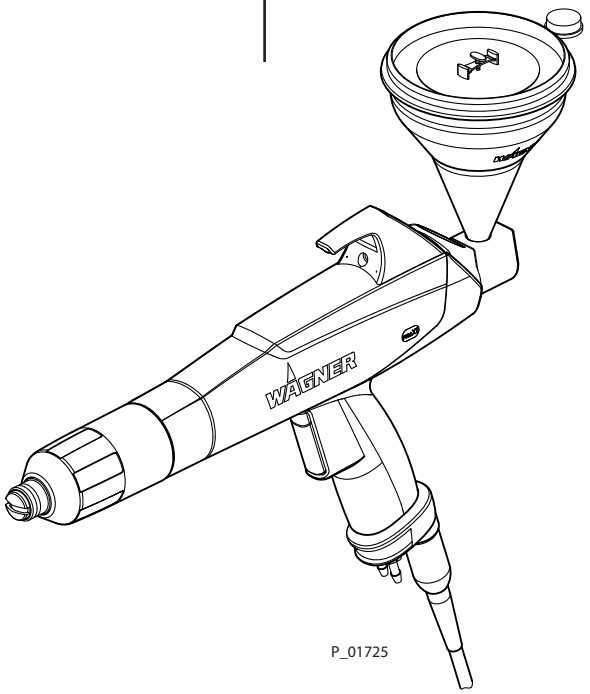
WAGNER

Translation of the Original Operating Manual

PEM-X1 CG

Powder Cup Gun

Version 03 / 2014



P_01725

CE 0102 Ex II 2D 2mJ

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1 GENERAL

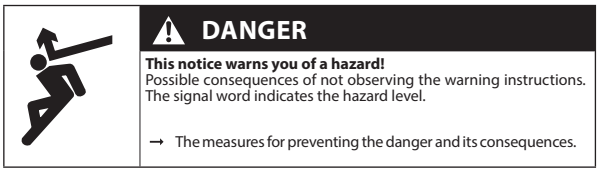
1.1 PREFACE

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 operating and service staff.
Operating and service staff should be instructed according to the safety instructions.
The device may only be operated in compliance with this operating manual.
This equipment can be dangerous if it is not operated according to the instructions in this operating manual.
Electrostatic manual coating systems may only be operated by qualified personnel.

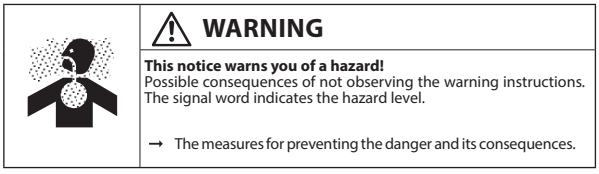
1.2 WARNINGS, NOTICES, AND SYMBOLS IN THIS OPERATING MANUAL

Warning instructions in this operating 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:

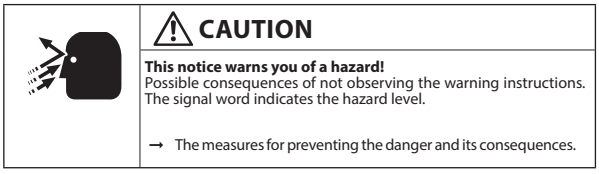
Danger - immediate risk of danger.
Non-observance will result in death or serious injury.



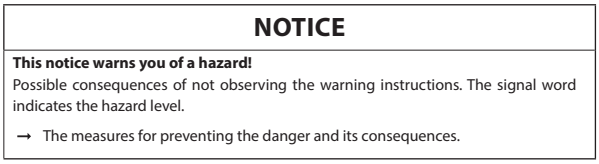
Warning - possible imminent danger.
Non-observance may result in death or serious injury.



Caution - a possibly hazardous situation.
Non-observance may result in minor injury.



Notice - a possibly hazardous situation.
Non-observance may result in damage to property.



Note - provides information about particular characteristics and how to proceed.

1.3 LANGUAGES

The operating manual is available in the following languages:

German	2326959	English	2326960
French	2326961	Italian	2326962
Spanish	2326963	Russian	2333347
Chinese	2333348		

1.4 ABBREVIATIONS

Stk	Number of pieces
Pos	Position
K	Marking in the spare parts lists
Order No.	Order number
ET	Spare part

2 CORRECT USE

2.1 DEVICE TYPE

Powder cup guns for manual coating of grounded work pieces.

2.2 TYPE OF USE

The PEM-X1 CG powder cup gun is designed for the electrostatic coating of work pieces with organic powders. Any other form of use is considered non-intended use. Wagner disclaims liability for any damage resulting from non-intended use.
Electrostatic manual coating systems may only be used in spray areas equipped in accordance with EN 12981 or under equivalent ventilation conditions.

2.3 USE IN POTENTIALLY EXPLOSIVE AREAS

In explosion hazard areas, only use approved explosion-proof electrical devices.
This type A-P electrostatic powder spray gun is suitable for processing industrial powder paints for coating electrically conductive objects and can be used in potentially explosive areas (zone 22). (See Chapter 3.1 Explosion Protection Identification).

2.4 SAFETY PARAMETERS

WAGNER accepts no liability for any damage arising from non-intended use.

→ Electrostatic manual coating systems may only be operated in an undamaged condition. Damaged devices must be decommissioned immediately and repaired immediately.
→ Use the device only to work with the products recommended by WAGNER.
→ Operate only the device as a whole.
→ Do not deactivate safety fixtures.
→ Spare parts and accessories may have safety-relevant properties.
Use only WAGNER original spare parts and accessories.

The powder cup gun may only be operated under the following conditions if:
→ the operating staff have previously been trained on the basis of this operating manual,
→ the safety regulations listed in this operating manual are observed,
→ the operating, maintenance and repair information in this operating manual is observed,
→ and the statutory requirements and accident prevention regulations standards in the country of use are observed.

2.5 PROCESSIBLE WORKING MATERIALS

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

2.6 REASONABLY FORESEEABLE MISUSE

The following is prohibited:

- coating work pieces which are not grounded,
- unauthorized conversions and modifications to the spray gun,
- processing liquid or similar coating products,
- using defective components, spare parts, or accessories other than those described in Chapter 12 of this operating manual.

The forms of misuse listed below may result in physical injury or property damage:

- Use of damp powder lacquer
- Incorrectly set values for powder discharge
- Incorrectly set electrostatic values
- Use of defective components and accessories
- Use for foodstuffs
- Use in the pharmaceutical sector
- Use with non-authorized control units

2.7 RESIDUAL RISKS

Residual risks are risks which cannot be excluded even in the event of correct use.
If necessary, warning and prohibition signs at the relevant points of risk indicate residual risks.

Residual risk	Source	Consequences	Specific measures	Lifecycle phase
Skin contact with powder lacquers and cleaning agents	Handling powder lacquers and cleaning agents	Skin irritation, allergies	Wear protective clothing, observe safety data sheets	Operation, maintenance, disassembly
Powder lacquer in air outside the defined working area	Lacquering outside the defined working area	Inhalation of substances hazardous to health	Observe working instructions and operating procedures	Operation, maintenance

3 IDENTIFICATION

3.1 EXPLOSION PROTECTION IDENTIFICATION

Gun type:	PEM-X1 CG
Manufacturer:	J. Wagner AG
	CH - 9450 Altstätten
CE 0102 Ex	II 2 D 2mJ 85 °C
CE:	European Communities
0102:	Number of notified body which issues the recognition of quality assurance in production.
Ex:	Symbol for explosion protection
II:	Device class II
2:	Category 2
D:	Ex-atmosphere dust
2mJ:	Maximum ignition energy 2 mJ
85 °C:	Maximum surface temperature

The EC type examination certificate PTB 12 ATEX 5002 can be found in Chapter 15.4.

3.2 PERMISSIBLE DEVICE COMBINATIONS

⚠ WARNING

Incorrect use!
Risk of injury and damage to the device.

→ Connect PEM-X1 CG powder cup guns only to genuine Wagner devices.

The PEM-X1 CG powder cup gun may only be connected to the control devices listed below:

- EPG-Sprint X
- EPG-Sprint
- EPG S2

Permissible device combinations for the USA and Canada, see Chapter 15.5 "FM Approval".

4 GENERAL SAFETY INSTRUCTIONS

4.1 SAFETY INSTRUCTIONS FOR THE OPERATOR

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

4.1.1 ELECTRICAL DEVICES AND EQUIPMENT

→ To be provided in accordance with the local safety requirements with regard to the operating mode and ambient influences.
→ May only be maintained by skilled electricians.
→ Must be operated in accordance with the safety regulations and electrotechnical regulations.
→ Must be repaired immediately in the event of problems.
→ Must be decommissioned if they pose a hazard.
→ Must be de-energized before work is commenced on active parts.
→ Secure the device against being switched back on without authorization. Inform staff about planned work.
→ Observe electrical safety regulations.

4.1.2 STAFF QUALIFICATIONS

→ Ensure that the device is operated, maintained and repaired only by trained persons.

4.1.3 SAFE WORK ENVIRONMENT

→ The floor in the working area must be electrostatically conductive (measurements according to EN 1081 and EN 61340-4-1).
→ The footwear worn by the operators must comply with the requirements of EN ISO 20344. The measured insulation resistance must not exceed 100 megohms.
→ The protective clothing, including gloves, must comply with the requirements of EN ISO 1149-5. The measured insulation resistance must not exceed 100 megohms.
→ The powder release must be electrically interlocked with the powder spray system's exhaust air equipment.
→ Excess coating product (overspray) must be collected up safely.
→ Ensure that there are no ignition sources such as naked flames, sparks, glowing wires, or hot surfaces in the vicinity. Do not smoke.
→ Maintain sufficient quantities of suitable fire extinguishers and ensure that they are serviceable.
→ The operating company must ensure that an average concentration of powder lacquer in the air does not exceed 50% of the lower explosion limit (LEL = max. permitted concentration of powder to air). If no reliable LEL value is available, the average concentration must not exceed 10 g/m^3.

4.2 SAFETY INSTRUCTIONS FOR STAFF

→ Always follow the information in this manual, particularly the general safety instructions and the warning instructions.
→ Always follow local regulations concerning occupational safety and accident prevention.
→ Under no circumstances may people with pacemakers enter the area where the high-voltage field between the spray gun and the work piece to be coated builds up!

4.2.1 SAFE HANDLING OF WAGNER POWDER SPRAY DEVICES

→ Do not point spray guns at people.
→ Before all work on the device, in the event of work interruptions and functional faults:
- Switch off the energy/compressed air supply.
- Secure the spray gun against actuation.
- Relieve pressure on spray gun and device.
- In case of functional faults: Identify and correct the problem, proceed as described in the "Fault Rectification" chapter.

4.2.2 GROUNDING THE DEVICE

The electrostatic charge may, in certain cases, give rise to electrostatic charges on the device. This may result in the formation of sparks or flames when discharging.

→ Ensure that the device is grounded before each coating process.
→ All the system's conductive elements, such as floors, walls, ceilings, protective grating, transport equipment, work pieces, powder tanks, automatic moving devices or construction parts etc. in the spray area, with the exception of parts which carry high-voltage during operation, must be connected to the grounding system.
Parts of the booth must be grounded in accordance with EN 12981.
→ Ensure that all persons inside the working area are grounded, e.g., by wearing electrostatically conductive shoes.
→ The functionality of grounding cables must be checked regularly (see EN 60204).

4.2.3 PRODUCT HOSES

→ Only use an original Wagner powder hose.

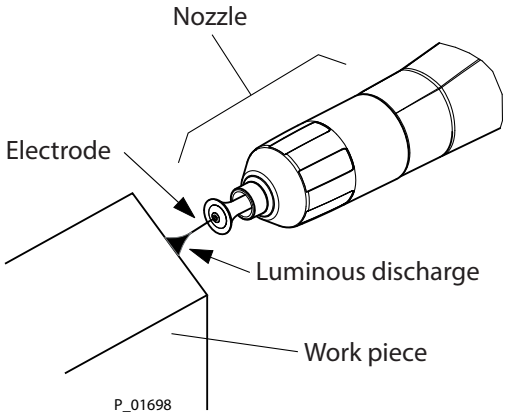
4.2.4 CLEANING

- → Before starting cleaning or any other manual work, the high-voltage in the spray area must be shut down and locked to prevent it from being switched back on.
- → Lock the compressed air supply and decompress the device.
- → Secure the device against being switched back on without authorization.
- → Use only electrically conducting and grounded tanks for cleaning fluids.
- → Preference should be given to non-flammable cleaning fluids.
- → Flammable cleaning liquids may only be used if, after switching off the high-voltage, all high-voltage conducting parts are discharged to a discharge energy of less than 0.24 mJ before they can be accessed.
  Most flammable solvents have an ignition energy of around 0.24 mJ or 60 nC.
- → The cleaning agent's flash point must be at least 15 K above the ambient temperature.
- → Only mobile industrial vacuum cleaners of design 1 (see EN 60335-2) may be used to remove dust deposits.

4.2.5 HANDLING POWDER LACQUERS

- → When preparing or processing the powder and cleaning the device, take note of the processing regulations, laid down by the manufacturer of the powder lacquers, being used.
- → Take note of the manufacturer’s instructions and the relevant environmental protection regulations when disposing of powder lacquers.
- → Take the prescribed safety measures, in particular the wearing of safety glasses and safety clothing as well as the use of protective hand cream.
- → Use a mask or breathing apparatus if necessary.
- → To ensure sufficient protection of health and the environment, only operate the device in a powder booth or on a spray wall with activated ventilation (exhaust air).

4.3 INFORMATION ABOUT SAFE DISCHARGES



With the high-voltage switched on, a luminous or corona discharge occurs at the electrode tip; this can only be seen in the dark. This physical effect can be seen when the electrode is brought near the grounded work piece. This luminous discharge does not involve any ignition energy and has no effect on system handling. When the electrode approaches the work piece, the control unit automatically reduces the high-voltage to a safe value. If you touch plastic parts of the spray gun with your finger, harmless discharges may occur due to the high-voltage field around the spray gun (so-called brush discharges). However, these do not contain any ignition energy.

4.4 PROTECTIVE AND MONITORING EQUIPMENT

⚠ WARNING

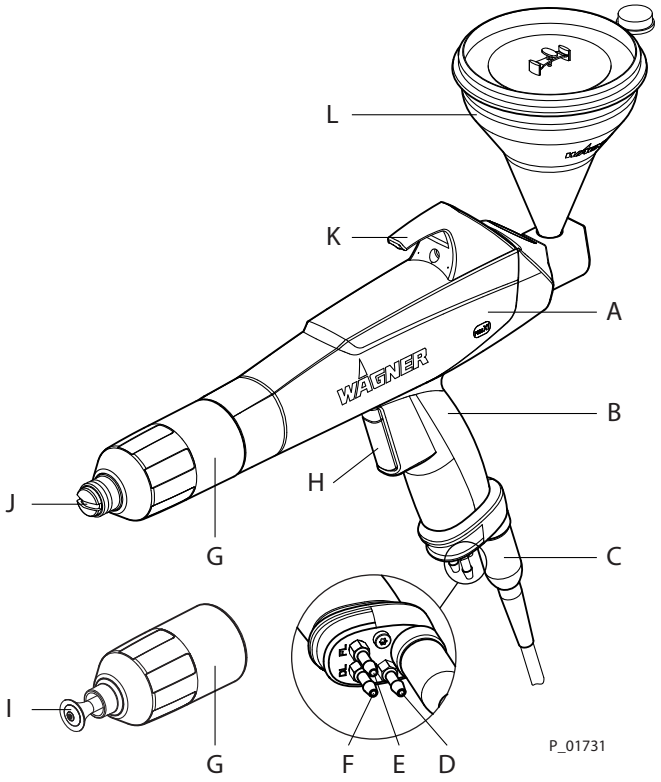
Protective and monitoring equipment!
Risk of injury and damage to the device.

- → 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.

To prevent electrostatic flashover, the union nut for securing the nozzles is designed in a certain geometric shape.
This shape, together with the shape of the fan spray nozzle or deflector cone sleeve, prevents the nozzles from coming loose unintentionally (see chapters 8.3, 8.5, 8.8).
To ensure safety, only use genuine Wagner spare parts!

5 DESCRIPTION

5.1 SPRAY GUN DESIGN



	Designation
A	Spray gun body
B	Handle
C	Electrical connection cable
D	Atomizing air connection
E	Feed air connection
F	Dosing air connection
G	Union nut
H	Trigger lever
I	Round spray nozzle
J	Fan spray nozzle
K	Suspension hook
L	Powder cup

5.2 FUNCTIONING OF THE SPRAY GUN

High-voltage is activated in the manual gun when the trigger is actuated!
The air supply of the feed, dosage and atomizing air are activated at the same time, for the powder feed.
The control unit must be switched off in order to lock the spray gun.
To prevent electrostatic flashover, the union nut for securing the nozzles is designed with a labyrinth.

5.3 TECHNICAL DATA

Dimensions:	
Length/width/height	see Chapter 5.3.1
Weight (with powder cup)	550 g; 1.21 lbs
Cup capacity	130 g; 0.29 lb
Cup filling volume	210 cm³; 7.93 ci
Electrical:	
Input voltage	maximum 22 Vpp
Input current	maximum 0.9 A
Frequency	19 - 30 kHz
Output voltage	maximum 100 kV DC
Maximum Corona current	120 µA
Polarity	negative
Construction type	in accordance with DIN EN 50050-2
Protection class	IP 64
Pneumatic:	
Input air pressure (atomizing air volume)	maximum 3 bar; 0.3 MPa, 43.51 psi
Powder output quantity	maximum 200 g/min; maximum 0.44 lbs/min
Ambient conditions:	
Operating temperature range	5 - 45 °C; 41 - 113 °F
Relative humidity	< 75 %

⚠ WARNING

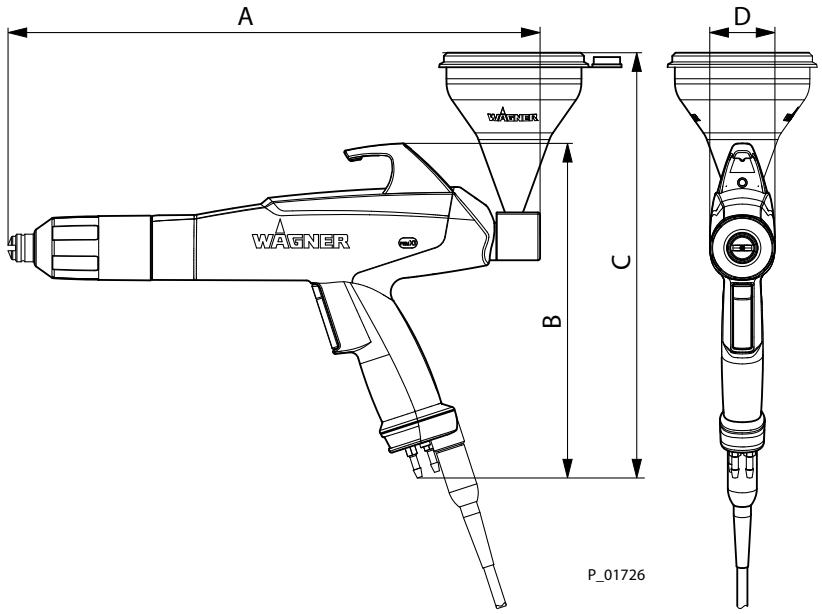
Outgoing air containing oil!
Risk of poisoning if inhaled.
Insufficient paint application quality.

→ Provide compressed air free from oil and water (Quality Standard 3.5.2 according to ISO 8573.1) 3.5.2 = 5 µm / +7 °C; 44.6 °F / 0.1 mg/m³.

Ambient conditions:
If low-melting powders are used, the ambient temperature may have to be lower than 30 °C; 86 °F.

Volume measures:
for volumes specified in Nm³ (standard cubic meters). One cubic meter of a gas at 0 °C and 1.013 bar is called norm cubic meter.

5.3.1 DIMENSIONS



Measurement	mm	inch
A*	365	14.37
B	230	9.06
C	290	11.42
D	45	1.77

* with fan spray nozzle/with deflector cone

5.4 PERMITTED ACCESSORIES

Only the accessories listed in the "Accessories" chapter of this operating manual may be connected to the PEM-X1 CG powder cup gun.
The accessories listed in the chapter "Accessories" were included in the EC type examination and are approved for use with the gun.

5.5 SCOPE OF DELIVERY

Stk	Order No.	Designation
1	2322588	PEM-X1 CG powder cup gun
1	---	Nozzle set
The standard equipment includes:		
1	2326024	Declaration of Conformity
1	2326959	Operating manual, German
1	see Chapter 1.3	Operating manual in local language

6 ASSEMBLY AND COMMISSIONING

6.1 TRAINING ASSEMBLY/COMMISSIONING STAFF

⚠ WARNING

Incorrect installation/operation!
Risk of injury and damage to the device.

- → The commissioning staff must have the technical skills to safely undertake commissioning.
- → The commissioning staff must be familiar with the provisions of European standard DIN EN 50050-2.
- → When commissioning and for all work, read and follow the operating manual and safety regulations for the additionally required system components.

6.2 STORAGE CONDITIONS

Until the point of assembly, the powder spray gun must be stored in a dry location, free from vibrations and with a minimum of dust. The powder spray gun must be stored in closed rooms.
The air temperature at the storage location must be between 5 - 45 °C; 41 - 113 °F.
The relative air humidity at the storage location must not exceed 75%.

6.3 INSTALLATION CONDITIONS

The air temperature at the installation site must be between 5 - 45 °C; 41 - 113 °F.
Depending on the powder lacquer used, the maximum permissible ambient temperature for reliable operation can be significantly below +40 °C; 104 °F.
The relative air humidity at the assembly location must not exceed 75%.

6.4 PREPARING THE SPRAY GUN

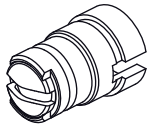
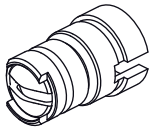
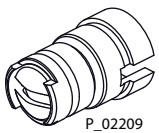
6.4.1 SELECTION OF THE SUITABLE NOZZLE SYSTEM

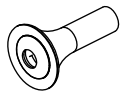
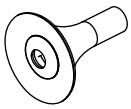
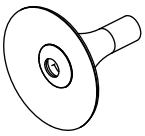
The process of changing from the fan spray nozzle to the deflector cone is described in Chapter 8.8 "Changing from Fan Spray Nozzle to Round Spray Nozzle".
You will find the article numbers of the different nozzles in Chapter 12 "Accessories".

Nozzle	Application overview	Powder cloud
Fan spray nozzle	Complex part geometries • Flat parts (slight window frame effect) • Profiles • Undercuts	Widely spread flat powder cloud
Deflector cone	• Wire goods • Grid designs • Small components	Round powder cloud: Size of the powder cloud is dependent on the deflector plate diameter

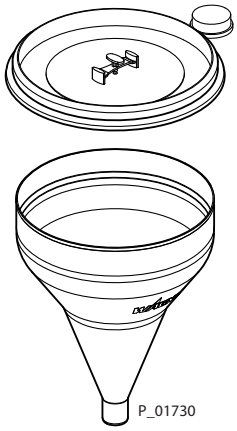
Nozzle	Application	Distance to work piece (mm)	Powder output (g/min)
 P_01664	Universal • Deep and complex part geometries • Extensive work pieces	120 ... 300	50 ... 300

The spray width can be adjusted by the sliding ring.

	Rear sliding ring Wide cloud Cloud opening angle approx. 80°
	Front sliding ring, front Narrow cloud Cloud opening angle approx. 60°
 P_02209	Front sliding ring, front, turned by 90° Extra narrow cloud Cloud opening angle approx. 40°

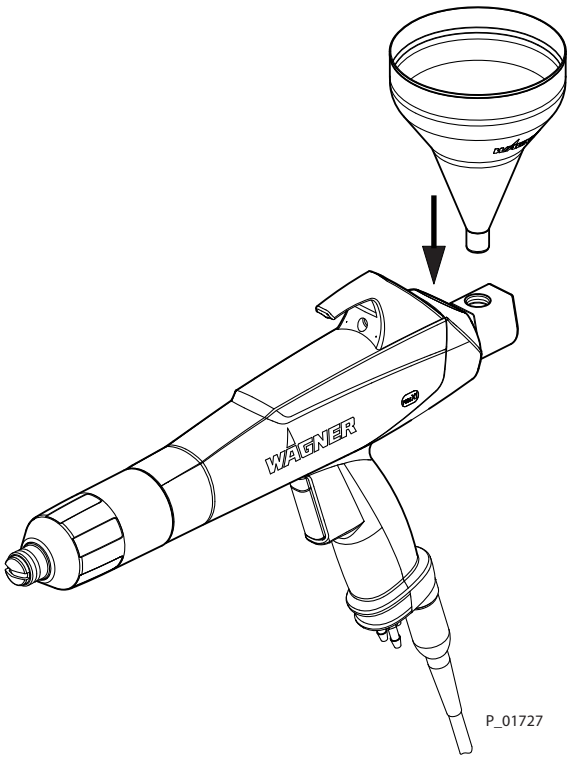
Deflector cone	Application	Distance to work piece (mm)	Powder discharge (g/min)
R18  P_01665	∅ 18 mm • Smaller flat parts	100 … 300	30 … 250
R25  P_01666	∅ 25 mm • Medium sized flat parts	100 … 300	50 … 250
R34  P_01667	∅ 34 mm • Large flat parts	100 … 300	50 … 250

6.4.2 POWDER CUP



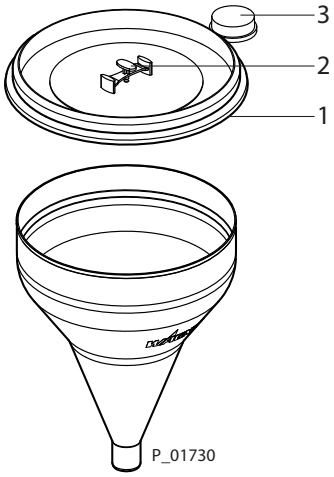
Powder cup with cover, 210 cm^3

6.4.3 ASSEMBLING THE POWDER CUP



Insert powder cup in opening up to stop.

6.4.4 HANDLING THE POWDER CUP



Cover 1 is only needed on the gun if the gun is angled such that powder escapes from the tank.

During coating, the flip-flop latch 2 must be open. It is opened by pulling up the toggle.

For storage purposes, the tank must be closed by fitting cover 1, closing flip flop latch 2 and attaching small cover 3 at the bottom of the tank.

6.5 CONNECTING THE SPRAY GUN

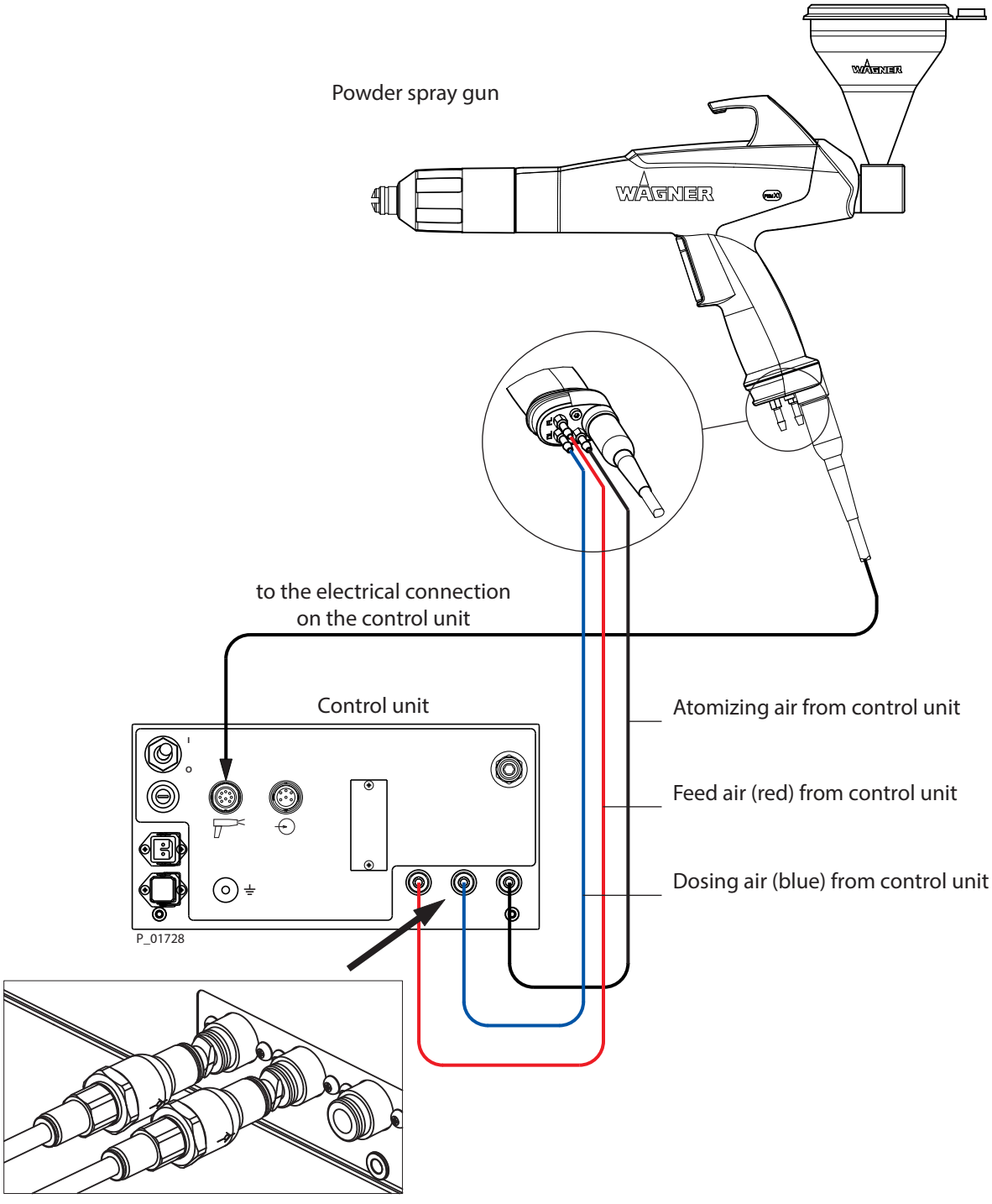
⚠ WARNING

Unintentional putting into operation!
Risk of injury.

Before any work on the device, in the event of work interruptions and malfunctions:
- → Switch off the energy/compressed air supply.
- → Relieve spray gun and device pressure.
- → Secure the spray gun against actuation.
- → In the event of malfunctions, remedy the fault as described in the "Troubleshooting" chapter.

Procedure:

1. Switch off the high-voltage generation on the control unit.
2. Before connecting the spray gun, check that all components (such as the nozzle system and union nut) are correctly fitted.
3. Connect electrical cable of spray gun to control unit.
4. Connect the feed air hose to the spray gun and to the control unit.
5. Connect the dosing air hose to the spray gun and to the control unit.
6. Connect the atomizing air hose to the spray gun and to the control unit.



Use non-return valve with feed and dosing air!

6.6 GROUNDING

DANGER

No Grounding!
Risk of explosion and risk of electric shock.

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

WARNING

Heavy powder mist if grounding is insufficient!
Danger of poisoning.
Insufficient paint application quality.

→ Ground all device components.
→ Ground the work pieces to be coated.

For safety reasons, the control unit must be properly grounded. The ground connection to the energy supply (socket) takes the form of the mains connection cable's protective conductor, while that to the work piece / system is via the knurled screw on the rear of the control unit. Both connections are absolutely essential. If installed correctly as described above, the spray gun is grounded via the gun cable between the control unit and spray gun.

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

A poorly grounded work piece causes:

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

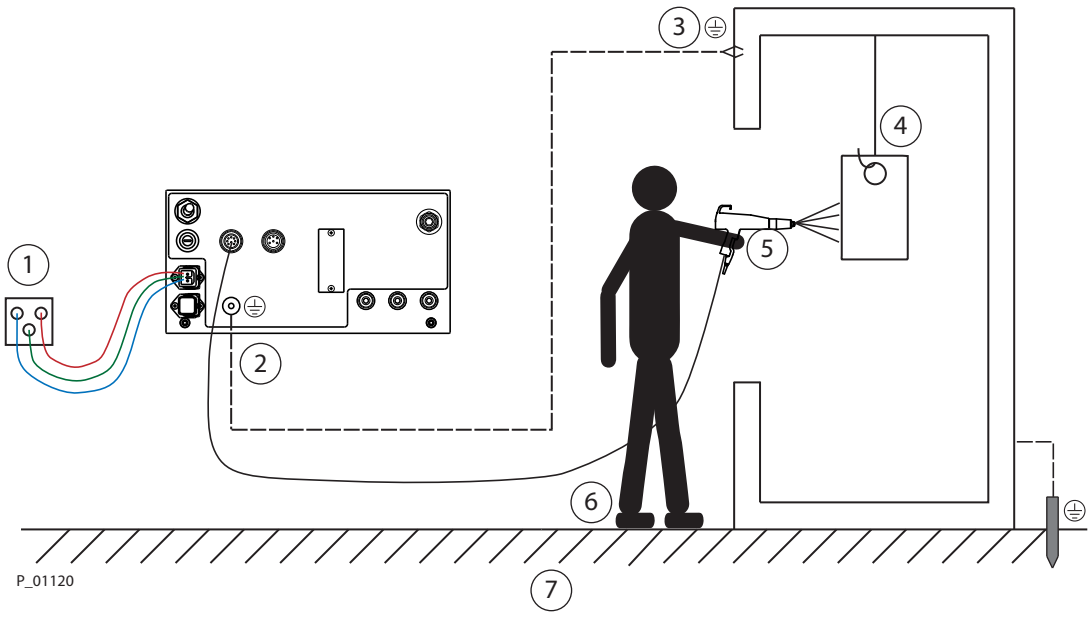
Prerequisites for perfect grounding and coating are:

- Clean work piece suspension.
- Grounding of spray booth, conveyor system and suspension on the building side in accordance with the operating manuals or the manufacturer's information.
- Grounding of all conductive parts within the working area.
- The grounding resistance of the work piece may not exceed 1 MΩ (megohm). (Resistance to ground measured at 500 V or 1,000 V).

- The footwear worn by the operators must comply with the requirements of EN ISO 20344. The measured insulation resistance must not exceed 100 MΩ (megohms).
- The protective clothing, including gloves, must comply with the requirements of EN ISO 1149-5. The measured insulation resistance must not exceed 100 MΩ (megohms).

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

6.6.1 GROUNDING THE POWDER COATING SYSTEM



1 **Only use mains cables with grounding strand!**
2 **Connect grounding cable with booth and signal ground!**
3 **Connect grounding cable to an uncoated metal part of the booth!**
4 **All paint must be removed from hook and other hanger parts!**
5 **Wear electrostatically conductive gloves!**
6 **Wear electrostatically conductive footwear!**
7 **The floor must be electrostatically conductive!**

7 OPERATION

7.1 TRAINING THE OPERATING STAFF

⚠ WARNING

Incorrect operation!
Risk of injury and damage to the device.

→ The operating staff must be qualified to operate the entire system.
→ Before work commences, the operating staff must receive appropriate system training.
→ The operating staff must be familiar with the provisions of European standard DIN EN 50050-2.

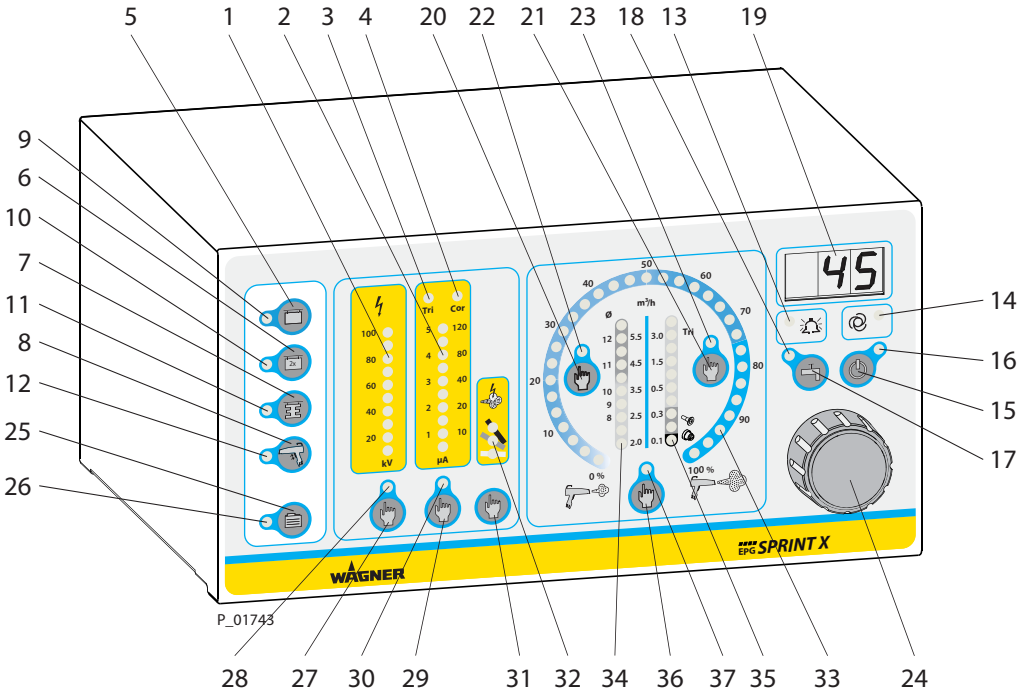
7.2 SAFETY INSTRUCTIONS

⚠ WARNING

Incorrect operation!
Risk of injury and damage to the device.

→ If contact with powder products or cleaning agents causes skin irritation, appropriate precautionary measures must be taken, e.g., wearing protective clothing.
→ The footwear worn by operating staff must comply with EN ISO 20344. The measured insulation resistance must not exceed 100 megohms.
→ The protective clothing, including gloves, must comply with EN ISO 1149-5. The measured insulation resistance must not exceed 100 megohms.

7.3 OPERATION OF THE CONTROL UNIT



1 Illuminated display: "High-voltage"

- Lights up green
- Display range: 0-100 kV
  Resolution 10 kV
- Single LED display: Nominal voltage
- Bar display: Working voltage

2 Illuminated display: "Corona or Tribo Current"

- Lights up green

Tribo scale:

- When a Tribo gun is connected and selected
- Bar display: When powder feed is activated
- Display range: 0-5 µA
  Resolution 0.5 µA

Corona scale:

- When a Corona gun is connected and selected
- Display and adjusting range: 0 [5]-120 µA,
  0 [5]-20 µA resolution 5 µA
  20-40 µA resolution 10 µA
  40-120 µA resolution 20 µA
- Single LED display: "Trigger Point of Current Limitation"
- Bar display: Corona current

3 Display: "Tribo Gun"
- Lights up when a Tribo gun is connected and selected

4 Display: "Corona Gun"
- Lights up when a Corona gun is connected and selected

5 Push button: recipe for "Surface Parts"

6 Push button: recipe for "Second Coating"

7 Push button: recipe for "Profiles"

8 Push button: recipe for "Double Click"
- To access the recipe, press the trigger lever on the spray gun twice in quick succession and hold it down

9 Display LED: recipe for "Surface Parts"
- Lights up green when the recipe for surface part is selected

10 Display LED: recipe for "Second Coating"
- Lights up green when the recipe for "Second Coating" is selected

11 Display LED: recipe for "Profiles"
- Lights up green when the recipe for profile part is selected

12 Display LED: recipe for "Double Click"
- Lights up green, when the recipe for "Double Click" is selected

13 Display LED: "Fault"
- Lights up, when there is a fault on the device

14 Display LED: "Automatic Gun"
- Lights up, when an automatic gun is connected

15 Push button: "Standby"
- To switch into standby mode
- High-voltage and powder feed cannot be activated in this mode
- To reactivate normal mode, press the button again

16 Display LED: "Standby"
- Lights up when the unit is in standby mode

17 Push button: "Flush"

- To activate the injector and the hose rinsing

18 Display LED: "Flush"

- Lights up blue, when the flush function is activated

19 Display LED: 7 segments, three-digit number

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

20 Push button: "Total Air Volume"

- To activate the function, the value is precisely adjusted with rotary controller 24 and is indicated in LED display 19
- Adjusting range: 2-6 m^3/h
- Resolution: 0.05 m^3/h

21 Push button: "Atomizing, Ionizing and Tribo Air"

- To activate the function, the value is precisely adjusted with rotary controller 24 and is indicated in LED display 19
- Adjusting range: 0.1-4 m^3/h
- Resolution: 0.05 m^3/h

22 Display LED: "Overall Air"

- Lights up yellow, when the setting "Overall Air" is selected

23 Display LED: "Atomizing, Ionizing and Tribo Air"

- Lights up yellow, when the setting "Atomizing, Ionizing and Tribo Air" is selected

24 Universal control dial

- Dynamic digital control dial with 32 positions per revolution
- Adjustment speed is proportional to rotational speed
- Used to set: "Total air volume; atomizer, ionizer and Tribo air; additional recipes; high-voltage; current limitation; powder quantity"
- For setting parameter values in configuration mode

25 Push button: "Additional Recipes"

- To activate the function, the additional recipes adjustment is set with the rotary controller (24) and is indicated in the LED display (19).
- Selection of the recipes 5 to 50

26 Display LED: "Additional Recipes"
- Lights up yellow, when an additional recipe is selected

27 Push button: "High-voltage"
- To activate the function, the high-voltage is set with Rotary Controller 24 and is indicated in LED Display 19
- Adjusting range: 10-100 kV
- Resolution: 1 kV

28 Display LED: "High-voltage"
- Lights up yellow. The high-voltage is selected and can be adjusted using rotary controller 24

29 Push button: "Current Limitation"
- To activate the function, the current limitation is set with rotary controller 24 and is indicated in LED display 19
- Adjusting range: 5-120 µA
- Resolution: 1 µA

30 Display LED: "Current Limitation"
- Lights up yellow. The current limitation is selected and can be adjusted using the rotary controller (24).

31 Push button: "Characteristic Slope"
- To switch the characteristic slope
- Display with LED 32

32 Display LED: "Characteristic Slope"
- Lights up green
- Lower LED characteristic curve, flat
- Middle LED characteristic curve, medium
- Upper LED characteristic curve, steep

33 Illuminated display: "Powder Quantity"
- Lights up green
- Display range: 0-100%
- Resolution: 3.33%
- Single LED display: Set point (high-voltage and powder are deactivated)
- Bar display: Actual value (high-voltage and powder are activated)

34 Illuminated display: "Total Air Volume"

- Lights up green
- Display range: 2-6 m^3/h
- Resolution: 0.2-0.5 m^3/h
- Single LED display: Set point (high-voltage and powder are deactivated)
- Bar display: Actual value (high-voltage and powder are activated)

35 Illuminated display: "Atomizing, Ionizing and Tribo Air Volume"

- Lights up green
- Display range: 0.1-4 m^3/h
- Resolution: 0.1-1.0 m^3/h
- Single LED display: Set point (high-voltage and powder are deactivated)
- Bar display: Actual value (high-voltage and powder are activated)

36 Push button: "Powder Quantity"

- To activate the function, the powder quantity is set with rotary controller 24 and is indicated in LED display 19.
- Adjusting range: 1-100%
- Resolution: 1%

37 Display LED: "Powder Quantity"

- Lights up yellow, when the powder quantity is selected

7.4 OPTIMIZING THE POWDER CLOUD FOR YOUR COATING

Procedure:

1. Switch on the high-voltage generation and the powder feed.

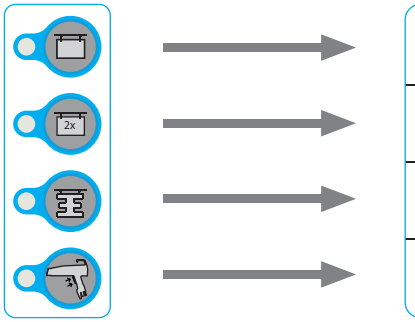
Note:

To minimize wear on the wearing parts, the total air volume should be below 2.5 Nm^3/h!

The atomizing air should be adjusted for the:
- fan spray nozzle to 0.1 Nm^3/h,
- round spray nozzle to > 0.2 Nm^3/h

2. Adjust the powder quantity and the powder speed on a test piece.

7.4.1 RECOMMENDED SETTINGS FOR TOTAL AIR VOLUME



	[kV]	[µA]	[Nm³/h]	[%]
	90	80	2.0	50
	50	30	1.5	40
	60	40	1.2	40
	82	20	1.8	30

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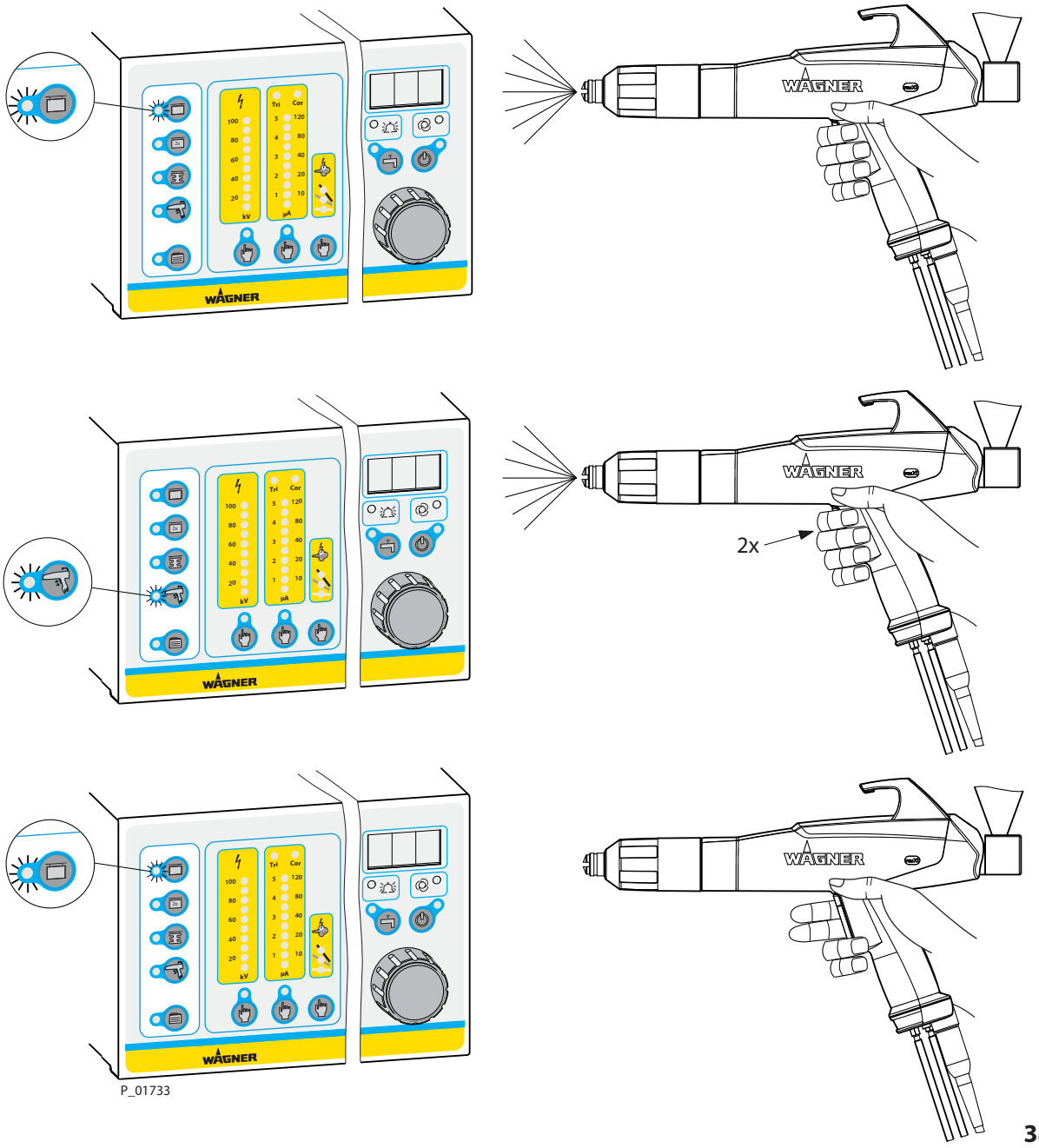
7.5 SWITCHING OFF THE SPRAY GUN

By releasing the trigger the powder feed is stopped and the high-voltage switched off.
To safely switch off the spray gun, e.g., for maintenance work, the control unit must be switched off.

7.6 "DOUBLE CLICK" RECIPE (HIGH DYNAMIC REMOTE)

This function is used to change quickly to another recipe during a coating operation. The operator can access a previously set recipe by double-clicking on the trigger lever on the spray gun, for example to recoat parts using different parameters (high-voltage, current limitation, air volumes etc.).
To access the function, press the trigger lever on the spray gun twice in quick succession and hold down. Upon releasing the trigger, the original recipe will be returned to.



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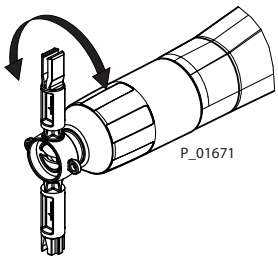
7.7 REPRODUCIBLE SETTING OF THE NOZZLE POSITION



An adjustment tool is provided for the fan spray nozzle.
It permits turning the flat spray nozzle without damaging the electrodes and without removing the union nut.
The union nut only has to be slackened.

8 CLEANING AND MAINTENANCE

8.1 CLEANING

8.1.1 CLEANING STAFF

Cleaning work should be undertaken regularly and carefully by qualified and trained staff. The staff must be familiar with the DIN EN 50050-2 provisions. They should be informed of specific hazards during their training.

The following hazards may arise during cleaning work:

- Health hazard from inhaling powder lacquer
- Use of unsuitable cleaning tools and aids

8.1.2 SAFETY INSTRUCTIONS

⚠ DANGER

Explosive powder/air mixes!
Danger to life and damage to the device.

→ Before starting cleaning 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 and compressed air supply before any cleaning work is started!
→ Use only electrically conductive tanks for cleaning liquids! Ground the tank!
→ Preference should be given to non-flammable cleaning fluids.
→ Flammable cleaning liquids may only be used if, after switching off the high-voltage, all high-voltage conducting parts are discharged to a discharge energy of less than 0.24 mJ before they can be accessed.
Most flammable solvents have an ignition energy of around 0.24 mJ or 60 nC.
→ The cleaning agent's flash point must be at least 15 K above the ambient temperature.
→ Only mobile industrial vacuum cleaners of design 1 (see EN 60335-2) may be used to remove dust deposits.

⚠ WARNING

Incorrect maintenance!
Risk of injury and damage to the device.

- → If contact with powder products or cleaning agents causes skin irritation, appropriate precautionary measures must be taken, e.g., wearing protective clothing.
- → The footwear worn by operating staff must comply with EN ISO 20344. The measured insulation resistance must not exceed 100 megohms.
- → The protective clothing, including gloves, must comply with EN ISO 1149-5. The measured insulation resistance must not exceed 100 megohms.
- → The protective clothing, including gloves, must comply with DIN EN ISO 1149-5. The measured insulation resistance must not exceed 100 megohms.

8.1.3 CLEANING PROCEDURES

The cleaning intervals should be adapted by the operator depending on the level of use and if necessary the level of soiling.
If in doubt, we recommend contacting J. Wagner AG's specialist personnel.
The valid health and safety specifications and the safety instructions provided in Chapter 4 must be adhered to for all cleaning work.

Procedure:

1. End coating process.
2. Press "Flush" button on control unit.
   Let the cleaning function run until the powder cup is completely empty.
3. Push the "Flush" button on the control unit, in order to switch off the cleaning function.
4. Remove the powder cup from the powder cup gun.
5. Clean the powder cup and powder cup's cover with compressed air.
6. Unscrew the union nut with nozzle system from the powder cup gun.
7. Press the nozzle system out of the union nut and clean all parts thoroughly.
8. Thoroughly blow out the powder cup gun from the rear, on the powder cup fitting, and from the front.
9. Build together the nozzle system and assemble it with the union nut on the powder cup gun.
10. Attach the powder cup, fill it with powder and put on the cover.
11. Continue the coating process.

8.2 MAINTENANCE

8.2.1 MAINTENANCE STAFF

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

The following hazards may arise during maintenance work:

- Health hazard from inhaling powder lacquer
- Use of unsuitable tools and aids

Once the maintenance work is complete, the device must be checked by a qualified person to ensure a reliable condition.

8.2.2 SAFETY INSTRUCTIONS

DANGER

Incorrect maintenance/repair!
Danger to life and damage to the device.

→ Repair or replacement of devices or parts of devices are only allowed to be performed outside the hazard area by qualified personnel.
→ Before starting maintenance 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 and compressed air supply before any maintenance work is started!

DANGER

Incorrect maintenance/repair!
Risk of injury and damage to the device.

→ Have repairs and part replacements carried out only by specially trained staff or a WAGNER service center.
→ Before all work on the device and in the event of work interruptions:
- Switch off the energy/compressed air supply.
- Relieve spray gun and device pressure.
- Secure the spray gun against actuation.
→ Observe the operating manual and service manuals at all times when carrying out work.

	**⚠ WARNING** **Incorrect maintenance!** Risk of injury and damage to the device. → If contact with powder products or cleaning agents causes skin irritation, appropriate precautionary measures must be taken, e.g., wearing protective clothing. → The footwear worn by operating staff must comply with EN ISO 20344. The measured insulation resistance must not exceed 100 megohms. → The protective clothing, including gloves, must comply with EN ISO 1149-5. The measured insulation resistance must not exceed 100 megohms.

8.2.3 MAINTENANCE PROCEDURES

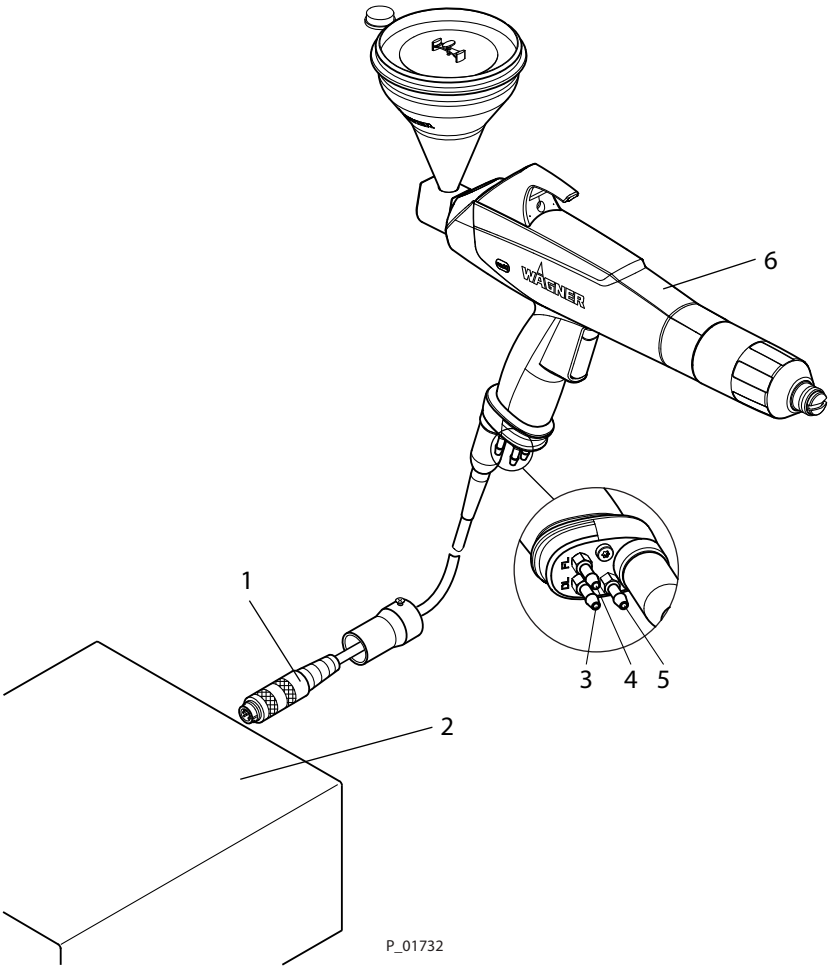
The maintenance intervals should be adapted by the operator depending on the level of use and if necessary the level of soiling.
If in doubt, we recommend contacting J. Wagner AG's specialist personnel.
The valid health and safety specifications and safety instructions provided in Chapter 4 must be adhered to for all maintenance work.

Maintenance work	Point in time	
	per shift	weekly
Blow out gun and check for sintering	x	
Check gun settings	x	
Check gun discharge pressure	x	
Blow out powder hoses	x	
Check grounding		x
Check compressed air quality		x
Check gun voltage		x
Check powder hoses for bends and sintering		x

8.2.4 REPLACING THE SPRAY GUN

Before replacing the spray gun, any powder residue must be thoroughly removed.

The wearing parts in the spray gun, marked in the spare parts list with "◆", must be regularly checked and, if necessary replaced.

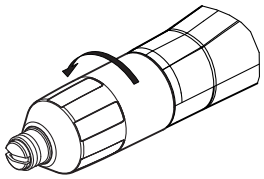


Procedure:

1. Switch off control unit.
2. Disconnect electrical cable 1 from control unit 2.
3. Disconnect dosing air hose 3, feed air hose 4 and atomizing air hose 5 from spray gun 6.
4. Connect dosing air hose 3, feed air hose 4 and atomizing air hose 5 to new spray gun 6.
5. Connect electrical cable 1 to control unit 2.
6. Switch on the control unit.
7. The spray gun is ready for use again.

8.3 REMOVING THE FAN SPRAY NOZZLE

1.



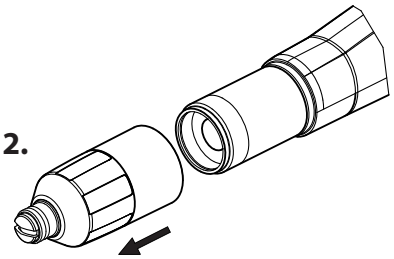
Procedure:

1. Unscrew union nut from gun housing.

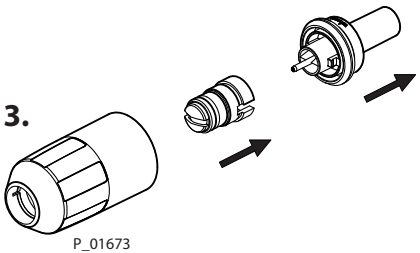
2. Take union nut with nozzle system off gun body. The nozzle system remains inserted in the union nut.

Note:
If the nozzle system doesn't remain inserted in the union nut, the nozzle system and union nut must be replaced.

2.



3.



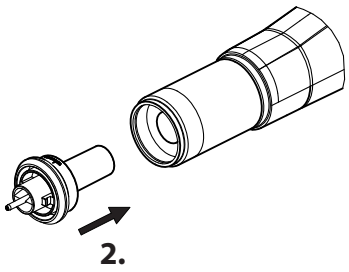
P_01673

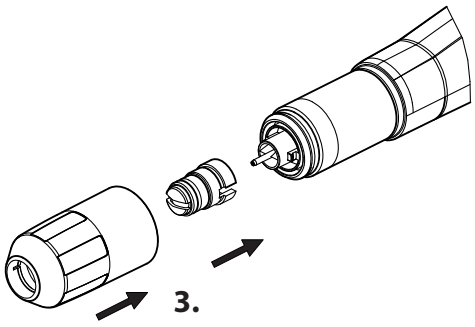
3. The parts can be separated by gently pressing the sliding ring on the fan spray nozzle.
4. Remove powder residues from the parts removed and from the spray gun.

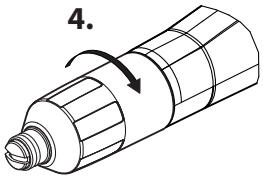
Note:
Never place the spray gun or parts of the spray gun in cleaning agent.

As a rule the protective wedge needs to be checked for wear and replaced if necessary.

8.4 FITTING THE FAN SPRAY NOZZLE







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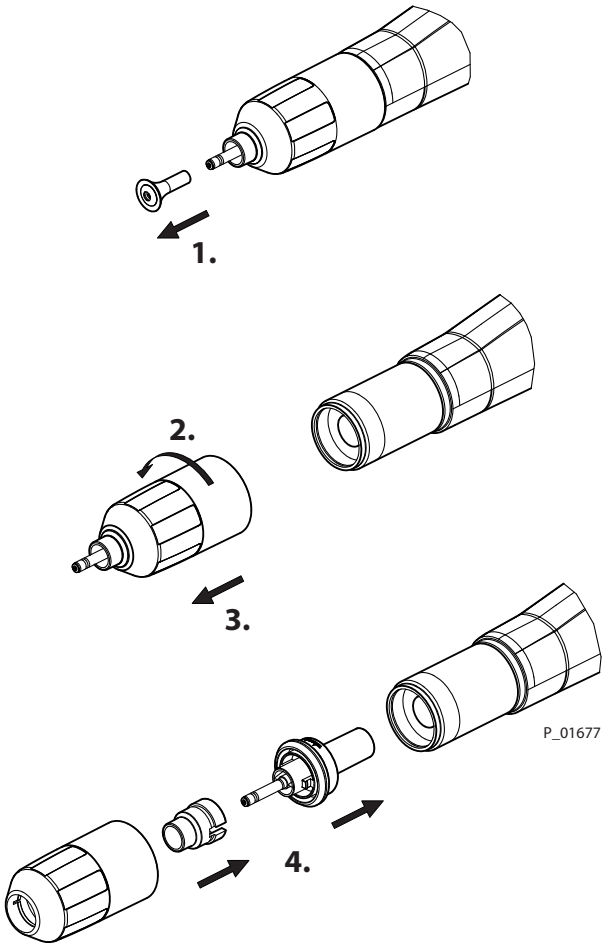
Procedure:

Note:

1. Before inserting the electrode holder, the spring contact of the gun body and contact surface of the electrode holder should be checked. The spring contact must be clean and smooth-running, the gun body must also be clean and free of powder deposits.
2. Insert electrode holder into gun housing.
3. Attach fan spray nozzle to electrode holder and attach union nut.
4. Screw union nut onto gun housing until fan spray nozzle can no longer be turned by hand.

8.5 REMOVING THE ROUND SPRAY NOZZLE



Procedure:

1. Pull off deflector cone.
2. Unscrew union nut from gun housing.
3. Take union nut with nozzle system off gun body. The nozzle system remains inserted in the union nut.

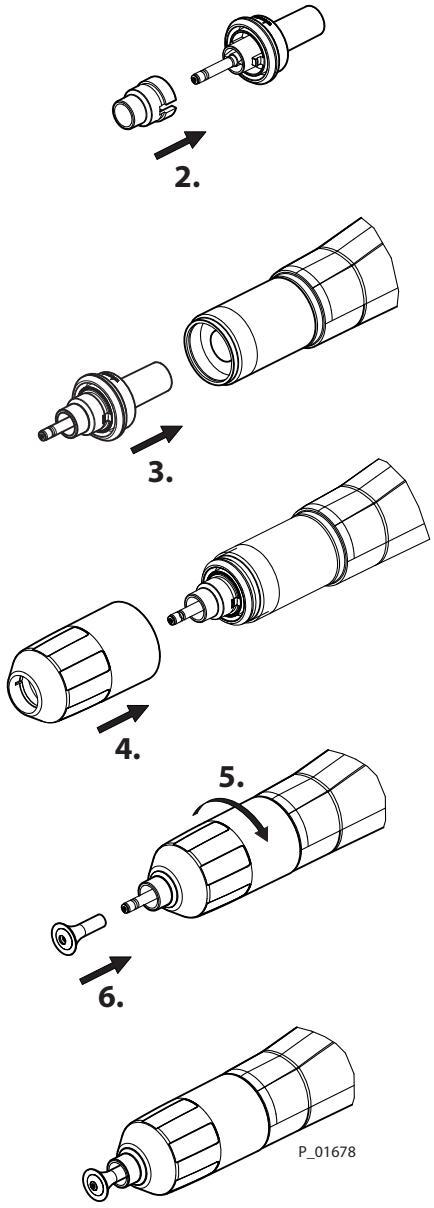
Note:
If the nozzle system doesn't remain inserted in the union nut, the nozzle system and union nut must be replaced.

4. Press nozzle system out of union nut by gently pressing on deflector cone sleeve.
5. Remove powder residues from the parts removed and from the spray gun.

Note:
Never place the spray gun or parts of the spray gun in cleaning agent.

As a rule the protective wedge needs to be checked for wear and replaced if necessary.

8.6 FITTING THE ROUND SPRAY NOZZLE



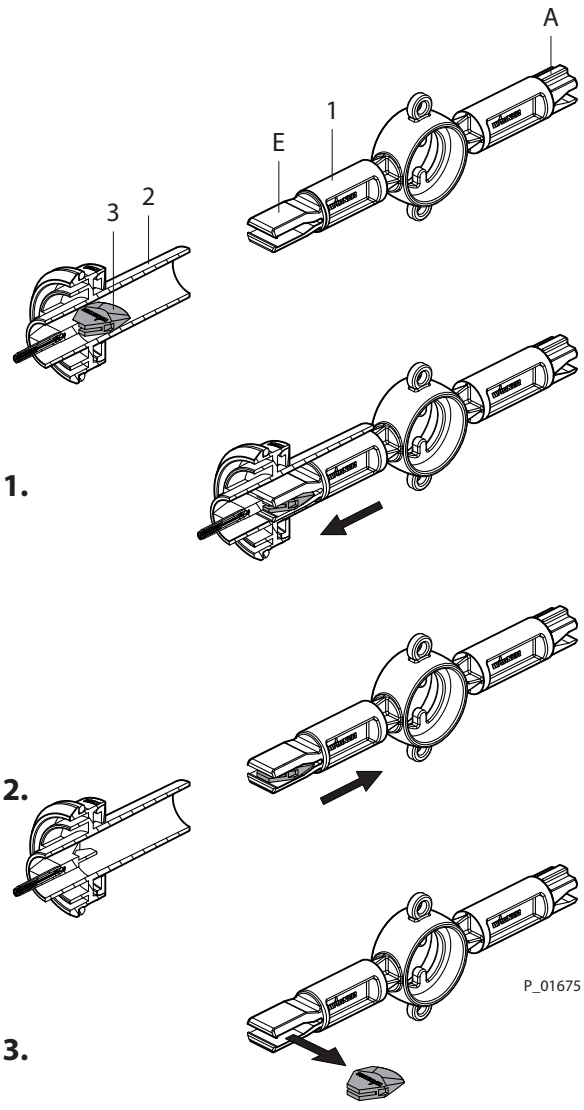
Procedure:

Note:

1. Before inserting the electrode holder, the spring contact of the gun body and contact surface of the electrode holder should be checked. The spring contact must be clean and smooth-running, the gun body must also be clean and free of powder deposits.
2. Attach deflector cone sleeve onto electrode holder.
3. Insert electrode holder into gun housing.
4. Slide union nut onto gun housing.
5. Screw union nut onto gun housing (hand-tight).
6. Slide deflector cone over deflector cone sleeve.

8.7 REPLACING THE PROTECTIVE WEDGE

Note:
A wedge tool is available to prevent the protective wedge from being damaged when dismantling and inserting.
The wedge tool has a removal side (E) and an attachment side (A). Use the right side for the corresponding procedure!
You will find the necessary wearing parts and spare parts in Chapter 13 "Spare Parts" of this operating manual.



1 Wedge tool
2 Electrode holder
(shown with a cut-away view to improve comprehension)
3 Protective wedge (when positioned)

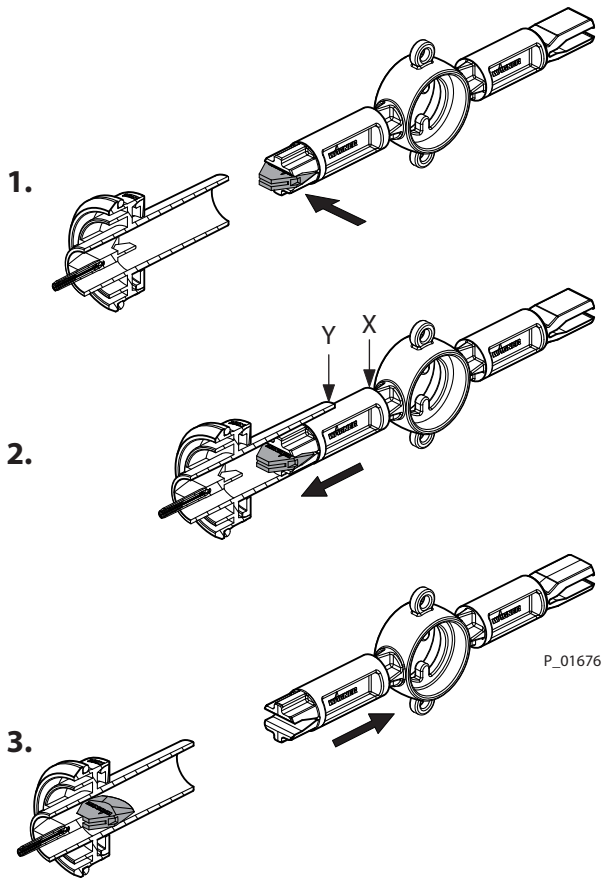
Procedure:

1. Guide wedge tool 1 into electrode holder 2 up to stop.

2. Pull protective wedge 3 out of electrode holder 2 using wedge tool 1.

3. Press protective wedge 3 sideways out of wedge tool 1 manually (without tool).

Note:
The same wedge tool is used to insert the protective wedge.



Procedure:

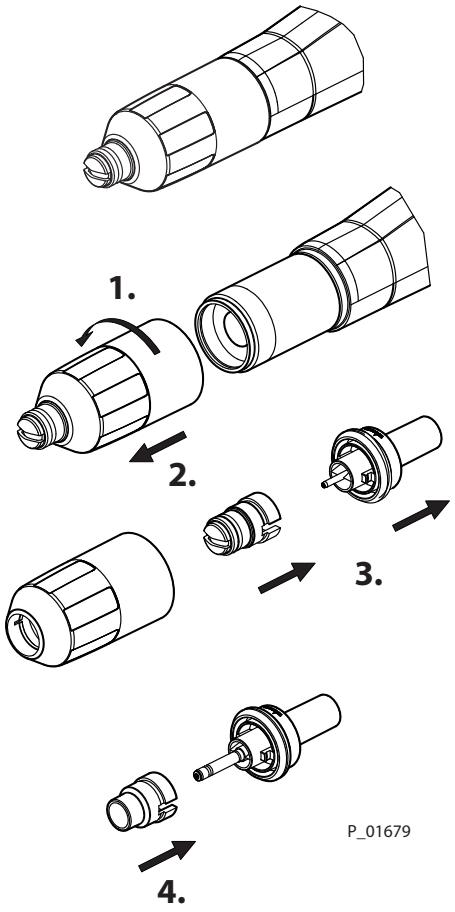
1. Guide protective wedge 2 into wedge tool 1.
2. Insert both parts into opening on electrode holder up to stop.
   If it is not possible to push the wedge tool in as far as the X mark, rotate the wedge tool a little until it can be pushed up to the mark.
   The X mark must be flush with the Y end of the electrode holder.
3. The protective wedge is now correctly assembled and the wedge tool can be pulled out of the electrode holder.
   The protective wedge remains inserted in the electrode holder.
4. Prior to re-fitting, check whether the contact points on electrode holder 3 and in gun housing 5 have been thoroughly cleaned so that the electrode tip is electrically connected to the high-voltage generator.
5. Mount fan or round spray nozzle with the corresponding electrode holder.

8.8 CHANGING FROM FAN SPRAY NOZZLE TO ROUND SPRAY NOZZLE

The standard Corona spray gun is delivered with a fan spray nozzle. The nozzle can be changed easily, as described below.

The X1 R electrode holder is necessary to perform the change.

⚠	**⚠ CAUTION** **Electrode tip!** Risk of injury. → Take care when fitting the X1 R electrode holder.

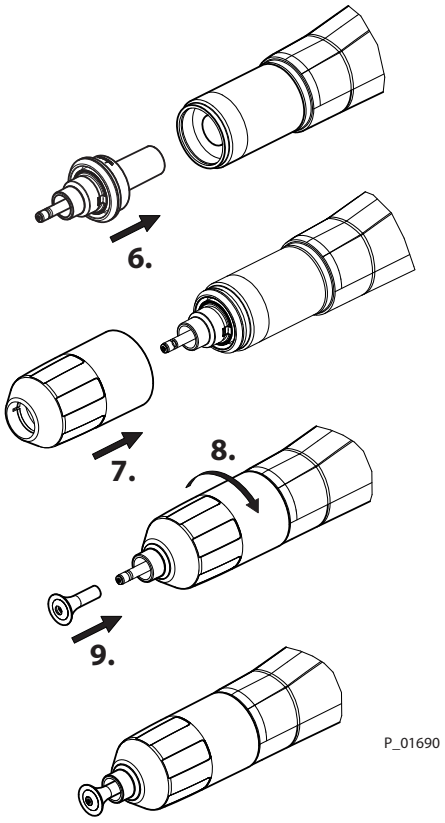


Procedure:

1. Unscrew union nut from gun housing.
2. Take union nut with nozzle system off gun body. The nozzle system remains inserted in the union nut.

Note:
If the nozzle system doesn't remain inserted in the union nut, the nozzle system and union nut must be replaced.

3. The parts can be separated by gently pressing the sliding ring on the fan spray nozzle.
4. Attach deflector cone sleeve onto X1 R electrode holder.



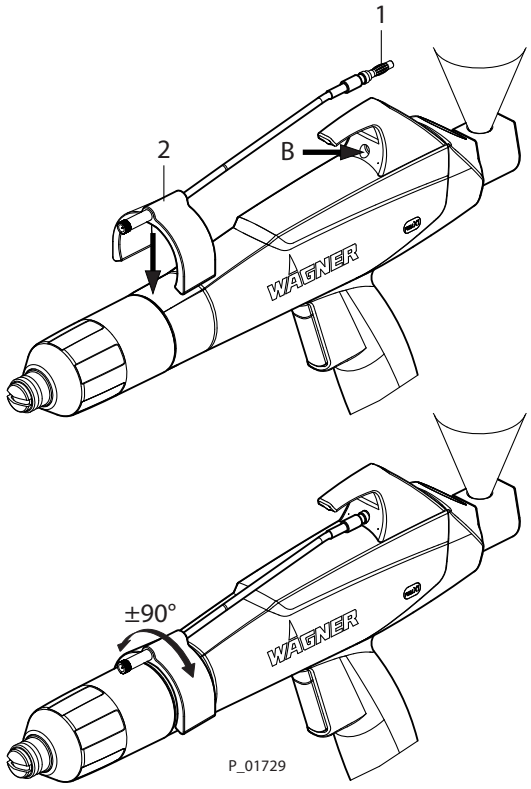
Procedure:

5. Before inserting the electrode holder, the spring contact of the gun body and contact surface of the electrode holder should be checked. The spring contact must be clean and smooth-running, the gun body must also be clean and free of powder deposits.
6. Insert electrode holder into gun housing.
7. Slide union nut onto gun housing.
8. Screw union nut onto gun housing (hand-tight).
9. Slide deflector cone over deflector cone sleeve.

8.9 ASSEMBLY OF THE CORONASTAR

The CoronaStar is a retrofit set for the spray gun, which helps to achieve a better surface quality (e.g., reduction of "orange peel").

⚠	**⚠ WARNING** **Danger from electric current!** Risk of injury and damage to the device. → The conversion to the CoronaStar may only be carried out by trained personnel. → Prior to assembling the CoronaStar, the high-voltage and powder feed must be switched off and secured against being inadvertently switched on.

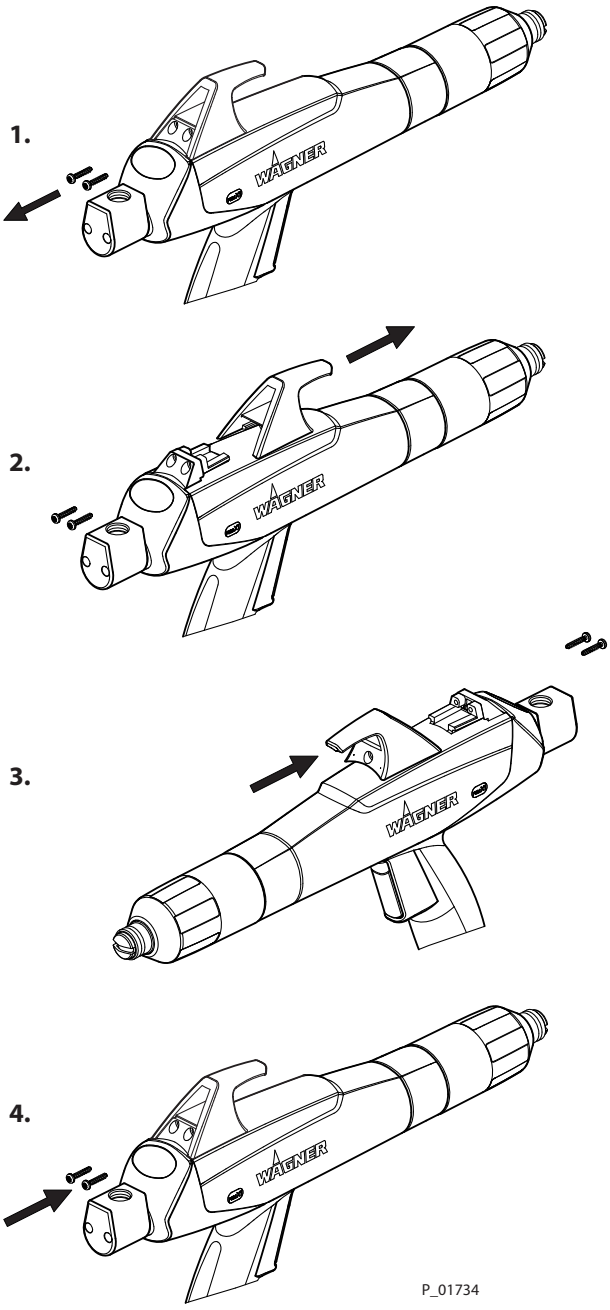


Procedure:

1. Guide plug-in contact 1 of CoronaStar into drilled hole B on hook.
2. Attach clip 2 of CoronaStar to housing.

Flexible positioning in a range of ± 90° is possible.

8.10 REPLACING THE SUSPENSION HOOK



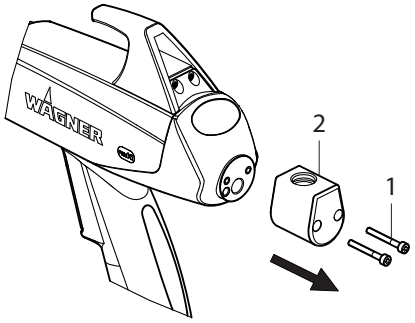
Procedure:

1. Loosen retaining bolts on rear of hook and unscrew.
2. Slide hook in direction indicated by arrow and remove from gun housing.
3. Fit new hook on receiver and slide in direction indicated by arrow.
4. Fit retaining bolts and tighten.

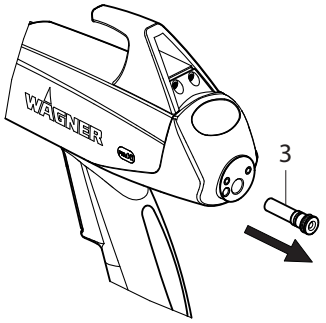
8.11 REPLACING THE COLLECTOR NOZZLE

The collector nozzle can be replaced if worn (for order number, see Chapter "Spare Parts").

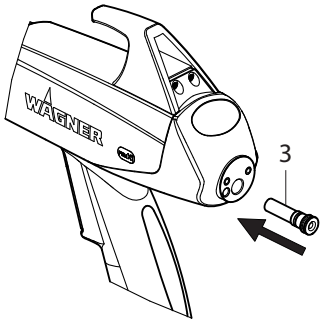
1.



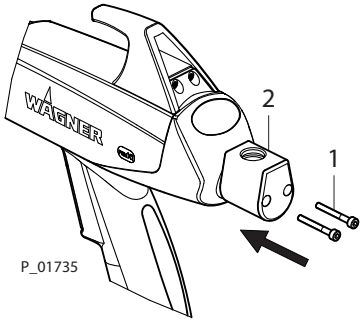
2.



3.



4.



Procedure:

1. Remove the powder cup from the gun.
   Unscrew screws 1 and remove connecting part 2 from gun body.

2. Pull collector nozzle 3 out of gun body.

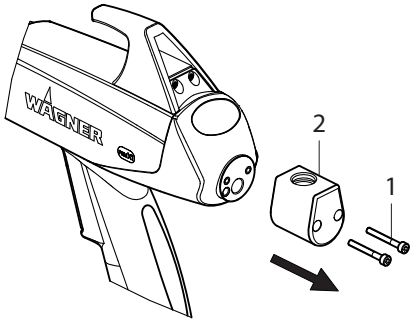
3. Carefully insert new collector nozzle 3 in gun body.

4. Attach connecting part 2 to gun body and fasten with screws 1.
   Insert powder cup in connecting part.

8.12 REPLACING THE CONNECTING TUBE

The connecting tube can be replaced if worn (for order number, see Chapter "Spare Parts").

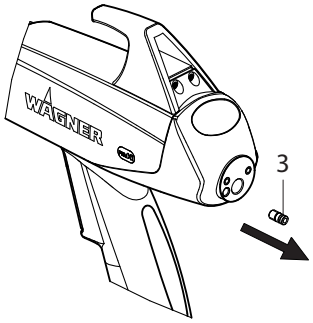
1.



Procedure:

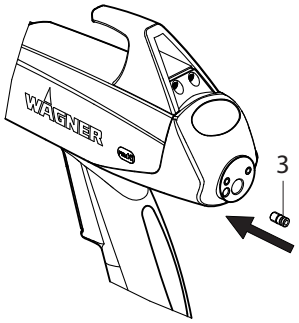
1. Remove the powder cup from the gun.
   Unscrew screws 1 and remove connecting part 2 from gun body.

2.



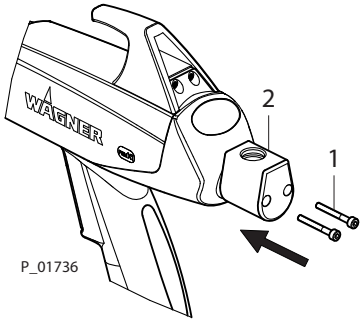
2. Unscrew connecting tube 3 from gun body.

3.



3. Screw new connecting tube 3 into gun body.

4.



4. Attach connecting part 2 to gun body and fasten with screws 1 (torque 40±10 Ncm).
   Insert powder cup in connecting part.

9 INSPECTIONS IN ACCORDANCE WITH DIN EN 50050-2: 2014

If the system is used for electrostatic coating with flammable coating powders, testing should be undertaken in accordance with DIN EN 50050-2: 2014 as per Table 1.

9.1 OVERVIEW OF INSPECTIONS

Section	Type of inspection	Requirements	Inspection by	Type of inspection	Inspection interval
1	Resistance to ground of work piece's locating point	The resistance to ground of every work piece's locating point must not exceed 1 megohm (measurement voltage must be 1,000 V). The design of the work piece receiver must ensure that the adapters remain grounded during coating.	CP	ME/CI Measure resistance to ground (work piece receiver - ground potential) max. 1 megohm @ 1,000 V.	weekly
2	Interlock between technical ventilation and high-voltage, compressed air and coating product supply	The technical ventilation should be interlocked such that the powder feed and high-voltage cannot be switched on, while the technical ventilation is not working effectively.	CP	FI Test whether the system is safely stopped and the product supply, supply air and high-voltage are switched off when the ventilation is shut down.	annually
3	Checking the electrostatic manual coating system for damage	Electrostatic manual coating systems may only be operated in an undamaged condition. Damaged devices must be decommissioned immediately and repaired immediately.	CP	FI Inspect and test (e.g., by measurement) whether all parts carrying high-voltage do not result in discharge which puts people at risk.	weekly

Legend:
MA = Manufacturer
EM = Employer
CP = Capable person
FSE = Fire safety engineer
ELC = Electrician
TP = Trained person

FI = Function inspection
ME = Measurement
SI = Standard inspection
VI = Visual inspection
CI = Continuous inspection
TI = Technical inspection

10 DISASSEMBLY AND DISPOSAL

10.1 DISASSEMBLY

⚠ WARNING

Incorrect disassembly!
Risk of injury and damage to the device.

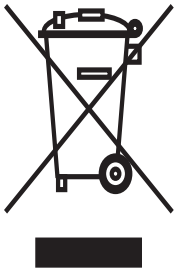
→ Before starting disassembly:
- Switch off the energy/compressed air supply.
- Ensure that all system components are grounded.
- Secure system against being switched back on without authorization.

→ Observe the operating manuals for any work.

Procedure:

1. Switching off the system.
2. Lock the compressed air supply and decompress system.
3. Disconnect the gun connection cable from control unit.
4. Disconnect the hose for feed air, dosing air and atomizing air from the spray gun and from the control unit.

10.2 DISPOSAL



NOTICE

Do not dispose of used electrical equipment with household refuse!
In accordance with European Directive 2002/96/EC 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 waste electrical 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 to arrange this.

11 TROUBLESHOOTING AND RECTIFICATION

DANGER

Incorrect maintenance/repair!
Risk of injury and damage to the device.

→ Have repairs and part replacements carried out only by specially trained staff or a WAGNER service center.
→ Before all work on the device and in the event of work interruptions:
- Switch off the energy/compressed air supply.
- Relieve spray gun and device pressure.
- Secure the spray gun against actuation.
→ Observe the operating manual and service manuals at all times when carrying out work.

DANGER

Incorrect maintenance/repair!
Danger to life and damage to the device.

→ Wagner devices, protective systems and safety, monitoring and control equipment may only be maintained/repaired as defined in Directive 94/9/EC (ATEX) by trained Wagner service personnel or capable persons in accordance with TRBS 1203! Note national regulations!
→ Repair or replacement of devices or parts of devices may only be performed outside the hazard area!

Fault	Cause	Remedy
No electrostatic (e.g., no wrap around or no powder adhesion)	• Fault in the high-voltage generator • Electrical cable from spray gun to control unit faulty • Cascade in spray gun faulty	• Contact a Wagner service center • Contact a Wagner service center • Contact a Wagner service center
Poor powder wrap-around, Back-spray	• Insufficient or no grounding	• See Chapter 6.6 "Grounding"
Powder outlet uneven or inadequate	• Contamination • Powder sintering • Collector nozzle contaminated • Feed air / dosing air ratio incorrect • Collector nozzle worn	• Blow through parts carrying powder • Clean parts carrying powder • Thoroughly clean gun • Adjust at control module resp. control unit • Replace collector nozzle
Spray pattern is uneven	• Parts of nozzle system worn	• Replace worn parts
Cracks in the gun housing	• Improper handling of the powder spray gun	• Gun housing must be replaced • Contact a Wagner service center

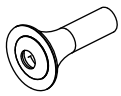
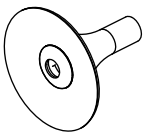
1.) The wearing and spare parts are listed in the "Spare Parts" chapter.

12 ACCESSORIES

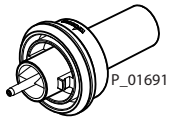
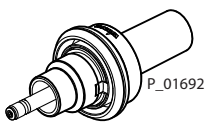
12.1 FAN SPRAY NOZZLE

	Order No.	Designation
 P_01664	2321976	Fan spray nozzle, X1, complete

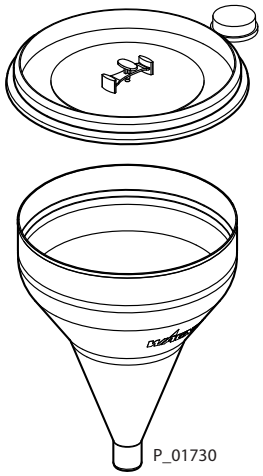
12.2 DEFLECTOR CONE

	Order No.	Designation
 P_01665	2321981	Deflector cone, D18, complete
 P_01666	2321980	Deflector cone, D25, complete
 P_01667	2321171	Deflector cone, D34, complete

12.3 ELECTRODE HOLDER

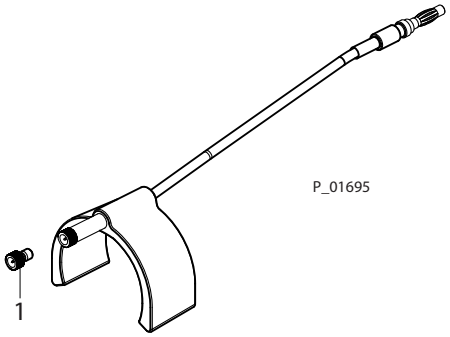
	Order No.	Designation
 P_01691	2322529	Electrode holder, X1 F ET
 P_01692	2322490	Electrode holder, X1 R ET

12.4 POWDER CUP



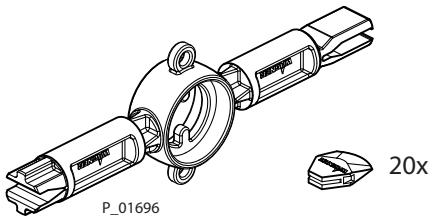
Pos	Order No.	Designation
	2324139	1 x cup with cover
	2324140	5 x cup with cover

12.5 CORONASTAR RETROFIT SET



Pos	Order No.	Designation
	2322868	CoronaStar, PEM-X1, complete
1	2322835	X1 ET CoronaStar electrode

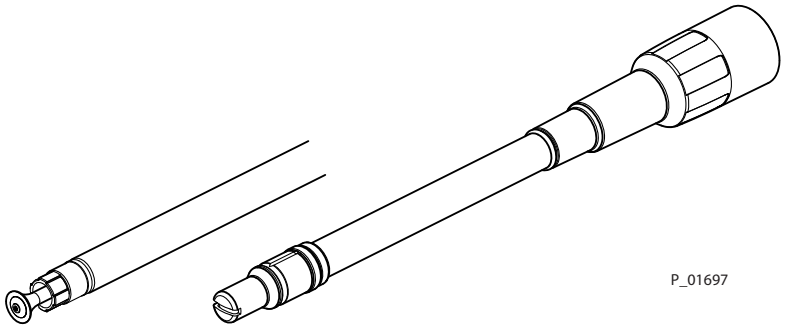
12.6 WEDGE TOOL



Pos	K	Stk	Order No.	Designation
	★	1	2324124	Wedge tool, X1 + 20 wedges

★ Only available as a set

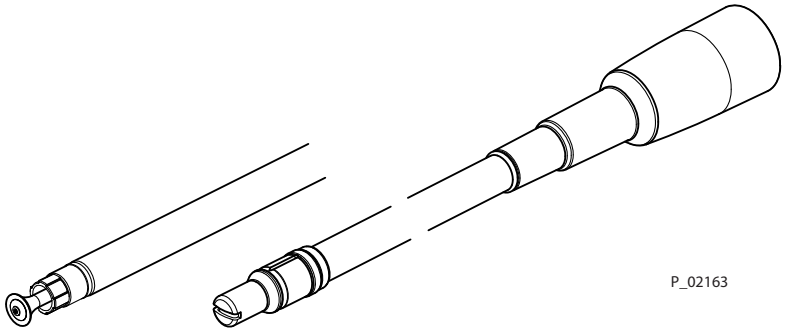
12.7 NOZZLE EXTENSION, X1 VL 150/300/500



Pos	K	Stk	Order No.	Designation
		1	2323366	Nozzle extension, X1 VL 150 (150 mm; 5.91 inches)
		1	2323356	Nozzle extension, X1 VL 300 (300 mm; 11.81 inches)
		1	2323338	Nozzle extension, X1 VL 500 (500 mm; 19.68 inches)
		1	2324147	Fan spray nozzle, X1 VL ET
	★	1	2324148	Round spray nozzle, X1 VL ET

★ available as accessory, not included in the purchased parts package

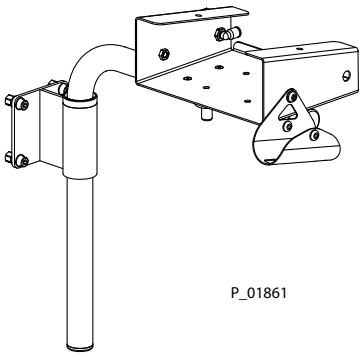
12.8 NOZZLE EXTENSION, X1 VL 750



Pos	K	Stk	Order No.	Designation
		1	2330497	Nozzle extension, X1 VL 750 (750 mm; 29.53 inches)
		1	2324147	Fan spray nozzle, X1 VL ET
	★	1	2324148	Round spray nozzle, X1 VL ET

★ available as accessory, not included in the purchased parts package

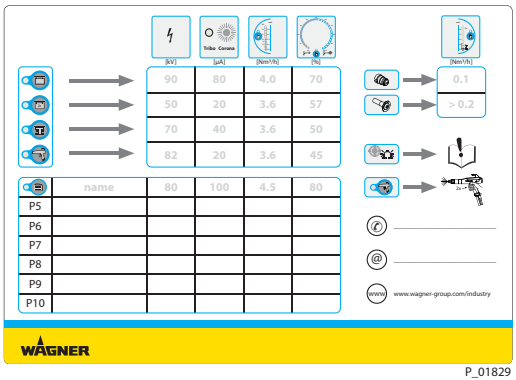
12.9 WALL MOUNT



P_01861

Order No.	Designation
2330223	Wall mount with bracket

12.10 RECIPE STICKER



P_01829

Order No.	Designation
2331223	Recipe sticker

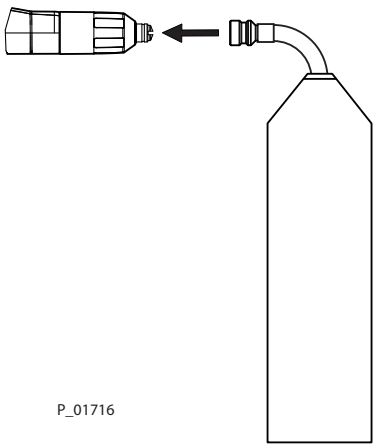
12.11 POWDER MEASURING ADAPTER

DANGER

Risk of explosion due to electrostatic charging!
Danger to life and damage to the device.

→ Only use powder measuring adapter when high-voltage is switched off!

for measuring powder quantities for the PEM-X1 CG gun



Order No.	Designation
2325320	Powder measuring adapter with X1 bag, complete

The powder measuring adapter is slid onto the nozzle.

13 SPARE PARTS

13.1 HOW CAN SPARE PARTS BE ORDERED?

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 lists. 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

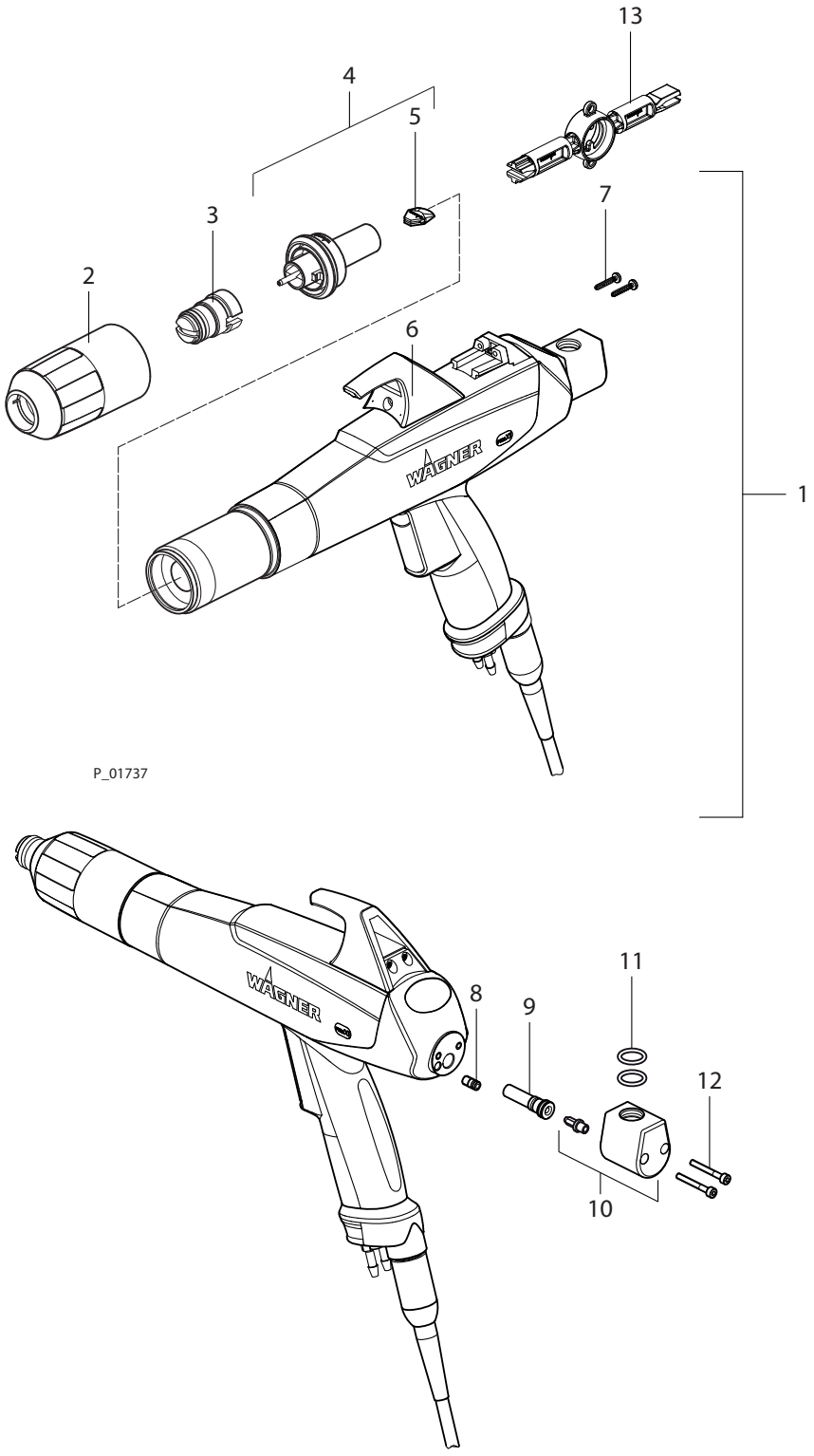
Explanation of column "K" (labeling) in the following spare parts lists.

◆ = Wearing parts
Note: These parts are not covered by warranty terms

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

	**⚠ WARNING** **Incorrect maintenance/repair!** Risk of injury and damage to the device. → Have repairs and part replacements carried out only by specially trained staff or a WAGNER service center. → Before all work on the device and in the event of work interruptions: - Switch off the energy/compressed air supply. - Ensure that all system components are grounded. - Secure the device against being switched back on without authorization. → Observe the operating manual and service manuals at all times when carrying out work.

13.2 PEM-X1 CG CORONA CUP GUN

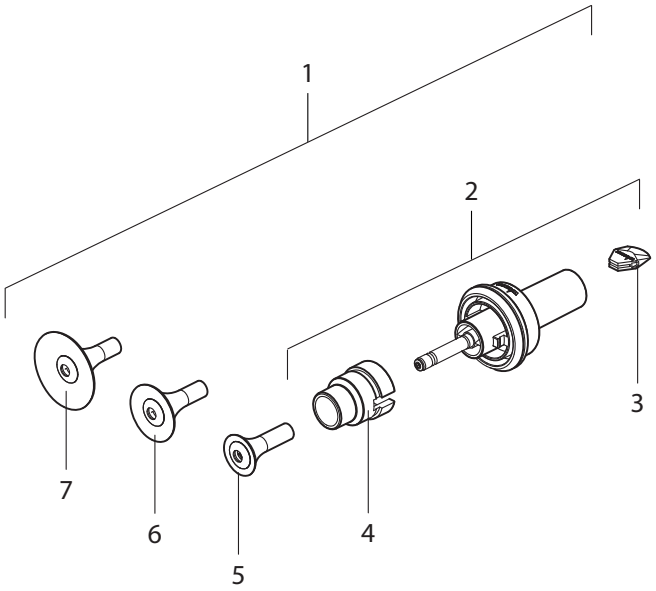


PEM-X1 CG cup gun

Pos	K		Stk	Order No.	Designation
1			1	2322588	Corona cup gun, PEM-X1 CG
2			1	2320464	Union nut, X1
3	◆		2	2321976	Fan spray nozzle, X1, complete
4	◆	★	1	2322529	Electrode holder, X1 F ET
5	◆		1	2320488	Replacement protective wedge, X1
6			1	2320330	Gun hook, X1 ET
7			2	2316896	Screw
8			1	2324135	Connecting tube ET
9			1	2324133	Collector nozzle ET
10			1	2324132	Connecting part ET
11	◆		2	9971313	O-ring
12			2	9906023	Screw
13			1	2324205	Wedge tool, X1
			2	2324223	Non-return valve, complete
	◆	★	1	2343544	Hose kit, PEM-X1 CG ET

◆ Wearing parts
● Not part of the standard equipment but available as a special accessory
★ Only available as a set

13.3 ELECTRODE HOLDER, X1 R

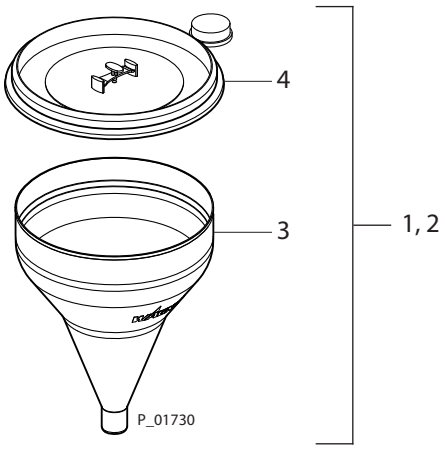


Electrode holder, X1 R, with nozzles

Pos	K	Stk	Order No.	Designation
1	◆	1	2322493	Electrode holder, X1 R, with nozzle
2	◆	1	2322490	Electrode holder, X1 R ET
3	◆	1	2320488	Replacement protective wedge, X1
4	◆	1	2320503	Deflector cone sleeve, X1
5	◆	1	2321981	Deflector cone, D18, complete
6	◆	1	2321980	Deflector cone, D25, complete
7	◆	1	2321171	Deflector cone, D34, complete

◆ Wearing parts
● Not part of the standard equipment but available as a special accessory
★ Only available as a set

13.4 POWDER CUP

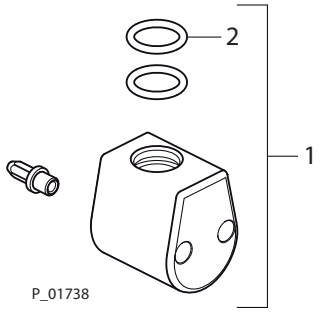


Powder cup

Pos	K	Stk	Order No.	Designation
1		1	2324139	Cup with X1 ET cover
2		5	2324140	Cup with X1 ET cover
3		1	2323145	X1 cup
4		1	2322906	Cover

◆ Wearing parts
● Not part of the standard equipment but available as a special accessory
★ Only available as a set

13.5 CONNECTING PART

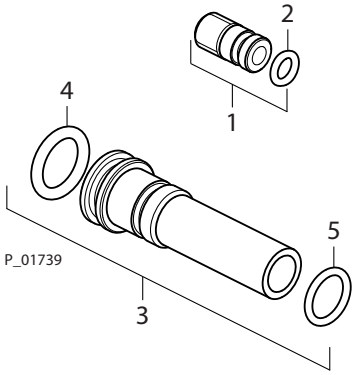


Connecting part

Pos	K	Stk	Order No.	Designation
1		1	2324132	Connecting part ET
2	◆	2	9971313	O-ring

◆ Wearing parts
● Not part of the standard equipment but available as a special accessory
★ Only available as a set

13.6 CONNECTING TUBE, COLLECTOR NOZZLE



Connecting part

Pos	K	Stk	Order No.	Designation
1		1	2324135	Connecting tube ET
2	◆	1	9971445	O-ring
3		1	2324133	Collector nozzle ET
4	◆	1	9974210	O-ring
5	◆	1	9971462	O-ring

◆ Wearing parts
● Not part of the standard equipment but available as a special accessory
★ Only available as a set

14 PEM-X1 CG PORTABLE SET

The PEM-X1 CG portable set is mainly designed for laboratory tests, sample coatings or small series production.

P_01740

Order No.	Designation
2328172	PEM-X1 CG portable set

P_01825

Operating position and connecting parts

15 DECLARATION OF WARRANTY AND CONFORMITY

15.1 IMPORTANT NOTES REGARDING PRODUCT LIABILITY

As a result of an EC regulation effective from January 1, 1990, the manufacturer shall only be liable for his product if all parts originate from him or are approved by him, and if the devices are properly mounted, operated and maintained.
The manufacturer will not be held liable or will only be held partially liable if third-party accessories or spare parts have been used.
With genuine WAGNER accessories and spare parts, you have the guarantee that all safety regulations are complied with.

15.2 WARRANTY CLAIM

Full warranty is provided for this device:
We will at our discretion repair or replace free of charge all parts which within 24 months in single-shift, 12 months in 2-shift or 6 months in 3-shift operation from date of receipt by the purchaser are found to be wholly or substantially unusable due to causes prior to the sale, in particular faulty design, defective materials or poor workmanship.
The type of warranty provided is such that the device or individual components of the device are either replaced or repaired as we see fit. The resulting costs, in particular shipping charges, road tolls, labor and material costs will be borne by us except where these costs are increased due to the subsequent shipment of the device to a location other than the address of the purchaser.
We do not provide warranty for damage that has been caused or contributed to for the following reasons:
Unsuitable or improper use, faulty assembly or commissioning by the purchaser or a third party, normal wear, negligent handling, defective maintenance, unsuitable coating products, substitute products and the influence of chemical, electrochemical or electrical agents, except when the damage is attributable to us.
Components that have not been manufactured by WAGNER are subject to the original warranty of the manufacturer.
Replacement of a component does not extend the period of warranty of the device.
The device should be inspected immediately upon receipt. To avoid losing the warranty, we or the supplier company are to be informed in writing about obvious faults within 14 days upon receipt of the device.
We reserve the right to have the warranty compliance met by a contracting company.
The services provided by this warranty are dependent on evidence being provided in the form of an invoice or delivery note. If the examination discovers that no warranty claim exists, the costs of repairs are charged to the purchaser.
It is clearly stipulated that this warranty claim does not represent any constraint on statutory regulations or regulations agreed to contractually in our general terms and conditions.

J. Wagner AG

15.3 DECLARATION OF CONFORMITY

Herewith we declare that the supplied version of

- PEM-X1 CG manual gun, order no. 2322588

complies with the following provisions applying to it:

- 94/9/EC (ATEX Directive)
- 2006/42/EC (Machine Directive)
- 2004/108/EC (EMV Directive)
- 2002/95/EC (RoHs Directive)
- 2002/96/EC (WEEE Directive)

Applied standards, in particular:

- prDIN EN 50050-2: 2011
- DIN EN 50050: 2007
- DIN EN 1127-1: 2011
- DIN EN 60079-0: 2010
- DIN EN 60079-31: 2010
- DIN EN 60079-7: 2007
- DIN EN 1953: 2010
- DIN EN 60204-1: 2007
- DIN EN ISO 80079-34: 2012
- DIN EN 14462: 2010
- DIN EN 60529: 2000
- DIN EN ISO 12100: 2011
- DIN EN 61000-6-2: 2011
- DIN EN 61000-6-4: 2011
- DIN EN 62061: 2010
- DIN EN ISO 13849-1: 2008
- DIN EN 50177: 2010

Applied national technical standards and specifications, in particular:

- BGI 764

Identification:

CE 0102 Ex II 2D 2mJ
PTB 12 ATEX 5002
DIN EN 50050-2: 2012

CE Certificate of Conformity
The CE certificate 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:
PEM-X1 CG manual gun 2326024

15.4 EC TYPE EXAMINATION CERTIFICATE

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

EC-TYPE-EXAMINATION CERTIFICATE

(Translation)

(1)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 12 ATEX 5002

(4) Equipment: PEM-X1 electrostatic hand-operated powder coating gun and PEM-X1 CG electrostatic hand-operated powder cup-gun with accessories.

(5) Manufacturer: J. Wagner AG

(6) Address: Industriestrasse 22, 9450 Altstätten, Switzerland

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential test report PTB Ex 12-51177.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

DIN EN 50050:2007, prEN 50050-2:2011, DIN EN 50177:2010

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2D 2mJ

ZSEx10100e.dotm

Zertifizierungssektor Explosionsschutz
On behalf of PTB:

Braunschweig, 6 August 2012

Dr.-Ing. M. Beyer
Direktor und Professor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT

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EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt.
In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • 38116 Braunschweig • GERMANY

15.5 FM APPROVAL

The PEM-X1 CG powder spray gun is approved in the USA and Canada using configuration drawing no. 2309729.

CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

HAZARDOUS LOCATION ELECTRICAL EQUIPMENT
PER CANADIAN REQUIREMENTS

The Sprint AF USA and Sprint 60L USA Manual Powder Spray Systems for use in Electrostatic Powder Finishing Applications using Class II Spray Materials when configured in accordance with drawing 2309729. The Sprint AF USA and Sprint 60L USA Trolleys are rated for use in Class II, Division 2, Groups E, F and G Hazardous (Classified) Locations. The PEM-X1, PEM-X1-CG, PEM-C4-HiCoat FM and PEM-C4-ERGO FM Manual Applicators, and PEA-C4-HiCoat FM and PEA-C4XL-HiCoat FM Automatic Applicators with either EPG-Sprint X, EPG-Sprint FM, EPG-S2 FM, EPG-Prima and EPG-2008 Control Units for use in Electrostatic Powder Finishing Applications using Class II Spray Materials when configured in accordance with drawing 2309729. Control Units are rated for use in Class II, Division 2 Hazardous (Classified) Locations. The EPG-Sprint X, EPG-Sprint FM Control Units have an indoor environmental rating of IP64. The PEM-C4-ERGO FM Manual Applicator, and PEA-C4-HiCoat FM and PEA-C4XL-HiCoat FM Automatic Applicators have an environmental rating of IP54.

Special conditions of use:
The source electrical connection for the Control Units are to be connected in an unclassified (ordinary) location only.

Equipment Ratings:

The applicators are rated for use in Electrostatic Powder Finishing Applications using Class II Spray Materials when configured in accordance with drawing no. 2309729. The associated control units and mobile powder systems are rated for use in Class II, Division 2, Group E, F and G Hazardous Locations. The EPG-Sprint X EPG-Sprint FM Control Units have an environmental rating of IP64. The PEM-C4-ERGO FM Manual Applicator, PEA-C4-Hicoat FM, PEA-C4XL-HiCoat FM Automatic Applicators have an environmental rating of IP54.

FM Approvals
Member of the FM Global Group

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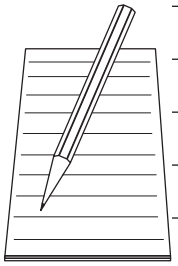

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