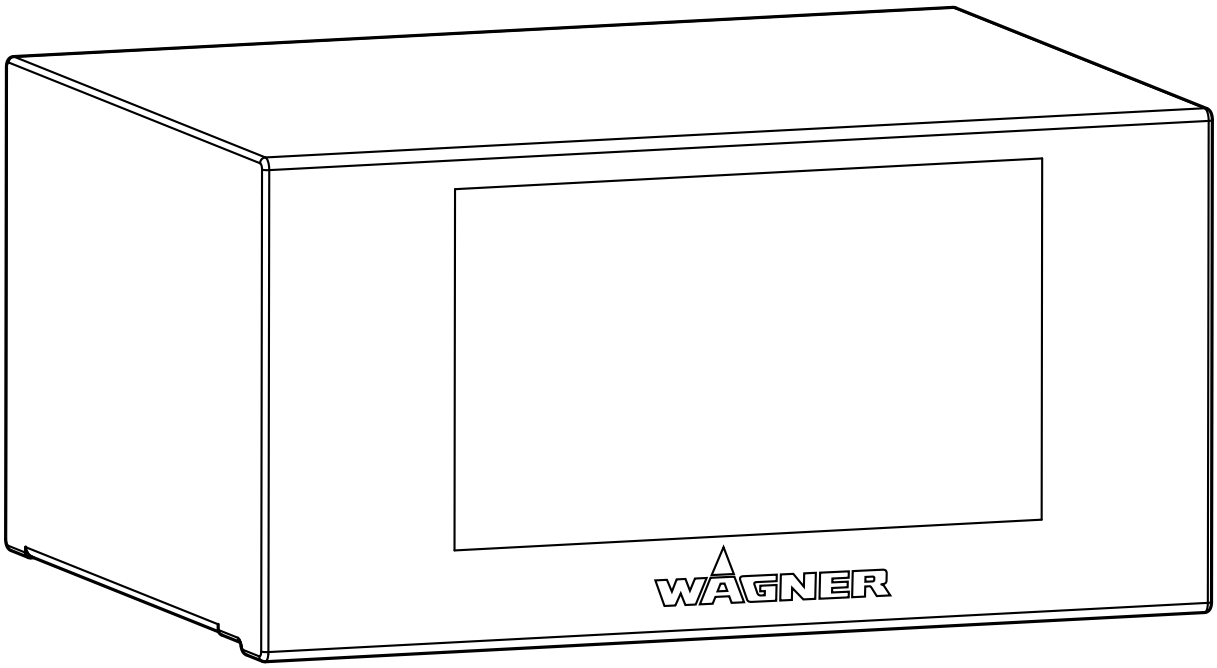


P_05981

Control unit for powder spray guns

WACON Sprint 2 Expert

Translation of the Original Operating Manual

CE 2813 Ex II 3(2) D IP54 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: 04/2025

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. Non-observance will result in death or serious injury.
⚠	**WARNING**	Potential danger. Non-observance may result in death or serious injury.
⚠	**CAUTION**	Potentially dangerous situation. Non-observance may result in minor injury.
ⓘ	**NOTICE**	Potentially dangerous situation. 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	2468263

Translation of the original operating manual

Language	Order no.	Language	Order no.
English	2468264	Czech	2475927
French	2468265	Slovenian	2475929
Italian	2468266	Turkish	2475930
Spanish	2468267	Portuguese	2475931
Chinese	2468268	Norwegian	2475933
Polish	2468861	Swedish	2475934
Japanese	2475920	Finnish	2475936
Dutch	2475921	Korean	2475937
Hungarian	2475925		

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
PLd	Level of safety (Performance Level) d

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. 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 50050-2.

The WACON Sprint 2 Expert (WS2E) and WACON Sprint 2 Expert EC control units may only be operated in accordance with the requirements of EN 50050-2, EN 50177 and other relevant regulations.

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.

The control unit WACON Sprint 2 may be used in Dust Ex Zone Category 3D (zone 22) under the following conditions:

- Control unit correctly fitted in rack or in trolley.
- 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.
- Lock the plug connections securely with tools and with a warning notice.

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 24 ATEX 5003.

Device type	WACON Sprint 2 Expert control unit
Manufacturer	Wagner International AG 9450 Altstätten Switzerland

CE 2813 Ex II 3(2) D IP54 80°C

CE	European Communities
2813	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
IP54	Protection class IP54
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:

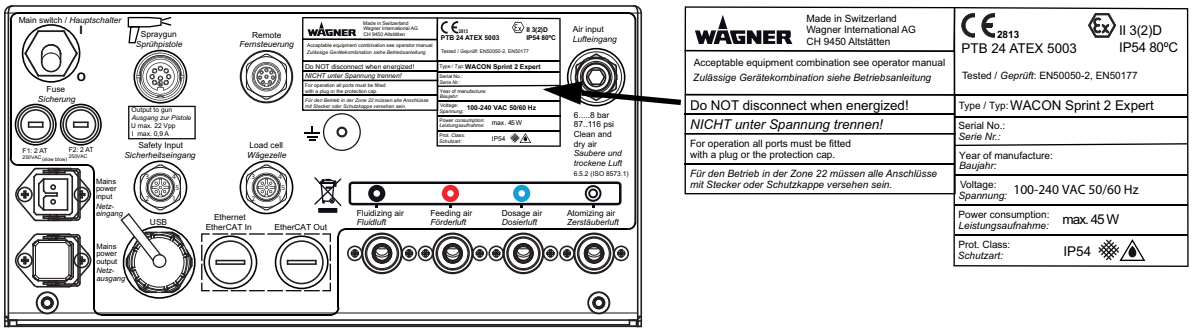
Manual spray guns	
Corona spray gun	PEM-X1, PEM-X1 CG
Tribo spray gun	PEM-T3
Automatic spray guns	
Corona spray gun	PEA-X1, PER-X1
Tribo spray gun	PEA-T3, PEA-T3XL

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 [▸▸ 94].

3.3 WACON SPRINT 2 EXPERT TYPE PLATES

WACON Sprint 2 Expert



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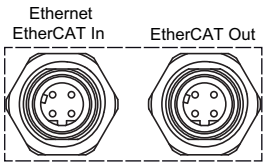
WACON Sprint 2 Expert EC



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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).
- Ensure that the personal protective equipment (see chapter Personal protective equipment [▸▸ 13]) is available and 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.
  Powder deposits in the varnishing booth must 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 the event of defects, shut down the device or system immediately and repair it before switching it on again.
  Powder deposits must 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 a reliable LEL value is not available, a value of 20 g/m^3 must be used. This means that 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 Expert control unit can be used as a stand-alone unit in manual coating systems or with an automatic coating device.

- 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 Expert:

Stk	Order no.	Designation
1	2469304	WACON Sprint 2 Expert control unit (for manual and automatic systems)
1	2467875	WACON Sprint 2 Expert EC control unit with EtherCAT interface (for manual and automatic systems)
The standard equipment includes:		
	2471704	Declaration of conformity
	2468263	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 of basic device	4.35 kg; 9.59 lb

Electrical:	
Mains (AC)	100 VAC - 240 VAC
Frequency	50/60 Hz
Power consumption	maximum 45 W
Mains (AC) output switched	maximum 100 W
Output voltage of gun	maximum 22 Vpp
Output current of gun	maximum 0.9 A
High voltage	10 – 100 kV (adjustable in 1 kV increments)
Corona current limitation	0.5 µA – 120 µA (adjustable in 0.5 µA increments up to 5 µA, then in 1 µA increments)

Electrical:	
Tribo current measuring range	0 µA–15 µA
Tribo current limitation	0 µA–5 µA (adjustable in 0.1 µA increments)
Tribo current limitation	higher than 12 µA (EX: switching off the device)
Ex identification:	
according to EN (ATEX, EN)	II 3(2) D
Pneumatic:	
Input air pressure	0.6–0.8 MPa; 6–8 bar; 87–116 psi
Air flow	maximum 19 m^3/h
Dosing air	0.00–5.5 m^3/h
Feed air	0.00–5.5 m^3/h
Atomizing air/Tribo air	0.05–4.0 m^3/h
Fluid air	0.00–4.0 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:

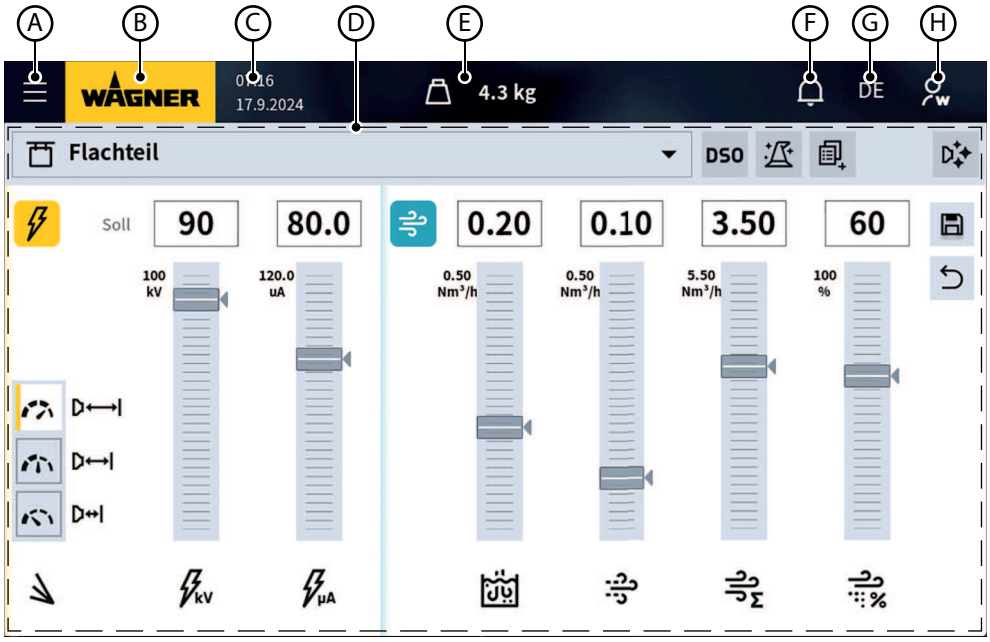
When using low-melting powder varieties, an ambient temperature below 30 °C (86 °F) may be necessary.

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 Screen layout



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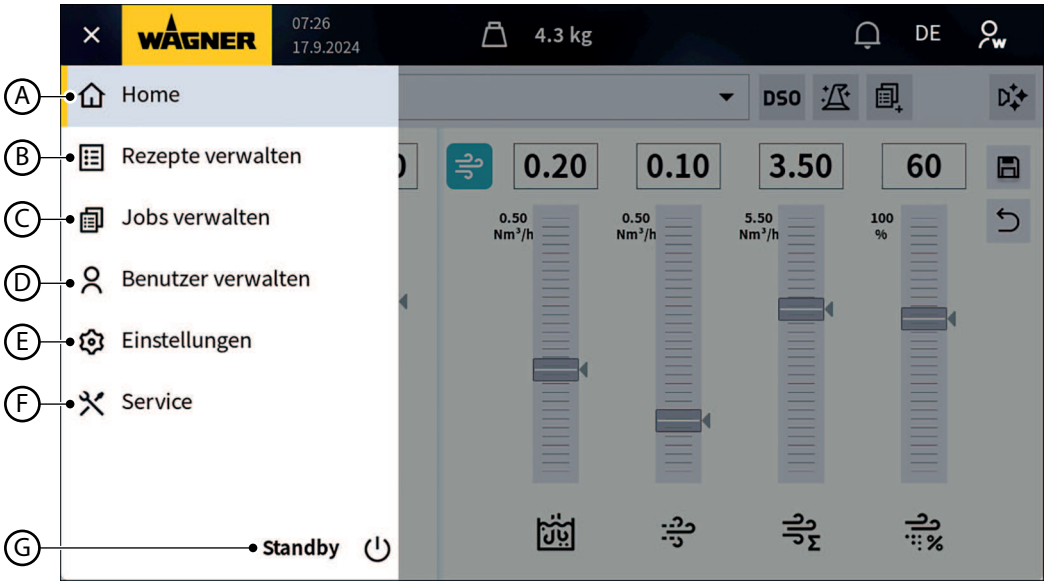
Pos	Function
A	Main menu
B	Logo and homepage button
C	Display of current date and time
D	Homepage with operating elements
E	Weight display of the powder tank (powder weighing system must be activated in the settings)
F	Call up current warnings and malfunctions
G	Language setting
H	User selection

5.4.2 Main menu



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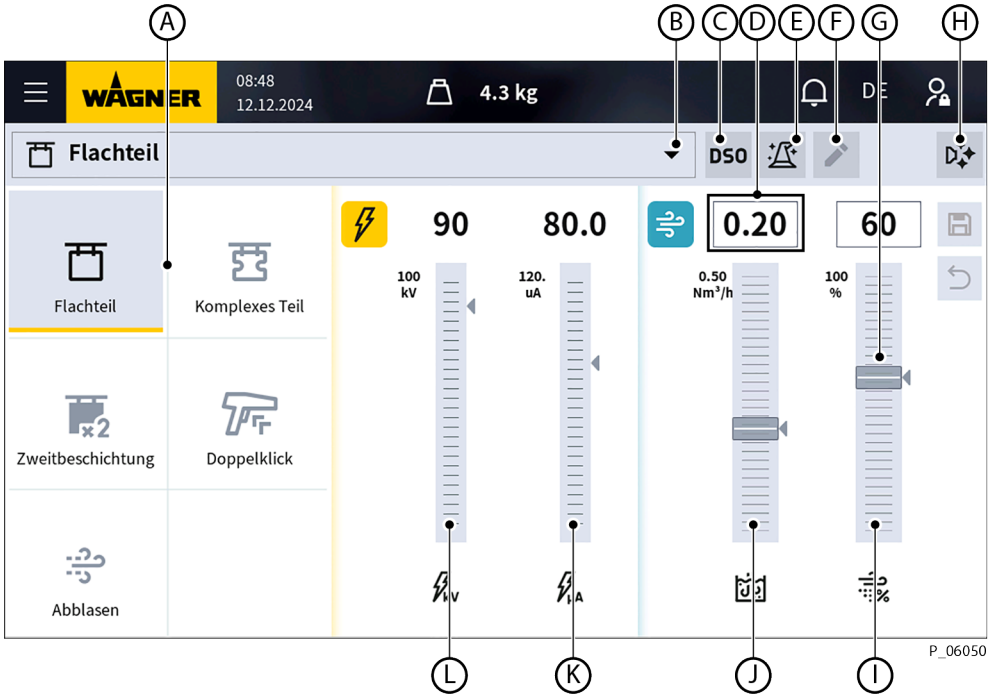
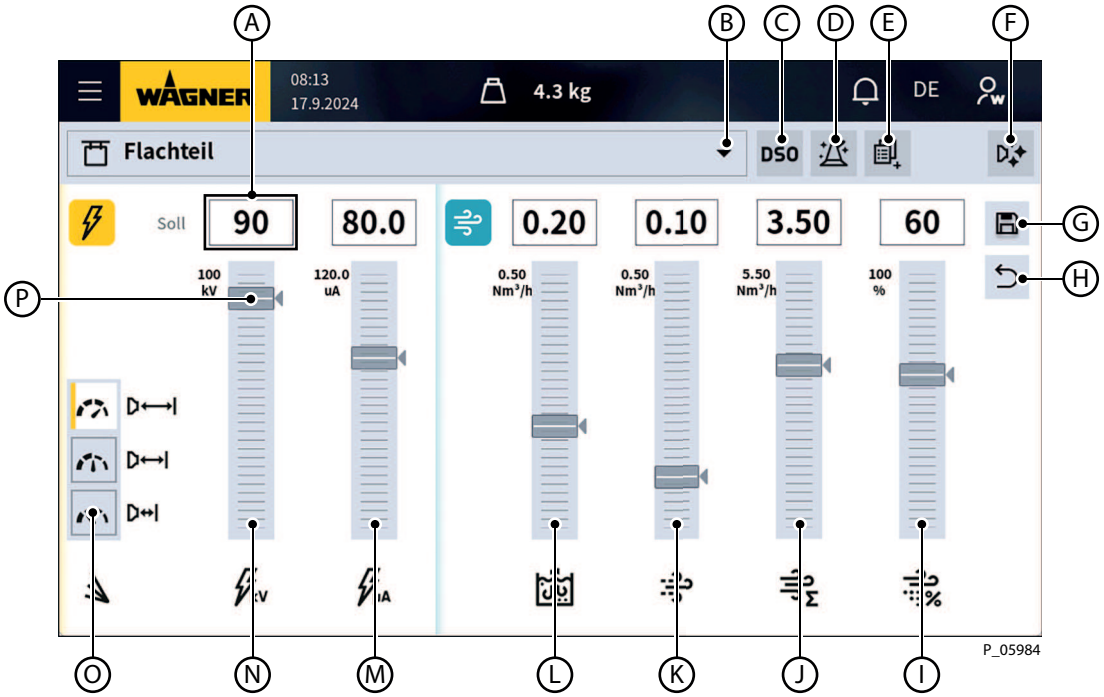
Pos	Function
A	Home page
B	Recipe management
C	Job administration One job contains two recipes.
D	User administration
E	Settings
F	Service
G	Standby mode

5.4.3 Operating elements of Easy Mode recipe view



Pos	Function	Description
A	Standard recipe selection buttons	Selection of the desired standard recipe
B	Recipe selection	A different recipe can be selected by tapping on the field.
C	[DSO] (Digital Surface Optimizer) button	For activating the electronically controlled DSO function (see chapter Digital Surface Optimizer (DSO) [▸▸ 70]). The button color changes to white when the electronically controlled DSO function is activated.
D	Display set and actual value	The set or actual values are displayed. In the actual value display, the values are not outlined in black and the bar displays are filled in. – The set values can be set by tapping the display panel or using the sliders (G). – If the actual value is too far away from the set value, the display color changes to red.
E	[Recipe wizard] button	Activation of the recipe wizard (see chapter Editing recipe (wizard) [▸▸ 57])
F	[Pencil] button	You can change to the recipe view by tapping on the button.
G	Slider	The set values can be changed with the sliders. The triangle to the right of the slider shows the saved value.
H	[Flushing] button	To activate the injector and the hose flushing
I	Powder quantity display	Powder quantity bar display
J	Fluid air quantity display	Fluid air quantity bar display
K	Corona or Tribo current display	Corona or Tribo current bar display
L	High voltage display	High voltage bar display

5.4.4 Operating elements of recipe view

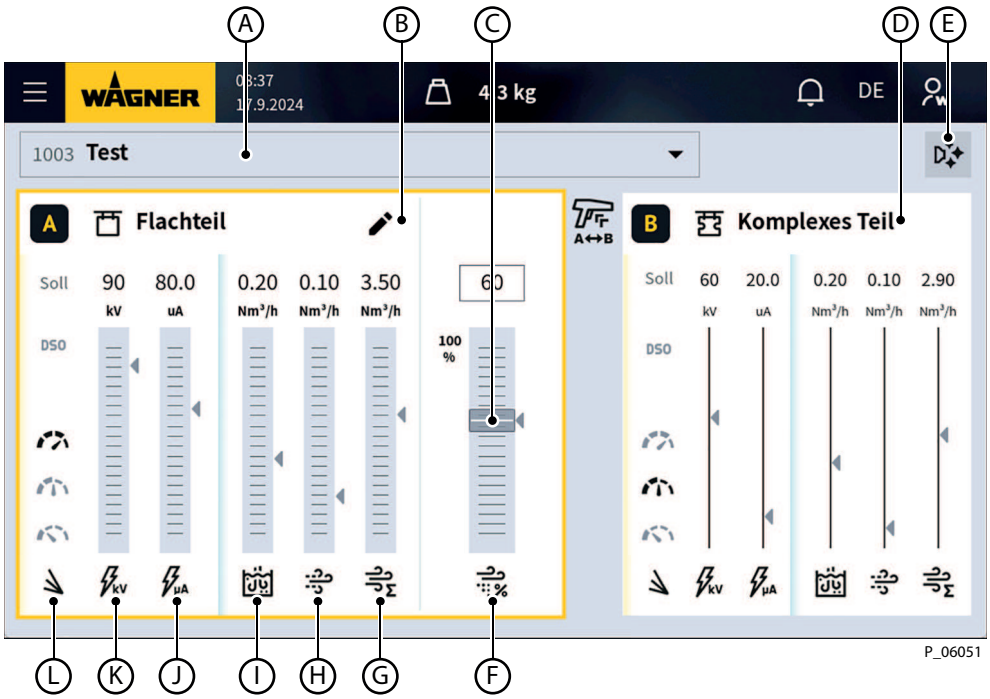


Pos	Function	Description
A	Display set and actual value	The set or actual values are displayed. In the actual value display, the values are not outlined in black and the bar displays are filled in. – The set values can be set by tapping the display panel or using the sliders (P). – If the actual value is too far away from the set value, the display color changes to red.
B	Recipe selection	A different recipe can be selected by tapping on the field.
C	[DSO] (Digital Surface Optimizer) button	For activating the electronically controlled DSO function (see chapter Digital Surface Optimizer (DSO) [▸▸ 70]). The button color changes to white when the electronically controlled DSO function is activated.
D	[Recipe wizard] button	Activation of the recipe wizard (see chapter Editing recipe (wizard) [▸▸ 57])
E	[Create job] button	Press the button to generate a job from the current recipe; the second recipe must still be selected.
F	[Flushing] button	To activate the injector and the hose flushing
G	[Save changes] button	The modified values are saved by pressing the button. The button is grayed out if it should not be operated.
H	[Reset] button	The modified values are reset by pressing the button as long as they have not been saved.
I	Powder quantity display	Powder quantity bar display
J	Total air volume display	Total air volume bar display
K	Atomizer air flow rate display	Atomizer air flow rate bar display
L	Fluid air quantity display	Fluid air quantity bar display
M	Corona or Tribo current display	Corona or Tribo current bar display

Pos	Function	Description
N	High voltage display	High voltage bar display
O	[Characteristic slope] button	Setting the desired characteristic curve. The activated characteristic curve button is displayed white. – Upper button standard characteristic curve (high surface coverage, large distance to the workpiece, simple component geometries, fast coating) – Middle button middle characteristic curve – Lower button flat characteristic curve (low surface coverage, small distance to the workpiece, complex component geometries, high surface quality)
P	Slider	The set values can be changed with the sliders. The triangle to the right of the slider shows the saved value.

5.4.5 Operating elements of job view

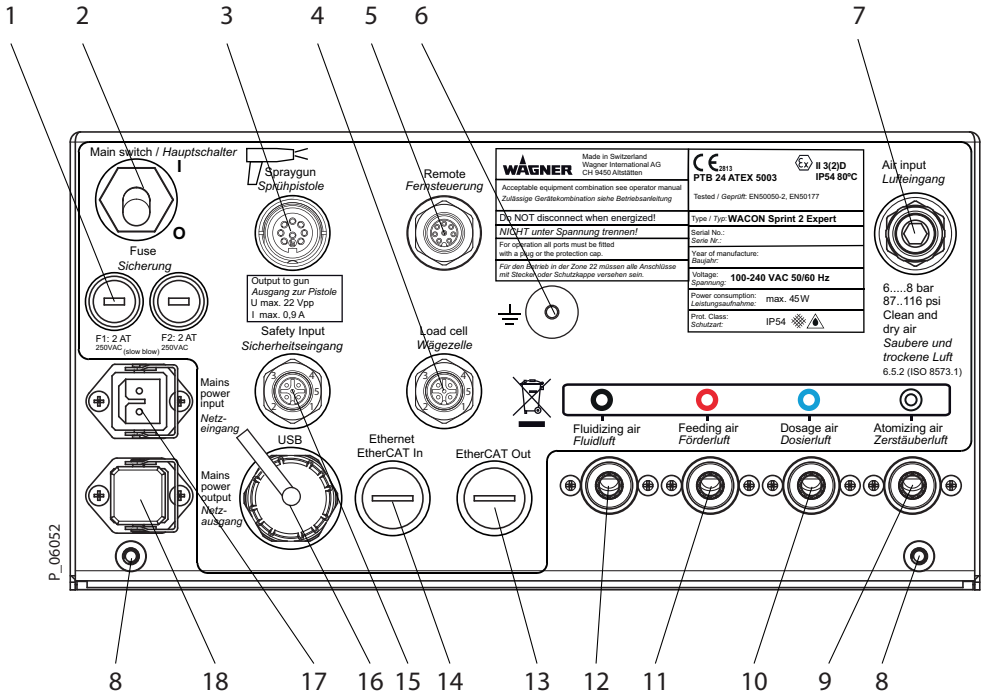
The active recipe is outlined in yellow.



Pos	Function	Description
A	Job selection	A different job can be selected by tapping on the field.
B	Selection of recipe A	A different recipe can be selected by tapping on the field.
C	Slider	The set values can be changed with the sliders. The triangle to the right of the slider shows the saved value.
D	Selection of recipe B	A different recipe can be selected by tapping on the field.
E	[Flushing] button	To activate the injector and the hose flushing
F	Powder quantity display	Display of the powder quantity
G	Total air volume display	Display of the total air volume
H	Atomizer air flow rate display	Display of the atomizer air flow rate
I	Fluid air quantity display	Display of the fluid air quantity

Pos	Function	Description
J	Corona or Tribo current display	Display of the Corona or Tribo current
K	High voltage display	Display of the high voltage
L	Characteristic slope display	Display of the set characteristic curve. The activated characteristic curve is displayed black.

5.4.6 Connections on the rear side of the WACON Sprint 2 Expert



1 Primary fuse (2 pieces)

2 Mains supply switch

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

3 Gun connection

- To connect a Corona or Tribo gun

4 Load cell connection

- To connect the load cell

5 Remote interface (remote control)

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

6 Knurled nut

- To connect the signal ground

7 Compressed air inlet

- Pressure range: 0.6–0.8 MPa; 6–8 bar; 87–116 psi
- Air volume: maximum 19 m^3/h
- Connection hose diameter 8 mm; 0.315 inch

8 Fastenings

- For screwing to the rack

9 Compressed air outlet for additional air
- Corona gun: Atomizing air
- Tribo gun: Tribo air

10 Compressed air outlet for dosing air
- For the powder injector

11 Compressed air outlet for feed air
- For the powder injector

12 Fluid air compressed air outlet
- For the powder injector or for the powder tank

13 EtherCat output
- Output EtherCAT

14 EtherCAT/Ethernet input
- Input EtherCat/Ethernet

15 Safety input
- 24 V Enable signal, PLd 2-channel

16 USB connection

17 Mains input terminal
- Universal input: 100 VAC – 240 VAC

18 Mains output terminal
- switched for vibrator motor

Note:

The ATEX protective sleeve (order no. see chapter Accessories [▸▸ 90]) can be used for items 4, 5 and 15.

5.5 ACCESSORIES

Only the accessories listed in chapter Accessories [▸▸ 90] 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).

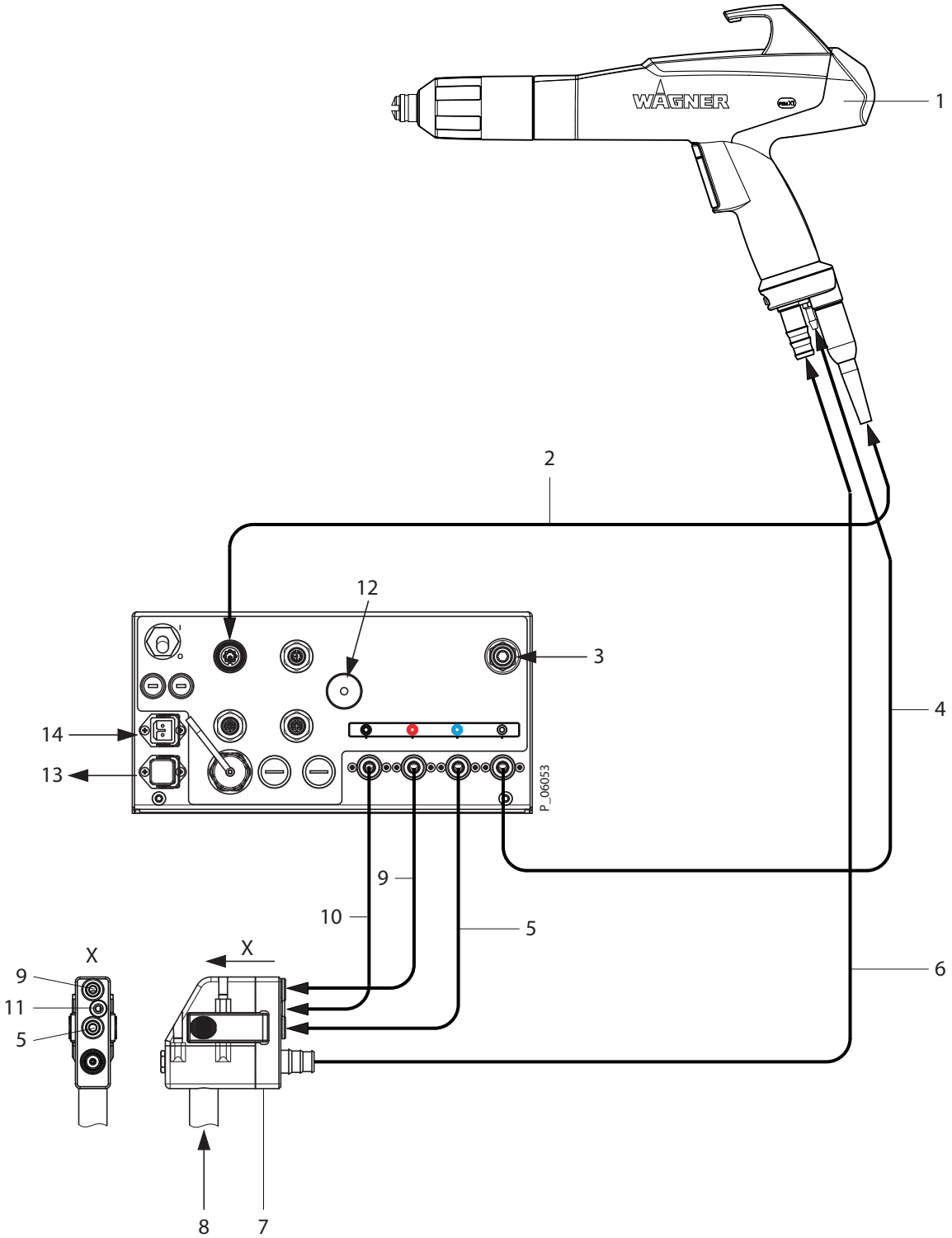
6.3 INSTALLATION CONDITIONS

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).

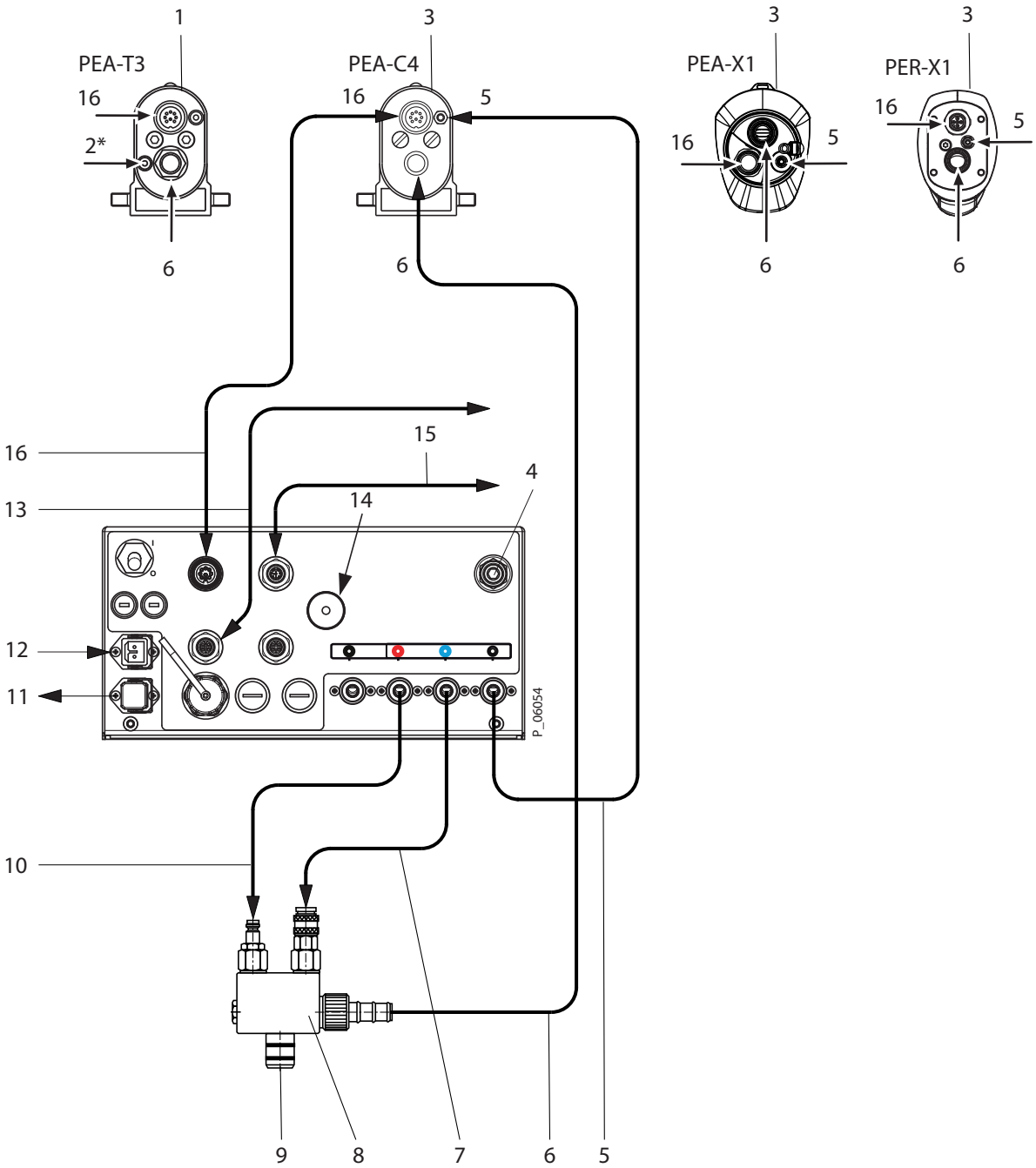
6.4 CONNECTING THE MANUAL GUN



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) hose diameter: 8 mm; 0.315 inches
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; when feeding from the 60 L powder tank, this output is connected directly to the bottom of the powder tank) In a manual system, the fluid air is regulated via a proportional valve.
11	Fluid air, black
12	Grounding cable to the signal ground
13	Mains output terminal
14	Mains input terminal

6.5 CONNECTING THE AUTOMATIC GUN



1	Tribo spray gun
2	Tribo air
3	Corona spray gun
4	Compressed air main supply (0.6–0.8 MPa; 6–8 bar; 87–116 psi) Hose diameter: 8 mm; 0.315 inch
5	Atomizing 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	Mains output terminal
12	Mains input terminal
13	Safety input
14	Grounding cable to the signal ground
15	Start/Stop command from external controller (master controller)
16	Electrical connection cable

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

6.6 GROUNDING

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:

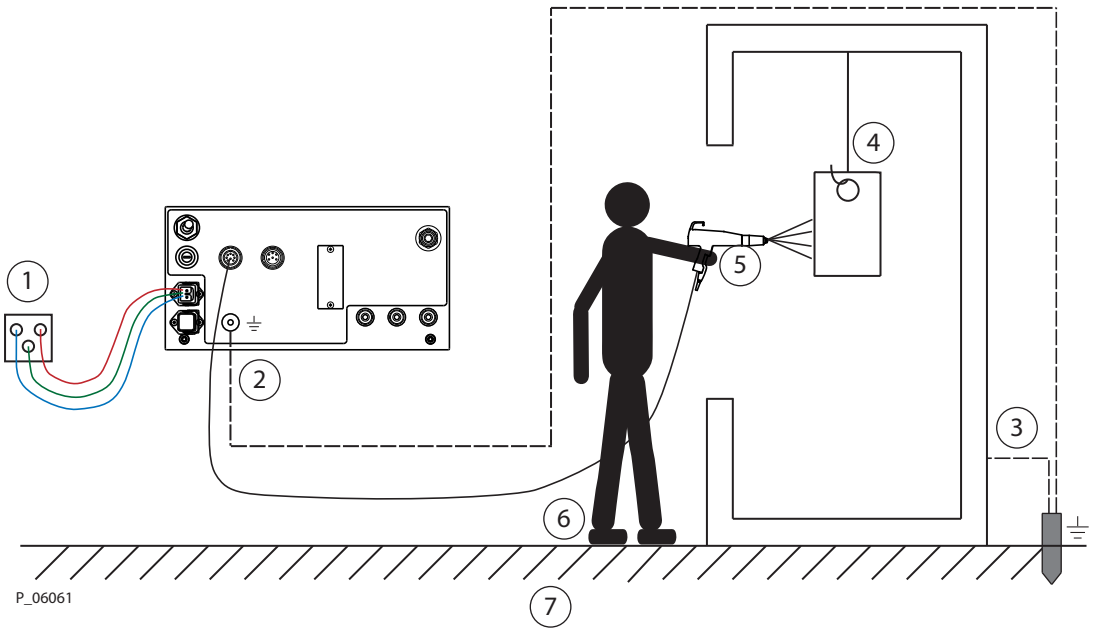
- Dangerous electric charging of the work piece
- Very bad wrap-around
- Uneven coating
- Back spraying to the spray gun, i.e., contamination

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 the control unit with the grounding cable to the signal ground!
3	Connect booth or spray wall to the signal ground with the grounding cable!
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 [▸▸ 72].

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 [▸▸ 72].
   - commissioning is carried out in accordance with chapter Assembly and commissioning [▸▸ 27].

7.2.2 Operating Modes

- Manual gun mode
  - Setpoint input and operation via the display
- Manual gun mode with external control
  - Remote interface with external release (required for coating and flushing), for the external control of the flushing function and for the selection of recipes
  - EtherCAT interface with external release and for transferring coating parameters
- Automatic gun mode with external control
  - Remote interface with external release (required for coating and flushing), for the external control of the flushing function and for the selection of recipes
  - EtherCAT interface with external release and for transferring coating parameters

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 Expert control unit automatically detects whether a manual or automatic gun is connected to the control unit. 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 Expert must receive an enable signal via the remote interface or the EtherCAT interface before flushing or coating operations are permitted (see chapter Remote interface [▸▸ 79]). The cleaning function (continuous flushing) can also be controlled externally. The flushing button can be activated or deactivated in the settings. The source of the setpoint specifications can be configured in the settings (see chapter System [▸▸ 42]).

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.

7.2.6 Safety input

The WACON Sprint 2 Expert control unit is equipped with a safety input with safety level (Performance Level) d (PLd) in accordance with standard EN 16985 (spray booths for organic coating products - safety requirements).

The release for the high voltage must be present at the safety input so that coating can take place.

The safety input is a standard M12 A-coded flange socket on the rear side of the WACON Sprint 2 Expert.

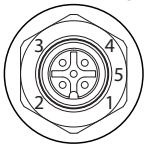
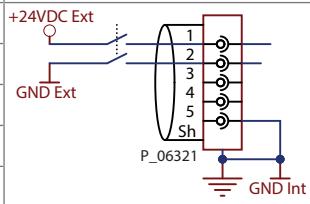
There are two options for issuing the safety release:

- Enable external safety control via 24 VDC signal to the safety input
- Locking the mains input terminal with the exhaust control and bridging the safety input

Variant 1 (24 V external release):

An external power supply with 24 VDC output is required for this variant.

The 24 V signal is interlocked with the system safety circuit and routed to the safety input.

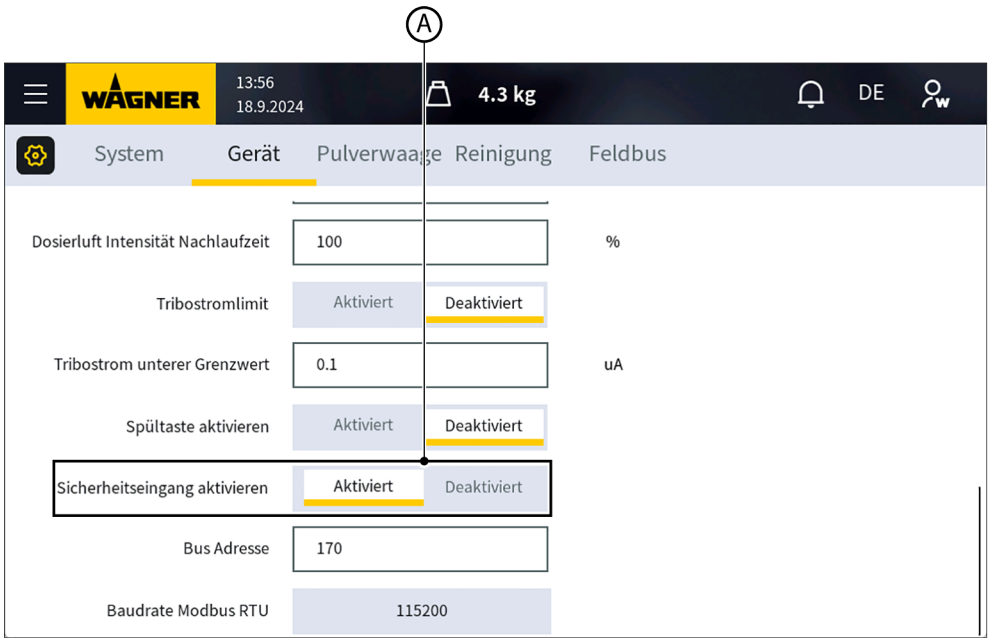
	Pin	Signal	Diagram
Safety Input *Sicherheitseingang*  P_06318	1	+24 VDC (Safety In)	
	2	0 V (Safety GND)	
	3	Not used	
	4	Not used	
	5	GND/Ground	
	Housing	Ground	

Cable for safety input

The following WAGNER cables can be used for this (for order numbers, see chapter Accessories [▸▸ 90]):

Length	Designation	Illustration
10 m 20 m	Cable, M12, 5-pin, plug, PVC, no shield, open cable end Cable core P1 = brown Cable core P2 = white	 P_06317

For this variant, the setting [Activate safety input] (A) must be set to [Activated].



P_06301

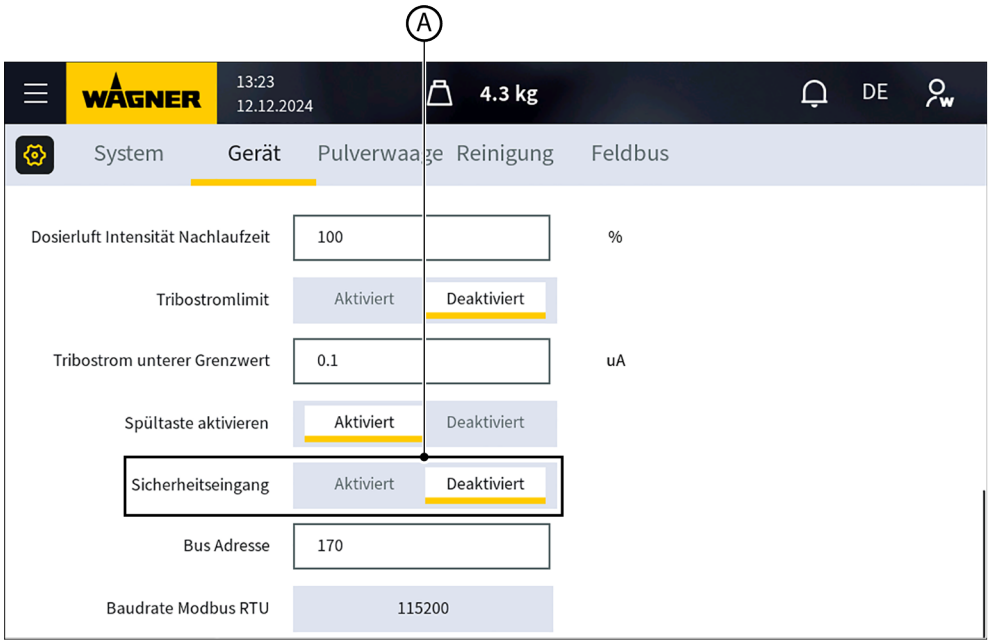
Variant 2 (interlocking via mains connection):

Interlock the control unit with the system safety circuit via the mains connection.

In addition, the safety input must be fitted with the enclosed jumper plug (WAGNER order no. see chapter Accessories [▸▸ 90]).

For use in zone 22, an ATEX protective sleeve (WAGNER order no. see chapter Accessories [▸▸ 90]) must be fitted.

For variant 2, the setting under [Device] setting [Enable safety input] (A) must be set to [Disabled].



P_06302

7.3 USER LEVEL

User:

- Device is started with this user
- Standard name User
- Standard role Level 1
- Standard language English
- As standard No password

The following can be changed:

- User name
- Role (level 0 to level 2)
- Language
- Password can be set

Default users:

Default users are:

- Level 0: Easy mode
- Level 1: Coater (passcode 2808)
- Level 2: Supervisor (passcode 0103)
- Level 3: Service
- Level 4: WAGNER

Characteristics:

- User name cannot be changed
- Role cannot be changed
- Passcode (level 3 and 4) cannot be changed
- Language can be changed

You can work as normal with the default users.

You can switch to a lower default user level without entering a passcode.

Individual users:

This function is used to create individual users.

Characteristics:

- User name can be selected as desired
- Role only levels 0 to 2
- Four-digit passcode can be selected as desired
- Language can be changed

Any user can be selected from any role. If set, a passcode must be entered (regardless of user role).

If a passcode is set, the passcode must be entered with each change (regardless of user role).

7.3.1 Settings

The user rights for the settings are listed below.

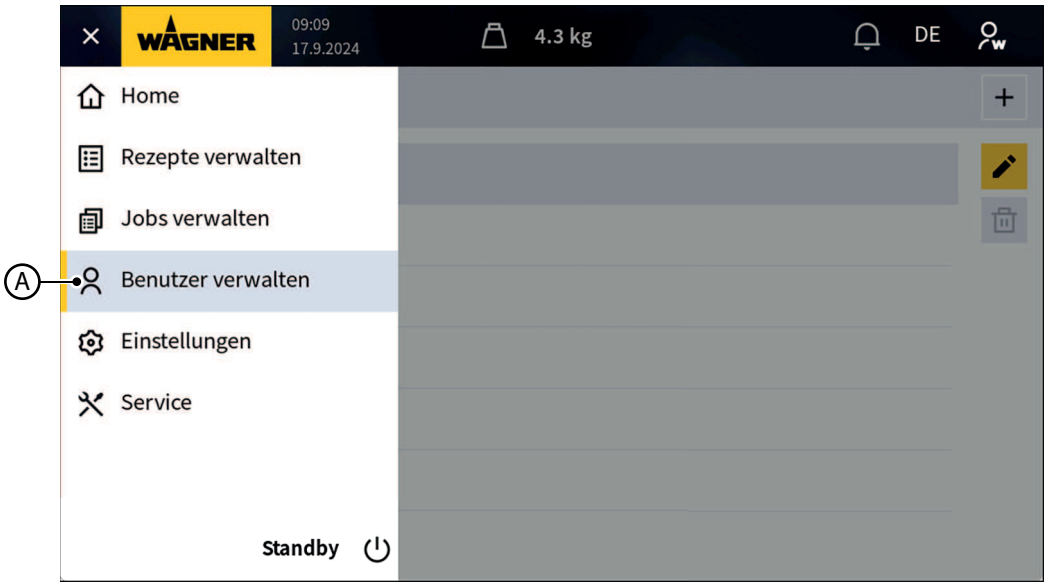
- Level 0: Easy Mode
- Level 1: Coater
- Level 2: Supervisor
- Level 3: Service
- Level 4: Wagner

Function	Subfunction	Level 0	Level 1	Level 2	Level 3	Level 4
System	Brightness			x	x	x
	Year			x	x	x
	Month			x	x	x
	Day			x	x	x
	Hours			x	x	x
	Minutes			x	x	x
	Units			x	x	x
	Time until Standby			x	x	x
	Easy Mode for all users			x	x	x
	Maintenance counter			x	x	x
	Target values			x	x	x
	Recipe selection (remote)			x	x	x
	Display orientation			x	x	x
	Reset settings			x	x	x
	Reset standard recipes			x	x	x
	Reset recipes and jobs			x	x	x
	Reset users			x	x	x
	Create backup			x	x	x
	Restore backup			x	x	x
Device	Gun type			x	x	x
	Tank type			x	x	x
	Standard upper limit of fluid air			x	x	x
	Hose diameter			x	x	x
	Hose length			x	x	x
	Double-click logic (for recipe)			x	x	x

Function	Subfunction	Level 0	Level 1	Level 2	Level 3	Level 4
	Double-click logic (for job)			x	x	x
	Vibrator motor			x	x	x
	Vibrator motor after-run time			x	x	x
	Mains output terminal			x	x	x
	Fluid air activation			x	x	x
	Starting output			x	x	x
	Dosing air after-run time			x	x	x
	After-run time dosing air intensity			x	x	x
	Hose flushing after-run time			x	x	x
	Tribo current limitation			x	x	x
	Tribo current below limit value			x	x	x
	Activate flushing button (remote)			x	x	x
	Safety input			x	x	x
	Bus address				x	x
	Baud rate Modbus RTU				x	x
Powder weighing system	Powder weighing system			x	x	x
	Warning limit			x	x	x
	Tank weight			x	x	x
	Set zero point			x	x	x
	Load cell calibration			x	x	x
Cleaning	Cleaning kit			x	x	x
	Cleaning intensity			x	x	x
Fieldbus	Type of fieldbus				x	x
	IP				x	x
	Subnet mask				x	x
	Standard gateway				x	x

7.4 USER ADMINISTRATION

User management is used to create, edit and delete users. There are different user levels.
The devices are started with the level User.



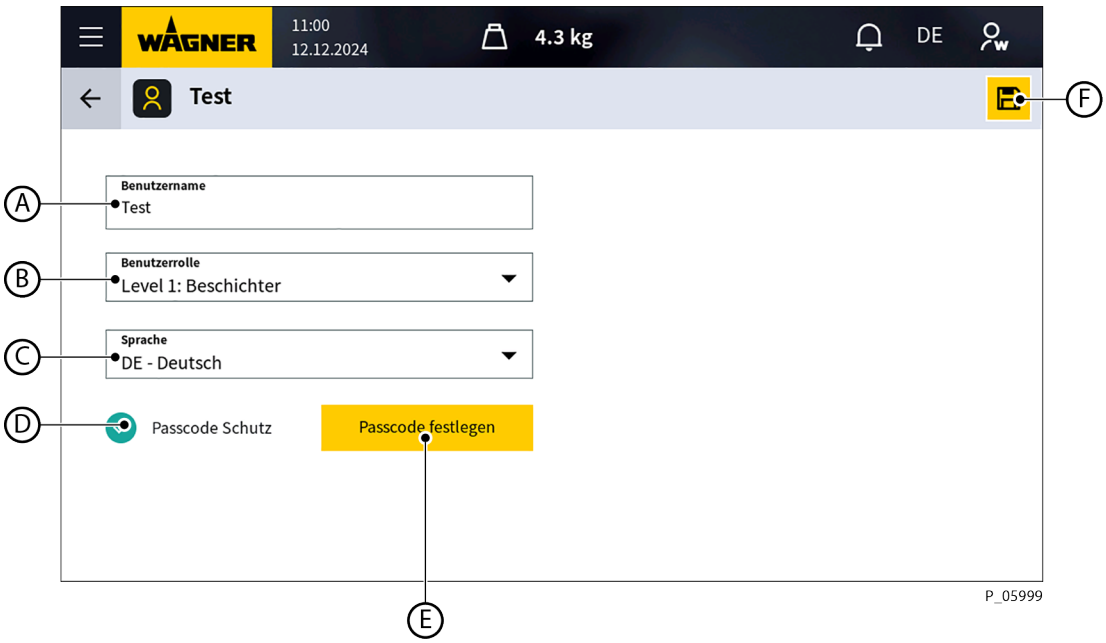
- Press the [User] button (A) to open the [User] page.

A	[Add user] button
B	[Edit user] button
C	[Delete user] button

Create user

1. Press the [Add user] button (A).

2. Specify a user name, role, language and, if desired, a passcode.



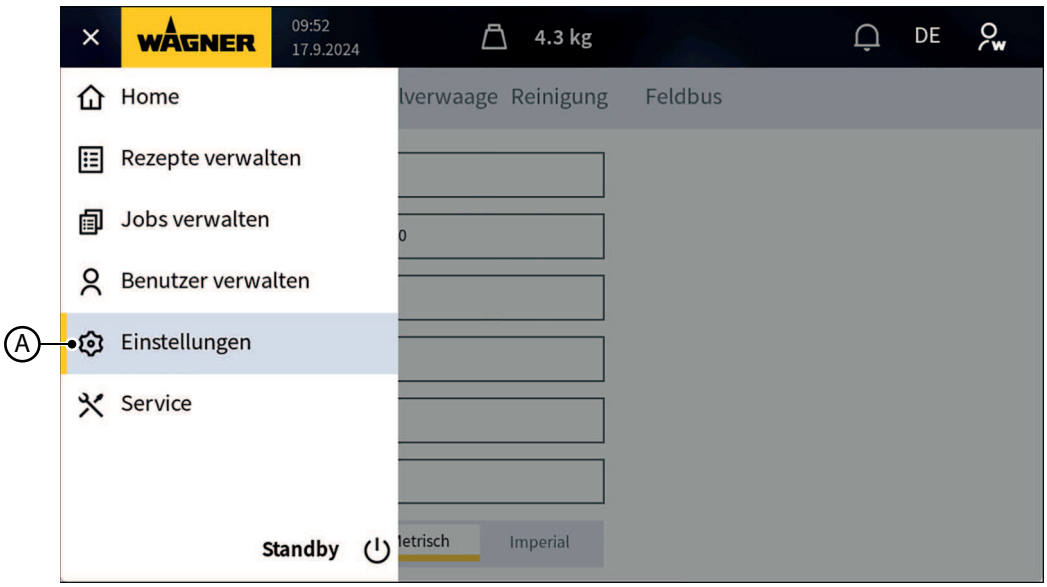
A	User name input field
B	User role selection field
C	Language selection field
D	Passcode yes/no selection field
E	[Set passcode] button if a passcode is required
F	[Save] button to save the new user

3. Press [Save] (F), the Test user is created.

P_06000

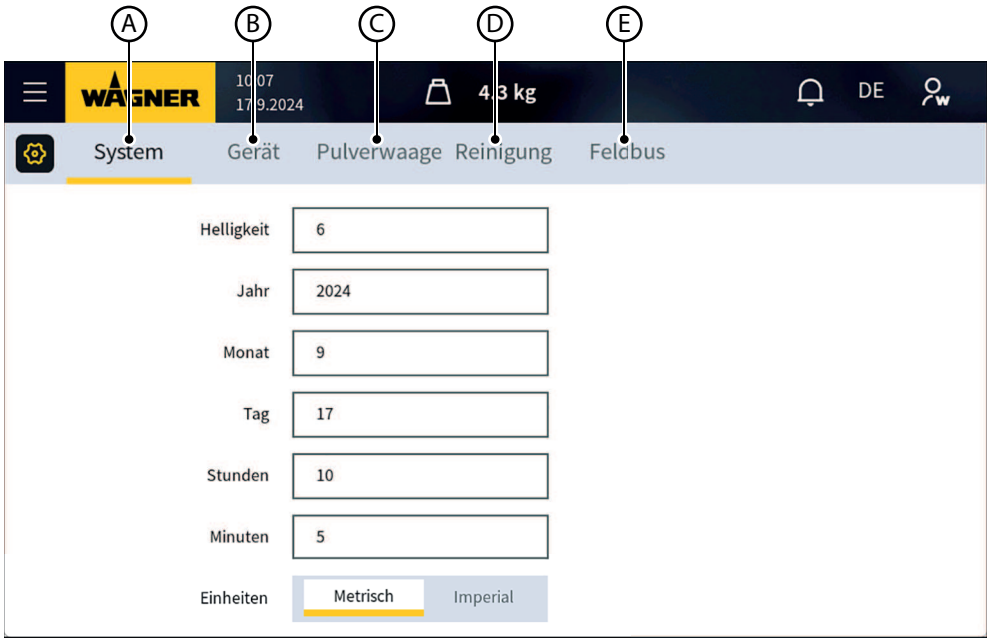
7.5 SETTINGS

In the [Settings] menu, different parameters of the control unit can be set.



P_06001

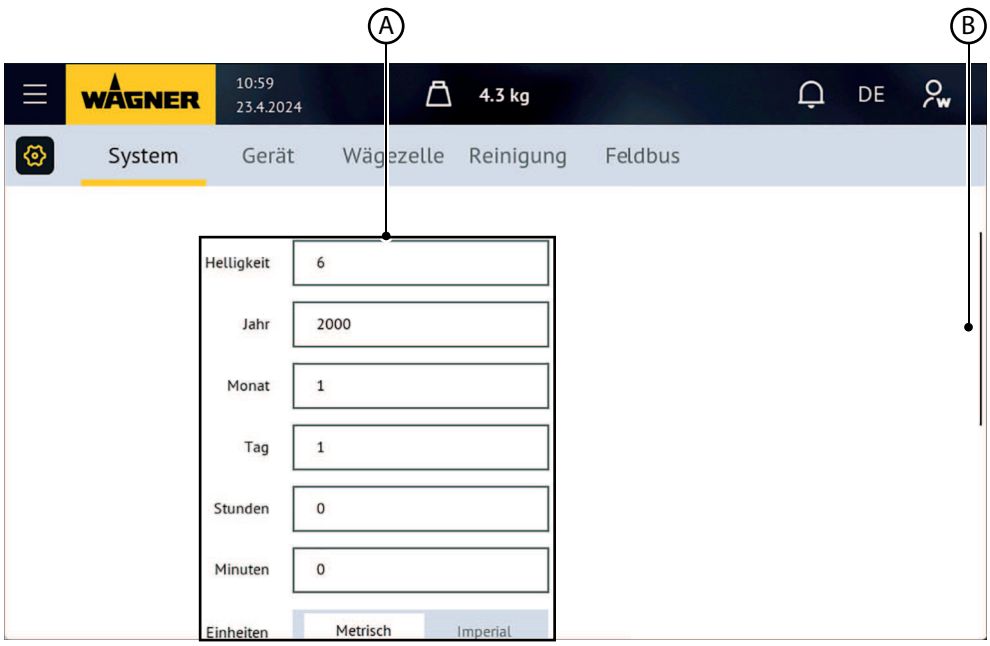
- Press [Settings] button (A) to open the [Settings] page.



P_06047

Pos	Function	Description
A	[System] button	Press the button to call up the [System] page.
B	[Device] button	Press the button to call up the [Device] page.
C	[Powder weighing system] button	Press the button to call up the [Powder weighing system] page.
D	[Cleaning] button	Press the button to call up the [Cleaning] page.
E	[Fieldbus] button	Press the button to call up the [Fieldbus] page.

7.5.1 System



P_06002

Pos	Function	Description
A	Adjustable parameters	The individual parameters are described in the following table.
B	Scroll bar	You can scroll down or up by tapping the screen.

Function	Description
Brightness	Setting the screen brightness
Year	Setting the date
Month	Setting the date
Day	Setting the date
Hours	Setting the time
Minutes	Setting the time
Units	Setting the measurement system Metric: The measurements are displayed in metric units (meters) (factory setting). Imperial: The measurements are displayed in US units (inches).
Time until Standby	Setting the duration until the control unit goes into Standby mode (factory setting: 30 min).
Easy Mode for all users	Activated: Easy Mode is selected for all user levels. Deactivated: Easy Mode can only be used in user level 0: Easy Mode.
Maintenance counter	Activated: The operating hours of the individual components are recorded. Deactivated: The operating hours are not recorded.
Target values	GUI: Target values from display (factory setting) Remote: Target values and release from the remote interface EtherCAT: Target values and release from the EtherCAT interface
Recipe selection (remote)	For description, see chapter Remote interface [▸▸ 79]
Display orientation	Normal: Display indicator normal (factory setting) Inverted: Display indicator rotated by 180°
Reset settings	Push the [Reset] button to reset the system and device settings.
Reset standard recipes	Push the [Reset] button to reset the settings of the standard recipes (flat part, complex part).
Reset recipes and jobs	Push the [Reset] button to reset the settings of the recipes and jobs that you have created (deletes recipes and jobs that you have created).
Reset users	Push the [Reset] button to reset the settings of the users to the factory settings (deletes users that you have created).

7.5.1.1 Special settings for double device

There are 3 variants or expansion stages for a double unit:

- Variant 1: normal double device
- Variant 2: Double device with cleaning stations
- Variant 3: Double device with cleaning stations and external cleaning buttons

The two control units are referred to as 1 and 2 below.

The first device is the device to which the powder weighing system and the vibrator motor are connected.

If neither the powder weighing system nor the vibrator motor are used, the 1. The device can be selected as required.

The following settings must be configured for all three variants:

- The [vibrator motor run-on time] setting must be set to 0 seconds for the second device (see chapter Device [▸▸ 45]).
- On the first device, the desired run-on time can be changed if required.
  The run-on time, which is set in the first device, applies to both devices.
- The setting [Powder weighing] must be set to [deactivated] for the second device (see chapter Powder weighing system [▸▸ 46]).

The extension cables in the following table can be used for all variants as extensions, e.g., between the control units, to the cleaning valve or to the external cleaning button (for order numbers, see chapter Connection cable M12, 8-pin [▸▸ 91]).

Length	Designation	Illustration
3 m	Cable, BU/ST M12, 8-pin, with shield	 B_08324
5 m		
10 m		
15 m		
20 m		

The connection cable (double device variant 1) is required in all cases where the connection box is not used.

Variant 1

The devices must be in manual gun mode and are connected to each other with the connection cable (for order number, see chapter Accessories [▸▸ 90]).

The marked side of the connection cable must be connected to the 2nd device.

The connection cable is mandatory; if necessary, the connection cable can be extended with a cable from the table above.

Variant 2

The control units and cleaning stations can be connected to the connection box and the device setting [Cleaning kit] must be set to [Activated] for both devices (see chapter Cleaning [▸▸ 47]).

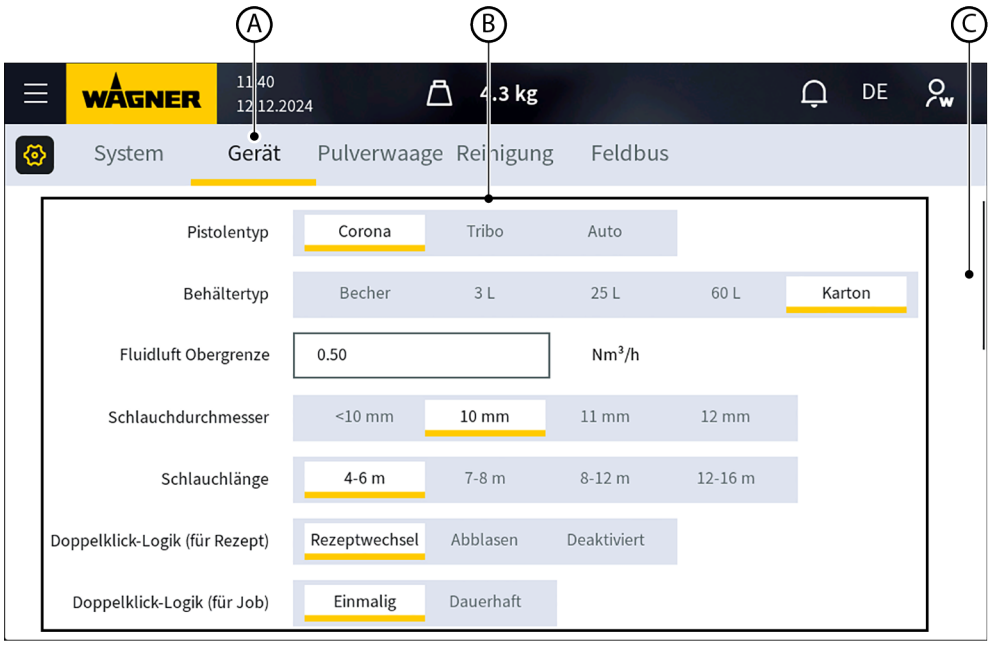
Variant 3

If variant 3 is selected: on the 1st device, the setting [External cleaning button] must be set to [Activated] (see chapter Cleaning [▸▸ 47]).

The device setting [Cleaning kit] must be set to [Activated] for both devices (see chapter Cleaning [▸▸ 47]).

The external cleaning buttons can be connected to the connection box.

7.5.2 Device



- Press the [device] (A) button to open the [Device] page.

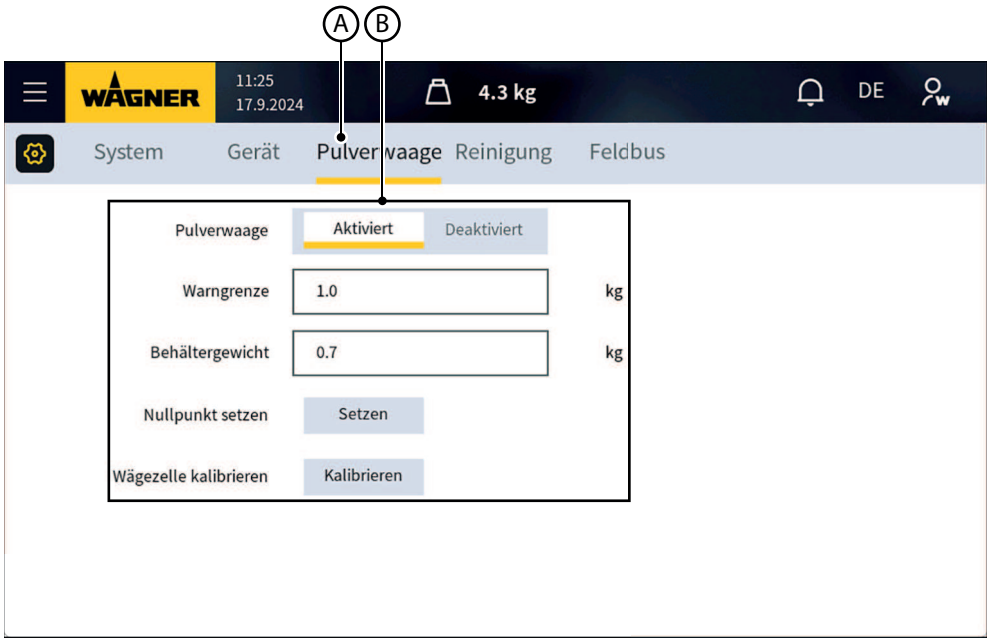
Pos	Function	Description
A	[Device] button	Press button to call up the page.
B	Adjustable parameters	The individual parameters are described in the following table.
C	Scroll bar	You can scroll down or up by tapping the screen.

Function	Description
Gun type	Setting the gun type: Corona: Operation with a corona gun (factory setting) Tribo: Operation with a tribo gun Auto: Automatic detection of the gun type
Tank type	Setting the tank type Cup: when using a cup gun 3/25/60 L: Powder feed from a powder tank Box: Powder feed from a box (factory setting)
Standard upper limit of fluid air	Set upper fluid air limit (factory setting: 1 Nm^3/h)
Hose diameter	Set the powder hose diameter (factory setting: 11 mm)
Hose length	Setting the length of the powder hose (factory setting: 4–6 m)
Double-click logic (for recipe)	Recipe change: A double-click on the manual gun's trigger lever opens the double-click recipe (factory setting). Blow off: A double-click on the trigger opens the blow-off recipe. Deactivated: The function is deactivated.
Double-click logic (for job)	One-time: As long as the trigger lever is held after a double-click, the 2nd recipe is applied (factory setting). Permanent: Double-click to permanently change the recipe.

Function	Description
Vibrator motor	Activated: The vibrator motor is always active as long as the device is switched on. Auto: The vibrator motor switches on during coating and switches off after the vibration after-run time has elapsed (factory setting). Deactivated: The vibrator motor is deactivated.
Vibrator motor after-run time	Setting the run-on time of the vibrator motor (factory setting: 10 s)
Mains output terminal	Activated: Mains output can be used for a second WACON Sprint 2 Expert in a double device (Attention! Maximum 70 W). Deactivated: Mains output functions normally, e.g., for vibrator control (factory setting).
Fluid air activation	Auto: Fluid air linked to gun trigger (factory setting) Permanent: Fluid air is always switched on
Starting output	Set the air volume at which powder starts to be conveyed (factory setting: 0.8 Nm^3/h for 25 L container, 60 L container and carton, 0.0 Nm^3/h for cup gun and 3 L container), see chapter Setting starting output (Zero-point adjustment) [▸▸ 68].
Dosing air after-run time	Activated: The set dosing air after-run time is applied after releasing the spray gun trigger Deactivated: No after-run time (factory setting)
Dosing air after-run time	Set the after-run time for the dosing air (factory setting: 0 s)
After-run time dosing air intensity	Setting of the intensity of the after-run time of the dosing air (factory setting: 100%)
Tribo current limit	Activated: If the value falls below the lower limit value by 10 s, a warning is issued. Deactivated: If the value falls below the lower limit value by 10 s, no warning is issued (factory setting).
Tribo current below limit value	If the Tribo current does not reach the set values for more than 10 seconds, a warning is issued (factory setting: 0.1 µA)
Activate flushing button (remote)	Activated: The flushing button can always be operated (factory setting). Deactivated: The flushing button is locked remotely.
Safety input	Activated: Function described in chapter Safety input [▸▸ 34] Deactivated: Function described in chapter Safety input [▸▸ 34]
Bus address	Setting the bus address (service)
Baud rate Modbus (RTU)	Baud rate Modbus setting (service)

7.5.3 Powder weighing system

- Press the [Powder weighing] button (A) to open the [Powder weighing] page.



P_06004

Pos	Function	Description
A	[Powder weighing] button	Press button to call up the page.
B	Adjustable parameters	The individual parameters are described in the following table.

Function	Description
Powder weighing system	Activated: The powder weighing system is activated Deactivated: The powder weighing system is deactivated (factory setting)
Warning limit	If the weight falls below the set weight, a warning message is issued (factory setting 1 kg).
Tank weight	Set the container weight (e.g. box or 60 L container, factory setting: 0.7 kg)
Set zero point	Press the [Set] button to set the zero point
Load cell calibration	Press the [Calibrate] button to calibrate the load cell

Load cell calibration:

1. There must be no powder tank on the vibrator table during the calibration process.
2. Press the [Set] button.
3. Place a weight of 10 kg (as accurately as possible) on the platform.
4. Press the [Calibrate] button.

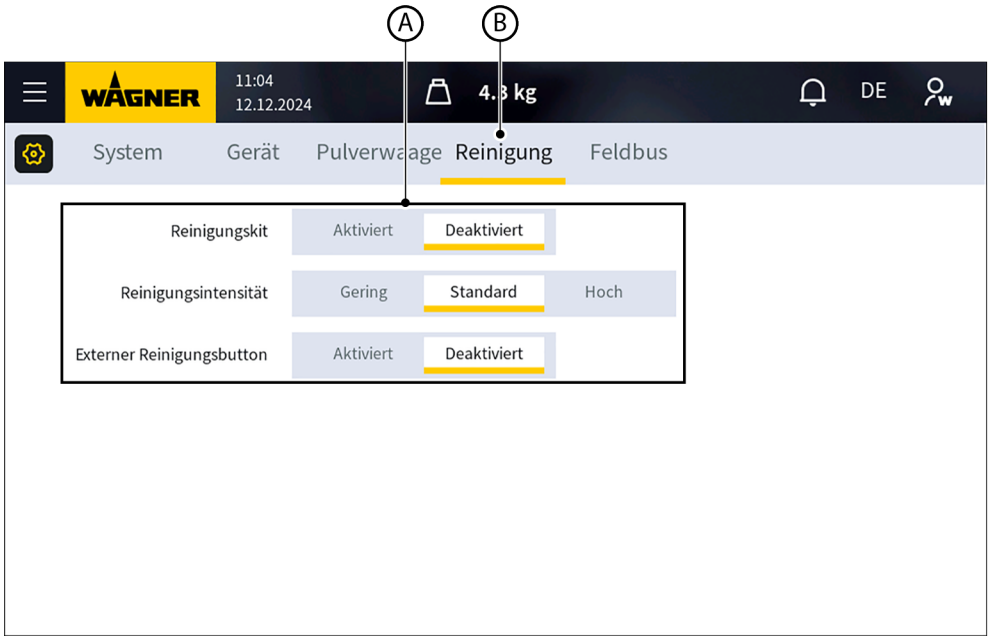
Alternatively, the powder weighing system can also be calibrated without a 10 kg weight, but the calibration is then not as precise as when calibrating with a 10 kg weight.

The calibration process without a weight is exactly the same as with a weight.

1. There must be no powder tank on the vibrator table during the calibration process.
2. Press the [Set] button.
3. Press the [Calibrate] button.

7.5.4 Cleaning

- Push [Cleaning] button (B) to call up the [Cleaning] page.



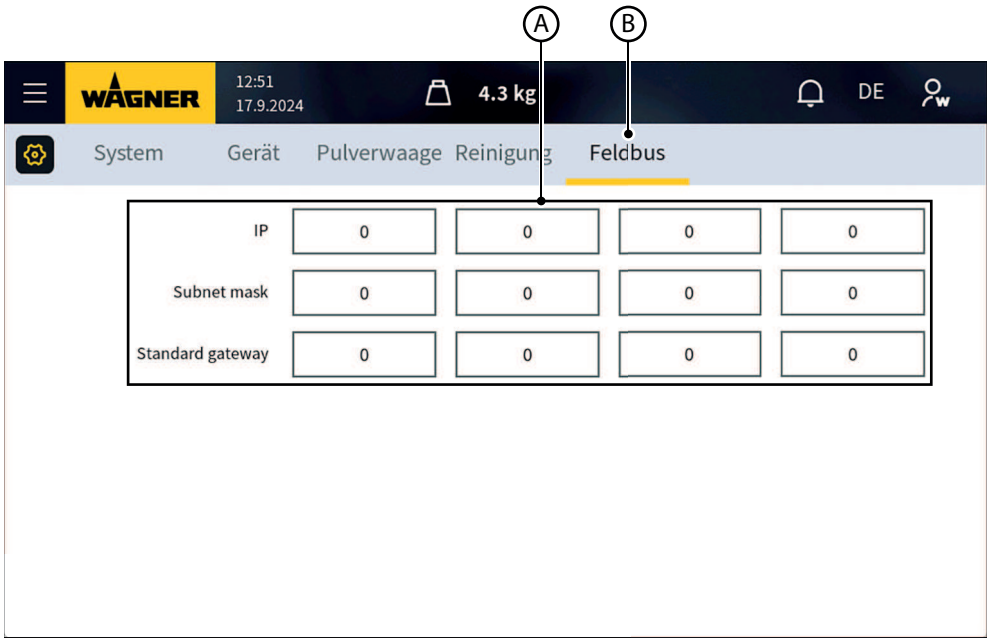
P_06005

Pos	Function	Description
A	Adjustable parameters	The individual parameters are described in the following table.
B	[Cleaning] button	Press button to call up the page.

Function	Description
Cleaning kit	Activated: The cleaning kit is activated Deactivated: The cleaning kit is deactivated (factory setting)
Cleaning intensity	Setting the cleaning intensity (factory setting: standard)
External cleaning button	Activated: The external cleaning button is activated Deactivated: The external cleaning button is deactivated (factory setting)

7.5.5 Fieldbus

- Push [Fieldbus] button (B) to call up the [Fieldbus] page.



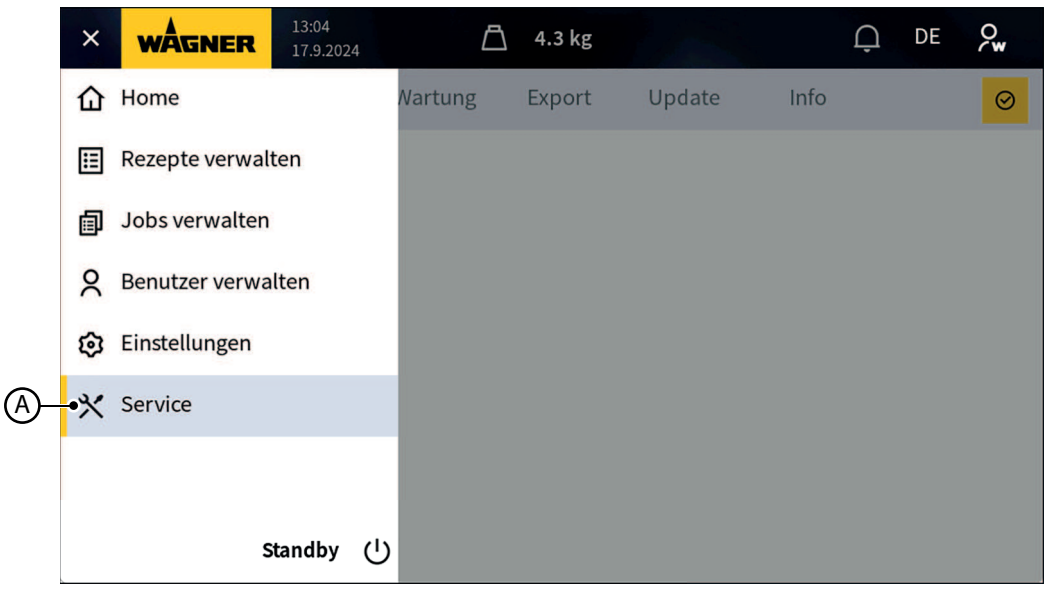
P_06006

Pos	Function	Description
A	Adjustable parameters	The individual parameters are described in the following table.
B	[Fieldbus] button	Press button to call up the page.

Function	Description
IP	Entry of the IP address of the system
Subnet mask	Subnet mask to define the network size
Standard gateway	Network access point

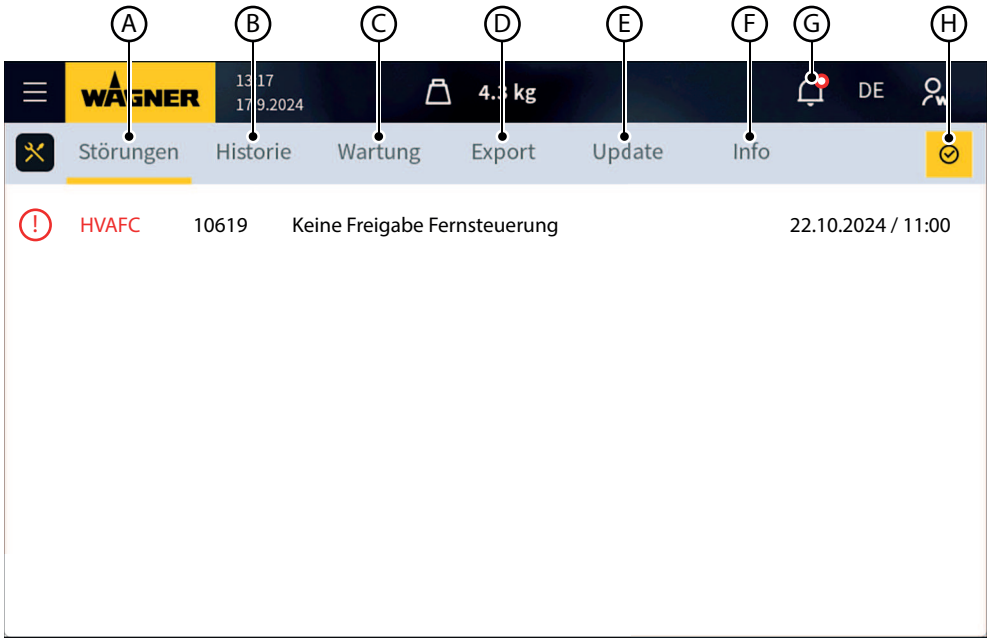
7.6 SERVICE

All possible service information that can be seen on the touch screen of the WACON Sprint 2 Expert is briefly described below.



P_06062

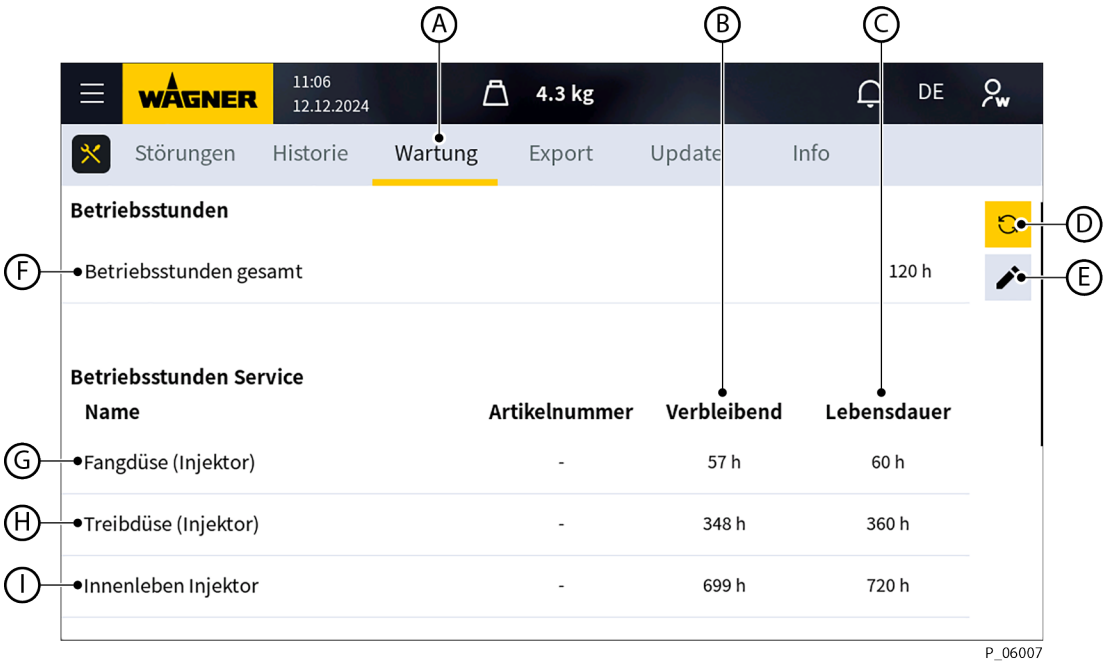
- Press [Service] button (A) to open the [Service] page.



P_06008

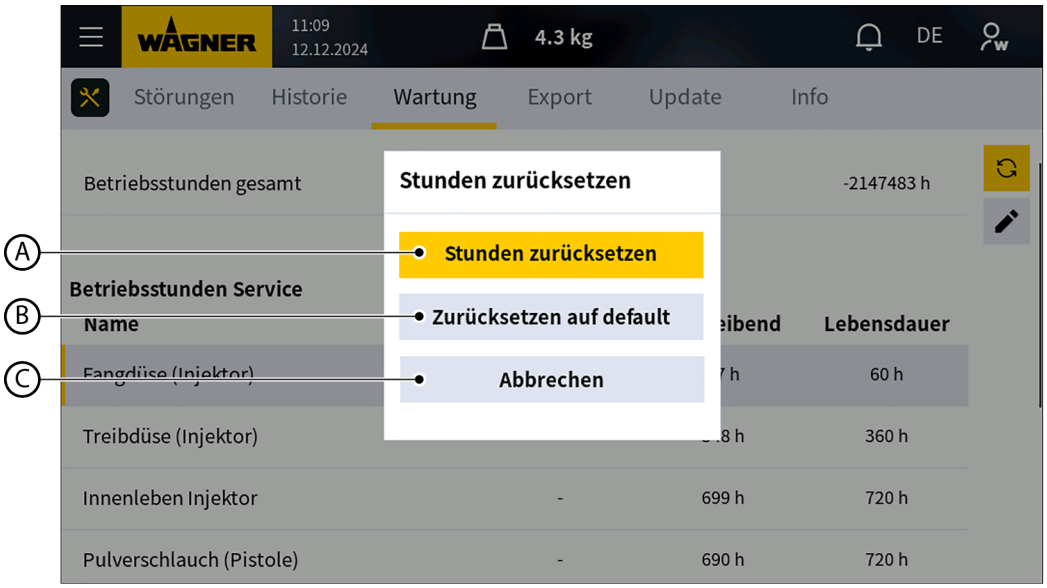
Pos	Function
A	Faults (current faults)
B	History (confirmed faults)
C	Maintenance
D	Export: Exporting settings
E	Update: For system updates
F	Info: Information about hardware and software versions and the assignment of the analogue and digital inputs
G	Bell symbol: Shows the current faults. Tapping on the symbol takes you directly to the overview of current faults.
H	Press [Acknowledge error] button to acknowledge an error.

7.6.1 Maintenance



- Press the [Maintenance] button (A) to open the [Maintenance] page.

Pos	Function	Description
A	[Maintenance] button	Press button to call up the page.
B	Remaining	Display of the remaining operating hours until the next maintenance
C	Service life	Set maintenance interval
D	[Reset] button	Press button to reset the operating hours. Tap to activate the individual component for which the operating hours are to be reset.
E	[Pencil] button	Button for setting the maintenance intervals. Activate the respective component for which the operating hours are to be set by tapping on it.
F	Total operating hours	Display of the total operating hours
G	[Collector nozzle (injector)] button	Activating the component Collector nozzle of the powder injector
H	[Air nozzle (injector)] button	Activating the component Air nozzle of the powder injector
I	[Inner workings of injector] button	Activating the component Injector
Scroll down to display further components.		
	[Powder hose (gun)] button	Activate the powder hose component
	[Wedge (gun)] button	Activating the component Gun wedge
	[Electrode holder (gun)] button	Activating the component Electrode holder
	[Gun nozzle (gun)] button	Activating the component Gun nozzle
	[Inner workings of gun] button	Activating the component Gun
	[Scraper ring (swivel arm)] button	Activating the component Scraper ring Swivel arm



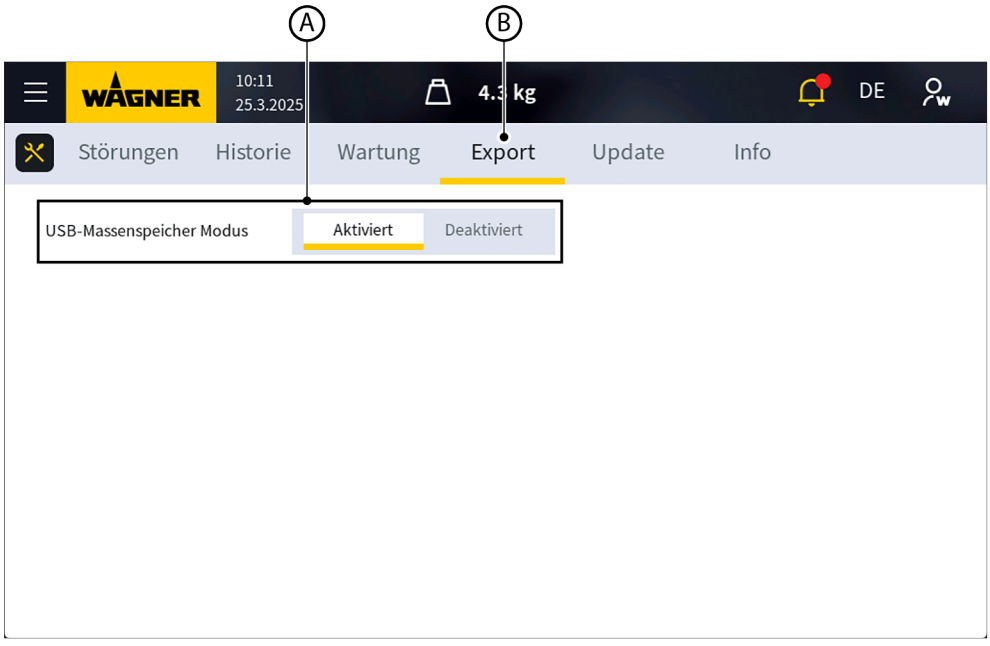
Pos	Function	Description
A	[Reset hours] button	Press button to reset the hours
B	[Reset to default] button	Press button to reset to the default values
C	[Cancel] button	Press button to cancel the reset

7.6.2 Export

✓ At least Level 2 is required to export data from the control unit.

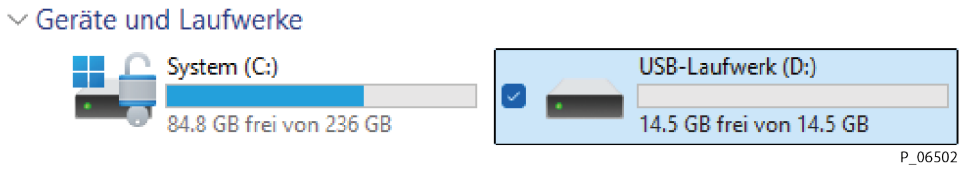
✓ A laptop or PC and the USB connection cable (order no. 2477023) are required to export data.

▸ Connect the USB connection cable to the control unit and the laptop.



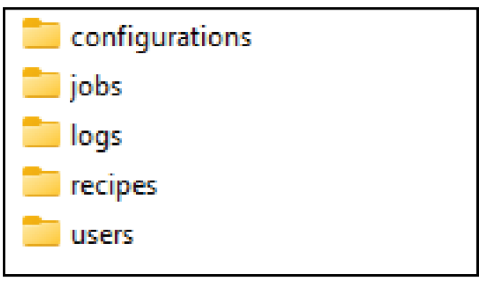
A	Adjustable parameters	Activate/deactivate USB mass storage device
B	[Export] button	Press the button to open the [Export] page.

1. Press the [Export] button (B) to open the [Export] page.
2. Press the [Activated] button (A) to activate USB mass storage mode.
   ⇨ An error message is displayed on the error page stating that the device is in USB mass storage mode.
   During this time, the device cannot be used.



P_06502

3. After a short time, the device is displayed on the laptop as a USB drive.
   It can take up to one minute for the first connection, do not disconnect the USB device during this time.



P_06503

4. This folder structure is displayed.
5. The data must be copied (Ctrl+C) and must not be deleted from the device.
6. The file contained in the configuration settings can be saved locally as a backup if desired.
7. Once the desired data has been exported, the USB connection can be disconnected again.
8. Mass storage mode must be deactivated again in the [Service - Export] menu.

Configurations	This folder contains all configurations.
Jobs	This folder contains all jobs.
Logs	This folder contains all logbooks as csv files (error logbook, production logbook, service logbook). The production and service logbooks are structured on a rolling basis. A logbook is created for each month, in the 13th month, the logbook from the 1st month is overwritten. This means that the history of an entire year is always available.
Recipes	This folder contains all recipes.
User	This folder contains all users.

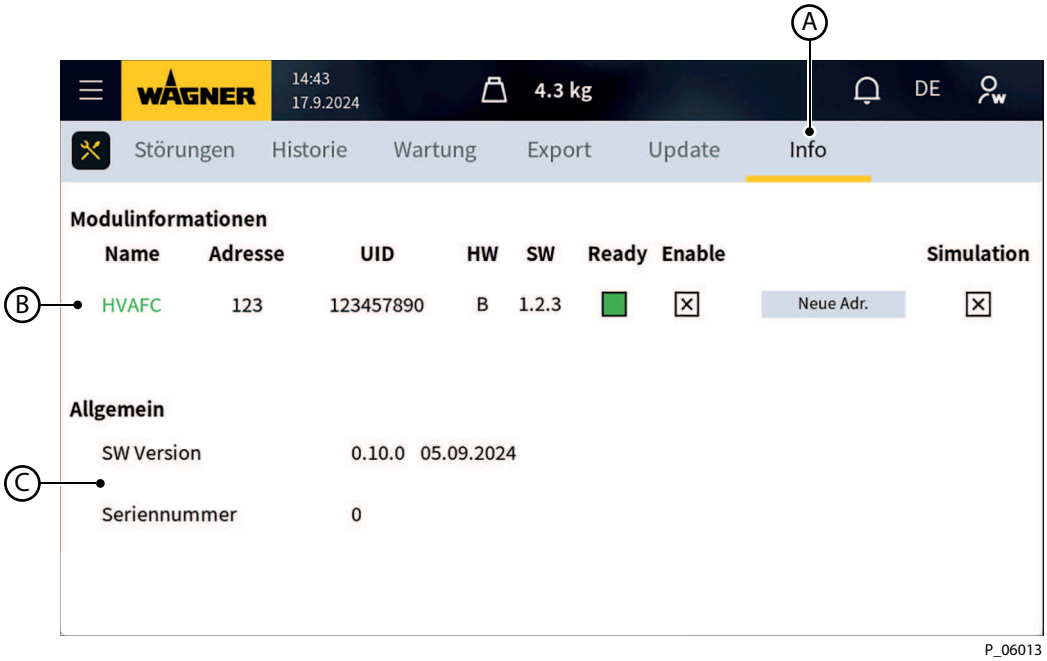
No changes are possible in the [Configurations], [Recipes] and [Users] folders, but this data can be saved locally as a backup.

All machine parameters are stored together in these five folders.

The folders can also be saved locally and then loaded onto a second device in order to parametrise the second device in exactly the same way.

7.6.3 Info

- Push [Info] button (A) to call up the [Info] page.



P_06013

Pos	Function	Description
A	[Info] button	Press button to call up the page.
B	Module information	
C	Software version and serial number display	

7.7 CHANGING AND SAVING RECIPES

7.7.1 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	[%]
Fluid air	[m^3/h]
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

7.7.1.1 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.

In Job mode, the [Double-click] function in the settings can be changed.

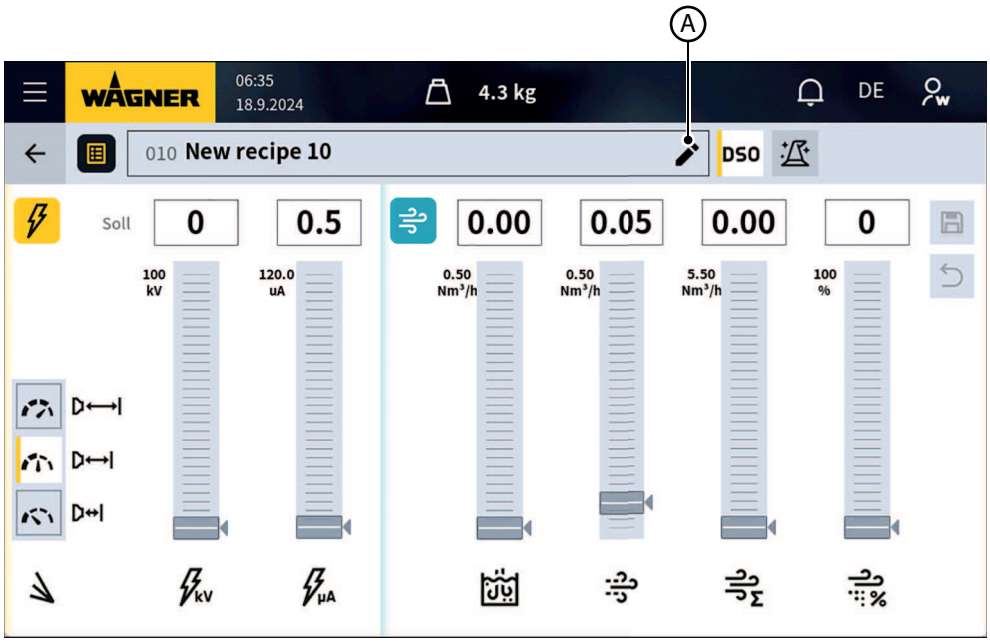
7.7.2 Creating recipe

A new recipe can be created in Recipe Management.

P_06057

A	[Create recipe] button
B	[Call up recipe] button
C	[Edit recipe] button
D	[Copy recipe] button
E	[Delete recipe] button

1. Push [Create recipe] button (A).



P_06058

2. A new recipe is created.
3. Push [Pencil] button (A) to change the recipe name.

P_06059

4. Enter the recipe name via the keyboard and confirm with the (Confirm) button (A).

P_06060

5. Set desired recipe parameter and save recipe with the [Save] button (A).

7.7.3 Editing recipe (wizard)

The recipe wizard can be used to edit an existing recipe. The operator is guided through the individual recipe parameters.

To do this, a recipe must first be created, see chapter Creating recipe [▸▸ 55].

Correct settings for the following parameters are required for the wizard to function correctly (see chapter Device [▸▸ 45]):

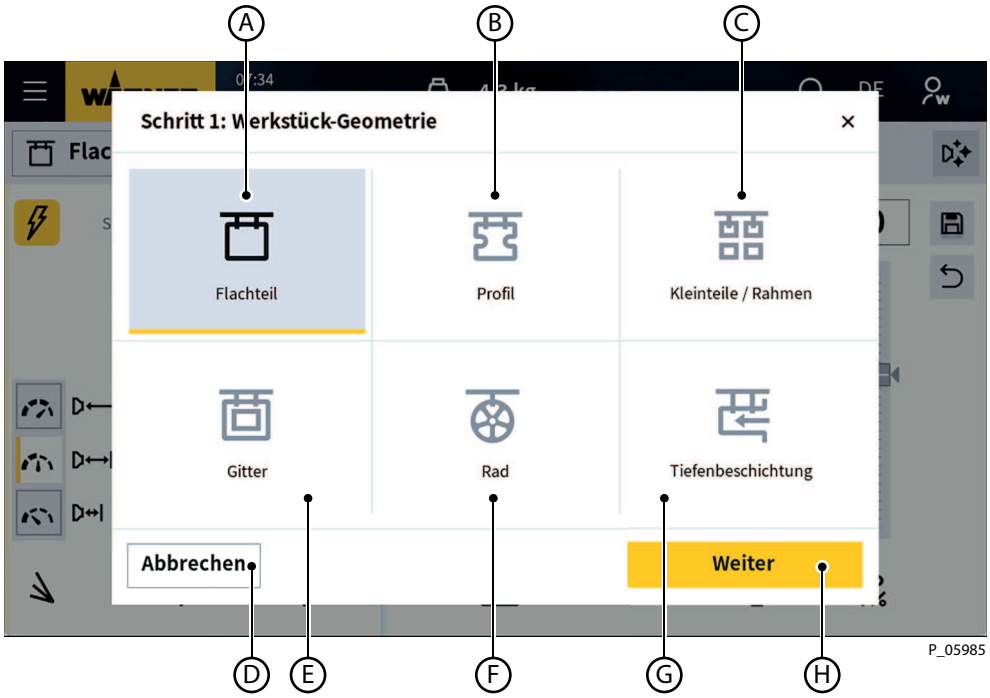
- Tank type
- Hose diameter
- Hose length

The parameters must be set during the first commissioning.

When using a cup gun or a 3 L tank, the wizard is deactivated.

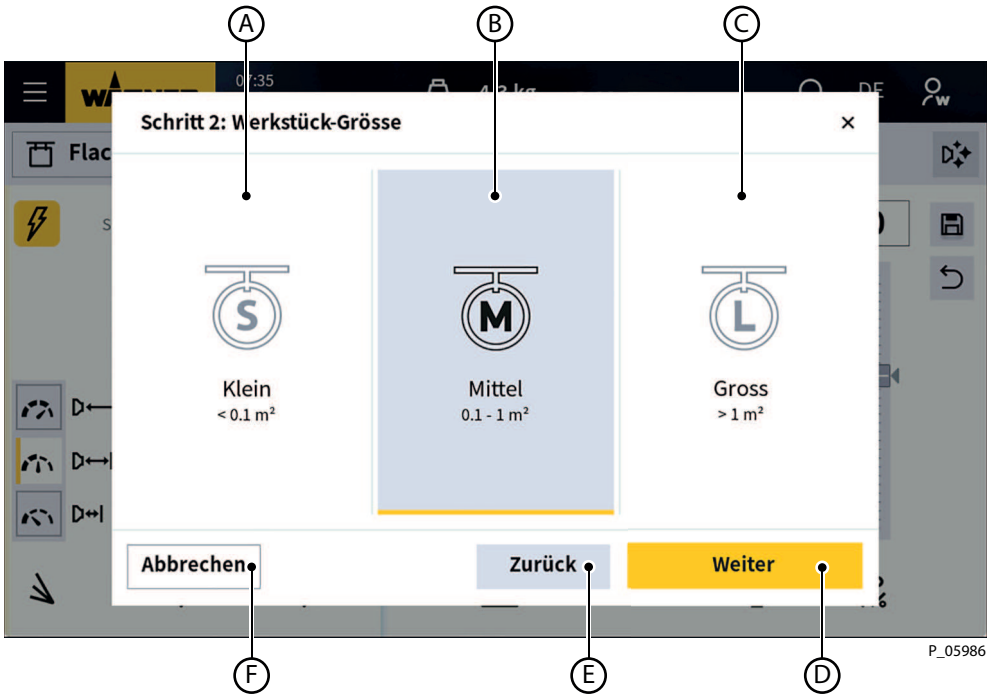
P_05987

1. Press the [Recipe wizard] button (A).



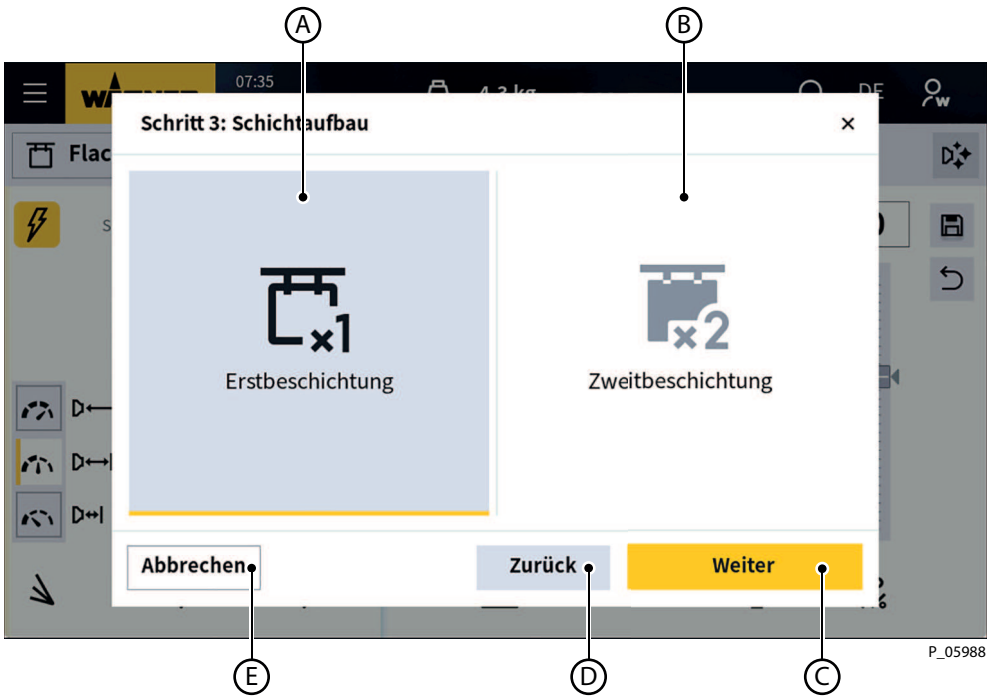
A	[Flat part] button	Setting for flat work pieces
B	[Profile] button	Setting for profile
C	[Small parts/frame] button	Setting for small components or frames
D	[Cancel] button	Press button, to cancel the process.
E	[Grille] button	Setting for grille parts
F	[Wheel] button	Setting for wheel coating
G	[Deep coating] button	Setting for deep coating
H	[Next] button	Push button to go to the next individual step.

2. Select the desired work piece geometry by pressing the relevant button.
3. Press the [Next] (H) button to move to the next setting.



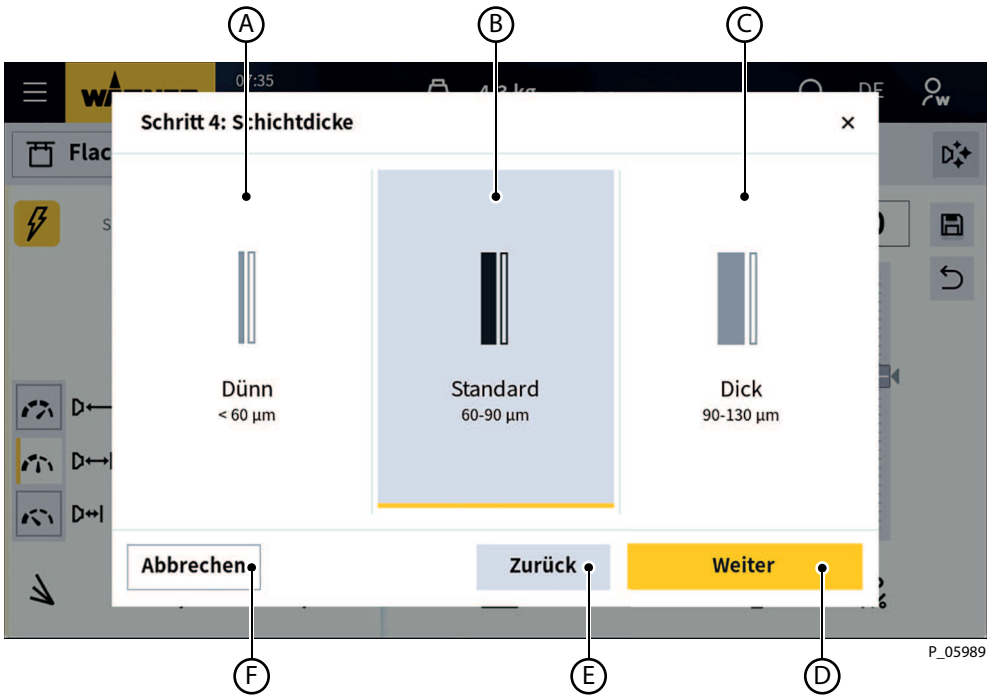
A	[Small] button	Setting for small parts: <0.1 m^2
B	[Medium] button	Setting for medium-sized parts: 0.1 - 1 m^2
C	[Large] button	Setting for large parts: >1 m^2
D	[Next] button	Push button to go to the next individual step.
E	[Back] button	Push button to go to the previous individual step.
F	[Cancel] button	Press button, to cancel the process.

4. Select the desired work piece size by pressing the relevant button.
5. Press the [Next] button (D) to go to the next setting.



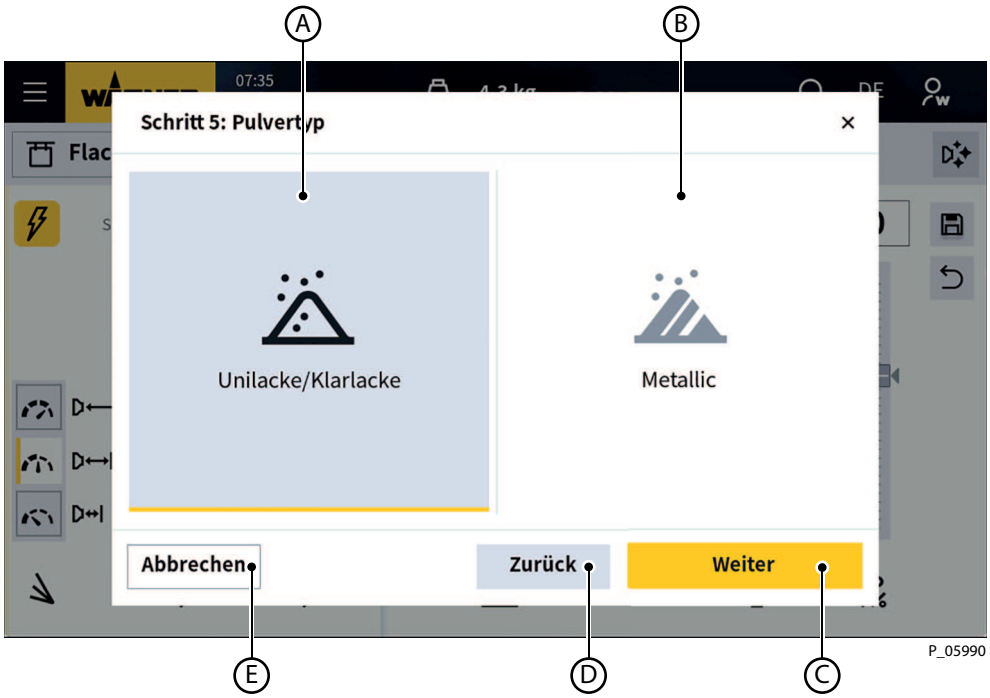
A	[Initial coating] button	Setting for initial coating of a part
B	[Second coating] button	Setting for the second coating (recoating) of a part
C	[Next] button	Push button to go to the next individual step.
D	[Back] button	Push button to go to the previous individual step.
E	[Cancel] button	Press button, to cancel the process.

6. Select the desired coating structure by pressing the respective button.
7. Press the [Next] button (C) to go to the next setting.



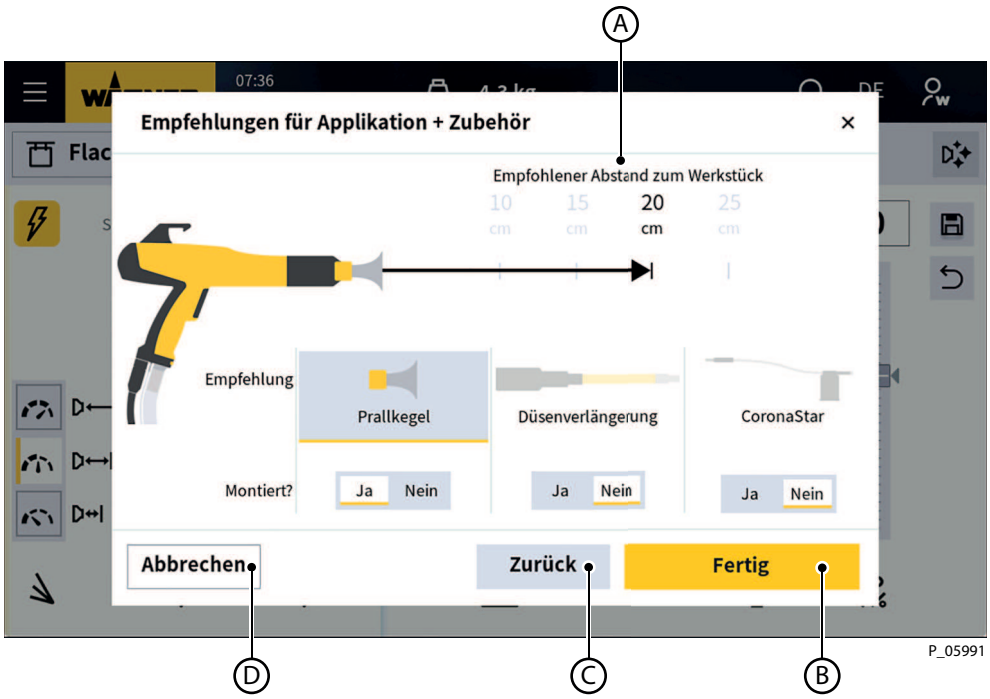
A	[Thin] button	Setting for thin coating thickness: <60 µm
B	[Standard] button	Setting for medium coating thickness: 60–90 µm
C	[Thick] button	Setting for thick coating thickness: 90–130 µm
D	[Next] button	Push button to go to the next individual step.
E	[Back] button	Push button to go to the previous individual step.
F	[Cancel] button	Press button, to cancel the process.

8. Select the desired coating thickness by pressing the relevant button.
9. Press the [Next] button (D) to go to the next setting.



A	[Unicolor/Clear Coat] button	Setting for Unicolor/Clear Coat
B	[Metallic] button	Setting for metallic lacquers
C	[Next] button	Push button to go to the next individual step.
D	[Back] button	Push button to go to the previous individual step.
E	[Cancel] button	Press button, to cancel the process.

10. Select the desired powder type by pressing the respective button.
11. Press the [Next] button (C) to go to the next setting.



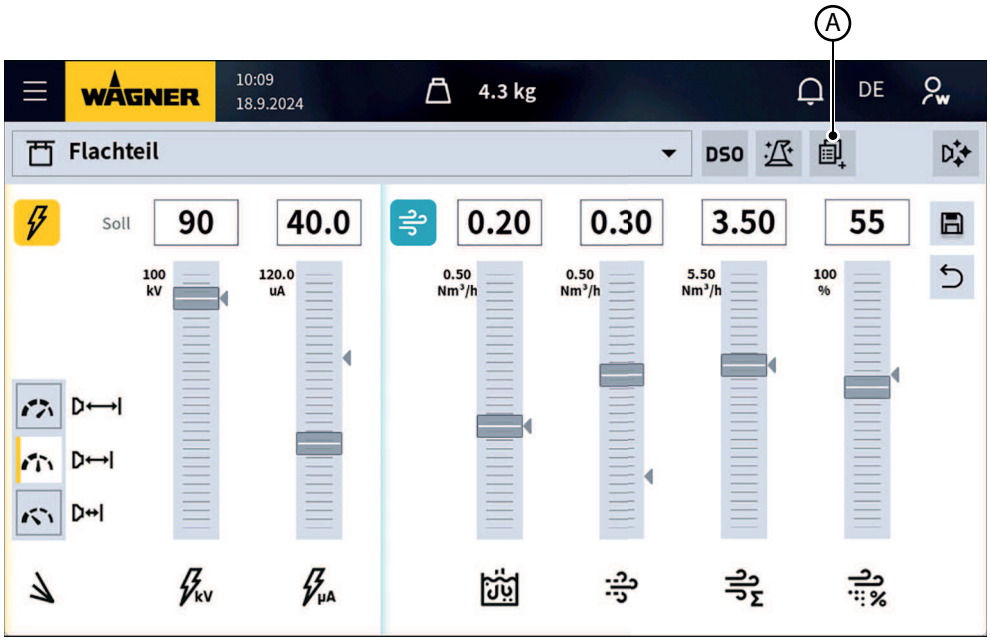
A	Recommendations for application and accessories	Recommendations for the application and accessories are given here, for example, the recommended distance to the workpiece, a recommendation for nozzle geometry, the use of a nozzle extension and/or the CoronaStar.
B	[Completed] button	Press button to complete the recipe creation.
C	[Back] button	Push button to go to the previous individual step.
D	[Cancel] button	Press button, to cancel the process.

12. Select the accessories used by pressing the respective button.

⇨ Nach dem Drücken der Taste [Fertig] (B) wird das neue Rezept erstellt.

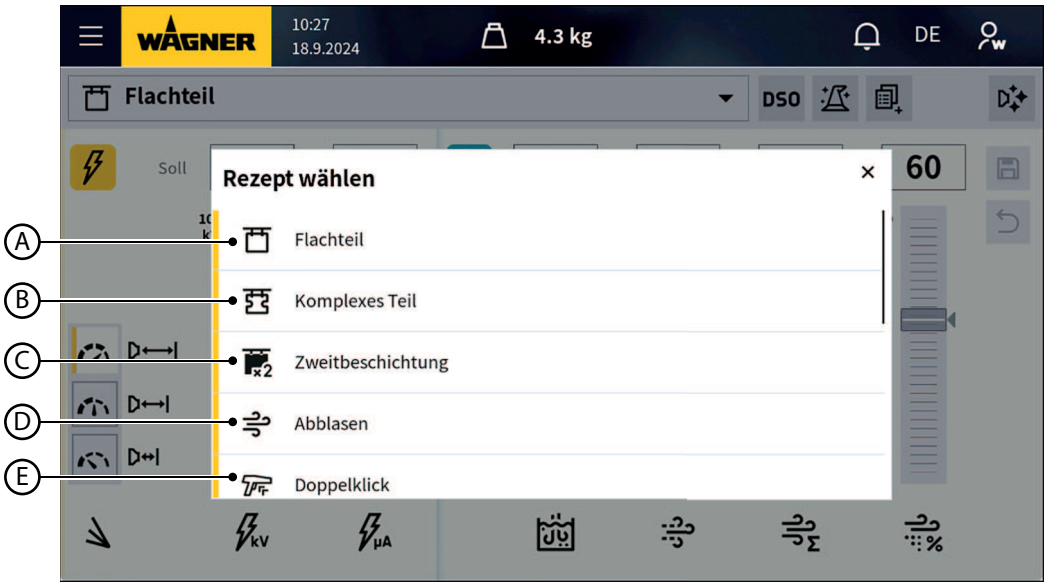
7.7.4 Create job

A job can be created with this function; a job consists of two existing recipes.



P_05992

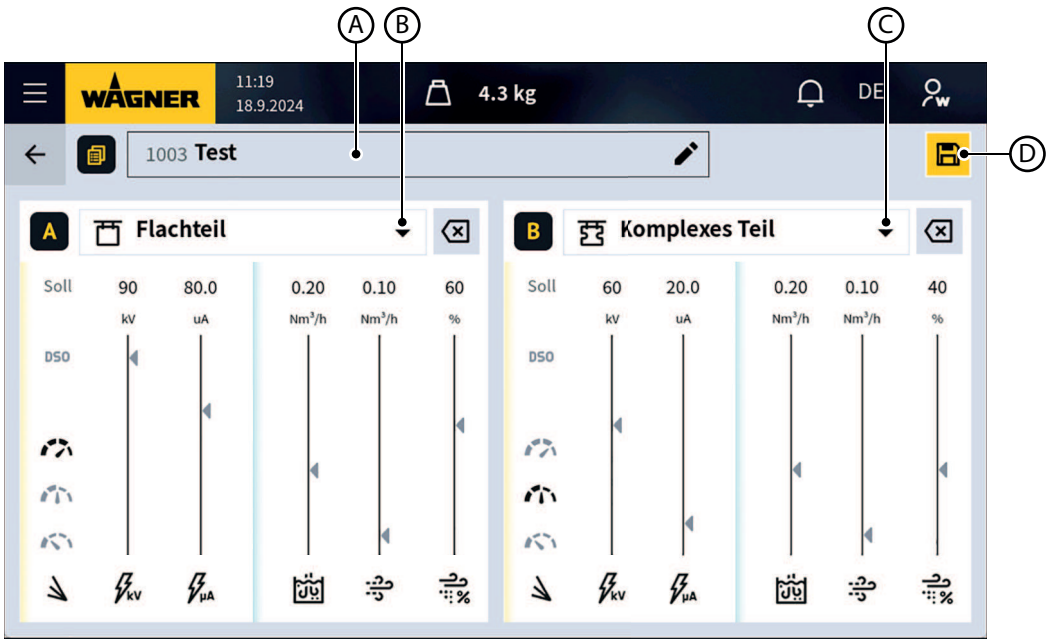
1. Push [Create job] (A) button.



P_05993

A	[Flat part] button	Flat part recipe
B	[Complex part] button	Recipe Complex part
C	[Second coating] button	Second coating recipe (recoating)
D	[Blowing off] button	Blowing off recipe
E	[Double-click] button	Double-click recipe

2. Scroll down to see other existing recipes.
3. Call up desired recipe by pressing the relevant button.



P_05994

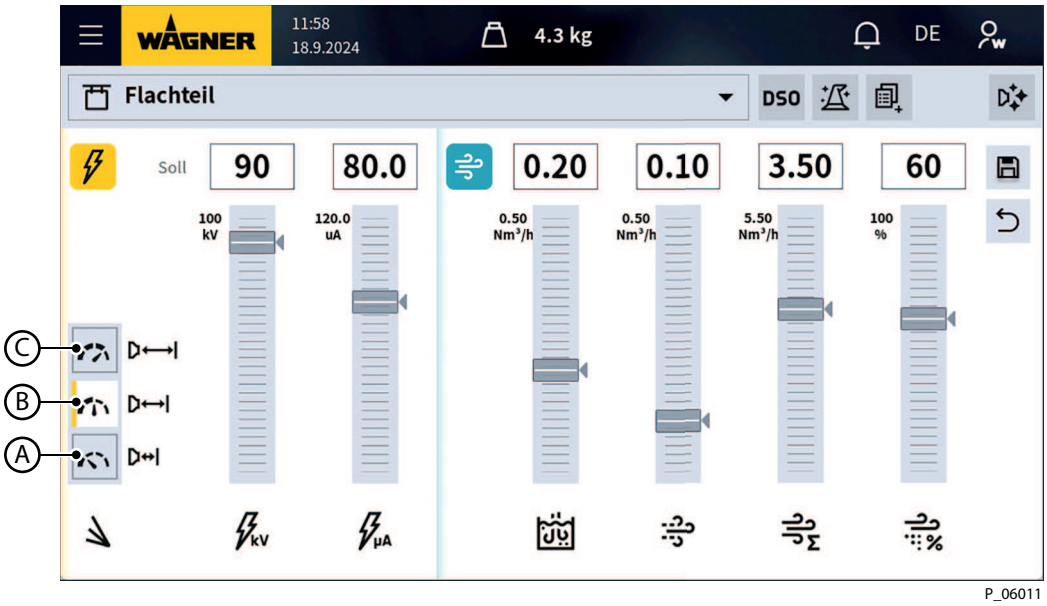
A	Input field for the job names	Enter job names
B	Selection of recipe A	Select recipe A
C	Selection of recipe B	Select recipe B
D	[Save] button	Press the button to save the settings.

4. Press the selection field for the job name and enter the job name.
5. Select recipe A and B.
6. Press Save button (D) to save the job.
   ⇨ After pushing the [Save] button, the new job is created.

A	[Plus] button	Press button to create a new job.
B	[Check] button	Press button to call up the selected job.
C	[Pencil] button	Press button to call up the selected job.
D	[Copy] button	Press button to copy the selected job.
E	[Delete] button	Press button to delete the selected job.

7.8 SETTING AND CHANGING COATING PARAMETERS

7.8.1 Setting the U/I Characteristic Curves

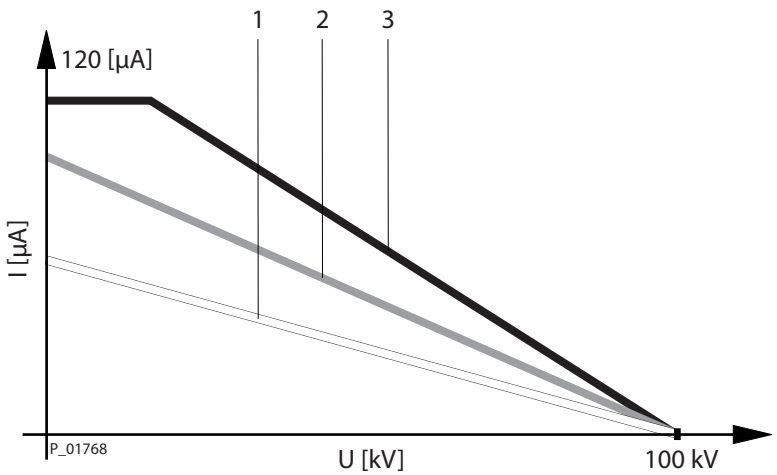


A	[Characteristic slope Soft] button
B	[Characteristic slope Medium] button
C	[Characteristic slope Standard] button

Press the desired button to switch the characteristic curve, the selected button has a white background.

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

7.9 FLUSH FUNCTION

The WACON Sprint 2 Expert control unit has two different flushing functions:

– Hose Flush Function
(Calling up the function via settings -> Device -> Dosing air after-run time)
– Cleaning Flush Function
(Calling up the function via [Cleaning] button)

7.9.1 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 [Deactivated] parameter value in the factory.

This setting can be changed in the [Settings --> Device] menu and the after-run time of the dosing air can be set.

7.9.2 Cleaning Flush Function

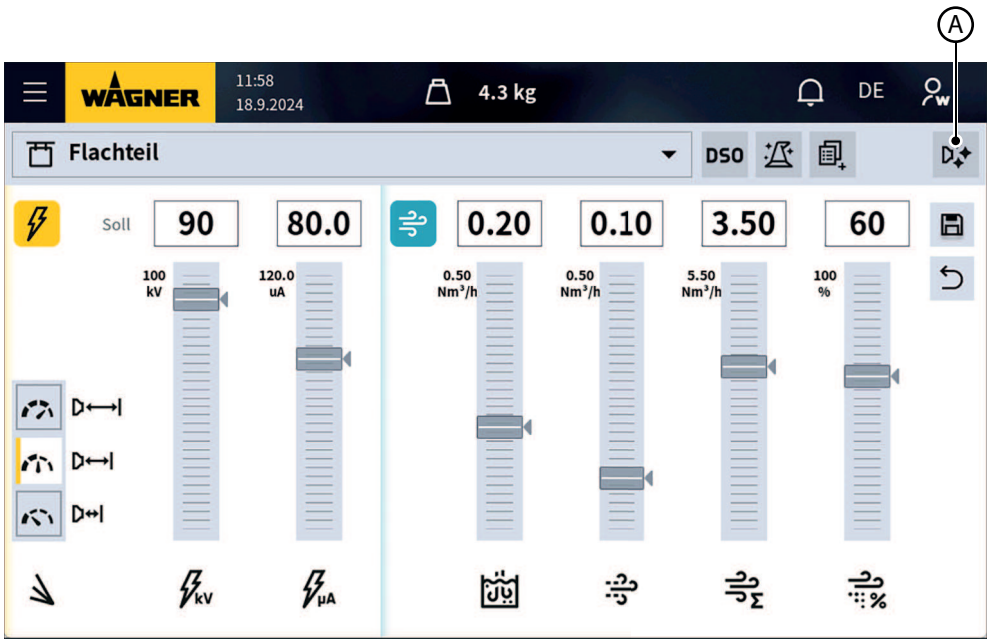
This function is used at the end of a shift or during a paint change. All powder feed parts are flushed. The flushing process is as described below:

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 pulsates slightly.

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.

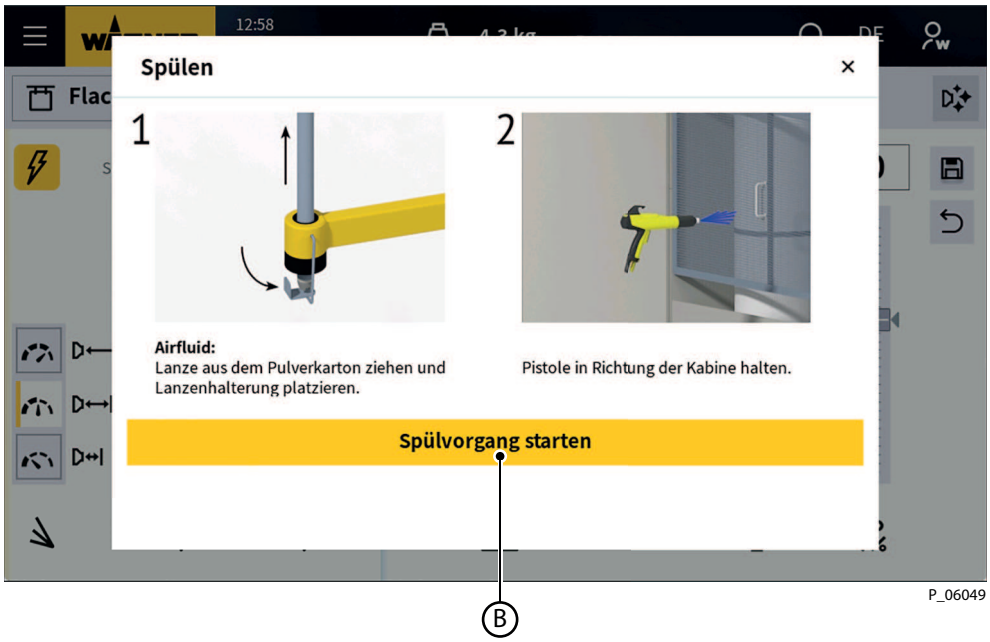
7.9.3 Procedure for Cleaning Flushing with Manual Guns

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.



P_06048

4. Switch on the flush function by pressing the [Flushing] (A) button on the control unit.
   ⇨ The [Flushing] pop-up menu is displayed.

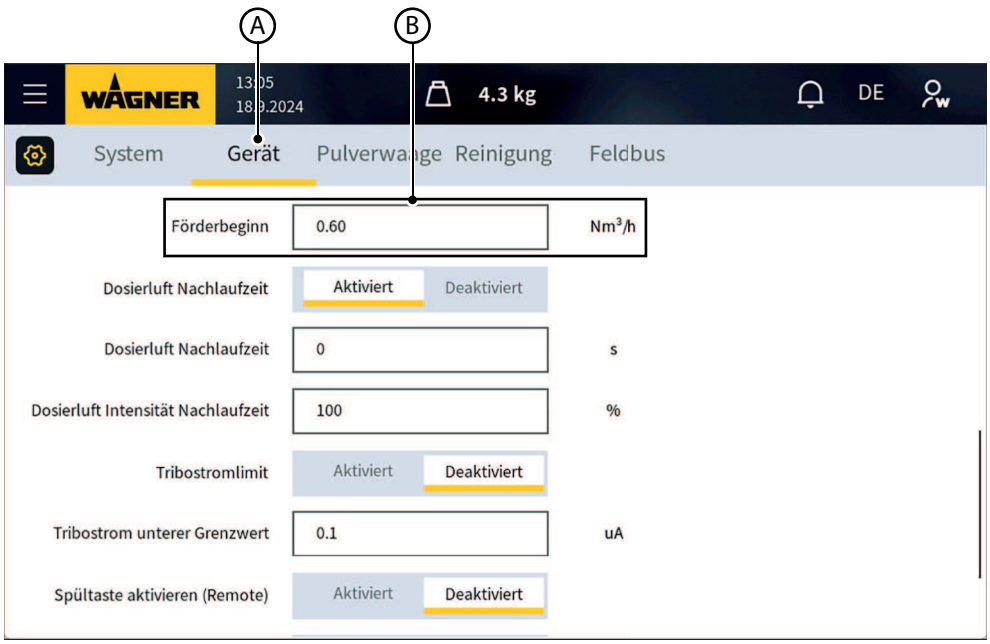


5. Tap the [Start flushing process] button (B) to start the rinsing process.
6. For extreme paint changes, it may be necessary to manually blow off interfaces in the system.
7. Once the suction lance has been lowered into the powder tank, the coating operation can be continued again.

7.10 SETTING STARTING OUTPUT (ZERO-POINT ADJUSTMENT)

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

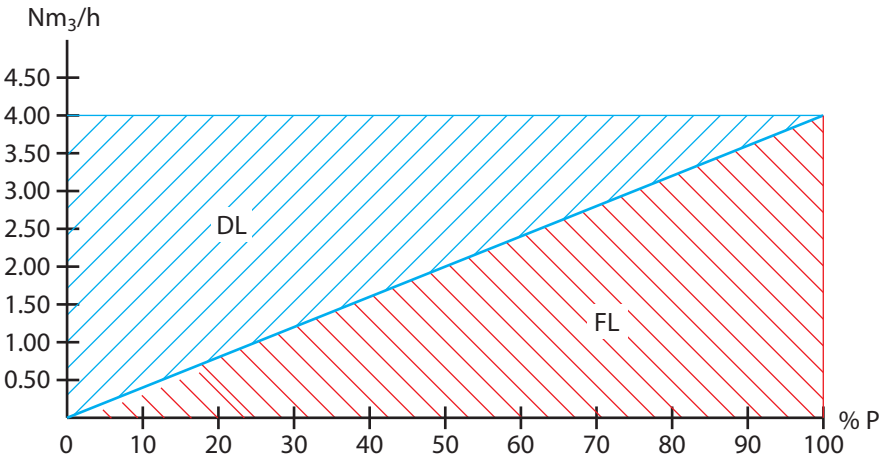
- The diameter of the powder hose
- The length of the powder hose
- The feed properties of the powder



1. Call up [Settings] menu.
2. To access the device configuration, press the [Device] button (A).
3. Scroll down the screen until the Starting output parameter (B) is displayed on the screen.
4. Tap the [Starting output] input field and set the desired value using the keypad.

Example: Total air = 4.00 Nm³/h

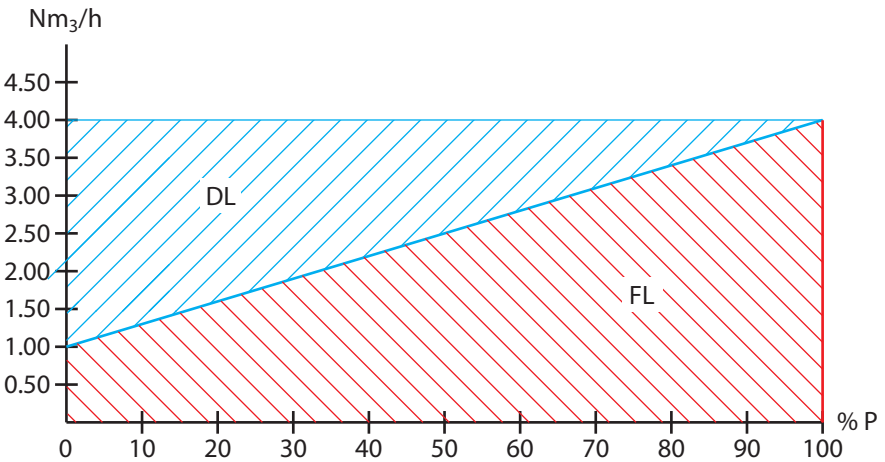
Starting output 0.00



P_05032

DL	Dosing air
FL	Feed air
P	Powder

Starting output 1.00



P_02368

DL	Dosing air
FL	Feed air
P	Powder

7.11 DIGITAL SURFACE OPTIMIZER (DSO)

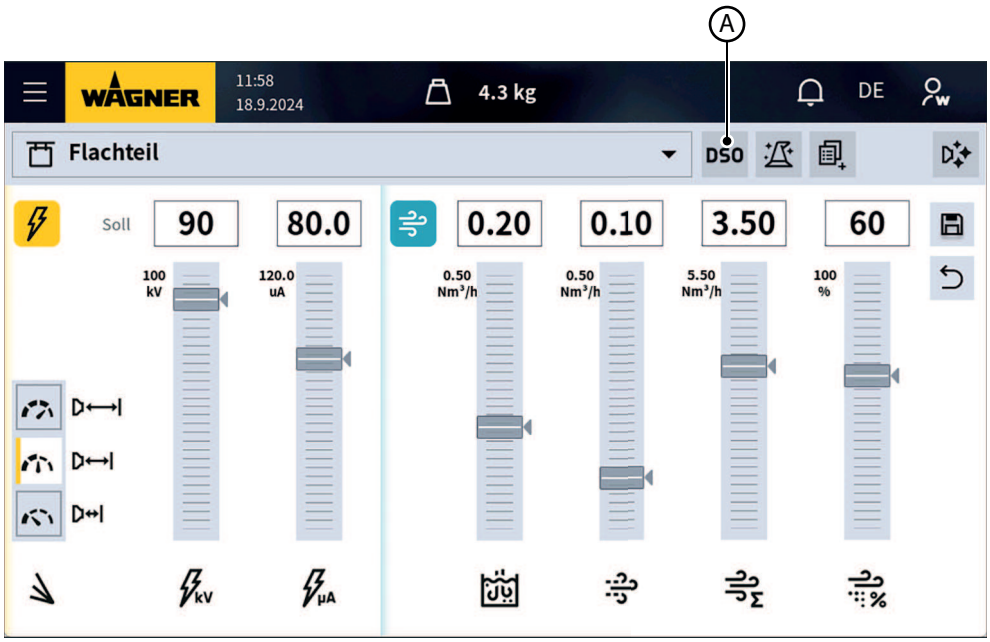
The DSO (Digital Surface Optimizer) is a function that helps the coater to achieve a better, more homogeneous surface quality with more complex coatings or powders.

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



P_06009

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

With activated function, the [DSO] button has a white background.

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 [▸▸ 71].

After maintenance

– Carry out safety checks in accordance with chapter Safety Checks [▸▸ 72].
– 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

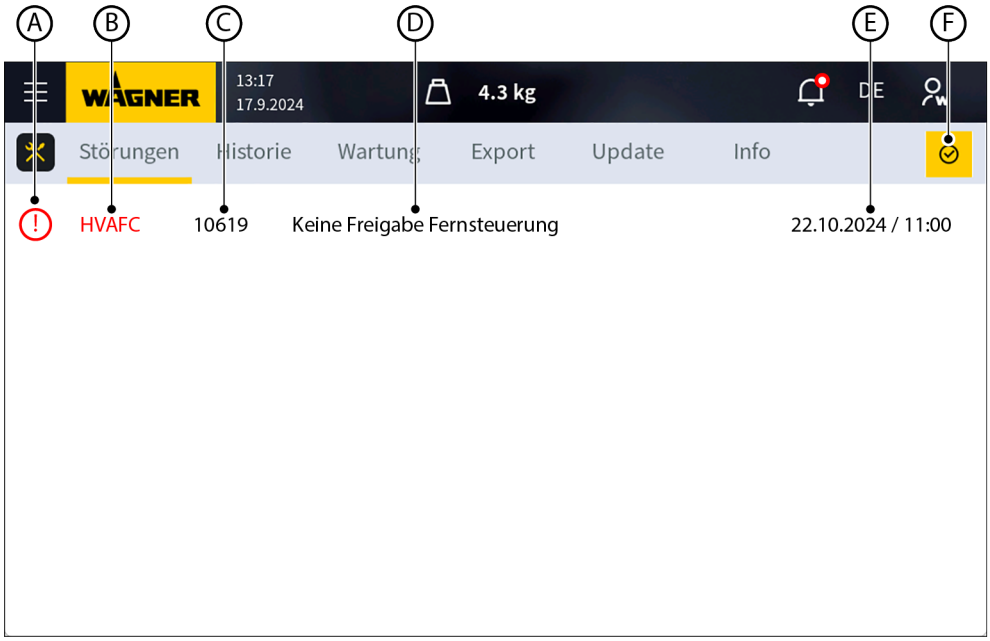
9 TROUBLESHOOTING AND RECTIFICATION

⚠ 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!

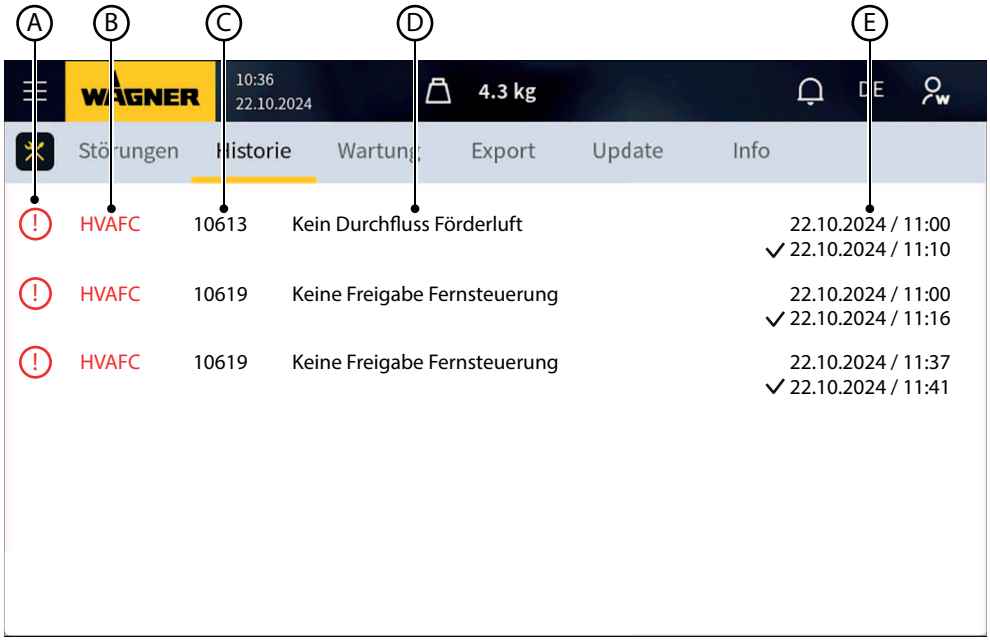


P_06319

9.1 FAULT DISPLAY

Pos	Function
A	Error type (orange warnings, faults shown in red)
B	Module in which the error occurred
C	Error number
D	Description of faults
E	Date/time on/at which the error occurred
F	Acknowledgement of the error

9.2 ERROR HISTORY



P_06320

Pos	Function
A	Error type (orange warnings, faults shown in red)
B	Module in which the error occurred
C	Error number
D	Description of faults
E	Date/time on/at which the error occurred or was acknowledged

9.3 WARNINGS

Warnings are shown with an orange exclamation point on the touchscreen. Work can continue if a warning is displayed.

Warning no.	Warning	Cause	Rectification
10100 10101	Internal device error	Memory error, work can continue with restrictions.	Notify WAGNER service department.
10102	Internal device error	Configuration error, work can continue with restrictions.	Notify WAGNER service department.
10106	Fallen below minimum weight of powder weighing system	Powder quantity, minimum limit not reached.	Refill the powder. Adjust the warning limit. Set powder weighing system zero point without weight.
10108	Data changes after USB mass storage mode detected	Data on the SD card has been changed.	The warning serves as information.
10109	Data check after USB mass storage mode failed	Data on the SD card has been deleted.	The warning serves as information.

Warning no.	Warning	Cause	Rectification
10113	The maintenance interval of a component has been reached	The maintenance interval for a component in the [Maintenance] service menu has been reached.	Reset the maintenance interval for the affected component in the service menu after replacing the component.
10114	The RTC battery is almost empty	The RTC battery, which is responsible for the date and time, is almost flat.	Notify WAGNER service department. The warning message can be reset in the [settings].
10601	Fallen below Tribo current limit for 10 s	Application warning: Tribo current below the limit for longer than 10 s.	Correct the air settings (increase Tribo air or adjust feed and total air).
			Check powder (Fill powder tank and use suitable powder).
10901	Atomizing air flow too low	The counter pressure may be too high or the hose may be kinked.	Check hoses and hose laying.
		Flow rate cannot be achieved (flow rate < setpoint -0.4 Nm^3/h).	Ensure inlet pressure > 6 bar.
			Check and clean gun and nozzle system.
10902	Dosing air flow too low	The counter pressure may be too high or the hose may be kinked.	Check hoses and hose laying.
		Flow rate cannot be achieved (flow rate < setpoint -0.4 Nm^3/h).	Ensure inlet pressure > 6 bar
			Check and clean gun and nozzle system.
10903	Feed air flow too low	The counter pressure may be too high or the hose may be kinked.	Check hoses and hose laying.
		Flow rate cannot be achieved (flow rate < setpoint -0.4 Nm^3/h).	Ensure inlet pressure > 6 bar
			Check and clean gun and nozzle system.
			Observe maximum flow of injector.
10904	Fluid air flow too low	The counter pressure may be too high or the hose may be kinked.	Check hoses and hose laying.
		Flow rate cannot be achieved (flow rate < setpoint -0.4 Nm^3/h).	Ensure inlet pressure > 6 bar.
			Check powder tank.
10905	Atomizing air flow too high	Flow rate 0.4 Nm^3/h higher than setpoint.	Continue working, contact WAGNER service department.
		Possible hardware error	
10906	Dosing air flow too high	Flow rate 0.4 Nm^3/h higher than setpoint.	Continue working, contact WAGNER service department.
		Possible hardware error	
10907	Feed air flow too high	Flow rate 0.4 Nm^3/h higher than setpoint.	Continue working, contact WAGNER service department.

Warning no.	Warning	Cause	Rectification
		Possible hardware error	
10908	Fluid air flow too high	Flow rate 0.4 Nm^3/h higher than setpoint.	Continue working, contact WAGNER service department.
		Possible hardware error	
11201	Maximum weight of powder weighing system exceeded	Load too high on powder weighing system/vibrator table.	Reduce load.

9.4 FAULTS

Malfunctions are shown with a red exclamation point on the touchscreen.

Work can be continued only after remediation of the fault and pressing any button.

9.4.1 Application error

Fault No.	Malfunction	Cause	Rectification
10301	Operating temperature out of range	MCU is operated outside the permitted temperature range (5 °C–70 °C).	Ensure room temperature between 5 °C and 40 °C.
10611	Ground monitoring Gun	Ground monitoring faulty.	Check or replace gun cable and gun.
10612	No coil current/cascade interruption	No cascade was detected (no coil current/cascade interruption).	Check or replace gun cable and gun.
10613	Coil current too high/ cascade short circuit	Coil current too great (cascade short circuit).	Check or replace gun.
10614	Tribo current too high	The Tribo current has exceeded the upper limit value of 12 µA.	Reduce Tribo air or powder quantity.
10618	Gun switch monitoring Automatic gun	Interruption of the gun in automatic mode. The gun switch line has been interrupted or the gun was unplugged during operation.	Check gun cable and gun.
10619	No release Remote control	Coating or cleaning was attempted without a release signal (manual gun with external control). No release from remote input.	Activate release signal on master controller.
10620	No release Safety input	Coating was attempted without a release signal.	Apply a release signal to the safety input or connect a bridging plug to the safety input if "Safety input deactivated" is set.
10911	No flow of atomizing air	The valve is completely open and no flow can be measured (flow 0.1 Nm^3/h).	Check hoses and hose laying.
			Ensure that inlet pressure is > 6 bar.
			Check and clean gun and nozzle system.

Fault No.	Malfunction	Cause	Rectification
10912	No flow of dosing air	The valve is completely open and no flow can be measured (flow 0.1 Nm^3/h).	Check hoses and hose laying.
			Ensure that inlet pressure is > 6 bar.
			Check and clean gun and nozzle system.
10913	No flow of feed air	The valve is completely open and no flow can be measured (flow 0.1 Nm^3/h).	Check hoses and hose laying.
			Ensure that inlet pressure is > 6 bar.
			Check and clean gun and nozzle system.
			Observe maximum flow of the injector.
10914	No flow of fluid air	The valve is completely open and no flow can be measured (flow 0.1 Nm^3/h).	Check hoses and hose laying.
			Ensure that inlet pressure is > 6 bar.
			Check powder tank.
11211	Powder weighing system not detected	No powder weighing system is detected. Possibly the powder weighing system is defective or not connected.	The powder weighing system was not detected.
			Check cabling.
			Notify WAGNER service department.

9.4.2 Internal hardware error

Internal errors are shown with a red exclamation point on the touchscreen.

Work can continue after acknowledging the fault or after restarting the device.

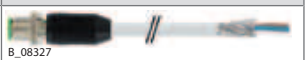
If the error occurs several times, notify the WAGNER service department.

Fault No.	Malfunction	Cause	Rectification
10001 10002 10003	Internal device error	Function error	Notify WAGNER service department.
10004 10104	Internal device error	Bus address error 191	Set HVAFC address between 128 and 190
10005 10006 10051 10052 10053 10105	Internal device error	Memory error	Notify WAGNER service department.
10110	No fieldbus module found	EtherCat is activated, but no fieldbus module was found.	EtherCat only works with WACON Sprint 2 Expert EN control units; the setting must be deactivated for other versions. In the event of a malfunction, notify WAGNER service.

Fault No.	Malfunction	Cause	Rectification
10111	Error when setting data in the PLC	Connection to the PLC interrupted or not established.	Check the operating status of the PLC, check the connection cable.
10112	Error when receiving data from the PLC	Connection to the PLC interrupted or not established.	Check the operating status of the PLC, check the connection cable.
10303 10351 10353 10355 10356 10357 10358 10615 10616 10617 10621 10622 10651 10653 10654 10655 10915 10916 10917 10918	Internal device error	Voltage deviation in safety circuit	Notify WAGNER service department.

10 REMOTE INTERFACE

If the device is operated via the remote interface, the following cables can be purchased (for order number, see chapter Accessories [▸▸ 90]).

Length	Designation	Illustration
5 m	Cable M12A, 8-pin, plug, PUR, open cable end	 B_08327
10 m		
20 m		

The pin assignment of the remote connector varies depending on the operating mode.

Remote PIN	Operating mode		
	Manual gun mode	Automatic gun mode	Manual gun with external control
1	Output vibrator/cleaning button 24 V	Output malfunction	Output malfunction
2	Input cleaning on/off	Input fault reset	Input cleaning on/off
3	Input vibrator and fluid air on/off	Input start/stop	Input release for coating
4	Output 24 V Remote	Output 24 V Remote	Output 24 V Remote
5	ext GND	ext GND	ext GND
6	--	Input Recipe	Input Recipe
7	--	--	--
8	GND	GND	GND

10.1 RECIPE SELECTION INPUT

This input is analyzed only for the operating modes automatic gun mode and manual system network.

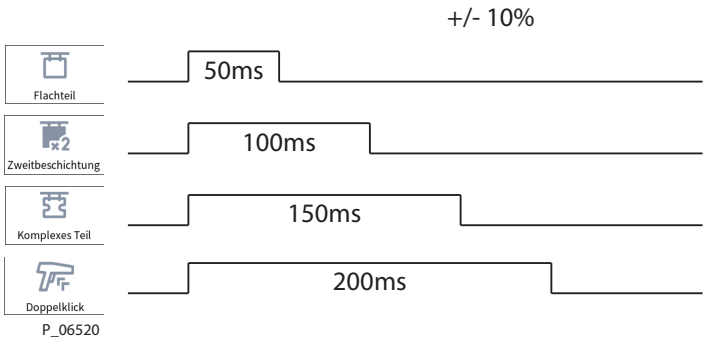
Two signal protocols are available. However, they cannot be used at the same time.

These transmission protocols must be selected via the configuration parameter [System] --> [Recipe selection (remote)].

10.1.1 Selection Via Pulse Length

Evaluation of the pulse lengths for switching between the four basic recipes.

The recipes 1, 2, 3, 4 can be selected by setting the parameter [Recipe selection (remote)] to [Pulse] in the system settings.



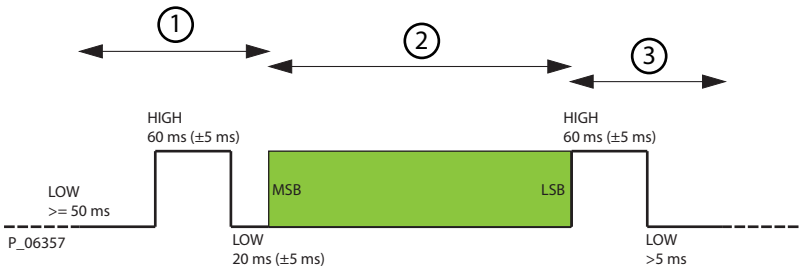
10.1.2 Selection with Transfer Protocol

A simple serial protocol is used to transmit 6-bit information.

First, a start sequence must be transmitted, followed by the 6 data bits and a stop sequence.

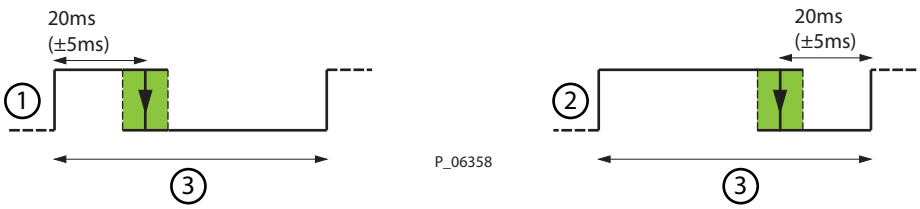
The MSB is transmitted as the first data bit.

The Recipe selection (remote) setting in the [Settings] --> [System] --> [Recipe selection (remote)] menu must be set to [Protocol].



1	Start sequence	MSB = Most Significant Bit
2	6 x data bits	LSB = Least Significant Bit
3	Stop sequence	

Depending on the information [0] or [1], a data bit is displayed as follows:

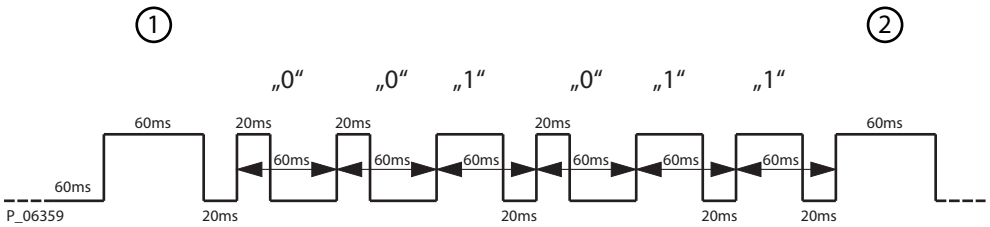


1	Data bit [0]
2	Data bit [1]
3	Bit length: 60 ms (±5 ms)

Example for calling up recipe 11:

If, for example, recipe 11 should be selected, the 0 0 1 0 1 1 data bit combination must be transferred.
The complete transfer frame is shown below:

Example: calling up recipe 11 --> binary 001011 --> decimal 11



1	Start sequence
2	Stop sequence

Times of the transmission protocol: 60+60+20+6*60+60 = 560

Conditions:

Recipe: 1 … 50 [range of values]

The control unit must be in coating mode (not standby, not flush, not configuration menu, not when starting the unit, etc.).

In the [System] configuration menu, the Recipe selection (remote) parameter must be set to [Protocol].
The maximum/minimum times of the transmission protocol must be observed.

Flush function (via the same protocol):

Flushing can be activated/deactivated via the serial transfer protocol.

Flushing	Transfer recipe number 62 to start

Flushing can only be activated if the control unit is in coating mode (not standby, not flush, not configuration menu, etc.)
The coating must be OFF, i.e. [Remote input ON] set to LOW.

In the [System] configuration menu, the Recipe selection (remote) parameter must be set to [Protocol].
The maximum/minimum times of the transmission protocol must be observed.

Command for activating the flush function:	Transfer recipe number 62
Command for deactivating continuous flush function:	Transfer recipe number 61

The same protocol can be used to correct the powder quantity (see following description).

Powder quantity increase / decrease (via the same protocol)

The control unit must be in coating mode (not standby, not flush, not configuration menu, not when starting the unit, etc.).

In the [System] configuration menu, the Recipe selection (remote) parameter must be set to [Protocol].

Increase powder quantity by 1%	Transfer recipe number 51
Reduce powder quantity by 1%	Transfer recipe number 52

If one of the two commands was detected and performed, the control unit changes to the powder quantity selection.

The change only affects the saved temporary powder quantity setpoint.

Saving must be done using the program buttons.

The two commands can be called up several times successively to increase the powder quantity, for example by 5%.

11 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 [▸▸ 83].

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	Checking the effectiveness of technical ventilation	Checking the effectiveness of technical ventilation	TP/SP	ME Measurements of air flow speed/ air quantities 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 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 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 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 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 resistance to ground from 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 Measure the ground leaking resistance (ground potential of the workpiece mount) 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 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 Trigger fire extinguishing system, observe manufacturer's requirements.	6 months

12 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 [▸▸ 86].

12.1 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

12.2 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 Measure resistance to ground (work piece receiver - ground potential) 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 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 Inspect and test (e.g., by measurement) whether all parts carrying high voltage do not result in discharge which puts people at risk.	Weekly

13 INSPECTIONS IN ACCORDANCE WITH DIN EN ISO 13849-1: 2023

13.1 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

13.2 OVERVIEW TABLE

Section	Type of inspection	Requirements	Inspection by	Type of inspection	Inspection interval
1	Check function of the safety input	The release of the high voltage via the PLd safety channel must be checked for function.	SP	FT Remove the release and check whether coating is prevented. An error message must appear.	Annually

14 DISASSEMBLY AND DISPOSAL

14.1 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.

14.2 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.

15 ACCESSORIES

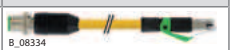
15.1 MAINS CONNECTION CABLE

Order no.	Stk	Designation	Illustration
241270	3 m	Mains cable, Europe	
2330628	10 m	Mains cable, Europe	
241271	3 m	Mains cable, Switzerland	
264626	3 m	Mains cable, USA	
264625	3 m	Mains cable, Japan	
360263	10 m	Open end of mains cable	
9952589	1	Cable box	

15.2 CONNECTION CABLE FOR SAFETY INPUT

Order no.	Stk	Designation	Illustration
2397450	20 m	Connection cable plug, M12, 5-pin	

15.3 CONNECTION CABLE FOR ETHERCAT INTERFACE

Order no.	Stk	Designation	Illustration
2465941	3 m	EtherCAT cable M12-RJ45	
2465942	5 m		
2465943	10 m		
2465944	15 m		
2465945	20 m		

15.4 CONNECTION CABLE FOR REMOTE CONTROL CONNECTION

Order no.	Stk	Designation	Illustration
2465922	5 m	Cable with M12 plug, 8-pin, plug, PUR, open cable end	
2465923	10 m		
2465924	20 m		

15.5 CONNECTION CABLE FOR AUTOMATIC GUNS

Order no.	Stk	Designation	Illustration
351216	5 m	Connection cable, PEA-C4/manual gun extension	
351217	10 m		
351215	20 m		
2442705	0.5 m	Connection cable, PEA-X1	
2470656	2 m		
2419539	5 m		
2419540	10 m		
2419541	20 m		

15.6 CONNECTION BOX

The connection box is used for the double device variants 2 and 3.

Order no.	Stk	Designation	Illustration
2475894	1	Connection box Sprint 2 Expert	

15.7 CONNECTION CABLE (DOUBLE DEVICE VARIANT 1)

Order no.	Stk	Designation	Illustration
2475922		Connection cable WACON Sprint 2 Expert	

15.8 CONNECTION CABLE M12, 8-PIN

Order no.	Stk	Designation	Illustration
2465895	3 m	Cable, BU/ST M12, 8-pin, with shield	
2404714	5 m		
2396684	10 m		
2459742	15 m		
2396685	20 m		

15.9 USB CONNECTION CABLE

Order no.	Stk	Designation	Illustration
2477023	1.8 m	USB connection cable	

15.10 MULTITASKING PEN

Order no.	Stk	Designation	Illustration
2386855	1	Multitasking pen	

15.11 PNEUMATIC ACCESSORIES

Order no.	Stk	Designation	Illustration
9990149	1	Plug junction, Ø 8 mm	
9982063	m	Hose, Ø 6/8 mm, red	
9982062	m	Hose Ø 6/8 mm, blue	
9982079	m	Hose Ø 4/6 mm, black	

16 SPARE PARTS

16.1 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.

16.2 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.

16.3 WACON SPRINT 2 EXPERT CONTROL UNIT

Pos	K	Stk	Order no.	Designation
		1	2469304	WACON Sprint 2 Expert control unit
		1	2467875	WACON Sprint 2 Expert EC control unit
		2	9951116	Slow-acting fuse, 2.0 A (included in WACON Sprint 2 Expert)
		1	2472333	Bridging plug
		1	2472835	Protective sleeve for M12 plug
		1	2468903	Dust protection cap, M12
		1	2424266	Set slow-acting fuse 2.0 AT and fastening screws
		1	360472	Dust protection cap for mains output terminal
		1	9998137	Straight reduction, 4/6A-6/8I

♦ = wearing parts

17 DECLARATION OF CONFORMITY

17.1 EU DECLARATION OF CONFORMITY

Herewith we declare that the supplied version of:

WACON Sprint 2 Expert

WACON Sprint 2 Expert EC

WACON Sprint 2 Expert EN

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	

Identification:

CE 2813 Ex II 3(2) D IP54 80°C

Type examination certificate:

PTB 24 ATEX 5003

Quality certificate:

CSANe 24 ATEX M040

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: 2471704

17.2 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

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Germany
J. Wagner GmbH
Otto-Lilienthal-Strasse 18
Postfach 1120
D-88677 Markdorf
Telephone: +49 (0)7544 5050
Fax: +49 (0)7544 505200
E-mail: ts-powder@wagner-group.com

Switzerland
Wagner International AG
Industriestrasse 22
CH-9450 Altstätten
Telephone: +41 (0)71 757 2211
Fax: +41 (0)71 757 2222

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More contact addresses on the internet at:
www.wagner-group.com