Tabel of Contents

Safety rules for electrostatic powder coating operations

PG 1-A Automatic powder gun .................................................. 1
   Technical data of the PG 1-A Automatic powder gun .............. 1
PG 1-A Automatic powder gun .................................................. 2
Functional description ......................................................... 4
   1. High-Voltage generation ................................................. 4
   2. Circuitry ................................................................. 4
   3. Powder flow and rinsing air ......................................... 4
   4. Flat jet nozzle with vented centre electrode .................... 5
   5. Round nozzle with vented deflector and vented centre electrode 5
Preparatory steps for initial start-up. ........................................ 6
   a) Connecting the PG 1-A Automatic powder gun ................. 6
   b) Setting the powder flow rate ....................................... 7
   c) Functional check ....................................................... 8
Start-up ............................................................................. 9
   a) Adjusting the powder output and powder cloud .................. 9
   b) Powder coating - Start-up .......................................... 10
   c) Shut-down .............................................................. 10
   d) Rinsing the powder hose ........................................... 10
Cleaning and repairs. ............................................................. 11
PG 1-A Automatic powder gun .................................................. 11
   a) Cleaning ................................................................. 11
   b) Gun disassembly ....................................................... 12
   c) Gun assembly .......................................................... 13
   d) Gun repair .............................................................. 14
Spray nozzles ..................................................................... 15
   a) Cleaning ................................................................. 15
   Important notes for assembling the nozzles ....................... 16
Trouble shooting guide .......................................................... 17
Spare Parts List ................................................................... 19
   Ordering Spare Parts ...................................................... 19
PG 1-A Automatic powder gun .................................................. 20
Notes ................................................................................. 23

System Overview
Safety rules for electrostatic powder coating operations

1. This equipment can be dangerous when not operated according to the following operating instructions.

2. In addition, the equipment must be set up and operated according to the latest local standards.

3. The operating instructions of the powder recovery plant must also be observed.

4. All electrostatic conductive parts which are within 5 metres of the coating area, especially the workpieces, must be grounded.

5. The floor of the coating area must be electrostatically conductive. Normal concrete is generally conductive.

6. The operating personnel must wear electrostatically conductive footwear, i.e. leather soles.

7. It is important that a good metal-to-metal contact exists between the control unit(s), the gun(s), coating booth, and the workpiece conveyor system.

8. The electrical cables and powder feed hoses to the gun(s) must be laid out so that they are protected from mechanical damage.

9. The powder coating equipment should only be switched on after the coating booth is in operation. If the booth breaks down then the powder coating equipment must also switch off.

10. The ground leakage resistance of the workpiece contact point can be a maximum of 1MΩ. The design of the workpiece suspension and hooks must ensure that the workpieces remain grounded.

    N.B: Because the workpieces are grounded through metal hooks, it is important that the hooks are cleaned regularly, in order to prevent an insulating layer of melted coating powder from building up.

11. Check the grounding of all electrostatic conductive parts at least once a week.

12. When cleaning the gun or changing nozzles the control module must be switched off.
PG 1-A Automatic powder gun

The extremely lightweight PG 1-A Automatic powder gun with an integrated high-voltage generator has a very high penetration power and a high, constant transfer efficiency because of its patented air-cleaned central electrode. The gun can be dismantled, making it easy to maintain and repair.

Technical data of the PG 1-A Automatic powder gun

- Rated input voltage : 10 V eff.
- Frequency : 17000 Hz.
- Rated output voltage : 98 kV.
- Maximum output current : 100 µA.
- Polarity : Negative.

The PG 1-A Automatic powder gun is electrostatically identical to the PG 1 Manual powder gun.

Flash protection, and Approval correspond to the PG 1 Manual powder gun.

- Flash protection : EEEx 5 mJ
- Approval : EN 50 050
  - FM No J. I. OW 7 A 6.AE (7264)
  - Date tested 1993
  - PTB test No 91.C.9102
  - Date tested 1991
1. Atomizing system.
2. Threaded sleeve.
3. Shaft.
4. H-V cascade.
5. Gun support.
6. Rinsing air connection.
7. Gun cable connection.
8. Powder hose connection/Powder tube.

Figure 1.
The PG 1-A Automatic powder gun can be equipped with the different nozzles and threaded sleeves, see "System Overview":

**40 mm nozzles**

- Flat jet nozzle with vented centre electrode
- Round nozzle with vented deflector and vented centre electrode

**150 mm nozzles**

- Flat jet nozzle with vented centre electrode (Standard)
- Round nozzle with vented deflector and vented centre electrode

**300 or 500 mm nozzles**

- Extended flat jet nozzle with vented centre electrode
- Extended round nozzle with vented deflector and vented centre electrode

Figure 2
Functional description

1. High-Voltage generation

The voltage generator module (control module) supplies high-frequency low-voltage. This voltage is fed through the gun cable (3) and the gun connector (2) in the grip to the high-voltage cascade (1).

In the cascade (1) this low voltage is stepped up (c). This primary high-voltage is subsequently rectified and multiplied in several stages in the cascade (d) until the required high-voltage is attained.

The high-voltage is then fed from the spray nozzle to the electrode (e). See also Figures 5 and 6.

2. Circuitry

The PG 1-A is switched on when the control module is switched on. The control module switches the low-voltage, the powder feed, and the gun air (rinsing air) on.

3. Powder flow and rinsing air

Additional air, functioning as rinsing air, is connected to the connection point 1.4 (8 - Fig. 7, page 6), at the rear of the PGC 1 control module. The rinsing air tube and the powder tube run side by side in the shaft, not one inside the other, as may appear in Figure 4.

The function of the nozzles are described in the applicable sections (see page 5).
4. Flat jet nozzle with vented centre electrode

The flat jet nozzle atomizes and electrically charges the powder. The slotted opening shapes the powder cloud to form an oval spray pattern. The powder is charged by the central electrode. The high-voltage, generated inside the gun, is fed via the black contact ring of the nozzle holder to the centre electrode. In order to prevent powder from sintering (building up) on the electrode, the latter is cleaned by compressed air during the spraying process. For this purpose the rinsing air is fed, via the small hole in the black contact ring in the nozzle holder, into the hole in the electrode holder.

![Figure 5](image-url)

5. Round nozzle with vented deflector and vented centre electrode

The deflector plate is used for shaping the powder jet emerging from the gun to form a powder cloud. The powder is charged by the centre electrode. The high-voltage generated inside the gun is conducted via the black contact ring of the nozzle holder to the centre electrode.

Powder can build up on the deflector plate, which has to be rinsed with air. For this purpose the rinsing air is fed via the small hole in the black contact ring in the nozzle holder, then into the hole in the electrode holder and deflected in such a way that it blows across the inside cone of the deflector plate. The intensity of the rinsing air is dependent on the powder and its sintering ability.

![Figure 6](image-url)
Preparatory steps for initial start-up.

a) Connecting the PG 1-A Automatic powder gun

1. Connect the cable (1) with the 7-pin connector to the socket labelled "**A Gun**" at the rear of the PGC 1 control module (See Figure 7. below).
2. Connect the hose for rinsing air (8) to rinsing air outlet 1.4 and to the gun.
3. Connect the powder hose (6) to the gun and to the injector (5).

(The connection "**B**" is not used with automatic powder guns).

![Diagram of PG 1-A Automatic powder gun connections](image)

1. Gun cable (output - **A Gun**).
2. Mains power input cable (input - **C**).
3. Internal air input hose (input - 1.1).
4. Conveying air hose (output - 1.2).
5. PI -V injector.
6. Powder hose.
7. Supplementary air hose (output - 1.3).
8. Rinsing air hose (output - 1.4).

**Figure 7.**
b) Setting the powder flow rate

In order to set the conveying, and supplementary air correctly on the PGC 1 Control module and therefore the powder output, the amount of powder to be deposited must be determined first.

The conveying air pressure setting for the pressure gauge (2) is found in the table on page 8 through the desired amount of powder to be deposited, in grammes per minute.

If the conveying air pressure is increased, through the control knob (1), then the powder output increases correspondingly. If the ball in the flow meter (4) does not “float” in the green sector of the scale then the supplementary air must be adjusted either up or down, on the setting knob (3).

Should the conveying air be set to over 2.5 bar then the supplementary air is no longer required and the setting knob (3) can be turned completely to the left-hand stop.

**IMPORTANT**

After every setting of the conveying air the ball in the flow meter (4) must “float” in the green sector of the scale (4-5 m$^3$/h).

![Diagram with labels](image)

Front panel

1. Control knob for conveying air gauge.
2. Conveying air gauge.
3. Control knob for supplementary air.
4. Flowmeter for conveying air plus supplementary air.
5. Control knob for rinsing air.
6. Flowmeter for rinsing air.
7. High-voltage/corona current meter.
7a. Gun **ON** and kV setting/reading.
7b. Gun **ON** and µA setting/reading.

Figure 8.
Values in the table below are approximate and only serve as a guideline for the various settings as conditions in different workshops can vary greatly.

<table>
<thead>
<tr>
<th>Specification: Powder hose:</th>
<th>ø11 mm - 12 m. long.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powder:</td>
<td>PES 31.9010 S</td>
</tr>
<tr>
<td>Constant volume of air:</td>
<td>4 m³/h (Conveying air + supplementary air).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>g/min.</th>
<th>bar</th>
<th>g/min.</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>0.92</td>
<td>150</td>
<td>1.90</td>
</tr>
<tr>
<td>50</td>
<td>1.14</td>
<td>175</td>
<td>2.11</td>
</tr>
<tr>
<td>75</td>
<td>1.32</td>
<td>200</td>
<td>2.32</td>
</tr>
<tr>
<td>100</td>
<td>1.52</td>
<td>225</td>
<td>2.61</td>
</tr>
<tr>
<td>125</td>
<td>1.70</td>
<td>250</td>
<td>3.07</td>
</tr>
</tbody>
</table>

• Pressure greater than 3.50 bar is not practical as too much turbulence is caused at the nozzle orifice.

c) Functional check

See trouble shooting guide on pages 17 and 18 for malfunctions.

1. The gun must be mounted in the booth and pointed towards a grounded workpiece, approximately 20 cm away. All connections must be made.

2. Switch on the main switch (9 - Fig. 8, page 7) of the control module. The PG 1-A is under power when the lamp inside the green main switch illuminates. The equipment is active.

3. Depress the high-voltage control knob (8 - Fig. 8, page 7) on the control module, if not already in this position, and turn to the left-hand stop.

4. The lowest left-hand LED on the high voltage/corona current meter (7 - Fig. 8, page 7) should illuminate.

5. Set the pressure for the desired rate of powder deposit (in g/min, see the table above) on the conveying air pressure gauge (2 - Fig. 8, page 7). The maximum output is 3.5 bar.

6. Check on the supplementary air flow meter (4 - Fig. 8, page 7) if the ball "floats" within the green sector of the scale. If it does not, turn the supplementary air control knob (3 - Fig. 8, page 7) to the left or right, until the ball is positioned correctly.

7. Set the rinsing air by turning the rinsing air control knob (5 - Fig. 8, page 7) until the ball in the rinsing air flow meter (6 - Fig. 8, page 7) "floats" within the respective green sector of the scale depending on the type of jet nozzle being used (flat jet nozzle or round jet nozzle).

When all the above checks have been successfully completed, the gun is ready for use. If it fails to function correctly, consult the trouble shooting guide on pages 17 and 18.
Start-up

a) Adjusting the powder output and powder cloud

The powder output is dependent on the type of powder, the powder hose length and the
number of coils, the powder hose diameter, the conveying air pressure, and the dosing air.

1. The gun must be mounted in the booth and pointed towards a grounded workpiece,
approximately 20 cm away. All connections must be made.
2. Check powder fluidization visually.
3. Switch the control module on.
4. Set the conveying air (see page 8).
5. Adjust the supplementary air (see page 8).
6. Adjust the rinsing air pressure.

Using a flat jet nozzle

- Adjust the pressure gauge (2 - Fig. 8, page 7) on the control module to the desired
  powder feed rate (see table on page 9).
- Adjust the supplementary air on the flowmeter (4 - Fig. 8, page 7) so that the ball
  "floats" within the green sector on the scale.
- Adjust the rinsing air on the flowmeter (6 - Fig. 8, page 7) so that the ball "floats" in the
  lower green sector on the scale.

Using a round nozzle with vented deflector

- Adjust the pressure gauge (2 - Fig. 8, page 7) on the control module to the desired
  powder feed rate (see table on page 9).
- Adjust the supplementary air on the flow meter (4 - Fig. 8, page 7) so that the ball
  "floats" within the green sector on the scale.
- Adjust the rinsing air on the flowmeter (6 - Fig. 8, page 7) so that the ball "floats" in the
  upper green sector on the scale.

7. Adjust the powder cloud.

Using a flat jet nozzle

- Loosen the threaded sleeve by turning it approximately 45° so that the flat jet nozzle (or
  the extension) can just be turned.
- Turn the flat jet nozzle in the desired axial direction.
- Tighten the threaded sleeve.

Using a round nozzle with vented deflector

- Change the deflector (ø 16, 24, and 32 mm are supplied with the gun).

⚠️ CAUTION ⚠️ Never turn the deflectors, these are pushed on an O-ring fitting!
b) Powder coating - Start-up

**IMPORTANT** First check that all electrostatically conductive parts within 5 m of the coating booth are grounded.

1. Check the powder fluidization visually.
2. The gun must be mounted in the booth and but not pointed towards a grounded workpiece. All connections must be made.
3. Switch on the control module.
4. Adjust the high voltage:
   - Check by observing the LEDs (7 - Fig. 8, page 7)
5. The workpiece(s) can now be coated.

c) Shut-down

1. Switch off the control module.
   - The adjustment for high-voltage, rinsing air, and powder output must not be changed.
2. For work interruptions such as lunchbreaks, over night, etc. it is necessary to disconnect the compressed air supply.

d) Rinsing the powder hose

Before long idle periods the residual powder must be removed from the powder hose as follows:

1. Pull off the hose from the injector.
2. Leave the gun mounted in the booth.
3. Blow out the hose manually with a compressed air gun.
4. Refit the hose to the injector sleeve.
Cleaning and repairs.

PG 1-A Automatic powder gun

Conscientious maintenance at regular intervals increases the service life of the coating equipment and will result in uniform coating quality over a longer period!

a) Cleaning

**IMPORTANT**  Before cleaning the gun, switch off the control module and detach the gun connector (13 - Fig. 9, page 12) at the gun socket (A  Gun). The compressed air used for cleaning should be free of oil and water.

**Daily:**
1. Clean the outside of the gun.

**Weekly:**
2. Detach the powder hose at the connector.
3. Detach the nozzle from the gun and clean it.
4. Blow out the gun through the powder inlet in the direction of flow.
5. Clean the gun tube (15 - Fig. 9, page 12) with the spiral brush supplied.
6. Blow out the gun with compressed air again.
7. Clean the powder hose
8. Reassemble and reconnect the gun.
b) Gun disassembly

The gun should only be disassembled if this becomes necessary due to a defect or contamination. Disassemble only to the point where access to the corresponding part is achieved. Before cleaning the gun, switch off the control module and detach the gun connector (16). The cascade (3) must not be removed because it has been installed by a special process. If the cascade is defective, send the entire shaft (4) to an authorized Gema service centre.
Gun disassembly (continued):

1. Detach the powder hose at connection (15 - Fig. 9, page 12).
2. Detach the rinsing air hose at the connection (11 - Fig. 9).
   The rinsing air connection (11 - Fig. 9, page 12) should not be unscrewed from the gun support bracket (9 - Fig. 9, page 12) if it is not defective.
3. Remove the nozzle.
4. Unscrew the lock screw (5 - Fig. 9, page 12).
5. **Give the cable connector (13 - Fig. 9, page 12) a 1/4 turn counterclockwise and pull it out of the support bracket (9 - Fig. 9, page 12).**
6. Screw the lock screw (5 - Fig. 9, page 12) back provisionally so that it will not get lost.
7. Unscrew the powder tube (15 - Fig. 9, page 12) completely and pull it out of the gun support bracket (9 - Fig. 9, page 12).
8. Unscrew the three socket head screws (10 - Fig. 9, page 12) holding the gun support (9 - Fig. 9, page 12) with the correct size Allen key.
9. Check the rinsing air gasket (8 - Fig. 9, page 12) and replace, if necessary.
10. Unscrew the plastic screw (6 - Fig. 9, page 12) and remove.
11. Separate the shaft (4 - Fig. 9, page 12) from the support (1 - Fig. 9, page 12).
    - Check the O-ring gaskets (2 and 7 - Fig. 9, page 12) and replace, if necessary.
12. Blow out the gun support (1 - Fig. 9, page 12), and the shaft (4 - Fig. 9, page 12) with compressed air.

c) Gun assembly

- The gun is reassembled by performing the previously described disassembling steps in the reverse order.
- Careful handling is recommended.
- If the gun connector (13 - Fig. 9, page 12) cannot be inserted properly without applying force, disassemble the gun again and reassemble it.

After the gun has been reassembled check that:
- the gun connector (13 - Fig. 9, page 12) is properly seated.
- the O-ring gaskets (2 and 7 - Fig. 9, page 12) are correctly in place.
- there are no large gaps between joints.
**d) Gun repair**

Except for the replacement of defective parts, virtually no repairs should be required. The replacement of the cascade (3 - Fig. 9) and the repair of the cable connector (13 - Fig. 9) should only be performed by an authorized service centre – please consult a Gema dealer.

Replacing the gun connector (16 - Fig. 9):
*A soldering iron is required for this operation.*

![View of soldering pins](image)

1. Opening the connector:
   - Unfasten the sealing gland (1)
   - Unscrew the sleeve (2)
     In case the sleeve cannot be unscrewed, put the gun plug into the gun connection at the socket (**A Gun** - Fig. 7) and try again!

2. Unfasten the two screws of the cable clamp.
3. Unsolder the wires of the connector (3).
4. Pull the cable out of the connector and the sleeve (2).
5. Introduce the cable into the new sleeve and connector.
6. Solder on the wires:
   - 1 - black wire
   - 2 - vacant
   - 3 - bridged with pin 4
   - 4 - bridged with pin 3
   - 5 - vacant
   - 6 - brown wire
     Centre - screening (ground)

7. Tighten the two screws of the cable clamp.
8. Screw on the sleeve (2) and tighten.
9. Tighten the sealing gland (1).
Spray nozzles

a) Cleaning

**Daily or after each shift:**
- Clean the outside of the spray nozzles with compressed air, solvents or any other liquids. *Never immerse them in solvents for any length of time.*
- Check the seating of the spray nozzle.
  Make sure that the threaded sleeve is always tightened correctly. If the flat jet nozzle is loosely mounted, the high voltage from the gun can “flash-over” and damage the gun!

**Weekly:**
- Remove the spray nozzles and clean the inside with compressed air.
  Sintered powder should be removed.

**Monthly:**
- Check the spray nozzles for wear.
  Replace the flat jet nozzle if:
  - the spray pattern is no longer a perfect oval.
  - deep grooves are present in the nozzle slot, or if the wall thickness has decreased.
  - the wedge at the rear of the electrode holder is worn.

By nozzles with deflectors
- if the wedge at the rear of the electrode holder is worn, change the electrode holder.

*Assembly - see next page*
Important notes for assembling the nozzles

Round jet nozzle

1. Hold the electrode holder.

2. Push the black contact ring with the hole on to the back of the electrode holder. **Attention! The slot in the contact ring must be visible from the rear - see Detail A!**

3. Push the electrode holder with the contact ring into the slot of the nozzle and press home.

4. Place the deflector onto the tip of the electrode holder and push it in as far as it will go. **Don't twist the deflector!**

---

Flat jet nozzle:
Assembly of the Flat jet nozzle is the same as with the Round jet nozzle.

Figure 11
### Troubleshooting Guide

*Bold numbers in the text refer to Figure 9, page 12*

<table>
<thead>
<tr>
<th>Faults</th>
<th>Causes</th>
<th>Remedies</th>
</tr>
</thead>
</table>
| Green lamp does not illuminate although control module has been switched on. | No power:  
- Control unit is not connected to Mains  
- Fuse F1 defective  
- External power line fuse defective  
In equipment:  
- Lamp defective  
- Electronics board (PCB) defective | Connect sprayer with power cord to Mains  
Replace  
Replace or reset  
Mail in for repair |
| Needle of pressure gauge for conveying air stays at zero when making adjustments | In equipment:  
- Solenoid valve defective  
- Electronics board (PCB) defective | Replace  
Mail in for repair |
| During spraying process air escapes from the gun shaft | - O-ring (2) defective or missing | Replace |
| Gun does not spray powder although the control module is switched on. | - Injector, check valve or throttling at injector, powder hose or gun clogged  
- Insert sleeve in injector is worn  
- Fluidization does not function  
No conveying air:  
- Reducing valve in the PGC 1 control module defective | Replace or insert  
Clean corresponding part  
Replace  
See PGC 1 Control unit, Powder container or ADU Air distribution unit operating instructions  
Replace (continued) |
## Trouble shooting guide (continued)
*(Bold numbers in the text refer to Figure 9, page 12)*

<table>
<thead>
<tr>
<th>Faults (continued)</th>
<th>Causes</th>
<th>Remedies</th>
</tr>
</thead>
</table>
| Gun does not spray powder although the control module is switched on. | - Solenoid valve in the PGC 1 control module defective.  
- Electronics board (PCB) in the PGC 1 control module defective. | Replace  
Mail in for repair. |
| Conveying air cannot be adjusted. | - Control knob turns freely on the shaft or the grubscrew is loose. | Tighten the grubscrew. |
| Gun sprays powder, but does not adhere to the workpiece. | - High-voltage too low.  
- Gun connector, gun cable or gun cable connector is defective.  
- High-voltage cascade is defective.  
- Electronics board (PCB) defective. | Increase the high-voltage on the control module.  
Replace defective item or mail it in for repair.  
Mail in the shaft (4) of the gun for repair. |
| Gun sprays powder, high-voltage present, powder does not adhere to the workpiece. | - Workpiece not properly grounded. | Mail in for repair.  
Check the ground connection, also refer to “Safety rules”. |
Spare Parts List

Ordering Spare Parts

When ordering spare parts for powder coating equipment, please indicate the following specifications:

1. Type, and serial number of your automatic powder coating equipment
2. Order number, quantity, and description of each spare part.

Example:

1. Type PG 1-A,  Serial no: xxxx xxxx
2. Order no: 232 564, 2 pieces, O-ring gaskets

When ordering cable or hose material the length required must also be given. The spare part number of yard/metre ware always begins with 1... and are always marked with an * in the spare parts list.

Wear parts are always marked with a #

All dimensions of plastic powder hoses are quoted as external (o/d), and internal (i/d) diameters:

   e.g. Ø 8 / 6 mm = 8 mm outside diameter (o/d) / 6 mm inside diameter (i/d).
PG 1-A Automatic powder gun

Notes:
1. Only those parts have been included in the spare parts list that can be replaced by the user without difficulty.
2. If a part of the shaft (4) is broken or the high-voltage cascade in the shaft is defective, then the complete shaft must be returned to an ITW Gema service centre for inspection and/or repair. The High-voltage cascade is fitted according to a special process and therefore should not be dismantled by the user. The shaft assembly (complete with items 2, and 7), however, can be replaced as a spare part. See next page.
3. If the gun cable (13) is defective, the complete gun cable assembly should be returned for repair.
**PG 1-A Automatic powder gun**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gun support</td>
<td>339 199</td>
</tr>
<tr>
<td>2</td>
<td>O-ring gasket - ø 06.1 x 1.60 mm</td>
<td>233 099</td>
</tr>
<tr>
<td>4</td>
<td>Shaft (complete with items 2, and 7):</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Negative polarity</td>
<td>342 947</td>
</tr>
<tr>
<td></td>
<td>Positive polarity</td>
<td>342 955</td>
</tr>
<tr>
<td>5</td>
<td>Lock screw - M 4 x 6 mm</td>
<td>216 763</td>
</tr>
<tr>
<td>6</td>
<td>Plastic bolt - M 8 x 80 mm</td>
<td>234 435</td>
</tr>
<tr>
<td>7</td>
<td>O-ring gasket - ø 13.1 x 1.6 mm</td>
<td>232 670</td>
</tr>
<tr>
<td>8</td>
<td>Rinsing air gasket</td>
<td>339 210</td>
</tr>
<tr>
<td>9</td>
<td>Gun support bracket</td>
<td>339 202</td>
</tr>
<tr>
<td>10</td>
<td>Socket head screw - M 6 x 20 mm</td>
<td>216 429</td>
</tr>
<tr>
<td>11</td>
<td>Rinsing air connector - 1/8&quot; B.S.P.-ø 6 mm</td>
<td>234 842</td>
</tr>
<tr>
<td>12</td>
<td>O-ring gasket - ø 7.65 x 1.78 mm</td>
<td>232 564</td>
</tr>
<tr>
<td>13</td>
<td>Gun cable, complete, length 11 m</td>
<td>334 677</td>
</tr>
<tr>
<td></td>
<td>Gun cable, complete, length 20 m</td>
<td>345 946</td>
</tr>
<tr>
<td>13.1</td>
<td>Cable to Item 13</td>
<td>103 454*</td>
</tr>
<tr>
<td>14</td>
<td>O-ring gasket - ø 10.82 x 1.78 mm</td>
<td>232 556</td>
</tr>
<tr>
<td>15</td>
<td>Powder tube / Powder hose connector (complete)</td>
<td>334 588#</td>
</tr>
<tr>
<td>16</td>
<td>7-pin plug</td>
<td>200 085</td>
</tr>
<tr>
<td>17</td>
<td>Powder hose - ø 16 / 11 mm</td>
<td>103 012##</td>
</tr>
<tr>
<td>18</td>
<td>Rinsing air hose - ø 6 / 4 mm</td>
<td>103 144*</td>
</tr>
<tr>
<td>19</td>
<td>Quick release connector - ø 6 / 4 mm</td>
<td>200 840</td>
</tr>
<tr>
<td></td>
<td>Spiral brush for PG 1-A</td>
<td>333 514</td>
</tr>
</tbody>
</table>

**Notes:**
- * indicates a special connection.
- # indicates a critical connection.
- ## indicates a non-critical connection.
Flat Jet Nozzle Set (items 1, 2, 3) 319 350
Round Jet Nozzle Set (items 1, 5, 6, 7) 347 337
1 Contact ring 318 760
2 Electrode holder - complete (Flat Jet Nozzle) 318 779#
3 Flat Jet Nozzle 318 744#
4 Threaded sleeve 328 774
5 Electrode holder - complete (Round Jet Nozzle) 347 329#
6 O-Ring - ø 5 x 1 mm 231 606#
7 Round Jet Nozzle 331 287#
8 Deflector - ø 16 mm 331 341#
9 Deflector - ø 24 mm 331 333#
10 Deflector - ø 32 mm 331 325#
11 Extension tube - 150 mm 347 310#
12 Extension tube - 300 mm 353 310#
12.1 Extension tube - 500 mm 352 500#

Other lengths on request!

Figure 13

#Wear parts