MULTIFLOW CHANNEL MF AND MFS

The Multiflow plenum is designed as a vacuum plenum (channel) with integrated conveying system for extraction and conveying of dust, for a medium and larger size indoor production area. The Multiflow channel is available in two different sizes: MF (width 1200 MM) and the smaller unit MFS (width 800 MM) with half capacity.

CONSTRUCTION

The Multiflow channel is a modular system. The modular system consists of three main sections. A drive module with gearmotor connected to a drive shaft with sprockets for driving the roller the roller chains mounted with scrapers. The drive module is designed with an opening for a rotary valve for material discharge. A turning station with adjustable sprockets is used for tensioning the chains. A standard intermediate module (M1) has a length of 3,360 mm. Branch pipes from machinery is connected to the intermediate modules. The chains with the mounted scrapers are balanced along the channel with carriers, mounted for every module section. All sections are flanged together. Depending on the channel length and air volume the channel is connected to the dust filter with one or more main pipes. The roller chains and sprockets are heavy duty industrial design. All panels in the plenum construction is in 2 mm Z 275 galvanized steel plate. The Multiflow can be made up to 130 m length.

FUNCTION

The Multiflow is operated under vacuum with ducts connected to a vacuum filter. Intelligent frequency control of the main fans can reduce energy by up to 50%, while maintaining minimum required conveying air speed in the main pipes as described in NFPA 664 and ATEX. The dust laden air enters the Multiflow, through the duct connection from the process machines. The Multiflow channel is a gravity separation and a conveying system. To ensure the pre-separation function the inside velocity is reduced well below the dust conveying speed. The material drops to the hopper of the plenum, and only the very fine dust escape to the dust collector. Roller chains with scrapers convey the dust and discharge it through the rotary valve mounted below the drive section. The rotary valve size will be decided depending on the material load.The discharge is often done to a pneumatic transport line, which transport the dust directly to a silo or container. The airborne fine dust is exhausted from the top of the Multiflow to the filter unit. The Multiflow is often mounted inside the production area as an overhead plenum, if the ceiling height is insufficient, the Multiflow can be mounted on the roof or hung from the side of the exterior wall.

DISCHARGE

MF, 1000 x 220 mm.
MFS, 500 x 220 mm.
Transition and rotary valve are optional supply.

INLETS AND OUTLETS

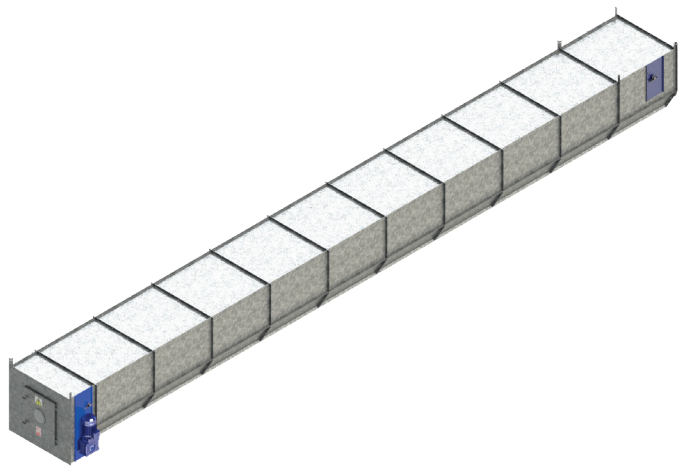
Outlets from the Multiflow channel are sized and placed to ensure a low speed in the channel.
Inlet connection can be done in any side panel.

ACCESS AND SERVICE

The plenum is equipped with access doors in both ends. Doors are provided with safety locks and switches. The smaller MFS channel include removable top plates for easy access.

SAFETY DEVICES

There is an option for an external mounted dry sprinkler system, which include drain valves in the plenum hopper.



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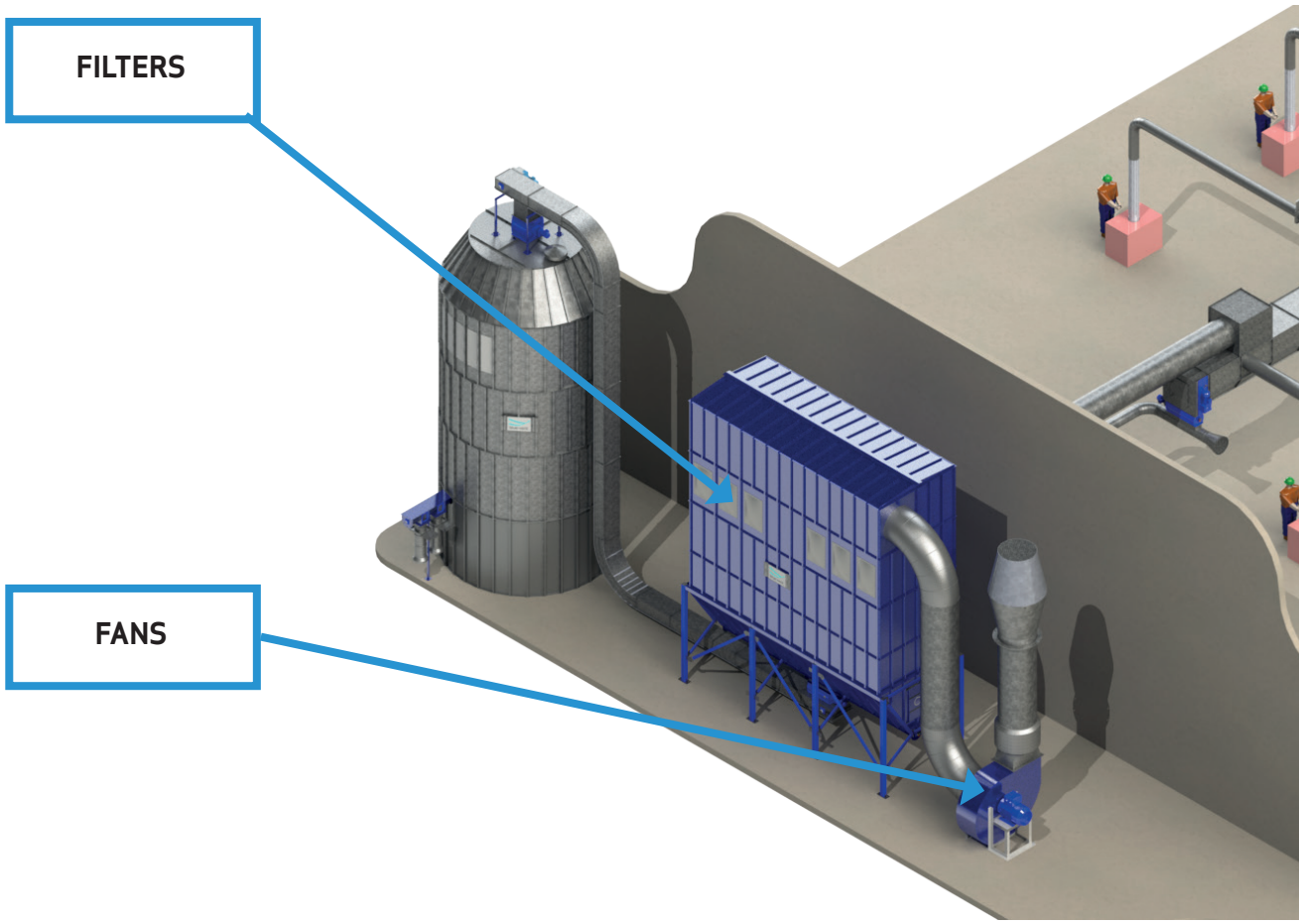


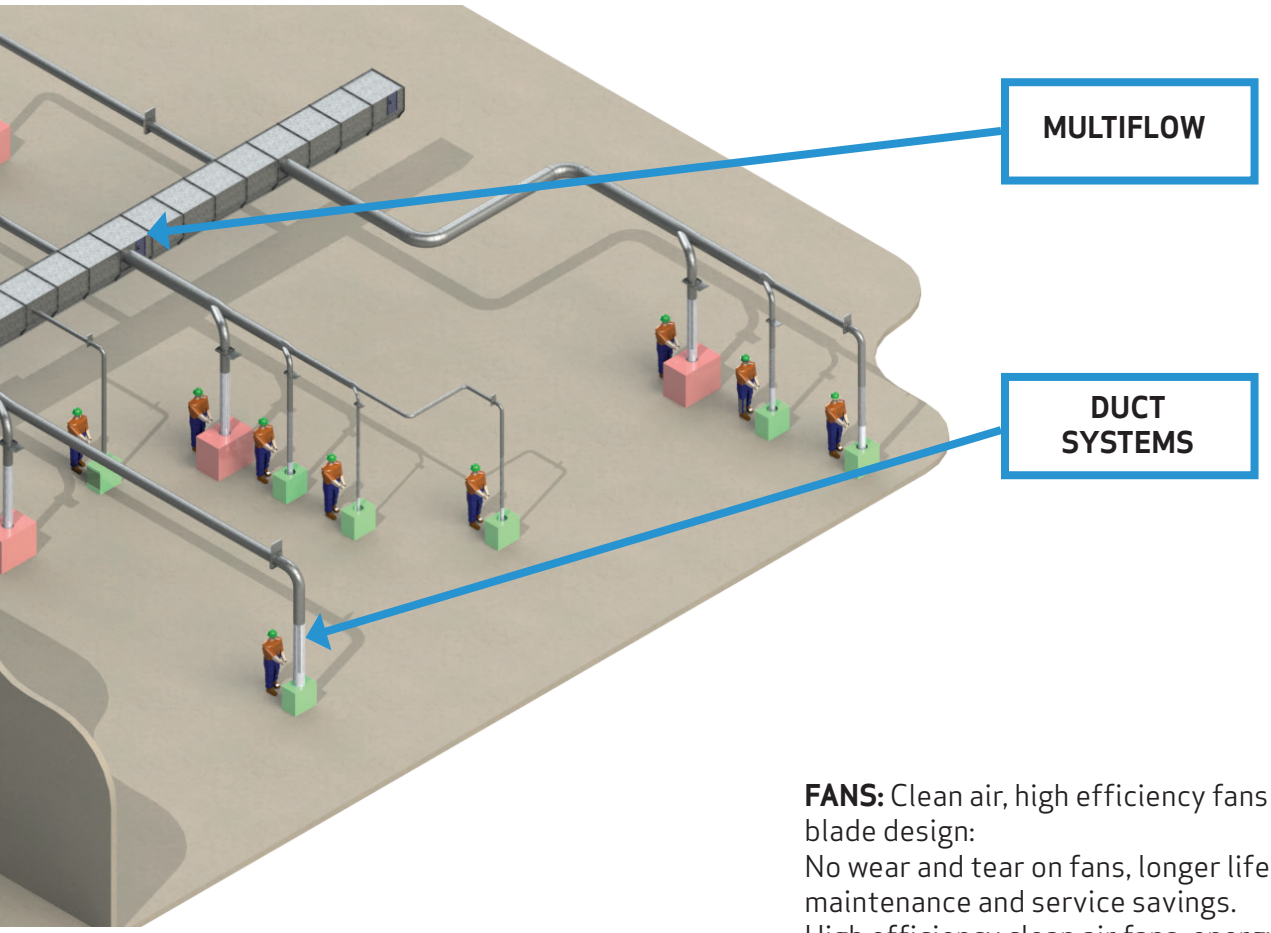
DEMAND-CONTROLLED ENERGY SAVINGS:
Traditional dust collector systems consume a lot of energy. Our filter technology is based on vacuum filter technology, MULTIJET A series with low pressure cleaning, where clean air fans with efficiencies of more than 80 % are used.

HOW DO WE CONTROL THE FANS?
By using variable speed drives on all fans, the air flow can be reduced or increased on demand from the process machines on the production floor.

HOW DO WE CONTROL THE SYSTEM?
The intelligent EController monitors the pressure in the Multiflow channel and automatically modulates the speed of the main fans. When the machines or machines groups are not in use they are isolated by a valve and the control system automatically reduces the air flow in the system by reducing the fan speed. By using high efficiency fans and controlling the fan speed according to demand an electricity saving of up to 50 % compared with traditional filter system can be achieved.

MULTIFLOW CHANNEL:
The combination of our vacuum filtration technology, where high efficiency fans are used, with the Multiflow channel, result in a reduction of energy consumption by up to 50 % compared with a traditional filter system.
Besides optimized installation flexibility and reducing energy consumption the Multiflow channel function as a pre-separation, where up to 80 % of the dust from the exhausted air is separated in the channel. Only the very fine dust escape to the dust collector, which reduces the wear and tear on the filter system and increase the life span of filter bags. Roller chains with scrapers convey dust to channel outlet from where it is conveyed directly to the silo system.

The Multiflow channel are made I lengths up to 130 meters. Channels can be extended in the future and several filters can be connected to the same extended channel, thus increase the exhaust capacity without any modification to existing equipment.
The Multiflow system represent a high degree of flexibility, when a redesign of the factory lay out is necessary.



DUCTING PROGRAM

We fabricate and supply a complete modular duct system. Ducts are assembled by assembly rings, with or without gaskets or by flanges. Our duct system is made from high grade galvanized steel with high corrosion resistance. The tight duct system is easy to install and can be reused, if machine layout is changed. The modular duct ensures a high flexibility in combination with the Multiflow channel.

The combination of our vacuum filtration technology, where high efficiency clean air fans are used, with the Multiflow channel gives the following advantages:

FILTER: Vacuum filters (A-series):
Reduced wear and tear on the filter, longer life span on filter bags, maintenance and service savings.
Low material load on the filter (80 % lower compared to a traditional system):
Low pressure loss over filter bags which reduces electricity and compressed air consumption.
Reduced emission from filter, filtration efficiency >99.99 % at particles size 2.5 micron.

FANS: Clean air, high efficiency fans with aerofoil blade design:
No wear and tear on fans, longer life span on fans, maintenance and service savings.
High efficiency clean air fans, energy savings. Demand controlled fans (variable speed drives), energy savings.

MULTIFLOW: Multiflow channels, (MF and MFS series) :
Low pressure loss in Multiflow channel, energy savings. Possible extension of system, without changing existing system, investment savings. High flexibility, when changing factory layout, investment savings. Efficient conveying system, energy savings. Constant electronic monitoring of Multiflow conveyor, no down time, maintenance and service savings. Easy inspection, access and service, maintenance and service savings.

DUCT SYSTEMS: Modular duct work (standard galvanized series):
Standard ducting program ø 80- ø1250 MM. Easy to install, installation time savings.
High quality pressed fittings, low pressure loss, energy savings.
Quick lock connections, installation time savings.
Quick lock with gaskets, no leaks in the system, energy savings.
The ducting can be reused if machine layout is changed, investment savings.
High flexibility, when changing factory layout, investment savings.

OPERATING RANGE

Vacuum: 3,000 Pa.
Capacity air flow: MFS : up to 80,000 M³/H.
Capacity air flow: MF : up to 320,000 M³/H.
Capacity material: MF max. 2,500 KG. /H.
Capacity material: MFS max. 1,000 KG. /H.
Conveyor speed: 10 m/min.
Operating Temperature: ÷ 30 - + 65°C.
Material type: Wooden dust.

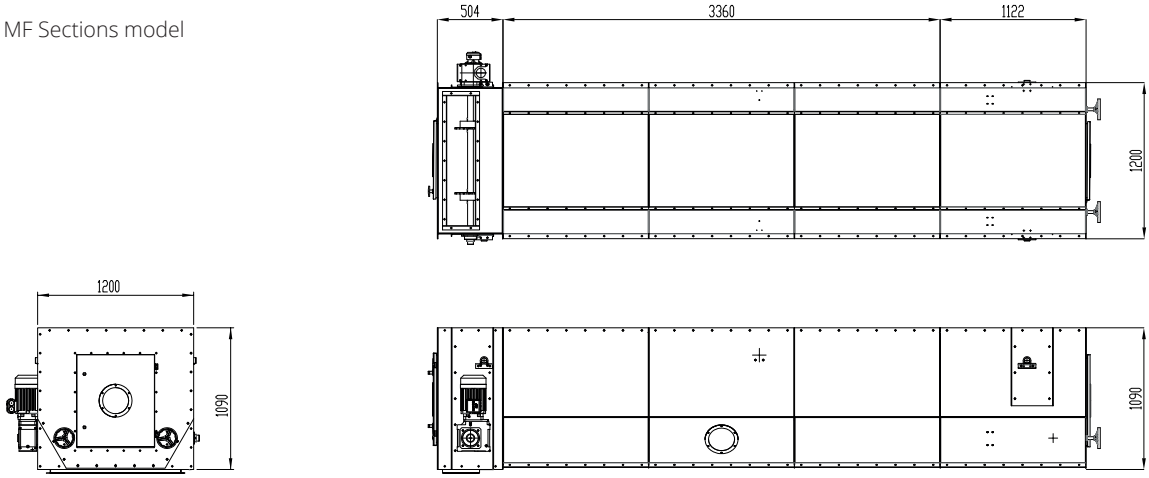
ELECTRICAL DEVICES

Driving module MF:
MF < (M 17) Gear motor 1.5 KW, 400 V. 50 HZ. 15,4 RPM
MF > (M 17) Gear motor 2.2 KW, 400 V. 50 HZ. 14,4 RPM

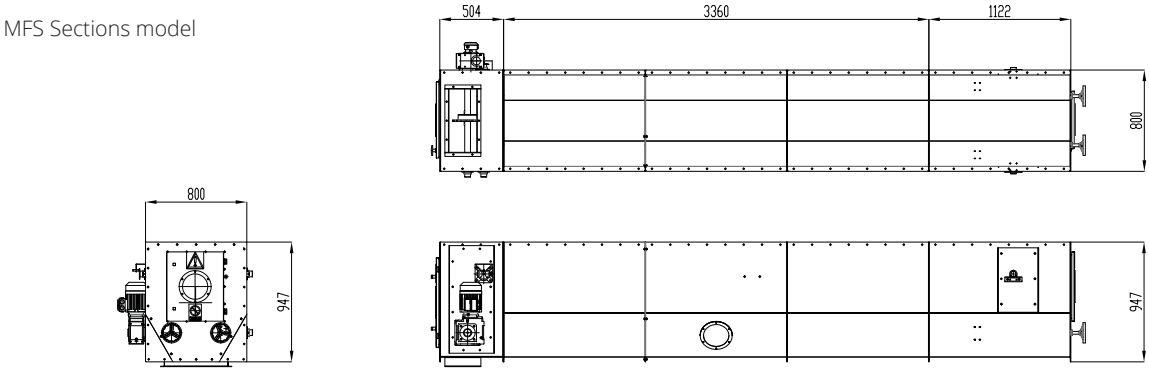
Driving module MFS:
MFS gear motor 0.75 KW, 400 V. 50 HZ. 13,5 RPM

Proximity sensor: 24 V. DC.
Door limit switches: 24 V. DC. /200 V. AC.

MF Sections model



MFS Sections model



Type	M 1 (one module) weight KG	Drive module Weight KG	Tension station weight KG
MF	280	270	190
MFS	188	210	140

We reserve the right to make changes without notice

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