Translation of the original Operating manual

Plastic Booth for Fast Booth Cleaning

DANGER
High-Voltage!
Turn power off before servicing!

CAUTION
Read rules for safe operation and instructions carefully!

SuperCube Booth

CERTIFIED
The SuperCube plastic booth is designed for a quick manual color change. It is suitable for automatic coating in multi-color operation, for coating operations with small and large piece numbers.

The booth is designed in different sizes with suitable apertures for coating different parts. The spray guns are supplied directly from a powder container or from a powder feed center.

Insufficiently coated and/or difficult parts of the work piece are recoated at this manual coating point. For this, the booth can be equipped with exterior manual coating points and a folding wall which can be opened to one or other sides by 90° or is fixed, depending on the model.

If the booth does not have any exterior manual coating point, an aperture on the front side is closed with a sliding door.

The booth walls and doors are manufactured from a special non-conducting plastic material.

The powder spray booth, with its integrated powder recovery system, meets the regulations for electrostatic powder coating and recovery and can be used for continuous operation.
A fixed, PVC sandwich construction serves as the floor. Powder is discharged automatically and continuously with blast rods in the booth. The suction slits for booth air are located on the sides of the booth floor.

The powder recovered in the cyclone unit 7 is conveyed back to the powder feed center 1. This closes the powder circuit. A small part of the fine particle fraction penetrates through to the final filter device 10/11 and is captured there.
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Safety regulations</td>
<td>6</td>
</tr>
<tr>
<td>1.1 Safety hints</td>
<td>6</td>
</tr>
<tr>
<td>1.2 Safety functions</td>
<td>8</td>
</tr>
<tr>
<td>1.3 Safety features</td>
<td>8</td>
</tr>
<tr>
<td>1.4 EU Declaration of conformity</td>
<td>11</td>
</tr>
<tr>
<td>2. Preparation for starting up the plant</td>
<td>12</td>
</tr>
<tr>
<td>2.1 Transport, handling and assembly of the plant</td>
<td>12</td>
</tr>
<tr>
<td>2.2 Supply connections</td>
<td>12</td>
</tr>
<tr>
<td>2.3 Requirements to be met by the place of installation</td>
<td>13</td>
</tr>
<tr>
<td>2.4 Control and plant settings</td>
<td>13</td>
</tr>
<tr>
<td>2.5 Grounding</td>
<td>13</td>
</tr>
<tr>
<td>2.6 Fire detection and fire extinguishing measures</td>
<td>14</td>
</tr>
<tr>
<td>2.7 Internal cleaning of booth and reviving plastic booth walls before initial start up</td>
<td>14</td>
</tr>
<tr>
<td>3. Operation</td>
<td>15</td>
</tr>
<tr>
<td>3.1 Switching on the plant</td>
<td>15</td>
</tr>
<tr>
<td>3.2 Manual coating</td>
<td>16</td>
</tr>
<tr>
<td>3.3 Switching off the plant without cleaning</td>
<td>17</td>
</tr>
<tr>
<td>3.4 Performing a color change</td>
<td>17</td>
</tr>
<tr>
<td>4. Maintenance and cleaning</td>
<td>20</td>
</tr>
<tr>
<td>4.1 Cleaning instructions</td>
<td>20</td>
</tr>
<tr>
<td>4.2 Maintenance of the booth</td>
<td>21</td>
</tr>
<tr>
<td>4.3 Internal booth cleaning and reviving plastic booth walls</td>
<td>22</td>
</tr>
<tr>
<td>4.3.1 Reviving plastic booth walls after extensive use</td>
<td>23</td>
</tr>
<tr>
<td>4.3.2 Cleaning procedure</td>
<td>24</td>
</tr>
<tr>
<td>4.4 Cleaning the individual components</td>
<td>25</td>
</tr>
<tr>
<td>4.4.1 Blowing out powder hoses and guns</td>
<td>26</td>
</tr>
<tr>
<td>4.4.2 Cleaning the powder center and the filter of the powder center</td>
<td>26</td>
</tr>
<tr>
<td>4.4.3 Cleaning the guns and the booth</td>
<td>26</td>
</tr>
<tr>
<td>4.4.4 Cleaning the cyclone screen</td>
<td>27</td>
</tr>
<tr>
<td>4.4.5 Emptying the residual powder container in the final filter</td>
<td>27</td>
</tr>
<tr>
<td>4.4.6 Recommissioning the powder center</td>
<td>27</td>
</tr>
<tr>
<td>4.5 Disposal</td>
<td>28</td>
</tr>
<tr>
<td>5. Rectification of malfunctions</td>
<td>29</td>
</tr>
<tr>
<td>6. Spare parts lists and accessories</td>
<td>30</td>
</tr>
<tr>
<td>6.1 How to order spare parts</td>
<td>30</td>
</tr>
<tr>
<td>6.2 Spare parts</td>
<td>30</td>
</tr>
<tr>
<td>6.3 Cleaning accessories</td>
<td>32</td>
</tr>
<tr>
<td>7. Technical data</td>
<td>33</td>
</tr>
<tr>
<td>7.1 Booth</td>
<td>33</td>
</tr>
<tr>
<td>7.2 Suction system</td>
<td>34</td>
</tr>
<tr>
<td>8. Warranty</td>
<td>35</td>
</tr>
</tbody>
</table>
This manual contains information and hints for the service, repair and maintenance of the equipment. The user must obey all the rules of operation found in this manual; failure to do so will render the warranty invalid.

Wagner powder systems are designed to meet the most stringent safety requirements. They can be operated in compliance with generally applicable safety codes and applicable national safety regulations.

Please pay particular attention to the parts marked by the following symbols. Follow the instructions exactly, in the interests of both your own safety and the correct functioning of the unit.

**Warning**

This symbol draws attention to the fact that if the operating instructions, working instructions, prescribed working sequences etc. are not followed exactly; this can lead to injury or even fatal accidents.

**Caution**

This symbol indicates that failure to follow the operating instructions, working instructions, prescribed working sequences etc. exactly can lead to material damage.

**Hint**

This symbol draws your attention to useful additional information and tips. Failure to observe these instructions can cause malfunctions.
1. Safety regulations
1.1 Safety hints

**Warning**

This equipment can be dangerous if it is not operated in accordance with this operating manual!
There might be additional regulations to be observed, put into effect by governmental, state or other official agencies or local security (fire) departments!

The following rules must be observed in order to ensure a safe and efficient use of the equipment:

- **Under no circumstance may persons with a cardiac pacemaker come close to the area between the tip of the spray gun and the work piece to be coated!**
- **The user has to observe particularly the safety guidelines of the VdS or the local professional and security institutions.**
- The user has to make sure, that the average powder/air concentration does not exceed 50% of the LEL (maximum allowed concentration of powder in air). If a reliable LEL value is not available, the average powder/air concentration may not exceed 10 g/m³.

If the powder concentration exceeds the permissible values when the total powder discharge is high, the user must contact the powder manufacturer. In this case, when the LEL value is determined accurately, generally the permissible maximum powder concentration is significantly higher.

The following table shows the recommended values:

<table>
<thead>
<tr>
<th>Max. total powder output quantity [g/h]</th>
<th>Output per gun 150 g/min</th>
<th>Output per gun 300 g/min</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Allowed powder/air concentration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>unchecked powder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 000 m³/h</td>
<td>10 g/m³</td>
<td>120 000</td>
</tr>
<tr>
<td>checked powder e.g. LEL ≥ 40 g/m³</td>
<td>20 g/m³</td>
<td>240 000</td>
</tr>
<tr>
<td>unchecked powder</td>
<td>10 g/m³</td>
<td>160 000</td>
</tr>
<tr>
<td>checked powder e.g. LEL ≥ 40 g/m³</td>
<td>20 g/m³</td>
<td>320 000</td>
</tr>
</tbody>
</table>
Safety regulations

<table>
<thead>
<tr>
<th>20 000 m³/h</th>
<th>unchecked powder</th>
<th>10 g/m³</th>
<th>200 000</th>
<th>max. 22 guns</th>
<th>max. 11 guns</th>
</tr>
</thead>
<tbody>
<tr>
<td>checked powder e.g. LEL ≥ 40 g/m³</td>
<td>20 g/m³</td>
<td>400 000</td>
<td>6 666</td>
<td>max. 44 guns</td>
<td>max. 22 guns</td>
</tr>
</tbody>
</table>

For guaranteed LEL values higher than 40 g/m³, the permissible number of guns increases accordingly.

- The main power connection for operation of the Wagner powder equipment **must** be electrically interlocked with the exhaust system of the powder coating booth.
- All individual booth components **must** be grounded according to the regulations.
- **Grounding cables must** be checked regularly for proper functioning (see EN 60204)!
- In the event of faults or defects, repair work is to be performed at the user's discretion.
- Specially trained personnel may only carry out repairs.
- Repairs must never be performed in an explosion-hazard area.
- The work area must have an electrostatically conductive floor (measured in accordance with EN 1081)
- All conductive parts in the work area must be electrostatically grounded (work area = 1 m around every spray location or opening in the booth).
- All persons inside the work area must wear electrostatically conductive footwear.
- Gloves are not to be worn! If gloves are used they **must** be made of conductive material.
- For removal of powder deposits use only mobile industry vacuum cleaners of protection class 1 (see ZH 1/487 for C-powder).
- The entering of the booth during the operation is forbidden.
- Suitable fire extinguishing equipment should be provided and maintained in perfect working order in rooms or areas where there is a risk of fire.

**Wear suitable work clothing**
- **Use breathing protection for work, which produces powder**
- **When entering the booth with fixed floor, always use the grounding strap supplied by the manufacturer!**
- **While coating, do not bend into the inner part of the booth!**
  If necessary, use an extension for the manual spray gun!
- **Check your equipment for damage**
  Before using the system; carefully inspect slightly worn parts for proper operation. Check whether the moving parts operate properly, whether they jam and whether parts are damaged.
  Damaged parts should be repaired or replaced by a Wagner customer service.
• **Risk of slipping:**
  Clean the floor sheet and shoes regularly.
  Make sure that the area around the person carrying out manual coating is clean!
  It is necessary to clean the area surrounding the booth regularly!

• **Risk of tripping:**
  You may step on the booth floor only after it has been cleaned!
  Before entering the booth, secure the drive motor against automatic start-up!

• **Risk of injury:**
  Do not bypass safety devices on reciprocators!

• **Risk of injury:**
  The surface temperature of the drive motor of the conveyor belt can reach 90 °C, depending on the operating circumstances.

• **Danger of explosion:**
  No connectors may be removed during operation!

• **Atex: (EWG 94/9)**
  This unit is suitable for use in zone 22 (ExII3D).

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**Warning**

For your own safety, use only accessories and equipment listed in the operating manual. The use of individual parts other than those recommended in the operating manual may create a hazard to personal safety.

*Use only original Wagner replacement parts!*

*Alteration or repair of Wagner original spare parts may cause fatal accidents or explosions in the coating system!*

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### 1.2 Safety functions

The powder coating booth has the following safety devices:

- Lock for the booth control with the exhaust system.
- Safety door mechanism for the changeover wall: an electrical control unit controls the valves of the changeover wall, ensuring that the wall cannot be detached from the booth.
- Safety screens with mechanical or electrical lock are necessary for movable devices (not necessarily included in the items supplied by Wagner).
- Locking of the conveyor belt when the work piece inlet or outlet is closed.
- Connection to the fire alarm system.

### 1.3 Safety features

Plates bearing information for the user have been attached to the access and work openings of the powder coating booth. The following symbols have been used:

- The plate size corresponds to the standard category \( \varnothing \) 100 mm.

The label plates, which must be attached, are shown below.
Risk of falling down

Forbidden for persons with a cardiac pacemaker

Explosive atmosphere

Fire, open light and smoking prohibited

Follow the instructions in the operating manual

Wear electrostatically conductive footwear
<table>
<thead>
<tr>
<th>HAZARD</th>
<th>PREVENTION</th>
</tr>
</thead>
</table>
| Electrostatic arcing may cause an explosion or fire. Mixtures of powder and air can explode or ignite causing property damage and/or severe injury. | - Operator must be grounded. Grounding straps must be used when wearing rubber soled shoes.  
- Operator must remove all metallic objects from his or her person, which are not grounded.  
- The object being sprayed must be grounded.  
- All metallic objects within the spray area must be grounded (including spray booth, part hangers, fire extinguishers, etc.)  
- Grounded conductive floor must be provided in spray area.  
- Turn off the Power Pack and unplug from outlet before flushing out the gun, cleaning or replacing parts on the gun such as changing tips.  |
| Explosion or fire. Mixtures of powder and air can explode or ignite causing property damage and/or severe injury. | - Exhaust and fresh air introduction must be provided to keep the air within the spray area free of accumulation of flammable atmosphere.  
- Smoking must not be allowed in spray area.  
- Fire extinguishing equipment must be present and in working order.  
- Electrostatic arcing must be prevented. (See Electrostatic arcing)  
- When cleaning the system, use only materials recommended by the coatings manufacturer. Be sure Power Pack is turned off and unplugged.  
- Avoid all ignition sources such as static electricity sparks, open flames such as pilot lights, hot objects such as cigarettes and sparks from connecting and disconnecting power cords and working light switches.  
- To prevent hazardous concentrations of flammable atmospheres, spray only in a properly ventilated spray booth.  
- Never operate spray gun unless ventilation fans are operating properly.  
- Check and follow all National, State and Local codes regarding air exhaust velocity requirements.  
- Ventilation must be maintained during the cleaning operation.  |
| Toxic Substances: Some materials may be harmful if swallowed or come in contact with the skin. | - Follow the requirements of the Material Safety Data Sheet supplied by the coatings manufacturer.  
- Exhaust and fresh air introduction must be provided within the spray area to keep the air free of high powder accumulations.  
- Wear a mask or respirator. Read all instructions for the mask to insure that it will provide the necessary protection against the inhalation of powder.  |
| General | - Read all instructions and safety precautions before operating.  
- Comply with all appropriate local, state and national codes governing ventilation, fire prevention, and operation of Electrostatic equipment usage.  
- The United States Government Safety Standards have been adopted under the Occupational Safety and Health Act. These standards, particularly the General Standards, Part 1910 and the Construction Standard, Part 1926, should be consulted.  
- NFPA Standard No. 33 is to be followed when setting up your spray area. Contact the National Fire Protection Association, Batterymarch Park, Quincy, Massachusetts, 02269 for more information.  
- Check with insurance company for additional requirements.  
- Use only identical replacement parts.  
- Personnel must be given training in accordance with the requirements of NFPA Standard No. 33 chapter 18.  
- It is the duty of all personnel responsible for the spray equipment operation and maintenance to read and understand all safety information furnished with this equipment.  |
1.4 EU Declaration of conformity

The Wagner Company declares herewith that the unit described in this Operating manual has been developed and manufactured in compliance with the pertinent directives:

- 42/2006/EG (Machinery directive)
- 94/9/EG (Equipment and safety systems intended for use in potentially explosive atmospheres)
- 2004/108/EG (Electromagnetic compatibility)

The following European standards were applied:

- DIN EN ISO 12100: 2011
- DIN EN 1127-1: 2008
- DIN EN 349: 2008
- DIN EN ISO 14121: 2007
- DIN EN 13463-1: 2009
- DIN EN 12981: 2010
- DIN EN 60204-1: 2009
- DIN EN 13463-5: 2004
- DIN EN 50050: 2011
- DIN EN ISO 13489-1: 2008

The following German standards and/or Guidelines were applied:

- BGI 764

The product includes an EU declaration of conformity. This can be ordered again if necessary from your WAGNER dealer by giving details of the product and serial number involved.

The number of the EU declaration of conformity is 3304093.
2. Preparation for starting up the plant

2.1 Transport, handling and assembly of the plant

The powder coating booth is delivered in parts to the place of installation. Assembly is performed on site.

Normally, the delivery consists of a pre-mounted basic frame and pallets with packed elements.

The pallets must be moved with standard industrial trucks. The basic frame has support points for forklift arms. They can be used for transport on the floor and for attaching ropes.

To transport the parts to the place of installation, there must be an opening with a width of minimum 2500 mm. There must also be sufficient space in front of and behind the opening to maneuver parts with a length of up to 8000 mm. However, this length depends on the system in question.

The system is assembled according to special assembly and service instructions.

During all transport, handling and assembly activities, the related safety measures stipulated (safety clothing, aids, etc.) are to be observed.

Transport conditions:

- Allowed air temperature: +41 °F to max. +104 °F (+5 °C to max. +40 °C)
- Allowed plastic surface temperature: +41 °F to max. +104 °F (+5 °C to max. +40 °C)
- Relative humidity: < 75%

2.2 Supply connections

Electrical:

- Three-phase current connection: 220-240 / 380-420 V at 50 Hz (or IEC 38)
- System Ground (strip or ground rod): according to VDE 0141 low impedance with NYAF >16 mm²

Pneumatic:

- Compressed air connection: 87 ... 116 psi (6 - 8 bar)
- Compressed air quality according to ISO 8573-1, (class 3.5.2):
  - Residual water in the compressed air: max. 1.3 g H₂O/Nm³ at a pressure dew point of +44.6 °F (+7 °C) and 700 kPa
  - Residual oil in the compressed air: max. 0.1 mg oil/Nm³
  - Residual dust in the compressed air: max. 5 mg dust/Nm³
  - Particle size in the compressed air: max. 5 μm

Compressed air requirement:

The compressed air requirement for gun blow-off significantly depends on the number of gun slits and the color change frequency. Therefore, it is not possible to specify an exact value for the compressed air requirement. The specified compressed air requirement figures for floor cleaning are estimated values.

<table>
<thead>
<tr>
<th>Number of slits per booth side</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic floor cleaning [m³/h]</td>
<td>4.8</td>
<td>4.8</td>
<td>4.8</td>
</tr>
</tbody>
</table>
2.3 Requirements to be met by the place of installation

- The plastic booth may not be installed in rooms with high temperatures. Powders with a gelling tendency should be processed at low temperatures. If low temperature curing powders are used the ambient temperature has to be lower than 95 °F (35 °C). Please observe the specifications of the powder manufacture.
- Relative humidity must not exceed 75%.
- A minimum distance of 1.00 m must exist between the final filter unit blowout aperture and the ceiling.
- The free movement area at the work place should be at least 1.5 m² and at no place less than 1.00 m wide.

Conditions for installation and operation:

- Allowed air temperature: +41 °F to max. +104 °F (+5 °C to max. +40 °C)
- Allowed part surface temperature: +41 °F to max. +122 °F (+5 °C to max. +50 °C)
- Allowed plastic surface temperature: +41 °F to max. +104 °F (+5 °C to max. +40 °C)
- Air currents near the booth: < 0.1 m/sec
- Relative humidity: < 75%

2.4 Control and plant settings

Caution
Pay attention to the operating manual of the control cabinet for controlling and starting up the system.

- For a detailed description of the control, see the special, enclosed operating manual of the control.
- The powder coating booth offers various setting possibilities on the booth control cabinet as well as on the devices attached to the booth. These setting possibilities are described in detail in the corresponding, enclosed operating manuals.
- The air pressure for gun blow-off may not exceed 2.5 bar (36.3 psi) in order to keep the noise within the prescribed limits.

2.5 Grounding

For security reasons, the floor respectively the basis rack of the plastic booth must be properly grounded. The use of a minimum 16 mm² cooper cable with sufficient mechanical strength is recommended for the connection to the System Ground.

In order to achieve a good powder coating, proper grounding for the work piece is absolutely essential. A poorly grounded work piece causes:

- Very bad wrap-around
- Uneven coating
- Back-spray onto spray gun and user
- Dangerous electric charging of the work piece
Warning

Sparks between work piece and conveyor hooks (hangers) can occur if hooks or other hanger parts are not completely cleaned! These sparks can cause heavy radio frequency interference.

Preconditions for good grounding as well as coating are:

- Electroconductive conveyor up to the transport device for the work piece to be coated.
- The customer must connect the powder booth, the transport device and the conveyor with a copper wire, minimum cross sectional area 16 mm$^2$, to the System Ground.
- Regular cleaning of the conveyor to remove powder deposits.
- A grounding resistance of the work piece of maximum 1 M$\Omega$ (Mega Ohm).
- The connection of a Ground Strap to the control unit or control cabinet.

Warning

Before entering the inner part of the booth (booth without powder discharge belt), the operator must wear the supplied grounding strap on the wrist and ensure that the grounding cable is properly connected to the grounding point of the booth and the grounding strap!

Caution

The control must be electrically interlocked with the exhaust air! Conductive parts (tools) may not be left unattended! Ground conductive parts!
Wear conductive shoes! Do not wear insulated gloves! Persons with cardiac pacemakers may not stand in the spray area!

2.6 Fire detection and fire extinguishing measures

The booth must be prepared for the installation of flame detectors. At fire detection a quenching gas is released into the booth to suffocate the fire. See operating manual of the fire extinguishing system.

Warning

The flame detection and fire extinguishing systems must be ordered and installed separately. These systems are not included in the standard scope of delivery of the booth.

2.7 Internal cleaning of booth and reviving plastic booth walls before initial start up

Caution

Before initial start-up, the powder coating booth must be cleaned thoroughly. This must be done to remove any dirt and production/assembly residues.
During the cleaning procedure, it is also very important to remove electrostatic charge from inner surfaces!

The procedure is described in chapter 4.3 of this manual.
3. **Operation**

### Caution

To achieve best coating results, it is absolutely necessary to degrease the booth and clean the walls from the inside before start-up or after a long shutdown period!

The procedure is described in chapter 4.2 of this manual.

3.1 **Switching on the plant**

![Diagram of the SuperCube Booth](image)

Proceed as follows:

<table>
<thead>
<tr>
<th>Step</th>
<th>Operation</th>
</tr>
</thead>
</table>
| 1    | **Control cabinet final filter**  
- Activate exhaust system 2.  
- Wait until the start-up procedure is completed and the signal lamp "Booth OK" lights up on the high-voltage control cabinet 6. |
| 2    | **Powder feed center 12**  
- Switch on main switch.  
- Check if peristaltic powder conveyor is turned on.  
- Leave the powder center switched to "Manual operation".  
- Align and secure the container on the circuit powder vibrator table.  
- Switch powder feed center to "Automatic".  
- Switch on screen vibrator. |
### Step 3: Control cabinet high-voltage

<table>
<thead>
<tr>
<th>Step</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td><strong>Control cabinet high-voltage 6</strong></td>
</tr>
<tr>
<td></td>
<td>• Switch on control system.</td>
</tr>
<tr>
<td></td>
<td>• If an error is displayed, acknowledge and remedy.</td>
</tr>
<tr>
<td></td>
<td>• Switch on reciprocators 11.</td>
</tr>
<tr>
<td></td>
<td>• Switch on high-voltage.</td>
</tr>
<tr>
<td></td>
<td>• The powder discharge belt is automatically activated when the switch is in the switch-on position.</td>
</tr>
<tr>
<td></td>
<td>• The floor cleaning of the fixed floor is automatically activated when the switch is in the switch-on position.</td>
</tr>
<tr>
<td></td>
<td>• Switch from &quot;Manual-Auto&quot; to &quot;Manual&quot;.</td>
</tr>
<tr>
<td></td>
<td>• Switch on spray guns 10 and check their function.</td>
</tr>
<tr>
<td></td>
<td>• Switch from &quot;Manual-Auto&quot; to &quot;Auto&quot;.</td>
</tr>
</tbody>
</table>

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### 3.2 Manual coating

The manual coating point allows the operator to manually correct or complete the coating of work pieces before or after automatic coating.

**External manual coating point:**

- The person carrying out manual coating stands on a platform outside the booth and has direct access to the work piece.
- For manual coating, he/she must move the gun at the correct distance with regard to the work piece (see operating manual of the gun).

The booth should be entered with the access points provided for this purpose. If this access point is the manual coating point, powder must be removed from the manual coating platform and the booth floor before entering the booth.

**Hint**

- Normally, it is not necessary to enter the booth!
- Before entering the booth, **secure it against start-up**!
- Before entering the booth, **wear the wrist-band**!
- Do **not** jump into the booth!
- Before entering the booth, **blow off the powder** from the booth floor!
3.3 Switching off the plant without cleaning

Proceed as follows:

<table>
<thead>
<tr>
<th>Step</th>
<th>Operation</th>
</tr>
</thead>
</table>
| 1    | Control cabinet final filter  
|      | • Switch off final filter system 2.  
|      | → The screen vibrator and **high-voltage** functions are turned off automatically. |
| 2    | Powder feed center 12  
|      | • Switch from "Manual-Auto" to "Manual".  
|      | • Switch off peristaltic powder conveyor.  
|      | • Switch off powder center according to separate operating manual. |

3.4 Performing a color change

All powder transporting components of the entire coating system **must** be cleaned *thoroughly* when changing colors.

**Caution**

The booth and powder center exhaust systems **must** remain *switched on* during the entire cleaning procedure.

If a switch is made from Tribo to Corona coating, the booth **must** be **neutralized**. This means that the booth **must be cleaned with demineralized water**.

The following diagram provides a brief overview of the cleaning procedure. The procedure is described in detail after the diagram.
Two people are required for a quick color change. The numbers in the table indicate the order of steps.

The following table describes the steps to be performed by two operators during the cleaning procedure.

<table>
<thead>
<tr>
<th>Operator 1</th>
<th>Operator 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control cabinet high-voltage 6</strong></td>
<td><strong>Powder feed center 12</strong></td>
</tr>
<tr>
<td>- Switch off spray guns 10 and reciprocators 11.</td>
<td>- Switch off peristaltic powder conveyor.</td>
</tr>
<tr>
<td>- Switch off the high-voltage and secure against unauthorized reactivation.</td>
<td>- Switch powder feed center to &quot;Manual&quot;.</td>
</tr>
<tr>
<td>- Switch from &quot;Manual-Auto&quot; to &quot;Manual&quot;.</td>
<td>- Position an empty container on the circuit powder vibrator table and hang the hose of the peristaltic conveyor in the container.</td>
</tr>
<tr>
<td>- Switch off floor blow-off.</td>
<td>- Switch on again peristaltic powder conveyor.</td>
</tr>
<tr>
<td><strong>Manual coating point 8</strong></td>
<td><strong>Powder feed center 12</strong></td>
</tr>
<tr>
<td>- Vacuum manual coating point 8 or blow fresh powder in the booth (floor, wall and ceiling).</td>
<td>- Move the powder center suction system downwards.</td>
</tr>
<tr>
<td>- From the exterior manual coating point 8, clean the spray wall and the roof from top to bottom and from the outside to the inside with the jet blast unit.</td>
<td>- Switch on the injector cleaning system on the powder center.</td>
</tr>
<tr>
<td>- Also clean the floor from the outside to the inside with the jet blast unit.</td>
<td></td>
</tr>
<tr>
<td>- Clean the rear wall and the floor with a mop, depending on the degree of dirt.</td>
<td></td>
</tr>
<tr>
<td>Operator 1</td>
<td>Operator 2</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>Booth</strong></td>
<td><strong>Powder feed center 12</strong></td>
</tr>
</tbody>
</table>
| 3 | • Close the sliding door or spray wall provided for cleaning purposes.  
   • Clean the reciprocators 11 and spray guns 10 roughly from outside with blasting lances.  
   • Take the nozzle systems deflector cone or fan spray nozzle) from the spray guns and transfer to the operator 2. |
|  | • Clean the powder center roughly with a blasting pistol.  
   • Blow out the nozzle systems 7a received from operator 1 until clean. |
| **Control cabinet high-voltage 6** | **Powder feed center 12** |
| 4 | • Switch on the automatic spray gun blasting equipment:  
   ➔ The spray guns 11 run out off the booth during blasting. |
|  | • Move the powder center suction system upwards. |
| **Booth** | **Powder feed center 12** |
| 5 | • Clean the interior of the booth from top to bottom from outside with the blasting lance.  
   • Clean the booth interior again with a mop, depending on the degree of dirt. |
|  | • Clean entire interior of powder center with a blasting pistol.  
   • Dismantle the powder injector nozzles on the suction system and blow out both.  
   • Fine clean the fluidizing equipment of the suction system and the circuit powder fitting.  
   • Refit the powder injectors.  
   • Switch off the peristaltic powder conveyor again.  
   • Insert and secure the hose of the peristaltic powder conveyor in the blow-out device. |
| **Control cabinet high-voltage 6 / booth** | **Powder feed center 12** |
| 6 | • Powder deposits can form on the exterior when cleaning the booth from the inside out. Subsequent fine cleaning of the booth exterior should therefore be carried out with the blasting lance.  
   **Control cabinet high-voltage 6 / booth**  
   • Run the spray guns 11 into the booth.  
   • Mount the nozzle systems on the spray guns. |
|  | • Switch off screen vibrator.  
   • Lower the funnel 4.  
   • Swivel the screen out of the cyclone 3 and blow out the cyclone from bottom to top.  
   • Blow out the funnel and leave in the lowered position.  
   • Swivel in the screen and funnel.  
   • Close the cyclone 3. |
| **Control cabinet final filter** | **Booth** |
| 7 | • Switch on the flushing of peristaltic powder conveyor hose.  
   • Remove the container from the fresh powder vibrator table.  
   • Blow out residual dust.  
   **Booth**  
   • Fine clean the manual spray guns.  
   • Blow out the suction cover and maintenance hatch.  
   • Insert new color container. |
| **Start up with new color:** **Caution!** The peristaltic conveyor should only be turned on after a coating operation of approx. 3 to 10 minutes! | **Powder feed center 12** |
4. Maintenance and cleaning

Caution

Only trained personnel may perform maintenance and repair work. The manufacturer's instructions provided by Wagner must be strictly observed!

Before you start the maintenance work, you **must** switch off the entire plant and **secure it against inadvertent switch on**!

4.1 Cleaning instructions

Caution

Repairs to the plastic elements of the booth (e.g. cracks, chips or holes) may only be carried out by **Wagner** personnel.

If these rules are not adhered to the interior of the booth may suffer damage or accumulations of powder deposits due to static charge on walls may occur:

- **USE ONLY DEMINERALIZED WATER FOR CLEANING**.
- **DO NOT USE CLEANING CLOTHS THAT PRODUCE A STATIC CHARGE** (NO COTTON CLOTHS ETC.).
- **USE ONLY SOFT CLOTHS**.
- **DO NOT USE SCOURING POWDER OR OTHER ABRASIVES**.
- **DO NOT USE HOUSEHOLD CLEANING AGENTS**.
- **FOR FIRE AND EXPLOSION PREVENTION FLAMMABLE CLEANING AGENTS ARE PROHIBITED**. **EXCEPTION:** REFRESH CLEANING OF THE PLASTIC WALLS (ACCORDING TO CHAPTER 4.3).

Warning

Always ensure that there is adequate ventilation, by leaving on the exhaust system.

Cleaning agent vapors can form explosive mixtures with air!
### 4.2 Maintenance of the booth

<table>
<thead>
<tr>
<th>Designation</th>
<th>Check interval</th>
<th>Comment / Cleaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Booth interior and manual coating point</td>
<td>Daily</td>
<td>• Check if powder has accumulated and blow it off if necessary.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Blow off at least with every shift change.</td>
</tr>
<tr>
<td>Booth exterior</td>
<td>Monthly</td>
<td>Use cleaning agent and demineralized water.</td>
</tr>
<tr>
<td>Booth roof outside, exhaust air channels etc.</td>
<td>Monthly</td>
<td>Vacuum outside, remove dust deposits.</td>
</tr>
<tr>
<td>Exhaust and filter system</td>
<td>In accordance with the operating manual of the final filter unit.</td>
<td></td>
</tr>
<tr>
<td>Lateral suction tube</td>
<td>Weekly</td>
<td>With cleaning torpedo or suitable round cleaning device which does not produce any scratches.</td>
</tr>
<tr>
<td>Suction connection</td>
<td>Monthly</td>
<td>• Inspection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Remove any powder, which may have accumulated (baked powder).</td>
</tr>
<tr>
<td>Grounding check</td>
<td>In accordance with the specifications and the manufacturer's documentation.</td>
<td></td>
</tr>
<tr>
<td>Cleaning the booth interior and furbishing the plastic walls</td>
<td>In accordance with chapter 4.3</td>
<td>In accordance with the specifications and the manufacturer's documentation.</td>
</tr>
</tbody>
</table>

**Attention:** When using the booth during a monochrome operation, perform a daily basic cleaning of the booth and the suction tubes, using a damp wiper.
4.3 Internal booth cleaning and reviving plastic booth walls

Example for the necessity of cleaning:

![Wall with electrostatic charge due to insufficient cleaning](image)

**Warning**
When using cleaning agents, make sure that the operator is grounded at any time. Static charge can generate sparks and ignite the solvent vapors.

The following chart indicates the time intervals and the number of individual cleaning processes.

<table>
<thead>
<tr>
<th>Application / Time interval</th>
<th>Cleaning process / Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial start up</strong></td>
<td>![Checkmark] ![Checkmark] ![Checkmark] ![Checkmark] ![Checkmark] ![Checkmark] ![Checkmark] ![Checkmark]</td>
</tr>
<tr>
<td>Weekly</td>
<td>![Checkmark] ![Checkmark]</td>
</tr>
<tr>
<td>Monthly</td>
<td>![Checkmark] ![Checkmark] ![Checkmark]</td>
</tr>
<tr>
<td>Semiyearly</td>
<td>![Checkmark] ![Checkmark]</td>
</tr>
<tr>
<td>Yearly</td>
<td>![Checkmark] ![Checkmark]</td>
</tr>
<tr>
<td>After a long shutdown period</td>
<td>![Checkmark]</td>
</tr>
<tr>
<td>(e.g.: vacation)</td>
<td></td>
</tr>
<tr>
<td><strong>After extensive use</strong></td>
<td>![Checkmark] ![Checkmark] ![Checkmark] ![Checkmark] ![Checkmark]</td>
</tr>
</tbody>
</table>

Wall without electrostatic charge

Wall with electrostatic charge due to insufficient cleaning
4.3.1 Reviving plastic booth walls after extensive use

The use of scrapers and blasting lances for cleaning, and when changing powder, results in very fine powder scaling on the walls of the booth. This should be cleaned off occasionally in order to keep the plastic surface in a condition as good as new.

For this, the "Cleaning processes" mentioned in the overview table in chapter 4.3 must be carried out.

The cleaning processes are described in the following chapter 4.3.2.

Cleaning material:

- Alcoholic cleaning agent with a flash point of 10 K above the ambient temperature
- Industrial paper e.g. Wagner article no. 3311137
- Industrial polishing machine
- Jet blast unit (included in the delivery)

Caution

The following instructions must be observed while cleaning:

- Always wear cotton gloves (finger marks cause the powder to stick)!
- Always wear suitable shoe covers!
## 4.3.2 Cleaning procedure

1. Degrease with cleaning agent on paper. Only 0.5 m² surface per cleaning procedure, otherwise the plastic may be damaged.

   Immediately wipe the cleaning agent with a fresh paper before it evaporates.

2. **There mustn't be any residual cleaning agent vapors remaining in the booth.**

### Warning

**STOP**

For safety reasons, work with cleaning agents must be performed under the following conditions:

- The final filter and the cyclone **must** be switched off.
- All booth doors **must** be open.
- A suitable breathing mask **must** be used.
- Any electrical device used **must** be protected against explosions!

3. Polish all inner surfaces with an industrial polishing machine with soft attachment (similar to the polishing attachment used in the automobile industry).

   This must be done during initial start-up or furbishing.

### Hint

**Press the polishing machine lightly** to avoid **excess material discharge**.

Work with circular movements to avoid overheating of the plastic material.

4. Remove small PVC parts, which remain after smoothening.
Moisten the paper with demineralized water. Dab the walls with the moistened paper.

**Hint**
Do not wipe as this causes electrostatic charge.

Use the atomizer to apply demineralized water evenly from top to bottom on a small wall surface and take care that no drops are formed. For this work, the booth must be completely free of dust.

Dry the walls completely with a sponge from bottom to top. There may not be any water residue on the surface. Before using the sponge for the first time, soften it with demineralized water.

Press the sponge well to ensure that it does not contain any water.

Cleaning the suction channel:

a) Use the cleaning torpedo with sponge.
b) Moisten the sponge with demineralized water (do not soak it!).
c) Wring out the sponge and attach it to the torpedo.
d) Insert the torpedo in the suction tube and push it along the pipe.
e) Pull out the cleaning torpedo from the suction tube.
f) Repeat steps a) to e) for the suction tube on the opposite side.

### 4.4 Cleaning the individual components

**Caution**
- The booth exhaust system **must** be switched on.
- The gun control **must** be switched off.
4.4.1 Blowing out powder hoses and guns

**Caution**

- The powder center must be switched on.
- The final filter device must be switched on.

1. Remove the injector suction tube from the powder container.
2. Separate the powder recovery hose from the powder container and hang it in the powder center.
3. Disconnect the powder container connections (from the fluid floor and from the lid exhaust unit, if the latter exists).
4. Take out the powder container from the powder center.
5. Clean the exhaust system with the blasting gun of the powder center towards the floor of the powder center.
6. Lower the suction tube.
7. Start the automatic blow-off mode for the powder hoses and the guns.

4.4.2 Cleaning the powder center and the filter of the powder center

1. Switch on the exhaust system of the powder center or the exterior exhaust system, check whether the floor is clean and clean it if necessary.
2. Switch off the impulse cleaning (if it exists) in the powder center.
3. Switch off the exhaust system of the powder center.
4. Detach and remove the powder collecting container.
5. Vacuum or empty the powder collecting container.
6. Insert and attach the powder collecting container.

4.4.3 Cleaning the guns and the booth

1. Vacuum the manual coating point (if it exists) or blow air into the booth with the jet blast unit.
2. Close the sliding door or spray wall provided for cleaning purposes.
3. Start automatic gun cleaning: first one side and then the opposite side (depending on the accessories, the feed devices automatically move out of the booth).
4. Use the jet blast unit to blow off the powder from the booth walls and the roof from the outside.
5. Blow out the suction slit with the special jet. Begin with the booth end, which is opposite to you. Insert the transverse tube at the end of the special jet into the suction slit and then turn it 60°-90° with regard to the slit direction. Keep the tube in this position and blow off along the suction slit. After this, remove the special jet.
6. Open the cleaning door/spray wall.
4.4.4 Cleaning the cyclone screen
   1. Lower the cyclone funnel.
   2. Swivel out the screen from the cyclone.
   3. Vacuum or blow off the powder residue.
   4. Replace the screen with baked powder with a clean screen.
   5. Blow off the funnel.
   6. Insert the screen again and raise the funnel.

4.4.5 Emptying the residual powder container in the final filter
   1. Switch off the ventilator of the final filter.
   2. Lower the filter carriage and move it out.
   3. Vacuum or empty the filter carriage.
   4. Move in the filter carriage and fasten it.

4.4.6 Recommissioning the powder center:
   1. Raise the exhaust system.
   2. Place the powder container on the vibrator table.
   3. Lock the powder container.
   4. Set the exhaust system to Auto.
   5. The exhaust system automatically moves into the powder container.
   6. Connect the hose of the powder recovery unit to the exhaust system.
4.5 Disposal

We recommend tasking Wagner or another specialist disposal firm with disassembling the system.

Before starting disassembly, all supply media (electricity, compressed air) must be disconnected at the connection points. All powder paint lines must be thoroughly emptied and then rinsed. Paint residues must be disposed of in line with statutory requirements.

Before starting disassembly, check whether the supply lines have actually been interrupted and have been depressurized and/or de-energized if necessary.

The empty system should be thoroughly cleaned. In particular fire loads such as unused paint in exhaust air pipes etc. should be removed to keep the risk of fire during disassembly as low as possible.

We recommend reporting to the responsible bodies the fact that systems with mandatory approval requirements are decommissioned.

Separate all materials encountered during disassembly as clearly as possible in line with statutory requirements. Take appropriate actions to ensure that no dangerous substances enter the system during disassembly. All waste produced must be separated and disposed of in line with local requirements.

Materials used:

- steel,
- PVC plastic,
- cables, …
5. **Rectification of malfunctions**

<table>
<thead>
<tr>
<th>Malfunction</th>
<th>Cause</th>
<th>Rectification</th>
</tr>
</thead>
<tbody>
<tr>
<td>The exhaust performance is inadequate (powder cloud outside the booth)</td>
<td>Filter cleaning system not turned on.</td>
<td>See separate operating manual of suction system.</td>
</tr>
<tr>
<td></td>
<td>Filter cleaning system throttled-down.</td>
<td>Position maintenance hatch correctly.</td>
</tr>
<tr>
<td></td>
<td>Maintenance hatch of central suction system is not positioned correctly.</td>
<td></td>
</tr>
<tr>
<td>Floor blow-off is not functioning</td>
<td>No compressed air supply.</td>
<td>Check the compressed air connection; set the pressure regulator to 2 bar (29 psi).</td>
</tr>
<tr>
<td></td>
<td>Control is defective.</td>
<td>Check the connections; if necessary, contact our service department.</td>
</tr>
<tr>
<td>Guns are not cleaned sufficiently</td>
<td>Gun blow-off device is set incorrectly or defective.</td>
<td>Set the blow-off nozzles again.</td>
</tr>
<tr>
<td></td>
<td>Powder is highly adhesive.</td>
<td>Check the compressed air settings.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Replace defective nozzles.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Take additional cleaning measures.</td>
</tr>
</tbody>
</table>
6. **Spare parts lists and accessories**

6.1 **How to order spare parts**

Faulty and unserviceable parts are replaced in accordance with our General Terms and Conditions of Delivery.

In order to be able to guarantee safe and smooth spare parts delivery, the following information is necessary:

- Invoicing address
- Delivery address
- Name of contact persons for check back
- Type of delivery
- Quantity ordered, article number and designation

6.2 **Spare parts**

<table>
<thead>
<tr>
<th>Article No.</th>
<th>Description</th>
<th>Use</th>
<th>Manufacturer / Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>3303641 **</td>
<td>Shower nozzle joint for gun blow-off: (LOC-LINE article no. 49450)</td>
<td>Spray gun blow-off</td>
<td>LOC-LINE</td>
</tr>
<tr>
<td>3158891 **</td>
<td>Solenoid valve for the spray gun blow-off: (Festo article no. 161732)</td>
<td>Spray gun blow-off</td>
<td>Festo</td>
</tr>
<tr>
<td>3157599 **</td>
<td>Pressure regulator valve with manometer for blowing off the gun: (Festo article no. 159627)</td>
<td>Spray gun blow-off</td>
<td>Festo</td>
</tr>
<tr>
<td>**</td>
<td>Valve for blast rod (Mecair article no. VEP506)</td>
<td>Floor cleaning</td>
<td>Mecair</td>
</tr>
<tr>
<td>3304491</td>
<td>Substitute diaphragm for VNP/VEP 506</td>
<td>Floor cleaning</td>
<td></td>
</tr>
<tr>
<td>2318129</td>
<td>Pilot valve with cover VNP 506</td>
<td>Floor cleaning</td>
<td></td>
</tr>
<tr>
<td>3134544</td>
<td>Sponge A for cleaning torpedo, the length can be cut to size depending on the required torpedo</td>
<td>Cleaning</td>
<td>Wagner</td>
</tr>
</tbody>
</table>

* Wearing part
** Customers can purchase this part on their own.
### Spare parts lists and accessories

<table>
<thead>
<tr>
<th>Article No.</th>
<th>Description</th>
<th>Use</th>
<th>Manufacturer / Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>3916403</td>
<td>2x18 W lamp with 2x illuminant</td>
<td>Illumination</td>
<td>Phillips</td>
</tr>
<tr>
<td>3919518</td>
<td>2x36 W lamp with 2x illuminant</td>
<td>Illumination</td>
<td>Phillips</td>
</tr>
<tr>
<td>**</td>
<td>18 W illuminant (short tubes): type TLD 18</td>
<td>Lamp 3916403</td>
<td></td>
</tr>
<tr>
<td>**</td>
<td>36 W illuminant (long tubes): type TLD 36</td>
<td>Lamp 3919518</td>
<td></td>
</tr>
<tr>
<td>3920048</td>
<td>Manual blasting gun</td>
<td></td>
<td>Wagner</td>
</tr>
<tr>
<td>3921960</td>
<td>Extension for manual blasting gun</td>
<td></td>
<td>Wagner</td>
</tr>
<tr>
<td>3920051</td>
<td>Length 460</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3920052</td>
<td>Length 960</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3923041</td>
<td>Length 1460</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3927555</td>
<td>Length 1960</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3927556</td>
<td>Length 2500</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length 3000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3026328</td>
<td>Proximity switch inductive</td>
<td>&quot;Klip/Klap&quot;-door</td>
<td>Rechner</td>
</tr>
<tr>
<td></td>
<td>IAS-10-A12-S</td>
<td>Manual</td>
<td></td>
</tr>
</tbody>
</table>

* Wearing part
** Customers can purchase this part on their own.
### 6.3 Cleaning accessories

<table>
<thead>
<tr>
<th>Article No.</th>
<th>Description</th>
<th>Use / Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>3301015</td>
<td>Shoe covers</td>
<td>to be used by operating personnel when they enter the booth</td>
</tr>
<tr>
<td>3920060</td>
<td>Cyclone cleaning jet unit</td>
<td>Cyclone 16 000 ... 20 000 m³/h</td>
</tr>
<tr>
<td>3311137</td>
<td>Wiper</td>
<td>Wagner</td>
</tr>
</tbody>
</table>

*** Customers can purchase this part on their own.
7. Technical data

7.1 Booth

Dimensions:
- Inner width * (1600)/1800/2000 mm
- External width * (1930)/2130/2330 mm
- External width with platforms (system-specific) * max. 4500 mm
- Inner length (system-specific) * 2500 mm
- External length (system-specific) * from 3000 mm
- Inner height over the hall floor * 2850 to 3920 mm
- Distance between gun slits
- Width of the gun slit 100 mm
- Distance of the work piece from the hall floor 900 to 1180 mm
- Suction capacity * 12000 to 20000 m³/h
- Work piece heights (standard) * 1400 to 2200 mm
- Work piece widths (standard) * 600, 800, 1000 mm
- Weight (project-specific) min. 1700 kg

* see the system layout for the dimension of this booth

Electrical:
- Illumination **
  - Booth: max. 4x 72 W + 4x 36 W
  - 1 manual coating stand 2x 72 W
  - 2 manual coating stands 4x 72 W
- Application 7 to 10 KW
- Suction system also refer to the following chapter

** System-specific
Technical data

7.2 Suction system

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Suction capacity [m³/h]</th>
<th>El. connection value</th>
<th>Largest consumer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheuch</td>
<td>12000</td>
<td>23 kW</td>
<td>22 kW</td>
</tr>
<tr>
<td>Scheuch</td>
<td>16000</td>
<td>31 kW</td>
<td>30 kW</td>
</tr>
<tr>
<td>Scheuch</td>
<td>20000</td>
<td>38 kW</td>
<td>2 x 18.5 kW</td>
</tr>
<tr>
<td>Wagner</td>
<td>12000</td>
<td>23 kW</td>
<td>22 kW / S class filter 30 kW</td>
</tr>
<tr>
<td>Wagner</td>
<td>16000</td>
<td>31 kW</td>
<td>30 kW / S class filter 37 kW</td>
</tr>
<tr>
<td>Wagner</td>
<td>20000</td>
<td>38 kW</td>
<td>37 kW / S class filter 45 kW</td>
</tr>
</tbody>
</table>

**Chart 1.** Connection data of the recovery units

Medium air current speed:

0.7 m/s

Maximum pressure loss of the air filter system:

500 to 2000 Pa

Noise emission:

The noise emission of the powder coating booth depends on the model and the connected suction capacity.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Suction capacity [m³/h]</th>
<th>Emission [dB A]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheuch</td>
<td>12000</td>
<td>&lt;=75 (cleaning pulse approx. 80/82)</td>
</tr>
<tr>
<td>Scheuch</td>
<td>16000</td>
<td>&lt;=75 (cleaning pulse approx. 80/82)</td>
</tr>
<tr>
<td>Scheuch</td>
<td>20000</td>
<td>&lt;=75 (cleaning pulse approx. 80/82)</td>
</tr>
<tr>
<td>Wagner</td>
<td>12000</td>
<td>&lt;=75 (cleaning pulse approx. 80/82)</td>
</tr>
<tr>
<td>Wagner</td>
<td>16000</td>
<td>&lt;=75 (cleaning pulse approx. 80/82)</td>
</tr>
<tr>
<td>Wagner</td>
<td>20000</td>
<td>&lt;=75 (cleaning pulse approx. 80/82)</td>
</tr>
</tbody>
</table>

**Chart 2.** Noise emission of the recovery units

If the operating pressure is set correctly (36.3 psi / 2.5 bar), the pneumatic floor cleaning device emits a brief noise of 84 dB(A).
8. Warranty

What is covered by this warranty?
Faulty or defective parts are replaced according to our general delivery conditions.
Within the applicable warrant period, Wagner will repair or replace, at our option, defective parts without charge if such parts are returned with transportation charges prepaid to the nearest authorized service center. If Wagner is unable to repair this product so as to conform to this Limited Warranty after a reasonable number of attempts, Wagner will provide, at our option, either a replacement for this product or a full refund of the purchase price of this product.

These remedies are the sole and exclusive remedies available for breach of express and implied warranties.

What is not covered by this warranty?
This warranty does not cover any of the following damages or defects:
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