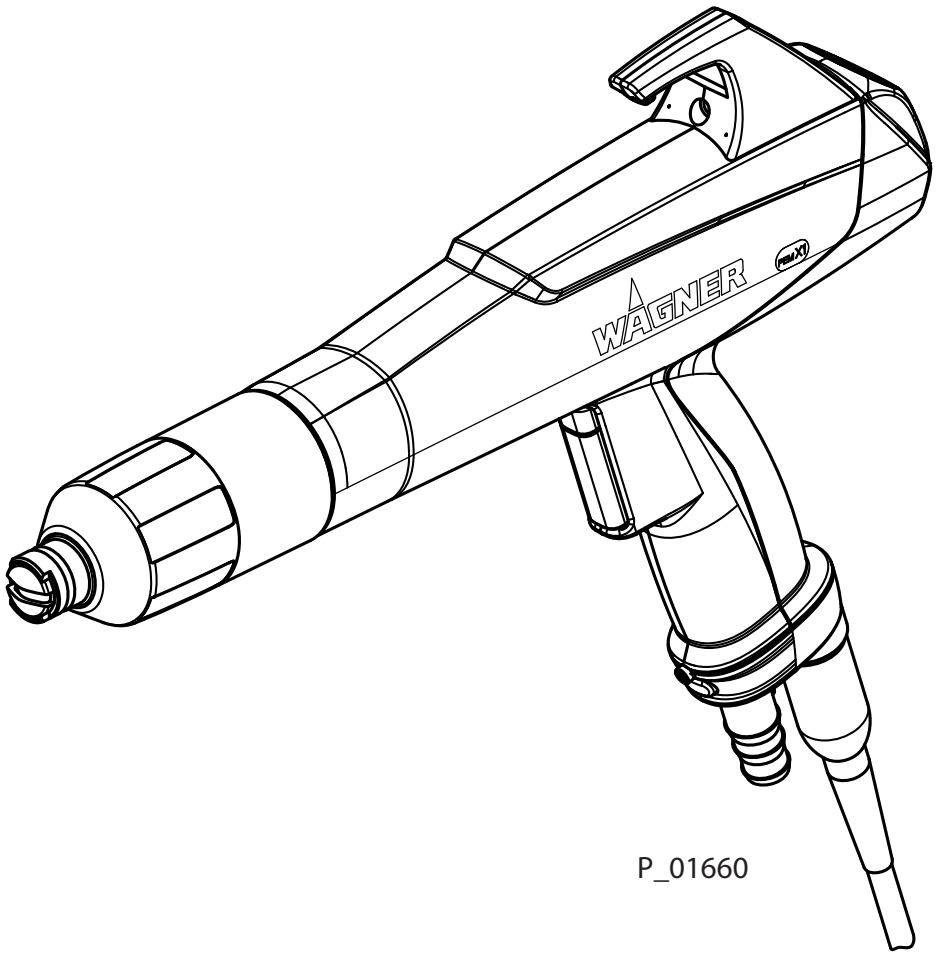

P_01660

Manual powder spray gun

PEM-X1

Translation of the Original Operating Manual

CE 2813 Ex II 2 D 2 mJ FM APPROVED

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: 08/2025

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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 is available in the following languages:

Original operating manual

Language	Order no.
German	2326019

Translation of the original operating manual

Language	Order no.	Language	Order no.
English	2326020	Portuguese	2345347
French	2326021	Danish	2348202
Italian	2326022	Finnish	2348203
Spanish	2326023	Norwegian	2348238
Russian	2333344	Slovakian	2348858
Chinese	2333345	Czech	2382912
Dutch	2337552	Bulgarian	2391645
Swedish	2345951	Romanian	2397427
Hungarian	2341080	Polish	2342156
Turkish	2400984	Greek	2466422
Croatian	2431541	Japanese	2426349
Slovenian	2448886	Korean	2448884
Serbian	2448885	Latvian	2481807

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

1.5 ABBREVIATIONS

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

1.6 TERMINOLOGY FOR THE PURPOSE OF THIS MANUAL

Cleaning

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

Personnel qualifications

Trained person	Is instructed in the tasks assigned to him/her, the potential risks associated with improper behavior as well as the necessary protective devices and measures.
Electrically trained person	Is instructed by an electrician about the tasks assigned to him/her, the potential risks associated with improper behavior as well as the necessary protective devices and measures.
Electrician	Can assess the work assigned to him/her and detect possible hazards based on his/her technical training, knowledge and experience in relevant provisions.
Skilled person in the context of DGUV 209-052	A person who, based on his/her technical training, experience and recent vocational experience, has sufficient technical knowledge in the area of electrostatic coating and is familiar with the relevant and generally accepted rules of technology so that he/she can inspect and assess the status of devices and coating systems based on workplace safety. 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

Manual powder spray gun PEM-X1 for manual coating of grounded work pieces.

2.2 TYPE OF USE

The manual powder spray gun is designed for the electrostatic coating of work pieces with organic powders.
WAGNER explicitly prohibits any other use!

The manual powder spray gun may only be operated in a temperature range from 5–40 °C; 41–104 °F.

Electrostatic manual coating systems may only be used in spray areas equipped in accordance with EN 16985:2018 or under equivalent ventilation conditions.

Electrostatic manual coating systems of type PEM-X1 in conjunction with the accessories and associated control units may only be operated in accordance with the requirements of EN 50050-2 and other relevant regulations.

Electrostatic manual coating systems of type PEM-X1 must not be operated in areas where there is a risk of explosion for reasons other than the operation of the electrostatic powder spraying equipment.

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

This type A-P electrostatic powder spray gun is suitable for processing industrial powder lacquers for coating electrically conductive objects and can be used in potentially explosive areas (zone 22). (See chapter Identification [▸▸ 10]).

In explosion hazard areas, only use approved explosion-proof electrical devices.

2.4 PROCESSIBLE WORKING MATERIALS

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

Info

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

2.5 MISUSE

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

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

3 IDENTIFICATION

3.1 EXPLOSION PROTECTION IDENTIFICATION

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

Device type	PEM-X1 manual powder spray gun
Manufacturer	J. Wagner GmbH 88677 Markdorf Germany

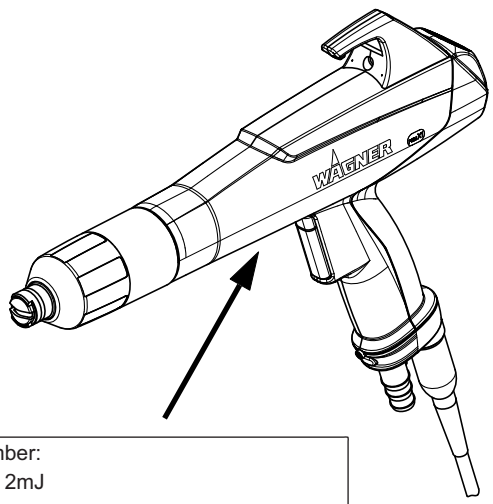
CE 2813 Ex II 2 D 2 mJ

CE	European Communities
2813	Number of notified body which issues the recognition of quality assurance in production.
Ex	Symbol for explosion protection
II	Device class II
2	Category 2
D	Ex-atmosphere dust
2 mJ	Maximum ignition energy 2 mJ

3.2 FM APPROVAL

The PEM-X1 manual powder spray gun is FM approved in the USA and Canada using control document no. 2309729.

3.3 TYPE PLATE



PEM-X1 Serial Number:
CE 2813 Ex II 2 D 2mJ
PTB 12 ATEX 5002 EN 50050-2
J. Wagner GmbH, 88677 Markdorf GERMANY Made in Switzerland
FM C US APPROVED
For Electro. Fin. Appl. CL. II Spray Materials
Output 100kV max. Ta_{max} = 40 °C; IP54
In accordance with control document: 2309729
Patents: https://go.wagner-group.com/patents

P_02657

3.4 PERMISSIBLE DEVICE COMBINATIONS

⚠ WARNING

Incorrect use!

Risk of injury and damage to the device.

- Only connect the powder spray gun to original WAGNER devices.

Only use the PEM-X1 manual powder spray gun with the following control units:

Guns	Control units
PEM-X1	EPG-Sprint X / XE
	EPG S2
	WACON Sprint 2 X / XE
	WACON Sprint 2 Expert

Please refer to the corresponding operating manual for the control unit.

4 BASIC SAFETY INSTRUCTIONS

4.1 SAFETY INSTRUCTIONS FOR THE OPERATOR

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

4.1.1 Electrical devices and equipment

Danger of electric shock!

Danger to life from electric shock:

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

4.1.2 A safe work environment

Danger due to dust formation!

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

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

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

4.1.3 Personnel qualifications

Danger due to incorrect use of device!

Risk of death due to untrained personnel.

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

4.2 SAFETY INSTRUCTIONS FOR THE PERSONNEL

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

Danger due to high-voltage field!

Danger to life from malfunction of active implants.

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

4.2.1 Personal safety equipment

Danger due to dust formation!

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

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

- Use a mask or breathing apparatus if necessary.
- For sufficient health and environmental protection, only operate the device with technical ventilation (extraction) switched on.

4.2.2 Safe handling of WAGNER powder spray devices

Danger due to dust formation!

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

4.2.3 Grounding the Device

Danger due to electrostatic charge!

Explosion hazard and damage to the device.

The electrostatic charge may, in certain cases, give rise to electrostatic charges on the device. Flames or sparks can form during discharge.

Correct grounding of the entire coating system prevents electrostatic charges:

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

4.2.4 Product hoses

Danger due to damaged product hoses!

The product hose may cause dangerous injuries.

- Use only an original WAGNER powder hose.

- Make sure that the hoses are laid only in suitable places. Hoses should not be laid in the following places under any circumstances:
  - in high traffic areas
  - on sharp edges
  - on moving parts
  - on hot surfaces
- Ensure that the hoses are never run over by vehicles (e.g., fork lifts), or that the hoses are never put under pressure from the outside in any other way.
- Ensure that the hoses are never kinked. Observe maximum bending radii.
- Ensure that no work is ever performed with a damaged hose.
- Make sure that the hoses are never used to pull or move the device.

4.2.5 Electrical connection cables

Risk caused by improperly laid cables!

Risk of injury and damage to the device.

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

4.2.6 Cleaning and flushing

Danger due to cleaning and flushing!

Explosion hazard and damage to the device.

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

4.2.7 Maintenance and repair

Danger due to improper maintenance and repair!

Danger to life and equipment damage.

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

4.2.8 Protective and Monitoring Equipment

Danger due to removal of protective and monitoring equipment!

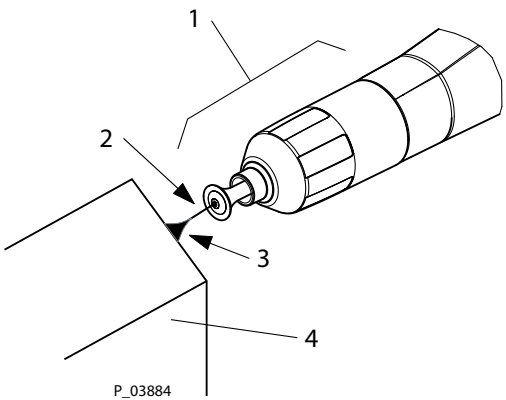
Danger to life and equipment damage.

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

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 flat jet nozzle or deflector cone sleeve, prevents the nozzles from coming loose unintentionally (see chapter Accessories [▸▸ 46]).

To ensure safety, only use original WAGNER spare parts!

4.3 INFORMATION ABOUT SAFE DISCHARGES

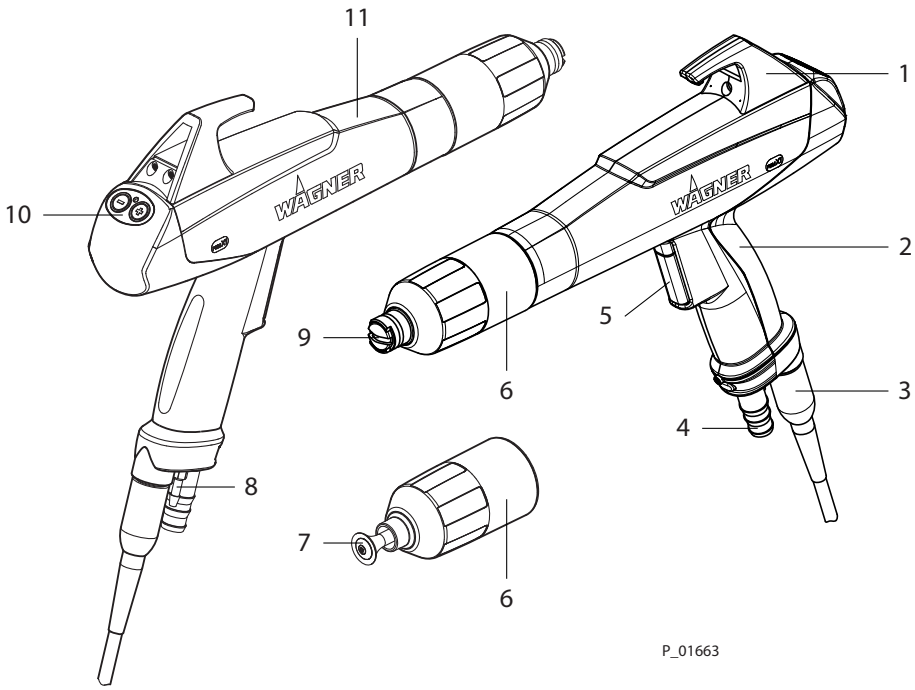


Pos	Designation
1	Nozzle
2	Electrode
3	Luminous discharge
4	Work piece

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.

5 DESCRIPTION

5.1 DESIGN OF THE MANUAL GUN

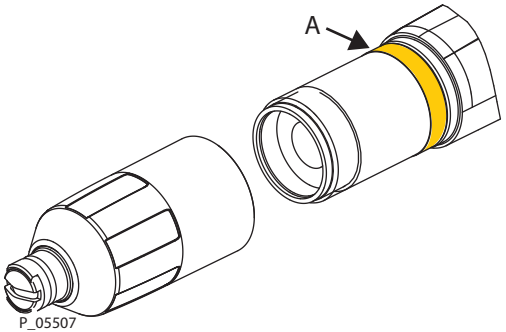


1	Suspension hook	7	Round jet nozzle
2	Handle	8	Atomizer air connection
3	Electrical Connection Cable	9	Flat jet nozzle
4	Powder hose connection	10	Buttons to adjust the powder quantity
5	Trigger lever	11	Spray gun body
6	Union nut		

5.2 POSITIVE CASCADE

The version with positive cascade can be used for special applications for powder in powder coating processes.

The `powder in powder´ coating process is a process in which the primer and the top coat are applied directly one after the another, without the primer being cured first. This makes it possible to save energy and shorten the processing time.



A	Identification: "Attention! Positive Cascade"

Note:

For the conversion of an existing gun, the WAGNER customer service must be contacted!

Instead, an additional PEM-X1 (+) gun can be ordered (order no. 2464026, see also chapter Extent of Delivery [▸▸ 19]).

5.3 MODE OF OPERATION OF THE MANUAL GUN

High voltage is activated in the manual gun when the trigger is actuated!

The powder supply and air supply to the gun are activated at the same time.

To secure the manual gun, the control unit must be switched off. To prevent electrostatic flashover, the union nut for securing the nozzles is designed with a labyrinth.

5.4 EXTENT OF DELIVERY

Stk	Order no.	Designation
1	2322587	PEM-X1 manual gun with flat jet nozzle
1	2335844	PEM-X1 manual gun with a round jet nozzle
1	2464026	PEM-X1 manual gun (+) with flat jet nozzle
	--	Nozzle set
The standard equipment includes:		
1	2326024	Declaration of conformity
1	2326019	Operating manual, in German
1	See chapter Languages [▸▸ 7]	Operating manual in local language

5.5 DATA

5.5.1 Technical data

Dimensions:	
Length/width/height	See chapter Dimensions [▸▸ 20]
Weight	490 g; 1.08 lbs
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 / positive (depending on variant)
Pneumatic:	
Input air pressure (atomizing air volume)	Maximum 3 bar; 0.3 MPa, 43.51 psi
Powder discharge quantity	Maximum 450 g/min; maximum 0.99 lbs/min

⚠ WARNING

Exhaust air containing oil!

Risk of poisoning if inhaled.

- Provide compressed air free from oil and water.

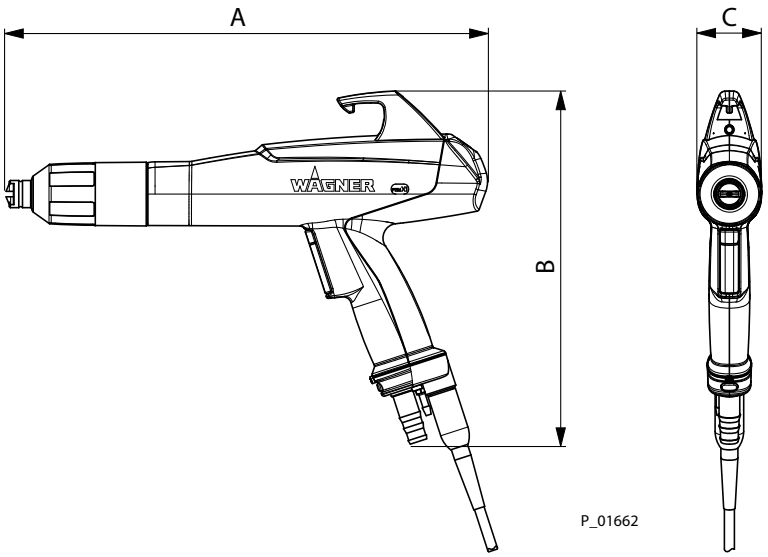
Ambient conditions:

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

Volume specifications for volumes that are specified in Nm^3 (normal cubic meters). One cubic meter of gas at 0 °C and 1.013 bar is referred to as a normal cubic meter.

Ambient conditions:	
Operating temperature range	5–40 °C; 41–104 °F
Relative humidity	< 75%

5.5.2 Dimensions



Measure-ment	mm	inch
A*	335/349	13.19/13.74
B	248	9.76
C	45	1.77

* With flat jet nozzle/deflector cone

5.6 ACCESSORIES

Only the accessories listed in Chapter Accessories [▸▸ 46] of this operating manual may be connected to the PEM-X1 manual powder spray gun.

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 and 40 °C; 32 and 104 °F.

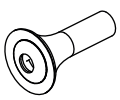
The relative air humidity at the installation site must be between 10 and 95% (without condensation).

6.4 PREPARATION OF THE SPRAY GUN

6.4.1 Selection of a Suitable Nozzle System

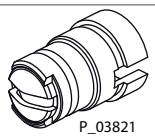
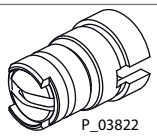
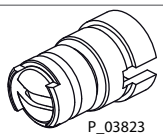
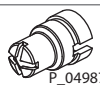
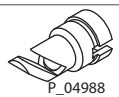
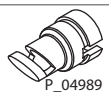
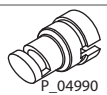
The process of changing from the flat jet nozzle to the deflector cone is described in chapter Changing Nozzle Types [▸▸ 38].

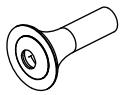
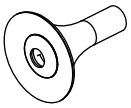
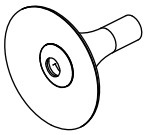
You will find the article numbers of the different nozzles in chapter Accessories [▸▸ 46].

Nozzle	Application overview	Powder cloud
Flat jet nozzle  P_04985	Complex part geometries Flat work pieces (reduced picture frame) Profile undercuts	Widely spread flat powder cloud
Deflector cone  P_01665	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 discharge (g/min)
 P_01664	Universal Deep and complex part geometries Parts with large surfaces	120–300	50–300

The spray width can be adjusted by the sliding ring.

 P_03821	Sliding ring at rear, wide cloud Cloud opening angle approx. 80°
 P_03822	Sliding ring at front, narrow cloud Cloud opening angle approx. 60°
 P_03823	Sliding ring at front, turned by 90°, extra narrow cloud Cloud opening angle approx. 40°
 P_04985	Standard flat jet nozzle with wide area of application
 P_04987	X1 cross nozzle, 90°, for narrow, spot coating
 P_04988	Single powder spray deflection nozzle in 3 fixed angles (30°, 45° and 60°)
 P_04989	
 P_04990	

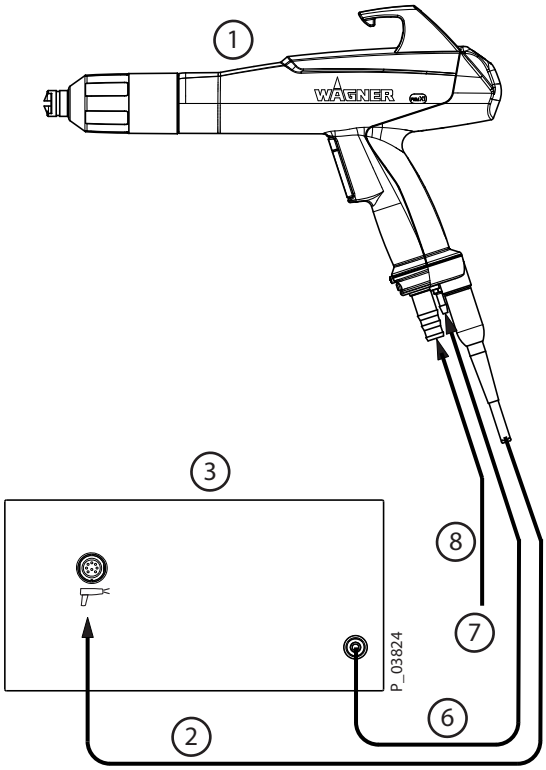
Deflector cone	Application	Distance to work piece (mm)
R18  P_01665	⌀ 18 mm Smaller flat parts	100–300
R25  P_01666	⌀ 25 mm Medium sized flat parts	100–300
R34  P_01667	⌀ 34 mm Large flat parts	100–300

Feed air [%]	Discharge quantity [g/min]		
	for total air		
	4.00 Nm^3/h	5.00 Nm^3/h	6.00 Nm^3/h
50	140	170	210
60	200	240	260
70	250	270	300
80	300	320	350
90	330	360	380
100	370	400	420

The values have been determined by means of a PI-F1 injector and a powder hose ⌀ 11 mm, length 5 m.

These values have to be considered as reference values and depend on the characteristics of the powder and the status of the transport relevant pieces (e.g., injector).

6.5 CONNECTING THE MANUAL GUN



1	Manual powder spray gun	6	Atomizing air hose (black)
2	Electrical connection cable	7	Powder conveyor
3	Control unit	8	Powder feed hose (transparent)

1. Switch off the high-voltage generation on the control unit.
2. Before connecting the manual gun, check that all components, such as the nozzle system and union nut, are correctly fitted.
3. Connect the manual gun's electrical cable to the control unit.
4. Connect powder feed hose to the manual gun an to the powder conveyor.
5. Connect the atomizing air hose to the manual gun and to the control unit.

6.6 GROUNDING

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

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

A poorly grounded work piece causes:

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

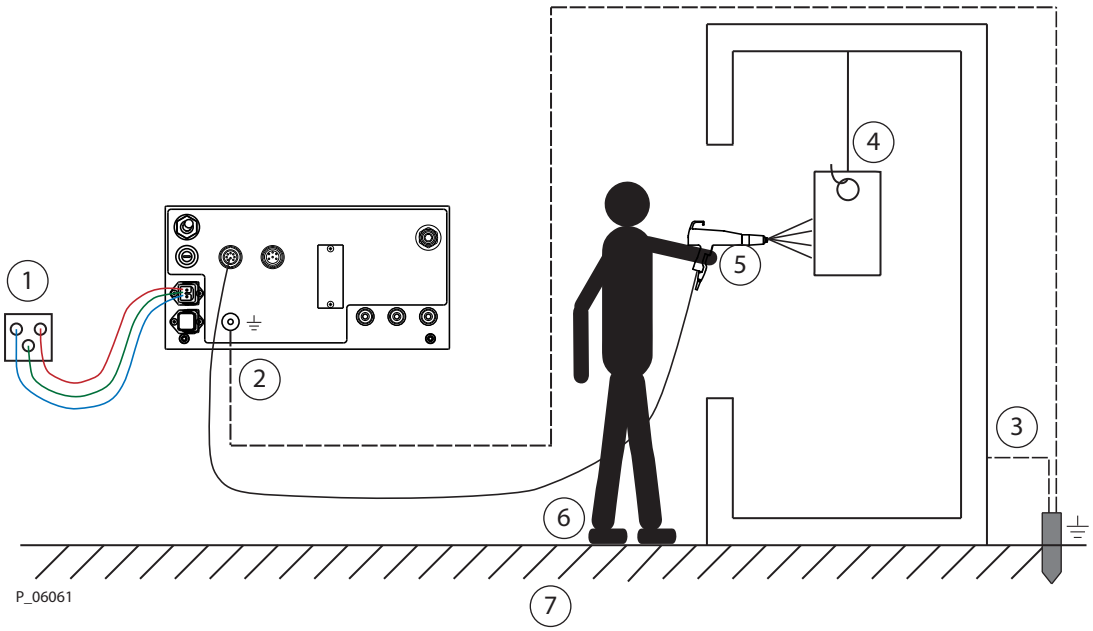
Prerequisites for perfect grounding and coating of a work piece are:

- Electroconductive suspension for the work piece that is to be coated

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

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

6.6.1 Grounding the powder coating system



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

6.7 SAFETY CHECKS

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

- Carry out safety checks in accordance with chapter Safety Checks [▸▸ 31].

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

1. Ensure that:
   - regular safety checks are performed in accordance with chapter Safety Checks [▸▸ 31].
   - commissioning is carried out in accordance with chapter Assembly and commissioning [▸▸ 21].

7.3 SWITCHING ON THE MANUAL POWDER SPRAY GUN

1. To put the control unit into operation, see corresponding operating manual.
2. Hold the manual powder spray gun in the spray booth.
3. Via the trigger lever of the manual powder spray gun, the high voltage and the coating material supply are activated at the same time.
4. Adjust the powder cloud on a test piece.

7.4 OPTIMIZING THE POWDER CLOUD FOR COATING

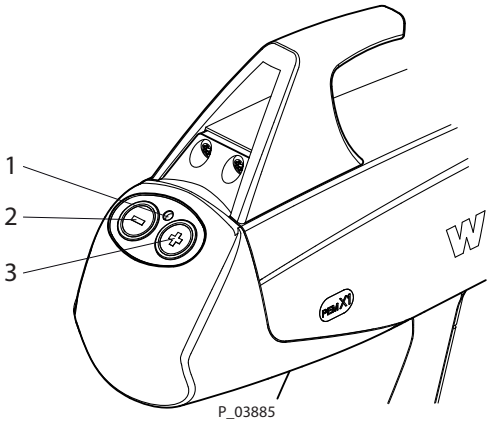
1. Switch on high voltage generator and powder feed.
   Note:
   To minimize wear on the wearing parts, the total air volume should be below 5 Nm^3/h.
   The atomizing air should be set for the
   ⇨ flat jet nozzle to 0.1 Nm^3/h
   ⇨ round jet nozzle to > 0.2 Nm^3/h
2. Adjust the powder quantity and the powder speed on a test piece.

7.4.1 Recommended Settings for Total Air Volume

Hose length	Hose diameter		
	10 mm	11 mm	12 mm
4–8 m	2.5–3.5 m^3/h	3.0–4.0 m^3/h	4.0–5.0 m^3/h
8–12 m	3.0–4.0 m^3/h	3.5–4.5 m^3/h	4.5–5.5 m^3/h
12–16 m	3.5–4.5 m^3/h	4.0–5.0 m^3/h	5.0–5.5 m^3/h

Standard manual system: hose diameter 10 mm, hose length 5 m

7.5 ADJUSTMENT OF POWDER QUANTITY



Pos	Designation
1	LED display green
2	Button [Reduce powder quantity]
3	Button [Increase powder quantity]

Note:

This function can only be activated in combination with the corresponding control unit.

By pressing the buttons [+/-], the preset program values of the feed air (powder quantity) can be changed in the desired direction.

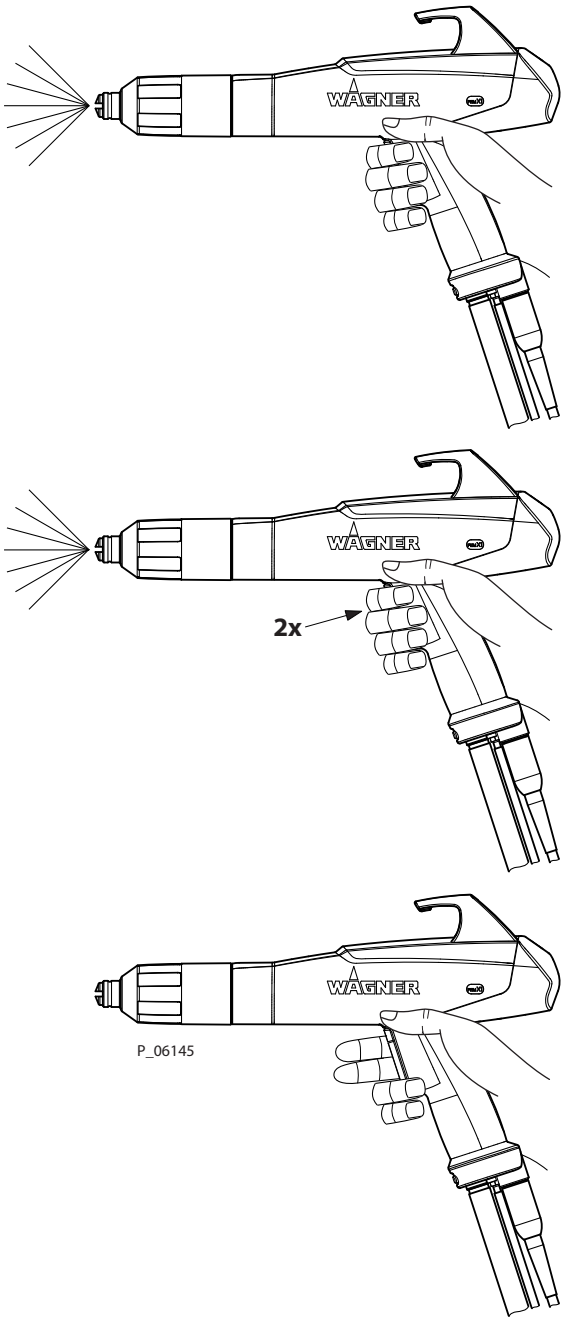
In this case, the total air remains unchanged, the dosing and feed air are readjusted accordingly.

LED display	Operating mode
Flashing	Normal operation of gun
Constant blinking	Activated program has been changed using the [+] or [-] button.
	By selecting another program, the modified values of the powder quantity are not accepted, however, the current values of the other program are accepted and the blinking changes to flashing. By saving these settings, the current values for the powder feed are accepted in the current program. The blinking changes back to flashing. By activating the [Double-click] function, the blinking is switched off as well. Then, the preset program values are active again.
Permanent lighting	Trigger lever has been actuated with [Double-click], i.e., the [Double-click] program is activated.

7.6 DOUBLE-CLICK PROGRAM (HIGH DYNAMIC REMOTE)

This function is used to change quickly to another program during a coating operation. The operator can access a previously set program by double-clicking on the trigger lever on the manual 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 manual gun twice in quick succession and hold down. Upon releasing the trigger, the original program will be returned to.



7.7 SWITCHING OFF THE MANUAL GUN

When releasing the trigger, the powder feed is stopped and the high voltage switched off.

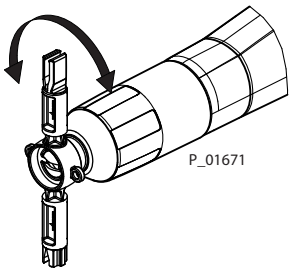
To safely switch off the manual gun, e.g., for maintenance work, the control unit must be switched off.

7.7.1 Pressure Relief / Work Interruption

- Carry out the work steps in accordance with the chapter on pressure relief in the operating manual of the corresponding device:
  - ⇨ If a prompt for pressure relief is given.
  - ⇨ If coating work is interrupted or stopped.

- ⇨ Before the device is externally cleaned, checked or serviced.
- ⇨ Before the spray nozzle is installed or cleaned.

7.8 REPRODUCIBLE SETTING OF THE NOZZLE POSITION



An adjustment tool is provided for the flat jet nozzle.

It permits turning the flat jet 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 personnel

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

The following hazards may arise during cleaning work:

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

8.1.2 Cleaning Procedures

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

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

8.2 MAINTENANCE

8.2.1 Maintenance personnel

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

The following hazards may arise during maintenance work:

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

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

8.2.2 Maintenance Instructions

⚠ DANGER

Incorrect maintenance/repair!

Danger to life and equipment damage.

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

Prior to maintenance

- Flush and clean the system according to chapter Cleaning Procedures [▸▸ 30].

After maintenance

- Carry out safety checks in accordance with chapter Safety Checks [▸▸ 31].
- Put the system into operation and check for leaks.
- Have the system checked for safe condition by a skilled person.

8.2.3 Safety Checks

8.2.3.1 Grounding Check

Every day

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

8.2.4 Maintenance Procedures

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

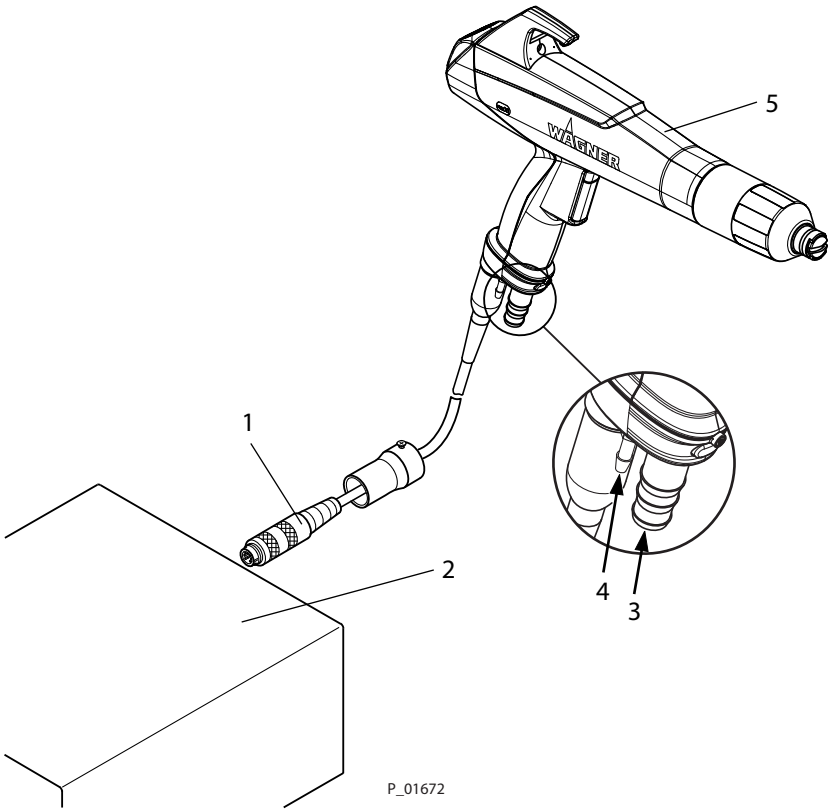
If in doubt, we recommend contacting WAGNER's specialist personnel.

Maintenance work	Time stamp	
	Per shift	Weekly
Blow out gun and check for sintering	x	
Check gun settings	x	
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

8.3 EXCHANGING THE MANUAL GUN

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

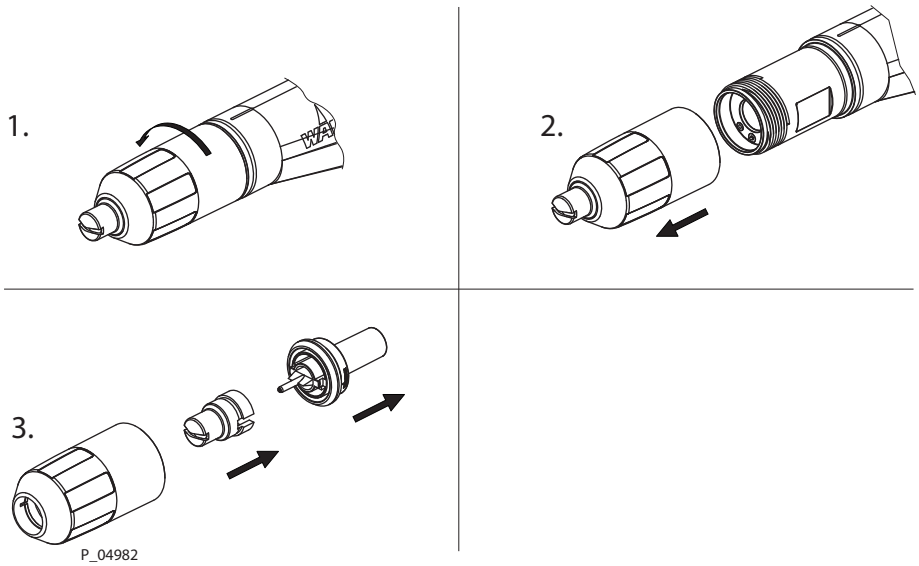
The wearing parts in the spray gun, marked in the spare parts list with ♦, must be regularly checked and replaced if necessary.



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

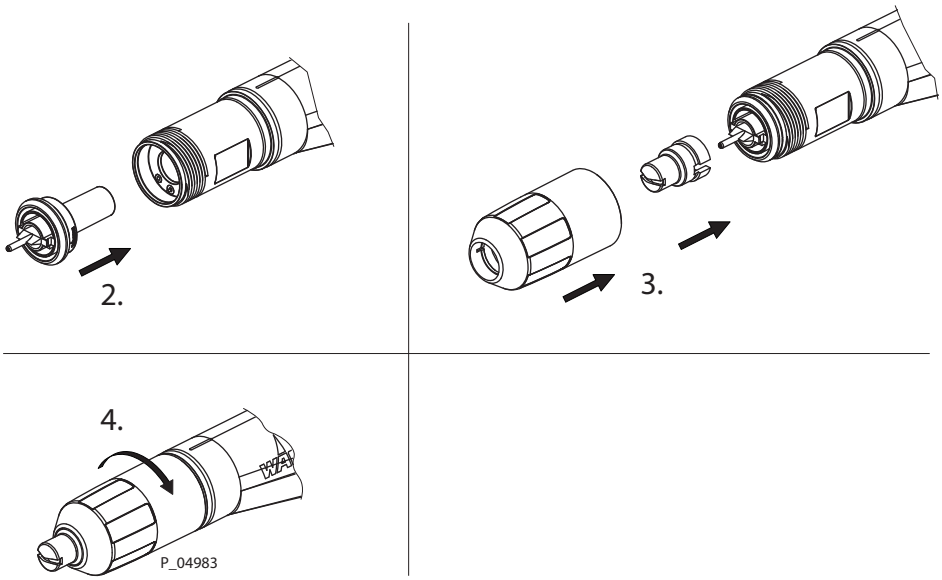
8.4 CHANGING THE FLAT JET NOZZLE

8.4.1 Removing the Flat Jet Nozzle



1. Unscrew the union nut from gun housing.
2. Remove the union nut with the nozzle system from the 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 applying slight pressure to the flat jet nozzle.
4. Remove powder residues from the removed parts and spray gun.
   Note:
   Never place spray gun, or parts of it, in cleaning agent.
   As a rule, the protective wedge needs to be checked for wear and replaced if necessary.

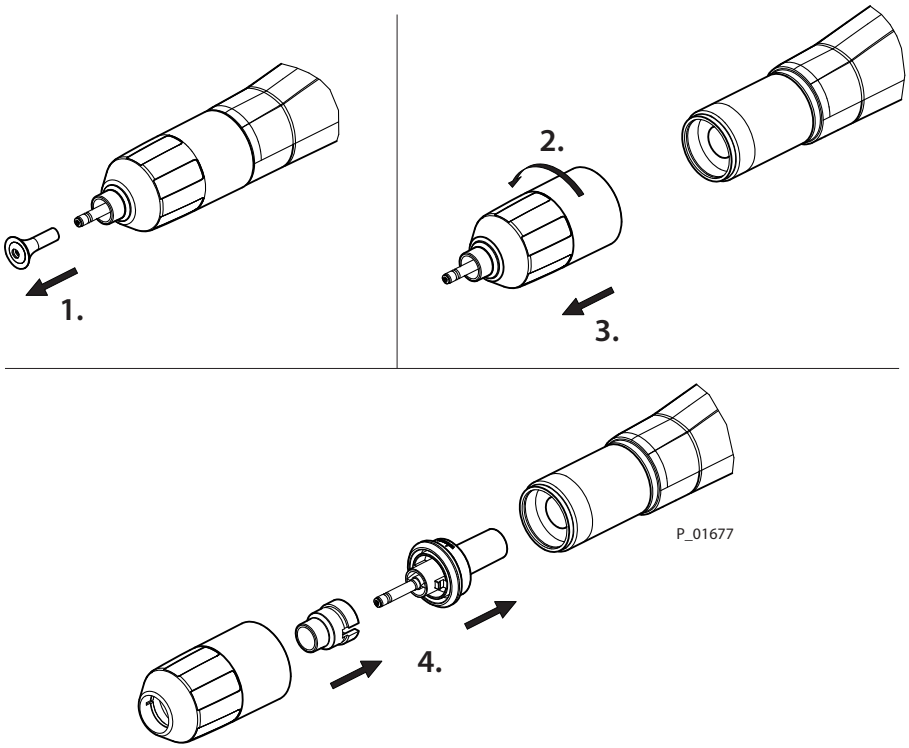
8.4.2 Fitting the Flat Jet Nozzle



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 move easily, the gun body must also be clean and free of powder deposits.
2. Insert electrode holder into gun housing.
3. Attach flat jet nozzle to electrode holder and attach union nut.
4. Screw union nut onto gun housing until flat jet nozzle can no longer be turned by hand.

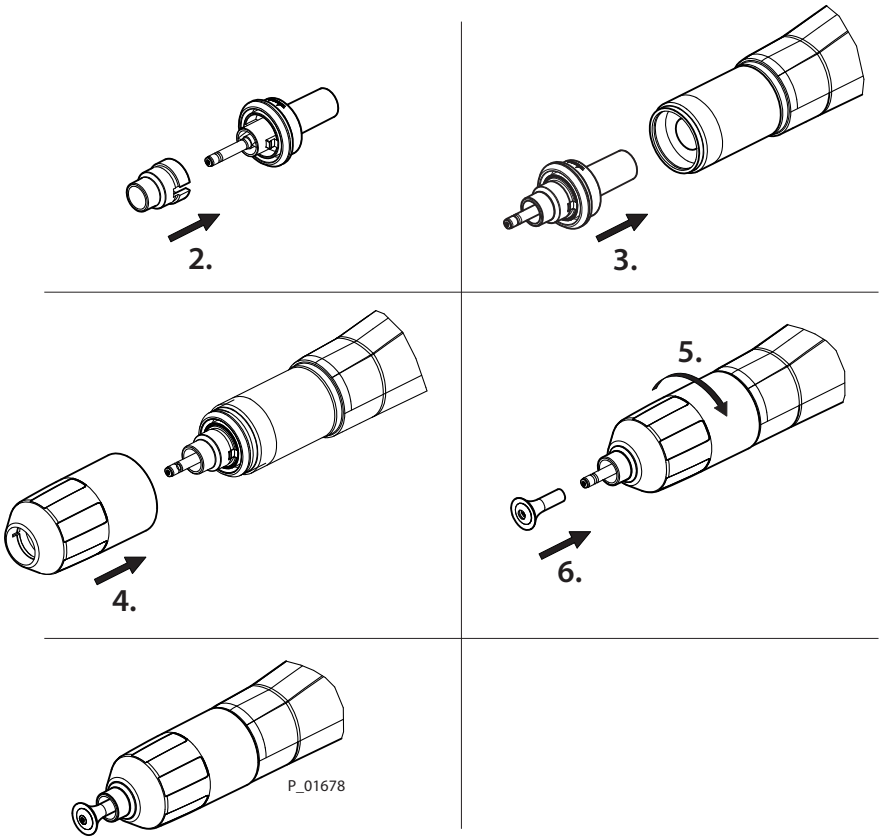
8.5 CHANGING THE ROUND JET NOZZLE

8.5.1 Removing the Round Jet Nozzle



1. Remove the deflector cone.
2. Unscrew the union nut from gun housing.
3. Remove the union nut with the nozzle system from the 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 removed parts and spray gun.
   Note:
   Never place spray gun, or parts of it, in cleaning agent.
   As a rule, the protective wedge needs to be checked for wear and replaced if necessary.

8.5.2 Fitting the Round Jet Nozzle



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 move easily, 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.

8.6 REPLACING THE PROTECTIVE WEDGE

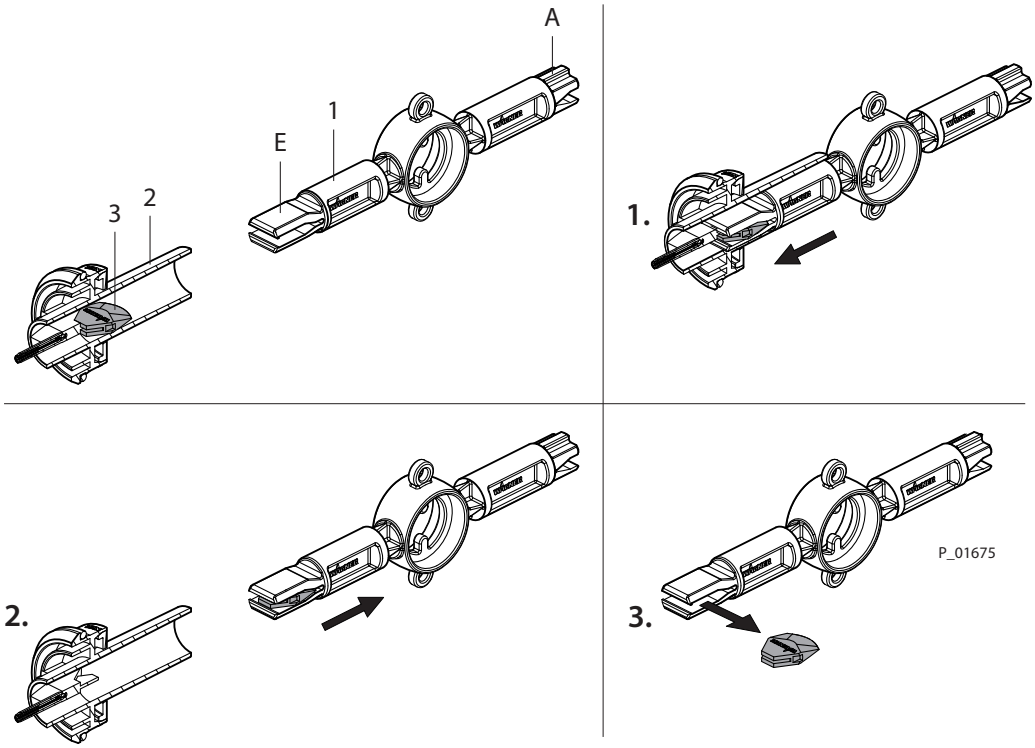
8.6.1 Removing the Protective Wedge

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 spare parts and wearing parts in chapter Spare parts [▸▸ 53] of this operating manual.



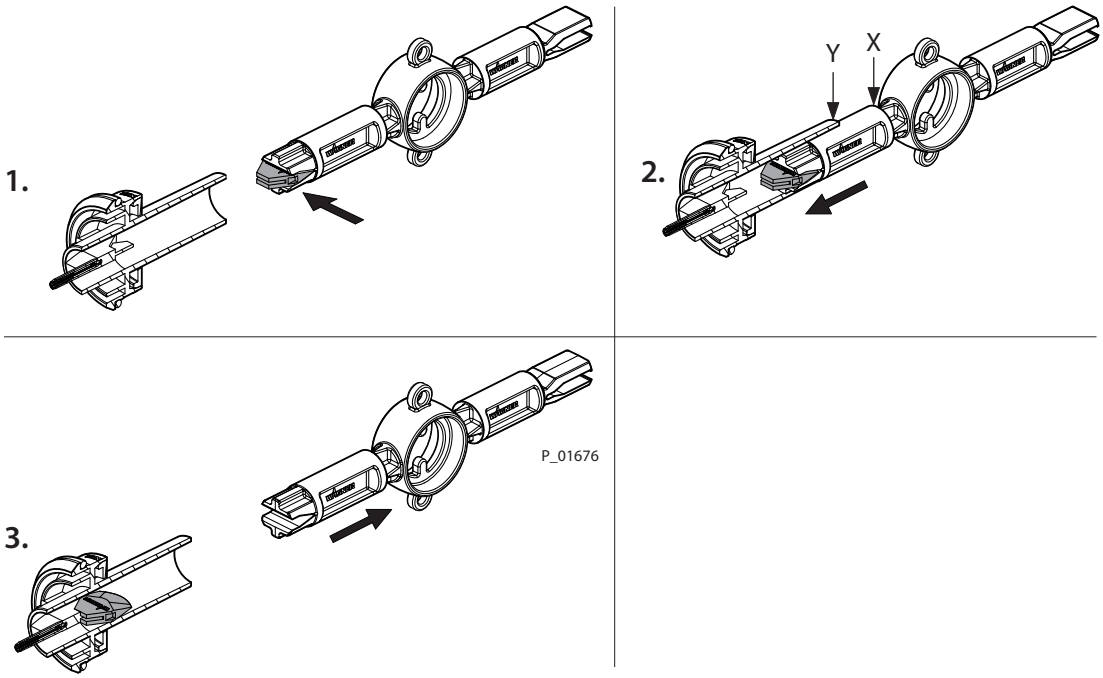
1	Wedge tool
2	Electrode holder (shown with a cut-away view to improve comprehension)
3	Protective wedge (when positioned)

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).

8.6.2 Installing the Protective Wedge

Note:

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



1. Guide protective wedge into wedge tool.
2. Move both parts up to stop in the opening of the electrode holder.
   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.
4. The protective wedge remains inserted in the electrode holder.
   Prior to re-fitting, check whether the contact points on the electrode holder and in the gun housing 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.

8.7 CHANGING NOZZLE TYPES

NOTICE

Wrong combination of parts!

Powder can be deposited in gaps and lead to incorrect coatings due to paint carryover.

- Only use recommended combinations (see chapter Accessories [▸▸ 46])!

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

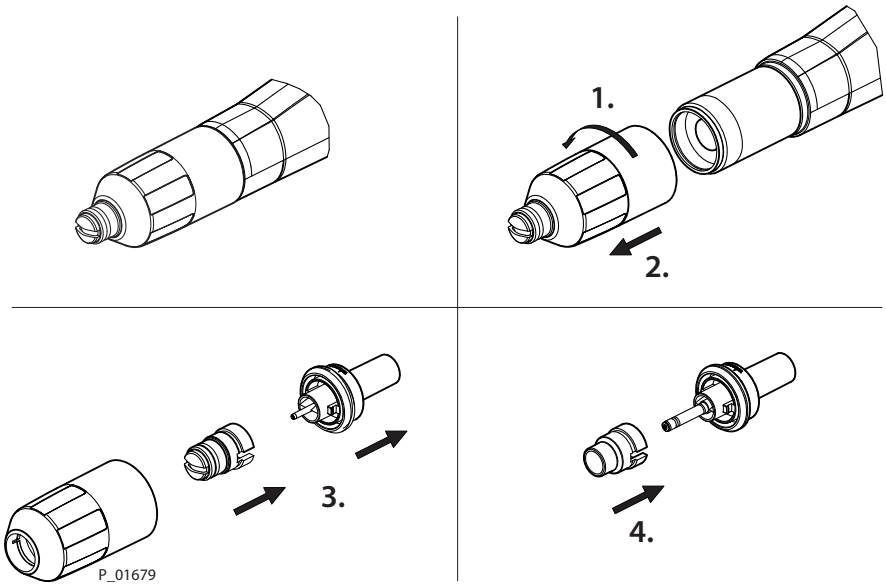
The X1 R electrode holder is needed to change from the flat jet nozzle to the round jet nozzle.

⚠ CAUTION

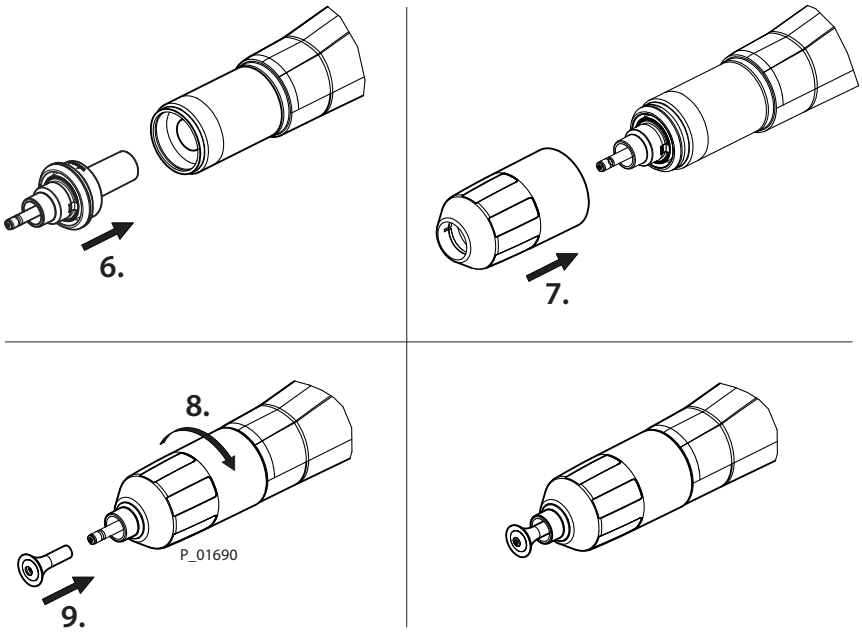
Electrode tip!

Risk of injury and damage to the device.

- Take care when fitting the electrode holder.



1. Unscrew the union nut from gun housing.
2. Remove the union nut with the nozzle system from the 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 applying slight pressure to the flat jet nozzle.
4. Attach deflector cone sleeve onto X1 R electrode holder.



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 move easily, 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.

8.8 ASSEMBLY OF THE CORONASTAR

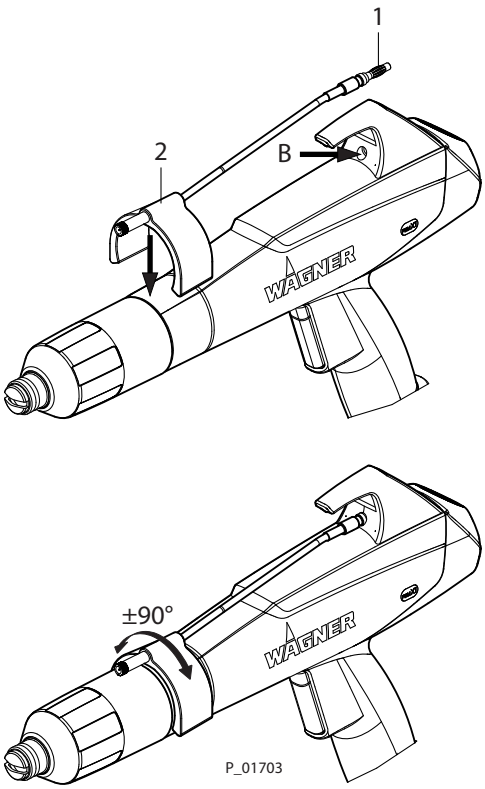
The CoronaStar is a retrofit set for the manual gun, which helps to achieve a better surface quality (e.g., reduction of "orange peel").

⚠ WARNING

Danger from electric current!

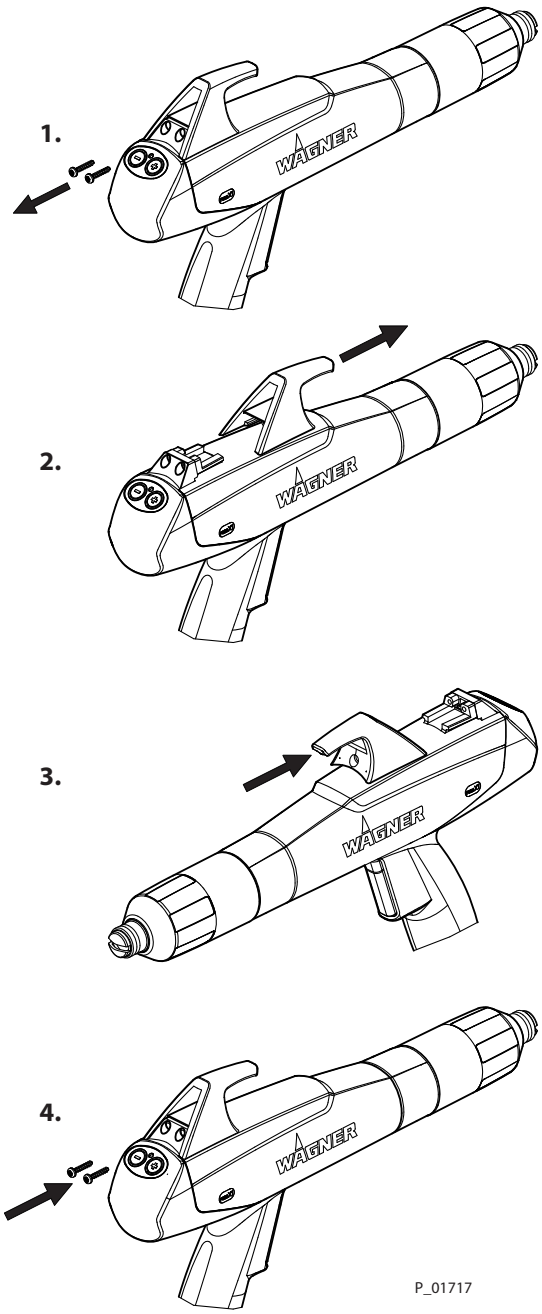
Risk of injury and damage to the device.

- The conversion on 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.



1. Guide plug-in contact 1 of CoronaStar into drilled hole B on hook.
2. Attach clip 2 of the CoronaStar onto the housing.
   Flexible positioning in a range of ± 90° is possible.

8.9 REPLACING THE SUSPENSION HOOK



1. Loosen fastening screws 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 fastening screws and tighten.

9 TROUBLESHOOTING AND RECTIFICATION

⚠ DANGER

Incorrect maintenance/repair!

Danger to life and equipment damage.

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

Malfunction	Cause	Rectification
No electrostatic (e.g., no wrap around or no powder adhesion)	Fault in the high-voltage generator	Contact a WAGNER service center
	Electrical cable from gun to control unit faulty	Contact a WAGNER service center
	Cascade in gun faulty	Contact a WAGNER service center
Poor powder wrap-around, backspray	Insufficient or no grounding	See chapter Grounding [▸▸ 24]
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
Powder outlet uneven or inadequate	Contamination	Blow through powder feeding parts
	Powder sintering	Clean powder feeding parts
	Feed unit contaminated	See operating manuals for the related devices connected
	Feed air / dosing air ratio incorrect	Adjust at control module resp. control unit
	Wear on powder injector nozzle	Replace worn parts on powder injector [1])

1.) You will find the wear parts and spare parts in the powder injector operating manual.

10 INSPECTIONS IN ACCORDANCE WITH DIN EN 50050-2: 2013

If the system is used for electrostatic coating with ignitable coating powders, the test must be performed in accordance with DIN EN 50050-2: 2013 according to the following Overview Table [▸▸ 44].

10.1 ABBREVIATIONS

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

10.2 OVERVIEW TABLE

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

11 DISASSEMBLY AND DISPOSAL

11.1 DISASSEMBLY

⚠ WARNING

Incorrect disassembly!

Risk of injury and damage to the device.

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

1. Switch off the system.
2. Lock the compressed air supply and decompress system.
3. Disconnect the gun connection cable from control unit.
4. Remove the powder feed hose from the spray gun and from the powder injector.
5. Remove the atomizing air hose from the spray gun and from the control unit.

11.2 DISPOSAL

ⓘ NOTICE

Do not dispose of used electrical equipment with household refuse!

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

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

12 ACCESSORIES

12.1 NOZZLE SYSTEMS

NOTICE

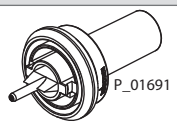
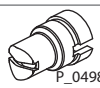
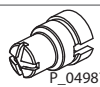
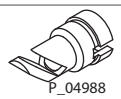
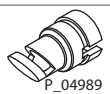
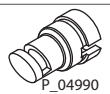
Wrong combination of parts!

Powder can be deposited in gaps and lead to incorrect coatings due to paint carryover.

- Only use the recommended combinations!

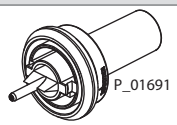
Only the following combinations can be used! Please note the respective color coding in parentheses!

12.1.1 Flat jet nozzles system X1

Order no.	K	Designation	
2429073	♦	**X1 electrode holder, complete ET (white)**	 P_01691
Can be combined with:			
2420243	♦	X1 flat jet nozzle, F1	 P_04985
2428515	♦	X1 cross nozzle, 90°	 P_04987
2428283	♦	X1 angular nozzle, 30°	 P_04988
2428284	♦	X1 angular nozzle, 45°	 P_04989
2428285	♦	X1 angular nozzle, 60°	 P_04990

♦ = wearing parts

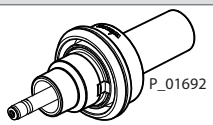
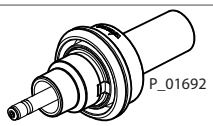
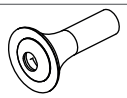
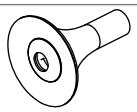
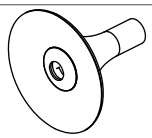
12.1.2 X1 F flat jet nozzles system

Order no.	K	Designation	
2322529	♦	**Electrode holder, X1 F ET (yellow)**	 P_01691
Can be combined with:			
2321976	♦	Flat jet nozzle, X1, complete	 P_04984

♦ = wearing parts

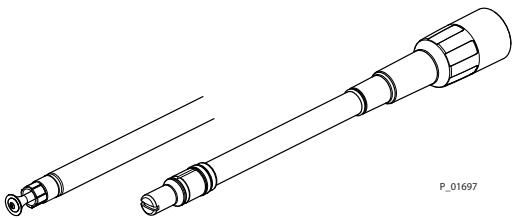
Note: Is preferably used for the PEM-X1 manual gun!

12.1.3 X1 R round jet nozzles system

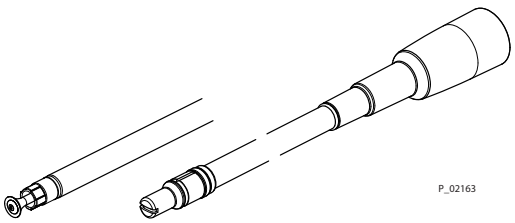
Order no.	K	Designation	
2322490	♦	**Electrode holder, X1 R ET (yellow)**	 P_01692
2322493	♦	**Electrode holder, X1 R (yellow) + nozzles**	 P_01692
Can be combined with:			
2321981	♦	Deflector cone, D18, complete	 P_01665
2321980	♦	Deflector cone, D25, complete	 P_01666
2321171	♦	Deflector cone, D34, complete	 P_01667

♦ = wearing parts

12.1.4 Nozzle extension


P_01697

X1 VL nozzle extension - 150/300/500


P_02163

X1 VL nozzle extension - 750

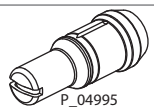
Order no.	K	Designation
2323366		**Nozzle extension, X1 VL 150 (150 mm; 5.91 inch)**
2323356		**Nozzle extension, X1 VL 300 (300 mm; 11.81 inch)**
2323338		**Nozzle extension, X1 VL 500 (500 mm; 19.68 inch)**
2330497		**Nozzle extension, X1 VL 750 (750 mm; 29.53 inch)**

Note:

The nozzle extensions include the flat jet nozzles system!

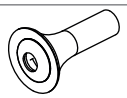
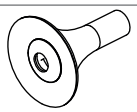
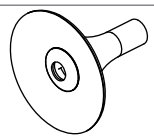
To use with the round jet nozzles system, see chapter Round jet nozzles system [▸▸ 48].

12.1.4.1 Flat jet nozzles system

Order no.	K	Designation	
2323401	♦	**Nozzle insert, X1 VL F (yellow)**	 P_04993
Can be combined with:			
2324147	♦	Flat jet nozzle, X1 VL ET	 P_04995

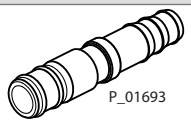
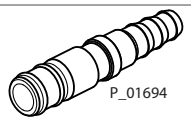
♦ = wear parts

12.1.4.2 Round jet nozzles system

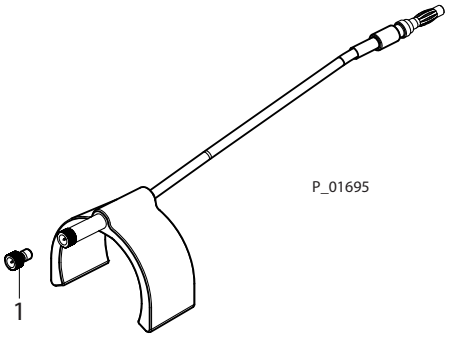
Order no.	K	Designation	
2323461	♦	**Nozzle insert, X1 VL R (yellow)**	 P_04992
Can be combined with:			
2321981	♦	Deflector cone, D18, complete	 P_01665
2321980	♦	Deflector cone, D25, complete	 P_01666
2321171	♦	Deflector cone, D34, complete	 P_01667
Set:			
2324148	♦	Round jet nozzle set X1 VL (comprising nozzle insert and the three deflector cones)	

♦ = wear parts

12.2 HOSE TAKE-UP

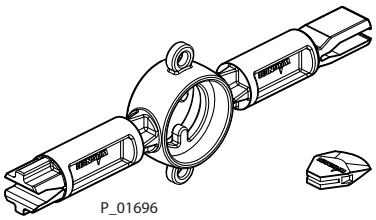
Order no.	K	Designation	
2322761		Hose take-up, D10-D12, complete	 P_01693
2322768		Hose take-up, D8-D10, complete	 P_01694

12.3 RETROFIT SET CORONASTAR



Order no.	K	Designation
2322868		CoronaStar, PEM-X1, complete
2322835		CoronaStar electrode, PEM-X1 ET

12.4 WEDGE TOOL



Order no.	K	Designation
2324124	⋆	Wedge tool, X1 + 20 wedges

⋆ Available as an accessory, not included in the scope of delivery

12.5 POWDER HOSE

Order no.	K	Designation
351794	♦	Powder hose ⌀ 9 mm
2310699	♦	Powder hose ⌀ 10 mm
2307502	♦	Powder hose ⌀ 11 mm
2310700	♦	Powder hose ⌀ 12 mm

♦ = wear parts

12.6 GUN CONNECTION CABLE

Order no.	K	Designation
2389365		Conversion set, 6 m for PEM-X1 handle (up to serial number 19098)
2399105		Manual gun cable, PEM-X1, 6 m, ET (from serial number 19099)
2398699		Conversion set, 15 m for PEM-X1 handle (up to serial number 19098)
2399106		Manual gun cable, PEM-X1, 15 m, ET (from serial number 19099)

Note:

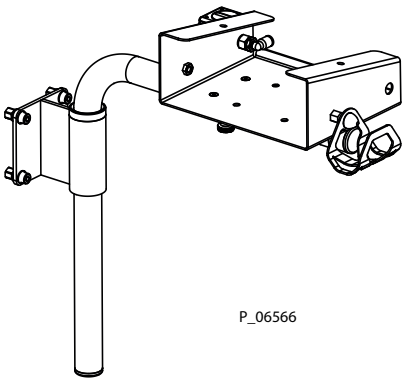
The replacement of the gun cable may only be performed by WAGNER's technical staff!

When replacing the gun cable (before serial number 19099) the manual gun must be converted once.

The 6 m handle conversion set for PEM-X1 is used for this purpose (order no. 2389365) or 15 m handle conversion set for PEM-X1 (order no. 2398699).

After the one-time conversion, the spare parts can then be ordered as from serial number 19099.

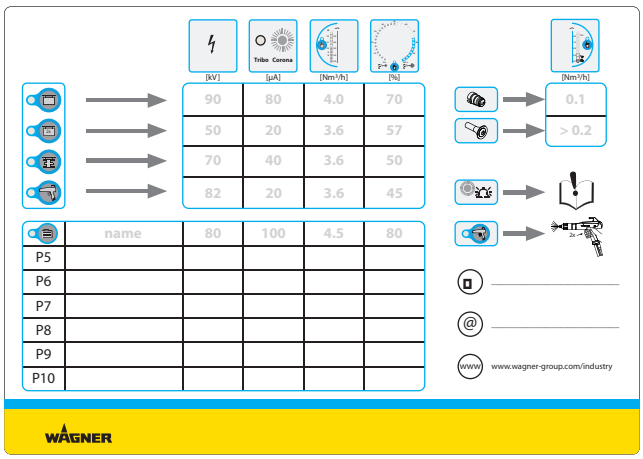
12.7 WALL MOUNT



P_06566

Order no.	K	Designation
2330223		Wall mount with bracket

12.8 RECIPE STICKER



P_01829

Order no.	K	Designation
2331223		Recipe sticker

12.9 POWDER MEASURING ADAPTER

⚠ WARNING

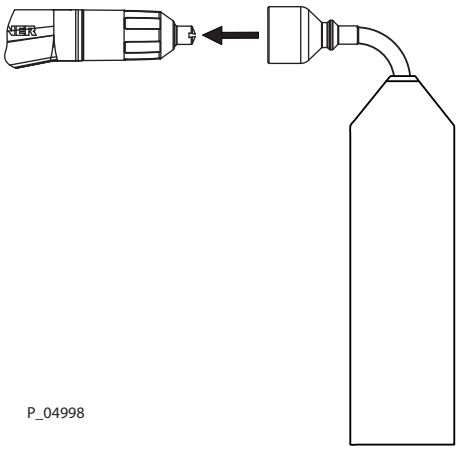
Risk of explosion due to electrostatic charging!

Danger to life and equipment damage.

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

The powder measuring adapter is used to measure powder quantities for the PEM-X1/ PEM-X1E/PER-X1/PEA-X1/PEA-X1E guns. The powder measuring adapter is slid onto the nozzle.

12.9.1 Powder Measuring Adapter for X1 Flat Jet Nozzle



P_04998

Order no.	K	Designation
2428701		Universal powder measuring adapter, complete

12.9.2 ECO powder measuring set

Note:

The ECO powder measuring set can be used with powder spray guns equipped with the X1 flat jet nozzle (order no. 2420243).

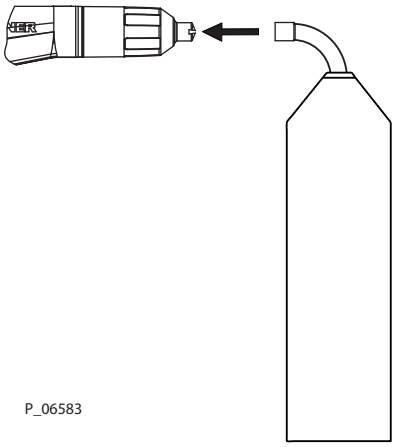
It is also possible to attach the powder measuring set to an X1 round steel electrode holder. To do this, the deflector cone must be removed before performing a measurement.

The ECO powder measuring set **cannot** be used with powder spray guns equipped with the X1 flat jet nozzle with sliding ring (order no. 2321976)!

In this case, the universal powder measuring adapter set, complete, (order no. 2428701) can be used.

The main area of application for the ECO powder measuring set is automatic guns.

The advantage of this ECO powder measuring set is its lower cost.



P_06583

Order no.	K	Designation
2479518		ECO powder measuring set consisting of: Calibration bag Elbow
2479335		Calibration bag

13 SPARE PARTS

13.1 HOW TO ORDER SPARE PARTS

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

Order number, designation and quantity

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

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

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

Identification in spare parts lists

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

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

⋆ Included in service set

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

Explanation of order no. column:

-- Item not available as spare part.

/ Position does not exist.

13.2 NOTES ON THE USE OF SPARE PARTS

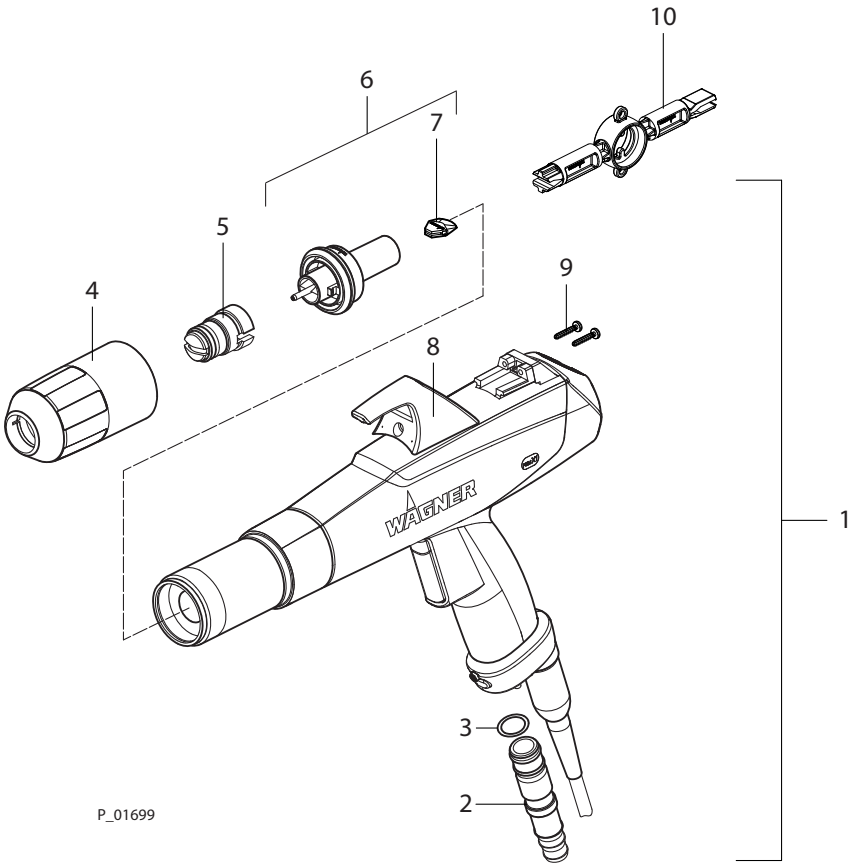
⚠ DANGER

Incorrect maintenance/repair!

Danger to life and equipment damage.

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

13.3 PEM-X1 CORONA MANUAL GUN WITH A FLAT JET NOZZLE

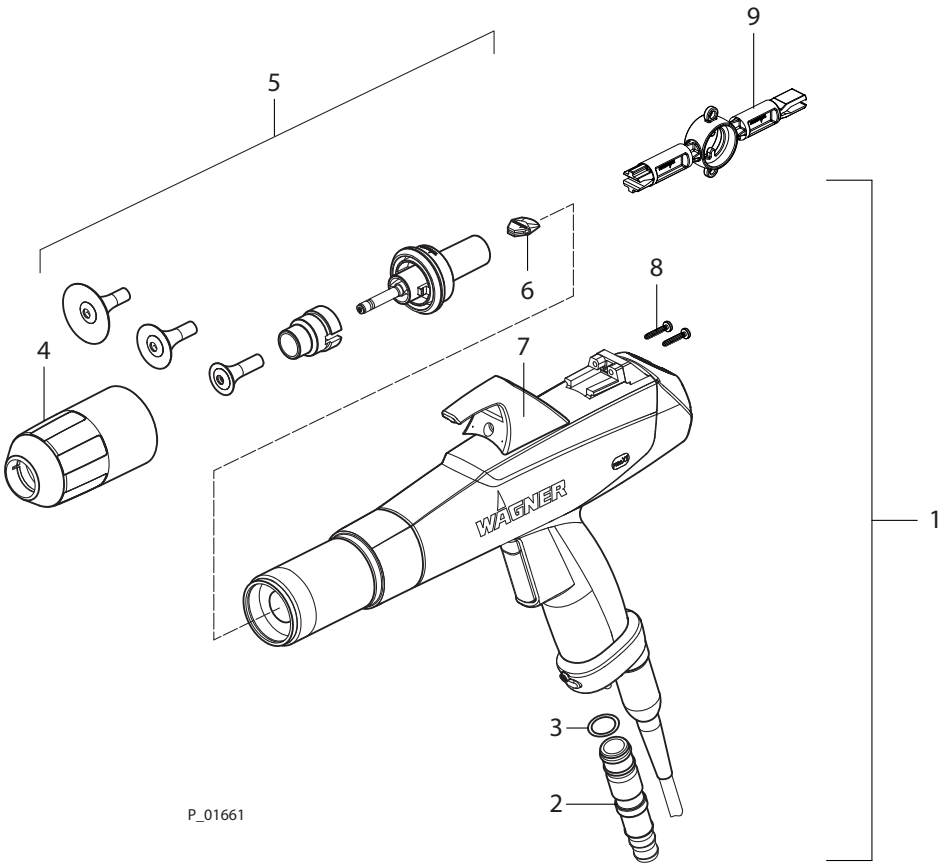


Pos	K	Stk	Order no.	Designation
1		1	2322587	PEM-X1 Corona manual gun
1	●	1	2464026	PEM-X1 Corona manual gun (+)
2		1	2322761	Hose take-up, D10-12, complete
3	♦	2	9971364	O-ring
4		1	2320464	Union nut, X1
5	♦	1	2321976	Flat jet nozzle, X1, complete
6	♦ ●	1	2322529	Electrode holder, X1 F ET
7	♦	1	2429695	Replacement protective wedge, X1 (white)
8		1	2320330	Gun hook, X1 ET
9		2	2316896	Screw
10		1	2324205	Wedge tool, X1
11		1	2313993	Hose, transparent ⌀ 6 mm

♦ = wear parts

● = available as an accessory, not included in the scope of delivery

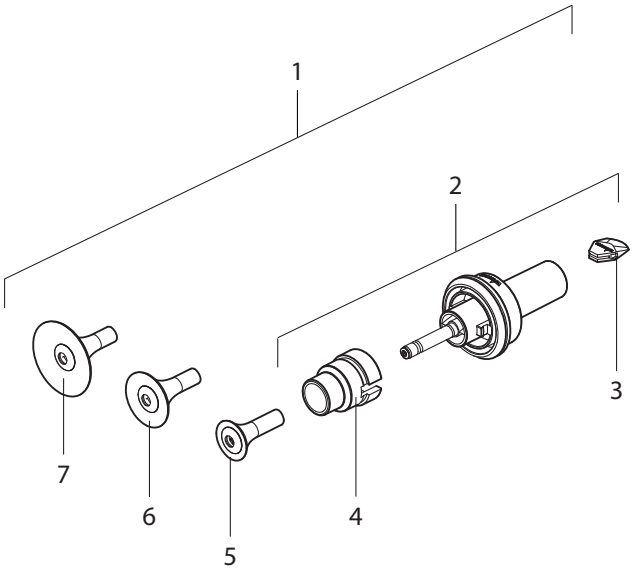
13.4 PEM-X1 CORONA MANUAL GUN WITH A ROUND JET NOZZLE



Pos	K	Stk	Order no.	Designation
1		1	2335844	PEM-X1 Corona manual gun
2		1	2322761	Hose take-up, D10-12, complete
3	♦	2	9971364	O-ring
4		1	2320464	Union nut, X1
5	♦	1	2322493	Electrode holder, X1 R, with nozzle
6	♦	1	2429695	Replacement protective wedge, X1 (white)
7		1	2320330	Gun hook, X1 ET
8		2	2316896	Screw
9		1	2324205	Wedge tool, X1
10		1	2313993	Hose, transparent ⌀ 6 mm

♦ = wear parts

13.5 X1 R ELECTRODE HOLDER



P_01700

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	2429695	X1 replacement protective wedge
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

14 DECLARATION OF CONFORMITY

14.1 EU DECLARATION OF CONFORMITY - MANUAL GUN

Herewith we declare that the supplied version of:

PEM-X1, PEM-X1 CG

complies with the following guidelines:

2014/34/EU
2006/42/EC
2014/30/EU
2011/65/EU

Applied standards, in particular:

EN ISO 12100: 2010	EN 50050-2: 2013
EN 1953: 2025	EN 1127-1: 2019
EN ISO 13732-1: 2008	EN IEC 61000-6-2: 2019
EN 14462: 2015	EN IEC 61000-6-4: 2019
EN 60529: 1991+A1: 2000+A2: 2013	EN IEC 63000: 2018

Identification:

CE 2813 Ex II 2 D 2 mJ

PTB 12 ATEX 5002

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: 2326024

14.2 FM CONTROL DOCUMENT

Identification:

FM C US APPROVED

FM Control Document

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

Order number: 2309729

Order number 2326020
Edition 08/2025

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Version G

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