

Dedusting devices for plastic granulate and regrind

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

The dedusting is carried out by air-sifting with a highly effective ion shower. Due to its absolutely new fountain principle, this washing process by air is able to perform even the most difficult cleaning tasks perfectly.



Reduce scrap, increase efficiency



Scrap

- burnings (black dots)
- unmelted parts (white dots)
- cords
- surface problems
- reduced mechanical properties



Disruptions at the processing machine

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



Maintenance

- malfunctions in the conveying line
- clogged filters
- sensor issues
- increased effort for cleaning and fault acknowledgment



By using a suitable HELIOS deduster, you avoid rejects, machine downtime and reduce maintenance cost.

Only dedusted granulate enables the production of sophisticated technical parts

By a professional material cleaning, the quality of the resin can be brought back to its original state and optically perfect parts can be produced from it.



Example: PMMA raw granulate before and after dedusting.



✓ improved parts quality

✓ voidance of scrap

✓ more regrind can be used

✓ less machine downtimes

4 proven model ranges are available

Find your ideal dedusting device in no time – test our configurator



NEW
Discover the perfect product with just two specifications!

www.helios-systems.de/en/granulate-regrind-dedusting#C6983



HC-2
HC-2 MIX

Degree of dedusting
sufficient

Material throughput
up to 25 kg/h



HC-3

Degree of dedusting
good

Material throughput
up to 10 kg/h



HC-5

Degree of dedusting
perfect

Material throughput
up to 25 kg/h



HC-Pro

Degree of dedusting
perfect

Material throughput
up to 150 kg/h

HELIO®Clean 2 | HELIO®Clean 2 MIX

Compressed air conveyor with dust removal function

As a device with own control or as JETBOXX® dryer option

The HELIO®Clean 2 as well as the HELIO®Clean 2 MIX conveyor / dedusting units were specially developed for injection moulding and are suitable for mounting on a processing machine (type M) or container (type B).

With the aid of a **dedusting adapter**, the HC-2 M or HC-2 MIX M can be integrated into an existing conveying line on site.

■ compact and light-weight construction

■ 1-component version -HC-2
2-components version -HC-2 MIX

■ easy operation

■ special glass construction

■ dust collection container in 5.5 liters effective size

■ optimum price/performance ratio

■ material throughput **up to 25 kg/h***

* depending on material and required degree of dedusting



type B



type M



type M on dedusting adapter



type B MIX



type M MIX



type M MIX on dedusting adapter

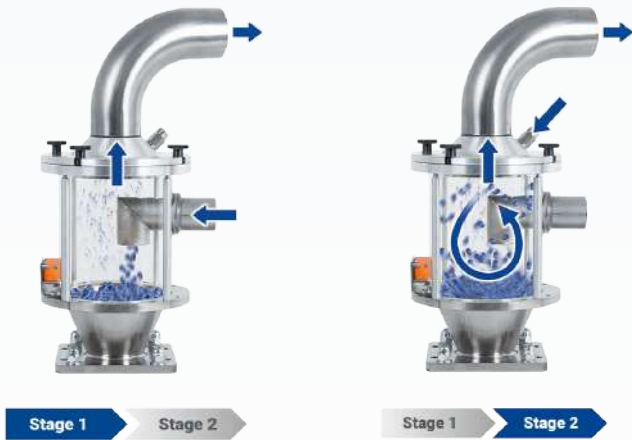
Special glass construction

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 granules over a longer period of time.

This design also enables the conveying and cleaning process to be viewed from all sides.

2-stage dedusting process

Dust separation by compressed air jet and whirling



Filling

Conveying by using a Venturi suction lance, the material is already pre-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.



Control HC-2 for 1 component

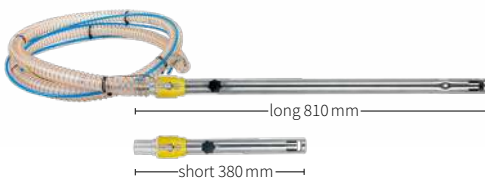
Fig.: model year 2025



Control HC-2 MIX for 2 components

Fig.: model year 2025

Equipment



Conveying hose set

- compressed air driven Venturi suction lance short or long version
- conveying height up to 6 m
- conveying hose PUR-H DN 32 (3 m) with earthing

Options

- conveying hose long (5 m)



Dust removal

STANDARD dust collecting container

- dust collecting container in 5,5 liters effective size
- dust removal hose 5 m (DN-50)

The separated dust is removed into a dust collecting container. An integrated exhaust air filter ensures dust-free ambient air.



OPTION

dust collecting container with automatic filter cleaning

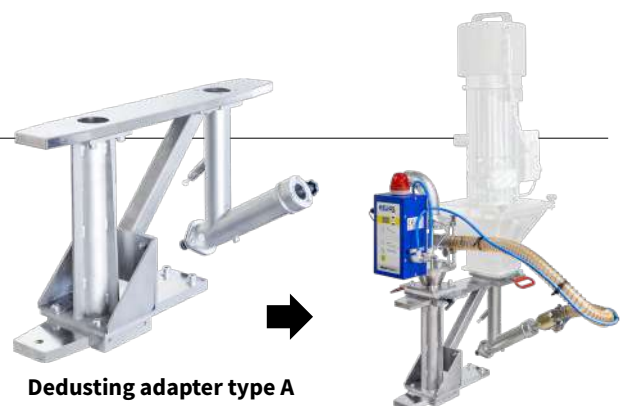
- dust collecting container in 15 liters effective size
- dust removal hose 5 m (DN-50)

The separated dust is removed into a dust collecting container. An integrated exhaust air filter with automatic filter cleaning ensures dust-free ambient air.

Dedusting adapter

For integration on existing conveying systems at site

The existing on-site conveying unit remains in use - it is simply moved sideways on a sliding rail. At this new position a suction device is located under the rail, from which the conveyed material is sucked into the HELIOS dedusting device, dedusted in portions and transferred to the processing machine (type A).



Dedusting adapter type A

HELIO®Clean 3

Conveying / dedusting device with ion shower

Reliable dust removal by 3-stage dedusting process

The new HELIO®Clean 3 conveying / dedusting device has been specially developed for injection moulding processes with small to medium throughputs of up to 10 kg/h. It is suitable for direct mounting on a processing machine (type M) or on container (type B).

With the aid of a **dedusting adapter**, the HC-3 M can be integrated into an existing conveying line on site.

- **small and efficient**
- **compact construction**
- **light weight**
- **air sifting with ion shower**
- **special glass construction**
- **easy operation**
- **dust collection container in 5.5 liters effective size**
- **cleaning by means of ions**
- **3-stage dedusting process**
- **optimum price/performance ratio**

- **material throughput** **up to 10 kg/h***

* depending on material and required degree of dedusting;
example based on PMMA/PC/COC/COP

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 granules over a longer period of time.

This design also enables the conveying and cleaning process to be viewed from all sides.



i Ion shower

While the granulate is whirled up in the deduster, a continuous stream of ionised 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 sifting. Due to the special glass construction, the ions are particularly „long-lasting“ and therefore lead to a high efficiency of the ion shower.



type B



type M



type M on dedusting adapter

3-stage dedusting process

Conveying speed and air sifting power Infinitely adjustable.

1 Conveying

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



2 Air sifting + ion shower

Dust separation by air sifting with ionised air with freely adjustable whirling.



3 Cleaning

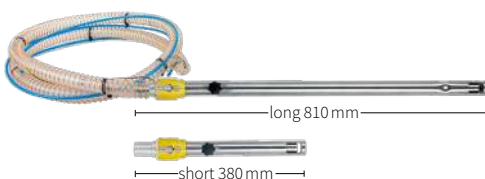
The sifter glass is cleaned and neutralised with ionised air between two filling processes.



Control

Fig.: model year 2025

Equipment



Conveying hose set

- compressed air driven Venturi suction lance short or long version
- conveying height up to 6 m
- conveying hose PUR-H DN 32 (3 m) with earthing

Options

- conveying hose long (5 m)



Dust removal

STANDARD

dust collecting container

- dust collecting container in 5,5 liters effective size
- dust removal hose 5 m (DN-50)

The separated dust is removed into a dust collecting container. An integrated exhaust air filter ensures dust-free ambient air.

OPTION

dust collecting container with automatic filter cleaning

- dust collecting container in 15 liters effective size
- dust removal hose 5 m (DN-50)

The separated dust is removed into a dust collecting container. An integrated exhaust air filter with automatic filter cleaning ensures dust-free ambient air.



HELIO®Clean 5

Conveying / dedusting device with ion shower and Superclean

Reliable dust removal by the new DKM process

The new HELIO®Clean 5 conveying / dedusting device has been specially developed for injection moulding processes with small to medium throughputs of up to 25 kg/h. It is suitable for direct mounting on a processing machine (type M) or on container (type B).

With the aid of a **dedusting adapter**, the HC-5 M can be integrated into an existing conveying line on site.

- small and efficient
- compact construction
- light weight
- air sifting with ion shower
- SUPERCLEAN function*
- special glass construction
- easy operation
- Interface: MODBUS RTU
- dust collection container in 5.5 liters effective size
- cleaning by ions
- 5-stage dedusting process
- optimum price/performance ratio

■ material throughput **up to 25 kg/h****

** depending on material and required degree of dedusting;
example based on PMMA/PC/COC/COP

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 granules over a longer period of time.

This design also enables the conveying and cleaning process to be viewed from all sides.



i Function
SUPERCLEAN



type B



type M



type M on dedusting adapter

DKM process



- 1 **Conveying**
an exactly equal portion of granulate
- 2 **Air sifting I**
- 3 **Air sifting II**
- 4 **Cleaning I**
- 5 **Cleaning II**



Control

Fig.: model year 2025

Equipment



Conveying hose set

- compressed air driven Venturi suction lance short or long version
- conveying height up to 6 m
- conveying hose PUR-H DN 32 (3 m) with earthing

Options

- conveying hose long (5 m)



Dust removal

STANDARD dust collecting container

- dust collecting container in 5,5 liters effective size
- dust removal hose 5 m (DN-50)

The separated dust is removed into a dust collecting container. An integrated exhaust air filter ensures dust-free ambient air.



OPTION dust collecting container with automatic filter cleaning

- dust collecting container in 15 liters effective size
- dust removal hose 5 m (DN-50)

The separated dust is removed into a dust collecting container. An integrated exhaust air filter with automatic filter cleaning ensures dust-free ambient air.

Dedusting dryers

Zero defect production thanks to HELIOS dedusting dryers

For the production of optical and medical parts

Filling + Dedusting + Drying

Compact material preparation unit for highest demands in injection moulding of optical parts. The unit consists of a dedusting device with integrated feeding technology and transfer of the dedusted granulate in portions into a tower drying container with a scalable filling height, which is flown through with a drying gas from a drying process control.

- installation directly on injection moulding machine
- special glass / stainless steel
- surface finished dust removal cone
- self-cleaning blowing nozzles
- dedusting by air sifting with ion-shower
- sifter glass cleaning with optical monitoring
- stainless steel portioner
- drying with dry air / nitrogen

NEW: WINneo® Connect maximum operating comfort

- HELIOS® material database
- freely programmable database
- intuitive operation
- wireless remote control

OPC UA interface documented process

- future-proof solution
- simple installation via Ethernet
- platform-independent
- can be integrated with cloud, ERP systems or dashboards



NEW: WINneo® Connect





Tower drying bin 'Optical Edition' in octagonal construction

- octagonal inner container of stainless steel, fully insulated
- powder-coated cladding sheet, very scratch-resistant
- optimal drying gas distribution
- viewing window



Viewing window with filling level scale

At the tower drying bin, the filling level can be continuously preselected between 4 – 10 liters or 6 – 20 liters by means of a sharable filling level sensor, depending on the throughput and the permissible dwell time.



Container lid can be folded down for easy cleaning

The container lid can be opened in just a few steps.

The lid, together with the deduster is tilted 90° to the side.

Two stable flap holders ensure a safe cleaning position.

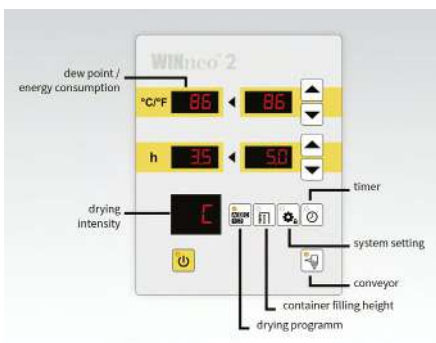
Process control



Control detachable

The drying process control can be easily detached from the tower drying bin by means of a clamping lock, i.e. in order to attach a bridging control during recalibration without interrupting production.

Compressed air or nitrogen can be used as drying gas.



Drying Process Control

- heating power 750 W
- drying gas flow rate 85 | 115 | 150 l/min
- compressed-air dry-gas based dryer with patented HELIOS digital pneumatics
- drying temperature range 30–150 °C
- quick selection button for 3 drying intensities A, B, C
- portion drying programs 1, 2 and 3
- weekly timer
- dew point display down –50 °C
- display of drying temperature and drying time SET/ACTUAL as well as A, B, C, 1, 2, 3
- factory calibration with a calibration certificate for
 - 2 drying temperatures
 - 3 drying gas volume flows
 - 2 dew points
- overdrying protection depending on throughput
- alarm lamp and potential-free contact
- MODBUS RTU
- OPC-UA and WINneo Connect prepared



Deduster control

- conveying
- filter cleaning
- air sifting
- sifter cleaning
- status display
- error messages
- time until ioniser maintenance
- reset to factory settings
- display of operating hours
- discharging time

HELIOS deduster dryers for maximum purity and perfect drying result



DD 12 "Optical Edition"

Tower Drying Container:
Octagon design for the best possible drying efficiency

SUPERCLEAN included



DD 24 "Optical Edition"

Tower Drying Container:
Octagon design for the best possible drying efficiency

SUPERCLEAN included



DD 20

Filling volume:
20 Liter

SUPERCLEAN included



DD 30

Variable filling volume:
20–30 Liter

SUPERCLEAN included

Highlights



DD 12 "Optical Edition"

Stepless filling level:
4–10 Litres



DD 24 "Optical Edition"

Stepless filling level:
6–20 Liter Litres



HELIO® Clean 3

For optical applications with throughputs
up to 10 kg/h



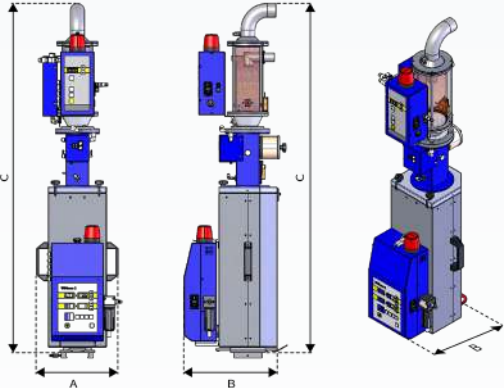
HELIO® Clean 5

up to 25 kg/h



**"SUPERCLEAN"
Funktion**

Technical Data

	DD12 Optical Edition	DD24 Optical Edition	DD20	DD30
				
Throughput* [kg/h]	0.4 – 3.0	0.8 – 5,0	4.5	4.5 – 6.0
Max. Drying Air [m3/h]	9.0	15.0	15.0	15.0
Max. Heating Power [kW]	0.75	1,5	1.5	1.5
Width A [mm]	304	335	396	396
Depth B [mm]	361	405	415	415
Height C [mm]	1222	1380	1115	1283

Injection moulded sample parts



Application examples



HELIO® Clean Pro

Granulate cleaner for plastics processing

The new HELIO®Clean Pro devices are the most powerful HELIOS dedusting units and have been specially developed for injection moulders and extruders. They are characterised by particularly gentle conveying and dedusting with an ion shower and are suitable for the most difficult dedusting tasks.

- 4-stage dedusting process

- gentle dedusting

- max. dedusting capacity

- special glass construction

- control stand with cleaning aid

- air-sifting with ion shower
2 integrated ionisers



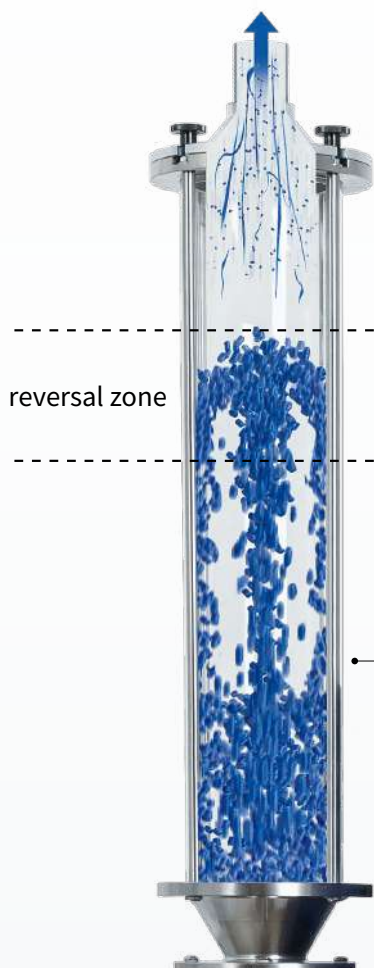
HELIO®Clean Pro 10/20

material throughput
up to 42/60 kg/h*



HELIO®Clean Pro 30

material throughput
up to 150 kg/h*



dust separation

Light parts such as dust or lints leave the sifter at the top through the sieve disc and are separated into the dust collection container.

material fountain



A laminar air stream with ionized air carries in an adjustable way the material to be dedusted up to the upper third of the sifter, where it reverses by gravity and flows back along the glass wall to the point of origin. This ion shower repeats for up to 30 seconds.

special glass construction

The dedusting chamber is made of abrasion-resistant special glass. This enables efficient cleaning with the aid of ions, since 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.

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

4-stage dedusting process

Air-sifting in fountain with ion shower and dust extraction



HELIO®Clean Pro system control

Control stand with dust collecting container

- intuitive operating
- low energy consumption
- steplessly adjustable vacuum unit
- dust collector container
- automatic filter cleaning
- integrated cleaning aid
- quick coupling for control line



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® Clean 2 HELIO® Clean 2 MIX	HELIO® Clean 3	Next Generation: HELIO® Clean 5	HELIO® Clean Pro 10 HELIO® Clean Pro 20	HELIO® Clean Pro 30
material throughput*	up to 25 kg/h	up to 10 kg/h	up to 25 kg/h	up to 60 kg/h	up to 150 kg/h
dedusting portion	0.25 Liter	0.38 Liter	0.38 liters	max. 0,5 – 1,0 Liter	max. 0,5 – 2,0 Liter
conveying technology	Venturi suction lance(s)	Venturi suction lance	Venturi suction lance	Suction blower in the control stand	Suction blower in the control stand
process	Whirling up by compressed air jet from above	Air sifting with ion shower	DKM process	Air sifting with ion shower by circulating in the fountain	DKM process in preparation
ioniser	No ionisation	1 ioniser	1 ioniser	2 ionisers	2 ionisers
degree of dedusting	sufficient	good	perfect	perfect	perfect
dust removal	Separate dust collection container	Separate dust collection container	Separate dust collection container	Dust collector integrated in control stand with automatic filter cleaning	Dust collector integrated in control stand with automatic filter cleaning
features	■ Compact construction ■ 1- or 2-components version (MIX) ■ Special glass construction	■ Compact construction ■ Cleaning of the sifting glass with ion flushing ■ Special glass construction	■ Compact construction ■ Cleaning of the sifting glass with ion flushing ■ Special glass construction ■ Superclean function ■ Interface: MODBUS RTU	■ Separate control stand combined with 3 steps vacuum generator and dust collecting container ■ Cleaning of the sifting glass with ion flushing ■ lockable conveying line ■ Locking- / discharging flap ■ Swivel/tilt dedusting chamber for cleaning ■ Conveying speed and air sifting power Infinitely adjustable. ■ Power consumption max. 1.1 kW	■ separate sifter and control stand ■ air-sifting with ion shower ■ Superclean function ■ Tilt sifter for cleaning ■ intuitive operating ■ Energy consumption 0,5 kW – 1,3 kW
place of action	■ on processing machine ■ on drying container ■ on dedusting adapter	■ on processing machine ■ on drying container ■ on dedusting adapter	■ on processing machine ■ on drying container ■ on dedusting adapter	■ on processing machine ■ on drying container ■ on dedusting adapter	■ directly on processing machine ■ on dedusting adapter ■ as a stationary dedusting unit

* depending on material and required degree of dedusting;
example based on PMMA/PC/COC/COP

Dedusting adapter for conveying systems

Integration of all HELIO®Clean dedusting device in existing conveying systems

Suitable for existing conveying systems of any make

The HELIOS dedusting adapter is a truly superb new development, which can be used to upgrade existing conveyor systems – regardless of make. Depending on the length of the conveying section and the number of deflections, abrasion occurs during material supply. This abrasion can lead to serious problems in the form of dust or angel hair in the feed zone of the processing machine or the end product. The innovative HELIOS dedusting adapter intervenes precisely where there are real problems and therefore a need for action.

The existing on-site conveying unit remains in use - it is simply moved sideways on a sliding rail. At this new position, a suction device is located under the rail, from which the conveyed material is sucked into the HELIOS dedusting device, dedusted in portions and transferred to the processing machine (type A).

If the processor temporarily does not require dedusting at this conveying point, the HELIOS deduster can be moved to the 'parking position' and the conveying device can be moved back to its original position above the feed zone (type B). The conveyed material then flows directly back into the processing machine.

Adapter

The HELIOS dedusting adapter can be used with all 4 series for throughputs of up to **10 | 25** or up to **50 kg/h** per conveying point.*



HELIO®Clean Pro 30 on dedusting adapter

■ the adapter is suitable for any conveying equipment

■ for product series:
HELIO®Clean 2 | 2 MIX | 3 | 5 and HELIO®Clean Pro

■ plug-and-play

■ material throughput **up to 50 kg/h***

* depending on material and required degree of dedusting;
example based on PMMA/PC/COC/COP

The adaptation consists of a **sliding rail with adapter** for mounting on the processing machine and a **suction device** for HELIOS dedusters of the following series:

■ HELIO®Clean 2

■ HELIO®Clean 3

■ HELIO®Clean 5

■ HELIO®Clean Pro

■ is suitable for any conveying equipment available.

■ **OPTION**
5-litres intermediate container for on-site conveyor.

* depending on material and required degree of dedusting;
example based on PMMA/PC/COC/COP