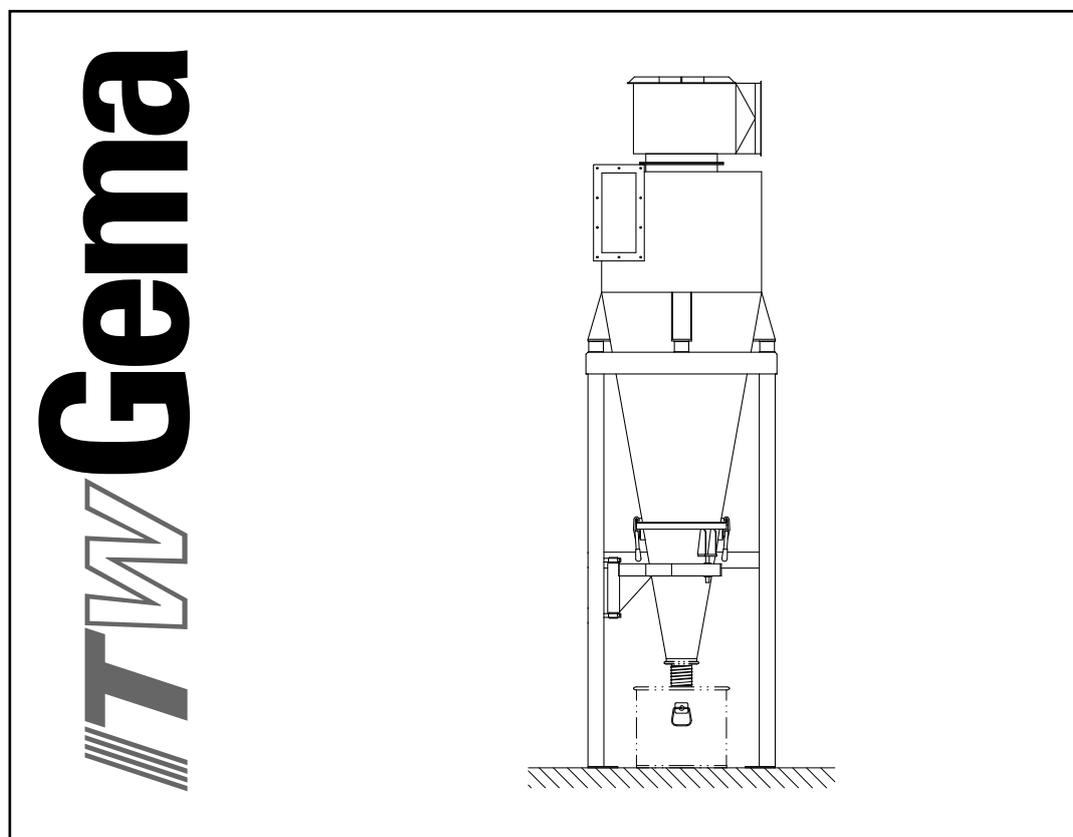

Operating instructions and spare parts list

EZ03 Monocyclone



Translation of the original operating instructions

Documentation EZ03 Monocyclone

© Copyright 2004 ITW Gema GmbH

All rights reserved.

This publication is protected by copyright. Unauthorized copying is prohibited by law. No part of this publication may be reproduced, photocopied, translated, stored on a retrieval system or transmitted in any form or by any means for any purpose, neither as a whole nor partially, without the express written consent of ITW Gema GmbH.

OptiTronic, OptiGun, EasyTronic, EasySelect, EasyFlow and SuperCorona are registered trademarks of ITW Gema GmbH.

OptiMatic, OptiMove, OptiMaster, OptiPlus, MultiTronic and Gematic are trademarks of ITW Gema GmbH.

All other product names are trademarks or registered trademarks of their respective holders.

Reference is made in this manual to different trademarks or registered trademarks. Such references do not mean that the manufacturers concerned approve of or are bound in any form by this manual. We have endeavored to retain the preferred spelling of the trademarks, and registered trademarks of the copyright holders.

To the best of our knowledge and belief, the information contained in this publication was correct and valid on the date of publication. ITW Gema GmbH makes no representations or warranties with respect to the contents or use of this publication, and reserves the right to revise this publication and make changes to its content without prior notice.

Printed in Switzerland

ITW Gema GmbH
Mövenstrasse 17
9015 St.Gallen
Switzerland

Phone: +41-71-313 83 00

Fax.: +41-71-313 83 83

E-Mail: info@itwgema.ch

Homepage: www.itwgema.ch

Table of contents

General safety regulations	3
Safety symbols (pictograms).....	3
Conformity of use.....	3
Technical safety regulations for stationary electrostatic powder spraying equipment	4
Product-specific safety measures	10
About this manual	11
General information	11
Function description	13
EZ03 Monocyclone	13
Delivery unit	14
Technical data	15
Exhaust air volume / powder application	15
Dimensions	15
Assembly notes	17
Set-up and assembly	17
Space requirement for delivery unit	18
Preparation for start-up	19
Important notes	19
Color change	21
Procedure.....	21
Maintenance	23
Checkpoints and references	23
Maintenance - sieve mesh tension	24
Monocyclone sealing	25
Cleaning	27
Cleaning of the connection sleeves	27
Cleaning the sieve	28
Troubleshooting guide	29
Problem fixing	29

Spare parts list	31
Ordering spare parts.....	31
EZ03 Monocyclone - spare parts list	32
Sieve insert.....	34
Powder pump with suction funnel.....	35

General safety regulations

This chapter sets out the fundamental safety regulations that must be followed by the user and third parties using the EZ03 Monocyclone.

These safety regulations must be read and understood before the EZ03 Monocyclone is put into operation.

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 EZ03 Monocyclone 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 non-compliant. The manufacturer shall not be liable for damage resulting from such use; the user bears sole responsibility for such actions. ITW Gema GmbH must be consulted prior to any use of the EZ03 Monocyclone for any purposes or substances other than those indicated in our guidelines.
3. Observance of the operating, service and maintenance instructions specified by the manufacturer is also part of conformity of use. The EZ03 Monocyclone 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 EZ03 Monocyclone 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 the EZ03 Monocyclone 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 also must be observed.



Technical safety regulations for stationary electrostatic powder spraying equipment

General information

Stationary ITW Gema GmbH electrostatic spraying equipment is built to the "state of the art" and is operationally safe. 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. Incorrect operation of the control unit can lead to accidents, malfunctions or damage to the control itself or to the plant.
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. Please observe the local safety regulations!
5. Disconnect the plugs before the machines are opened for repair.
6. The plug connections between the powder spraying equipment and the mains should only be removed when the power supply is switched off.
7. The connecting cables between the control unit and the spray gun must be installed so as to eliminate the possibility of damage during the operation. Please observe the local safety regulations!
8. Only original ITW Gema spare parts should be used, because the explosion protection will also be preserved that way. Any

warranty claim for damage caused by the use of foreign parts is void.

9. If ITW Gema GmbH 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. Take care 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 point out that the customer himself is responsible for the safe operation of the equipment. ITW Gema GmbH is in no way responsible for any resulting damage.

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 units for the spray guns must be installed and used in zone 22. Spray guns are allowed 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 shut-down. 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 should care about no non-authorized personnel works 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 operator is obliged to check that the powder spraying equipment is only operated when in satisfactory 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. The safety devices may not 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 take place when the powder spraying equipment 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 equipment 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 chapter "Grounding".

Grounding

All electrically conductive parts and machinery found in the workplace (according to DIN VDE 0745, part 102: 1,5 meters either side and 2,5 meters around each booth opening) have to be grounded. The grounding resistance of each object 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 machinery includes the suspen-

sion arrangements, then 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 grounding.

Compressed air

When there are longer pauses or stand-still 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 operating firm must ensure that local conditions are met when repairs are made to the electronic parts or when the equipment is restarted so that there are additional measures such as barriers to prevent unauthorized access.

Prohibition of unauthorized conversions and modifications to machines

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

The powder spraying equipment should not be used if damaged, the faulty part must be immediately replaced or repaired. Only original ITW Gema spare parts should be used! Any warranty claim for damage caused by the use of foreign parts is void.

Repairs must only be carried out by specialists or by authorized ITW Gema service centers. Unauthorized conversions and modifications can lead to injuries and damage to the equipment. The ITW Gema GmbH guarantee would no longer be valid.

Safety requirements for electrostatic powder coating

1. This equipment is dangerous if the instructions in this operating manual are not followed.
2. All electrically 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 electrically conductive 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 electrostatic manual powder coating equipment. The grounding cable must have a good metallic connection with the coating booth, the recovery unit and the con-

veyor chain, respectively with the suspension arrangement of the objects.

7. The electricity and powder supply to the hand guns must be set up so that they are fully protected against heat and chemical damage.
8. 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.
9. The grounding of all electricity conducting devices (e.g. hooks, conveyor chains) must be checked on a weekly basis. The grounding resistance must amount to maximally 1 MOhm.
10. The control device 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 manufacturer's instructions must be observed when using such cleaning agents.
12. The manufacturer's 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, fractures) 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 spare 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 greater 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.

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

BGV A1	General regulations
BGV A2	Electrical equipment and material
BGI 764	Electrostatic coating
BGR 132	Guidelines for the avoidance of the dangers of ignition due to electrostatic charging (Guideline "Static Electricity")
VDMA 24371	Guidelines for electrostatic coating with synthetic powder ¹⁾ - Part 1 General requirements - Part 2 Examples of use

Leaflets

ZH 1/310	Leaflet for the use of tools in locations where there is danger of explosion ¹⁾
----------	--

EN European standards

RL94/9/EC	The approximation of the laws of the Member States relating to apparatus and safety systems for their intended use in potentially explosive atmospheres
EN 292-1 EN 292-2	Machine safety ²⁾
EN 50 014 to EN 50 020, identical: DIN VDE 0170/0171	Electrical equipment for locations where there is danger of explosion ³⁾
EN 50 050	Electrical apparatus for potentially explosive atmospheres - Electrostatic hand-held spraying equipment ²⁾
EN 50 053, part 2	Requirements for the selection, installation and use of electrostatic spraying equipment for flammable materials - Hand-held electrostatic powder spray guns ²⁾
EN 50 177	Stationary electrostatic spraying equipment for flammable coating powder ²⁾
PR EN 12981	Coating plants - spray booths for application of organic powder coating material/safety requirements
EN 60 529, identical: DIN 40050	IP-Type protection; contact, foreign bodies and water protection for electrical equipment ²⁾
EN 60 204 identical: DIN VDE 0113	VDE regulations for setting-up high voltage electrical machine tools and processing machines with mains voltages up to 1000 V ³⁾

VDE (Association of German Engineers) Regulations

DIN VDE 0100	Regulations for setting-up high voltage equipment with mains voltages up to 1000 V ⁴⁾
DIN VDE 0105, part 1 part 4	VDE regulations for the operation of high voltage equipment ⁴⁾ General regulations Supplementary definitions for stationary electrical spraying equipment
DIN VDE 0147 part 1	Setting up stationary electrostatic spraying equipment ⁴⁾
DIN VDE 0165	Setting up electrical equipment in locations in areas with danger of explosion ⁴⁾

***Sources:**

- ¹⁾ Carl Heymanns Verlag KG, Luxemburger Strasse 449, 5000 Köln 41, or from the appropriate employers association
- ²⁾ Beuth Verlag GmbH, Burggrafenstrasse 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 safety measures

- Installation work performed 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)
- All components must be 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 EZ03 Monocyclone. 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.

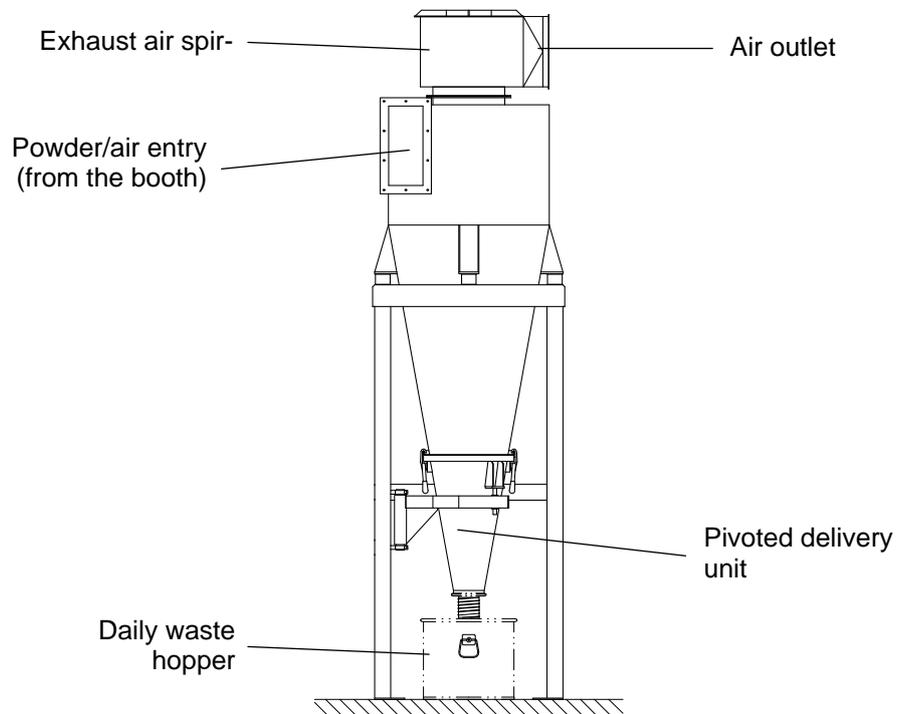
Information about the functionality of the individual system components - booth, gun control unit, manual gun or powder injector - should be referenced to their enclosed corresponding documents.

Function description

EZ03 Monocyclone

The EZ03 Monocyclone (as a matter of principle a centrifugal cyclone) separates the coating powder from the booth exhaust air.

The volume of exhaust air, depending on the booth size, the number of guns etc. is created by a fan fitted after the monocyclone and a filter separator. The powder/air mixture arrives at the cyclone through the ducting and the tangential air input. Now the powder is set in rotation, separated from the air by the centrifugal force and isolated around the cyclone wall. The exhaust air rises up through the central immersion tube in the cyclone and arrives at the filter separator. Herein, the residual powder is retained and the cleaned air is returned into the workshop environment.

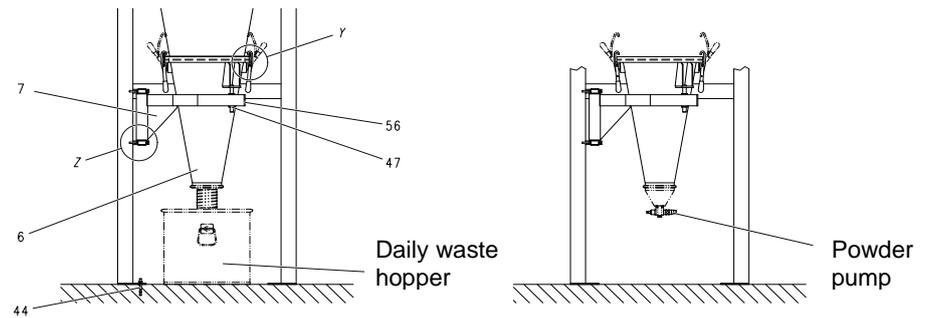


EZ03 Monocyclone

Delivery unit

The separated powder is removed from the operating cyclone by the pivoted delivery unit. The delivery unit, consisting of the cyclone connection, and the sieve insert is pivoted manually under the cyclone and fitted. The separated powder collects in the lower cone part and falls either into the daily waste hopper or, if available, into the powder pump suction funnel. The powder is now transported from the suction funnel to the sieve machine or to the powder hopper.

Consequently, a periodical extraction of powder takes place, which is regained and fed back to the powder coating circuit.



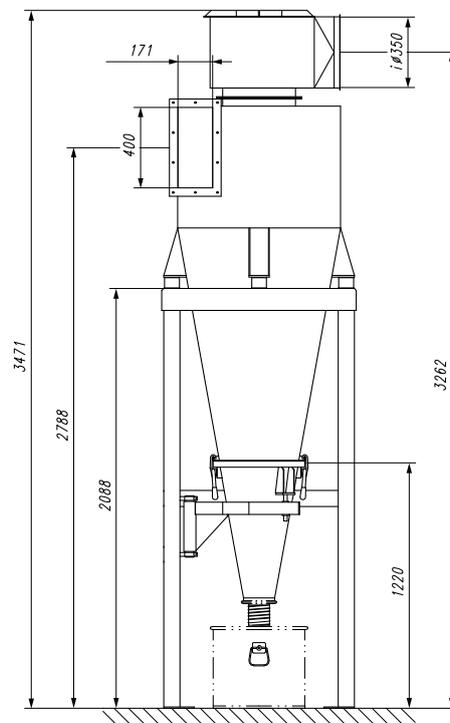
Delivery unit

Technical data

Exhaust air volume / powder application

Single cyclone	EZ03-05
Exhaust air volume	4500-5000 m ³ /h
Powder removal	
Powder pump	PP01
Conveying performance	approx. 2.5 kg/min
Compressed air consumption	approx. 4 Nm ³ /h

Dimensions



Monocyclone EZ03-05 - dimensions

Assembly notes

Set-up and assembly

**Warning:**

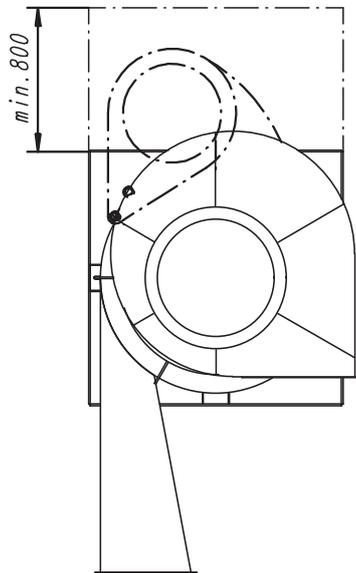
The assembly procedure for setting up the cyclone must be adapted to the available resources at customer site. Since it concerns heavy and bulky parts, special attention must be given to the security of the assembly personnel. In order to guarantee operating safety, all assembly work must be checked by trained personnel!

Above all, the following points must be observed:

- The air outlet can be set infinitely variable rotating 360 degrees.
- All connecting joints (exit spiral etc.) must be locked hermetically
- It must be observed that all connecting joints in the ducting and inside the cyclone etc. are as smooth as possible, so that no powder can deposit
- In order to ensure the grounding connection from the frame to the cyclone, a vibration damper must be bypassed with the supplied grounding cable
- The monocyclone must be firmly anchored to the workshop floor
- The ducting must be assembled as tension-free as possible
- The delivery unit is preassembled ready and for mounting
- The connecting hoses to the powder pump (if available) must be laid in such a way, that the delivery unit can be pivoted for cleaning without disconnecting the hose connections
- The delivery unit and the cyclone must be closed tightly during operation. The gaskets of the cyclone and of the swivel frame are to be examined regularly

Space requirement for delivery unit

Swiveling out the delivery unit needs at least 800 mm swiveling area. This place may not be closed or blocked and is used also for operation, cleaning and maintenance.



Space requirement for delivery unit

Preparation for start-up

Important notes

**Warning:**

**The start-up should be done only by trained personnel!
Foreign objects in the booth or in the ducting can cause damages to the plant!**

Before the start-up the following points are to be checked:

- Are all screw connections on the cyclone and on other plant units firmly tightened?
- Is the ducting and the interior of the cyclone cleaned properly?
- The tube and hose connections, are they properly connected?
- Are there no foreign objects (e.g. screws, small parts etc.) in the booth, the cyclone or the ducting?
- Is the filter unit completely assembled?
- Are all plant units grounded?
- Is the delivery unit connected correctly?
- Is the transport hose connected correctly on the exhaust side?
- Are the settings for the powder pump correct?

**Warning:**

The plant may be put into operation after all these points are checked and any faults are corrected!

Color change

Procedure

The following points are to be observed at color changes:

1. In order to save time and powder at a color change, the cleaning should be made in the flow direction of the powder. But cleaning the powder guns and the booth should be done first. During this phase, the powder can be transported back into the powder hopper or the powder container by means of the powder pump
2. The filter unit is detached from the cyclone. By aspirating additional air on the cyclone lower part, the powder separation now is void and all resulting powder is fed to the After Filter
3. Procedure at an extreme color change or with increased requirements:
 - Blow off the exhaust air ducting between the booth and the cyclone with compressed air
 - Let soak in the compressed air hose without nozzle in the ducting at the air exhaust while the exhaust is operating
 - The turbulences which are caused thereby will detach the powder in the ducting. After that, the powder is transported to the cyclone and discharged
4. After switching off the powder pump, the transport hose is now flushed with compressed air from the exhaust side and cleaned in this way
5. While the delivery unit is slowly being swiveled away from the cyclone, the cone of the delivery unit is blown out and the generated dust is sucked up into the cyclone
6. Now the inside wall of the cyclone is cleaned with the air nozzle
7. The cleaning of the immersion tube is done with a special cleaning head (see therefore "Cleaning of the connection sleeves")
8. Now the cleaning of the cyclone, the delivery unit and the ducting is completed

Maintenance

Checkpoints and references

In order to guarantee a trouble-free operation, the following points should be checked regularly during an operation break:



Warning:

All cleaning work should be carried out without scratching. Any scratches on the surface lead to increased powder sintering and thus to increased cleaning effort!

Points to check	Ursachenhinweise
Check for powder depositing in the booth and in the suction tube and clean	increased deposition indicates a reduction of the exhaust air and a change in the powder
Check the cyclone for powder sintering	increased sintering indicates increased exhaust air and changes in the powder
Check for powder depositing in the delivery unit	Depositing indicates higher powder development or reduced conveying performance
Check for sintering in the transport hose	increased sintering indicates ageing of the hose or changes in the powder
Check the cleanliness of the cyclone exterior	Accumulations of powder indicate leakages in the coating area
Check the grounding connections of the plant units	
Check the gaskets of the delivery unit and the sieve insert	Defective gaskets greatly decrease the efficiency of the cyclone

Maintenance - sieve mesh tension

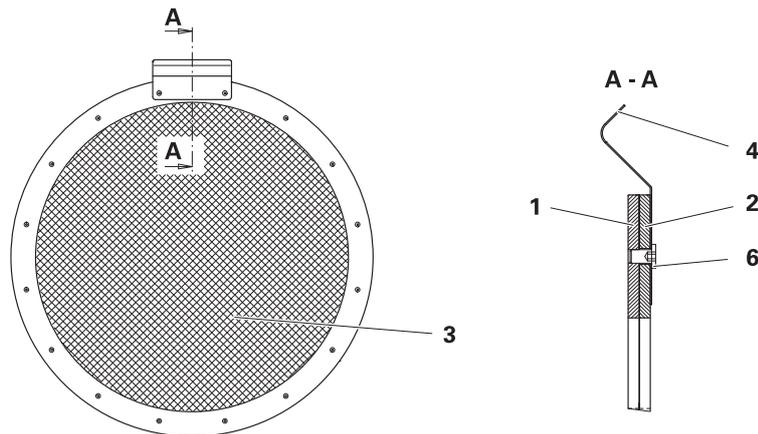
Use the following procedure to cloth the sieve mesh:

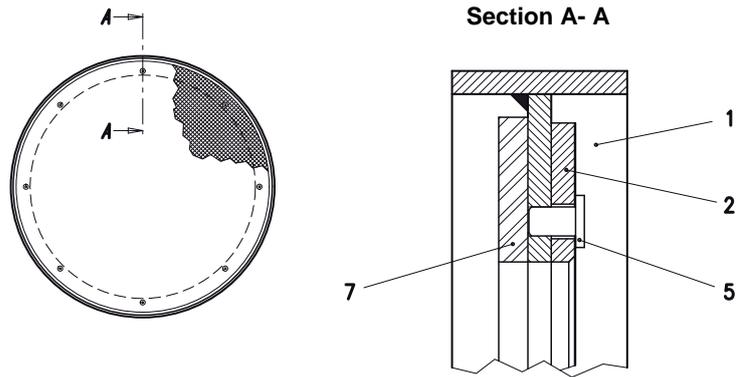


Information:

In order to prevent injuries by overhanging wires it is recommended to work with gloves on!

1. Place the Supporting ring on the workbench.
2. Put the sieve mesh (3) on the supporting ring (note that the mesh evenly stands out everywhere)
3. Apply the clamping ring (2), align the supporting ring (1) and the clamping ring (2) holes
4. At one hole, puncture the sieve mesh (3) with a sharp object (e.g. awl) and screw in a screw (6)
5. Stretch the sieve mesh on the opposite side with a combination pliers and, at the same time, puncture the sieve mesh (3) and insert a screw (6)
6. Turn the sieve 90°, stretch the sieve mesh again with a combination pliers, puncture the sieve mesh (3) and insert a screw (6)
7. Stretch the sieve mesh on the opposite side with a combination pliers and, at the same time, puncture the sieve mesh (3) and insert a screw (6)
8. Stretch the sieve mesh at each intermediate hole with a combination pliers, puncture the sieve mesh (3) and insert a screw (6)
9. Fit the additionally grounding spring (4) with two screws
10. Cut away the surplus mesh (3) with a sharp knife and remove the overhanging wires with a grinding wheel





Sieve insert/sieve mesh tension



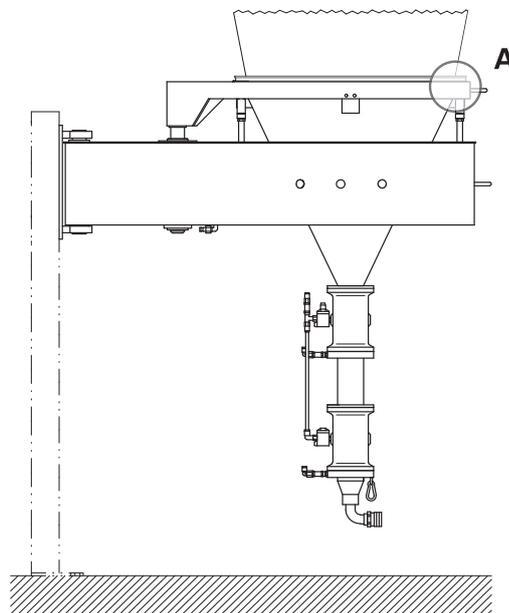
Information:

In order to achieve a good sieve-performance make sure that the sieve mesh is stretched uniformly tight!

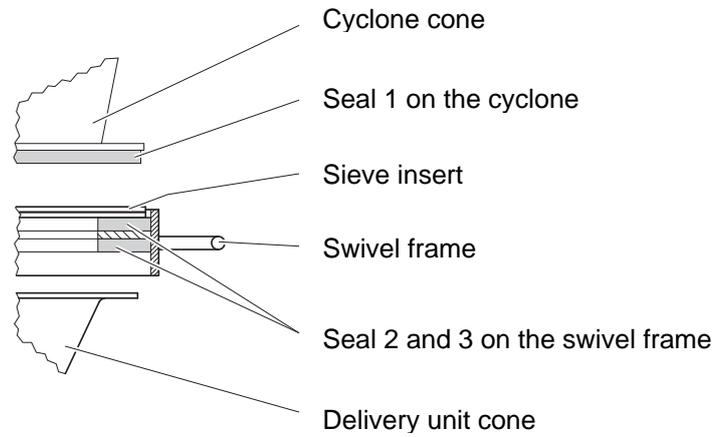
Small holes in the sieve mesh can be filled with 2-components adhesive.

Monocyclone sealing

In order to achieve a good cyclone-performance it is very important that the delivery unit is tightly closed during the operation. In order to ensure a trouble-free operation, three gaskets are intended in accordance with following drawing:



A



Monocyclone sealing/delivery unit

Seal 1	on the lower cyclone cone flange	seals between cyclone cone and sieve insert or delivery unit cone
Seal 2	on top of the swivel frame	seals between sieve insert and swivel frame
Seal 3	bottom of the swivel frame	seals between swivel frame and delivery unit cone



Information:

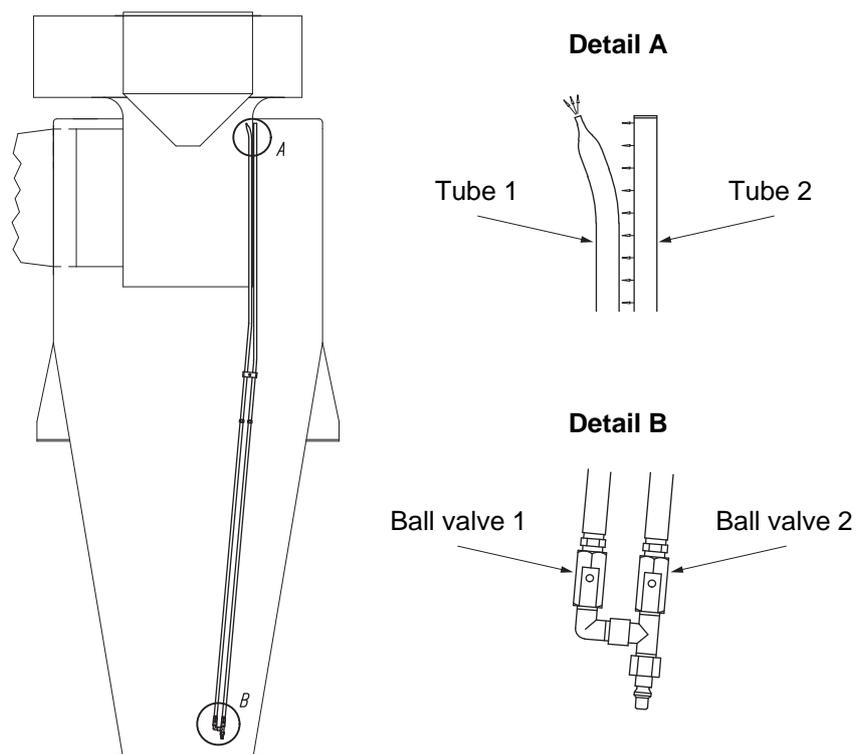
The gaskets are always to be checked during the start-up as well during the operation. Damaged gaskets are to be replaced immediately! Leakages on the cyclone site will greatly decrease the efficiency of the cyclone, i.e. it goes more powder in the After Filter than into the recuperation.

Cleaning

Cleaning of the connection sleeves

The cleaning of the cyclone takes place with the provided cleaning lance. It is composed of two blast pipes with the following features:

Cleaning of the clean gas connecting piece



Cleaning lance / sleeves

The blow off lance is connected to the clean gas connecting piece, tube 1 inside, tube 2 outside. By turning on the compressed air on ball valve 2, the cleaning air for the outside diameter is turned on and the clean gas pipe is blown through on the entire level at once. During the blowing process, the lance is now conducted manually throughout the entire clean gas pipe thus cleaning the entire connecting sleeve. Tube 1 in the inside of the tube, prevents the blowing nozzle from being pushed off during cleaning.

Cleaning of the inlet connection sleeve

By using the tube 1 and the compressed air at ball valve 1, individual ranges in the cyclone can be blown off purposefully.



Information:

In order to provide as much compressed air as possible during cleaning, only one ball valve should be opened for each cleaning process!

The following points are to be considered for the further maintenance and the care of the cyclone:

Item	Cleaning and/or check cycle	Remarks
Collecting funnel inside	daily	Blow off with compressed air - by using some powder types some sintering can develop, these will be cleaned with suitable cleaning agents
Cyclone cone inside	daily	Blow off with compressed air - by using some powder types some sintering can develop, these will be cleaned with suitable cleaning agents
Cyclone outside	monthly	Clean from outside, avoid dust deposits



Warning:

**It must be observed, that no cleaning agents or solvents get into the powder pump (risk of damaging and clogging!)
The cleaning agent must evaporate completely; it must not come in contact with the coating powder!**

Cleaning the sieve

The sieve must be cleaned when the sieve meshes are clogged/dirty because of powder agglomerations. For this purpose the sieve is to keep immersed in solvent, until all contaminations can be removed. Thereafter blow off the sieve and let the solvent evaporate for approx. 1 day, until the sieve is dried completely. It must be observed, that solvent must not come in contact with the coating powder!

Troubleshooting guide

Problem fixing

Problem/error/malfunction	Cause	Procedures/remedy
Plant cannot be put into operation	The signal from the delivery unit is not present	Connect the delivery unit to the cyclone correctly
Too little exhaust air in the booth	Ducting booth/cyclone or cyclone/After Filter not leak-proof Delivery unit not connected to the cyclone	Search and repair the leak(s) Connect the delivery unit to the cyclone correctly
Contamination on the cyclone external wall	Connection points leaking	reseal
Powder sintering in the cyclone	Quick reacting powder quality Air speed too high Solvents came in contact with powder	Check the room temperature Check the air volume Clean the cyclone
Powder remains in the delivery unit	Powder accumulation in the cyclone too large Settings of the powder pump not correct	Check the conveying performance Check setting values / parameters according to technical data
Too much powder in the After Filter	Sieve clogged up	Clean the sieve Check the powder removal Check the seals on the cyclone and the delivery unit Check the air volume

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** EZ03 Monocyclone
Serial number 1234 5678
- Order no. 203 386, 1 piece, Clamp - Ø 18/15 mm

When ordering cables or hose material, the required length must also be given. The spare part numbers of this bulk stock is always marked with an *.

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)



WARNING!

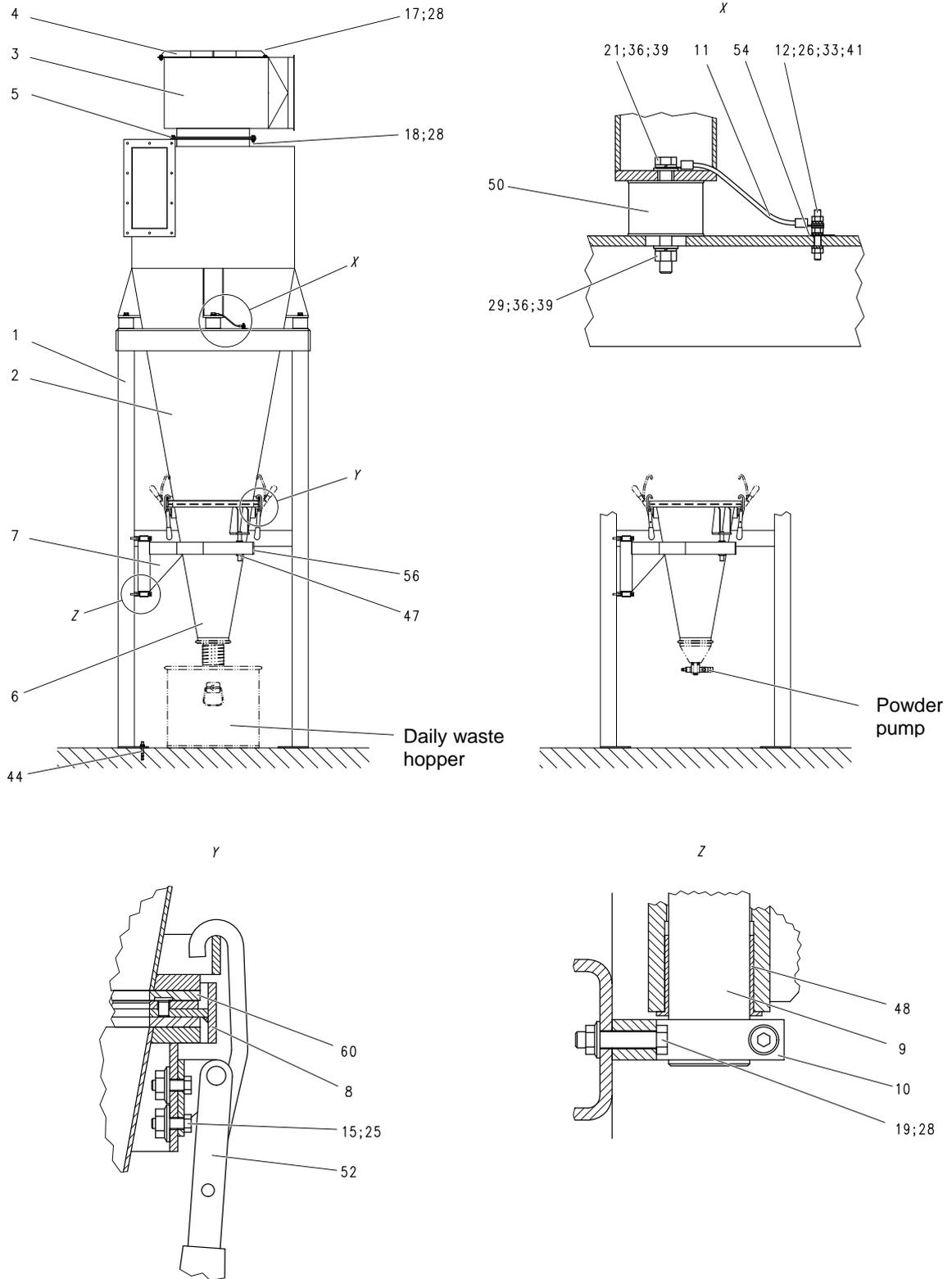
Only original ITW Gema spare parts should be used, because the explosion protection will also be preserved that way. The use of spare parts from other manufacturers will invalidate the ITW Gema guarantee conditions!

EZ03 Monocyclone - spare parts list

	Monocyclone EZ03-05 - complete	395 250
8	Sieve complete - type 400	395 277
10	Clamping piece 40 mm	355 291
11	Grounding cable	377 775
44	Steel bolt dowel A - M10x90 mm	245 216
47	Sliding ring - D20/23x21 mm	250 589
48	Sliding ring - D40/44x40 mm	258 148
50	Sliding ring - D75x55-M12/Ai	267 333
52	Clamp lever Mod. 351	255 300
60	Foam rubber profile - 25x5 mm	105 120*

* Please indicate length

EZ03 Monocyclone - spare parts



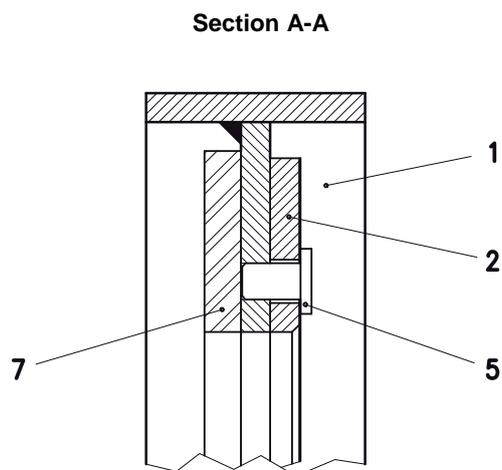
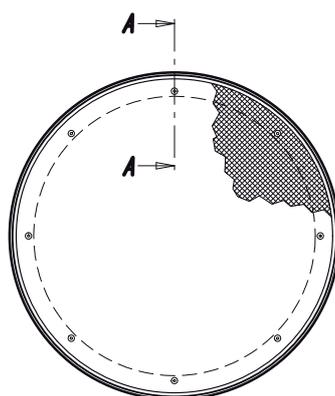
EZ03 Monocyclone - spare parts

Sieve insert

	Sieve insert complete - 300 µm	395 269
	Sieve insert complete - 400 µm	395 277
	Sieve insert complete - 500 µm	395 285
The sieve is composed of following parts:		
1	Sieve frame	395 102
2	Sieve mesh - 300 µm	388 696#
2	Sieve mesh - 400 µm	388 718#
2	Sieve mesh - 500 µm	388 726#
5	Screw	248 568
7	Foam rubber profile 25x5 mm	105 120*

* Please indicate length

Wearing part



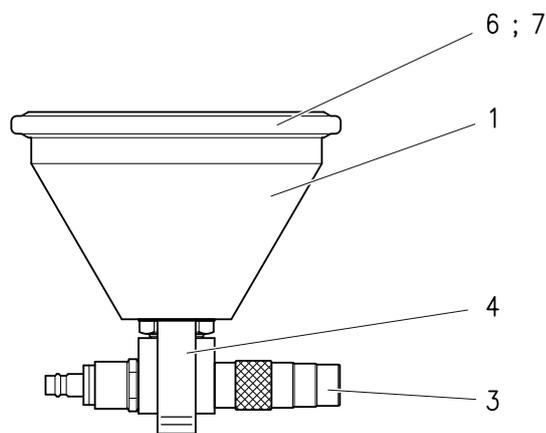
Sieve insert - spare parts

Powder pump with suction funnel

	Powder pump with suction funnel - complete	395 242
1	Suction funnel	395 170
3	PP01 Powder pump - complete	345 199
4	Direct attachment	346 012
6	Clamp ring NW150	267 341
7	U-shaped sealing ring NW150	267 350#

* Please indicate length

Wearing part



Powder pump with suction funnel - spare parts