



Air filters



Liquid filters



Engineering

Losma / Liquid filters  
**Spring + Spring Compact**

Self-cleaning drum filtration system

ENG



Spring



Spring Compact

# Spring



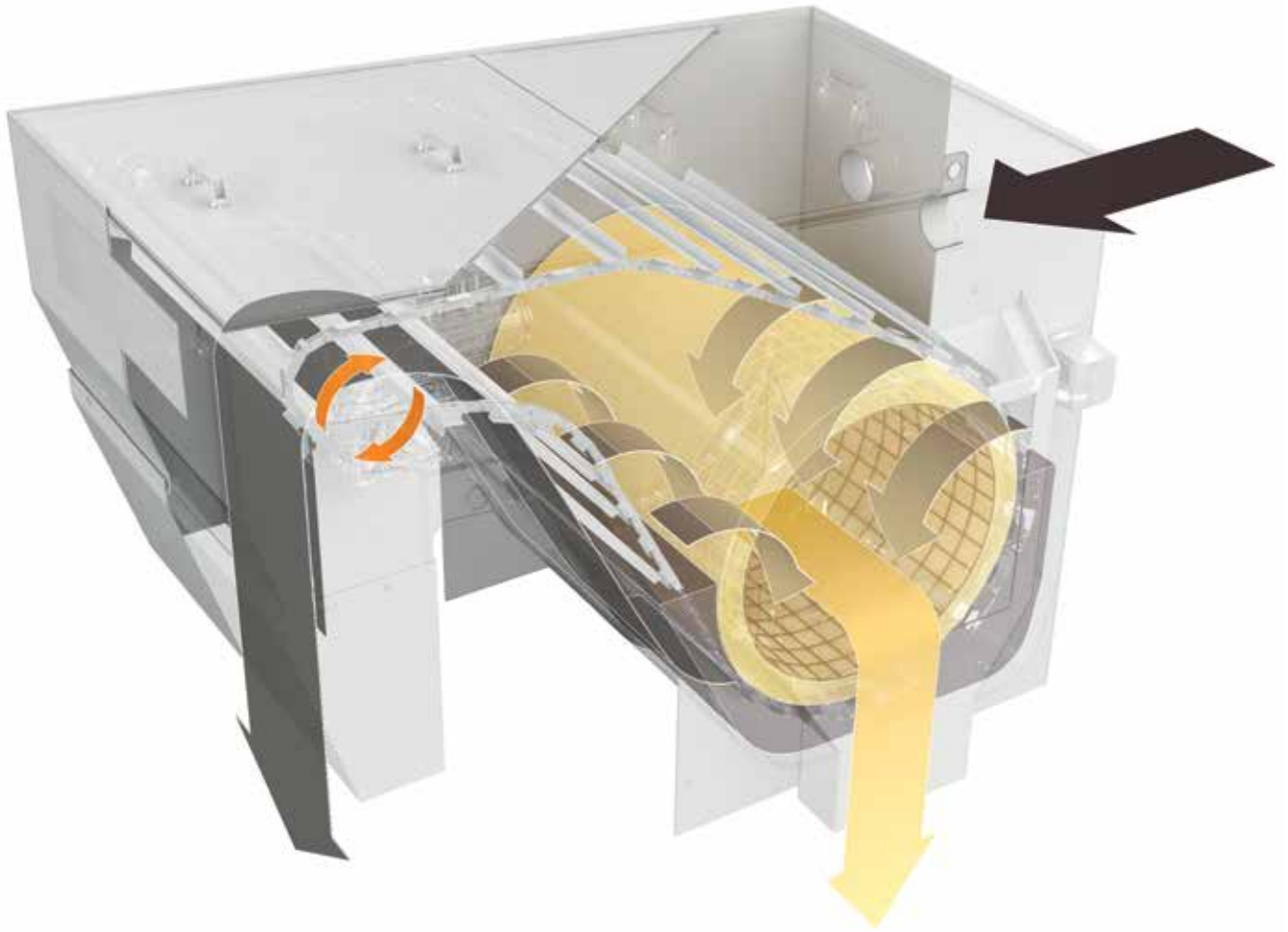
*Losma grants that every single system is tested through strict control procedures. Every unit is provided with a Quality and Functional Test Certificate..*

Spring is a self-cleaning drum filtration system, with permanent metallic net, suitable to clean neat oil or emulsion from magnetic or non-magnetic particles. It's available in 9 sizes with flowrates from 25 to 1000 l/min of neat oil and from 50 to

2000 l/min of emulsion. Drum's filtration efficiency can be customized following the needs of the customer and reaches a max of 25 microns, depending on process, coolant and material worked.



## Working Principles



Spring Working principle is divided in three steps:

- 1) Filtering fabric is clean; contaminated coolant passes through it leaving pollutant particles, and drops inside the drum where a discharge opening is placed. Clean liquid falls into the collection tank, from where pumps will send it back to machine tools. During this step the drum does not rotate and dredge system is stationary. The polluting material deposited on the filtering cloth forms the actual filtering stratum. In many applications the filtering stratum can reach the thickness of even 10-15 mm.
- 2) While the filtering cloth gets dirty the liquid level increases. The dirty liquid continues to deposit the pollutant particles outside the drum. The filtering degree improves due to the thickness of the mud deposited on the filtering cloth. Also during this phase the drum doesn't rotate and the dredging system is stationary.
- 3) The filtering fabric doesn't let the liquid to go through. This is the stage when the best possible filtering degree is actually reached. The longer the filtering functioning period under this condition the best average filtering will be. When the liquid reaches the maximum level allowed, drum rotates and Autoclean process starts automatically (see box page 4). The level will descend and the filter starts again depuration process.

Plus



#### **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 obstruction 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.



#### **Dredging System:**

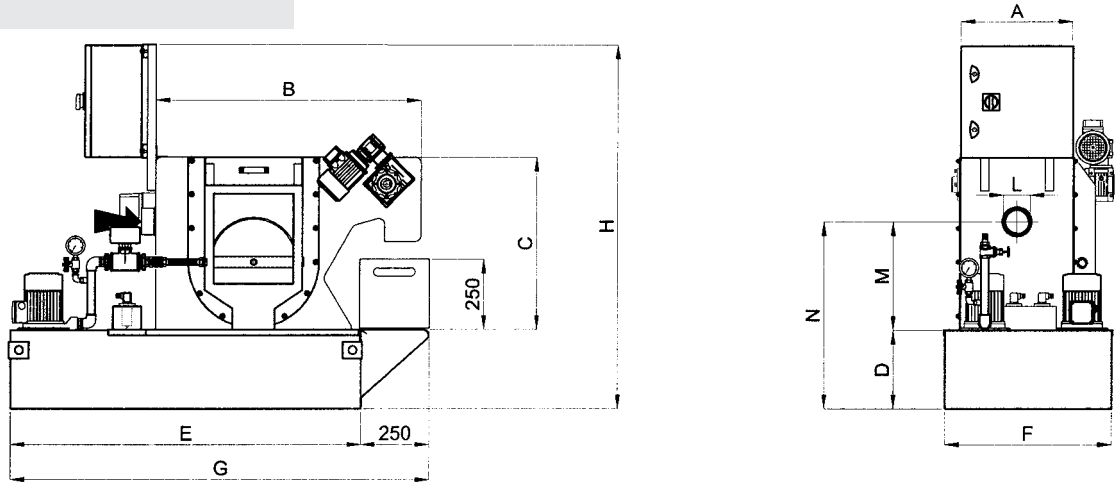
"It is used for discharging filtered and decanted swarf. Dredging system can be equipped with a magnetic bottom for scavenging ferromagnetic residuals.



#### **Permanent Filtering Materials:**

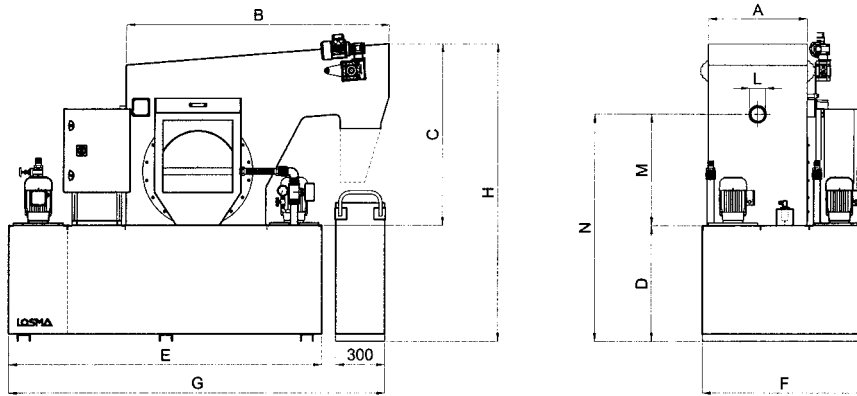
Spring system uses metallic filtering nets, which are cleaned thanks to Autoclean system. In this way no consumable material is used, thus reducing costs for maintenance and industrial waste disposal.

# Technical data



## Spring

Models	Dimensions [mm]										
	A	B	C	D	E	F	G	H	L	M	N
F1	400	950	630	280	1250	593	1500	1300	2"	400	680
F2	500	950	630	280	1600	793	1850	1300	2"	400	680
F3	600	950	630	280	1800	1093	2050	1300	3"	400	680



## Spring

Models	Dimensions [mm]										
	A	B	C	D	E	F	G	H	L	M	N
F4	600	1600	1200	700	1900	1000	2300	1800	4" G	670	1370
F5	850	1600	1200	700	2600	1300	3000	1800	4" G	670	1370
F6	1100	1600	1200	850	2900	1500	3300	1950	DN125-PN16	670	1520
F7	1450	1600	1200	850	2900	1900	3300	1950	DN125-PN16	670	1520
F8	1100	2400	1500	850	3500	2200	3900	2350	DN125-PN16	1100	1950
F9	1450	2400	1500	850	4500	2200	4900	2350	DN125-PN16	1100	1950

## Spring

Models	Max filtering cap. Emulsion	Max filtering cap. neat oil	Tank capacity	Weight [kg]	
	l/min	l/min	l	Filter only	With tank
F1	50	25	170	100	210
F2	100	50	300	120	270
F3	150	75	460	140	360
F4	300	150	1150	260	700
F5	600	300	2000	290	980
F6	900	450	3000	310	1200
F7	1200	600	4000	350	1500
F8	1600	800	5500	650	2250
F9	2000	1000	7000	850	2850

# Spring Compact



*Losma grants that every single system is tested through strict control procedures. Every unit is provided with a Quality and Functional Test Certificate.*

Spring Compact is a self-cleaning drum filtration system, suitable for flowrates from 100 to 5000 l/min of neat oil or emulsion. Drum's filtration efficiency is customizable following the needs of the customer and reaches a max of 25 micron, depending

on process, coolant and material worked. Spring Compact has the peculiarity of processing just the coolant needed by the machine; the tank for clean liquid collection is welded in a unique piece with the filter.

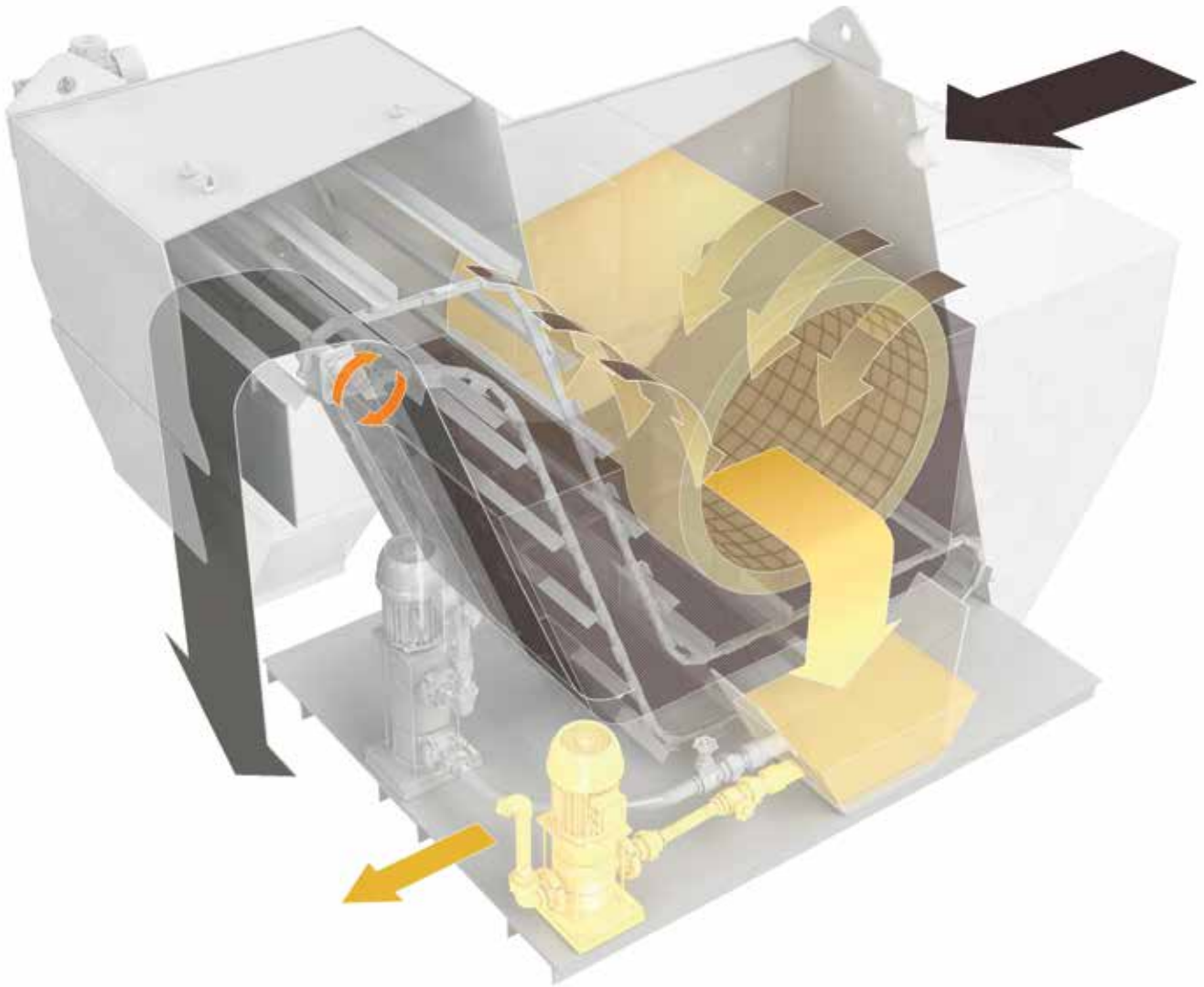


Engineering

Given the filter specifications, the system is engineered and dimensioned according to specific customer requirements.



## Working Principle



Spring Compact working principle is divided in three steps:

1) Filtering fabric is clean; contaminated coolant passes through it leaving pollutant particles, and drops inside the drum where a discharge opening is placed. Clean liquid falls into the collection tank welded with the filter, from where pumps will send it back to machine tools. During this step the drum does not rotate and dredge system is stationary. The polluting material deposited on the filtering cloth forms the actual filtering stratum. In many applications the filtering stratum can reach the thickness of even 10-15 mm.

2) While the filtering cloth gets dirty the liquid level increases. The dirty liquid continues to deposit the polluting parts outside the drum. The filtering degree improves due to the thickness of the mud deposited on the filtering cloth. Also during this phase the drum doesn't rotate and the dredging system is stationary.

3) The filtering cloth doesn't let the liquid to go through. This is the stage when the best possible filtering degree is actually reached. The longer the filtering functioning period under this condition the best average filtering will be. When the liquid reaches the minimum level allowed in the tank, drum rotates and Autoclean process starts automatically (see box page 8). At the end of the cleaning filtration process starts again from point 1.

Plus



### **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 obstruction 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.



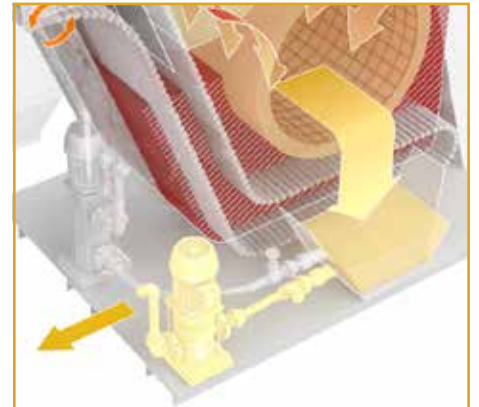
### **Dredging System:**

It is used for discharging filtered and decanted swarf. Dredging system can be equipped with a magnetic bottom for scavenging ferromagnetic residuals.



### **Permanent Filtering Materials:**

Spring system uses metallic filtering nets, which are cleaned thanks to Autoclean system. In this way no consumable material is used, thus reducing costs for maintenance and industrial waste disposal.



### **No Deposit In Tank:**

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



# Optional Spring + Spring Compact

## DMD:

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

## Transfer tank:

To collect dirty liquid for feeding the filter (only Spring)

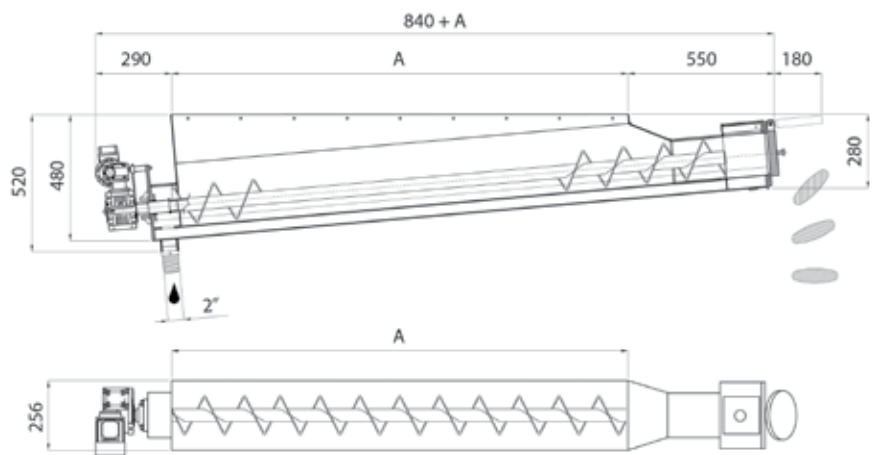


## SKIM:

Superficial oil skimmer, it allows to lengthen coolant quality and eliminate odors generated by anaerobic bacteria.

## 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%.

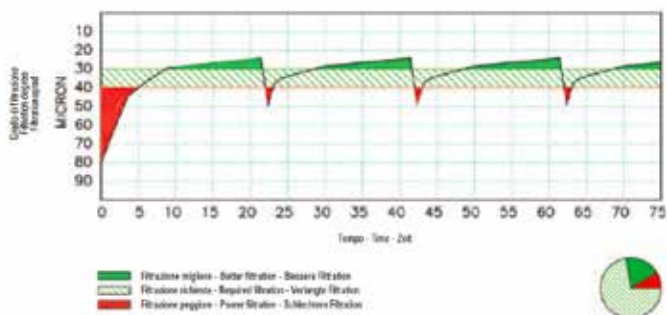


# Installations

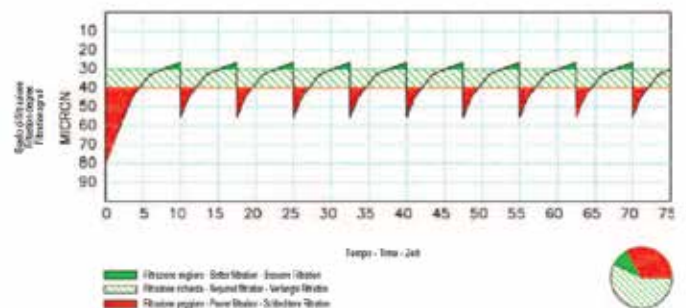


Self-cleaning systems from Spring series are suitable for many machine tool types, such as: machining centers, deep drilling, transfer, grinding and milling machines, machining with special tools requiring high-pressure coolant. Spring range is particularly ideal for works in engineering and automotive industries, involving removal of metal swarf with tools, abrasives, strain and washing.

**Working cycle and filtration process in a correctly dimensioned system**



**Working cycle and filtration process in under-dimensioned system**







Health



Savings



Efficiency



Environment



Safety

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