MECHANICAL SYSTEM

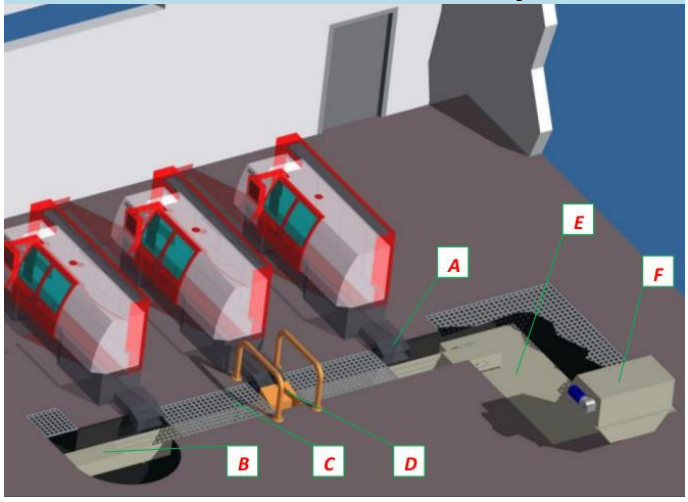
DESCRIPTION

It is a traditional centralised system, which collects swarf and oil through vane channels and/or shutters conveyors. The channels are placed inside special trenches dug into the floor. The machines are placed in line in order to unload swarf and oil into the channels, which flow towards the collection tank.

COVERED DISTANCE	***unlimited***
QUANTITY PER LINE	***unlimited***
POWER	***to be defined***
VOLTAGE	***230/400 V***
LOADING	***continuous***
CIVIL WORKS*	***to be defined***
VERSATILITY	***limited***
TYPE OF SWARF	***any***
COOLANT	***any***

OBJECTIVE

The aim is simple: a system that allows to remove swarf and coolant from lathes, milling machines, NC machines,... continuously, automatically and without the constant presence of an operator to control it.



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.

SUPPLY

- Oil and swarf collection channel with vanes or shutters;
- Hoppers for connection between the channel and the machines;
- Geared motor of adequate power according to the channel length;
- Oil collection and swarf settling tank, with vane dredger for swarf extraction;
- Main electrical panel.

OPTIONAL

- Grates or walkable closing plates for the trenches and the pit;
- Civil works for the construction of the trenches and the pit;
- Centrifugal pumps for oil reintegration in low or high pressure to the machines;
- Shredder for long and skein-type metal swarf.

HOURLY PRODUCTION						
Q = 0.8 m3/h	BRASS	STEEL	ALUMINIUM	STAINLESS STEEL	COPPER	CAST IRON
Δ density [kg/dm3]	1.5	1.3	0.8	1.1	1.0	1.4
Kg/h →	TO BE SIZED ACCORDING TO REQUIREMENTS					

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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MECHANICAL SYSTEM

OPERATION

The evacuation system of the machine will be adapted [***A***] to discharge swarf and oil into the collection channel [***B***]. This is positioned inside a trench and will be equipped with special hoppers to connect it to the evacuators of the machines [***D***]. All the trenches will be covered with walkable steel grates or plates [***C***]. The oil and swarf flow from the channel will be discharged into a dredged tank, sized to ensure good swarf settling [***E***]. The swarf deposited on the bottom will be removed from the dredger and unloaded into a container or treated by centrifugation [***F***].

Changes of direction can take place by gravity (photo above), or by direct intersection for the oil and with duck beak for the solid part (swarf, photo below).

The channels can be single or double for mono- or bi-material. In this case, a vane channel for brass and one with shutters for steel have been created.