

# Spring

Self-cleaning drum filtration system



# Spring

Spring is a self-cleaning drum filtration system, with permanent metallic net, suitable for removal of magnetic or non-magnetic particles from neat oil or emulsion.

It is available in 9 sizes with flowrates ranging from 25 to 1000 l/min of neat oil and from 50 to 2000 l/min of emulsion.

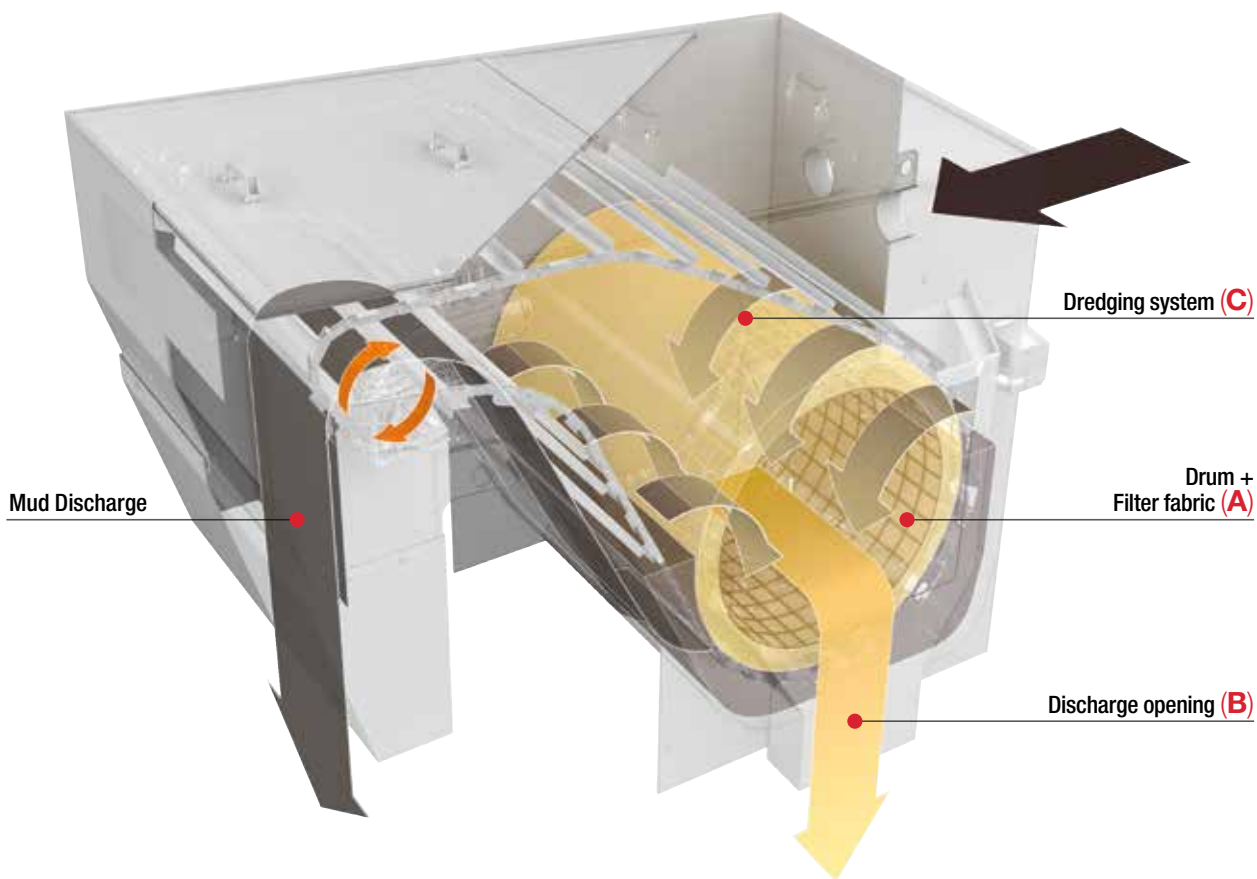
The drum's filtration efficiency can be customized according to customer requirements.



LOSMA guarantees that every single unit is individually tested through strict control procedures. Each unit is issued a test certificate for quality and function.



# Working principles



The Spring working principle is divided in three main steps:

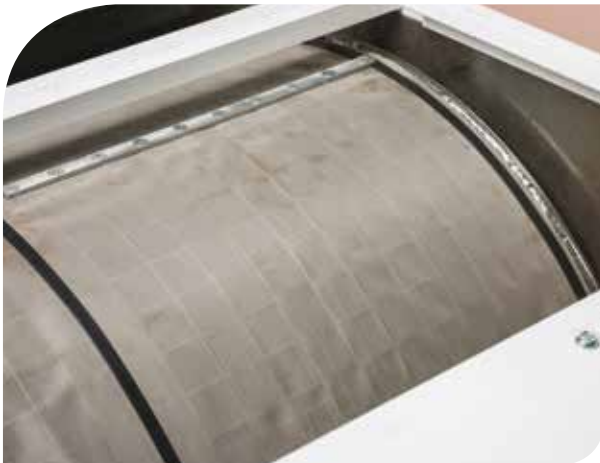
- 1** The metallic filter net covering the drum is clean **(A)**. The dirty coolant passes through it depositing the pollutant particles and goes through the discharge opening **(B)**. From here the clean coolant falls into the collection tank positioned below, from where pumps will transfer it back to the machine tool. During this phase the drum does not rotate and the dredging system is stationary. The polluting particles deposited on the filter net forms the actual filtering layer which can also reach a thickness of 10-15 mm.
- 2** As the filter net gradually gets dirty, the liquid

level increases. The dirty coolant continues to deposit pollutant particles onto the drum surface, while the drum and dredging system **(C)** are still. The filtration level improves due to the thickness of the mud deposited on the filter net.

- 3** Coolant cannot pass through the filter net any longer - filter net clogging cycle is complete. This phase is when the best filtration level is reached. The longer the filter operates under these conditions, the better the average filtration will be. When the coolant reaches the maximum internal level allowed, a self-cleaning cycle is started automatically (see box page 4). At the end of this phase the coolant level descends and the filtration cycle begins again.

# Plus

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## **PERMANENT FILTERING MATERIALS**

Spring system uses metallic filter net which is cleaned thanks to a self-cleaning system. In this way consumable material is not used, thus reducing costs for maintenance and industrial waste disposal.



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## **AUTOCLEAN SYSTEM**

It's an automatic cleaning system of the metallic net, used for coolant filtration. Inside the filtration system there is a sensor, which makes the drum rotate when the maximum level of clogging of the net is reached. During the rotation the dredge system scrapes away deposited muds from the net, transporting them outside the filter. Meanwhile, a countercurrent jets system washes the metallic net, removing even the tiniest residuals.

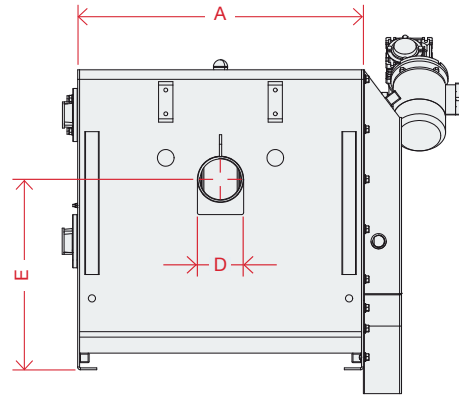
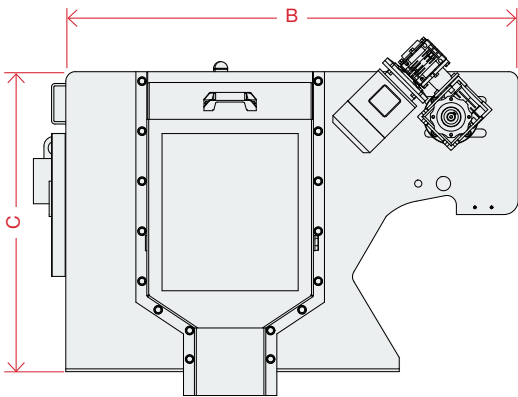


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## **DREDGING SYSTEM**

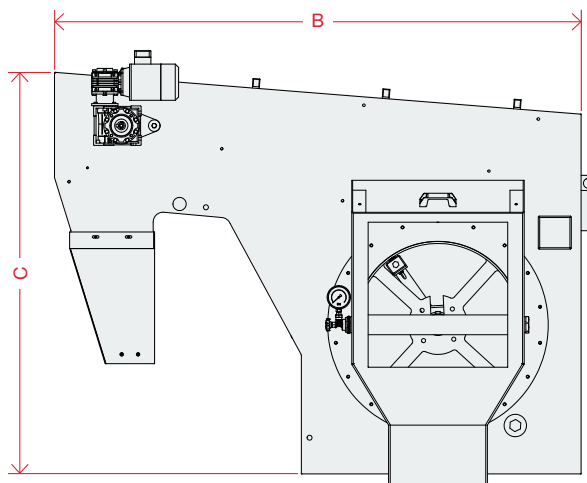
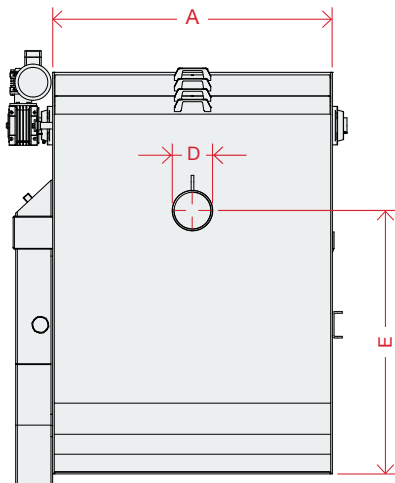
It is used for discharging filtered and decanted swarf; the system is also available in magnetic version for ferromagnetic residuals.

# Technical data



MODELS	Dimensions (mm)				
	A	B	C	D	E
<b>F1</b>	400	950	630	2"	400
<b>F2</b>	500	950	630	2"	400
<b>F3</b>	600	950	630	3"	400

Max filtering cap. soluble oil*	Max filtering cap. neat oil*	Tank capacity	Weight
(l/min)	(l/min)	(l)	Filter Only
50	25	170	100
100	50	300	120
150	75	460	140



MODELS	Dimensions (mm)				
	A	B	C	D	E
<b>F4</b>	600	1600	1220	4"G	800
<b>F5</b>	850	1600	1220	4"G	800
<b>F6</b>	1100	1600	1220	DN125-PN16	800
<b>F7</b>	1450	1600	1220	DN125-PN16	800
<b>F8</b>	1100	2400	1520	DN125-PN16	1100
<b>F9</b>	1450	2400	1520	DN125-PN16	1100

Max filtering cap. soluble oil*	Max filtering cap. neat oil*	Tank capacity	Weight
(l/min)	(l/min)	(l)	Filter Only
300	150	1150	260
600	300	2000	290
900	450	3000	310
1200	600	4000	350
1600	800	5500	650
2000	1000	7000	850

\* Flow rates data refers to emulsion with a max. oil concentration of 5% or neat oil with a max. viscosity of 20cst at 40°C, and with a filtering fabric having a nominal filtration grade of 100 μ. Different characteristics of the coolant to be treated, pollutant typology and its concentration could considerably influence the filtration system's performances. Our Technical Dept. is available for studying the best solution for your requirements.

# Spring Compact

Spring Compact is a self-cleaning drum filtration system, suitable for flowrates ranging from 100 to 5000 l/min of neat oil or emulsion.

The drum's filtration efficiency can be customized according to customer requirements. Spring Compact has the characteristic of processing only the quantity of coolant needed by the machine; the clean coolant tank is welded in one piece together with the filter.



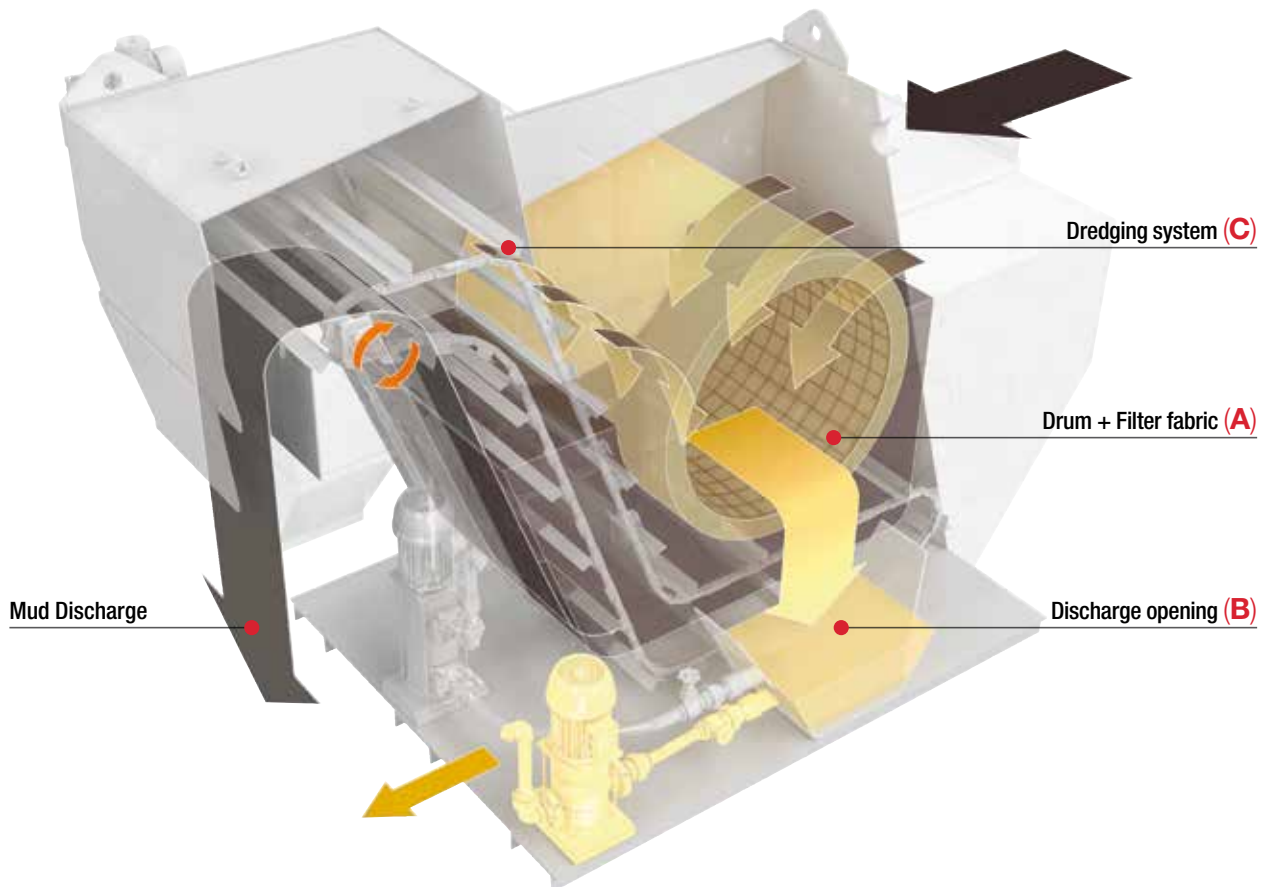
**Due to the filter's characteristics, the system is engineered and dimensioned according to specific customer requirements.**



LOSMA guarantees that every single unit is individually tested through strict control procedures. Each unit is issued a test certificate for quality and function.



# Working principles



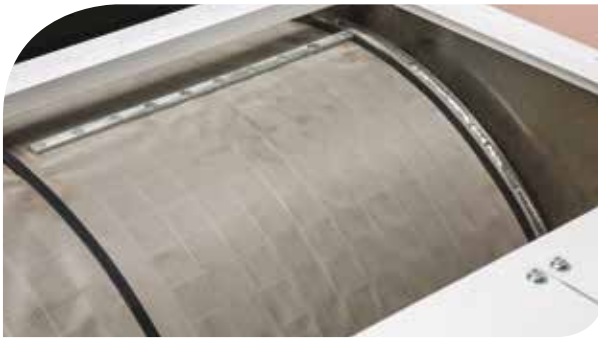
The Spring Compact working principle is divided in three main steps:

- 1** The metallic filter net covering the drum is clean (A). The dirty coolant passes through it depositing the pollutant particles and goes through the discharge opening (B). From here the clean coolant falls into the collection tank welded in one piece with the filter, from where pumps will transfer it back to the machine tool. During this phase the drum does not rotate and the dredging system is stationary. The polluting particles deposited on the filter net forms the actual filtering layer which can also reach a thickness of 10-15 mm.
- 2** As the filter net gradually gets dirty, the liquid level increases. The dirty coolant continues

to deposit pollutant particles onto the drum surface, while the drum and dredging system (C) are still. The filtration level improves due to the thickness of the mud deposited on the filter net.

- 3** Coolant cannot pass through the filter net any longer - filter net clogging cycle is complete. This phase is when the best filtration level is reached. The longer the filter operates under these conditions, the better the average filtration will be. When the coolant reaches the maximum internal level allowed, a self-cleaning cycle is started automatically (see box page 8) and the drum rotates. At the end of this phase the coolant level descends and the filtration cycle begins again.

# Plus



## **PERMANENT FILTERING MATERIALS**

Spring Compact uses metallic filter net which is cleaned thanks to a self-cleaning system. In this way consumable material is not used, thus reducing costs for maintenance and industrial waste disposal.



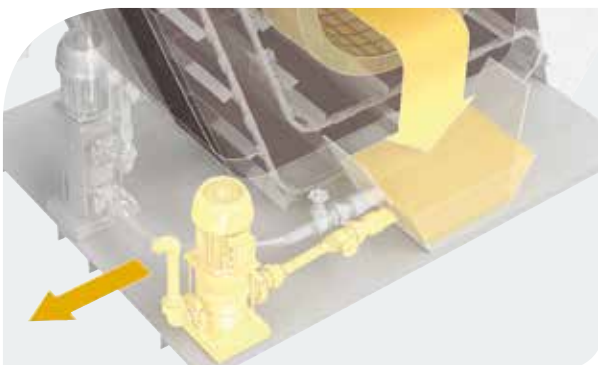
## **AUTOCLEAN SYSTEM**

It's an automatic cleaning system of the metallic net, used for coolant filtration. Inside the filtration system there is a sensor, which makes the drum rotate when the maximum level of clogging of the net is reached. During the rotation the dredge system scrapes away deposited muds from the net, transporting them outside the filter. Meanwhile, a countercurrent jets system washes the metallic net, removing even the finest residuals.



## **DREDGING SYSTEM**

It is used for discharging filtered and decanted swarf; the system is also available in magnetic version for ferromagnetic residuals.



## **NO DEPOSIT IN TANK**

Spring Compact processes the coolant quantity required by every single machine tool in real time, eliminating mud deposits inside the tank.



# Optional

## DMD

Pre-filtration system with rotating magnetic discs for the separation of magnetic polluting particles from coolant.

## Magnetic dredging bed

To facilitate ferromagnetic elimination.

## Electrical panel

For powering the system, control and command all signals.

## Mud Compactor

Used to reduce the volume of mud intended for disposal and for reducing the liquid contained therein.

The obtainable compacting level can change on the basis of mud, liquid used and many other factors such as cycle timing. The reduction in volume and of humidity is obtained through pressing with static load. The volume efficiency reduction is from 40% to 20% and for liquid residual from 30% to 10%.

## Pumps

For pressure from 0,1 to 100 bar for returning clean liquid.

## Skim

Superficial oil skimmer; it allows to maintain coolant's quality and eliminate odors generated by anaerobic bacteria.

## Collecting tank

For clean liquid collection to be sent back to the machine tool (only in Spring).

## Transfer tank

To collect dirty liquid for feeding the filter.



# Installations



Self-cleaning systems from Spring series are suitable for many machine tool types, such as: machining centers, deep drilling, transfer, grinding and milling machines, machining with special tools requiring high-pressure coolant.

Spring range is particularly ideal for works in engineering and automotive industries, involving removal of metal swarf with tools, abrasives, strain and washing.







Health



Savings



Efficiency



Environment



Safety



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