

Dust Containment

Dust Containment Systems

- the safest way to collect highly potent compounds



A Complete Range of Solutions

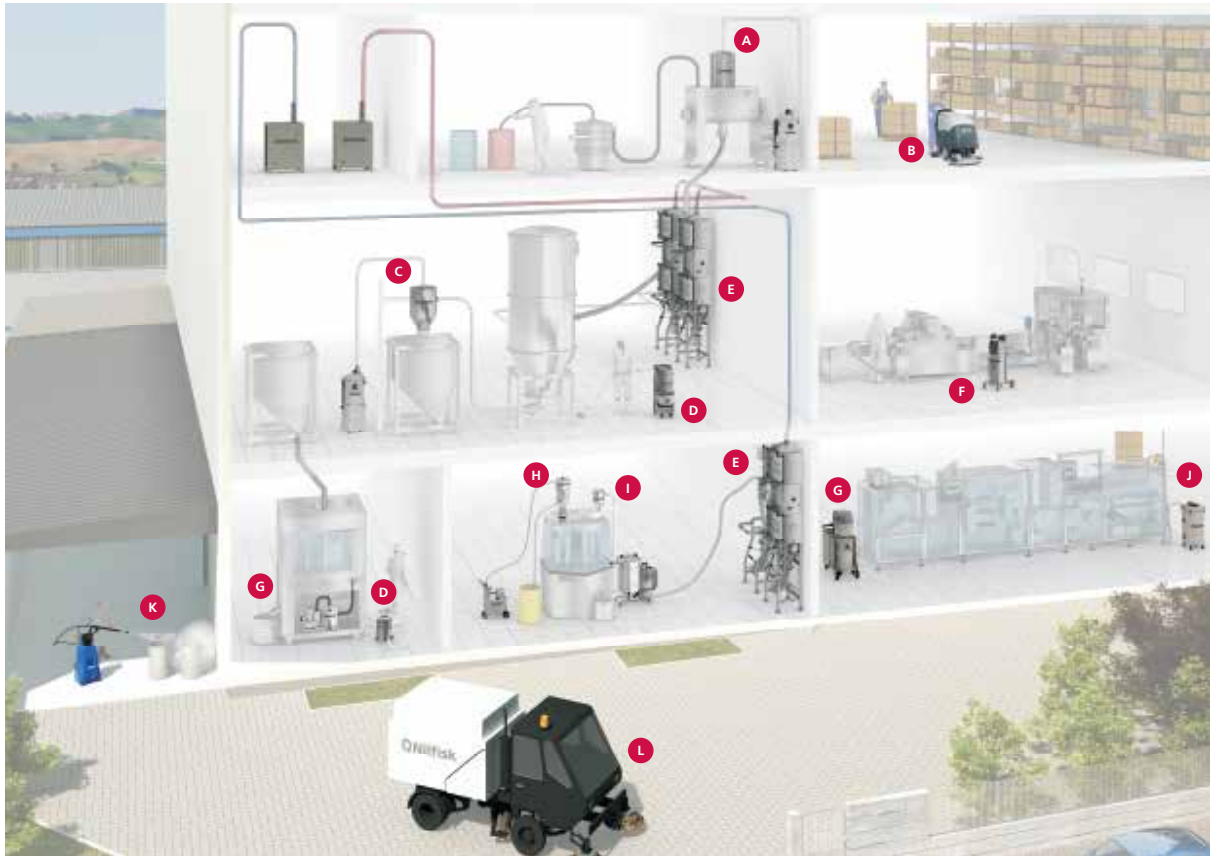
- for a safe, pure and effective environment

With more than 100 years of experience in industrial equipment and more than 30 years with a dedicated product line for the pharmaceutical sector, Nilfisk now partners with the top pharmaceutical companies and OEMs in the industry to deliver the widest range of products.

This established experience allows Nilfisk to continuously improve and innovate a range of pharma-specific solutions, including these new dust containment systems to safely handle APIs and HPAPIs.

Products include:

- Mobile and fixed industrial vacuums
- Pneumatic conveyors for powder, mixtures, granules, tablets and empty capsules
- Accessories
- Floorcare and outdoor machines
- NEW dust containment systems



A Feeding mixers

B Floor cleaning

C Powder conveying from a dryer to a bin

D Cleanroom vacuums

E Dust containment

F Cleaning equipment

G Recovering dust from process machines

H Feeding capsule filling machines with powder

I Feeding capsule filling machines with empty capsules

J Recovering scraps from blistering/cartoning machines

K Washing equipment

L Outdoor cleaning

Choosing a Dust Containment System

- various options to safely handle APIs and HPAPIs

Nilfisk dust containment filter systems provide easy-to-use, OEB5 approved solutions, with backing from the widest direct global provider.

DCU: Equipped with HEPA absolute filters to retain the finest dust particles.

CY: Features a high efficiency filterless pre-separation unit to be used in combination with DCU220 - DCU220WIP series.

FEATURES:

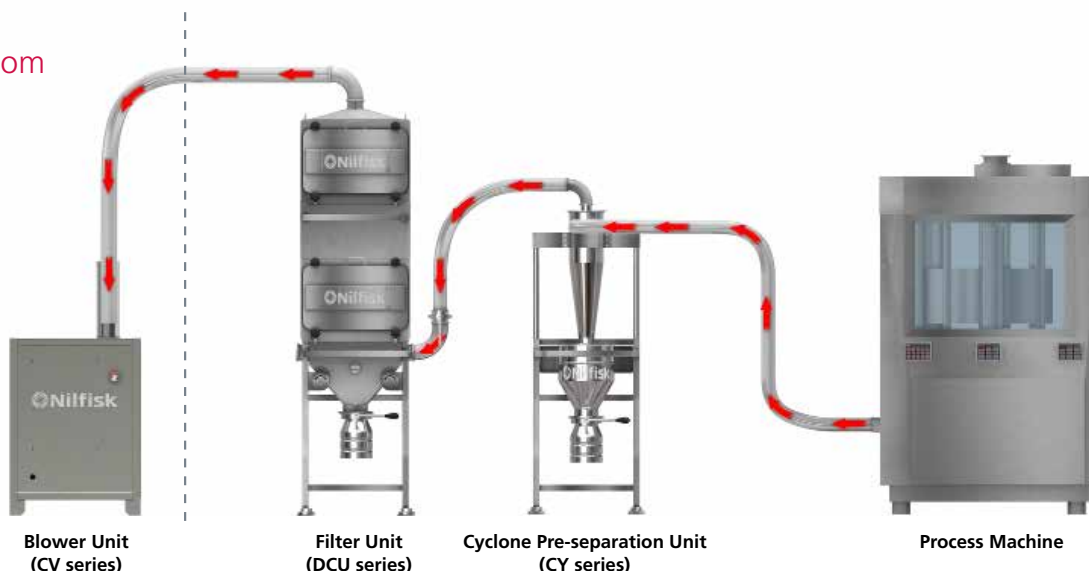
- Up to OEB 5
- Up to 636 CFM (1080 m³/h) in very compact size
- GMP design
- Reduced maintenance costs
- Available in Wash In Place (WIP) version

Unit selector

	DCU114	DCU115	DCU112	DCU113	DCU220	DCU220WIP
Mobile						
Fixed						
Wash-In-Place, complete unit						
Airflow up to 383 CFM (650 m ³ /h)						
Airflow up to 636 CFM (1080 m ³ /h)						
Single HEPA Filtration, Bag-In/Bag-Out system						
Double HEPA Filtration, Bag-In/Bag-Out system						
Integrated Cyclonic Pre-Separation Unit						
Separate Cyclonic Pre-Separation Unit (CY series)						
Integrated Star Filter Pre-Separation Unit (no Bag-In/Bag-Out system)						
Wash-In-Place, only cyclone pre-separation unit (optional)						
Construction Material - AISI 304						
Construction Material - AISI 316L						
Material Discharge with Contamination-Free Dust Bag						
Total Safe Handling						

	CY202	CY203
Fixed		
Airflow up to 383 CFM (650 m ³ /h)		
Airflow up to 636 CFM (1080 m ³ /h)		
Wash-In-Place (Optional)		
Construction Material - AISI 316L		
Material Discharge with Contamination-Free Dust Bag		

Technical Room

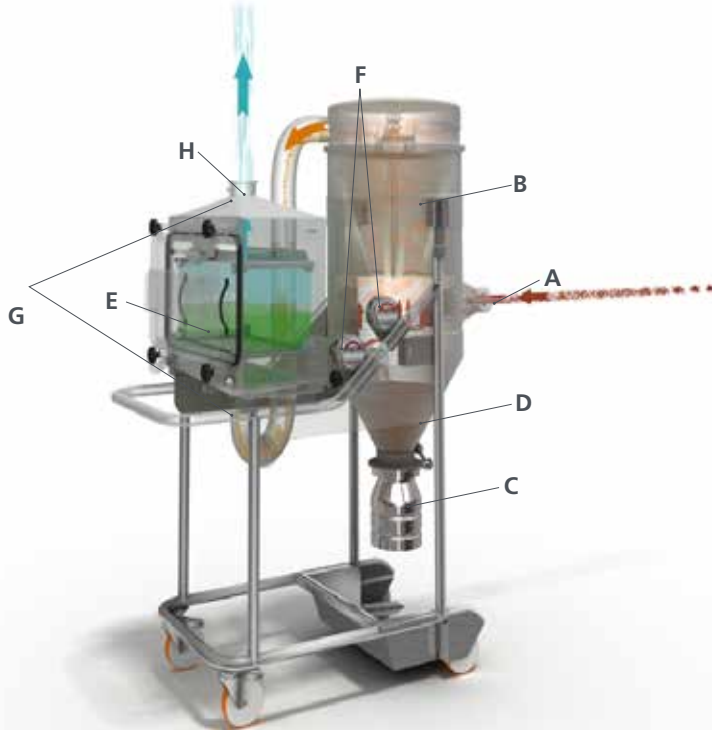


Star Filter with HEPA, Bag-In/Bag-Out

- DCU114, DCU115

This mobile stand-alone filter unit is equipped with a star filter and HEPA Bag-In/Bag-Out filter. Fully constructed of AISI304 stainless steel, both models ensure safe disposal of collected material and replacement of the HEPA filter.

The star filter can be cleaned with the manual filter shaker. Two different sizes are available with airflow rates up to 636 CFM.



- A** Machine inlet with manual butterfly valve
- B** Main star filter
- C** Material discharge with butterfly valve and contamination free dust bag
- D** Container capacity up to 30 L
- E** Absolute HEPA filter Bag-In/Bag-Out filter replacement system
- F** Visual indication of filter status
- G** DOP/DEHS Ports
- H** Machine outlet



DCU114

DCU115

		DCU114	DCU115
Waterlift, controlled	in. H ₂ O (kPa - mbar)	100.5 (25 - 250)	100.5 (25 - 250)
Airflow, blower max.	CFM (m ³ /h - L/min ²)	324 (550 - 9166)	324 (1080 - 18000)
Main Filter Type	-	Star Filter - Antistatic M Class	Star Filter - Antistatic M Class
Main Filter Area	f ² (m ²)	21 (1.95)	38 (3.5)
HEPA Filter Stage(s)	-	1	1
HEPA Filter Area	f ² (m ²)	108 (10)	108 (10)
HEPA Filter Replacement System	-	Bag-In/Bag-Out	Bag-In/Bag-Out
Filtering Efficiency	%	99.995%	99.995%
OEB Level Production Phase	-	OEB5	OEB5
OEB Level Maintenance Phase ^(*)	-	OEB4	OEB4
Material Discharge System	-	Contamination-free dust bag	Contamination-free dust bag
Container Capacity	gal. (L)	7.9 (30)	7.9 (30)
Wash-In-Place (WIP)	-	No	No
Construction Material	-	Stainless Steel AISI 304	Stainless Steel AISI 304
Dimensions (L x W x H)	in. (mm)	60 x 28 x 72 (1521 x 710 x 1826)	64 x 28 x 81 (1615 x 710 x 2068)

^(*) Not valid for star filter change

OPTIONALS

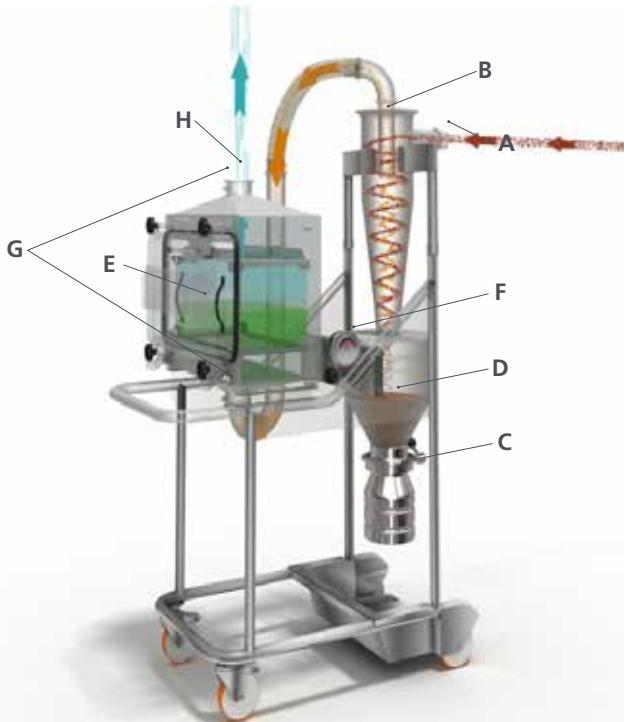
- Washing of pipeline and safe disconnection of the unit
- Container level sensor
- Filter clogging sensor
- Acoustic-visual alarm
- Automated valves
- Stainless steel support for HEPA filter change

Cyclone with HEPA, Bag-In/Bag-Out

- DCU112, DCU113

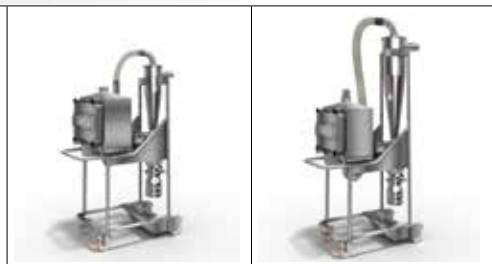
This mobile stand-alone filter unit is equipped with a cyclone pre-separation unit and HEPA Bag-In/Bag-Out filter. The AISI316L constructed cyclone, also available in optional WIP version, separates the dust without a filter element.

Filterless technology ensures all maintenance operations on the unit are performed safely while reducing costs. Two different sizes are available with airflow rates up to 636 CFM.



WIP of cyclone (optional)

- A** Machine inlet with optional manual butterfly valve
- B** Cyclone pre-separation unit
- C** Material discharge with butterfly valve and contamination free dust bag
- D** Container capacity up to 30 L
- E** Absolute HEPA filter Bag-In/Bag-Out filter replacement system
- F** Visual indication of filter status
- G** DOP/DEHS Ports
- H** Machine outlet



		DCU112	DCU113
Waterlift, controlled	in. H ₂ O (kPa - mbar)	100.5 (25 - 250)	100.5 (25 - 250)
Airflow, blower max.	CFM (m ³ /h - L/min')	383 (650 - 10833)	636 (1080 - 18000)
Cyclone Pre-Separator Efficiency	%	> 96% (*)	> 95% (**)
HEPA Filter Stage(s)	-	1	1
HEPA Filter Area	f ² (m ²)	108 (10)	108 (10)
HEPA Filter Replacement System	-	Bag-In/Bag-Out	Bag-In/Bag-Out
Filtering Efficiency	%	99.995%	99.995%
OEB Level Production Phase (**)	-	OEB5	OEB5
OEB Level Maintenance Phase (**)	-	OEB4	OEB4
Material Discharge System	-	Contamination-free dust bag	Contamination-free dust bag
Container Capacity	gal. (L)	7.9 (30)	7.9 (30)
Wash-In-Place (WIP)	-	Only Cyclone pre-separator - Optional	Only Cyclone pre-separator - Optional
Construction Material	-	Stainless Steel AISI 304	Stainless Steel AISI 304
Dimensions (L x W x H)	in. (mm)	57 x 28 x 88 (1454 x 710 x 2232)	57 x 28 x 110 (1452 x 710 x 2803)

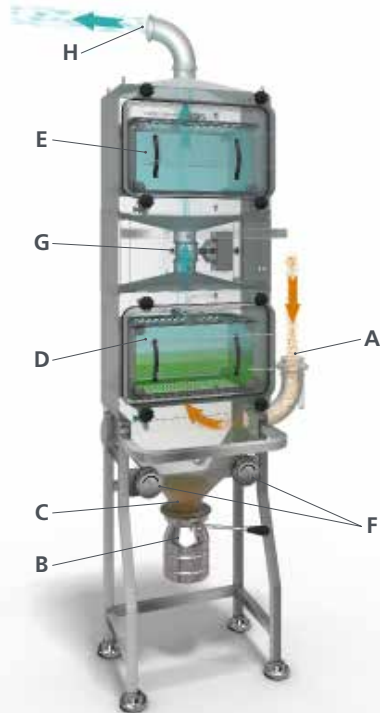
- OPTIONALS**
- Manual butterfly valve on machine inlet
 - Washing of pipeline and safe disconnection of the unit
 - Wash-In-Place (WIP) of cyclone pre-separation unit
 - Container level sensor
 - Filter clogging sensor
 - Acoustic-visual alarm
 - Automated valves
 - Stainless steel support for HEPA filter change

(*) Using placebo dust (0,97kg/dm³)
 (**) Using placebo dust (0,6kg/dm³)

Double HEPA, Bag-In/Bag-Out

- DCU220

The DCU220 AISI304 fixed filter unit is equipped with two HEPA Bag-In/Bag-Out filters. Maintenance operations are performed safely to ensure the highest level of safety during equipment operation.



Available in vertical and horizontal configuration, this model must be used in combination with the CY series, depending on the airflow requirements.

- A** Machine inlet with manual butterfly valve
- B** Material discharge with butterfly valve and contamination free dust bag
- C** Container capacity up to 30 L
- D** Absolute HEPA filter Bag-In/Bag-Out filter replacement system
- E** Security Absolute HEPA filter Bag-In/Bag-Out filter replacement system
- F** Visual indication of filter status
- G** DOP/DEHS Ports
- H** Machine outlet



		DCU220 V	DCU220 H
Configuration	-	Vertical	Horizontal
Waterlift, controlled	in. H ₂ O (kPa - mbar)	100.5 (25 - 250)	100.5 (25 - 250)
Airflow, blower max.	CFM (m ³ /h - L/min')	636 (1080 - 18000)	636 (1080 - 18000)
HEPA Filter Stage(s)	-	2	2
First HEPA Filter Area	f ² (m ²)	108 (10)	108 (10)
First HEPA Filter Replacement System	-	Bag-In/Bag-Out	Bag-In/Bag-Out
Security HEPA Filter Area	f ² (m ²)	108 (10)	108 (10)
Security HEPA Filter Replacement System	-	Bag-In/Bag-Out	Bag-In/Bag-Out
Filtering Efficiency	%	99.995%	99.995%
OEB Level Production Phase (*)	-	OEB5	OEB5
OEB Level Maintenance Phase (**)	-	OEB4	OEB4
Material Discharge System	-	Contamination-free dust bag	Contamination-free dust bag
Container Capacity	gal. (L)	7.9 (30)	7.9 (30)
Wash-In-Place (WIP)	-	No	No
Construction Material	-	Stainless Steel AISI 304	Stainless Steel AISI 304
Dimensions (L x W x H)	in. (mm)	25 x 40 x 115 (630 x 1010 x 2920)	25 x 71 x 80 (630 x 1793 x 2036)

OPTIONALS

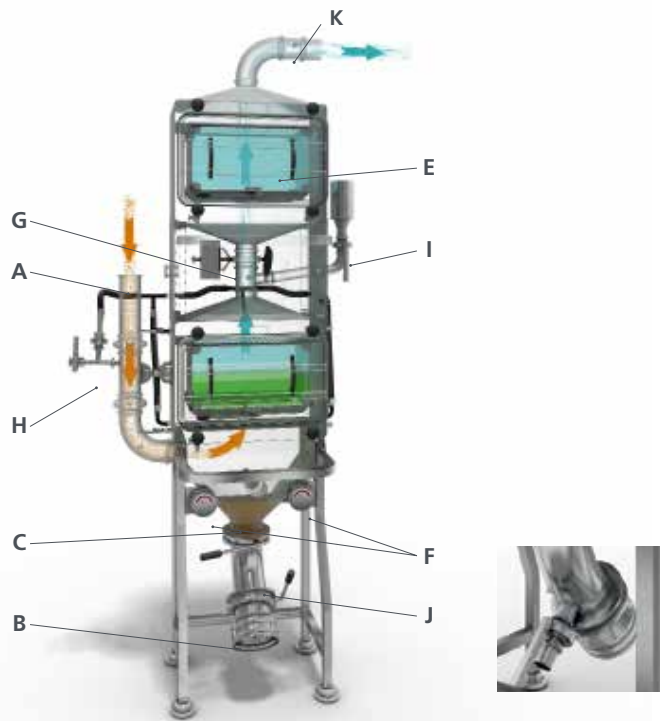
- Washing of pipeline and safe disconnection of the unit
- Container level sensor
- Filter clogging sensor
- Acoustic-visual alarm
- Automated valves
- Stainless steel support for HEPA filter change
- Single HEPA unit available

Double HEPA, Bag-In/Bag-Out WIP

- DCU220WIP

The DCU220WIP AISI316L fixed filter unit is equipped with two HEPA Bag-In/Bag-Out filters and is suitable for Wash-In-Place for deactivation of dust on the inside surface following use. Maintenance operations are performed safely to ensure

the highest level of safety during equipment operation. Available in vertical and horizontal configuration, this model must be used in combination with the CY series, depending on the airflow requirements.



- A** Machine inlet with manual butterfly valve
- B** Material discharge with butterfly valve and contamination free dust bag
- C** Container capacity up to 30 L
- D** Absolute HEPA filter Bag-In/Bag-Out filter replacement system
- E** Security Absolute HEPA filter Bag-In/Bag-Out filter replacement system
- F** Visual indication of filter status
- G** DOP/DEHS Ports
- H** Valves and pipes for WIP
- I** Venting HEPA filter for WIP
- J** Manual butterfly valve for totally safe WIP liquid discharge
- K** Machine outlet



DCU220WIP

Configuration	-	Vertical
Waterlift, controlled	in. H ₂ O (kPa - mbar)	100.5 (25 - 250)
Airflow, blower max.	CFM (m ³ /h - L/min')	636 (1080 - 18000)
HEPA Filter Stage(s)	-	2
First HEPA Filter Area	f ² (m ²)	108 (10)
First HEPA Filter Replacement System	-	Bag-In/Bag-Out
Security HEPA Filter Area	f ² (m ²)	108 (10)
Security HEPA Filter Replacement System	-	Bag-In/Bag-Out
Filtering Efficiency	%	99.995%
OEB Level Production Phase	-	OEB5
OEB Level Maintenance Phase	-	OEB4
Material Discharge System	-	Contamination-free dust bag
Container Capacity	gal. (L)	7.9 (30)
Wash-In-Place (WIP)	-	Yes
Construction Material	-	Stainless Steel AISI 316L
Dimensions (L x W x H)	in. (mm)	25 x 55 x 115 (630 x 1392 x 2920)

OPTIONALS

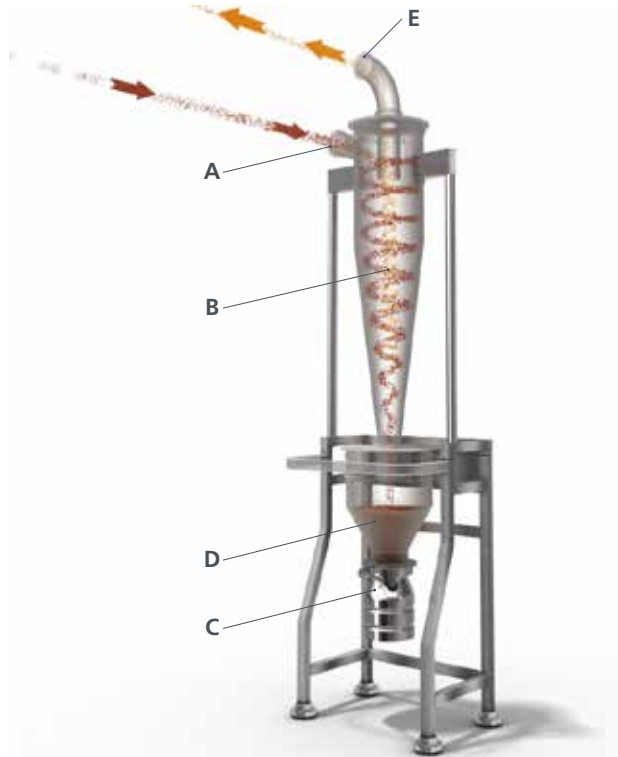
- Container level sensor
- Filter clogging sensor
- Acoustic-visual alarm
- Automated valves
- Stainless steel support for HEPA filter change
- Single HEPA unit available

Cyclone Pre-Separation Unit

- CY202, CY203



Both the CY202 and CY203 AISI316L filterless pre-separation units feature efficiency up to 99%. Available in a Wash-In-Place version for deactivation of dust on the inside surfaces following use. Thanks to filterless technology, all maintenance

operations on the unit are performed safely while reducing costs. Two different sizes available with airflow rates up to 1080 m³/h.



WIP version available

- A** Machine inlet with optional manual butterfly valve
- B** Material retained by cyclonic effect
- C** Material discharge with butterfly valve and contamination free dust bag
- D** Container capacity up to 30 L
- E** Machine outlet, DCU220-DCU220WIP unit side

			
		CY202	CY203
Waterlift, controlled	in. H ₂ O (kPa - mbar)	100.5 (25 - 250)	100.5 (25 - 250)
Airflow, blower max.	CFM (m ³ /h - L/min')	383 (650 - 10833)	636 (1080 - 18000)
Efficiency	%	> 96% (*)	> 95% (**)
OEB Level Production Phase	-	OEB5	OEB5
OEB Level Maintenance Phase	-	OEB4	OEB4
Material Discharge System	-	Contamination-free dust bag	Contamination-free dust bag
Container Capacity	gal. (L)	7.9 (30)	7.9 (30)
Wash-In-Place (WIP)	-	Yes - Optional	Yes - Optional
Construction Material	-	Stainless Steel AISI 316L	Stainless Steel AISI 316L
Dimensions (L x W x H)	in. (mm)	25 x 30 x 86 (630 x 760 x 2180)	25 x 30 x 106 (630 x 760 x 2690)

OPTIONALS

- Washing of pipeline and safe disconnection of the unit
- Wash-In-Place (WIP) of the unit
- Manual butterfly valve on machine inlet
- Container level sensor
- Acoustic-visual alarm
- Automated valves
- Stainless steel support for HEPA filter change



BIBO HEPA REPLACEMENT

The HEPA filter is safely removed with the Bag-In/Bag-Out (BIBO) system. Maintenance personnel never come into contact with contaminated filters while removing them from the unit. They remain protected against any hazardous contaminants retained in the filter unit. The sealed bag containing the filter is then removed and disposed of according to standard protocol.

SAFE MATERIAL DISPOSAL

The hopper is emptied by opening the butterfly valve. The material is collected into a plastic bag which is safely sealed, removed and replaced by the operator without ever coming in contact with the contents.



CIP AND WIP

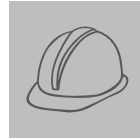
The cyclone unit and filter unit can be washed inside — both by complete flooding and sprayballs — so as to deactivate the dust on inside surfaces. The exhaust air is filtered by HEPA filters, while the washing liquid is safely discharged. The CIP and WIP processes can be validated with fluorescein tests before installation.

More Than Just an Equipment Provider

- your solution partner everywhere



User Requirements (URS)



Site Survey



Engineering and Tailor-made Solutions



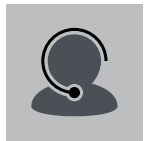
Installation



International Certifications



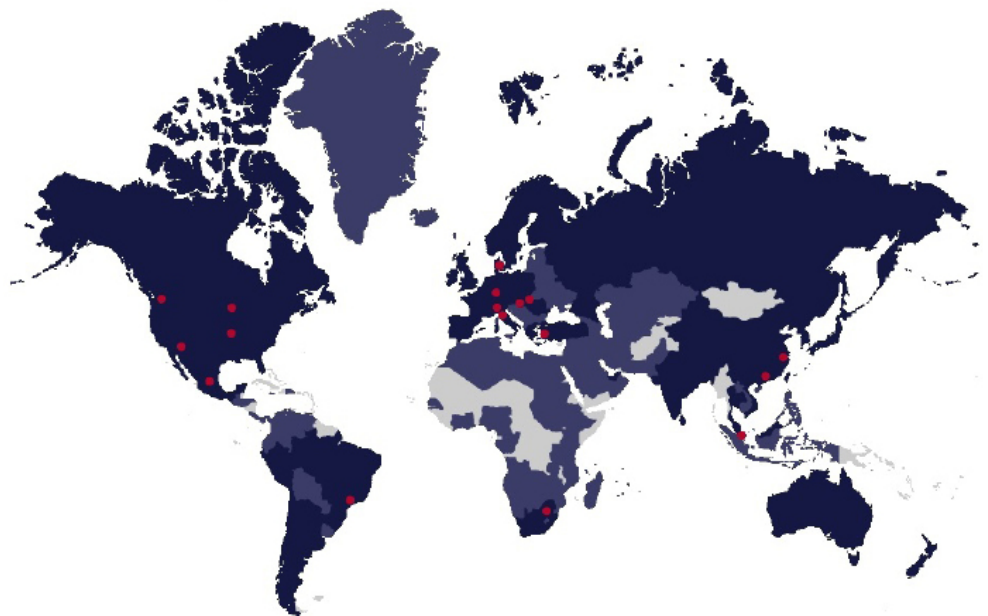
Validation and Commissioning



After Sales Support

- FAT - SAT
- WIP validation tests with fluorescein
- OEB test before installation on-site
- Tests performed according to ISPE Good Practice issued by SMEPAC Committee
- Training

Nilfisk is directly present in 45 countries and has partners in more than 70 countries. This means that you have a direct contact with the local Nilfisk team of experts and support from the Italian headquarter. This "service excellence" allows Nilfisk to be a partner to the biggest pharmaceutical manufacturers and OEMs worldwide.



■ Branches

■ Authorized dealers

■ Manufacturing facilities

A Complete Product Range

- safe dust handling throughout your process



Equipment Cleaning



Cleaning Around Equipment



Process Integration



Cleanroom Maintenance



Pneumatic Conveying

Safe Choice Commitment

At Nilfisk Industrial Vacuums we understand that you face many risks each day, just by operating your business. That is why Nilfisk is dedicated to helping you make smart choices to keep your facility and your workers safe. Our team of experts is ready to tackle any cleaning challenge – because in a world full of risk, you have to make safe choices.

We are committed to being that safe choice.
To learn more visit www.nilfiskindustrialvacuums.com.