

# HELIOS

The perfect partner for your material handling

## JETBOXX® SYSTEM

### Dryer System

Mini dryers

Top mounted dryers

Mobile dryers

Batch dryers

Dedusting dryers



2023

[www.helios-systems.com](http://www.helios-systems.com)

MADE IN GERMANY



# JETBOXX® SYSTEM

## Compressed air dryers for plastic granulate

Since HELIOS was founded by the plastics engineer Klaus Wilhelm in **1982**, we have mainly been involved in material handling in the plastics industry.

Even if the focus was on planning and supply of central pellet drying systems with throughputs of several tons per hour and central material supply systems in the early years, we noticed the lack of a drying system for small quantities in the injection molding process.

Especially for small throughputs and/or in case of frequent material change, central drying and material supply systems are rather unsuitable, because the subjects overdrying, post humidification and contamination/mixing appear to be impossible to control. The cleaning effort may be enormous.

Therefore the first batch dryer worldwide, called HELIO®MAT, with removable drying containers, was presented at the FAKUMA in the year **1990**. That system has been produced ever since in a modified version.

Based on the removable HELIO®MAT drying containers the expansion of the system, including a removable dryer control for different container sizes and throughputs, was presented at the **K-1998** — called JETBOXX®. That system is suitable for batch drying as well as for continuous drying. Thanks to the digital pneumatics used, just as much of compressed air as necessary for the fulfillment of the drying task is consumed. The invention JETBOXX® with digital pneumatics was patented **1999** in Europe and **2000** in USA and since then more than 10.000 were sold.

On the occasion of the K-2001 fair a JETBOXX® with a comfort and user benefit - once thought impossible - was presented. This JETBOXX® of the series –Economy– included already as standard a finely graded dry air flow rate control, a database for plastic specialized and throughput dependent dryer adjustments, a display for drying parameters temperature, air volume flow, dew point of the dry air as well as energy consumption for a current throughput and menu navigation for users in 10 languages. Furthermore a control for a compressed air conveyor with mixing function for 2 components and automatic filter cleaning.

This innovation of HELIOS can be described – not entirely without pride – as „mother of all current compressed air dryers“. Imitated manytimes, but never equalled!

**2004** JETBOXX® –Economy– was replaced by series WINsystem® and the stainless steel drying containers were supplemented by 4 mini glass containers up to 5 litres with an absolutely new air distribution.

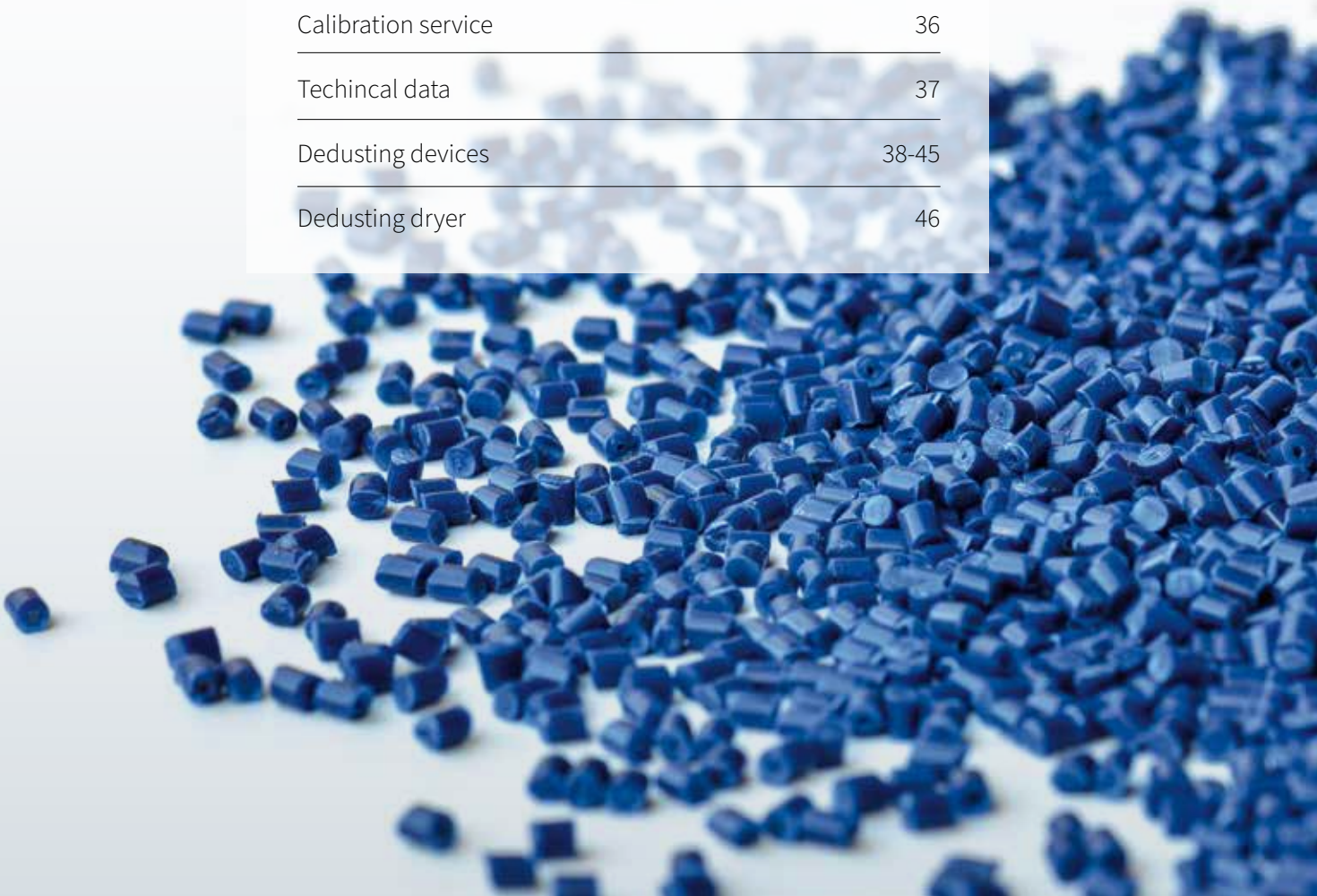
Since **2007** all JETBOXX® dryers feature a material feeding and tracking without or with **dedusting**.

In over **20** years, many supplementary system components have been developed that enabled customised configuration for the respective application.

# HELIOS

# JETBOXX® SYSTEM

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# JETBOXX® System Components

"By combining system basic components you can implement optimal solutions for every setting of task"



## JETBOXX®

### Controls

Control for drying and conveying

- WINneo® version
- WINsystem® version

## JETBOXX®

### Drying containers

- Glass drying containers 0.5 – 5.0 liters
- Stainless steel drying containers 6.0 -200 liters
  - Double-walled version
  - Optimal air distribution
  - Scalable filling level

# JETBOXX® System Variations



Top-mounted dryers



Mobile dryers

**"With modified tasks the components  
can be easily recombined"**



## **JETBOXX®**

### **Conveying techniques**

- for drying container filling
  - for machine feeding
- without/with dedusting

## **JETBOXX®**

### **Accessories**

Base frames, suction devices,  
adapters, autarkic conveyors,  
dedusters etc.



**Variable dryer station**



**Dedusting dryer**

## Perfect drying result by throughput-/ material dependent dryer settings

### 100% accurate repeatable settings of all drying parameters

#### Plastics

For all common plastics, values are stored for the parameters drying temperature, minimum drying time and plastic-specific air requirement.

#### Throughput

Fine adjustment in steps of 0,1 kg/h

#### Air volume

Display of current airflow input based on adjusted plastic type and throughput.

#### Dew point

Display of actual dew point of your compressed air system existing on site with alarm function.

#### Continuous drying

LCP	150 °C	4.0h
Throughput	2.7	kg/h
Air volume	90	l/min
Heating energy	0.38	kW
Air flow energy	0.54	kW
Due point	-22	°C

#### Energy consumption

Display of the current energy consumption at the selected dryer setting.



Basic material	Temp	Time
COP.....	80 °C	5.0h
CP.....	75 °C	2.5h
CP_lon.....	60 °C	8.0h
<b>LCP.....</b>	<b>150 °C</b>	<b>4.0h</b>
PA 4,6.....	100 °C	5.0h
PA 6-3-T.....	80 °C	5.0h

#### Plastic data base

Database proposals for plastic-specific settings are obtained which can be accepted or changed. Empirically determined dryer settings can be also saved as personal programmes and recalled.

#### Conveying settings

Layering A/B	2.0	s
Component B	30	%
Permitted conveying time	99	s
Dedusting	3	x

#### Conveying control

The dryers can control two compressed air 2-components conveyor with dedusting.

- Mix function
- Detection of lack of material
- Dedusting

#### Week timer

Day	ON	OFF
Mo	6.00	22.00
Tue	6.00	22.00
Wed	7.00	19.00
Thu	6.00	22.00
Fri	6.00	16.00

#### Week timer

Both continuous drying programs and single portion drying can be individually programmed for each day of the week. When switched back on the continuous drying mode, the dryer starts a preheating programme 30 minutes before the production starts.



### Speed dial programs

The speed dial function enables to program and start a drying task within a shortest period. In doing so, it is not necessary to enter the main menu. The settings will be done directly on the main displays.

### Large-scale main display

The most important parameters like drying temperature and drying time can be easily seen also from distance. The target values can be easily set by pushing the keys next to the display.



### Removable drying control

The dryer control is simply detachable by means of quick clamps, no tools are necessary. During the service, like re-calibration, there are interim devices available with HELIOS.

Pre / Continuous drying  
LCP

Overheating protection  
active  
Waiting for production start

Drying time 4.0 h

#### Overheating protection

The drying system monitors the extraction and filling. When exceeding the permitted dwell time of the granules in the drying container, the control lowers the drying temperature and the dry gas volume flow. A thermal damage of the plastic is avoided.

Drying mode

Batch drying

Pre / Continuous drying

Continuous drying

#### Drying programs

- Quick selection programs
- Database programs
- Personal programs

Executable in drying mode:

- Pre-/continuous drying
- Continuous drying
- Batch drying

Dew point alarm

Max permitted  
dew point

**-20 °C**

0 = alarm Off

Minimize

(+)

Increase

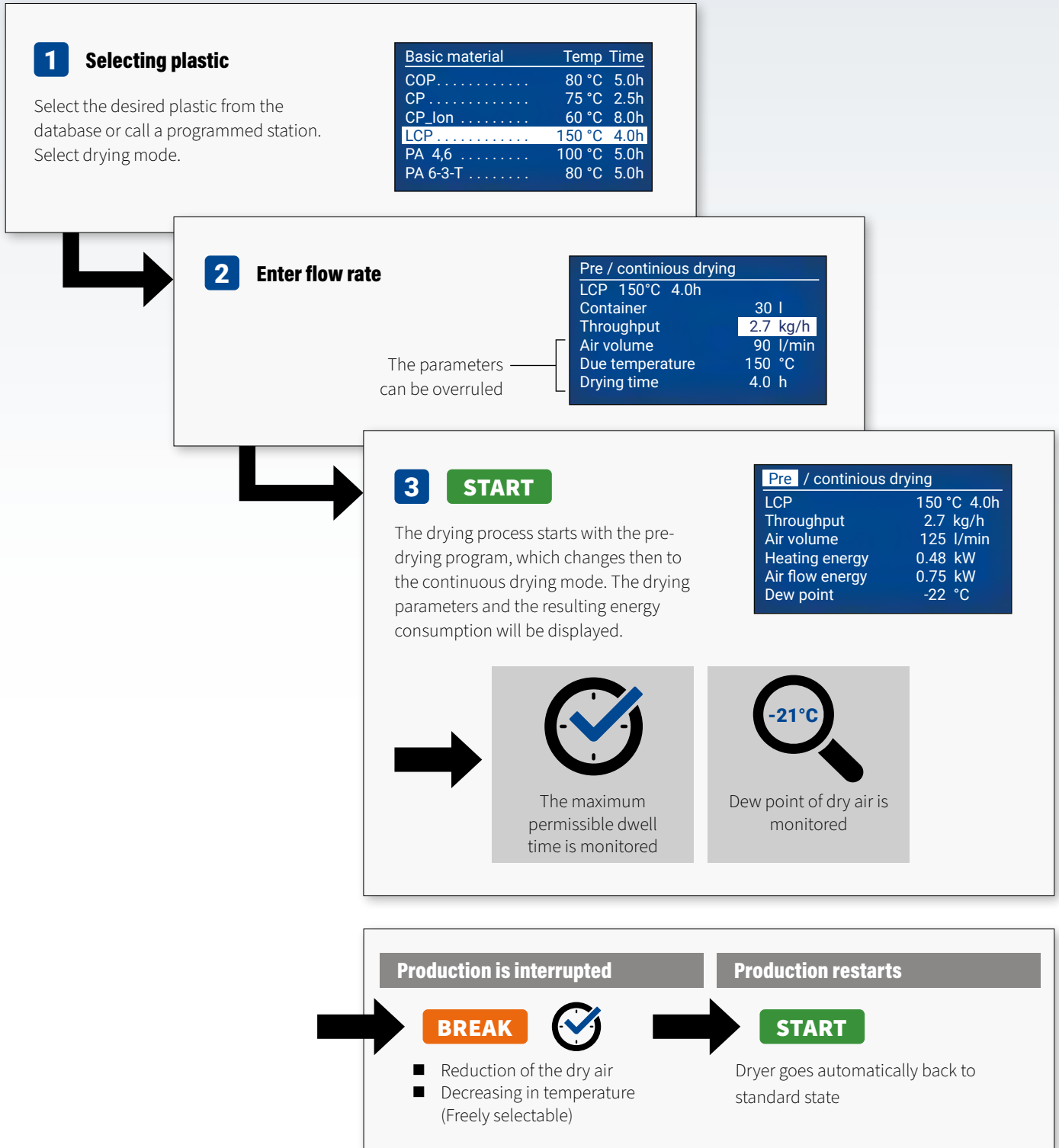
(-)

#### Dew point measurement

Every WINsystem® granulate dryer / dry-air dryer has a precision dew point measuring device as standard. This enables a permanent monitoring of the compressed air net and an alarm will be triggered in case of exceeding the permitted dew point value.

## Continuous drying program with pre-drying

Reaching an optimal drying result without danger of overdrying by menu-guided operation, when production is interrupted for example.





# Quick selection of continuous drying programs

The quick selection function allows to define and start a drying task in shortest time. You don't have to enter the main menu. The settings are executed directly through the main display.

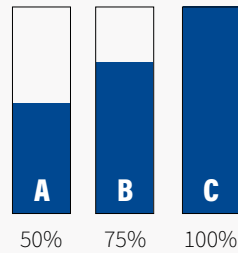
## 1 Select drying temperature

The drying temperature can be adjusted easily via the buttons next to temperature main display.



## 2 Select intensity for continuous drying

By pressing the quick selection button a drying program with the desired intensity will be adjusted and the dryer starts immediately.



Type series	WINsystem® / WINneo®											
	JETBOXX® 0,5 - 5				JETBOXX® 6	JETBOXX® 12	JETBOXX® 24	JETBOXX® 20	JETBOXX® 30	JETBOXX® 50	JETBOXX® 75	JETBOXX® 200
Drying capacity [kg/h] *	0,1	0,2	0,5	1,0	1,2	2,4	4,8	4	6	10	15	40
A - Dry air max [l/min]	30				30	50		60	60	125	125	250
B - Dry air max [l/min]	45				45	75		90	90	180	180	375
C - Dry air max [l/min]	60				60	100		125	125	250	250	450

\* for PC when drying time is 3h

## Drying in batch mode

In many cases just one batch of a certain type of plastic has to be dried, for example for sampling or for a single order with small batch size. After manual filling of the dryer or by means of a conveyor, proceed as follows:

### 1 Select plastic

Select the desired plastic from the database or call a programmed station. To select the drying mode.

Basic material	Temp	Time
COP . . . . .	80 °C	5.0h
CP . . . . .	75 °C	2.5h
CP_Ion . . . . .	60 °C	8.0h
<b>LCP . . . . .</b>	<b>150 °C</b>	<b>4.0h</b>
PA 4,6 . . . . .	100 °C	5.0h
PA 6-3-T . . . . .	80 °C	5.0h

### 2 START

The drying parameters and the resultant energy consumption will be displayed.

Batch drying	
LCP	150 °C 5.0h
Air volume	125 l/min
Heating energy	0.48 kW
Air flow energy	0.75 kW
Dew point	-22 °C

### Drying time achieved

Preservation drying in energy-saving mode

- Reduction of dry air
- Decrease in temperature (freely selectable)

**STOP**



## Quick selection of batch drying program

### 1 Select portions drying program

### 2 Select drying temperature

Select „drying program-1“ by pressing the quick selection button. The drying temperature can be easily adjusted via the buttons next to the temperature main display.



### 3 Select the drying time

The drying time can be easily adjusted via the buttons next to the time main display. The dryer starts with the entry of a drying time.

→ **START**



# Control options



**WINneo®**



**WINsystem®**

	WINneo®	WINsystem®
4 quick selection programs	●	●
9 personal programs	—	●
Plastic database for plastic-specific and throughput-dependent dryer settings	—	●
Measurement of dew point + display	○	●
Dew point alarm	—	●
Display of compressed air volume flow, energy consumption for heating and air generation.	—	●
Large digital display	●	●
Graphic display with 10 languages	—	●
Week timer	●	●
Conveying control	●	●
2 conveying points 1 dedusting	●	●
2 conveying points 2 dedustings 2 mix functions	—	●
Material lack detection	●	●
Overdrying protection	●	●
Error messages + collective fault signal	●	●

● In standard  
○ Optionally  
— Not available

## Mounting directly on the feed section of the proce

The dryer is directly mounted on the feed section of the injection molding machine. Therefore the dried material flows directly from the dryer in the plasticating cylinder, without humidification or cooling.

### Minimal space requirement

Based on the small dimensions the JETBOXX® mini dryers can be mounted on the injection molding machine directly.



JETBOXX® mini set 0,5 liters with manual filling



JETBOXX® mini set 1 liter

example: manual filling



### tool-free control change

The control can be removed from the drying container easily via the fastener, for example to mount an interim control in case of maintenance like calibration without production interruption.

### Split version



In case of particularly difficult space conditions, the drying control and the drying container can be mounted separately at a suitable place. Example: 5 liters + conveyor



# osing machine



539 mm



765 mm



**JETBOXX® mini set 2,5 liters**  
 example: conveyor with dedusting  
 throughput: up to 0,5 kg/h

**JETBOXX® mini set 6 liters**  
 example: manual filling

**JETBOXX® mini set 12 liters**  
 example: hopper loader with exhaust air filter  
 throughput: up to 2,4 kg/h

## Machine adapter

Closing slide



L-guide  
 for sliding rail (mm)

70x10		
80x15	80x20	80x25
90x15	90x20	90x25
100x15	100x20	100x25
110x15	110x20	110x25

Polished flat slide valve made of stainless steel with clamping device. L-guiding rail made of steel, nickel plated, different dimensions.



Clean room - / medicine version – 5 liters

# JETBOXX® Mini drying container

## Double-walled special glass

The whole inner body of the drying container consists of one single piece of special glass and is shaped conically at the outlet. A cushion of air is created by assembling with the outer glass, that functions according to the principle of a thermos flask. This is how you save energy.

Another advantage of the glass construction is the all side transparent visibility into the drying container. Contaminations are immediately apparent when changing the material.



## Air input - distribution

Uniform distribution guarantees, that your material is dry and homogeneous at the right temperature.

The conically shaped inner glass forces the intruding dry air through the material output and ensures, that the granule that is already located at machine feed is kept at the right temperature.

A flow stabiliser made of stainless steel distributes the dry air flowing upwards across the entire cross section of the cylindrical container and avoids, that the material flows too quickly through the container center. For cleaning purposes the stabilizer can be removed manually without tools.



## Container sizes

\* Height [mm] without filter  
Filter: +100mm



	0,5 liter	1 liter	2,5 liters	5 liters	6 liters	12 liters	24 Liter
Weight [kg]	4,5	5,0	6,7	7,2	9,0	12,0	17,8
Height* [mm]	229	369	347	587	439	495	749
Width [mm]	267	267	267	267	252	301	335
Depth [mm]	125	125	170	170	169	219	280
Cover	Swiveling cover	Swiveling cover	Swiveling cover	Swiveling cover	Hinged cover	Hinged cover	Hinged cover
Filling level*					variable 2 - 6 liters	variable 2 - 12 liters	variable 6 - 24 liters

\* At automatic filling



### Easy to open

The drying containers can be opened easily on top for filling or cleaning. Glass containers have a swivelling cover, 6/12/18 liter containers have a hinged cover.

### Filling options

- Swivelling / hinged cover (in case of manual filling)
- Compressed air conveyor
- Compressed air conveyor with dedusting



● Teflon insulation contact protection



### Split version

The dry air is led into the container by an insulated hose (max. 1m). The heating control regards occurring heat losses of the hose connection.



### Variable filling height Overdrying protection

The maximum filling height in case of automatic filling can be reduced by the conveyor in container sizes 6 / 12 and 18 liters by the adjustable filling level sensor. Therefore the optimal container volume for keeping the permitted residence time can be adjusted.

## Mounting directly on the feed section of the proce

The dryer is mounted directly on the feed section of the injection molding machine. Therefore the dried material flows directly from the dryer in the plasticating cylinder, without post humidification or cooling.



### Venturi suction lance

Compressed air  
Venturi suction lance  
Short: 380 mm  
Long: 810 mm



### Conveyors

1-or 2- components  
with / without dedusting  
for dryer filling

### Drying container

Filling level variable

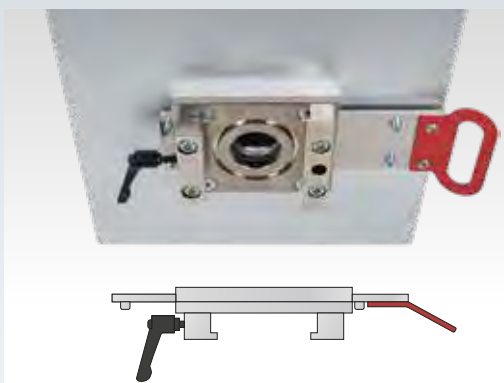
### JETBOXX® control

System control for the drying  
process and two conveyors

### Machine adapter

### JETBOXX®-Set 30 liters

Example: + conveyor with exhaust air filter  
Throughput: 3-6 kg|h



Polished outlet flat slide valve made of stainless steel with clamping device. L-guiding rail made of steel, nickel plated, different dimensions.

### Machine adapter

Closing slide

Optionally for sample taking

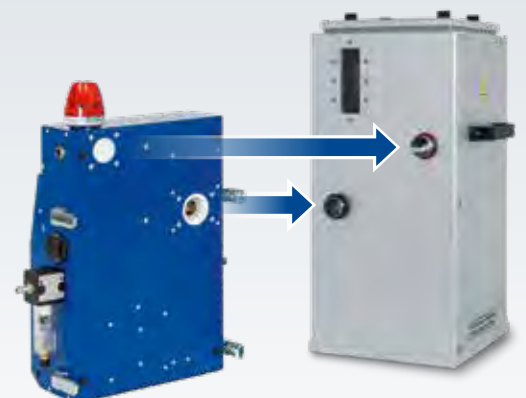
L-guides  
for sliding rail [mm]

70x10

80x15

80x20

special sizes on request





# Drying machine



**JETBOXX®-Set 50 liters**  
 Example: + conveyor with dedusting  
 Throughput: 6-10 kg|h



**JETBOXX®-Set 75 liters**  
 Example: + conveyor with exhaust air filter  
 Throughput : 10 – 15kg|h



The control can be removed from the drying container easily via the fastener, for example to mount an interim control in case of maintenance like calibration without production interruption.



## Worldwide in thousands applications

Since 1999 more than 10.000 JETBOXX® drying systems were supplied and the great majority of them still run in a tough 3-shift operation everyday.

■ TECHNOLOGY  
■ MADE IN  
■ GERMANY

## Case examples



20 liters on vertical injection unit



50 liters on injection unit

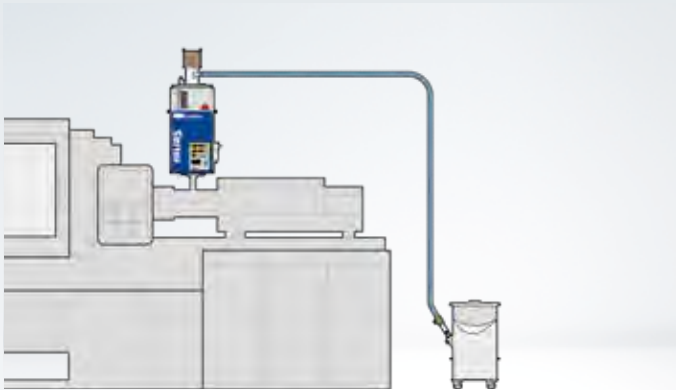


20 liters with conveyor ME



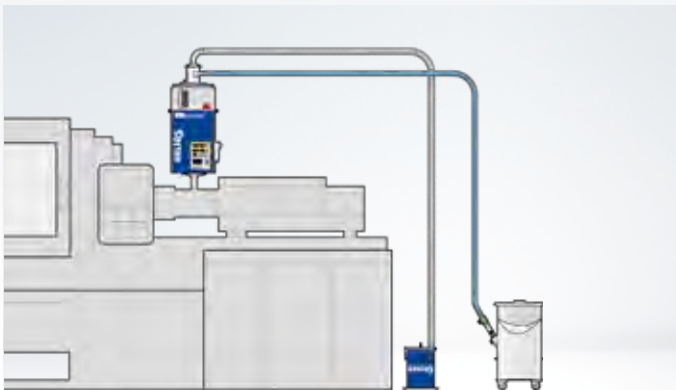
20 liters with option C

# Top - mounted dryer versions



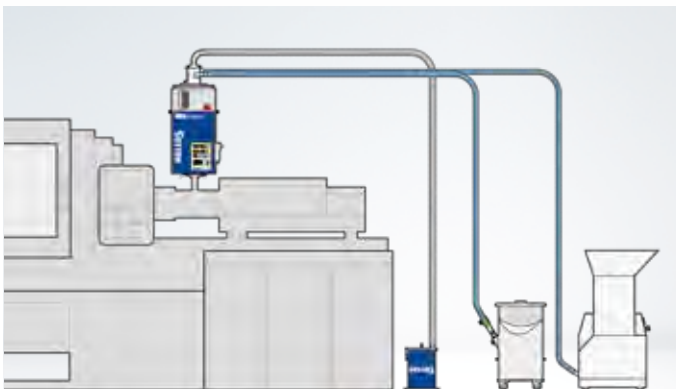
## Version A

Conveying and drying of one component onto the feeding section



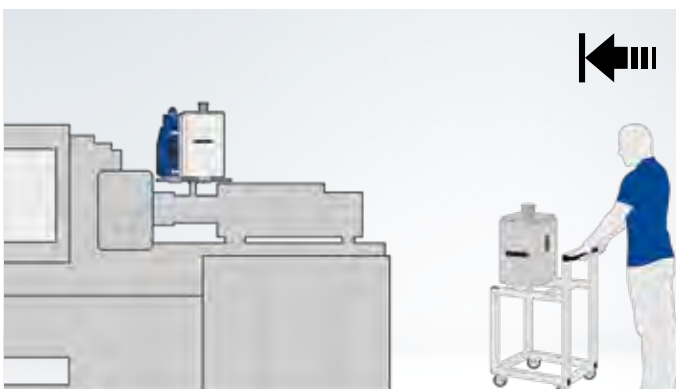
## Version B

Conveying with dedusting and drying of one component onto the feeding section



## Version C

Conveying, dedusting and drying of two components (virgin + ground material). Dust is removed to a separate container.



## Version D

Drying containers are predried at a drying station and transported to the machine by trolley. The containers are docked to a docking plate with dryer control.



## Easy access. Easy to clean.



### Hinged cover

The cover can be hinged down in just one action.  
Standard for 6|12|18 liters, optionally for 20|30|50|75 litres.



### Cover removable

The covers are removable in standard by bayonet locks for 20 to 200 liters container sizes.



### Remove air distributor

The special JETBOXX® air distributor pipe can be removed easily without any tools.



### Cleaning from top

The JETBOXX® drying container can be opened easily from top for cleaning. The high quality inner wall made of stainless steel allows a 100 percent cleaning.



### Cleaning door

The drying containers with size 75 to 200 litres have a cleaning door at the rear. In that way the cleaning can be done easily.

## Container sizes



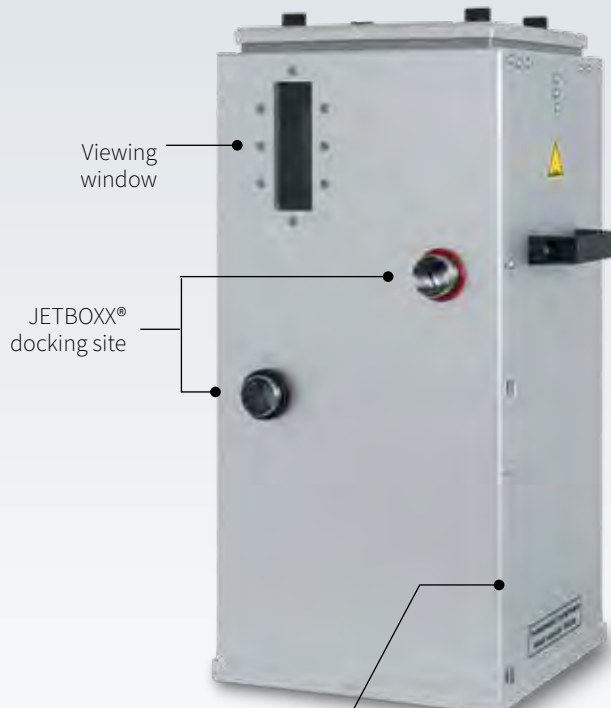
	20 liters	30 liters	50 liters	75 liters
Weight [kg]	15,5	19,0	25,3	35,3
Height [mm]	474	641	801	942
Width [mm]	376	376	407	433
Depth [mm]	293	293	324	403
Cover	removable	removable	removable	removable + cleaning door
optionally	Hinged cover	Hinged cover	Hinged cover	Hinged cover
Filling level	-	variable 15 - 30 liters	variable 30 - 50 liters	variable 50 - 75 liters





Adjustable filling level sensor

Fig.: 30 liters



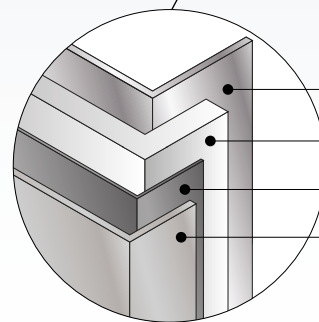
Viewing window

JETBOXX® docking site



**Air distributor pipe and flow stabiliser**

The detachable air distributor pipe made of electropolished stainless steel can be removed without using tools for cleaning functioning as flow stabiliser for the sinking granule level at the same time.



- Stainless steel inner container
- Thermal insulation
- Reflector
- Aluminium casing

Container volume	Minimum filling level
6 liters	> 2 liters
12 liters	> 2 liters
24 liters	> 6 liters
30 liters	> 15 liters
50 liters	> 30 liters
75 liters	> 50 liters
200 liters	> 125 liters

**Filling level sensor on sliding rail**

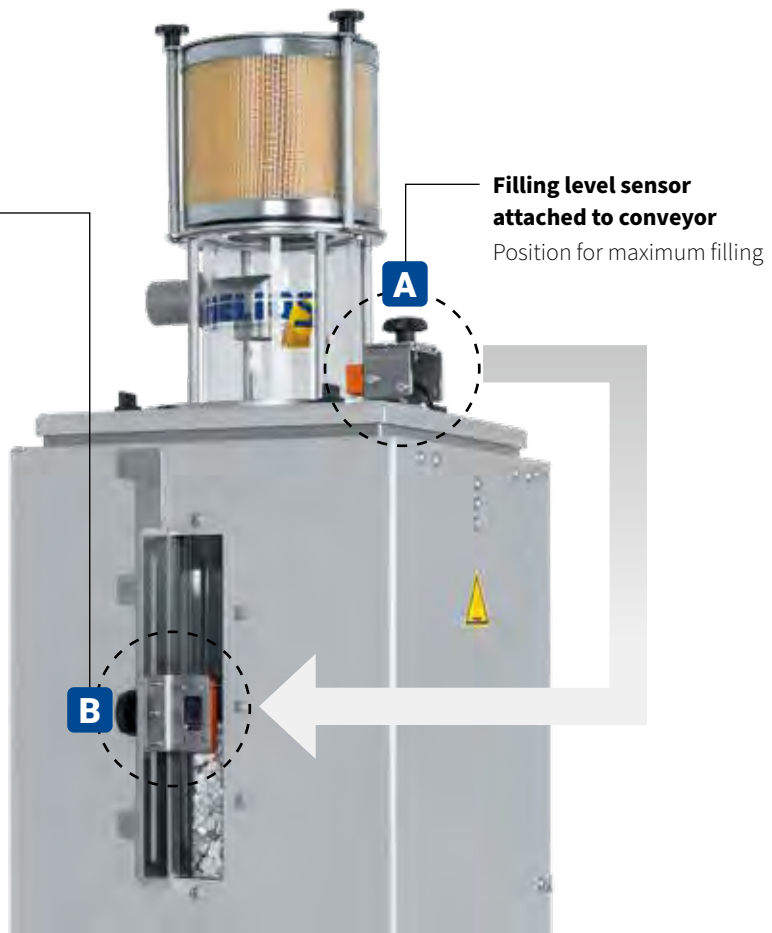
Position for decreased filling level, infinitely adjustable.

**Filling level sensor attached to conveyor**

Position for maximum filling

**Variable filling level**

The filling level sensor of a conveyor can be attached on a sliding rail at the container (viewing) window. In this way the maximal filling height can be varied to guarantee the permitted residence time (overdrying protection).



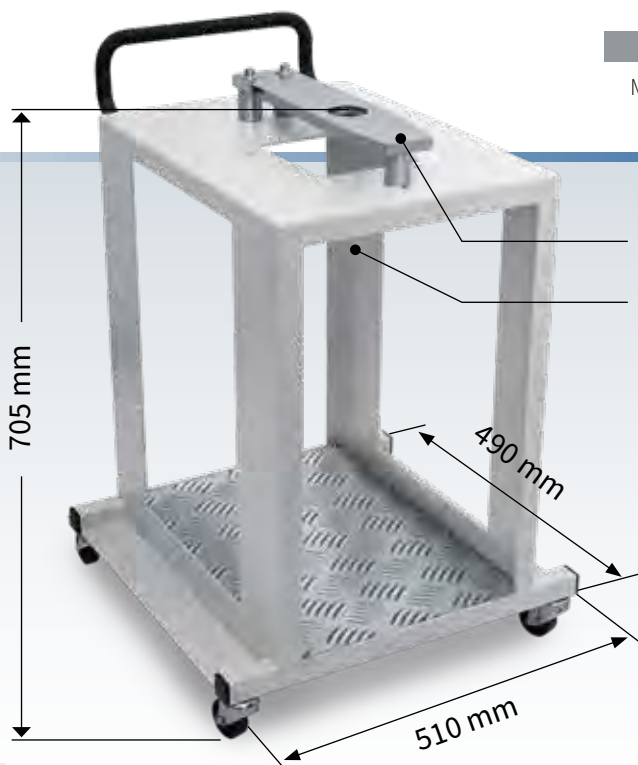
## Placement next to the processing machine and conveyi

Mobile dryers can be used anywhere, where top-mounted dryers fail because of weight / or space reasons. Assembly of the system components on a base frame for a drying before / while the processing with conveying of the dried granules onto the injection unit.



JETBOXX® 30 liter

Material throughput  
3 - 6 kg/h



### Minimal space requirement

Stand - alone dryer frame: 510 x 490 mm  
(special design ST-200: 600 x 600 mm)



# ng to the feeding section



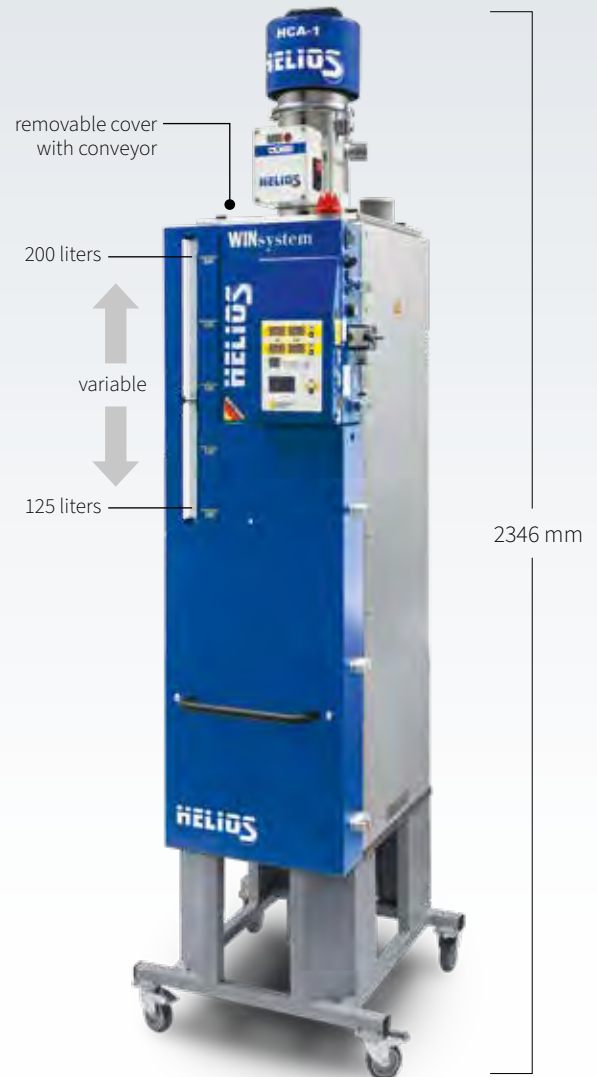
1776 mm

**JETBOXX® 50 liter**  
Material throughput  
6 - 10 kg/h



1918 mm

**JETBOXX® 75 liter**  
Material throughput  
10 - 15 kg/h



Special design  
**JETBOXX® 200 liter**  
Material throughput  
25 - 40 kg/h

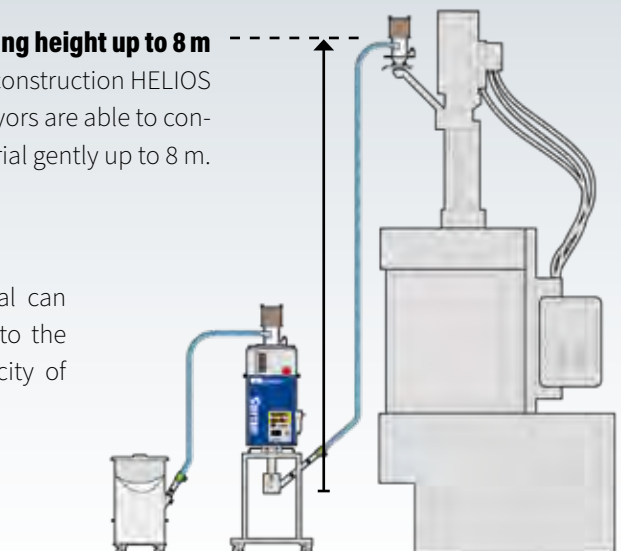


### 2nd conveyor Conveying onto feed section

By using ambient or clean dry air, the material can be conveyed from suction box at dryer outlet to the feeding section, depending on the hygroscopicity of the dried granules/ground material.

### Conveying height up to 8 m

Because of their construction HELIOS compressed air conveyors are able to convey the material gently up to 8 m.



## Suction / Discharge devices

For the conveying of the dried granules by using Venturi suction lances or for discharging for cleaning purposes 4 devices are available:



**X-1**  
1- fold  
Suction device for  
HELIOS Venturi suction  
lance  
DN 22 | 32



**X-2**  
2- fold  
Suction device for two  
HELIOS Venturi suction  
lances  
DN 22 | 32



**A1**  
Discharge nozzle,  
vertical



**A2**  
Discharge nozzle,  
sloping

## Suction devices with dry air conveying

3 new types of suction devices allow a 100 percent avoidance of moisture adsorption of the dried material anew in the waiting or conveying mode.



**XT-1 mini**  
Mini suction device with  
integrated Venturi suction  
lance and dry air convey-  
ing. For small throughputs  
up to 20 kg/h  
Conveying tube: 22mm



**XT-1**  
Material suction for  
HELIOS Venturi suction  
lance, dry air conveying  
with one suction point  
DN 22 | 32



**XT-2**  
Material suction for  
HELIOS Venturi suction  
lance, dry air conveying  
with two suction points  
DN 22 | 32

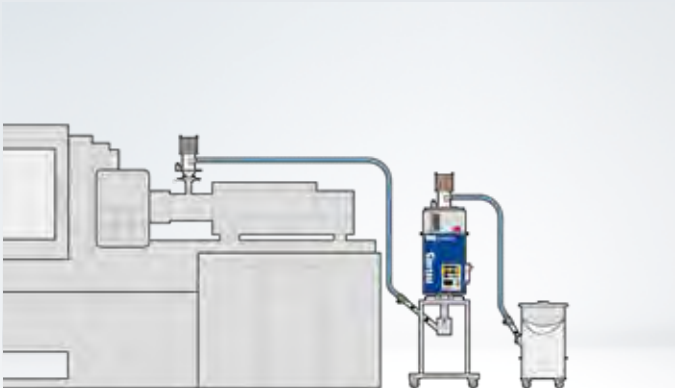
### Conveying with dry air Zero post humidification



Closed conveying system.  
Venturi principle without suction of  
ambient air.

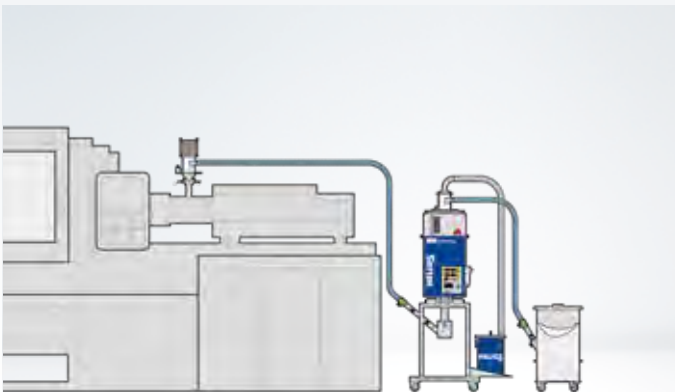


# Mobile dryer types



## Version A

Conveying and drying of one component directly next to the injection molding machine.  
 Conveying of the dried material onto the feeding section.  
 Conveying height up to 8 m possible. Selectable with/without dry air conveying.



## Version B

Conveying, dedusting and drying of one component next to the injection molding machine.  
 Conveying of the dried material onto the feeding section.  
 Selectable with/without dry air conveying.



## Version C

Conveying, dedusting and drying of two components (virgin/ ground material) next to the injection molding machine.  
 Conveying of the dried material onto the feeding section. Selectable with/without dry air conveying.



## Version D

Example: Feeding of two machines with dried material.  
 Selectable with / without dry air conveying.

## Conveyors

## OPTION C

### OPTION C micro

**1-component conveyor**  
 Special glass and stainless steel capacitive filling level sensor  
 0,5|1,0|2,5|5,0 litres containers  
 Conveyor pipe DN 22 | DN 32  
 Mounting on glass container

### OPTION C mini

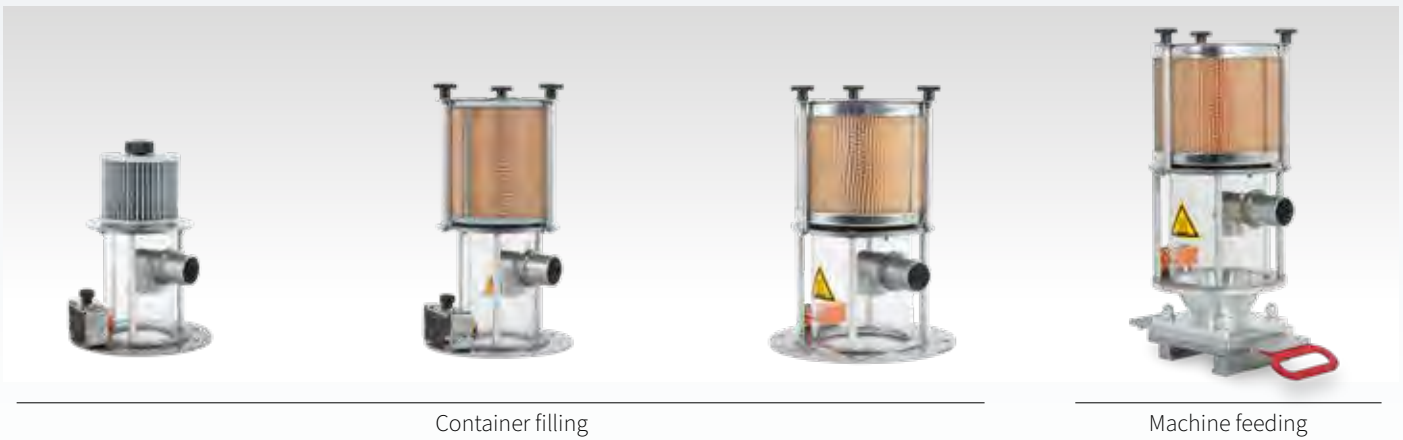
**1-component conveyor**  
 Special glass and stainless steel capacitive filling level sensor  
 6|12 litres containers  
 Conveyor pipe DN 22 | DN 32  
 Mounting on drying container

### OPTION C

**1-component conveyor**  
 Special glass and stainless steel capacitive filling level sensor  
 18|20|30|50|75 litres containers  
 Conveyor pipe DN 22 | DN 32  
 Mounting on drying container

### OPTION C-M

**1-component conveyor**  
 Special glass and aluminium/stainless steel capacitive filling level sensor  
 Machine adapter with gate valve  
 Conveyor pipe DN 22 | DN 32  
 Mounting on processing machine



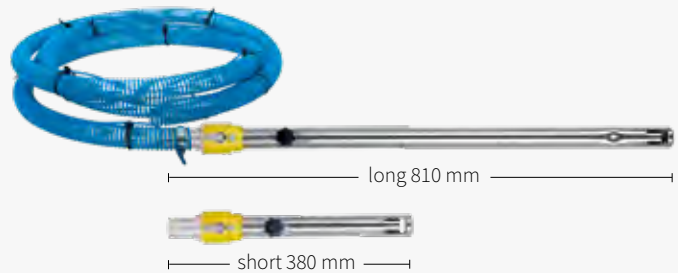
Container filling

Machine feeding

### Conveying set DN 22 | DN 32

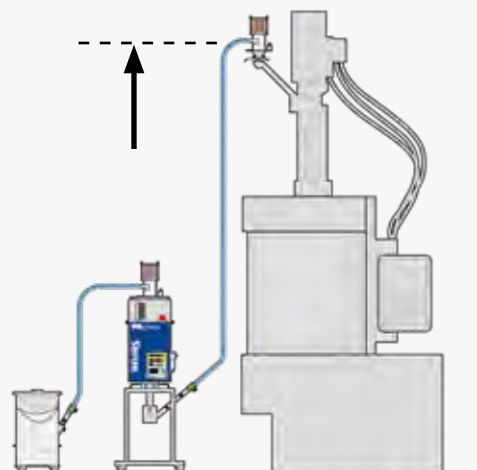
Compressed air conveying Venturi principle

- **Conveying hose**  
 PUR hose + compressed air line  
 (3 m or 5 m)
- **Suction lance**  
 Venturi suction lance  
 (short / long)



### Conveying height up to 8 m

Because of their construction, HELIOS compressed air conveyors are able to convey the material gently up to 8 m.



## Conveyors with dedusting

### OPTION CE/ME

#### OPTION CE Mini

1-component conveyor with dedusting

Special glass and stainless steel capacitive filling level sensor

2,5|5|6|12 litres containers

Conveyor pipe DN 22 | DN 32

Mounting on drying container

#### OPTION CE

1-component conveyor with dedusting

Special glass and stainless steel capacitive filling level sensor

18|20|30|50|75 litres containers

Conveyor pipe DN 22 | DN 32

Mounting on drying container

#### OPTION ME

2-components conveyor with dedusting

Special glass and stainless steel capacitive filling level sensor

18|20|30|50|75 litres containers

Conveyor pipe DN 22 | DN 32

Mounting on drying container

#### OPTION CE-M / ME-M

1 or 2-components conveyor with dedusting

Special glass and aluminium nickel-plated, machine adapter with gate valve, capacitive filling level sensor

Conveyor pipe DN 22 | DN 32

Mounting on processing machine



Container filling with dedusting

Machine feeding with dedusting

#### Conveying set DN 22 | DN 32

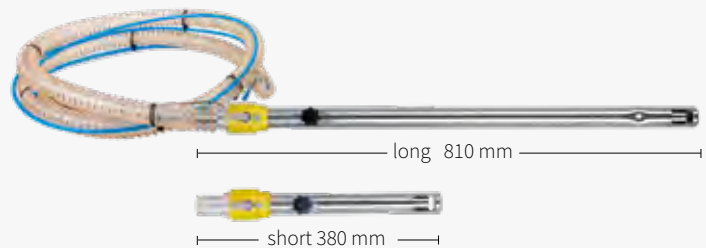
Compressed air suction lance consisting of

- **Conveying hose**

PUR H-hose + compressed air line with copper spiral (earthing) (3 m standard - optional 5 m)

- **Suction lance**

Venturi suction lance (short / long)



#### Dust separator

consisting of

- **Dust drain hose**

DN 50 - 5 m

- **Dust collecting container**

Volume 5,5 litres + expansion to 11 liters



## Variable pre-drying station

HELIOS top-mounted dryers are positioned on a base frame with docking plates. The drying containers may be removed and carried to the processing device. They are mounted directly on the feeding section and the dried material can be processed. If the material should be kept dry on the machine, a JETBOXX® docking plate can be used, that is connected to a dryer control.

### Applications

- Pre-drying station for quick change of material
- Drying station for sample batches
- Batch drying in small sizes / sampling
- Laboratory applications
- Cleanroom supply with hermetically sealed drying containers
- Drying container parking station
- Mobile station / dryer as insular solution

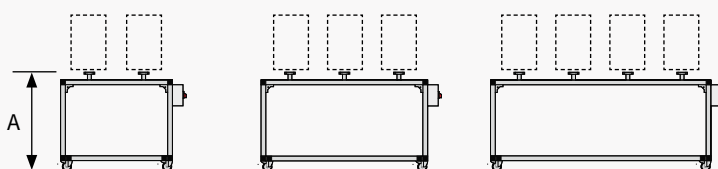
**"When changing the setting of task the components can be combined easily or used as top-mounted dryers again."**

## movable rack

for transport from pre-drying station to point of consumption  
sliding rail 80x15 mm or 80x20 mm



### Base frames



	2-unit	3-unit	4-unit
A Height [mm]	739	739	739
Width [mm]	1179	1679	2100
Depth [mm]	683	683	683
Electrical power supply	Central power supply for all docking areas (optional)		
Sliding rail	Bevelled on both sides, for L-claw 80 x 15 mm or 80 x 20 mm		





## Base frames

- 2/3/4-unit base frame
- With sliding rails
- Central compressed air / electrical supply
- Docking plate

X-top-mounted dryer 0,5-50l  
with machine adapter



**JETBOXX®**

## Docking system

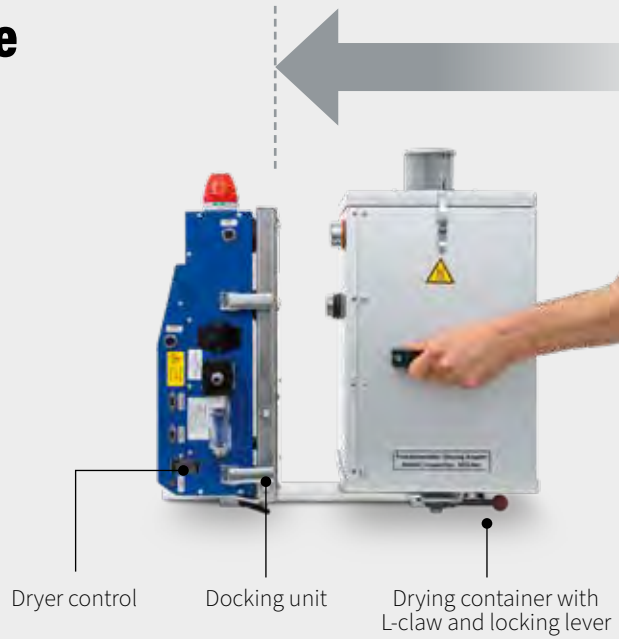
### Mobile drying container

When the drying time has elapsed the hermetically sealed containers can be moved comfortably by rack to the point of consumption.



## JETBOXX® Docking plate

Functions as holding device for the drying control and as docking station for changing drying containers, mounting with machine adapter on sliding rail.



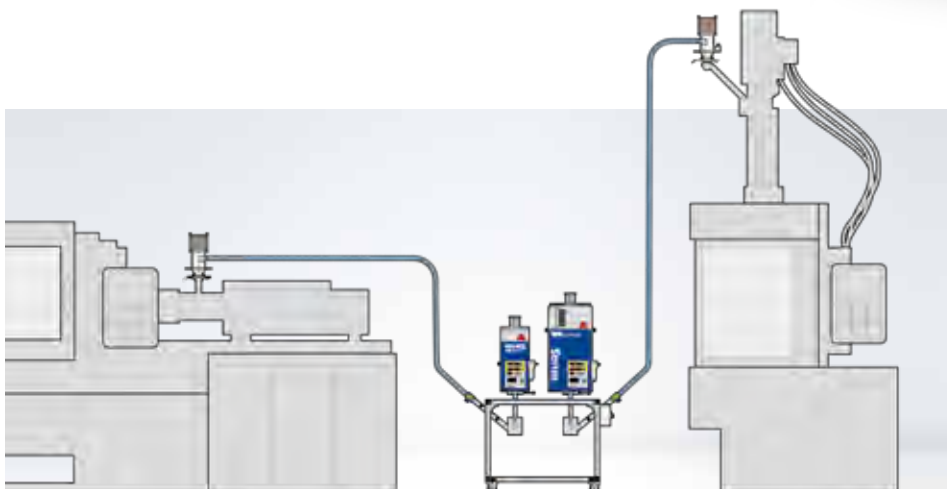
### OPTION UP2000

Cold regenerating adsorption dryer for dew point lowering up to  $-60^{\circ}\text{C}$  of the dry air.  
15 / 30 / 60 / 100  $\text{m}^3/\text{h}$



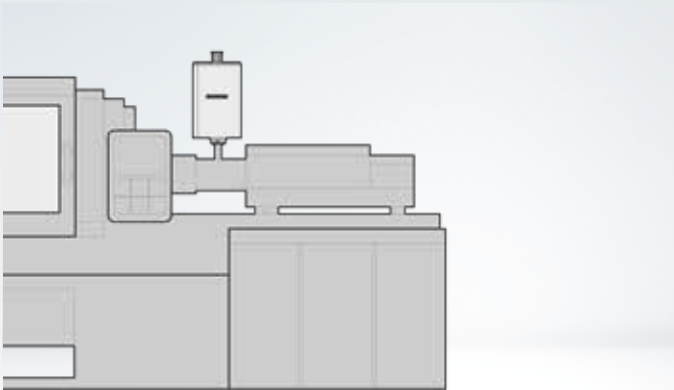
### OPTION Suction/discharge

Different suction/discharge devices (see page 24)



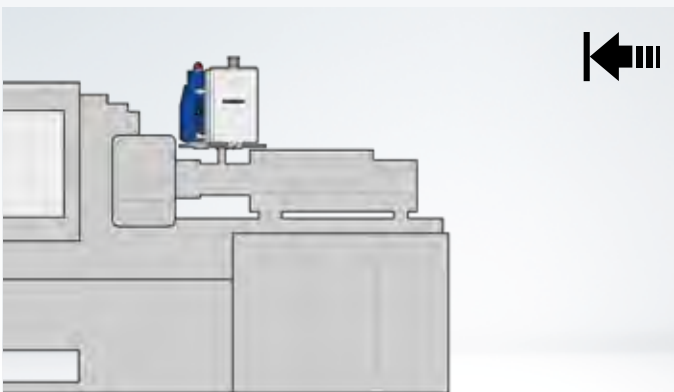
Application as mobile station / dryer as insular solution

# Docking versions for mobile drying containers



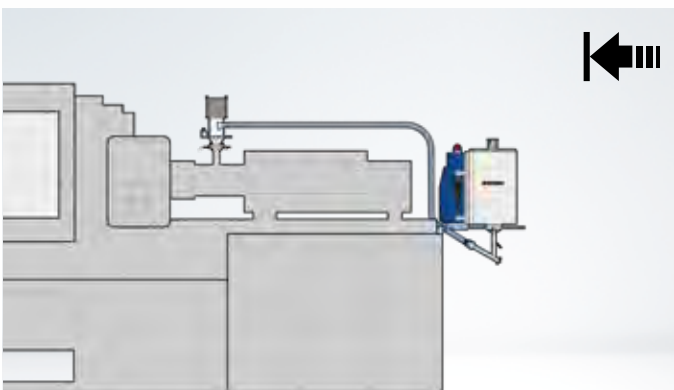
## Version A

The dryer filled with dried granules is attached directly onto the feed section of the injection molding machine via a sliding rail.



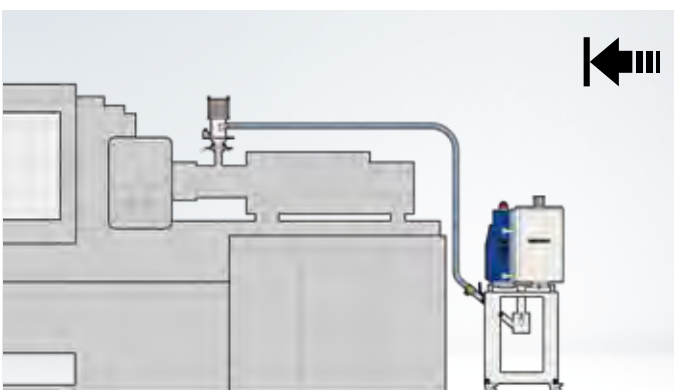
## Version B

A docking plate with dryer control is fixed on the injection molding machine. The drying containers are docked via a sliding rail.



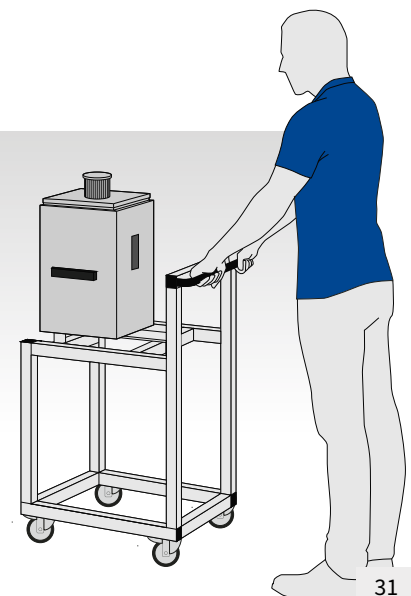
## Version C

The docking plate including the dryer control is fixed directly on the injection molding machine. The drying containers are docked via a sliding rail. The dried granules are conveyed via a suction device onto the injection molding machine.



## Version D

The docking plate and dryer control are mounted on a base frame / mobile station.



# JETBOXX® System Components



## WINneo® Mini

Control for the drying and conveying  
Compact version  
Basic- functions



## WINsystem® Mini

Control for the drying and conveying  
Compact version  
PRO- functions

### Drying containers mini



0,5 liter    1 liter    2,5 liters    5 liters    6 liters    12 liters    24 liters



## WINneo®

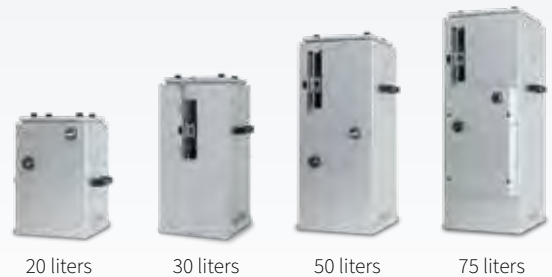
Control for the drying and conveying  
Basic- functions



## WINsystem®

Control for the drying and conveying  
PRO- functions

### Drying containers



20 liters    30 liters    50 liters    75 liters



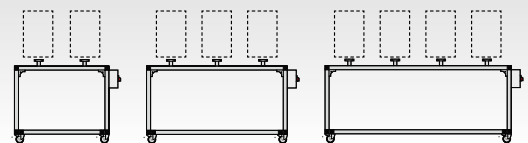
## Machine adapter

Polished flat slide valve  
L-guides:  
70×10  
80×15 | 80×20 | 80×25  
90×15 | 100×20 | 100×25  
110×15 | 110×20 | 110×25



## Mobile dryer rack

By combining with a rack the top-mounted dryer can be changed to a mobile dryer



## Base frame

If more than one dryer should be combined as mobile dryer or pre-dryers, 2-/3-/4-fold frames made of aluminium profile are available.

### Top-mounted dryer



### Mobile dryer



### Variable dryer station





## Conveyors with exhaust air filter



### OPTION C Micro

- » 1-component conveyor
- » Special glass and stainless steel
- » Capacitive filling level sensor
- » For 0,5|1,0|2,5|5 litres containers
- » Conveying pipe DN 22 | DN32
- » Mounting on glass drying container



### OPTION C Mini

- » 1-component conveyor
- » Special glass and stainless steel
- » Capacitive filling level sensor
- » For 6|12 litres containers
- » Conveying pipe DN 22 | DN32
- » Mounting on drying container



### OPTION C

- » 1-component conveyor
- » Special glass and stainless steel
- » Capacitive filling level sensor
- » For 18|20|30|50|75 litres containers
- » Conveying pipe DN 22 | DN 32
- » Mounting on drying container



### OPTION C-M

- » 1-component conveyor
- » Special glass and aluminium/ stainless steel
- » Capacitive filling level sensor
- » Machine adapter with gate valve
- » Conveying pipe DN 22 | DN 32
- » Mounting on processing machine

### Conveying set

- » DN 22 or DN 32
- » Conveying hose package PUR
- » Suction lance Venturi long/short



## Conveyors with dedusting



### OPTION CE Mini

- » 1-component conveyor
- » With dedusting
- » Special glass and stainless steel
- » Capacitive filling level sensor
- » For 2,5|5|6|12 litres containers
- » Conveying pipe DN 22 | DN 32
- » Mounting on drying container



### OPTION CE

- » 1-component conveyor
- » With dedusting
- » Special glass and stainless steel
- » Capacitive filling level sensor
- » For 18|20|30|50|75 litres containers
- » Conveying pipe DN 22 | DN 32
- » Mounting on drying container



### OPTION ME

- » 2-component conveyor
- » With dedusting
- » Special glass and stainless steel
- » Capacitive filling level sensor
- » For 18|20|30|50|75 litres containers
- » Conveying pipe DN 22 | DN 32
- » Mounting on drying container

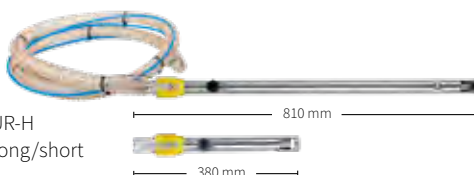


### OPTION CE-M / ME-M

- » 1 or 2-component conveyor
- » With dedusting
- » Special glass and stainless steel / aluminium nickel-plated
- » Capacitive filling level sensor
- » For 20|30|50|75 litres containers
- » Conveying pipe DN 22 | DN 32
- » Machine adapter with gate valve
- » Mounting on processing machine

### Hose set

- » DN 22 or DN 32
- » Conveying hose set PUR-H
- » Venturi suction lance long/short



### Dust removal

- » Dust removal hose DN 50
- » Dust collection bin
- » Size 5,5 liter or
- » Extension by 11 liter



## Material outlet/suction



**A-1**

» Outlet pipe, vertical



**A-2**

» Outlet pipe, sloping



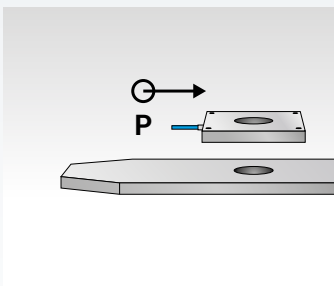
**X-1**

» 1-fold suction device for Venturi suction lance  
» DN 22 / DN 32



**X-2**

» 2-fold suction device for Venturi suction lances  
» DN 22 / DN 32



**Discharge aid**

While dosing, it is possible to lead compressed air shots into outlet plate



**XT-1 mini**

» mini suction device with integrated dry air conveying  
» DN 22



**XT-1**

» 1-fold suction device for Venturi suction lance DN 22 / DN 32, conveying by means of dry air



**XT-2**

» 2-fold suction device for Venturi suction lances DN 22 / DN 32, conveying by means of dry air

## Transport



**Trolley**

» for transport to processing point  
» sliding rail 80x15 or 80x20



**Crane bracket**

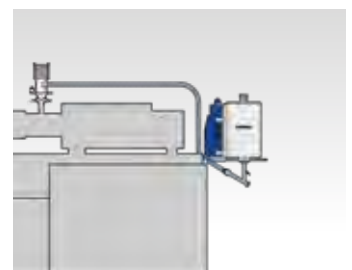
Stainless steel drying containers are hooked by the bracket and transported by indoor crane.

## Docking plate



**Docking plate**

Serves as the holding device for the dryer control and as the docking station for changing drying containers, installed on machine adapter.  
A: 20 / 30 Liter drying container  
B: 0,5 - 18 Liter drying container



**Docking place**

The docking plate with dryer control is placed directly on the injection moulding machine, for example. The drying containers are docked via sliding rail. The dried resin will be transported to the feeding zone by means of a suction device.

## Special versions of machine adapters

### Medical application

All material touching parts of stainless steel 1.4301 (AISI 304)

### Lockable

With a lockable slider

### Dust-tight

Polished outlet slide, spring-loaded pressure pieces with a Teflon sealing disc

### Machine adaption

Krauss Maffei, Arburg, Demag, Babyplast, Engel, Netstal, Boy, etc.

## Accessories



### Split version

The JETBOXX® dryer control and the drying container can be mounted at appropriate places. The dry air will be led into the drying container by means of an insulated tube. Available for drying container sizes from 0,5 – 18 liters.



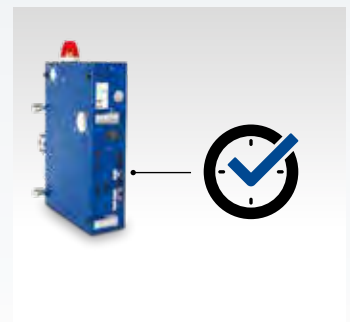
### Protection cover

Protection cover for high temperature applications as contact protection. For glass drying containers 0,5 to 5 liters



### UP2000

Cold regenerating adsorption dryer to reduce the dew point of dry air up to -60°C.  
15 / 30 / 60 / 100 m<sup>3</sup>/h



### Option Z

Signal input of third-party conveyor for protection against overdrying.

## Conveyors with separate controls



### HELIO® Jet 2-M

- 1-component conveyor with exhausted air filter
- of special glass + stainless steel
- with individual control
- compact and split version
- conveying line DN 32

Conveying capacity up to 100 kg/h



### HELIO® Clean 2-M

- 1 or 2 components conveyor with dedusting
- of special glass + stainless steel
- with individual control
- compact and split version
- conveying line DN 32

Conveying capacity up to 50 kg/h



### HCA 1

- compressed air driven suction conveyor for 1 or 2 components
- with individual control
- compact and split version
- conveying line DN 40

Conveying capacity up to 300 kg/h



### HCA 2 with intermediate bin

- 5 liter intermediate bin
- compressed air driven suction conveyor for 1 or 2 components
- with individual control
- compact and split version
- conveying line DN 40

Conveying capacity up to 300 kg/h

## Calibration service

### HELIOS dryers are maintenance-free except filters.

All the resin dryers are tested for several hours before delivery.

### Dryer calibration in standard

All HELIOS dryers are factory calibrated for two dew point values, two drying temperatures and three volume flow rates with a calibration certificate.

### Repeat calibrations

are possible locally by a HELIOS service technician or with HELIOS in-plant.

For this purpose, the dryer control is simply detachable by means of quick clamps, no tools are necessary

To avoid production stops during the service, there are interim devices available with HELIOS.

### Long-term warranty for all\* dryers regarding

- Maintenance
- Repeat calibration
- Availability of interim devices

*\*for all dryers built since 1998*



## After Sales Service



You are not alone with the HELIOS components, we will support you with whole the process up to the start-up and training of your staff. This is what the partnership exactly involves. As to the different application possibilities of our products, our engineers are glad to give you advice and to inform you about the latest technical developments – also for possible upgrades.

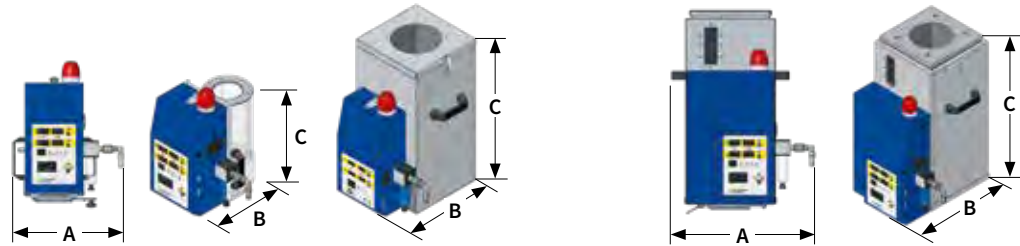
- starting-up
- training
- consultation
  
- maintenance
- interims devices
- dryer calibration
- spare parts leaving within 24h



# JETBOXX® Technical Data

## JETBOXX® SET

measurement (A) incl. compressed air angle plug



Control range	WINsystem® / WINneo®											
JETBOXX® SET	JETBOXX® 0.5 - 5				JETBOXX®-6	JETBOXX®-12	JETBOXX®-24	JETBOXX®-20	JETBOXX®-30	JETBOXX®-50	JETBOXX®-75	
Drying container size [liter]	0,5	1,0	2,5	5	6	12	24	20	30	50	75	
Min. filling level [liter]	---				2	2	6	-	15	30	50	
Drying capacity* [kg/h]	0,1	0,2	0,5	1,0	1,2	2,4	4,8	4,0	6,0	10	15	
Drying air max. [m³/h]	3,6				7,2		9,0	7,5		15	18	
Heating power max. [kW]	0,4				0,75		0,75	0,75		1,5	1,5	
Width [mm]	A	355	355	355	355	346	291	335	394	458	473	486
Depth [mm]	B	275	275	320	320	320	236	280	410	442	477	549
Height [mm]	C	446	369	347	587	439	588	749	545	640	800	942

\* for PC when drying time is 3h

Compressed air quality accd. to ISO 8573-1	max. oil content ≤ 0,01 mg/m³, pressure dew point ≤ 3°C
Dry gas dew point	-20°C (-60°C with optional UP-2000 device)
Drying temperature max.	up to 185°C
Power supply	230 V, 50/60 Hz

JETBOXX® conveyors	Exhaust air filters (in standard for manual filling without conveyor)	Option C micro	Option C Mini Option C	Option CE Mini Option CE Option ME	Option C-M	Option CE-M Option ME-M
		container filling			machine feeding	
Height [mm]	+ 100 mm	+ 224 mm	+ 270 / 271 mm	+ 267 / 276 / 276 mm	+ 337 mm	+ 356 mm

	mobile frame
Sliding rail	1-fold
Height [mm]	705
Width [mm]	510
Depth [mm]	557

	Racks			Mini docking plate	Docking plate
	2-fold	3-fold	4-fold	for 0,5 - 18 liters	for 20 - 50 liters
	739	739	739	404	450
	1179	1679	2100		
	683	683	683		

common compressed air/power supply	
Power supply	400 V, 50/60 Hz
Electric power	800 - 6000 W
Compressed air supply	DI 9 mm (3/8"), 6-10 bar
Compressed air quality	accd. to ISO 8573-1 : max. oil content ≤ 0,01 mg/m³, pressure dew point ≤ 3°C
Pressure dew point	≤ 3°C

## 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.

HELIO®Clean is a combined conveying-/mixing and dedusting system to be mounted directly on the injection moulding machine/drying container and to feed virgin material and/or regrind.

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.



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



### Advantages of cleaning with HELIO®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.



BEFORE



AFTER

# 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

# HELIO®Clean dedusting devices



	HELIO®Clean 2	Option CE/ME	HELIO®Clean 3
	Conveyor with dedusting - with independent control	Conveyor with dedusting - controlled by JETBOXX® dryer	Modular system
material throughput*	max. 25 kg/h	max. 25 kg/h	max. 25 kg/h
dedusting portion	max. 0,25 liter	max. 0,25 liter	max. 0,38 - 0,5 liter
process	whirling up by compressed air jet from above	whirling up by compressed air jet from above	air-sift ing with whirling up by ionized compressed air from below
dust removal	separate dust collection container	separate dust collection container	separate dust collection container
control	control HELIO®Clean 2 or option CE/ME in JETBOXX®	control HELIO®Clean 2 or option CE/ME in JETBOXX®	control HELIO®Clean 3 + ionizer
features	<ul style="list-style-type: none"> <li>■ 1- or 2-components version</li> <li>■ Venturi suction lances</li> </ul>	<ul style="list-style-type: none"> <li>■ 1- or 2-components version</li> <li>■ Venturi suction lances</li> </ul>	<ul style="list-style-type: none"> <li>■ 1- or 2-components version</li> <li>■ intermediate container for dedusted material</li> <li>■ cleaning of dust collection chamber with ion flushing</li> <li>■ Venturi suction lances with/without portioner</li> <li>■ small size and eff ective</li> <li>■ compact / lightweight</li> <li>■ simply operating</li> <li>■ special glass construction</li> <li>■ optimal price / performance ratio</li> </ul>
Einsatzort	<ul style="list-style-type: none"> <li>■ directly on processing machine</li> <li>■ directly on drying container</li> </ul>	<ul style="list-style-type: none"> <li>■ directly on processing machine</li> <li>■ directly on drying container</li> </ul>	<ul style="list-style-type: none"> <li>■ directly on processing machine</li> <li>■ directly on drying container</li> <li>■ repositioning adapter</li> </ul>



## HELIO® Clean 2 / Option CE/ME

### Compressed air conveyor with dedusting function

The HELIO® 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

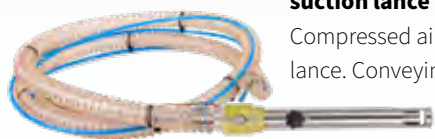
■ optimum price/performance ratio

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

\* depending on material and required degree of dedusting



Example: HELIO® Clean 2, compact version, 1 component



#### suction lance

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® dryers from HELIOS can control up to two HELIO® 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.

HELIO® Clean 2 MIX as hopper loader on drying container



Please see also brochure JETBOXX® Dryer System

#### Conveying settings

Layering A/B	2.0 s
Component B	30 %
Permitted conveying time	99 s
Dedusting	3 x

WINSsystem® dryer with option ME



### Option CE/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



Stage 1



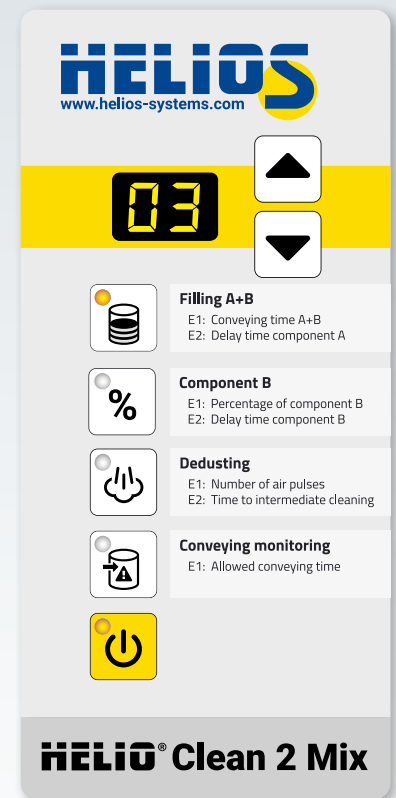
Stage 2

## 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.



HELIOS® Clean 2 Mix

## HELIOS®Clean 2 MIX Version for 2 components

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

## 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 HELIOS®Clean 2 MIX
- conveying hose package long (5 m)
- dust collection container extension (+ 11 litre volume)

## Technische Daten

Material throughput	ca. 25 kg/h*
Conveying height	max. 8 m
Weight	4,9 kg
Height	358 mm

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

## JETBOXX® dryer with option CE



- WINneo® or WINSsystem®
- option CE entspricht HELIOS®Clean 2 1-component

## JETBOXX® dryer with option ME



- WINSsystem®
- option ME equals HELIOS®Clean 2 Mix 2-component

## HELIO®Clean 3

### Conveying and dedusting device with ion shower

The new HELIO®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 size and effective
- ▶ compact / lightweight
- ▶ simply operation
- ▶ special glass construction
- ▶ 1- or 2-component version
- ▶ optimal price / performance ratio
- ▶ air shifting by ion shower
- ▶ sifter cleaning with ions

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

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

#### HELIO®Clean 3

#### basic element



### HELIO®Clean-3 - Modular system

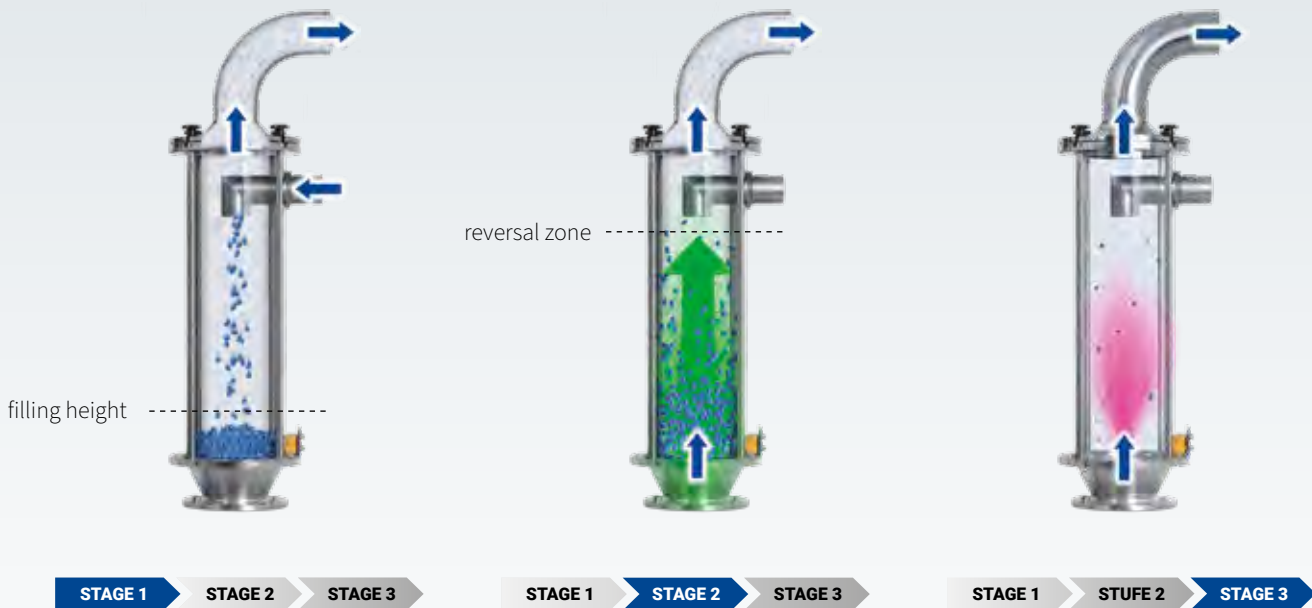


#### Special glass construction

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.

# 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.

## Air floating

### + ion shower

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**
- 2 **Neutralize charge**
- 3 **Separation by air-floating**

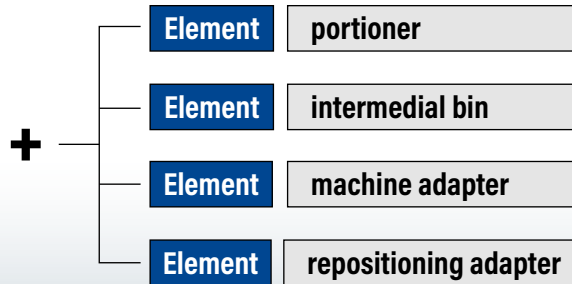


# HELIO® Clean-3 Modular system elements

## HELIO® Clean-3 Basis-Paket



- Ⓐ HELIO®Clean-3 sifter basic element
- Ⓑ venturi suction lance + conveying hose set
- Ⓒ dust removal hose
- Ⓓ dust collection container



## Element portioner



The HELIOS portioner enables a reproducible, always the same size dedusting portion with controlled transfer to a downstream (drying) container.

Optional portioner also available for regrind.

### virgin material portioner

usable without intermedial ring for:

- HELIOS intermedial bin 0,5 liter
- HELIOS drying container 6 / 12 liters

usable with intermedial ring for:

- HELIOS drying container 18 – 75 liters
- HELIOS intermedial bin 5,0 liters
- third-party drying container from 132 mm inlet upwards

## Element intermedial bin



### mounting on a processing machine / repositioning adapter

- intermedial bin 0,5 liter
- intermedial bin 5 liter

## Element machine adapter



Maschinenadapter mit Klauenführung für Aufbau auf Verarbeitungsmaschine oder Wechseladapter.  
Staubdichter, geschliffener Auslauf-Flachschieber, arretierbar, 4x90° versetzbar.

L-Führungen für Schiebeschienen [mm].  
80×15 | 80×20 | 100×20 | 100×25 |  
Sondergrößen auf Anfrage

## Element repositioning adapter



### Einbindung in Förderanlagen

Der Wechseladapter ist eine kompakte Vorrichtung zur Einbindung eines HELIO®Clean-3 Sets in eine bestehende Förderanlage.



### Set 1

- HELIO®Clean-3 basic element
- intermedial bin
- machine adapter



### Set 2

- HELIO®Clean-3 basic element
- portioner
- intermedial ring



### Set 3

- HELIO®Clean-3 basic element
- portioner
- intermedial bin
- machine adapter



### Set 4

- HELIO®Clean-3 basic element
- portioner
- intermedial bin
- machine adapter
- repositioning adapter



### Separation dust collection container

		
dust collection container	5,5 liter	16,5 liter
height	300 mm	470 mm
dust hose	5 m DN 50	5 m DN 50

Der entfernte Staub wird in einem Staubsammelbehälter abgeschieden. Der integrierte Abluftfilter sorgt für eine staubfreie Umgebungsluft.

### Conveying venturi suction lance



type		short	long
suction lance length		380 mm	810 mm
conveying hose set	standard	3 m DN 32	3 m DN 32
conveying hose set	optionally	5 m DN 32	5 m DN 32

**suction lance:** stainless steel suction lance according to Venturi principle, adjustable ambient air suction and suction protection.

**conveying hose set:** conveying hose with compressed air line



### 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

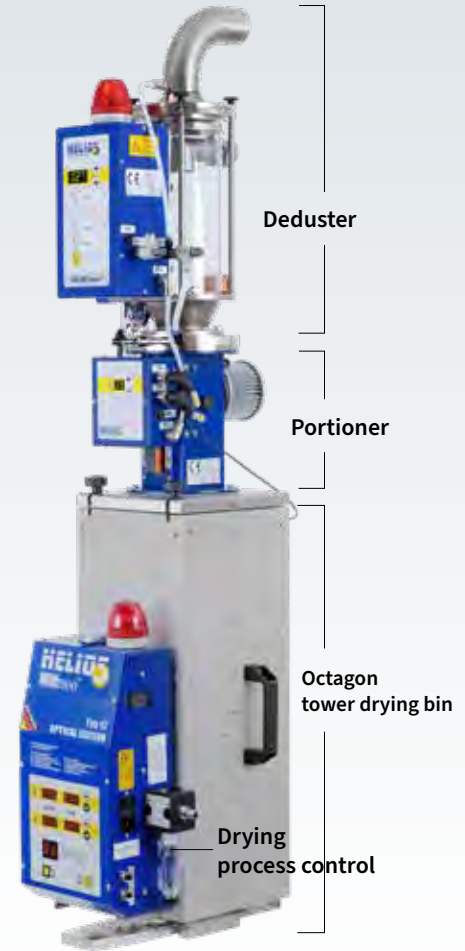
When filling with Venturi suction lances, the filling process is already combined with air-floating and ion shower. When filling with Venturi suction lances, the filling process is already combined with air-floating and ion shower.

# DD-12 / DD-24 Optical Edition

DD-12 material throughput **0,4 - 3 kg/h\***

DD-24 material throughput **0,8 - 6 kg/h\***

\* depending on the bulk material and the allowed drying time.  
The example is related to COC/COP/PC/PMMA



picture.: DD-12

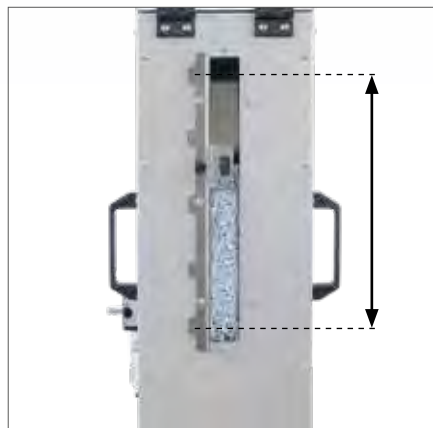
## Filling + Dedusting + Drying

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



### Tower drying bin in octagon construction

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



### Viewing window

At the tower drying bin, the filling level can be continuously preselected between 2-10 liters or 4-20 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 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.





Your perfect partner for material handling



### **JETBOXX®**

#### **Drying System**

Dry-air dryers for plastic granulate



### **OKTOMAT®**

#### **Emptying system**

Discharging stations for Octabin and BigBag



### **HELIO® Clean**

#### **Dedusting system**

Dedusters for plastic granulate/regrind

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