Operating Instructions and Spare Parts List

OptiMatic 2
Automatic Powder System
(AS02)

Translation of the original operating instructions
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1. Fields of application

The OptiMatic 2 automatic powder system with Gema automatic powder guns is especially designed to meet the demands of production line applications in both manufacturing, and custom electrostatic coating installations, where reliability in automated working, comfortable operation, and safety are the outstanding advantages to the user. The flexible, modular structure of the OptiMatic 2 is readily adaptable to any changes in your installation.

2. Scope of delivery

The scope of delivery depends on the number and composition of the modules (see above).

It is extremely important to follow the "assembly instructions" in this manual, and the operating instructions supplied with every control unit, when setting up and operating the OptiMatic 2 System.
3. Designation

OptiMatic-2

OptiGun A(X)
OptiGun AE Enamel
PG 2-A(X)
PG 2-AE Enamel

OptiMaster Powder Master Control (CM01 / 02)
(for fluidized powder hoppers)
OptiTronic Powder Gun Control (CG02)
Gematic Powder Reciprocator Control (CR03)
OptiPlus-A2 Pneumatic / Fluidizing Unit (CA01)
OptiPlus-C1 Hose Rinsing Control (CC01) (Individual rinsing)
OptiPlus-C2 Hose Rinsing Control (CC02) (Group rinsing)
OptiPlus-P1 Fresh Powder Control (CP01)

OptiFlow Powder Injector (IG02)
PI 3-V Powder Injector - Vertical connections
PI 3-H Powder Injector - Horizontal connections
PI 4-V Powder Injector - Vertical connections with a rinsing air connection
EI 1-V Enamel Injector - Vertical connections
EI 1-H Enamel Injector - Horizontal connections

PH 4-1
PH 50-2/4/8
PH 100-12
PH 150-24
PH 200-32

Number of injectors
Capacity in litres
4. General information

This is general information, for more detailed information see corresponding Operating Instructions

4.1 Mains supply

- The Mains supply is the local voltage. See also Wiring diagram
- The mains frequency can be 50 or 60 Hz.
- Adding the connected load of the individual units together gives the total connected load for the complete system.
- All electrical components correspond to the IP 54 type of protection.

4.2 Compressed air

- The equipment only requires a compressed air supply on the main compressed air network (Main air input and compressed air distributor)
- An OptiPlusA1 unit is always fitted to monitor the fluidizing air.
- The following values for compressed air must be maintained:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input pressure</td>
<td>6-10 bar</td>
</tr>
<tr>
<td>Max. water vapour</td>
<td>1.3 g/m³</td>
</tr>
<tr>
<td>Max. oil vapour</td>
<td>0.1 mg/kg</td>
</tr>
</tbody>
</table>

For a faultless functioning of the OptiTronic Control units CG02 the main compressed air input pressure must be set at exactly 5.0 bar. Pressure regulator/Filter unit is placed at the rear of the OptiMatic 2 control cabinet.
5. Setting up the OptiMatic-2 Automatic Powder System

5.1 Possibilities

- Up to 13 control module units can be fitted.
- OptiMatic 2 cabinets can only be mounted side by side (without a gap) or with one side against a wall.
- Openings which are not used should be sealed with a coverplate. When the OptiMatic 2 system is extended the coverplate can easily be unscrewed.
5.2 Assembly instructions

- After unpacking and assembling the OptiMatic 2 System the control cabinet must be fitted to the floor with the steel bolts supplied. The fixing holes are found in the base at the rear of the cabinet.
- Internal connections have already been made at the factory, connections to control units of external plant must, however, be made before starting up. The connection possibilities for individual control units are found in the accompanying operating instructions.
- When connecting the pneumatic hoses in the control cabinet their lengths, and radii should be specially taken into account!

5.3 OptiTronic Control CG02 Power Supply

⚠️ NOTICE

OptiTronic Control CG02 may only be connected to a 24 VDC power supply.

The OptiTronic Control units are only suitable for power supplied from a special Power Main Board. The Power Main Board can be fitted with a maximum of 12 power modules (1 power module per OptiTronic). When retrofitting the equipment with each OptiTronic Control unit a further Power module has to be ordered, which can be easily inserted onto the Power Main Board.
6. Electrical diagrams

6.1 Block diagram: OptiTronic Control System without CANBus
24 V DC
External Supply for all Digital In / Outputs

DataBus - 11 Bit
8 Bit Desired value
3 Bit ID No.

1-12 Guns
Collective error message

1-12 Guns
Remote / Manual

1-12 Guns
System ON / OFF Strobe
6.3 Block diagram - Power Main Board for OptiTronic Control unit CG02

Fig. 5
7. **Spare Parts List**

7.1 **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:** OptiMatic-2  
   **Serial no:** XXXX XXXX

2. **Order no:** 234 265  
   1 piece,  
   Sealing gasket

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

The spare part number of yard/ metre ware always begins with 1... ... .

All wear parts are marked with a #.

All dimensions of plastic hoses are given as external and internal diameters:  
e.g. ø 8 / 6 mm = 8 mm outside diameter (o/d) / 6 mm inside diameter (l/d).
### OptiMatic-2 - Switch Cabinet

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Drawer holder - large (left)</td>
<td>380 890</td>
</tr>
<tr>
<td>2</td>
<td>Roller guide (left)</td>
<td>342 041</td>
</tr>
<tr>
<td>3</td>
<td>Escutcheon plate - small</td>
<td>341 991</td>
</tr>
<tr>
<td>4</td>
<td>Door lock</td>
<td>239 887</td>
</tr>
<tr>
<td>5</td>
<td>Key (for items 4 and 9)</td>
<td>259 908</td>
</tr>
<tr>
<td>7</td>
<td>Drawer holder - large (right)</td>
<td>380 881</td>
</tr>
<tr>
<td>8</td>
<td>Roller guide (right)</td>
<td>342 050</td>
</tr>
<tr>
<td>9</td>
<td>Door lock</td>
<td>239 887</td>
</tr>
<tr>
<td>11</td>
<td>Rear wall panel</td>
<td>341 606</td>
</tr>
<tr>
<td>13</td>
<td>Stud</td>
<td>302 198</td>
</tr>
<tr>
<td>15</td>
<td>Pressure regulator/Filter unit - complete (see also page 12)</td>
<td>381 721</td>
</tr>
<tr>
<td>16</td>
<td>Double adapter - 1/2&quot;</td>
<td>343 170</td>
</tr>
<tr>
<td>17</td>
<td>Clamp nut - 1/2&quot;</td>
<td>239 884</td>
</tr>
<tr>
<td>18</td>
<td>Solenoid valve - 24 VAC</td>
<td>264 423</td>
</tr>
<tr>
<td></td>
<td>Solenoid valve - 24 VDC on request</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solenoid valve - 230 VAC</td>
<td>259 500</td>
</tr>
<tr>
<td></td>
<td>Solenoid valve - 110 VAC</td>
<td>on request</td>
</tr>
<tr>
<td>19</td>
<td>Double adapter - 1/2&quot;</td>
<td>202 436</td>
</tr>
<tr>
<td>20</td>
<td>Distributor block - 10x ø 8 mm</td>
<td>343 250</td>
</tr>
<tr>
<td>21</td>
<td>Air connection ring - 3/8&quot;</td>
<td>241 970</td>
</tr>
<tr>
<td>22</td>
<td>Double adapter - 3/8&quot;</td>
<td>242 020</td>
</tr>
<tr>
<td>23</td>
<td>Cap nut - 3/8&quot;</td>
<td>203 157</td>
</tr>
<tr>
<td>24</td>
<td>Hose nipple - ø 10 mm</td>
<td>203 165</td>
</tr>
<tr>
<td>25</td>
<td>Solaflex hose - ø 16 / 10 mm</td>
<td>100 498*</td>
</tr>
<tr>
<td>26</td>
<td>Hose clamp ring</td>
<td>203 386</td>
</tr>
<tr>
<td>27</td>
<td>Air connection adapter - 3/8&quot;</td>
<td>241 997</td>
</tr>
<tr>
<td>28</td>
<td>Air connection ring - ø 8 mm</td>
<td>241 989</td>
</tr>
<tr>
<td>29</td>
<td>Air connection adapter - 3/8&quot;</td>
<td>242 004</td>
</tr>
<tr>
<td>30</td>
<td>Plug - ø 8 mm</td>
<td>236 023</td>
</tr>
<tr>
<td>31</td>
<td>Plug screw</td>
<td>203 319</td>
</tr>
<tr>
<td>32</td>
<td>Cover plate - for large drawer unit</td>
<td>380 903</td>
</tr>
<tr>
<td>33</td>
<td>Floor plate - for large drawer unit</td>
<td>380 920</td>
</tr>
<tr>
<td>34</td>
<td>Front plate - large</td>
<td>380 911</td>
</tr>
<tr>
<td>35</td>
<td>Drawer holder - small (left)</td>
<td>342 009</td>
</tr>
<tr>
<td>36</td>
<td>Drawer holder - small (right)</td>
<td>342 017</td>
</tr>
<tr>
<td>40</td>
<td>Mounting plate - empty</td>
<td>345 490</td>
</tr>
<tr>
<td>41</td>
<td>Mounting plate - empty</td>
<td>368 660</td>
</tr>
<tr>
<td>42</td>
<td>Mounting plate - empty</td>
<td>346 276</td>
</tr>
</tbody>
</table>

* Indicate length required

1 For electrical components see accompanying wiring diagram
7.3 Pressure regulator/Filter unit

Pressure regulator / Filter unit - complete 381721

1. Filter unit - G1/2 262943
2. Pressure regulator - 0.05-10 bar 262935
3. Pressure gauge - 1/8"a - 0-10 bar 259179
4. Adapter - 1/2"i - 1/2"i 202622
5. Adapter - 1/8"i - 1/4"a 231932
6. Double nipple - 1/2"a - 1/2"a 243540
7. Double nipple - 1/2"a - 1/2"a detachable 243582
8. Double nipple - 1/2"a x 150 mm 602183
9. Adapter - 1/2"a - 1/2"i 223166
10. Adapter - 1/2"i - 1/2"i 252867
11. Hose connection - D17.0 mm - 1/2"a 223069
12. Plug screw - 1/4"a 258695

Fig. 7
7.4 Power Main Board

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power Main Board - for 12 guns</td>
<td>383 660</td>
</tr>
<tr>
<td>2</td>
<td>Power Module - 1x per gun</td>
<td>383 686</td>
</tr>
<tr>
<td>3</td>
<td>Transformer - 300 VA (prim. 100 V) for 12 guns</td>
<td>384 925</td>
</tr>
<tr>
<td></td>
<td>Transformer - 300 VA (prim. 115 V) for 12 guns</td>
<td>383 856</td>
</tr>
<tr>
<td></td>
<td>Transformer - 300 VA (prim. 200 V) for 12 guns</td>
<td>384 984</td>
</tr>
<tr>
<td></td>
<td>Transformer - 300 VA (prim. 230 V) for 12 guns</td>
<td>383 864</td>
</tr>
<tr>
<td></td>
<td>Transformer - 300 VA (prim. 400 V) for 12 guns</td>
<td>383 872</td>
</tr>
<tr>
<td></td>
<td>OptiTronic CG 02 Power supply cable - 5m</td>
<td>381 756</td>
</tr>
<tr>
<td></td>
<td>OptiTronic CG 02 Power supply cable - 20m</td>
<td>382 000</td>
</tr>
</tbody>
</table>

Fig. 8
### 7.5 CD02 Digital Connector

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CD02 Digital Connector - for 12 guns</td>
<td>382 825</td>
</tr>
<tr>
<td>2</td>
<td>Digital cable - 19 pin - 4.5 m</td>
<td>1000 934</td>
</tr>
<tr>
<td></td>
<td>Digital cable - 19 pin - 5.5 m</td>
<td>1000 935</td>
</tr>
<tr>
<td></td>
<td>Digital cable - 19 pin - 6.5 m</td>
<td>1000 936</td>
</tr>
</tbody>
</table>

![Image of CD02 Digital Connector](image_url)
7.6 OptiMatic 2: Grounding connection

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Studding - M6x50 mm</td>
<td>301 159</td>
</tr>
<tr>
<td>5</td>
<td>Nut</td>
<td>200 417</td>
</tr>
<tr>
<td>6</td>
<td>Washer - M6</td>
<td>200 476</td>
</tr>
<tr>
<td>7</td>
<td>Shakeproof washer</td>
<td>200 450#</td>
</tr>
<tr>
<td>8</td>
<td>Grounding cable</td>
<td>301 140</td>
</tr>
<tr>
<td>9</td>
<td>Milled nut</td>
<td>200 433</td>
</tr>
</tbody>
</table>

Rear view

# Wear Part

Fig. 10
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