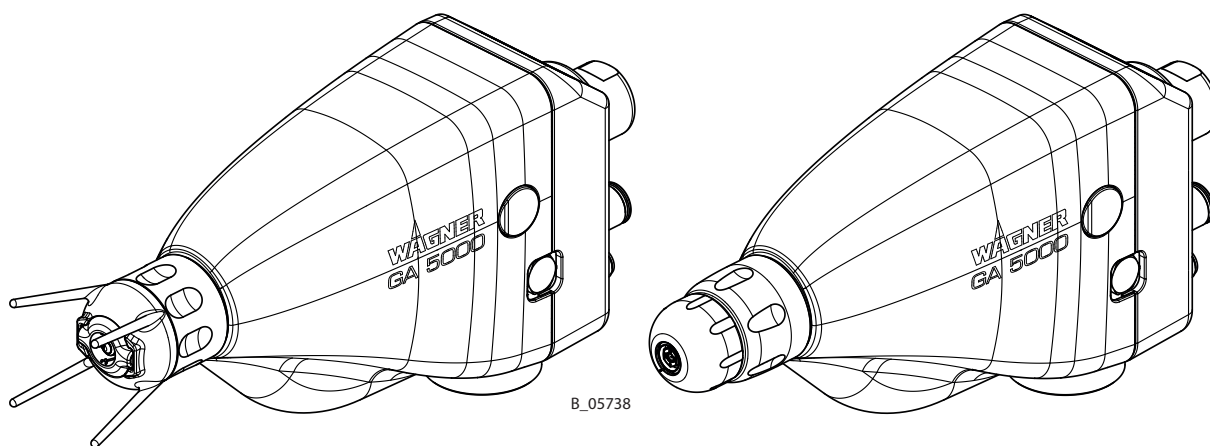




GA 5000EAC

Electrostatic Automatic Spray Gun (AirCoat)

Translation of the Original Operating Manual

CE 0102  II 2 G 0.24 mJ

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: 09/2022

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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.
	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 GA 5000EAC is available in the following languages:

Original operating manual

Language	Order no.
German	2360921

Translation of the original operating manual

Language	Order no.	Language	Order no.
English	2360922	Spanish	2367696
French	2367694	Russian	2373688
Italian	2367695	Chinese	2373690
Japanese	2382578		

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
GA	Automatic gun
EAC	Electrostatic AirCoat
IC	Shaping and atomizing air controlled via valve within gun
EC	Shaping and atomizing air controlled via valve outside of gun
Low R	Low resistance
SW	Wrench size

Materials

SSt	Stainless steel
-----	-----------------

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 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

Electrostatic automatic spray gun for coating of grounded work pieces in automatic coating systems.

2.2 TYPE OF USE

The GA 5000EAC electrostatic automatic spray gun is suitable for spraying liquid products, particularly coating products. 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.

2.3 FOR USE IN POTENTIALLY EXPLOSIVE AREAS

The GA 5000EAC electrostatic automatic spray gun is suitable for coating electrically conductive objects with liquid coating products and can be used in potentially explosive areas.

(See Explosion Protection Identification in chapter Explosion Protection Identification [►► 11].)



2.4 PROCESSIBLE WORKING MATERIALS

- ▶ Coating products whose ingredients contain substances of explosion class IIA and IIB (maximum ignition energy 0.24 mJ) can be processed with the GA 5000EAC spray gun.
- ▶ The basic spray gun version is suitable for processing sprayed substances with an electrical resistance of $> 150 \text{ k}\Omega$ (according to the WAGNER scale). Equipped with a special product hose for low-resistance sprayed substances (available as an accessory), you can also successfully process sprayed substances with an electrical resistance $> 50 \text{ k}\Omega$ (according to the WAGNER scale).
- ▶ When processing metallic lacquers, it is advisable to use the spiral hose.
- ▶ The application effectiveness is always dependant on the composition of the product being used, e.g., pigments or resin.

Conversion of Paint Resistance

There are paint resistance measuring devices available on the market that do not directly measure the specific paint resistance.

Multiplying the result of the measurement with the device-specific cell constant (K), we obtain the specific resistance value of the product.

Example:

With WAGNER's paint resistance measuring device the cell constant is K 123.

Measured value according to the WAGNER scale $R = 500 \text{ k}\Omega$

Specific resistance (RS)

$$RS = R \times K = 500 \text{ k}\Omega \times 123 = 61.5 \text{ M}\Omega \text{ cm}$$

Note:

Using sprayed substances with too low an electrical resistance, the application of electrostatics does not show any effect, i.e. there is no "paint wrap around" on the object to be sprayed.

The suitability of the spray product with regard to the charging ability can be read from the actual values for high voltage (kV) and for the spray current (μA) shown in the illuminated displays on the EPG 5000 control unit.

High kV value, low μA value

= ok

Low kV value, high μA value

= excessive conductivity of the paint

▶ no wrap-around

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 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

As defined in the Directive 2014/34/EU (ATEX), the device is suitable for use in potentially explosive areas.

Device Type	Electrostatic automatic spray gun GA 5000EAC
Manufacturer	Wagner International AG 9450 Altstätten Switzerland



  II 2 G 0.24 mJ
SIRA 16 ATEX 5290 X

CE	European Communities
0102	Notified body: PTB
Ex	Explosion-proof equipment
II	Device group II (not mining)
2	Category 2 device (suitable for zone 1)
G	Ex-atmosphere gas
0.24 mJ	Maximum ignition energy
SIRA 16 ATEX 5290 X	Number of type examination certificate "X": see chapter Identification "X" [►► 11].



Temperature notes

- Maximum surface temperature: 85 °C; 185 °F
- Maximum permissible product temperature: 50 °C; 122 °F
- Permissible ambient temperature: 0 to +40 °C; +32 to +104 °F

3.2 IDENTIFICATION "X"

Notice: SIRA 16 ATEX 5290 X

The EU 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 cables assigned to the device may be used (see chapter Accessories [►► 69]).

Permissible device combinations

The GA 5000EAC automatic spray gun may only be connected to the control units listed below:

- EPG 5000

⚠ WARNING

Incorrect use!

Risk of injury and damage to the device.

- ▶ Connect the GA 5000EAC automatic spray gun only to original WAGNER control units.

3.3 USE IN AREAS SUBJECT TO EXPLOSION HAZARDS

Electrostatic surface spraying

- ▶ Never spray device parts using electrostatic equipment (electrostatic spray gun)!



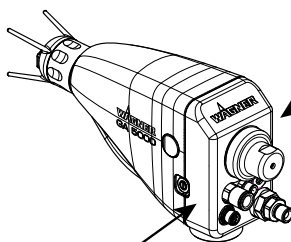
Cleaning

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



Wagner International AG
 CH-9450 Altstätten
 GA 5000EACIC Art. Nr. 2357746
 high voltage: max. 80kV DC
 current: max. 100uA DC
 max. mat. pressure: 25MPa; 250bar; 3626psi
 max. air pressure: 0.8Pa; 8bar; 116psi

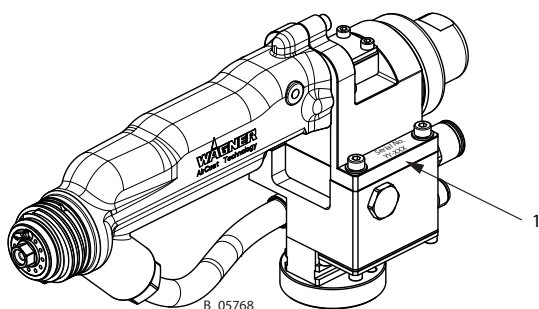
GA 5000EACIC

UK CA 0518 CE 0102 Ex II 2 G 0.24mJ
 SIRA 16 ATEX 5290 X CSAE 21 UKEX 5232 X
 EN 50176:2009 BS EN 50176:2009
 EN 50050-1:2013 BS EN 50050-1:2013
 Ta = 0°C - 40°C, Temp code = T6

Wagner International AG
 CH-9450 Altstätten
 GA 5000EACEC Art. Nr. 2360829
 high voltage: max. 80kV DC
 current: max. 100uA DC
 max. mat. pressure: 25MPa; 250bar; 3626psi
 max. air pressure: 0.8Pa; 8bar; 116psi

GA 5000EACEC

UK CA 0518 CE 0102 Ex II 2 G 0.24mJ
 SIRA 16 ATEX 5290 X CSAE 21 UKEX 5232 X
 EN 50176:2009 BS EN 50176:2009
 EN 50050-1:2013 BS EN 50050-1:2013
 Ta = 0°C - 40°C, Temp code = T6



1 Serial number

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.
- ▶ 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 EN 1081:2018+A1:2020 or 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. Footwear must comply with EN 20344. 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 comply with 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 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 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 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 cause 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.

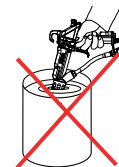
An explosive gas/air mixture forms in closed tanks.

- ▶ 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 $> 43^{\circ}\text{C}$; 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 the chapters Accessories [▶▶ 69] 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:
 - ▶ 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.

4.2.9 Safety-Relevant Information about Discharges

The plastic parts of the spray gun are charged electrostatically by the high-voltage field. In case of contact with plastic parts, harmless discharges (brush discharges) may occur. They are completely non-hazardous for human health.

When keeping a distance of 4 to 10 mm; 0.15 to 0.4 inch between the spray gun and the object to be sprayed, the corona discharge at the end of the electrode is visible in the dark.

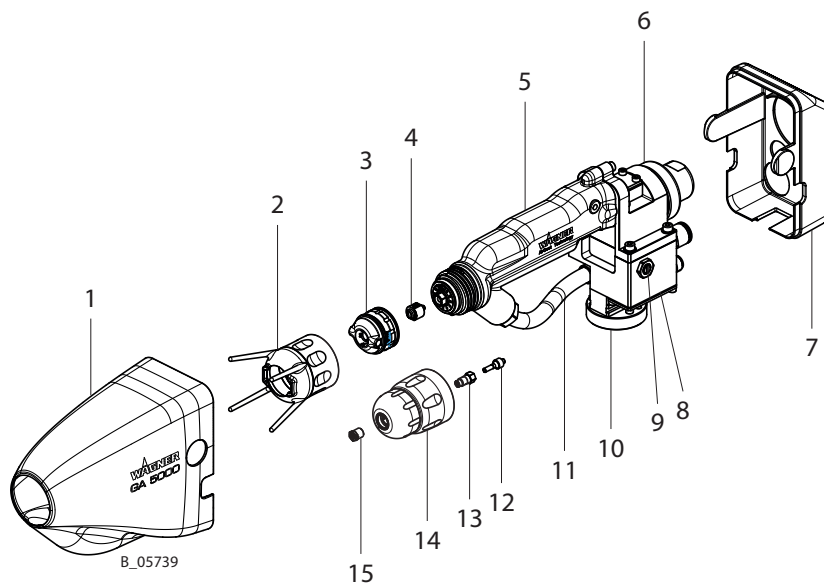
4.2.10 Setting up Stationary Electrostatic Systems

The spray gun is a component of a stationary coating system. When setting up stationary coating systems, comply strictly with EN 50176. One of the requirements is that activation of the high voltage is only possible by using a key. But it must be possible to switch off the high voltage without a key.

5 DESCRIPTION

5.1 STRUCTURE (BASIC VERSION)

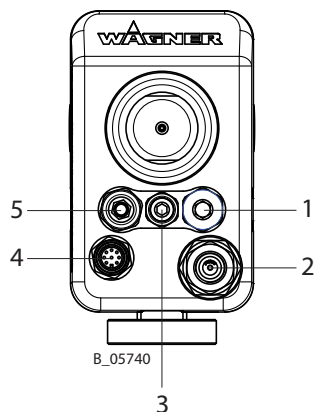
5.1.1 GA 5000EACIC Design



1	Front cover	9	Shaping air setting
2	Union nut on nozzle protection	10	Gun holder
3	Air cap	11	Product hose
4	Flat jet nozzle	12	Sealing fitting
5	Gun adapter	13	Nozzle screw joint
6	Piston housing	14	Nozzle attachment
7	Rear cover	15	Round jet nozzle
8	Air diffuser housing		

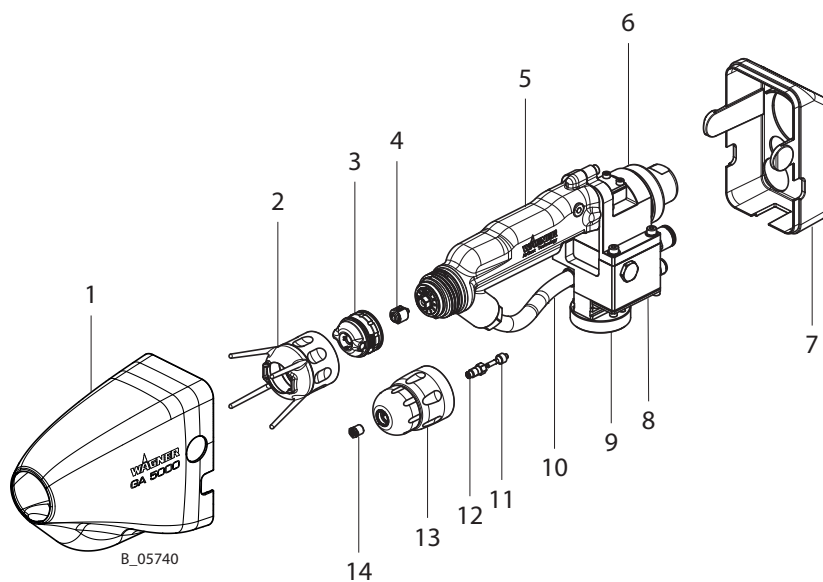
Order numbers see chapter Round Jet Nozzles [►► 69]

Connections on the rear side:



1	Connection closed with dummy plug	4	Gun cable connection
2	Product connection NPSM 1/4"	5	Shaping air or atomizing air connection (D10/blue)
3	Control air connection (D6/red)		

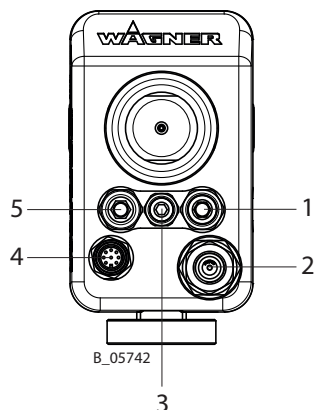
5.1.2 GA 5000EACEC Design



1	Front cover	8	Air diffuser housing
2	Union nut on nozzle protection	9	Gun holder
3	Air cap	10	Product hose
4	Flat jet nozzle	11	Sealing fitting
5	Gun adapter	12	Nozzle screw joint
6	Piston housing	13	Nozzle attachment
7	Rear cover	14	Round jet nozzle

Order numbers see chapter Round Jet Nozzles [► 69]

Connections on the rear side:



1	Atomizing air connection (D10/blue)	4	Gun cable connection
2	Product connection	5	Shaping air connection (D8/green)
3	Control air connection (D6/red)		

5.2 GENERAL INFORMATION ON MODE OF OPERATION

Note:

Operation of the spray gun in conjunction with the EPG 5000 control unit is described in this operating manual.

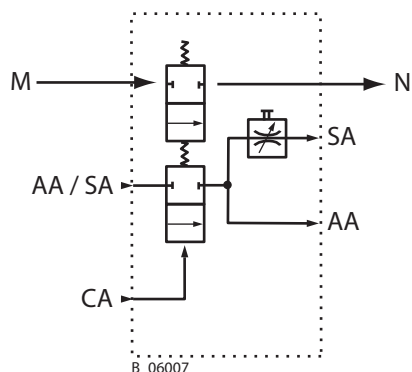
- The high voltage for the GA 5000EAC spray gun is activated directly on the EPG 5000 control unit or by a signal from the superordinate controller.
- The high voltage for the spray gun can be set via the voltage regulator on the EPG 5000 and can be adjusted to the paint or to the spraying object.

Securing the gun:

1. Switch off the mains at the EPG 5000.
2. Switch off the air supply at the EPG 5000.
3. Relieve the pressure of the spray gun and system.

5.2.1 Functioning

GA 5000EACIC:



Pneumatic diagram

SA	Shaping air	M	Material
AA	Atomizing air	N	Nozzle
CA	Control air		

Open:

The piston in the drive is charged with control air and moves toward the rear. This ensures that the air valve which releases the shaping and atomizing air is opened first. The product valve is then opened with a mechanical delay. In this position, the pressurized coating product is applied to the work piece.

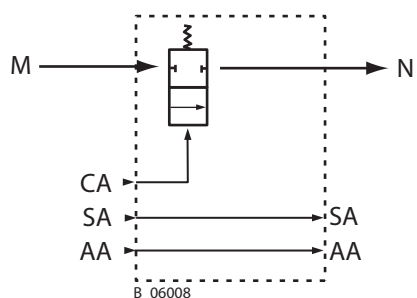
Close:

The piston is relieved, and the product valve closes due to the pressure spring which presses against the product valve tappet. The air valve is then closed, again with a spring force and mechanical delay.

Additional functions:

The shaping air throttle is used to regulate the shaping air volume, while the atomizing air is adjusted via an external pressure regulator. The two air streams do not flow separately until they are downstream of the air valve, so that the pressure of the shaping air corresponds roughly to that of the atomizing air and so that they influence each other during adjustment.

GA 5000EACEC:



Pneumatic diagram

SA	Shaping air	M	Material
AA	Atomizing air	N	Nozzle
CA	Control air		

Open:

First, the external air valve, which enables the shaping and atomizing air, is opened. The diaphragm in the drive is then charged with control air and moves toward the rear, opening the product valve. In this position, the pressurized coating product is applied to the work piece.

Close:

If the control air is deactivated, the product valve closes due to the pressure spring. The air valve is then closed externally.

Additional functions:

The shaping air pressure and the atomizing air pressure are set externally via separate pressure regulators. Both air flows are supplied separately, which allows them to be set separately.

5.3 PROTECTIVE AND MONITORING EQUIPMENT

WARNING

Protective and monitoring equipment

Risk of injury and damage to the device.

- ▶ 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.



The following functions are provided for safety:

- Electrical monitoring of high voltage and spray current (maximum ignition energy 0.24 mJ) → No ignition danger and no danger to persons.
- Electrical ground monitoring of the spray gun
- Anti-contact guard for flat jet nozzle

5.4 EXTENT OF DELIVERY

Stk	Order no.	Designation
1	2360898	Spray gun, GA 5000EACIC
1	2360899	Spray gun, GA 5000EACEC
	The spray guns are delivered without control unit, product and air hose, electric cable, air cap and nozzle.	

Each spray gun includes the following as standard equipment:

Stk	Order no.	Designation
1	2309368	Valve needle assembly tool
1	2325263	Clamping screw assembly tool
1	2360925	Declaration of Conformity for ES 5000 Automatic
1	2360921	Operating manual, in German
1	see chapter Languages [►► 7]	Operating manual in local language

The basic spray gun version can be adapted optimally to any application depending upon the requirements and the desired accessories with the help of the spray gun configurator.

The delivery note shows the exact scope of delivery.

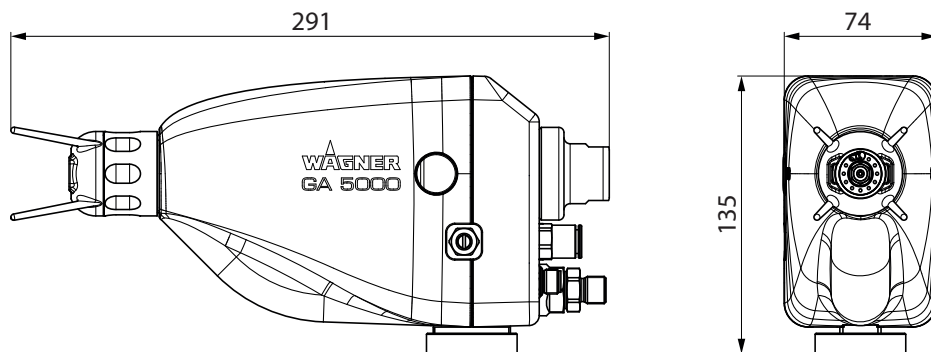
5.5 TECHNICAL DATA

Description	Units	GA 5000EAC
Control air pressure (open product valve)	MPa bar psi	0.4-0.8 4-8 58-116
Maximum air pressure	MPa bar psi	0.8 8 116
Maximum product pressure	MPa bar psi	25 250 3626
Polarity		negative
Maximum discharge energy	mJ	0.24
Product connection	inch	NPSM 1/4"-18
Atomizer air connection		D10
Shaping air connection (only for GA 5000EAC)		D8
Control air connection		D6
Weight (without hose set)	kg lb	1.0 kg 2.2 lb
Flow rate	according to nozzle size (see nozzle table in Accessories [►► 69] chapter)	
Input voltage, maximum	Vpp	20
Input current, maximum	A AC	1.0
Output voltage, maximum	kV DC	80
Output current, maximum	µA DC	100
Operating temperature range	°C °F	0 – 40 32 – 104
Maximum permissible product temperature:	°C °F	50 122
Maximum surface temperature	°C °F	85 185
Compressed air quality: free from oil and water	Quality standard 6.5.2 according to ISO 8573.1, 2010	
	mg/m ³ °C mg/m ³	6: Particle density ≤ 5 5: Humidity: pressure dew point ≤ +7 2: Oil content ≤ 0.1
Sound level at 0.3 MPa; 3 bar; 43.5 psi air pressure and 11 MPa; 110 bar; 1549 psi product pressure *	dB(A)	73

* A-rated emission sound pressure level measured at 1 m distance, LpA 1 m, according to DIN EN 14462:2015.

5.5.1 Dimensions of GA 5000EAC

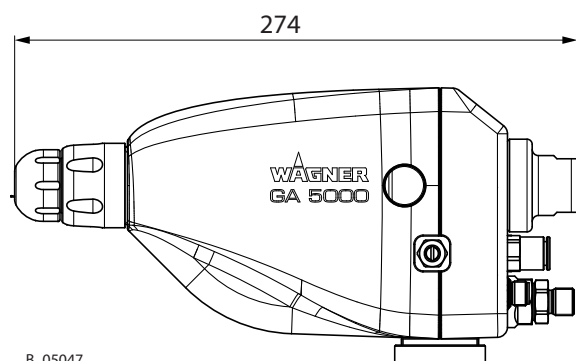
GA 5000EAC with flat jet nozzle



B_05748

Measurements in mm

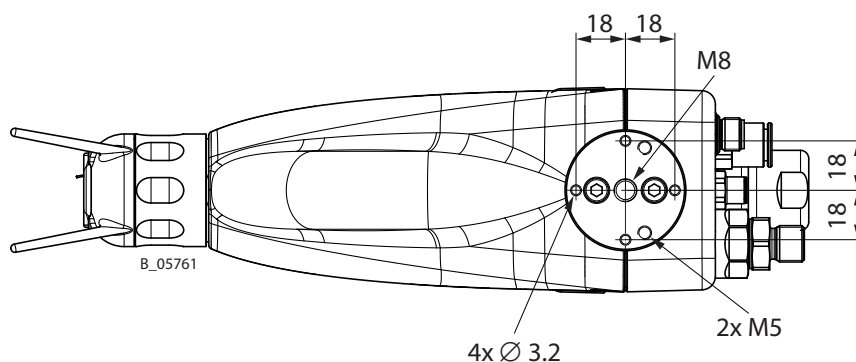
GA 5000EAC with round jet nozzle



B_05047

Measurements in mm

Connecting dimensions of the connection plate:

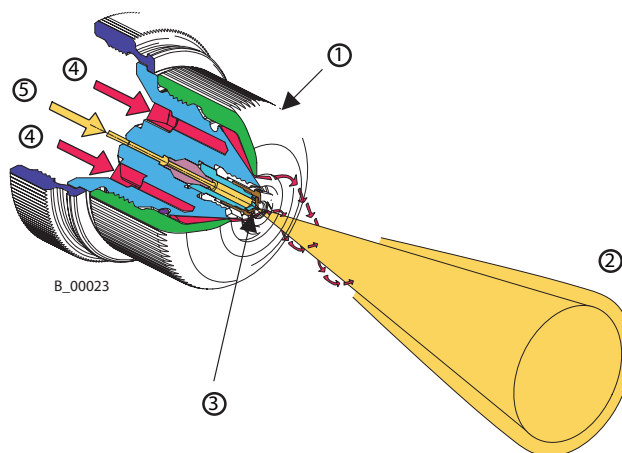


Measurements in mm

5.6 SPRAYING PROCEDURE

5.6.1 Spraying Procedure with Round Jet Nozzle

In the AirCoat process, the spray product is atomized under a pressure of 3-15 MPa; 30-150 bar; 435-2176 psi. With the help of an air pressure of 0-0.25 MPa; 0-2.5 bar; 0-36 psi, a soft spray jet is produced. The spray jet size can be adjusted by turning the nozzle nut.



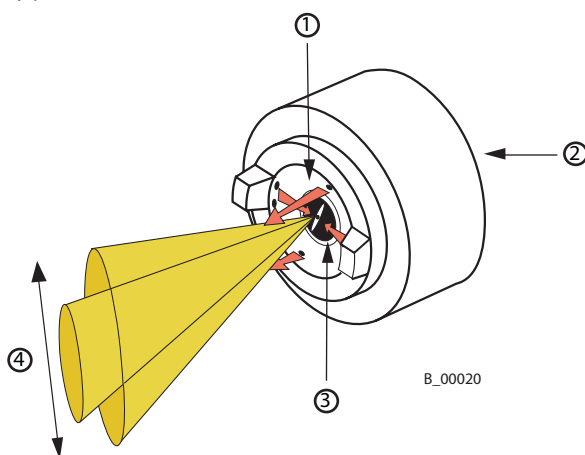
1	Nozzle nut	4	AirCoat air
2	Spray jet	5	Spray product
3	Multi-channel swirl nozzle		

Advantages

- Large application volume
- Low fogging tendency
- Good finish
- High-viscosity products can easily be processed
- Long service life of the nozzles
- Spray jet width adjustment

5.6.2 Spray process with Flat Jet Nozzle

In the AirCoat process, the spray product is atomized under a pressure of 3-15 MPa; 30-150 bar; 435-2176 psi. With the help of the AirCoat air, with a pressure of 0-0.25 MPa; 0-2.5 bar; 0-36 psi, a soft, flat spray jet is produced which largely eliminates the problem of overlapping in the peripheral zones. With shaping air, there is the possibility of reducing the width of the spray jet.



1	Shaping air	3	Atomizing air
2	Air cap	4	Variable spray jet width

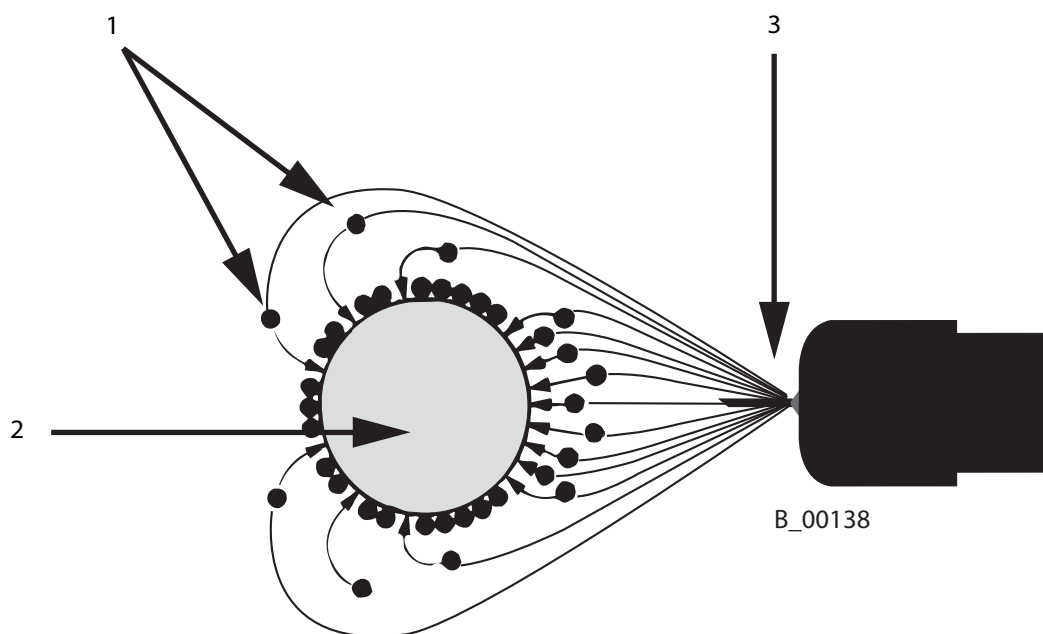
Advantages

- Large application volume

- Low fogging tendency
- Good finish
- High-viscosity products can easily be processed
- Long service life of the nozzles
- Spray jet width adjustment

5.6.3 The Electrostatic Effect

The spray gun produces an electrostatic field by means of the high-voltage electrode. As a result, the paint particles atomized by the spray gun are carried to the grounded work piece by kinetic and electrostatic energy, where they adhere finely dispersed to the object to be sprayed.



1	Paint particle	3	Electrode
2	Object to be sprayed is conductive and grounded		

Advantages

- Very high application effectiveness
- Low over spray
- Coating of entire circumferences due to the electrostatic effect
- Savings in working time

5.7 THE WAGNER ELECTROSTATIC AIRCOAT SPRAYING SYSTEM

The nozzle range (Accessories [►► 69] chapter) provided by WAGNER allows optimum coating results for any application.

General criteria for selection of nozzles

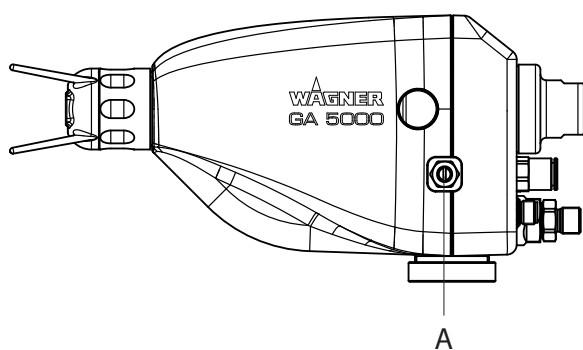
Flat jet → parts with large surfaces
Round jet → for smaller delicate parts

Options for influencing the jet spray / spray pattern:

Description		Modification
Product pressure	P_{MAT}	+ or -
Atomising air pressure	P_{ZL}	+ or -
Air regulation	L_{FL}	From open to closed
Nozzle sizes	DS	Flow rate
Electrostatics	ES	+ or - or off

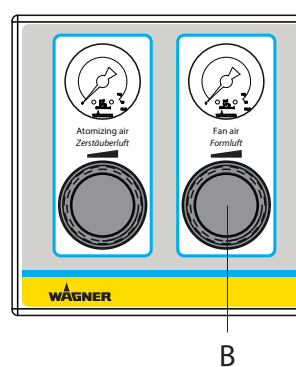
The spray jet width of the GA 5000EACIC spray gun is adjusted via the shaping air regulation (A) on the gun and on the GA 5000EACEC spray gun with the air control knob (B) on the EPG 5000 control unit in the case of flat jet spraying.

GA 5000EACIC



B_05769

GA 5000EACEC



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.

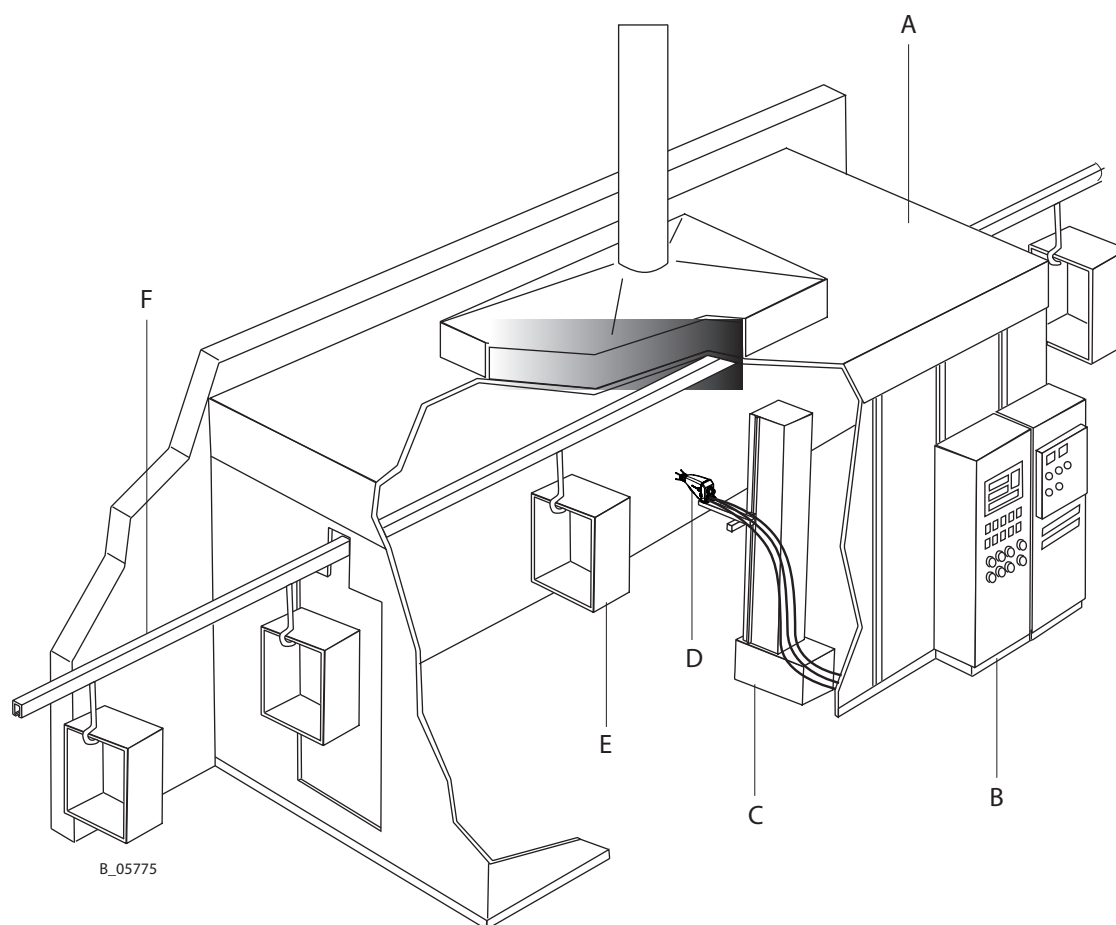
The relative air humidity at the installation site must be between 10 and 95% (without condensation).

6.4 ASSEMBLY AND INSTALLATION

6.4.1 Typical Electrostatic Spraying System

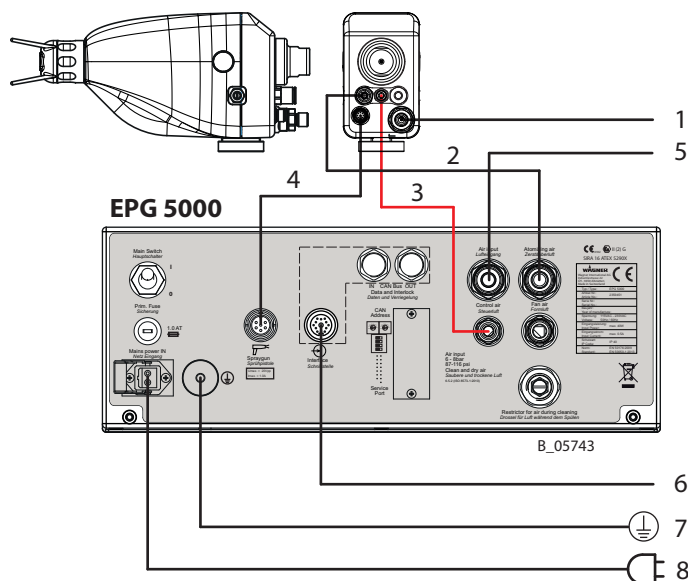
The GA 5000EAC spray gun must be combined with various components to make up a spraying system. The system shown in the figure is only one example of a spraying system. Your WAGNER distributor would be happy to assist you in creating a spraying system solution that meets your individual needs.

You must familiarize yourself with the operating manuals and the safety regulations of all additional system components before starting commissioning.



A	Spray booth	D	Electrostatic spray gun
B	Controller	E	Work piece
C	Reciprocator	F	Conveyor

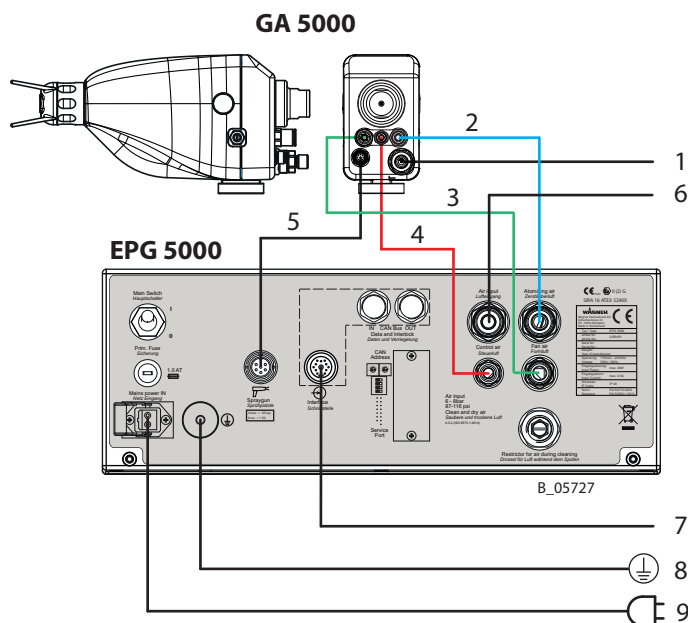
GA 5000



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

1. Place the control unit outside the explosion zone.
2. Mount spray gun to a grounded gun support.
3. Connect the grounding cable to the control unit and the signal ground.
4. Connect the gun connection cable to the control unit.
5. Connect the control unit to the higher-level controller (if available).
6. Connect the air hoses to the control unit and the spray gun in accordance with the figure.
7. Set all airs to "0" using the regulator on the front side of the control unit!
8. Connect the control unit to the compressed air supply.
9. Connect the spray gun to the product supply system.
10. Connect the control unit to the power supply.

6.4.3 Connecting the GA 5000EACEC Spray Gun



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

1. Place the control unit outside the explosion zone.
2. Mount spray gun to a grounded gun support.
3. Connect the grounding cable to the control unit and the signal ground.
4. Connect the gun connection cable to the control unit.
5. Connect the control unit to the higher-level controller (if available).
6. Connect the air hoses to the control unit and the spray gun in accordance with the figure.
7. Set all airs to "0" using the regulator on the front side of the control unit!
8. Connect the control unit to the compressed air supply.
9. Connect the spray gun to the product supply system.
10. Connect the control unit to the power supply.

6.4.4 Ventilation of the Spray Booth

The electrostatic spraying equipment may only be operated in defined spraying areas and in accordance with the 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.



6.4.5 Air Supply Lines

WARNING

Hose connections!

Risk of injury and damage to the device.

- ▶ Do not mix up hose connections of product hose and air hose.
- ▶ Ensure that only dry, clean atomizing air is used in the spray gun! Dirt and moisture in the atomizing air worsens the spraying quality and spray pattern.



6.4.6 Product Supply Lines

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.

DANGER

Bursting hose, bursting threaded joints!

Danger to life from injection of product.

- ▶ Ensure that the hose material is chemically resistant to the sprayed products.
- ▶ Ensure that the spray gun, fittings and product hose between the device and the spray gun are suitable for the pressure generated in the device.
- ▶ Ensure that the following information can be seen on the high-pressure hose:
 - ▶ Manufacturer
 - ▶ Permissible operating pressure
 - ▶ Date of manufacture



6.4.7 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 EN 16985:2018.

⚠ DANGER

Discharge of electrostatically charged components in atmospheres containing solvents!

Explosion hazard from electrostatic sparks or flames.

- ▶ Earth all unit components.
- ▶ Earth the workpieces being painted.
- ▶ Use only a damp cloth to clean the device.



⚠ WARNING

Heavy paint mist if grounding is insufficient!

Risk of poisoning.

Insufficient paint application quality

- ▶ Earth all unit components.
- ▶ Earth the workpieces being painted.

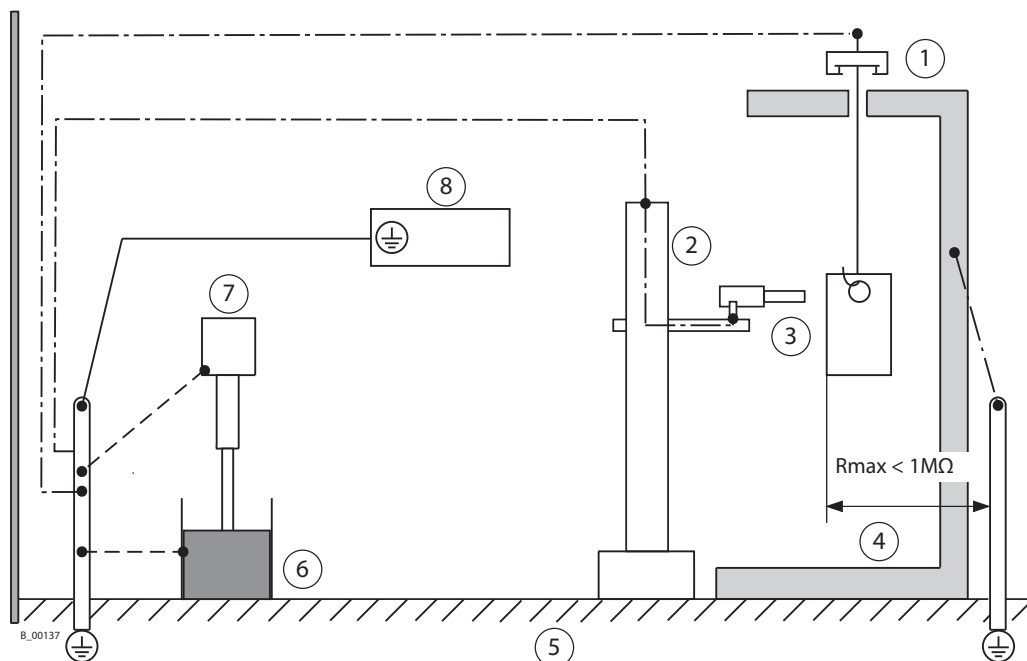


A poorly grounded work piece causes:

- 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.
- Mount spray gun to a grounded gun support.
- 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 mm ² / AWG 6
2	Reciprocator	16 mm ² / AWG 6
3	Work piece	16 mm ² / AWG 6
4	Spraying stand	—
5	Floor, static dissipative	—
6	Paint tank	4 mm ² / AWG 12
7	Product supply	4 mm ² / AWG 12
8	Control unit	4 mm ² / AWG 12

6.5 LACQUER PREPARATIONS

The viscosity of the lacquer is of great importance. The best spraying results are obtained with values between 25 and 40 DIN/4 seconds (measured in immersion flow cup DIN 4 mm; 0.16 inch).

Processing of up to 60 DIN/4 seconds is generally possible without problem if high coating thicknesses are required.

With the WAGNER AirCoat flat jet spraying process, the different viscosities of the lacquer are optimally covered by two air cap types. These can be found in "Accessories".

In the case of application problems contact the lacquer manufacturer.

6.5.1 Viscosity Conversion Table

Millipascal × sec	Centipoise	Poise	DIN cup 4 mm	ISO cup			Ford cup Number 4	Zahn cup Number 2
				4 mm	5 mm	6 mm		
mPa s	cP	P	sec	sec	sec	sec	sec	sec
10	10	0.1	--	14	--	--	5	16
15	15	0.15	--	17	--	--	8	17
20	20	0.2	--	20	--	--	10	18
25	25	0.25	14	23	--	--	12	19
30	30	0.3	15	26	--	--	14	20
40	40	0.4	17	33	--	--	18	22
50	50	0.5	19	40	--	--	22	24
60	60	0.6	21	47	--	--	26	27
70	70	0.7	23	54	--	--	28	30
80	80	0.8	25	62	28	--	31	34
90	90	0.9	28	70	31	--	32	37
100	100	1	30	78	34	--	34	41
120	120	1.2	33	90	40	--	41	49
140	140	1.4	37	105	46	--	45	58
160	160	1.6	43	--	52	--	50	66
180	180	1.8	46	--	58	28	54	74
200	200	2	49	--	63	31	58	82
220	220	2.2	52	--	69	34	62	--
240	240	2.4	56	--	75	37	65	--
260	260	2.6	62	--	82	40	68	--
280	280	2.8	65	--	89	43	70	--
300	300	3	70	--	95	46	74	--
320	320	3.2	--	--	--	48	--	--
340	340	3.4	--	--	--	51	--	--
360	360	3.6	80	--	--	54	--	--
380	380	3.8	--	--	--	57	--	--
400	400	4	90	--	--	60	--	--

6.6 START UP

⚠ 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.

1. Make sure that all other conductive parts within the work area are grounded, see chapter Grounding [►► 34].
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.

6.6.1 Verifying a Safe Operational Condition

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

This includes:

- Safety checks in accordance with chapter Safety Checks and Maintenance Intervals [►► 51].
- Function test in accordance with chapter Function Test after Repair Work [►► 66].

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.



WARNING

Discharge of electrostatically charged components in atmospheres containing solvents!

Explosion hazard from electrostatic spark-over.

- ▶ Use spray gun only with fitted nozzle, air cap and union nut.



1. Ensure that:
 - ▶ the control unit was not opened;
 - ▶ commissioning is carried out in accordance with chapter Assembly and Commissioning [▶▶ 30].

7.2.1 Emergency Deactivation

In the case of unforeseen occurrences immediately:

1. Switch off control unit.
2. Relieve pressure according to the operating manual of the product pressure generator.
3. Close the compressed air supply.

7.3 SETTING THE SPRAY PATTERN USING THE AIR PRESSURE REGULATOR

The air pressure regulator regulates the air supply (shaping and atomizing air) to the gun.



①

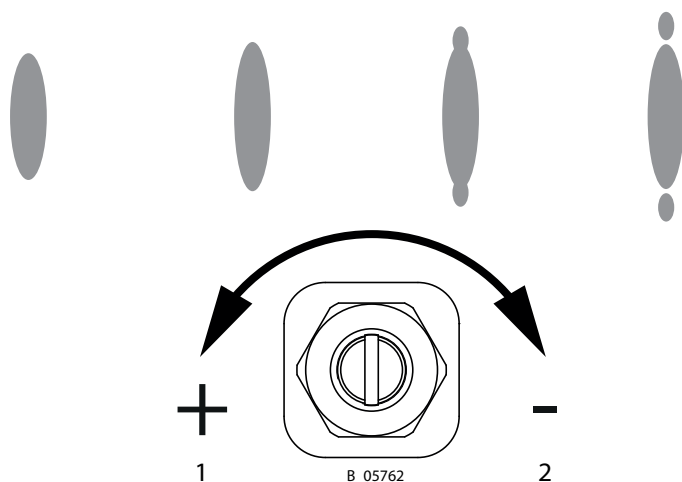
②

③

1	No air	3	Correct amount of air
2	Not enough air		

Spray pattern and air regulation

For the IC variant, the air regulation regulates the ratio of shaping/atomizing air. For the IC variant, the shaping and atomizing air are set individually. The spray pattern can then be adjusted to optimally suit the object being sprayed. The illustration shows the influence of the regulator on the spray pattern. Other nozzle sizes can be used to obtain larger or smaller spray patterns.



1	Air regulation fully opened = maximum shaping air	2	Air regulation closed = minimum shaping air
---	---	---	---

Changing the flow rate

1. Adapt product pressure.
2. Use a different nozzle (see chapter Accessories [▶▶ 69]).

Changing the Spray Jet Width

- ▶ Use a different nozzle (see chapter Accessories [▶▶ 69]).

7.4 SPRAYING

1. Secure spray gun (switch off controller) and insert the desired nozzle.
2. Turn on the control unit. See corresponding operating manual.
3. Start up with product pressure generator set to approx. 8 MPa; 80 bar; 1160 psi operating pressure. See corresponding operating manual.

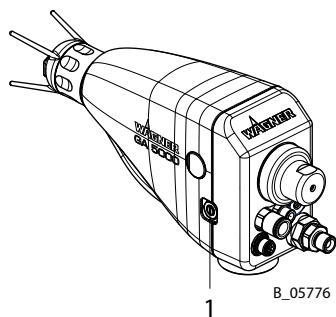
AirLess spraying

1. Turn both air pressure regulators at the control unit all the way down.
2. Spray on a test object (switch on the controller).
3. Adjust the product pressure and gun air in accordance with the nozzle and object.

AirCoat spraying

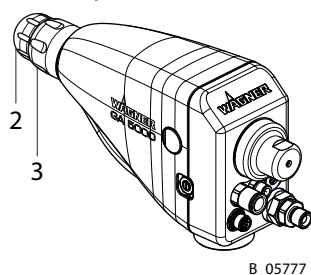
1. For the IC variant, open the air pressure regulator (approx. 0.05 - 0.25 MPa; 0.5 - 2.5 bar; 7 - 36 psi) and adjust for optimal atomization.
2. For the EC variant, set shaping and atomizing air on the pressure regulators.

Flat-jet method: Changing the spray jet width



1. Change the spray jet width by selecting the appropriate nozzle.
2. By turning the air regulation (1), the spray jet can additionally be adjusted (IC variant).
3. Increase or decrease shaping air (EC variant).

Round-jet method



- By gently turning the nozzle nut (2), the atomizing air jet can additionally be adjusted.
 - ⇒ **Do not completely tighten the nozzle nut:**
Do not turn the nozzle nut (2) until it is flush with the nozzle body (3). There must be play for the atomizing air between the nozzle nut and the nozzle body.

Flow rate

The flow rate can be reduced by:

1. Minimizing the product pressure.
2. Using a different nozzle size (see chapter Accessories [► 69]).

7.5 PRESSURE RELIEF / WORK INTERRUPTION

The pressure must always be relieved:

- after the spraying tasks are finished,
- before servicing or repairing the spraying system,
- before carrying out cleaning tasks on the spraying system,
- before moving the spraying system to another location,
- before something must be checked on the spraying system,
- Before the valve seat is replaced on the spray gun.

Observe general safety instructions in chapter Basic Safety Instructions [► 14].

⚠ WARNING

High-pressure spray jet!

Danger to life from injecting paint or solvent.

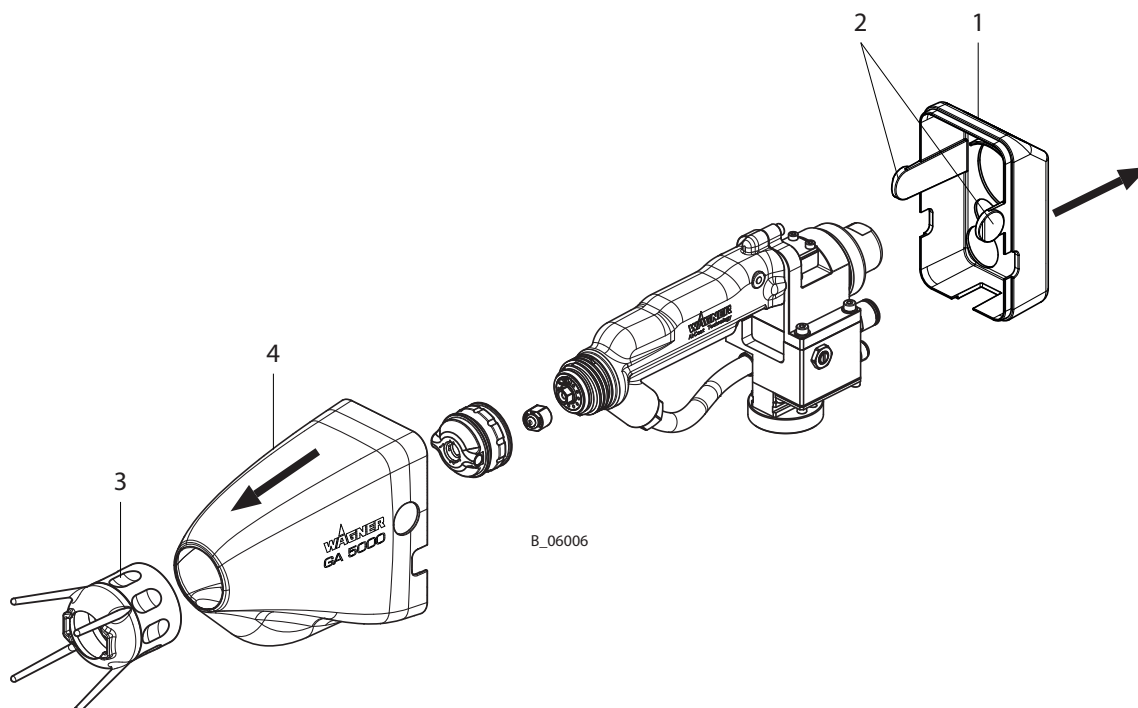
- ▶ Never reach into the spray jet.
- ▶ Never point the spray gun at people.
- ▶ Consult a doctor immediately in the event of skin injuries caused by paint or solvent. Inform the doctor about the paint or solvent used.
- ▶ Never seal defective high-pressure parts, instead relieve the pressure from them and replace them immediately.
- ▶ Wear the appropriate protective clothing, gloves, eyewear, and respirator.



Depressurizing the spray gun

1. Switch off high voltage at the control unit.
2. Turn compressed air regulator for shaping and atomizing air on the EPG 5000 to "0".
3. Close the compressed air supply on the material side upon the product pressure generator.
4. Relieve the pressure of gun and system, e.g., by switching on gun without high voltage.
5. Fill flushing agent and adjust pressure.
6. Thoroughly flush out the spray gun.
7. Relieve the pressure on the gun and the system.
8. Clean gun and dry it with a cloth or a blow gun.

7.6 DISMOUNTING THE GUN COVER



1. Press the snap fit (2) together and pull the rear cover (1) off towards the back.
2. Unscrew union nut (3) and the front cover (4) off towards the front.

Info

For changing nozzles, the cover does not have to be removed!



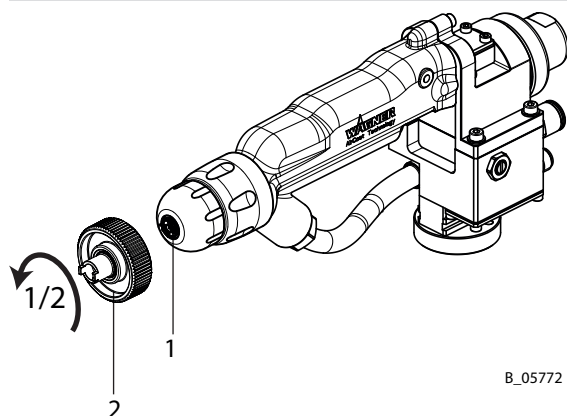
7.7 FLUSHING OUT CLOGGED ROUND JET NOZZLES

DANGER

Exploding gas / air mixture!

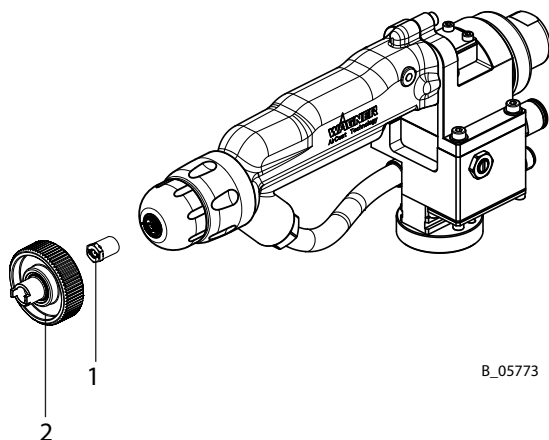
Danger to life from flying parts and burns.

- ▶ Never spray into a closed tank.
- ▶ Ground the tank.



1. Remove nozzle insert (1) completely using nozzle wrench (2).
2. Actuate spray gun briefly.
3. Blow out and clean nozzle opposite the spraying direction.
4. After flushing, re-tighten the nozzle insert.

7.8 REPLACING NOZZLE INSERT OF ROUND JET NOZZLE



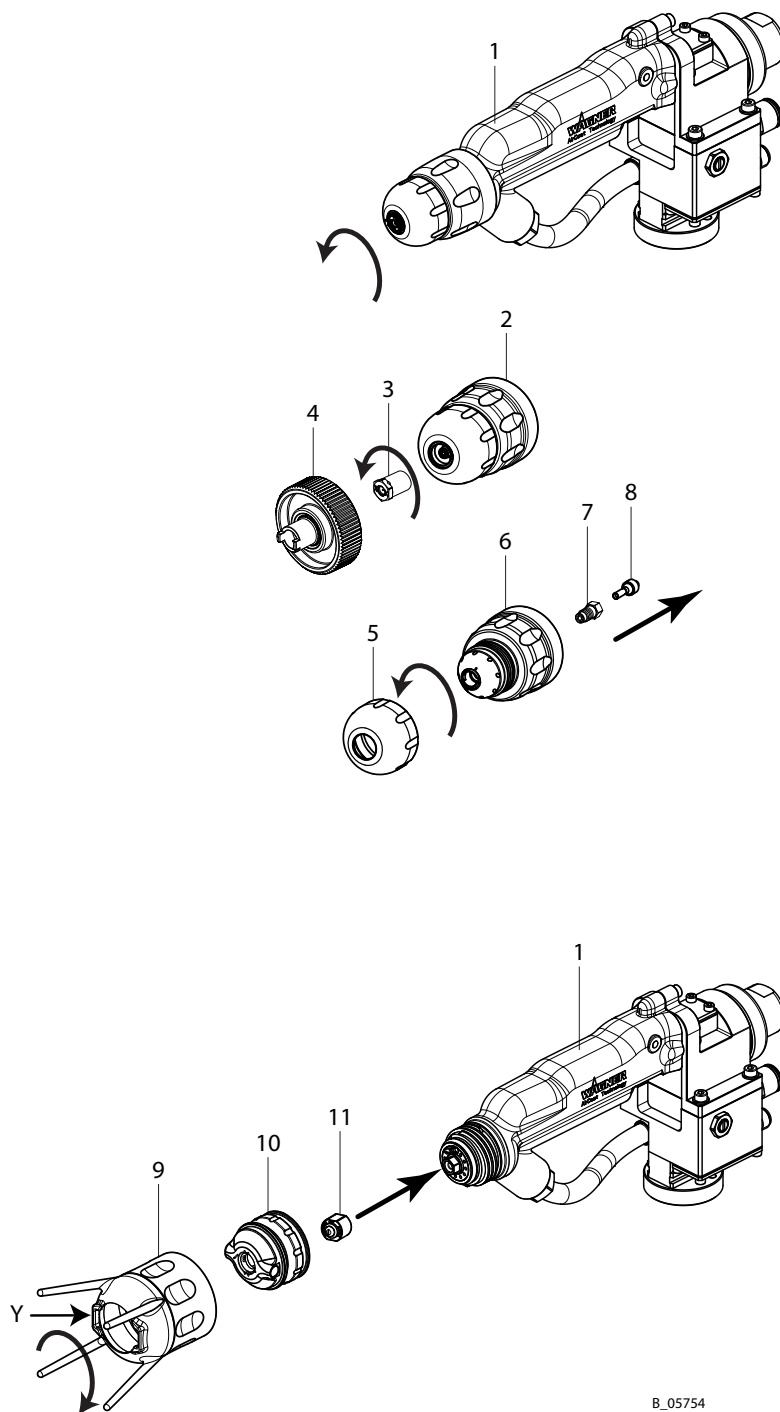
1. Remove nozzle insert (1) using nozzle wrench (2).
2. Assembling new nozzle insert.

7.9 CHANGING FROM AIRCOAT ROUND JET / AIRCOAT FLAT JET

Flushing spray gun

1. Switch off control unit.
2. Relieve pressure (see chapter Pressure Relief / Work Interruption [►► 41]).
3. Connect the system to the flushing agent supply.
4. Set product pressure. Close atomizing air regulator.
5. Thoroughly flush out the spray gun.
6. Relieve pressure (see chapter Pressure Relief / Work Interruption [►► 41]).

Changing from round jet to flat jet



B_05754

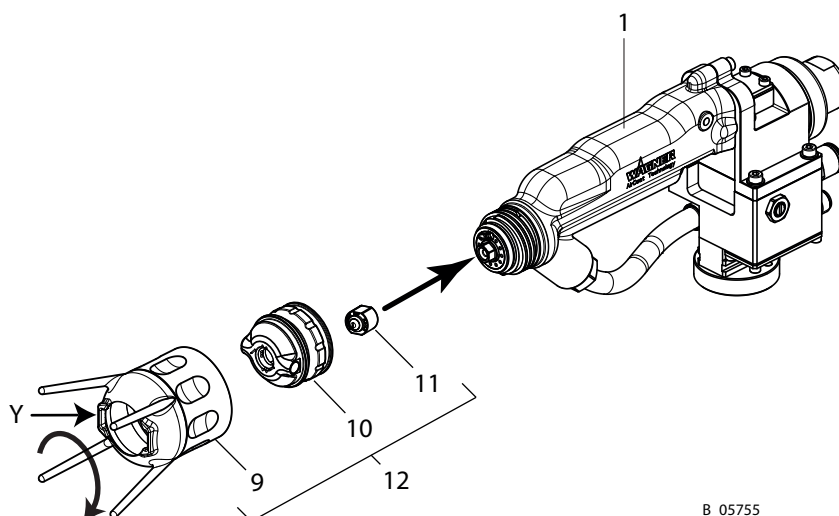
1. Unscrew round jet nozzle attachment (2) incl. nozzle insert (3).
2. Unscrew nozzle insert (3) using nozzle wrench (4).
3. Unscrew nozzle nut (5). Remove nozzle screw joint (7) and sealing fitting (8) from the nozzle body (6). Thoroughly clean all parts.
4. Insert desired ACF5000 nozzle (11) into the valve housing.
5. Put the air cap (10) on the nozzle (11) and pay attention to the position of the guide surfaces.

6. Screw union nut with attached nozzle guard (9) to the gun body and make sure that the air cap horns lie in the designated recess (Y).
7. Before tightening with the air cap horns (Y), set the desired jet level and then tighten the union nut to stop by hand.

Changing from flat jet to round jet

1. Unscrew union nut (9) with air cap (10) and ACF5000 nozzle (11).
2. Remove air cap (10).
3. Press ACF5000 nozzle (11) out of air cap (10) by hand. Thoroughly clean all parts.
4. Insert nozzle screw connection (7) and sealing fitting (8) into nozzle body (6).
5. Screw nozzle nut (5) onto nozzle body (6). Do not screw on nozzle nut completely.
⇒ There must be play for the atomizing air between the nozzle nut and the nozzle body.
6. Screw on nozzle insert (3) using nozzle wrench (4).
7. Screw round jet nozzle attachment (2) with nozzle insert (3) onto spray gun and tighten by hand.

7.10 REPLACING THE AIRCOAT FLAT JET NOZZLES



1. Switch off control unit.
2. Unscrew union nut completely (12) and remove air cap (10).
3. Remove and clean the ACF 5000 AirCoat nozzle (11).

! NOTICE

Defective AirCoat nozzle!

Insufficient paint application quality.

- Do not use sharp-edged objects on the carbide on the nozzle.

4. Insert new ACF 5000 nozzle (11) into the valve housing.
5. Put the air cap (10) on the nozzle (11) and pay attention to the position of the guide surfaces.
6. Screw union nut with attached nozzle guard (9) to the gun body and make sure that the air cap horns lie in the designated recess (Y).

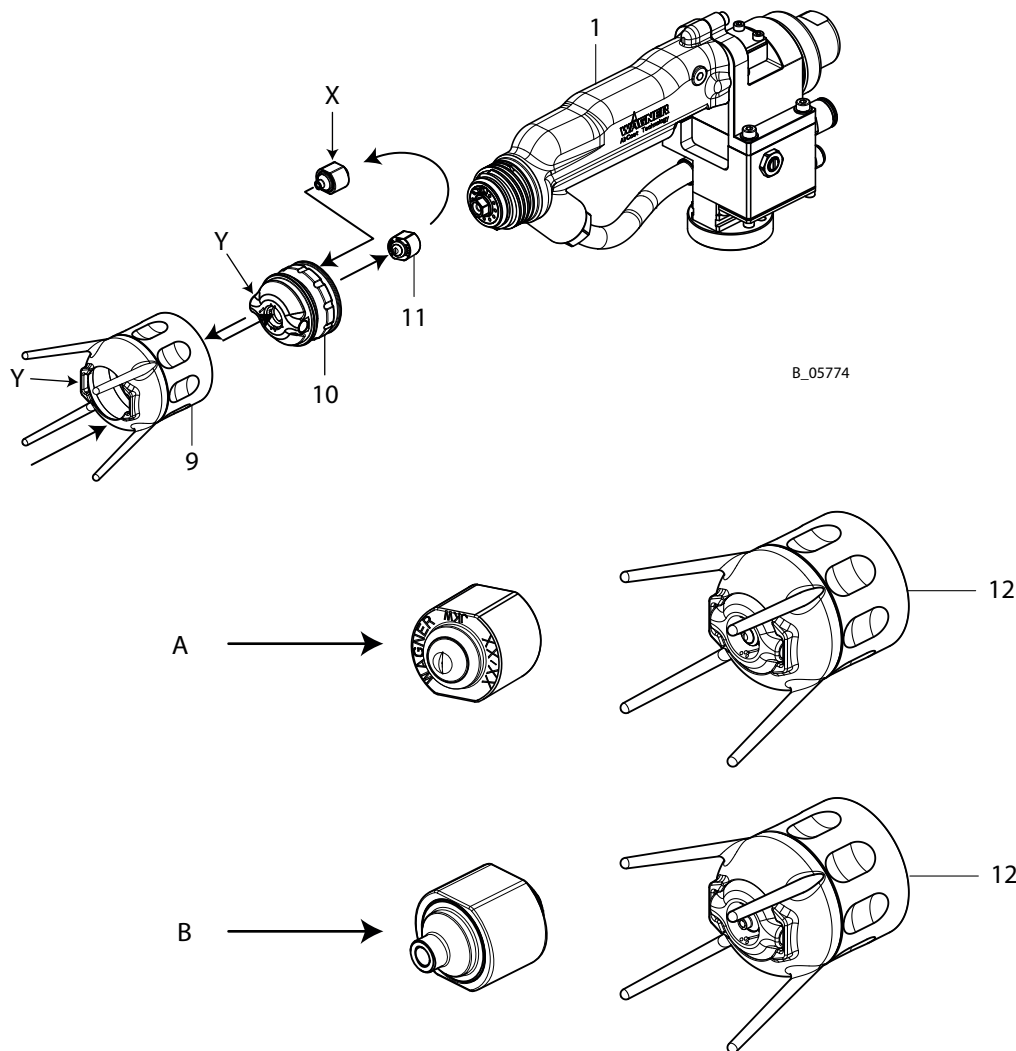
7. Before tightening with the air cap horns (Y), set the desired jet level and then tighten the union nut to stop by hand.

7.11 CLEANING OF THE NOZZLE PARTS

The nozzle parts may only be immersed in a cleaning solvent recommended by the lacquer manufacturer and must be removed again immediately. They may only remain in a cleaning solvent for a short time.

Clean these parts with a brush and dry them with a cloth or a blow gun.

7.12 ELIMINATING NOZZLE CLOGGING



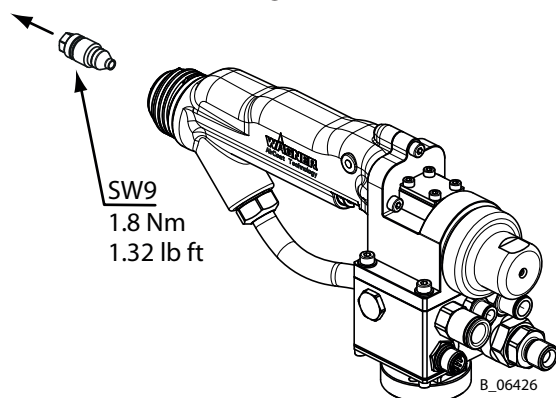
A	ACF5000 nozzle in spray position	B	ACF5000 nozzle in cleaning position
---	----------------------------------	---	-------------------------------------

1. Switch control unit to standby operation.
2. Unscrew union nut completely (12) and remove air cap (10).
3. Push ACF 5000 nozzle (11) out of air cap (10) by hand, reverse it and put it into the air cap (10) with the nozzle tip towards the rear. Pay attention to the position of the guide surfaces (X).
4. Insert air cap (10) with integrated ACF 5000 nozzle (11) into the union nut (9). Make sure that the air cap horns (Y) lie in the recess of the nozzle guard.

5. Screw complete preassembled union nut (12) to gun (1) and tighten by hand.
6. Switch on gun without high voltage and flush gun.
7. When the blockage has been flushed out, switch control unit back to standby operation.
8. Unscrew union nut (12) completely.
9. Remove air cap (10) and push ACF 5000 nozzle (11) out of the air cap by hand. Clean ACF 5000 nozzle and in the spraying position, insert it back into the valve housing.
10. Put the air cap (10) on the nozzle (11) and pay attention to the position of the guide surfaces (X).
11. Screw union nut with attached nozzle guard (9) to the gun body and make sure that the air cap horns lie in the designated recess (Y).
12. Before tightening with the air cap horns (Y), set the desired jet level and then tighten the union nut to stop by hand.
13. Switch control unit to the required operating mode.

7.13 CHANGING THE VALVE HOUSING

- ✓ Pressure was relieved (see chapter Pressure Relief / Work Interruption [►► 41]).
- Use a socket or ring wrench (not a combination wrench) to tighten the valve housing.



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 Safety Instructions

DANGER

Explosive powder/air mixes!

Danger to life and equipment damage.

- ▶ Before starting cleaning, flushing, or other manual work, the high voltage must be shut down and locked to prevent it from being switched back on!
- ▶ The spray gun must be separated from the high-voltage supply before any cleaning work is started.
- ▶ Only electrically conductive tanks may be used for cleaning and flushing agents. Ground the tank.
- ▶ Preference should be given to non-ignitable cleaning and flushing agents.
- ▶ If ignitable solvents are used, the cleaning and flushing agent's flash point must be at least 15 K above the ambient temperature.
- ▶ Ignitable solvents and solvent gases must be completely removed, before the system can be recommissioned.
- ▶ Ensure that no electric component is cleaned with or immersed into solvent.



NOTICE

Damage to electrical devices!

Never immerse the spray gun in cleaning agent.

8.1.3 Cleaning and flushing the device

! NOTICE

Liquid in air tube!

Functional faults caused by swollen seals.

Discharge current to ground → No high voltage.

- ▶ Always point the spray gun down when cleaning.
- ▶ Ensure that neither lacquers nor cleaning or flushing agent enters the air duct.
- ▶ When taking a break from work or when stored for a longer period, the spray gun should be positioned with the adapter pointing downwards.

Regular flushing

1. The spraying system and the spray gun must be cleaned and flushed daily.
2. The cleaning and flushing agents used must be compatible with the working material.

! WARNING

Incompatibility of cleaning/flushing agent and working medium!

Risk of explosion and danger of poisoning by toxic gases.

- ▶ Examine the compatibility of the flushing and cleaning agents and working media on the basis of the safety data sheets.



Flushing procedures

1. Switch off control unit.
2. Remove nozzle and clean separately in accordance with chapter Cleaning of the Nozzle Parts [►► 47].
3. Connect spraying system to flushing agent supply in accordance with operating manual for the product pressure generator.
4. Direct the spray gun into the collection tray and switch it on. Switch off gun as soon as clean flushing agent emerges.
5. Remove flushing agent supply.
6. Close pump pressure regulator. Switch on compressed air supply on the control unit, open air pressure regulator for shaping and atomizing air.
7. Actuate the spray gun without activated high voltage and thoroughly blow out the air passages.
8. For switching off the shaping and atomizing air, press the [Standby] button on the control unit.
9. Close the compressed air supply.
10. Clean the gun body and remaining components of the spraying system with a cleaning agent recommended by the lacquer manufacturer.
11. Dry with a cloth or a blow gun.

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 Safety 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 the device [▶▶ 50].

After maintenance

1. Carry out safety checks in accordance with chapter Safety Checks and Maintenance Intervals [▶▶ 51].
2. Put the system into operation in accordance with chapter Start up [▶▶ 37] and check for leaks in accordance with chapter Product Pressure Test [▶▶ 67].
3. Carry out functional check in accordance with chapter Function Test after Repair Work [▶▶ 66].
4. Have the system checked for safe condition by a skilled person.
5. In accordance with DGUV regulation 100-500, chapters 2.29 and 2.36:
 - ▶ The liquid ejection devices should be checked by an expert (e.g., WAGNER service technician) for their safe working conditions as required and at least every 12 months.
 - ▶ 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, see chapter Cleaning and Maintenance [▶▶ 49]
Hoses, tubes, couplings	Every day	
Grounding measures	Weekly	Chapter Grounding the Device [▶▶ 16], chapter Grounding [▶▶ 34]
Inspection for damage	Weekly	Chapter Cleaning and Maintenance [▶▶ 49], chapter Troubleshooting and Rectification [▶▶ 53]
Locking of the technical ventilation with the electrostatic spraying equipment	Annually	Chapter Ventilation of the Spray Booth [▶▶ 33]

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.

8.2.4 Product Hoses, Pipes and Couplings

The service life of the complete hoses between product pressure generator and application device is reduced due to environmental influences even when handled correctly.

1. Check hoses, pipes, and couplings every day and replace if necessary.
2. Before every commissioning, check all connections for leaks.
3. Additionally, the operator must regularly check the complete hoses for wear and tear as well as for damage at intervals that he/she has set. Records of these checks must be kept.
4. Replace the complete hose if one of the following two periods is exceeded:
 - ▶ 6 years from the date of the hose crimping (see fitting embossing).
 - ▶ 10 years from the date of the hose imprinting.

Fitting embossing (if present)	Meaning
xxx bar	Pressure
yymm	Crimping date (year/month)
XX	Internal code
Hose imprinting	Meaning
WAGNER	Name / manufacturer
yymm	Date of manufacture (year/month)
xxx bar (xx MPa) e.g., 270 bar (27MPa)	Pressure
XX	Internal code
DNxx (e.g., DN10)	Nominal diameter

9 TROUBLESHOOTING AND RECTIFICATION

Functional fault	Cause	Rectification
Insufficient product output	Nozzle too small.	Flat jet: Select larger nozzle (see chapter Accessories [▶▶ 69]).
	Product pressure too low.	Increase product pressure.
	Filter on product pressure generator clogged.	Clean or replace filter.
	Nozzle clogged.	Clean or replace nozzle.
Poor spray pattern	Atomizing air incorrectly adjusted.	Readjust atomizing air.
	Unfavorable nozzle size.	Select a different nozzle (see chapter Accessories [▶▶ 69]).
	The product viscosity is too high.	Thin product in accordance with the spray product manufacturer's instructions.
	Product pressure too high/too low.	Adapt product pressure.
	Damaged nozzle.	Attach new nozzle.
Poor wrap-around	Poor grounding at object.	Check grounding of object or hanger with ohmmeter.
	Lacquer resistance too high/too low.	Check lacquer resistance (see chapter Processible Working Materials [▶▶ 9]).
	Spraying pressure too high.	Adjust spraying pressure.
No wrap-around	No high voltage.	Switch on high voltage at the control unit. / Repair malfunction as explained in the control unit operating manual.
		Connect gun and gun cable/check for defect.
		Check lacquer resistance (see chapter Processible Working Materials [▶▶ 9]).
	Seal in end piece defective.	Repair by WAGNER service department.
Back-spray	Air-passages damp.	Clean and dry air passages.
	Poor grounding at object.	Check grounding.
	Distance between spray gun and work piece too great.	Reduce distance between spray gun and work piece.
	High voltage set incorrectly (too high).	Adapt high voltage to product.
Valve seat leaks	Loosen the nozzle union nut for round jet method.	Tighten union nut by hand.
	Valve seat or valve tip worn.	Replace valve seat or valve tip.

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 the system according to chapter Cleaning and flushing the device [▶▶ 50].

After repair work

1. Carry out safety checks in accordance with chapter Safety Checks and Maintenance Intervals [▶▶ 51].
2. Put the system into operation in accordance with chapter Start up [▶▶ 37] and check for leaks in accordance with chapter Product Pressure Test [▶▶ 67].
3. Carry out functional check in accordance with chapter Function Test after Repair Work [▶▶ 66].
4. Have the system checked for safe condition by a skilled person.
5. In accordance with DGUV regulation 100-500, chapters 2.29 and 2.36:
 - ▶ The liquid ejection devices should be checked by an expert (e.g., WAGNER service technician) for their safe working conditions as required and at least every 12 months.
 - ▶ For shut down devices, the examination can be suspended until the next start-up.

10.3 ASSEMBLY AIDS

In chapter Spare Parts [► 75] the order numbers for device spare parts can be found, as well as for wearing parts such as seals.

- Use torques, greases and glues in accordance with chapter Spare Parts [► 75]. Spray gun in accordance with chapter Spray Gun [► 55].

Brand notice:

The brands specified in this document are property of the respective owners. Loctite®, for example, is a registered brand of Henkel.

10.4 SPRAY GUN

Plastic parts

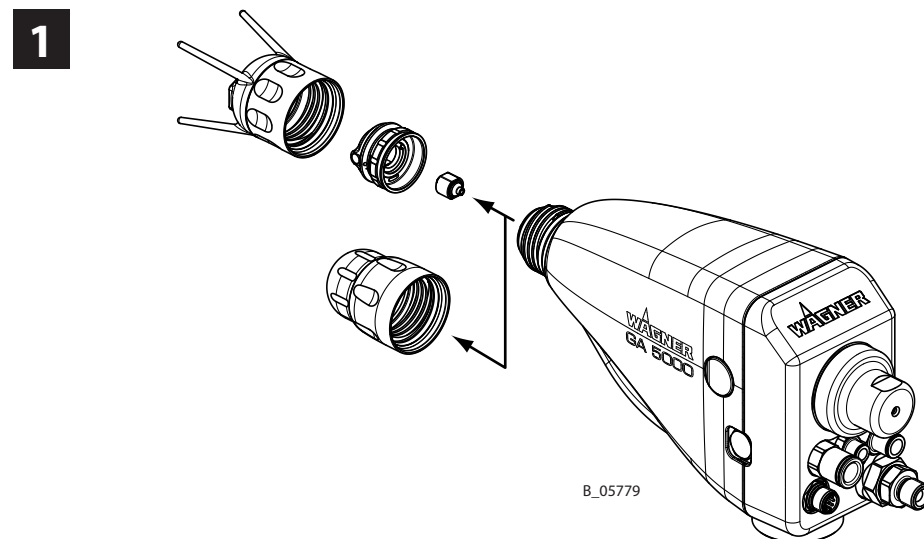
Gently handle all plastic parts.

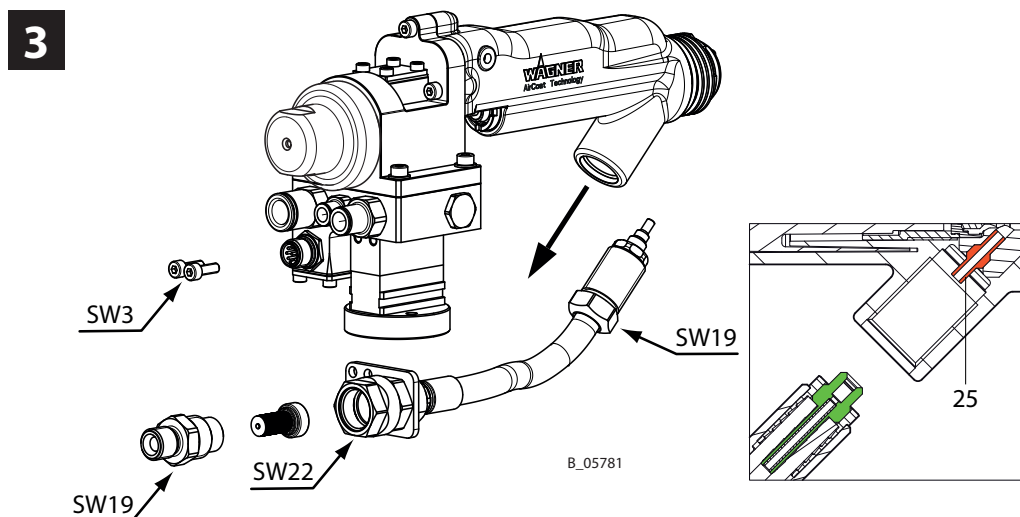
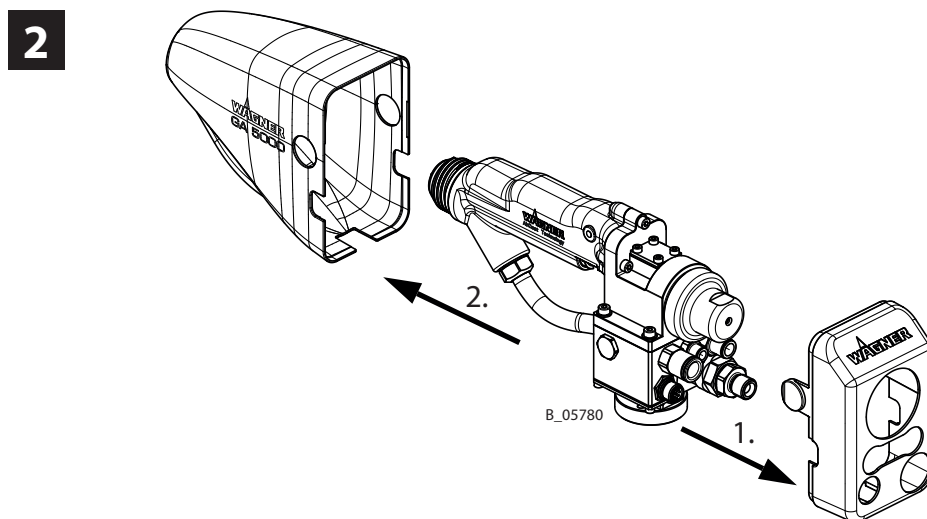
10.4.1 Tools

For disassembling and assembling the spray gun, the following tools are required:

- Allen wrench, wrench size (SW) 3
- Combination wrench, wrench size (SW) 22
- Combination wrench, wrench size (SW) 5
- Ring wrench, wrench size (SW) 9
- Combination wrench, wrench size (SW) 7
- Screwdriver No. 1
- Combination wrench, wrench size (SW) 8
- Slide gauge
- Combination wrench, wrench size (SW) 19
- Valve needle assembly tool, order no. 2309368
- Clamping screw assembly tool, order no. 2325263

10.4.2 Dismantling the Spray Gun





Product hose:

- Do not tilt, but pull it straight out in the direction indicated by the arrow. At the same time, perform slight rotational movements.

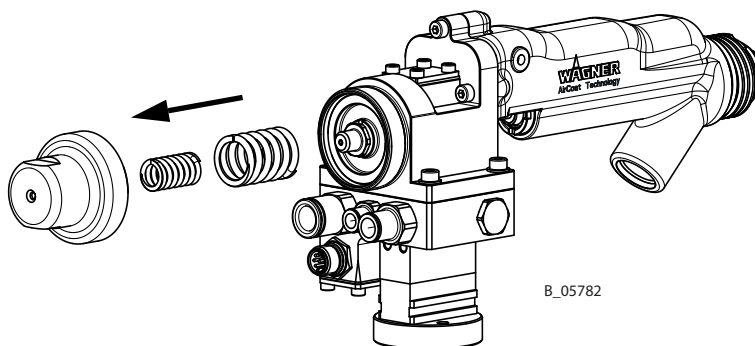
Fitting (25), if fitting has any leaks:

If the fitting (25) does not come out with the product hose, it must be removed from the gun adapter as follows:

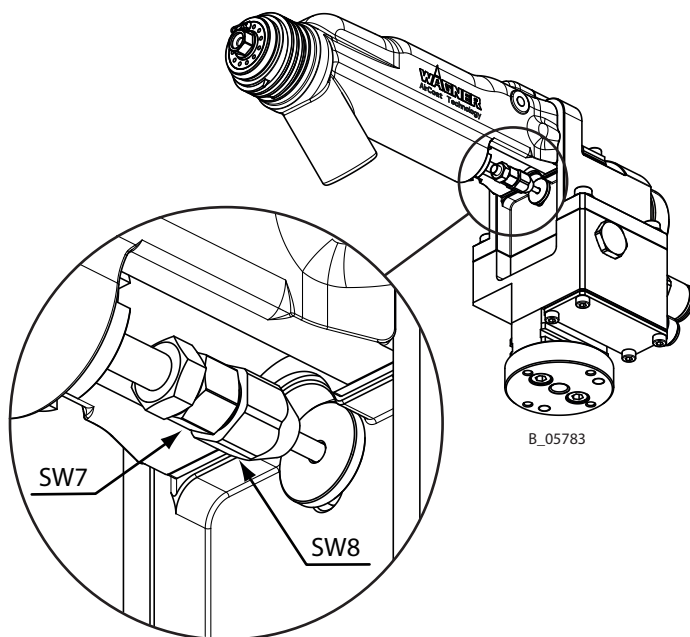
1. Screw in the wood screw ($\varnothing$ 3 mm; 0.12 inch, length 40 mm; 1.6 inches) into the fitting (25), max. 6 mm deep.
2. Pull out straight with suitable pliers. Possibly rotate clockwise simultaneously.
3. Thereafter, the fitting must be replaced.

If the fitting is broken in the gun adapter, the WAGNER service department must be contacted.

4



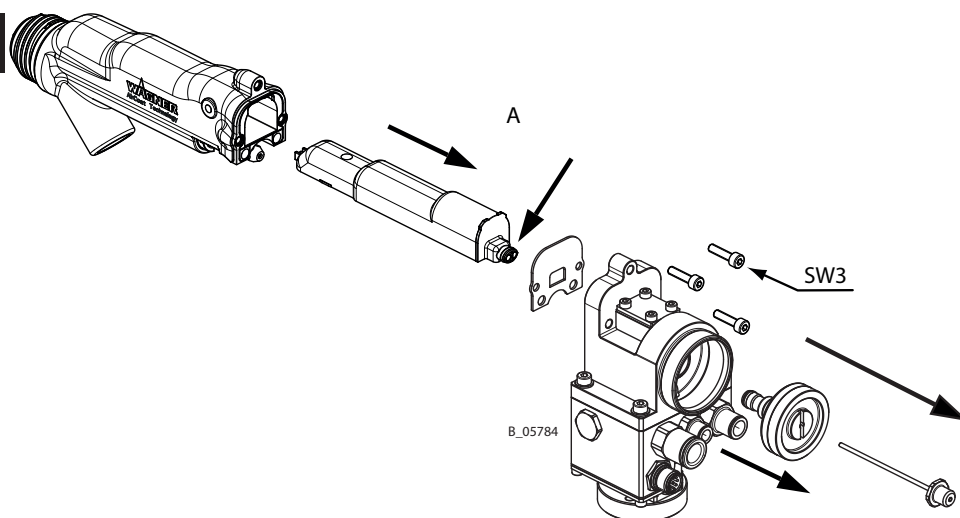
5



Unscrewing the collet chuck:

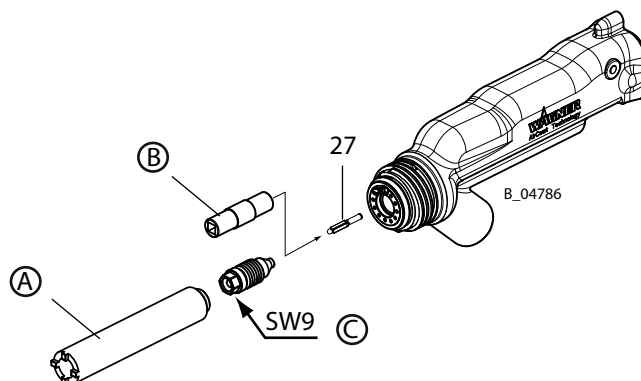
- When unscrewing the collet chuck, a second size 7 combination wrench must be used for counterholding.

6



A Carefully release the cascade without pliers

7

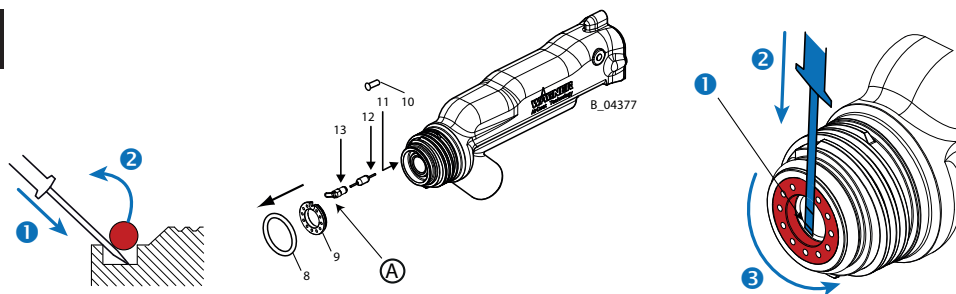


A	Tensioning screw assembly tool Or- der number 2325263	C	Valve housing: Use an assembly tool or socket/ring wrench (not a combination wrench)
B	Valve needle assembly tool, order no. 2309368		

Valve tip (27):

- Loosen valve tip by hand using the valve needle assembly tool (order no. 2309368).

8



A	Do not pull out by contact wire.
---	----------------------------------

The gold contact sleeve (10) remains either in the adapter (11) or rests on the resistor (12).
Do not lose them!
(The other gold contact sleeve is in the contacting [13]).

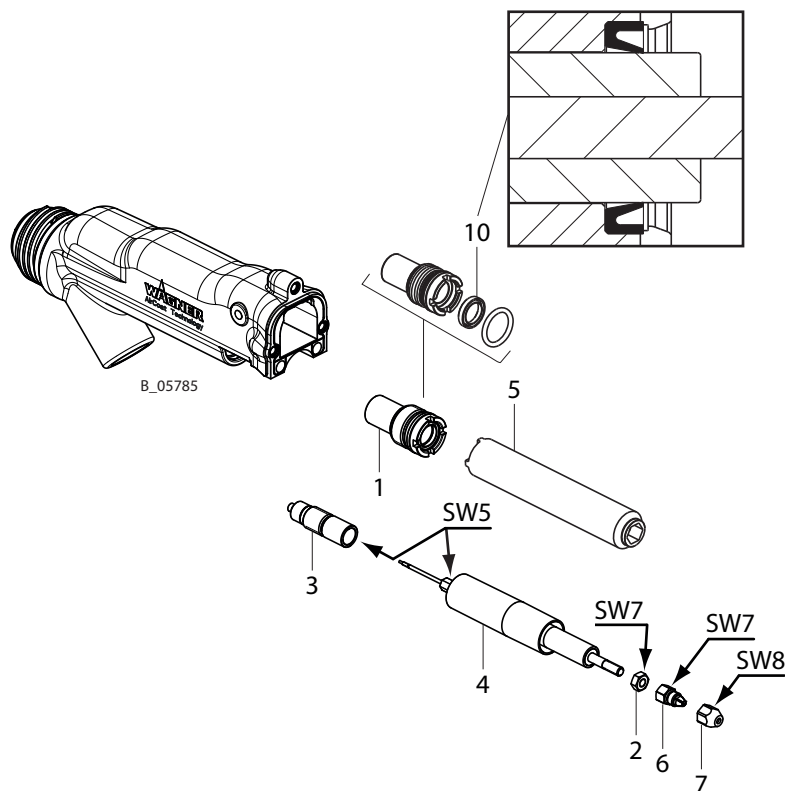
O-ring (8)

1. Use screwdriver no. 1 to press under the O-ring.
2. Push up the O-ring and remove it.

Air manifold ring (9)

1. Locate the start of the thread for recessed internal threading.
2. Push under the air distribution ring directly in front of the start of the thread using screwdriver no. 1.
3. As soon as the ring disengages, carefully loosen it on all sides.

9



1. Loosen clamping screw (1) with assembly tool (5).
2. Remove valve rod unit (2, 3, 4, 6).
3. **Only as necessary:** Remove rod seal (10). Do not damage the housing in the process.

10.4.3 Cleaning the Parts after Disassembly

Please note:

1. All reusable parts (except for the parts conducting high voltage such as adapter etc.) should be cleaned thoroughly using a suitable cleaning agent.
2. The adapter, plug and all dismantled parts must be clean and dry after cleaning. Care should be taken that these parts remain free of solvents, grease or sweat from the hands (salt water). Perform cleaning and mounting tasks wearing gloves.
3. Spare parts may have safety-relevant properties. Only repair and replace parts that are listed in the spare parts chapter and that are assigned to the device.
4. Defective parts, O-rings and seal sets must always be replaced.

⚠ WARNING

Incompatibility of cleaning agent and working medium!

Risk of explosion and danger of poisoning by toxic gases.

- Examine the compatibility of the cleaning agents and working media on the basis of the safety data sheets.



In chapter Spare Parts [► 75] the order numbers for gun spare parts can be found as well as for wearing parts such as seals.

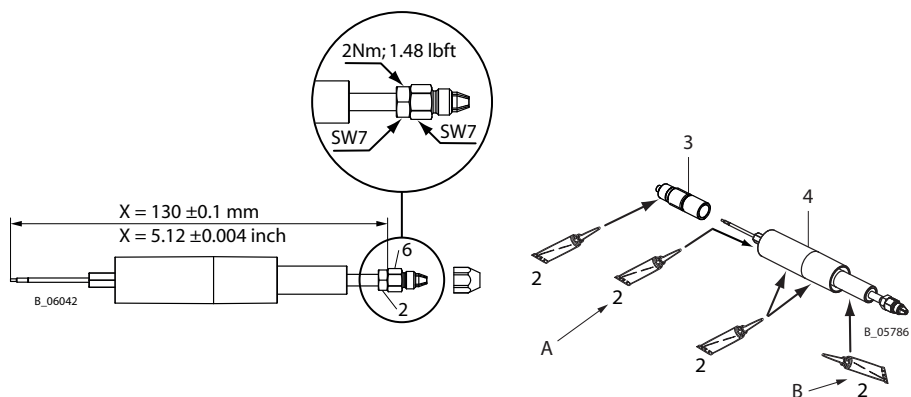
10.4.4 Assembling the Spray Gun

Assembly Aids

Pos	Order no.	Description
2 *	9992698	Vaseline white, PHHV II
4	9992511	Loctite® 243

* Use Vaseline sparingly

1

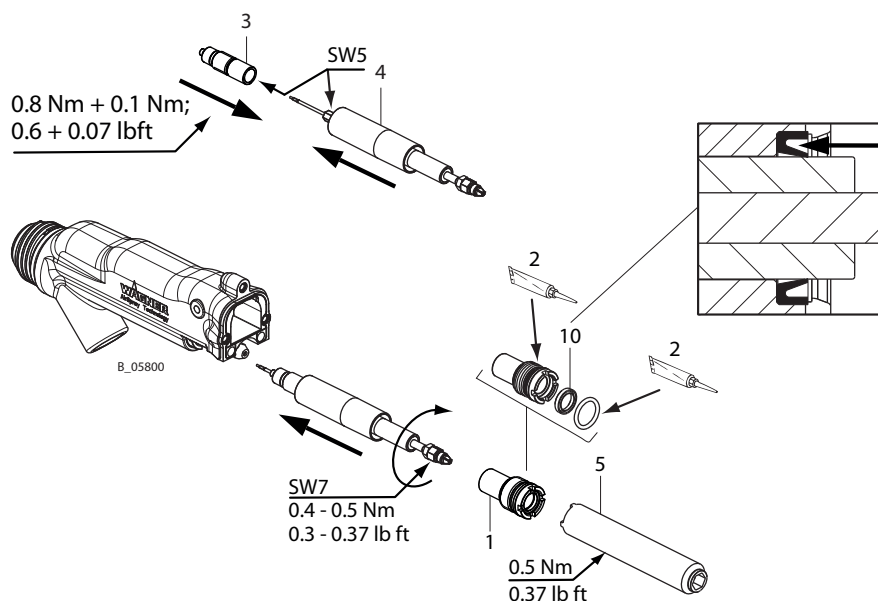


A	Coat the hollow section with a brush. Note: Do not coat the pin and hexagon.	B	Sparingly
---	--	---	-----------

Valve rod unit:

- Set length adjusting measure X with collet chuck (6) and lock with a hexagon nut (2).

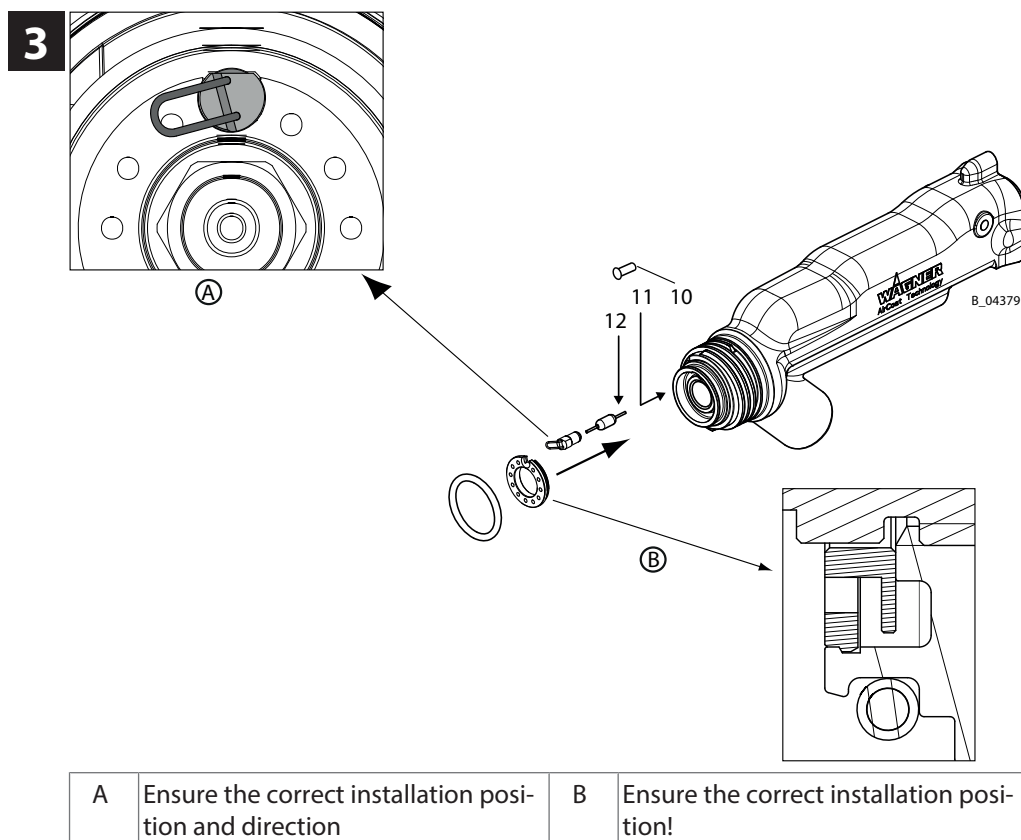
2



Wear gloves!

- ✓ The outside thread of the packing (3) must be free of lacquer.

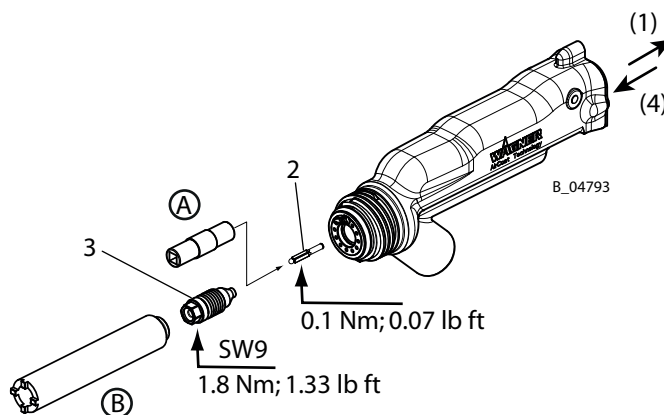
1. Valve rod unit (4) and packing (3):
 - ▶ grease,
 - ▶ slide together,
 - ▶ screw together.
2. Grease clamping screw (1) and mount using assembly tool (5).
3. **Only as required** (if the rod seal was removed): Press in rod seal (10). In the process, press only on the lowest area of the rod seal.



Gold contact sleeve (10)

1. Check whether the gold contact sleeve is located in the end piece (11).
2. Otherwise, insert the sleeve onto the resistor (12).

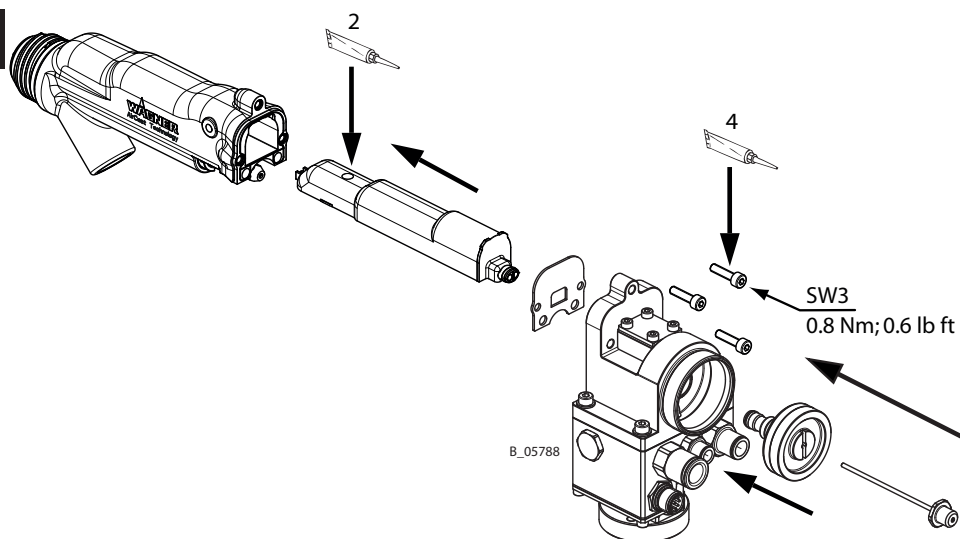
4



A	Valve needle assembly tool, order no. 2309368	B	Tensiing screw assembly tool Order number 2325263
---	---	---	---

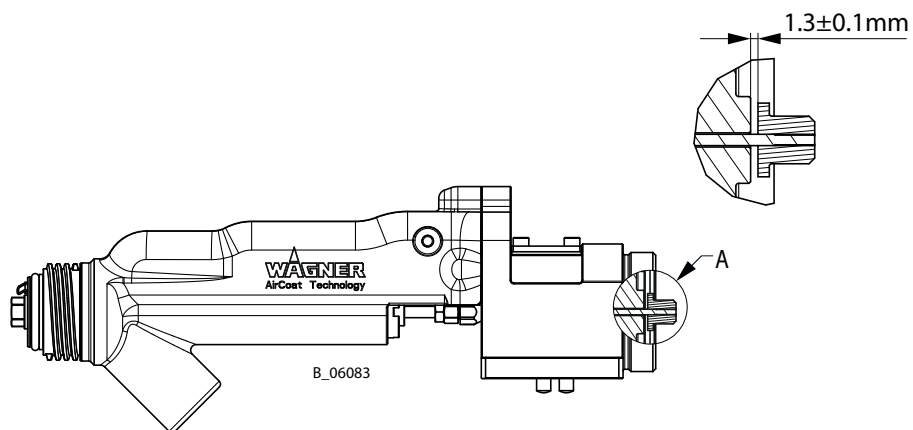
1. Move the valve rod to the rear position so that the sealing area does not become scratched (1).
2. Slightly tighten AC valve tip (2) by hand, with three fingers, using an assembly tool.
3. Use a socket or ring wrench (not a combination wrench) to tighten the valve housing (3).
4. Slide the valve rod to the forward position (on the valve seat) (4).

5



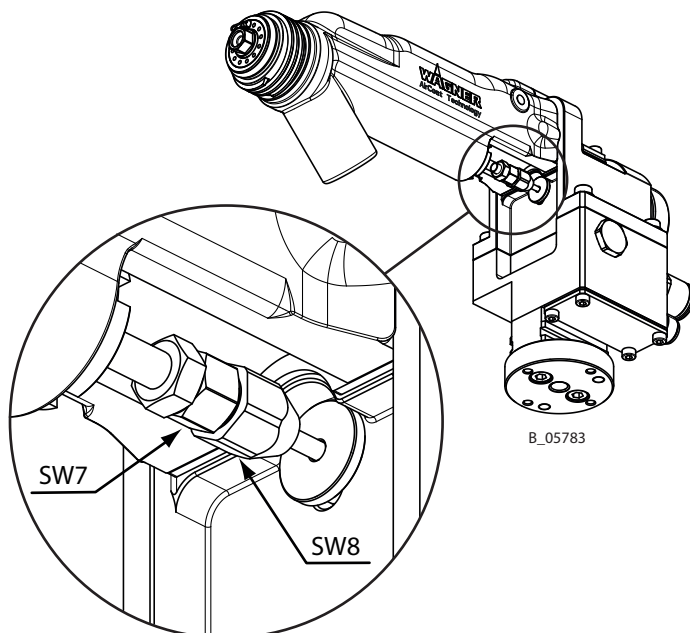
- Clean and degrease the inside of the adapter and the outside of the cascade, then grease the cascade surface with Vaseline.

6



- A Set dimension of 1.3 mm:**
By setting the dimension, soiling of air cap will be decreased.

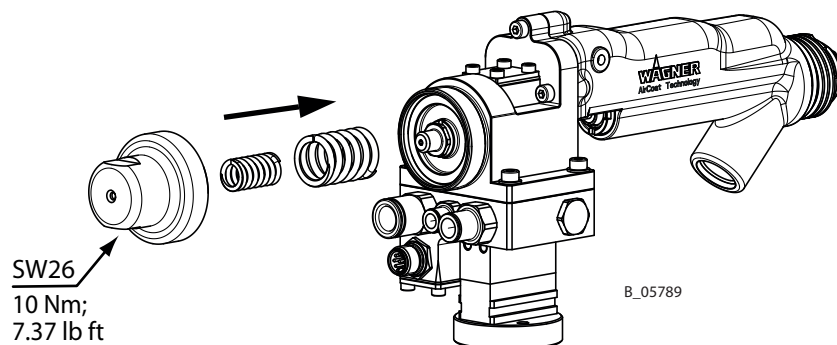
7



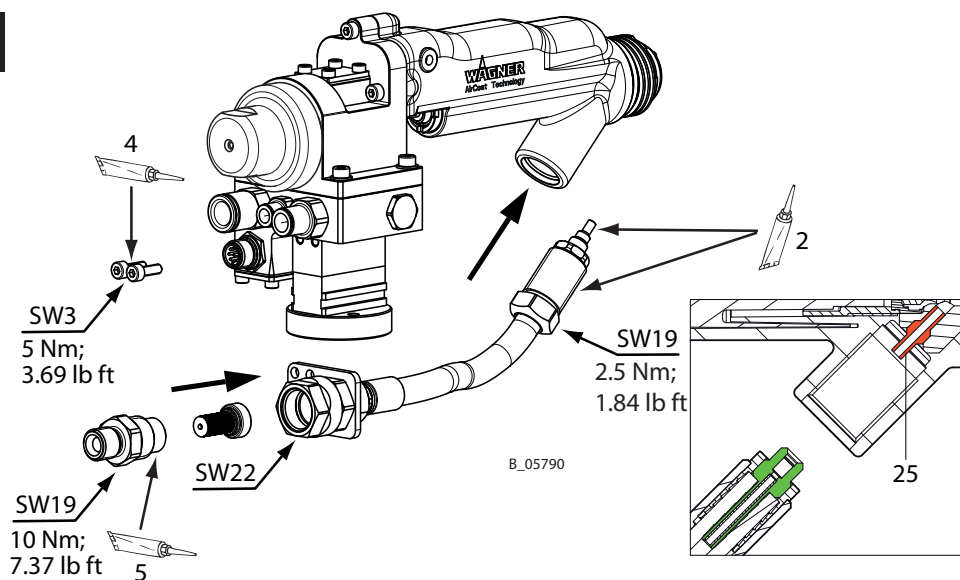
Assembling the collet chuck:

- ▶ When assembling the collet chuck, a second size 7 combination wrench must be used for bracing.

8



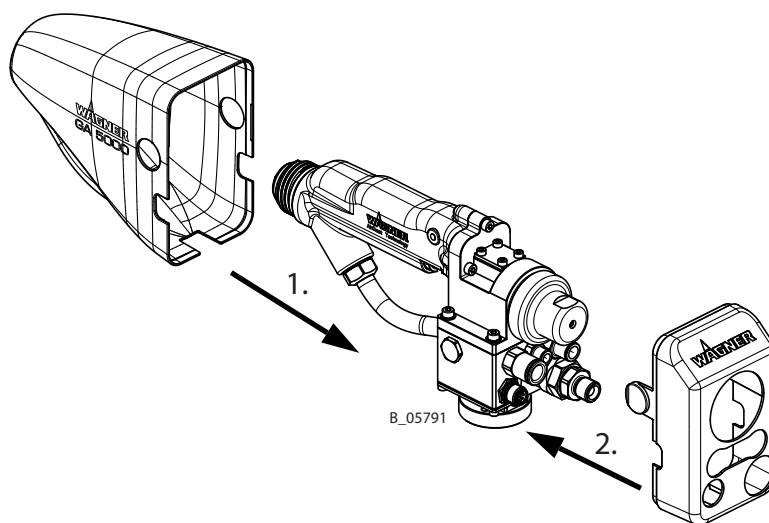
9



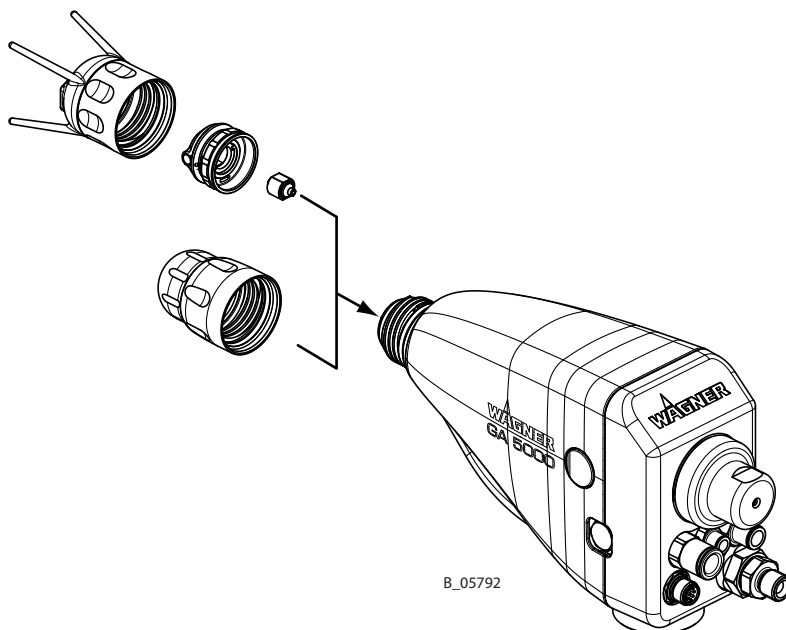
Fitting (25)

- ✓ Before assembling the product hose, check that no fitting (25) is in the gun adapter!
- ▶ Check the fitting for damage and replace if necessary (order no. 2338853).

10



11



Round jet nozzle

Assembly, see chapter Accessories Spare Parts Lists [▶▶ 83]

Diverse nozzle sizes, see chapter Round Jet Nozzles [▶▶ 69]

Flat jet nozzle

Assembly, see chapter Accessories Spare Parts Lists [▶▶ 83]

Diverse nozzle sizes, see chapter Flat jet nozzles [▶▶ 69]

11 FUNCTION TEST AFTER REPAIR WORK

After all repairs, the device must be checked for safe condition before recommissioning. The necessary scope of inspection and testing depends on the repair carried out and must be documented by the repair personnel.

11.1 CHECK HIGH VOLTAGE

Required test equipment:
EPG 5000 control unit and HV 200 high-voltage tester.

High-voltage measurement on spraying gun.

Connect gun cable to control unit. Mount spray gun to grounded gun support. Switch on the control unit.

The high voltage should be 60 to 65 kV in dry ambient air. The value can be checked with the display on the control unit (EPG 5000).

Notes:

- The gun must be clean and dry and must not have any paint or cleaning agent residues.
- In the case of ambient air with a high air humidity, the measured value can reduce to 50 to 55 kV.

High-voltage measurement with high-voltage tester

Place the ball of the high-voltage tester on the gun electrode and turn on the high voltage. The measured value should be 70 to 80 kV.

Notes:

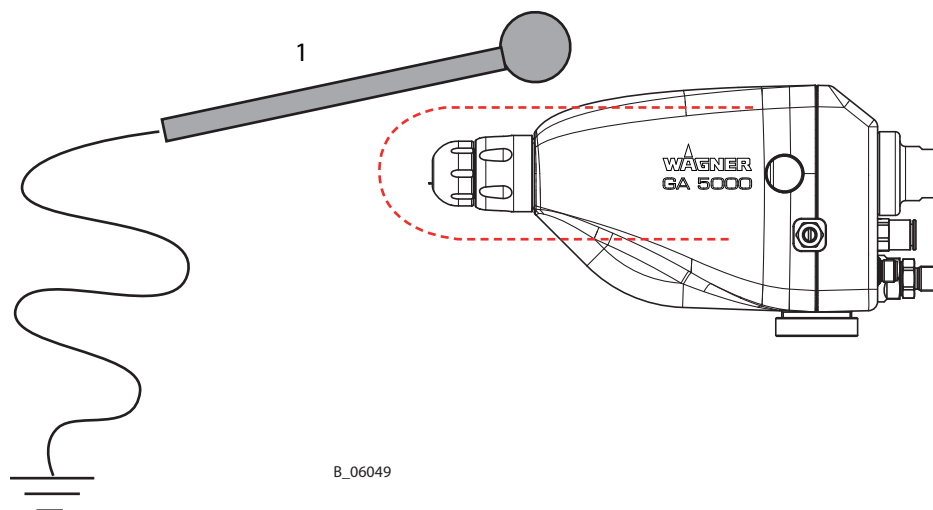
- When measuring the high voltage the measuring device should be held at arms length as far from the body as possible.
- There should be no chargeable objects within a radius of 1 m; 3.28 ft of the place where the measurements are taken.
- The placing of the measuring ball of the high-voltage measuring device reduces the spraying of the high-voltage electrode. As a result, the high-voltage value increases compared to spraying in an empty space.

Disruptive discharge test

Check to see if the gun is grounded using the grounding rod. No sparks should form.

Notes:

- In the vicinity of the electrode, harmless corona discharges can occur.



1	Grounding rod, order no. 175519
---	---------------------------------

11.2 FUNCTION TESTS FOR SPRAY GUN

11.2.1 Air Tests

GA 5000EAC

1. Switch off the atomizing and shaping air, switch on control air.
 - ▶ 0.4 MPa; 4 bar; 58 psi: The air valve must switch on correctly.
 - ▶ 0.8 MPa; 8 bar; 116 psi: Test for air seal.
 - ▶ Switch off control air: The air valve must switch off correctly.

11.2.2 Product Pressure Test

Connect high-pressure hose to the spray gun.

Test the seal of the spray gun with suitable medium (e.g., flushing agent or Marcol 52) and a maximum pressure of 25 MPa; 250 bar; 3626 psi. Increase the pressure gradually while doing so.

Observe the following gun components:

- Product connection
- Nozzle body
- Product valve (no post-spraying)

DANGER

Exploding gas / air mixture!

Danger to life from flying parts and burns.

- ▶ Never spray into a closed tank.
- ▶ Ground the tank.



11.2.3 Check Spray Pattern

Check spray pattern in accordance with chapter Setting the spray pattern using the air pressure regulator [▶▶ 39]

12 DISPOSAL

12.1 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!

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.



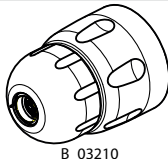
12.2 CONSUMABLE PRODUCTS

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

13 ACCESSORIES

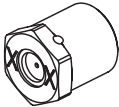
13.1 ROUND JET NOZZLES

13.1.1 ACR 5000 Round Jet Nozzle Attachment

Order no.	Designation	
2309883	ACR 5000 round jet nozzle attachment (with nozzle wrench, without AC round jet nozzle insert)	 B_03210

13.1.2 AirCoat Round Jet Nozzle Inserts

The round jet nozzles are especially suitable for spraying delicate parts, tubes, profiles and complex work pieces.

Order no.	Marking	Jet width mm; inch	Recommended gun filter	
132720	11	approx. 250; 10	yellow 200 mesh	 B_00027
132721	12	approx. 250; 10		
132722	13	approx. 250; 10		
132723	14	approx. 250; 10		
132724 *	15	approx. 250; 10		
132725	16	approx. 250; 10	black 100 mesh	
132726	17	approx. 250; 10		
132727	18	approx. 250; 10		
132728	19	approx. 250; 10		
132729	20	approx. 250; 10	white 60 mesh	
132730	21	approx. 250; 10		
132731	22	approx. 250; 10		

* Standard version

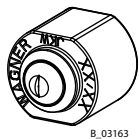
Jet width in mm; inches at a distance of 30 cm; 11.8 inches from the object and at a pressure of 10 MPa; 100 bar; 1450 psi.

13.2 FLAT JET NOZZLES

13.2.1 ACF 5000 Air Caps (Flat Jet)

Order no.	Designation	
2309882	Air cap, ACF 5000 - LV suitable for low viscosity products (marked red).	 B_03454
2314203	Air cap, ACF 5000 - HV suitable for high viscosity products (marked blue).	 B_03209

13.2.2 ACF 5000 AirCoat Flat Jet Nozzles



Order no.	Marking	Drilled hole Ø mm; inch	Spray angle	Application
395107	07/10	0.18; 0.007	10°	Natural lacquer
395207	07/20		20°	
395407	07/40		40°	
395109	09/10	0.23; 0.009	10°	Clear lacquer Oils
395209	09/20		20°	
395309	09/30		30°	
395409	09/40		40°	
395509	09/50		50°	
395609	09/60		60°	
395111	11/10	0.28; 0.011	10°	Synthetic resin lacquer PVC lacquer
395211	11/20		20°	
395311	11/30		30°	
395411	11/40		40°	
395511	11/50		50°	
395611	11/60		60°	
395811	11/80		80°	
395113	13/10	0.33; 0.013	10°	Lacquers Base coat Primer Filler
395213	13/20		20°	
395313	13/30		30°	
395413	13/40		40°	
395513	13/50		50°	
395613	13/60		60°	
395813	13/80		80°	
395115	15/10	0.38; 0.015	10°	Filler Rust proofing paints
395215	15/20		20°	
395315	15/30		30°	
395415	15/40		40°	
395515	15/50		50°	
395615	15/60		60°	
395815	15/80		80°	
395217	17/20	0.43; 0.017	20°	Rust proofing paints Latex paints
395317	17/30		30°	
395417	17/40		40°	
395517	17/50		50°	
395617	17/60		60°	
395817	17/80		80°	

Order no.	Marking	Drilled hole Ø mm; inch	Spray angle	Application
395219	19/20	0.48; 0.019	20°	Rust proofing paints Latex paints
395319	19/30		30°	
395419	19/40		40°	
395519	19/50		50°	
395619	19/60		60°	
395819	19/80		80°	
395221	21/20	0.53; 0.021	20°	Mica paints
395421	21/40		40°	Zinc rich paints
395521	21/50		50°	Rust proofing paints
395621	21/60		60°	Glue paints
395821	21/80		80°	
395423	23/40	0.58; 0.023	40°	
395623	23/60		60°	
395823	23/80		80°	
395425	25/40	0.64; 0.025	40°	
395625	25/60		60°	
395825	25/80		80°	
395427	27/40	0.69; 0.027	40°	
395627	27/60		60°	
395827	27/80		80°	
395429	29/40	0.75; 0.029	40°	
395629	29/60		60°	
395829	29/80		80°	
395431	31/40	0.79; 0.031	40°	
395631	31/60		60°	
395831	31/80		80°	
395435	35/40	0.90; 0.035	40°	
395635	35/60		60°	
395835	35/80		80°	

13.3 FILTER

Order no.	Designation	
3204604	Edge filter, 60 mesh (white)	 B_00019
3204605	Edge filter, 100 mesh (black)	
9999002	Edge filter, 200 mesh (yellow)	

13.4 HOSES AND CABLES

13.4.1 Gun Cables and Gun Cable Extensions

Gun cable					 B_03218
Length	10 m; 32.8 ft	15 m; 49.2 ft	20 m; 65.6 ft	25 m; 82.0 ft	
Order no.	2339157	2339158	2339159	2339160	
Extension cable					
Length	10 m; 32.8 ft	20 m; 65.6 ft			
Order no.	2339161	2339162			

13.4.2 Product Hoses

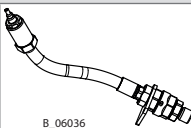
Standard

Order no.	Designation	 B_06421
9984573	High-pressure hose, DN4-PN270-¼"NPS-7.5 m-PA	
2302374	High-pressure hose, DN4-PN270-¼"NPS-10.0 m-PA	
9984573-15	High-pressure hose, DN4-PN270-¼"NPS-15.0 m-PA	
9984573-20	High-pressure hose, DN4-PN270-¼"NPS-20.0 m-PA	

For low-resistance products

Order no.	Designation	 B_06031
2367212	Product hose, GA EAC LowR 7.5 m	
2367213	Product hose, GA EAC LowR 10 m	
2367214	Product hose, GA EAC LowR 15 m	
2367215	Product hose, GA EAC LowR 20 m	

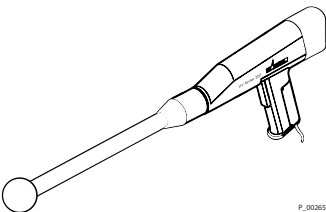
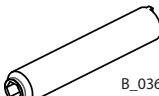
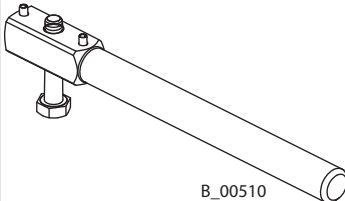
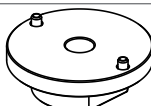
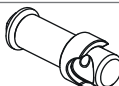
Product Hose, 1.5 mm

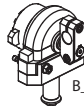
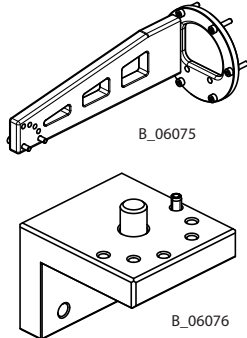
Order no.	Designation	 B_06036
2367217	Product hose (ID = 1.5 mm)	

13.4.3 Air hoses

Order no.	Designation
9982035	Air hose, red ø 6 mm, per meter
9982077	Air hose, green ø 8 mm, per meter
9987095	Air hose, blue ø 10 mm, per meter

13.4.4 Miscellaneous

Order no.	Designation	
259010	High-voltage tester, HV 200 N	 P_00265
2326041	Paint resistance meter	 B_03692
999080	Wet film thickness gauge	 B_03225
50342	Viscosity cup, DIN/4 (4 mm; 0.16 inch)	 B_03224
2309368	Valve needle assembly tool	 B_03451
2325263	Clamping screw assembly tool	 B_03681
380941	Standard holder, 180 mm; Ø 16 mm, 7.1 inches; Ø 0.63 inch	 B_00510
2314079	Cefla adapter plate	 B_03099
380942	Rotary gun holder (standard)	 B_00586
380945	Rotary holder, 40/40/5	

Order no.	Designation	
380943	Complete swivel drive	 B_00585
380944	Cross clamp for swivel drive	 B_00584
2370869	Robot connection, GA 5000	 B_06075 B_06076
128901	Nozzle wrench, ACR	 B_01971

14 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.



14.1 HOW TO ORDER SPARE PARTS

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

Order number, designation and quantity

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

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

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

Identification in spare parts lists

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

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

★ = included in service set

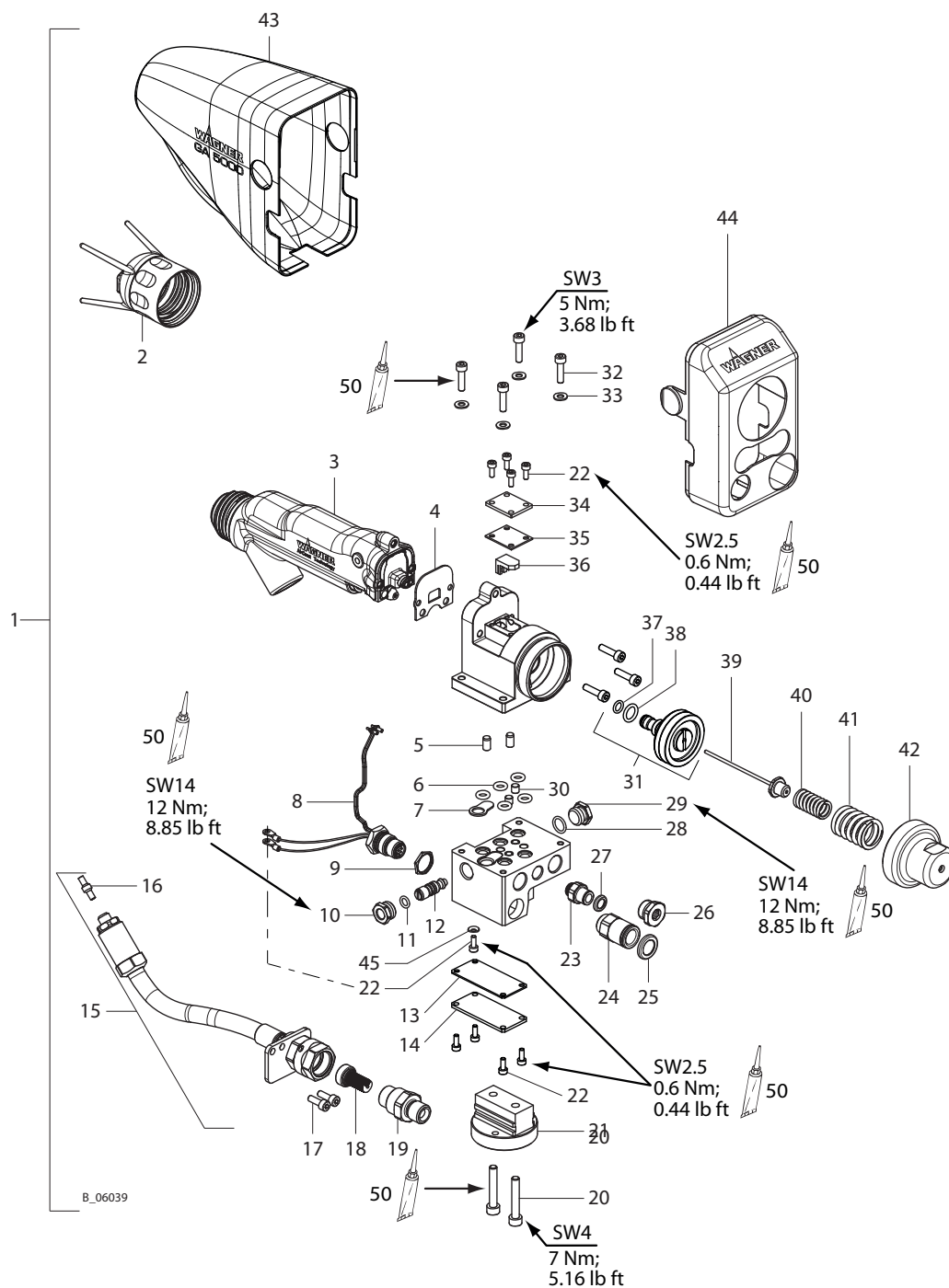
● not part of the standard equipment but available as a special accessory

Explanation of order no. column:

- Item not available as spare part.
- / Position does not exist.

14.2 GA 5000EAC SPRAY GUN

14.2.1 GA 5000EACIC - Basic Version



Dismantling and assembling in accordance with chapter Repairs [►► 54]

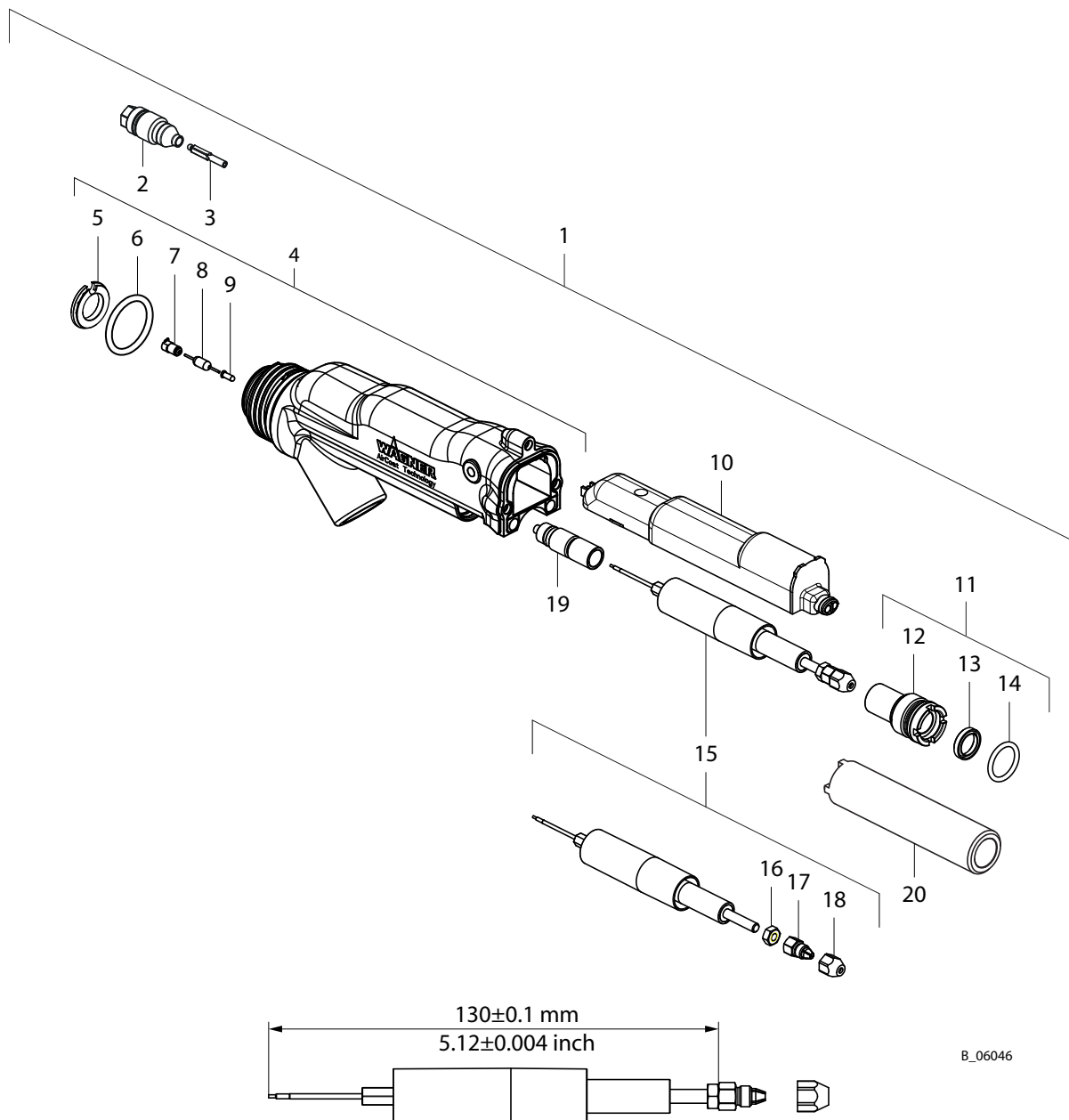
Pos	K	Stk	Order no.	Designation
1		1	2360898	GA 5000EACIC, basic version
2		1	2315775	AC union nut, complete
3		1	--	GA 5000EAC adapter, complete For details, see chapter GA 5000EAC – Adapter [►► 79]
4		1	2307232	Adapter seal
5		2	9930128	Parallel pin
6	◆ *	5	9974265	O-ring
7	◆ *	1	2360689	Gasket
8		1	2360813	Cable, complete (only for WAGNER service department)
9		1	2357712	Locknut
10		1	2307739	Mounting nut
11	◆ *	1	9971388	O-ring
12		1	2307868	Round spray jet reduction
13	◆ *	1	2357738	Gasket
14	◆	1	2357739	Cover
15		1	2386373	GA AC product hose, complete
16	◆	1	2338853	Connecting fitting, AC
17		2	9900353	Hexagon socket head cap screw
18		1	3204605	Edge filter 100 mesh
19		1	2308764	Filter socket, AC
20		1	9900329	Hexagon socket head cap screw
21	◆	1	2357737	Mounting bracket
22		9	9906029	Hexagon socket head cap screw
23		1	9998090	Straight screw-in fitting
24		1	9998987	Straight threaded fitting
25		1	9998770	Coding ring, blue d10
26		1	9998274	Threaded plug, G1/4"
27		1	9998995	Coding ring, red d6
28	◆	1	9974089	O-ring
29		1	2358895	Sealing plug
30		1	2360690	Plug
31		1	2314275	IC piston, complete
32		7	9900308	Hexagon socket head cap screw
33		4	9920104	Washer
34		1	2357167	Lock plate
35	◆ *	1	2357166	Gasket
36		1	2357164	Contact holder
37	◆ *	1	248314	O-ring
38	◆ *	1	9971025	O-ring
39		1	2371130	Pull rod

Pos	K	Stk	Order no.	Designation
40	◆	1	2309945	Cylindrical helical spring
41	◆	1	9998991	Cylindrical helical spring
42		1	2307741	End cap short
43		1	2365237	Cover, labeled
44		1	2365238	Lid labeled, EACIC
45		1	2338526	Contact washer, M3
50		1	9992511	Loctite® 243
		1	2369320	Service set Air/Controller, GA 5000E

◆ = wearing parts

* = included in service set

14.2.2 GA 5000EAC – Adapter



Dismantling and assembling in accordance with chapter Repairs [►► 54]

Pos	K	Stk	Order no.	Designation
1		1	--	Adapter, GM 5000EAC, complete
2	★	1	2312175	Valve housing AC, complete
3	◆ ★	1	2312186	Valve tip, AC, complete
4		1	2397188	Adapter, GA 5000EAC
5	★	1	2313314	Air manifold ring, AC
6	◆ ★	1	2307180	O-ring, sheathed
7	◆ ★	1	2314283	Contacting, AC
8	◆ ★	1	9952777	High resistance, bare

Pos	K	Stk	Order no.	Designation
9		1	9960808	Socket contact component (gold contact sleeve)
10		1	2312181	Cascade, complete
11		1	2357665	Clamping screw valve rod, complete
12		1	2307062	Clamping screw valve rod
13	◆ *	1	2311562	Rod seal
14	◆ *	1	9974166	O-ring
15	*	1	2369017	Valve rod unit, GA 5000E
16		1	9910108	Hexagon nut
17		1	2357740	Collet chuck
18		1	2357741	Clamping nut
19	*	1	2357106	Packing, complete
20		1	2325263	Clamping screw assembly tool
		1	2369015	Service set, GA 5000EAC adapter

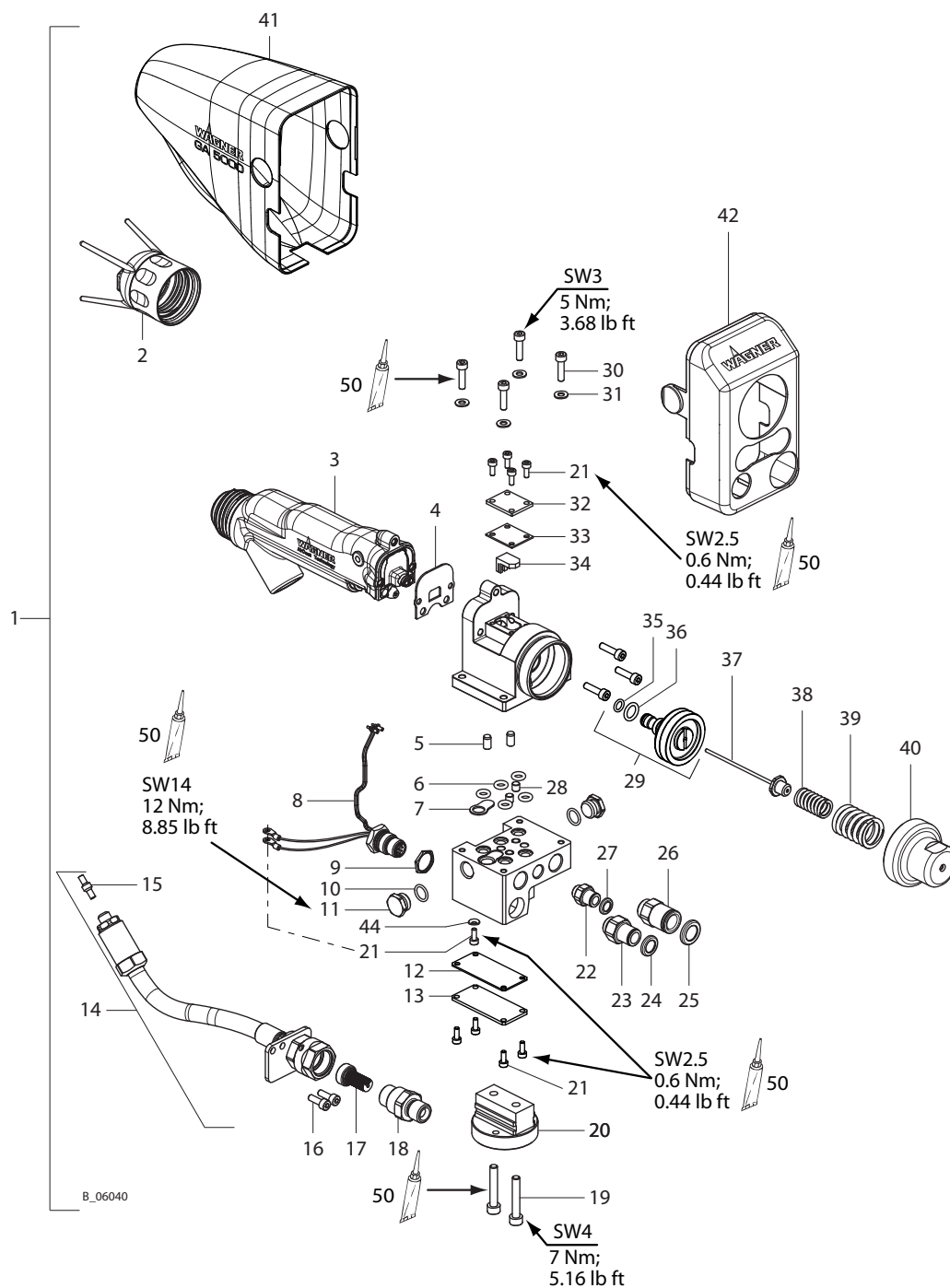
◆ = wearing parts

* = included in service set

- from chapter 14.3.1 pos. 5 or 14.3.2 pos. 11 (2311217, O-ring, sheathed)
- from chapter 14.2.1 pos. 4 or 14.2.3 pos. 4 (2307232, adapter seal)
- from chapter 14.2.1 pos. 16 or 14.2.3 pos 15 (2338853, AC connecting fitting)

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

14.2.3 GA 5000EACEC - Basic Version



Dismantling and assembling in accordance with chapter Repairs [►► 54]

Pos	K	Stk	Order no.	Designation
1		1	2360899	GA 5000EACEC, basic version
2		1	2315775	AC union nut, complete
3		1	--	GA 5000EAC adapter, complete For details, see chapter GA 5000EAC – Adapter [►► 79]
4		1	2307232	Adapter seal

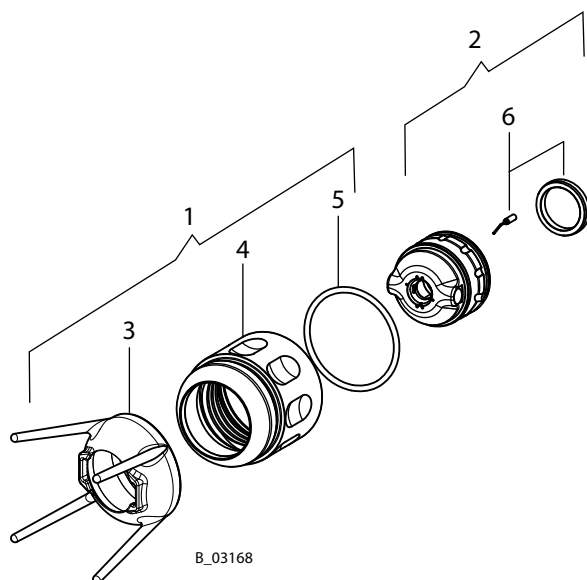
Pos	K	Stk	Order no.	Designation
5		2	9930128	Parallel pin
6	◆ *	5	9974265	O-ring
7	◆ *	1	2360689	Gasket
8		1	2360813	Cable, complete (only for WAGNER service department)
9		1	2357712	Locknut
10	◆	1	9974089	O-ring
11		1	2358895	Sealing plug
12	◆ *	1	2357738	Gasket
13	◆	1	2357739	Cover
14		1	2386373	GA AC product hose, complete
15	◆	1	2338853	Connecting fitting, AC
16		2	9900353	Hexagon socket head cap screw
17		1	3204605	Edge filter 100 mesh
18		1	2308764	Filter socket, AC
19		1	9900329	Hexagon socket head cap screw
20	◆	1	2357737	Mounting bracket
21		9	9906029	Hexagon socket head cap screw
22		1	9998090	Straight screw-in fitting
23		1	9998254	Straight screw-in fitting
24		1	9998616	Coding ring, green d8
25		1	9998770	Coding ring, blue d10
26		1	9998987	Straight threaded fitting
27		1	9998995	Coding ring, red d6
28		1	2360690	Plug
29		1	2314275	IC piston, complete
30		7	9900308	Hexagon socket head cap screw
31		4	9920104	Washer
32		1	2357167	Lock plate
33	◆ *	1	2357166	Gasket
34		1	2357164	Contact holder
35	◆ *	1	248314	O-ring
36	◆ *	1	9971025	O-ring
37		1	2371130	Pull rod
38	◆	1	2309945	Cylindrical helical spring
39	◆	1	9998991	Cylindrical helical spring
40		1	2307741	End cap short
41		1	2365237	Cover, labeled
42		1	2365244	Cover, labeled EACEC
44		1	2338526	Contact washer, M3
50		1	9992511	Loctite® 243
		1	2369320	Service set Air/Controller, GA 5000E

◆ = wearing parts

★ = included in service set

14.3 ACCESSORIES SPARE PARTS LISTS

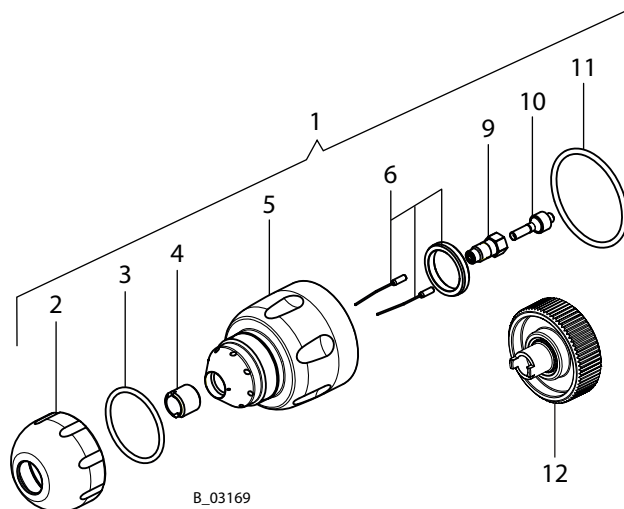
14.3.1 Flat jet nozzles



Pos	K	Stk	Order no.	Designation
1		1	2315775	AC union nut, complete
2		1	2309882	Air cap, ACF 5000 - LV (red)
		1	2314203	Air cap, ACF 5000 - HV (blue)
3	◆	1	2311777	Nozzle guard, AC
4	◆	1	2311776	Union nut, AC
5	◆	1	2311217	O-ring, sheathed
6	◆	1	2319525	Flat electrode set

◆ = wearing parts

14.3.2 ACR 5000 Round Jet Nozzle Attachment



Pos	K	Stk	Order no.	Designation
1		1	2309883	Round jet nozzle attachment, ACR 5000
2		1	2307220	Nozzle nut
3	◆	1	2315310	O-ring
4	◆	1	132351	Nozzle screwed connection holder
5		1	2307219	Nozzle body
6	◆	1	2319526	Round electrode set
9	◆	1	132516	Nozzle screw joint, complete
10	◆	1	2307216	Sealing fitting
11	◆	1	2311217	O-ring
12		1	128901	Nozzle wrench, complete

◆ = wearing parts

15 DECLARATION OF CONFORMITY

15.1 EU DECLARATION OF CONFORMITY

EU Declaration of Conformity as defined by ATEX-directive 2014/34/EU.

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:

2006/42/EC	2014/34/EU	2014/30/EU	2011/65/EU
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Applied standards, in particular:

EN ISO 12100:2010	EN 50176:2009
EN 1953:2013	EN 61000-6-2:2019
EN 60204-1:2018	EN 61000-6-4:2019
EN 60529:1991+A1:2000+A2:2013	EN IEC 63000:2018
EN 50050-1:2013	

Applied national technical standards and specifications, in particular:

DGUV 209-052	DGUV regulation 100-500 Chap. 2.29	DGUV regulation 100-500 Chap. 2.36
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Type examination certificate:

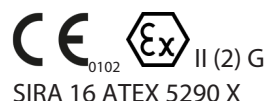
SIRA 16 ATEX 5290 X

Quality certificate for the quality assurance system:

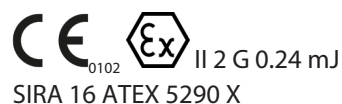
PTB 03 ATEX Q019

Identification:

Control unit



Spray gun:



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





Order number 2360922
Edition 09/2022

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Version B



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Subject to changes without notice