

Operating Instructions and Spare Parts List

MPS 1-F / MPS 2-F Manual Powder System

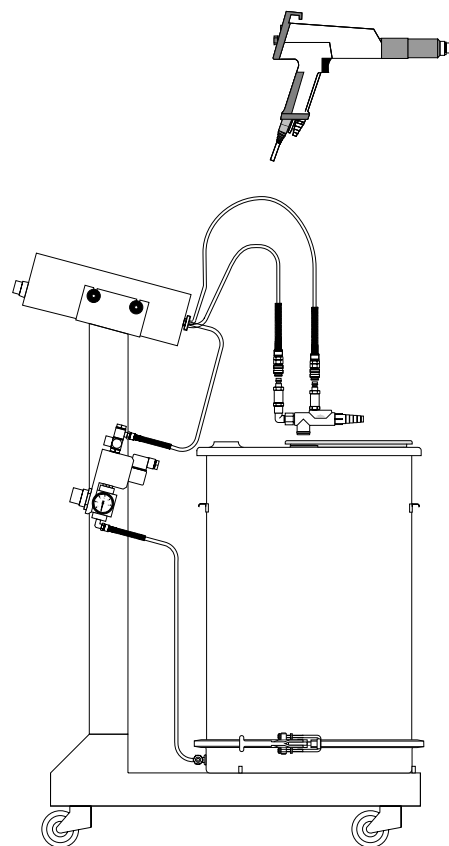


Table of contents

Directions for use

Safety rules for the electrostatic powder coating

Technical data for the MPS 1-F and MPS 2-F

About these Operating Instruction	1
MPS 1-F / MPS 2-F Manual powder system for electrostatic coating	2
1. Fields of application	2
2. Scope of delivery for MPS 1-F (standard):	2
3. Supplementary material for MPS 2-F (standard)	2
Functional description	3
Installation of powder coating equipment	4
MPS 1-F	4
Converting MPS 1-F to MPS 2-F	5
Procedure for converting MPS 1-F to MPS 2-F	5
Procedure for converting the Main compressed air input connection	5
Preparatory steps for initial start-up	6
a) Setting the correct line voltage	6
b) Connection to the compressed air supply	6
c) Connecting the venting hose	6
d) Establishing the ground connection	6
e) Connecting the PG 1 powder gun	7
f) Functional check	8
g) Filling the powder hopper	8
Start-up	9
a) Powder fluidization	9
b) Adjusting the powder output and powder cloud	9
c) Powder coating - Start-up	10
d) Shut-down	10
e) Rinsing the powder hose	10
Colour change	11
Maintenance schedule	11
Cleaning	12
Powder hopper	12
Cleaning	12
PG 1 Powder gun	12
Cleaning	12

continued

Table of contents (cont.)

Trouble shooting guide	13
Supplementary material for converting MPS 1-F to MPS 2-F	15
Pneumatic diagram for MPS F-1	16
Wiring diagram	17
NOTES	18
Spare Parts Lists	19
Ordering Spare Parts	19
PH 50-D Powder hopper for MPS 1-F / MPS 2-F	20
Fluidizing unit	22
MPS 1-F - MPS 2-F	23

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

Single-phase AC

Selectable voltage : 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.

Tolerance: ±10%

Frequency : 50/60 Hz

Connected load : 60 VA 120 VA

Rated output voltage (to gun) : 10 V 10V

Rated output current (to gun) : 1.2 VA 1.2 VA

Type of protection : IP 54

Temperature range : +10° C to +40° C (+50° F to +104° F)

Approval : 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

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

Width: 460 mm 460 mm

Depth: 710 mm 710 mm

Height: 1080 mm 1170 mm

Weight: 44 kg 60 kg

Capacity: 50 l (~25 kg) 50 l (~25 kg)

About these operating instructions

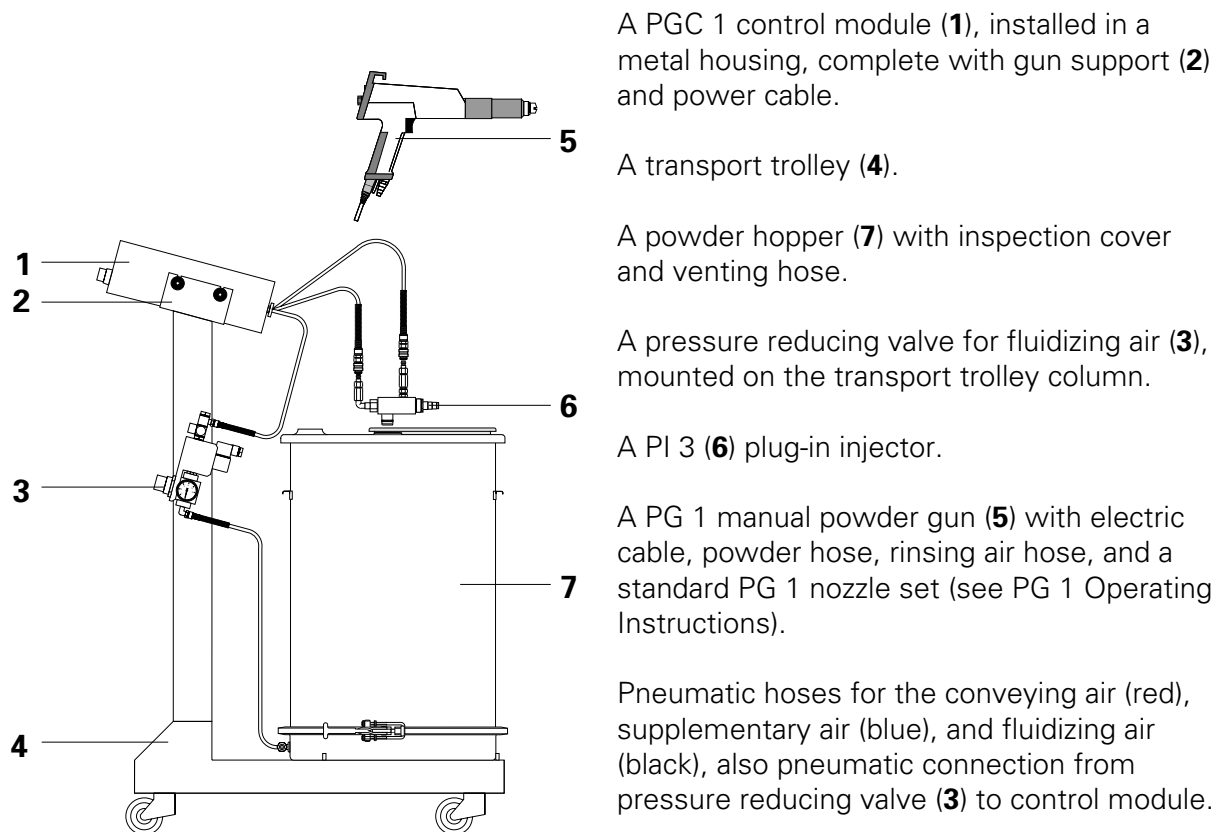
These operating instructions contain important information which is required to operate the MPS Manual Powder System. It will guide you safely through the assembly phase, give you information to convert an MPS 1 to MPS 2 and give instructions and tips for optimizing the new powder coating system. The 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.

- | | |
|---------------------------|-------------------|
| 1 PGC 1 control module | 5 PG 1 Powder gun |
| 2 Gun holder | 6 PI 3 injector |
| 3 Pressure reducing valve | 7 Powder hopper |
| 4 Transport trolley | |

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 work piece 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.

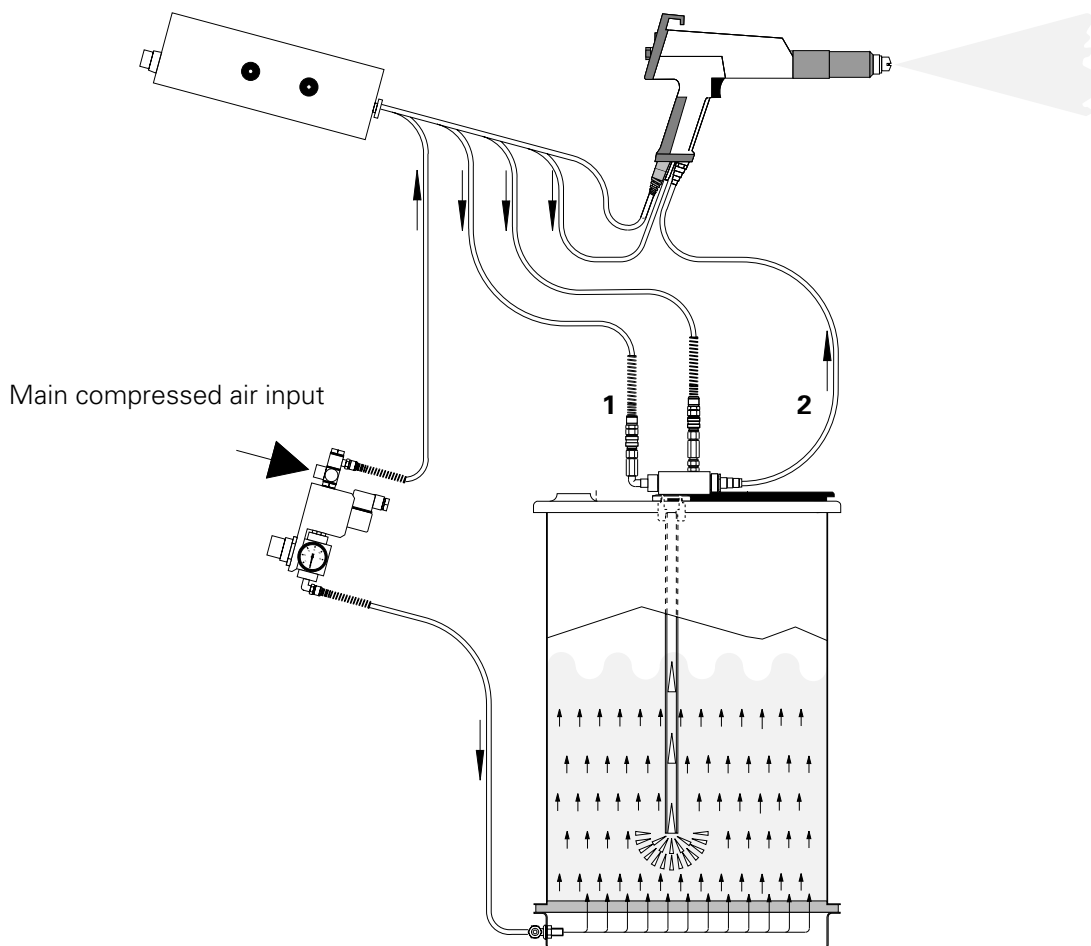


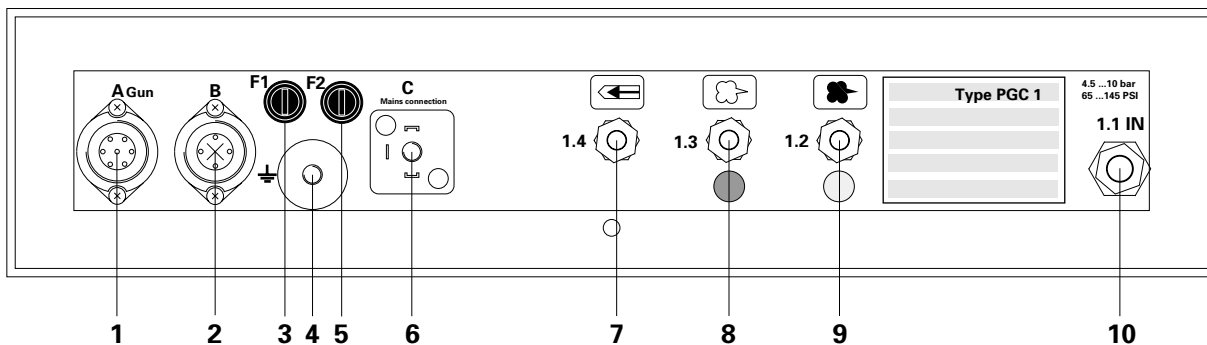
Figure 2

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 (\varnothing 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).



Rear panel

- | | |
|---|--|
| 1 Gun socket (A Gun) | 6 Mains connection (C) |
| 2 Fluidizing air solenoid valve socket (B) | 7 Rinsing air connection (1.4) |
| 3 Fuse holder (F1) | 8 Supplementary air connection (1.3) |
| 4 Module ground connection | 9 Conveying air connection (1.2) |
| 5 Fuse holder (F2) for N. America only | 10 External compressed air input (1.1 IN) |

Figure 3

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.

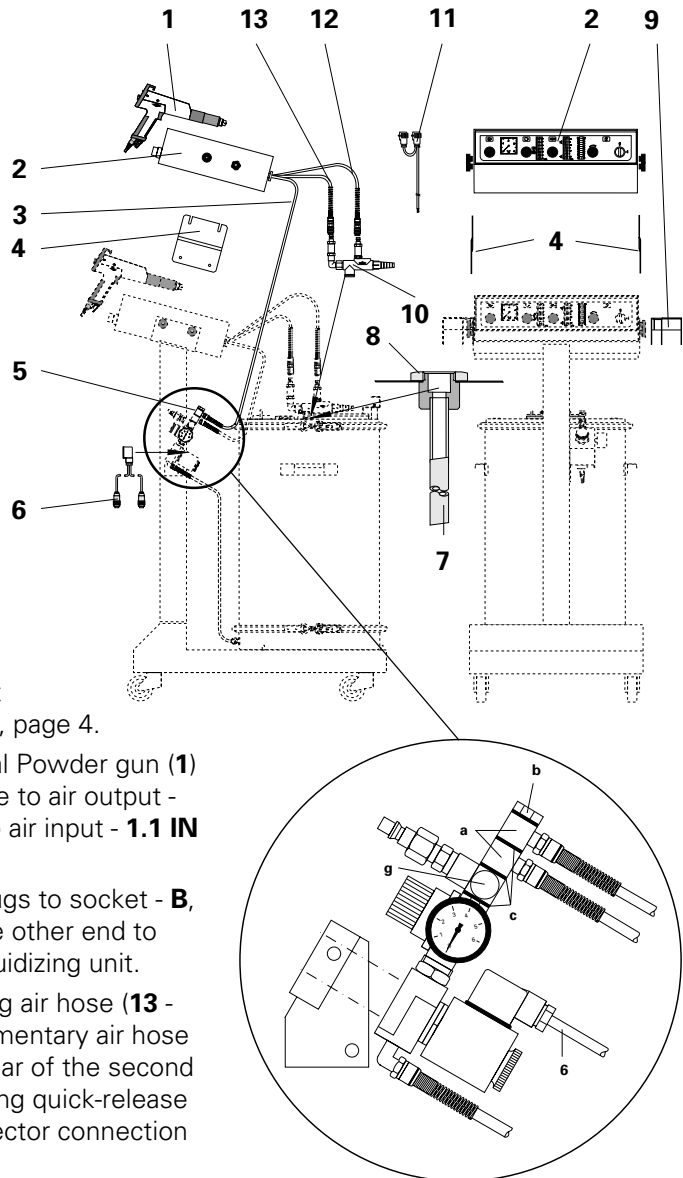


Figure 4

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.



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.



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.

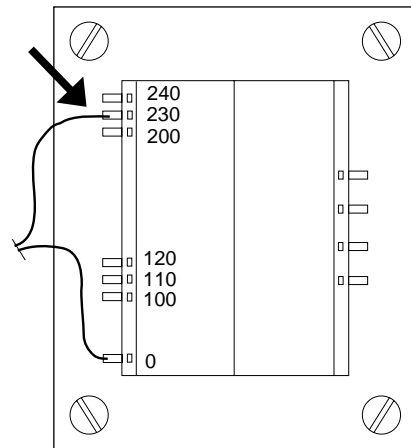


Figure 5

b) Connection to the compressed air supply

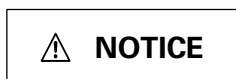
Compressed air is fed into the connection on the pressure reducing valve mounted on the trolley column. Thread connection: 1/4" B.S.P.

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.



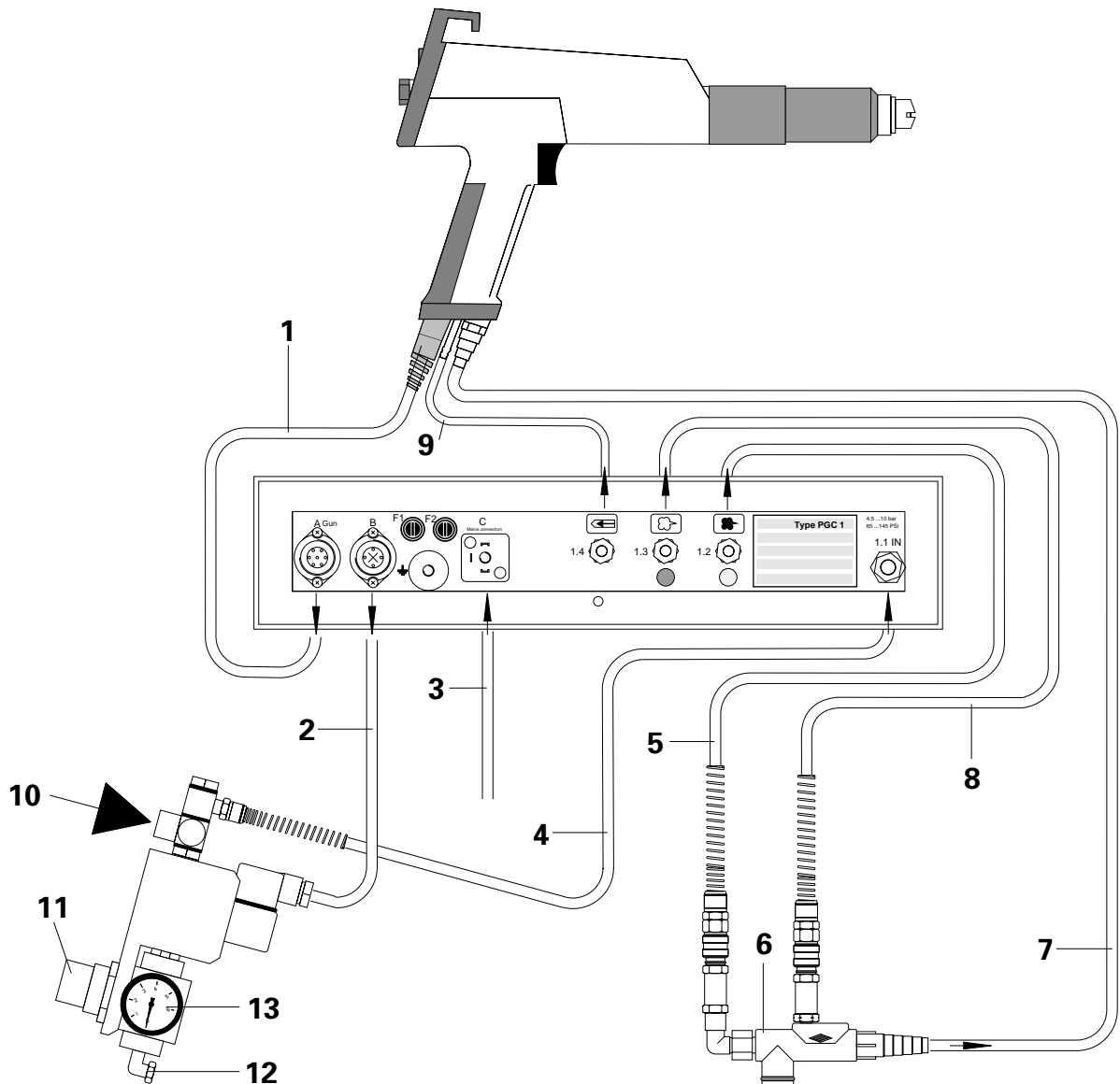
Atmospheric pressure should prevail in the powder hopper while it is in operation!

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).



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

Figure 6

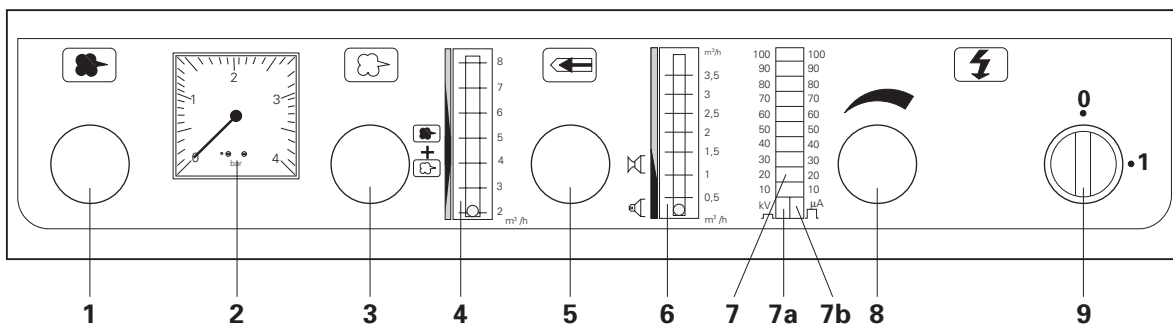
f) Functional check

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 (\varnothing 16, 24, and 32 mm are supplied with the gun).

**NOTICE**

Never turn the deflectors, 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 $\varnothing 15$ 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.

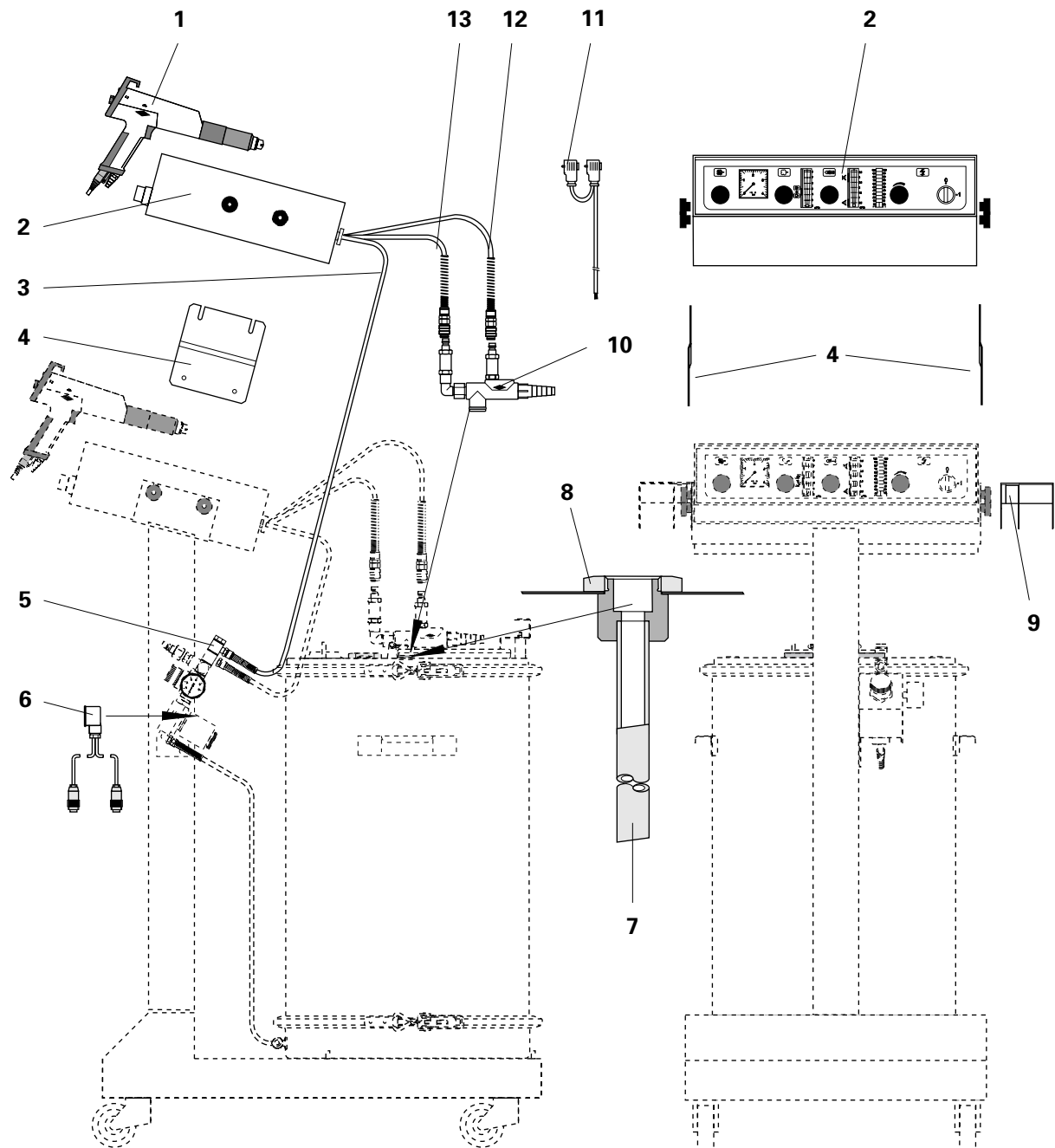
Trouble shooting guide

Faults	Causes	Remedies
Green lamp does not illuminate although control module has been switched on.	No power: <ul style="list-style-type: none"> – Control unit is not connected to Mains – Fuse F1 defect – External power line fuse defect In equipment: <ul style="list-style-type: none"> – Lamp defect – Electronics board (PCB) defective In the gun: <ul style="list-style-type: none"> – Gun cable defective – High voltage section defect 	Connect sprayer with power cord to Mains Replace Replace or reset Replace Mail in for repair Replace, eventual mail in for repairs Mail in gun for possible repairs
Powder is not fluidized	<ul style="list-style-type: none"> – 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: <ul style="list-style-type: none"> – Module is not switched on – Gun switch is not pressed In equipment: <ul style="list-style-type: none"> – Solenoid valve defective – Electronics board (PCB) defect 	Switch on Press gun switch while regulating Replace Mail in for repair
During spraying process air escapes from the gun shaft	<ul style="list-style-type: none"> – O-ring defect or missing 	Replace or insert

Faults	Causes	Remedies
<p>Gun does not spray powder although the control module is switched on and the gun trigger is pressed.</p>	<ul style="list-style-type: none"> – 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: <ul style="list-style-type: none"> – Reducing valve defect – Solenoid valve defect – Electronics board (PCB) defect 	<p>Clean corresponding part</p> <p>Replace</p> <p>See above</p> <p>Replace</p> <p>Replace</p> <p>Mail in for repair</p>
<p>Gun sprays powder, LED at the rear of the cascade is dark, powder does not adhere to the workpiece</p>	<ul style="list-style-type: none"> – High voltage too low – Gun connector, gun cable or gun cable connector is defect – High voltage cascade is defect – Electronics board (PCB) defect 	<p>Increase the high voltage on the control module</p> <p>Replace defective item or mail it in for repair</p> <p>Mail in the shaft of the gun for repair</p> <p>Mail in for repair</p>
<p>Gun sprays powder, high-voltage present, powder does not adhere to the work piece.</p>	<ul style="list-style-type: none"> – Work piece not properly grounded 	<p>Check the ground connection, also refer to "Safety rules"</p>
<p>Conveying air cannot be adjusted.</p>	<p>Control knob turns freely on the shaft or the grubscrew is loose.</p>	<p>Tighten the grubscrew.</p>

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.



- | | | | |
|-------------------------------------|--------------------------------------|--------------------------|--|
| <input checked="" type="checkbox"/> | | | |
| <input type="checkbox"/> | 1. PG 1 Manual Powder Gun - compl. | <input type="checkbox"/> | 9. Gun holder |
| <input type="checkbox"/> | 2. PGC 1 Powder Gun Control - compl. | <input type="checkbox"/> | 10. PI 3-V Powder Injector |
| <input type="checkbox"/> | 3. Main air connection (black) | <input type="checkbox"/> | 11. Main cable - 2 plugs |
| <input type="checkbox"/> | 4. Connecting plate | <input type="checkbox"/> | 12. Supplementary air connection (black) |
| <input type="checkbox"/> | 5. Air connection adapter | <input type="checkbox"/> | 13. Conveying air connection (red) |
| <input type="checkbox"/> | 6. Solenoid cable - 2x4 pole plug | <input type="checkbox"/> | Powder hose - \varnothing 16 / 11 mm x 6 m (not shown) |
| <input type="checkbox"/> | 7. Suction tube - complete | <input type="checkbox"/> | Assorted spare parts set (not shown) |
| <input type="checkbox"/> | 8. Locking nut - PG21 | | |

Figure 8

Pneumatic diagram for MPS F-1

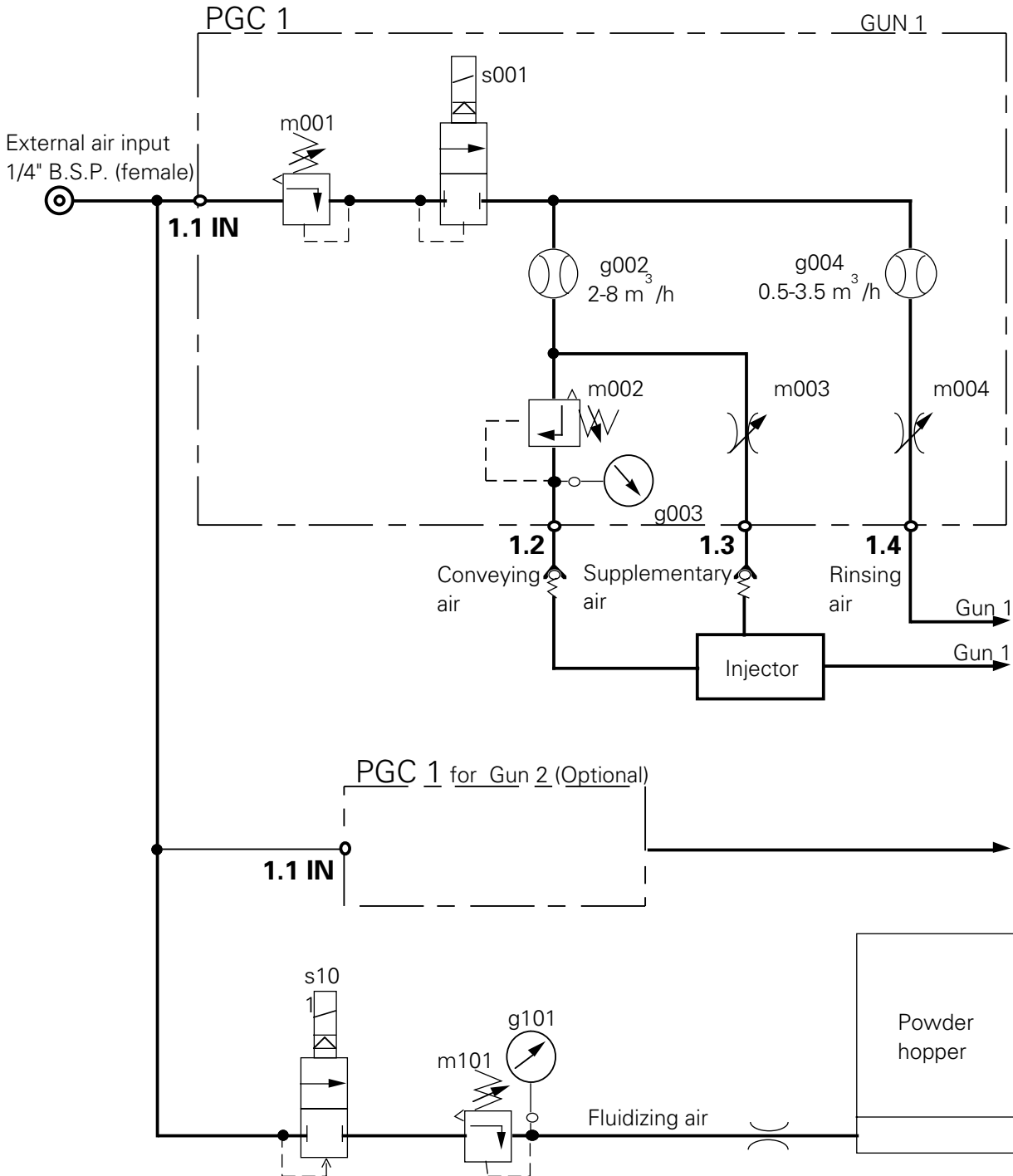


Figure 9

Wiring diagram

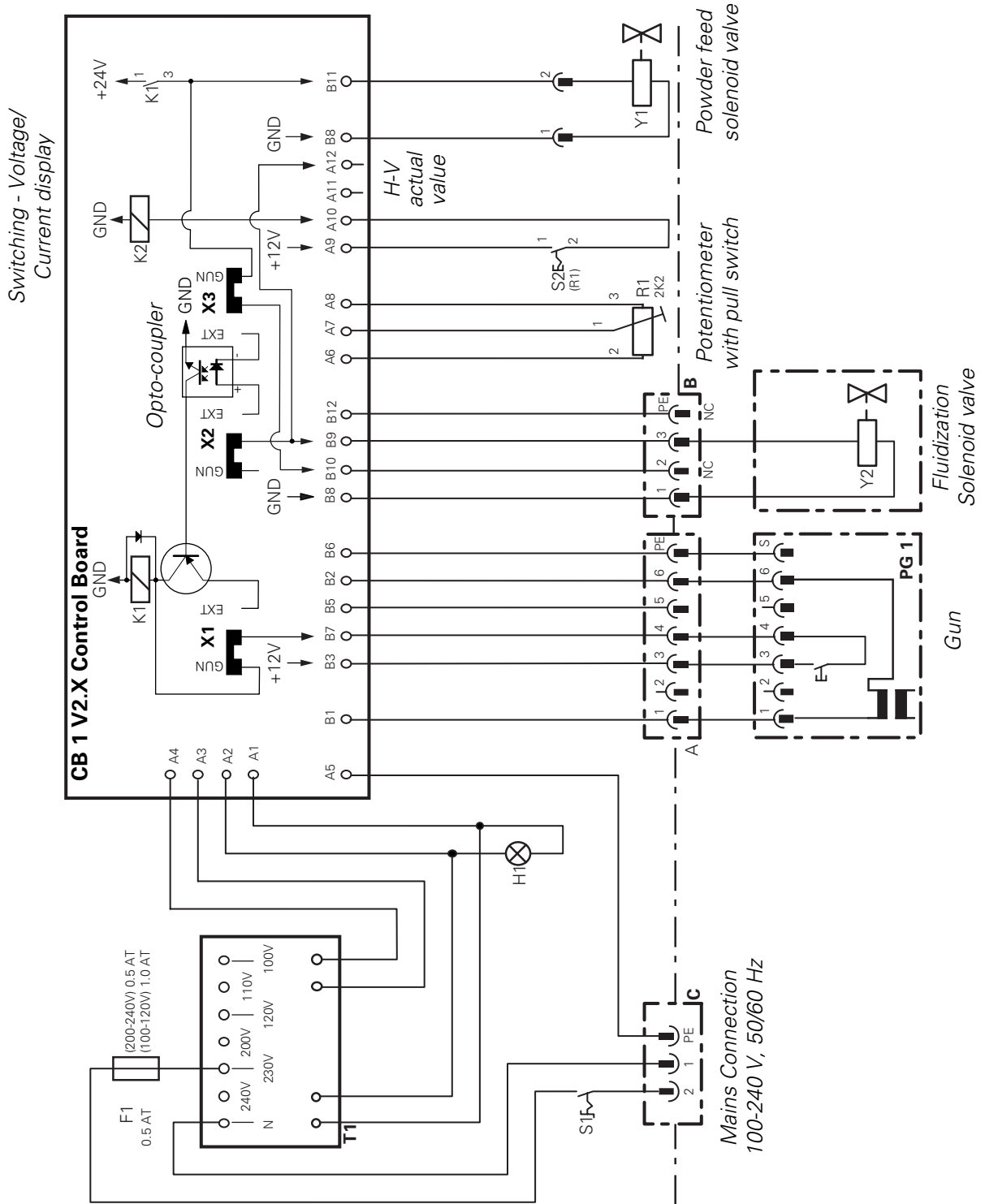


Figure 10

NOTES:

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

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

* Indicate length required

Wear parts

PH 50-D Powder hopper for MPS 1-F / MPS 2-F

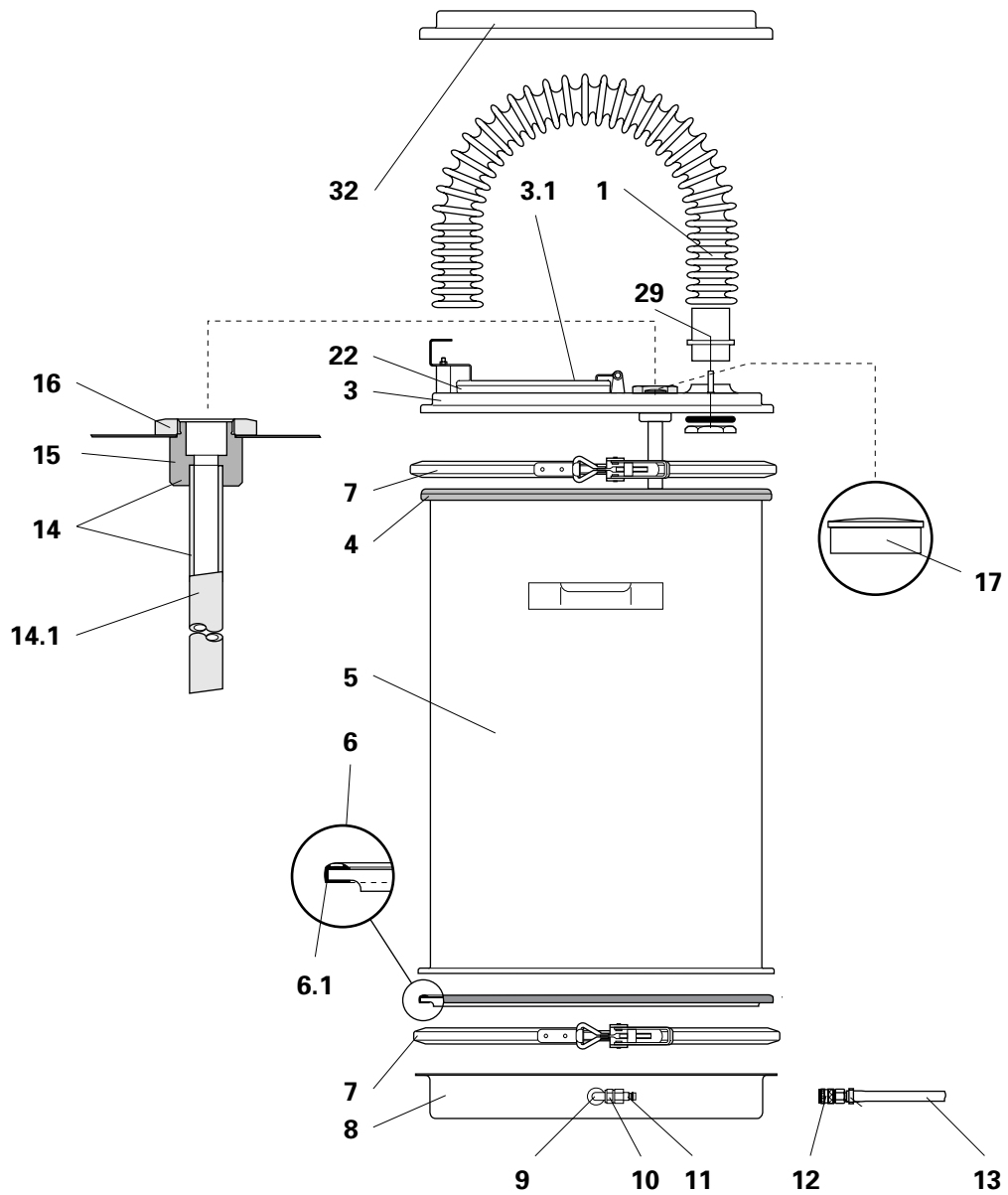
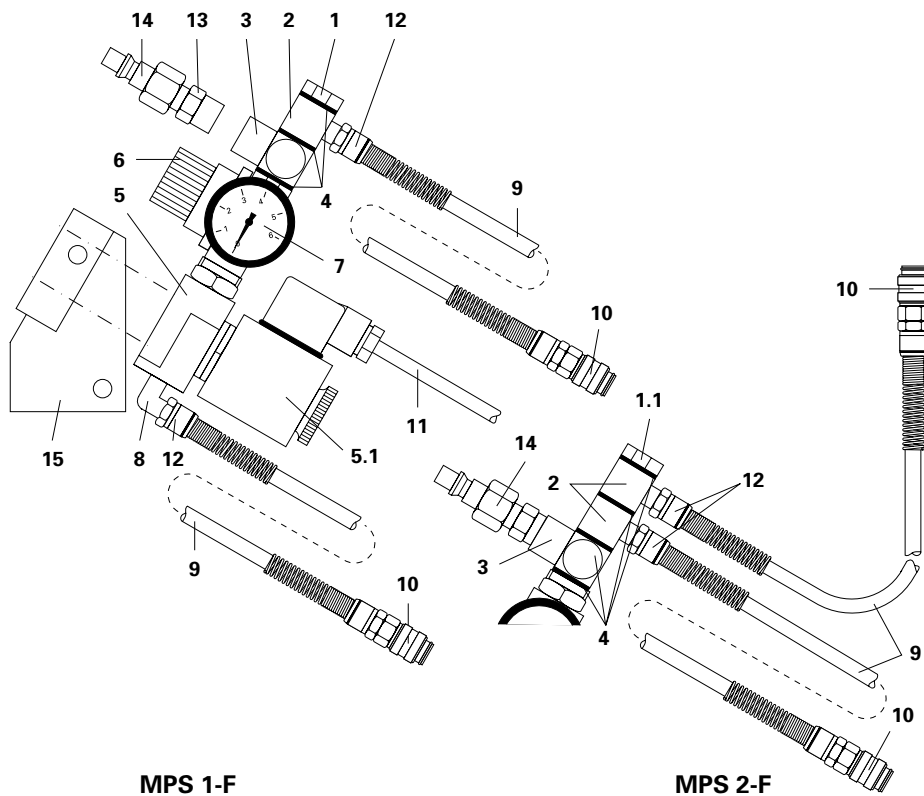


Figure 11

Fluidizing unit

For MPS 1-F - complete	346 098
(without items 9, 10, 11, 12, 13, 14, 15)	
For MPS 2-F - complete	346 101
(without items 9, 10, 11, 12, 13, 14, 15)	
1 Air connection adapter for MPS 1-F	227 838
1.1 Air connection adapter for MPS 2-F	236 055
2 Air connection ring - \varnothing 8 mm-1/4"	231 886
3 Main air connection - 1/4" (female) B.S.P. thread	236 063
4 Gasket - \varnothing 13.4x18.0x1.8 mm	225 487
5 Solenoid valve - compl.	242 217
5.1 Solenoid valve coil	251 046
6 Pressure reducing valve	242 225
6.1 Adapter	242 209
7 Pressure gauge	237 060
8 Elbow connector - \varnothing 8 mm-1/8"	242 853
9 Hose for fluidizing air \varnothing 8 / 6 mm (black)	103 756*
10 Quick-release connector - \varnothing 8 / 6 mm	203 181
11 Solenoid valve cable for MPS 1-F	336 629
11.1 Solenoid valve cable for MPS 2-F	342 254
12 Screw connector	201 316
13 Adapter	202 479
14 Quick-release connector - 1/4"	203 106
15 Fluidizing unit bracket	346 110



MPS 1-F

MPS 2-F

* Indicate length required

Figure 12

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

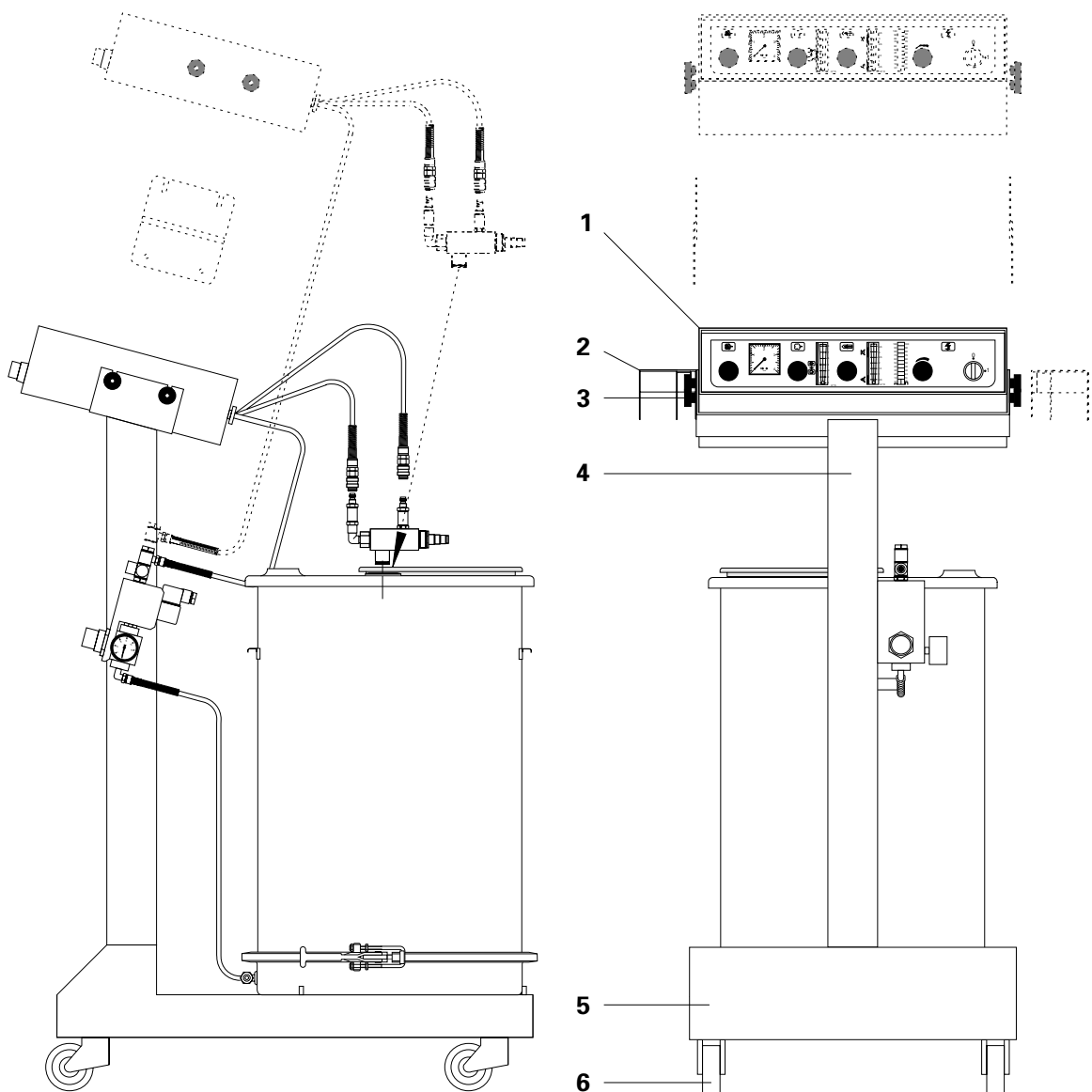


Figure 13

Documentation MPS 1-F / MPS 2-F

© Copyright 1991 ITW Gema AG, CH-9015 St. Gall.

All technical products from ITW Gema AG are constantly being developed based on our continuing research and applications.

The data found in this publication may therefore change at any time without prior notification.

Printed in Switzerland