OptiAir CA06
Pneumatic-fluidizing unit

Translation of the original operating instructions
Documentation OptiAir CA06

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General safety regulations

This chapter sets out the fundamental safety regulations that must be followed by the user and third parties using the OptiAir CA06 Pneumatic-fluidizing unit.

These safety regulations must be read and understood before the OptiAir CA06 Pneumatic-fluidizing unit is used.

Safety symbols (pictograms)

The following warnings with their meanings can be found in the 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 OptiAir CA06 Pneumatic-fluidizing unit 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 OptiAir CA06 Pneumatic-fluidizing unit is to be used for other purposes or other substances outside of our guidelines then Gema Switzerland GmbH should be consulted.
3. Observance of the operating, service and maintenance instructions specified by the manufacturer is also part of conformity of use. The OptiAir CA06 Pneumatic-fluidizing unit should only be used, maintained and started up by trained personnel, who are informed 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 OptiAir CA06 Pneumatic-fluidizing unit has been set up and wired according to the guidelines for machinery (2006/42 EG). EN 60204-1 (machine safety) must also be observed.

5. Unauthorized modifications to OptiAir CA06 Pneumatic-fluidizing unit exempts 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 observed.

<table>
<thead>
<tr>
<th>Explosion protection</th>
<th>Protection type</th>
<th>Temperature class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex</td>
<td>IP54</td>
<td>T4 (zone 22)</td>
</tr>
</tbody>
</table>

**Product specific security measures**

**OptiAir CA06 Pneumatic-fluidizing unit**

The OptiAir CA06 Pneumatic-fluidizing unit is a constituent part of the system and is thus integrated into the safety system of the plant.

For the use outside of the safety concept, corresponding measures must be taken!

**Note:**
For further information see the more detailed Gema safety regulations!
About this manual

General information

This operating manual contains all the important information which you require for the working with the OptiAir CA06. 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 - reciprocators, booths, powder gun controls, powder guns etc. - should be referenced to their corresponding documents.
Function description

Field of application

The OptiAir CA06 Pneumatic-fluidizing unit regulates the fluidizing air and Airmover pressure.

By using the OptiAir CA06 Pneumatic-fluidizing unit, the fluidizing air and the air to the Airmover will be regulated separately. The prefluidization is controlled automatically by the integrated solenoid valve (the signal comes from the PLC, OptiControl CM-20 etc.). The exact prefluidization pressure can be set with the pressure regulator in the OptiAir CA06 Pneumatic-fluidizing housing. The prefluidization starts immediately by switching on the interlocking control unit.

The OptiAir CA06 control unit is suitable particularly in combination with the Gema OptiFlex A2 series.
OptiAir CA06 Pneumatic-fluidizing unit - structure

Overview

Pressure indicator for fluidizing air
Pressure indicator for Airmover
Pressure regulator for fluidizing air
Pressure regulator for Airmover

OptiAir CA06 Pneumatic-fluidizing unit - structure
Technical data

OptiAir CA06 Pneumatic-fluidizing unit

### Pneumatic data

<table>
<thead>
<tr>
<th>OptiAir CA06</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Input pressure</td>
<td>7-10 bar</td>
</tr>
<tr>
<td>Compressed air consumption</td>
<td>depending on the powder hopper size</td>
</tr>
<tr>
<td>Water vapor content</td>
<td>max. 1.3 g/m³</td>
</tr>
<tr>
<td>Oil content</td>
<td>max. 0.1 mg/m³</td>
</tr>
</tbody>
</table>

### Electrical data

<table>
<thead>
<tr>
<th>OptiAir CA06</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage (according to the valve coil)</td>
<td>24 VDC</td>
</tr>
<tr>
<td></td>
<td>24 VAC / 50/60Hz</td>
</tr>
<tr>
<td></td>
<td>230 VAC / 50/60Hz</td>
</tr>
</tbody>
</table>

### Dimensions

<table>
<thead>
<tr>
<th>OptiAir CA06</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>244 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>177 mm</td>
</tr>
<tr>
<td>Height</td>
<td>290 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>4.2 kg</td>
</tr>
</tbody>
</table>
Start-up and operation

Setting the fluidization

The powder fluidization depends on the powder type, the air humidity and the ambient temperature.

The OptiAir CA06 Pneumatic-fluidizing unit contains a push button for the prefluidization, as well as a pressure regulator and a manometer for fluidizing air and Airmover.

The OptiAir CA06 Pneumatic-fluidizing unit is connected to a 7-10 bar compressed air circuit.

The fluidization is set as follows:

1. Connect the main compressed air supply and open it. The compressed air flows now through the OptiAir CA06 Pneumatic-fluidizing unit. The fluidization operates immediately by connecting the OptiAir CA06 Pneumatic-fluidizing unit to the compressed air

2. Adjust the compressed air to 7 bar on the pressure reducing valve

3. Check the powder fluidization in the powder hopper. If the powder does not "cook" regularly, push the prefluidization button several times briefly. The compressed air of the prefluidization will loosen the powder. If the powder begins to "cook", adjust the fluidizing air with the corresponding pressure regulator in such a way that the "cooking" spreads evenly on the powder surface. The fluidizing air pressure is monitored on the manometer

Connect the powder hopper Airmover

The fluidizing air produces an overpressure in the powder hopper. This overpressure prevents the powder supply and must be eliminated. For this purpose an Airmover is installed on the powder hopper, which extracts, similarly as an injector, the overpressure and the powder mixed with air.

Therefore, the Airmover produces a depression in the powder hopper. The air volume, which can be extracted by the Airmover, depends on the powder hopper size and the fluidizing air volume.

The Airmover air is to be set, when a powder cloud rises over the powder surface and flows out through the powder hopper openings. The Airmover pressure is set with the corresponding adjusting button and moni-
stored on the manometer. The pressure will be increased so far, until no more powder flows out of the powder hopper.

If these settings are once fixed, they can be left also when work interruptions take place. A reset of the adjusted values is thereby not necessary. The main switch of the OptiFlex A2 (AS04) control system can be switched on now, and the guns can be set and/or operated (see therefore the powder gun and gun control unit manuals).
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 OptiAir CA06 Pneumatic-fluidizing unit,
  Serial number 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 ware 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)

WARNING!
Only original Gema spare parts should be used, because the hazardous location approval will be preserved that way! The use of spare parts from other manufacturers will invalidate the Gema guarantee conditions!
## OptiAir CA06 Pneumatic-fluidizing unit - spare parts

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Code</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>OptiAir CA06 Pneumatic-fluidizing unit - complete</td>
<td>1002 970</td>
<td></td>
</tr>
<tr>
<td>Front frame - complete</td>
<td>1000 393</td>
<td></td>
</tr>
<tr>
<td>Pressure regulator - 359b101-1/4*-6-6</td>
<td>239 852</td>
<td></td>
</tr>
<tr>
<td>Nut - M14x1 mm</td>
<td>302 163</td>
<td></td>
</tr>
<tr>
<td>Button - Ø 28 mm</td>
<td>200 069</td>
<td></td>
</tr>
<tr>
<td>Manometer - 1/8&quot;a, 0-4 bar</td>
<td>235 814</td>
<td></td>
</tr>
<tr>
<td>Connection sleeve - 1/8&quot;i, Ø 6 mm</td>
<td>233 412</td>
<td></td>
</tr>
<tr>
<td>Connection fitting - 3/8&quot;a-3/8&quot;a</td>
<td>202 975</td>
<td></td>
</tr>
<tr>
<td>Booster - 0-8 bar (without valve coil)</td>
<td>384 747</td>
<td></td>
</tr>
<tr>
<td>Valve coil (for pos. 10) - 230 VAC, 50/60 Hz</td>
<td>258 016</td>
<td></td>
</tr>
<tr>
<td>Valve coil (for pos. 10) - 24 VAC, (for controlling by CM-20, PLC etc.)</td>
<td>257 990</td>
<td></td>
</tr>
<tr>
<td>Valve coil (for pos. 10) - 24 VAC, 230 VAC, 50/60 Hz</td>
<td>258 008</td>
<td></td>
</tr>
<tr>
<td>Screw-in nipple - 3/8&quot;a, Ø 10 mm</td>
<td>242 268</td>
<td></td>
</tr>
<tr>
<td>Double nipple - 1/8&quot;a-1/8&quot;a</td>
<td>202 258</td>
<td></td>
</tr>
<tr>
<td>Pressure regulator - 332a002-1/8&quot;, 0-8 bar</td>
<td>239 623</td>
<td></td>
</tr>
<tr>
<td>Elbow joint - 1/8&quot;a, Ø 6 mm</td>
<td>254 061</td>
<td></td>
</tr>
<tr>
<td>Connection sleeve - 3/8&quot;i, Ø 10 mm</td>
<td>259 349</td>
<td></td>
</tr>
<tr>
<td>Schott lead-through - Ø 6 mm, Rapid</td>
<td>241 792</td>
<td></td>
</tr>
<tr>
<td>Cover screw - M4x18/7 mm</td>
<td>1000 192</td>
<td></td>
</tr>
<tr>
<td>Hexagon nut - M4x6/16 mm</td>
<td>1002 967</td>
<td></td>
</tr>
<tr>
<td>Pressure regulator - 359b101-1/4-6-6-6</td>
<td>241 369</td>
<td></td>
</tr>
<tr>
<td>Connecting cable for pos. 11 - 5 m (not shown)</td>
<td>371 173</td>
<td></td>
</tr>
<tr>
<td>Nut with kink protection for pos. 17 (not shown)</td>
<td>201 316</td>
<td></td>
</tr>
<tr>
<td>Plastic tube - Ø 8/6 mm, for pos. 17 (not shown)</td>
<td>103 756*</td>
<td></td>
</tr>
</tbody>
</table>

*Please indicate length*
OptiAir CA06 Pneumatic-fluidizing unit - spare parts
**Hose connections**

1. Plastic hose - Ø 6/4 mm (black) 103 144*
2. Plastic hose - Ø 10/8 mm (black) 103 250*

* Please indicate length

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**Diagram:**

- **Fluidizing air**
- **Airmover**
- **Air input**

Diagram showing connections between fluidizing air, airmover, and air input components.