The Filter with the extreme separating capacity

Laser Filter

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EREMA®
HIGH TECH RECYCLING

The name "Laser Filter" originates from the fact that the core elements of this filtering system, the filter screens, are drilled (shot through) using laser technology, with the holes designed conically, making them self-cleaning.
(see picture below)

Used plastic waste contains a large proportion of unwanted material and contamination. Despite complex washing and separating processes, the removal of residual contamination through the melt filtration system in the subsequent extrusion process causes huge problems, particularly in terms of economic efficiency.

Conventional melt filtering technology on the market fails to meet the demands in many cases. This is all the more so if the used plastic waste is to be used to manufacture pellets (recyclate) in film quality.

In order to perform these tasks, Erema has developed a continuous high-capacity filtering system: the EREMA LASER FILTER.

A quantuum leap in filtering capacity

When traditional cartridge filters with wire mesh screens are used, heavy contamination of the screens rapidly results in excess pressure, switching off the extruder in seconds. Using the Laserfilter, a continuous filtration and thus extrusion process can be maintained for days and even weeks.

Comparisons made in Erema´s technical centre and in many customer applications confirm the impressive capacity of the filtering system, e. g. in filtering plastic melt from washed post-consumer plastic waste.

The results:

3–5 minutes screen change interval
using traditional cartridge screen changers

- high personnel costs
- high risk of injury
- limited filtering capacity

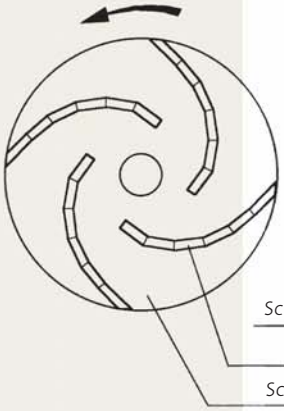
2 hours screen change interval
with modern state-of-the-art partial area backflush screen changers (e. g. Erema SW 8/170 RTF)

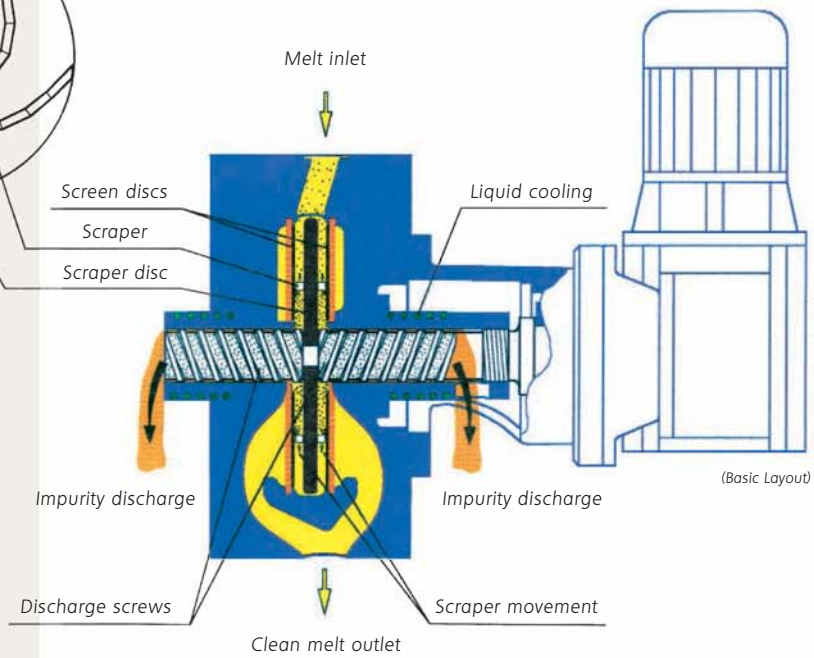
- reduced personnel costs
- reduced risk of injury
- increased filtering capacity

600–1000 hours screen change interval with the EREMA LASER FILTER!

- extremely high filtering capacity
- practically no need for personnel
- minimum melt loss
- fully automatic constant pressure operation

How the system works





(Basic Layout)

Field of application

The filter system is ideal for the separation of so-called "soft" impurities such as paper, wood, aluminium, copper etc; not, however, for filtering thermally unstable melts or melts containing high amounts of instable printing ink as well as not for the filtration of larger quantities of hard impurities such as sand, glass, grinding dust, etc.

The type and quantity of impurities to be removed have a major influence on the working life of the wear parts of the filtering system, screen discs and scrapers.

Two laser-drilled circular-shaped screen discs are located parallel to each other in a casing. Between them rotates a "scraper disc" with spiral scraper rows on each side. The surface of the smooth, hardened screen discs is continuously scraped clean of impurities by the scrapers pressing down on them. Thanks to the spiral form, the scrapers transport the impurities to the centre of the screen disc. The now compressed impurities are transferred to coaxially located discharge screws and removed with precision.

The continuous of the impurities from the screen surface ensures the automatic removal of even very high levels of contamination from plastic melt. The scraper disc speed depends on the level of impurity of the melt to be filtered, and therefore on the pressure increase before the filter, and can be carried out automatically depending on the pressure ("pressure constant operation").

Hardened, laser-drilled screen disc

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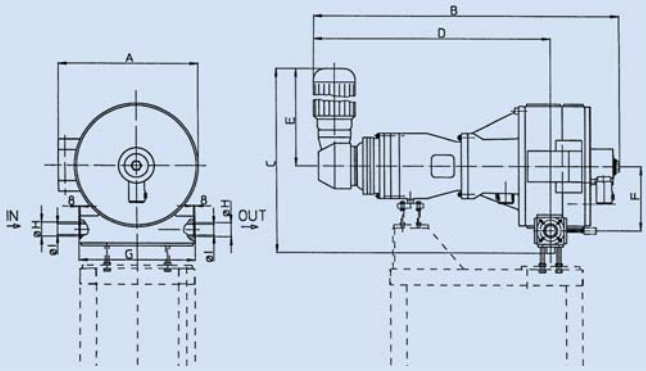
Technical specifications

Laser Filter type	**LF 2/350**
Total filter area (cm²)	1470
Number of heating zones	5
Heating capacity (kW)	18
Drive power (kW)	3,0
Scraper disc speed (rpm)	1-8
Max. operating pressure (bar)	350
Throughput capacity (kg/h)	250-1500

Screen discs: made of special tempered steel



Available filtering finenesses	(comparable with wire screen, approx.)
110 + 20 µm	(150 mesh)
130 + 20 µm	(120 mesh)
150 + 30 µm	(100 mesh)
180 + 30 µm	(80 mesh)
230 + 30 µm	(65 mesh)

Scraper elements: made of special tempered steel

Main dimensions LF 2/350 (mm)

A	B	C	D	E	F	G	H	I
700	1300	1050	800	580	350	450	75,1	60

Why Erema?

- High-tech from the world market leader
- Top-notch state-of-the-art recycling technology
- Best customer service and care and therefore safety for the user
- Tailor-made, individual solutions possible through large engineering capacity with more than 30 years experience in plastic recycling
- Superb reliability, flexibility and productivity
- Your best partner

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