



Multiduty

Automatic Self-Cleaning Viscous Air Filter



MultiDuty Automatic Self-Cleaning Viscous Air Filter

The MultiDuty is an automatic self-cleaning viscous air filter using a rotating curtain of metal panels as the filtering media, requiring little maintenance.

APPLICATION

- Air filtration for areas with high dust concentrations such as Steel-, Chemical- and Cement plants.
- Pre filtration of air for multistage air filtration in ventilation systems with high capacities
- Intake filters for gasturbines, compressors and Diesel engines.

PRINCIPLE OF OPERATION

The filtering curtain is composed of overlapping panels, type DD, which cover each other in such a way that the air has to change four times direction in the inlet- and as well in the outlet curtain.

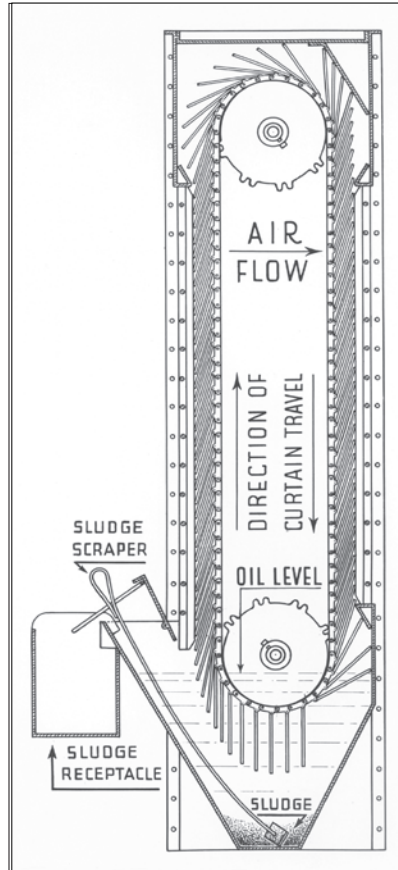
The panels are die-stamped from sheet metal with knurled louvres turned at an angle in the direction of the airflow. The filtering is obtained by a film of Viscosine on the panels that retains all dust particles that will touch them. The panels are mounted on both sides to an endless chain that will be moved a few centimeters, controlled by a timer at 15 minutes intervals, in order to make one complete turn in 24 hours.

The curtains at the inlet and outlet form two masses in equilibrium on the upper shaft, due to this fact, the required power of the electric motor is very low. The power consumption of the MultiDuty is therefore low.

The filtering surface will be renewed after the panels in the rear curtain have passed the outlet opening. When the panels enter the reservoir at the base of the filter, they separate and hang widely spaced for ease of cleaning as they pass through the Viscosine bath. The dust will be washed off and will deposit on the bottom of the reservoir.

CONSTRUCTION

The MultiDuty is constructed in steel plate for industrial application and consists of the following elements:



- A rigid metallic frame consisting of a top assembly a base reservoir and two side panels
- A filter curtain consisting of metal panels which are supported and moved on each side by a chain
- The base reservoir containing the Viscosine for impregnation of the panels
- An electric motor of 0,18 kW with reducer which rotates the top shaft through a ratchet wheel
- A controlbox IP55 containing the timer and the terminals

The MultiDuty is available in standard sections with widths of 914, 1219, 1524 and 1829 mm.

The height of all sections ranges from 1526 up to 5488 mm, with increments of 100 mm.

VISCOSINE

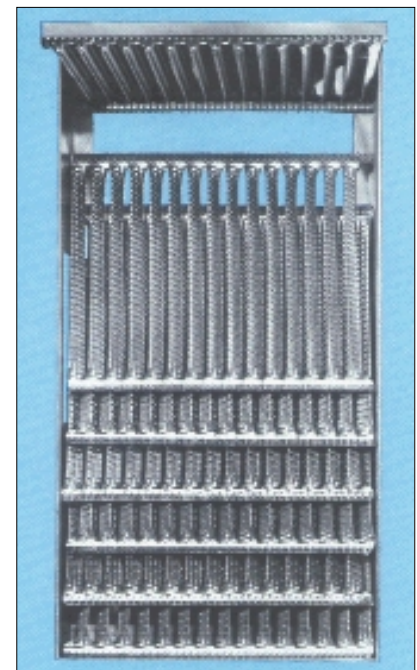
AAF's Viscosine has the following advantages:

- Capillary action of the highly viscous adhesives enables it to cling to the panels and thoroughly saturate each dust particle
- Accumulated dust will not break away and blow downstream
- Maintains its dust trapping characteristics over an extended time scale
- Non toxic and odourless

Some Viscosine will be lost each time the sludge is removed. It is recommended to keep the proper level. Average annual usage is approximately 10%.

Types of Viscosine:

- Viscosine BA for temperatures up to 35°C
- Viscosine MA for higher temperatures up to 55°C



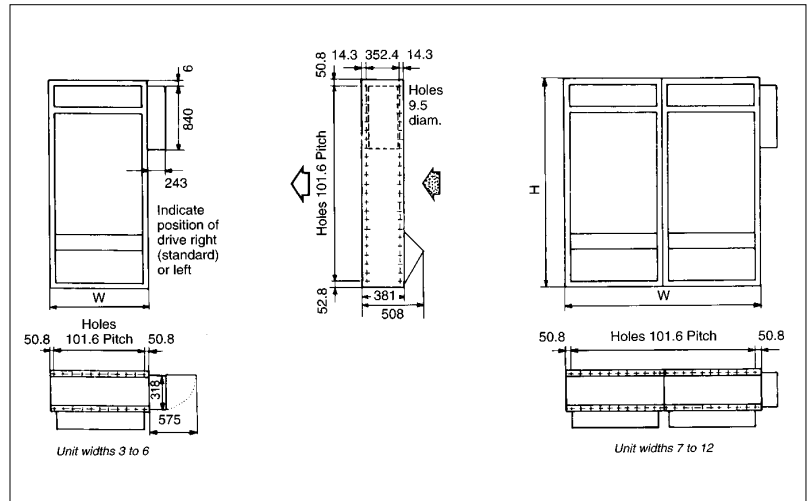
Overlapping panels, type DD



Standard Arrangements

OPTIONS

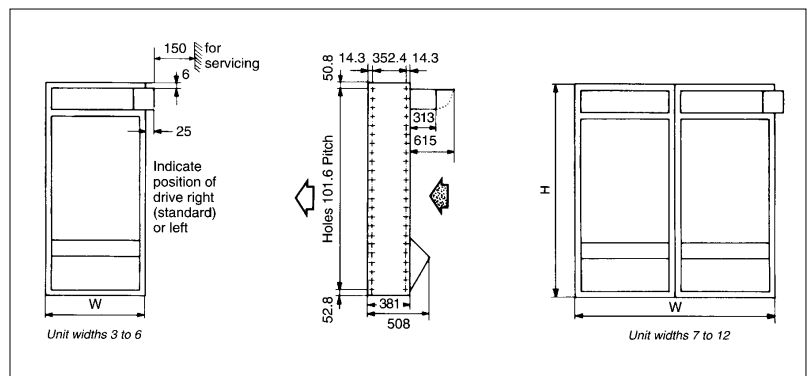
- Intake Protection
Weather Louvres with trash screen
Horizontal Louvres in galvanized steel
Vertical Louvres in PP
- Plenum Chamber
Plenum Chamber bolted to the outlet of the MultiDuty equipped with a perforated baffle plate for even air distribution over the entire filter face and a connection flange.
- Cold Weather Protection
Electric heater to be installed in the Viscosine reservoir, to be used when the air temperature in the filter is below 5°C



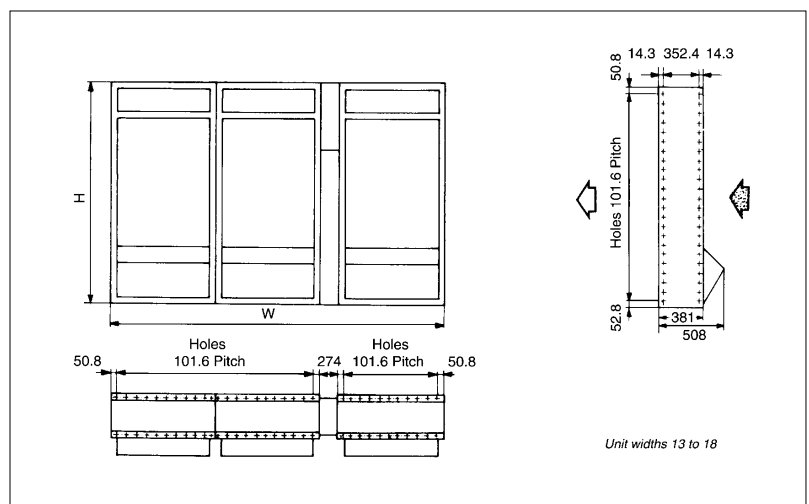
Single end drive for a MultiDuty with 1 or 2 sections

PERFORMANCE DATA

| | |
|-------------------------------------|----------|
| Dust Arrestance | |
| ASHRAE test | : 77% |
| Using Arizona Road Dust fine | : 82% |
| EN 779 Class | : G2/G3 |
| Average Operating Resistance | |
| At 2.5 m/s | : 200 Pa |
| At 2.0 m/s | : 130 Pa |



Single front drive for a MultiDuty with 1 or 2 sections



Intermediate drive for a MultiDuty with 3 or 4 sections



Standard & Approximate Transport Weights

Approximate Weights

Weights are given for each section No. (in kg). To calculate the total weight, add 75 kg for each drive unit.

| Height Designation | Section No. | | | |
|--------------------|-------------|-----|-----|-----|
| | 3 | 4 | 5 | 6 |
| 54 | 310 | 385 | 460 | 705 |
| 58 | 320 | 395 | 475 | 730 |
| 60 | 330 | 410 | 490 | 755 |
| 64 | 340 | 425 | 505 | 775 |
| 68 | 350 | 440 | 520 | 795 |
| 70 | 365 | 450 | 530 | 815 |
| 74 | 375 | 460 | 545 | 835 |
| 78 | 385 | 470 | 560 | 860 |
| 80 | 395 | 485 | 575 | 880 |
| 84 | 405 | 495 | 590 | 900 |
| 88 | 415 | 505 | 605 | 925 |
| 90 | 425 | 520 | 615 | 945 |
| 94 | 435 | 535 | 630 | 965 |

| Height Designation | Section No. | | | |
|--------------------|-------------|-----|-----|------|
| | 3 | 4 | 5 | 6 |
| 98 | 450 | 550 | 645 | 985 |
| 100 | 460 | 560 | 660 | 1000 |
| 104 | 470 | 575 | 675 | 1025 |
| 108 | 480 | 590 | 690 | 1050 |
| 110 | 490 | 600 | 700 | 1070 |
| 114 | 500 | 610 | 715 | 1090 |
| 118 | 510 | 620 | 730 | 1110 |
| 120 | 520 | 630 | 740 | 1130 |
| 124 | 530 | 645 | 755 | 1150 |
| 128 | 540 | 660 | 770 | 1175 |
| 130 | 550 | 670 | 785 | 1195 |
| 134 | 560 | 680 | 800 | 1215 |
| 138 | 575 | 695 | 815 | 1240 |

| Height Designation | Section No. | | | |
|--------------------|-------------|-----|-----|------|
| | 3 | 4 | 5 | 6 |
| 140 | 585 | 705 | 825 | 1260 |
| 144 | 590 | 715 | 840 | 1280 |
| 148 | 610 | 730 | 855 | 1300 |
| 150 | 615 | 740 | 865 | 1320 |
| 154 | 625 | 750 | 880 | 1340 |
| 158 | 640 | 765 | 895 | 1360 |
| 160 | 650 | 775 | 910 | 1380 |
| 164 | 660 | 790 | 925 | 1400 |
| 168 | 670 | 805 | 940 | 1420 |
| 170 | 680 | 815 | 950 | 1440 |
| 174 | 690 | 825 | 965 | 1460 |
| 178 | 705 | 840 | 980 | 1480 |
| 180 | 715 | 850 | 995 | 1500 |



AAF has a policy of continuous product research and improvement and reserves the right to change design and specifications without notice.