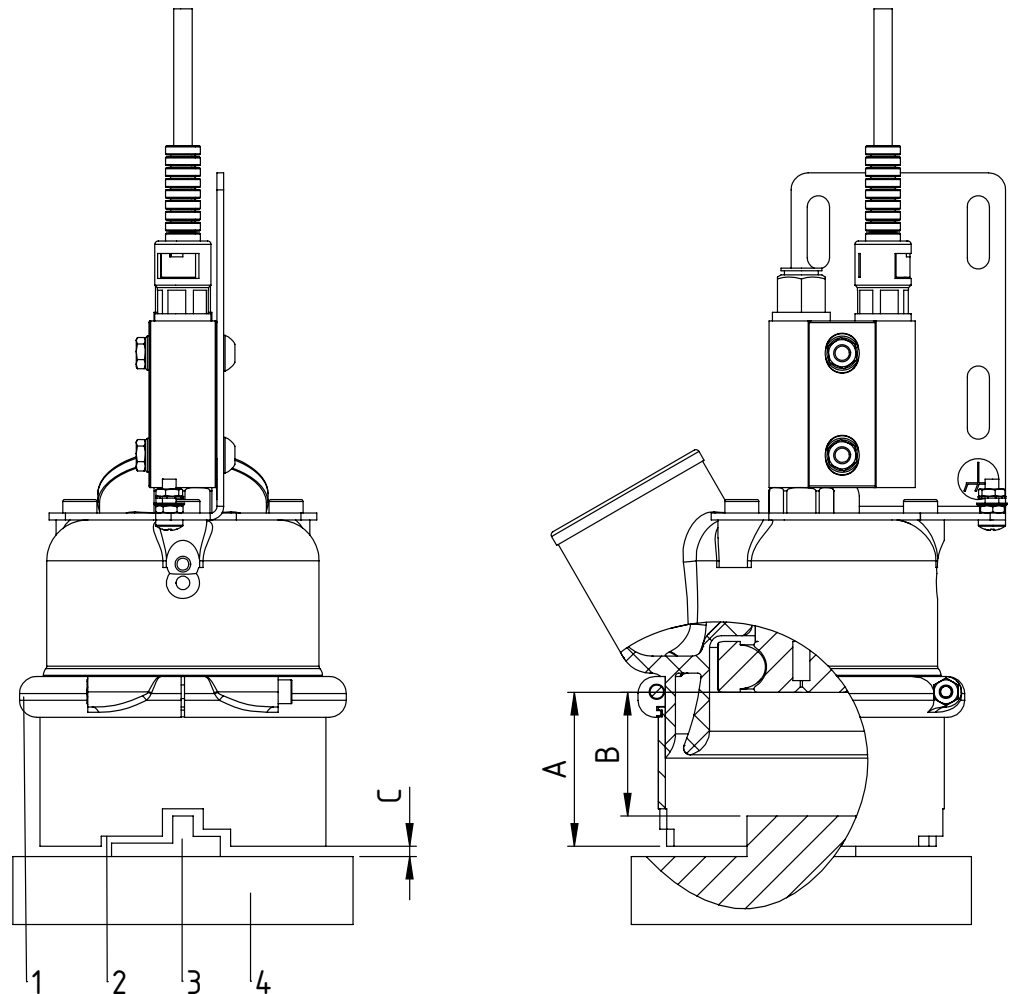


Fig. 4:
Apron adjustment

- A Nominal size of the apron (30, 45, 60, 75, 90 mm)
- B Effective distance (nozzle - workpiece level)
- C Suction gap between apron and workpiece
- 1 Mounting clip
- 2 Adapted contour of the suction apron
- 3 Workpiece (schematic)
- 4 Workpiece holder (schematic)

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It is intended that the gap (C) is set by the customer by positioning the appliance over the mounting plate or by moving the apron (max. 10 mm). For tall cleaning objects, it may be advisable to partially cut out the apron to keep the gap (C) narrow.

3.4 Application Mounting flange

Mounting flanges are useful if cleaning is to take place through a fixed working level (3). The appliance is attached to this level, which is designed by the customer for material and air routing, with four screws (4). Four M5 screws can be screwed through the flange (2) into the worktop or M6 screws can be screwed through the countersunk worktop into the flange.

To adjust the effective distance, the flange can be loosened and moved by up to 10 mm.

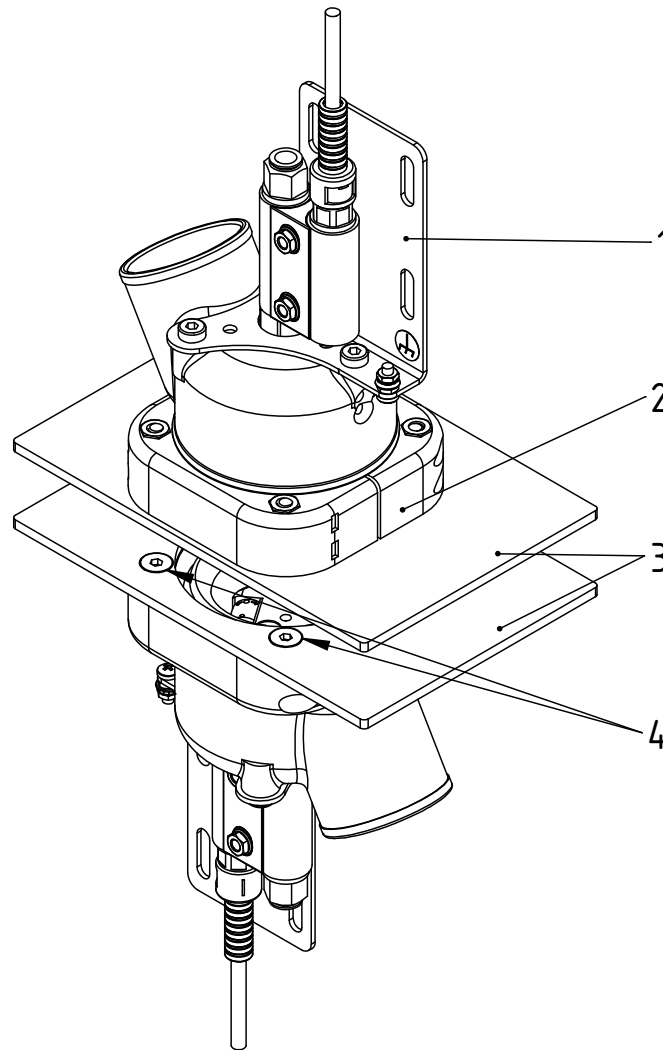


Fig. 5:
Mounting flange

- 1 Mounting bracket
- 2 Mounting flange
- 3 Customer-side working plane (air baffle)
- 4 Fixing screws M5 or M6

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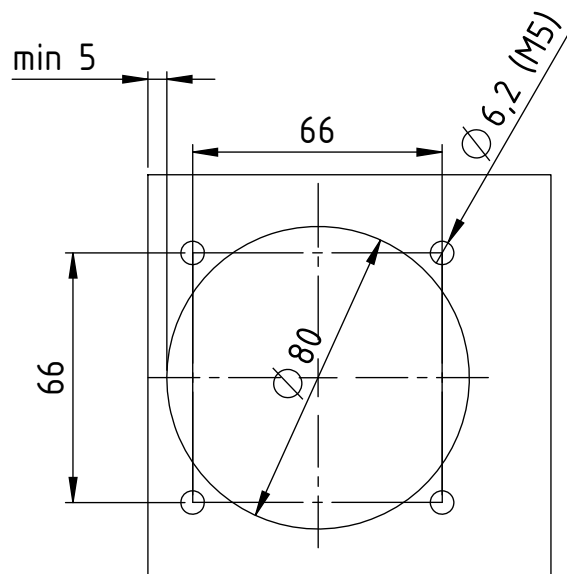


Fig. 6:
Hole pattern in the
air baffle

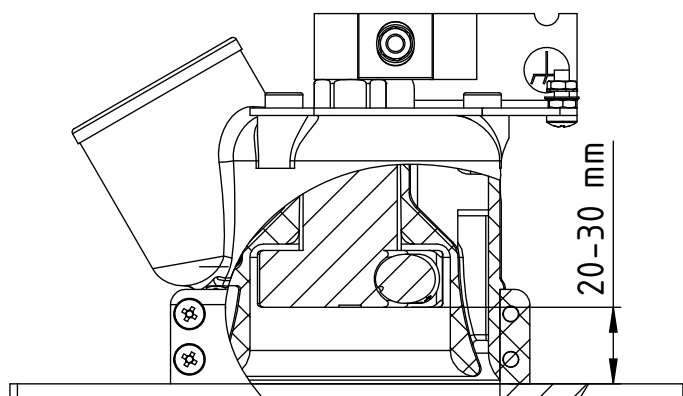


Fig. 7:
Distance
lower edge of
nozzle to
mounting surface
flange

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Z-118074dv_12

3.5 Adjusting the nozzle diameter

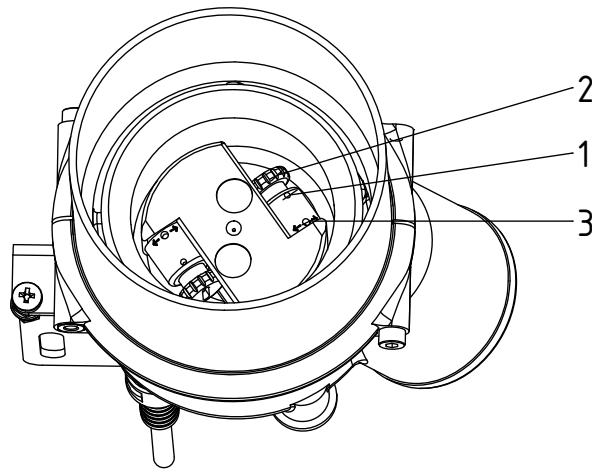
The nozzle openings (1) are marked with dotted brackets.

The nozzle diameters on the blower drum can be set as follows:

- (X) = nozzle closed
- (0.8) = 0.8 mm nozzle diameter
- (1.1) = 1.1 mm nozzle diameter
- (1.4) = 1.4 mm nozzle diameter
- (1.6) = 1.6 mm nozzle diameter

Turn the blower drum using the rotary knob (2) until it engages at the desired nozzle diameter (click sound).

Turn the blower drum until the desired nozzle diameter engages (clicking sound).



*Fig. 8:
Nozzle outlet
setting*

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3.6 Adjusting the blow-out angle

The blowing direction can be flexibly adapted to the respective cleaning task by adjusting the blow-out angle α .

- On delivery, the blow-out angles of both nozzles are set to 90°.
- Set the blow-out angle α with a 1.5 mm hexagon socket screw key.
- The direction of the hexagon socket screw key indicates the set nozzle angle (= blow-out angle α).
- For optimal cleaning with the SCC-P, we recommend setting both nozzles to 90°.

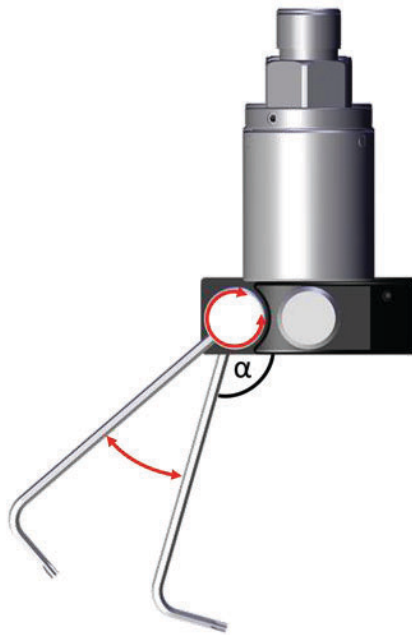


Fig. 9:
Blow-out angle

- The angle must not be so large that the jet blows onto the apron or the inner guide structures.
- If the angles of the nozzles are different, two different, concentric cleaning tracks are described. The cleaning effect can therefore be more homogeneous and multidirectional, but less intensive.
- A large angle leads to wide working areas with less intensity. This makes the ejection of particles more likely.
- A small angle can be useful for small objects. The intensity increases, the particle ejection decreases.

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3.7 Distance to the product surface

The optimum distance between the ion blower nozzle and the surface to be cleaned depends on the product geometry or product surface, the degree of soiling, the set nozzle diameter, the blowing pressure and the relative speed to the product surface. We recommend a distance of 30 - 60 mm.

3.7.1 Effective range for objects to be cleaned

Fig. 10 shows the white and grey area in which the objects to be cleaned are permitted.

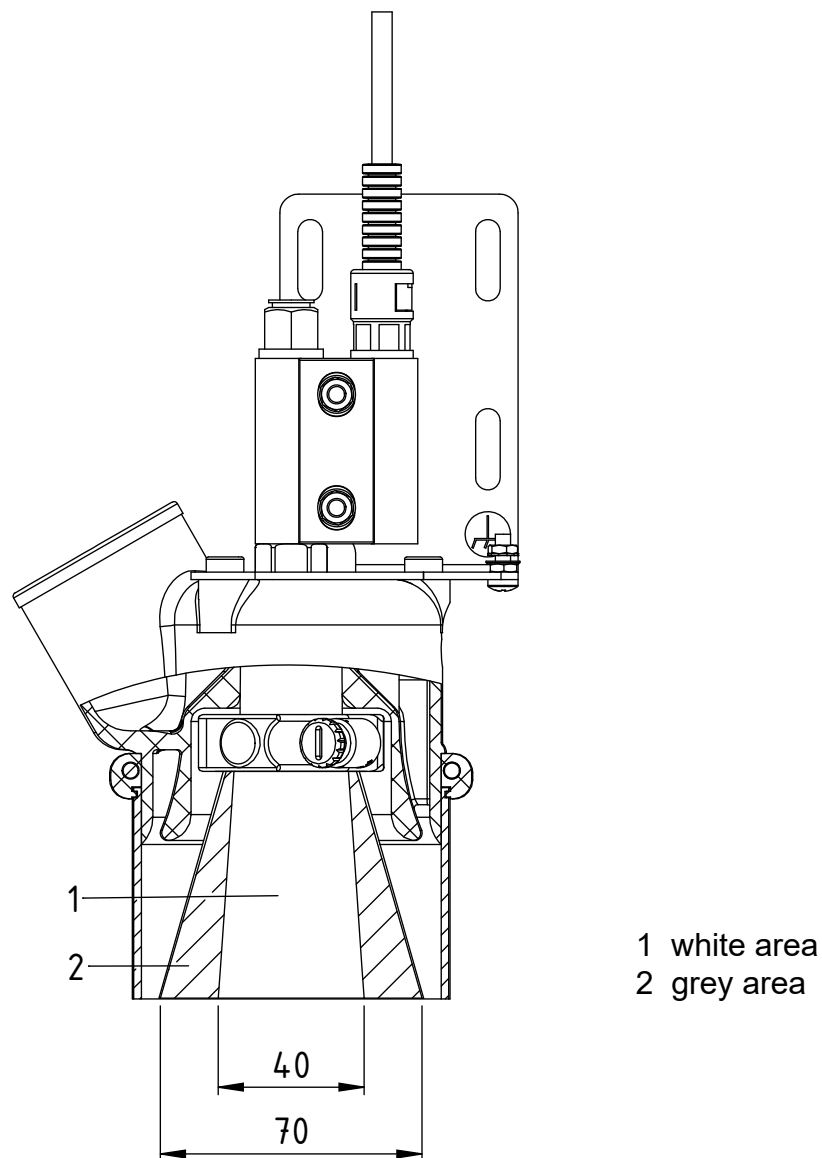


Fig. 10:
Effective range

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3.8 Connecting to ground

In units equipped with existing ground cables, the cables must be permanently connected to ground potential. The ground cable should have a minimum cross section of 1.5 mm².

3.9 Connecting the high voltage cable to the ion blower nozzle

The high voltage cable is fixed permanently to the ion blower nozzle.

3.10 Connecting the high voltage cable

Connecting the ES5x / ES6x / PI Eltex high voltage power supplies see Operating Instructions of the used unit.



Warning!

Electric shock hazard!

Work may be carried out only if:

- the supply voltage to the power supply unit has been disconnected,
- the machine is at standstill because the bars pick up charges if the substrat web is running.

Connect the discharging bars to the power supply using the prefabricated high voltage cable. Push the high voltage cables into the sockets up to the stop. Then secure the adapter in the socket with the clip provided (see Fig. 11).

Cables without flexible tube and cables with plug-type adapters are plugged in flush and secured with the clip.

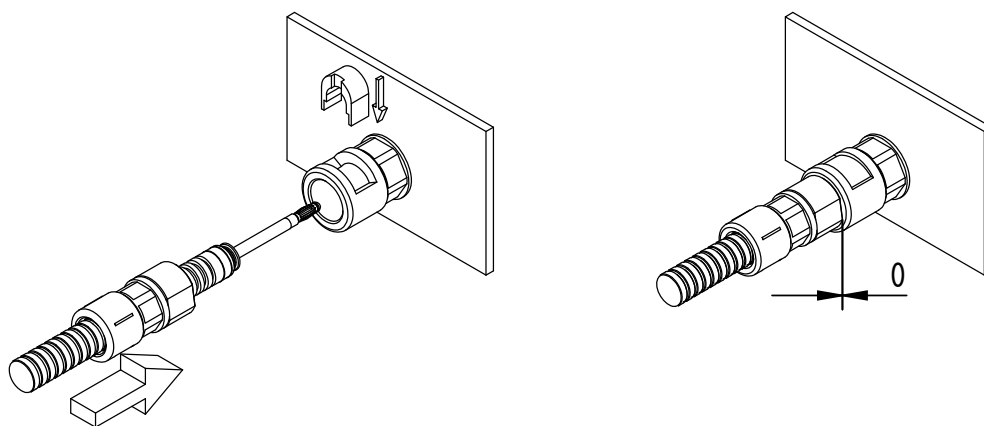


Fig. 11:
Connecting the
high voltage cable



Warning!

In applications involving moving bars, the high voltage cable must be attached such that there is no cable movement near the connection zones of the devices.

Seal unused connections with blanking plugs.



3.11 Routing the high voltage cable

The high voltage cable must be routed to make sure that it does not make contact with moving machine parts. Avoid mechanical deformations and bending radii smaller than 60 mm. The high voltage cable must not be installed on the floor, as it may break under load; the cable must also not be subjected to tensile stress.

3.12 Connecting the compressed air

The R36 ion blower nozzle is supplied with a plug-in connection for pneumatic hoses with an outer diameter of 8 mm. The plug-in connection can be replaced by other hose connections with a G 1/4" or R 1/4" screw thread.



3.13 Routing the air hose

The air hose must be routed to make sure that it does not make contact with moving machine parts. Avoid mechanical deformation and excessively small bending radii (see manufacturer's specifications).



3.14 Compressed air properties

The compressed air must be free from oil, water and dust. If the air supply hoses are very long, a water separator must be fitted immediately upstream from the ion blower nozzle, the ion blower pistol or the ion blower nozzle bar. Maximum rated air pressure depends on the used nozzle type (see chap. 7 Technical specifications).



3.15 Impact of heat radiation

To ensure that the permissible operating temperature is not exceeded, the blower nozzle must not be exposed to direct heat radiation.

Please also observe the operating instructions for the ion blower nozzles R36, BA-en-2043 for all connections.

4. Operation

4.1 Startup

Once all the connections have been made correctly, the system is operational and the supply voltage can be switched on at the power supply. The ion blower nozzle and the ionization cleaning station are operational now.

4.2 Operating voltage

The ion blower nozzles are supplied via the Eltex high voltage supply unit and are operated with an optimum operating voltage of 3.5 - 6 kV.

4.3 Function control

Use the Eltex Volt Stick or a glow-lamp voltage tester to check the proper function of the emission tips. Quote Article No. 109136 when ordering the Volt Stick from Eltex.



Caution!

To avoid severe damage, keep other objects from hitting against the nozzle!

5. Maintenance



Warning!

Electric shock hazard!

- Switch off the power supply unit and disconnect the supply voltage before carrying out any maintenance or repair work.
- The bars passively absorb energy from the moving substrate web. The high voltage cable must be plugged in or grounded to the generator. If the high voltage cable is disconnected, the plug is live (high voltage) and applies with full power on the plug; this may cause a spark discharge and may lead to a risk of injury. Disconnected high voltage plugs are not permitted or have to be grounded.
- The machine which has the units fitted must not be in operation.
- Repairs and maintenance work must be carried out by qualified electricians only.
- Disconnect the compressed air supply before carrying out any maintenance or repair work.

5.1 Cleaning

To ensure the trouble-free function of the ion blower nozzles, the surface from which the emission tip and the blown air exit must be clean and dry at all times. Dirty blower nozzles must be cleaned with a suitable solvent (benzine) and a brush with soft plastic bristles. To prevent the air exit holes from clogging up with dirt during cleaning, the compressed air ($0.3...0.5 \times 10^5$ Pa) must be switched on during cleaning.



Warning!

Risk of deflagration!

Allow the solvent to evaporate completely before restarting the unit.



Caution!

Do not damage the emission tips when cleaning.

5.2 Inspection of the protective resistors - contact protection

The function and the appearance of the protective resistors must be inspected at regular intervals. The inspection intervals are specified in the accident prevention regulations, as amended (e.g. in Germany DGUV V3).

The function of the series resistors must be checked using a suitable measuring device. The test voltage must be 1,000V. The measured resistance between the high-voltage connection and the individual emission tip must not fall below 80 MOhm and not exceed 120 MOhm.

Please additionally observe the operating instructions for the ion blower nozzles R36, BA-en-2043.

6. Troubleshooting



Warning!

Electric shock hazard!

- Switch off the power supply unit and disconnect the supply voltage before carrying out any maintenance or repair work.
- The machine which has the units fitted must not be in operation.
- Repairs and maintenance work must be carried out by qualified electricians only.
- Disconnect the compressed air supply before carrying out any maintenance or repair work.

For other malfunctions, see also the operating instructions for the power supply.

Fault	Cause	Measure
Efficiency of the application declines.	Dirt on ion blower nozzle / pistol / nozzle bar.	Clean ion blower nozzle / pistol with compressed air and a plastic brush. Grease, oil, inks, etc. on the blower nozzle / pistol must be cleaned off using a suitable solvent (benzine). Caution! Allow the solvent to evaporate completely before restarting the unit. Do not soak the blower nozzle / pistol in solvent.
	Short circuit in the high voltage cable.	If required, exchange the high voltage cable at the R36E ion blower nozzle. In the event of defective high voltage cables at the PR36 ion blower pistol and the LR36 ion blower nozzle bar, please notify Eltex Service or return the complete unit for repair. Do not replace or exchange the cable.
	Defective ion blower nozzle / pistol / nozzle bar.	Check the blower nozzle / pistol / nozzle bar for any damage caused by leakage currents. If more than one blower nozzle / pistol / nozzle bar is connected to the power supply, disconnect all devices and replace one after the other device to localize the defective blower nozzle / pistol / nozzle bar. Replace the defective device.

7. Technical specifications

Operating voltage	3.5 - 6 kV, 50 - 250 Hz
High voltage supply	via Eltex power supplies, operating voltage max. 6 kV AC
Operating ambient temperature	0...+60 °C (+32...+140 °F)
Ambient humidity	max. 70 % r. F., no dewing permitted
Contact protection	contact protected according to EN 61140
Air connection	Plug-in connection 8 mm
Air pressure	2.5 to max. 6×10^5 Pa dry, oil-free, filtered fineness of filtration < 20 µm
Dimensions	approx. 120 x 90 x 220 mm (L x W x H)
Weight	approx. 0.7 kg, without high voltage cable

Air Overpressure	D = 0.8	D = 1.1	D = 1.4	D = 1.6
[10 ⁵ Pa]	[Nm ³ /h]	[Nm ³ /h]	[Nm ³ /h]	[Nm ³ /h]
2.50	3.8	5.2	---	---
3.00	4.4	5.8	---	---
4.00	5.2	7.2	8.7	9.5
5.00	6.5	8.5	10.3	11.6
6.00	7.5	10.0	12.2	13.1



8. Dimensions

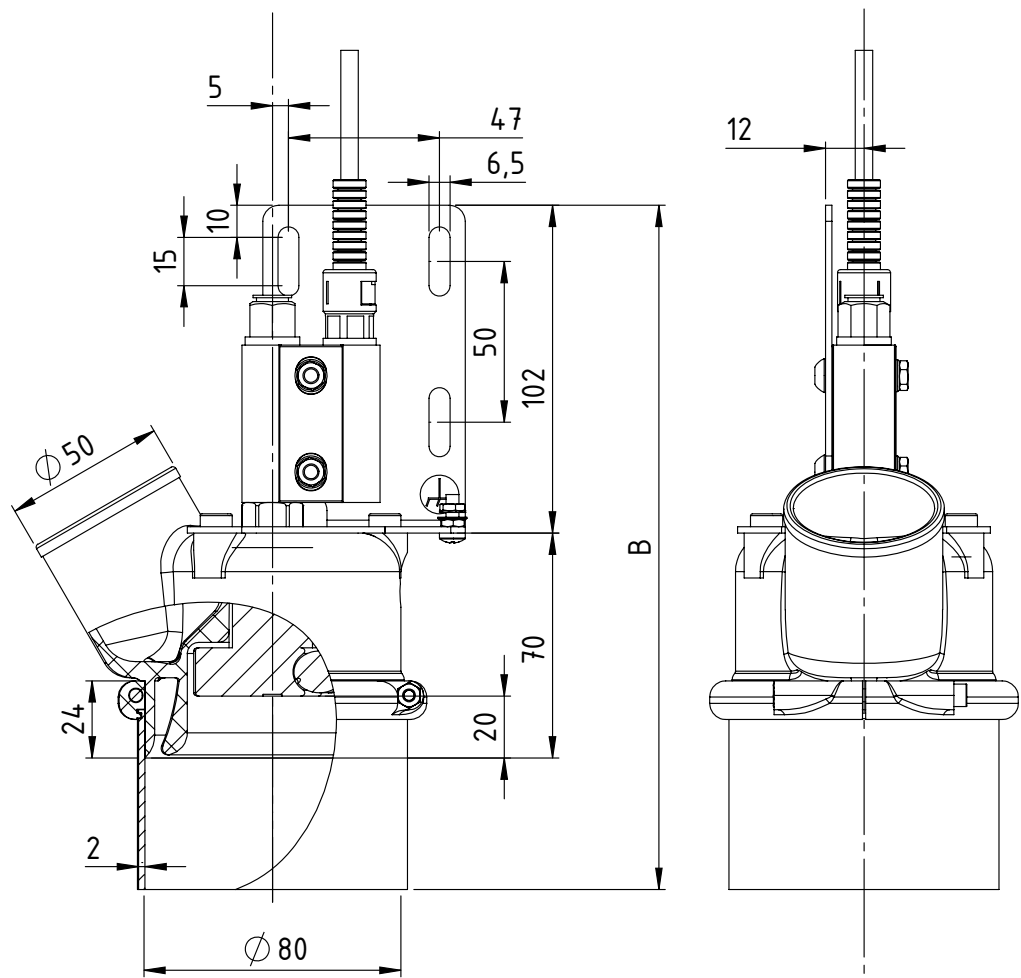


Fig. 12:
Dimensions

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9. Spare parts and accessories

Article	Article No.
Plug "S" Set for prefabricating the high voltage cable without flexible tube for power supply ES5x, ES6x and PI	101366
Plug "L" Set for prefabricating the high voltage cable with flexible tube for power supply ES5x, ES6x and PI	103289
Suction apron, 30 mm	118544
Suction apron, 45 mm	118545
Suction apron, 60 mm	118546
Suction apron, 75 mm	118547
Suction apron, 90 mm	118548
Speed sensor, inductive	118468
Flange Type 1 (e.g. for mounting an air baffle)	118570
Speed sensor, inductive	118468
Threaded union, axial G1/4", NW8	110309
L-threaded union, G1/4", NW8	116295
Volt Stick	109136
Operating instructions (specify language)	BA-xx-2087

Please specify the article number when ordering.

10. Decommissioning / Waste disposal

The Static Combi Cleaner SCC-P unit can be disposed of using the general waste disposal methods (electronic waste).

EU-Declaration of Conformity

CE-2038-en-2411

Eltex-Elektrostatik-Gesellschaft mbH
Blauenstraße 67 - 69
D-79576 Weil am Rhein



declares in its sole responsibility that the product

Static Combi Cleaner SCC / SCC-C / SCC-P

(according to Eltex reference code)

complies with the following directives and standards.

Relevant EU-Directive:

2014/35/EU

Low Voltage Directive

Harmonized standard applied:

EN 60204-1:2018

Safety of machinery – Electrical equipment of machines –
General requirements

Relevant EU-Directive:

2014/30/EU

EMC Directive

Harmonized standards applied:

EN IEC 61000-6-2:2019

Electromagnetic compatibility (EMC)
Generic standards – Immunity for industrial environments

EN 55011:2016 + A1:2017
+ A11:2020 + A2: 2021

Industrial scientific and medical equipment –
Radio-frequency disturbance characteristics – limits and methods
of measurement

Relevant EU-Directives:

2011/65/EU

RoHS Directive

(EU) 2015/863

RoHS Delegated Directive

in the version effective at the time of delivery.

Eltex-Elektrostatik-Gesellschaft mbH keep the following documents for inspection:

- proper operating instructions
- plans
- other technical documentation

Weil am Rhein, 05.11.2024
Place/Date



Lukas Hahne, Managing Director

UKCA Declaration of Conformity

CA-2038-en-2402

Eltex-Elektrostatik-Gesellschaft mbH
Blauenstraße 67 - 69
D-79576 Weil am Rhein



declares in its sole responsibility that the product

Static Combi Cleaner SCC / SCC-C / SCC-P (according to Eltex reference code)

complies with the following directives and standards.

Applicable Regulation:

S.I. 2016 No. 1101

Electrical Equipment (Safety) Regulations

Used Designated Standard:

BS EN 60204-1:2018

Applicable Regulation:

S.I. 2016 No. 1091

Electromagnetic Compatibility Regulations

Used Designated Standard:

BS EN IEC 61000-6-2:2019

BS EN 55011:2016+A2:2021

Applicable Regulation:

S.I. 2012 No. 3032

RoHS Regulations

in the version effective at the time of delivery.

Eltex-Elektrostatik-Gesellschaft mbH keep the following documents for inspection:

- proper operating instructions
- plans
- other technical documentation

Weil am Rhein, 15.02.2024
Place/Date



Lukas Hahne, Managing Director

Eltex offices and agencies

The addresses of all
Eltex agencies can be
found on our website at
www.eltex.de



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