FPP01
Fresh powder pump
# Table of contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>General safety regulations</td>
<td>3</td>
</tr>
<tr>
<td>Safety symbols (pictograms)</td>
<td>3</td>
</tr>
<tr>
<td>Conformity of use</td>
<td>3</td>
</tr>
<tr>
<td>About this manual</td>
<td>5</td>
</tr>
<tr>
<td>General information</td>
<td>5</td>
</tr>
<tr>
<td>Function description</td>
<td>7</td>
</tr>
<tr>
<td>Field of application</td>
<td>7</td>
</tr>
<tr>
<td>Design and function</td>
<td>7</td>
</tr>
<tr>
<td>Functionality of FPP01 Fresh powder pump</td>
<td>8</td>
</tr>
<tr>
<td>Start-up</td>
<td>9</td>
</tr>
<tr>
<td>Connection</td>
<td>9</td>
</tr>
<tr>
<td>Powder flow booster</td>
<td>9</td>
</tr>
<tr>
<td>Technical Data</td>
<td>11</td>
</tr>
<tr>
<td>FPP01 Fresh powder pump</td>
<td>11</td>
</tr>
<tr>
<td>Compressed air consumption</td>
<td>11</td>
</tr>
<tr>
<td>Powder output</td>
<td>11</td>
</tr>
<tr>
<td>Color change</td>
<td>13</td>
</tr>
<tr>
<td>General procedure</td>
<td>13</td>
</tr>
<tr>
<td>Maintenance</td>
<td>15</td>
</tr>
<tr>
<td>Daily maintenance</td>
<td>15</td>
</tr>
<tr>
<td>Weekly maintenance</td>
<td>15</td>
</tr>
<tr>
<td>Cleaning the fresh powder pump</td>
<td>16</td>
</tr>
<tr>
<td>Spare parts list</td>
<td>17</td>
</tr>
<tr>
<td>Ordering spare parts</td>
<td>17</td>
</tr>
<tr>
<td>FPP01 Fresh powder pump - spare parts list</td>
<td>18</td>
</tr>
<tr>
<td>FPP01 Fresh powder pump - spare parts list</td>
<td>19</td>
</tr>
</tbody>
</table>

---

FPP01 Fresh powder pump  
Table of contents  
1
Function description 7
   Field of application ........................................................................................................... 7
   Design and function ........................................................................................................... 7
   Functionality of FPP01 Fresh powder pump ...................................................................... 8

Start-up 9
   Connection .......................................................................................................................... 9
   Powder flow booster .......................................................................................................... 9

Technical Data 11
   FPP01 Fresh powder pump .............................................................................................. 11
   Compressed air consumption ............................................................................................ 11
   Powder output .................................................................................................................... 11

Color change 13
   General procedure ............................................................................................................ 13

Maintenance 15
   Daily maintenance ............................................................................................................. 15
   Weekly maintenance .......................................................................................................... 15
   Cleaning the fresh powder pump ...................................................................................... 16

Spare parts list 17
   Ordering spare parts ......................................................................................................... 17
   FPP01 Fresh powder pump - spare parts list .................................................................... 18
   FPP01 Fresh powder pump - spare parts list .................................................................... 19
General safety regulations

This chapter sets out the fundamental safety regulations that must be followed by the user and third parties using the FPP01 Fresh powder pump.

These safety regulations must be read and understood before the FPP01 Fresh powder pump is used.

Safety symbols (pictograms)

The following warnings with their meanings can be found in the ITW Gema operating instructions. The general safety precautions must also be followed as well as the regulations in the operating instructions.

**DANGER!**

Danger due to live electricity or moving parts. Possible consequences: Death or serious injury

**WARNING!**

Improper use of the equipment could damage the machine or cause it to malfunction. Possible consequences: minor injuries or damage to equipment

**INFORMATION!**

Useful tips and other information

Conformity of use

1. The FPP01 Fresh powder pump is built to the latest specification and conforms to the recognized technical safety regulations. It is designed for the normal application of powder coating.

2. Any other use is considered as non-conform. The manufacturer is not responsible for damage resulting from improper use of this equipment; the end-user alone is responsible. If the FPP01 Fresh powder pump is to be used for other purposes or other substances outside of our guidelines, then ITW Gema AG should be consulted.

3. Observance of the operating, service and maintenance instructions specified by the manufacturer is also part of the conformity of use. The FPP01 Fresh powder pump should only be used,
maintained and started up by trained personnel, who are in-
formed about and are familiar with the possible hazards involved.

4. Start-up (i.e. the execution of a particular operation) is forbidden
until it has been established that the FPP01 Fresh powder pump
has been set up and wired according to the guidelines for ma-
chinery (98/37/EG). EN 60204-1 (machine safety) must also be
observed.

5. Unauthorized modifications to FPP01 Fresh powder pump ex-
empts the manufacturer from any liability from resulting damage.

6. The relevant accident prevention regulations, as well as other
generally recognized safety regulations, occupational health and
structural regulations, are to be observed.

7. Furthermore, the country-specific safety regulations must be ob-
erved.

Note:
For further information see the more detailed ITW Gema safety regu-
lations!
About this manual

General information

These operating manual contains all important information which you require for operating the FPP01 Fresh powder pump-en.doc. It will safely guide you through the start-up process and give you references and tips for the optimal use of your new powder coating system.

Information about the function mode of the individual system components - booth, powder gun control unit, manual gun or powder injector - you will find in the corresponding enclosed documentations.
Function description

Field of application

The FPP01 Fresh powder pump is intended exclusively for use with the FPC03 Fresh powder control. Any other use is considered as non-conform. The manufacturer is not responsible for damage resulting from improper use of this equipment; the end user alone is responsible.

For a better understanding of the relationships in powder coating, it is recommended to read the operating instructions of the other components thoroughly, so as to be familiar with their functions also.

Design and function

The FPP01 Fresh powder pump is used to convey the fresh powder directly from the powder manufacturer's box. The pump (pinch valve with elastomer check valves) is fitted directly onto the suction unit. The powder hose is attached on the upper pump connection.
Functionality of FPP01 Fresh powder pump

The pinch valve in the FPP01 Fresh powder pump is squeezed by means of compressed air and then loosed again. Thereby, a vacuum is created, which causes the transport of powder through the lower elastomer check valve into the pinch valve. The pinch valve is now squeezed again, and the powder is fed through the upper elastomer check valve into the powder hose.

The powder pump is supplied with a 3 meters (9.8 ft) long powder hose. This powder hose length does not require additionally conveying air. On the other hand, for distances between 3 and 8 meters (9.8 and 26.2 ft), after 3 meters (9.8 ft) a powder flow booster is inserted into the powder hose (see "Powder flow booster").
Start-up

Connection

The FPP01 Fresh powder pump is supplied from factory ready for use. The customer have just to connect a few cables and hoses.

Because the fresh powder pump can be used in different configurations, the information regarding connections are to be read in the corresponding operating instruction.

Note:
The compressed air must be free from oil and water!

Powder flow booster

The FPS14-1 and FPS14-2 Fresh powder systems are supplied with a 3 meters long powder hose as standard. By using this powder hose length, no additional conveying air is needed.

If the conveying distance of coating powder from the container to the powder center is however longer than 3 meters, after 3 meters a powder flow booster is inserted into the powder hose.

In addition, a 5 meters long powder hose is connected. This makes possible a powder conveying distance up to 8 meters.

The powder flow booster is inserted according to the following steps:

1. Remove the plug cap

![Image of plug cap being removed](image-url)
2. Plug in the pneumatic hose for the powder flow booster in the corresponding air connection

3. Install the powder flow booster in the powder hose (the installation direction is free selectable)

4. Plug in the pneumatic hose in the powder flow booster and fix it to the powder hose with cable fixations
Technical Data

FPP01 Fresh powder pump

Compressed air consumption

<table>
<thead>
<tr>
<th>FPP01 Fresh powder pump</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Powder pump</td>
<td>3,2 Nm³/h (53 l/min)</td>
</tr>
<tr>
<td></td>
<td>1.88 SCFM</td>
</tr>
<tr>
<td>Additional conveying air supply</td>
<td>0,12 Nm³/h (2,0 l/min)</td>
</tr>
<tr>
<td></td>
<td>0.07 SCFM</td>
</tr>
<tr>
<td>Fluidizing air</td>
<td>0,12 Nm³/h (2,0 l/min)</td>
</tr>
<tr>
<td></td>
<td>0.07 SCFM</td>
</tr>
</tbody>
</table>

Powder output

<table>
<thead>
<tr>
<th>FPP01 Fresh powder pump</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hose length 3.0 meters (9.8 ft)</td>
<td>1200 g/min*</td>
</tr>
<tr>
<td>Hose length 8.0 meters (26.2 ft)</td>
<td>1000 g/min*</td>
</tr>
<tr>
<td>with powder flow booster</td>
<td></td>
</tr>
</tbody>
</table>

* The indicated values are approximate values, possible deviations depend on the powder type!
Color change

General procedure

The color change is executed in accordance with the following instructions:

1. Clean the fluidizing/suction unit thoroughly
   - Remove the powder hose and the pneumatic hoses
   - Remove the fresh powder pump
   - Remove the fluidizing/suction unit
   - Remove the powder container from vibration table
   - Clean the fluidizing/suction unit on the outside with compressed air. Blow through the powder suction tube with compressed air and clean it
   - Visual check of the fluidizing/suction unit for possible damages

2. Blow through the powder hose with compressed air. Clean the powder hose by taking a foam cube from the packing material and blowing it through the hose with compressed air. Therefore, it is recommended to use the special air gun (order no. 346 055). The foam cubes can be ordered in sheets of 100 pieces (order no. 241 717)

3. Clean the powder pump (see "Cleaning the fresh powder pump")

4. Prepare the FPS fresh powder system with the new powder for start-up
   - Place the open the powder container on the vibration table
   - Reinstall the fresh powder pump and the fluidizing/suction unit and connect the pneumatic hoses
   - Set the fluidizing/suction unit on the powder
   - Start up the plant
Maintenance

Note:
A regular and conscientious maintenance increases the operating life of the FPP01 Fresh powder pump and ensures a longer constant conveying quality!
The parts to be replaced during maintenance are available as spare parts. These parts can be found in the corresponding spare parts list!

Attention:
Clean the component parts only with compressed air and, if necessary, with water. Never use solvents or acetone! Do not scrape!

Daily maintenance
- Clean the fresh powder pump on the outside

Weekly maintenance
- Visual check of the elastomer check valves for possible damages (e.g. holes, ruptures etc.)
Cleaning the fresh powder pump

1. Remove the FPP01 Fresh powder pump from the fluidizing/suction unit
2. Remove the powder hose from powder hose connection (5)
3. Unscrew both clamp nuts (4, 6) and remove the powder hose connection (5) and the suction connection (1)
4. Clean the powder hose connection (5), suction connection (1), elastomer check valves (3) and the pump body (inside and outside) with compressed air. The compressed air must be free from water and oil! Check the parts for wear!
5. Reassemble the individual parts and reinstall the fresh powder pump

FPP01 Fresh powder pump

FPP01 Fresh powder pump
Spare parts list

Ordering spare parts

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

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

Example:

- **Type** FPP01 Fresh powder pump, **serial no.** 1234 5678
- **Order no.** 203 386, 1 piece, Clamp - Ø 18/15 mm

When ordering cable or hose material, the required length must also be given. The spare part numbers of this yard/meter product is always marked with an *.

The wear parts are always marked with a #.

All dimensions of plastic hoses are specified with the external and internal diameter:

**Example:**

Ø 8/6 mm, 8 mm outside diameter (o/d) / 6 mm inside diameter (i/d)

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**WARNING:**

Only original ITW-Gema spare parts should be used, because the explosion protection will also be preserved that way. The use of spare parts from other manufacturers will invalidate the ITW Gema guarantee conditions!
### FPP01 Fresh powder pump - spare parts list

Note:
Only parts were included in the spare parts list, which can be replaced by the user himself without problems!
If the pinch valve sleeve in the pump body should be defective, then the whole pump is to be sent in to ITW Gema for repair and check.
The pinch valve sleeve was installed according to a special procedure and should be never removed therefore by the user!

<table>
<thead>
<tr>
<th>Part Item</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Suction connection</td>
<td>1000 233</td>
</tr>
<tr>
<td>8</td>
<td>Bleed valve - Dn7-1/4&quot;, 3 bar</td>
<td>1000 326#</td>
</tr>
<tr>
<td>2</td>
<td>O-Ring - Ø 16x2 mm</td>
<td>231 517#</td>
</tr>
<tr>
<td>3</td>
<td>Elastomer check valve</td>
<td>1000 089#</td>
</tr>
<tr>
<td>4</td>
<td>Clamp nut - Ø 65X20 mm</td>
<td>1000 235</td>
</tr>
<tr>
<td>5</td>
<td>Hose connection - Ø 12 mm</td>
<td>1000 238</td>
</tr>
<tr>
<td>6</td>
<td>Clamp nut - Ø 65X30 mm</td>
<td>1000 239</td>
</tr>
<tr>
<td>7</td>
<td>Hexagon nut - 1/4&quot;, ms</td>
<td>1000 469</td>
</tr>
<tr>
<td>8.1</td>
<td>Solenoid valve to Item. 8 - mounted apart (not shown)</td>
<td>269 123#</td>
</tr>
<tr>
<td>9</td>
<td>Sealing ring - Ø 13,4/18x1,8 mm</td>
<td>225 487</td>
</tr>
<tr>
<td>10</td>
<td>Swivel ring - 1/4&quot;i-1/4&quot;, single</td>
<td>261 726</td>
</tr>
<tr>
<td>11</td>
<td>Hollow screw - 1/4&quot;a-1/4&quot;i, single</td>
<td>261 700</td>
</tr>
<tr>
<td>12</td>
<td>Screw-in nipple - 1/4&quot;a, Ø 8 mm</td>
<td>265 136</td>
</tr>
<tr>
<td>13</td>
<td>Adapter nipple - 1/8&quot;i-1/4&quot;a</td>
<td>265 454</td>
</tr>
<tr>
<td>14</td>
<td>Conveying air connection - sw 14x12 mm</td>
<td>1000 240</td>
</tr>
<tr>
<td>15</td>
<td>Elbow joint - M5, Ø 4 mm</td>
<td>257 060</td>
</tr>
<tr>
<td>16</td>
<td>Plug - Ø 4 mm</td>
<td>268 496</td>
</tr>
</tbody>
</table>

* Indicate length required
# Wear parts
FPP01 Fresh powder pump - spare parts list

Pump body incl. Pinch valve sleeve

FPP01 Fresh powder pump - spare parts list