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Nederman



MJB
Bag Filter

The MJB (400-19,000 CFM)

Suitable for collection of most fine dusts including metal grinding, welding fumes and most powders



Applications:

Metal • Cement • Powder Bulk • Welding • Plastic • Petro-Chemical • Pharmaceutical • Food

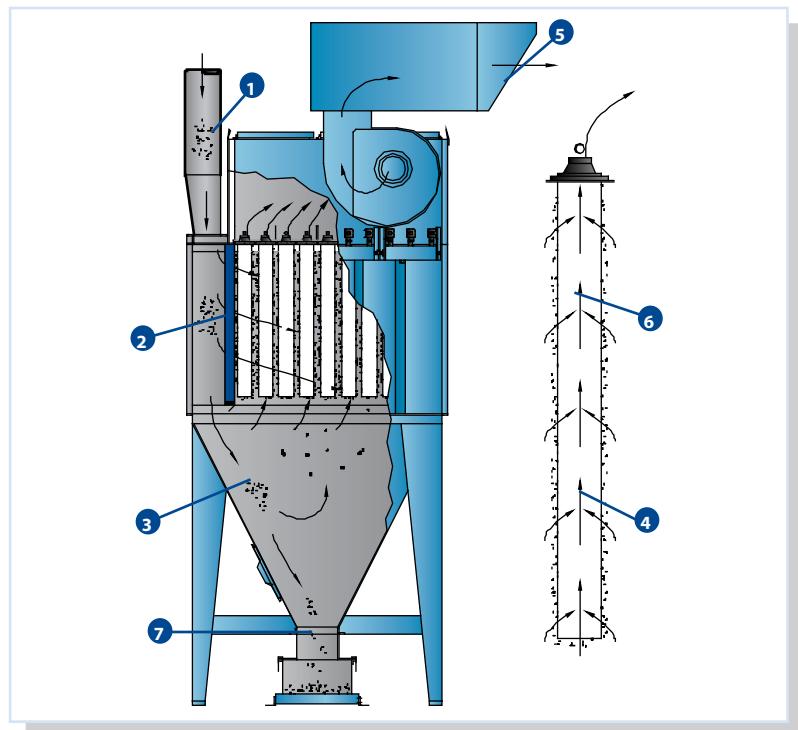
Features

<ul style="list-style-type: none">• Robust welded steel construction• Weatherproof for exposed locations• Two bag lengths available• Built-in pre-separation down flow / cross flow air distribution• Typical airflow volumes up to 19,000 cfm per single filter unit. Larger units available to special order	<ul style="list-style-type: none">• Bag replacement from clean air side• Multiple fans may be fitted to larger units• Available with or without hopper• Hopper discharge options include bins, rotary valve, flap valves, screw conveyors• Higher temperature options
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How It Works

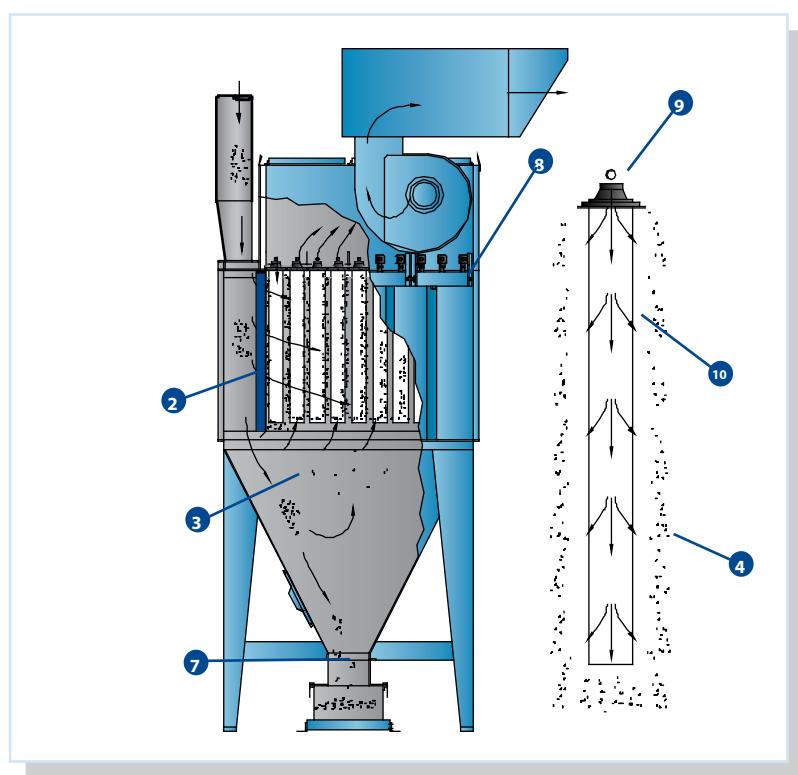
...during normal operation

1. During normal operation, the dust laden air from the plant travels down the supply duct **1**
2. A vertical slotted baffle **2** separates the inlet section that slows the airstream and directs dust downward into the hopper, **3** protecting the bags from direct abrasion but allowing air to pass horizontally between the bags.
3. The lighter dust collects on the outside of the tubular bag **4** as clean air passes inside of the cage to the clean air chamber **6**. The clean air then travels through the air handling fan **5** where it can be returned to the plant or exhausted outdoors
4. The heavier dust settles in the hopper section **3** where it can be discharged into a metal bin **7** or through a rotary air lock



...while cleaning

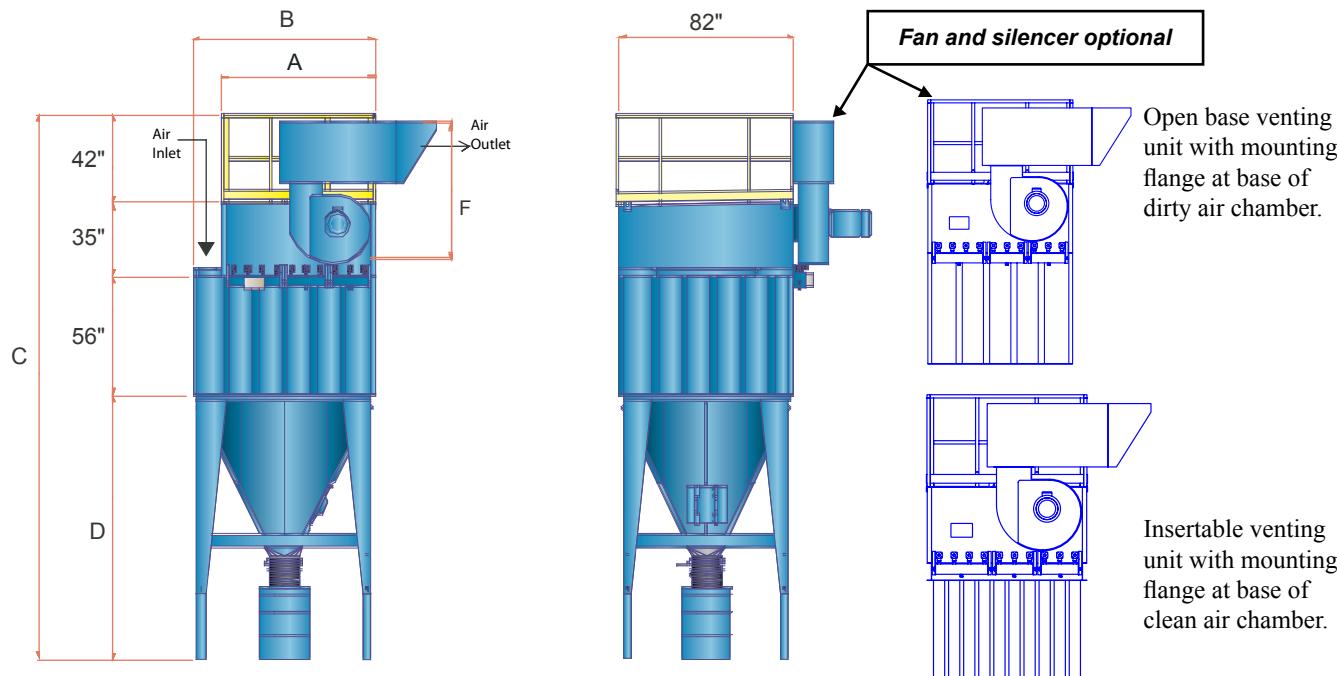
1. The MJB can utilize a Delta-P gauge to control the compressed air cleaning. In essence, the filter cleans itself when it needs to!
2. A compressed air line must be connected to one end of the compressed air manifold **8**
3. A solenoid valve opens to allow compressed air from the manifold **8** into the jet tubes **9**. The jet tubes are aligned above each row of filter bags
4. The downward blast **10** blows the dust off the tubular filter bag (from the inside out) **4** where it settles into the hopper section **3** to be collected in the metal bin **7** or discharged through a rotary air lock



NOTE: Please consult with your Dantherm Filtration representative for compressed air requirements

Planning-in Data

MJB-M Medium length bag



Add fan plus silencer weight for
For dimension F.

Fan size HP	Fan + Silencer Weight lbs	Dimension F
Up to 4.0	150	4' 7"
5.5 to 10.5	240	5' 7"
10-L to 25	415	6' 1"

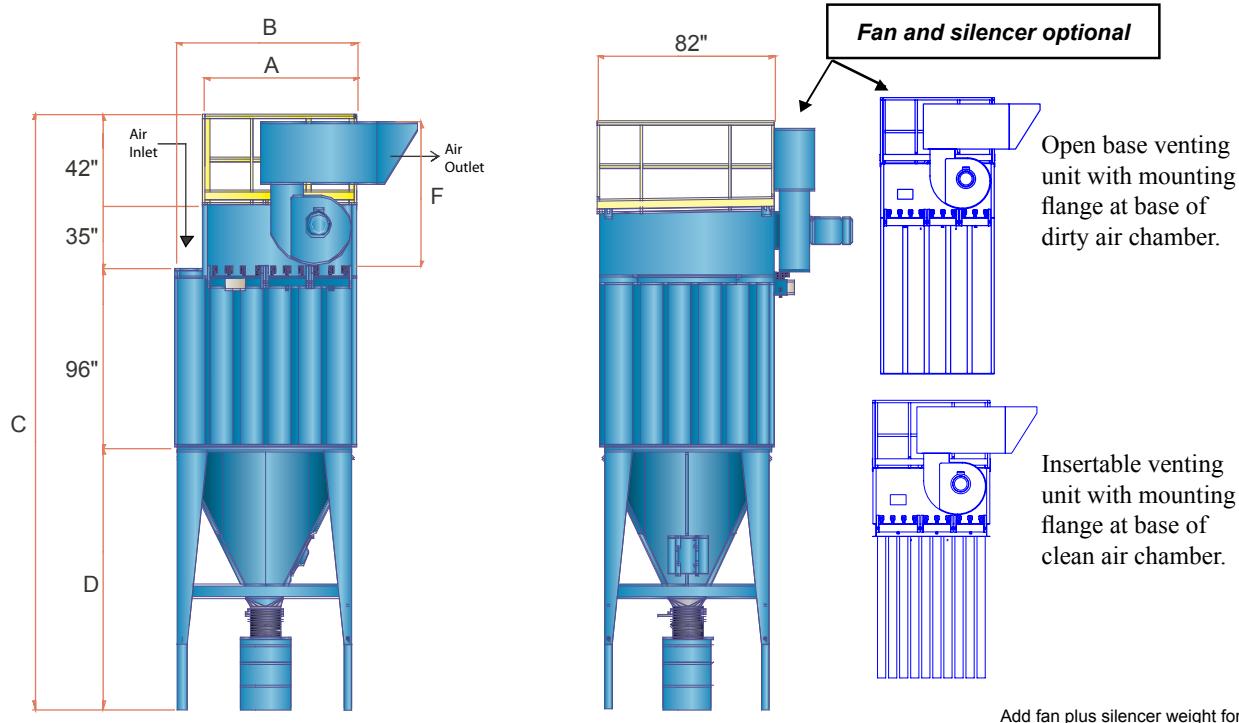
MJB "M"	TOTAL BAGS	TOTAL CLOTH AREA SQ FT.	MAX AIR VOLUME (CFM) 8:1 AIR- CLOTH	WIDTH OF CLEAN AIR CHAMBER	WIDTH OF DIRTY AIR CHAMBER AND HOPPER	FILTER HEIGHT								FILTER WEIGHT	HOPPER OUTLETS
						A	B	C ₁	D ₁	C ₂	D ₂	C ₃	D ₃	C ₄	D ₄
22/M/4-11	44	262	2096	2' - 7"	3' - 9"	18' - 6"	7' - 5"	19' - 4"	8' - 3"	20' - 11"	9' - 10"	22' - 3"	11' - 2"	2866	1
28/M/5-11	55	327	2616	3' - 9"	4' - 11"	18' - 6"	7' - 5"	19' - 4"	8' - 3"	20' - 11"	9' - 10"	22' - 3"	11' - 2"	3329	1
33/M/6-11	66	393	3144	3' - 9"	4' - 11"	18' - 6"	7' - 5"	19' - 4"	8' - 3"	20' - 11"	9' - 10"	22' - 3"	11' - 2"	3397	1
39/M/7-11	77	458	3664	4' - 11"	6' - 1"	18' - 6"	7' - 5"	19' - 4"	8' - 3"	20' - 11"	9' - 10"	22' - 3"	11' - 2"	3856	1
44/M/8-11	88	524	4192	4' - 11"	6' - 1"	18' - 6"	7' - 5"	19' - 4"	8' - 3"	20' - 11"	9' - 10"	22' - 3"	11' - 2"	3924	1
50/M/9-11	99	589	4712	6' - 1"	7' - 3"	19' - 1"	8' - 0"	19' - 11"	8' - 10"	21' - 6"	10' - 5"	22' - 10"	11' - 9"	4405	1
55/M/10-11	110	655	5240	6' - 1"	7' - 3"	19' - 1"	8' - 0"	19' - 11"	8' - 10"	21' - 6"	10' - 5"	22' - 10"	11' - 9"	4473	1

All dimensions are rounded to the nearest inch - see engineering drawings for installation details.

Key: example MJB 22/M/4-11 has 22 sq m filter area; Medium Length filter bags; 4 cleaning valves each cleaning 11 bags.

Planning-in Data

MJB-XL extra long bag



Front and side view of standard MJB complete with typical fan and silencer, mounted on a bin hopper. Rotary valve, flap valve and other discharge options available.

FAN SIZE HP	FAN + SILENCER WEIGHT LBS	dimension F
Up to 4.0	150	4' 7"
5.5 to 10-S	240	5' 7"
10-L to 25	415	6' 1"

MJB "XL"	TOTAL BAGS	TOTAL CLOTH AREA SQ FT.	MAX AIR VOLUME (CFM) 8:1 AIR- CLOTH	WIDTH OF CLEAN AIR CHAMBER AND HOPPER	FILTER HEIGHT								FILTER WEIGHT	HOPPER OUTLETS	
					A	B	C ₁	D ₁	C ₂	D ₂	C ₃	D ₃	C ₄	D ₄	
42/XL/4-11	44	479	3832	2' - 7"	3' - 9"	21' - 10"	7' - 5"	22' - 8"	8' - 3"	24' - 3"	9' - 10"	25' - 7"	11' - 2"	3816	1
52/XL/5-11	55	599	4792	3' - 9"	4' - 11"	21' - 10"	7' - 5"	22' - 8"	8' - 3"	24' - 3"	9' - 10"	25' - 7"	11' - 2"	4363	1
63/XL/6-11	66	719	5752	3' - 9"	4' - 11"	21' - 10"	7' - 5"	22' - 8"	8' - 3"	24' - 3"	9' - 10"	25' - 7"	11' - 2"	4464	1
74/XL/7-11	77	839	6712	4' - 11"	6' - 1"	21' - 10"	7' - 5"	22' - 8"	8' - 3"	24' - 3"	9' - 10"	25' - 7"	11' - 2"	5009	1
84/XL/8-11	88	958	7664	4' - 11"	6' - 1"	21' - 10"	7' - 5"	22' - 8"	8' - 3"	24' - 3"	9' - 10"	25' - 7"	11' - 2"	5110	1
94/XL/9-11	99	1078	8624	6' - 1"	7' - 3"	22' - 5"	8' - 0"	23' - 3"	8' - 10"	24' - 10"	10' - 5"	26' - 2"	11' - 9"	5701	1
105/XL/10-11	110	1198	9584	6' - 1"	7' - 3"	22' - 5"	8' - 0"	23' - 3"	8' - 10"	24' - 10"	10' - 5"	26' - 2"	11' - 9"	5803	1
115/XL/11-11	121	1318	10544	7' - 3"	9' - 6"	21' - 10"	7' - 5"	22' - 8"	8' - 3"	24' - 3"	9' - 10"	25' - 7"	11' - 2"	6865	2
125/XL/12-11	132	1437	11496	7' - 3"	9' - 6"	21' - 10"	7' - 5"	22' - 8"	8' - 3"	24' - 3"	9' - 10"	25' - 7"	11' - 2"	6967	2
145/XL/14-11	154	1677	13416	8' - 4"	10' - 8"	21' - 10"	7' - 5"	22' - 8"	8' - 3"	24' - 3"	9' - 10"	25' - 7"	11' - 2"	7613	2
165/XL/16-11	176	1917	15336	9' - 6"	11' - 10"	21' - 10"	7' - 5"	22' - 8"	8' - 3"	24' - 3"	9' - 10"	25' - 7"	11' - 2"	8267	2
190/XL/18-11	198	2156	17248	10' - 8"	13' - 0"	22' - 5"	8' - 0"	23' - 3"	8' - 10"	24' - 10"	10' - 5"	26' - 2"	11' - 9"	8975	2
210/XL/20-11V	220	2396	19168	11' - 10"	14' - 1"	22' - 5"	8' - 0"	23' - 3"	8' - 10"	24' - 10"	10' - 5"	26' - 2"	11' - 9"	9676	2

All dimensions are rounded to the nearest inch - see engineering drawings for installation details.

MJB Specification

Construction

Welded painted steel, clean air chamber 14 gauge thick steel; dirty air chamber 14 gauge or 12 gauge; hopper typically 12 gauge thick.

Strength

Maximum negative and positive operating pressures:

Standard: minus 32" wg to plus 8" wg

Optional: minus 60" wg to plus 20" wg

Optional version has 12 gauge steel dirty air chamber plus extra internal stiffening in clean air chamber; to special order.

For explosion relief area calculation St1, St2, St3:

Reduced explosion pressure $P_{red} = 0.2$ bar.

Operating temperature

Standard unit: - 15° to + 175°F

Optional High Temp. Unit: - 15° to + 480°F

Features: Goyen diaphragm and seals
Silicone panel sealant
High temp. Paint
Suitable filter bags

Compressed air requirement

Normal operating pressure for cleaning air: - 90 psi (dry and oil free)

Typical compressed air consumption for 2 minute continuous cleaning cycle (for units with up to 12 valves); or 10 second interval between pulses (for units with more than 12 valves). Based upon 2.6 ft³ at NTP per pulse.

NO. OF VALVES	3	4	5	6	7	8	9	10	11	12	>12
CFM AT NTP	4.7	6.4	7.9	9.6	11.2	12.7	14.3	15.6	17.4	19.1	19.1

Note: - use of "clean-on-demand" or increased cleaning cycle time will reduce typical compressed air consumption.

Electrical requirement

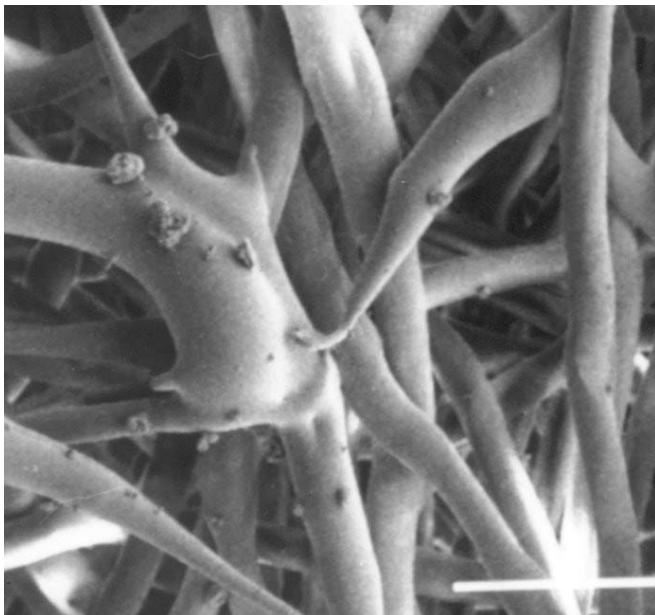
Controller: - 240/220/110Vac input (24 Vdc to special order only)

Fan: - 230/ 460V 3ph 60Hz (USA) (other voltages available by request)

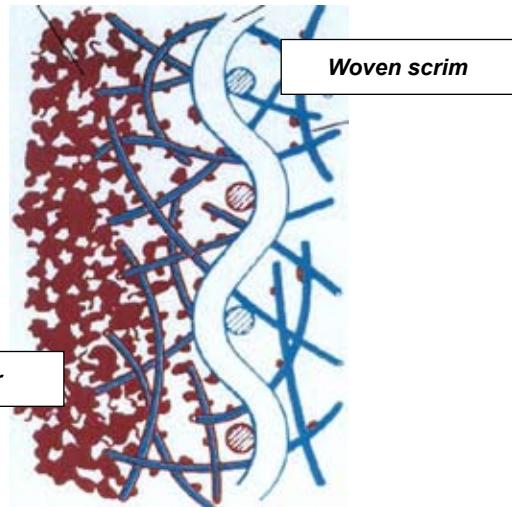
MJB bag filter materials

MJB reverse jet tubular bag filters typically utilize robust high efficiency non-woven needle felt materials incorporating a woven scrim for stability, with various finishes to suit the application and material to be filtered or collected.

The material may have a glazed dust collection surface. This improves the dust release properties for use with “difficult” dust materials. This is shown here as seen, and magnified. The basic material is polyester needle felt with a singed dust collection surface. However, many other base materials are available to suit particular applications.



Dust layer



Woven scrim

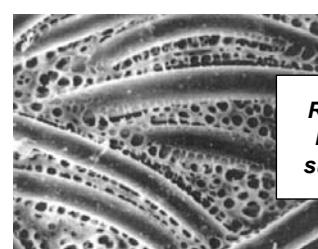


Typical cross section of a used needlefelt with scrim

There are materials to resist attack from acidic and alkaline atmospheres; with enhanced abrasion resistance; for higher temperatures; with anti-static properties; with flame retardant treatments and with other special properties.

Needle felt can be made from many kinds of fiber: for example

- Polypropylene (PP)**
- Polyamide (NOMEX)**
- Polyphenyl sulphide (PPS) (Ryton)**
- Polyimide (P84)**
- Homopolymer-acrylic (PAN) (Dralon)**
- PTFE (Gore-Tex) (Ravlex)**



Ravlex PTFE surface

Dantherm Filtration applications engineers will carefully assess your requirements to ensure optimal selection of equipment and filter material, based upon 30+ years' experience of successful installations worldwide.

Built in Fans

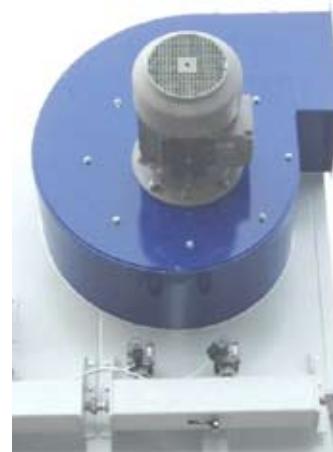
MJB Fan performance and selection

MJB units may be fitted with space saving integral high efficiency radial fans. Single fans can deliver up to 8,250 cfm but some larger units may be fitted with two fans. A floor mounted version of the same fan range is also available as an option.

Fan Performance

To select a fan for use with an MJB filter unit, first determine the airflow volume, then the static pressure required at that airflow volume as follows:

- Determine the static pressure required for the application (hoods, ducts, cyclone if used).
- Add 1.2" wg for the filter inlet resistance.
- Add 4" wg for bag resistance. For some "difficult" dust applications, add up to approx 8" wg.
- Add 1" wg for a silencer, plus any outlet duct resistance.
- The sum of 1+2+3+4 above is the static pressure required from the fan.



Fans for larger installations

Larger installations may be served by separately mounted **Combifab** fans when appropriate. **Combifab** is a range of high efficiency low noise fans with three impeller types to suit clean air, dusty air or for waste transport duties.

For clean air extraction from an MJB filter unit, the **Combifab** Type R, with backward curved blades is the most suitable.



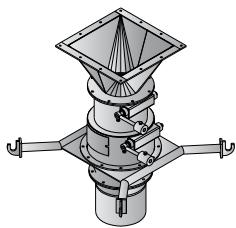
Combifab fans may be directly or belt driven, with drive arrangements to suit the site and impeller speed.

- Airflow volumes up to 41,000 cfm.
- High efficiency up to 87%.

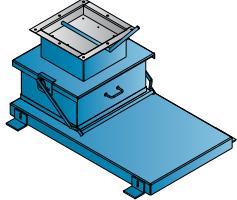
A floor mounted **Combifab** fan will be a practical, cost effective solution if more than one integral fan would otherwise be required to meet the airflow volume demand.

Please refer to the **Combifab** brochures for further details as required.

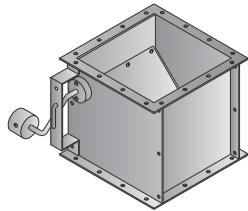
Options



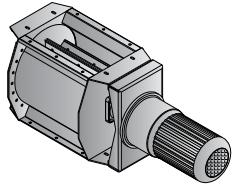
Double flap valve
discharge for big bag



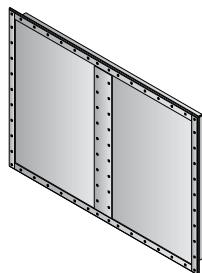
20 Gallon Bin



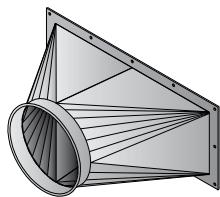
NFSU-3 counter balance
dump valve



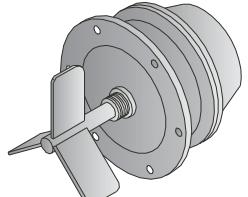
Rotary Airlock
NRS-4 fabricated



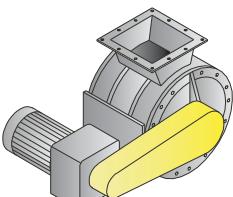
Explosion relief
panels



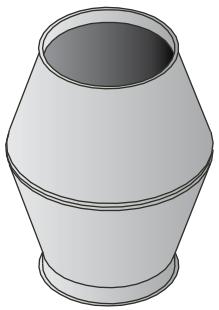
Inlet transitions
flanged to round



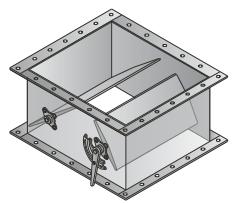
Bindicator



10" cast rotary airlock.
Flex tip w. 1 hp - 230/460V



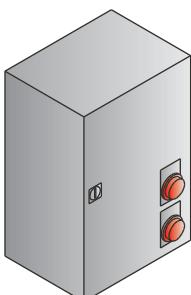
Jet Cap



Fan discharge damper
opposed blade

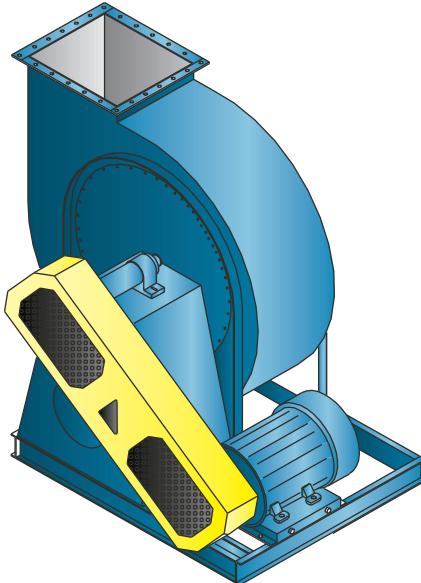


In line silencer

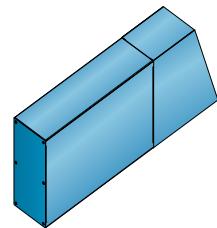


Fan motor starter
230/460V - 3 hp

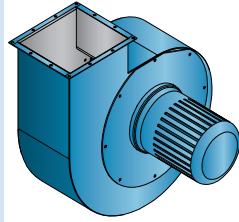
Options



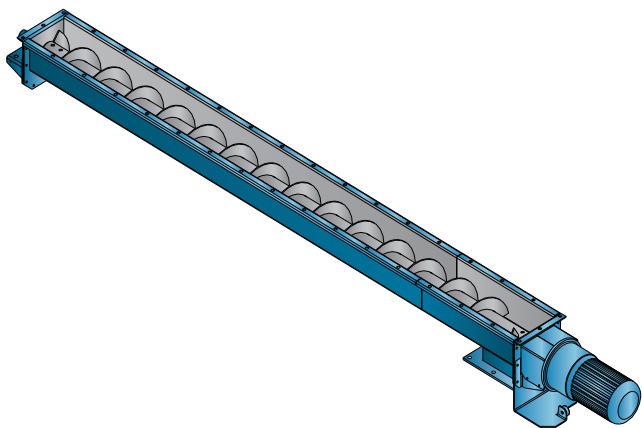
Ground mounted fans



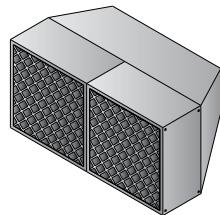
Air silencer with weather cowl for side mounted fans



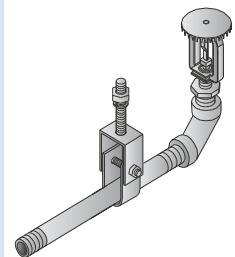
Detachable Fan
1.0 to 25 hp



9" diameter screw conveyor
w 1 hp 230/460V



HEPA filter kits



Filter sprinkler

Applications



Fume extraction
from hot-dip
galvanizing process



Conveying and
handling
hydrated lime
for steel
production



Cement outloading
and conveying for
production and
distribution



Cutting, trimming and
finishing gypsum products



Conveying and
Transferring chrome
ore at high
temperatures



Dockside handling,
conveying and
storage, of grain

Dust control applications include:

- Bag filling and emptying - animal feed, building products, additives...
- Blast cleaning - metals, ceramics...
- Conveying, mixing, blending - all powders, pellets and granulated material...
- Crushing, screening, sieving - from quarried minerals to pharmaceutical powders...
- Grinding, polishing, finishing: - metals and other materials...
- Foundry processes - melting and sand reclamation to fettling and finishing...
- Milling - food and feed raw materials, grains, pulses...
- Cutting and shaping - laser, plasma, mechanical sawing...
- Powder coating - surface finishing, decorative coatings...
- Hot metal processes - galvanizing, metal spraying.....and many more

Bringing superior conditions to the workplace and the environment

For more than 60 years Nederman has developed, manufactured and marketed products and system solutions to reduce the strain on the environment and improve working conditions in numerous industries.

Our products and systems have been ground-breaking in industries such as Machining, Metal Fabrication, Automotive, Composite Manufacturing, Food, Paper, Chemical, Pharmaceutical and many others.

Today companies all over the world are using equipment from Nederman.



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