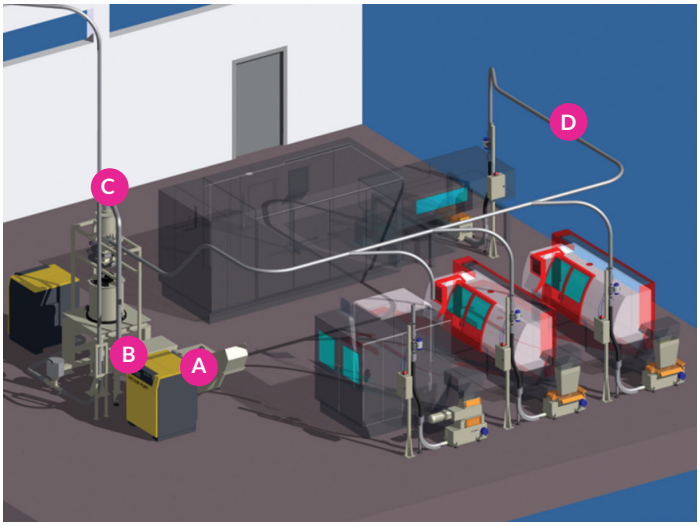
PNEUMATIC SUCTION SYSTEMS

SYSTEMS



The goal is simple: a system that allows to remove from lathes, milling machines, CNCs and other machines, automatically and without the constant presence of an operator to control it.

CHARACTERISTICS

- Allows the chip to be evacuated from the machine tool to the treatment or storage site
- Transports the chip continuously, automatically and without the constant presence of an operator to control it
- Allows unattended work

DESCRIPTION

FAMA **pneumatic suction systems** are designed for the transfer and movement of metal chips directly from the production points (machine tools) to a centralised collection point, continuously and automatically.

The system consists of a pneumatic circuit that uses air speed to suck up swarf and move it along the conveyor lines to the point where the swarf is stored or treated.

The advantages of such a system, compared to traditional centralised systems or their absence, are many: all the problems related to swarf handling are eliminated, including the use of one or more operators and one or more forklifts, the risk of impacts during transport, the commitment of personnel to clean the scattered swarf and oil, the size of the bins in the warehouse, both full and empty.

Together with logistical improvements, a centralised pneumatic suction system also leads to undoubted improvements in the working conditions of operators, environmental conditions and the safety of personnel.

It is important to point out that civil works of excavation for the realization of trenches are not required, unlike other traditional conveyor systems.

The FAMA pneumatic suction conveyor system can easily be extended: if new machines need to be added for production requirements, simply connect the new machines to the system. In a similar way, if a machine has to be moved for production reasons, moving a branching is simple and economical

OPTIONAL

- Double or triple suction line in case of multi material
- Revolver
- Wear-resistant kit for cyclonic separator
- Bends with wear-resistant extrados
- Double guillotine damper for 24/7 continuous operation plants – safety filter version [**B**]
- Crusher for long and skein-type metal swarf
- Squeezer for very wet swarf or to be installed in case of high extension of the line. [**G**]
- Vibrating screen

SUPPLY

- Displacement pump
- Safety filter
- Cyclonic separator
- Suction main piping line in AISI304 stainless steel, complete with bends and couplings
- Branching to reach the machine tool, complete with sub-machine unit, support column, stainless steel actuated valve and electric panel
- Main electric panel, wiring and compressed air line

CONTINUOUS WORK

UNATTENDED WORK

LONG DISTANCE

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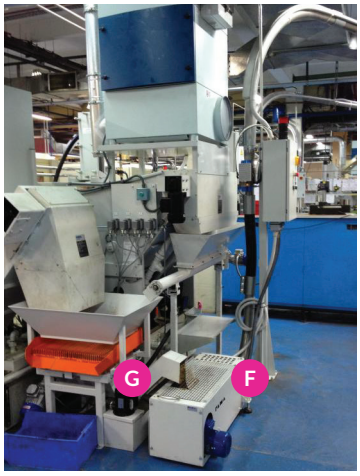
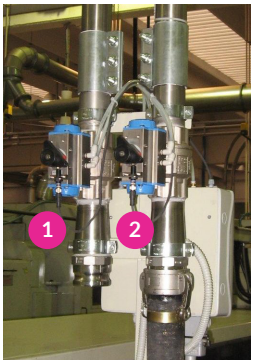
OPERATION

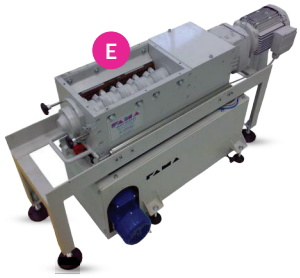
The system is operated by a vacuum pump [**A**], protected by a safety filter [**B**], which provides enough energy to suck the oil-soaked swarf.
This is then transferred from the machine to the storage area. Each machine will be equipped with a submachine unit [**F**], abbreviated 'GSM'.
It is a special storage unit, placed at the base of the evacuator, which accumulates the wet swarf for a certain amount of time. A level sensor reserves the GSM for cleaning after the suction process. In its turn, the GSM dosing screw activates and conveys the swarf to the suction point. The material courses along the line [**D**] to the separator [**C**], where the swarf precipitates and is stored inside a container or is centrifuged. The system works with a short swarf, so where necessary, the GSM is integrated with a shredder [**E**].



Safety filter with guillotines



This is a drop point with a double suction line and manual changeover. Depending on the material being processed, the operator can connect to either Line **1** or Line **2**. The operation can also be automated and managed via the control panel.



If the swarf is long and skeintype, a shredder model TRA is combined with GSM to grind the swarf and to make it pneumatically transportable

TECHNICAL DATA

COVERED DISTANCE*	Up to 200 m
QUANTITY PER LINE*	Up to 1200 kg/hour
POWER	11 ÷ 55 kW
VOLTAGE	230/400 V
LOADING	Continuous
CIVIL WORKS	None
VERSATILITY	Maximum
TYPE OF SWARF	Any
COOLANT	Any

The described data are to be considered as limit values. Every case must be studied, analysed, sized and designed. The number of machines that can be connected depends on the distance and quantity of swarf.
*The data refer to a single line, it is always possible to provide relaunch mechanisms.

HOURLY PRODUCTION

Q = 0,8 m3/h	BRASS	STEEL	ALUMINIUM	STAINLESS STEEL	COPPER	CAST IRON
Δ density [kg/dm3]	1,2	1,1	0,4	1,1	1,5	1,4
kg/h	1200	1050	640	900	800	1150

The data in kg/h are approximate and in any case depend on the density of the swarf, the shape, the oil content and the type of coolant. The density data considered are hypothetical, based on an experimental average of the data in our possession.

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