FlexPAK DX

Filtro industriale depolveratore per impianti centralizzati

FlexPAK DX combustible dust collector

The FlexPAK DX high vacuum unit represents the foremost solution on the market. The unit is designed for the extraction of combustible grinding dust, metal chips etc. FlexPAK DX is suitable for cleaning the workplace, the shop floor, and machines. The FlexPAK DX is manufactured to withstand overpressure from a potential explosion and is equipped with an explosion relief panel. The harmful effects of an explosion are minimized by venting the overpressure and flames via the relief panel to a safe area.

FlexPAK 800 DX is a high vacuum unit, suitable for applications where metal chips, shot blasting grit and other heavy material need to be removed.

FlexPAK 1000 DX operates at a lower vacuum level and is suitable for extracting grinding dust and for use where a constant airflow, independent of the number of users, is a requirement.

Demand controlled vacuum

FlexPAK DX regulates the speed of the motor automatically depending on the vacuum demand. Compared to traditional controllers, FlexPAK DX provides an optimal, and well-balanced vacuum according to the need, ensuring energy-saving operation.

PLC controlled filter cleaning

The filters are effectively cleaned by applying powerful air bursts to the filter through quick opening valves. The dust is knocked off by the impact and collected in the dust bin. The sequence is controlled by the PLC, and it can be adjusted to suit every installation. This maximizes the life of the filter and ensures the correct functioning of the unit.

Alarms for safe operation

FlexPAK DX can be fitted with different types of alarms, for example, level monitors for waste containers, filter indicators (for clogged filters) and fire alarms. Alarms can be activated at A and B levels and can be set to give both visual and audible signals.

Advantages

Low installation costs:

- Compact unit complete with starter and control unit mounted on a profile frame.
- Quick and easy installation.

Low running and maintenance costs:

- Long life filters: 8000 h with dust extraction.
- Efficient filter cleaning method.
- Direct driven fan with lifetime-lubricated bearings.
- Automatic start/stop function.
- Reduced energy consumption with frequency control.

Wide range of applications:

- Can be used for grinding dusts, general floor cleaning and machine cleaning.

Low noise level:

- Fan mounted in acoustic enclosure.

Built in PLC functions:

- Pipe flushing and filter cleaning sequences are performed just before system idling.
- Weekly timer – ensures unit is switched off outside normal working hours.
- Overtime timer (option).
- Waste emptying possibilities: Manual, automatic time controlled emptying, or by an optional Bin Level Indicator.
- Filter cleaning possibilities: automatic time controlled cleaning, automatic cleaning triggered by a delta pressure sensor.

Built in safety functions:

- Filter cleaning is disabled during waste emptying sequence.
- Built in Emergency stop switch.
- Monitored control filter to detect main filter failure.
- Monitored relief panel. Vents the explosion to a safe area and stops the unit.

Miscellaneous:

- Possibility to connect to external alarm flashlight (option).

Dust explosion

A solid piece of any given material is normally safe and non-combustible. However, creating a fine dust from the very same material could make it combustible. Compare a solid piece of wood to wood dust! Furthermore, the finer the dust particles are, the more combustible they become.

When combustible material is dispersed as fine dust and

combined with air and an ignition source, the risk for a dust explosion increases. Some examples of combustible materials:

- Synthetic organic dust: Plastic grinding dust, reinforced plastics and other composite materials, powder paint, cosmetics
- Metal dust: Fine dust of aluminium, magnesium, titanium, chromium
- Organic dust from food industry: Baking flour, soup powder, spices, sugar
- Pharmaceutical dust: A large number of powders used in pharmaceutical industries are combustible

Protect Your Staff and Increase Efficiency

One of the hazards with combustible dust is that it settles on all surfaces within the facility. Once the settled dust is disturbed into the air as a result of an initial explosion, it becomes the fuel for secondary explosions.

An effective solution is to prevent dust from spreading around the workplace by capturing the dust at the source where it is generated, preventing it from spreading into the facility. A clean work environment, besides having a minimized risk of explosion, is efficient, maximizes production time, increases product quality, and provides significant cost savings.

ATEX Directive

FlexPAK DX is designed to extract combustible and non-combustible dust, but the unit "as a whole" is not to be placed in an area that is classified as a zone according to directive 1999/92/EC. It is only the inside of the filter that meets the ATEX requirements.

FlexPAK 800/1000 DX may be used with duct systems internally classified as zone 20, 21 or 22.

The product has no Ex marking since there is no internal ignition source. The inside is to be considered as a simple filter/ silo and does not fall under the scope of the directive 94/9/ EC.*

*Source: ATEX working group considerations; "How should the directive be applied to filter units and vented silo bins."

Nederman has been operating in the field of environmental equipment for more than 50 years and has extensive experience in equipment and systems for potentially combustible dust.

Note! Since July 1, 2006, all existing sites, as well as new sites must be fully compliant with the ATEX directive.

Permitted materials

It is of outmost importance to know the properties of the extracted material. The FlexPAK DX is intended to be a part of an extraction system collecting material with the following properties:

- Dust explosion class: St1 and St2
- Pmax: ≤10 bar
- MIE (Minimum Ignition Energy) > 3 mJ
- MIT (Minimum Ignition Temperature) > 205 ºC

Materials with properties not given within the above stated values must be investigated prior to use with the FlexPAK DX. Contact Nederman for technical support and Dust application investigation.

Explosion suppression system

For indoor installations, an explosion suppression system can be used instead of the explosion relief panel. With an explosion suppression system, the early stage of an explosion is detected with optical or pressure devices, and an extinguishing agent is quickly dispersed into the filter. The suppression of the explosion is initiated in an extremely short time after explosion's detection (in milliseconds), and stops the pressure rise and extinguishes (suppresses) the flames of the explosion before it reaches excessive pressure levels.

Note! The explosion suppression system must be quoted on project basis. Contact Nederman for technical support and Dust application investigation.

FlexPAK DX units for multi purpose use

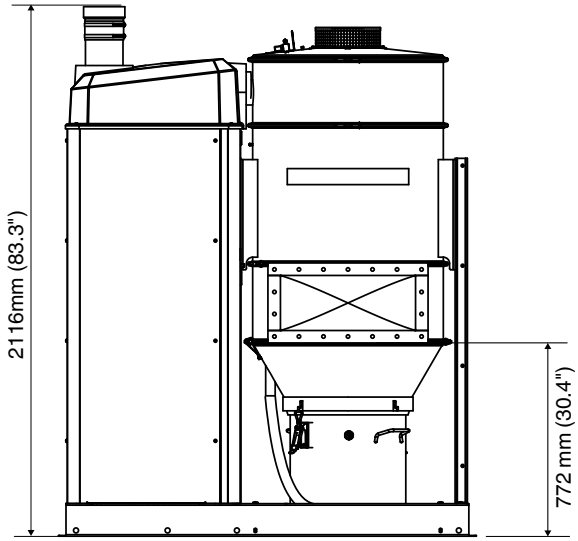
On-tool extraction of sanding dust

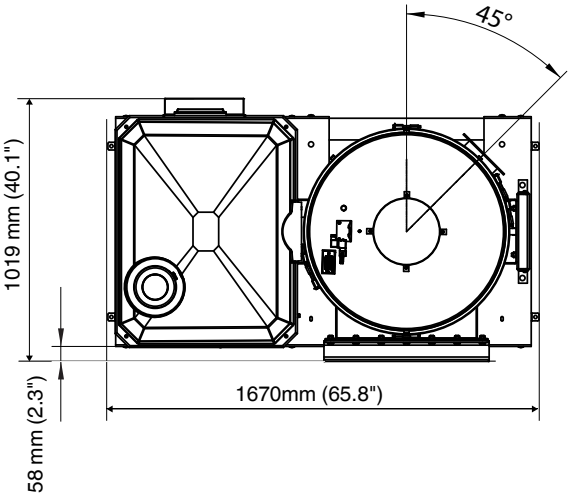
On-tool trimming composites

Cleaning in a bakery

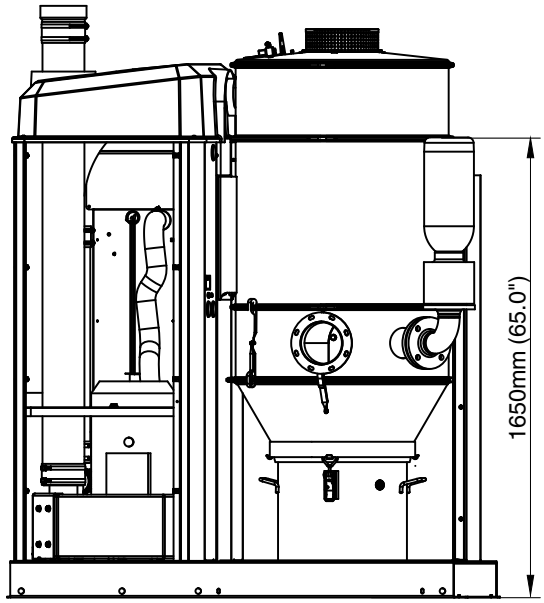
Work floor cleaning

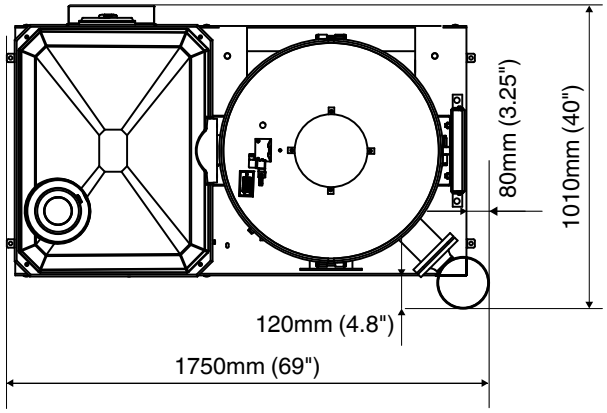
Dimensions FlexPAK DX



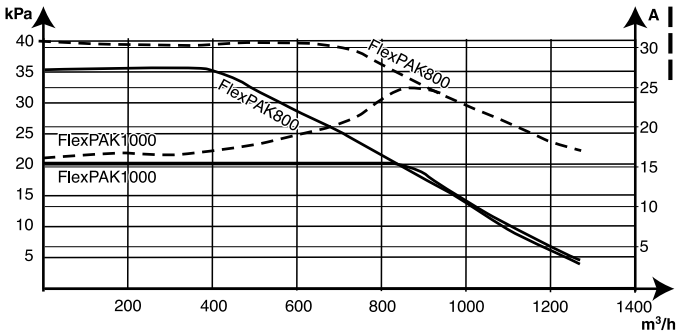


Dimensions FlexPAK DX: Explosion suppresion





Fan diagram FlexPAK DX

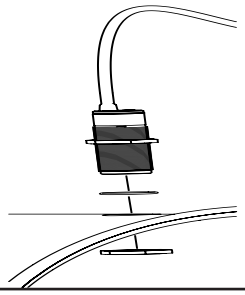
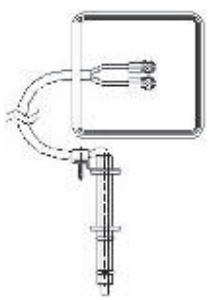


Technical data FlexPAK 800 DX

	FlexPAK 800 DX 400 V 50/60 Hz	FlexPAK 800 DX 460 V 60 Hz	FlexPAK 1000 DX 400 V 50/60 Hz	FlexPAK 1000 DX 460 V 60 Hz
Article number	050311	050312	050321	050322
Effect	18.5 kW (25 hp)	21.5 kW (29 hp)	18.5 kW (25 hp)	21.5 kW (29 hp)
Mains voltage/frequency	400 V±10%/50–60 Hz	460 V±10%/50–60 Hz	400 V±10%/50–60 Hz	460 V±10%/50–60 Hz
Maximum flow	1,300 m_3/h (765 cfm)	1,300 m_3/h (765 cfm)	1,300 m_3/h (765 cfm)	1,300 m_3/h (765 cfm)
Air flow	800 m_3/h (470 cfm) at -20 kPa (-2.9 PSI)	800 m_3/h (470 cfm) at -20 kPa (-2.9 PSI)	1000 m_3/h (588 cfm) at -15 kPa (-2.2 PSI)	1000 m_3/h (588 cfm) at -15 kPa (-2.2 PSI)
Maximum vacuum	-35 kPa (-5.1 PSI)	-35 kPa (-5.1 PSI)	-20 kPa (-2.9 PSI)	-20 kPa (-2.9 PSI)
Filter area*	6 m_2 (64.5 sqft)	6 m_2 (64.5 sqft)	6 m_2 (64.5 sqft)	6 m_2 (64.5 sqft)
Weight	439 kg (968 lb)	439 kg (968 lb)	439 kg (968 lb)	439 kg (968 lb)
Flanged Inlet and outlet diameter	150/160 mm (7.87/6.29")	150/160 mm (7.87/6.29")	150/160 mm (7.87/6.29")	150/160 mm (7.87/6.29")
Sound level	70 dB(A)	70 dB(A)	70 dB(A)	70 dB(A)
Maximum ambient temperature	-10 – +40 °C (14–104 °F)	-10 – +40 °C (14–104 °F)	-10 – +40 °C (14–104 °F)	-10 – +40 °C (14–104 °F)
Relative humidity	Max. 85%	Max. 85%	Max. 85%	Max. 85%
Compressed air	6–7 bar (87–102 PSI)	6–7 bar (87–102 PSI)	6–7 bar (87–102 PSI)	6–7 bar (87–102 PSI)
Material recycling	93.6% per weight	93.6% per weight	93.6% per weight	93.6% per weight
Control Filter area	12 m^2 (129 sqft)	12 m^2 (129 sqft)	12 m^2 (129 sqft)	12 m^2 (129 sqft)

* Main filter material is classified as category L, and control filter material is classified as category M according to DIN EN 60335-2-69.

Accessories

	Name	Part No
	**Deflector 220x540** Explosion venting deflector for all FlexPAK DX with explosion relief panel. In case of explosion venting, the deflector alters the risk area.	**376771**
	**Differential Pressure Switch. 3-15 kPa NC** The Differential Pressure Switch (DPS) monitors the pressure drop across for example the main filter. If the pressure drop exceeds a set value between 3-15 kPa the alarm will be activated. The DPS can stop the vacuum unit if wired to FlexPAK. Normally Closed (NC) or Normally Open (NO) function. If installed within EX zone, intrinsic safe circuit must be used. **Switching voltage:** • AC eff: min 24 V / max 250 V • DC: min 24 V / max 48 V. **Switching current:** • AC eff. max 6 A (at cos ϕ 1) min 20 mA • DC: max 1 A / min 20 mA	**375273**
	**BLI EX** The Bin Level Indicator (BLI) is a proximity switch activated by for example a full dust bin. It can stop the vacuum unit if wired to the Nederman High Vacuum Starter. Resets automatically when the bin is emptied. Adjustable sensibility. Normally Closed (NC) or Normally Open (NO) function. • Supply Voltage: 12-240VDC, 24-240VAC • Supply Current: 3 VA • Output: S.P.C.O • Output rating: 240 V 3 A non-ind. • ATEX Category: 1D T100ºC (Tamb. -15°C - +50°C) • The BLI EX comes equipped with 5 m cable	**375269**
	**Fire alarm** The Fire alarm is activated when the temperature exceeds +140°C. It can stop the vacuum unit if wired to the Nederman High Vacuum Starter. Can be used to trigger warnings such as external fire alarm. If installed within EX zone, intrinsic safe circuit must be used. Voltage: 24V AC/DC. (Includes special cables but not standard external cables).	**116540**

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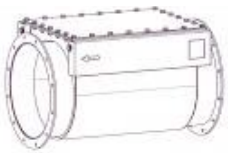
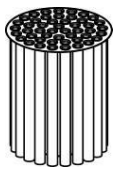
Accessories piping

	Name	Part No
	**Flanged pipes** Pressure resistant pipes and bends for connection of Isolation valve. Pipes and bends are installed between filter inlet and the Isolation valve. Fasteners and seals are included.	
	Flanged pipe Ø 150 mm, 1 m	375263
	Flanged pipe Ø150mm, 0,5 m	376525
	Flanged bend 90º Ø 150 mm	375264
	Flanged bend 45º Ø 150 mm	376770
	Flanged bend 90º Ø 150 mm	375264
	**Transition flanged pipes** Pipe is installed as a transition between the Isolation valve and standard high vacuum steel pipes.	
	Transition flanged pipe Ø 150 mm	375265
	**Isolation valves** The Isolation valve prevents a possible explosion from spreading from the filter, backwards to the workplace.	
	Isolation valve ø 160 mm length 455 mm	374400

Consumables

	Name	Part No
	**Plastic Bag** Dust collecting bag made of special conductive material for EX applications. Dimensions: 730 x 900 For FlexPAK DX standard 70 l (18.5 gal) bin 20 pcs *Use only Nederman conductive containers when collecting combustible material.*	118800
	**Antistatic filter** Main filter replacement kit including filter, attachment and top gasket. Area: 6 m_2 (64,6 square feet) Weight: 27 kg (60 lbs)	118880
	**Control filter insert** Control filter replacement Dimension: DY325 X L800 mm	375270

KOMSA

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