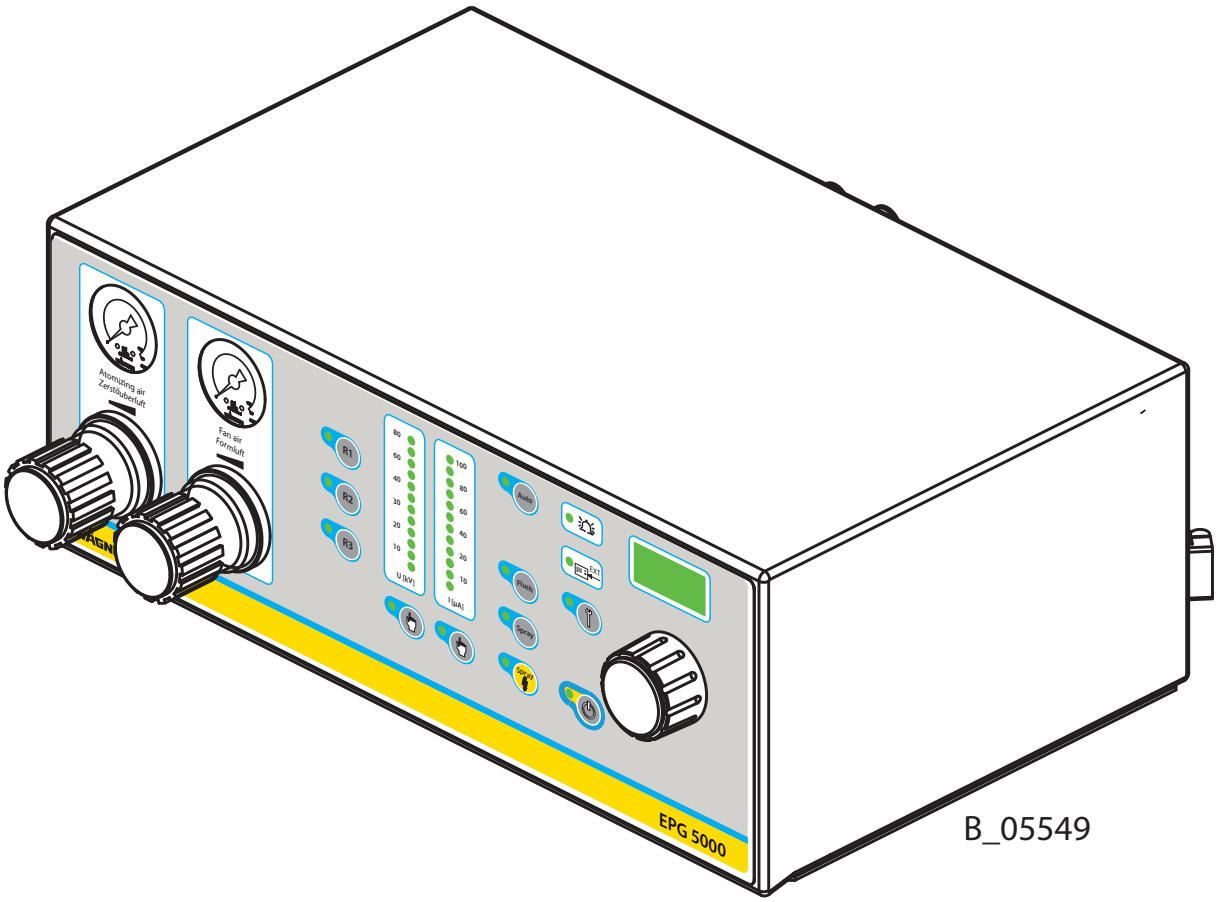


B_05549

Control unit for electrostatic spray guns

EPG 5000

Original Operating Manual

UK CA Ex II (2) G

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: 12/2021

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.
English	2432003

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
2K	Two components

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 flushing agent.

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	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: 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

EPG 5000 control unit for controlling GA 5000EA, GA 5000EAC, GM 5000EA or GM 5000EAC electrostatic spray guns.

2.2 TYPE OF USE

The WAGNER EPG 5000 electrostatic control unit controls and regulates the high voltage, current, and air required for operation of the spray guns (control air, shaping air, atomizing air).

The EPG 5000 may only be operated together with the above-mentioned spray guns. If the control unit is operated in combination with devices other than the above-mentioned spray guns, the CSAE authorization (type examination) ceases to be valid.

These electrostatic spray guns are suitable for spraying liquid products, in particular coating products, based on the AirCoat or Airspray techniques. Coating products may be processed which contain components of substances of explosion group IIA and IIB (maximum ignition energy 0.24 mJ).

WAGNER explicitly prohibits any other use!

The device may only be operated under the following conditions:

- Use the device only to work with the materials recommended by WAGNER.
- 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.

The control unit may only be operated if all parameters are set and all measurements/safety checks have been carried out correctly.

2.2.1 For Use in Potentially Explosive Areas

The control unit, together with the spray gun, is designed as defined by statutory requirement SI 2016/1107. The spray gun is suitable for use in potentially explosive areas in zone 1, which are generated by the spray gun itself. The control unit is not suitable for use in the explosion zone and must be placed outside of this zone (see Chapter Explosion Protection Identification [▸▸ 8]).

2.2.2 Misuse

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

- No dry coating products, e.g., powder are processed.
- No food, medicine or cosmetics are processed. It is important to note that the device's materials are not food-safe.

3 IDENTIFICATION

3.1 EXPLOSION PROTECTION IDENTIFICATION

The control unit, together with the spray gun, is designed as defined by statutory requirement SI 2016/1107. The control unit must be placed outside the explosion-hazard area.

Device Type	EPG 5000 control unit
Manufacturer	Wagner International AG 9450 Altstätten Switzerland

UKCA 0518 Ex II (2) G
CSAE 21 UKEX 5232 X

UKCA	UK Conformity Assessed
0518	Notified body: CSA UK
Ex	Explosion-proof equipment
II	Device group II (not mining)
( )	Effective in zone
(2)	Effective in zone 1
G	Ex-atmosphere gas
CSAE 21 UKEX 5232 X	Number of type examination certificate X: see Chapter Identification "X" [▸▸ 8].

3.2 IDENTIFICATION "X"

Notice: CSAE 21 UKEX 5232 X

The EC Type Examination Certificate covers the following:

- The use of the spray gun in Zone 1
- The use of the EPG 5000 control unit as related equipment for the spray gun.

Cable connections

Only the corresponding cables for the device may be used (see Chapter Accessories [▸▸ 50] and the spray gun's operating manual).

Permissible device combinations

The following spray guns may be connected to the EPG 5000 control unit:

- GA 5000EA
- GA 5000EAC
- GM 5000EA
- GM 5000EAC

3.3 USE IN AREAS SUBJECT TO EXPLOSION HAZARDS

Electrostatic surface spraying

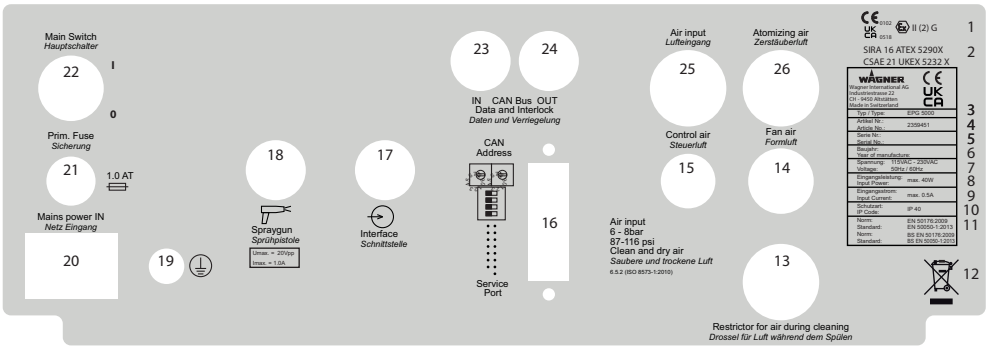
▸ Never spray device parts using electrostatic equipment (electrostatic spray gun)!

Cleaning

If there are deposits on the surfaces, the device may form electrostatic charges. Flames or sparks can form during discharge.

1. Remove deposits from the surfaces to maintain conductivity.
2. Use only a damp cloth to clean the device.

3.4 TYPE PLATE



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1	Explosion Protection Identification	14	Shaping air connection
2	Test center	15	Control air connection
3	Device type	16	CAN address setting
4	Article number	17	Interface
5	Serial number	18	Spray gun connection
6	Year of manufacture	19	Grounding
7	Input voltage	20	Power connection
8	Input power	21	Fuse
9	Input current	22	Main switch
10	Protection class	23	CAN bus input interface
11	Standard	24	CAN bus output interface
12	Do not dispose of used electrical equipment with household refuse.	25	Air input
13	Throttle valve for flushing	26	Atomizing air connection

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 statutory provisions 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.
- Must be de-energized before work is commenced.
  - 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 dangerous fluids or vapors!

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

- Ensure that the floor in the working area is static dissipative in accordance with BS EN 1081:2018+A1:2020 or BS EN 61340-4-1:2004+A1:2015 (resistance must not exceed 100 MΩ).
- Paint mist extraction systems/ventilation systems must be fitted on site according to local regulations.
- Make sure that the ground connection and potential equalization of all system parts are reliable and continuous and can withstand the expected stress (e.g., mechanical stress, corrosion).
- Ensure that product hoses/air hoses adapted to the working pressure are used.
- Ensure that personal protective equipment is available and is used.

- Make sure that all people within the work area wear static dissipative shoes. The footwear must correspond to BS EN ISO 20344:2011. The measured insulation resistance must not exceed 100 MΩ.
- Ensure that during spraying, persons wear static dissipative gloves. The grounding takes place via the spray gun's handle or its trigger.
- Protective clothing including gloves, must correspond to BS EN 1149-5:2018. 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 vicinity. Do not smoke.
- Ensure that the pipe joints, hoses, equipment parts and connections are permanently, technically leak-proof:
  - Periodic preventative maintenance and service (replacing hoses, checking tightness strength of connections, etc.)
  - Regular monitoring of leaks and defects via visual inspection and odor testing, e.g., daily before commissioning, at the end of work or weekly.
- Ensure that maintenance and safety checks are performed regularly.
- In the event of defects, immediately bring the device or system to a stop and arrange to have repairs carried out immediately.

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 statutory provisions 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 as defined by the UK statutory requirement SI 2016 No. 588 (EMF) (e.g., carriers of active implants), must not enter the high-voltage area.

4.2.1 Personal Safety Equipment

Danger due to dangerous fluids or vapors!

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

- When preparing or working with lacquer and when cleaning the device, follow the working instructions of the manufacturer of the lacquers, solvents and cleaning agents being used.
- Implement the prescribed safety measures, in particular the wearing of safety glasses, safety clothing and protective gloves as well as the use of protective hand cream.
- Use a mask or breathing apparatus if necessary.

- For sufficient health and environmental safety: Operate the device in a spray booth or on a spraying wall with the ventilation (extraction) switched on.
- Wear suitable protective clothing when working with hot products.

4.2.2 Safe Handling of WAGNER Spray Devices

Danger due to injection of lacquer or flushing agent into the skin!

The spray jet is under pressure and can cause dangerous injuries.

Avoid injection of lacquer or flushing agents:

- Never point the spray gun at people.
- Never reach into the spray jet.
- Perform the following measures before any work on the device, in the event of work interruptions and malfunctions:
  - Switch off the energy/compressed air supply
  - Relieve the pressure from the 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 and rectification.
- If needed, the liquid ejection devices must be checked by experts (e.g., WAGNER service technician) at least every 12 months for their work-safe condition in accordance with DGUV regulation 100-500 chapter 2.29 and chapter 2.36.
  - For shut down devices, the examination can be suspended until the next start-up.

In the event of skin injuries caused by lacquer or flushing agents:

- Note the lacquer or flushing agent that you have been using.
- Consult a doctor immediately.

Danger due to recoil forces!

Actuating the trigger can causes strong recoil forces. Thereby, the user can lose his balance and injure himself when falling.

Avoid risk of injury from recoil forces:

- Ensure that you have firm footing when operating the spray gun.

4.2.3 Grounding the Device

Danger due to electrostatic charge!

Risk of injury, explosion hazard and damage to the device.

Friction, flowing liquids and air or electrostatic coating processes create charges. Flames or sparks can form during discharge. Correct grounding of the entire spraying system prevents electrostatic charges.

- Ensure that all devices and tanks are grounded before each spraying process.
- Make sure that the ground and potential equalization of all system parts are performed reliably and continuously and can withstand the expected stress (e.g., mechanical stress, corrosion).
- Earth the workpieces being painted.
- Ensure that all persons inside the working area are grounded, e.g., that they are wearing static dissipative shoes.

- Wear static dissipative gloves when spraying. The grounding takes place via the spray gun's handle or its trigger.

4.2.4 Product Hoses

Danger due to bursting of product hose!

The product hose is under pressure and may cause dangerous injuries.

- Ensure that the hose material is chemically resistant to the sprayed products and the flushing agents used.
- Ensure that the product hoses and the fittings are suitable for the pressure generated.
- Ensure that the following information can be seen on the high-pressure hose:
  - Manufacturer
  - Permissible operating pressure
  - Date of manufacture
- 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.
- The electrical resistance of the product hose, measured at both valves, must be less than 1 MΩ.
- Suction hoses may not be subjected to pressure.

4.2.5 Cleaning and Flushing

Danger due to cleaning and flushing!

Explosion hazard and damage to the device.

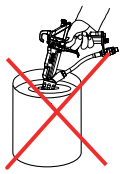
- Non-ignitable cleaning agents and flushing agents should preferably be used.
- When carrying out cleaning work with flammable cleaning agents, make sure that all equipment and resources (e.g., collection tank, funnel, transport cart) are conductive or static dissipative and grounded.
- Observe the specifications of the lacquer manufacturer.
- Ensure that the flash point of the cleaning agent is at least 15 K above the ambient temperature or that cleaning is undertaken at a cleaning station with technical ventilation.
- Never use chloride or halogenated solvents (such as trichloroethane and methylene chloride) with devices containing aluminium or galvanized/zinc-plated parts. They may react chemically thus producing an explosion danger.
- Take measures for workplace safety.

- It should be noted that when the device is put into operation or emptied: depending on the coating product used, depending on the rinsing agent (solvent) used, there may briefly be a mixture inside the pipes and equipment which can ignite.
- Only use electrically conductive tanks for cleaning and flushing agents.
- The tanks must be grounded.

An explosive gas/air mixture forms in closed tanks.

- Never spray into a closed tank when using solvents for flushing.

External cleaning



When cleaning the exterior of the device or its parts, also observe the following:

- Relieve the pressure from the device.
- De-energize the device electrically.
- Disconnect the pneumatic supply line.
- Use only moistened cloths and brushes. Never use abrasive agents or hard objects and never spray cleaning agents with a gun. Cleaning the device must not damage it in any way.
- Ensure that no electric component is cleaned with or immersed into solvent.

4.2.6 Touching Hot Surfaces

Danger due to hot surfaces because of hot coating products!

Risk of burn injuries

- Only touch hot surfaces if you are wearing protective gloves.
- When operating the device with a coating product with a temperature of > 43 °C; 109 °F, apply a warning label to the device that says "Warning - Hot Surface."

Instruction label: Order no. 9998910

Protection label: Order no. 9998911

Info

Order the two labels together.

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 suitably 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.
- Do not change or modify the device; if change is necessary, contact WAGNER.
- Only repair and replace parts that are listed in Chapters Accessories and Spare Parts [▸▸ 51] 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:
  - Relieve the pressure from the spray gun, product hoses and all devices.
  - Secure the spray gun against actuation.

- Switch off the energy and compressed air supply.
- Disconnect the control unit from the mains.

- 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.

5 DESCRIPTION

5.1 COMPONENTS

The EPG 5000 control unit, together with the matching automatic spray guns and other components, form an electrostatic spraying system.

5.2 FUNCTIONING

The EPG 5000 control unit supplies the control voltage for the spray gun, in which high voltage is subsequently produced. The set value for high voltage and the spray current limitation are adjusted on the control unit and can be saved in three different recipes. The high-voltage supply is switched on and off on the spray gun via the controller.

The special linear characteristic for high voltage ensures that, if the spray gun is brought too close to the work piece (or ground), the high voltage is reduced automatically to prevent an accidental spark discharge.

Furthermore, the EPG 5000 control unit regulates the air required for operating the gun (control air, shaping air, atomizing air).

In addition, the EPG 5000 control unit has a wide range of other functions, such as an operating hours counter, service interval display, external approval, fault display and an easy-to-use interface.

5.3 EXTENT OF DELIVERY

Stk	Order no.	Designation
1	2359918	EPG 5000 control unit

5.3.1 Standard Equipment

Stk	Order no.	Designation
1	241270	Mains cable with Stak200; 3 m; 9.8 ft
1	130215	Grounding cable 10 m; 32.8 ft
2	9951117	Slow-acting fuse, 1.0 AT
1	2360925	Declaration of Conformity
1	2364877	EPG 5000 operating manual, German
1	See Chapter Languages [▸▸ 6]	Operating manual in local language

The delivery note shows the exact scope of delivery.

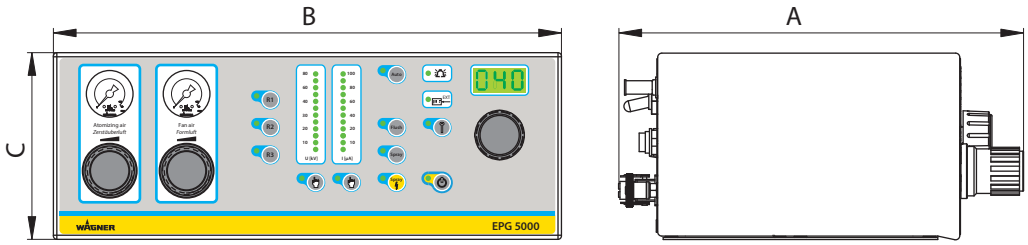
5.4 DATA

5.4.1 Technical Data

Description	Values
Input voltage	115 VAC – 230 VAC, 50 Hz / 60 Hz
Input power	Max. 40 W
Input current	Max. 0.5 A
Output voltage	Max. 20 Vpp
Output current	Max. 1.0 A AC
High-voltage limitation	80 kV DC
Spray current limitation	100 µA DC
Polarity	For negative, high-voltage generators

Description	Values
Protection class	IP 40
Weight (without cables)	6.7 kg; 14.77 lb
Operating temperature range	0 °C – 40 °C; 32 °F – 104 °F
Input air pressure	6–8 bar; 0.6–0.8 MPa; 87–116 psi
Compressed air quality: free from oil and water	Quality standard 6.5.2 according to ISO 8573-1:2010 6: Particle density ≤ 5 mg/m³ 5: Humidity: pressure dew point ≤ +7 °C 2: Oil content ≤ 0.1 mg/m³

5.4.2 Dimensions



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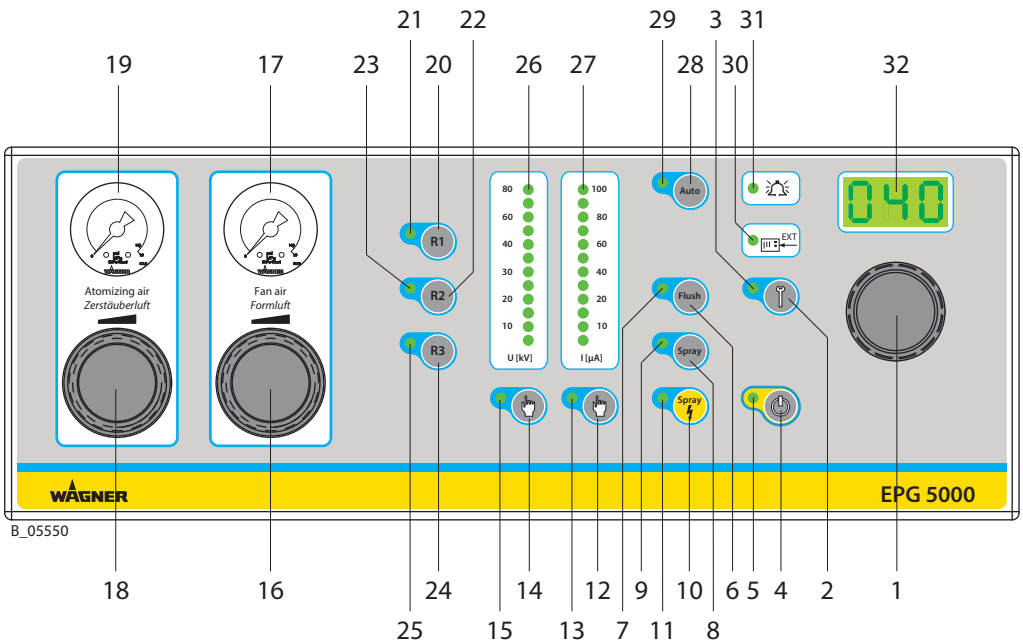
Measurement	mm	inch
A	295	11.61
B	370	14.57
C	136	5.35

5.5 OPERATING ELEMENTS AND CONNECTIONS

5.5.1 Operating Elements on Front Side



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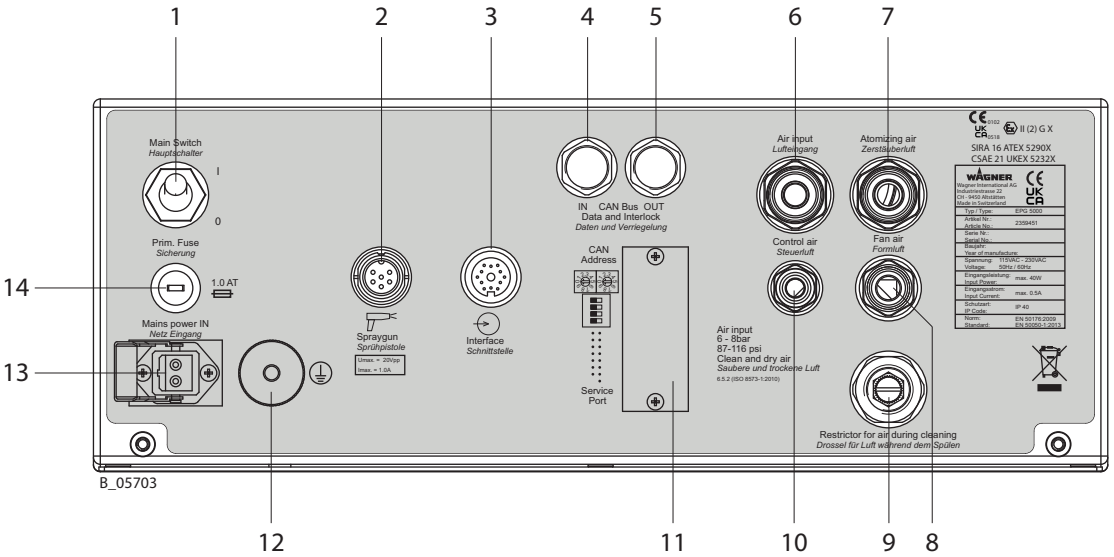
1	Universal control dial – Dynamic digital control dial with 32 positions per revolution – Adjustment speed is proportional to rotational speed – Used to adjust high voltage and spray current – For setting parameter values in configuration mode
2	Push button [Service]
3	Illuminated display [Service] – Lights up when the submenu [Maintenance] is opened – Flashes quickly when the maintenance interval has been reached
4	Push button [Standby] – For switching to standby mode
5	Illuminated display [Standby] – Lights up when the device is in standby mode
6	Push button [Flushing] – For switching the flush function on/off – Button is only active in manual operation
7	Illuminated display [Flushing] – Lights up when the flush function is activated – Flashes in 2K operation when the flush function is activated without the release
8	Push button [Spraying without high voltage] – Switches gun on/off without high voltage – Button is only active in manual operation
9	Illuminated display [Spraying without high voltage] – Lights up when the gun is switched on – Flashes in 2K operation when the spray function is activated without the release
10	Push button [Spraying with high voltage] – Switches gun on/off with high voltage – Button is only active in manual operation
11	Illuminated display [Spraying with high voltage] – Lights up when the gun is switched on – Flashes in 2K operation when the spray function is activated without the release
12	Push button [Spray current] – To activate the function, the current limitation is set with the control dial (1) and is indicated in the LED display (27) – Adjusting range: 5-100 µA – Resolution: 1 µA
13	Illuminated display [Spray current]
14	Push button [High voltage] – To activate the function, the high voltage is set with the control dial (1) and is indicated in the LED display (26) – Adjusting range: 5-80 kV – Resolution: 1 kV
15	Illuminated display [High voltage]
16	Pressure regulator [Shaping air] – Pressure regulator for the shaping air: 0–8 bar; 0–0.8 MPa; 0–116 psi
17	Pressure gauge [Shaping air] – Pressure indicator for the shaping air
18	Pressure regulator [Atomizing air] – Pressure regulator for the atomizing air: 0–8 bar; 0–0.8 MPa; 0–116 psi

19	Pressure gauge [Atomizing air] – Pressure indicator for the atomizing air
20	Push button [Recipe 1]
21	Illuminated display [Recipe 1] – Lights up if recipe 1 is used
22	Push button [Recipe 2]
23	Illuminated display [Recipe 2] – Lights up if recipe 2 is used
24	Push button [Recipe 3]
25	Illuminated display [Recipe 3] – Lights up if recipe 3 is used
26	Illuminated display [High voltage] – Lights up green – Display range: 0-80 kV – Dot display: set voltage – Bar display: actual voltage
27	Illuminated display [Spray current] – Lights up green – Display range: 0-100 µA – Single LED display: Spray current limitation – Bar display: Actual spray current
28	Push button [Auto] – Switches between automatic and manual operation
29	Illuminated display [Auto] – Lights up when the control unit is in automatic mode
30	Illuminated display [External release] – Lights up when operating via the interface bushing – Lights up when operating via the CAN bus – Lights up when operating with external set value specification
31	Illuminated display [Fault] – Lights up when a fault occurs
32	LED display, 7 segments, three-digit number – Indicates the set and actual values of the high voltage and spray current – Display showing error number in the event of warnings and malfunctions

5.5.2 Connections on the Rear Side



1	Mains supply switch – 0 = The control unit is deactivated – I = The control unit is activated
2	Spray gun connection – To connect a WAGNER automatic spray gun. – **Warning:** Do not disconnect under voltage.
3	Interface – For description, see Chapter External Interface [▸▸ 40] – **Warning:** Do not disconnect under voltage.
4	Input: CAN bus connector plug – CANopen communication signal – Release signal
5	Output: CAN bus bushing – CANopen communication signal – Release signal
6	Compressed air input – Pressure range: 6–8 bar; 0.6–0.8 MPa; 87–116 psi – Maximum air flow 1000 l/min – Diameter of connection hose 10 mm
7	Atomizing air outlet – Diameter of connection hose 10 mm
8	Shaping air output Diameter of connection hose 8 mm
9	Throttle valve for flushing
10	Control air outlet – Diameter of connection hose 6 mm
11	Cover of the service connection – Only for WAGNER service personnel

12	Grounding connection – To connect the signal ground
13	Mains input terminal – Connection for mains cable with safety clip – **Warning:** Do not disconnect under voltage.
14	Primary fuse – 1.0 ampere, slow-acting

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 0 °C and 40 °C; 32 °F and 104 °F.

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

6.4 ADDITIONAL COMPONENTS

The EPG 5000 control unit can be used to complete an electrostatic spraying system. To do so, a suitable spray gun and the relevant components for the selected spray process are required (WAGNER accessories).

Spray guns that are compatible with the EPG 5000:

- GA 5000EA
- GA 5000EAC

6.5 LOCATION OF THE CONTROL UNIT

⚠ DANGER

Incorrect installation of the device!

Explosion hazard and damage to the device.

- Set up the device outside the spray booth/spray zone.
- If possible, place the device outside the Ex zone.
- Protect the device from significant temperature and moisture changes.
- Protect the device from contamination.
- Lay and fix the connecting cable correctly.
- Ensure that the local mains voltage and tension of the device match.

⚠ DANGER

Sparks form when live components are separated or connected!

Explosion hazard from electric sparks.

- Do not disconnect plug connections under voltage.
- Do not open fuse holders under voltage.
- Do not remove the service plug cover under voltage.

All sealed elements on the control unit must be present and undamaged. During operation, all electric connections of the control unit have to be tightly sealed with the corresponding plug connectors or closing elements. While under voltage, neither plug connectors nor closing elements may be separated or opened.

6.6 ASSEMBLY

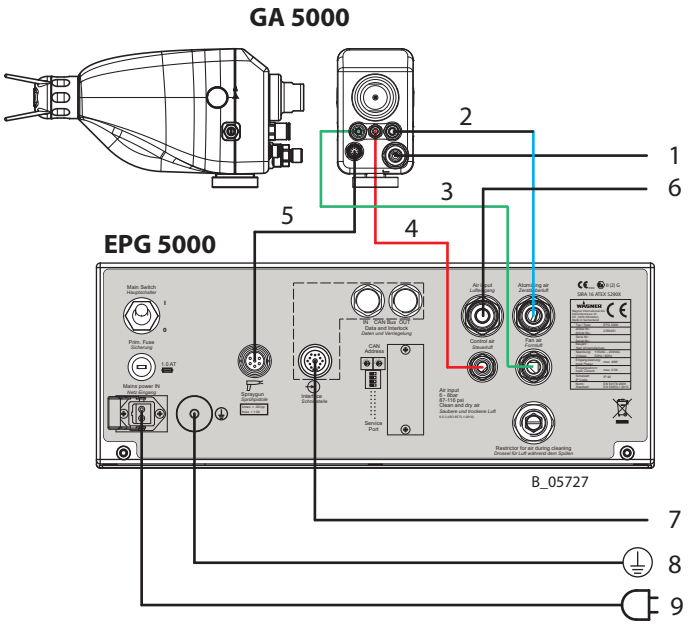
⚠ WARNING

Incorrect installation/operation!

Risk of injury and damage to the device.

- When commissioning and for all work, read and follow the operating manual and safety regulations for the additionally required system components.

1. Place the control unit outside the explosion zone.
2. Connect the grounding cable to the control unit and the signal ground.
3. Connect the gun connection cable to the control unit.
4. Connect the control unit to the higher-level controller (if available).
5. Connect the air hoses to the control unit and the spray gun in accordance with the figure below.
6. Connect the control unit to the compressed air supply.
7. Connect the spray gun to the product supply system.
8. Connect the control unit to the power supply.



1	For the product supply	6	For the compressed air supply
2	Atomizing air hose	7	Control cable
3	Shaping air hose	8	Grounding cable
4	Control air hose	9	Mains cable
5	Gun cable		

NOTICE

Impurities in the spraying system

Spray gun blockage, products harden in the spraying system.

- Flush the spray gun and paint supply with a suitable flushing agent before commissioning.

6.7 GROUNDING

During normal operation, perfect grounding of all conductive parts such as floors, walls, roofs, barriers, work pieces, transport devices, coating product tank, coating product supply or construction parts in the spray area, with exception of the high-voltage parts, is important for work safety and optimum coating.

Parts of the booth must be grounded in accordance with BS EN 16985:2018.

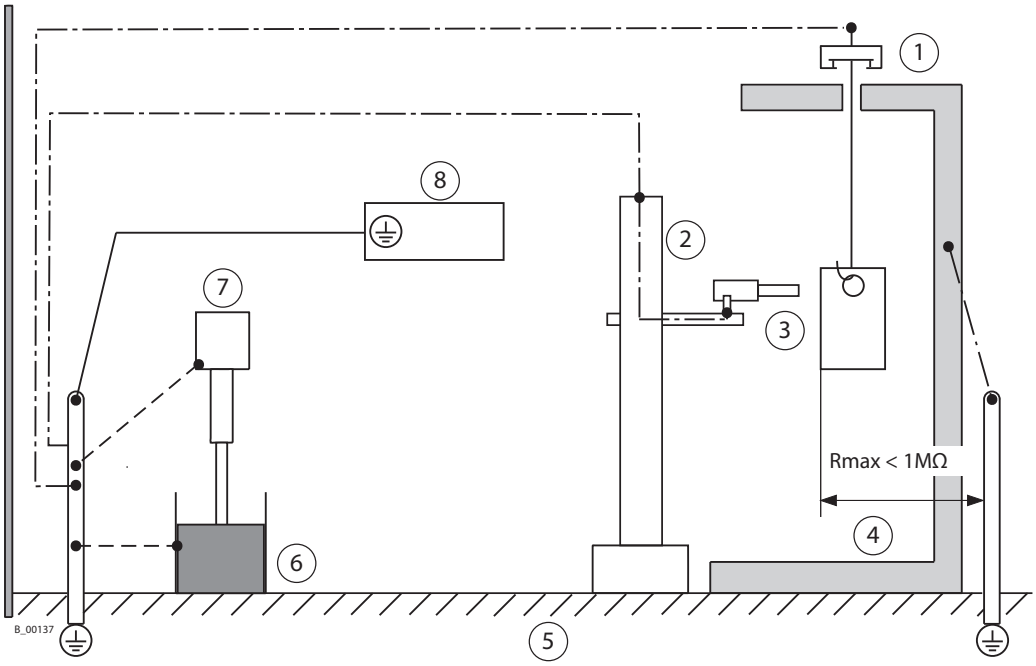
A poorly grounded work piece causes:

- Very bad wrap around
- Uneven coating
- Back spraying to the spray gun (contamination) and coater

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

- Clean suspension of the work piece to be coated.
- Grounding of spray booth, conveyor system and suspension equipment on the building side in accordance with the operating manuals or the manufacturer's information.
- Grounding of all conductive parts within the working area.
- That a grounding resistance of the work piece of 1 MΩ is not exceeded (resistance to ground measured at 500 V or 1000 V).

– Connect the control unit to the signal ground.
– Connect all grounding cables using a short and direct route.
– Safety shoes and gloves, if used, must be static dissipative.



Earthing schema (example)

Pos	Part / workstation	Minimum cable cross section
1	Conveyor	16 mm² / AWG 6
2	Reciprocator	16 mm² / AWG 6
3	Work piece	—
4	Spraying stand Alternative: Spray booth	16 mm² / AWG 6
5	Floor, static dissipative	—
6	Paint tank	4 mm² / AWG 12
7	Product supply	4 mm² / AWG 12
8	Control unit	4 mm² / AWG 12

Grounding of spray gun

The spray gun must be grounded.

Notice for the coater

Safety shoes and gloves, if used, must be static dissipative.

6.8 START UP

The following points should be noted before commissioning:

1. Lay grounding cable from the grounding screw on the device to the signal ground and ensure that all other conductive parts within the working area are grounded.
2. Lock the external release with the exhaust air unit.
3. Lock the external release with an appropriate tool (e.g., key switch) (the high-voltage supply must be secured to prevent unauthorized persons from switching it on).
4. Check that all product-conveying connections are correctly connected.

5. Check that all air-conveying connections are correctly connected.
6. Visually check the permissible pressures for all the system components.
7. Check the level of the separating agent in the pump and fill up if necessary.
8. Provide product tank, tanks for flushing agent and an empty tank for return flow.
9. The interface on the rear of the control unit must be protected with a cover.
10. Connect the system to the air supply.
11. When first commissioning the unit, flush the system in accordance with the operating manuals for the other components.

Configuring the control unit

see Chapter Device Configuration [▸▸ 32].

6.9 VENTILATION OF THE SPRAY BOOTH

The electrostatic spraying equipment may only be operated in defined spraying areas and in accordance with the BS EN 16985:2018 standard or under comparable ventilation conditions.

The electrostatic spraying equipment must be locked to the technical ventilation so that the coating product supply and the high voltage are not effective as long as the technical ventilation is not operated with the minimum exhaust air volume flow or a larger exhaust air volume flow.

Ensure that the excess coating product (overspray) will be collected up safely.

⚠ WARNING

Toxic and/or flammable vapor mixtures!

Risk of poisoning and burns.

- Operate the device in a spray booth approved for the working materials.
  Or:
- Operate the unit on an appropriate spraying wall with the ventilation (extraction) switched on.
- Observe national and local regulations for the outgoing air speed.

6.10 VERIFYING A SAFE OPERATIONAL CONDITION

A skilled person must check to ensure that the device and the spraying system are in a safe state after they are installed and commissioned. This includes:

- Carry out safety checks in accordance with Chapter Safety Checks and Maintenance Intervals [▸▸ 44].

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.

7.2 TASKS

⚠ DANGER

High-voltage field!

Danger to life from malfunction of heart pacemakers. Make sure that persons with pacemakers:

- do not work with the electrostatic spray gun,
- don't stay inside the area of the electrostatic spray gun/work piece.

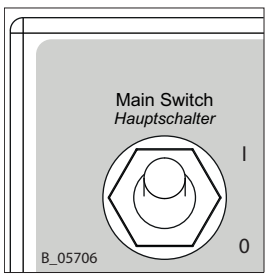
1. Ensure that:
   - the control unit was not opened;
   - the regular safety checks are carried out in accordance with Chapter Safety Checks and Maintenance Intervals [▸▸ 44];
   - commissioning is carried out in accordance with Chapter Assembly and Commissioning [▸▸ 22].

7.2.1 Emergency Deactivation

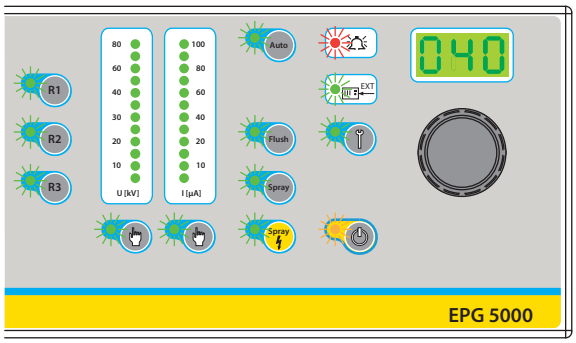
In the case of unforeseen occurrences, proceed as follows:

1. Switch off control unit.
2. Close the compressed air supply.
3. Relieve pressure according to the operating manual of the product pressure generator.
4. Point the spray gun toward the grounded collecting tray.
5. Switch on the spray gun until there is no pressure left.

7.3 STARTING UP THE CONTROL UNIT



- Set main switch to position I.



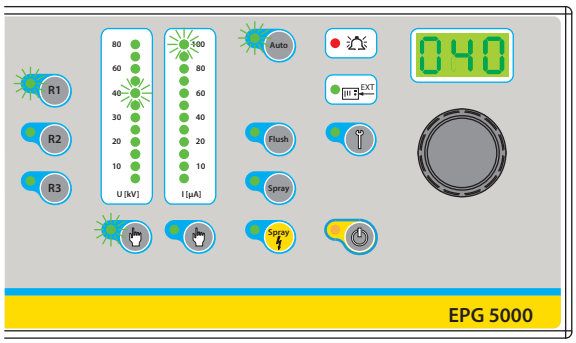
B_05707

⇨ For approx. 1 second, all LEDs light up → Display test

B_03294

B_03295

⇨ In the display, the hardware status and software version are shown briefly, one after the other.



B_05708

⇨ The control unit is ready for operation.

Info

Each starting procedure is concluded by allocating the saved set data in recipe R1.

7.4 SETTING AND SAVING RECIPES

Set values for the high voltage, in kV, and for the spray current limitation, in µA, are stored in a recipe. As standard, the following values are saved in the factory in the three storage places available for recipes:

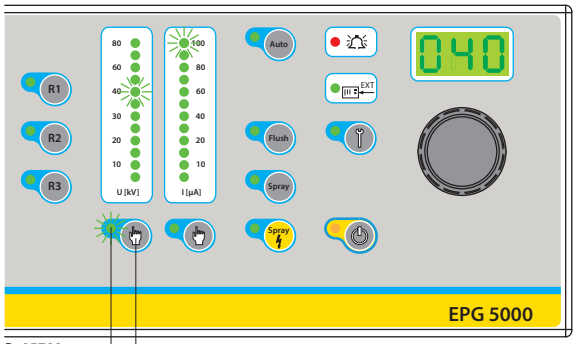
Recipe No.	Set value - high voltage in kV	Target spray current limitation in µA
R1	80	100
R2	60	100
R3	40	80

Recipes 1-3 can be selected and saved directly with the program buttons [R1], [R2] and [R3]. Once the recipe required has been called up, the individual coating parameters can be called up and changed using the corresponding selection buttons (see Chapters Setting the High Voltage [▸▸ 29], and Setting the Current Limitation [▸▸ 30]). When a parameter is changed, the LED on the left of the program button goes out and indicates to the user that a parameter value has been changed.

The process for saving parameters is described below.

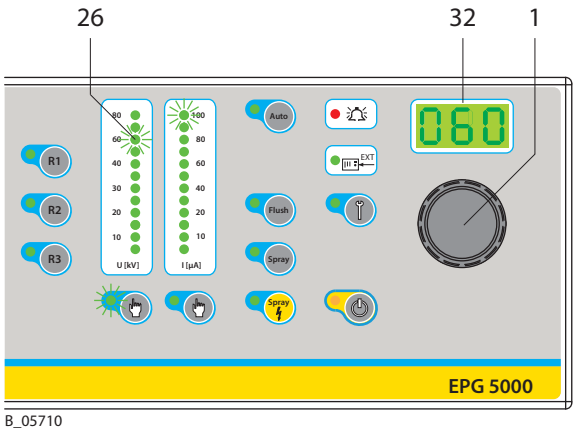
1. To reuse the originally set values, press the corresponding program button briefly.
   ⇨ The modified values are not applied.
2. If however, the modified values should be saved, press and hold the corresponding program button for approx. 2 seconds, until the LED next to the button starts to flash quickly.
   ⇨ The modified values are then saved.

7.4.1 Setting the High Voltage



B_05709

1. Press the [High-voltage] push button (14) to adjust the high voltage.
   ⇨ The LED (15) indicates that high voltage is selected.

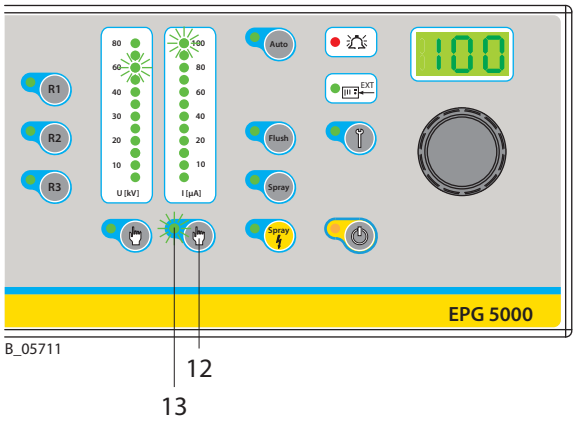


B_05710

2. The high voltage can now be adjusted using the universal control dial (1) between 5 to 80 kV with a resolution of 1 kV.
   ⇨ The corresponding value is indicated in the LED display (32).

Above the [High-voltage] push button (14) is the [High-voltage] bar graph display (26). If the control unit is in the ready position, this light strip shows the set value as a dot.

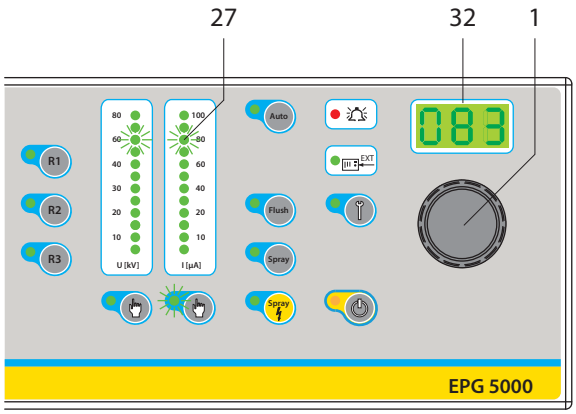
7.4.2 Setting the Current Limitation



B_05711

1. Press the [Current limitation] push button (12) to adjust the limitation of the spray current.

   ⇨ The LED (13) indicates that current limitation is selected.



B_05712

2. The current limitation can now be adjusted with the universal control dial (1) between 10 - 100 µA with a resolution of 1 µA.

   ⇨ The corresponding value is indicated in the illuminated display (32).

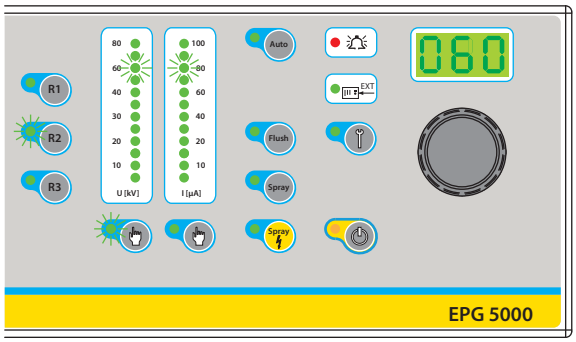
Above the [current limitation] push button (12) is the [current limitation] bar graph display (27). If the control unit is in the ready position, this light strip shows the set value as a dot.

The current limitation is an adjustable threshold. If this threshold is exceeded, for example, by the spray gun having approached the object being sprayed, the high voltage is adjusted downwards until the threshold is no longer exceeded.

The values set in the examples for high voltage, = 40 kV, and for current limitation, 83 mA, are saved in [R2] by pressing and holding recipe push button for a longer period of time (for > 2 seconds).

7.4.3 Display During Spraying Mode

Control unit in standby position

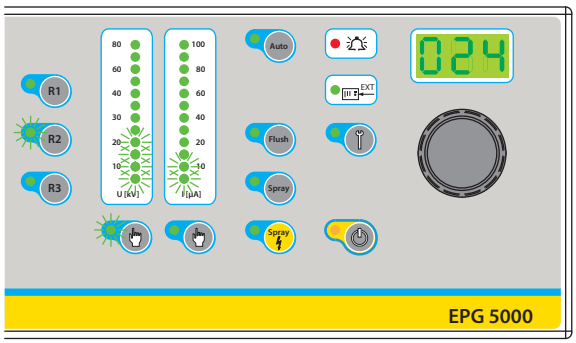


B_05713

Ready to spray using R2 recipe:

The LEDs for the set values light up in the dot display and the value for high voltage, is displayed digitally. If you press the push button [Current limitation], the adjusted set value for the spray current limitation is displayed digitally.

Display during spraying



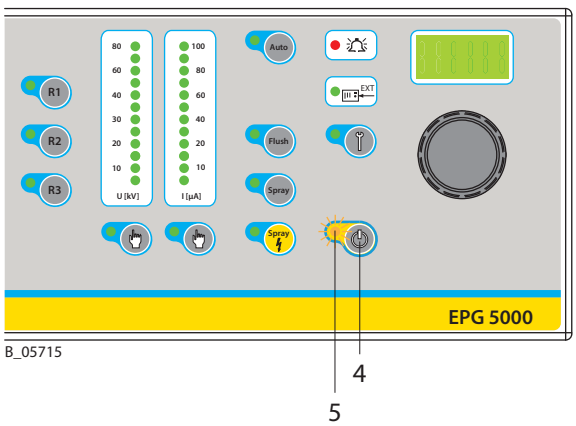
B_05714

Spraying using recipe R2:

High voltage will be switched on for the spray gun by a signal from the controller. The LEDs light up in a bar display showing the actual values. The current actual value for the activated push button for high voltage (kV) is displayed digitally. If the push button [Spray current limitation] is pressed, the respective LED lights up and the respective actual value appears in µA.

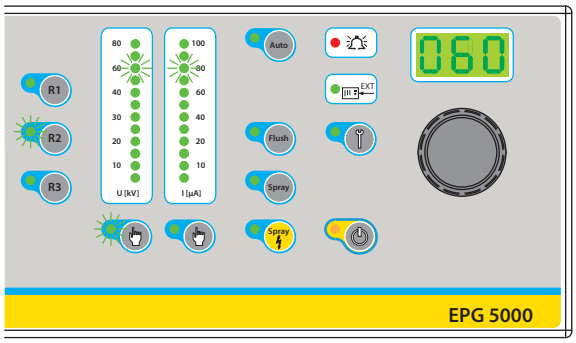
7.5 STANDBY MODE

In standby mode, all electrical functions are switched off on the control unit.



B_05715

1. Briefly press push button (4).
   ⇨ Illuminated display [Standby] (5) lights up. All the other LEDs go out.



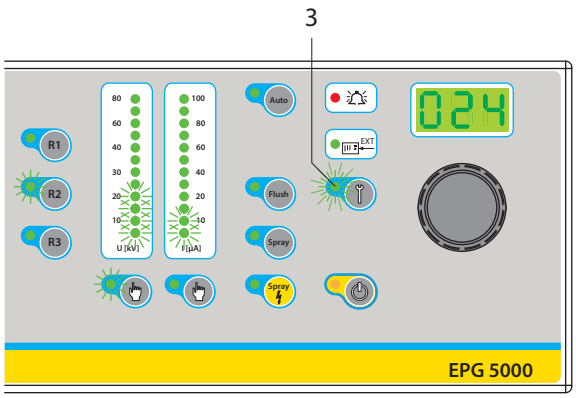
B_05713

2. To go from standby mode back to ready mode, press the push button (4) again.

7.6 PERFORM SERVICE DISPLAY

Prerequisite: The function [Maintenance interval limit] is activated.

Servicing the spray gun



B_05716

Once the time for the defined maintenance interval has expired, the illuminated display (3) starts to flash.

The flashing service display merely acts as a warning. You can continue working without any limitations.

7.7 DEVICE CONFIGURATION

There are 3 levels:

- Level 1: for the operator
- Level 2: for the WAGNER service department
- Level 3: for the WAGNER production plant

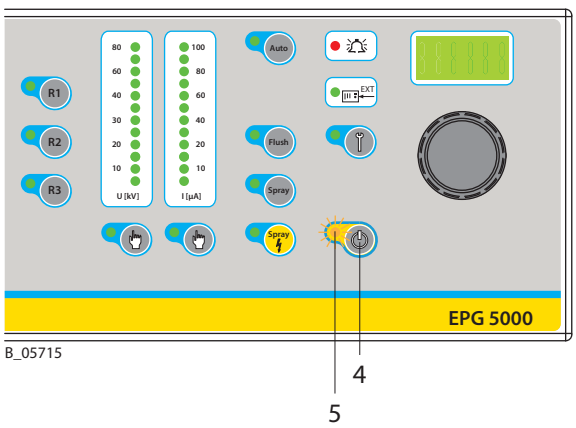
7.7.1 Parameter Overview of Level 1 for Users

Parameter		Value	Description
C11	Operating mode	1 Manual gun mode	The device functions as a standalone device in conjunction with a manual gun. Operation of the buttons [Automatic operation], [Spraying with high voltage], [Spraying without high voltage], and [Flush] is not possible. Optional: External release via interface bushing (C13). Optional: External set value specification via analog inputs (C12). Optional: 2K operation.
		2 Standalone operation (factory setting)	The device functions as a standalone device. Operation of the button [Automatic operation] is not possible. Optional: External set value specification via analog inputs (C12).
		3 External control via interface bushing	Control via interface bushing: The signals for the functions [Flush], [Spraying with high voltage], and [Spraying without high voltage] are sent via digital signals from the interface bushing. Optional: External release via interface bushing (C13). Optional: External set value specification via analog inputs (C12).
		4 External control via CAN bus	Control via CAN bus: The signals for the functions [Flush], [Spraying with high voltage], and [Spraying without high voltage] are sent from the higher-level controller. Optional: External release via CAN plug (C13). Optional: External set value specification via CAN bus (C12).
C12	External set value specification	off (factory setting)	The set values for high voltage in kV and current limitation in µA are set at the operating panel.
		1	The set values for high voltage in kV and current limitation in µA are predefined using either two analog voltage inputs of the interface bushing or the CAN bus. Set values can no longer be adjusted at the front control panel. All recipe functions (save, call up recipe, etc.) are locked.
		2	Set value specification determined by the set operating mode: It behaves as per [off] in manual operation and as [1] in automatic operation.
C13	External release	on (factory setting)	External release is necessary for flush or spraying mode.
		off	External release is not necessary for flush or spraying mode. The release is bridged internally in the device.

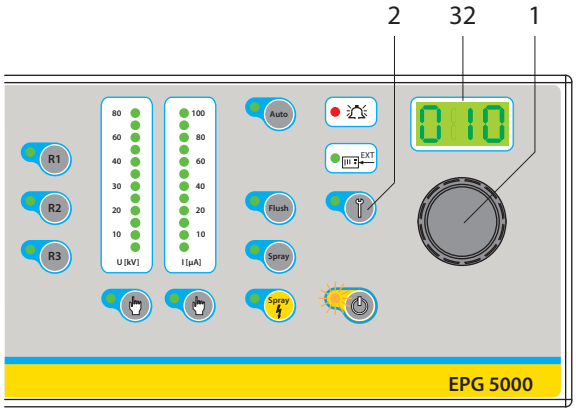
Parameter		Value	Description
C14	2K operation	off (factory setting)	Normal operation
		1	Manual mode is not possible (2K operation with superordinate control).
		2	Automatic mode is not possible (2K system signals are only releases).
C15	Lock	off (factory setting)	Lock is deactivated.
		1	Lock is switched on: The set values (kV and µA) cannot be adjusted. Recipe change is possible. Manual/automatic operation is possible.
		2	Lock pro (program): The set values (kV and µA) can be adjusted in manual operation, but not saved in the recipes. Recipe change is possible. Manual/automatic operation is possible.
		3	Lock max. (maximum): The set values (kV and µA) cannot be adjusted. Recipe change is possible. System always remains in automatic operation. Maintenance menu cannot be activated.
C16	Spray gun/high-voltage cascade	1 (factory setting)	C11 = 1: GM 5000 manual spray gun C11 = 2 ... 4: GA 5000 automatic spray gun
		2	Universal cascade with maximum 70 kV
		3	Universal cascade with maximum 80 kV
C17	Gun remote lock Parameter [C17] can only be selected with parameter [C11] = 1.	off (factory setting)	Lock is deactivated.
		1	Lock is active: Standby function is disabled. The recipe switch can still be carried out.
		2	Lock is active: Recipe change function is disabled. The standby function is still active.
		3	Full lock: The button has no function. The recipe switch and standby functions are not executed.
C18	Illuminated display	off (factory setting)	Normal luminosity of the LEDs and the 7-segment display.
		1	Normal luminosity of the LEDs. Reduced luminosity of the 7-segment display.

Parameter		Value	Description
		2	Reduced luminosity of the LEDs. Normal luminosity of the 7-segment display.
		3	Reduced luminosity of the LEDs. Reduced luminosity of the 7-segment display.
C19	Operation with external control air valve	off (factory setting)	Normal operation
		on	The internal valve is always switched on so that the air can be used as supply air for the external control air valve.
C20	Special function	off (factory setting)	Normal operation
		1	Separate switching of control air and high voltage – Signal [Spraying without high voltage] → Control air – Signal [Spraying with high voltage] → High voltage
		2	EC operation – Signal [Spraying without high voltage] → Shaping and atomizing air – Signal [Spraying with high voltage] → Control air and high voltage **Note:** For spraying with high voltage, both signals must be present (note that the [Spray with high voltage] signal may only be present if the [Spray without high voltage] signal is already present). For spraying without high voltage, the external set value specification for high voltage must be used (signal with 0 V results in minimal high voltage).

7.7.2 Getting Started in Configuration Mode

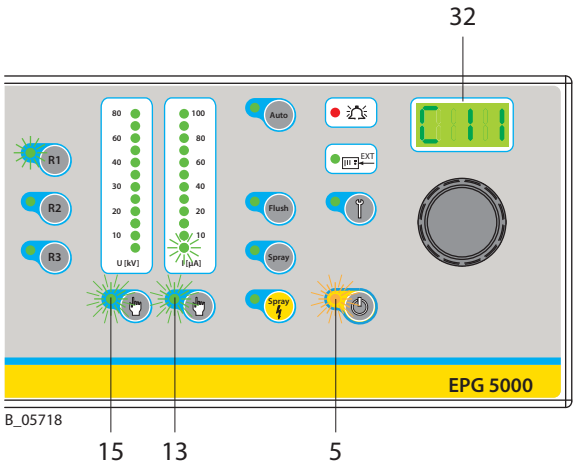


1. Switch to Standy by pressing the push button [Standby] (4).
   ⇨ The orange LED [Standby] (5) lights up.



B_05717

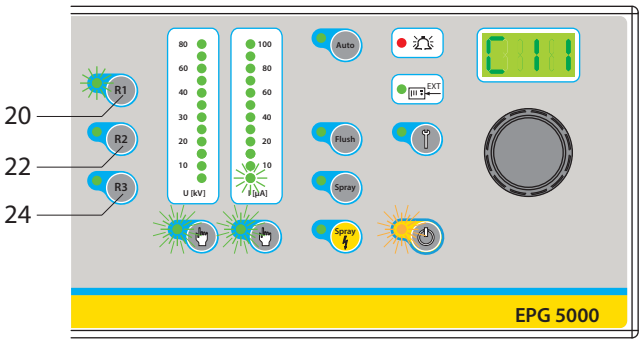
2. Press and hold the [Service] push button (2).
3. Turn the universal control dial (1) with the other hand until the display (32) shows the number [10].
4. Then release the push button [Service] (2).
   ⇨ The scrolling text [Configuration] is displayed.
   ⇨ The device is now in configuration mode.



B_05718

   ⇨ The LED display (32) now shows the first configuration setting [C11].
   ⇨ At the same time, the two LED displays [High voltage] (15) and [Spray current limitation] (13) start to flash.
   ⇨ The illuminated display [Standby] (5) flashes quickly.

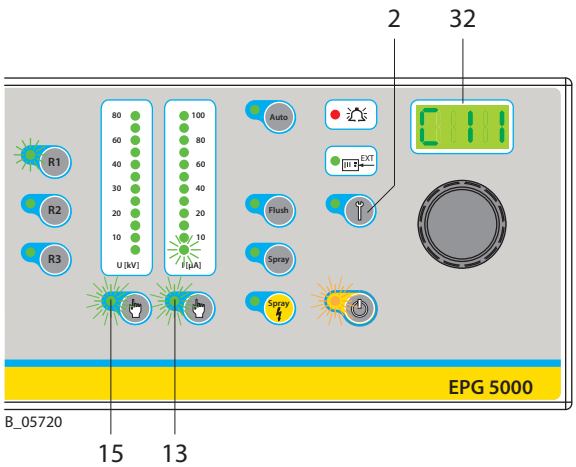
For ease of operation the configuration settings are divided into three levels. The first level is for the end user, the other two levels are password protected and reserved for the WAGNER service department and the WAGNER production sites or the WAGNER service center, which have the necessary infrastructure.



B_05719

- Level 1 (20) illuminated display:
  Parameters [C11] to [C20] (for the end user)
- Level 2 (22):
  Parameters [C21] to [C30] (for WAGNER service department)
- Level 3 (24):
  Parameters [C31] to [C40] (for production plant; service center)

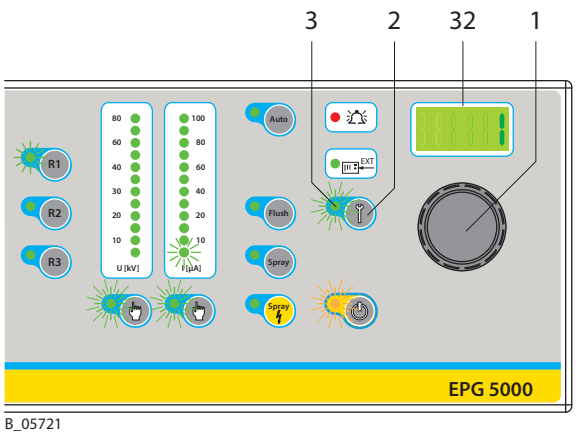
7.7.3 Setting Example for Parameter C11



B_05720

After getting started in configuration mode, the display (32) shows parameter [C11] by default.

1. Select the desired parameters for the end users with the push button [High voltage] (13) or [Current limitation] (15).
2. To change the selected parameter value (e.g., [C11]), press push button [Service] (2).



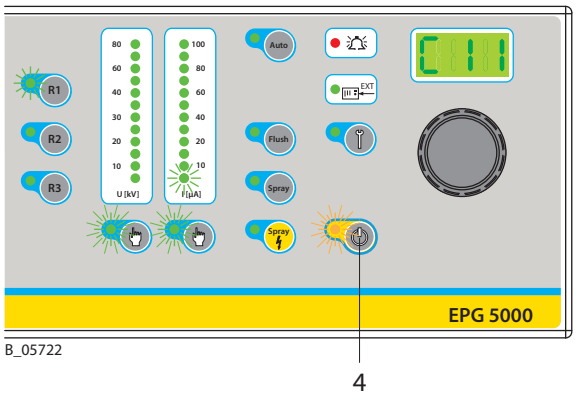
B_05721

⇨ The content of [C11] is displayed (32).

⇨ The flashing illuminated display (3) indicates that the parameter value in the display (32) can be changed.

3. Set the parameter value with the universal control dial (1). Possible values in [C11] are [1], [2], [3] or [4].
4. To save the values set on [C11], press and hold the push button (2) for a long time.

⇨ Once the value has been saved, the illuminated display (3) starts flashing quickly.



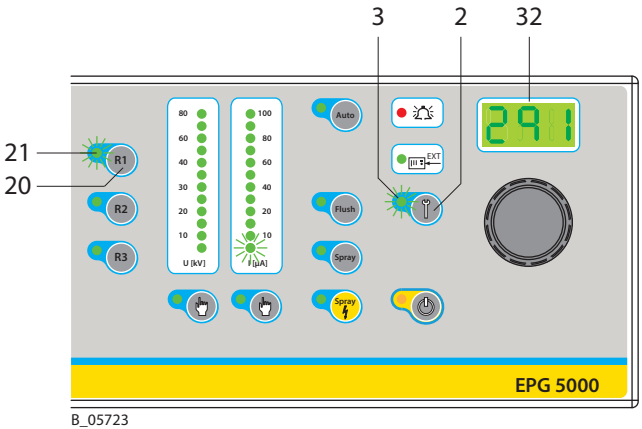
B_05722

5. To go from the configuration mode back to the operating mode, press the standby button (4).

7.8 OPERATING HOURS COUNTER/SERVICE DISPLAY

Two hour counters are integrated into the control unit:

- The absolute counter measures the ongoing hours of operation of the spray gun.
- The maintenance intervals for the spray gun can be determined and monitored with the maintenance hours counter.



B_05723

When the control unit is in the ready position, the maintenance menu screen can be accessed using the push button (2).

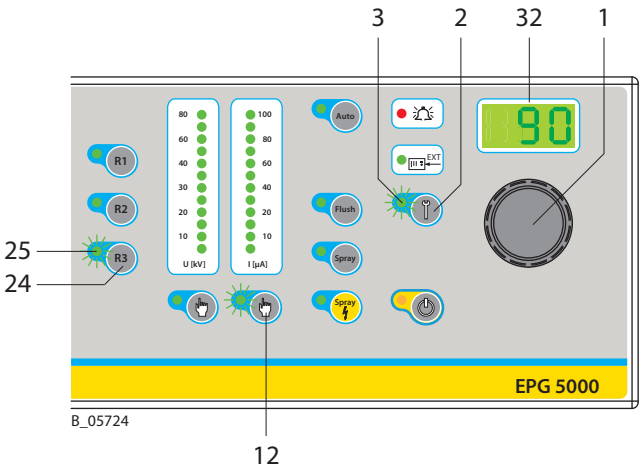
Maintenance menu structure (illuminated display (3) is activated)

Push button	Description of display
R1	Display of the spray gun's absolute accrued operating hours. Display format: Counter reading < 999 hours: 001 = 1 h; 291 = 291 h Counter reading > 1000 hours: 1.23 = 1230 h; 45.2 = 45200 h Maximum display value = 99.9 = 99900 h Afterwards it shows flashing dashes.
R2	Display of temporary maintenance counter and how to reset this counter
R3	Set maintenance interval in hours, or activate or lock this function

7.8.1 Maintenance Counter Set Up and Reading

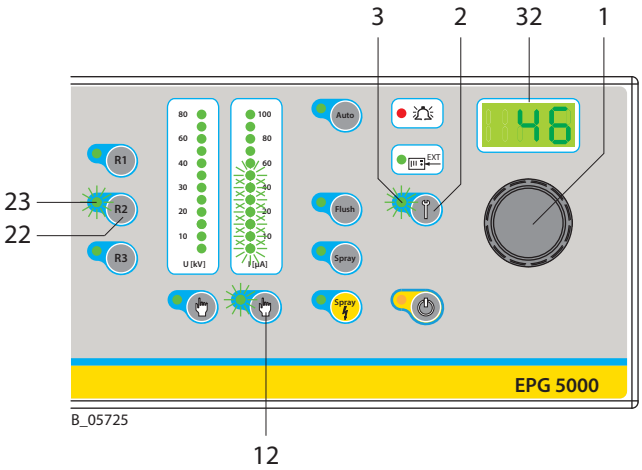
When using the device for the first time, the function for the maintenance hours counter is deactivated. This function can be activated with the [R3] push button (24). The maintenance interval limit can be set within a range of 0 to 999 hours.

Setting and saving the service interval limit in hours



1. Press the push button (24) briefly.
   ⇨ Illuminated display (25) lights up.
2. Use the control dial (1) to set the maintenance interval limit you want (e.g., 90 hours).
3. Check setting on the display (32).
4. To save the value, press the push button (12) and hold until the display (32) starts flashing quickly.

Review counter reading since last service carried out on the spray gun

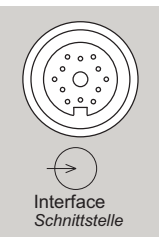


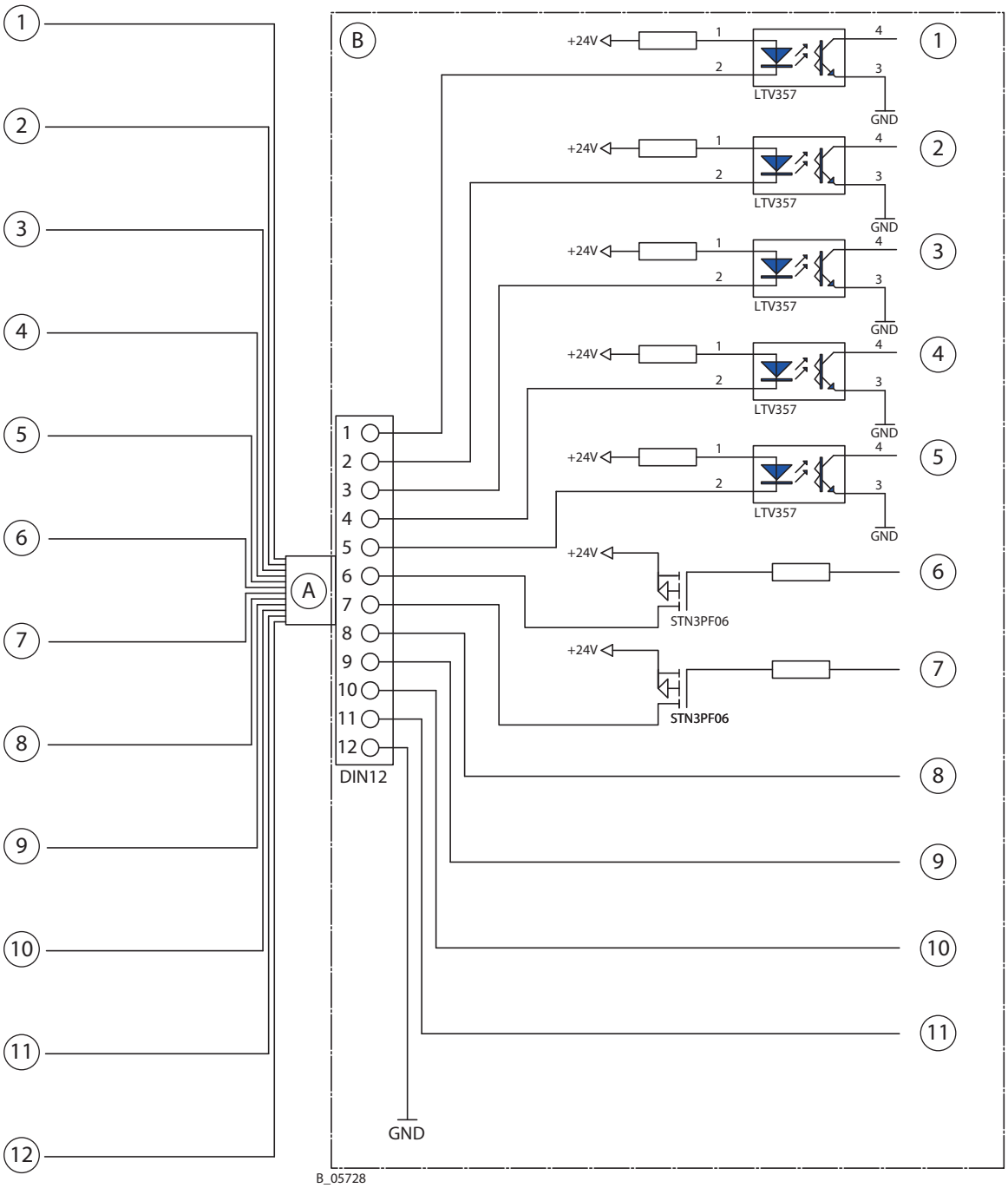
1. Press the push button (22) briefly.
   ⇨ Illuminated display (23) lights up.
2. Read display (32).
   In the example, 46 hours have passed since the las spray gun maintenance.
   The bar display on the left indicates that 50% of the set interval time has passed.
3. By pressing and holding the push button (12), the display (32) can be reset to 0.

7.9 EXTERNAL INTERFACE

The control unit is equipped with an interface.

Before using it, the respective parameters have to be selected in the device configuration.





Pos	In/Out	Color	Designation	Description
A	—	—	Interface cable	—
B	—	—	Control unit	—
1	In	White	External release	Potential-free contact between pin 1 and pin 12 (ground) – Closed → Release issued – Open → Release not issued
2	In	Brown	Spraying with high voltage	Potential-free contact between pin 2 and pin 12 (ground) – Closed → gun switched on (spraying with high voltage) – Open → gun switched off

Pos	In/Out	Color	Designation	Description
3	In	Green	Spraying without high voltage	Potential-free contact between pin 3 and pin 12 (ground) – Closed → gun switched on (spraying without high voltage) – Open → gun switched off
4	In	Yellow	Flushing	Potential-free contact between pin 4 and pin 12 (ground) – Closed → gun flushing switched on – Open → gun switched off
5	In	Gray	Fault reset	Potential-free contact (button) between pin 5 and pin 12 (ground) – If there is a fault, it can be acknowledged by pressing a button. – Acknowledgement is only given via the negative side.
6	Out	Pink	Fault output	If there is a fault, +24 V DC is issued at pin 6 in reference to pin 12 (ground). – Maximum current 0.5 A
7	Out	Blue	External control valve	If the control valve for the gun is switched on, +24VDC is issued at pin 7 in reference to pin 12 (ground). – Maximum current 0.5 A
8	In	Red	Set value specification for high voltage (High voltage input, DC kV in)	Analog DC current input between pin 8 in reference to pin 12 (ground) – 0.1 V corresponds to 1 kV – 8.0 V is a maximum specification and corresponds to 80 kV
9	In	Black	Set value specification for spray current limitation (µA input, DC µA in)	Analog DC current input between pin 9 in reference to pin 12 (ground) – 0.1 V corresponds to 1 µA – 10.0 V is a maximum specification and corresponds to 100 µA
10	Out	Purple	Output of current working voltage (High voltage output, DC kV out)	Analog DC current output between pin 10 in reference to pin 12 (ground) – 0.1 V corresponds to 1 kV – 8.0 V is the maximum output and corresponds to 80 kV
11	Out	Gray-pink	Output of current working spray current (µA output, DC µA out)	Analog DC current output between pin 11 in reference to pin 12 (ground) – 0.1 V corresponds to 1 µA – 10.0 V is the maximum output and corresponds to 100 µA
12	—	Red-blue	Ground	—

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:

- risk to health from inhaling solvent vapors,
- use of unsuitable cleaning tools and aids.

8.1.2 Cleaning Instructions

⚠ DANGER

Cleaning the control unit!

If there are deposits on the surfaces, the device may form electrostatic charges. Flames or sparks can form during discharge.

- Remove deposits from the surfaces to maintain conductivity.
- Use only a damp cloth to clean the device.
- Do not clean control unit with solvent or immerse it in solvent.

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:

- risk to health from inhaling solvent vapors,
- 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 suitably 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:
  - Relieve the pressure from the spray gun, product hoses and all devices.
  - Secure the spray gun against actuation.
  - Switch off the energy and compressed air supply.
  - Disconnect the control unit from the mains.
- Observe the operating and service manual for all work.

Prior to maintenance

– Flush and clean the system according to Chapter Cleaning and Flushing [▸▸ 13].

After maintenance

– Carry out safety checks in accordance with Chapter Safety Checks and Maintenance Intervals [▸▸ 44].
– Commission the system and check for leaks as described in the spray gun's operating manual.
– Have the system checked for safe condition by a skilled person.

In accordance with DGUV 100-500 Chapter 2.29 and 2.36:

– Have the liquid ejection devices checked by an expert (e.g., WAGNER service technician) as required, but no later than every 12 months to ensure that they are in safe working order.
– For shut down devices, the examination can be suspended until the next start-up.

8.2.3 Safety Checks and Maintenance Intervals

For the safe operation of stationary electrostatic spraying equipment for ignitable liquid coating products, intervals for periodical inspections are defined as follows:

Inspection point	Inspection interval	Remarks
Spray gun cleaning, spray gun flushing	Every day	Spray gun operating manual
Hoses, tubes, couplings	Every day	
Grounding measures	Weekly	Chapter Grounding the Device [▸▸ 12], Chapter Grounding
Inspection for damage	Weekly	Chapter Cleaning and Maintenance [▸▸ 43], Chapter Trouble shooting and solution [▸▸ 46]

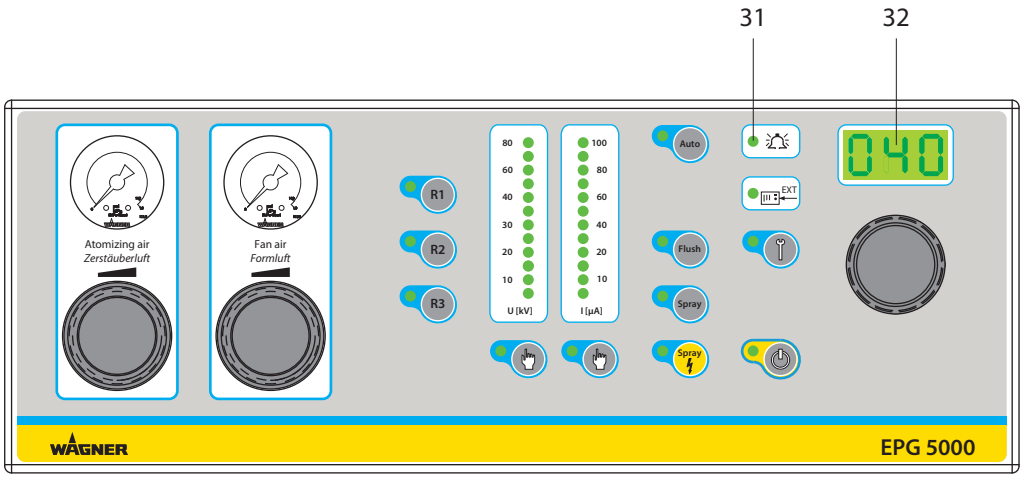
Inspection point	Inspection interval	Remarks
Locking of the technical ventilation with the electrostatic spraying equipment	Annually	Chapter Ventilation of the Spray Booth [▸▸ 26]

The above recommended intervals are maximum values and may be modified by the operator depending on the local and operational conditions and the contamination.

Damaged devices must be decommissioned and repaired immediately.

The functionality and completeness of the control unit must be checked regularly. All sealed elements on the control unit must be present and undamaged. During operation, all electric connections of the control unit have to be tightly sealed with the corresponding plug connectors or closing elements.

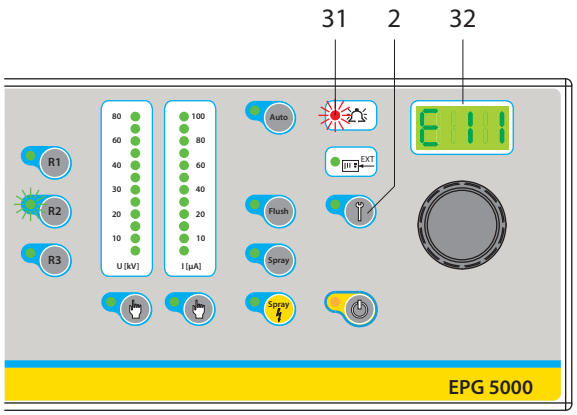
9 TROUBLE SHOOTING AND SOLUTION



B_05732

Functional fault	Cause	Solution
No illuminated display lights up	Mains supply not switched on	Check and switch on mains supply
	Fuses defective	Replace fuses
No high voltage	Spray gun cable not connected or defective	Connect spray gun cable
	Spray gun not connected or defective	Contact the WAGNER service department
	Excessive conductivity of the lacquer	See operating manual of spray gun
Malfunction LED (31) lights up. Fault message in display (32)	See the following table	See the following table

If the problem is not listed above consult your WAGNER Service Center.



B_05726

The fault LED (31) indicates faults. In addition, the error number is shown in the 7-segment display (32). If a fault occurs, the high voltage is immediately switched off. The user can only continue to work once the fault has been remedied and acknowledged with push button [Service] (2).

Code	Malfunction	Cause	Solution
E10	Ground monitoring	Grounding cable is interrupted	Check/replace spray gun cable, check replace spray gun

Code	Malfunction	Cause	Solution
		The spray gun is not connected	Connect spray gun
E11	No coil current/cascade interruption	The spray gun is not connected	Connect spray gun
		Spray gun cable is interrupted	Check/replace spray gun cable
		Cascade in spray gun is interrupted → defective	Check/replace spray gun
E12	Coil current too big	Cascade of the connected spray gun is defective	Check/replace spray gun
E13	No release	24 V DC release is missing or has been dropped	Check release cable and recreate the signal
E14	Control error	Plausibility check of external control Multiple control cables or bits set	Check control
E18-E25	Hardware error	Hardware defect has occurred	If problem persists, contact the WAGNER service department
E28-E31	Spray gun communication faulty (in connection with GM 5000)	No GM 5000 manual spray gun connected	Connect GM 5000 manual spray gun
		Spray gun cable defective	Check/replace spray gun cable
		Operating unit of spray gun defective	Contact the WAGNER service department
		Control unit defective	Contact the WAGNER service department
E51	Password error	Password not set	Password to be set by service center
E71	Service interface communication lost	Only relevant in service mode	Check PC client program and communication
E81-E88	CANopen communication error	Problems with the CANopen interface	Check cables, etc.

10 REPAIRS

10.1 REPAIR PERSONNEL

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

The following hazards may arise during repair work:

- risk to health from inhaling solvent vapors,
- use of unsuitable tools and aids.

A skilled person must check to ensure that the device is in a reliable state after it is repaired. A function test should be performed.

10.2 REPAIR NOTES

⚠ DANGER

Incorrect maintenance/repair!

Danger to life and equipment damage.

- Only a WAGNER service center or a suitably 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:
  - Relieve the pressure from the spray gun, product hoses and all devices.
  - Secure the spray gun against actuation.
  - Switch off the energy and compressed air supply.
  - Disconnect the control unit from the mains.
- Observe the operating and service manual for all work.

Before repair work

- Flush and clean system in accordance with Chapter Cleaning and Flushing [▸▸ 13] and in accordance with the operating manuals of the spray gun or the system.

After repair work

- Carry out safety checks in accordance with Chapter Verifying a Safe Operational Condition [▸▸ 26].
- Commission the system and check for leaks as described in the spray gun's operating manual.
- Function test in accordance with Chapter Verifying a Safe Operational Condition [▸▸ 26].

In accordance with DGUV 100-500 Chapter 2.29 and 2.36:

- Have the liquid ejection devices checked by an expert (e.g., WAGNER service technician) as required, but no later than every 12 months to ensure that they are in safe working order.
- For shut down devices, the examination can be suspended until the next start-up.

11 DISPOSAL

11.1 DEVICE

When the devices must be scrapped, please differentiate the disposal of the waste materials.

The following materials have been used:

- Stainless steel
- Carbide
- Aluminium
- Elastomers
- Plastics

NOTICE

Do not dispose of used electrical equipment with household refuse!

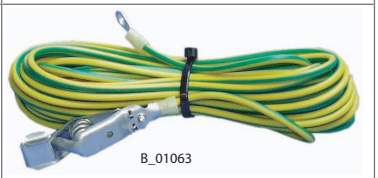
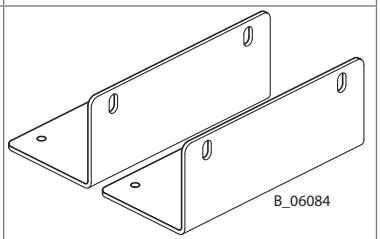
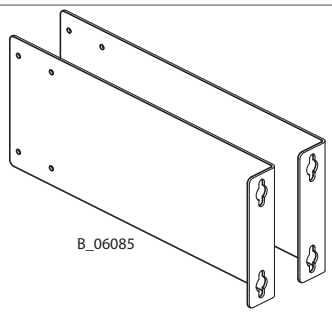
This product may not be disposed of with the household refuse, but must be recycled in an environmentally correct manner.

- 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.

11.2 CONSUMABLE PRODUCTS

Consumable products (lacquers, adhesives, flushing and cleaning agents) must be disposed of in accordance with all applicable legal requirements.

12 ACCESSORIES

Order no.	Designation	
241270	Mains cable for Europe 3 m; 9.8 ft	 B_01065
2330628	Mains cable for Europe 10 m; 32.8 ft	
241271	Mains cable for Switzerland 3 m; 9.8 ft	
264626	Mains cable for USA 2 m; 6.6 ft	
264625	Mains cable for Japan 3 m; 9.8 ft	
360391	EPG 5000 interface cable 15 m; 49.21 ft	 B_03471
360393	EPG 5000 interface cable 5 m; 16.40 ft	
130215	Grounding cable 10 m; 32.8 ft	 B_01063
264332	Grounding cable connection 0.75 m; 2.5 ft	 B_01064
2369616	19" rack fastening, complete	 B_06084
2369636	Wall mount, complete	 B_06085

Hose set and spray gun cable

Please refer to the gun manual.

13 SPARE PARTS

13.1 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.

13.2 NOTES ON USING SPARE PARTS

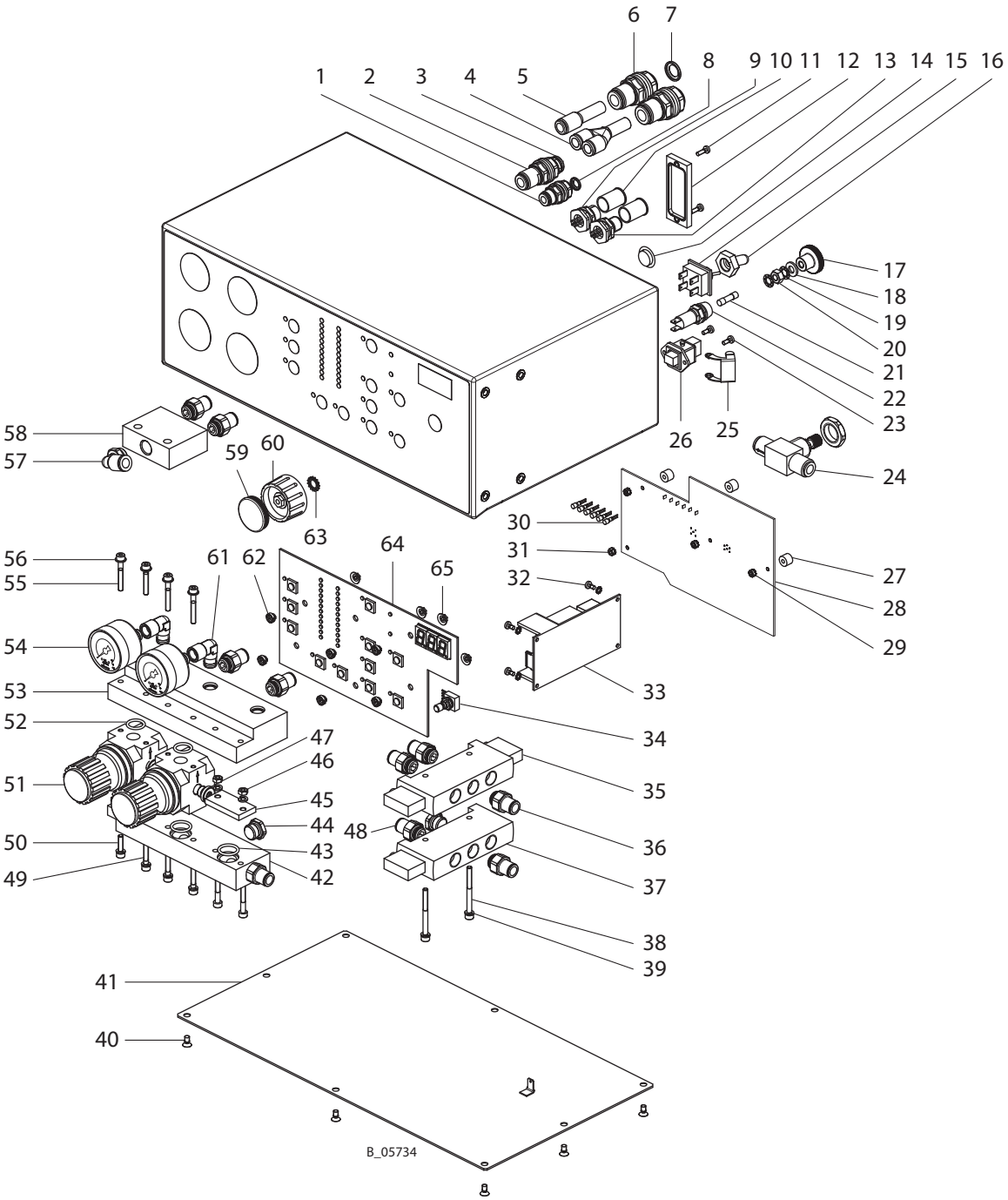
⚠ DANGER

Incorrect maintenance/repair!

Danger to life and equipment damage.

- Only a WAGNER service center or a suitably 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:
  - Relieve the pressure from the spray gun, product hoses and all devices.
  - Secure the spray gun against actuation.
  - Switch off the energy and compressed air supply.
  - Disconnect the control unit from the mains.
- Observe the operating and service manual for all work.

13.3 SPARE PARTS LIST FOR EPG 5000 CONTROL UNIT



Pos	K	Stk	Order no.	Designation
1		1	9998614	Hermetic plug connection, straight
2		1	9998615	Hermetic plug connection, straight
3		1	9998616	Coding ring, green
4		1	2359304	Y plug
5		1	9998154	Reducer
6		2	9998769	Hermetic plug connection, straight

Pos	K	Stk	Order no.	Designation
7		1	9998770	Coding ring, blue
8		1	9998995	Coding ring, red
9		1	2316679	Socket, M12, 5-pin
10		2	2359283	CAN plug protective cap
11		2	9903311	Recessed head fillister head screw, H form
12		1	241323	Cover
13		1	2316680	Connector plug, M12
14		1	9955130	Protective cap
15		1	9953536	Toggle switch, 2-pin
16		1	9971519	Rubber seal
17		1	9910522	High knurled nut
18		1	9920118	Washer
19		2	9922109	Lock washer with internal teeth
20		1	9910102	Hexagon nut
21	♦	1	9951117	Slow-acting fuse, 1.0 AT
22		1	2348276	Fuse socket
23		2	9903306	Recessed head fillister head screw, H form
24		1	9999223	Adjustable check-valve
25		1	9950330	Safety clip
26		1	9952587	Connector plug
27		4	263400	Distance bush
28		1	2365133	Control PCB, complete
29		8	9922011	Serrated lock washer, externally toothed
30		6	2359306	Quick-connect receptacle
31		4	9910103	Hexagon nut
32		4	9903312	Recessed head fillister head screw, H form
33		1	2352818	Switching power supply
34		1	2304459	Incremental encoder
35		1	2359299	5/3 solenoid valve
36		9	9998254	Straight screw-in fitting
37		1	2359300	5/2 solenoid valve
38		2	9900375	Hexagon socket head cap screw
39		8	9921511	Spring washer
40		8	2306405	Recessed countersunk head screw, Z form
41		1	2353727	Cover
42		1	2335186	Air input, 3-fold
43		3	9974166	O-ring
44		2	9998274	Threaded plug, G1/4"
45		1	2359503	Sealing plate
46		2	9910108	Hexagon nut
47		2	9998675	Threaded plug, G1/8"

Pos	K	Stk	Order no.	Designation
48		1	9998255	Straight threaded fitting
49		5	9900386	Hexagon socket head cap screw
50		1	9900308	Hexagon socket head cap screw
51		2	2309972	Pressure regulator valve
52		2	9971313	O-ring
53		1	2335187	Air output, 3-fold
54		2	9998677	Pressure gauge, 0-10 bar
55		4	9900365	Hexagon socket head cap screw
56		4	9921511	Spring washer
57		1	9998253	Male stud elbow
58		1	9943138	OR gate
59		1	2304462	Cover
60		1	2304461	Rotary knob
61		2	9992289	Male stud elbow
62		6	2309112	Spacer
63		1	2329441	Serrated lock washer, externally toothed
64		1	2365132	Display PCB, complete (with position 34)
65		6	2312348	Hexagon lock nut

♦ = wearing parts

14 DECLARATION OF CONFORMITY

14.1 UK DECLARATION OF CONFORMITY

UK Declaration of Conformity as defined by the UK statutory requirement UK SI 2016 No. 1107.

Herewith we declare that the supplied version of:

Electrostatic spraying system		
EPG 5000	GA 5000EA / GM 5000EA	GA 5000EAC / GM 5000EAC

complies with the following provisions applying to it:

SI 2016/1597	SI 2016/1107	SI 2016/1091	SI 2012/3032

Applied standards, in particular:

BS EN ISO 12100:2010	BS EN 50176:2009
BS EN 1953:2013	BS EN IEC 61000-6-2:2019
BS EN IEC 60204-1:2019	BS EN IEC 61000-6-4:2019
BS EN 60529:1992+A2:2013	BS EN IEC 63000:2018
BS EN 50050-1:2013	--

Applied national technical standards and specifications, in particular:

--

Type examination certificate:

CSAE 21 UKEX 5232 X

Quality certificate for the quality assurance system:

CSAE 21 UKQAN 0022

Identification:

Control unit UKCA 0518 Ex II (2) G
CSAE 21 UKEX 5232 X

Spray gun: UKCA 0518 Ex II 2 G 0.24mJ
CSAE 21 UKEX 5232 X

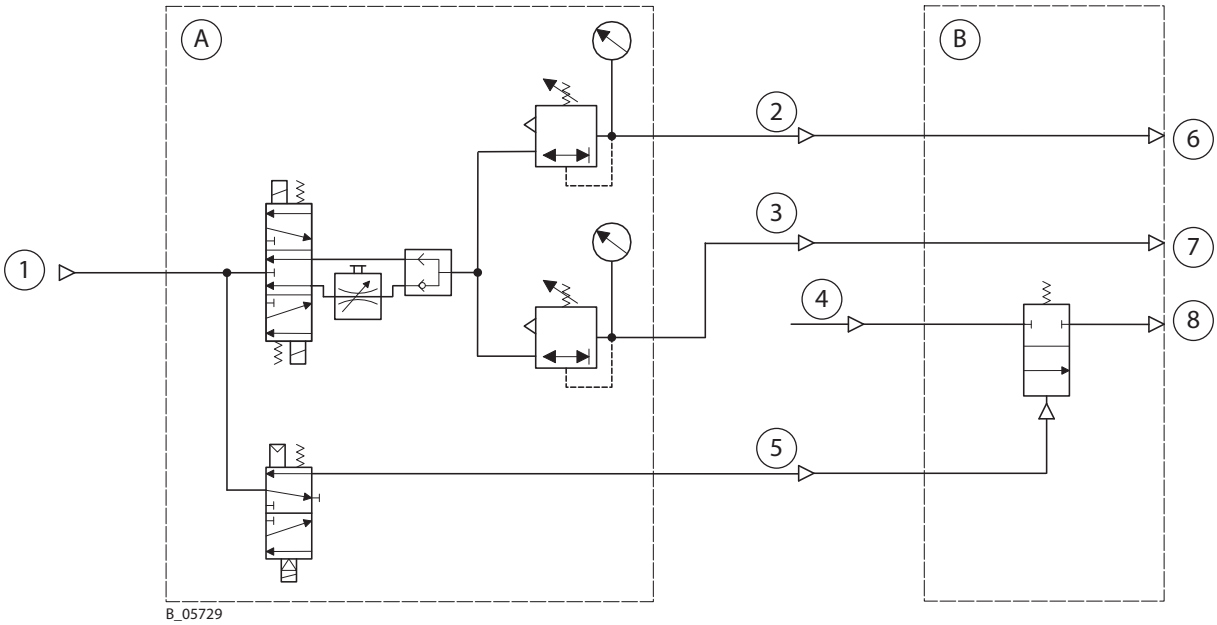
Declaration of Conformity

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: 2360925

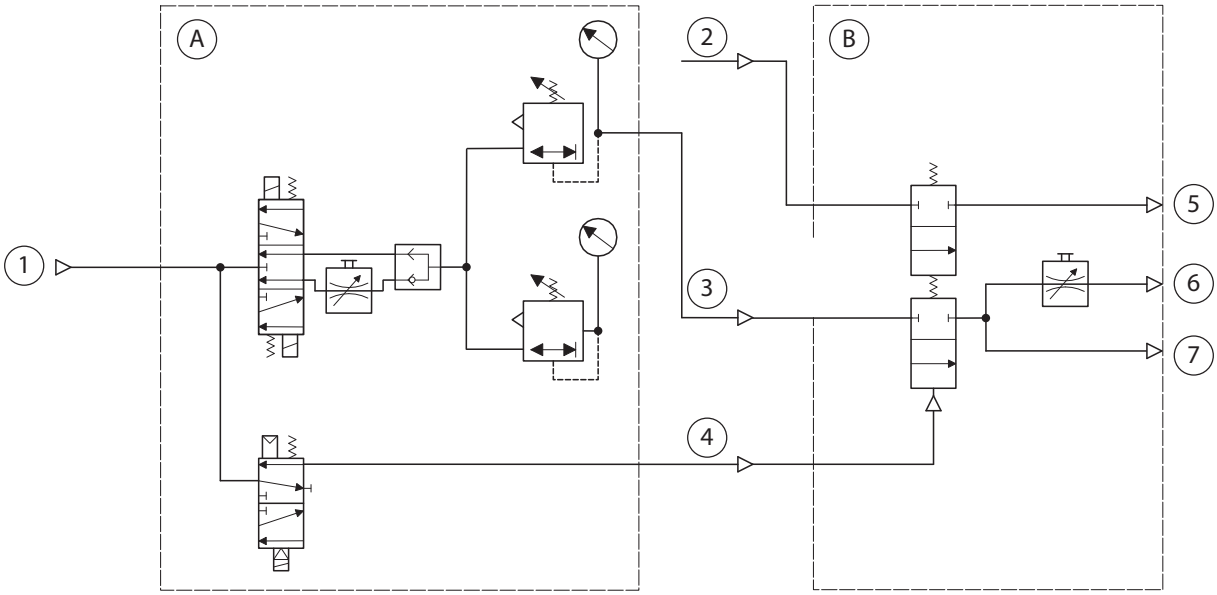
15 CONNECTION PLANS

15.1 GA 5000 EC PNEUMATIC DIAGRAM



A	EPG 5000	4	Product
B	GA 5000EC	5	Control air
1	Inlet air	6	Atomizing air
2	Atomizing air	7	Shaping air
3	Shaping air	8	Nozzle

15.2 GA 5000 IC PNEUMATIC DIAGRAM



A	EPG 5000	4	Control air
B	GA 5000IC	5	Nozzle
1	Inlet air	6	Shaping air
2	Product	7	Atomizing air
3	Shaping air atomizing air		

Order number 2432003
Edition 12/2021

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Document number 11447589
Version B

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Subject to changes without notice