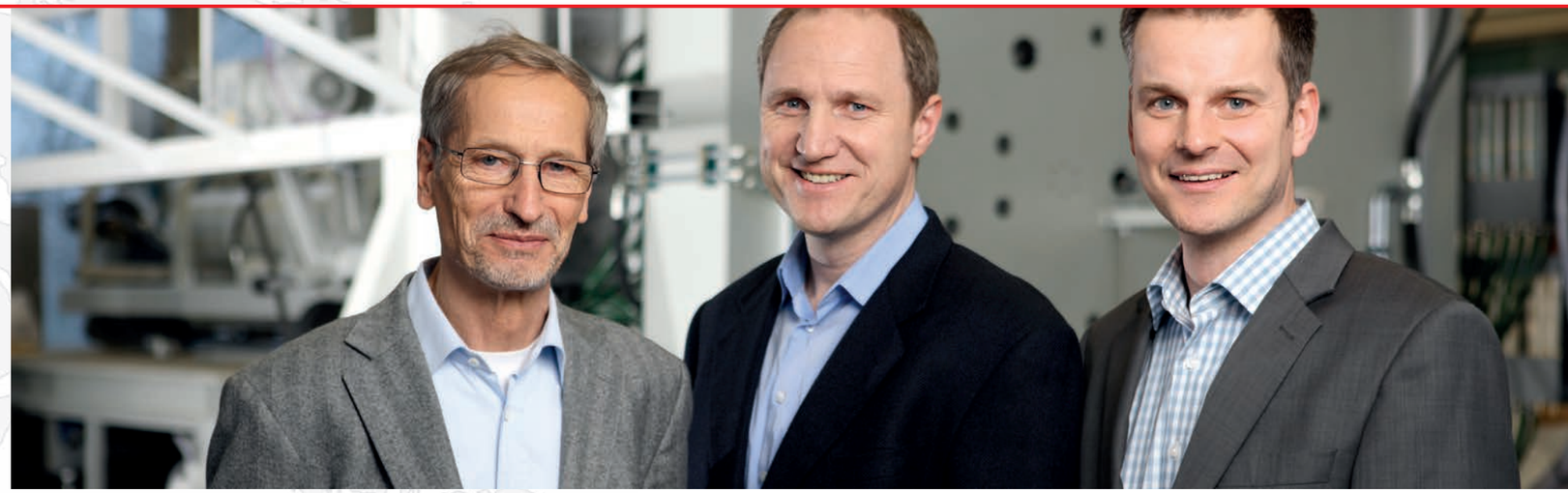
ETTLINGER

ERF Melt Filter

high tech for plastics recycling

ERF Melt Filter

30 Years
Experience and Know-How



1983 The company is founded in Augsburg, Bavaria, by a mechanical engineer named Roderich Ettlinger who begins producing injection molding machines and other specialized machinery. The first machine within the “srm” range is delivered to a customer in Sweden.

1999 Ettlinger opens a new production facility to keep up with the growing demand.

2004 Roderich Ettlinger realizes an idea that has been occupying him since the 1970s. The ERF 200, Ettlinger’s patented melt filter system, is launched in the market.

2010 After 27 successful years in business Roderich Ettlinger hands the company over to his son Thorsten Ettlinger and Volker Neuber, who are both responsible for all future technical and commercial development of the company.

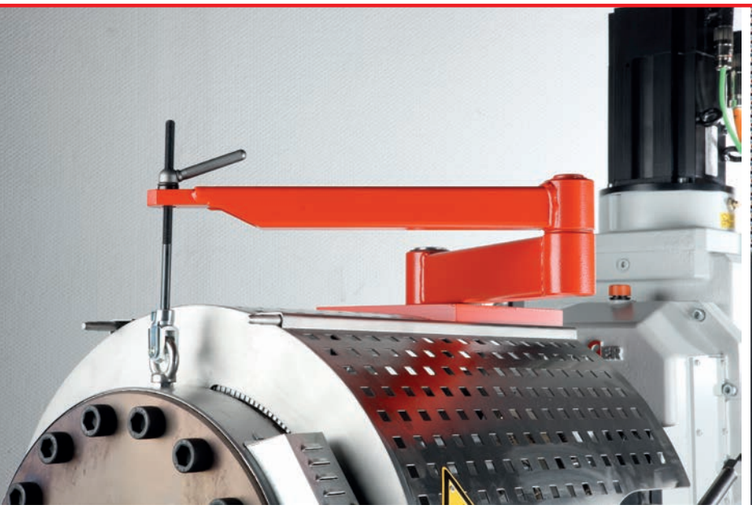
2013 Ettlinger North America LP opens in Atlanta. Customers in the US and Canada have since profited from an efficient sales network as well as local technical services such as rapidly available spare parts.

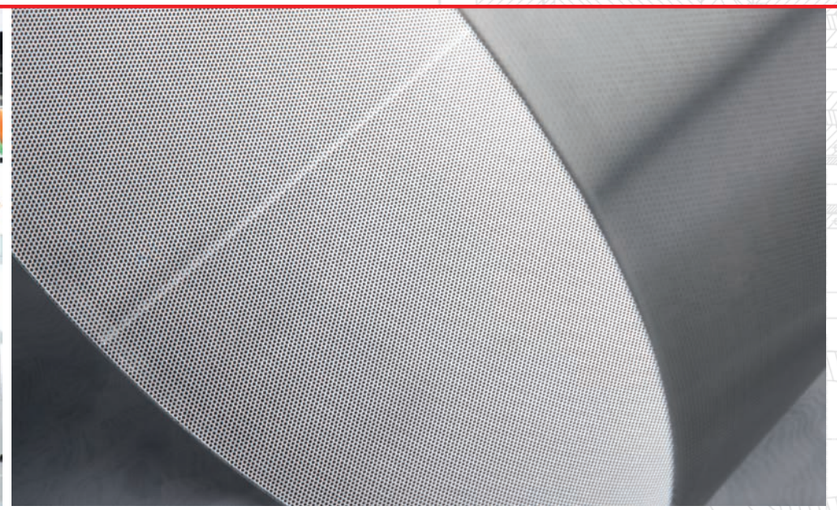
2015 Ettlinger’s office and production space is extended in response to rising demand.

Ettlinger is active worldwide with representatives in all the major markets. The company’s core competency is the development and manufacture of injection molding machines and high performance melt filters.

To meet the demanding requirements of melt filtration, Ettlinger makes high performance melt filters for continuous filtration of feedstock with varying degrees of contamination.
This patented systems filter out contaminants such as paper, aluminum, wood, silicones or high viscosity plastics from all standard polymers.

The injection molding machines are especially suitable for the production of plastic parts such as plastic pallets, fittings or manholes weighing up to 100 kg – or more on request.
Because of its integrated building-block system, Ettlinger can offer low-cost solutions and flexible machine concepts for a very wide range of applications.





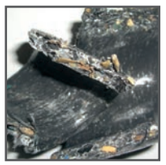
Characteristics

The continuously operating ERF melt filter is suitable for filtering plastic melts with low to very high levels of contamination. The main characteristics of the fully enclosed system include constant melt pressure, extremely low melt loss and very short contaminant retention times.

The ERF can be integrated into any existing extrusion line, has a small footprint and is available in three sizes depending on required throughput capacity: ERF 200, ERF 250 and ERF 500.

Recycling, sheet and film extrusion, and profile extrusion are typical applications.

Application Areas

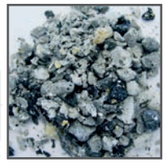


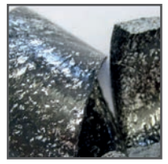
Rubber, wood

- PP or ABS (refrigerator scrap) with rubber and wood contaminants
- Levels of contamination approx. 3 %
- Filtration with 150 µm
- Melt loss approx. 2 %

Paper

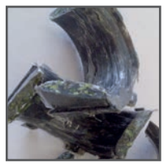
- PS film with paper sticker
- Levels of contamination approx. 2.5 %
- Filtration with 120 µm
- Melt loss approx. 1.5 %

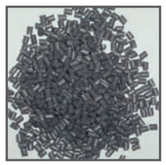




Aluminium

- HDPE (pipe material) with aluminum particles
- Levels of contamination approx. 18 %
- Filtration with 150 µm
- Melt loss approx. 9 %



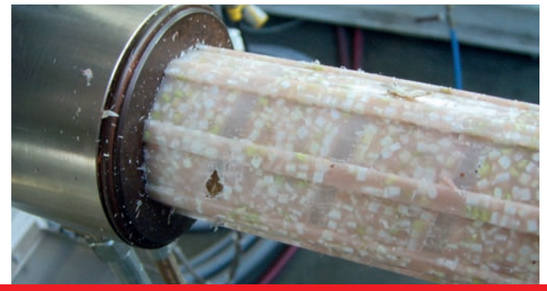


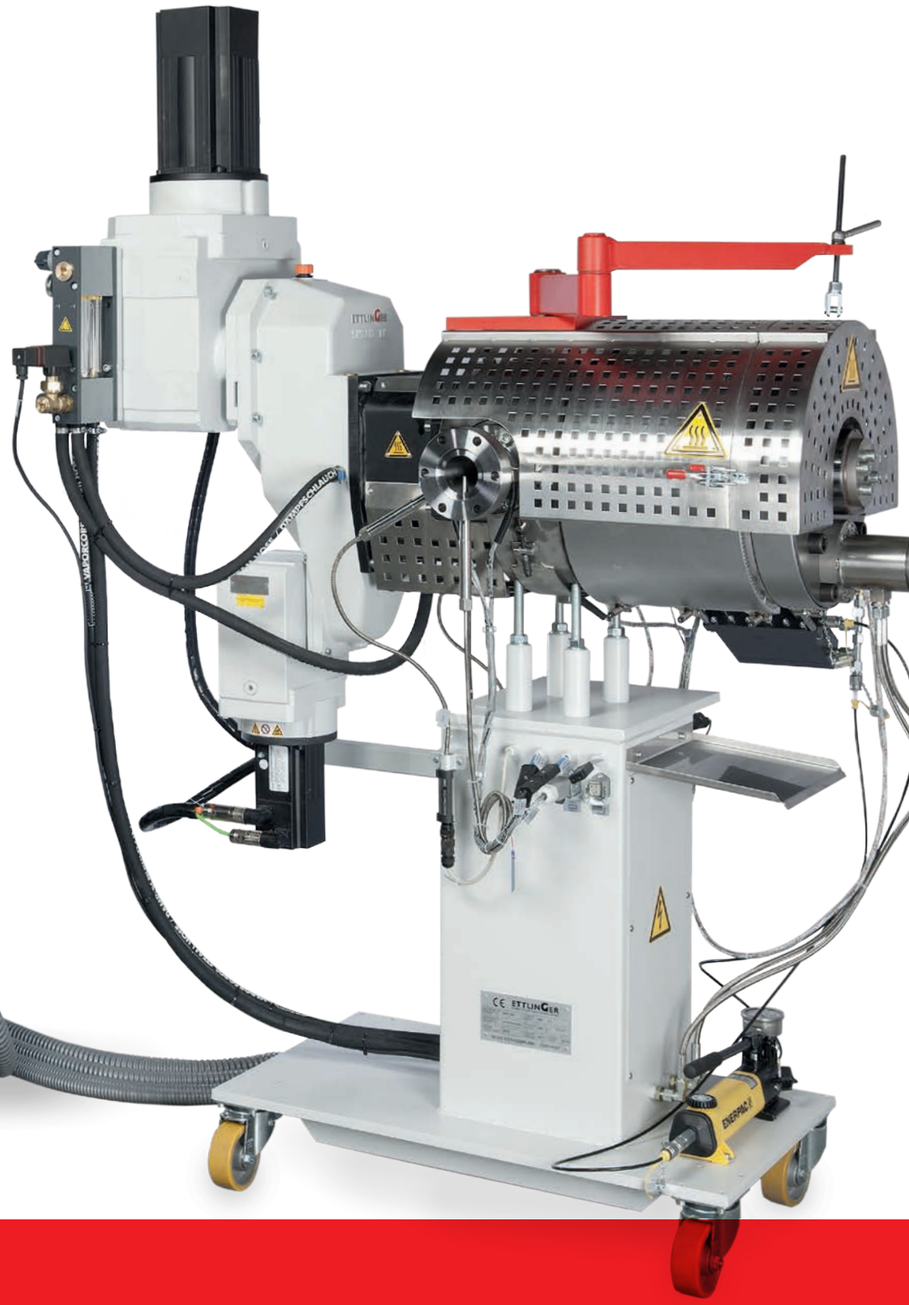
PET

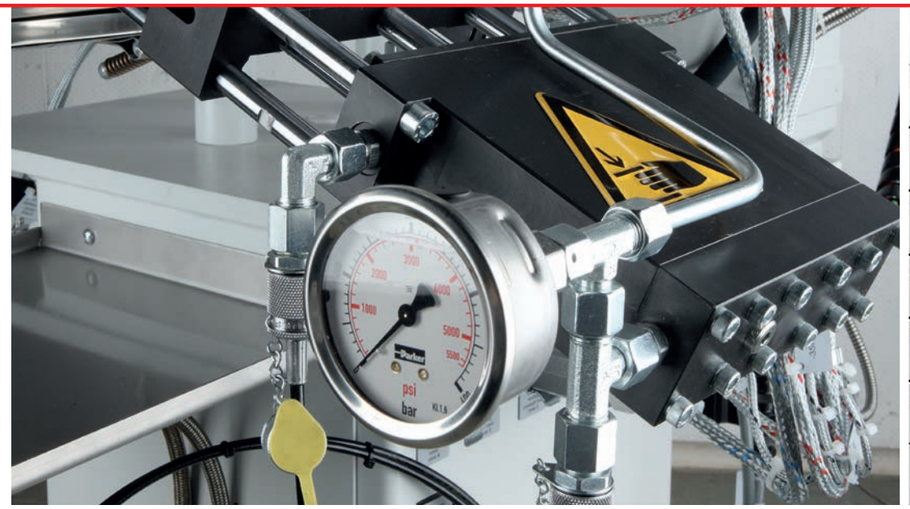
- PE (bottle closures) with PET
- Levels of contamination approx. 2 %
- Filtration with 150 µm
- Melt loss approx. 1 %

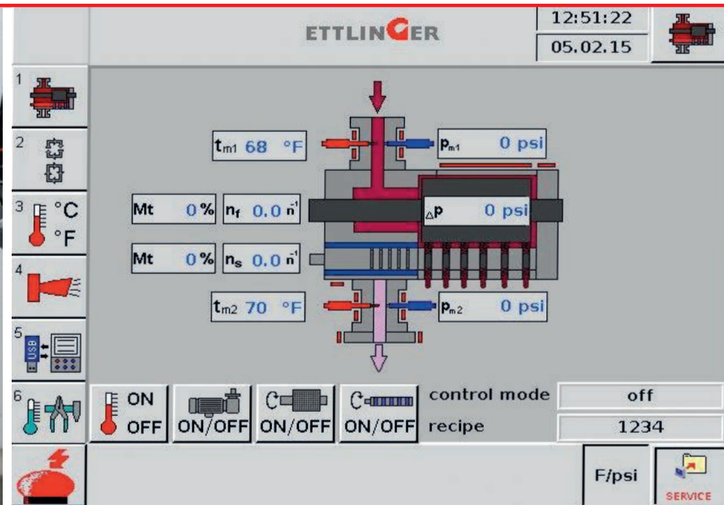
Application Examples

Input material	Type of contamination	Level of contamination Input [%]	Contaminant concentration [%]	Melt loss [%]
PE, PP	Diverse	0.5	55 - 65	0.3 - 0.4
PP or HDPE	PET	4	57 - 66	2 - 3
PS	Aluminium	3 - 4	57 - 60	2 - 3
PE	Aluminium	10	60 - 65	3.5 - 4
PP	Silicon, Rubber	2 - 3	55 - 60	1 - 2
PE	Paper	5	58 - 67	3 - 4









Principle of Operation

A filter drum featuring millions of conical drill holes rotates as the melt flows through it from the outside towards the interior. The contaminants contained in the melt remain on the filter surface and, within one revolution of the filter drum, are fed to the exit screw by means of a scraper. The filter is driven by energy-efficient servo motors, which ensure highly accurate control of the filter shaft and the exit screw.
A unique advantage of the ERF melt filter is that the speed of the filter and the speed of the exit screw can be separately adjusted. This enables the filter surface to be kept constantly free and clean and the melt loss to be reduced to a minimum.

Benefits at a glance

- Fully automatic operation
- Extremely low melt loss
- Constant melt pressure downstream of the filter (+/- 2 bar)
- Short retention times of the contaminants on the filter surface
- Fully enclosed system

Technical Data	ERF 200	ERF 250	ERF 500
Total filter area	1,250 cm^2	1,570 cm^2	3,140 cm^2
Filter diameter	200 mm	250 mm	2 x 250 mm
Throughput rate	up to 1,500 kg/h	up to 3,000 kg/h	up to 6,000 kg/h
Number of heating zones	5	5	6
Installed heat capacity	12 kW	16 kW	31 kW
Motor capacity, filter	5.2 kW	5.2 kW	7.6 kW
Motor capacity, exit screw	1.4 kW	1.4 kW	2.3 kW
Speed of filter (steplessly adjustable)	0 - 12 1/min	0 - 11 1/min	0 - 10 1/min
Speed of exit screw (steplessly adjustable)	0 - 27 1/min	0 - 26 1/min	0 - 18 1/min
Weight	800 kg	1,000 kg	2,000 kg
Maximum operating pressure	300 bar	300 bar	300 bar
Available degrees of filter fineness	80 / 120 / 150 / 200 / 250 / 300 / 500 / 750 / 1.000 / 1.300 µm		

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... give us a call to find out more!

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