Operating Instructions and Spare Parts List

MPS 1-F / MPS 2-F Manual Powder System
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Directions for use

The electrostatic manual coating system consists of:

- PG 1 Electrostatic manual powder coating gun
- PGC 1 Control module with CB 1 electronics control board
- 50 l Fluidizing powder hopper

This equipment is matched and should only be operated in this configuration.

This equipment combination was tested by PTB:
PTB test No Ex-91.C.9102, Date 10/1991

Safety rules for the electrostatic powder coating

1. This equipment can be dangerous when it is not operated according to the following standards:
   - EN 50 050 (or VDE 0745 Part 100),
   - EN 50 053 Part 2 (or VDE 0745 Part 102).

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

3. The floor in the coating area must be electrostatic conductive. Normal concrete is generally conductive.

4. The operating personnel must wear electrostatic conductive footwear, i.e. leather soles.

5. The operating personnel should hold the gun in the bare hand. If gloves are worn they must be electrostatically conductive.

6. Connect the grounding cable (green/yellow) supplied to the grounding terminal on the transport trolley column. The grounding cable must have a good metal to metal contact with the coating booth, recovery unit, and the work piece conveyor system, especially with the workpiece suspension.

7. The electrical cables and powder feed hoses to the gun must be laid out so that they are protected from possible mechanical damage.

8. 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 be switched off.

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

10. When cleaning the gun or changing nozzles the control module must be switched off.

11. Only those parts listed in the section - Nozzle Combinations for PG 1 - of the Spare Parts List of the PG 1 Powder Gun may be used.
Technical data for the MPS 1-F and MPS 2-F electrostatic coating equipment

**Type**

**MPS 1-F**

**MPS 2-F**

**Electrical data**

- Type: Single-phase AC 100 V, 110 V, 120 V, 200 V, 230 V or 240 V
- Voltage selection is made on the inside of the electrical unit by resoldering the tag of the transformer.
- The value of the fuse for 100, 110, and 120 V is 0.5 AT and for the higher voltages is 0.25 AT.
- **The equipment is delivered for operation at 230 V from the factory.**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>MPS 1-F</th>
<th>MPS 2-F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerance</td>
<td>±10%</td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>50/60 Hz</td>
<td></td>
</tr>
<tr>
<td>Connected load</td>
<td>60 VA</td>
<td>120 VA</td>
</tr>
<tr>
<td>Rated output voltage (to gun)</td>
<td>10 V</td>
<td>10 V</td>
</tr>
<tr>
<td>Rated output current (to gun)</td>
<td>1.2 VA</td>
<td>1.2 VA</td>
</tr>
<tr>
<td>Type of protection</td>
<td>IP 54</td>
<td></td>
</tr>
<tr>
<td>Temperature range</td>
<td>+10° C to +40° C (+50°F to +104°F)</td>
<td></td>
</tr>
<tr>
<td>Approval</td>
<td>EN 50 050, PTB test No Ex-91.C.9102, Date PTB tested 10/1991, FM No. J.I. OW 7 A 6.AE (7264), Date tested 10/1993</td>
<td></td>
</tr>
</tbody>
</table>

**Pneumatic data**

- Maximum input pressure: 10 bar
- Minimum input pressure: 5 bar
- Maximum water vapour content of compressed air: 1.3 g/m³
- Maximum oil vapour content of compressed air: 0.1 mg/kg (oil/water)
- Maximum compressed air consumption:
  - Powder hose - ø 11mm: 10 m³/h 17 m³/h
- Main compressed air input connection thread: 1/4" B.S.P (female)

**Dimensions**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>MPS 1-F</th>
<th>MPS 2-F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>460 mm</td>
<td>460 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>710 mm</td>
<td>710 mm</td>
</tr>
<tr>
<td>Height</td>
<td>1080 mm</td>
<td>1170 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>44 kg</td>
<td>60 kg</td>
</tr>
<tr>
<td>Capacity</td>
<td>50 l (~25 kg) 50 l (~25 kg)</td>
<td></td>
</tr>
</tbody>
</table>
About these operating instructions

These operating instructions contain important information which is required to operate the MPS Manual Powder System. It will guide you safely through the assembly phase, give you information to convert an MPS 1 to MPS 2 and give instructions and tips for optimizing the new powder coating system. The information about functioning of the individual system components – PGC 1 Powder Gun Control, PG 1 Manual Powder Gun or PI Injector – are found in the accompanying documentation.
MPS 1-F / MPS 2-F Manual powder system for electrostatic coating

1. Fields of application

The MPS 1-F / MPS 2-F electrostatic manual powder coating system with the PG 1 powder gun are especially suited for manual coating of workpieces manufactured in small series.

2. Scope of delivery for MPS 1-F (standard):

A PGC 1 control module (1), installed in a metal housing, complete with gun support (2) and power cable.

A transport trolley (4).

A powder hopper (7) with inspection cover and venting hose.

A pressure reducing valve for fluidizing air (3), mounted on the transport trolley column.

A PI 3 (6) plug-in injector.

A PG 1 manual powder gun (5) with electric cable, powder hose, rinsing air hose, and a standard PG 1 nozzle set (see PG 1 Operating Instructions).

Pneumatic hoses for the conveying air (red), supplementary air (blue), and fluidizing air (black), also pneumatic connection from pressure reducing valve (3) to control module.

Figure 1

3. Supplementary material for MPS 2-F (standard)

- A PGC 1 control module, complete with gun support, and special power cable.
- A PI 3 injector.
- A PG 1 manual powder gun with electric cable, powder hose, and rinsing air hose.
- Pneumatic hoses for the conveying air (red), supplementary air (blue), also a pneumatic connection with a double air distributor from the pressure valve to control module.
- Two connecting plates.
Functional description

The fluidized powder in the powder hopper is sucked up into the injector by the conveying air (1 - red hose) passing through it. The powder/air mixture reaches the gun through the powder hose (2). The powder is electrostatically charged shortly before it leaves the gun nozzle. An electrostatic field also exists between the gun nozzle and the grounded workpiece. The electrostatically charged powder sprayed onto the workpiece adheres to the latter’s surfaces. The powder is fluidized in the hopper by forcing air from below through a porous plastic plate. The fluidized powder acquires liquid-like properties.

The conveying air and the supplementary air are regulated on the control module, and the fluidizing air on the trolley column. The function of the injector is explained in the description in the PI Injector Operating Instructions.

The arrows in Figure 2 show the directions of flow.
Installation of powder coating equipment

MPS 1-F

The powder coating equipment is preassembled in the factory to a point where only certain cables and hoses must be connected. Refer to the assembly drawing (page 15, Figure 9).

- The gun support can be mounted on either side of the control module housing. A pressure gauge is mounted on the outlet side of the pressure reducing valve on the column of the trolley.
- Connect the thick black hose from the external compressed air input (mounted on the column of the trolley) to the inlet 1.1 IN (10) at the rear of the control module.
- Fit the red hose to the conveying air outlet 1.2 (9) at the rear of the control module and the other end to the angular fitting of the injector.
- Connect the blue hose for the supplementary air to the outlet 1.3 (8) of the control module and to the straight fitting of the injector.
- Connect the rinsing air hose (small diameter transparent hose) to the connection on the gun and the other end to the outlet 1.4 (7) at the rear of the control module.
- Connect the fluidizing air (ø 6 mm black hose), fitted to the pressure valve, mounted on the column of the trolley, to the elbow fitting at the bottom of the powder hopper bed (see to page 15, Figure 9).
Converting MPS 1-F to MPS 2-F

The MPS 2-F consists of a basic MPS 1-F which has been expanded with supplementary material to operate with a second manual powder gun, as shown on page 15, Figure 9.

Procedure for converting MPS 1-F to MPS 2-F

1. Remove the small plastic cap from the suction tube hole in the powder hopper lid. Place the second suction tube (7) into the hole from below and screw the locking nut (8) tight.
2. Remove the milled nuts, and gun holder from the control unit.
3. Mount a connecting plate (4 - slots facing upwards) and gun holder (9) on each side on the protruding studs and fasten the milled nuts.
4. Mount the second PGC 1 control unit (2) so that the protruding studs fit into the slots of the connecting plates and tighten the milled nuts.
5. Fit the second injector (10) into the injector holder of the second suction tube in the hopper lid, and check that it sits firmly, then connect the Conveying air connection (13 - red), and the Supplementary air connection (12 - black) to corresponding quick-release connection (red-red, and black-black) of the injector.
6. Remove the plugs from sockets - B, and - C on the rear of the original PGC 1 control unit (the other end of the cable from socket - B, is connected to the solenoid valve on the fluidizing unit and must also be removed). See Fig. 3, page 4.
7. Connect the plug of the second manual Powder gun (1) to socket - A Gun, the Rinsing air hose to air output - 1.4, and the Main air hose (3 - black) to air input - 1.1 IN on the rear of the second PGC 1 unit.
8. Connect one of the power cable (6) plugs to socket - B, on the rear of each PGC 1 unit, and the other end to the solenoid valve connection of the fluidizing unit.
9. Fit the screw coupling of the Conveying air hose (13 - red) to air output - 1.2, and the Supplementary air hose (12 - black) to air output - 1.3, on the rear of the second PGC 1 unit, then push the corresponding quick-release connection onto the corresponding injector connection (red to red, and black to black).
10. Connect one plug of the Mains cable (11) to socket - C on the rear of each PGC 1 unit.

Procedure for converting the Main compressed air input connection

(See Fig. 4)

1. Unscrew the double air connection adapter from the fluidizing unit fitted on the bracket on the column. Always use the correct size spanners!!!
2. Fit the air connection rings (a), and gaskets (c) on the triple air connection adapter (b) and screw into the supporting plate adapter.
Preparatory steps for initial start-up

a) Setting the correct line voltage

The factory always sets the voltage to 220 V. If the local line voltage is not 220 V, the voltage setting of the transformer must be changed by an electrician.

**CAUTION**

*If the incoming voltage is 10% or higher than the voltage selected damage may be done to internal components. If the incoming voltage is 10% or more below the selected setting then the unit may operate erratically or not at all.*

1. Unfasten all connections (pneumatic and electrical) at the rear of the control module.
2. Unscrew the retaining screw at the rear of the control module.
3. Slide the module out carefully and place on a clean, flat surface.

**CAUTION**

*When removing the unit do not pull on the control knobs, push the unit from the back if necessary.*

4. Unscrew the two screws holding the cover of the electrical section. Carefully remove the coverplate.
5. Unsolder the connecting wire from the 220 V terminal post on the transformer and resolder onto the desired voltage terminal post.  
   *Do not unsolder the other wire (0) on the transformer.*
6. Replace the cover and tighten the two screws.
   *When replacing the cover care should be taken that the gasket is not displaced.*
7. Reinsert the module into the housing and slide back into place. Tighten the retaining screw.
8. Refasten all pneumatic and electrical connections.

b) Connection to the compressed air supply

Compressed air is fed into the connection on the pressure reducing valve mounted on the trolley column. Thread connection: 1/4" B.S.P.

*Before connecting, the fluidizing air must be switched off!*  
The compressed air must be free of oil and water.

c) Connecting the venting hose

1. Push one end of hose over the sleeve on the lid of the powder hopper.
2. Place the opposite end into the opening of the booth.

**NOTICE**

*Atmospheric pressure should prevail in the powder hopper while it is in operation!*

d) Establishing the ground connection

Connect the ground connection cable clip on the column of the trolley to the booth or the work piece suspension device, connect the cable with the cable shoe to the ground connector of the powder hopper, and the cable with the eye to the ground connector at the rear of the control module.
e) Connecting the PG 1 powder gun

1. Connect the cable (1) with the 7-pin connector to the socket labelled ‘A Gun’ at the rear of the control module.
2. Connect the hose for rinsing air (9) to rinsing air outlet 1.4 and to the gun.
3. Connect the powder hose (7) to the gun and to the injector (6).

Figure 6

1. Gun cable
2. Solenoid valve cable
3. Mains power input cable
4. Internal air input hose
5. Conveying air hose
6. PI 3 injector
7. Powder hose
8. Supplementary air hose
9. Rinsing air hose
10. External compressed air input
11. Fluidizing air setting knob
12. Fluidizing air hose connection
13. Fluidizing air gauge
f) Functional check

See trouble shooting guide on pages 13 and 14 for malfunctions.

1. Switch on the main switch (9) of the control module. The MPS 1-F is under power when the lamp inside the green main switch illuminates.

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

3. Squeeze the gun trigger. The lowest left-hand LED on the high-voltage / corona current meter (7) should illuminate. The equipment is active.

4. Pick up the gun and point it towards a grounded workpiece approximately 20 cm away.

5. Set the pressure for the desired rate of powder deposit (see PGC Control unit Operating Instructions) on the conveying air pressure gauge (2). The maximum output is 3.5 bar.

6. Check on the supplementary air flowmeter (4) if the ball "floats" within the green sector of the scale. If it does not, turn the supplementary air control knob (3) to the left or right, while pulling the trigger once or twice, until the ball is positioned correctly.

7. Set the rinsing air by turning the rinsing air control knob (5) until the ball in the rinsing air flowmeter (6) "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).

g) Filling the powder hopper

1. Open the inspection cover from the powder filling hole of the powder hopper.

2. Pour the fresh powder into the hopper (max. 50 l/25 kg powder).
   The powder should only be filled to a level of approximately 5-10 cm below the handles of the hopper because when the powder is fluidized a cloud of powder can escape from the hopper.

3. Close the inspection cover.

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 13 and 14.

Figure 7
Start-up

a) Powder fluidization

The fluidizing of the powder is dependent on the type of powder, the air humidity, and the ambient temperature. Fluidization functions after the control module is switched on.

1. Open the inspection cover of powder hopper.
2. Slowly increase fluidizing air. The powder should “boil” only lightly, but constantly. If necessary increase the fluidizing air until the “boiling” in the hopper is even, then reduce the air until a low "boil" is obtained.
3. Lock the setting of the pressure reducing valve (mounted on the trolley column) by pushing the knob down.
4. Close the inspection cover.

b) Adjusting the powder output and powder cloud

The powder output is dependent on the type of powder, the powder hose length, the number of coils, the powder hose diameter, the conveying air pressure, and the dosing air. The operating principle of the injector and the influence of the supplementary air are explained in the PI Injector Operating Instructions.

1. Switch the control module on.
2. Check the powder fluidization.
3. Direct the gun into the booth and press gun trigger.
4. Set the conveying air (see the PGC Control unit Operating Instructions).
5. Adjust the supplementary air (see the PGC Control unit Operating Instructions).
6. Adjust the rinsing air pressure.
   - Using a flat jet nozzle
     - Adjust the pressure gauge (2 - Fig. 7) on the control module to the desired powder feed rate (see the PGC Control unit Operating Instructions).
     - Adjust the supplementary air on the flowmeter (4 - Fig. 7) so that the ball "floats" within the green sector on the scale.
     - Adjust the rinsing air on the flowmeter (6 - Fig. 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. 7) on the control module to the desired powder feed rate (see the PGC Operating Instructions).
     - Adjust the supplementary air on the flowmeter (4 - Fig. 7) so that the ball "floats" within the green sector on the scale.
     - Adjust the rinsing air on the flowmeter (6 - Fig. 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 nut with the special box key (see PG 1 Operating Instructions) by turning it approximately 45° so that the flat jet nozzle (or the extension) can barely be turned.
- Turn the flat jet nozzle in the desired axial direction.
- Tighten the threaded nut.
  
  *Using a round nozzle with vented deflector*

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

⚠ NOTICE

Never turn the defectors, these are pushed on an O-ring fitting!

**c) Powder coating - Start-up**

⚠ IMPORTANT

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

1. Switch on the control module.
2. Check powder fluidization.
3. Pick up the gun and point it into the coating booth, but not at the work piece to be coated.
4. Press the gun trigger (*See PG 1 Operating Instructions*).
5. Adjust the high-voltage:
   - Check by observing the LED (*See PG 1 Operating Instructions*).
6. The workpiece(s) can now be coated.

**d) Shut-down**

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

**e) Rinsing the powder hose**

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

1. Pull out the hose.
2. Point the gun into the booth.
3. Blow out the hose manually with a compressed air gun.
4. Refit the hose to the injector sleeve.
Colour change

1. Drain and clean powder hopper, refer to PH Powder hopper Operating Instructions.
2. Blow out powder hose with compressed air.  
   *Powder hose is easy to clean with a piece of foam rubber (approx ø15 mm) which is blown through the hose under pressure.*
3. Disassemble and clean the gun, refer to PG 1 Operating Instructions.
4. Prepare control module for operation with new powder, refer to PG 1 Operating Instructions.
5. Before starting with the coating operation, “flush” powder hose and gun with the new powder.

Maintenance schedule

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) Daily maintenance

1a Clean injector, refer to PI Operating Instructions.
2a Clean gun, refer to PG 1 Operating Instructions.
3a Clean powder hopper, see "Colour change, section 2" above.

b) Weekly maintenance

1b Clean the powder hopper, injector, and gun. Do not refill the powder hopper until coating is to be resumed!
2b Check ground connections between control module, coating booth, workpiece suspension device or the conveyor chain.

c) If the control module remains idle for several days.

1c Disconnect power plug.
2c Clean the control module (refer to 1b).
3c Disconnect compressed air supply to the coating equipment.
Cleaning

Powder hopper

Cleaning

1. Disconnect quick-release couplings of fluidizing air hose.
2. Remove injector.
3. Disconnect ground cable.
4. Remove cover and wipe with a clean, dry brush and a clean cloth.
5. Clean fluidizing/suction tube and injector seal.
6. Empty residual powder into a container.
7. Vacuum out powder hopper, especially the bed.
8. Wipe powder hopper with a clean, dry cloth.
9. Reassemble powder hopper.

⚠️ NOTICE Do not refill with powder until coating operation is to be resumed and do not wash hopper bed with solvent or water!

PG 1 Powder gun

Cleaning

Frequent cleaning of the gun is recommended for assuring the coating quality.

⚠️ IMPORTANT Before cleaning the gun, switch off the control module and detach the gun connector 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 (see PG 1 Operating Instructions).
4. Blow out the gun through the powder inlet in the direction of flow.
5. Clean the gun tube (see PG 1 Operating Instructions) with the spiral brush supplied.
6. Blow out the gun with compressed air again.
7. Clean powder hose
8. Reassemble and reconnect the gun.
## Trouble shooting guide

<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 defect  
– External power line fuse defect  

| In equipment:  
– Lamp defect  
– Electronics board (PCB) defective  

| In the gun:  
– Gun cable defective  
– High voltage section defect | Connect sprayer with power cord to Mains  
Replace  
Replace or reset  
Mail in for repair  
Replace, eventual mail in for repairs  
Mail in gun for possible repairs |
| Powder is not fluidized | – Pneumatic unit is not connected to compressed air network  
– Pressure reducing valve defect | Connect  
Replace |
| Needle of pressure gauge for conveying air stays at zero when making adjustments | Operating error:  
– Module is not switched on  
– Gun switch is not pressed  

| In equipment:  
– Solenoid valve defective  
– Electronics board (PCB) defective | Switch on  
Press gun switch while regulating  
Replace  
Mail in for repair |
<p>| During spraying process air escapes from the gun shaft | – O-ring defect or missing | Replace or insert |</p>
<table>
<thead>
<tr>
<th>Faults</th>
<th>Causes</th>
<th>Remedies</th>
</tr>
</thead>
</table>
| Gun does not spray powder although the control module is switched on and the gun trigger is pressed. | – 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 defect  
– Solenoid valve defect  
– Electronics board (PCB) defect | Clean corresponding part  
Replace  
See above  
Replace  
Replace  
Mail in for repair |
| Gun sprays powder, LED at the rear of the cascade is dark, powder does not adhere to the workpiece | – High voltage too low  
– Gun connector, gun cable or gun cable connector is defect  
– High voltage cascade is defect  
– Electronics board (PCB) defect | Increase the high voltage on the control module  
Replace defective item or mail it in for repair  
Mail in the shaft of the gun for repair  
Mail in for repair |
| Gun sprays powder, high-voltage present, powder does not adhere to the work piece. | – Work piece not properly grounded | Check the ground connection, also refer to "Safety rules" |
| Conveying air cannot be adjusted. | Control knob turns freely on the shaft or the grubscrew is loose. | Tighten the grubscrew. |
Supplementary material for converting MPS 1-F to MPS 2-F

Carefully unpack the parts and check against the list below if all the necessary material has been supplied.

- PGC 1 Powder Gun Control - compl.
- Main air connection (black)
- Connecting plate
- Air connection adapter
- Solenoid cable - 2x4 pole plug
- Suction tube - complete
- Locking nut - PG21
- Gun holder
- PI 3-V Powder Injector
- Main cable - 2 plugs
- Supplementary air connection (black)
- Conveying air connection (red)
- Powder hose - ø 16 / 11 mm x 6 m (not shown)
- Assorted spare parts set (not shown)

Figure 8
Pneumatic diagram for MPS F-1

Figure 9
Wiring diagram

Figure 10
Spare Parts Lists

Ordering Spare Parts

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

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

Example:

1. Type MPS 1-F, Serial no: xxxx xxxx
2. Order no: 201 073, 5 pieces, fine wire fuse

When ordering cable or hose material the length required must also be given.
The spare part numbers 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 given as external diameter (o/d), and internal diameter (i/d):

e.g. ø 8 / 6 mm, 8 mm outside diameter (o/d) / 6 mm inside diameter (i/d)
# PH 50-D Powder hopper for MPS 1-F / MPS 2-F

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hopper complete (without cover)</td>
<td>367 095</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Venting hose (without Airmover - ø 40 mm x 3 m.)</td>
<td>100 048#</td>
</tr>
<tr>
<td>3</td>
<td>Hopper cover</td>
<td>367 001</td>
</tr>
<tr>
<td>3.1</td>
<td>Inspection cover complete</td>
<td>366 870</td>
</tr>
<tr>
<td>4</td>
<td>Rubber seal (1.24 m)</td>
<td>103 837*</td>
</tr>
<tr>
<td>5</td>
<td>Powder hopper body</td>
<td>367 087</td>
</tr>
<tr>
<td>6</td>
<td>Fluidizing plate</td>
<td>362 387#</td>
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<tr>
<td>6.1</td>
<td>Rubber seal</td>
<td>348 694</td>
</tr>
<tr>
<td>7</td>
<td>Clamp band</td>
<td>341 924</td>
</tr>
<tr>
<td>8</td>
<td>Fluidizing air chamber</td>
<td>340 898</td>
</tr>
<tr>
<td>9</td>
<td>Elbow joint</td>
<td>200 875</td>
</tr>
<tr>
<td>10</td>
<td>Aperture disk</td>
<td>301 329</td>
</tr>
<tr>
<td>11</td>
<td>Quick-release hose connector</td>
<td>200 859</td>
</tr>
<tr>
<td>12</td>
<td>Quick-release connection for fluidizing air hose</td>
<td>203 181</td>
</tr>
<tr>
<td>13</td>
<td>Fluidizing air hose</td>
<td>103 756*</td>
</tr>
<tr>
<td>14</td>
<td>Suction tube - complete (incl. Items 14.1 and 15)</td>
<td>339 130</td>
</tr>
<tr>
<td>14.1</td>
<td>Suction tube</td>
<td>336 491</td>
</tr>
<tr>
<td>15</td>
<td>Injector support</td>
<td>336 483</td>
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<tr>
<td>16</td>
<td>Lock nut</td>
<td>234 869</td>
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<tr>
<td>17</td>
<td>Plug cap - Injector opening</td>
<td>223 220</td>
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<tr>
<td>20</td>
<td>Plug cap - Powder recovery opening (ø 100 mm)</td>
<td>244 147</td>
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<tr>
<td>22</td>
<td>Inspection cover seal (0.65 m)</td>
<td>103 837*</td>
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<tr>
<td>29</td>
<td>Venting hose adapter complete</td>
<td>361 410</td>
</tr>
<tr>
<td>32</td>
<td>Hopper cover (No holes)</td>
<td>367 010#</td>
</tr>
</tbody>
</table>

* Indicate length required
# Wear parts
PH 50-D Powder hopper for MPS 1-F / MPS 2-F

Figure 11
**Fluidizing unit**

For MPS 1-F - complete
(without items 9, 10, 11, 12, 13, 14, 15) 346 098

For MPS 2-F - complete
(without items 9, 10, 11, 12, 13, 14, 15) 346 101

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Code</th>
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<tbody>
<tr>
<td>1</td>
<td>Air connection adapter for MPS 1-F</td>
<td>227 838</td>
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<tr>
<td>1.1</td>
<td>Air connection adapter for MPS 2-F</td>
<td>236 055</td>
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<tr>
<td>2</td>
<td>Air connection ring - ø 8 mm-1/4&quot;</td>
<td>231 886</td>
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<td>3</td>
<td>Main air connection - 1/4&quot; (female) B.S.P. thread</td>
<td>236 063</td>
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<td>4</td>
<td>Gasket - ø 13.4x18.0x1.8 mm</td>
<td>225 487</td>
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<td>5</td>
<td>Solenoid valve - compl.</td>
<td>242 217</td>
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<tr>
<td>5.1</td>
<td>Solenoid valve coil</td>
<td>251 046</td>
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<tr>
<td>6</td>
<td>Pressure reducing valve</td>
<td>242 225</td>
</tr>
<tr>
<td>6.1</td>
<td>Adapter</td>
<td>242 209</td>
</tr>
<tr>
<td>7</td>
<td>Pressure gauge</td>
<td>237 060</td>
</tr>
<tr>
<td>8</td>
<td>Elbow connector - ø 8 mm-1/8&quot;</td>
<td>242 853</td>
</tr>
<tr>
<td>9</td>
<td>Hose for fluidizing air ø 8 / 6 mm (black)</td>
<td>103 756*</td>
</tr>
<tr>
<td>10</td>
<td>Quick-release connector - ø 8 / 6 mm</td>
<td>203 181</td>
</tr>
<tr>
<td>11</td>
<td>Solenoid valve cable for MPS 1-F</td>
<td>336 629</td>
</tr>
<tr>
<td>11.1</td>
<td>Solenoid valve cable for MPS 2-F</td>
<td>342 254</td>
</tr>
<tr>
<td>12</td>
<td>Screw connector</td>
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<tr>
<td>13</td>
<td>Adapter</td>
<td>202 479</td>
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<tr>
<td>14</td>
<td>Quick-release connector - 1/4&quot;</td>
<td>203 106</td>
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<tr>
<td>15</td>
<td>Fluidizing unit bracket</td>
<td>346 110</td>
</tr>
</tbody>
</table>

* Indicate length required

Figure 12

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22 MPS 1-F / MPS 2-F
MPS 1-F - MPS 2-F

1. Control unit housing 336 548
2. Gun holder 301 086
3. Milled nut - M4 201 090
4. Control unit support 336 270
5. Base plate 336 297
6. Trolley wheels 202 215

Figure 13