

KOMSA



The NFKZ3000 (1,000-300,000 CFM)

The NFKZ3000 filter is a compact filter, well suited for any air flow with heavy material content.



Applications:

Timber • Wood • Furniture • Lightweight Bulk Materials

Features

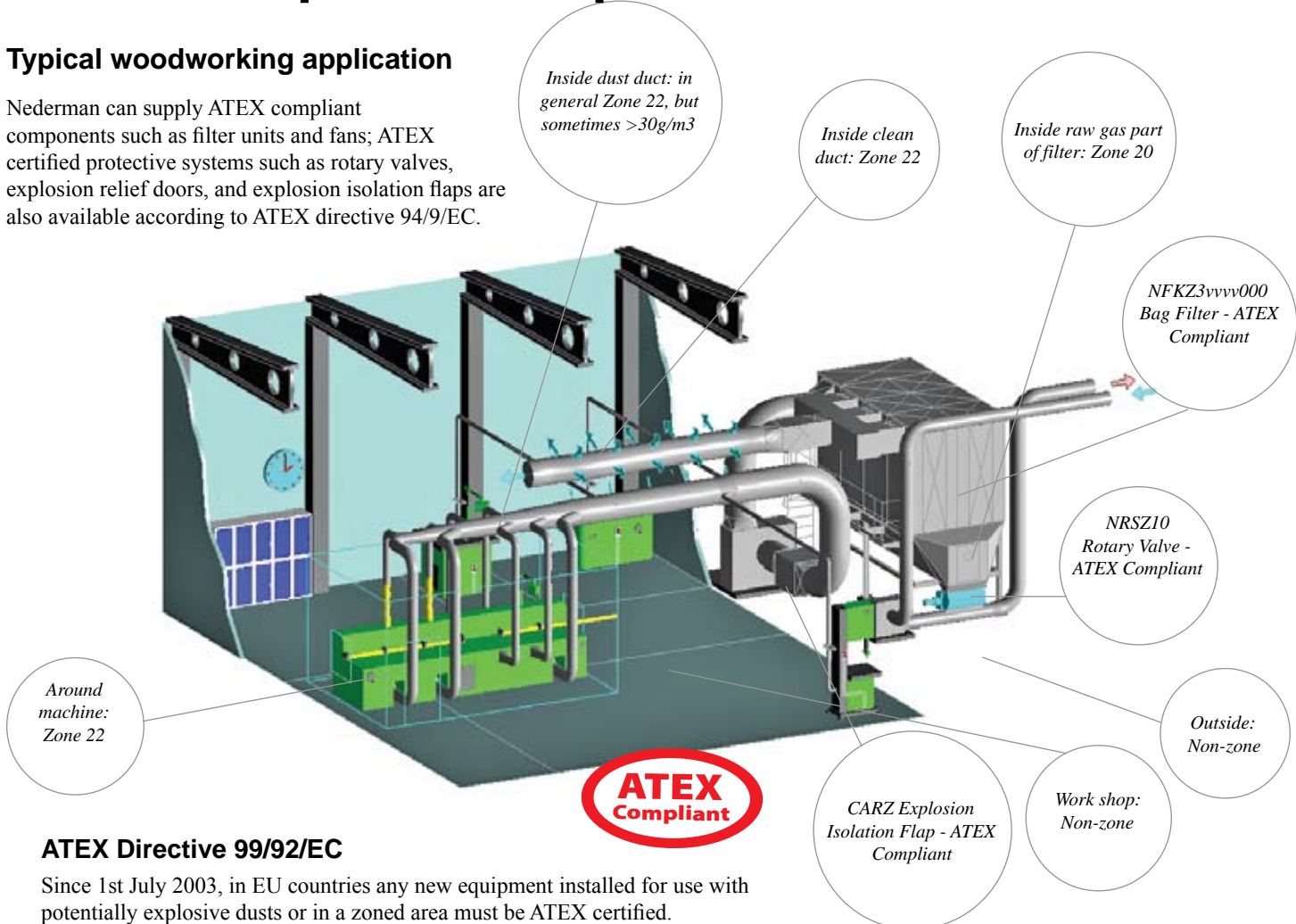
- Full filter range covering airflows from 1,000 to 300,000 CFM
- Modular galvanized steel construction
- Easy to install on site and expand if additional capacity is required
- ATEX certified for St1 and St2 dust with a Kst value up to 300 bar m/s
- Available for positive or negative pressure operation
- Low power consumption
- Powerful on-line cleaning by efficient regeneration fans
- Patented polyester XT15 filter media
- Wide range of discharge and waste handling options
- Self-supporting with telescopic legs suitable for outdoor locations

SPECIFICATIONS	
TEMPERATURE	Max. 170°F (75°C)
OVER PRESSURE VERSION	Max. (+) 3.2" Wg
VACUUM VERSION	Max. (-) 20" Wg
POWER SUPPLY	<ul style="list-style-type: none"> · 230 / 460 V · Chain motor – 1.5HP · Regeneration fan – 2.0 HP (optional 3 HP)
DOOR SWITCH	<ul style="list-style-type: none"> · At the inspection doors in the filter hopper · At one filter module door per each 5 modules · At each inlet module door
FILTER ELEMENT	Superbag 2000 XT15 with ø7.875" (200mm) collar
FILTER AREA PER MODULE	HJ: 915 ft ²

ATEX Compliant Components

Typical woodworking application

Nederman can supply ATEX compliant components such as filter units and fans; ATEX certified protective systems such as rotary valves, explosion relief doors, and explosion isolation flaps are also available according to ATEX directive 94/9/EC.



ATEX Directive 99/92/EC

Since 1st July 2003, in EU countries any new equipment installed for use with potentially explosive dusts or in a zoned area must be ATEX certified.

Since 1st July 2006, in EU countries any existing equipment handling potentially explosive dusts or in a zoned area must be Risk Assessed.

A dust extraction system from Nederman fulfills the ATEX requirements:

- The explosion strength of the filter has been proven
- The structural integrity of the filter is protected by explosion relief doors or panels. These components are ATEX approved.
- The risk of an explosion spreading has to be prevented by installing safety equipment such as rotary valves, explosion isolation flaps, etc. Nederman can supply these ATEX compliant components.
- ATEX compliant components are recommended for systems handling potentially explosive dust.



How It Works

....during normal operation

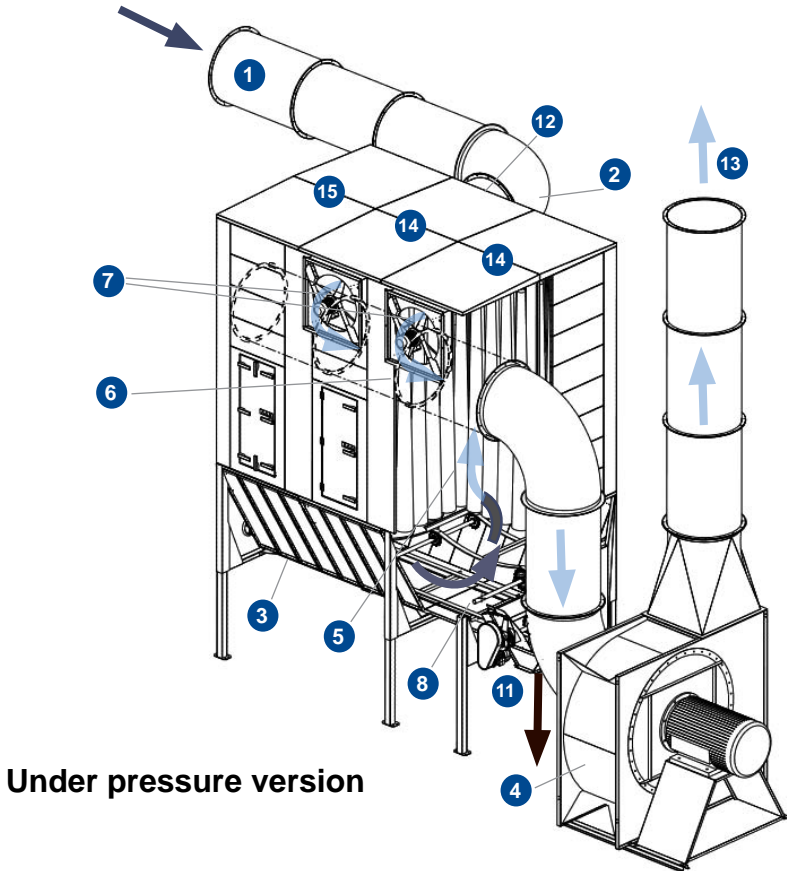
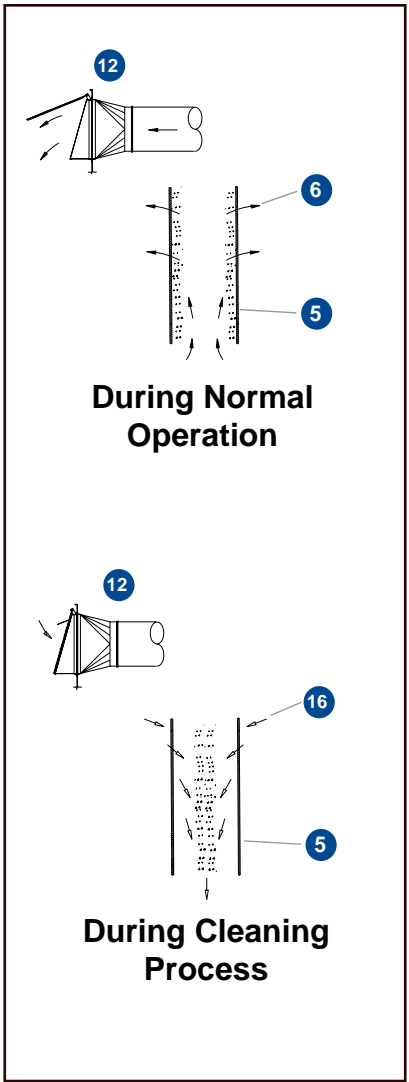
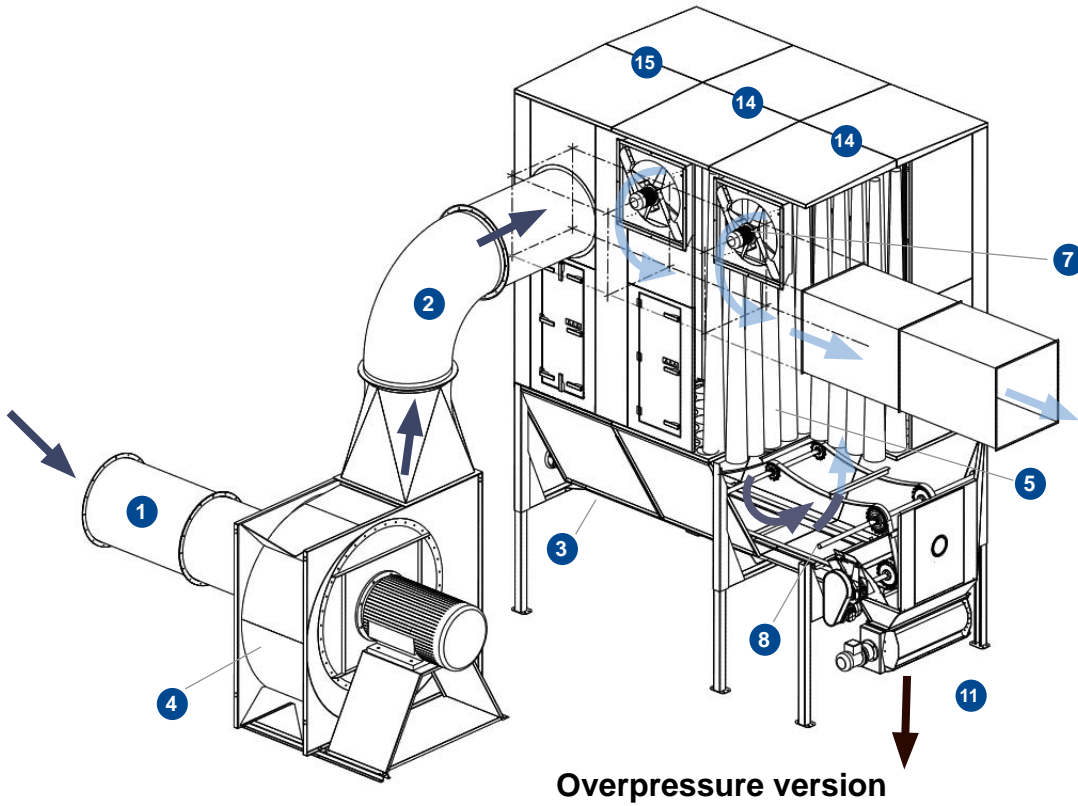
1. During normal operation, the dust laden air from the plant travels down the supply duct **1**.
2. The dirty air then enters the filter **2**.
3. As the dust laden air enters the inlet section of the filter **15**, the air decelerates and heavier dust and shavings settle on the hopper floor **3**.
4. The heavier dust and shavings collected on the hopper floor are conveyed to the discharge end **11** of the filter by the scrapers on the chain conveyor **8**.
5. At the discharge end of the filter, the dust is removed **11**.
6. The remaining dust then travels up into the inside of the filter bags **5**. Each filter module **14** has 50 filter bags.
7. The air, which originated from the plant, is now clean **6** and passes through the filter bag and out the exhaust port **7**.

....while cleaning

1. The filter cleans the bags during operation (on-line cleaning) and when the unit is shut down (off-line cleaning). The off-line cleaning period starts after the COMBIFAB fan **4** has stopped rotating.
2. A PLC control in the electrical panel regulates the cycle of the reverse air regeneration fan. **7** The regeneration fan shakes the filter bags **5** causing the dust, which hangs on the inside of the filter bag, to fall into the hopper section **3**.
3. Any dust that remains on the inside of the filter bag after the initial “shake” is removed by the airflow **16** generated by the regeneration fan.
4. The dust that is removed during the cleaning cycle falls on the floor of the hopper **3**, and is then transported to the discharge section of the filter **11** by the chain conveyor **8**.

NOTE: The back pressure flap **12** is open during normal operation of the filter but closes when the fan is shut down and the filter starts in an off-line cleaning cycle. During the off-line cleaning period, the back pressure flap **12** acts as a barrier to prevent the air generated from the regeneration fan from travelling back down the supply duct **1**.

How It Works



With chain conveyor



NFKZ3000 Filter with chain conveyor

The NFKZ3000 filter with chain conveyor is a compact filter, suited for handling large air flows with heavy material content.

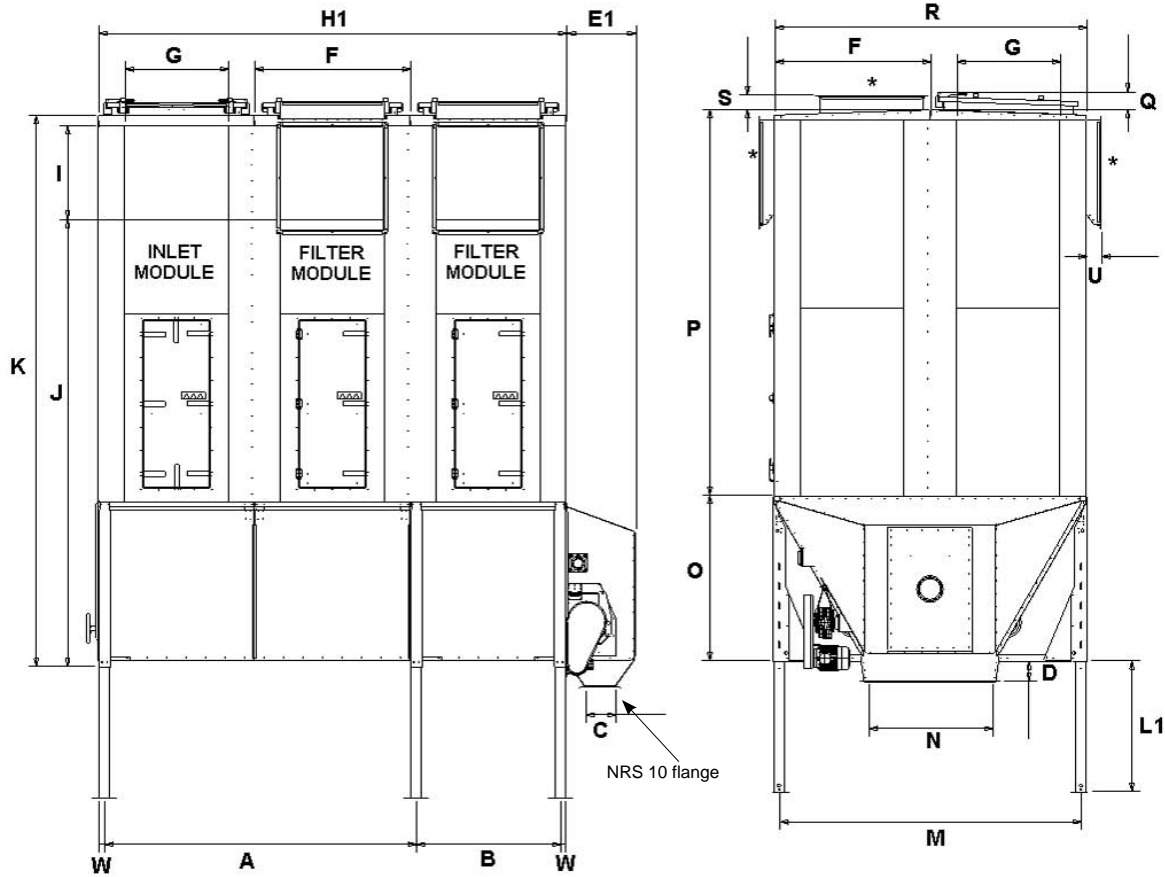
The filter hopper and the inlet section (optional) separate the medium/large particles and distribute the air to the filter bags.

A double chain conveyor in the bottom of the hopper moves the collected material to a rotary valve for outfeeding.

The filter can be supplied for either continuous operation or with a pause for cleaning of the filter bags every four hours.

- **Handles air flows from 5,000 – 300,000 CFM**
- **Compact design**
- **ATEX certified for St1 or St2 dust**
- **Easy to expand**
- **To be mounted either on the ground, structure or on the roof**
- **Available for positive or negative pressure operation**
- **Explosion venting upwards or at side**
- **Available in J module size 47.25" x 97.50" (1200 x 2400 mm)**

Planning-in Data

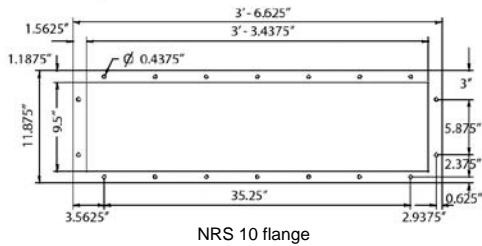


Example: NFKZ3000 2+1 HJ

TYPE	A#	B	C	D	E1	F	G	H1	I	J	K	L1	M
J	7'-10 $\frac{1}{2}$ "	3'-7 $\frac{9}{16}$ "	9 $\frac{5}{8}$ "	6"	1'-11"	3'-11 $\frac{1}{4}$ "	2'-7 $\frac{1}{2}$ "	11'-9 $\frac{3}{4}$ "	2'-4 $\frac{3}{4}$ "	11'-2 $\frac{5}{8}$ "	13'-10 $\frac{9}{16}$ "	See below	7'-7 $\frac{3}{8}$ "

TYPE	N	O	P	Q	R	S	U	W
J	3'-1 $\frac{1}{2}$ "	4'-1 $\frac{5}{8}$ "	9'-8 $\frac{1}{2}$ "	5 $\frac{3}{8}$ "	7'-10 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	5 $\frac{7}{8}$ "	1 $\frac{7}{8}$ "

See technical data sheet for engineering and installation purposes



NRS 10 flange

L1 - TELESCOPIC FILTER LEGS		
TYPE	MIN. ADJUST.	MAX. ADJUST.
L = 5'	1'-9"	4'-1"
L = 7'	3"-9"	6'
L = 8'	5'-1"	7'-4"

* Optional position of outlet /reg. fan. 800 x 800 or 600 x 600 mm
 # Optional 3'-11 $\frac{1}{4}$ "

Regeneration fans and explosion relief doors





Regeneration fans and explosion relief doors

Each module of the NFKZ3000 filter may be fitted with inspection door(s), explosion relief door(s) and regeneration fan(s).


As standard the filter is fitted with side venting due to the combined inspection and explosion relief door. Regeneration fan for cleaning the filter is as standard mounted on the roof of the filter.

Optional the filter can be fitted with top venting or venting type UP and regeneration fans on the side.

The NFKZ3000 filter body for dust type St1 for installation in non-zone are marked:

The filter body is marked: **Label#ATS.308 NF*Z 3000** CE1180  II 1(3)/- D St1
Label#ATS.309 NF*Z 3000 CE1180  II 1(3)/- D St2

The marking is based on product certificate Baseefa 06 ATEX 0068X.

The explosion relief doors are marked: CE1180  II D St1

- *One explosion relief door per module for St1 dust*
- *Two explosion relief doors per module for St2 dust*
- *Regeneration fans on top or side*
- *Combined inspection and explosions relief doors as standard*
- *Top venting (optional)*
- *UP venting (optional)*

Regeneration Fan and Rotary Valve

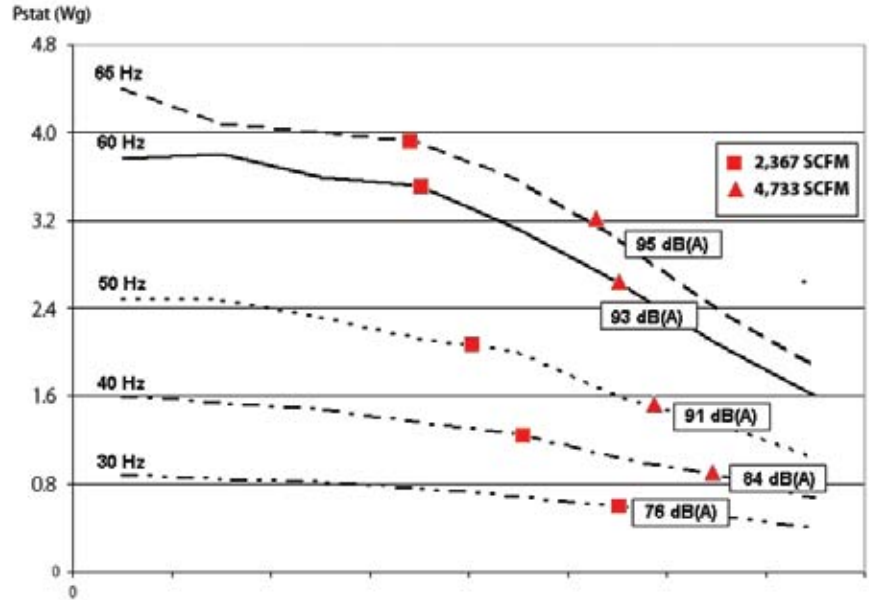
Regeneration Fan

The regeneration fan for reverse air cleaning of the NFKZ3000 filter operates at time intervals dependant on filter load and dust level. The regeneration fan can be mounted either in the roof or on the side of the filter.

The fan is an axial type fan 31.50" x 31.50" (800 x 800mm). The regeneration fan is available in a 2 HP and a 3 HP version.

The regeneration fan is designed to deliver an effective high pressure pulse of air during the cleaning process. When the system is in normal operation, the regeneration fan creates minimal resistance to airflow and emits a low noise level.

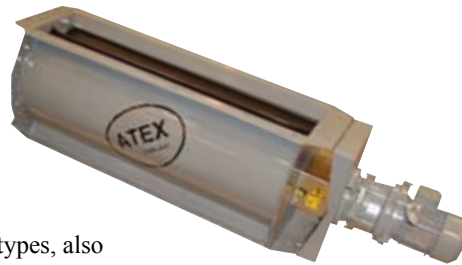
The pressure resistance is 0.5" wg at 5,900 CFM.



NRSZ-10 Rotary Valve

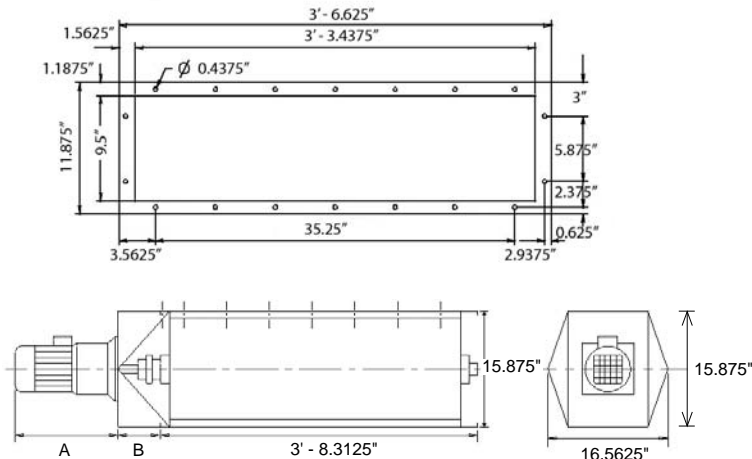
The NRSZ-10 type rotary valve is used to transfer material between two separate systems. In pneumatic conveying systems, a rotary valve is usually required between the filter or cyclone discharge and the conveying system

The rotary valve can be used for most material types, also explosive (St1 or St2), though the particle size must not exceed .5 x .5 x .5 in.



- **ATEX compliant**
- **The rotary valve is a barrier against propagation of an explosion**
- **Simple design and proven strength**
- **Available in different lengths and capacities**

NRSZ-10



MOTOR HP	A	B
1 HP	21"	2 5/8"

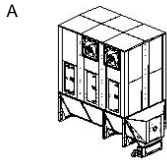
LABEL#ATS.016	CE 1180	Ex II 1/1 Dc St2 80°C	no motor
LABEL#ATS.020	CE 1180	Ex II 1/- Dc St2 80°C	St2 non-zone
LABEL#ATS.021	CE 1180	Ex II 1/3 Dc St2 80°C	St2 Zone 22
LABEL#ATS.022	CE 1180	Ex II 1/2 Dc St2 80°C	St2 Zone 21

*See technical data sheet for engineering and installation purposes.

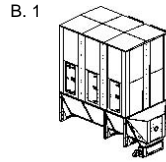
Positioning of fans and doors

St1 dust

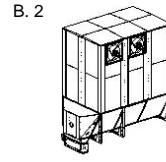
NOTE:
1 - Left side view
2 - Right side view



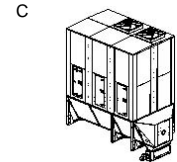
Ex. doors and regeneration fans at same side (not L type).



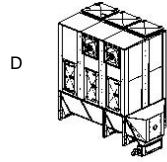
Ex. doors and regeneration fans opposite each other.



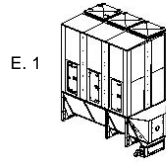
Ex. doors and regeneration fans opposite each other.



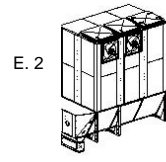
Ex. doors left or right. Regeneration fans in top.



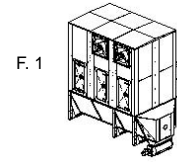
Locked doors (only for inspection). Regeneration fans at same side. Top venting (not L type).



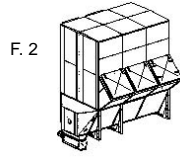
Locked doors (only for inspection). Regeneration fans opposite the doors. Top venting.



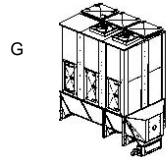
Locked doors (only for inspection). Regeneration fans opposite the doors. Top venting.



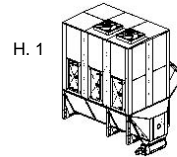
Locked doors (only for inspection). Regeneration fans at same side. Venting type UP (not L type).



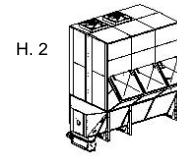
Locked doors (only for inspection). Regeneration fans at same side. Venting type UP (not L type).



Locked doors left or right (only for inspection). Regeneration fans on top. Top venting.

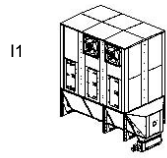


Locked doors (only for inspection). Venting type UP opposite the doors. Regeneration fans on top.

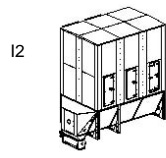


Locked doors (only for inspection). Venting type UP opposite the doors. Regeneration fans on top.

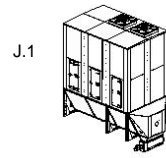
St2 dust



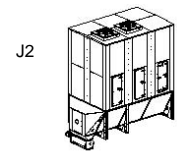
Ex. doors at both sides. Regeneration fans left or right (not L type).



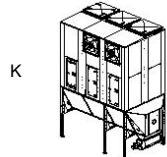
Ex. doors at both sides. Regeneration fans left or right (not L type).



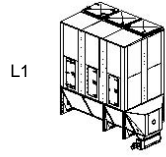
Ex. doors at both sides. Regeneration fans on top.



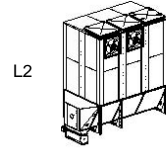
Ex. doors at both sides. Regeneration fans on top.



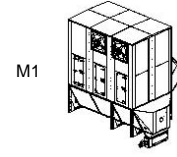
Ex. doors and regeneration fans at same side. Top venting (not L type).



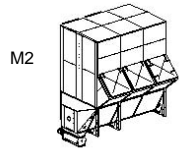
Ex. doors and regeneration fans opposite each other. Top venting.



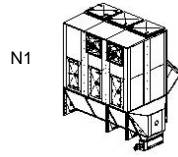
Ex. doors and regeneration fans opposite each other. Top venting.



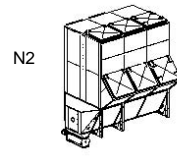
Ex. doors and regeneration fans at same side. Venting type UP. (not L type).



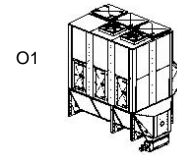
Ex. doors and regeneration fans at same side. Venting type UP (not L type).



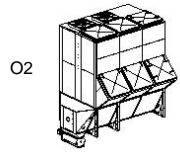
Doors locked (only for inspection). Regeneration fans at same side. Venting type UP and top venting (not L type).



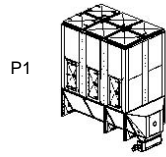
Doors locked (only for inspection). Regeneration fans at same side. Venting type UP and top venting (not L type).



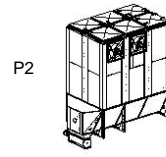
Doors locked (only for inspection). Regeneration fans on top. Venting type UP and top venting.



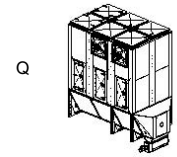
Doors locked (only for inspection). Regeneration fans on top. Venting type UP and top venting.



Doors locked (only for inspection). Regeneration fans opposite the locked doors. Top venting.



Doors locked (only for inspection). Regeneration fans opposite the locked doors. Top venting.



Doors locked (only for inspection). Regeneration fans at same side. Top venting (not L type).

Superbag - The heart of the system

A filter is only as good as the filter bags it uses. This is the component that provides the filtering while allowing clean air to pass through with the least possible resistance and, therefore, the lowest possible consumption of energy – even after several thousand hours of operation.



Efficiency and low energy consumption

Superbag is Nederman's own polyester filter bag. A patented weaving technique in tubular format gives the filter bag a surface which can cope with varying dust loads and with virtually any type of dust. Better filtering efficiency is achieved with this unique filter media which provides low pressure drop, and low energy consumption.

Strength and durability

The special shape of the SUPERBAG helps to ensure that the high efficiency and effectiveness of the NFKZ3000 filter system is maintained even after long periods of operation. The durability is the result of the patented construction, strong polyester fiber and seamless body. These features also make cleaning of the filter bag very easy.



Antistatic

SUPERBAG's interwoven carbon fibre wire provides higher anti-static properties – both on the surface and inside – than traditional filter bags. This reduces the risk of fire and explosion as fine particles are removed.

Soluzioni KOMSA per le vostre necessità di aspirazione

Vi mostriamo qui di seguito alcuni esempi di sistemi di aspirazione che fanno parte della nostra ampia gamma di prodotti.

Per maggiori informazioni potrete visitare il nostro sito internet: www.komsa.it

Bracci di aspirazione



Sistemi di aspirazione per gas di scarico veicoli



Elettroventilatori



Filtri



Filtri per impianti centralizzati



Filtri carrellati



Aspiratori industriali ad alta pressione



Arrotolatori per tubi e cavi



KOMSA

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