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Operating instructions and spare parts list

Manual coating equipment

OptiFlex 2 F Spray

Translation of the original operating instructions

Gema

Documentation Manual coating equipment OptiFlex 2 F Spray

For the latest information about Gema products, visit www.gemapowdercoating.com.

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About this instructions

General information

This operating manual contains all important information you will need to work with the OptiFlex 2 F Spray. 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 functional mode of the individual system components should be referenced in the respective enclosed documents.

Keeping the manual

Please keep this Manual ready for later use or if there should be any queries.

Safety symbols (pictograms)

The following contains a list of warnings with their meanings found in the Gema operating instructions. Apart from the regulations in the relevant operating instructions, the general safety precautions must also be followed .

⚠ DANGER

Indicates a hazardous situation which,

if not avoided, will result in death or serious injury.

⚠ WARNING

Indicates a potentially hazardous situation which,

if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a potentially hazardous situation which,

if not avoided, could result in minor or moderate injury.

ATTENTION

Indicates a potentially harmful situation which,

if not avoided, the equipment or something in its surrounding may be damaged.

ENVIRONMENT

Indicates a potentially harmful situation which,

if not avoided, may have harmful consequences for the environment.

MANDATORY NOTE

Information which must be observed.

NOTE

Useful information, tips, etc.

Structure of Safety Notes

Every note consists of 4 elements:

– Signal word
– Nature and source of the danger
– Possible consequences of the danger
– Prevention of the danger

⚠ SIGNAL WORD

Nature and source of the hazard!

Possible consequences of the danger

► Prevention of the danger

Presentation of the contents

Figure references in the text

Figure references are used as cross references in the descriptive text.

Example:

"The high voltage (**H**) created in the gun cascade is guided through the center electrode.

Safety

Intended use

- This product is built to the latest specification and conforms to the recognized technical safety regulations and is designed for the normal application of powder coating.
- Any other use is considered non-compliant. The manufacturer shall not be liable for damage resulting from such use; the user bears sole responsibility for such actions. If this product is to be used for other purposes or other substances outside of our guidelines then Gema Switzerland GmbH should be consulted.
- Observance of the operating, service and maintenance instructions specified by the manufacturer is also part of conformity of use. This product should only be used, maintained and started up by trained personnel, who are informed about and are familiar with the possible hazards involved.
- Start-up (i.e. the execution of intended operational tasks) is forbidden until it has been established that this product has been set up and wired according to the guidelines for machinery. The standard "Machine safety" must also be observed.
- Unauthorized modifications to the product exempt the manufacturer from any liability from resulting damage.
- The relevant accident prevention regulations, as well as other generally recognized safety regulations, occupational health and structural regulations are to be observed.
- Furthermore, the country-specific safety regulations also must be observed.

Product-specific safety information

- This product is a constituent part of the equipment and is therefore integrated in the system's safety concept.
- If it is to be used in a manner outside the scope of the safety concept, then corresponding measures must be taken.
- The installation work to be done by the customer must be carried out according to local regulations.

– It must be ensured, that all components are earthed according to the local regulations before start-up.

▶ **For further security information, see the more detailed Gema safety regulations!**

⚠ WARNING

Working without operating instructions

Working without operating instructions or with individual pages from the operating instructions may result in damage to property and personal injury if relevant safety information is not observed.

– Before working with the device, organize the required documents and read the section "Safety regulations".
– Work should only be carried out in accordance with the instructions of the relevant documents.
– Always work with the complete original document.

⚠ WARNING

These general safety regulations must be read and understood in all cases prior to start-up!

General information

This 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.

Any other use is considered non-compliant. The manufacturer shall not be liable for damage resulting from such use; the user bears sole responsibility for such actions. Gema Switzerland GmbH must be consulted prior to any use of this manual coating equipment for any purposes or substances other than those indicated in our guidelines.

Observance of the operating, service and maintenance instructions specified by the manufacturer is also part of conformity of use.

The relevant accident prevention regulations, as well as other generally recognized safety regulations, occupational health and structural regulations are to be observed.

Furthermore, the country-specific safety regulations also must be observed.

Additional safety and operation notices can be found on the accompanying CD or on the homepage www.gemapowdercoating.com.

General dangers

Start-up is forbidden until it has been established that the manual coating equipment has been set up and wired according to the EU guidelines for machinery.

Unauthorized modifications to the coating equipment exempt the manufacturer from any liability from resulting damages or accidents.

The operator must ensure that all users do have the appropriate training for powder spraying equipment and are aware of the possible sources of danger.

Any operating method, which will negatively influence the technical safe-

ty of the powder spraying equipment, is to be avoided.

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 Gema spare parts should be used!

Repairs must only be carried out by specialists or by authorized Gema service centers. Unauthorized conversions and modifications can lead to injuries and damage to the equipment and invalidate the Gema Switzerland GmbH guarantee.

Electrical danger

The connecting cables between the control unit and the spray gun must be installed in such a way, that they cannot be damaged during the operation. Please observe the local safety regulations!

The plug connections between the powder spraying equipment and the mains should only be removed when the power supply is switched off.

All maintenance activities must take place when the powder spraying equipment is switched off.

The powder coating equipment may not be switched on until the booth is in operation. If the booth stops, the powder coating device must switch off too.

Explosion hazard

The control units for the spray guns must be installed and used in zone 22. Spray guns are allowed in zone 21.

Only original Gema OEM parts are guaranteed to maintain the explosion protection rating. If damages occur by using spare parts from other manufacturers, the warranty or compensation claim is void!

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 = max. permissible powder/air concentration). If the UEG is not known, then a value of 10 g/m³ should be considered (see EN 50177).

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

No safety devices should be dismantled or put out of operation.

Mandatory operational and workplace notices from the operating company must be written in a comprehensible manner in the language of equipment operators and posted in a suitable place.

Slip hazard

Powder lying on the floor around the powder spraying equipment is a potentially dangerous source of slipping. Booths may be entered only in the places suitable for it.

Static charges

Static charges can have the following consequences: Charges to people, electric shocks, sparking. Proper grounding must be in place to prevent objects from becoming charged.

Grounding

Observe the grounding regulations

All electrically conductive parts found in the workplace of 5 meters around each booth opening, and particularly the objects to be coated, have to be grounded. The grounding resistance of each object must amount to maximally 1 MOhm. This resistance must be checked/tested regularly when starting work.

The condition of the work piece attachments, as well as the hangers, must guarantee that the work pieces remain grounded. The appropriate measuring devices must be kept ready in the workplace, in order to check the grounding.

The floor of the coating area must conduct electricity (normal concrete is generally conductive).

The supplied grounding cable (green/yellow) must be connected to the grounding screw of the electrostatic manual powder coating equipment. The grounding cable must have a good metallic connection with the coating booth, the recovery unit and the conveyor chain, respectively with the suspension arrangement of the objects.

Fire and smoke prohibition

Smoking and igniting fire are forbidden in the entire vicinity of the system! No work that could potentially produce sparks is allowed!

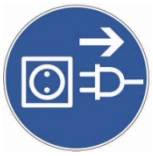
The stay for persons with cardiac pacemakers is forbidden

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!

Photographing with flashlight is forbidden

Photographing with flashlight can lead to unnecessary releases and/or disconnections by safety devices.

Disconnect from mains before maintenance works take place



Disconnect the plugs before the machines are opened for maintenance or repair.

The plug connections between the powder spraying equipment and the mains should only be removed when the power supply is switched off.

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

A dust mask corresponding to filter class FFP2 or N95 at minimum must be worn during any cleaning work.

The operating personnel must wear electrically conductive, steel-toe footwear (e.g. leather soles).

The operating personnel should hold the gun with bare hands. If gloves are worn, these must also conduct electricity.

Product description

Field of application

The OptiFlex 2 F Spray manual coating equipment (with powder hopper) is exclusively intended for electrostatic coating using organic powders (For more on this please also review chapter "Technical Data").

Any other use is considered non-compliant. The manufacturer is not responsible for any incorrect use and the risks associated with such actions are assumed by the user alone!

For a better understanding of the interrelationships in powder coating, it is recommended that the operating instructions for all other components be read as well, so as to be familiar with their functions too.

Fig. 1

Utilization

This electrostatic manual coating equipment with the OptiSelect GM03 manual powder gun is ideally suited for manual coating of objects.

Versions

The manual coating equipment is available in different versions and covers a broad application range.

This manual unit is the right solution for coatings that require a constant powder output or high film builds. With a powder output of up to 600 g/min and an extremely high efficiency best coating results are achieved.

Application	**Precise powder transport**	
Option	I	Ia (Extension Kit)
		
Number of guns	1	1 +1
Number of pumps	1	1 +1
Powder output	1x 50-300 g/min	2x 50-300 g/min

Application	**Hot coating**	
Option	II	IIa (Extension Kit)
		
Number of guns	1	1 +1
Number of pumps	2	2 +2
Powder output	1x 100-600 g/min	2x 100-600 g/min

Reasonably foreseeable misuse

– Operation without the proper training
– Use with insufficient compressed air quality and grounding
– Use in connection with unauthorized coating devices or components

Design and function

Structure

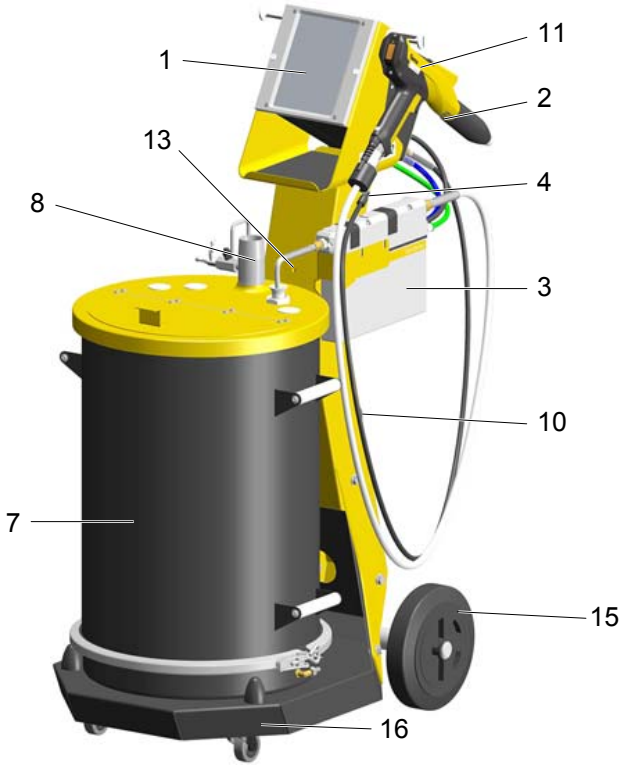


fig. 2: Structure

1 OptiStar CG11-P Gun control unit
2 OptiSelect GM03 manual gun
3 OptiSpray AP01 Application Pump
4 Diffuser
7 Fluidized powder hopper
8 AirMover
10 Filter unit
11 Gun holder
13 Powder suction hose
15 Rubber wheel
16 Swivel wheel

OptiSelect GM03 manual gun

All information about the OptiSelect GM03 manual powder gun can be found in the documentation for that equipment (enclosed with this manual)!

OptiStar CG11-P Gun control unit

All information about the OptiStar CG11-P Control unit will be found in the corresponding enclosed documentation!

OptiSpray AP01 Application Pump

All information about the OptiSpray AP01 application pump will be found in the corresponding enclosed documentation!

Technical Data

Connectable guns

OptiFlex 2 F Spray	connectable
OptiSelect GM03	yes

ATTENTION

The OptiFlex 2 F Spray Manual coating equipment may only be used with the specified gun types!

Powder output (reference values)

OptiFlex 2 F Spray	
Conveying hose till 20 m – internal Ø 7 mm Suction hose 0.6 m – internal Ø 4.5 mm	50-300 g/min
Conveying hose till 25 m – internal Ø 7 mm Suction hose 0.6 m – internal Ø 4.5 mm	75-400 g/min*
Conveying hose till 20 m – internal Ø 7 mm Suction hose 0.6 m – internal Ø 4.5 mm	100-600 g/min*

* Parallel operation (for more on this, please also see the operating instructions for the OptiStar CG11-P manual gun control unit)

Air flow rates

The total air consists of conveying air and supplementary air, in relation to the selected powder quantity (in %). As a result the total air volume is maintained constant.

OptiFlex 2 F Spray	Range	Factory setting
Flow rate – fluidizing air: - OptiFlex 2 F Spray (without AirMover air requirements)	0-5.0 Nm³/h	1.0 Nm³/h
Electrode rinsing air flow rate	0-3.0 Nm³/h	0.1 Nm³/h
Flow rate total air (at 5.5 bar)	1.8-6.5 Nm³/h	

The total air consumption for the device is determined based on the 3 configured air values (without AirMover air value).

– These values apply for an internal control pressure of 5.5 bar!

Electrical data

OptiFlex 2 F Spray	
Nominal input voltage	100-240 VAC
Frequency	50-60 Hz
Connected load	40 VA
Nominal output voltage (to the gun)	eff.10 V
Nominal output current (to the gun)	max. 1.2 A
Temperature range	0 °C - +40 °C (+32 °F - +104 °F)
Max. surface temperature	100 °C (+212 °F)
Approvals	CE Ex II 3 D IP54 120 °C

Pneumatic data

OptiFlex 2 F Spray	
Max. input pressure	8 bar / 145 psi
Min. input pressure	6 bar / 87 psi
Input pressure (Dynamic based on pressure regulator setting)	5.5 bar / 80 psi
Max. water vapor content of the compressed air	1.3 g/m³
Max. oil vapor content of the compressed air	0.1 mg/m³
Max. compressed air consumption (depending on application and model version)	8-19 Nm³/h

Dimensions

OptiFlex 2 F Spray	
Width	460 mm
Depth	832 mm
Height	1105 mm
Weight	46 kg

Processible powders

OptiFlex 2 F Spray	
Plastic powder	yes
Metallic powder	yes
Enamel powder	no

Scope of delivery

OptiFlex 2 F Spray

– OptiStar CG11-P Control unit in a metal case with power supply cable
– OptiSpray AP01 Application Pump
– OptiSelect GM03 manual powder gun with gun cable, powder hose, rinsing air hose and standard nozzle set (For more on this, see the operating manual for the OptiSelect GM03 manual powder gun)
– Diffuser
– mobile trolley with a gun/hose support
– Fluidized powder hopper
– Pneumatic hoses for conveying air (red), supplementary air (black), fluidizing air (black) and rinsing air (black)
– Operating manual
– Short description

Typical properties – Characteristics of the functions

Processing of the powder from the fluidized powder container

This manual coating equipment processes powder from the fluidized powder container.

Freely rotating head piece

This manual coating equipment features a freely rotating and lockable head piece for more ergonomic operation and configuration.

fig. 3: Freely rotating head piece

Start-up

Preparation for start-up

Basic conditions

When starting up this manual coating unit, the following general conditions impacting the coating results must be taken into consideration:

– Manual coating equipment is set up properly

– Gun control unit correctly connected

– Gun correctly connected

– Corresponding power and compressed air supply available

– Powder preparation and powder quality

Set-up

This manual coating equipment should always be set up vertically on a flat surface.

ATTENTION

Surrounding temperature too high

► Install the equipment only in locations with an ambient temperature of between +15 and +40 °C, i.e. never next to heat sources (such as an enameling furnace) or electromagnetic sources (such as a control cabinet).

Assembly guide

This manual coating equipment must be set up in accordance with the setup and connecting instructions (included with delivery).

fig. 4: Manual coating equipment OptiFlex 2 F Spray

Connection instructions

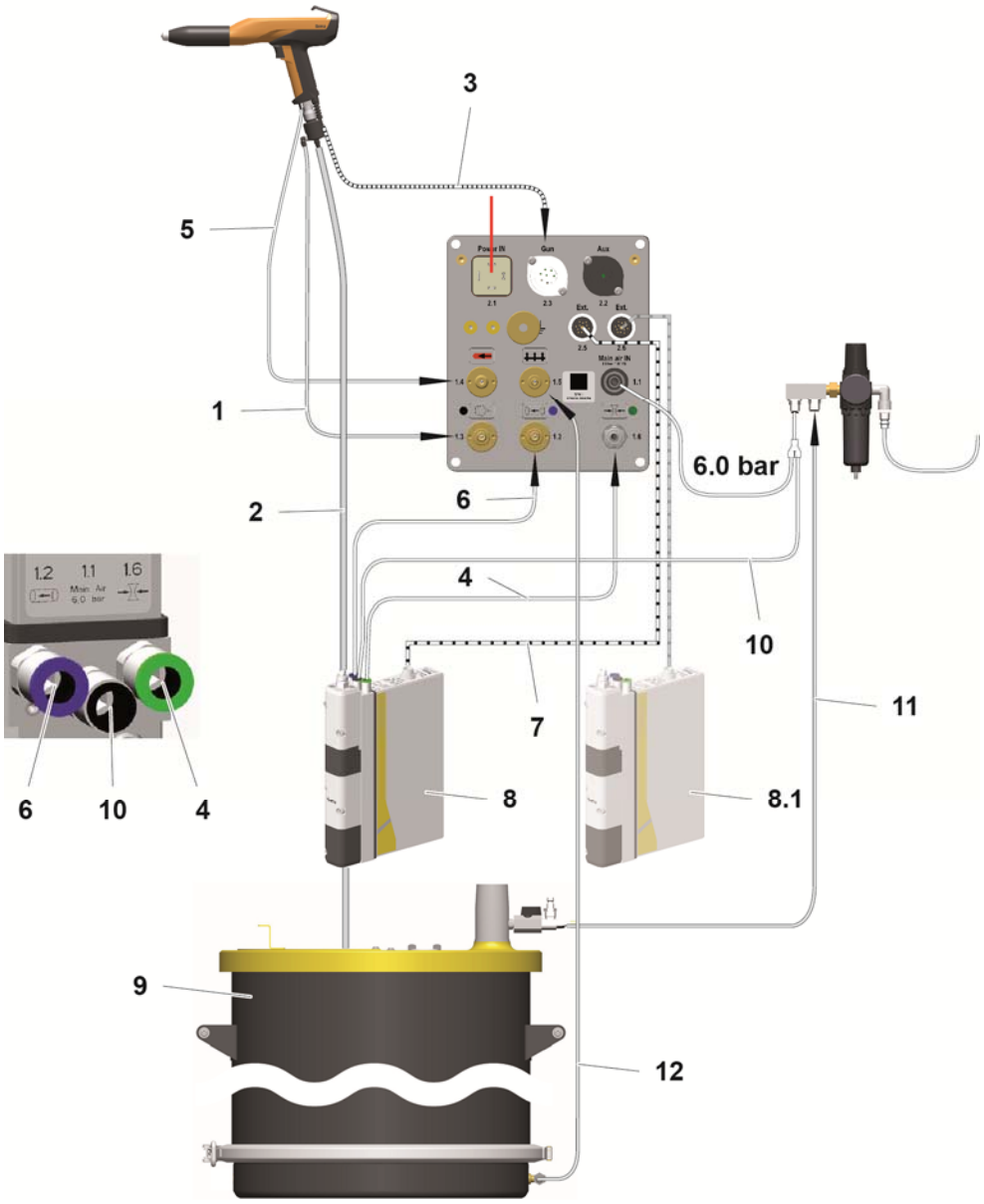


fig. 5: Connecting guide – overview

1	Spraying air hose	7	Control signal cable
2	Powder hose	8	Application pump no. 1
3	Gun cable	8.1	Application pump no. 2
4	Pinch valve air hose	9	Powder hopper
5	Electrode rinsing air hose	10	Compressed air hose
6	Transport air hose	11	AirMover air hose
		12	Fluidizing air hose

The manual coating equipment must be connected in accordance with the setup and connection instructions (Please also review the operating instructions for the OptiStar CG11-P manual gun control unit).

1. 

2. 

Use clamp to connect grounding cable to the cabin or the suspension arrangement. Check ground connections with Ohm meter and ensure 1 MOhm or less.

3. 

4. 

5. 

6. 

7. 

8. 

9. 

10. 

The compressed air must be free of oil and water!

Initial start-up

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

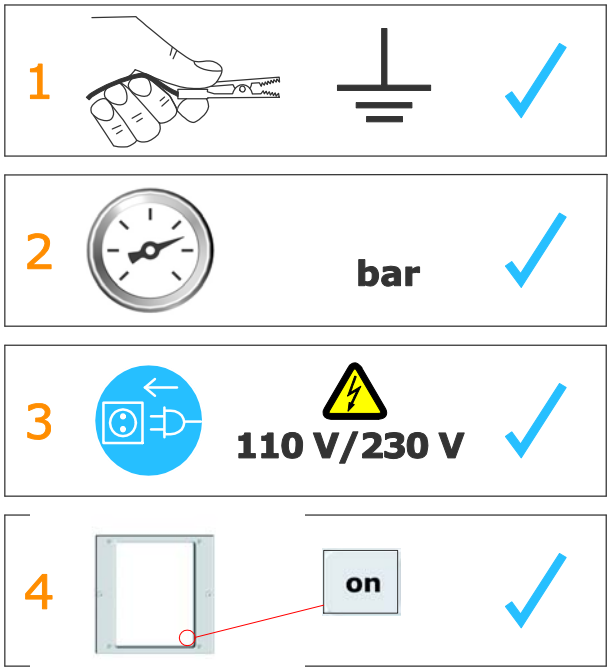


Fig. 6

The further start-up procedure for the OptiSpray AP01 Application pump is explicitly described in the OptiStar CG11-P Gun control unit operating instructions (chapter "Initial start-up" and "Daily start-up")!

Set head piece

1. 

2. 

3. 

Setting the device type

If the control unit is delivered as an integral component of an OptiFlex apparatus, then the system parameter P00 will have been factory preconfigured to the value "5" for optimal use (Application pump). For more on this, please also see the operating instructions for the OptiStar CG11-P manual gun control unit!

– The gun control unit always starts up to the last configured settings.

Operation

⚠ WARNING

Holding the gun incorrectly

During the coating process, the gun can discharge along the body of the coater if not held using its intended handle, which has been grounded.

- ► Always hold gun only by the handle!
- ► Do not touch any other parts of the gun!

Coating

⚠ CAUTION

Large dust formation possible!

If the manual equipment is not being used for coating in conjunction with a sufficiently powerful suction unit, then the stirred-up dust from the coating powder can cause respiratory issues or cause a slippage/falling hazard.

- ► The manual equipment may only be operated in conjunction with a sufficiently powerful suction unit (such as Gema Classic Open booth).

1. Turn on the gun control unit with the **on** key.
   The displays illuminate and the control unit is ready for operation
2. Place powder hopper on the mobile trolley

⚠ CAUTION

Large dust formation possible!

When setting the powder hopper onto the mobile trolley of the manual equipment, the hopper/trolley zone represents a threat of crushed toes.

- ► Wear safety shoes with steel toecaps.

3. Set the ventilation (Airmover)
   - – Open the ball valve completely
   - – Calibrate with the throttle valve
4. Fill in powder
   - – Open the powder hopper filling cover.
   - – Fill in powder: Fill with maximum 25 kg (50 l) powder or the powder must reach to a maximum of 5-10 cm below the handles of the powder hopper, otherwise the fluidized powder can escape from the cover.
   - – Close the filling cover of the powder hopper again
5. Set coating parameters:

6. Press the application button for the appropriate preset mode:

flat parts	
complicated parts	
overcoat	

The arrow above the desired button lights up:

OR

7. Press program key 

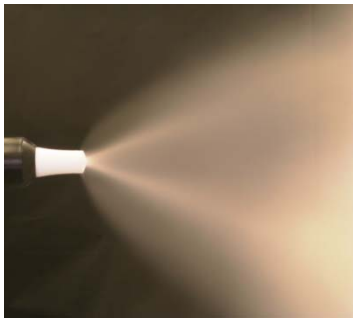
– Select desired program (01-20)

– Change coating parameters as required

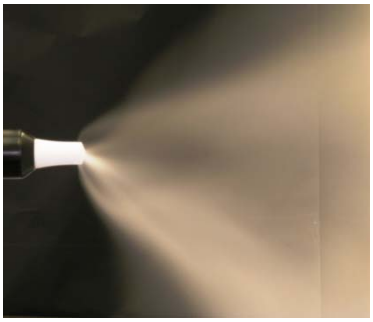
▶ **Programs 01-20 are preset at the factory but can be modified at any time, after which they are automatically stored.**

Description		Presetting
	Powder output	60 %
	Total air	4.0 Nm³/h
kV	High voltage	80 kV
µA	Spray current	20 µA
	Electrode rinsing air	0.1 Nm³/h
	Fluidizing air	1.0 Nm³/h (OptiFlex-F)

8. Setting the total air volume



correct powder cloud

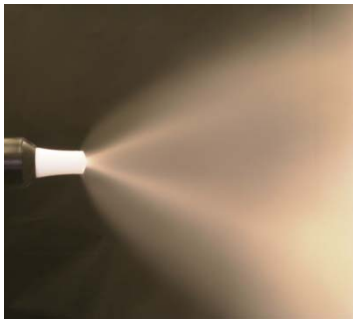


too little total air

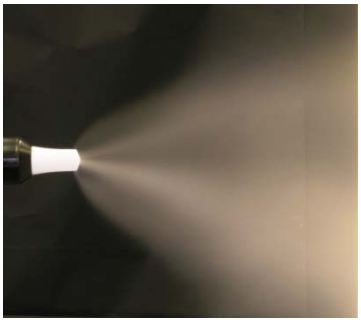
A total air volume of 4 Nm³/h and a 50% powder share are recommended as the base values.

9. Adjust the powder output volume (e.g. according to the desired coating thickness)

or



much powder



little powder

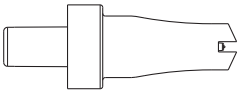
To achieve maximum efficiency, we recommend avoided an overly high powder volume where possible!

- The standard setting of 50% and a total air volume of 4 Nm³/h is recommended at the start. The total air volume is thereby kept constant automatically by the control unit.
- If values are entered that the equipment cannot implement, then the operator is informed of this by a blinking in the relevant display and a temporary error message!

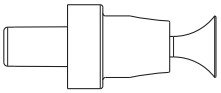
10. Setting the electrode rinsing air

- Press the sel key

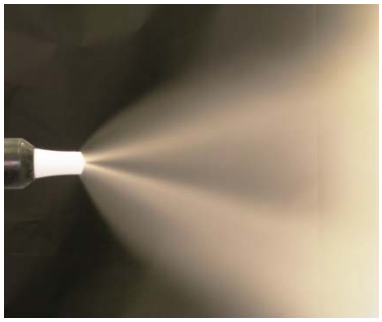
  The second display level will be shown:



≈ 0.1 Nm³/h



≈ 0.5 Nm³/h



too much electrode rinsing air

11. Setting the fluidization

   – Press the 

key

     The second display level will be shown:

   – Check fluidization of the powder in the powder container.

     The powder fluidization depends on the powder type, the air humidity and the ambient temperature. Fluidizing and vibration start by switching on the control unit.

⚠ CAUTION

Large dust formation possible!

If the ventilation has been incorrectly adjusted, then the coating powder can create a dust cloud capable of causing respiratory problems.

► Ensure proper setting of ventilation.

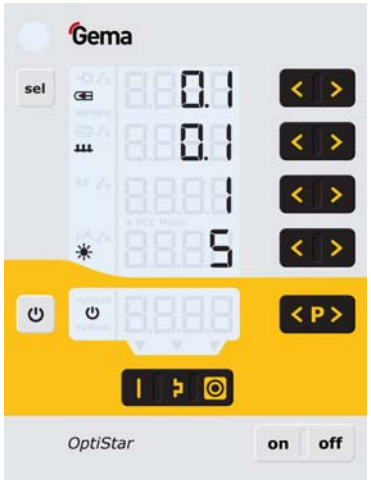
12. Point the gun into the booth (not at the object to be coated), press the gun trigger and visually check the powder output
13. Check whether everything is functioning correctly
14. Coating
15. Adjust the coating parameters as necessary

Setting the background illumination

1. Press the 

key

   The display switches to the following level:



2. 

   Select the desired brightness

Color change

General information

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

The following describes an 'extreme' color change (light to dark).

1. 
2. 
3. 
4. 
5. 
6. 

7. Remove and clean the nozzle, purge gun using air
8. Clean the dense phase pump (see the corresponding operating manual)
9. Disconnect the fluidizing air supply
10. Remove cover, purge with compressed air and clean with a clean, dry brush and cloth
11. Clean the suction tube
12. Empty remaining powder into a container
13. Vacuum up the hopper and in particular the bottom
14. Clean the hopper with a cloth
15. Reassemble the powder hopper
16. Fill with new powder

17. 
18. 
19. 
20. 

Shutdown

1. Release gun trigger
2. Switch off the control unit

▶ **The adjustments for high voltage, powder output, electrode rinsing air and fluidizing remain stored.**

If in disuse for several days

1. Separate from power mains
2. Clean coating equipment (see Chapter on "Cleaning and maintenance")
3. Turn off the compressed air main supply

Cleaning and maintenance

Regular, careful cleaning and maintenance extends the service life of the manual coating equipment and ensures long-lasting, uniform coating quality!

– The parts to be replaced during maintenance work are available as spare parts. These parts can be found in the corresponding spare parts list!

Daily maintenance

1. Clean the application pump (see therefore the application pump user manual)
2. Clean the powder gun (For more on this, please also review the user manual for the OptiSelect GM03 manual powder gun)
3. Clean the powder hose; Please also review the section "Color change"

Weekly maintenance

1. Clean the powder hopper, application pump and powder gun.
2. 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. Separate from power mains
2. Clean the coating equipment
3. Turn off the compressed air main supply

Powder hose rinsing

If longer downtimes take place, the powder hose has to be cleaned.

The procedure is described in the section "Color change".

Cleaning

⚠ CAUTION

Large dust formation possible!

If no dust mask or one of an insufficient filter class is worn when cleaning the Fresh powder system, then the dust that is stirred up from the coating powder can cause respiratory problems.

- ► The ventilation system must be turned on for all cleaning work.
- ► A dust mask corresponding to filter class FFP2 or N95 at minimum must be worn during any cleaning work.

Cleaning the powder hopper

ATTENTION

Damage to the fluidizing plate

- ► Never clean the powder hopper with solvents or water!

1. Disconnect the fluidizing air supply
2. Remove the suction hose
3. Remove the cover, blow out with compressed air and clean with a clean dry brush and cloth
4. Empty remaining powder into a container
5. Vacuum up the hopper and in particular the bottom
6. Clean the hopper with a cloth
7. Reassemble the powder hopper

► **Refill the powder hopper shortly before reusing!**

Cleaning the OptiSelect GM03 manual powder gun

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

Before cleaning the powder gun, switch off the control unit. The compressed air used for cleaning must be free of oil and water!

Daily:

1. Blow off the outside of the gun and wipe, clean etc.
2. Clean the diffuser

Weekly:

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

Please also review the user manual for the OptiSelect GM03 manual powder gun!

Maintenance and cleaning of the filter unit

The filter unit on the manual coating equipment measures and cleans the compressed air. This is where the equipment's main compressed air connection is located.

Replacing the filter element

Procedure:

1. Unscrew the filter glass on the filter unit
2. Remove the complete filter element

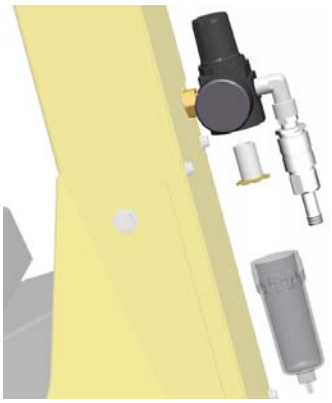


fig. 7: Replacing the filter element

1. Replace the filter element
2. Clean the filter glass on the inside and install it again

Troubleshooting

General information

Prior to any troubleshooting measures, always check whether the equipment parameters (P00) as configured in the control unit are correct (See operating instructions for the OptiStar CG11-P manual gun control unit, Chapter "Initial Start-up – Setting Equipment Type").

Failure	Causes	Troubleshooting
Control unit displays remain dark, although the control unit is switched on	Control unit is not connected to the mains	Connect the equipment with the mains cable
	Power pack fuse defective	Replace the fuse
	Power pack defective	Contact local Gema representative
The gun does not spray powder, although the control unit is switched on and the gun trigger is pressed	Compressed air not present	Connect the equipment to the compressed air
	Dense phase pump, motor throttle, powder hose or powder gun are clogged	Clean the corresponding part
	Fluidization not running	see below
	Total air incorrectly configured	Set total air correctly (Default value 4 Nm³/h)
	Main valve defective	Replace main valve
Gun LED remains dark, although the gun is triggered	Gun not connected	Connect the gun
	Gun plug, gun cable or gun cable connection defective	Contact local Gema representative
	Remote control on powder gun defective	Contact local Gema representative

Failure	Causes	Troubleshooting
Powder does not adhere to object, although the gun is triggered and sprays powder	The objects are improperly or insufficiently grounded	Check grounding, reground at better quality
	High voltage and current deactivated	Press the selection key (application key)
	High voltage cascade defective	Contact local Gema representative
The powder is not fluidized	Compressed air not present	Connect the equipment to the compressed air
	Fluidizing air is set too low on the control unit	Set the fluidizing air correctly
	Throttle motor defective	Contact local Gema representative
No electrode rinsing air	Rinsing air throttle motor defective	Contact local Gema representative

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 2 F Spray,

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 wearing 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)

ATTENTION

Use of non-original Gema spare parts

When using the spare parts from other manufacturers the explosion protection is no longer guaranteed. If any damage is caused by this use all guarantee claims become invalid!

► Only original Gema spare parts should be used!

OptiFlex 2 F Spray – Spare parts list

1	OptiStar CG11-P gun control unit – complete (see corresponding operating manual)	1009 970
2	GM03 manual powder gun – complete (see corresponding user manual)	1008 071
3	AP01 Application pump – complete (see corresponding user manual)	1015 447
5	Powder hose – dia. 8.1/4.5 mm	1005 454
6	Diffuser – complete (see operating manual OptiStar CG11-P gun control unit)	1005 263
7	Plastic tube – Ø 8/6 mm, black	103 756*
8	Powder hopper – complete (without pos. 17)	1012 132
9	Pneumatic connection for conveying air – complete (incl. Pos. 9.1, 9.2 and 9.3)	
9.1	Quick release connection – NW5, Ø 6 mm	200 840
9.2	Nut with kink protection – M10x1 mm, Ø 6 mm	201 308
9.3	Plastic tube – Ø 6/4 mm, black	1001 973
10	Pneumatic group – complete (see corresponding spare parts list)	
11	Quick release connection – NW7.8-Ø 10- Ø 26 mm	239 267
12	AirMover – complete	1002 043
13	Rubber buffer – Ø 35x40 mm, M8	211 664
14	Powder hose – Ø 11.4/7 mm, 14 m	1005 097*#
15	Suction tube – complete, pos. 16-23	1015 098
16	Hose feedthrough – complete, incl. pos. 17	1015 095
17	O-ring – Ø 19x2 mm, NBR70	208 264
18	Suction tube holder – complete, incl. pos. 19	1015 097
19	O-ring – Ø 28.3x1.78 mm, NBR70	224 987
20	Locknut – for pos. 18	234 869
21	Suction tube	1015 096
22	Suction restrictor – complete, incl. pos. 23	1015 094
23	O-ring – Ø 8x2 mm, NBR70	242 470
24	Short description	1007 143
25	Operating manual	1012 279

***** Please indicate length

#Wearing part

OptiFlex 2 F Spray – Spare parts

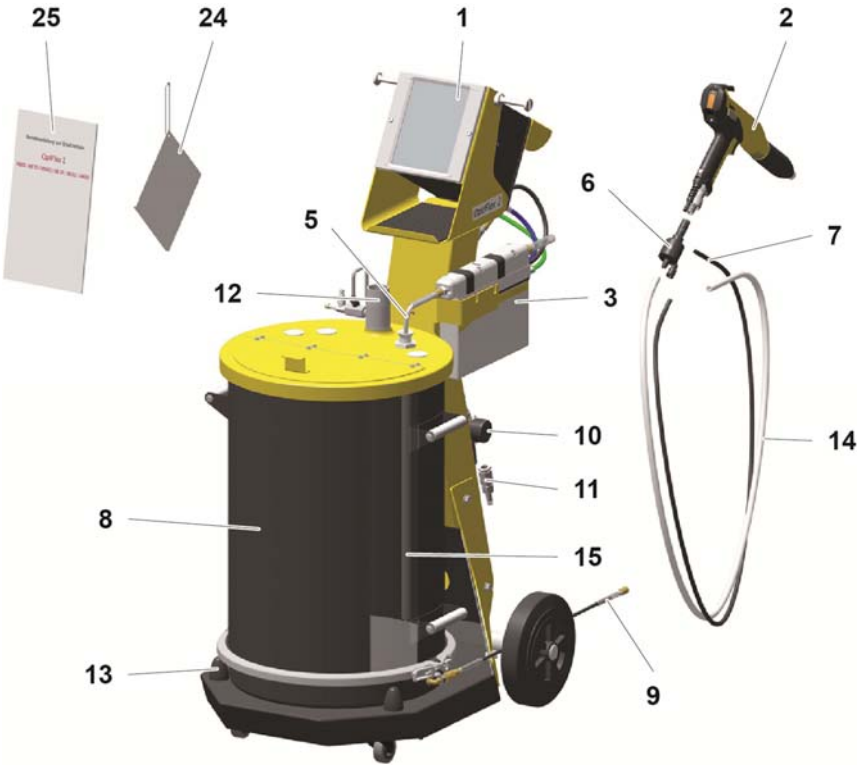


fig. 8: OptiFlex 2 F Spray – Spare parts

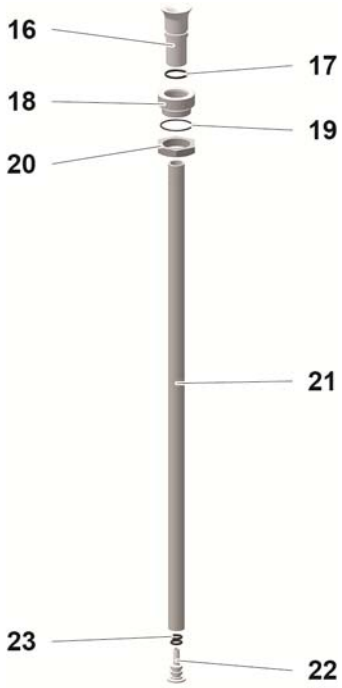


fig. 9: OptiFlex 2 F Spray – Suction tube

Pneumatic group

	Pneumatic group – complete	1008 235
1	Filter cartridge – 20 µm	1008 239#
2	Plug cap – dia. 8 mm	238 023

Wearing part

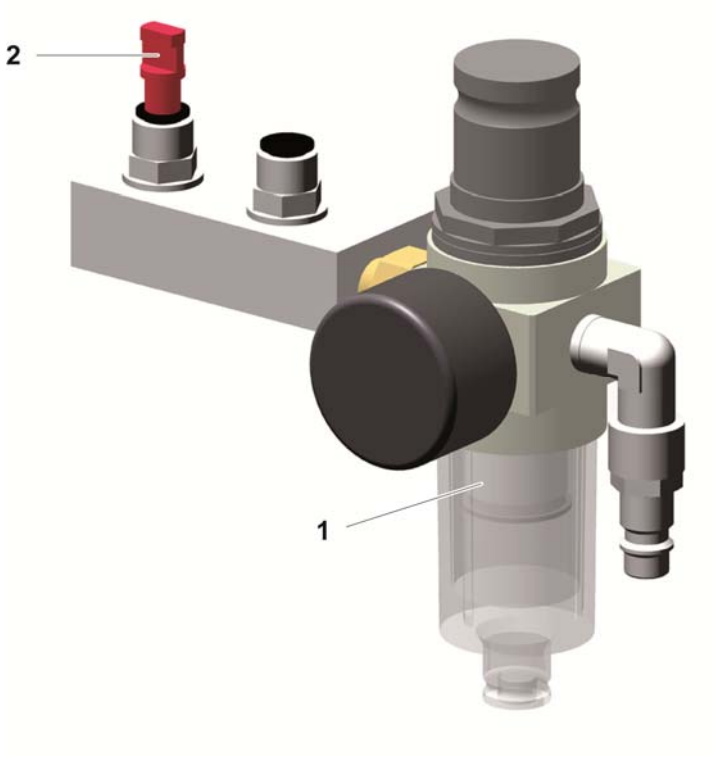


fig. 10: Pneumatic group