

# **HELIO<sup>®</sup>Clean**

# **Dedusting system**

### Type series

HELIO<sup>®</sup>Clean 2

HELIO<sup>®</sup>Clean 3

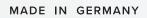
HELIO<sup>®</sup>Clean Pro 10

HELIO<sup>®</sup>Clean Pro 20





www.helios-systems.com



# HELIO°Clean dedusting devices

# **HELIO®Clean dedusting devices for injection moulding processes** Professional cleaning of plastics before processing

Plastic processing, especially injection moulding, requires absolutely pure raw materials without dust, angel hair and other impurities for the production of high-quality parts.

Since these often only occur during conveying, HELIO®Clean granulate cleaners are combined conveying and dedusting systems for mounting on the processing machine, which transfer the perfectly dedusted granulate / regrind material directly into the plasticizing unit.

Dust is removed by means of air-floating with a highly effective ion shower. Due to its absolutely new fountain principle, this air washing process is able to perform even the most difficult cleaning tasks perfectly.

When selecting a deduster system, the choice shall be made:

As good as possible, or as good as necessary? We offer both !

HELIOS always has the optimal solution for your dedusting task.

## **Minimal space requirement**

Due to their compact construction, HELIO<sup>®</sup>Clean dedusting units can be mounted directly on the injection moulding machine or a drying container.





# **HELIO®Clean - Milestones**

9	2007	Deduster with compressed air jet
¢	2008	Deduster integrated in JETBOXX <sup>®</sup> dryer
¢	2011	Deduster with integrated ejector
¢	2012	Deduster with ionization
¢	2014	Deduster with collecting unit
6	2016	Deduster with fountain and ion shower

2018 Deduster with blow cone and ion shower









# **Problems with insufficiently dedusted resin**

### **Product quality**

- combustions (black dots)
- unmelted parts (white dots)
- streaks
- surface problems
- reduced mechanical properties

## **Injection moulding machine**

- clogging and crust formation at the feeding zone
- abrasion on screw and barrel due to charred dust
- frequent machine downtime and high cleaning costs

AFTER

# Advantages of cleaning with **HELIO**<sup>®</sup>Clean dedusting units

By a professional cleaning of the material the quality of the resin can be brought back to its original state or the disturbing fines can be removed from the ground material.

### better part quality

less scrap

more regrind can be used

less machine downtime



PMMA raw granulate before and after dedusting.



# HELIO<sup>®</sup>Clean 3

# **Conveying and dedusting device with ion shower**

The new HELIO<sup>®</sup>Clean 3 conveyor / dedusting unit has been specially developed for injection moulding processes with small to medium throughputs and is suitable for mounting on the injection unit or a drying container.

- small and powerful
   compact / low weight
   air separation with ion shower
   1- or 2-component version
- special glass construction
- simple operation
- optimum price/performance ratio
- cleaning by means of ions

### material throughput **Up to 25 kg/h**\*

\* depending on material and required degree of dedusting example based on PMMA/PC





### **Special glass construction**

The dedusting chamber is made of abrasion-resistant special glass. This enables efficient cleaning with the aid of ions, as these are not neutralised immediately when they hit the sifter wall, but can release the binding forces between dust and material over a longer period of time. This design also enables the conveying and cleaning process to be viewed from all sides.



#### **suction lance** Compressed air operated Venturi suction lance. Conveying height up to 8 m.

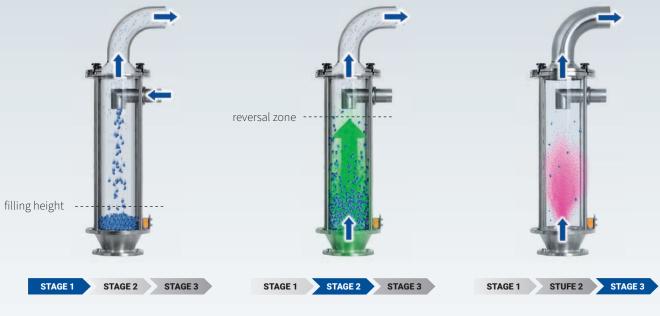


**dust removal** The separated dust is removed into a separate dust collection container.



## **3-stage dedusting process**

Air-floating with ion shower and dust suction



#### Filling

The material is gently conveyed into the sifting glass with simultaneous dust separation during filling.



Dust separation by air-floating with ionized air with freely adjustable whirling.

### Cleaning

The sifter glass is cleaned and neutralised with ionized air between two filling processes.

# Ion shower

While the granulate is whirled up and circulated in the deduster, a continuous stream of ionized air is blown through the portion to be dedusted.

In this way, the binding forces between dust particles and granules are reduced to such an extent that the dust loosens and can be separated by air-floating.

Due to the special glass construction, the ions are particularly "long-lasting" and therefore lead to a high efficiency of the ion shower.

1 Insert ions



3

Separation by air-floating



# HELIO<sup>®</sup>Clean 3

# **Assembly versions**



### Mounting on processing machine

Conveying and dedusting of the material directly on the feeding zone. Intermediate container optionally with 0.5 / 2.0 or 5.0 liter volume.

Machine adapter with L-claw







### Mounting on drying container

Conveying with dedusting of the material on mobile dryer or top mounted dryer.

JETBOXX<sup>®</sup> dryer with HELIO<sup>®</sup>Clean 3



### **Split version**

Installation of the control unit at a suitable place. So the weight on the drying container can be reduced or the control can be mounted at eye level in a user-friendly way.

JETBOXX<sup>®</sup> dryer on injection unit with HELIO<sup>®</sup>Clean 3 split version



7,6 kg







HELIO®Clean 3 MIX, compact version

### **HELIO°Clean 3 MIX**

The MIX version can convey, dedust and homogenize regrind and virgin material in an adjustable mixing ratio.

The unit can be adjusted to any task effortlessly via 4 function keys with sub-levels.



#### Ionizer

A standard ionizer ensures optimum dust separation during air-floating and cleaning.



**Gentle conveying** The conveying speed for each material component can be adjusted steplessly and material protectively.



#### **Filling with air-floating** When filling with Venturi suction lances, the filling process is already combined with air-floating and ion shower.

#### Standard equipment

- compact version (control on device)
- 1-component version
- version for mounting on processing machine
- Venturi suction lance with 3 m conveying hose package
- dust collection container with 5 m dust removal hose
- special glass, abrasion-resistant and viewable from all sides

#### Options

- flange ring for mounting on drying container
- split version (control can be mounted separately)
- 2-component version HELIO®Clean 3 MIX
- conveying hose package long (5 m)
- dust collection container extension (+ 11 litre volume)
- intermediate container 0.5 / 2.0 or 5.0 litre
- machine adapter with L claws

Technical data	
Material	special glass, stainless steel, Al nickel-plated
Material throughput	approx. 25 kg/h*
Conveying pipe	DN 32
Conveying height	max. 8 m
Electrical connection	~ 100 - 240 V AC, 50/60 Hz
Power consumption	max. 20 W
Pneumatic connection	min. 6 bar, 1/2"
Compressed air quality	max. oil content ≤ 0.01 mg/m³
Temperature range	0 - 40 °C
Height	559 mm

\*depending on the material to be dedusted and the required degree of dedusting

# HELIO<sup>®</sup>Clean 2

# **Compressed air conveyor with dedusting function**

The HELIO<sup>®</sup>Clean 2 conveyor / dedusting unit was specially developed for injection moulding and is suitable for mounting on a processing machine or a drying container.

- compact and simple construction
- 1- or 2-component version
- simple operation
- special glass construction
- optimum price/performance ratio

#### material throughput up to 25 kg/h\*

\* depending on material and required degree of dedusting



Example: HELIO<sup>®</sup>Clean 2, compact version, 1 component



### suction lance

S

%

s

Compressed air driven Venturi suction lance. Conveying height up to 8 m.



#### dust removal

The separated dust is removed into a separate dust collection container.

## **Control by JETBOXX® dryers**

JETBOXX<sup>®</sup> dryers from HELIOS can control up to two HELIO<sup>®</sup>Clean 2 dedusting units.

In this case, the control box on the dedusting and conveying unit is not required and all parameters for conveying and dedusting can be set directly on the dryer system control.



Please see also brochure JETBOXX® Dryer System

#### Conveying settings

Layering A/B2.0Component B30Permitted conveying time99Dedusting3

WINsystem® dryer with option ME





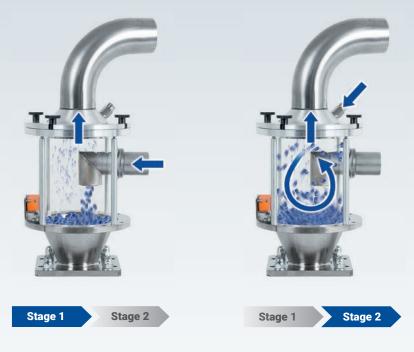


HELIO®Clean 2 on processing machine Control version CE as second conveying point of JETBOXX® dryer



## **Dust removal process**

Dust separation by compressed air jet and whirling



### Filling

Conveying using Venturi suction lance(s), the material is already dedusted during conveying, dust removal into the dust collection container.

### Whirling

Dedusting after each conveying process by 1 to 9 dedusting impulses by means of compressed air jet from above onto the dedusting portion, dust removal into the dust collection container.



#### HELIO<sup>®</sup>Clean 2 MIX Version for 2 components

Regrind material and virgin material are conveyed, dedusted and homogenised.



Example: HELIO®Clean 2 MIX, split version, 2 components for mounting on drying container

Technical data	
Material	special glass, stainless steel, Al nickel-plated
Material throughput	approx. 25 kg/h*
Conveying pipe	DN 32
Conveying height	max. 8 m
Electrical connection	~ 100 - 240 V AC, 50/60 Hz
Power consumption	max. 15 W
Pneumatic connection	min. 6 bar, 1/2"
Compressed air quality	max. oil content ≤ 0.01 mg/m³
Temperature range	0 - 40 °C
Weight	4,9 kg
Height	358 mm

\* depending on the material to be dedusted and the required degree of dedusting

### Standard equipment

- version for mounting on processing machine with cone and machine adapter, type M
- 1-component version
- compact version (control on device)
- 3 m transport hose package with Venturi suction lance
- dust collection container + 5 m dust removal hose
- special glass, abrasion-resistant and viewable from all sides

#### Options

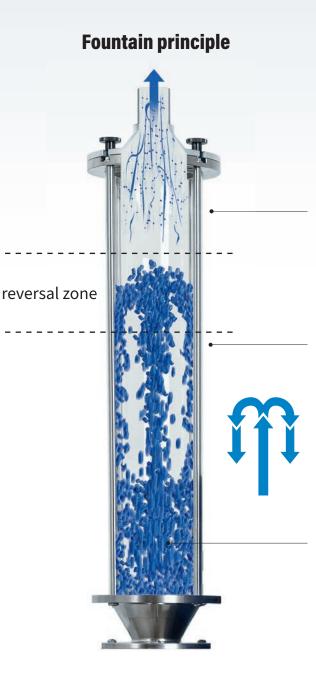
- version for mounting on drying container, type B
- split version (control can be mounted separately)
- 2-component version HELIO®Clean 2 MIX
- conveying hose package long (5 m)
- dust collection container extension (+ 11 litre volume)

# **HELIO®Clean Pro**

# perfect granulate cleaning with the HELIO®Clean Pro dedusting technology

An integrated conveyor system sucks resin/regrind into the dedusting chamber. The conveying speed can be preselected steplessly and new dust formation due to abrasion can be avoided.

A portion of exactly the same amount is gently dedusted by means of air-floating with an ion shower. The resin/regrind is sucked only as high that it does not touch the sieve disc at the dust outlet or leave the separator when the sieve disc is removed.



### Safe removal of:

- dust
- splintering
- lint
- angel hair





### dust separation

Light parts such as dust or lint leave the separator at the top through the sieve disc and are separated into the dust collection container. HELIO®Clean Pro - devices without a sieve disc are even able to remove angel hair safely, which is produced when conveying plastic granulate.

### material fountain

A laminar air stream with ionized air carries the material to be dedusted adjustable up to the upper third of the separator, where it reverses by gravity and returns to the starting point at the glass wall without leaving the open dedusting chamber (separator) at the bottom. This process is time-controlled, freely adjustable and repeats itself several times. Only after switching off the vacuum the dedusted portion is transferred to the intermediate container below.

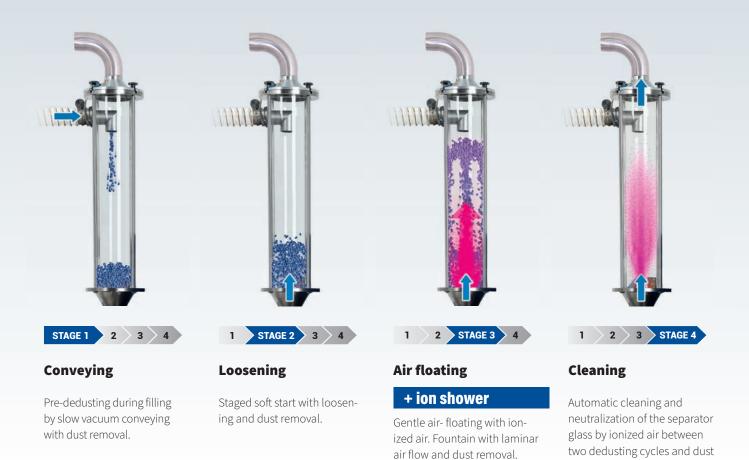
### special glass construction

The dedusting chamber is made of abrasion-resistant special glass. This allows efficient cleaning with the aid of ions, as these are not neutralized immediately when they hit the separator wall, but can release the binding forces between dust and material over a longer period of time. This design also enables the conveying and cleaning process to be viewed from all sides.

## 4-stage dedusting technology

Air-floating in fountain with ion shower and dedusting





lon shower

While the granulate is whirled up and circulated in the deduster, a continuous stream of ionized air is blown through the portion to be dedusted.

In this way, the binding forces between dust particles and granules are reduced to such an extent that the dust loosens and can be separated by air-floating.

Due to the special glass construction, the ions are particularly "long-lasting" and therefore lead to a high efficiency of the ion shower.



2

Neutralize charge





removal.

# HELIO<sup>®</sup>Clean Pro 10

# Granulate cleaner for injection moulding processes

The new HELIO<sup>®</sup>Clean Pro 10 conveying and dedusting device was specially developed for injection moulding and is characterised by particularly gentle conveying and dedusting with an ion shower.

•	4-stage dedusting process
	maximum dedusting degree
•	gentle dedusting
	easy cleaning
	control stand with cleaning aid
	compact or split construction
	1- or 2-component version
	air- floating with ion-cleaning <b>2x ionizer integrated</b>

### material throughput up to 35 kg/h\*

\* depending on material and required degree of dedusting example based on PMMA/PC



Example: HELIO®Clean Pro 10 split version, 1 component (2 components optional)

#### Standard equipment

- 1-component compact version
- control stand with dust collector + separable control cable
- version can be converted to split version
- 2 ionizers as standard
- shut-off conveying line
- outlet aid
- shut-off / outlet flap
- switchable vacuum cleaner for cleaning the dust collector
- suction pipe and conveyor hose PUR-H 3 m
- dust discharge hose 5 m

### Options

- intermediate container 0.5 / 2.0 / 5.0 liter
- flange ring for mounting on drying container
- 2-component version
- conveying hose PUR-H 5 m
- dustproof shut-off valve with L-claws



### **Control stand**

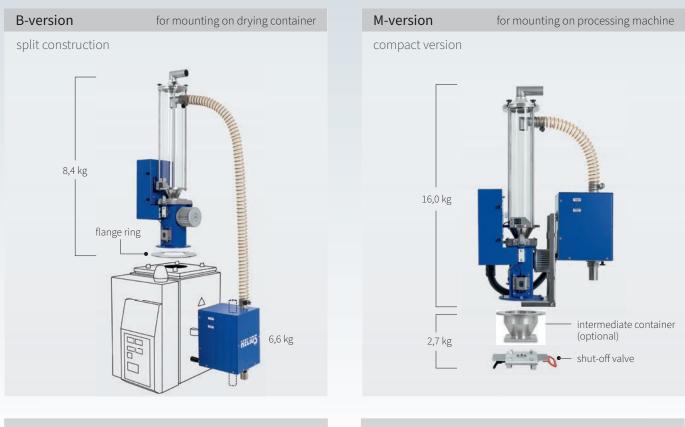
- system control
- vacuum generator with dust filter
- dust collection container
- filter cleaning
- cleaning set

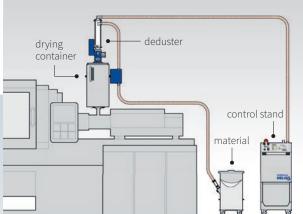
#### Technical data

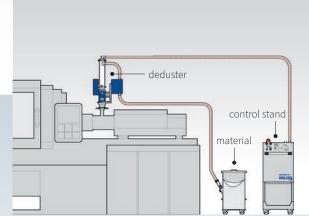
Material	special glass, stainless steel, Al nickel-plated
Filling capacity	up to 400 g
Material throughput	up to 35 kg/h*
Conveying pipe	DN 32
Conveying height	max. 8 m
Electrical connection	~ 100 - 240 V AC, 50/60 Hz
Power consumption	max. 25 W
Pneumatic connection	min. 6 bar, 1/2"
Compressed air quality	max. oil content ≤ 0.01 mg/m³
Temperature range	0 - 40 °C



# **Assembly versions**









### Removable valve box



The HELIO<sup>®</sup>Clean Pro 10 is delivered as a compact unit as standard. The valve box can be easily disassembled and attached to the desired position, e.g. hooked up to the container handle.

# HELIO<sup>®</sup>Clean Pro 20

# **Granulate cleaner for injection moulding processes**

The new HELIO<sup>®</sup>Clean Pro 20 is the most powerful HELIOS conveying and dedusting unit and was specially developed for injection moulding. It is characterized by particularly gentle conveying and dedusting with an ion shower and is suitable for the most difficult dedusting tasks.

- 4-stage dedusting process
- high material throughput at max. dedusting degree
- gentle dedusting
- special glass construction
- control stand with cleaning aid
- 1- or 2-component version
- air- floating with ion-cleaning
   2x ionizer integrated

### material throughput Up to 70 kg/h\*

\* depending on material and required degree of dedusting example based on PMMA/PC

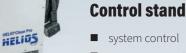
> Example: HELIO®Clean Pro 20 11 component

#### Standard equipment

- M-version for mounting on processing machine
- 1-component version
- control stand with dust collector
- 2 ionizers as standard
- shut-off conveying line
- shut-off / outlet flap
- switchable vacuum cleaner for cleaning the dust collector
- suction pipe and conveyor hose PUR-H 3 m
- dust discharge hose 5 m

#### Options

- 2-component version (Mix)
- conveying hose PUR-H 5 m
- machine adapter
- intermediate container 2.0 liter



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- vacuum generator with dust filter
- dust collection container
- filter cleaning
- cleaning set

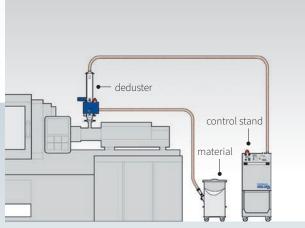
Technical data	
Material	special glass, stainless steel, Al nickel-plated
Filling capacity	up to 800 g
Material throughput	50 to 70 kg/h*
Conveying pipe	DN 32
Conveying height	max. 8 m
Electrical connection	~ 100 - 240 V AC, 50/60 Hz
Power consumption	max. 25 W
Pneumatic connection	min. 6 bar, 1/2"
Compressed air quality	max. oil content ≤ 0.01 mg/m³
Temperature range	0 - 40 °C



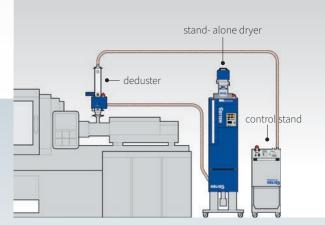
# Construction



### **Typical applications**



Conveying and dedusting of the material directly on the feeding zone.



Material drying via stand alone dryer with subsequent conveying and dedusting of the material on the feeding zone.



#### **Conveying hose package**

	long	short
suction pipe length	810 mm	380 mm
+ conveying hose (standard)	3 m DN 32	3 m DN 32
+ conveying hose (optional)	5 m DN 32	5 m DN 32



# HELIO<sup>®</sup>Clean Pro system control

# **Control stand with dust collecting container**

Electronic control with microcontroller, programming interface for firmware updates, adjustment via 4 function keys with sub-levels, infinitely variable fine adjustment for conveying and air-flaoting.

dust collecting container

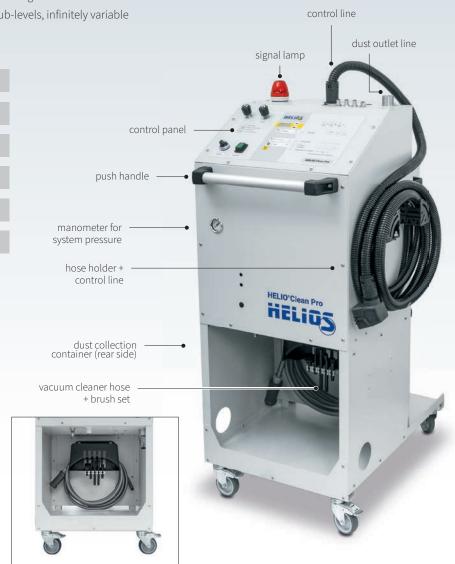
5-stage vacuum generator

- automatic filter cleaning
- integrated cleaning aid
- system pressure regulator
- quick coupling for control line



#### Hose bridge

Control stand with telescopic hose bridge for supporting the control pipe and the dust removal hose.

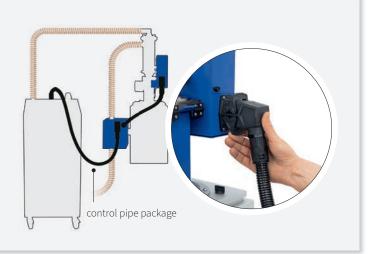


### Control line for HELIO®Clean Pro 10

2 coupling plugs with quick locking for energy and signals Length 5 m between control stand and valve box Length 0.7 m between valve box and separator

### Control line for HELIO®Clean Pro 20

1 coupling plug with quick locking for energy and signals Length 5 m between control stand and separator





## **Operation**

#### **Extensive setting options**

The basic setting and the possible settings for the four functional areas are visible at the control stand. Each function key has several sub-levels which can be called up by pressing the key. Detailed operating instructions allow you to optimize the process steps for each application.





Automatical filter cleaning



**Dust collecting container** The dust collection container can be simply pulled out and emptied.

17

# System control with integrated cleaning aid

# Easy handling / effortless cleaning



#### Use as cleaning aid

To clean the dust extractor, the control stand can be used as a classic vacuum cleaner. Instead of the dust discharge hose, the vacuum cleaner hose is plugged on and used together with one of the supplied cleaning attachments.

### HELIO<sup>®</sup>Clean Pro 10



The dedusting chamber can be hinged down The dedusting chamber can be hinged down for cleaning with just one movement.

### HELIO®Clean Pro 20



#### Dedusting chamber can be swivelled out

Upper part of the deduster can be released and swivelled out in a few simple steps.





# HELIO<sup>®</sup>Clean Pro 10/20



# **Accessories and options**

#### Conveying hose package



suction	nine
SUCTION	pipe

■ conveying hose PUR-H with earthing

	suction pipe long	suction pipe short
suction pipe length	810 mm	380 mm
+ conveying hose (standard)	3 m DN 32	3 m DN 32
+ conveying hose (optional)	5 m DN 32	5 m DN 32

#### Intermediate container



0,5 liter2,0 liter5,0 liter

#### Machine adapter



- shut-off valve made of stainless steel
- dustproof version
- L-guide rails made of steel, nickel-plated
- clamping lever for sliding rail

for sliding rail (mm)



Special sizes are available on request.

#### Mobile dedusting station



# Separator connected to control stand. Filling of the dedusted granulate in mobile day container.

#### HELIO<sup>®</sup> Clean Pro control stand colour



available in HELIOS blue or light grey

# HELIO®Clean 2/3

# **Accessories and options**



- suction pipe Venturi
- conveying hose PUR-H with earthing
- compressed air line bundled with hose

	suction pipe long	suction pipe short
suction pipe length	810 mm	380 mm
+ conveying hose (standard)	3 m DN 32	3 m DN 32
+ conveying hose (optional)	5 m DN 32	5 m DN 32

#### Machine adapter



- shut-off valve made of stainless steel
- dustproof version
- L-shaped guide rails made of steel, nickel-plated
- clamping lever for sliding rail

for sliding rails [mm]



Special sizes available on request.

### JETBOXX<sup>®</sup> dryer with option CE



- WINneo<sup>®</sup> or WINsystem<sup>®</sup>
- Option CE corresponds to HELIO<sup>®</sup>Clean 2 1-component



The removed dust is separated in the dust collection container. An integrated exhaust air filter ensures dust-free ambient air.

	dust collecting container
dust collecting container volume (standard)	5,5 liter
volume expansion (optional) + 11 liter	16,5 liter
+ dust removal hose	5 m DN 50

#### Intermediate container



- 0,5 liter
- 2,0 liter
- 5,0 liter

### JETBOXX<sup>®</sup> dryer with option ME



- WINsystem<sup>®</sup>
- Option ME corresponds to HELIO<sup>®</sup>Clean 2 Mix 2 -components

# HELIO®Clean type overview

We will be happy to help you to select the right device for your requirements. You are welcome to send us a material sample of the granulate or regrind material to be dedusted and we will carry out tests for you in our technical centre. In case of a positive result, we will make a recommendation for the ideal device and you can test the deduster at your site.









	HELIO <sup>®</sup> Clean 2	HELIO <sup>®</sup> Clean 3	HELIO <sup>®</sup> Clean Pro 10	HELIO®Clean Pro 20
material hroughput*	max. 25 kg/h	max. 25 kg/h	max. 35 kg/h	max. 50 - 70 kg/h
filling quantity	up to 200 g	up to 300 g	up to 400 g	up to 800 g
process	whirling up by compressed air jet from above	air-floating with whirling up by ionized compressed air from below	air-floating with ionized air by	circulating in the fountain
ionizer	no ionization possible	1 ionizer standard	2 Ionizers standard	
dust removal	separate dust collection conta	ainer	dust collection container inte	grated in control stand
control	HELIO®Clean 2 or JETBOXX ® control	HELIO <sup>®</sup> Clean 3 control	HELIO <sup>®</sup> Clean Pro control stan	d
place of action	suitable for mounting on processing machine or drying container	suitable for mounting on processing machine or drying container	suitable for mounting on processing machine or drying container	particularly suitable for mounting on processing machine
features	<ul> <li>compact or split version</li> <li>1- or 2-components version</li> <li>separate dust collection container</li> <li>Venturi suction lances</li> </ul>	<ul> <li>compact or split version</li> <li>1- or 2-components version</li> <li>separate dust collection container</li> <li>intermediate container for dedusted material</li> <li>cleaning of dust collection chamber with ion flushing</li> </ul>	<ul> <li>separate control combined with 3-step vacuum generator and dust collection container</li> <li>1- or 2-components version</li> <li>lockable conveying pipe(s)</li> <li>shut-off / outlet flap</li> </ul>	<ul> <li>separate control combined with 3-step vacuum generator and dust collection container</li> <li>1- or 2-components version</li> <li>lockable conveying pipe(s)</li> <li>shut-off / outlet flap</li> </ul>
		<ul> <li>Venturi suction lances</li> </ul>	<ul> <li>hinged dedusting chamber for cleaning</li> <li>conveying speed and air-floating power step- lessly adjustable</li> </ul>	<ul> <li>swing-out dedusting chamber for cleaning</li> <li>conveying speed and air-floating power steplessly adjustable</li> </ul>



### JETBOXX<sup>®</sup> Drying system

Dry-air dryers for plastic granulate



### **OKTOMAT**<sup>°</sup> Emptying system

Discharging stations for Octabin and BigBag



### HELIO<sup>®</sup>Clean Dedusting system

Dedusters for plastic granulate/regrind



# HELIUS Service

## **Consulting and quoting**

The first step for a successful and long-lasting cooperation always starts with the personal contact to the customer. Our experienced sales representatives will be happy to advise you directly on site about the latest technical developments from HELIOS and their possible applications.

We carry out significant material tests in our in-house technology center and provide you with a detailed test protocol. We will show you the advantages of our products for the expansion or modernization of your machinery and will immediately prepare an individual quotation for you.

Short delivery times of 4 - 8 weeks are standard at HELIOS.

## **After Sales Service**

Our service department will be at your disposal during the entire period of use with competent advice on all pending questions or carry out repairs, maintenance and calibrations on request even on site.

## Commissioning

Knowing your equipment and machines inside out is the only way to ensure optimal and efficient use. For this reason, all HELIOS products have detailed installation and operating instructions to make the proper use of our equipment as easy as possible and therefore ensure safe and efficient operation. HELIO®Clean dedusters are largely prepared for "Plug&Play".

## Spare parts delivery within 48h

A missing spare part can lead to a complete shutdown of the entire plant and therefore cause considerable financial damage.

We keep the majority of the necessary components in our spare parts warehouse, which we can provide within the shortest possible time.

## Test equipment

Test equipment is available for almost all HELIOS products on the basis of a rental contract.

### used worldwide

More than 1000 dedusting system units have been delivered by HELIOS



## Training

Of course we also offer specific training directly on site or in our technical center.

During the training, your employees will be supported by our competent service technicians and learn the concrete handling of the technology used. The acquired knowledge about our products reduces operating errors significantly and avoids possible failures in your production.

Take advantage of our training courses and benefit from additional advantages:

- Increasing the qualification of your employees
- Effective use of machines and equipment
- No downtimes due to operating errors
- Follow-up training after approx. 6 months





## Your perfect partner for material handling



JETBOXX<sup>®</sup> Drying system Dry-air dryers for plastic granulate



**OKTOMAT**° **Emptying system** Discharging stations for Octabin and BigBag



HELIO<sup>°</sup>Clean Dedusting system Dedusters for plastic granulate/regrind

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