

# Naaykens

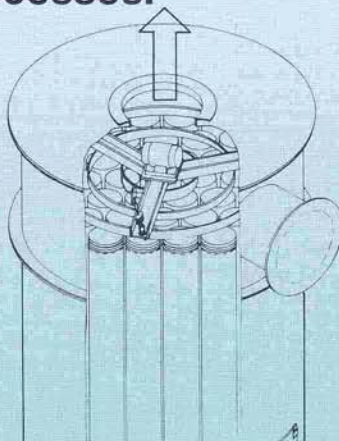


# Dust Extractors

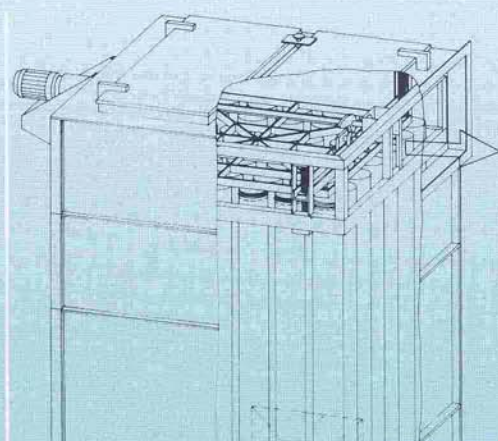
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A complete production range of filters and cyclones for extracting dust from industrial processes.

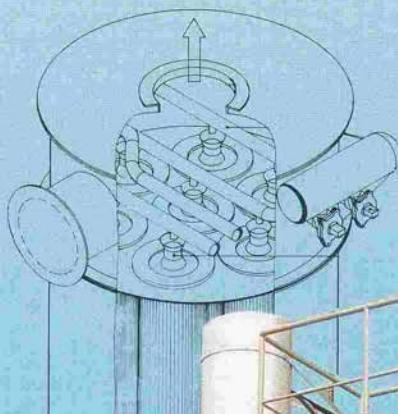


**Cobra SMT**

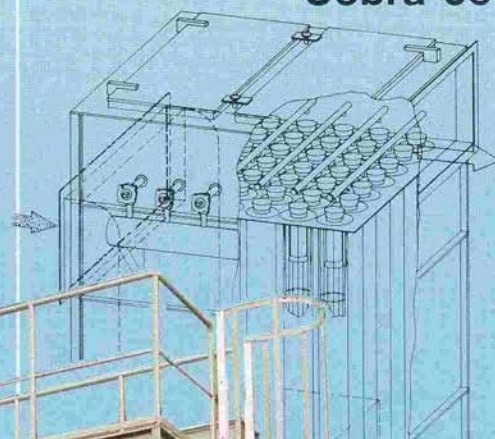


**Cobra SMK**

**Pat-Jet**



**Cobra-Jet**





## Mechanically cleaned filters

In these filters the cleaning of the filter bags takes place by means of a:

- vibrating system for types SMT and SMKT,
- knock-out device for type SMK.

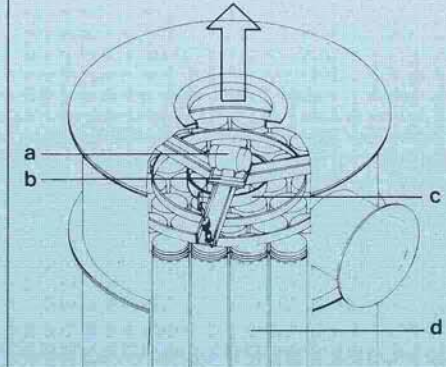
The cleaning is automatically controlled from the switch box after switching off and allowing the fan to run down.

The cleaning takes place intermittently and is suitable for processes of maximum 4 hours.

## Type Cobra SMT

Due to its effective, high frequency vibrating system this filter is outstandingly suited for fine-grained metallic or mineral dust.

- Vibrating system with:
- a. vibrating motor
  - b. suspension with dampers
  - c. vibrating frame
  - d. filter bags of polyester needle felt



SMT 15 with sound absorber at outlet

Type SMT 15-50:  
Filter housing 1270 mm Ø with 37 bags.



Transportable filter SMT 40, fan B 18¼,  
7,500 m³/h at 330 mm WG. Motor 11 kW.  
Frame 1630 square, height 4300 mm.  
Special mobile version with 4 wheels and mounting brackets.



SMT 110 with suction labyrinth, for preservation treatment of trucks, Herten Western Germany.

Type 70-110:  
Filter housing 1840 mm Ø with 85 bags.

## Technical specification Cobra-SMT

type	fan type	normal cap. m³/h	stat. press. mm WG	motor kW	length of bags mm
SMT- 15	B 13½	2.700	185	3	950
SMT- 20	B 13½	3.600	180	3	1200
SMT- 25	B 15	4.500	230	5,5	1450
SMT- 30	B 15	5.400	210	5,5	1700
SMT- 35	B 15	6.300	200	5,5	1950
SMT- 40	B 16½	7.200	240	7,5	2200
SMT- 45	B 16½	8.100	200	7,5	2450
SMT- 50	B 16½	9.000	225	11	2700
SMT- 70	B 18¼	12.600	245	15	1710
SMT- 90	B 30	16.200	200	15	2210
SMT-110	B 30	19.800	230	18,5	2710

# cleaned filters



## Type Cobra SMKT

The vibrating system and application are identical to the SMT filter.

*Filter Cobra SMKT-4-150:  
Cap. 27,000 m<sup>3</sup>/h*

*Placed on supporting construction for dust removal by container. Project Kaldenkirchen, Western Germany*

The filter types SMK and SMKT are built into the same rectangular filter housing with 1, 2 or 3 compartments.

## Technical Specifications Cobra SMKT

type	fan type	normal cap. m <sup>3</sup> /h	motor kW	Number of bags x length	Number of dust removal hoppers
SMKT-4-50	B 16½	9.000	11	49 x 2360	1
SMKT-4-63	B 18¼	11.400	15	49 x 2870	1
SMKT-4-75	B 18¼	13.500	15	49 x 3380	1
SMKT-4-100	B 30	18.000	15	98 x 2360	2
SMKT-4-125	B 30	22.500	18,5	98 x 2870	2
SMKT-4-150	B 30	27.000	22	98 x 3380	2
SMKT-4-170	B 33	30.000	30	98 x 3860	2
SMKT-4-190	B 33	34.200	30	147 x 2870	3
SMKT-4-225	B 33	40.500	37	147 x 3380	3

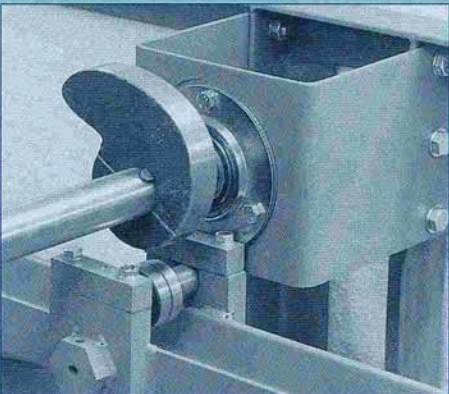


*Dust removal by 2 conical flap valves with plastic bag, project Nieuw Amsterdam, Holland.*

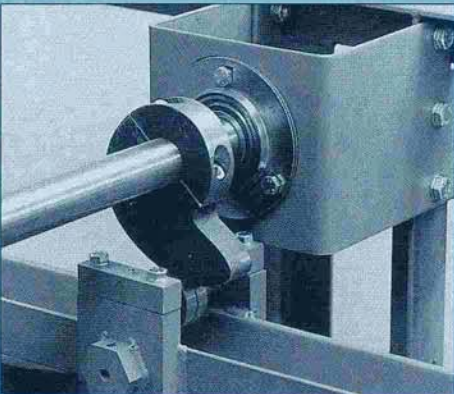
## Type Cobra SMK

The SMK type with a knock-out mechanism must be used for extraction of fibrous, voluminous dust as is found in the processing of timber, leather and textiles. The dust removal cannot then be carried out with a conical flap valve, instead the filter is put under positive pressure and a slide or air lock is used as the method of removal.

*Knocking frame in rest position; eccentric upwards*



*During knock-out the eccentric presses the frame downwards*



*Cobra SMK 75 for extracting leather dust from a planing and scouring machine. Fan MH17 10,000 m<sup>3</sup>/h. Enlarged dust collecting hopper with slide.*



## Compressed air - cleaned filters

During the process these filters are continuously cleaned by pulsating compressed air. Thus the filter is cleaned in stages, a small part at a time. The compressed air flows through a magnetic valve, backwashing the filter elements. The magnetic valves are electronically controlled with setting possibilities for pressure, interval time and pulse time.

The production range of Naaykens includes 3 types.

	nominal cloth ratio
<b>Pat-Jet</b> cartridges as filter elements	v=1m/min
<b>Cobra-Jet</b> filter bags	v=3m/min
<b>E-Jet</b> tensioned cassettes as elements	v=2m/min

*A Pat-Jet 3/13 for separating metal dust on drilling machines*



## Type Pat-Jet

In current environmental conditions the cartridge filters are the most attractive in terms of price and performance levels.

Polyester fleece is folded over the cylindrical cartridges to form the filter medium. The cartridges have a fold separation of 7.5mm and a depth of 48 mm. The cartridges are always removed from the clean compartment upwards.



*A Pat-Jet 7/13 with built in, centrifugal preliminary separator for extraction fume from a flame cutting machine for aluminium.*



*Pat-Jet 16/13 with screw conveyor built in to 10 feet containers, fan B 18 1/4, 11,000 m³/h. Application: suction for outside shot blasting of bridges and chemical plants.*

## Technical Specification Pat-Jet

type	filter area m²	capacity m³/h at v=1m/min	static pressure mm WG	fan type	motor kW	No. of cartridges x length	No. of dia-phragm valves	No. of dust removal hoppers
3/13	39	2.300	170	B 13 1/2	2,2	3x1000	3	1
3/21	63	3.800	170	B 13 1/2	3	3x1600	3	1
7/13	91	5.500	210	B 15	5,5	7x1000	4	1
7/21	147	9.000	175	B 16 1/2	7,5	7x1600	4	1
14/13	182	11.000	190	B 16 1/2	11	14x1000	6	1
14/21	294	18.000	185	B 27	15	14x1600	6	1
20/21	420	25.000	190	B 30	18,5	20x1600	10	2
26/21	546	33.000	175	B 30	22	26x1600	13	2
34/21	714	43.000	190	B 33	37	34x1600	17	3
40/21	840	51.000	180	B 36 1/2	45	40x1600	20	3

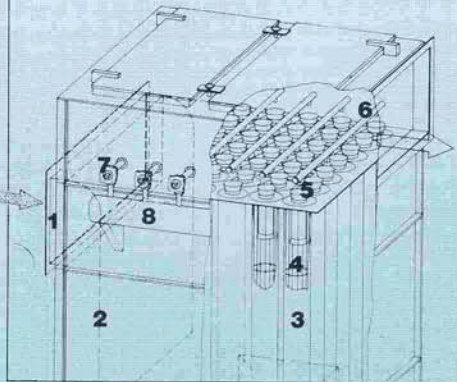
# - cleaned filters

- 1: inlet
- 2: pre-separation plate
- 3: filter bag
- 4: filter basket
- 5: injector
- 6: compressed air distribution line
- 7: magnetic valve
- 8: compressed air reservoir

## Type Cobra-Jet

The Cobra-Jet filter is a bag filter cleaned by compressed air. It is used for very corrosive types of dust where the filter medium rapidly wears out. A Cobra-Jet is more expensive than a Pat-Jet in terms of investment, only after approximately 3 x filter changes is a bag filter more attractive in terms of total costs.

*Cobra-Jet 150 for dust extraction during sand regeneration in a foundry cap. 27,000 m<sup>3</sup>/h, project Sande, W. Germany*



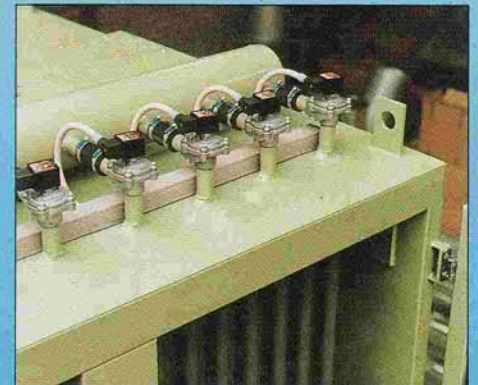
## Type E-Jet

In this filter the polyester needle felt is stretched across steel cassettes, which can be removed from the front. This type is used when the building dimensions are restricted.

*E-Jet 44 for separating tobacco dust.*



*Compressed air reservoir, magnetic valves on top of E-Jet with door open.*



## Technical Specification E-Jet

type = number m <sup>2</sup> cloth	number of cassettes 1200 x 1000	capacity m <sup>3</sup> /h at v=2m/min.	number of valves
20	8	2.400	4
34	14	4.100	7
44	18	5.300	9



## Cyclones

are mechanical dust extractors, in which the separating effect is based on the centrifugal force which is exerted on the particles of dust.

Important characteristics:

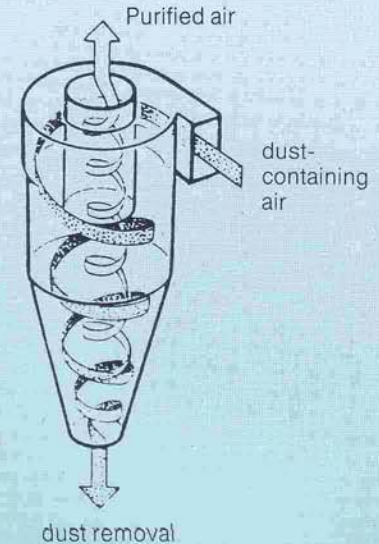
- simple construction and no moving parts, so that maintenance is minimal.
- suitable for extracting large quantities of dust without the possibility of clogging.

### Application

- in general for separating particles larger than 20  $\mu$ , e.g. in the metal, timber, textile, foodstuffs, ceramic and paper processing industries.
- as pre-separator upstream of a cloth filter.
- in recycling installations such as:
  - Glass recycling:** The pneumatic cleaning of glass fragments. On a vibrating sieve bits of labels, corks and aluminium and plastic rings are removed under high vacuum from the glass and separated in a cyclone.

**Wrecked car shredder installations:** The rubber, upholstery parts, etc. are extracted from the crushed steel products flow in a wind sifter. Next these parts are separated in a cyclone.

### Operating principle of a cyclone



Glasrecycling installation cyclone 2200 mm  $\varnothing$  with double chamber air lock, Fan type B 24 $\frac{1}{2}$ , cap. 22,800 m<sup>3</sup>/h, Leeseringen, W. Germany.



Cyclone erected in a shredder installation, removal by rotating air lock with a diameter of 1000mm. Fan B 33, capacity 46,000 m<sup>3</sup>/h. Total height of installation: 14 metres.

# separators

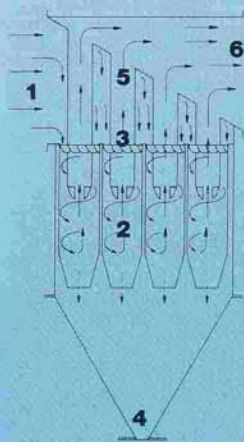


## Multicyclones

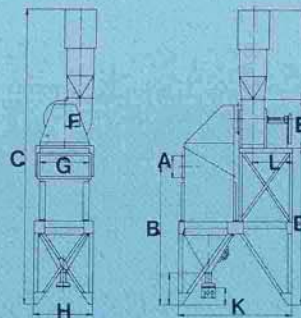
Multicyclones consist of a number of small cyclones accommodated in a steel plate casing. Due to the aerodynamically shaped inlet vanes, the small cyclone diameter and the high air pressure per cyclone, greater centrifugal forces are exerted on the particles of dust in the air than would be the case in a simple cyclone, so that the capture rate is higher. In general dust particles greater than 10 microns are separated.

### Multicyclone Characteristics:

- Compact design
- Robust steel plate casing, cyclones and inlet buckets of wearresistant cast iron.
- Constant operation. In contrast to a cloth filter no clogging occurs. The resistance of the installation and therefore its capture rate are constant.
- Reliable in use with minimum maintenance.
- Can be used at high temperatures.
- For separating particles which can cause wear, for instance in the metal and ceramic industries.
- In combustion installations, downstream of coal fired boilers, timber waste ovens.
- As pre-separator of a cloth filter.



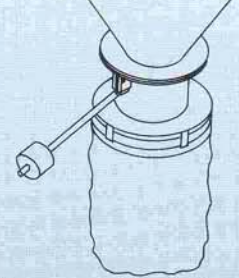
- 1 Suction chamber
- 2 Cyclones
- 3 Inlet vanes
- 4 Dust collecting hopper
- 5 Risers
- 6 Outlet chamber



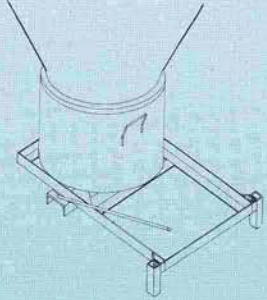
Type	A	B	C	D	E	F	G	H	K	L	vent. type B	cap. m <sup>3</sup> /h	motor kW
I-3	330	2780	7023	3367	648	178	300	550	1750	482	12 1/4	3.060	2,2
II-3	330	2780	7072	3304	762	218	565	815	1910	610	15	6.120	4,0
III-3	330	2780	7131	3215	908	265	830	1080	1970	634	18 1/4	9.180	7,5
IV-3	330	3010	7393	3400	985	290	1095	1365	2150	770	20	12.240	11,0
V-3	330	3160	7581	3490	1083	322	1360	1600	2200	794	22 1/4	15.300	11,0
VI-3	330	3360	7819	3630	1181	355	1625	1870	2260	824	24 1/2	18.360	11,0
VII-3	330	3570	8073	3778	1292	392	1890	2170	2430	986	27	21.420	15,0
VIII-3	330	3800	8295	4000	1292	397	2155	2800	2400	981	27	24.480	18,5
IX-3	330	4000	8603	4040	1563	478	2420	3000	2530	1022	33	27.540	15,0
X-3	330	4200	8803	4240	1563	478	2685	3000	2530	1022	33	30.600	18,5
II-4	480	3068	7465	3640	825	239	565	860	2260	631	16 1/2	8.160	5,5
III-4	480	3068	7529	3545	984	290	830	1130	2450	763	20	12.240	11,0
IV-4	480	3068	7567	3484	1083	322	1095	1390	2500	787	22 1/4	16.320	11,0
V-4	480	3218	7755	3574	1181	355	1360	1670	2550	807	24 1/2	20.400	15,0
VI-4	480	3328	7910	3617	1293	392	1625	1940	2740	969	27	24.480	18,5
VII-4	480	3628	8260	3835	1425	435	1890	2220	2800	991	30	28.560	18,5
VIII-4	480	3848	8538	3975	1563	478	2155	2480	2870	1022	33	32.640	18,5

## Dust extraction systems

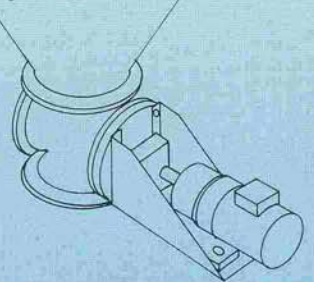
1. self-closing flap valve with plastic bag



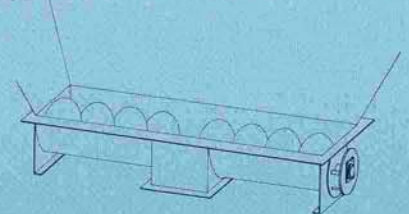
2. dust bin on stretching frame



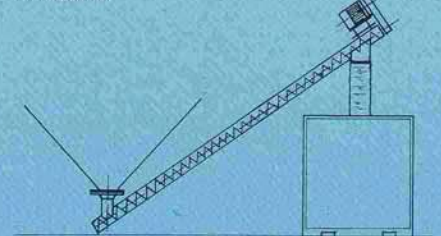
3. rotating air lock



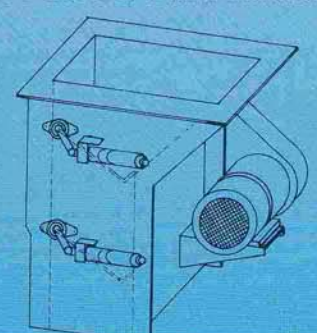
4. counter-rotating screw conveyor with air lock



5. intermittent screw conveyor in big bag or container



6. double chamber air lock for coarse dirt





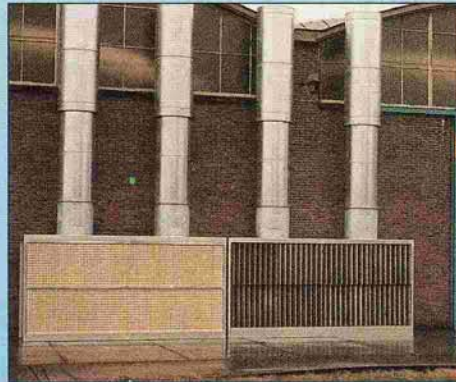
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**Versatility in industrial pneumatic  
applications.**

## Product range

- Axial and centrifugal fans for industrial applications
- Ventilation and extraction installations
- Bag houses
- Compressed air-cleaned cartridge filters
- Multicyclones
- Pneumatic conveying
- Paint spraying exhaust booths
- Grit blasting extractions
- Cleaning installations for recycling
- Plate fabrication
- Biobed filters
- Activated Carbon Installations



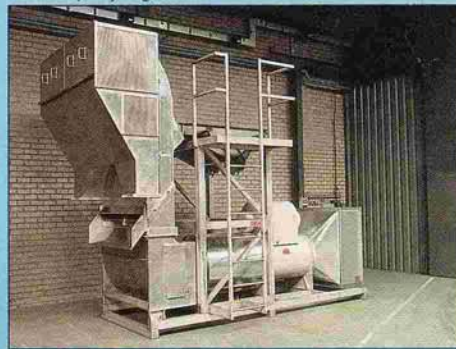
*Paint spraying booths*



*Suction unit with pre-separator*



*Airwasher for biobed filter*



*Bean cleaning installation*



*Vapour extraction installation*

