WAGNER

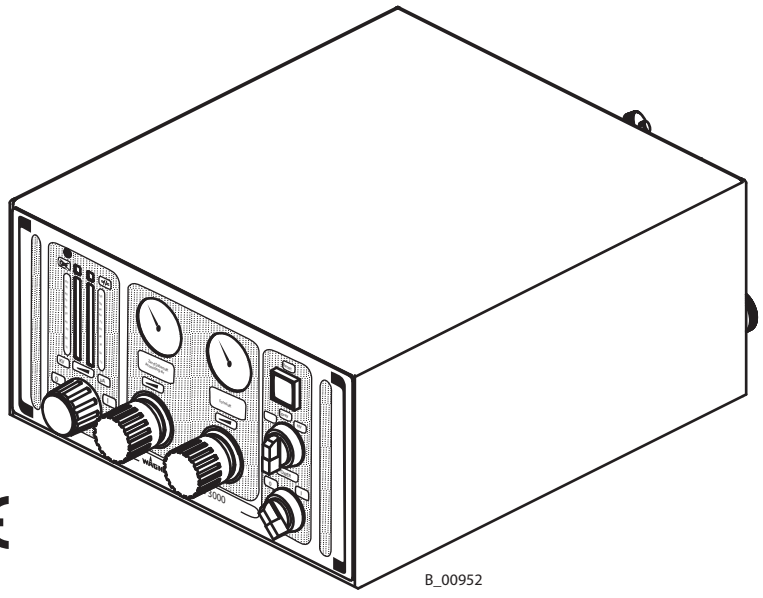
**Translation of the original Operating manual**

**EPG 3000**

Edition 06 / 2007

# Electrostatic Control Unit

for E-Static automatic sprayguns



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# 1 ABOUT THESE INSTRUCTIONS

This operating manual contains information about the operation, repair and maintenance of the unit.
→ Always follow these instructions when operating the unit.
This equipment can be dangerous if it is not operated in accordance with this manual.
Electrostatic spray guns may be operated only by trained personnel.
Compliance with these instructions constitutes an integral component of the guarantee agreement.

## 1.1 LANGUAGES

This operating manual is available in the following languages:

| Language: | Part No. | Language: | Part No. |
|---|---|---|---|
| German | 0381860 | English | 0381861 |
| French | 0381862 | Dutch | 0381863 |
| Italian | 0381864 | Spanish | 0381865 |
| Danish | 0381867 | Swedish | 0381866 |

## 1.2 WARNINGS, NOTES AND SYMBOLS IN THESE INSTRUCTIONS

Warning instructions in this manual point out particular dangers to users and equipment and state measures for avoiding the hazard. These warning instructions fall into the following categories:

**Danger** - imminent danger. Non-observance will result in death, serious injury and serious material damage


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**⚠ DANGER**

**This line warns of the hazard !**
Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.

→ The measures for preventing the hazard and its consequences.

**Warning** - possible danger. Non-observance can result in death, serious injury and serious material damage.


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**⚠ WARNING**

**This line warns of the hazard !**
Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.

→ The measures for preventing the hazard and its consequences.

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


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**⚠ CAUTION**

**This line warns of the hazard !**
Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.

→ The measures for preventing the hazard and its consequences.

**Caution** - a possibly hazardous situation. Non-observance can cause material damage.

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**CAUTION**

**This line warns of the hazard !**
Possible consequences of failing to observe the warning instructions. The signal word points out the hazard level.

→ The measures for preventing the hazard and its consequences.

**Note -** provide information on particular characteristics and how to proceed.

# 2 GENERAL SAFETY INSTRUCTIONS

## 2.1 SAFETY INSTRUCTIONS FOR THE OPERATOR

→ Keep these operating instructions to hand near the unit at all times.
→ Always follow local regulations concerning occupational safety and accident prevention.

### 2.1.1 ELECTRICAL EQUIPMENT

Electrical plant and unit
→ 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 or under their supervision.
→ Must be operated in accordance with the safety regulations and electrotechnical regulations.
→ Must be repaired immediately in the event of problems.
→ Must be put out of operation if they pose a hazard.
→ Must be de-energized before work is commenced on active parts. Inform staff about planned work, observe electrical safety regulations.

**Control units**
→ Place the control unit outside the spray booth/zone.
→ Place the control unit outside the explosion zone.
→ Protect the control unit from extreme temperature and moisture changes.
→ Protect the control unit against dirt.
→ Lay and fix the connecting cable correctly.
→ Guarantee that local mains voltage and tension of the equipment agree.

### 2.1.2 PERSONNEL QUALIFICATIONS

→ Ensure that the unit is operated and repaired only by trained persons.

### 2.1.3 A SAFE WORK ENVIRONMENT

→ Ensure that the floor of the working area is anti-static in accordance with EN 50053 Part 1, §7-2, measurement in accordance with DIN 51953.
→ Ensure that all persons within the working area wear anti-static shoes, e.g. shoes with leather soles.
→ Ensure that during spraying, persons wear anti-static gloves so that they are earthed via the handle of the spray gun.
→ Customer to provide paint mist extraction systems conforming to local regulations.
→ Ensure that the following components of a safe working environment are available:
  – Material/air hoses adapted to the working pressure
  – Personal safety equipment (breathing and skin protection)
→ Ensure that there are no ignition sources such as naked flame, glowing wires or hot surfaces in the vicinity. Do not smoke.

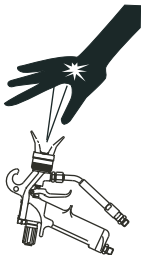
## 2.2 SAFETY INSTRUCTIONS FOR PERSONNEL

→ Always follow the information in these instructions, particularly the general safety instructions and the warning instructions.
→ Always follow local regulations concerning occupational safety and accident prevention.

**Control units**

→ When putting into operation and for all work, read and follow the operating instructions and safety regulations for the additionally required system components.
→ Do not open the control unit.

## 2.2.1 SAFE HANDLING OF WAGNER SPRAY UNITS



The spray jet is under pressure and can cause dangerous injuries.
Avoid injection of paint or cleaning agents:
→ Never point the spray gun at people.
→ Never reach into the spray jet.
→ Before all work on the unit, in the event of work interruptions and functional faults:
  – Switch off the energy/compressed air supply
  – Secure the spray gun against actuation.
  – Relieve the pressure from the spray gun and unit.
  – By functional faults: Identify and correct the problem, proceed as described in chap. „Trouble shooting".

In the event of skin injuries caused by paint or cleaning agents:
→ Note down the paint or cleaning agent that you have been using.
→ Consult a doctor immediately.

Avoid danger of injury through recoil forces:
→ Ensure that you have a firm footing when operating the spray gun.
→ Only hold the spray gun briefly in any one position.

## 2.2.2 EARTH THE UNIT

Electrostatic charges can occur on the unit due to the electrostatic charge and the flow speed involved in spraying. These can cause sparks and flames upon discharge.
→ Ensure that the unit is earthed for every spraying operation.
→ Earth the workpieces to be coated.
→ Ensure that all persons inside the working area are earthed, e.g. that they are wearing antistatic shoes.
→ When spraying, wear antistatic gloves to earth yourself via the spray gun handle.

## 2.2.3 MATERIAL HOSES

→ Ensure that the hose material is chemically resistant to the sprayed materials.
→ Ensure that the material hose is suitable for the pressure generated in the unit.
→ Ensure that the following information is visible on the high-pressure hose:
  – Manufacturer
  – Permissible operating overpressure
  – Date of manufacture.
→ The electrical resistance of the complete high-pressure hose must be less than 1 MOhm.

### 2.2.4 CLEANING

→ De-energize the unit electrically.
→ Disconnect the pneumatic supply line.
→ Relieve the pressure from the unit.
→ Ensure that the flash point of the cleaning agent is at least 5 K above the ambient temperature.
→ To clean, use only solvent-free cloths and brushes. Never use hard objects or spray on cleaning agents with a gun.

An explosive gas/air mixture forms in closed containers.
→ When cleaning units with solvents, never spray into a closed container.
→ Earth the container.

### 2.2.5 HANDLING HAZARDOUS LIQUIDS, VARNISHES AND PAINTS

→ When preparing or working with paint and when cleaning the unit, follow the working instructions of the manufacturer of the paints, solvents and cleaning agents being used.
→ Take the specified protective measures, in particular wear safety goggles, protective clothing and gloves, as well as hand protection cream if necessary.
→ Use a mask or breathing apparatus if necessary.
→ For sufficient health and environmental safety: Operate the unit in a spray booth or on a spraying wall with the ventilation (extraction) switched on.
→ Wear suitable protective clothing when working with hot materials.

### 2.2.6 TOUCHING HOT SURFACES

→ Touch hot surfaces only if you are wearing protective gloves.
→ When operating the unit with a coating material with a temperature of >43°C; 109.4°F:
- Identify the unit with a warning label that says „Warning - hot surface“.

**Order No.**
9998910 Information label
9998911 Safety label

### 2.3 CORRECT USE

WAGNER accepts no liability for any damage arising from incorrect use.
→ Use the unit only to work with the materials recommended by WAGNER.
→ Operate the unit only as an entire unit.
→ Do not deactivate safety equipment.
→ Use only WAGNER original spare parts and accessories.

## 2.4 SAFETY-RELEVANT INFORMATION ABOUT DISCHARGES

The plastic parts of the spray gun are charged electrostatically by the high-voltage field of the spray pistol. Harmless discharges (brush discharges) are possible after contact with plastic parts. They are completely harmless for people.

The corona discharge at the electrode end is visible during darkness at a distance of between 4 and 10 mm; 0.15 and 0.4 inch, between the spray gun and spray object.

## 2.5 SETTING UP STATIONARY ELECTROSTATIC SYSTEMS

The EPG 3000 is a component of a stationary spraying system. When setting up stationary spraying systems comply strictly with EN 50176.
One of the requirements is that it is only possible to switch on the high voltage with a key. But it must be possible to switch off the high voltage without a key, for instance with an emergency stop button.

# 3 PRODUCT LIABILITY AND WARRANTY

## 3.1 IMPORTANT NOTES ON PRODUCT LIABILITY

As a result of an EC regulation, effective as from January 1, 1990, the manufacturer shall only be liable for his product if all parts come from him or are approved by him, and if the devices are properly fitted , operated and maintained.
If other makes of accessory and spare parts are used, the manufacturer's liability could be fully or partially null and void.
The usage of original WAGNER accessories and spare parts guarantees that all safety regulations are observed.

## 3.2 WARRANTY

This unit is covered by our warranty on the following terms:
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 terms of the warranty are met at our discretion by the repair or replacement of the unit or parts thereof. The resulting costs, in particular shipping charges, road tolls, labour and material costs will be borne by us except where these costs are increased due to the subsequent shipment of the unit to a location other than the address of the purchaser.

This warranty does not cover damage caused by:
Unsuitable or improper use, faulty installation or commissioning by the purchaser or a third party, normal wear, negligent handling, defective maintenance, unsuitable coating products, substitute materials and the action of chemical, electrochemical or electrical agents, except when the damage is attributable to us.

Abrasive coating products such as redlead, emulsions, glazes, liquid abrasives, zinc dust paints and similar reduce the service life of valves, packings, spray guns, nozzles, cylinders, pistons etc. Any wear resulting from the aforementioned causes is not covered by this warranty.

Components not manufactured by Wagner are subject to the warranty terms of the original maker.
The replacement of a part does not extend the warranty period of the unit.
The unit should be inspected immediately upon receipt.
To avoid loss warranty, aniy apparent defect should be notified to us or the dealer in writing within 14 days from date of sale of the unit.

The right to commission warranty services to a third party is reserved.
Warranty claims are subject to proof of purchase by submitting an invoice or delivery note.
If an inspection finds damage not covered by the present warranty, the repair will be carried out at the expense of the purchaser.

Note that this warranty does not in any way restrict legally entitled claims or those contractually agreed to in our general terms and conditions.

J. Wagner AG

## 3.3 CE-CONFORMITY

Herewith we declare that the supplied version of:

| | |
|---|---|
| **EPG 3000** | 0381020 |
| **EPG 3000 ext** | 0381021 |

*in connection with:*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **GA 2000 EAF** | 0350002 | **GA 2005 EAF** | 0350042 | 0350072 | **GA 2805 EA** | 0350046 | 0350074 |
| **GA 2000 EAR** | 0350005 | **GA 2005 EAR** | 0350041 | 0350073 | **GA 2800 EA** | 0350028 | |
| **GA 2000 EACFB** | 0350003 | **GA 2005 EACFB** | 0350044 | 0350070 | | | |
| **GA 2000 EACRB** | 0350007 | **GA 2005 EACRB** | 0350043 | 0350071 | | | |

Complies with the following provisons apllying to it:

| | |
|---|---|
| 98/37/EG | 93/68/EWG |
| 89/336/EWG | 73/23/EWG |
| 92/31/EWG | 94/9/EG |

Applied standards, in particular:

| | | |
|---|---|---|
| EN 292-1 | EN 55022 | EN 61000-6-1 |
| EN 292-2 | EN 60204-1 | EN 61000-6-2 |
| EN 1050 | EN 61000-4-2 | EN 61000-6-3 |
| EN 1953 | EN 61000-4-4 | EN 61000-6-4 |
| EN 50176 | EN 61000-4-6 | |
| EN 55011 | EN 61000-4-11 | |

Applied national technical standards and specifications, in particular:

see chapter 3.4

Marking:

CE

**EC Certificate of Conformity**

The certificate is enclosed with this product. The certificate of conformity can be reordered from your WAGNER representative, quoting the product and serial number.

**Part number:**

EPG 3000 0381891

## 3.4 GERMAN REGUALTIONS AND GUIDELINES

| | | |
|---|---|---|
| a) | BGV A2 | Electrical units and equipment |
| b) | BGV D15 | Working with liquid ejection devices |
| c) | BGV D25 | Using coating materials |
| d) | CHV 9 | Regulations on flammable liquids |
| e) | CHV 11 | Regulations on electrical equipment in Ex areas |
| f) | BGR 104 | Explosion protection rules |
| g) | BGR 132 | Avoiding ignition risks |
| h) | BGR 180 | Setting up for cleaning workpieces with solvents. |
| i) | ZH 1/406 | Guidelines for liquid ejection devices |
| j) | BGI 740 | Painting rooms and equipment |
| k) | BGI 764 | Electrostatic coating |

**Note:** All titles can be ordered from Heymanns Publishing House in Cologne.

# 4 DESCRIPTION

## 4.1 FIELD OF APPLICATION, USING IN ACCORDANCE WITH INSTRUCTIONS

The EPG 3000 can be run as a component of the Modular Painting System or as a stand-alone unit.
The electrostation control unit EPG 3000 may only be used with the automatic spray guns GA 2005EAC or GA 2005EA or GA 2805EA.
**Note:**
The automatic guns GA 2000EAC, GA 2000EA or GA 2800EA can likewise be operated with the EPG 3000. The shaping air regulator in the EPG 3000 must remain closed for this.

## 4.2 SCOPE OF SUPPLY

| Qty | Part No. | Description |
|---|---|---|
| 1 | 0381020 | Electrostatic power generator EPG 3000<br>Suitable for use in Wagner Modular Painting System<br>**Note:**<br>Connecting cables are not included in delivery scope.<br>See accessories in chap. 7 |
| 1 | 0381021 | Electrostatic power generator EPG 3000<br>For use as a stand alone equipment.<br>**Note:**<br>Connecting cables are included in delivery scope. |
| 1 | 0381022 | Electrostatic power generator EPG 3000 USA<br>For use as a stand alone equipment.<br>**Note:**<br>Connecting cables are included in delivery scope. |

The standard equipment includes:

| Quantity | | | Part No. | Description |
|---|---|---|---|---|
| 0381020 | 0381021 | 0381022 | | |
| | 1 | | 0241270 | Mains cable standard 3m; 9.8 ft |
| | | 1 | 0264626 | Mains cable USA 2 m; 6.6 ft |
| | 1 | 1 | 0130215 | Earthing cable 10 m; 32.8 ft |
| | 1 | 1 | 0350275 | Control cable extern 3 m; 9.8 ft |
| 1 | 1 | 1 | 0264900 | Spare parts set * |
| 2 | 2 | 2 | 9922101 | Tooth lock washer |
| 2 | 2 | 2 | 9903328 | Phillips head screw |
| 1 | 1 | 1 | 0381891 | CE-Declaration of Conformity |
| 1 | 1 | | 0381860 | Operating manual German |
| | | 1 | 0381861 | Operating manual English |
| 1 | 1 | 1 | see 1.1 | An operating manual in the local language |

* The spare parts set consists of:

| Quantity | Part-No | Description |
|---|---|---|
| 2 | 9951116 | Thermal delay fuse 2.0 A |
| 2 | 9951117 | Thermal delay fuse 1.0 A |

For special versions the delivery note applies

## 4.3 TECHNICAL DATA

| **Electrical:** | |
|---|---|
| Input voltage | 85 VAC - 264 VAC<br>47 Hz - 440 Hz |
| Input power | max. 40 W |
| Output voltage | max. 17 Vpp |
| Output current | max. 0.9 A |
| Valve control voltage | 24 V DC |
| High voltage limit | 80 kV DC |
| Spray gun current limit | 100 µA DC |
| Enclosure class | IP64 |
| **Pneumatics:** | |
| Input air pressure | 0.6-0.8 MPa; 6-8bar, 87-116 psi |
| Output air pressure | 0-0.6 MPa; 0-6 bar, 0-87 psi |
| Compression air qual. to ISO 8573.1 | 5.5.4 |

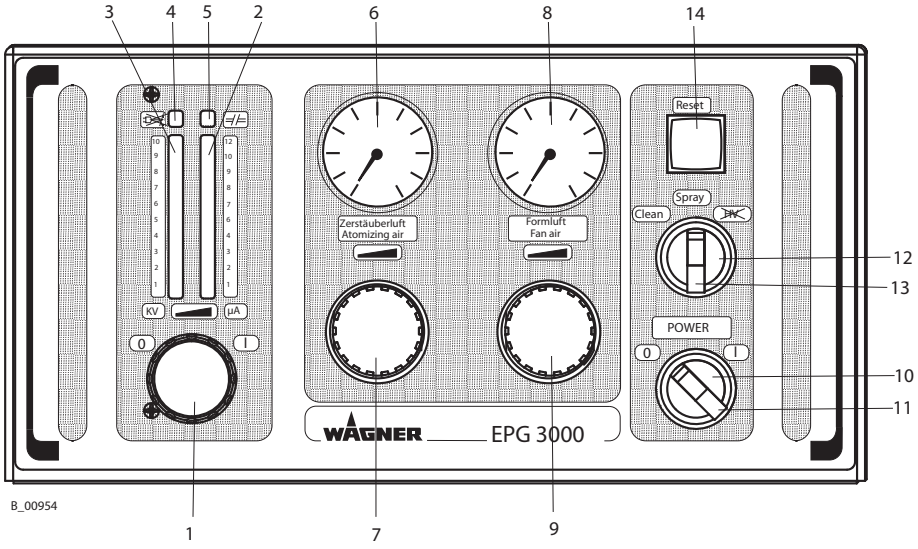
| **Measurements:** | |
|---|---|
| Width | 270 mm; 10.6 inches |
| Height | 135 mm; 5.3 inches |
| Depth | 315 mm; 12.4 inches |
| Weight (without cable). | 6.8 kg; 15.0 lb |
| Working temperature range | 5-40° C; 41-104° F |

## 4.4 FUNCTION

The EPG 3000 is made up into an electrostatic spraying system with the appropriate spray gun and other components.
It can be used either as a stand-alone unit or through an external controller. (e.g. PLC, Modular Painting System). Three operating modes can be set, i.e.„Spray“,„Clean“, ~~or~~ HV (spraying without high voltage). The high voltage and the paint material valve of the spray gun is switched on and off through the EPG 3000. The high voltage characteristics have the effect that if the spray gun gets too close to the object being sprayed (or to earth), the voltage is automatically reduced thus preventing an unintentional spark discharge. At the same time as the high voltage and the paint material valve, the preset atomising air valve in the spray gun is pneumatically actuated.

## 4.5 OPERATING CONTROL

### Front plate




**1 Voltage regulator**
- Rotate anti-clockwise past switching point to turn off the high-voltage module.
- Rotate clockwise to adjust the high-voltage (max 80 kV)

**2 Spraying current display** (Luminous display green)
Shows the spraying current in µA as a bar display.

**3 High voltage indicator** (Luminous display green)
Shows the high-voltage (actual value) in kV as a bar display.

**4 Proximity shut-off** (LED - red), gun proximity
Lights up when the distance between the gun and object is too low. HVM goes into fault mode, i.e.:
- High-voltage is turned off.
- Material valve and atomizing air valve on the gun are closed.

**Procedure:**
- Remove cause, i.e, increase distance between gun and object.
- Turn off HVM with the voltage regulator and then turn it on again.

**5 Grounding guard circuit** (LED - red), gun cable fault
Lights up when the connecting cable from EPG 3000 to the spray gun is not plugged in or is faulty. HVM goes into fault mode, i.e.:
- High-voltage is turned off.
- Material valve and atomizing air valve on the gun are closed.

**Procedure:**
- Remove cause, i.e., check connecting cable from gun to EPG 3000. If faulty, repair by WAGNER-Service.
- Turn off HVM with the voltage regulator and then turn it on again.

**6 Pressure gauge**
- Displays atomizing air pressure for the spray gun
- Readings between 0-0.6 MPa; 0-6 bar; 0-87 psi.

**7 Regulator**
- Adjusts the pressure of the atom. air
- Adjustment between 0-0.6 MPa; 0-6 bar; 0-87 psi.

**8 Pressure gauge**
- Displays sharping air pressure for the spray gun
- Readings between 0-0.6 MPa; 0-6 bar; 0-87 psi.)

**9 Regulator**
- Adjusts the pressure of the atom. air
- Adjustment between 0-0.6 MPa; 0-6 bar; 0-87 psi.

**10 Selector (mains supply)**
OFF = Control unit switched off
ON = Control unit switched on

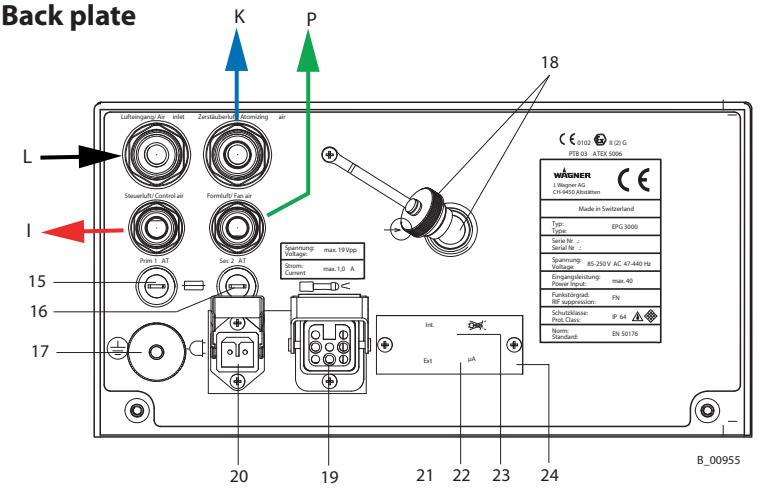
**11 Luminous display** (integrated in switch)
OFF = Control unit switched off
ON = Control unit switched on

**12 Selector** (operating mode)
Spray = Spraying mode
Clean = Cleaning mode
HV = Spraying mode without high voltage

**13 Luminous display** (integrated in switch)
Off = highvoltage off
On = highvoltage on

**14 Reset button**
Reset a fault

## Back plate




| | |
|---|---|
| I | Control air red<br>Ø 8 mm; Ø 0.31 inch |
| K | Atomizing air blue<br>Ø 8 mm; Ø 0.31 inch |
| L | Compressed air inlet black<br>Ø 10 mm; Ø 0.39 inch |
| P | Shaping air green<br>Ø 8 mm; Ø 0.31 inch |

**15 Primary fuse**
1.0 Ampere, delay action

**16 Secondary fuse**
2.0 Ampere, delay action

**17 Milled nut earthing**
Connection for the earth cable (system earth)

**18 Interface connections** (with coverings)
Interface for external equipment control (PLC, Modular Painting System).
For pin assignment and a connection example see section 8.5 and section 8.6
The function selector is set to„Ext" for use with an external control system.

**19 Connecting socket**
Connection for gun cable with safetyclip

**20 Connecting socket**
Connection for mains cable with safety clip

**21 Changeover switch**
2 settings possible
„int" Use as a stand-alone unit
„ext" Use with external controller (e.g. PLC, Robot, Modular Painting System)

**22 Spraying current limit** Potentiometer.
Standard setting = 100 µA.
Potentiometer for setting of the spraying current limit to values between 50 µA and 100 µA. If low resistance paints are used there is a possibility that better wraparound figures could be achieved if the spraying current is set to a lower value.

**23. Proximity shut off** Potentiometer.
Standard setting = 100 µA.
At this setting the EPG 3000 never goes into fault mode as the spraying current can never reach a value > 100 µA.
If the value is reduced, the EPG 3000 can go into fault mode. A reduction in the value of the proximity shut-off means that the EPG 3000 will change over into fault mode in the following situations.
- Distance between gun electrode and workpiece too short.
(e.g. caused by the workpiece rolling).
- Gun very heavily contaminated.

**24 Cover**

# 5 STARTING UP AND OPERATION

## 5.1 ADDITIONAL COMPONENTS

This control unit is used to complete an electrostatic spraying system,with an automatic spray gun GA 2005 EA or GA 2005 EAC or GA 2805 EA and various other components (see WAGNER accessories), e.g. paint supply equipment.

With the electrostatic control unit VM 2000 may be used the spray guns:

- GA 2005EA
- GA 2005EAC
- GA 2805EA

**⚠WARNING**

**Incorrect installation/operation!**
Risk of injury and damage to equipment.

→ When putting into operation and for all work, read and follow the operating instructions and safety regulations for the additionally required system components.

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**CAUTION**

**Impurities in the spraying system!**
Spray gun blockage, materials harden in the spraying system.

→ Flush the spray gun and paint supply with a suitable cleaning agent.

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## 5.2 POSITIONING OF THE UNIT

**⚠ DANGER**

**Incorrect installation of the unit!**
Risk of explosion and equipment damage.

→ Place the unit outside the spray booth/zone.
→ Place the unit outside the explosion zone.
→ Protect the unit from extreme temperature and moisture changes.
→ Protect the unit against dirt.
→ Lay and fix the connecting cable correctly.

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## 5.3 EARTHING

Perfect earthing of all system components (workpieces, conveyor, paint supply system, control unit, spray booth or spraying stand, see illustration) is a prerequisite for optimum coating efficiency and safety.

**⚠WARNING**

**Discharge of electrostatically charged components in atmospheres containing solvents!**
Explosion hazard from electrostatic sparks or flames.

→ Earth all unit components.
→ Earth the workpieces being painted.

SIHI_0027_GB

**⚠WARNING**

**Heavy paint mist if earthing is insufficient!**
Risk of poisoning.
Insufficient paint application quality.

→ Earth all unit components.
→ Earth the workpieces being painted.

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**A badly earthed workpiece will result in:**

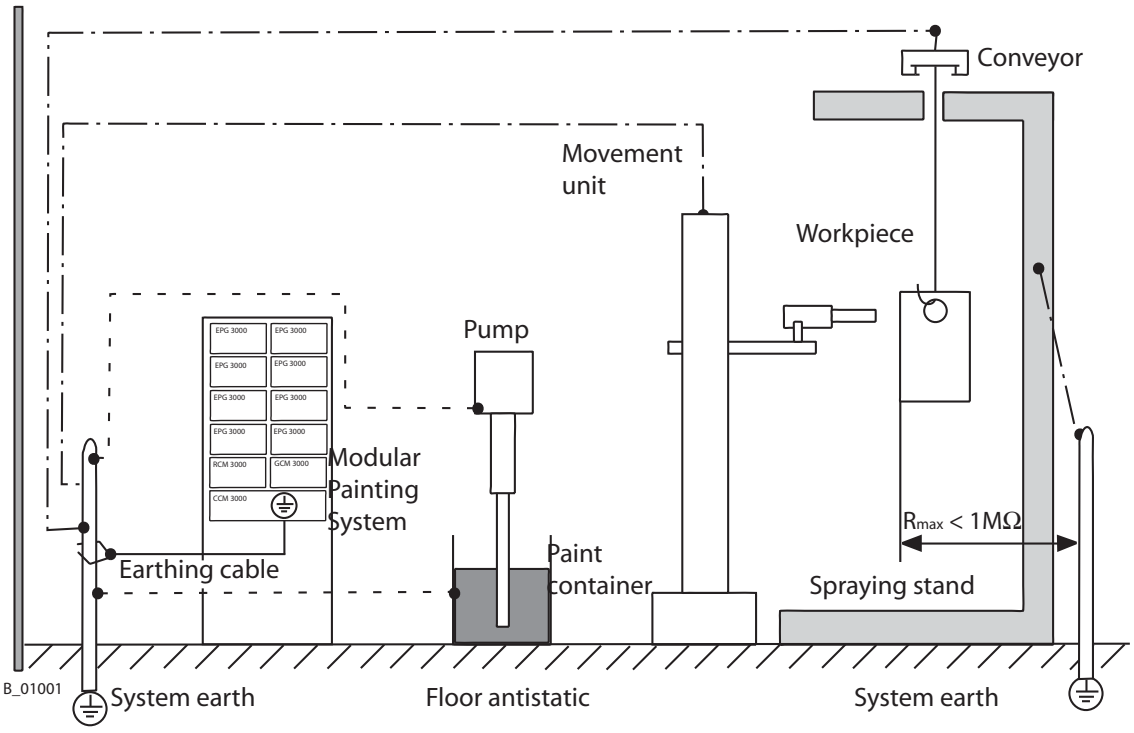
- Very poor wrap-around
- Uneven coating thickness
- Spray-back onto the spray gun, i.e. contamination

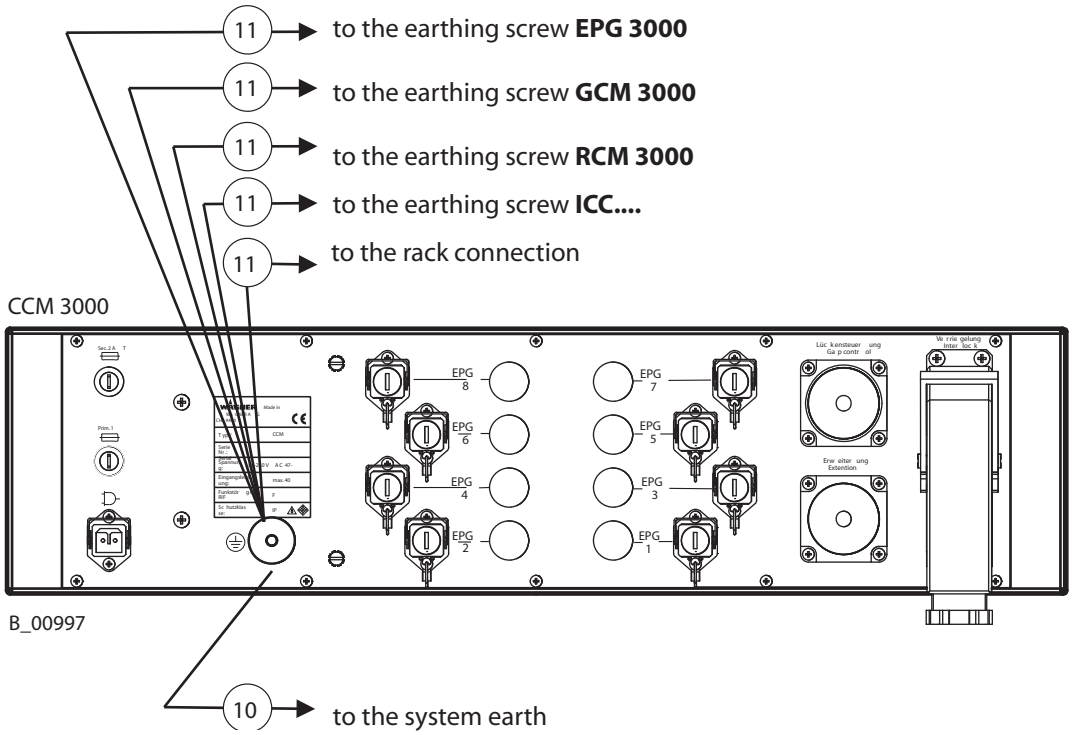
**The prerequisites for perfect earthing and coating are**:

- Clean workpiece suspension
- Earthing of spray booth, conveyor system and hangers to the building earth in accor dance with the operating instruction or the manufacturer's information
- Earthing of all conductive parts within the working area
- The earthing resistance of the workpiece must not exceed 1 MΩ (Mega Ohm).
- Connect the control unit to the mains system earth.

### 5.3.1 USING IN MODULAR PAINTING SYSTEM

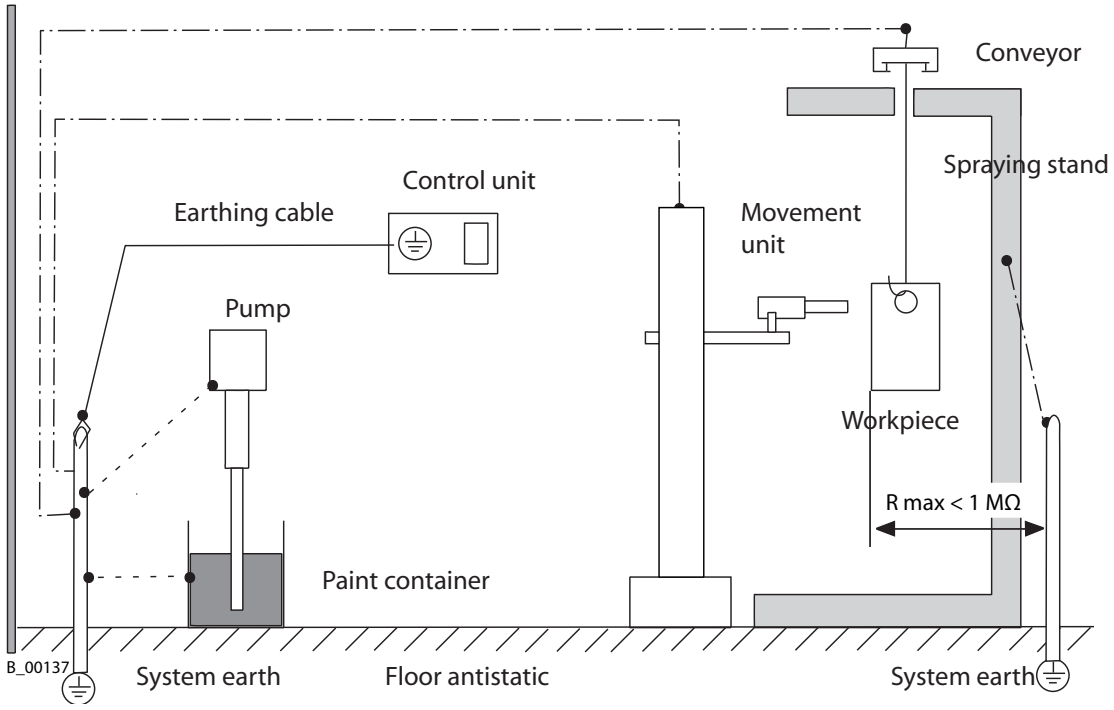
**Earthing scheme (example)**



## 5.3.2 USE AS A STAND-ALONE UNIT

### Earthing scheme (example)

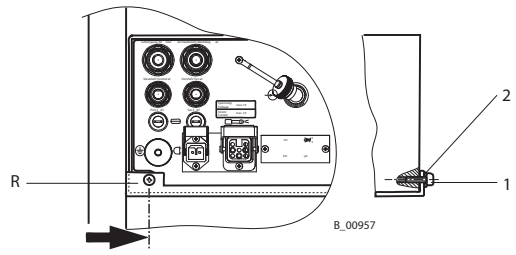



### Minimum cable cross-section

| | |
|---|---|
| Control unit | 4 mm² (AWG 12) |
| Pump | 4 mm² (AWG 12) |
| Paint container | 4 mm² (AWG 12) |
| Movement unit | 16 mm² (AWG 6) |
| Conveyor | 16 mm² (AWG 6) |
| Spraying booth | 16 mm² (AWG 6) |
| Spraying stand | 16 mm² (AWG 6) |

## 5.4 FIXING THE EPG 3000 IN THE RACK

Screw the modules onto the rack (R), using the 2 enclosed oval head screws (2) and serrated washers (1).



## 5.5 STARTING-UP THE CONTROL UNIT/ SPRAY GUN

→ See **safety regulations** in chapter 2.

**⚠ DANGER**

**High voltage field!**
Danger to life from malfunctioning heart pacemakers.

Ensure that persons with heart pacemakers:
→ Do not work with the electrostatic spray gun.
→ Remain outside the area of the electrostatic spray gun/work piece.

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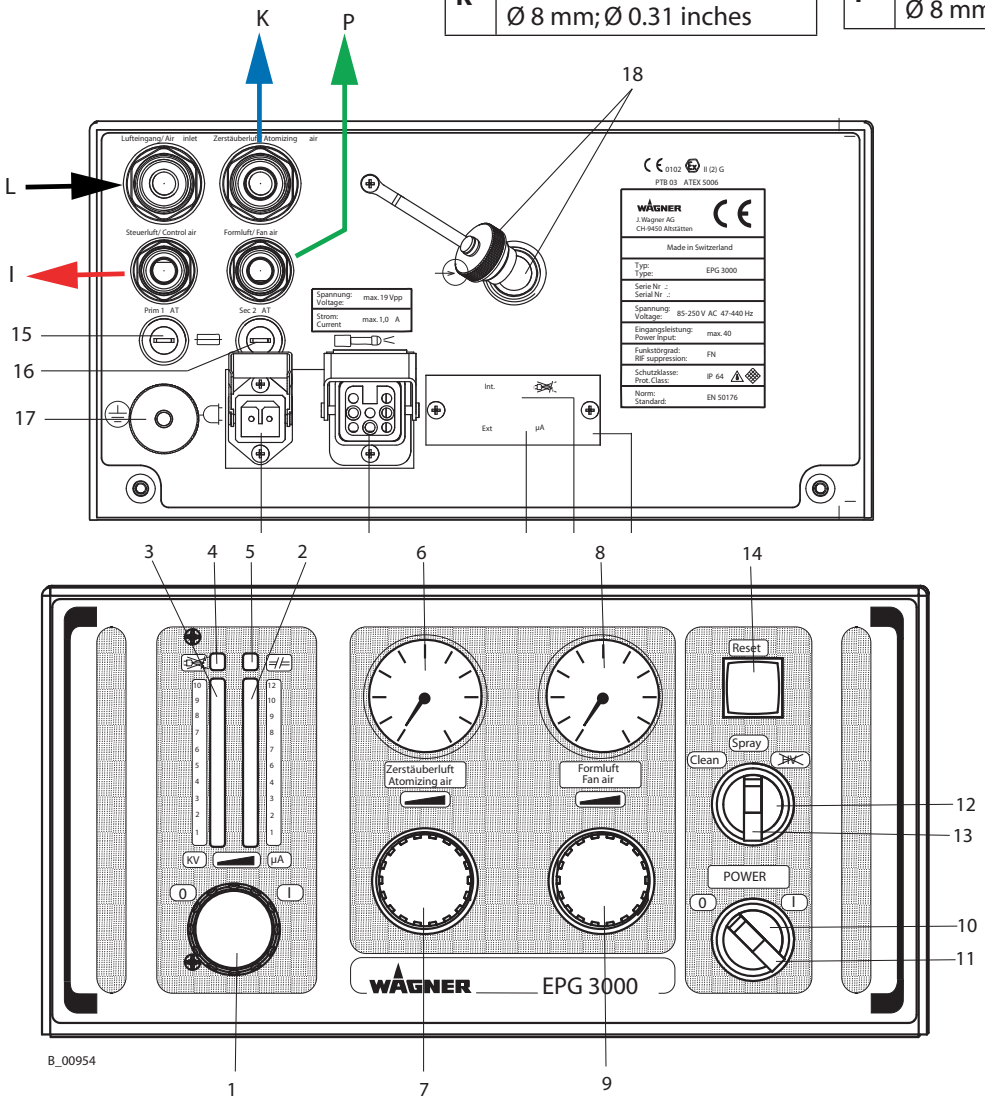
| | |
|---|---|
| **I** | Control air red<br>Ø 8 mm; Ø 0.31 inches |
| **K** | Atomizing air blue<br>Ø 8 mm; Ø 0.31 inches |

| | |
|---|---|
| **L** | Compressed air inlet black<br>Ø 10 mm; Ø 0.39 inches |
| **P** | Shaping air green<br>Ø 8 mm; Ø 0.31 inches |

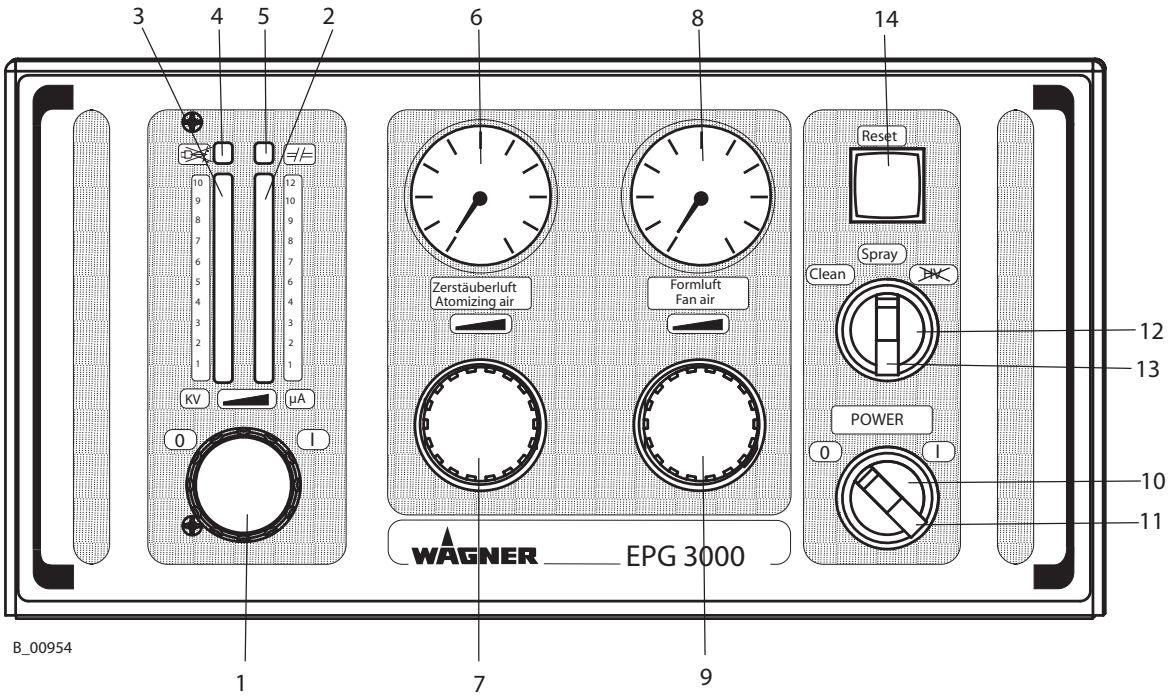


1. Connect the electrostatic control unit EPG 3000 to the mains socket (20). The mains socket should be interlocked with the extraction system.
2. Connect the earth cable to the earthing screw (17) and to system earth.
3. Connect gun cable to connection socket (19) and secure with the safety clip. Also connect spray gun GA 2005EA or GA 2005EAC or GA 2805EA to the paint supply and see the operating instructions GA 2005EA or GA 2005EAC or GA 2805EA.
4. Connect the control unit using a hose black, ø10 mm; ø0.39 in from the input air connection on the rear of the control unit, which is marked black and labelled „Eingangsluft“ (air in), to the equipment air supply 0.6-0.8 MPa; 6-8 bar; 87-116 psi.
5. Connect one end of control air hose red, ø8 mm; ø0.31 in to the redmarked air input labelled „St“ on the back of the spray gun and the other end to the red marked air outlet, labelled „Steuerluft“ (control air), on the rear of the control unit.
6. Connect one end of the atomizing air hose blue, ø10 mm; ø0.39 in to the air inlet (blue) labelled „Z“ on the back of the spray gun and the other end to the blue air outlet, labelled„Zerstäuberluft“ (atomizing air), on the rear of the control unit.
7. Connect one end of the shaping air hose green, ø8 mm; ø0.31 in to the air inlet (green) on the top of the spray gun and the other end to the green air outlet, labelled„Formluft“ (shaping air), on the rear of the control unit.
8. Set the material supply to approx. 0.05-0.15 MPa; 0.5-1.5 bar; 7.2-21.7 psi working pressure.
9. Turn master switch on the front of the control unit to ON.
10. Spray onto a test object
11. Adjust the spray pressure and atomizing air and the shaping air to suit the accordance with the tip and object.

# 6 TROUBLESHOOTING AND REPAIR

## 6.1 TROUBLESHOOTING AND MAINTENANCE

| Problem | Cause | Remedy |
|---|---|---|
| Red LED (4) is on (fault). | • Distance between pistol and object too small | • Switch off high voltage module (1), increase distance between pistol and object, switch HVM on again. |
| Red LED (5) is on (fault). | • Gun cable not connected | • Check that gun cable is connected (at the rear of the control unit) |
| | • Gun cable faultiy | • WAGNER Service |
| LED (11) is not on. | • Mains not switched on | • Switch on mains |
| | • Mains switch (10) switched off (OFF) | • Switch on (ON) |
| | • Fuse(s) faulty | • Replace 1.0 or 2.0 A fuse. |
| | • Indicator light faulty | • WAGNER Service |
| LED (13) does not come on when selector switch is in the „spray“ position, | • Mains not switched on | • Switch on mains |
| | • flush function is switched on by a external signal. | • Switch off external flush function |
| | • Indicator light faulty | • WAGNER Service |
| | • if no high voltage available | • Switch on high voltage |
| Red LED´s (4, 5) not on, highvoltage indicator (3) low, spray current indicator (2) high. | • Material resistance less than 50 kΩ, see also spray gun operating instructions. | • Clean spray gun, flush out, re-check; if the problem persists measure resistance of paint and, if necessary, use another paint. |
| | • Gun (electrode) too close to object | • Increase distance |
| | • Gun heavily contaminated | • Clean gun |


3
4
5
2
6
8
14
Reset
Spray
Clean
Zerstäuberluft
Atomizing air
Formluft
Fan air
KV
µA
0
I
POWER
0
I
WAGNER
EPG 3000
12
13
10
11
1
7
9

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## 6.2 REPAIR

→ See **safety regulations** in Chapter 2

| | |
|---|---|
|  | **⚠WARNING**<br>**Incorrect maintenance/repair!**<br>Risk of injury and damage to the equipment.<br><br>→ Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center.<br>→ Before all work on the unit and in the event of work interruptions:<br>- Switch off the energy/compressed air supply.<br>- Relieve the pressure from the spray gun and unit.<br>- Secure the spray gun against actuation.<br>→ Observe the operating and service instructions when carrying out all work. |

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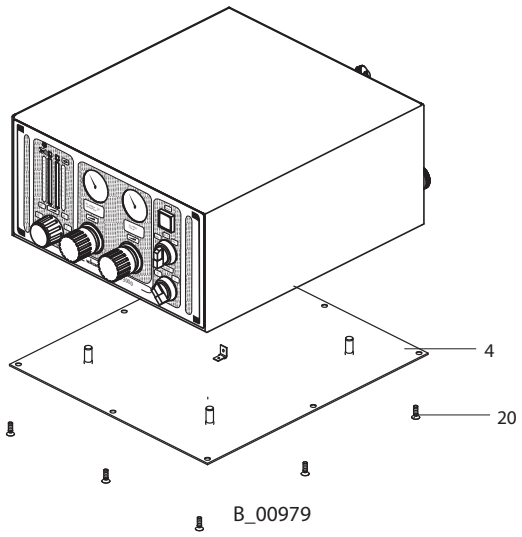
### 6.2.1 OPEN THE UNIT

1. Unscrew and remove 8 countersunk head screws (20)
2. Remove cover (4) carefully.
3. Disconnect earthing cable from cover.

**Note:**
The seal is glued to the underside of the housing.

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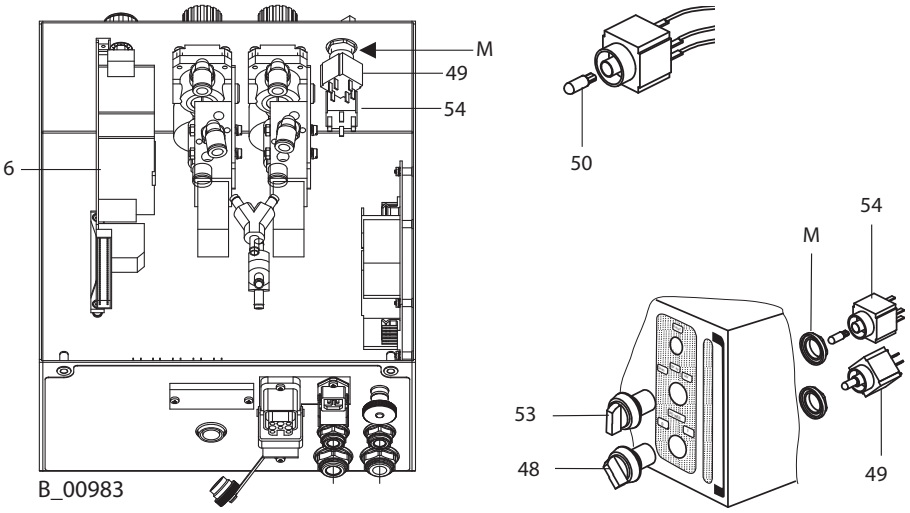
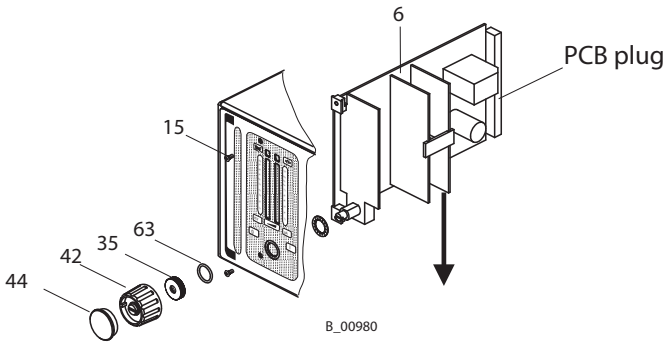
### 6.2.2 REPLACING SELECTOR SWITCH AND FILAMENT BULPS

1. Twist the standard switch element (49 or 54) out of its location and pull it out of the selector switch (53 or 48 respectively).
2. Replace the filament unbolt (50)
3. Loosenand unscrew nut (M)
4. Pull selector switch (53 or 48) out of the front panel and replace it.
5. Reassemble in reverse order



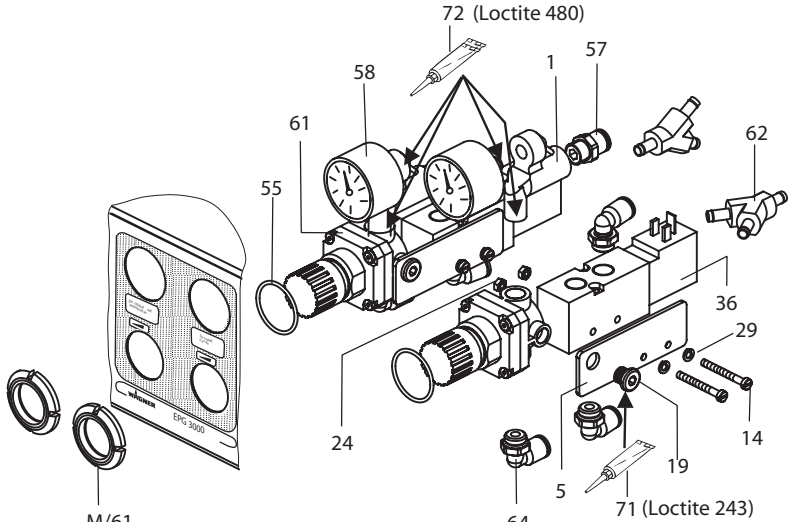

### 6.2.3 CHANGING HIGH VOLTAGE MODULE HVM

1. Pull out flat cable from the PCB plug
2. Remove rotary knob cover (44) from rotary knob (42)
3. Unscrew cross head screw and remove rotary knob (42)
4. Unscrew sealing nut (35) with special tool.
5. Unscrew two oval head countersunk screws (15)
6. Pull high voltage module carefully out of housing support.



### 6.2.4 CHANGING PARTS OF THE PNEUMATIC UNIT

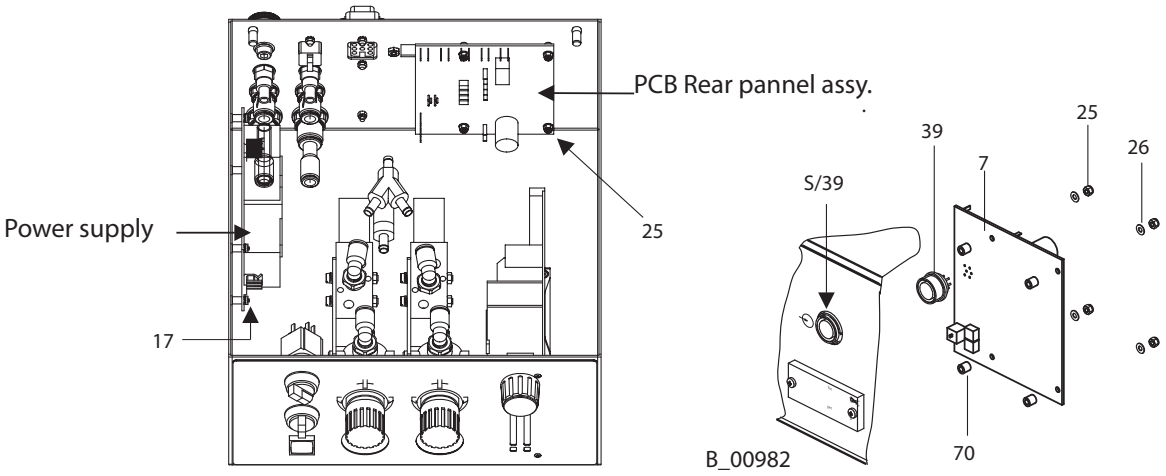
1. Disconnect all hoses
2. Loosen 2 nuts (M/61) and unscrew.
3. Take out the pre-assembled pneumatic unit and replace faulty parts.




### 6.2.5 CHANGING PCB EPG 3000 REAR PANEL ASSY.

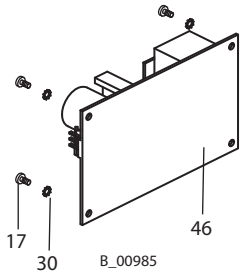
1. Unscrew locking ring (S/39) with special tool from connection plug (39).
2. Pull out flat cable from the PCB plug
3. Pull out all connection cables from the printed circuit board.
4. Unscrew 4 nuts (25) and remove them, together with the washers (25)
5. Pull out carefully PCB rear panel assy.

**Note:**
When assembling remember the spacer sleeves (70)

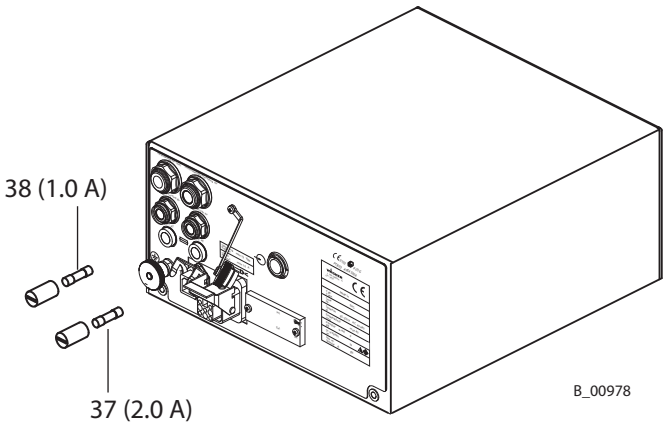


### 6.2.6 REPLACING THE POWER SUPPLY

1. Pull both plugs out of the power supply.
2. Unscrew 4 oval head screws (17) and remove them together with 4 serrated lock washers (30).
3. Carefully remove the power supply (46)




### 6.2.7 REPLACING LIGHT FUSES



# 7 ACCESSORIES

| Part No. | Description |
|---|---|
| 0241270 | Mains cable Europe 3 m; 9.8 ft |
| 0381100 | Mains cable Switzerland 3 m; 9.8 ft |
| 0381101 | Mains cable USA 2 m; 6.6 ft |
| 0381102 | Mains cable Japan 3 m; 9.8 ft |
| 0350275 | Control cable extern 3 m; 9.8 ft |
| 0130215 | Earthing cable 10 m; 32.8 ft |
| 0381103 | Earth cable connection 0.75 m; 2.5 ft |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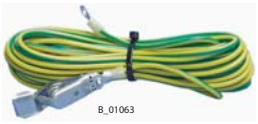
B_01066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# 8 SPARE PARTS

## 8.1 HOW TO ORDER SPARE PARTS?

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

**Part Number, description and quantity**

The quantity need not be the same as the number given in the „Quantity" column. This number merely indicates how many of the respective parts are used in each subassembly.

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

- Address for the invoice
- Address for delivery
- Name of the person to be contacted in the event of any queries
- Type of delivery required (air freight or mail, sea route or overland route, etc.)

**Marks in spare parts lists**

Note to column „K" in the following spare parts lists.

◆ = Wearing parts
**Note**: No liability is assumed for wearing parts

● = Not part of standard equipment, available, however, as additional extra.

| | |
|---|---|
|  | **⚠WARNING** |
| | **Incorrect maintenance/repair!**<br>Risk of injury and damage to the equipment.<br><br>→ Repairs and part replacement may only be carried out by specially trained staff or a WAGNER service center.<br>→ Before all work on the unit and in the event of work interruptions:<br>- Switch off the energy/compressed air supply.<br>- Relieve the pressure from the spray gun and unit.<br>- Secure the spray gun against actuation.<br>→ Observe the operating and service instructions when carrying out all work. |

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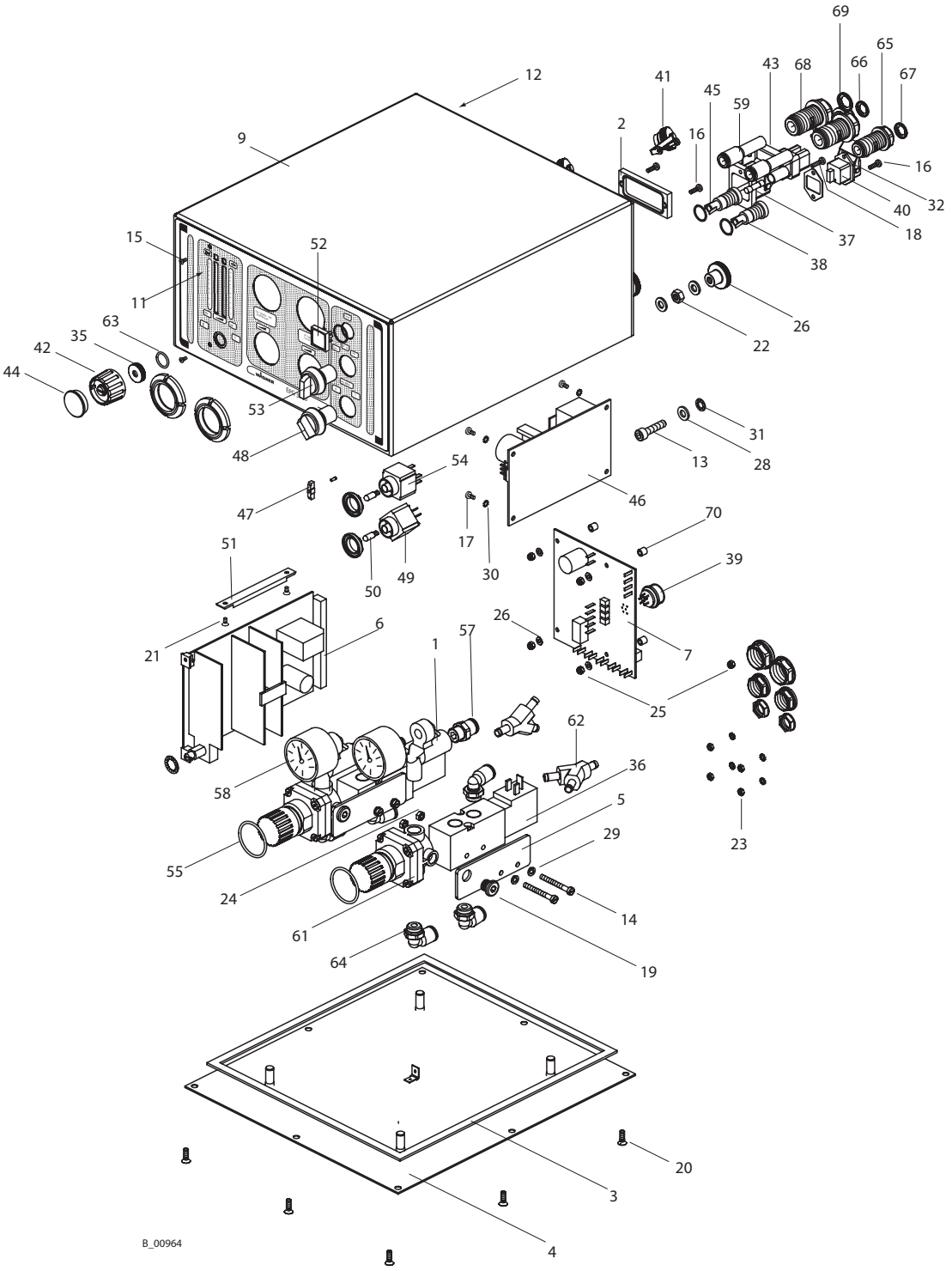
## 8.2 SPARE PARTS EPG 3000



## Spare parts list EPG 3000

| Item K | Qty | Part No. | Description |
|---|---|---|---|
| 1 | 2 | 0123459 | Pressure gauge union |
| 2 | 1 | 0241323 | Cover |
| 3 | 1 | 0263316 | Cover EPG 2007 |
| 4 | 1 | 0263327 | Seal EPG 2007 |
| 5 | 2 | 0350519 | Connecting plate |
| 6 | 1 | 0350022 | Modul HVM 2082 red. |
| 7 | 1 | 0381221 | PCB EPG 3000 rear panel assy. |
| 8 | 1 | 0381222 | Cable loom EPG 3000 |
| 9 | 1 | 0381224 | Housing EPG 3000 |
| 10 | 1 | 0381226 | Hose set EPG 3000 |
| 11 | 1 | 0381450 | Front plate EPG 3000 |
| 12 | 1 | 0381451 | Rear panel EPG 3000 |
| 13 | 1 | 9900315 | Cap head screw |
| 14 | 4 | 9900713 | Cap head screw |
| 15 | 2 | 9903214 | Oval countersunk head screw |
| 16 | 5 | 9903311 | Oval head screw |
| 17 | 4 | 9903312 | Oval head screw |
| 18 | 2 | 9903327 | Oval head screw |
| 19 | 2 | 9904306 | Threaded plug |
| 20 | 8 | 9907010 | Countersunk head screw |
| 21 | 2 | 9907167 | Countersunk head screw |
| 22 | 1 | 9910102 | Hexagon nut |
| 23 | 4 | 9910103 | Hexagon nut |
| 24 | 4 | 9910108 | Hexagon nut |
| 25 | 5 | 9910211 | Hexagon nut, self locking |
| 26 | 1 | 9910522 | Knurled nut |
| 27 | 4 | 9920114 | Washer |
| 28 | 3 | 9920118 | Washer |
| 29 | 4 | 9921511 | Spring washer |
| 30 | 8 | 9922011 | Serrated lock washer |
| 31 | 1 | 9922109 | Serrated washer |
| 32 | 1 | 9950330 | Securing ring |
| 33 | 1 | 9950392 | Plug, surface mounted |
| 34 | 7 | 9950615 | Cable tie |
| 35 | 1 | 9950814 | Sealing nut, potentiometr |
| 36 | 2 | 9950967 | Solenoid valve 5/2 |
| 37 | 1 | 9951116 | Fuse, slow 2.0 A |

| Spare parts list EPG 3000 | | | |
|---|---|---|---|
| **Item K** | **Qty** | **Part No.** | **Description** |
| 38 | 1 | 9951117 | Fuse, slow 1.0 A |
| 39 | 1 | 9952585 | Equipment Socket |
| 40 | 1 | 9952587 | Equipment Plug |
| 41 | 1 | 9952593 | Protective cap, socket |
| 42 | 1 | 9952607 | Rotary knob |
| 43 | 1 | 9952653 | Plug, contact insert |
| 44 | 1 | 9952654 | Rotary knob cap |
| 45 | 2 | 9955021 | Fuse holder |
| 46 | 1 | 9955176 | Power Supply EPG 27 |
| 47 | 1 | 9955194 | Mounting kit |
| 48 | 1 | 9955677 | Illuminated selector switch |
| 49 | 1 | 9955679 | Switch-element standard |
| 50 | 2 | 9955680 | Filament bulb |
| 51 | 1 | 9955797 | PCB holder |
| 52 | 1 | 9955798 | Push button |
| 53 | 1 | 9955799 | Illuminated selector switch |
| 54 | 1 | 9955800 | Switch element universal |
| 55 | 2 | 9971336 | O-ring |
| 57 | 2 | 9992743 | Straight fitting |
| 58 | 2 | 9998012 | Pressure gauge with throttle |
| 59 | 2 | 9998154 | Reducer |
| 61 | 2 | 9998240 | Pressure regulator 0-0.6 MPa; 0-6 bar; 0-87 psi |
| 62 | 2 | 9998245 | Y-piece |
| 63 | 1 | 9998248 | O-Ring, electrically conductive |
| 64 | 6 | 9998253 | Screwed elbow |
| 65 | 2 | 9998615 | Straight bulkhead fitting |
| 66 | 1 | 9998616 | Compression ring, green |
| 67 | 1 | 9998617 | Compression ring, red |
| 68 | 2 | 9998769 | Straight bulkhead fitting |
| 69 | 1 | 9998770 | Compression ring blues |
| 70 | 4 | 9998980 | Spacer sleeve |
| | | 9992511 | Loctite 243, 50 ml; 50 cc |
| | | 9998157 | Loctite 480, 18 ml; 18 cc |

## 8.3 ELECTRICAL DIAGRAMM EPG 3000

**⚠WARNING**

**Conductive metal parts on the switched-mode power supply unit! Danger to life from electric shock.**

→ Disconnect the switched-mode power supply unit from the mains voltage.
→ Do not touch the switched-mode power supply unit for at least 5 minutes after it has been disconnected.

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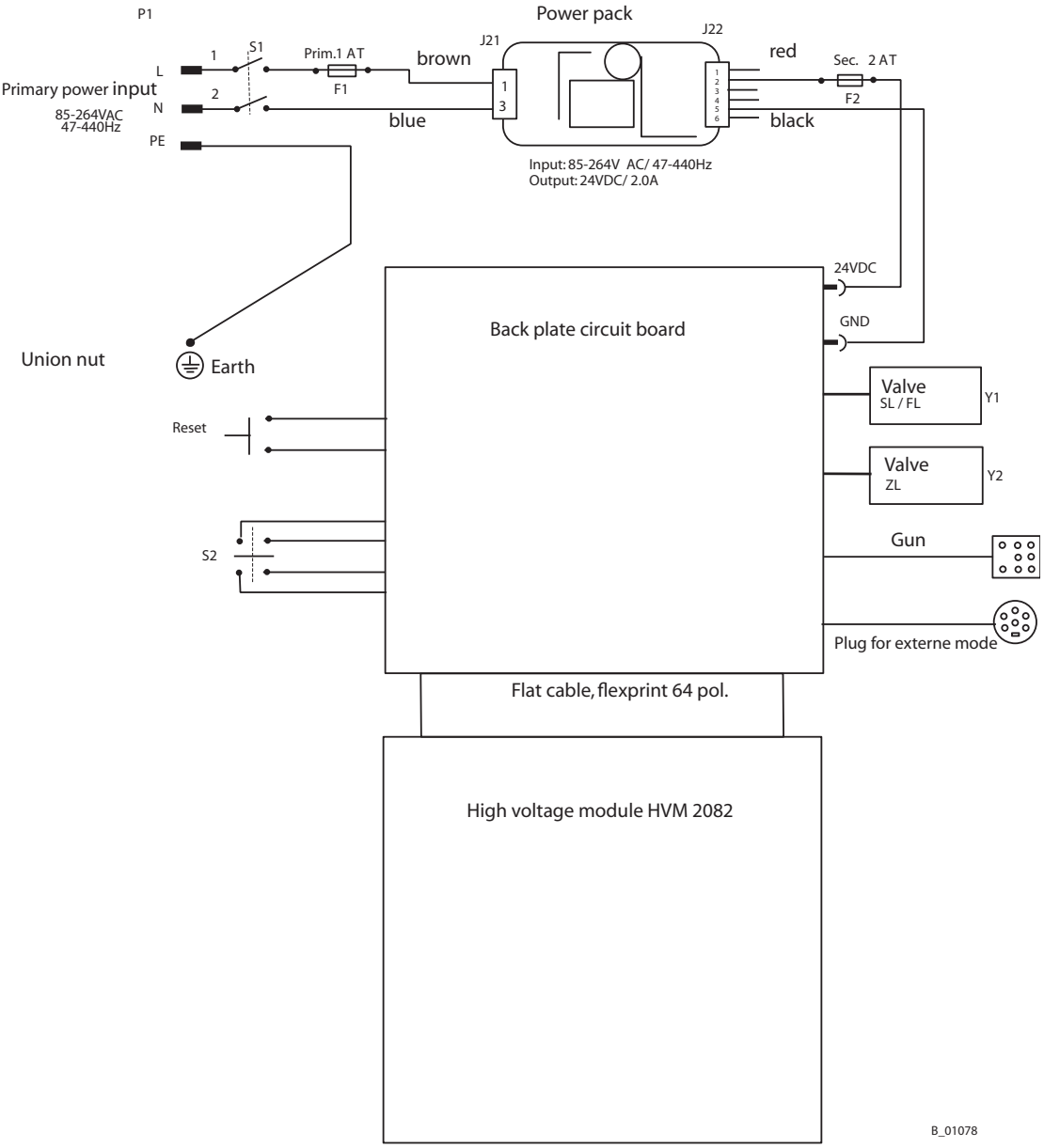
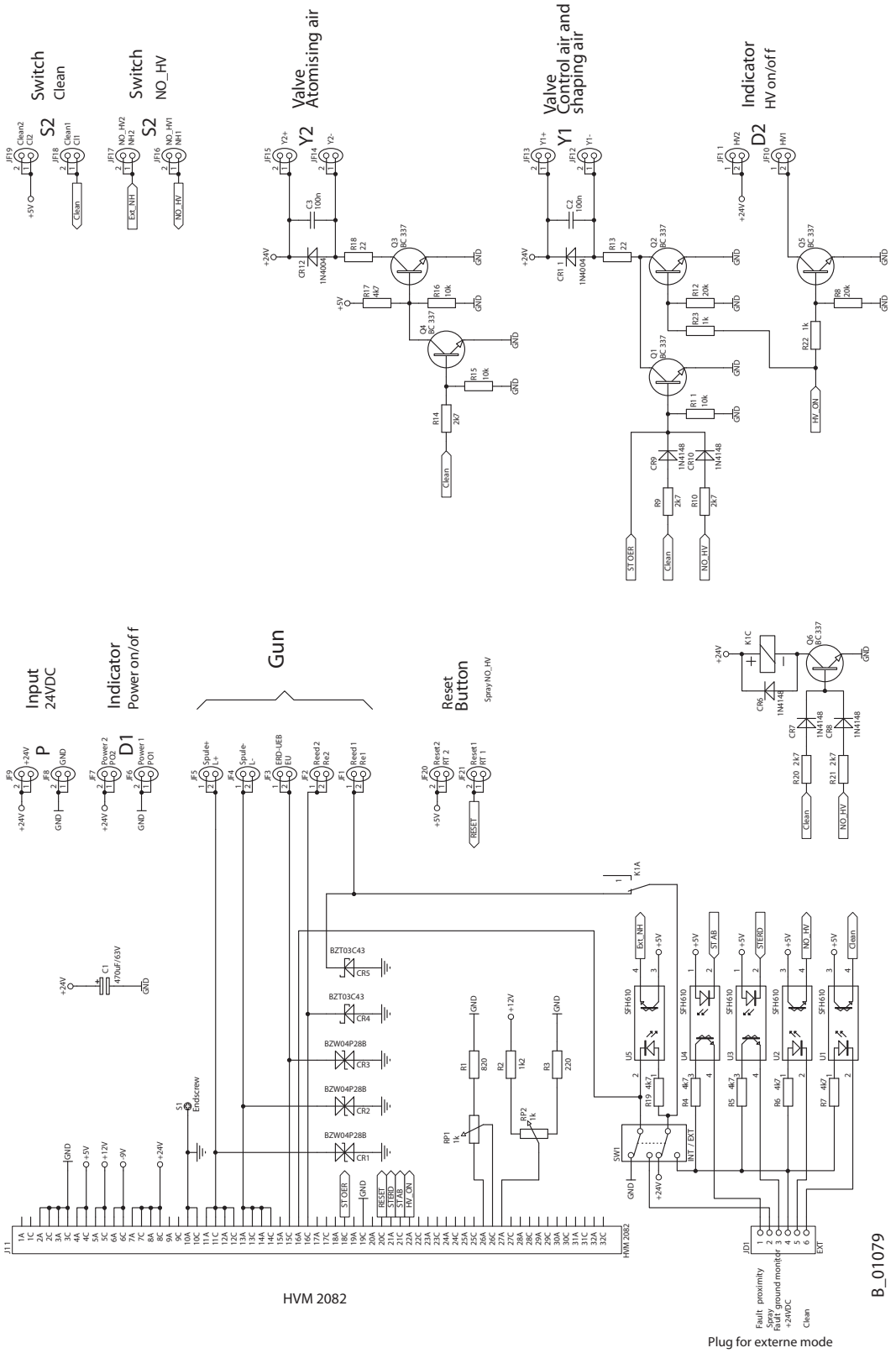
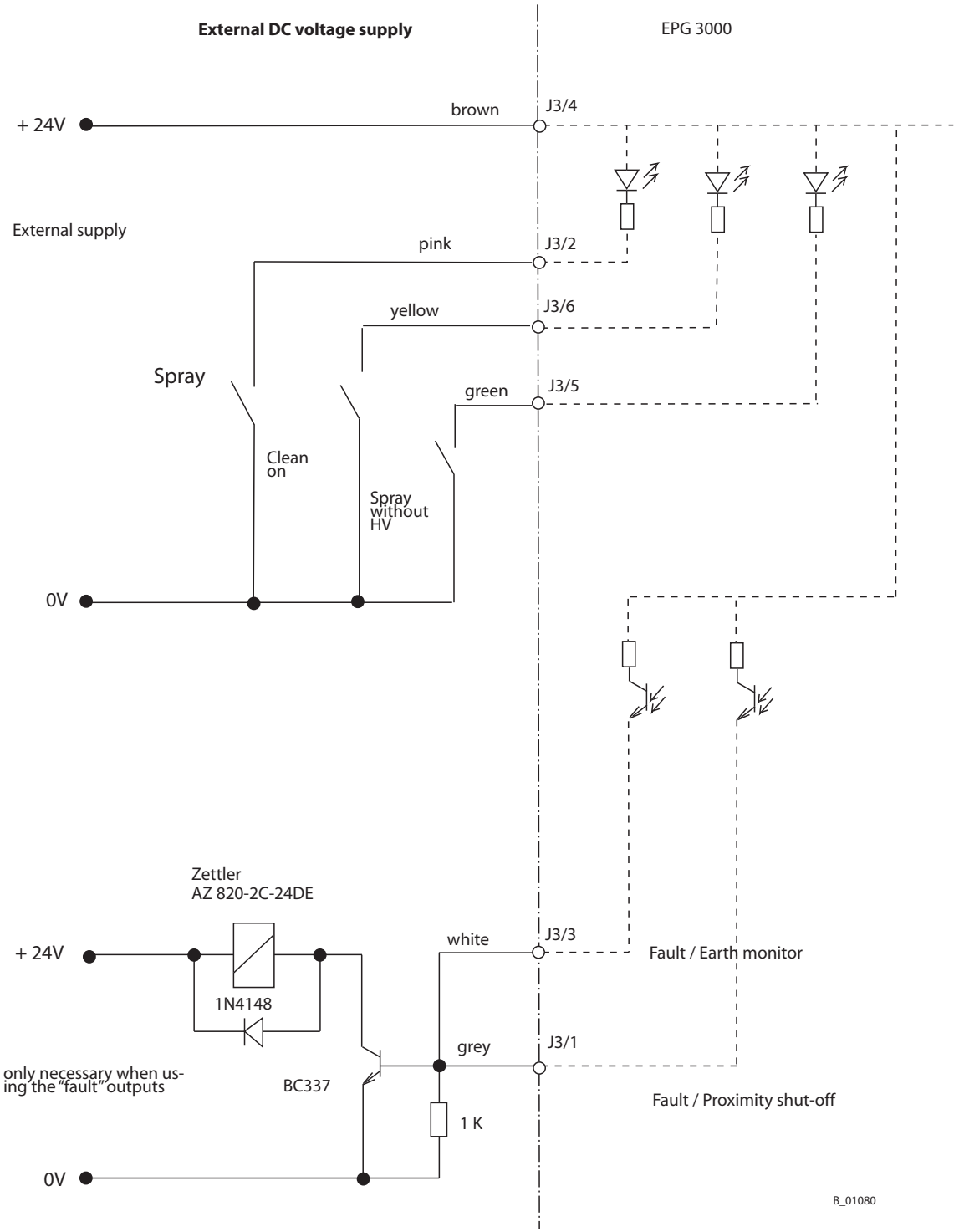


## 8.4 CONNECTION DIAGRAM PCB REAR PANEL

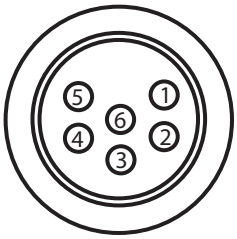


## 8.5 USING THE EXTERNAL CONTROL CONNECTION (EXAMPLE)



## 8.6 EXTERNAL CONTROL

| Plug No. | Lead colour | Function |
|---|---|---|
| 1 | grey | Fault output: proximity shut-off |
| 2 | pink | Spraying with high voltage on/ off |
| 3 | white | Fault output: earth monitor |
| 4 | brown | 24 VDC supply |
| 5 | green | Spray without HV on/ off |
| 6 | yellow | Clean on/ off |



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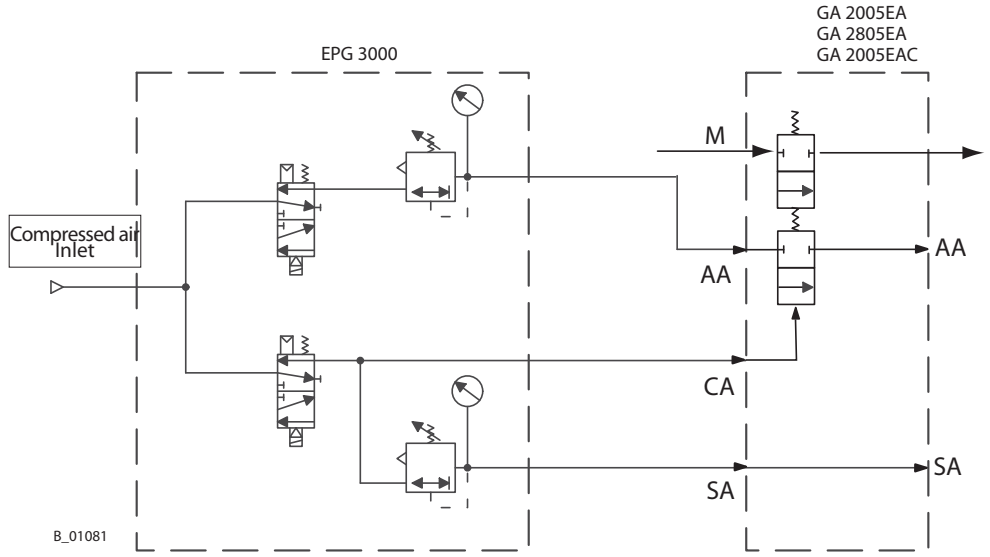
View of control cable

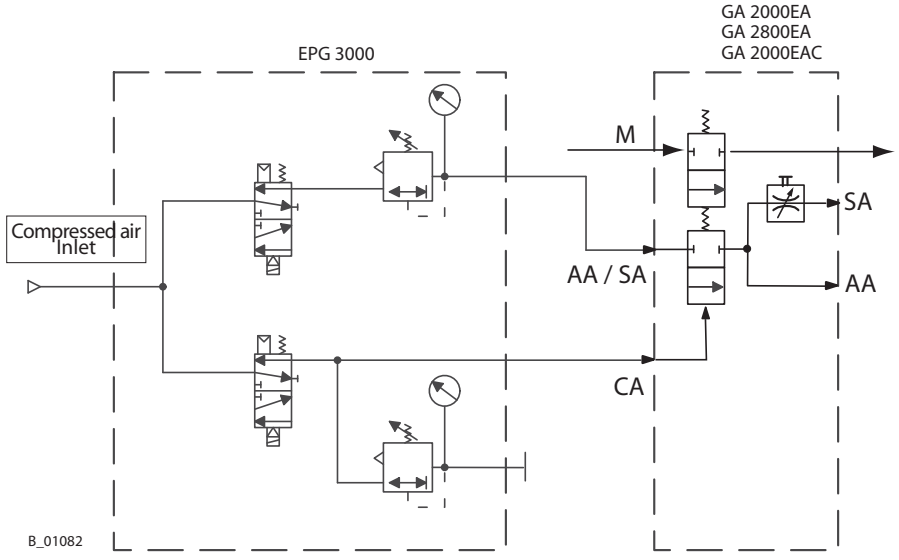
**Note:**
The external control system is designed to operate from a 24 VDC system, using a 24 V supply to pin 4 (brown wire), To switch on spraying with high voltage, 0 V is applied at Pin 2 (pink) with a volt-free contact.
To switch on spraying without high voltage, 0 V is applied at Pin 5 ( green ) with a volt-free contact. To activate the flushing function, 0 V is applied at Pin 6 ( yellow ) with a volt-free contact.
The external plug also has two fault outputs. On Pin 3 (white) there is provision for the proximity shut-off and on Pin 1 (grey) for the earth monitor. So that these for outputs can be used, the circuit are shown in schematic 8.5 is suggested. Alarm indicators cannot be connected directly to the external plug; instead a 24 V relay must be used.

## 8.7 PNEUMATIC CONNECTION EPG 3000 - GA2X05

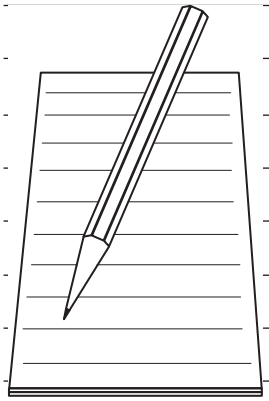



**SA** = Fan air **AA** = Atomizing air
**CA** = Control air **M** = Material

## 8.8 PNEUMATIC CONNECTION EPG 3000 - GA2X00




**SA** = Fan air **AA** = Atomizing air
**CA** = Control air **M** = Material



| | |
|---|---|
| **Germany**<br>J. WAGNER GmbH<br>Otto-Lilienthal-Str. 18<br>Postfach 1120<br>D- 88677 Markdorf<br>Telephone: ++49/ (0)7544 / 5050<br>Telefax: ++49/ (0)7544 / 505200<br>E-Mail:service.standard@wagner-group.com | **Switzerland**<br>J. WAGNER AG<br>Industriestrasse 22<br>Postfach 663<br>CH- 9450 Altstätten<br>Telephone: ++41/ (0)71 / 757 2211<br>Telefax: ++41/ (0)71 / 757 2222<br>E-Mail: rep-ch@wagner-group.ch |
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Order number 0381861

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