
Operating instructions and spare parts list

OptiFlex B

Manual coating equipment



Documentation OptiFlex B manual coating equipment

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Printed in Switzerland

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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 B manual coating equipment.

These safety regulations must be read and understood before the OptiFlex B 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!**

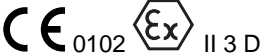
Useful tips and other information

Conformity of use

1. The OptiFlex B manual coating equipment is built to the latest specification and conforms to the recognized technical safety regulations. It is designed for the normal application of powder coating.
2. Any other use is considered as non-conform. The manufacturer is not responsible for damage resulting from improper use of this equipment; the end-user alone is responsible. If the OptiFlex B manual coating equipment is to be used for other purposes or other substances outside of our guidelines then ITW Gema AG should be consulted.
3. Observance of the operating, service and maintenance instructions specified by the manufacturer is also part of

conformity of use. The OptiFlex B 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 B 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 OptiFlex B manual coating 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.

Explosion protection	Protection type	Temperature class
	IP54	T6 (zone 21) T4 (zone 22)

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 important information which you require for the working with the OptiFlex B 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 - reciprocators, booths, powder gun controls, powder guns etc. - you will find in the corresponding enclosed documentations.

Function description

Field of application

The OptiFlex B manual coating equipment (with powder box) 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!

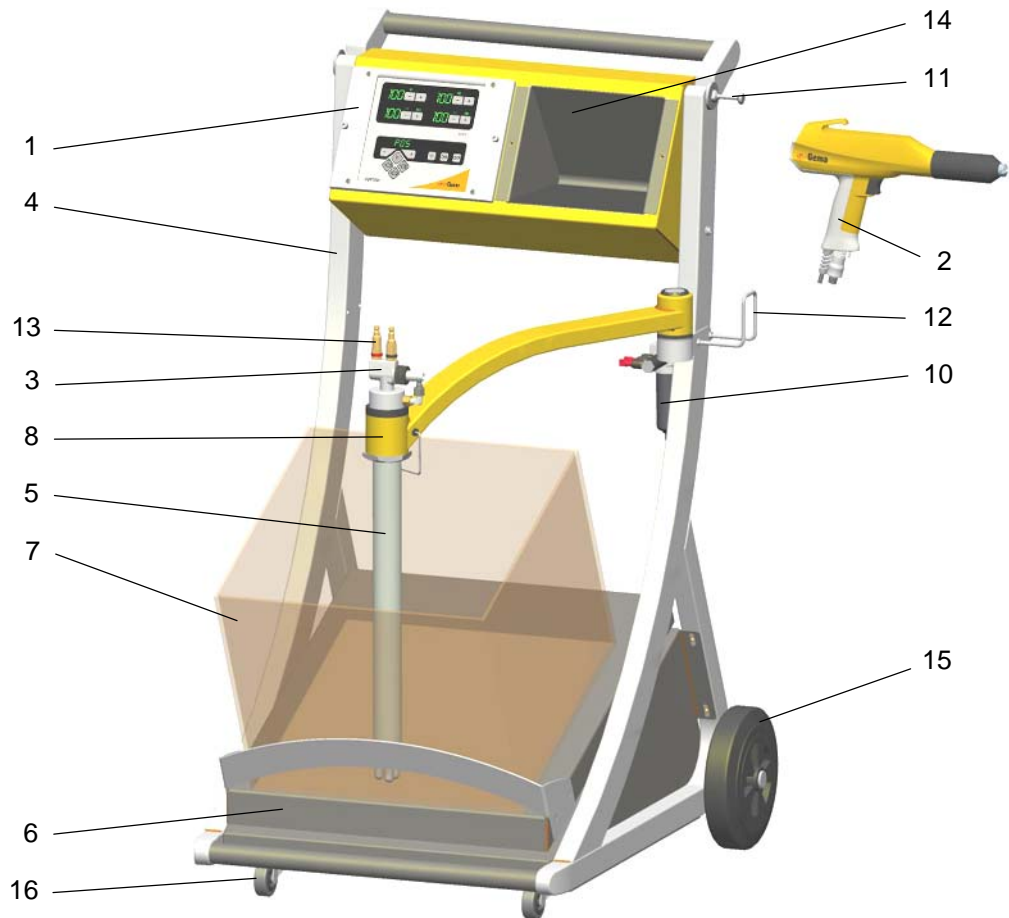
The OptiFlex B electrostatic powder manual coating equipment with the OptiSelect manual powder gun is ideally suited for manual coating of objects in small series.

Typical characteristics

- Processing the powder directly from the original powder manufacturer's container
- Total emptying of the powder container due to inclined vibrating base
- Quick and simple color change
- Supplied ready for use
- Available with one or two guns (extensible)

OptiFlex B manual coating equipment

Structure



OptiFlex B manual coating equipment - structure

- | | | | |
|---|------------------------------|----|------------------|
| 1 | OptiStar control unit | 10 | Filter unit |
| 2 | OptiSelect manual powder gun | 11 | Gun holder |
| 3 | OptiFlow injector | 12 | Hose holder |
| 4 | Frame with hand rail | 13 | Hose connections |
| 5 | Fluidizing/suction unit | 14 | Shelf |
| 6 | Vibrating base | 15 | Rubber wheel |
| 7 | Powder box | 16 | Swivel wheel |
| 8 | Swivel arm with guide sleeve | | |

OptiStar control unit

All information about the OptiStar control unit you will find in the corresponding, enclosed manual!

OptiFlow injector

All information about the OptiFlow injector you will find in the corresponding, enclosed manual!

Scope of delivery

OptiFlex B-1

- A OptiStar control unit in a metal case with power supply cable
- A mobile trolley with a gun/hose support
- A vibrating base and a fluidizing/suction unit
- A plug-in OptiFlow Injector
- An OptiSelect manual powder gun with gun cable, powder hose, rinsing air hose and standard nozzle set (see therefore the OptiSelect manual powder gun user manual)
- Pneumatic hoses for conveying air (red), supplementary air (black) and fluidizing air (black)

Additional supply for OptiFlex B-2

- An additional OptiStar control unit, complete with gun holder, special powder supply cable and connecting material
- A second fluidizing/suction unit with plug-in OptiFlow injector, a double arm, a pneumatic kit and screw joints
- An additional OptiSelect manual powder gun with gun cable, powder hose, rinsing air hose and standard nozzle set
- Pneumatic hoses for conveying air (red), supplementary air (black), as well as a pneumatic connection with dual distributor from pressure reducing valve to control unit
- Mains adaptor for twin equipment

Technical Data

OptiFlex B manual coating equipment

Electrical Data

OptiFlex B manual coating equipment	
Nominal input voltage	230-240 VAC (110-120 VAC)
Frequency	50/60 Hz
Input value	150 VA
Nominal output voltage (to the gun)	max. 12 V
Nominal output current (to the gun)	max. 1 A
Protection type	IP 54
Temperature range	0 to 40°C
Approvals	

Pneumatical Data

OptiFlex B manual coating equipment	
Compressed air main connection	G1/4" internal thread
Max. input pressure	10 bar
Min. input pressure	6 bar
Max. water vapor content of compressed air	1,3 g/m ³
Max. oil vapor content of compressed air	0,1 mg/kg
Max. compressed air consumption	8 m ³ /h

Connectable guns

OptiFlex B manual coating equipment	connectable
OptiSelect GM02	yes
OptiGun GA02	yes
PG1/PG2-A	yes (no remote control)
TriboJet	yes, with adapter*

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



Attention:

The OptiFlex B manual coating equipment may be used only with the specified gun types!

Dimensions

OptiFlex B manual coating equipment	
Width	690 mm
Depth	800 mm
Height	1135 mm
Weight	58 kg

Start-up and operation

Connecting guide



1. Connect the compressed air supply hose from the compressed air circuit directly to the filter unit main connection on the rear side of the equipment (connecting thread G 1/4"). The compressed air connection from the filter unit to the control unit must consist properly

Note:

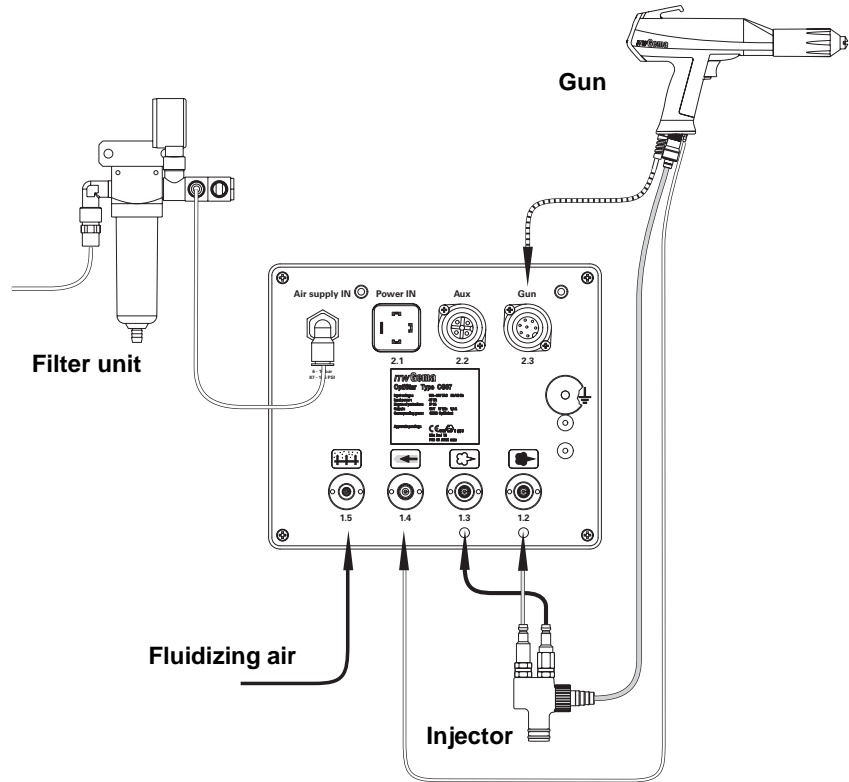
The compressed air must be free from oil and water!

2. Connect the black hose for fluidizing air to the output **1.5** on the rear side of the control unit
3. Connect the grounding connection 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 suspension device
4. Connect the gun cable plug to the socket **2.3** on the rear side of the control unit
5. Connect the rinsing air hose to the electrode rinsing air output **1.4** and to the powder gun
6. Attach the injector, connect the powder hose to the injector and to the powder gun
7. Connect the red hose for conveying air to the corresponding output **1.2** on the rear side of the control unit and to the injector
8. Connect the black hose for supplementary air to the corresponding output **1.3** on the rear side of the control unit and to the injector (this hose is electrically conducting)
9. Connect the mains cable to the **2.1 Power IN** plug and fasten it



Note:

If no vibration motor (OptiFlex B) is connected, close the 2.2 Aux output with the provided dust protection cap!



Connecting guide - overview

Preparation for start-up

Preparing the powder container

1. Swivel the fluidizing/suction unit to the side
2. Place the open powder container on the vibrating table
3. Place the fluidizing/suction unit onto the powder

Switching 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 power switch **ON**.
The displays illuminate and the control unit is ready for operation



Note:

The further start-up procedure for the OptiFlex B manual coating equipment gun is explicitly described in the OptiStar CG07 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 fluidizing/suction unit
2. Clean the powder hose:
 - Strip the powder hose from the hose connection on the injector
 - Point the gun into the booth
 - Blow through the hose manually with a compressed air gun
 - Fit the powder hose again to the hose connection on the injector
3. Dismantle and clean the powder gun (see therefore the user manual of the OptiSelect manual powder gun)
4. Clean the injector (see therefore the user manual of the OptiFlow injector)
5. Prepare the manual coating equipment with new powder for start-up

Maintenance and cleaning

**Note:**

A regular and conscientious maintenance increases the operating life of the unit and ensures a longer constant coating quality!

Daily maintenance

1. Clean the injector (see therefore the user manual of the OptiFlow injector)
2. Clean the powder gun (see therefore the user manual of the OptiSelect manual powder gun)
3. Clean the powder hose, see therefore in chapter "Color change"

Weekly maintenance

1. Clean fluidizing/suction unit, injector and powder gun. Just place the fluidizing/suction unit in the powder shortly before restarting operation
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. Disconnect the mains plug
2. Clean the coating equipment
3. Turn off the compressed air main supply

Powder hose rinsing

If lengthy downtimes take place, the powder hose must be cleaned.
Procedure:

1. Strip the powder hose from the hose connection on the injector
2. Point the gun into the booth
3. Blow through the hose manually with a compressed air gun
4. Fit the powder hose again to the hose connection on the injector

Cleaning

Cleaning the fluidizing/suction unit

1. Remove the injector
2. Remove the fluidizing/suction unit
3. Clean the fluidizing/suction unit with compressed air. Also blow off the suction tube with compressed air
4. Clean the injector (see therefore the injector user manual)
5. Reassemble the individual parts

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 powder hose from the connection
3. Remove the spray nozzle from the gun and clean it
4. Blow through the gun with compressed air, beginning from the connection in flow direction
5. Clean the 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!

Maintenance and cleaning of the filter unit

The filter unit on the OptiFlex B 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 guide

General information

Fault	Causes	Fault elimination
---	Power pack defective	Replace the power pack
---	Main valve defective	Replace main valve coil
---	Gun not connected Gun plug, gun cable or gun cable connection defective Remote control on powder gun defective	Connect the gun Replace corresponding part or send in for repair Replace remote control (gun cap)
---	Rinsing air solenoid valve of flat jet nozzle defective	Replace valve coil
---	Rinsing air solenoid valve of round jet nozzle defective	Replace valve coil
---	Gun plug, gun cable or gun cable connection defective	Replace corresponding part or send in for repair
Gun LED remains dark, although the gun trigger is operated	Gun plug, gun cable or gun cable connection defective Remote control on powder gun defective	Replace corresponding part or send in for repair Replace remote control (gun cap)
Powder does not adhere to object, although the gun trigger is operated and the gun sprays powder	High-voltage and current deactivated High voltage cascade defective Objects are not properly grounded	Press the selection key (application key) Send in the gun for repair Check the grounding

Fault	Causes	Fault elimination
Control unit displays remain dark, although the control unit is switched on	Control unit is not connected to the mains Power pack fuse defective Power pack defective	Connect the equipment with the mains cable Replace the fuse Replace the power pack
The powder is not fluidized	Compressed air not present Fluidizing air is set too low on the control unit Motor throttle defective	Connect the equipment to the compressed air Set the fluidizing air correctly Replace the motor throttle
The gun does not spray powder, although the control unit is switched on and the gun trigger is operated	Compressed air not present Injector, motor throttle or nozzle on injector, powder hose or powder gun are clogged Nozzle in the injector is clogged Nozzle is not inserted Fluidizing not running No conveying air: Reducing valve defective Solenoid valve defective Control circuit board defective	Connect the equipment to the compressed air Clean corresponding part Replace Insert the nozzle (see above) Replace the reducing valve Replace the solenoid valve Send in for repair

Schematic diagrams

Pneumatical diagram

Block diagram

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 B 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!

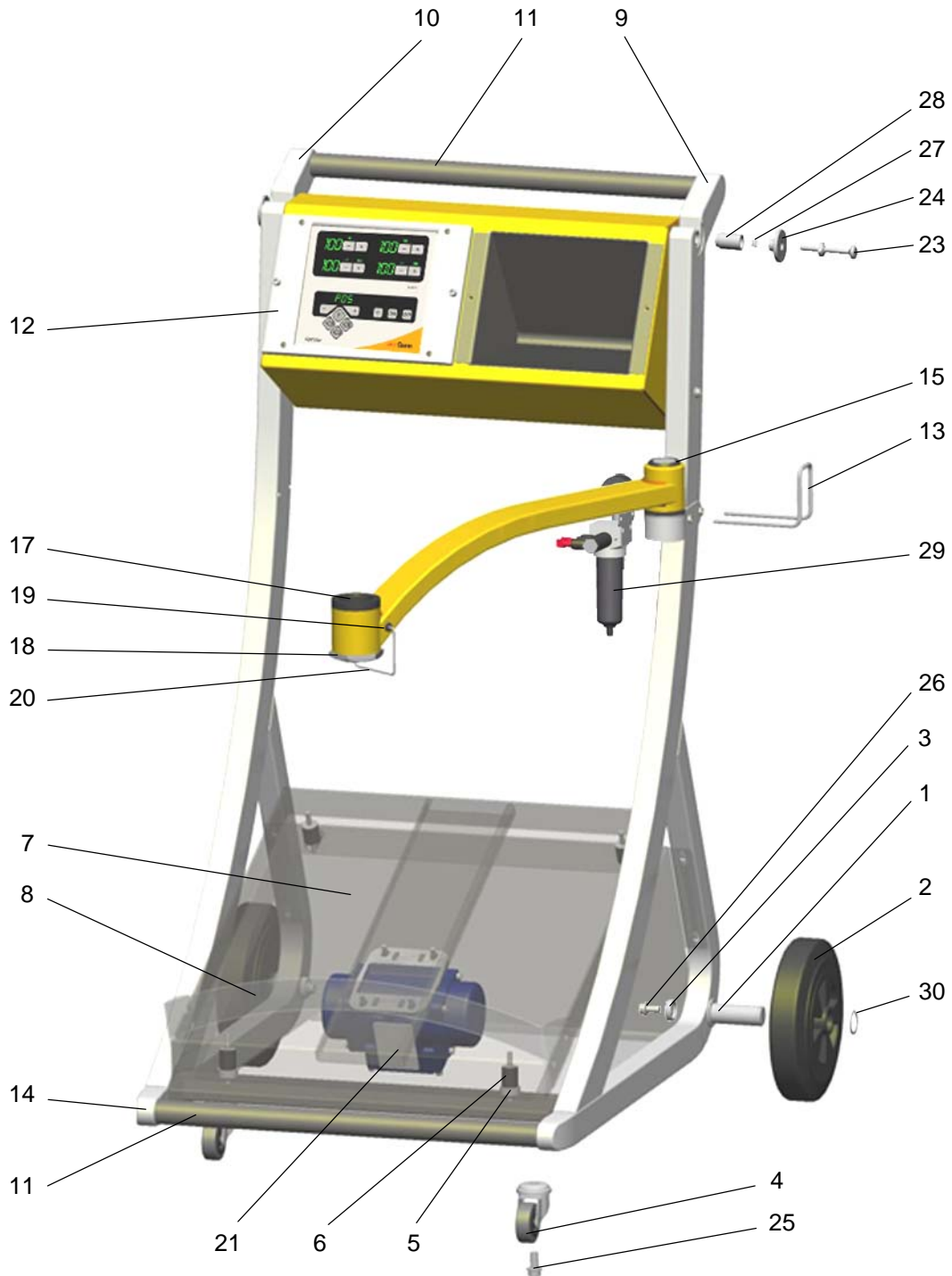
OptiFlex B manual coating equipment - spare parts list

1	Wheel shaft	1000 453
2	Rubber wheel - Ø 200 mm	260 592
3	Counter washer	1000 454
4	Swivel wheel - Ø 50 mm	260 606
5	Spacing ring	375 624
6	Rubber damper- Ø 20x25 mm, M6/2a 43sh	246 000
7	Vibrating base	1000 748
8	Stop plate	1000 513
9	Handle piece, right	1000 811
10	Handle piece, left	1000 812
11	Handle bar	1000 460
12	CG07 gun control unit - complete (see corresponding user manual)	1001 060
13	Bracket	1000 699
14	Bumper	1000 779
15	Bearing bush	1001 138
16	Cable connection fitting for vibrator cable - M16/1/6,0-10,5 mm, brass (not shown)	265 780
17	Guide sleeve	375 675
18	Counter nut - M50x1,5 mm	260 657
19	Cable sleeve	265 276
20	Retaining bracket	390 445
21	Vibrator motor - 220-240 V, 50 Hz	1001 748
22	IG02-V Injector - complete (not shown, see corresponding user manual)	391 530
23	Gun retainer	1001 140
24	Conical spring washer	1000 943
25	Ribbed cylinder screw - M10x20 mm	260 584
26	Hexagon ribbed cylinder screw - M8x16 mm, galv.	261 793
27	Compression spring - 0,63x8x16 mm, RF	1000 565
28	Bearing bolt - L=33	1000 953
29	Filter unit - complete (see corresponding spare parts list)	1001 147
30	Snap ring - A	237 094

Wearing part

* Please indicate length

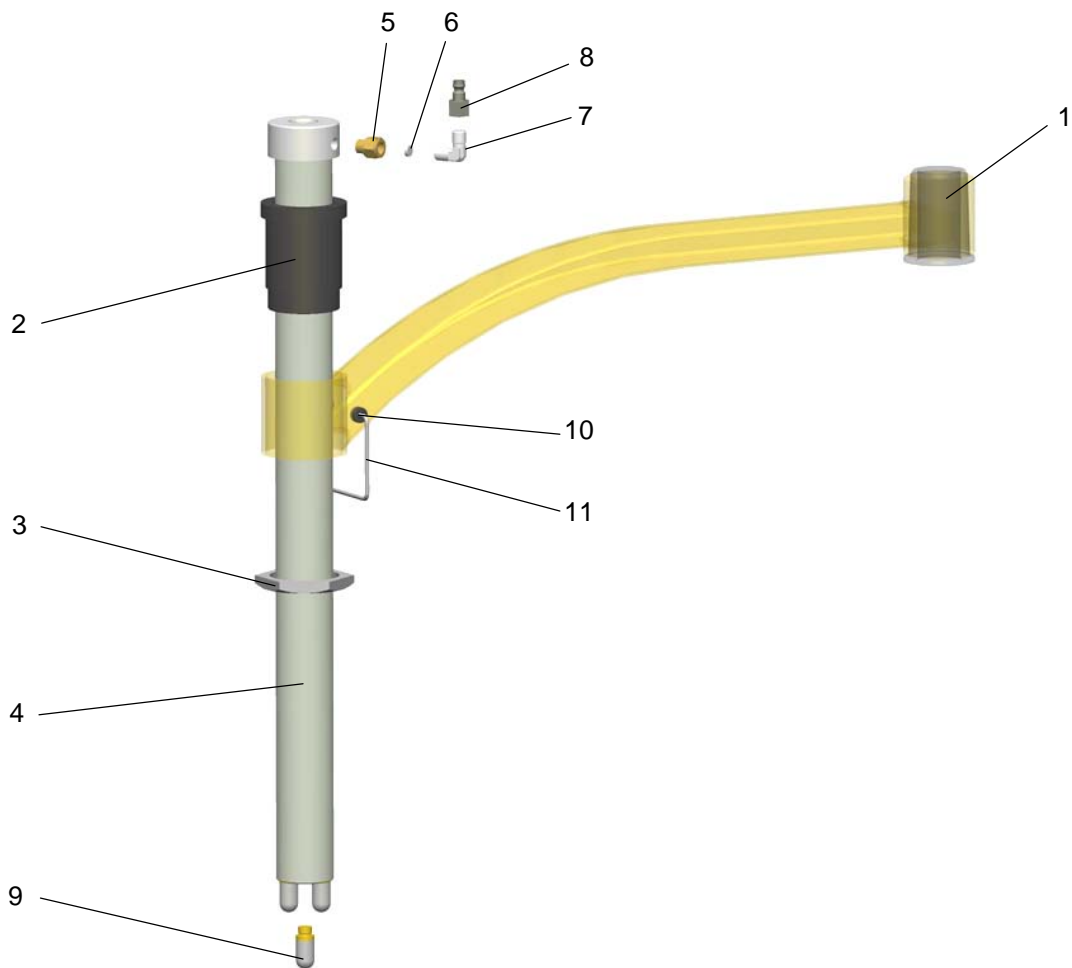
OptiFlex B manual coating equipment - spare parts list



OptiFlex B manual coating equipment - spare parts

OptiFlex B - fluidizing/suction unit

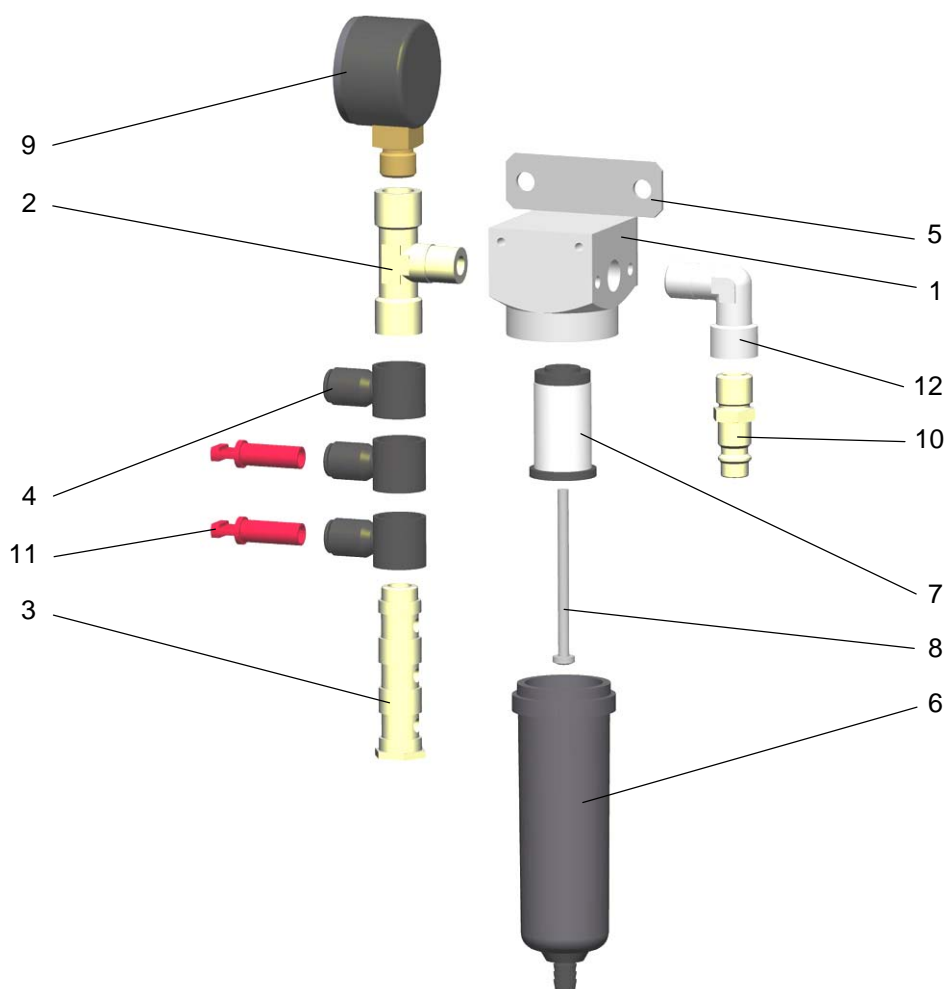
1	Bearing bush	1001 138
2	Guide sleeve	375 675
3	Locknut - M50x1,5, plastic	260 657
4	Fluidizing/suction unit - Ø 40x534 mm, complete (incl. pos. 5-9)	362 425
5	Adapter nipple - 1/8"i-1/8"a	200 930
6	Bezel - Ø 0,3 mm	338 303
7	Elbow - 1/8"a-1/8"a	235 733
8	Plug - NW5-1/8"i	200 859
9	Fluidizing pad - 1/8"a	237 264
10	Cable sleeve - Ø 4/8/1,5 mm	265 276
11	Retaining bracket	390 445



OptiFlex B - fluidizing/suction unit

OptiFlex B - filter unit

	Filter unit - complete, without pos. 5	1001 147
1	Filter separator body - F14MD	1001 759
2	T-piece - 1/4"i-1/4"a-1/4"i	262 064
3	Hollow screw - 1/4"a, triple	222 623
4	Swivel ring - Ø 8mm, 1/4", 1-fach, A type	225 762
5	Carrier plate	1001 758
6	Condensate container with drain valve	1001 761
7	Filter cartridge - 20 µm	1001 762
8	Cap screw - M4x60 mm	258 946
9	Manometer - G1/4", 0-10 bar	1001 764
10	Rectus nipple - NW 7,4-1/4"a	256 730
11	Grommet - Ø 8 mm	238 023
12	Elbow joint - 1/4"i-1/4"a	222 674
13	Rectus quick release connection (for pos. 10, not shown)	239 267



OptiFlex B - filter unit