
Operating instructions and spare parts list

Application cup for OptiFlex 2 GM03 manual powder gun



Translation of the original operating instructions

Documentation OptiFlex GM03 application cup

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Table of contents

General safety regulations	3
Safety symbols (pictograms).....	3
Conformity of use.....	3
Product specific security measures	4
About this manual	5
General information	5
Function description	7
Field of application	7
Typical characteristics.....	7
Scope of delivery	7
Application cup.....	7
Application cup.....	8
Design.....	8
Technical data	9
OptiFlex 2 GM03 application cup.....	9
General information	9
Start-up and operation	11
Connecting guide	11
Function check.....	12
Start-up	13
Fill in powder	13
Switch on the control unit.....	13
Maintenance and cleaning	15
Daily maintenance	15
Weekly maintenance.....	15
Cleaning.....	15
Cleaning the application cup.....	15
Completely dismantling the application cup.....	16
Dismantling the application cup	16
Assembling the application cup	16
Troubleshooting	17
General information	17
Spare parts list	19
Ordering spare parts	19
Application cup - spare parts list.....	20
Application cup - spare parts	21

General safety regulations

This chapter sets out the fundamental safety regulations that must be followed by the user and third parties using the Application cup.

These safety regulations must be read and understood before the Application cup 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 Application cup 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 Application cup 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 Application cup 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 Application cup has been set up and wired according to the guidelines for machinery (2006/42 EC). EN 60204-1 (machine safety) must also be observed.
5. Unauthorized modifications to powder spraying equipment exempt 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.

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 Application cup. 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.

In order to be able to exploit all the advantages of the application cup, the user should already be familiar with the working techniques and functioning of the powder coating equipment. It is not the function of this manual to give instruction on how to use powder coating equipment. If problems arise during working with the application cup, which are ascribed to the OptiFlex 2 GM03 powder gun or the powder gun control unit, then the corresponding operating instruction manual should be consulted.

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 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 application cup is especially suited for manual coating very small series, test coatings at powder manufacturers, and for laboratory tests.

The powder types used are to be fluidized without vibration.

Typical characteristics

- The application cup is especially suited for working with minimum quantity of powder
- Precise application parameters lead to repeatable application performances
- The application cup enables a very quick color change
- The application cup can be connected to an OptiFlex 2 GM03 gun by quick release connection - no extra device necessary

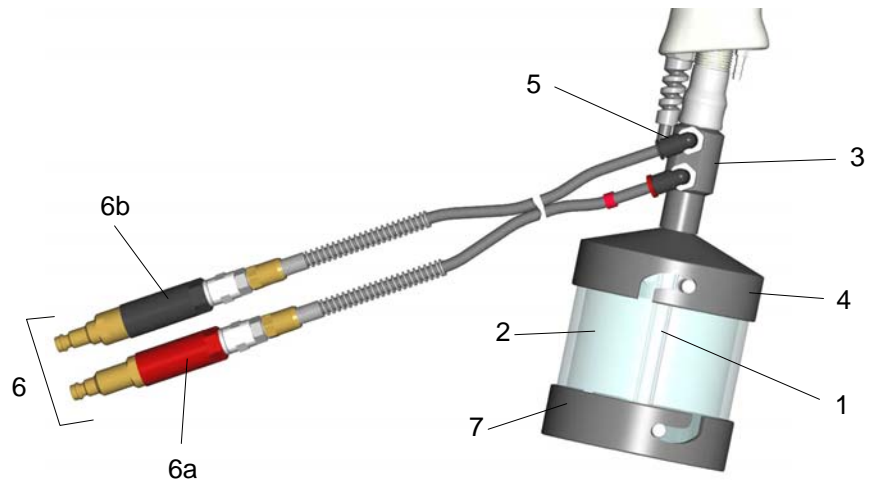
Scope of delivery

Application cup

- An application cup - complete
- A pneumatic connection to the control unit

Application cup

Design



- | | | | |
|---|------------------------------|----|--|
| 1 | Dip tube | 6 | Pneumatic connection |
| 2 | Application cup | 6a | Red quick release connection with integrated powder stop (conveying air) |
| 3 | Cup connection with injector | 6b | Black quick release connection with integrated powder stop (supplementary air) |
| 4 | Cup cover | 7 | Bottom with fluidizing plate |
| 5 | Elbow joint | | |

Technical data

OptiFlex 2 GM03 application cup

General information

Application cup	150 ml	500 ml
Powder output	30 - 400 g/min	30 - 400 g/min
Useful capacity	150 ml (approx. 90 g of powder)	500 ml (approx. 300 g of powder)
Air consumption (application range)	1,8 - 4 Nm ³ /h	1,8 - 4 Nm ³ /h
Weight without connections	130 g	310 g
Weight with pneumatic connections	430 g	604 g
Diameter	66 mm	90 mm
Length below the gun	153 mm	180 mm
Conveying air connection (FL)	red encoded / OptiFlex 2 CG09 connection 1.2	red encoded / OptiFlex 2 CG09 connection 1.2
Supplementary air connection (ZL)	black / OptiFlex 2 CG09 connection 1.3	black / OptiFlex 2 CG09 connection 1.3

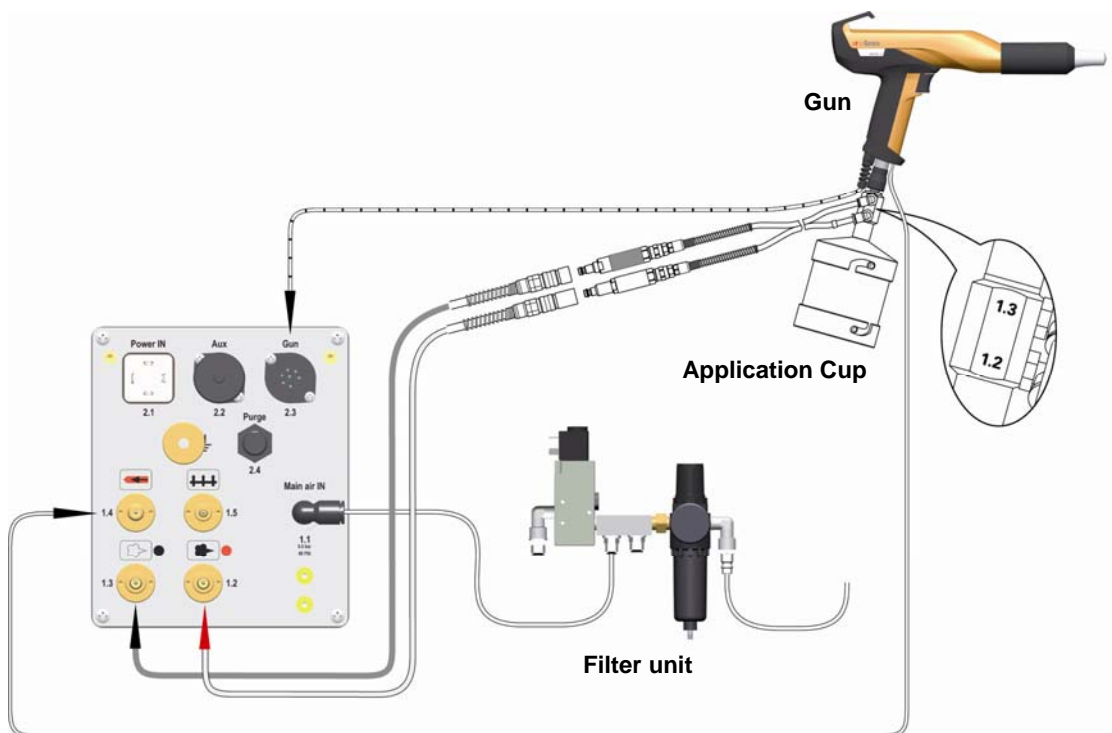
Start-up and operation

Connecting guide



Note:

The further start-up procedure for the OptiFlex 2 GM03 manual gun is explicitly described in the OptiFlex 2 CG09 control unit operating instructions (chapter "Initial start-up" and "Daily start up")!



Connecting guide - overview



Note:

The compressed air must be free from oil and water!

1. 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
2. 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
3. Connect pneumatic hoses according to color coding on the cup connection

Function check

1. Turn on the gun control unit
2. Press the desired application key (Preset or Program mode) on the control unit (see gun control unit operating instructions)
3. Pick the gun up and point it at a grounded object, at a distance of approx. 20 cm
4. Press the powder gun trigger
 - The display for current and high voltage on the control unit shows the actual value. The high voltage is present in the OptiFlex 2 GM03 gun and the LED illuminates
 - The high voltage can be set with the corresponding keys (see also the control unit operating instructions)
5. Select the powder output and total air volume
 - The display indicates the powder output in % and total air volume in m³/h
6. Press the corresponding key for the rinsing air on the control unit (according to the used nozzle)
7. Check the remote control by pressing the + or - key on the back of the powder gun, and the modified powder output value is displayed on the control unit. By simultaneous pressing of the + and - key, the application modes can be changed on the control unit

If all the checks are positive, the application cup is ready for operation.



Note:

If a malfunction occurs, see the troubleshooting guide, as well as the gun control operating instructions!

Start-up

Fill in powder

1. Fill the application cup with powder
2. Carefully place the dip tube into the powder, in order to avoid the clogging of the dip tube
3. Lock the bayonet closure

Switch on the control unit

1. Press the **ON** power switch.
The displays illuminate and the control unit is ready for operation
2. Select the coating parameters
 - The powder output can be adjusted either on the control unit or on the rear of the OptiFlex 2 GM03 powder gun (remote control)
3. Point the gun to the workpiece and coat normally

Maintenance and cleaning

**Note:**

Regular and conscientious maintenance increases the operating life of the unit and ensures a longer, more constant coating quality!

Daily maintenance

1. Clean the application cup, see chapter "Cleaning"

Weekly maintenance

1. Clean the application cup, see chapter "Cleaning"
2. Check the O-rings

Cleaning

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. Clean the gun and the outside of the application cup by blowing off, wiping etc.
3. Release the bayonet closure between cup cover and cup
4. Clean the cup
5. Pull out the dip tube and clean it
6. Clean the cup with compressed air

7. Clean the fluidizing plate with compressed air (free of oil and water)



Attention:**Do not clean the fluidizing plate with solvents or other fluidities!**

Completely dismantling the application cup

Dismantling the application cup

When changing colors (dark to light or vice versa), or for maintenance purposes, the entire application cup, including injector parts, can be dismantled and cleaned with compressed air.

1. Disconnect the pneumatic hoses
2. Unscrew the cup cover
3. Insert one of the pneumatic hoses into the connection tube and push out the injector parts (nozzle seat and nozzle)



Attention:**Do not use hard objects!**

4. Clean the component parts with compressed air or by wiping

Assembling the application cup

The assembly of the application cup is carried out in the reverse order to that shown above.

Troubleshooting

General information

Fault	Cause	Troubleshooting
No powder output	The application cup is incorrectly connected or not connected at all to the control unit	Check the pneumatic connections, and if necessary, connect (see Connection guide)
	Injector nozzle clogged	Dismantle the application cup completely and clean it
	Dip tube clogged	Blow through the dip tube with compressed air, and place it in the powder carefully
Irregular powder output	Poor leak proof closure	Dismantle the application cup completely, check the O-rings and replace, if necessary
	Pneumatic hoses not correctly connected	Check the elbow joints and connect correctly, if necessary.
	Powder fluidization insufficient or not available	Dismantle and clean the fluidizing plate, replace if necessary

Spare parts list

Ordering spare parts

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

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

Example:

- **Type** OptiFlex GM03 application cup
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)



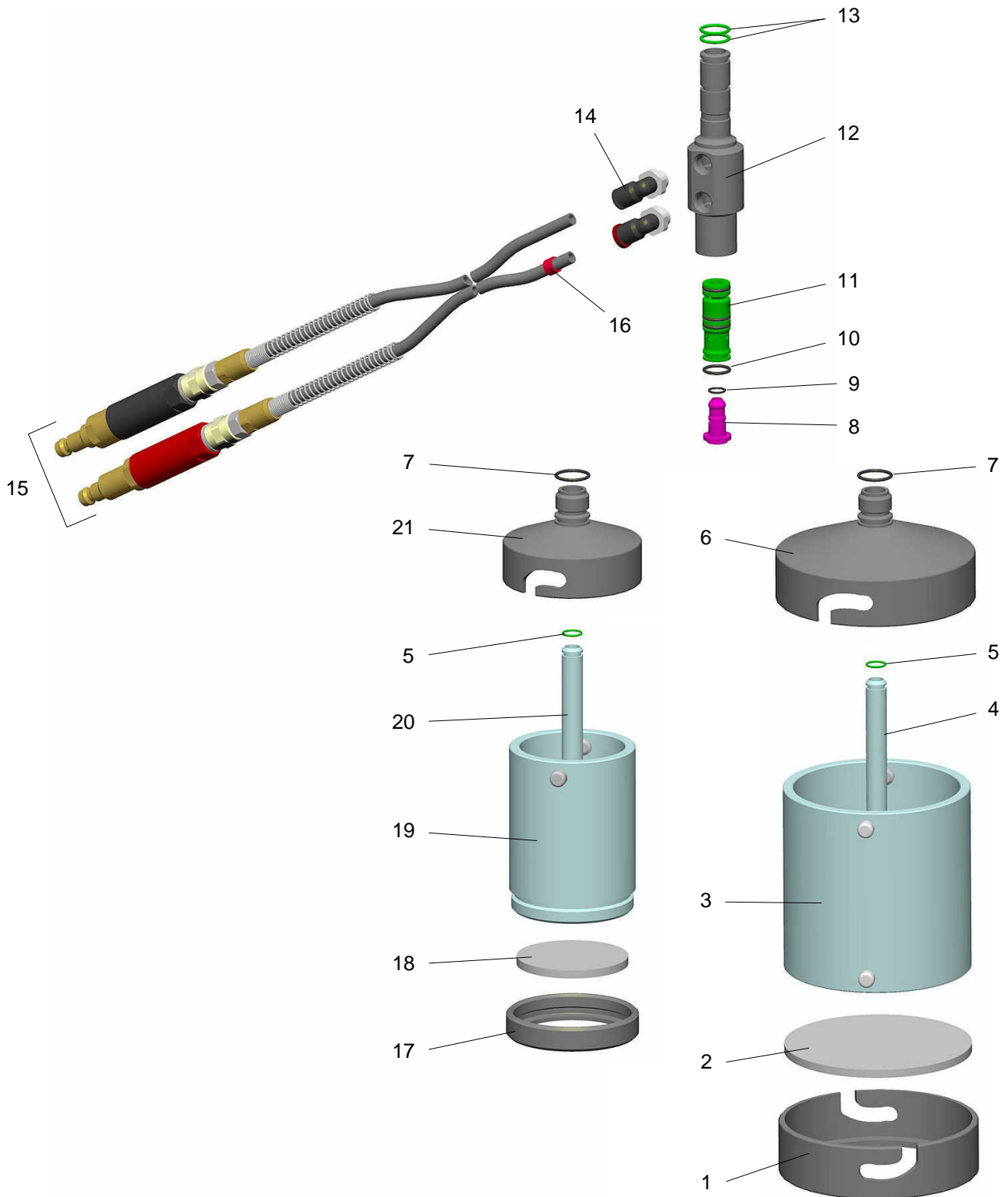
WARNING!

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!

Application cup - spare parts list

Application cup - 500 ml, complete		1002 069
A	Cup - 500 ml, complete (incl. pos. 1, 2, 3)	1002 620
B	Cup connection - 500 ml, complete (incl. pos. 6-14)	1002 094
1	Bottom	1002 074
2	Fluidizing plate	1002 072#
3	Cup cylinder - 500 ml	1002 070#
4	Dip tube - complete	1005 090#
5	O-ring - Ø 8x1 mm	221 740#
6	Cup cover	1002 098
7	O-ring - Ø 14x1.5 mm	263 486#
8	Nozzle	1002 097
9	O-ring - Ø 6x1 mm	217 115#
10	O-ring - Ø 10x1.5 mm	1002 588#
11	Nozzle seat	1002 096
12	Connection pipe	1002 095
13	O-ring - Ø 12x1.5 mm	1000 822#
14	Elbow joint - 1/8"a, Ø 6 mm	254 061
15	Pneumatic connection (from application cup to control unit)	1002 587
16	Coding ring, 06 red	1002 603
Application cup - 150 ml, complete		1004 552
C	Cup - 150 ml, complete (incl. pos. 17, 18, 19)	1004 553
D	Cup connection - 150 ml, complete (incl. pos. 7-14, 21)	1004 554
17	Bottom	1003 563
18	Fluidizing plate	1004 556#
19	Cup cylinder - 150 ml	1004 561#
20	Dip tube - complete	1005 089#
21	Cup cover	1003 564
	# Wearing part	

Application cup - spare parts



Application cup - spare parts