Operating instructions and spare parts list

OptiFlex

Manual coating equipment

Translation of the original operating instructions
Documentation OptiFlex C manual coating equipment

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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 OptiFlex C Manual coating equipment.

These safety regulations must be read and understood before the OptiFlex C Manual coating equipment 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 OptiFlex C Manual coating equipment is built to the latest specification and conforms to the recognized technical safety regulations and is designed for the normal application of powder coating.

2. Any other use is considered as non-conform. The manufacturer is not responsible for any damage resulting from this, the risk for this is assumed by the user alone! If the OptiFlex C Manual coating equipment is to be used for other purposes or other substances outside of our guidelines then ITW Gema GmbH 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 OptiFlex C Manual coating equipment 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 OptiFlex C Manual coating equipment has been set up and wired according to the guidelines for machinery (98/37 EG). EN 60204-1 (machine safety) must also be observed.

5. Unauthorized modifications to powder spraying equipment 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>C 0102 EX II 3 D</td>
<td>IP54</td>
<td>T6 (zone 21)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T4 (zone 22)</td>
</tr>
</tbody>
</table>

Technical safety regulations for stationary electrostatic powder spraying equipment

General information

The powder spraying equipment of ITW Gema is designed with safety in mind and is built according to the latest technological specifications. This equipment can be dangerous if it is not used for its specified purpose. Consequently it should be noted, that there exists a danger to life and limb of the user or third party, a danger of damage to the equipment and other machinery belonging to the user and a hazard to the efficient operation of the equipment.

1. The powder spraying equipment should only be started up and used once the operating instructions have been carefully studied. Improper use of the controlling device can lead to accidents, malfunction or damage to the control itself.

2. Before every start-up check the equipment for operational safety (regular servicing is essential)!

3. Safety regulations BGI 764 and VDE regulations DIN VDE 0147, Part 1, must be observed for safe operation.

4. Safety precautions specified by local legislation must be observed!

5. The plug must be disconnected before the machine is opened for repair.

6. The plug and socket connection between the powder spraying equipment and the mains network should only be taken out when the power is switched off.
7. The connecting cable between the controlling device and the spray gun must be set up so that it cannot be damaged during operation. Safety precautions specified by local legislation must be observed!

8. Only original ITW-Gema spare parts should be used, because the explosion protection will also be preserved that way. Damage caused by other parts is not covered by guarantee.

9. If ITW-Gema powder spraying equipment is used in conjunction with machinery from other manufacturers then their safety regulations must also be taken into account.

10. Before starting work familiarize yourself with all installations and operating elements, as well as with their functions! Familiarization during operation is too late!

11. Caution must be exercised when working with a powder/air mixture! A powder/air mixture in the right concentration is flammable! Smoking is forbidden in the entire plant area!

12. As a general rule for all powder spraying installations, persons with pacemakers should never enter high voltage areas or areas with electromagnetic fields. Persons with pacemakers should not enter areas with powder spraying installations!

**WARNING!**

We emphasize that the customer himself is responsible for the safe operation of equipment. ITW Gema GmbH is in no way responsible for any resulting damages!

### Safety conscious working

Each person responsible for the assembly, start-up, operation, service and repair of powder spraying equipment must have read and understood the operating instructions and the “Safety regulations”-chapter. The operator must ensure that the user has had the appropriate training for powder spraying equipment and is aware of the possible sources of danger.

The control devices for the spray guns must only be set up and used in zone 22. Spray guns are admitted in zone 21.

The powder spraying equipment should only be used by trained and authorized personnel. This applies to modifications to the electrical equipment, which should only be carried out by a specialist.

The operating instructions and the necessary closing down procedures must be followed before any work is carried out concerning the set-up, start-up, operation, modification, operating conditions, mode of operation, servicing, inspection or repairs.

The powder spray equipment can be turned off by using the main switch or failing that, the emergency shutdown. Individual components can be turned off during operation by using the appropriate switches.

### Individual safety regulations for the operating firm and/or operating personnel

1. Any operating method which will negatively influence the technical safety of the powder spraying equipment is to be avoided.
2. The operator has to ensure that no non-authorized persons work on the powder spraying equipment (e.g. this also includes using the equipment for non-conform work).

3. For dangerous materials, the employer has to provide an operating instructions manual for specifying the dangers arising for humans and environment by handling dangerous materials, as well as the necessary preventive measures and behavior rules. The operating instructions manual has to be written in an understandable form and in the language of the persons employed, and has to be announced in a suitable place in the working area.

4. The operator is under obligation to check the powder spraying equipment at least once every shift for signs of external damage, defects or changes (including the operating characteristics) which could influence safety and to report them immediately.

5. The operating enterprise has to ensure that GEMA electrostatic spraying equipment is only operated in perfect condition.

6. As far as it is necessary, the operating firm must ensure that the operating personnel wear protective clothing (e.g. facemasks).

7. The operating firm must guarantee cleanliness and an overview of the workplace with suitable instructions and checks in and around the powder spraying equipment.

8. No safety devices should be dismantled or put out of operation. If the dismantling of a safety device for set-up, repair or servicing is necessary, reassembly of the safety devices must take place immediately after the maintenance or repair work is finished. All maintenance activities must be executed when the powder spraying mechanism is switched off. The operator must train and commit the responsible personnel to this.

9. Activities, such as checking powder fluidization or checking the high voltage spray gun etc., must be carried out with the powder spraying equipment switched on.

**Notes on special types of hazard**

**Power/tension**

It is necessary to refer once more to the danger of life from high voltage current if the shutdown procedures are not observed. High voltage equipment must not be opened - the plug must first be taken out - otherwise there is danger of electric shock.

**Powder**

Powder/air mixtures can be ignited by sparks. There must be sufficient ventilation in the powder coating booth. Powder lying on the floor around the powder spraying device is a potentially dangerous source of slipping.

**Static charges**

Static charges can have the following consequences: Charges to people, electric shocks, sparking. Charging of objects must be avoided - see "Earthing".

**Grounding/Earthing**

All electricity conducting parts and machinery found in the workplace (according to DIN VDE 0745, part 102) - 1,5 meters either side and 2,5 me-
ters around each booth opening, have to be grounded. The earthing resistance must amount to maximally 1 MOhm. The resistance must be tested regularly. The condition of the work piece attachments as well as the hangers must guarantee that the work pieces remain grounded. If the grounding of the work pieces takes place by their attachments, these must constantly be kept clean in order to guarantee the necessary conductivity. The appropriate measuring devices must be kept ready in the workplace in order to check the earthing.

**Compressed air**

When there are longer pauses or standstill times between working, the powder spraying equipment should be drained of compressed air. There is a danger of injury when pneumatic hoses are damaged and from the uncontrolled release and improper use of compressed air.

**Crushing and cutting**

During operation, moving parts may automatically start to move in the operating area. It must be ensured that only instructed and trained personnel go near these parts. The operator should ensure that barriers comply with the local security regulations.

**Access under exceptional circumstances**

The user enterprise has to ensure due to the local conditions, that when repairs at the electrical part or restarting operation activities are done, additional measures such as providing with gates against the admission of unauthorized persons are absolutely executed.

**Prohibition of unauthorized conversions and modifications to machines**

All unauthorized conversions and modifications to electrostatic spraying equipment are forbidden for safety reasons.

The powder spraying equipment should not be used if damaged, and the faulty part must be immediately replaced or repaired. Only original ITW Gema spare parts may be used! Damage caused by other parts is not covered by guarantee.

Repairs must only be carried out by specialists or in ITW-Gema workshops. Unauthorized conversions and modifications may lead to injury or damage to machinery. The ITW Gema GmbH guarantee would no longer be valid.

**Safety requirements for electrostatic powder coating**

1. This equipment can be dangerous, if the instructions in this operating manual are not followed.
2. All electrostatic conductive parts, in particular the machinery within 5 meters of the coating equipment, must be earthed.
3. The floor of the coating area must conduct electricity (normal concrete is generally conductive).
4. The operating personnel must wear electricity conducting footwear (e.g. leather soles).
5. The operating personnel should hold the gun with bare hands. If gloves are worn, these must also conduct electricity.
6. The supplied grounding cable (green/yellow) must be connected to the grounding screw of the manual electrostatic powder spraying equipment. The grounding cable must have a good metal to metal connection with the coating booth, the recovery unit and the work piece conveyor system, especially with the work piece suspension.

7. The electricity and powder supply to the hand guns must be set up in such a way that they are fully protected against heat and chemical damage.

8. The powder coating equipment may be able to be switched on only if the booth is in operation. If the booth cuts out then the powder coating device must be switched off.

9. The earthing of all electricity conducting devices (e.g. hooks, conveyor chains) must be checked on a weekly basis. The earthing resistance must amount to maximally 1 MOhm.

10. The control unit must be switched off, if the hand gun is cleaned or the nozzle is changed.

11. When working with cleaning agents there may be a risk of hazardous fumes. The manufacturers instructions must be observed when using such cleaning agents.

12. The manufacturers instructions and the applicable environmental requirements must be observed when disposing of powder lacquer and cleaning agents.

13. If any part of the spray gun is damaged (broken parts, tears) or missing then it should not be used.

14. For your own safety, only use accessories and attachments listed in the operating instructions. The use of other parts can lead to risk of injury. Only original ITW-Gema replacement parts should be used.

15. Repairs must only be carried out by specialists and under no circumstances should they be carried out in the operating area. The former protection must not be reduced.

16. Conditions leading to dangerous levels of dust concentration in the powder spraying booths or in the powder spraying areas must be avoided. There must be sufficient technical ventilation available, to prevent a dust concentration of more than 50% of the lower explosion limit (UEG) (UEG = max. permissible powder/air concentration). If the UEG is not known then a value of 10 g/m³ should be used.

A summary of the rules and regulations

The following is a list of relevant rules and regulations which are to be observed:

**Guidelines and regulations, German professional association**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BGV A1</td>
<td>Prevention principles</td>
</tr>
<tr>
<td>BGV A2</td>
<td>Electrical equipment and material</td>
</tr>
<tr>
<td>BGR 132</td>
<td>Guidelines for the avoidance of the dangers of ignition due to electrostatic charging</td>
</tr>
</tbody>
</table>
### EN European standards

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL94/9/EC</td>
<td>The approximation of the laws of the Member States relating to apparatus and safety systems for their intended use in potentially explosive atmospheres</td>
</tr>
<tr>
<td>EN 292-1</td>
<td>Machine safety 2)</td>
</tr>
<tr>
<td>EN 292-2</td>
<td></td>
</tr>
<tr>
<td>EN 50014 until EN 50020, identical: DIN VDE 0170/0171</td>
<td>Electrical equipment for locations where there is danger of explosion 3)</td>
</tr>
<tr>
<td>EN 60529, identical: DIN 40050</td>
<td>IP-Type protection: contact, foreign bodies and water protection for electrical equipment 2)</td>
</tr>
<tr>
<td>EN 60204 identical: DIN VDE 0113</td>
<td>VDE regulations for the setting up of high voltage electrical machine tools and processing machines with mains voltages up to 1000 V 3)</td>
</tr>
</tbody>
</table>

### VDE (Association of German Engineers) Regulations

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN VDE 0100</td>
<td>Regulations for setting-up high voltage equipment with mains voltages up to 1000 V 4)</td>
</tr>
<tr>
<td>DIN VDE 0105, part 1</td>
<td>VDE regulations for the operation of high voltage equipment 4)</td>
</tr>
<tr>
<td>DIN VDE 0147, part 1</td>
<td>General regulations</td>
</tr>
<tr>
<td>DIN VDE 0165</td>
<td>Setting up electrical equipment in locations in areas with danger of explosion 4)</td>
</tr>
</tbody>
</table>

Sources:
1) Carl Heymanns Verlag KG, Luxemburger Strasse 449, 5000 Köln 41, or from the appropriate employers association
2) Beuth Verlag GmbH, Burgrafenstrasse 4, 1000 Berlin 30
3) General secretariat, Rue Bréderode 2, B-1000 Bruxelles, or the appropriate national committee
4) VDE Verlag GmbH, Bismarckstrasse 33, 1000 Berlin 12

### Product specific security measures

- The installation work, to be done by the customer, must be carried out according to local regulations
- Before starting up the plant a check must be made that no foreign objects are in the booth or in the ducting (input and exhaust air)
- It must be observed, that all components are grounded according to the local regulations, before start-up
About this manual

General information

This operating manual contains all the important information which you require for the working with the OptiFlex C Manual coating equipment. 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, gun control unit, manual gun or powder injector - should be referenced to their enclosed corresponding documents.
Function description

Field of application

The OptiFlex C Manual coating equipment (with application cup) is built exclusively for electrostatic coating with organic powders. Any other use is considered as non-conform. The manufacturer is not responsible for any damage resulting from this, the risk for this is assumed by the user alone!

The electrostatic OptiFlex C Manual coating equipment with the OptiSelect Manual powder gun and the application cup is ideally suited for manual coating of objects in vary small series, for test coatings at powder manufacturers, and in test laboratories.

The powder types used must can be fluidized without vibration.

Typical characteristics

- The OptiFlex C Manual coating equipment is suitable for working with minimum quantity of powder
- Precise application parameters lead to repeatable application performances
- Quick and simple color change
- Supplied ready for use
OptiFlex C Manual coating equipment

Structure

1 OptiStar Control unit 6 Clamping element
2 OptiSelect Manual powder gun 7 Pneumatic connection
3 Application cup 8 Filter unit
4 Pneumatic connection 9 Tube
5 Rack 10 Base

OptiStar Control unit

All information about the OptiStar Control unit will be found in the corresponding enclosed documentation!

OptiSelect Manual powder gun

All information about the OptiSelect Manual powder gun will be found in the corresponding enclosed documentation!

Application cup

All information about the application cup will be found in the corresponding enclosed documentation!
Scope of delivery

**OptiFlex 1-C**

- An OptiStar Control unit in a metal case with power supply cable
- A base with column and filter unit
- An application cup, complete with pneumatic connection to the control unit
- An OptiSelect Manual powder gun with gun cable, rinsing air hose and standard nozzle set (see therefore the OptiSelect Manual powder gun user manual)
Technical data

**OptiFlex C Manual coating equipment**

### Electrical data

<table>
<thead>
<tr>
<th>OptiFlex C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mains input voltage</td>
<td>100-240 VAC</td>
</tr>
<tr>
<td>Operating frequency</td>
<td>50/60 Hz</td>
</tr>
<tr>
<td>Input power</td>
<td>40 VA</td>
</tr>
<tr>
<td>Nominal output voltage (to the gun)</td>
<td>max. 12 V</td>
</tr>
<tr>
<td>Nominal output current (to the gun)</td>
<td>max. 1 A</td>
</tr>
<tr>
<td>Protection type</td>
<td>IP54</td>
</tr>
<tr>
<td>Temperature range</td>
<td>0-40°C</td>
</tr>
<tr>
<td></td>
<td>(+32°F - +104°F)</td>
</tr>
<tr>
<td>Approval</td>
<td>(pendent)</td>
</tr>
</tbody>
</table>

### Pneumatical data

<table>
<thead>
<tr>
<th>OptiFlex C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressed air main connection</td>
<td>G1/4&quot; - female thread</td>
</tr>
<tr>
<td>Max. input pressure</td>
<td>10 bar</td>
</tr>
<tr>
<td>Min. input pressure (while unit in operation)</td>
<td>6 bar</td>
</tr>
<tr>
<td>Max. water vapor content of the compressed air</td>
<td>1,3 g/m³</td>
</tr>
<tr>
<td>Max. oil vapor content of the compressed air</td>
<td>0,1 mg/m³</td>
</tr>
<tr>
<td>Max. compressed air consumption</td>
<td>6 m³/h</td>
</tr>
</tbody>
</table>
Connectable guns

<table>
<thead>
<tr>
<th>OptiFlex C</th>
<th>connectable</th>
</tr>
</thead>
<tbody>
<tr>
<td>OptiSelect GM02</td>
<td>yes</td>
</tr>
<tr>
<td>OptiGun GA02</td>
<td>yes</td>
</tr>
<tr>
<td>PG1/PG2-A</td>
<td>yes (no remote control)</td>
</tr>
<tr>
<td>TriboJet</td>
<td>yes, with adapter*</td>
</tr>
</tbody>
</table>

* The gun type must be set on the control unit (see therefore the corresponding user manual)!

Attention:
The OptiFlex C manual coating equipment can only be used with the specified gun types!

Dimensions

<table>
<thead>
<tr>
<th>OptiFlex C</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>444 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>310 mm</td>
</tr>
<tr>
<td>Height</td>
<td>490 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>12 kg</td>
</tr>
</tbody>
</table>
Start-up and operation

Connection guide

1. Check the compressed air connection from the filter unit to the control unit. Connect the compressed air supply hose from the compressed air circuit directly to the filter unit main connection on the base (1/4" female BSP)

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

2. Connect the grounding cable to the control unit with the grounding screw, and the 5 m long grounding cable with the clamping clip to the booth or the conveyor. Check ground connections with Ohm meter and ensure 1 MOhm or less

3. Connect the gun cable plug to the socket 2.3 on the rear side of the control unit

4. Connect the rinsing air hose to the electrode rinsing air output 1.4 and to the powder gun

5. Connect the red hose for the conveying air to the corresponding output 1.2 on the rear of the control unit

6. Connect the black hose for the supplementary air to the corresponding output 1.3 on the rear of the control unit

7. Insert the application cup into the corresponding connection on the OptiSelect Powder gun

8. Connect pneumatic hoses according to color coding on the cup connection

9. Connect the red quick release connection (with integrated powder stop) with the quick release coupling of the conveying air hose. The conveying air hose must already be connected to the output 1.2 on the rear side of the control unit

10. Connect the black quick release connection (with integrated powder stop) with the quick release coupling of the supplementary air hose. The supplementary air hose must already be connected to the output 1.3 on the rear side of the control unit

11. Connect the mains cable to the 2.1 Power IN plug and fasten it
Preparation for start-up

**Fill in powder**

1. Fill the application cup with powder
2. Place the dip tube in the powder carefully, in order to prevent the plug building in the inside of the dip tube
3. Lock the bayonet closure

**Switch on the booth**

The coating booth is switched on according to the corresponding user manual.

Start-up

**Switch on the control unit**

1. Press the ON power switch.
   The displays illuminate and the control unit is ready for operation

**Note:**
The further start-up procedure for the OptiFlex C Manual coating equipment is explicitly described in the OptiStar CG07 Gun control unit operating instructions (chapter "Initial start-up" and "Daily start up")!
Color change

General information

When a color change takes place, the individual components of the manual coating equipment must be cleaned carefully. Thereby, all powder particles of the former color must be removed!

Procedure:

1. Clean the application cup (see therefore the application cup user manual)
2. Dismantle and clean the powder gun (see therefore the user manual of the OptiSelect Manual powder gun)
3. Prepare the manual coating equipment with new powder for start-up
Maintenance and cleaning

Note:
Regular and conscientious maintenance increases the life span of the manual coating equipment and provides for a longer continuous coating quality!

Daily maintenance

1. Clean the application cup (see therefore the application cup user manual)

Weekly maintenance

1. Clean the application cup (see therefore the application cup user manual)
2. Check the O-rings
3. Check the control unit grounding connections to the coating booth, the suspension devices of the work pieces, or the conveyor chain

If in disuse for several days

1. Remove the mains plug
2. Clean the coating equipment
3. Turn off the compressed air main supply

Cleaning

Cleaning the OptiSelect Manual powder gun

Frequent cleaning of the gun helps to guarantee the coating quality.

Note:
Before cleaning the powder gun, switch off its control unit. The compressed air used for cleaning must be free from oil and water!
Daily:
1. Blow off the outside of the gun and wipe, clean etc.

Weekly:
2. Remove the application cup from the connection
3. Remove the spray nozzle from the gun and clean it
4. Blow out the gun from the connection in flow direction with compressed air
5. Clean the integrated gun tube with the provided gun brush
6. Blow through the gun with compressed air again
7. Clean the powder hose
8. Reassemble the gun and connect it

Note:
See therefore the user manual of the OptiSelect Manual powder gun!

Cleaning the application cup
Frequent cleaning of the application cup helps to guarantee the coating quality.

Note:
Before cleaning the application cup, switch off the control unit! The compressed air used for cleaning must be free from oil and water!

Attention:
It is not permitted to clean the application cup with solvents!

1. Empty any powder out of the application cup
2. Blow off the outside of the application cup and wipe, clean etc.
3. Release the bayonet closure between cup cover and cup
4. Clean the cup
5. Pull the dip tube out and clean
6. Press and hold (approx. 3 seconds) the program key T12 on the OptiStar Control unit, until a circulating luminous segment is shown in display A5
7. Press the powder gun trigger to begin the cleaning
8. The cleaning mode is terminated by pressing the program key T12 again
9. Clean the cup with compressed air
10. Clean the fluidizing plate with compressed air (free of oil and water)

Attention:
Do not clean the fluidizing plate with solvents or other fluidities!
Maintenance and cleaning of the filter unit

The filter unit on the OptiFlex C Manual coating equipment measures and cleans the compressed air. Here, the main compressed air connection of the equipment is located.

Replacing the filter element

Procedure:

1. Unscrew the filter glass on the filter unit
2. Loose the cap screw
3. Remove the complete filter element
4. Replace the filter element
5. Clean the filter glass on the inside and install it again
# Troubleshooting

## General information

<table>
<thead>
<tr>
<th>Fault</th>
<th>Causes</th>
<th>Troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>Power pack defective</td>
<td>Replace the power pack, if error is permanent</td>
</tr>
<tr>
<td>---</td>
<td>Main valve defective</td>
<td>Replace main valve coil</td>
</tr>
<tr>
<td>---</td>
<td>Gun not connected Gun plug, gun cable or gun cable connection defective Remote control on powder gun defective</td>
<td>Connect the gun Replace corresponding part or send in for repair Replace remote control (gun back cover)</td>
</tr>
<tr>
<td>---</td>
<td>Rinsing air solenoid valve of flat jet nozzle defective</td>
<td>Replace valve coil</td>
</tr>
<tr>
<td>---</td>
<td>Rinsing air solenoid valve of round jet nozzle defective</td>
<td>Replace valve coil</td>
</tr>
<tr>
<td>---</td>
<td>Gun plug, gun cable or gun cable connection defective</td>
<td>Replace corresponding part or send in for repair</td>
</tr>
<tr>
<td>Gun LED remains dark, although the gun is triggered</td>
<td>Gun plug, gun cable or gun cable connection defective Remote control on powder gun defective</td>
<td>Replace corresponding part or send in for repair Replace remote control (gun back cover)</td>
</tr>
<tr>
<td>Powder does not adhere to object, although the gun is triggered and sprays powder</td>
<td>High-voltage and current deactivated High voltage cascade defective Objects are not properly grounded</td>
<td>Press the selection key (application key) Send in the gun for repair Check the grounding</td>
</tr>
<tr>
<td>Fault</td>
<td>Causes</td>
<td>Troubleshooting</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>Control unit displays remain dark, although the control unit is</td>
<td>Control unit is not connected to the mains</td>
<td>Connect the equipment with the mains cable</td>
</tr>
<tr>
<td>switched on</td>
<td>Power pack fuse defective</td>
<td>Replace the fuse</td>
</tr>
<tr>
<td></td>
<td>Power pack defective</td>
<td>Replace the power pack, if error is permanent</td>
</tr>
<tr>
<td>The gun does not spray powder, although the control unit is</td>
<td>Compressed air not present</td>
<td>Connect the equipment to the compressed air</td>
</tr>
<tr>
<td>switched on and the gun is triggered</td>
<td>Throttle motor or powder gun are clogged</td>
<td>Clean corresponding part</td>
</tr>
<tr>
<td></td>
<td>Front plate defective</td>
<td>Send in for repair</td>
</tr>
<tr>
<td>The application cup is incorrectly connected or not connected at all to the control unit</td>
<td>Check the pneumatic connections, and if necessary, connect (see Connection guide)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Injector nozzle clogged</td>
<td>Dismantle the application cup completely and clean it</td>
</tr>
<tr>
<td></td>
<td>Dip tube clogged</td>
<td>Blow through the dip tube with compressed air, and place it in the powder carefully</td>
</tr>
<tr>
<td>Irregular powder output</td>
<td>Poor closure</td>
<td>Dismantle the application cup completely, check the O-rings and replace, if necessary</td>
</tr>
<tr>
<td></td>
<td>Pneumatic hoses not correctly connected</td>
<td>Check the elbow joints and connect correctly, if necessary</td>
</tr>
<tr>
<td></td>
<td>Powder fluidization insufficient or not available</td>
<td>Dismantle the fluidizing plate, and clean, if necessary</td>
</tr>
</tbody>
</table>
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** OptiFlex C Manual coating equipment  
  **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 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!
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part No.</th>
<th>Qty/Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Base complete</td>
<td></td>
<td>385 190</td>
</tr>
<tr>
<td>2</td>
<td>Filter unit - complete (see corresponding spare parts list)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>CG07 Gun control unit - complete (see corresponding operating manual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Application cup - complete (see corresponding operating manual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>OptiSelect Manual powder gun - complete (see corresponding operating manual)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Column - complete</td>
<td></td>
<td>1002 532</td>
</tr>
<tr>
<td>7</td>
<td>Mounting bracket</td>
<td></td>
<td>1002 579</td>
</tr>
<tr>
<td>8</td>
<td>Rectus quick release connection - NW7,4-Ø 10 mm</td>
<td></td>
<td>239 267</td>
</tr>
<tr>
<td>A</td>
<td>Clamping element - 30-1-1, complete (incl. pos. 9, 10, 11)</td>
<td></td>
<td>376 183</td>
</tr>
<tr>
<td>9</td>
<td>Cover, fix</td>
<td></td>
<td>364 720</td>
</tr>
<tr>
<td>10</td>
<td>Cover</td>
<td></td>
<td>364 010</td>
</tr>
<tr>
<td>11</td>
<td>Cylinder Allen screw - M8x25 mm</td>
<td></td>
<td>216 500</td>
</tr>
<tr>
<td>12</td>
<td>Shakeproof Allen screw - M6x16 mm</td>
<td></td>
<td>261 823</td>
</tr>
<tr>
<td>13</td>
<td>Cleaning brush - Ø 12 mm</td>
<td></td>
<td>389 765</td>
</tr>
<tr>
<td>14</td>
<td>Hexagon shakeproof screw - M6x12 mm</td>
<td></td>
<td>244 406</td>
</tr>
<tr>
<td>16</td>
<td>Hexagon locknut - M6</td>
<td></td>
<td>244 430</td>
</tr>
<tr>
<td>25</td>
<td>Parts set, consisting of:</td>
<td></td>
<td>1002 789</td>
</tr>
<tr>
<td></td>
<td>Fuse - F4.00AF</td>
<td></td>
<td>262 897</td>
</tr>
<tr>
<td></td>
<td>Cable tie - L=100x2.5 mm</td>
<td></td>
<td>200 719</td>
</tr>
<tr>
<td>26</td>
<td>Rack - complete</td>
<td></td>
<td>1002 680</td>
</tr>
<tr>
<td>27</td>
<td>OptiStar CG07 short instructions</td>
<td></td>
<td>1002 060</td>
</tr>
<tr>
<td>28</td>
<td>OptiStar CG07 program table</td>
<td></td>
<td>1002 063</td>
</tr>
<tr>
<td>32</td>
<td>Hex. Allen key - wrench size 6</td>
<td></td>
<td>262 030</td>
</tr>
<tr>
<td>36</td>
<td>Plastic tube - Ø 8/6 mm black</td>
<td></td>
<td>103 152</td>
</tr>
</tbody>
</table>

*Wearing part*

*Please indicate length*
OptiFlex C Manual coating equipment - spare parts
### OptiFlex C Manual coating equipment - spare parts list

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gun retainer</td>
<td>1001 140</td>
</tr>
<tr>
<td>2</td>
<td>Mains cable - L=5m, 12 G (Switzerland)</td>
<td>382 493</td>
</tr>
<tr>
<td></td>
<td>Mains cable - L=5m, VII G Schuko (Europe, Russia etc.)</td>
<td>382 485</td>
</tr>
<tr>
<td></td>
<td>Mains cable - L=5m, 498 G (USA, Japan etc.)</td>
<td>382 507</td>
</tr>
<tr>
<td></td>
<td>Mains cable - L=5m, BS89/5 (GB, Africa etc.)</td>
<td>382 515</td>
</tr>
<tr>
<td></td>
<td>Mains cable - L=5m, SAA/3 (Australia, China etc.)</td>
<td>382 523</td>
</tr>
<tr>
<td>3</td>
<td>Nut - M10x1 mm, Ø 6 mm</td>
<td>263 052</td>
</tr>
<tr>
<td>4</td>
<td>Screw cap - Ø 6 mm</td>
<td>263 044</td>
</tr>
<tr>
<td></td>
<td>Pneumatic connection - supplementary air (complete, incl. pos. 5, 6, 7)</td>
<td>382 221</td>
</tr>
<tr>
<td>5</td>
<td>Nut with kink protection - M12x1 mm, Ø 8 mm</td>
<td>201 316</td>
</tr>
<tr>
<td>6</td>
<td>Plastic tube - Ø 8/6 mm, black</td>
<td>103 756*</td>
</tr>
<tr>
<td>7</td>
<td>Quick release coupling - NW5, Ø 8 mm, black</td>
<td>261 637</td>
</tr>
<tr>
<td></td>
<td>Pneumatic connection - conveying air (complete, incl. pos. 8, 9, 10)</td>
<td>382 213</td>
</tr>
<tr>
<td>8</td>
<td>Quick release coupling - NW5, Ø 8 mm, red</td>
<td>261 645</td>
</tr>
<tr>
<td>9</td>
<td>Plastic tube - Ø 8/6 mm, antistatic</td>
<td>103 500*</td>
</tr>
<tr>
<td>10</td>
<td>Nut with kink protection - M12x1 mm, Ø 8 mm</td>
<td>201 316</td>
</tr>
<tr>
<td>11</td>
<td>Grounding cable complete</td>
<td>301 140</td>
</tr>
<tr>
<td>12</td>
<td>Protection cap</td>
<td>206 474</td>
</tr>
<tr>
<td>13</td>
<td>Shakeproof Allen screw - M8x12 mm</td>
<td>263 214</td>
</tr>
</tbody>
</table>

* Please indicate length
OptiFlex C Manual coating equipment - spare parts

1
2
3
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11
12
13

OptiFlex C Manual coating equipment - spare parts
## OptiFlex C - filter unit

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Filter separator - MAF200L-8A</td>
<td>1007 321</td>
</tr>
<tr>
<td>2</td>
<td>T-piece - 1/4&quot;i-1/4&quot;a-1/4&quot;i</td>
<td>262 064</td>
</tr>
<tr>
<td>3</td>
<td>Elbow joint - 1/4&quot;-3xØ 8-8 mm</td>
<td>1007 327</td>
</tr>
<tr>
<td>7</td>
<td>Filter cartridge - 20 µm</td>
<td>1007 325</td>
</tr>
<tr>
<td>9</td>
<td>Manometer - G1/4&quot;, 0-10 bar</td>
<td>1007 328</td>
</tr>
<tr>
<td>10</td>
<td>Rectus nipple - NW 7.4-1/4&quot;a</td>
<td>256 730</td>
</tr>
<tr>
<td>11</td>
<td>Grommet - Ø 8 mm</td>
<td>238 023</td>
</tr>
<tr>
<td>12</td>
<td>Elbow joint - 1/4&quot;i-1/4&quot;a</td>
<td>222 674</td>
</tr>
<tr>
<td>14</td>
<td>Rectus quick release connection (for pos. 10) - NW 7.8-Ø 10 mm</td>
<td>239 267</td>
</tr>
</tbody>
</table>

![OptiFlex C - filter unit](image)