

Centralized Vacuum Systems

Smart digital solutions for fully automated, facility-wide cleaning



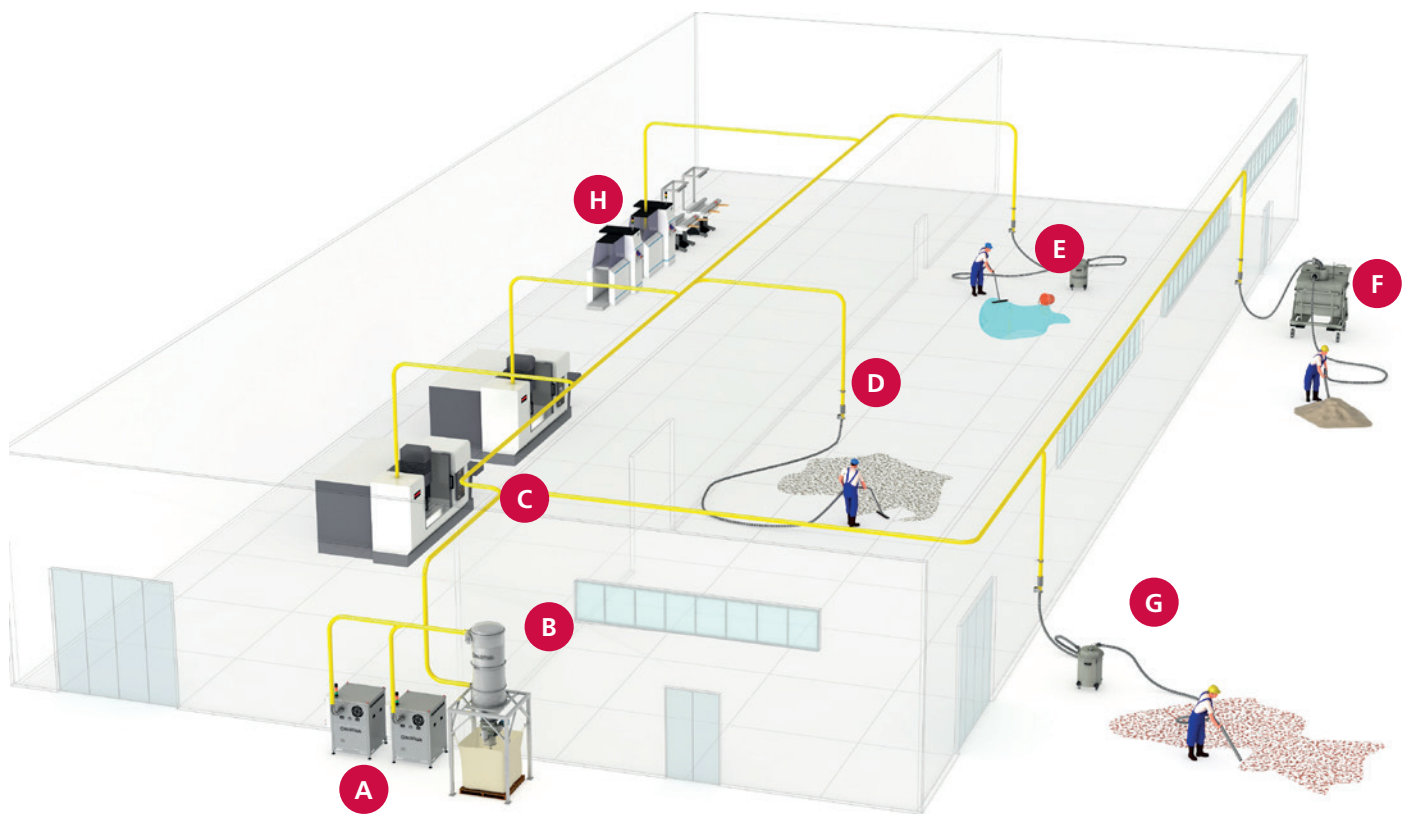
Full-facility cleaning at its smartest

Tailored systems for optimal hygiene and safety

Integrated directly into your manufacturing process, and ready to provide vacuum power whenever needed, centralized vacuum systems are the perfect tool for efficient large-area cleaning involving large amounts of waste.

Centralized vacuum systems consist of a suction unit, a control panel, a filtration system, a discharge system, and a series of pipes with inlets in requested locations.

- Collect residual materials and waste from multiple inlets simultaneously
- Clean continuously for maximum resource-savings
- Collect all materials in a single container, located inside or outside the factory, for easier disposal or recycling



A Suction unit	D Inlet for quick connections	G Hot material pre-separator
B Silo/filter chamber	E Liquid pre-separator	H Process-machine interconnection
C Pipeline	F Heavy-duty pre-separator	

Why choosing a Centralized Vacuum System?

When selecting a vacuuming solution for your manufacturing operation, remember the following:

WHAT

- Are you recovering dry powder, or waste material of differing grain-size?
- Are you recovering small amounts of hazardous material?
- Are you performing large-volume collection in order to minimize downtime?

HOW

- Is your collection process safe for your operators?
- How will you recycle collected waste material?
- How will you centralize the collection of the materials?
- How will you integrate collection into your manufacturing process?

WHERE

- How large are the areas you need to clean?
- Do you have disposal occurring on multiple floors?
- Are space limitations a factor at your facility?

WHEN

- Is your equipment ready for use anytime, anywhere?
- Is your collection process as fast as possible?
- Is your cleaning process an integrated function of your production process?



Digitalization for optimal interactivity

With a CVS, you can clean simultaneously in different production areas, while monitoring performance across your entire operation using web-based oversight – all in real-time.

FEATURES

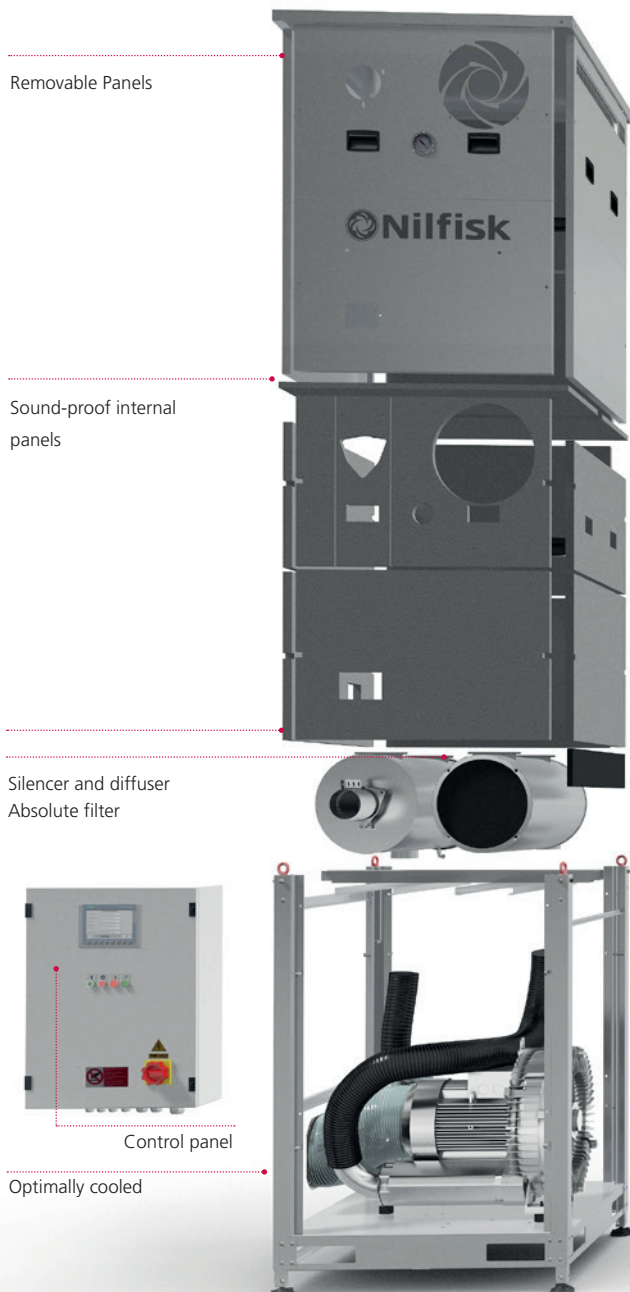
- Visual, tactile, and acoustic signals/microswitch
- Local control via human-machine interface
- Remote control via web server
- Industry 4.0 IoT connectivity with process machines

BENEFITS

- Intuitive interaction and control
- Real-time monitoring simplifies management and allows you adjust performance to your exact needs
- Easy data-access from any location



Cabinets (FSU range)



Our new FSU cabinets are available in 3 different sizes, all of which fit the CVS blower, which operates at a power rating ranging from 5.5 to 23 kW. Cabinets are available in different versions: standard, ATEX Z22, high-efficiency, and inverter-equipped. Each is available painted, or in stainless steel.

KEY FEATURES:

Modularity:

- Stackable legs permit cabinets to be stacked
- Control panel and removable panels can be adjusted according to need
- Can be positioned inside or outdoors

Silence:

- Silencer and sound-proof panels ensure low-noise operation

Sustainability:

- Dynamic power usage adjusts to number of users (inverter-equipped model)

Safety:

- Motor is cooled and filtered, ensuring cleaner work environment
- Absolute-filtration HEPA H14 available
- Suitable for collection of combustible dust
- Suitable for ATEX Z22 environments

Silos (FDC range)

A silo comprises a filter chamber, a collection cone, and a discharge system. Our range is available in three different diameters: 560mm, 780mm, and 1200 mm, each providing a different total-filtration area (up to 64 m²) and capacity.

You can select between various filter types, including star filters or cartridges, PTFE, polyester, M-class, or anti-static. Different filter-cleaning technologies are also available, in automatic or manual configurations.

The right combination of filter and discharge systems allows you to satisfy various requirements for cleaning, collection, and disposal.

Silos can be mounted on different frames, according to the size and discharge point, which simplifies standard filter-maintenance procedures.

Additional separators are available, and can increase the silo's capacity to provide different disposal solutions.

Safe and certified

- Suitable for combustible dust
- Suitable for ATEX Z22-certified environments



Components



Rotary valve



Double butterfly valve: continuous discharge



Long durability valve



Bag-holder



Heavy industry separator



Stainless steel container



Compact frame



Cartridges

Frames



Frames are designed to provide safe support for FDC silos.

The Nilfisk range includes three types of frames, each developed according to the application and configuration of the silo. All are available for the full silo range with diameters of 560mm, 780mm, and 1200mm.

- **COMPACT FRAMES** are designed to allow the fast connection and disconnection of bins through a lever system. They are recommended for the recovery of a mid-sized amount of material.
- **TELESCOPIC FRAMES** are designed to discharge the material into Big Bags of different sizes, and allow for the adjustment of the discharge point's height. They have a modular shape – standard frames are square, but can become rectangular if needed. They are recommended for the recovery of large material quantities.
- **TELESCOPIC PLATFORM FRAMES** are a combination of platforms and telescopic frames. Platforms are designed to simplify access to the silo for safe filter-maintenance processes. They are available for 1 or 2 operators, according to the size of the silo. The telescopic ladders can be adjusted to match the height of the telescopic frame.

Safe and certified

Our frames have been tested and certified by a third party, in compliance with guidelines that ensure total safety:

- Suitable for installation in seismic regions
- Suitable for wind-heavy regions
- Suitable for resisting snow loads

Functionality to match your needs

Our new CVS control panels are designed to meet different requirements across different segments, but all are intuitive and user-friendly.

Three different panel types are available, each with a different level of integration.

- **VISUAL** panels provide straightforward information that is easy to read, and are best for standard applications.

- **DISPLAY** panels combine excellent functionality with optimal pricing.
- **TOUCH** panels maximize interaction and user control, with a multi-language human-machine interface and touch screen for real-time monitoring and control over system parameters.

The DISPLAY and TOUCH variants can manage both standard and inverter-equipped blowers.



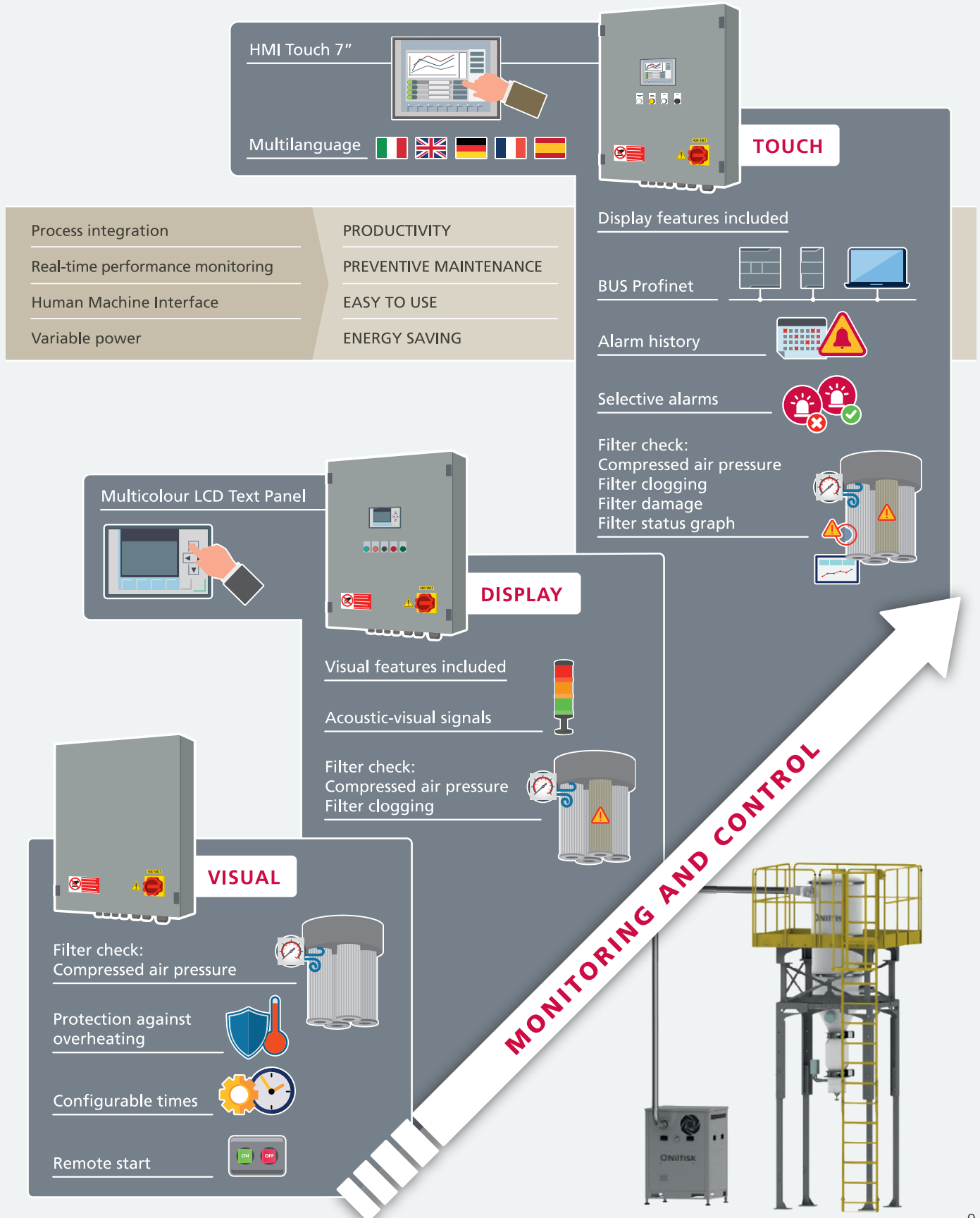
HMI Touch features

- Runtime graphs
- Multi-language menus
- Adjustable timer
- Data-logging
- Remote access via web server

Control panels, the different functionalities: choose the most suitable for your needs!

Functionalities	VISUAL	DISPLAY	TOUCH
LCD Text Panel Multicolor		✓	
HMI Touch 7"			✓
Multi-language			✓
BUS Profinet			✓
Data Logger – Alarm history			✓
Selective alarms			✓
Industry 4.0		✓	✓
Acoustic-visual signals		✓	✓
Advanced signals		✓	✓
Web server		✓	✓
Filter check: filter status graph			✓
Filter check: filter damage			✓
Filter check: filter clogging		✓	✓
Filter check: compressed air pressure	✓	✓	✓
Inverter variant		✓	✓
Automatic Timed Stop	✓	✓	✓
Configurable times	✓	✓	✓
Remote start	✓	✓	✓
Protection against overheating	✓	✓	✓

Control panels



Total cleaning coverage

Centralized vacuum systems are used to support production processes, and they rank among the most flexible tools within a manufacturing unit. Because they are integrated directly into production processes, they work efficiently in tandem with manufacturing machines to provide non-stop vacuum recovery. This keeps production lines clean and running efficiently, while also keeping products aligned during the packaging process.

Fixed cleaning installations are present in all industrial sectors, including pharmaceutical and chemical manufacturing, metalwork, food production, wood processing, ceramics, tobacco, and more.

APPLICATIONS

A DUST CONTAINMENT:

- Provide power to systems comprising several containment units
 - Discharge waste into a single location (incl. outdoors)
 - Noise-free operation
-

B PROCESS INTEGRATION:

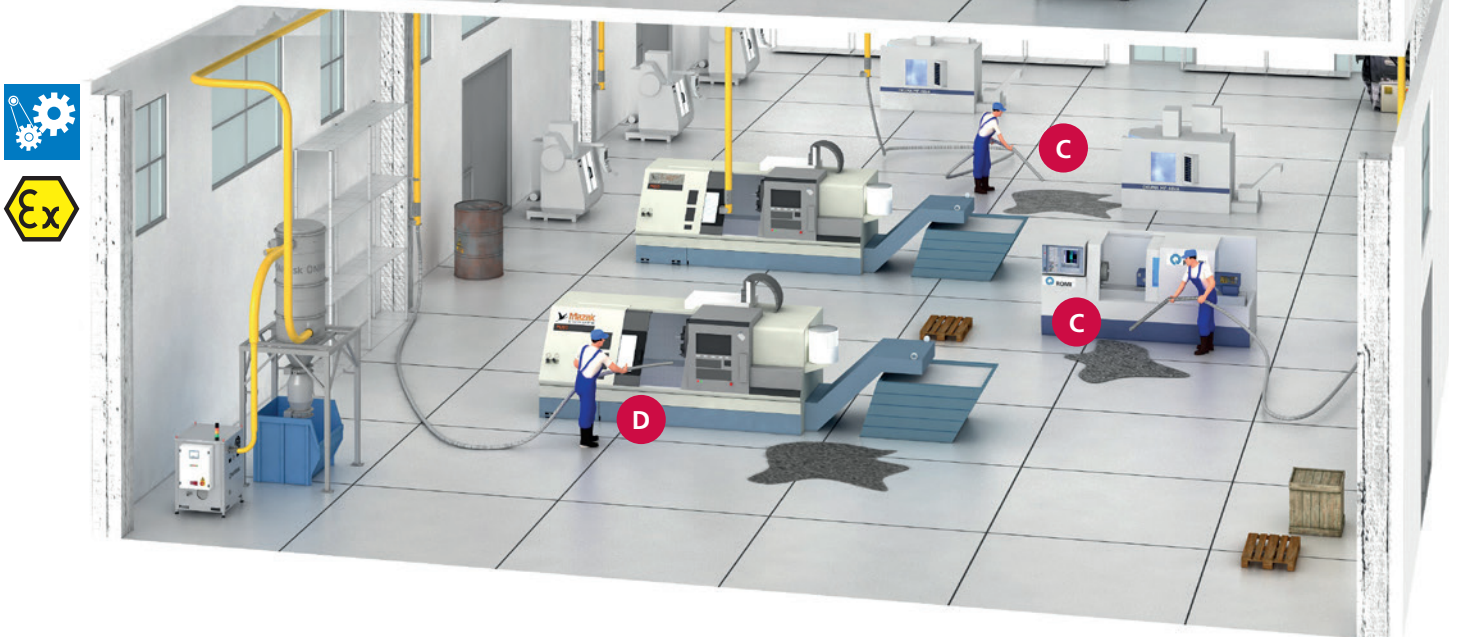
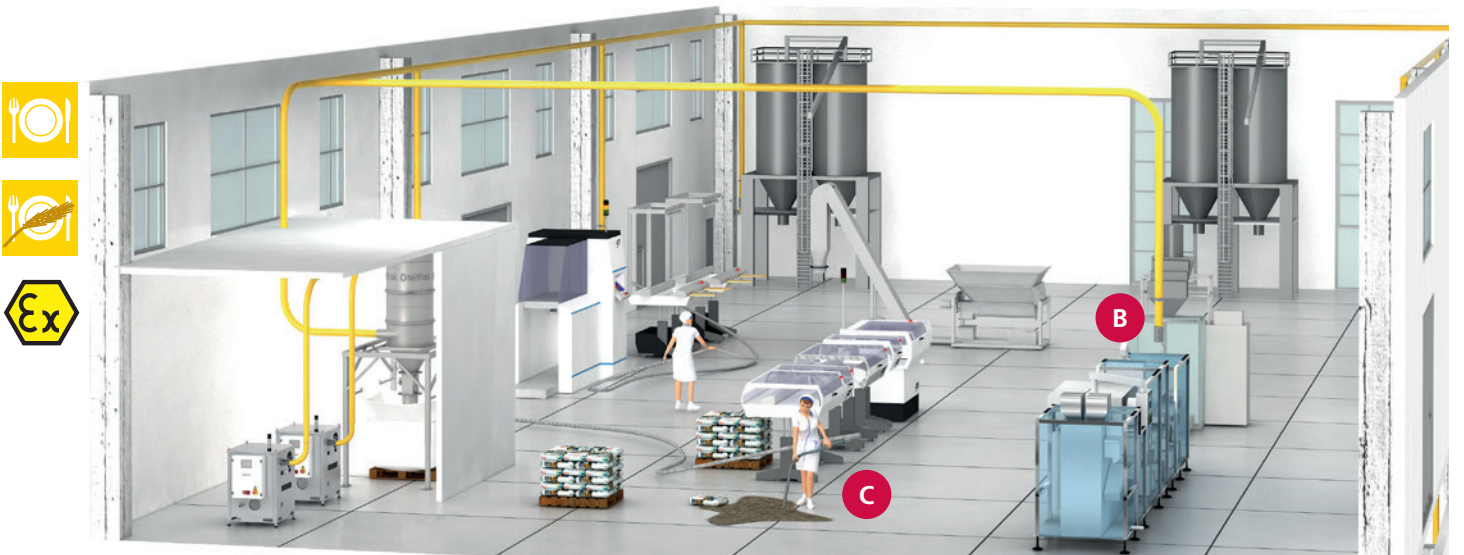
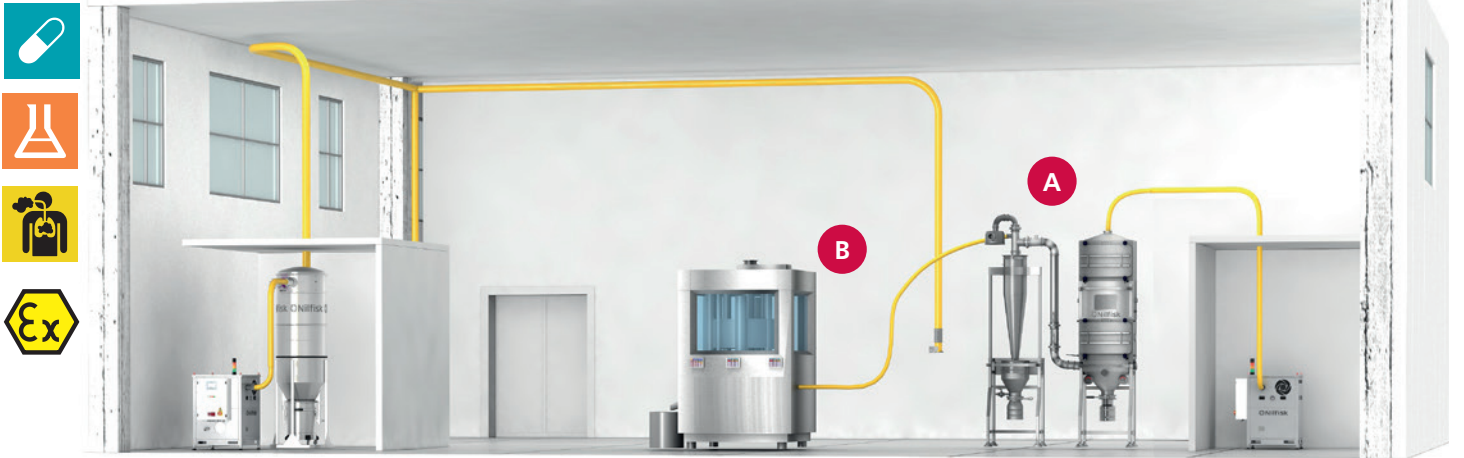
- Continuously recover waste produced
 - Customize system to serve several machines simultaneously
 - Discharge waste into a single location (incl. outdoors)
 - Noise-free operation
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C GENERAL CLEANING:

- Clean manufacturing areas quickly and effectively
 - Discharge waste into a single location (incl. outdoors)
 - Noise-free operation
-

D EQUIPMENT CLEANING:

- Quickly recover large quantities of waste
 - Discharge waste into a single location (incl. outdoors)
 - Noise-free operation
-



The value of safety

The Nilfisk CVS portfolio includes ATEX-certified variants of each main component, including control panels, suction units, and filter chambers, all of which can be chosen according to the classification of the installation zone. Non-certified components can still be interconnected in the event that certain components require ATEX certification. The flexibility and modularity of our CVS range can provide for maximum safety, while also ensuring that the investment is specifically tailored to your exact safety requests.

The 3 primary system elements – the control panel, suction unit, and silo – can be placed in different locations with different requirements (e.g. classified vs. non-classified zones). The infographic below illustrates how an application's risk-level increases according to the type of dust produced, and the type of zone in which it is produced, while safety remains constantly high. The value of our CVS systems essentially increases alongside increasing customer needs.



COMBUSTIBLE DUST

Combustible dust can create potentially-explosive atmospheres in specific circumstances, depending on its properties and granulometry.



ATEX AND CLASSIFIED ZONES

A zone is ATEX-classified when the potential exists for creation of an explosive atmosphere. A Zone 22-classified atmosphere is one in which a cloud of combustible dust is unlikely to form during normal operation, and will only persist for a short period if formation occurs. These regulations provide guidelines for eliminating associated risk.



THIRD-PARTY CERTIFICATION

Nilfisk employs third-party system certification in order to ensure total compliance with applicable regulations; protect customers; and provide optimal workplace safety for operators. We are proud to offer solutions that enable optimal safety, thanks to our partnership with various certification bodies responsible for testing functional safety.

SAFE ZONE	Safe zone
ZONE Z22	Zone ATEX Z22 classified
	ATEX certified (by a third notified body)
	Not ATEX certified
	Suitable for the recovery of combustible dust



Level of risk according to the zone and type of dust

Cleaning power you can trust

We employ a strict approach to certification – even in cases where auto-certification is considered satisfactory, Nilfisk relies on third-party certification of conformity with all applicable regulations and protocols.

Certifications include:

COMPANY CERTIFICATIONS

- ISO 9001 (Quality Management System)
- ISO 14001 (Environmental Management System)
- Atex Ineris (Product Quality system complying with the ATEX Directive)

PRODUCT CERTIFICATIONS

- ATEX (products compliant with the EU Directive for explosive atmospheres)
- CE (products compliant with EU requirements for safety, health, and environmental protection)
- EAC (products compliant with all technical regulations of the Eurasian Customs Union)
- IECEx (products compliant with the Australia/New Zealand Directive for explosive atmospheres)
- ETL (products compliant with North American safety standards)
- CSA (products compliant with Canadian safety standards)

ATEX



Global reach with a local presence



Nilfisk is a leading global player within the professional cleaning industry. With more than 110 years of innovation experience, Nilfisk is dedicated to delivering reliable solutions and products of high quality that pave the way for a safer, more productive, and cleaner day for millions of companies and private homes around the world. Nilfisk has its own sales companies in more than 40 countries, and its products are sold in more than 100 countries. Read more at www.nilfisk.com.

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