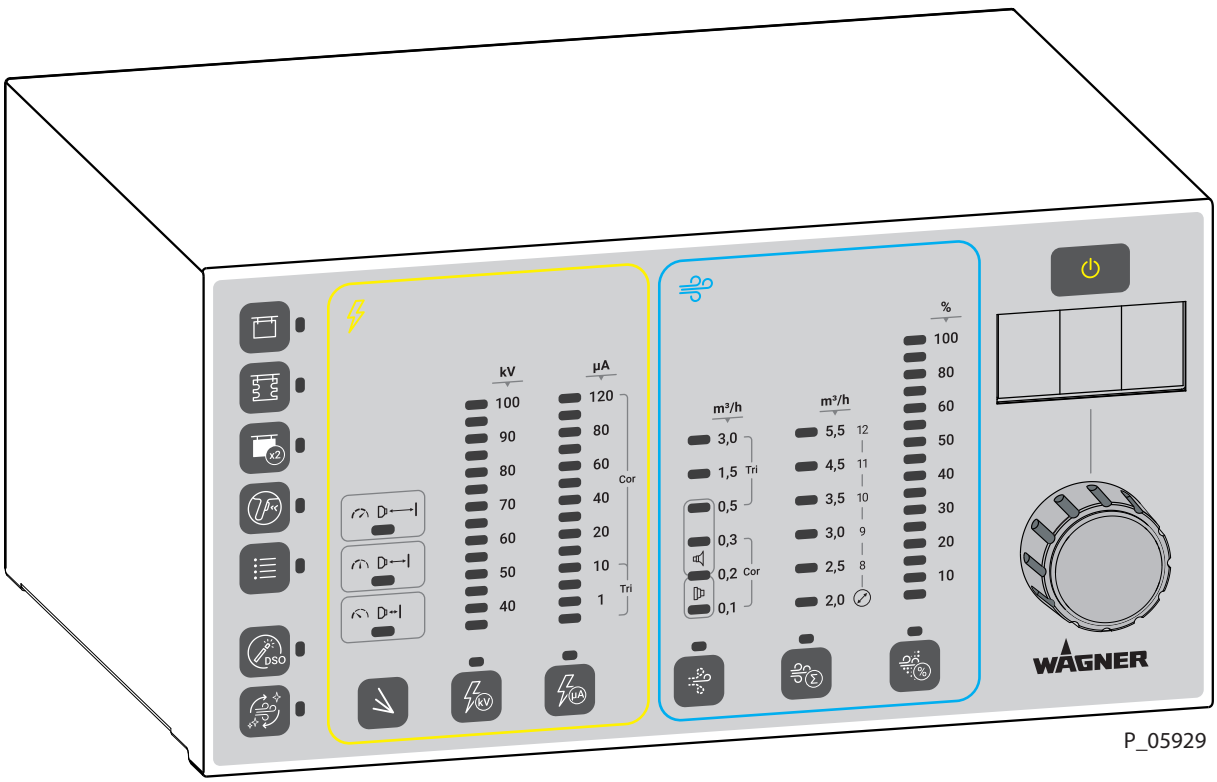



P_05929

# Control unit for powder spray guns

## WACON Sprint 2

## Translation of the Original Operating Manual

CE 0102 Ex II 3(2) D IP64 80 °C

For professional use.
Always observe the information in this manual, particularly the safety instructions and the warning instructions. Store the manual in a safe place.

Edition: 03/2024

# TABLE OF CONTENTS

# 1 ABOUT THESE INSTRUCTIONS

## 1.1 PREFACE

The operating manual contains information about safely operating, maintaining, cleaning and repairing the device. The operating manual is part of the device and must be available to the operating and service personnel.

The device may only be operated by trained personnel and in compliance with this operating manual. Operating and service personnel should be instructed according to the safety instructions.

This equipment can be dangerous if it is not operated according to the instructions in this operating manual.

## 1.2 WARNINGS, NOTICES AND SYMBOLS IN THESE INSTRUCTIONS

Warning instructions in this manual highlight particular dangers to users and to the device and state measures for avoiding the hazard.

These warning instructions fall into the following categories:

| | | |
|---|---|---|
| ⚠ | **DANGER** | Immediate risk of danger.<br>Non-observance will result in death or serious injury. |
| ⚠ | **WARNING** | Potential danger.<br>Non-observance may result in death or serious injury. |
| ⚠ | **CAUTION** | Potentially dangerous situation.<br>Non-observance may result in minor injury. |
| ⓘ | **NOTICE** | Potentially dangerous situation.<br>Non-observance may result in damage to property. |
| ℹ | **Info** | Provides information about particular characteristics and how to proceed. |

**Explanation of warning notice:**

**⚠ WARNING**

**This notice warns you of a danger!**

Possible consequences of not observing the warning notice.

- The measures for preventing the hazard and its consequences.

## 1.3 GENERAL CHARACTERS AND SYMBOLS

The characters and symbols in this operating manual indicate the following:

✓ Requirement that must be fulfilled before an action can be performed.

1. Step 1 of an action to be performed with several action steps.
   - Second level action step
2. Step 2
   ⇨ Intermediate result of an action

⇨ Result of a complete action

- Action to be performed with an action step

1. Numbered list, first level
   – Numbered list, second level

- Non-numbered list, first level
  - Non-numbered list, second level

[⏩ 8] = cross-reference on page

♦ = wearing parts

⋆ = included in service set

● = not part of the standard equipment but available as a special accessory

## 1.4 LANGUAGES

The operating manual is available in the following languages:

**Original operating manual**

| Language | Order no. |
|---|---|
| German | 2462920 |

**Translation of the original operating manual**

| Language | Order no. | Language | Order no. |
|---|---|---|---|
| English | 2462921 | Polish | 2464283 |
| French | 2462922 | | |
| Italian | 2462923 | | |
| Spanish | 2462924 | | |
| Chinese | 2462925 | | |

Additional languages upon request or at: www.wagner-group.com

## 1.5 ABBREVIATIONS

| | |
|---|---|
| Order no. | Order number |
| ET | Spare part |
| K | Marking in the spare parts lists |
| Pos | Position |
| Stk | Number of pieces |
| -- | Item not available as spare part |
| / | Item does not exist |

## 1.6 TERMINOLOGY FOR THE PURPOSE OF THIS MANUAL

**Cleaning**

| | |
|---|---|
| Cleaning | Manual cleaning of devices and device parts with cleaning agent. |
| Flushing | Internal flushing of paint-wetted parts with compressed air. |

**Personnel qualifications**

| | |
|---|---|
| Trained person | Is instructed in the tasks assigned to him/her, the potential risks associated with improper behavior as well as the necessary protective devices and measures. |
| Electrically trained person | Is instructed by an electrician about the tasks assigned to him/her, the potential risks associated with improper behavior as well as the necessary protective devices and measures. |
| Electrician | Can assess the work assigned to him/her and detect possible hazards based on his/her technical training, knowledge and experience in relevant provisions. |
| Skilled person in the context of DGUV 209-052 | A person who, based on his/her technical training, experience and recent vocational experience, has sufficient technical knowledge in the area of electrostatic coating and is familiar with the relevant and generally accepted rules of technology so that he/she can inspect and assess the status of devices and coating systems based on workplace safety.<br>Additional requirements for skilled persons can also be found in TRBS 1203 (2010/amendment 2012): Expert knowledge in the areas of protection against excessive pressure, electrical hazards and explosion protection (where applicable). |

# 2 USING IN ACCORDANCE WITH THE INSTRUCTIONS

## 2.1 DEVICE TYPE

Control unit for controlling electrostatic manual and automatic spray guns

## 2.2 TYPE OF USE

The WACON Sprint 2 control unit is intended for controlling electrostatic manual and automatic powder spray guns of types A-P (2 mJ) according to DIN EN 50177.

The device may only be operated under the following conditions:

- Use the device only to work with the materials recommended by WAGNER.
- Only operate the device as a whole.
- Do not deactivate safety fixtures.
- Use only WAGNER original spare parts and accessories.
- The operating personnel must be trained on the basis of this operating manual.
- Follow the instructions in the operating manual.

## 2.3 FOR USE IN POTENTIALLY EXPLOSIVE AREAS

The WACON Sprint 2 control unit is intended for use with powder spray guns of types A-P up to 2 mJ in accordance with the type examination PTB 12 ATEX 5001.

The WACON Sprint 2 control unit may be used in the dust explosion zone (zone 22) under the following conditions:

- Control unit correctly fitted in rack.
- Rack correctly and securely sealed on rear with corresponding cover.
- All connections not needed (mains output terminal, remote control) are sealed with dust protection caps.

## 2.4 PROCESSIBLE WORKING MATERIALS

- Types of powder which can be charged electrostatically
- Metallic powder

**Info**

Contact your local WAGNER dealer and the lacquer manufacturer if you encounter application problems.

## 2.5 MISUSE

Misuse can lead to physical injury and/or property damage! Special attention must be paid that:

- No liquid coating products, e.g., solvents or water-based lacquers, are processed.
- No food, medicine or cosmetics are processed.

# 3 IDENTIFICATION

## 3.1 EXPLOSION PROTECTION IDENTIFICATION

The device is suited for use in potentially explosive areas, in accordance with Test Certificate PTB 12 ATEX 5001.

| | |
|---|---|
| Device type | Control unit WACON Sprint 2 |
| Manufacturer | Wagner International AG<br>9450 Altstätten<br>Switzerland |

CE 0102 Ex II 3(2) D IP64 80°C

| | |
|---|---|
| CE | European Communities |
| 0102 | Number of notified body which issues the recognition of quality assurance in production. |
| Ex | Symbol for explosion protection |
| II | Device class II |
| 3 | Category 3 (zone 22) |
| (2) | Impact on equipment of category 2 |
| D | Ex-atmosphere dust |
| IP64 | Protection class IP64 |
| 80°C | Temperature class: maximum surface temperature < 80 °C; 176 °F |

## 3.2 PERMISSIBLE DEVICE COMBINATIONS

**⚠ WARNING**

**Incorrect use!**

Risk of injury and damage to the device.

- Only connect original WAGNER spray guns to the WACON Sprint 2 control unit.
- The PEM-C3R and PEM-T3R manual spray guns must not be connected to the WACON Sprint 2 control unit.

The following powder spray guns may be connected to the WACON Sprint 2:

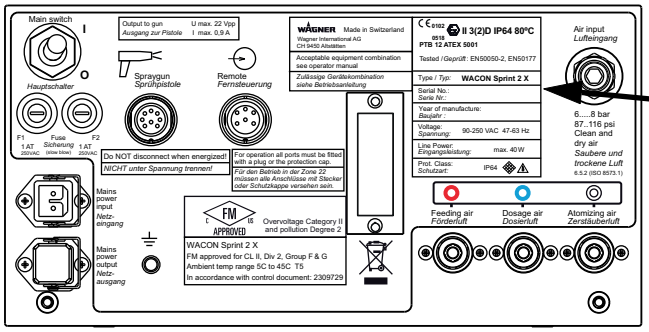
| **Manual spray guns** | |
|---|---|
| Corona spray gun | PEM-X1, PEM-X1 CG, PEM-C3, PEM-C4, PEM-C4-Ergo |
| Tribo spray gun | PEM-T3 |
| **Automatic spray guns** | |
| Corona spray gun | PEA-C3, PEA-C4, PEA-X1, PER-X1 |
| | PEA-C3XL, PEA-C4XL |
| Tribo spray gun | PEA-T3, PEA-T3XL |
| Tribo lance | TL1 |

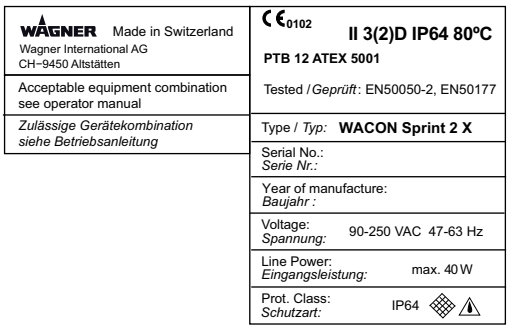
Older or other gun types may only be connected to the control unit after first checking their suitability with WAGNER.

For permissible device combinations for the USA and Canada, see FM Control Document [▸▸ 68].

## 3.3 WACON SPRINT 2 X/XE TYPE PLATE

### WACON Sprint 2 X type plate

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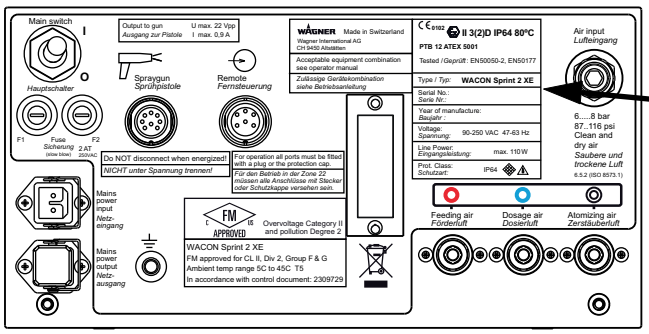
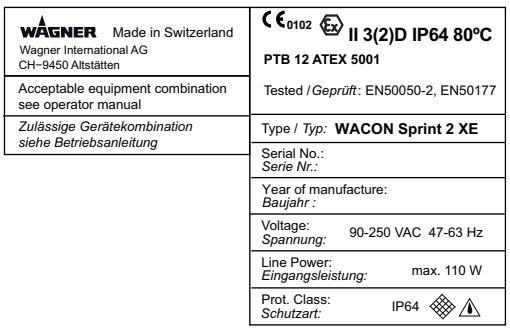
### WACON Sprint 2 XE type plate




P_05965

# 4 BASIC SAFETY INSTRUCTIONS

## 4.1 SAFETY INSTRUCTIONS FOR THE OPERATOR

- Keep this operating manual at hand near the device at all times.
- Always follow existing regulations concerning occupational safety and accident prevention regulations.

### 4.1.1 Electrical devices and equipment

**Danger of electric shock!**

Danger to life from electric shock:

- Place and operate device in accordance with the existing safety requirements with regard to the operating mode and ambient influences.
- May only be maintained by skilled electricians or under their supervision. With open housings, the mains voltage poses a danger.
- Operate device in accordance with the safety regulations and electrotechnical regulations.
- Do not disconnect any plug connections during operation.
- Label plug connections with the warning "Do not disconnect when energized".
- Must be repaired immediately in the event of problems.
- Decommission if device poses a danger or is damaged.
- Disconnect the power supply before starting maintenance or repair work on the device.
  - Secure the device against being switched back on without authorization.
  - Inform personnel about planned work.
  - Observe electrical safety regulations.
- Ground all devices to a common grounding point.
- Only operate the device with a properly installed socket with a protective ground wire connection.
- Keep liquids away from electrical devices.

### 4.1.2 A safe work environment

**Danger due to dust formation!**

Severe or fatal injuries due to explosion danger or inhalation, swallowing or contact with the skin or eyes.

- The floor of the work area must be electrostatically conductive (measurement in accordance with EN 1081:2018+A1:2020 or EN 61340-4-1:2004+A1:2015).
- In the spray booth, coating may only be performed with correctly designed and locked technical ventilation.
- Make sure that grounding and potential equalization of all system parts is reliably and permanently in effect and that they withstand the loads to be expected (e.g., mechanical, corrosion).
- Make sure that the personal protective equipment (see chapter Personal protective equipment [▸▸ 13]) is present and being used.
- Make sure that all people within the work area wear static dissipative shoes. The footwear must correspond to EN 20344. The measured insulation resistance must not exceed 100 MΩ.

- Protective clothing including gloves, must correspond to EN 1149-5. The measured insulation resistance must not exceed 100 MΩ.
- Ensure that there are no ignition sources such as naked flames, sparks, glowing wires, or hot surfaces in the spray booth. Do not smoke.
- A suitable system for suppressing fire and explosion must be installed.
- The powder release must be electrically interlocked with the connected technical ventilation of the spray system.
- Excess coating product (overspray) must be collected up safely.
  Accumulations of powder in the spray booth is to be avoided. Set the parameters of the floor cleaning and manually clean the spray booth as needed.
- Ensure that maintenance and safety checks are performed regularly.
- In case of defects, immediately shut down the device or system and repair before switching back on.
  Accumulations of powder are to be removed before switching the system back on.
- The operator/responsible person must ensure that an average concentration of powder lacquer in the air of 50% of the lower explosion limit (max. permitted powder/air concentration) is not exceeded. If no reliable LEL value is available, the value 20 g/m$^3$ is to be used. Thus, the average concentration of 10 g/m$^3$ must not be exceeded.

### 4.1.3 Personnel qualifications

**Danger due to incorrect use of device!**

Risk of death due to untrained personnel.

- Ensure that the operating personnel has been instructed by the operator in accordance with the operating manual and the operating instructions. The device must only be operated, maintained and repaired by trained personnel. Refer to the operating instructions for information about the required personnel qualifications.

## 4.2 SAFETY INSTRUCTIONS FOR THE PERSONNEL

- Always observe the information in this manual, particularly the safety instructions and the warning instructions.
- Always follow existing regulations concerning occupational safety and accident prevention regulations.

**Danger due to high-voltage field!**

Danger to life from malfunction of active implants.

- Persons belonging to a risk group according to EMF guideline 2013/35/EU (e.g., carriers of active implants), must not enter the high-voltage area.

### 4.2.1 Personal safety equipment

**Danger due to dust formation!**

Serious or fatal injuries due to inhalation, swallowing or contact with the skin or eyes.

- Observe the processing regulations laid down by the manufacturer of the powder lacquer being used, when preparing or processing the powder.
- Take note of the manufacturer's notification and the relevant environmental protection regulations when disposing of powder lacquers.
- Take the specified protective measures, in particular wear safety goggles, protective clothing and gloves, as well as skin protection cream if necessary.
- Use a mask or breathing apparatus if necessary.

- For sufficient health and environmental protection, only operate the device with technical ventilation (extraction) switched on.

### 4.2.2 Safe handling of WAGNER powder spray devices

**Danger due to dust formation!**

- Do not point spray guns at people.
- Do not spray device parts using electrostatic equipment.
- Before any work on the device, in the event of work interruptions and malfunctions:
  - Switch off the energy/compressed air supply.
  - Relieve pressure on spray gun and device.
  - Secure the spray gun against actuation.
  - Disconnect the control unit from the mains.
  - In the event of functional faults, remedy the fault as described in the chapter on troubleshooting.
- Carry out the work steps in accordance with the chapter on pressure relief in the operating manual of the corresponding device:
  - If a prompt for pressure relief is given.
  - If coating work is interrupted or stopped.
  - Before the device is externally cleaned, checked or serviced.
  - Before the spray nozzle is installed or cleaned.

### 4.2.3 Grounding the device

**Danger due to electrostatic charge!**

Explosion hazard and damage to the device.

The electrostatic charge may, in certain cases, give rise to electrostatic charges on the device.

Flames or sparks can form during discharge.

Correct grounding of the entire coating system prevents electrostatic charges:

- Ensure that all devices and tanks are grounded before each coating process.
- All conductive components of the system, such as floors, walls, ceilings, barriers, transport equipment, work pieces, powder tanks, moving devices or structural parts in the spray area, with the exception of parts under high voltage during operation, must be connected to the grounding system.
  Parts of the spray booth must be grounded. All these components of the complete spray system must be on the same grounding potential.
- Ensure that all persons inside the working area are grounded, e.g., that they are wearing static dissipative shoes.
- Grounding cables must be checked regularly to ensure that they are serviceable (see EN 60204).

### 4.2.4 Product hoses

**Danger due to damaged product hoses!**

The product hose may cause dangerous injuries.

- Use only an original WAGNER powder hose.
- Make sure that the hoses are laid only in suitable places. Hoses should not be laid in the following places under any circumstances:

- in high traffic areas
- on sharp edges
- on moving parts
- on hot surfaces

- Ensure that the hoses are never run over by vehicles (e.g., fork lifts), or that the hoses are never put under pressure from the outside in any other way.
- Ensure that the hoses are never kinked. Observe maximum bending radii.
- Ensure that no work is ever performed with a damaged hose.
- Make sure that the hoses are never used to pull or move the device.

### 4.2.5 Electrical connection cables

**Risk caused by improperly laid cables!**

Risk of injury and damage to the device.

- Properly lay connection cables and check them regularly.
- Immediately replace damaged connection cables.
- Ensure that no work is ever performed with a damaged connection cable.
- Do not lay connection lines on travel paths of forklifts or through doors/gates.
- Do not lay connection lines in the area of walkable hallways or paths to avoid the risk of tripping.

### 4.2.6 Cleaning and flushing

**Danger due to cleaning and flushing!**

Explosion hazard and damage to the device.

- Before starting cleaning or any other manual work, the high voltage in the spray area must be shut down and locked to prevent it from being switched back on.
- Lock the compressed air supply and decompress the device.
- Secure the device against being switched back on without authorization.
- Use only electrically conducting and grounded tanks for cleaning fluids.
- Preference should be given to non-ignitable cleaning fluids.
- Ignitable cleaning liquids may only be used if all high-voltage parts are discharged to a discharge energy of less than 0.24 mJ after shutting off the high voltage before these parts can be reached. Most ignitable solvents have an ignition power in the range of 0.24 mJ, corresponding to 60 nC.
- The flash point of the cleaning agents must be at least 15 K over the ambient temperature.
- Note the details provided by the powder lacquer manufacturer.
- To remove dust deposits, only suitable mobile industrial vacuums may be used.
- Take measures for workplace safety (see chapter "A safe work environment").

### 4.2.7 Maintenance and repair

**Danger due to improper maintenance and repair!**

Danger to life and equipment damage.

- Only a WAGNER service center or a specially trained person may carry out repairs and replace parts.

- Repair or replacement of devices or parts of devices are only allowed to be performed outside the hazard area by qualified personnel.
- Use only WAGNER original spare parts and accessories.
- WAGNER assumes no liability for changes to the product made by the operating company without the knowledge of WAGNER. Any adjustments to the documentation and the market release are the responsibility of the operating company.
- Only repair and replace parts that are listed in the chapters "Accessories" and "Spare Parts" and that are assigned to the device.
- Do not use any defective components.
- Before all work on the device and in the event of work interruptions:
  - Switch off the energy and compressed air supply.
  - Relieve pressure on spray gun and device.
  - Secure the spray gun against actuation.
- Observe the operating and service manual for all work.

### 4.2.8 Protective and monitoring equipment

**Danger due to removal of protective and monitoring equipment!**

Danger to life and equipment damage.

- Protective and monitoring equipment must not be removed, modified or rendered unusable.
- Regularly check for perfect functioning.
- If defects are detected on protective and monitoring equipment, the system must not be operated until these defects are remedied.

## 4.3 SAFETY FEATURES

Plates bearing information for the user have been attached to the work openings of the powder coating booth.

The plate size corresponds to standard series Ø 100 mm (3.94 inches).

The label plates, which must be attached, are shown below:

Forbidden for persons with a cardiac pacemaker!

Forbidden for unauthorized persons!

Smoking, fire, and open flames are prohibited!

Danger of crushing!

Risk of tripping!

High voltage!
In the control cabinet:
(25 mm; 0.98 inch)
Voltage before main switch


Explosive atmosphere!

Follow the instructions in the operating manual!

Wear electrostatically conductive footwear!

# 5 DESCRIPTION

## 5.1 APPLICATIONS

The WACON Sprint 2 X/XE control unit can be used as a stand-alone unit in manual coating systems or with an automatic coating device.

WACON Sprint 2 X: for use in systems without vibrator control (color of the front panel, light grey)

WACON Sprint 2 XE: for use in manual systems with vibrator control (color of the front panel, light grey)

**Note:**

Only the WACON Sprint 2 X is shown in this operating manual (light grey front panel).
The functions of the WACON Sprint 2 XE (dark grey front panel) are identical to the WACON Sprint 2 X.

- When a Corona gun is connected, the Corona current scale and the high-voltage supply and control unit are active.
- When a Tribo gun is connected, the Tribo current scale is activated, while the high-voltage supply and control unit are deactivated.

The control unit recognizes if a manual or automatic spray gun is connected. If an automatic gun is connected, then the control unit can only be controlled via the remote interface.

## 5.2 EXTENT OF DELIVERY

**WACON-SPRINT 2 X:**

| Stk | Order no. | Designation |
|---|---|---|
| 1 | 2463345 | WACON Sprint 2 X |
| The standard equipment includes: | | |
| | 2463395 | Declaration of conformity |
| | 2462920 | Operating manual, in German |
| | See Languages [▸▸ 7] | Operating manual in local language |

**WACON-SPRINT 2 XE:**

| Stk | Order no. | Designation |
|---|---|---|
| 1 | 2463347 | WACON Sprint 2 XE |
| The standard equipment includes: | | |
| | 2463395 | Declaration of conformity |
| | 2462920 | Operating manual, in German |
| | See Languages [▸▸ 7] | Operating manual in local language |

## 5.3 TECHNICAL DATA

| Dimensions: | |
|---|---|
| Height | 136 mm; 5.35 inch |
| Width | 270 mm; 10.63 inch |
| Depth (without operating elements) | 200 mm; 7.87 inch |
| Weight | 3.3 kg; 7.28 lb |

| Electrical: | WACON Sprint 2 X | WACON Sprint 2 XE |
|---|---|---|
| Mains (AC) | 90 VAC–250 VAC | 90 VAC–250 VAC |
| Frequency | 47 Hz–63 Hz | 47 Hz–63 Hz |
| Input power | maximum 40 W | maximum 110 W |
| Mains (AC) output terminal | -- | Vibrator motor, maximum 70 W |
| Output voltage | maximum 22 Vpp | maximum 22 Vpp |
| Output current | maximum 0.9 A | maximum 0.9 A |
| High voltage | 10–100 kV (adjustable in 1 kV steps) | 10–100 kV (adjustable in 1 kV steps) |
| Corona current limitation | Adjusting range: 0.5 µA–120 µA (adjustable up to 5 µA in 0.5 µA steps, from 5–120 µA in 1 µA steps) | Adjusting range: 0.5 µA–120 µA (adjustable up to 5 µA in 0.5 µA steps, from 5–120 µA in 1 µA steps) |
| Tribo current limitation minimum | 0.1 µA–5 µA (adjustable in 0.1 µA steps) | 0.1 µA–5 µA (adjustable in 0.1 µA steps) |
| Tribo current limitation | greater than 12 µA (EX: switching off of the unit) | greater than 12 µA (EX: switching off of the unit) |

| Ex identification: | |
|---|---|
| according to EN (ATEX, EN) | II 3(2) D |
| according to class & division (North America) | Class II, Division 2, Group F & G Hazardous (Classified) Locations |

| Pneumatic: | |
|---|---|
| Input air pressure | 0.6–0.8 MPa; 6–8 bar; 87–116 psi |
| Air flow | maximum 15 $m^3/h$ |
| Sum of dosing and feed air | 1–6 $m^3/h$ |
| Gun air | 0.05–4.0 $m^3/h$ |
| Required compressed air quality as per ISO 8573.1 | 6.5.2 |
| Connection hose diameter | 8 mm; 0.315 inch |

| Ambient conditions: | |
|---|---|
| Operating temperature range | 5–40 °C; 41–104 °F |

**⚠ WARNING**

**Exhaust air containing oil!**

Risk of poisoning if inhaled.

- Provide compressed air free from oil and water.

**ⓘ NOTICE**

**Compressed air quality, accessories**

Danger of damage to the device.

- Operate the control unit only with the prescribed compressed air quality.
- Only use the control unit with original WAGNER accessories.
- Non-observance of these conditions results in the warranty expiring.

**Ambient conditions:**

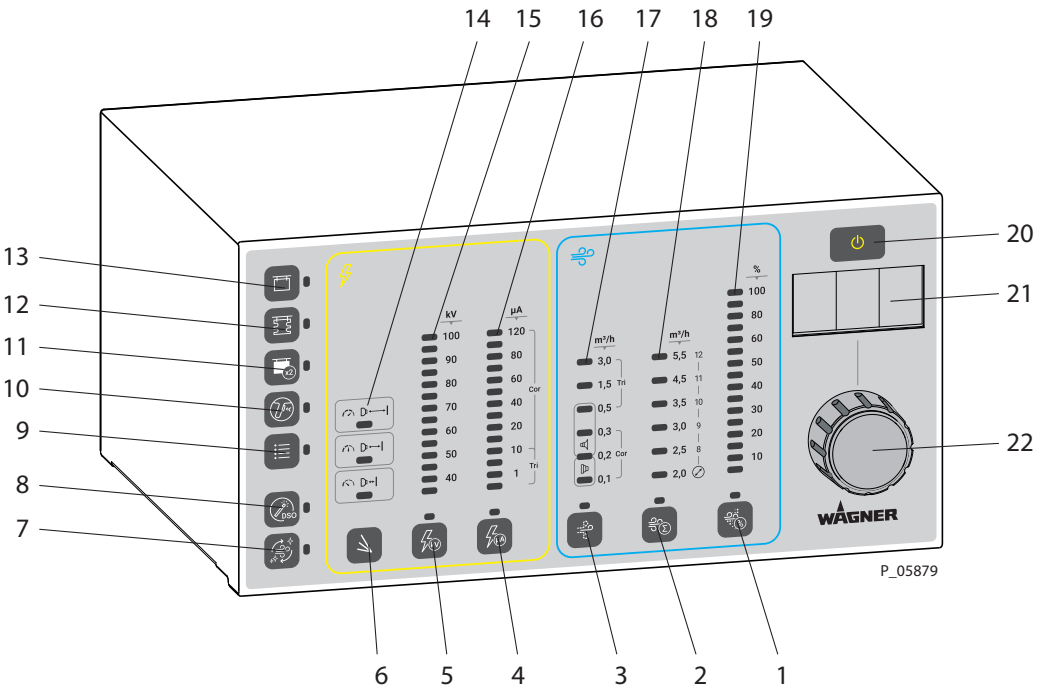
When using low-melting powder varieties, an ambient temperature below 30 °C (86 °F may be necessary.

**Volume measures:**

for volumes specified in $Nm^3$ (standard cubic meters. One cubic meter of gas at 0 °C and 1.013 bar is referred to as a normal cubic meter.
The volume flow (air volume is specified in $m^3/h$. The calibration of the WAGNER volume flow sensor was performed at room temperature with a reference measuring instrument, that displays the volume flow in $Nm^3/h$.

## 5.4 OPERATING ELEMENTS

### 5.4.1 Operating elements on front side



**Note on the bar displays:**

The bar displays show the approximate values. The steps in the bar display are not linear; see front panel. To display the exact nominal values, push one of the buttons, 1–3, for two seconds, in the 7 segment LED display (21), the exact value is shown. To display the exact actual values of voltage and high voltage, push button 4 or 5 for two seconds, in the 7 segment LED display, the exact actual value is shown.

**1 [Powder quantity] button**

- To activate the function, the powder quantity is set with the control dial (22) and is indicated in the LED display (21).
- The LED above it lights up white when the [Powder quantity] setting is selected.

**2 [Total air volume] button**

- To activate the function, the value is precisely adjusted with the control dial (22) and is indicated in the LED display (21).
- The LED above it lights up white when the [Total air volume] setting is selected.

**3 [Atomizing, ionizing and Tribo air] button**

- To activate the function, the value is precisely adjusted with the control dial (22) and is indicated in the LED display (21).
- The LED above it lights up white when the setting [Atomizing, ionizing and Tribo air] is selected.

**4 [Current limitation] button**

- To activate the function, the current limitation is set with the control dial (22) and is indicated in the LED display (21).
- The LED above it lights up white when the [Current limitation] setting is selected.

**5 [High voltage] button**

- To activate the function, the high voltage is set with the control dial (22) and is indicated in the LED display (21).
- The LED above it lights up white when the [High voltage] setting is selected.

**6 [Characteristic slope] button**

- To switch the characteristic slope.
- Display with LED display (14).

**7 [Flushing] button**

- To activate the injector and the hose flushing.
- The LED to the right lights up white, when the flushing function is activated.

**8 [DSO] (Digital Surface Optimizer) button**

- For activating the electronically controlled DSO function (see chapter Digital surface optimizer (DSO) [▸▸ 26]).
- The LED to the right lights up white when the electronically controlled DSO function is activated.

**9 [Additional recipes] button**

- To activate the function, the additional recipe is set with the control dial (22) and is indicated in the LED display (21).
- Selection of the recipes nos. 5 to 50
- The LED to the right lights up white, when an additional recipe is selected.

**10 [Double-click] recipe button**

- To access the recipe, press the trigger lever on the spray gun twice in quick succession and hold it down.

– Alternatively, the function can be called up by pressing the [Double-click] button.
– The LED to the right lights up white, when the [Double-click] recipe is selected.

**11 [Second coating] recipe button**
– The LED to the right lights up white when the [Second coating] recipe is selected.

**12 [Profile parts] recipe button**
– The LED to the right lights up white when the [Profile parts] recipe is selected.

**13 [Surface parts] recipe button**
– The LED to the right lights up white when the [Surface parts] recipe is selected.

**14 LED display [Characteristic slope]**
– Lights up green
– Standard upper LED characteristic curve (high surface coverage, large distance to the work piece, simple component geometries, fast coating)
– Middle LED characteristic curve, medium
– Lower LED characteristic curve flat (low surface coverage, small distance to the work piece, complex component geometries, high surface quality)

**15 Illuminated display [High voltage]**
– Lights up green
– Top LED dot with full luminosity: nominal voltage
– Top dot of the bar display: actual voltage

| | Bar display | 7-segment display |
|---|---|---|
| High voltage | 35–100 kV | 10–100 kV, 1 kV steps |

**16 Illuminated display [Corona or Tribo current]**
– Lights up green
– Lower area for Tribo current
– Total area for Corona current
– Single LED display: Set value for the Corona current limitation
– Bar display: Actual value for Tribo or Corona current

| | Bar display | 7-segment display |
|---|---|---|
| Corona current | 0.5–120 µA | 0.5–5 µA, 0.5 µA steps<br>5–120 µA, 1 µA steps |
| Tribo current display | 0.5–10 µA | 0.0–12.0 µA, 0.1µA steps |
| Tribo current limitation | | 0.1–5.0 µA, 0.1µA steps |

**17 Illuminated display: [Atomizing, ionizing and Tribo air volume]**
– Lights up green
– Single LED display: Set value
– Bar display: Actual value

| | Bar display | 7-segment display |
|---|---|---|
| Atomizing, ionizing and Tribo air volume | 0.1–3.0 $m^3$/h | 0.05–4.0 $m^3$/h, 0.05 $m^3$/h steps |

**18 Illuminated display [Total air volume]**
– Lights up green
– Single LED display: Set point (high voltage and powder are deactivated)
– Bar display: Actual value (high voltage and powder are activated)

| | Bar display | 7-segment display |
|---|---|---|
| Total air volume | 2.0–5.5 $m^3/h$ | 1.00–6.00 $m^3/h$, 0.05 $m^3/h$ steps |

**19 Illuminated display [Powder quantity]**

- Lights up green
- Single LED display: Set point (high voltage and powder are deactivated)
- Bar display: Actual value (high voltage and powder are activated)

| | Bar display | 7-segment display |
|---|---|---|
| Powder quantity | 0–100% | 0–100%, 1% steps |

**20 [Standby] button**

- To switch into standby mode
- Dot on 7-segment display lights up when control unit is in standby mode.
- High voltage and powder feed cannot be activated in this mode.
- To reactivate normal mode, press the button again.

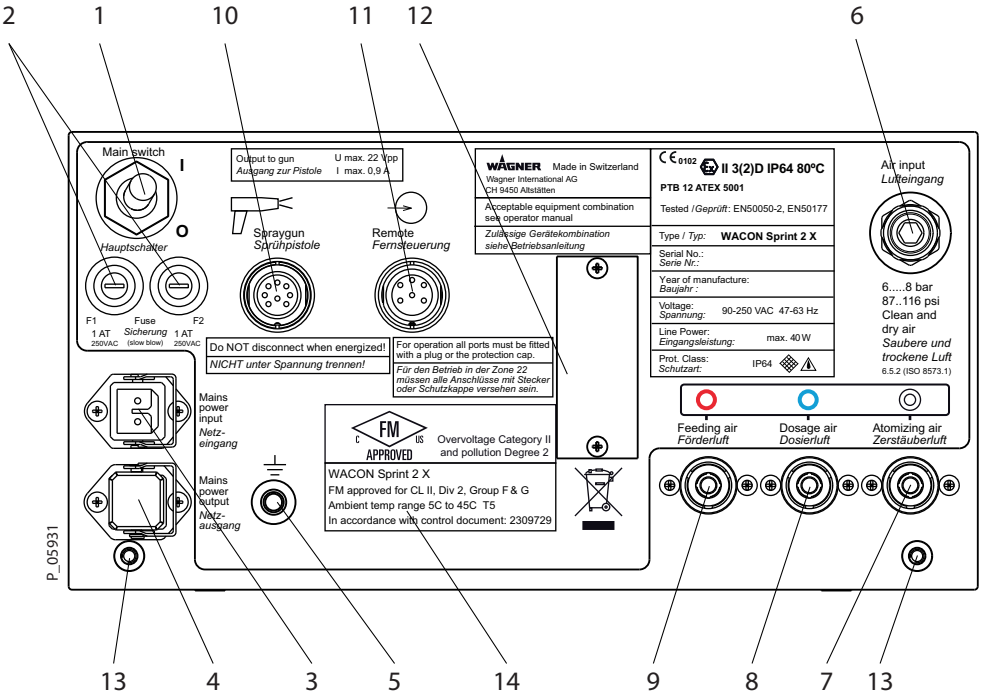
**21 LED display, 7 segments, three-digit number**

- Indicates the exact value depending on the activated function:
  [Total air volume]; [atomizing, ionizing and Tribo air]; [additional recipes]; [high-voltage current]; [current limitation]; [powder quantity]
- Display showing error number in the event of warnings and malfunctions
- Indicates standby mode with a lit dot

**22 Universal control dial**

- Dynamic digital control dial with 32 positions per revolution
- Adjustment speed is proportional to rotational speed
- Used to set: [Total air volume]; [Atomizing, ionizing and Tribo air]; [Additional recipes]; [High voltage]; [Current limitation]; [Powder quantity]
- For setting parameter values in configuration mode.

### 5.4.2 Connections on the rear side of the WACON Sprint 2 X



**1 Mains supply switch**
- 0 = The control unit is deactivated
- I = The control unit is activated

**2 Primary fuse (2 pieces)**

**3 Mains input terminal**
- Universal input: 90 VAC–250 VAC

**4 Mains output terminal**
- Direct, not through the mains switch and control system
- To loop the mains supply through the automatic system

**5 Knurled nut**
- To connect the signal ground

**6 Compressed air inlet**
- Pressure range: 0.6–0.8 MPa; 6–8 bar; 87–116 psi
- Air volume: maximum 15 $m^3/h$
- Connection hose diameter 8 mm; 0.315 inch

**7 Compressed air outlet for additional air**
- With a Corona gun: Atomizing air
- With a Tribo gun: Tribo air

**8 Compressed air outlet for dosing air**
- For the powder injector

**9 Compressed air outlet for feed air**
- For the powder injector

**10 Gun connection**
- To connect a Corona or Tribo gun

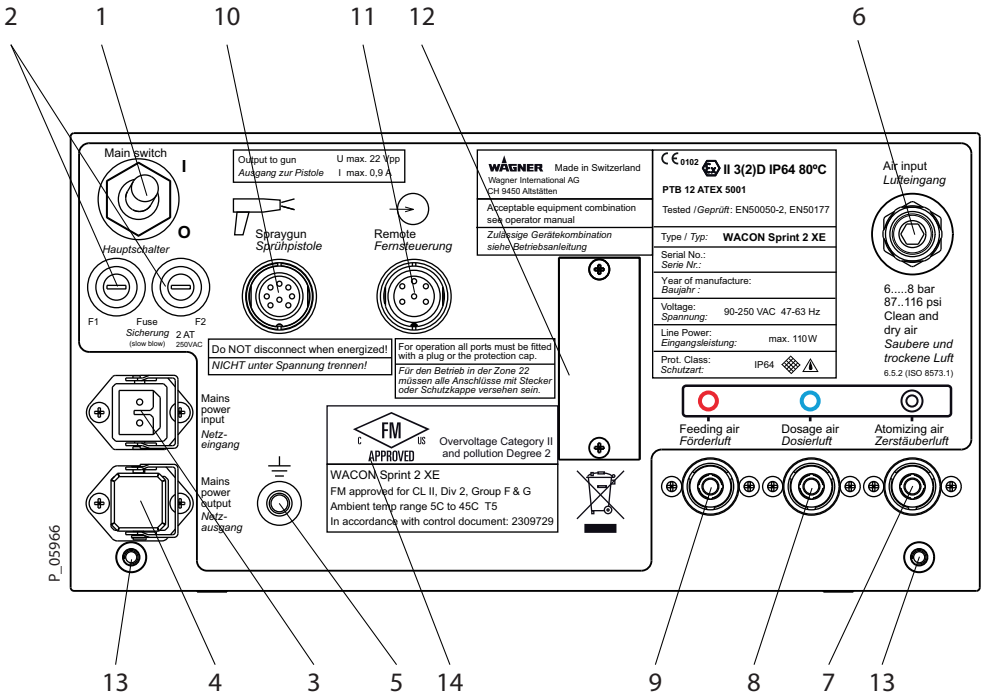
**11 Remote interface (remote control)**
- Start/Stop command of external controller (master controller) for automatic guns
- For wiring, see service manual WACON Sprint 2

**12 Cover of the service connection**
- For WAGNER service personnel only!

**13 Fastenings**
- For screwing to the rack

**14 FM identification**

### 5.4.3 Connections on the rear side of the WACON Sprint 2 XE




**1 Mains supply switch**

- 0 = The control unit is deactivated
- I = The control unit is activated

**2 Primary fuse (2 pieces)**

**3 Mains input terminal**

- Universal input: 90 VAC – 250 VAC

**4 Mains output terminal**

- Connected for vibrator motor

**5 Knurled nut**

- To connect the signal ground

**6 Compressed air inlet**

- Pressure range: 0.6 – 0.8 MPa; 6 – 8 bar; 87 – 116 psi
- Air volume: maximum 15 $m^3/h$
- Connection hose diameter 8 mm; 0.315 inch

**7 Compressed air outlet for additional air**

- With a Corona gun: Atomizing air
- With a Tribo gun: Tribo air

**8 Compressed air outlet for dosing air**

- For the powder injector

**9 Compressed air outlet for feed air**

- For the powder injector

**10 Gun connection**

- To connect a Corona or Tribo gun

**11 Remote interface (remote control)**

- Start/Stop command of external controller (master controller) for automatic guns
- For wiring, see service manual WACON Sprint 2

**12 Cover of the service connection**

- For WAGNER service personnel only!

**13 Fastenings**

- For screwing to the rack

**14 FM identification**

## 5.5 DIGITAL SURFACE OPTIMIZER (DSO)

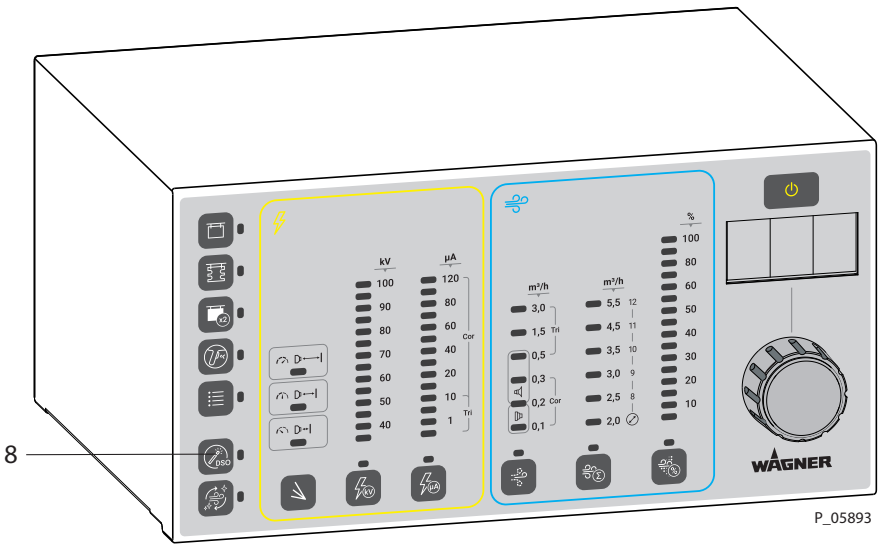
The DSO (Digital Surface Optimizer) is a function that helps the coater to achieve a better, more homogeneous surface quality with more complex coatings or powders.

The function helps to counteract overcharging effects (orange peel/build-up of edges/back-spraying effect) in particular.

The function affects each of the 3 characteristic curves and can be used in combination with application accessories.

**Applications include:**

- Complex coatings:
  - high coating coverage
  - short spraying distances
  - undercuts
- Complex powders:
  - for powders prone to overcharging




The function is switched on and off with the [DSO] button (8).

With activated function, the [DSO] LED to the right of the button lights up.

## 5.6 ACCESSORIES

Only the accessories listed in chapter Accessories [▸▸ 65] of this operating manual may be connected to the WACON Sprint 2 control unit.

# 6 ASSEMBLY AND COMMISSIONING

## 6.1 TRAINING OF ASSEMBLY/COMMISSIONING PERSONNEL

- The assembly and commissioning personnel must have the technical skills to safely commission the device.
- When assembling, commissioning and carrying out all work, read and follow the operating manuals and safety regulations for the additionally required system components.

A skilled person must check to ensure that the device is in a reliable state after it is assembled and commissioned.

## 6.2 STORAGE CONDITIONS

Until the point of assembly, the device must be stored in a dry location, free from vibrations and with a minimum of dust. The device must be stored in closed rooms.

The air temperature at the storage location must be between -20 °C and +60 °C (-4 °F and+140 °F).

The relative air humidity at the storage location must be between 10 and 95% (without condensation).

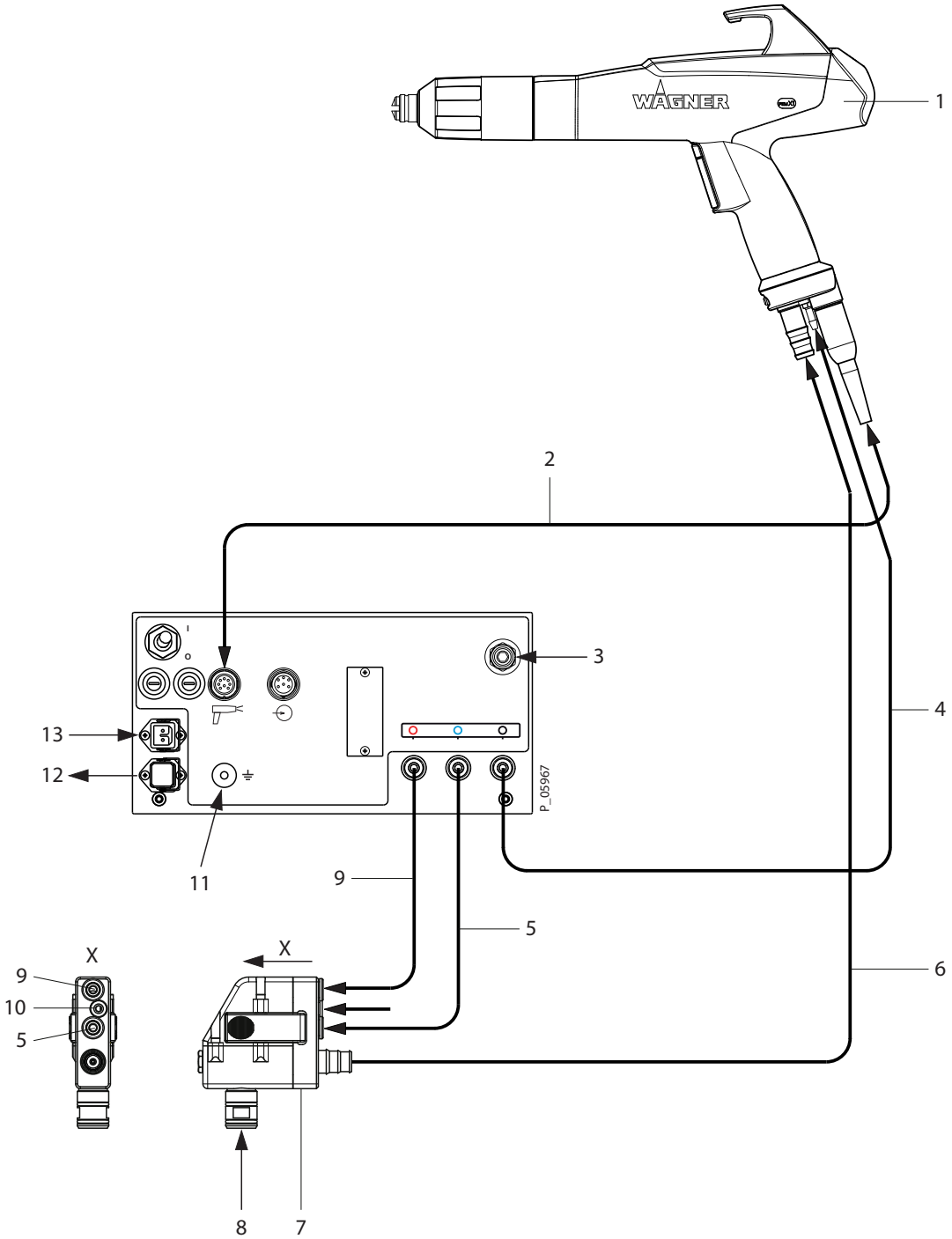
## 6.3 INSTALLATION CONDITIONS

The air temperature at the installation site must be in a range between 5 and 45 °C; 41 and 113 °F.

Depending on the powder lacquer used, the maximum permissible ambient temperature for reliable operation can be significantly below 40 °C; 104 °F.

The relative air humidity at the installation site must be between 10 and 95% (without condensation).

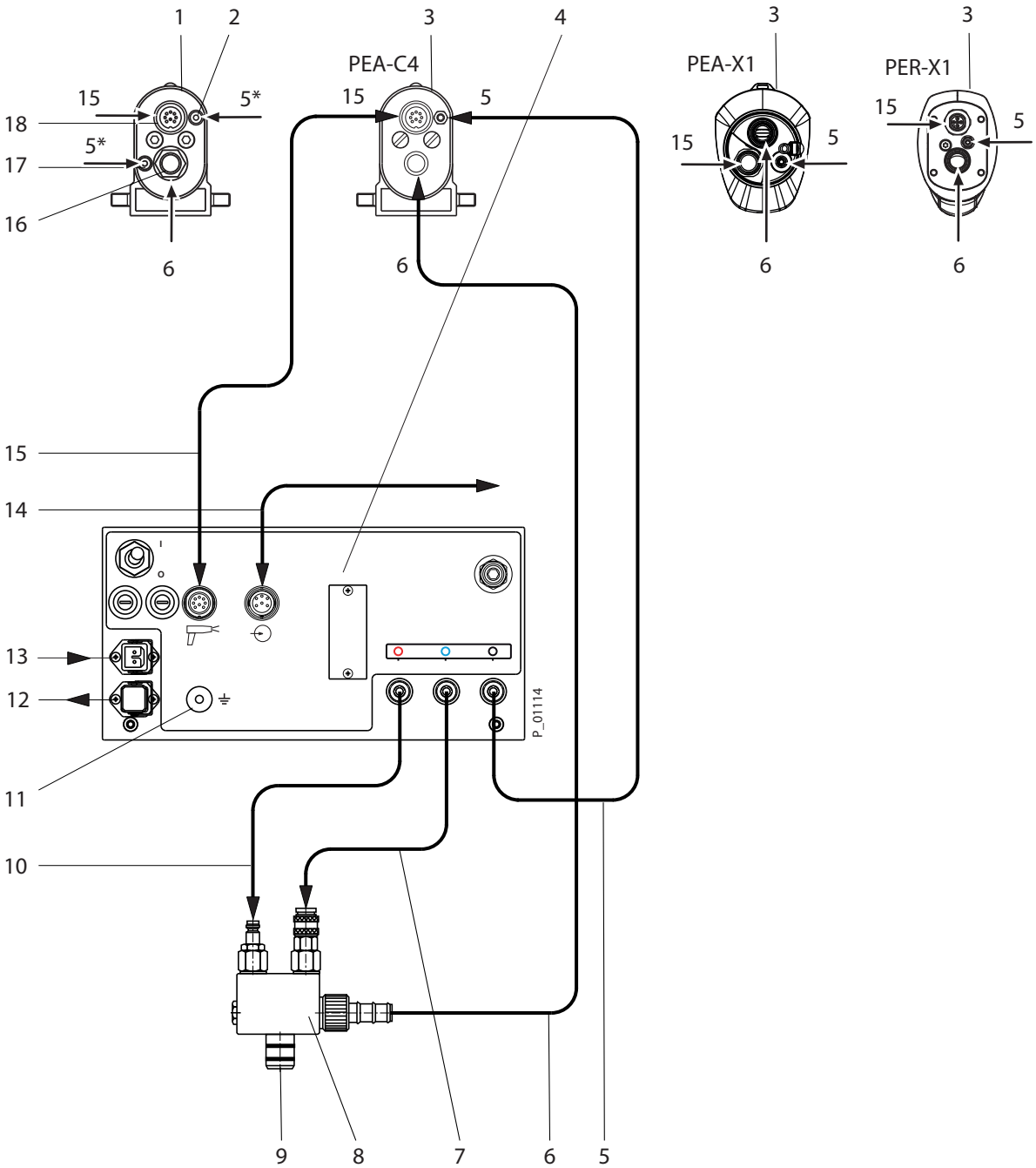
## 6.4 CONNECTING THE MANUAL GUN




| | |
|---|---|
| 1 | Corona or Tribo spray gun |
| 2 | Electrical connection cable |
| 3 | Compressed air main supply (0.6–0.8 MPa; 6–8 bar; 87–116 psi)<br>Hose diameter: 8 mm; 0.315 inch |
| 4 | Atomizing or Tribo air, transparent |
| 5 | Dosing air, blue |
| 6 | Powder feed, transparent |

| | |
|---|---|
| 7 | Powder injector |
| 8 | Powder feed, e.g., from the powder tank |
| 9 | Feed air, red |
| 10 | Fluid air (only for feeding from a powder box; for feeding out of the 60 l powder tank, this output is closed with a plug)<br>In a manual system, the fluid air is fed from the throttle on the air filter to the inlet on the injector. |
| 11 | Grounding cable to the signal ground |
| 12 | WACON Sprint 2 X: mains output terminal (no application)<br>WACON Sprint 2 XE: mains output terminal for vibrator motor |
| 13 | Mains input terminal |

## 6.5 CONNECTING THE AUTOMATIC GUN




| | |
|---|---|
| 1 | Tribo spray gun* |
| 2 | Atomizing air |
| 3 | Corona spray gun |
| 4 | Compressed air main supply (0.6–0.8 MPa; 6–8 bar; 87–116 psi)<br>Hose diameter: 8 mm; 0.315 inch |
| 5 | Atomizing or Tribo air, transparent |
| 6 | Powder feed, transparent |
| 7 | Dosing air, blue |

| | |
|---|---|
| 8 | Powder injector |
| 9 | Powder feed, e.g., from the powder tank |
| 10 | Feed air, red |
| 11 | Grounding cable to the signal ground |
| 12 | WACON Sprint 2 X: mains output terminal to next control unit<br>WACON Sprint 2 XE: mains output terminal (no application) |
| 13 | Mains input terminal |
| 14 | Start/Stop command from external controller (master controller) |
| 15 | Electrical connection cable |
| 16 | Powder hose connection |
| 17 | Tribo air |
| 18 | Electrical connection |

* A Y-distributor (order no. 9990149) is needed to divide the Tribo and atomizing air.

### 6.6 GROUNDING

**⚠ DANGER**

**No grounding!**

Risk of explosion and risk of electric shock!

- Electrostatic control units and the associated spray equipment may only be connected to mains supplies with a protective conductor connection (PE conductor)!

For safety reasons, the control unit must be properly grounded. The grounding connection to the energy supply (socket) is made via the mains connection cable's protective conductor, while that to the work piece/system is made via the knurled screw on the rear of the control unit. Both connections are absolutely essential. The gun is grounded according to instructions for proper commissioning.

Good grounding of the work piece is also necessary for optimum powder coating.

**A poorly grounded work piece causes:**

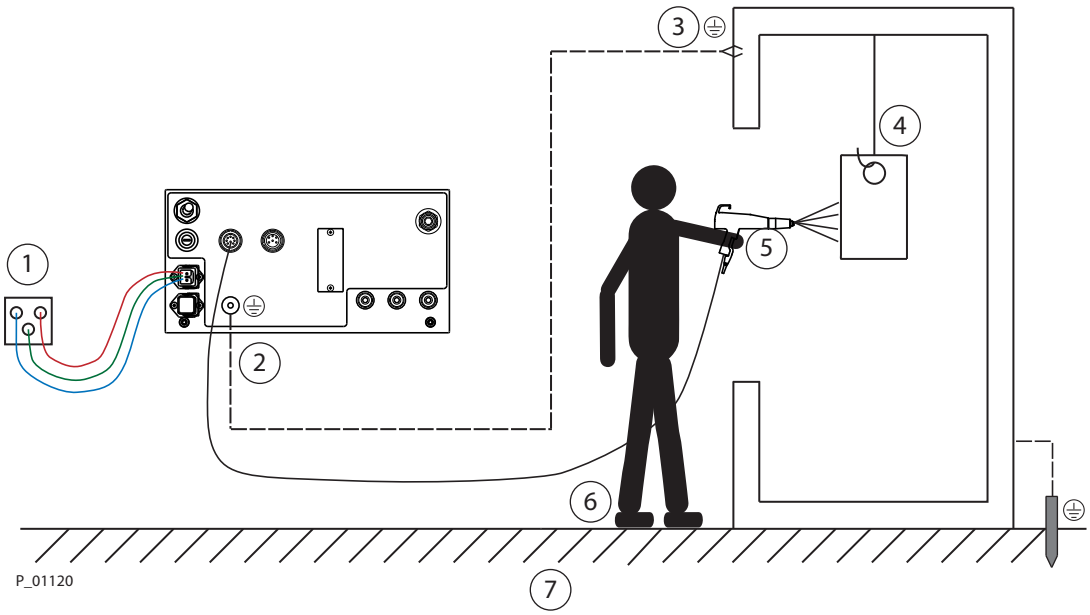
- dangerous electric charging of the work piece
- very bad wrap-around
- uneven coating
- back spraying to the spray gun, i.e., contamination

**Prerequisites for perfect grounding and coating of a work piece are:**

- Electroconductive suspension for the work piece that is to be coated
- Regular cleaning of powder residue from hanger
- Grounding of the spray booth, conveyor system and suspension equipment on site, in accordance with the operating manual or the manufacturer's information
- Grounding cable connected to the control module or control cabinet
- That a grounding resistance of the work piece of 1 MΩ is not exceeded (resistance to ground measured at 500 V or 1000 V).

**Sparks between conveyor, conveyor hooks (hangers) and work piece can occur if electric contact points between conveyor, conveyor hooks (hangers) and work piece are not sufficiently cleaned and therefore the work pieces are not sufficiently grounded! These sparks can cause heavy radio frequency interference (EMC).**

### 6.6.1 Grounding the powder coating system




| | |
|---|---|
| 1 | Only use mains cables with grounding strand! |
| 2 | Connect grounding cable with booth or spray wall and signal ground! |
| 3 | Connect grounding cable to an uncoated metal part of the booth or spray wall! |
| 4 | Remove all paint from hooks and other hanger parts! |
| 5 | Do not wear insulating gloves! |
| 6 | Wear electrostatically conductive footwear! |
| 7 | The floor must be electrostatically conductive! |

### 6.6.2 Safety checks

A skilled person must check to ensure that the device is in a reliable state after it is assembled and commissioned. This includes:

- Carry out safety checks in accordance with chapter Safety checks [▸▸ 54].

# 7 OPERATION

## 7.1 TRAINING THE OPERATING PERSONNEL

- The operating personnel must be qualified to operate the entire system.
- The operating staff must be familiar with the potential risks associated with improper behavior as well as the necessary protective devices and measures.
- Before work commences, the operating personnel must receive appropriate system training.

**NOTICE**

Danger of damage to the device.

- The control unit must be connected and grounded according to the directions in chapter Assembly and commissioning [▸▸ 27].
- After switching on the device, wait for the start up phase to be completed. A function test is performed in the start up phase. At the end of the tests, the connected gun type is detected and displayed.
- Do not actuate the trigger on a manual spray gun in the start-up phase, if the gun is used as a single device in a manual coating system. If the trigger is actuated, the control unit will detect it as an automatic gun and wait for the actuation signal from remote control. The device cannot be switched on.

## 7.2 PREPARATIONS FOR COMMISSIONING

### 7.2.1 Tasks

1. Ensure that:
   - regular safety checks are performed in accordance with chapter Safety checks [▸▸ 54]
   - commissioning is carried out in accordance with chapter Assembly and commissioning [▸▸ 27].

### 7.2.2 Operating modes

The WACON Sprint 2 supports the following operating modes:

**WACON Sprint 2 X:**

- Manual gun mode (manual system without vibrator control)
- Manual gun mode with external control (remote interface with external release (required for coating and flushing) and for external control of flushing function)
- Manual gun mode with external control for IPS
- Automatic gun mode (remote interface for external control of the module)

**WACON Sprint 2 XE:**

- Manual gun mode (manual system with vibrator control)
- Manual gun mode with external control (remote interface with external release (required for coating and flushing) and for external control of flushing function)
- Automatic gun mode for a maximum of 1 automatic gun. A further looping of the mains voltage for additional EPG control units is not possible.

In the first two listed operating modes, the configuration parameter C26 must be set to oFF (factory setting). The operating mode is automatically recognized by the control unit (parameter C26 must be set to oFF, see chapter Gun recognition [▸▸ 34]).

### 7.2.3 Gun recognition

**NOTICE**

**Functional faults!**

- Do not operate the spray gun's trigger while the control unit is being switched on and is powering up.

The WACON Sprint 2 control unit automatically detects whether a manual or automatic gun is connected to the control unit (parameter C26 must be set to oFF). It does this by checking whether the trigger switch is activated when it is switched on.

- If the trigger switch is pressed, the gun is an automatic one. The powder feed is switched on and off by a superordinate controller via the remote interface.
- If the trigger switch is not pressed, the gun is a manual one. The powder feed is switched on and off with the gun's manual trigger.

### 7.2.4 Manual gun mode with external control

Application is the recoating of work pieces in an automatic coating system. The recoating is done with a manual gun, but the powder feed is done by the powder center of the automatic system. The WACON Sprint 2 must receive a release signal via the remote interface so that the device may flush and coat. The cleaning function (continuous flushing can also be controlled externally.

The function must be selected specifically via configuration parameter C26.

### 7.2.5 Basic and factory settings

The WACON Sprint 2 control unit is factory-configured for operation with Corona manual or automatic guns. Consequently, the control unit can be used in a manual system or an automatic system without any further settings being required.

However, if the control unit is used with a Tribo manual or automatic gun, the gun type must be changed. This change is made in the configuration settings.

For all other settings, configurations and special functions, please refer to chapter Appendix device configuration [▸▸ 69].

## 7.3 RECIPES

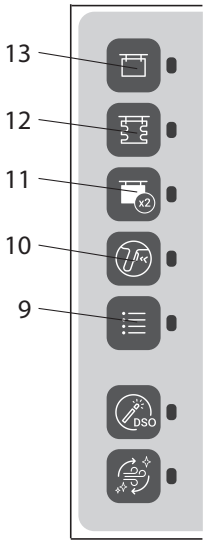
Recipes are used to avoid lengthy adjustment work when changing powder or work piece. All parameters relevant for coating a work piece are combined and stored under a recipe number instead.

If required, these can then be called up using the recipe buttons.

With the WACON Sprint 2, a recipe comprises the following parameters:

| | |
|---|---|
| Total air volume (feed and dosing air volume) | [$m^3/h$] |
| Powder quantity | [%] |
| Atomizing air/Tribo air | [$m^3/h$] |
| High voltage | [kV] |
| Current limitation | [µA] |
| U/I characteristic curve | [standard, medium, soft] |
| DSO (Digital Surface Optimizer) | Function activated or deactivated |

The WACON Sprint 2 control unit has 50 pre-defined recipes. 4 of these can be selected directly using buttons 10-13 and the remaining 46 by pressing the [Additional recipes] button (9) above the control dial (22). All recipes can be adapted and stored by the user to suit individual requirements.



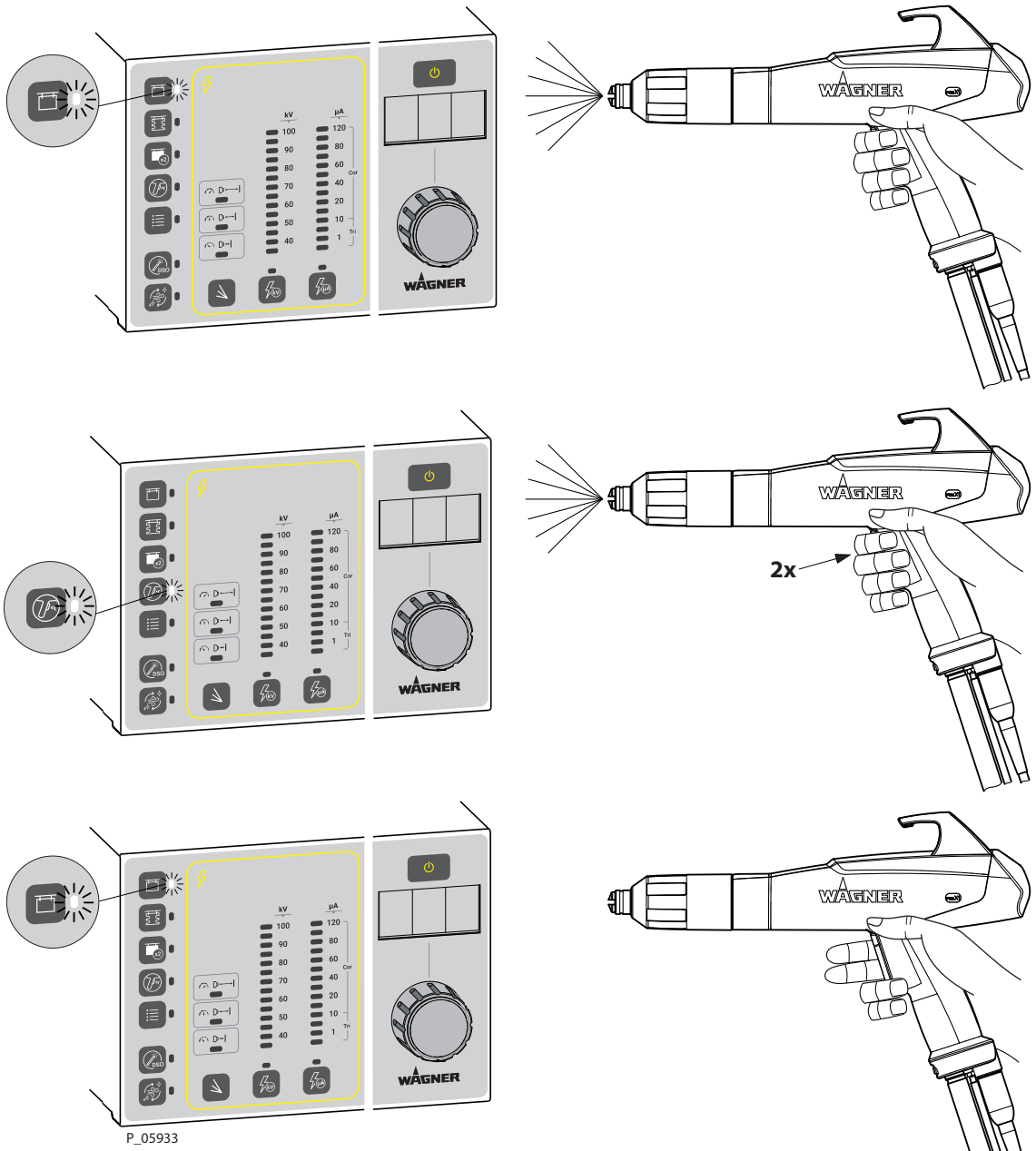

P_05932

| | |
|---|---|
| 13 | Recipe 1 for [Surface parts]: High powder quantity, high powder charging |
| 12 | Recipe 3 for [Profile parts]: Medium powder quantity, low powder charging |
| 11 | Recipe 2 for [Second coating]: Small powder quantity, low powder charging |
| 10 | Recipe 4 for [Double-click function]: Individual setting, activated by a double-click on the manual gun or once this button has been pressed |
| 9 | Recipe nos. 5 to 50: Can be selected with the control dial (22) after pressing the button |

### 7.3.1 Double-click recipe (High Dynamic Remote)

This function is used to change quickly to another recipe during a coating operation.
The operator can call up a stored second recipe by double-clicking on the trigger lever of the spray gun, for example to coat using different parameters (high voltage, current limitation, air volumes etc.

To call up the function, press the trigger lever on the spray gun twice in quick succession and hold down. Upon releasing the trigger, the original recipe will be returned to.

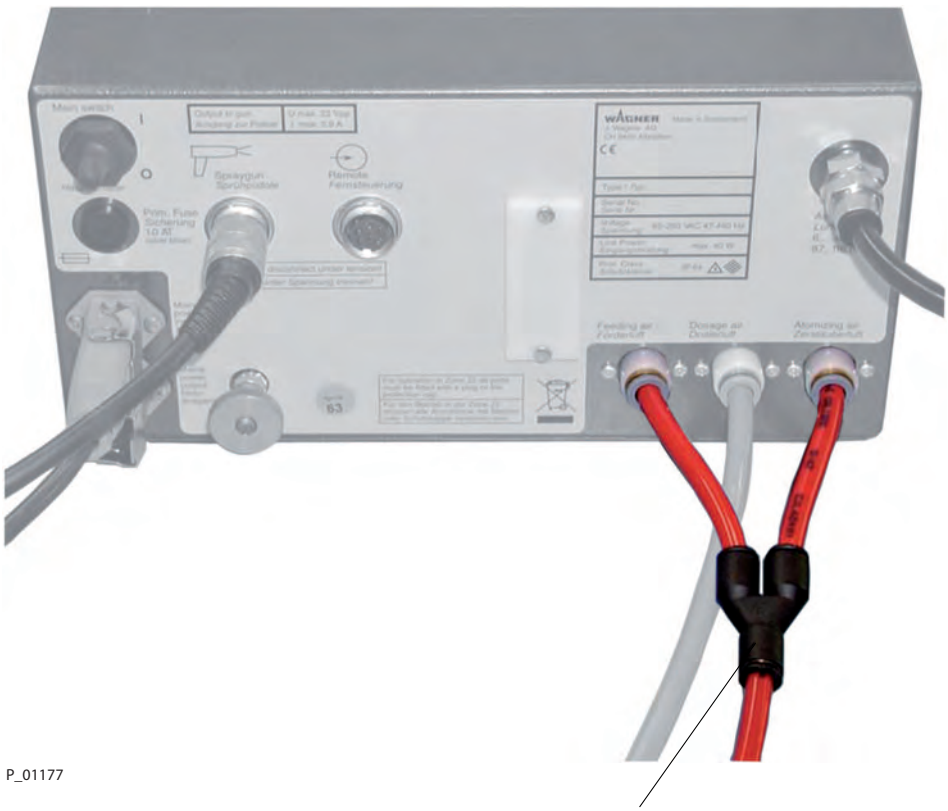



## 7.4 AIR HIGH OUTPUT MODE (HIGH POWDER DISCHARGE

With the WACON Sprint 2, you can combine the feed and atomizing air to obtain a higher feed air volume. A high powder volume however still depends on other factors. The length and diameter of the powder hose also affect the maximum powder volume.

### 7.4.1 Combining the air outputs

A Y-piece (order no. 9990149 is needed to combine the feed and atomizing air.



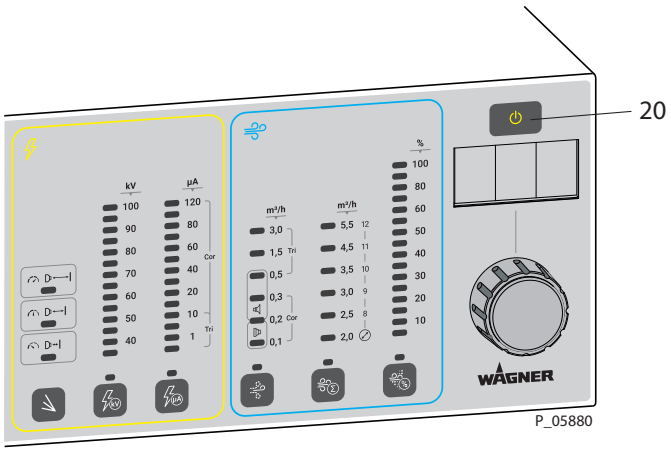
P_01177

| | |
|---|---|
| 1 | Y-piece |

**Attention:**

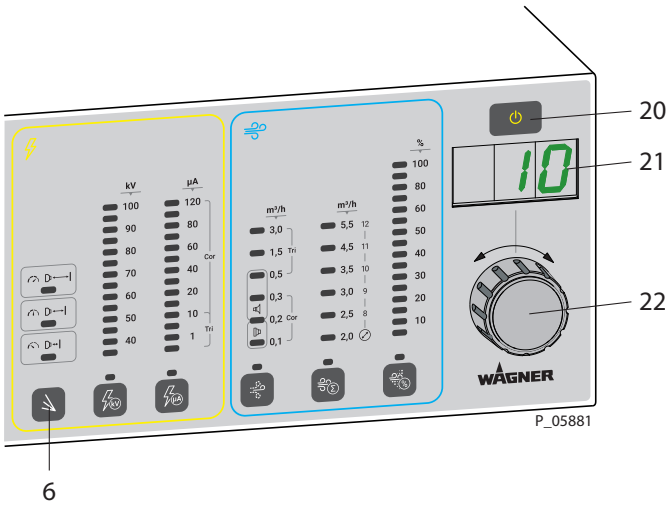
- The atomizing air is not available in this mode.
- Warning messages 1–3 [Insufficient feed air], [Insufficient dosing air], [Insufficient atomizing air] are deactivated in this mode.

### 7.4.2 Activating high output mode (C17)

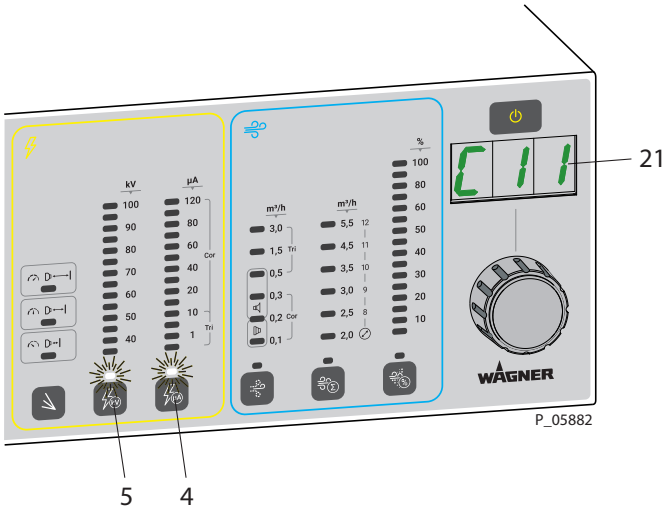



P_05880

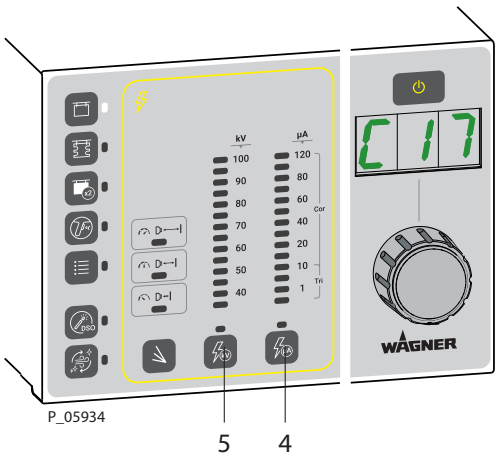
1. To access special device configuration, switch the device to [Standby] with the [Standby] button (20).



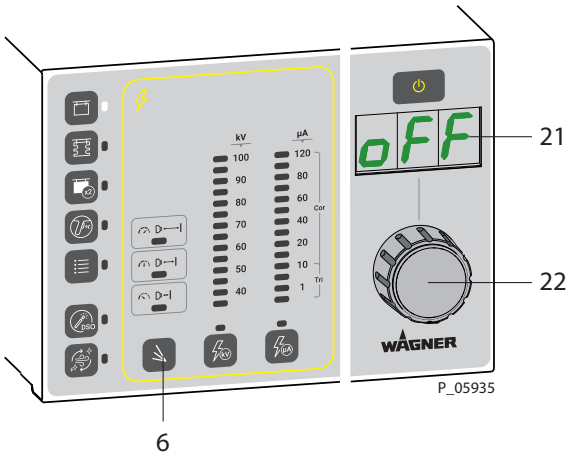

2. Press [Characteristic slope] button (6) and hold it down.
3. Turn the universal control dial (22) with the other hand until the LED display (21) shows the number 10. Then release the [Characteristic slope] button (6). The device is now in configuration mode. The scrolling text [Configuration] is displayed.



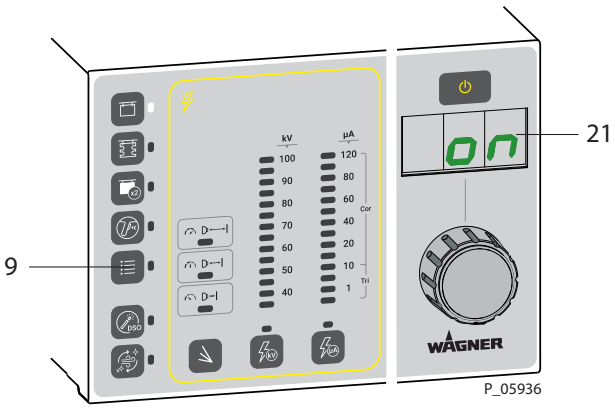

4. The LED display (21) now shows the first configuration setting C11. At the same time, the two white LED displays [Spray current] and [High voltage] will flash via the [Current limitation] (4) button and [High voltage] (5) button.



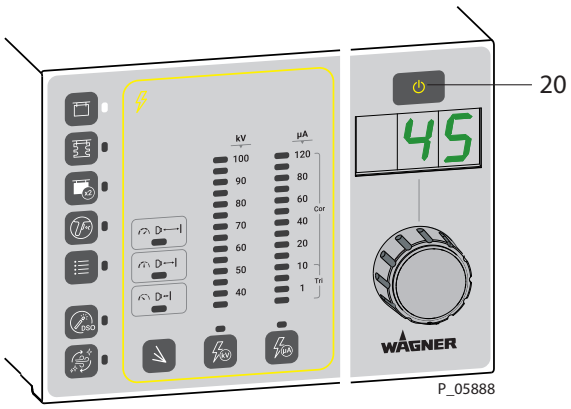
5. Use [Current limitation] button (4) or [High voltage] button (5) to select parameter C17.




6. The value set for parameter C17 is displayed by pressing the [Characteristic slope] button (6) on the LED display (21).
   - oFF = High feed air volume switched off
   - on = High feed air volume switched on
7. To change the value to [on], turn universal control dial (22) one step clockwise.
   To change the value to [oFF], turn universal control dial (22) one step counterclockwise.



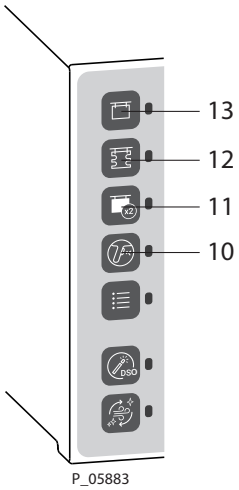

8. To save the [on] setting, press [Additional programs] button (9) for approx. 2 seconds.
   LED display (21) switches back to display C17.




9. Press the [Standby] button (20) to exit the configuration mode. The control unit is now in the operating mode with high powder feed switched on. This setting is global and applies in all recipes.

## 7.5 CHANGING AND SAVING RECIPES

### 7.5.1 Recipe nos. 1-4




Recipes 1–4 can be selected and saved directly using recipe buttons 10–13.

Once the recipe required has been called up, the individual coating parameters can be called up and changed using the corresponding selection buttons.

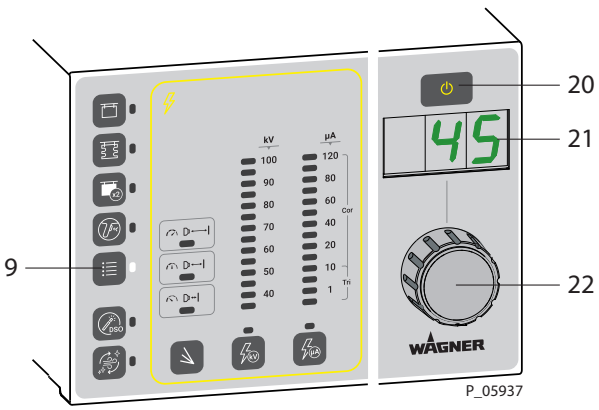
Descriptions of the individual parameters are provided in chapter Setting the total air volume [▸▸ 41] and in the following chapters.

When a parameter is changed, the LED on the left of the recipe button flashes to indicate to the user that a parameter value has been changed.

The process for saving parameters is described below.

- To reuse the originally set values, press the corresponding recipe button briefly. The modified values are not applied.
- To save the modified values, press the appropriate recipe button and hold for approx. 2 seconds until the LED beside the button flashes quickly. The modified values are then saved.

### 7.5.2 Recipe nos. 5-50




Recipes 5–50 can be indirectly selected and saved. First press the [Additional recipes] button (9). The white [Additional recipes] LED then lights up next to the [Additional recipes] button (9) and the LED display (21) indicates the current recipe number. The required recipe can be set by turning the universal control dial (22). In the following example, the values in recipe no. 10 are to be modified and saved.

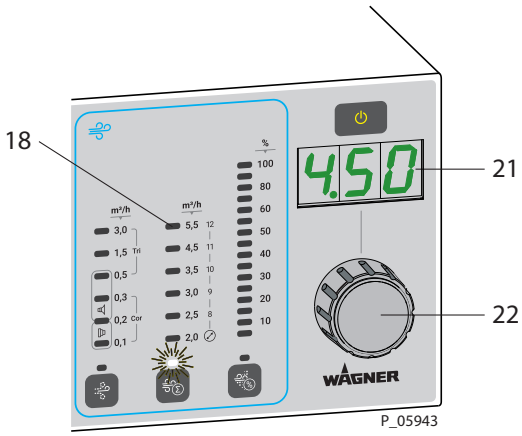
1. Select recipe no. 10.

2. Set the desired values in the recipe, see chapter Setting the total air amount [▸▸ 41] and the following chapters.
3. Instead of showing the current recipe number, the LED display (21) now shows the modified value.
4. To save the changes, hold down the [Additional recipes] button (9) until the previous recipe number flashes in the LED display (21).
5. To save the values, there are two options:
   - To save the recipe to the recipe number currently displayed, hold the [Additional recipes] button (9) down for another 2 seconds until the white [Additional recipes] LED flashes quickly. The modified values are then saved to the original recipe.
   - To save the changes to another recipe number, use universal control dial (21) to set the desired recipe number - this is now displayed flashing. To save the values, press and hold down the [Additional recipes] button (9) for 2 seconds until the white [Additional recipes] LED flashes quickly. The changes are thereby saved to the set recipe number.

## 7.6 SETTING AND CHANGING COATING PARAMETERS

### 7.6.1 Setting the total air volume


1. Press [Total air volume] button (2) to adjust the total air volume. The white LED above the button indicates that the total air volume is selected.




2. The total air volume can now be set using the universal control dial (22) between 1–6 $m^3/h$ with a resolution of 0.05 $m^3/h$. The value is shown in the LED display (21).

Above the [Total air volume] button (2) is the [Total air] bar graph display (18). When the control unit is in the ready position, this light strip shows the set point as a dot and when powder feed is switched on it shows the actual value as a bar.

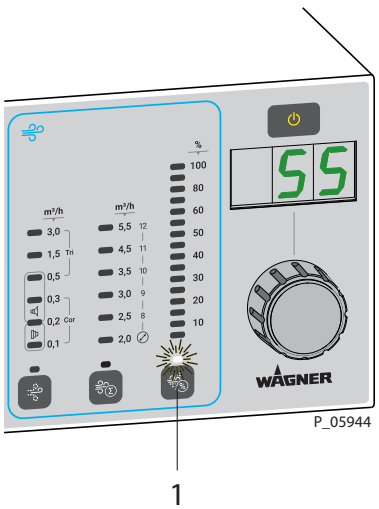
To the right of the bar graph is the scale for the total air volume. To the right of the bar graph is another scale indicating the hose diameter. This scale shows the correlation between the total air volume and the inner hose diameter (see operating manuals for the quick link powder injector). The inner hose diameter is printed on the powder hose.

Example:

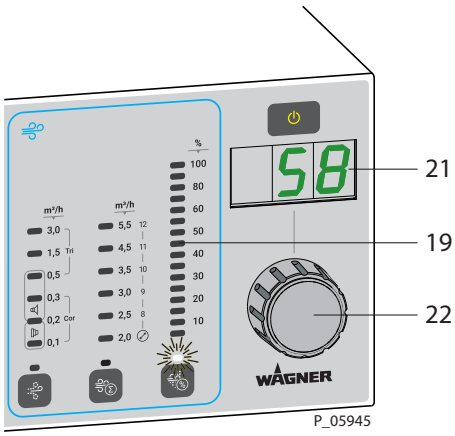
Inner hose diameter 10 mm
Total air 3.6 $m^3/h$

The total air volume can be set between 1–6 $m^3/h$ as described above. If this value is further reduced from a value of 1 $m^3/h$, the word [oFF] appears in the LED display (21) to signal that the total air supply is deactivated. The total air supply is not therefore activated when the powder feed is switched on.

### 7.6.2 Setting the powder feed quantity




1. Press the [Powder quantity] button (1) to adjust the powder quantity. The white LED above the button indicates that the powder quantity is selected.



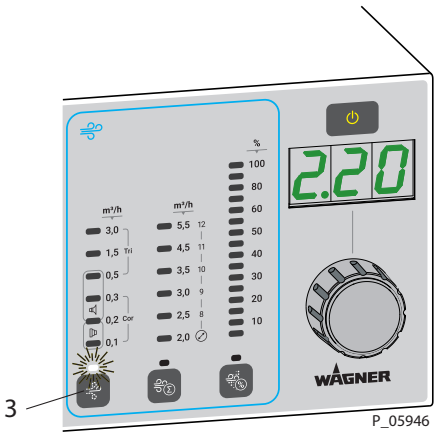

2. The powder quantity can now be set using the universal control dial (22) between 0–100% with a resolution of 1%. The value is shown in the LED display (21).

When the control unit is in the ready position, the light strip (19) shows the set value as a dot and when powder feed is switched on it shows the actual value as a bar. The powder quantity setting as a % refers to the percentage distribution of the different air types.

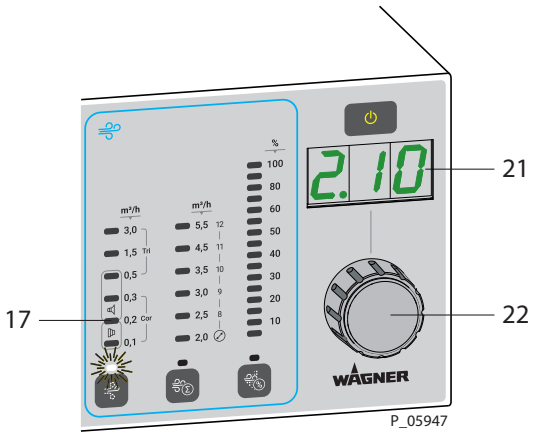
Example:

75% powder quantity means that 75% of the total air volume is supplied to the feed air and 25% to the dosing air. The greater the proportion of feed air, the greater the powder quantity for the specified total air volume.

### 7.6.3 Setting the additional air (atomizing/ionizing/tribo air volume)




1. Press [Additional air] button (3) to set the additional air volume. The white LED above the button indicates that the Additional air is selected.



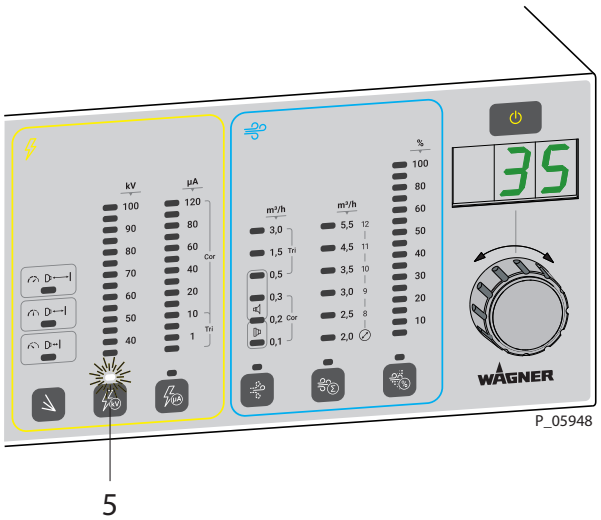

2. The additional air volume can now be set using the universal control dial (22) between 0.05–4.0 $m^3$/h with a resolution of 0.05 $m^3$/h. The value is shown in the LED display (21).

The [Additional air] bar graph display (17) can be found above the [Additional air] button (3). When the control unit is in the ready position, this light strip shows the set point as a dot and when powder feed is switched on it shows the actual value as a bar.

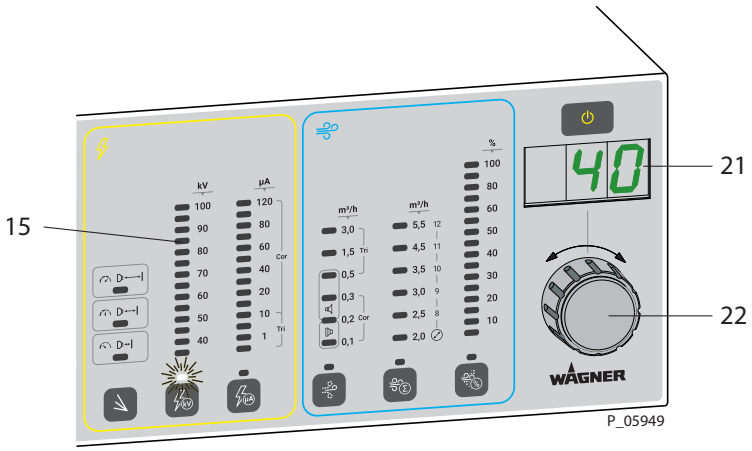
Different amounts of air are required depending on the type or gun and/or nozzle. For the correct settings, please refer to the operating manual for the relevant powder spray gun.

The additional air volume can be set between 0.05–4 $m^3$/h as described above.
The additional air cannot be fully deactivated, therefore the spray gun always receives minimal additional air.

### 7.6.4 Setting the high voltage




1. Press the [High voltage] button (5) to adjust the high voltage. The white LED above the button indicates that the High voltage is selected.



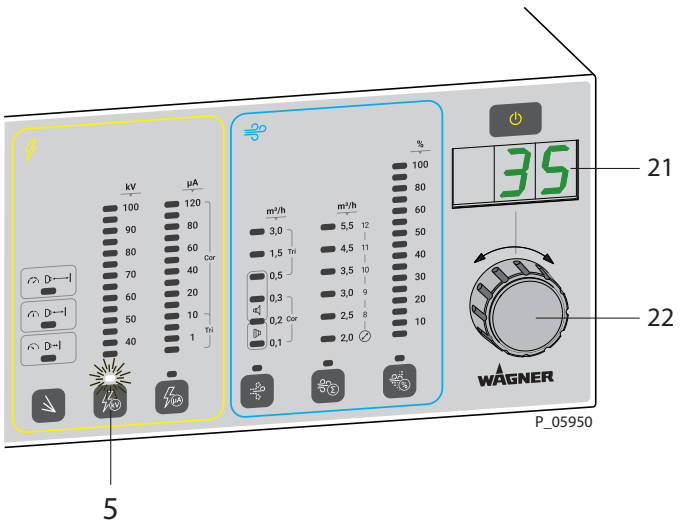

2. The high voltage can now be set using the universal control dial (22) between 10–100 kV with a resolution of 1 kV. The value is shown in the LED display (21).

Above the [High voltage] button (5) is the [High voltage] bar graph display (15). When the control unit is in the ready position, this light strip shows the set value as a dot and when high voltage is switched on it shows the actual value as a bar.

The high voltage can be set between 10–100 kV as described above. If this value is further reduced from a value of 10 kV, the word [oFF] appears in the LED display (21) to signal that the high voltage is deactivated. The high-voltage generation is not therefore activated when the powder feed is switched on.

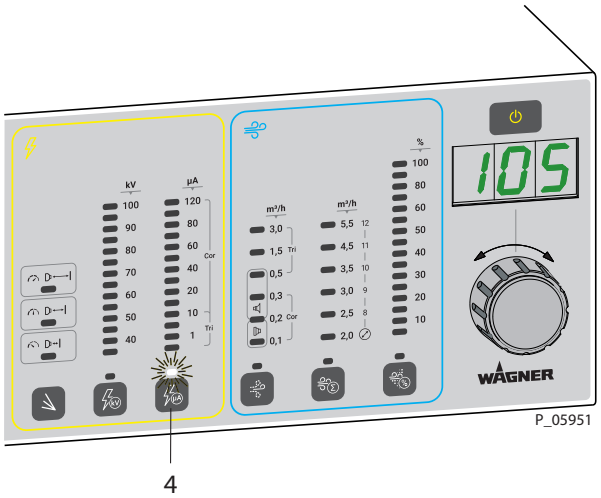
### 7.6.5 Displaying actual high-voltage value

The actual high-voltage value can be displayed during the coating process in LED display (21).

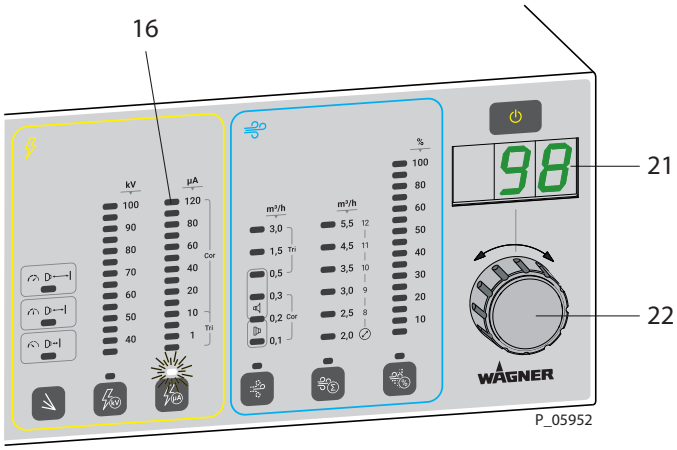



- Press [High-voltage] button (5) for around 2 seconds. White LED over the button flashes quickly. The current high voltage value is displayed in the LED display (21). The actual value display can also be left by pressing a selection button, rotating the universal control dial (22) or letting go of the trigger lever.

### 7.6.6 Setting the current limitation




1. Press the [Current limitation] button (4) to adjust the limitation of the spray current.
   The white LED above the button indicates that the Current limitation is selected.



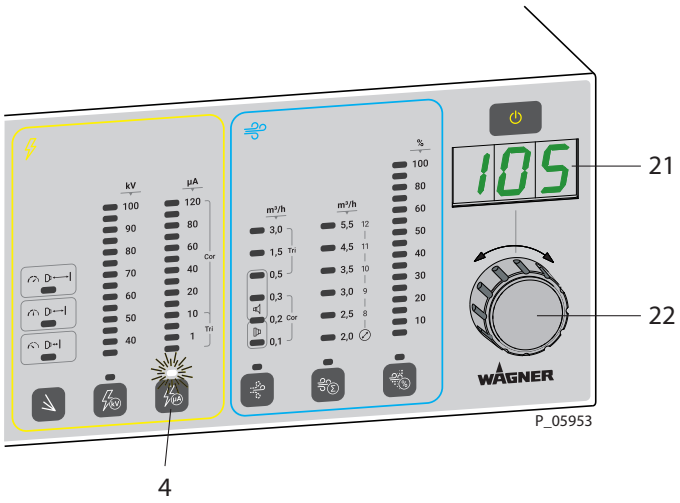

2. The current limitation can now be adjusted using the universal control dial (22) from 0.5–120 µA (resolution: 0.5 µA to 5 µA, then 1 µA). The value is shown in the LED display (21).

Above the [Current limitation] button (4) is the [Current limitation] bar graph display (16). When the control unit is in the ready position, this light strip shows the set value as a dot and when high voltage is switched on it shows the actual value as a bar.

The current limitation is an adjustable threshold. If this threshold is exceeded, the high voltage is adjusted downwards until the threshold is no longer exceeded.

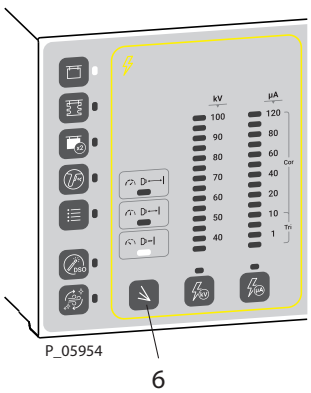
### 7.6.7 Displaying actual value of current limitation

The actual current limitation value can be displayed in LED display (21) during the coating process.




- Press the [Current limitation] button (4) approx. 2 seconds. White LED over the button flashes quickly. The actual current limitation value is shown in the LED display (21). The actual value display can also be left by pressing a selection button, rotating the universal control dial (22) or letting go of the trigger lever.

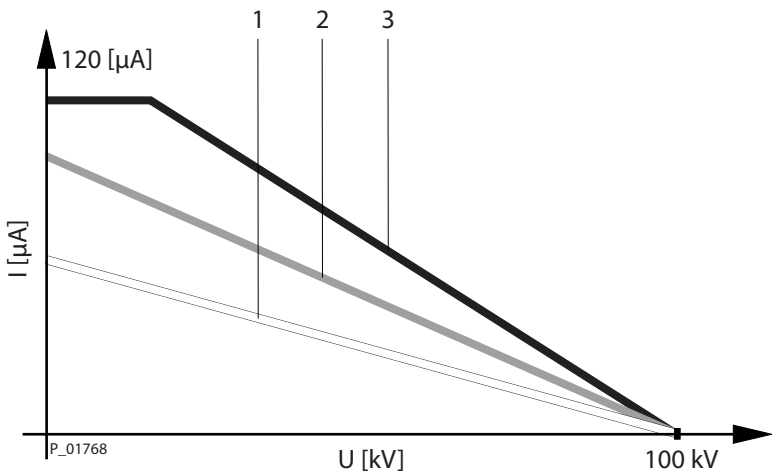
### 7.6.8 Setting the U/I characteristic curves




To change the characteristic slope, press the [Characteristic slope] button (6) once or twice until the desired characteristic curve is shown in the [Characteristic slope] LED display.

**U/I characteristics WACON Sprint 2**

The user can choose from three characteristic curves to achieve optimum coating results. These enable optimum electrostatic charging of the powder despite different powder characteristics.




| | |
|---|---|
| 1 | Soft |
| 2 | Medium |
| 3 | Standard |
| U | High voltage |
| I | Spray current |

The properties of the various characteristic curves and their use are described on the following page.

| **Properties of the characteristic curve** | **Field of application/remarks** |
|---|---|
| Standard level (black)<br>– Open-circuit voltage 100 kV<br>– Maximum current 120 µA (current limitation at 120 µA) | – High performance<br>– For high application effectiveness<br>– For quick coating<br>– For large spraying distances<br>– For high coating thicknesses<br>– For charging large powder quantities and complex powders<br>– For coarse-textured powder<br>– For functional coating |
| Medium level (gray)<br>– Open-circuit voltage 100 kV<br>– Maximum current 120 µA | – For more precise coating thicknesses<br>– For better surface quality/decorative surfaces<br>– For metallic powder<br>– For effect lacquers<br>– Measures in case of overcharging effects with the standard characteristic curve<br>– For small surfaces |
| Soft level (white)<br>– Open-circuit voltage 100 kV<br>– Maximum current 80 µA | – For stringent requirements on decorative surfaces<br>– When the quality is more important than the quantity<br>– For overcoating or recoating<br>– For low coating thicknesses<br>– For small powder quantities<br>– To avoid build-up of edges<br>– For use with low spraying distance<br>– For complex geometries with undercuts<br>– For coating coverage for deep coating |

## 7.7 FLUSH FUNCTION

The WACON Sprint 2 control unit has two different flush functions:

- hose flush function
- cleaning flush function

### 7.7.1 Hose flush function

This function blows dosing air through the powder feed hose and gun when the powder feed is switched off (manual guns - releasing of trigger lever, automatic guns - signal from controller).

This function is set to the [oFF] parameter value in the factory.

The values can be changed in the parameter settings for parameters C22 and C23 (see chapter Appendix device configuration [▸▸ 69]).

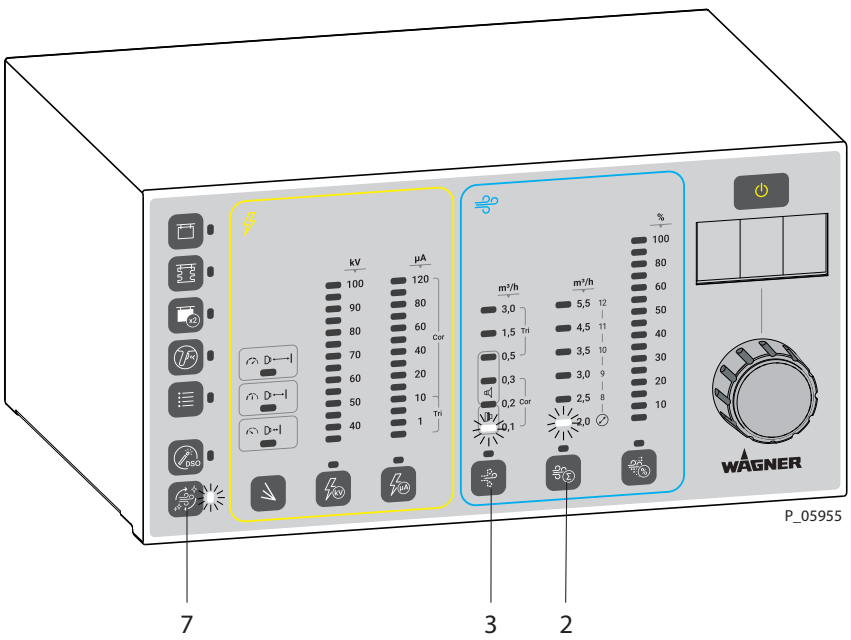
### 7.7.2 Cleaning flush function

This function is used at the end of a shift or during a paint change. All powder feed parts are flushed. The flushing process is as described below:

First the atomizing air is activated. After around 0.5 seconds, the feed and dosing air are added, increasing all the time. After a total of 2.5 seconds, the feed and dosing air flush in pulses while the atomizing air remains constant throughout.

The cleaning flush function is only available when the control unit is switched on and in the operating mode. In standby mode or in configuration mode, this function is inactive.

### 7.7.3 Procedure for cleaning flushing with manual guns

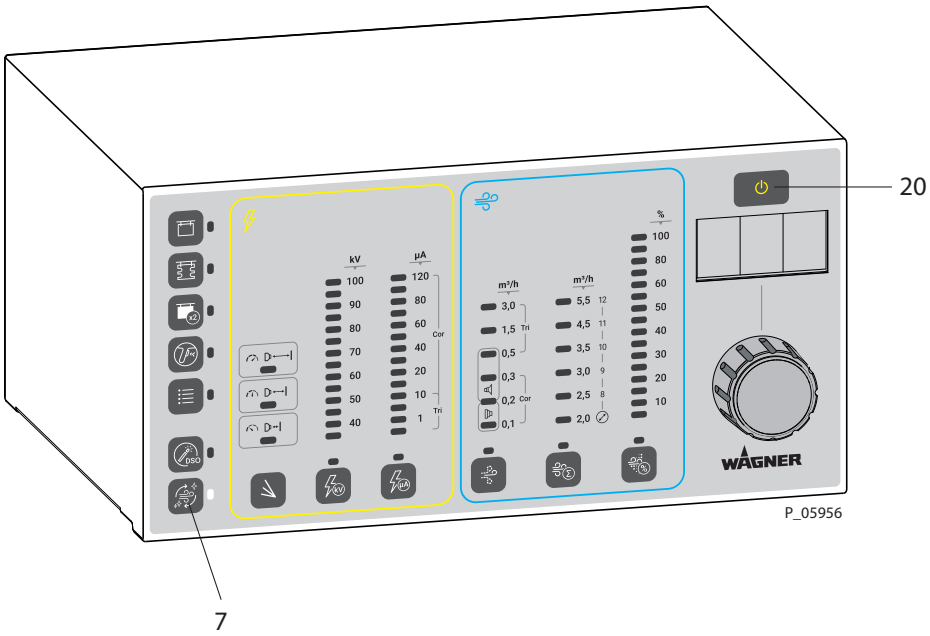



1. End coating operation.
2. Remove or pull out powder suction unit (suction lance, powder injector) from powder tank.
3. Place the gun, secured against recoil, in the direction of the extraction system so that the ejected powder is extracted.
4. Switch on flushing function by pressing [Flushing] button (7) on the control unit.
   ⇨ LED display next to the button lights up permanently.

5. Close function by again pressing [Flushing] button (7).
6. For extreme paint changes, it may be necessary to manually blow off interfaces in the system.
7. Once the suction lance has been lowered into the powder tank, the coating operation can be continued again.

The activated function is also indicated by the illuminated display lighting above the [Total air] button (2) and [Atomizing/ionizing/Tribo air] button (3).

### 7.7.4 Procedure for cleaning flushing with automatic guns




1. End coating operation.
2. Remove powder suction unit (suction lance, powder injector) from powder tank.
3. Switch on flushing function by pressing [Flushing] button (7) on the control unit.
   ⇨ The LED display to the right of the [Flushing] button (7) starts to flash and indicates readiness for flushing.
4. Process should be repeated for each spray gun that is to be flushed.
5. If you do not want a flushing process, press [Standby] button (20).
6. Start flushing process using [Gun start] on the system controller.
7. Stop flushing process using [Gun Stop] on the system controller.
8. Re-activate control units in standby mode by pressing the [Standby] button (20).
9. Press [Flushing] button (7) to return to normal coating mode.
   ⇨ The LED display no longer flashes.
10. Once the suction lance has been lowered into the powder tank, the coating operation can be continued again.

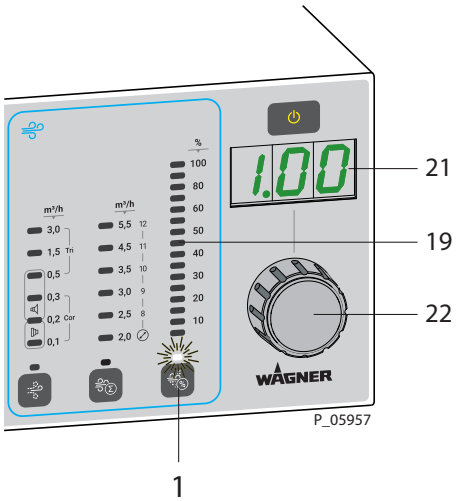
**Info**

If configuration parameter C16 is set to [on], the flushing function can only be activated via the serial interface.

### 7.8 STARTING OUTPUT SETTING (ZERO ADJUSTMENT)

This function can be used to set the point from which powder is fed. The starting output setting is subject to:

- The diameter of the powder hose
- The length of the powder hose
- The feed properties of the powder




If no powder is fed at 0%:

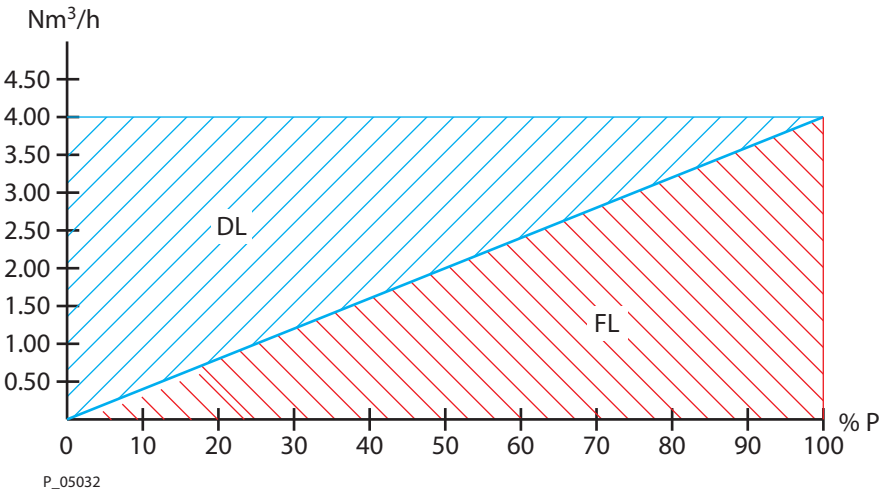
1. Press [Powder quantity] button (1) for around 2 seconds. The [Powder quantity] LED flashes rapidly, the [Powder quantity display] (19) flashes. The current value of the feed air is shown in the LED display 21 (e.g., 1.00 means 1.00 $Nm^3/h$). The factory setting is set to 0.8 $Nm^3/h$.
2. Turn universal control dial (22) until just a small amount of powder is fed.
3. To save, hold down the [Powder quantity] button (1).
   ⇨ The LED display (21) flashes.
4. To discard the set value, press any button briefly.
   ⇨ The value that was originally set is reloaded.

The starting output value is set to 0.8 $Nm^3/h$ at the factory.

If the set value is changed, the coating parameters also change, as altering the value alters the feed air (see diagram).

**Example: Total air = 4.00 Nm³/h**

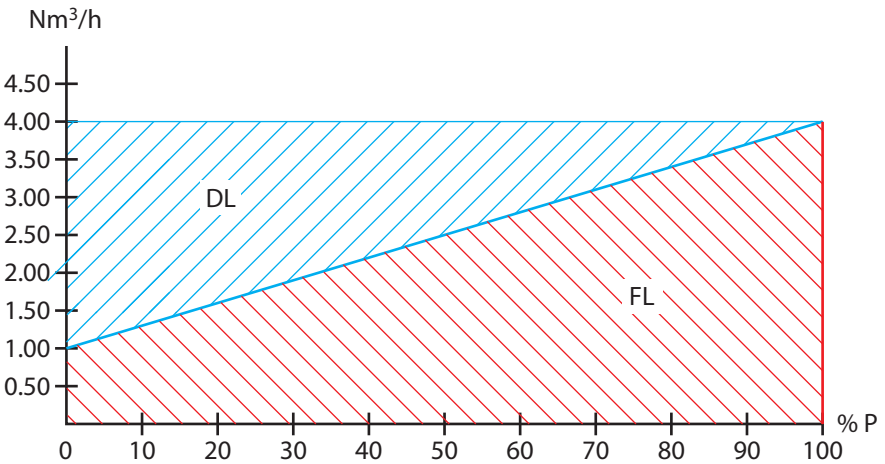
**Starting output 0.00**




P_05032

| | |
|---|---|
| DL | Dosing air |
| FL | Feed air |
| P | Powder |

**Starting output 1.00**




P_02368

| | |
|---|---|
| DL | Dosing air |
| FL | Feed air |
| P | Powder |

# 8 CLEANING AND MAINTENANCE

## 8.1 CLEANING

### 8.1.1 Cleaning personnel

Cleaning work should be undertaken regularly and carefully by qualified and trained personnel. They should be informed of specific hazards during their training.

The following hazards may arise during cleaning work:

- health hazard from inhaling powder lacquer,
- use of unsuitable cleaning tools and aids.

### 8.1.2 Cleaning procedures

The cleaning intervals should be adapted by the operator depending on the level of use and if necessary the level of soiling.

If in doubt, we recommend contacting WAGNER's specialist personnel.

The valid health and safety specifications and the safety instructions provided in chapter Basic safety instructions [▸▸ 12] must be adhered to for all cleaning work.

## 8.2 MAINTENANCE

### 8.2.1 Maintenance personnel

Maintenance work should be undertaken regularly and carefully by qualified and trained personnel. They should be informed of specific hazards during their training.

The following hazards may arise during maintenance work:

- health hazard from inhaling powder lacquer,
- use of unsuitable tools and aids.

A skilled person must ensure that the device is checked for being in a reliable state after maintenance work is completed.

### 8.2.2 Maintenance instructions

**⚠ DANGER**

**Incorrect maintenance/repair!**

Danger to life and equipment damage.

- Only a WAGNER service center or a specially trained person may carry out repairs and replace parts.
- Use only WAGNER original spare parts and accessories.
- Only repair and replace parts that are listed in the spare parts chapter and that are assigned to the device.
- Before all work on the device and in the event of work interruptions:
  - Switch off the energy and compressed air supply.
  - Relieve spray gun and device pressure.
  - Secure the spray gun against actuation.
- Observe the operating and service manuals of the individual components for all work.

**Prior to maintenance**

– Flush and clean the system according to chapter Cleaning procedures [▸▸ 53].

**After maintenance**

– Carry out safety checks in accordance with chapter Safety checks [▸▸ 54].
– Put the system into operation and check for leaks.
– Have the system checked for safe condition by a skilled person.

### 8.2.3 Safety checks

#### 8.2.3.1 Grounding check

**Every day**

- Before starting work, carry out a visual check to ensure that the system is grounded.

### 8.2.4 Maintenance procedures

The maintenance intervals should be adapted by the operator depending on the level of use and if necessary the level of soiling.

If in doubt, we recommend contacting WAGNER's specialist personnel.

| Maintenance work | Time stamp | |
|---|---|---|
| | Per shift | Weekly |
| Blow out gun and check for sintering | x | |
| Check gun settings | x | |
| Check gun discharge pressure | x | |
| Blow out powder hoses | x | |
| Check grounding | | x |
| Check compressed air quality | | x |
| Check gun voltage | | x |
| Check powder hoses for bends and sintering | | x |

# 9 TROUBLESHOOTING AND RECTIFICATION

## ⚠ DANGER

**Incorrect maintenance/repair!**

Danger to life and equipment damage.

- WAGNER devices, protective systems and safety, monitoring and control equipment may only be serviced/repaired as defined in Directive 2014/34/EC (ATEX) by trained WAGNER service personnel or skilled persons in accordance with TRBS 1203! Note national regulations!
- Service, repair or replacement of devices or parts of devices may only be performed outside the hazard area!


### 9.1 WARNINGS E01-E04

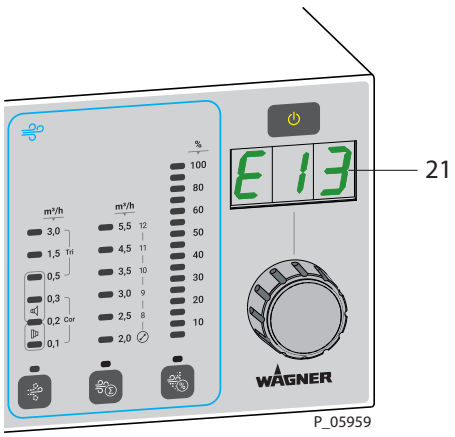
Warnings are shown alternately in the [Exx] LED display (21) (7-segment LED) (xx stands for the warning number). Work can continue if a warning is displayed.

| Warning No. | Warning | Cause | Rectification |
|---|---|---|---|
| E01 | Atomizing air too low | Set point cannot be reached Causes: | |
| | | Hose kinked/blocked | Check hoses and hose laying |
| | | Input air pressure too low | Ensure that inlet pressure is > 6 bar |
| | | System cannot reach target setting | Check gun and nozzle system |
| | | Clogging due to powder sintering on the electrode tip | Check and clean gun, nozzle system and electrode tip |
| E02 | Dosing air too low | Set point cannot be reached Causes: | |
| | | Hose kinked/blocked | Check hoses and hose laying |
| | | Input air pressure too low | Ensure that inlet pressure is > 6 bar |
| | | Injector is not connected | Connect injector correctly |
| | | System cannot reach target setting | Check hoses and hose laying |

| Warning No. | Warning | Cause | Rectification |
|---|---|---|---|
| E03 | Feed air too low | Set point cannot be reached<br>Causes: | |
| | | Hose kinked/blocked | Check hoses and hose laying |
| | | Input air pressure too low | Ensure that inlet pressure is > 6 bar |
| | | Injector is not connected | Connect injector correctly |
| | | System cannot reach target setting | Select smaller set point<br>Example: Feed air for ED pump max. 3.5 $Nm^3/h$ |
| E04 | Fallen below Tribo current limit for 10 s | The Tribo current set in the configuration cannot be reached<br>Causes: | |
| | | Tribo air set too low | Increase Tribo air |
| | | Powder not flowing due to incorrect settings for feed air and total air | Correct feed air and total air settings |
| | | No powder in tank | Fill powder tank |
| | | The powder does not have the required charge characteristics | Use suitable powder |

## 9.2 FAULTS

Malfunctions are shown alternately in the [Exx] LED display (21) (7-segment LED) (xx stands for the warning number). If a fault occurs, high voltage, air, etc. is immediately switched off. Work can be continued only after remedying the fault and pressing any button.




| Fault number | Malfunction | Cause | Rectification |
|---|---|---|---|
| E11 | Ground monitoring | Grounding cable is interrupted | Check/replace gun cable |
| | | | Check/replace gun |
| | | Gun is not connected | Connect gun |
| E12 | No coil current/cascade interruption | Gun is not connected | Connect gun |
| | | Gun cable is interrupted | Check/replace gun cable |
| | | Cascade in gun is interrupted --> defective | Check/replace gun |

| Fault number | Malfunction | Cause | Rectification |
|---|---|---|---|
| E13 | Coil current too big | Cascade of the connected gun is defective | Check/replace gun |
| E14 | Tribo current too high | The Tribo current has exceeded the upper limit value of 12 µA.<br>ATEX guidelines do not permit higher values. | Reduce Tribo air |
| | | | Reduce powder quantity |
| E15–E17 | High-voltage generator error | Hardware defect | If problem persists, contact the WAGNER service department |
| | | | Switch off unit and after 10 seconds, switch on again |
| E18 | Result of spray current measurement is implausible | Hardware defect | If problem persists, contact the WAGNER service department |
| E20 | Password error | The password for enabling the device is not set or has been lost | Contact WAGNER service department |
| E21–E25 | Exception error | Hardware defect has occurred | If problem persists, contact the WAGNER service department |
| E31 | Gun switch monitoring in automatic mode | The gun switch line has been interrupted | Check gun cable |
| | | Gun unplugged during operation | Check gun |
| E41 | No flow of atomizing air | No air is flowing out of the control unit<br>Causes: | Check: |
| | | Hose kinked/blocked | The hose laying |
| | | Gun blocked | The air supply to the control unit |
| | | | Inlet pressure > 6 bar |
| | | Compressed air switched off | Open compressed air |
| | | Clogging due to powder sintering on the electrode tip | Check and clean gun, nozzle system and electrode tip |
| E42 | No flow of dosing air | No air is flowing out of the control unit<br>Causes: | Check: |
| | | Hose kinked/blocked | The hose laying |
| | | | The air supply to the control unit |
| | | | Input pressure > 6 bar |
| | | Injector is not connected | Connect injector |
| | | Compressed air switched off | Open compressed air |

| Fault number | Malfunction | Cause | Rectification |
|---|---|---|---|
| E43 | No flow of feed air | No air is flowing out of the control unit<br>Causes: | Gun unplugged during operation<br>Check: |
| | | Hose kinked/blocked | The hose laying |
| | | | The air supply to the control unit |
| | | | Input pressure > 6 bar |
| | | Injector is not connected | Connect injector |
| | | Compressed air switched off | Open compressed air |
| E51–E53 | Exception error | Hardware defect has occurred | If problem persists, contact the WAGNER service department |
| E54 | Hardware error | Hardware defect has occurred | Detach hose on rear of valve and in standby mode, check the valve for seal integrity (air supply must be connected) |
| | | Atomizing air duct valve leaking | |
| E55 | Hardware error | Hardware defect has occurred | Detach hose on rear of valve and in standby mode, check the valve for seal integrity (air supply must be connected) |
| | | Dosing air duct valve leaking | |
| E56 | Hardware error | Hardware defect has occurred | Detach hose on rear of valve and in standby mode, check the valve for seal integrity (air supply must be connected) |
| | | Feed air duct valve leaking | |
| E60 | Coating or cleaning was attempted without a release signal | Parameter C26 set to 1 or 2:<br>No release from remote input | Activate release signal on master controller (safety circuit) |
| | | Parameter C26 set to 3 or 4:<br>No release from communication cable | Check cable |
| E61 | Data connection via communication cable was interrupted | Parameter C26 set to 3 or 4:<br>No data connection or interruption to master controller | Check communication cable and connector<br>Diagnosis:<br>Connection control on master controller, status display on WACON Sprint 2<br>(Error LED) |
| E62 | Coating block set by master controller | Manual gun ON, but IPS is not ready to feed powder | |
| | | Not enough powder | Refill the powder |
| | | Tank not ready | Switch on tank |
| | | Activate cleaning process | Complete cleaning |
| | No general release from IPS for coating (only for WACON Sprint 2 X) | Extraction in ECO-mode or switched off | Activate coating release on IPS |

# 10 INSPECTIONS IN ACCORDANCE WITH DIN EN 50177: 2009

If the system is used for electrostatic coating with ignitable coating powders, the test must be performed in accordance with EN 50177:2009+A1:2012 according to the following overview table [▸▸ 60].

## 10.1 ABBREVIATIONS

| | | | |
|---|---|---|---|
| ER | Employer | FT | Function test |
| SP | Skilled person | ME | Measurement |
| FPE | Fire protection engineer | SI | Standard inspection |
| QEW | Electrician | VI | Visual inspection |
| MFR | Manufacturer | CM | Continuous monitoring |
| TP | Trained person | TI | Technical inspection |

## 10.2 OVERVIEW TABLE

| Section | Type of inspection | Requirements | Inspection by | Type of inspection | Inspection interval |
|---|---|---|---|---|---|
| 1 | Checking the effectiveness of technical ventilation | Checking the effectiveness of technical ventilation | TP/SP | ME<br>Measurements of air flow speed/ air quantities<br>Check the differential pressure indicator. | Continuously |
| 2 | Link between technical ventilation equipment and high voltage, compressed air and coating material supply | The technical ventilation should be interlocked such that the coating material supply and high voltage cannot be switched on, while the technical ventilation is not working effectively. | SP | FT<br>Test whether the system is safely stopped and the coating material supply, supply air, and high voltage are switched off when the ventilation is shut down. | Annually |
| 3 | Parts carrying high voltage outside the spray area | Parts carrying high voltage outside the spray area must be routed such that discharges which put people at risk do not occur. | SP | FT<br>Inspect and test (e.g., by measurement) whether all parts carrying high voltage do not result in discharge which puts people at risk. | Weekly |
| 4 | Effectiveness of grounding | All conductive components of the system, such as floors, walls, ceilings, barriers, transport equipment, work pieces, powder tanks, moving devices or structural parts, etc. in the spray area, with the exception of parts under high voltage during operation, must be connected to the grounding system. Parts of the booth must be grounded in accordance with EN 16985. | SP | VI/ME/CM<br>Visual check of ground connections, perform function test on grounding switch, measurement of grounding resistors. | Weekly |
| 5 | Measures to take if conductive components are insufficiently grounded | If sufficient grounding of conductive parts cannot be ensured, their discharge energy must not exceed the permissible value. | SP | ME/CM<br>Measurement of discharge energy. | Weekly |

| Section | Type of inspection | Requirements | Inspection by | Type of inspection | Inspection interval |
|---|---|---|---|---|---|
| 6 | Ground leaking resistance from the work piece attachment point | The ground leaking resistance of the attachment point of every work piece may be 1 megohm at most (measuring voltage must be 500 V or 1000 V). The design of the work piece holder must ensure that the work pieces remain grounded during coating. | SP | ME/CM<br>Measure the ground leaking resistance (ground potential of the workpiece mount)<br>maximum 1 MOhm @ 500 V/1000 V. | Weekly |
| 7 | Measures to take if the work pieces are insufficiently grounded | If sufficient work piece grounding in accordance with section 6 cannot be ensured, appropriate equipment, e.g., ionizers, must be used to discharge electric charges on the work piece. Such equipment must not exceed the permitted discharge energy of the spraying systems with which it is used. In terms of permitted discharge energy, this equipment must be put through the same inspections as the powder spraying systems used with it. The discharge equipment must be interlocked with the spraying system such that the high voltage is switched off and that coating cannot take place if the discharge equipment malfunctions. | SP | ME/FT/CM<br>Measurement of discharge energy, check the monitoring equipment's test function by triggering it. | Weekly |
| 8 | Effectiveness of the manually or automatically actuated fire extinguishing systems (room protection system) | Effectiveness of the manually or automatically actuated fire extinguishing systems (room protection system). | MFR/FPE | FT<br>Trigger fire extinguishing system, observe manufacturer's requirements. | 6 months |

# 11 INSPECTIONS IN ACCORDANCE WITH DIN EN 50050-2: 2013

If the system is used for electrostatic coating with ignitable coating powders, the test must be performed in accordance with DIN EN 50050-2: 2013 according to the following Overview Table [▸▸ 63].

## 11.1 ABBREVIATIONS

| | | | |
|---|---|---|---|
| ER | Employer | FT | Function test |
| SP | Skilled person | ME | Measurement |
| FPE | Fire protection engineer | SI | Standard inspection |
| QEW | Electrician | VI | Visual inspection |
| MFR | Manufacturer | CM | Continuous monitoring |
| TP | Trained person | TI | Technical inspection |

## 11.2 OVERVIEW TABLE

| Section | Type of inspection | Requirements | Inspection by | Type of inspection | Inspection interval |
|---|---|---|---|---|---|
| 1 | Ground leaking resistance from the work piece attachment point | The resistance to ground of the hold point of every work piece may be 1 MΩ at the most (measuring voltage must be 1000 V). The design of the work piece holder must ensure that the work pieces remain grounded during coating. | SP | ME/CM<br>Measure resistance to ground (work piece receiver - ground potential)<br>max. 1 MΩ @ 1000 V | Weekly |
| 2 | Link between technical ventilation equipment and high voltage, compressed air and powder feed | The technical ventilation should be interlocked such that the powder feed and high voltage cannot be switched on, while the technical ventilation is not working effectively. | SP | FT<br>Testing whether the system is stopped by the safety technology and the powder feed, supply air and high voltage are switched off in case of ventilation deactivation. | Annually |
| 3 | Checking the electrostatic manual coating system for damage | Electrostatic manual coating systems may only be operated in an undamaged condition. Damaged devices must be decommissioned immediately and repaired immediately. | SP | FT<br>Inspect and test (e.g., by measurement) whether all parts carrying high voltage do not result in discharge which puts people at risk. | Weekly |

# 12 DISASSEMBLY AND DISPOSAL

## 12.1 DISASSEMBLY

### ⚠ WARNING

**Incorrect disassembly!**

Risk of injury and damage to the device.

- Before starting disassembly:
  - Switch off the energy and compressed air supply.
  - Ensure the grounding of all system components.
  - Secure system against being switched back on without authorization.
- Observe the operating manuals when carrying out all work.

1. Switch off the system.
2. Lock the compressed air supply and decompress system.
3. Release electrical cable on control unit.
4. Detach hose for compressed air supply on control unit.
5. Detach hoses for the feed air, dosing air and atomizing air on the control unit.
6. Remove grounding cable on control unit.
7. Loosen retaining nuts and dismount control unit.

## 12.2 DISPOSAL

### ⓘ NOTICE

**Do not dispose of used electrical equipment with household refuse!**

In accordance with European Directive 2012/19/EU on the disposal of used electrical equipment and its implementation in national law, this product may not be disposed of with the household refuse, but must be recycled in an environmentally correct manner.

- WAGNER or one of our dealers will take back your used WAGNER electric or electronic equipment and will dispose of it for you in an environmentally-friendly way.
- Please contact one of our service points, one of our representatives or us directly.

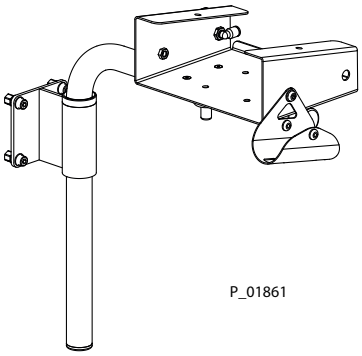
The consumable products (lacquers, adhesives, solvents) must be disposed of in accordance with the applicable specific standards.

# 13 ACCESSORIES

## 13.1 CONNECTION CABLE

| Order no. | Designation |
|---|---|
| 241270 | Mains cable, Europe |
| 241271 | Mains cable, Switzerland |
| 264626 | Mains cable, USA |
| 264625 | Mains cable, Japan |
| 130215 | Grounding cable 10 m; 32.8 ft |
| 263219 | Grounding cable Japan |
| 9990149 | Y-piece |

## 13.2 WALL MOUNT




| Order no. | Designation |
|---|---|
| 2330223 | Wall mount with bracket |

# 14 SPARE PARTS

## 14.1 HOW TO ORDER SPARE PARTS

Always supply the following information to ensure delivery of the right spare part:

**Order number, designation and quantity**

The quantity need not be the same as the number given in the quantity column „Stk“ on the list. This number merely indicates how many of the respective parts are used in each component.

The following information is also required to ensure smooth processing of your order:

- Billing address
- Delivery address
- Name of the person to be contacted in the event of any queries
- Type of delivery (normal mail, express delivery, air freight, courier etc.)

**Identification in spare parts lists**

Explanation of column „K“ (marking) in the following spare parts lists:

♦ Wearing parts. Wearing parts are not included in the warranty.

⋆ Included in service set

● Not part of the standard equipment but available as a special accessory

Explanation of order no. column:

-- Item not available as spare part.

/ Position does not exist.

## 14.2 NOTES ON THE USE OF SPARE PARTS

### ⚠ DANGER

**Incorrect maintenance/repair!**

Danger to life and equipment damage.

- Only a WAGNER service center or a specially trained person may carry out repairs and replace parts.
- Use only WAGNER original spare parts and accessories.
- Only repair and replace parts that are listed in the spare parts chapter and that are assigned to the device.
- Before all work on the device and in the event of work interruptions:
  - Switch off the energy and compressed air supply.
  - Relieve spray gun and device pressure.
  - Secure the spray gun against actuation.
- Observe the operating and service manuals of the individual components for all work.

## 14.3 WACON SPRINT 2 X CONTROL UNIT

| Pos | K | Stk | Order no. | Designation |
|---|---|---|---|---|
| | | 1 | 2463345 | WACON Sprint 2 X control unit (for manual and automatic systems) |
| | ♦ | 2 | 9951117 | Slow-acting fuses 1.0 A (included in WACON Sprint 2 X) |

♦ = wearing parts

### 14.4 WACON SPRINT 2 XE CONTROL UNIT

| Pos | K | Stk | Order no. | Designation |
|---|---|---|---|---|
| | | 1 | 2463347 | WACON Sprint 2 XE control unit |
| | ♦ | 2 | 9951116 | Slow-acting fuses 2.0 A (included in WACON Sprint 2 XE) |

♦ = wearing parts

# 15 DECLARATION OF CONFORMITY

## 15.1 EU DECLARATION OF CONFORMITY FOR CONTROLLER

Herewith we declare that the supplied version of:

**WACON Sprint 2 X / WACON Sprint 2 XE**

complies with the following guidelines:

| |
|---|
| 2014/34/EU (ATEX Directive) |
| 2014/30/EU (EMC Directive) |
| 2011/65/EC (RoHS Directive) |

Applied standards, in particular:

| | |
|---|---|
| EN 60204-1:2018 | EN IEC 61000-6-2:2019 |
| EN 60529:1991+A1:2000+A2:2013 | EN IEC 61000-6-4:2019 |
| EN 50050-2:2013 | EN IEC 63000:2018 |
| EN 50177:2009+A1:2012 | |

Applied national technical standards and specifications, in particular:

| |
|---|
| DGUV-I 209-052 |

**Identification:**

CE 0102 Ex II 3(2) D IP64 80°C

**Declaration of conformity**

The declaration of conformity is enclosed with this product. If needed, further copies can be ordered through your WAGNER dealer by specifying the product name and serial number.

**Order number:** 2463395

## 15.2 FM CONTROL DOCUMENT

**Identification:**

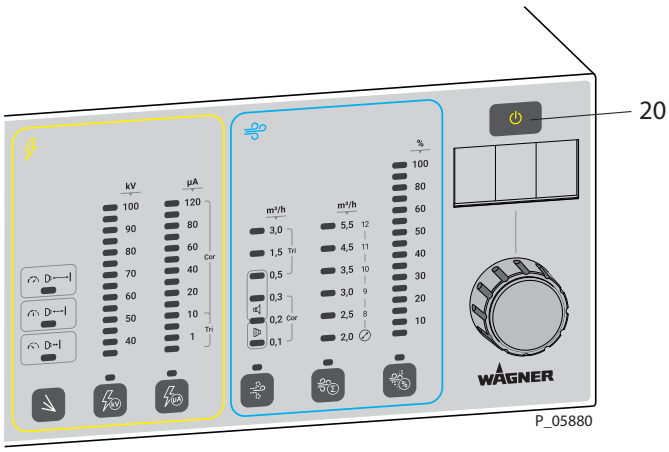
FM C US APPROVED

**FM Control Document**

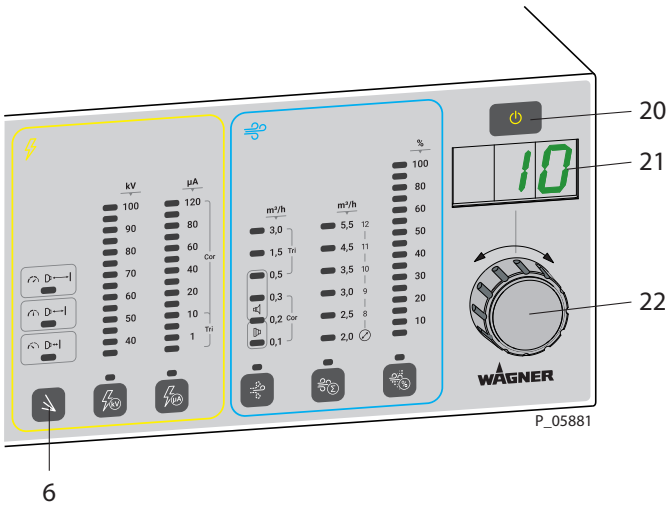
The FM Control Document is enclosed with this product. If needed, further copies can be ordered through your WAGNER dealer by specifying the product name and serial number.

**Order number:** 2309729

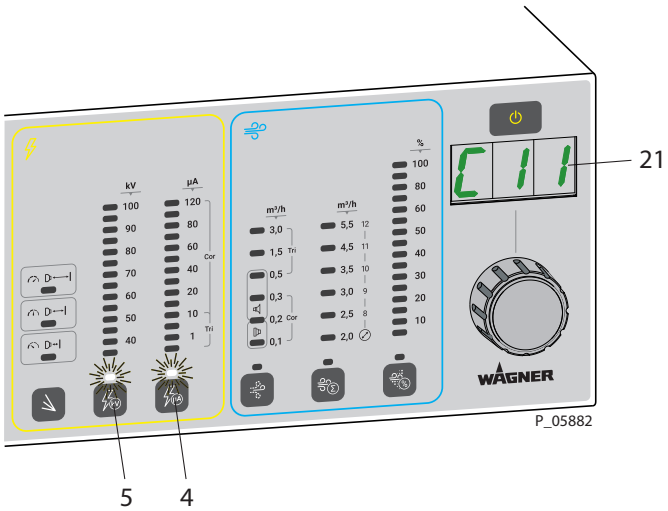
# 16 APPENDIX DEVICE CONFIGURATION




1. To access special device configuration, switch the device to [Standby] with the [Standby] button (20).

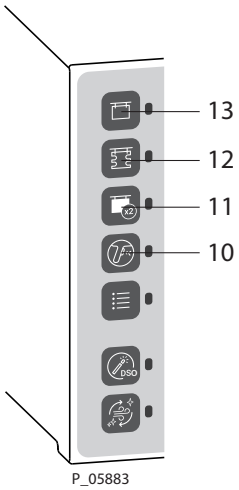



2. Press [Characteristic slope] button (6) and hold it down.
3. Turn the universal control dial (22) with the other hand until the LED display (21) shows the number 10. Then release the [Characteristic slope] button (6). The device is now in configuration mode. The scrolling text [Configuration] is displayed.




4. The LED display (21) now shows the first configuration setting C11. At the same time, the two white LED displays above the [Spray current] button (4) and the [High voltage] button (5) will flash.

For ease of operation the configuration settings are divided into 4 groups. The first two groups are for the end user, the third group is for WAGNER service department and the fourth group is reserved for WAGNER production sites or the WAGNER service center, which have the necessary infrastructure.

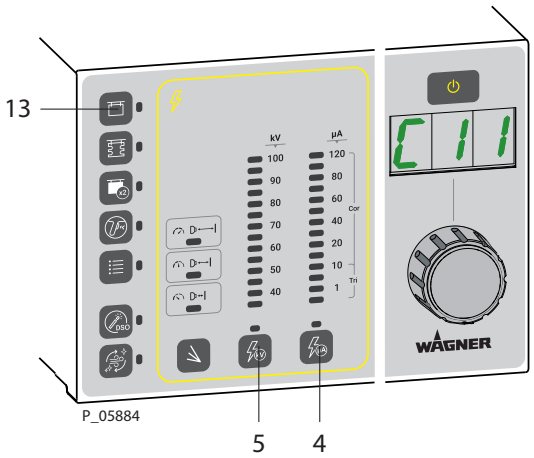



| | |
|---|---|
| 13 | Group 1: Parameters C11 to C20 |
| 12 | Group 2: Parameters C21 to C30 |
| 11 | Group 3: Parameters C31 to C40 (WAGNER service department) |
| 10 | Group 4: Parameters C41 to C99 (production plant; service center) |

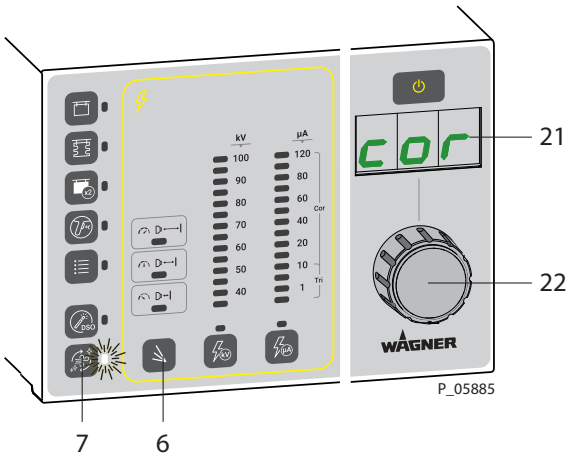
It is possible to switch between the different groups using the [Recipe] buttons 10, 11, 12 and 13.

## 16.1 SETTING EXAMPLE: PARAMETER C11

This parameter is used to set the gun type (Tribo or Corona). The control unit is factory-set to Corona [cor].



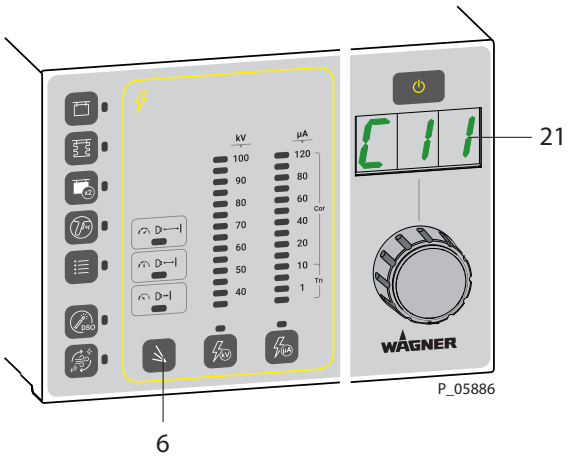

1. If parameter C11 is not set on the control unit, select parameter group 1 by pressing recipe button (13) and use the [High-voltage] button (5) and the [Current limitation] button (4) to set the parameter to C11.



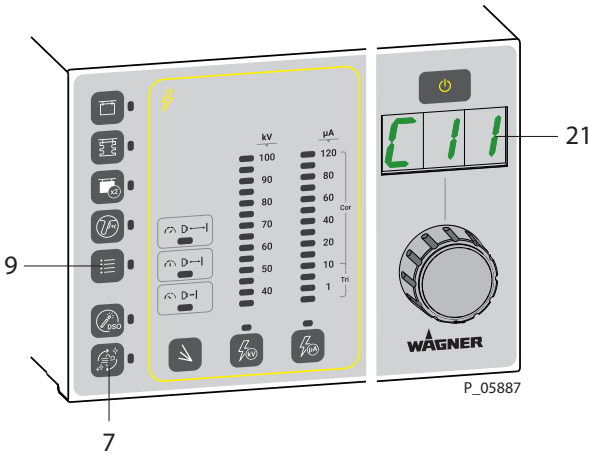

2. The parameter value is now shown by pressing the [Characteristic slope] button (6).
3. The LED display (21) shows [cor]. At the same time, the white [Flushing] LED display to the right of the [Flushing] button (7) will flash.
4. All setting options can then be viewed, in turn, by turning the universal control dial (22). The display shows:
   - [cor] for Corona manual and automatic guns
   - [tri] for Tribo manual and automatic guns
   - [aut] for automatic switching from Tribo to Corona, if the user frequently switches between Tribo and Corona.

Limitation: A Corona gun is always shown when the control unit is switched on. A Tribo gun is only recognized when the high voltage and powder feed are activated.

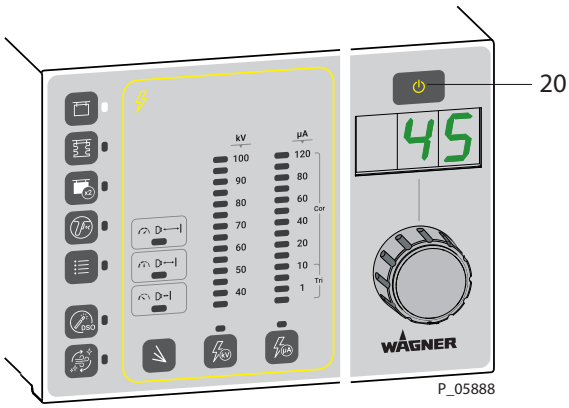
This setting is retained until the control unit is switched off.




1. There are now two options:
   - If you want to keep the old setting, regardless of what is currently displayed, press the [Characteristic slope] button (6) again. The LED display (21) shows C11 again.



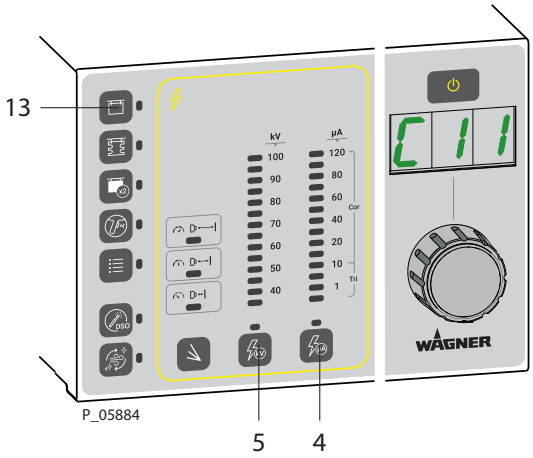

   - If you want to save the changed setting, press the [Additional recipes] button (9) to save the setting until the white [Flushing] LED no longer flashes. The LED display (21) then shows the parameter number again (in this example, C11). Proceed in the same way for all other parameters. The list below provides an overview of all the other parameters.

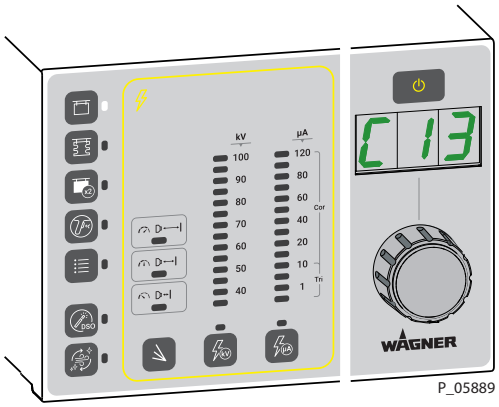



2. To exit the configuration, switch control unit to standby mode by pressing the [Standby] button (20). Pressing this button again returns the control unit to normal operating mode.

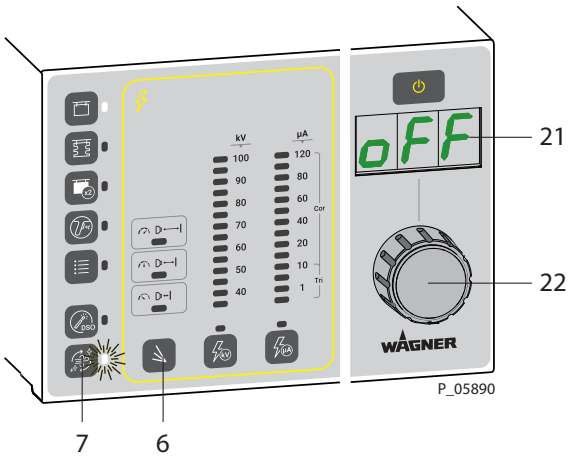
## 16.2 SETTING EXAMPLE: PARAMETER C13

The lock is activated and deactivated with this parameter. The control unit is factory-set to oFF (lock deactivated).



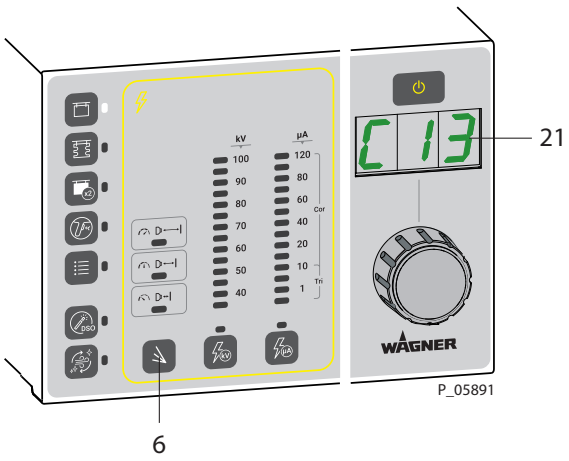




1. If parameter C13 is not set on the control unit, select parameter group 1 by pressing recipe button (13) and use the [High-voltage] button (5) and the [Current limitation] button (4) to set the parameter to C13.

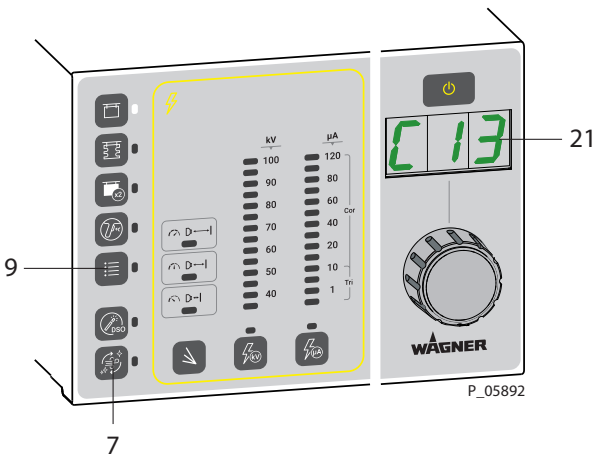



2. The parameter value is now shown by pressing the [Characteristic slope] button (6).
3. The LED display (21) shows [oFF]. At the same time, the white [Flushing] LED display to the right of the [Flushing] button (7) will flash.
4. All setting options can then be viewed, in turn, by turning the universal control dial (22). The display shows:

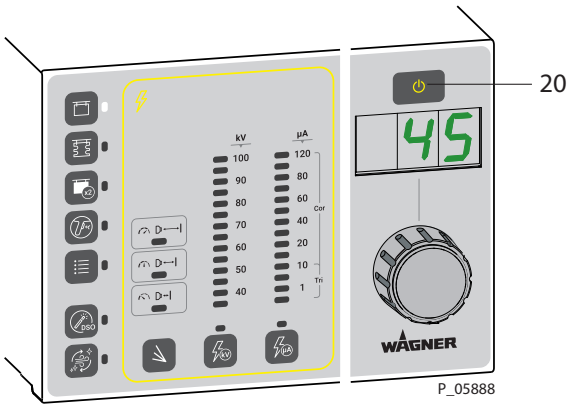
- oFF with lock deactivated.
- on with lock activated. No program values can be adjusted when the lock is activated.




5. There are now two options:
   - If you want to keep the old setting, regardless of what is currently displayed, press the [Characteristic slope] button (6) again. The LED display (21) shows C13 again.




   - If you want to save the changed setting, press the [Additional recipes] button (9) to save the setting until the white [Flushing] LED display no longer flashes. The LED display (21) then shows the parameter number again (in this example, C13). Proceed in the same way for all other parameters.



6. To exit the configuration, switch control unit to standby mode by pressing the [Standby] button (20). Pressing this button again returns the control unit to normal operating mode.

### 16.3 TABLE OF PARAMETERS

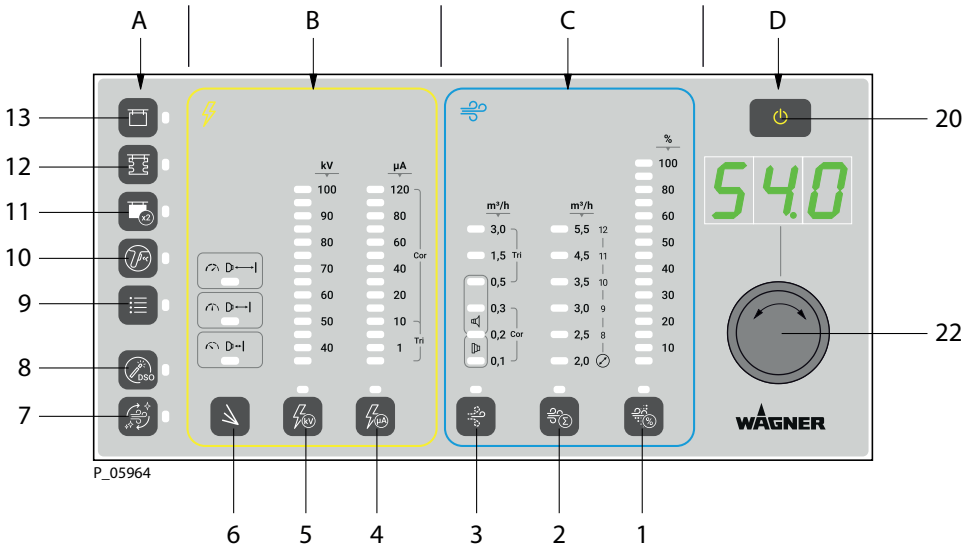
| Parameter | | Value | Description |
|---|---|---|---|
| C11 | Gun charging type | cor (factory setting) | WAGNER Corona spray guns can be connected to the unit; a Tribo gun will trigger a fault. |
| | | tri | WAGNER Tribo guns can be connected to the unit; a Corona gun will not trigger a fault. |
| | | aut | Tribo or Corona spray guns can be connected to the unit. The system only changes to the correct type after it is first switched on with the gun's trigger or the master controller. |
| C12 | Selection reset function | oFF | The selection function is switched off. A selection is retained until another selection is made. |
| | | on (factory setting) | Selection function is switched on: after 5 seconds, the selection automatically returns to the powder quantity setting. |
| C13 | Lock | oFF (factory setting) | Lock is deactivated. |
| | | on | Lock is activated, values cannot be changed, user can only select recipes and control functions.<br>Recipe values cannot be changed. |
| | | Pro | Lock sometimes activated.<br>Recipe storage is blocked, otherwise function as in the [oFF] setting. Values can be changed temporarily. |
| C14 | [Double-click] function | oFF | The [Double-click] function is deactivated. |
| | | on (factory setting) | The [Double-click] function is activated - when the manual gun's trigger lever is pressed twice to switch on, the program jumps to the [Double-click] recipe; at the next switch-on the previous recipe is selected again. |
| C15 | Operating hours counter | only display | The actual coating hours are counted. The numerical value displayed should be multiplied by 100.<br>Examples:<br>0.15 -> 0.15 * 100 h = 15 operating hours<br>050 -> 50 * 100 h = 5000 operating hours |

| Parameter | | Value | Description |
|---|---|---|---|
| C16 | External recipe selection<br>(Pulse controller using remote control bush) | oFF<br>(factory setting) | The recipe is selected using 4 different pulse lengths to select recipes 1–4.<br>This setting is compatible with the master controller. |
| | | on | The recipe is selected by using an extended pulse/pause protocol to select all 50 recipes and call up the flush function.<br>This setting should be used if control by a programmable logic controller (PLC) is the same as with a Profi Tech Sprint system.<br>For protocol, see service instructions for WACON Sprint 2. |
| C17 | Powder discharge<br>Increase in powder discharge by activating the feed and atomizing air in parallel. Both these airs must be combined externally by a Y-piece and supplied to the injector's feed air connection. The additional volume differs depending on injector type. The atomizing and Tribo air is no longer available to the spray gun and must be obtained from a different source. | oFF<br>(factory setting) | Standard setting for separate hosing for feed, dosing and atomizing air. |
| | | on | The feed air and atomizing air outputs are combined for a larger feed air quantity (higher powder discharge quantity).<br>Attention: The Tribo and atomizing air is no longer available. |
| C18 | Display luminance: The display luminance can be set to one of three levels. | 0 | Full display luminance (default setting) |
| | | 1 | Medium luminance (reduced brightness) |
| | | 2 | Minimum luminance (brightness greatly reduced) |
| C19 | Deletion of created recipes | NO<br>(factory setting) | No action. |
| | | res | All recipes are reset to the delivery condition if [res] is saved with button (25). |
| C20 | Reset device to delivery condition | NO<br>(factory setting) | No action. |
| | | res | All settings except recipes are reset to the delivery condition if [res] is saved with button (25). |
| C21 | Vibrator motor controller after-run | 10 s<br>(factory setting) | Vibrator motor has an after-run time of 10 seconds. |
| | | oFF | Vibrator motor is not controlled; always off. |
| | | on | Vibrator motor is always switched on. |
| | | 1 s-240 s | Vibrator motor is switched on with the manual gun's trigger lever and runs for X seconds after; can be set from 1 second to 240 seconds. |

| Parameter | | Value | Description |
|---|---|---|---|
| C22 | Hose flushing (dosing air without feed air) | oFF (factory setting) | Hose flushing switched off. |
| | | 1 s–10 s | Hose flushing after-run time in seconds. |
| C23 | Hose flushing intensity of dosing air | 100% (factory setting) | Hose flushing intensity 100%. |
| | | 1%–100% | Hose flushing intensity from 1% to 100%. |
| C25 | Tribo current minimum monitoring | oFF (factory setting) | Tribo current is not monitored. |
| | | 0.1 µA–5 µA | If the Tribo current does not reach the set values for more than 10 seconds, a warning is issued (see Warnings and fault messages). |
| C26 | Manual gun with external control operating mode | oFF (factory setting) | Standard function. The device automatically recognizes the manual or automatic gun. The properties of the corresponding manual or automatic gun operating mode are described in the chapter on Preparations for commissioning [▸▸ 33] and in the service manuals. |
| | | 1 | Operation always with manual gun. The remote interface is not used for controlling the vibrator, instead the remote interface provides the device with a release and the OFF-ON command for cleaning (continuous flushing). The remote interface is described in the service manuals. |
| | | 2 | Same as described for value 1, but the flush button at the operating front is without function (disabled). |
| | | 3 | Manual gun mode together with the superordinate WSC controller.<br>Communication between WACON Sprint 2 and superordinate controller via special RS-422 cable and protocol.<br>The control is primarily designed for operation in an IPS system.<br>The flushing button on the WACON Sprint 2 is not blocked. |
| | | 4 (factory setting IPS) | The same as with value 3, but the flushing button is blocked. |
| C31–C40 | Password protection | | Password-protected; only for WAGNER personnel or appropriately trained persons. |
| C41–C99 | Password protection | | Password-protected; only for WAGNER production sites or the WAGNER service center with appropriate test equipment. |

# 17 BRIEF DESCRIPTION

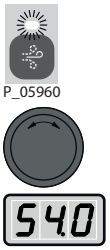
## 17.1 OPERATING ELEMENTS




| | | |
|---|---|---|
| A | Recipes | |
| B | Electrostatic parameters | |
| C | Air parameters | |
| D | Selection/display elements | |
| 20 | [Standby] button | To switch into standby mode |
| 22 | Universal control dial | to select recipes and parameters |
| 1 | Selection button: [Powder quantity] [%] | |
| 2 | Selection button: [Total air volume] [$m^3$/h] | |
| 3 | Selection button: [Atomizing/Tribo air] [$m^3$/h] | |
| 4 | Selection button: [Current limitation] [A] | |
| 5 | Selection button: [High voltage] [kV] | |
| 6 | Selection button: [Characteristic slope] | |
| 7 | [Flushing] button | For quick and easy flushing of powder feeding components |
| 8 | [DSO] button | For activating the electronically controlled DSO function |
| 9 | Recipe button: [Additional recipes] 5–50 | |
| 10 | Recipe button: [Double-click] | For rapid recipe changes without interrupting the coating process, by simply double-clicking on the gun trigger |
| 11 | Recipe button: [Second coating] | Recoating of pieces |
| 12 | Recipe button: [Profile parts] | Coating profile parts |
| 13 | Recipe button: [Surface parts] | Coating surface parts |

## 17.2 OPERATION OF THE CONTROL UNIT

### 1 Changing parameters

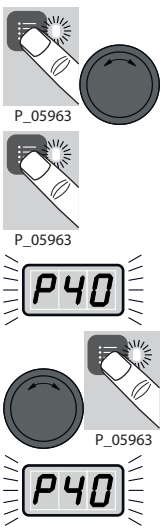



1. Use selection button to select the parameters required.
   ⇨ The white LED lights up.
2. Set parameter value with control dial.
   ⇨ The value set is shown in the LED display.

### 2 Calling up / changing / saving recipes 1–4


1. Select required recipe by pressing the corresponding recipe button.
2. Set new parameters (electrostatic, air volume) (see 1).
3. Press the recipe button required for around 2 seconds until the LED display flashes rapidly.
   ⇨ The recipe is saved with new parameters and can be called up again at any time at the touch of a button!


### 3 Calling up / changing / saving recipes 5–50




1. Press Additional recipes button.
2. Set recipe number with control dial.
   ⇨ The recipe number is displayed in the LED display.
3. Set new parameters (see 1).
4. Press Additional recipes button for around 2 seconds.
   ⇨ The changed parameters are saved.
   ⇨ The recipe number is shown flashing in the LED display.
5. Set desired recipe number with control dial.
   (Only necessary if the parameters are to be saved under another recipe number.)
6. Press Additional recipes button for around 2 seconds.
   ⇨ LED display flashes quickly.
   ⇨ Recipe is saved with new parameters.

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