

Metso

Polishing filtration

LSF filter



Maximize your operation with this cost efficient, reliable and proven filter for high-capacity polishing applications.

Metso LSF filter absorption filtration reduces particle concentrations to a level of parts per million. Production capacities increase, as do the quality of plant and refinery end products. LSF filters occupy little building space. Flow rates as high as 600 m³/hr can be consistently handled by a single unit, greatly simplifying the process. Most units are designed with expansion capability, economically accommodating growing capacity requirements.

Costly filter aids, such as precoat and body feed, are unnecessary in the vast majority of applications, which reduces the volume of total cake solids disposed in the environment. Low electrical energy consumption is another cost-saving benefit, as the absorption filtration uses very low pump pressures.

With no moving parts, the operating cost is low compare to volume of the produced filtrate. The unique cloth cleaning and cake discharge system ensures maximum cloth lifetimes. Normally the filter is only opened periodically to replace filter cloths.

Fixed position nozzles and pipework

All process pipes are connected to nozzles on the non-moveable head unit, leaving the opening access shell free to roll easily aside. The wet cake is discharged as a slurry through the drain line enabling easy cake handling.

Retractable shell

The movable shell slides easily on steel wheels and rails, automatically disconnecting and withdrawing the overhead wash spray manifold. During routine maintenance this also allows easy access to check the spray nozzle.

Expandable filters

If greater filtration area is required for growing process throughput most Metso LSF double flange D and E series filters can be expanded with additional elements and internal manifolds. A Series filters also have a flexible combination of element frames that can be configured for expansion.



We offer sustainable value to our customers and have a significant positive impact on the environment and people through our offering and our handprint.

Benefits

- High quality filtration
- Minimal maintenance costs
- Fully automatic operation
- High capacity
- Compact and expandable design
- Very low operating costs

Application LSF filters are used in various applications with low solids concentration and small particle size. Main applications are electrolyte recirculation, and thickening and clarification overflows.

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LFS E-series filter

With the Metso LSF filter, different plant and process conditions are catered for. There is a wide variety of sizes in each of our four filter vessel configurations.

Rigid element frames

Standard AISI316L steel frames support the filter media cloth bags with separation chains or springs providing full span support and a permanent exit route for the filtrate. Other corrosion resistant materials are available to meet process requirements.

Filter vessel formats

Larger flows are catered for with the D and E Series of horizontally mounted cylindrical vessels. Flow rates of 50 m³/h to 600 m³/h can be handled, and all filter sizes are available in a comprehensive range of corrosion resistant materials, including rubber-lined vessels with titanium or C276 internal wetted components. The vertical through floor cylindrical A Series features a conical base that serves to concentrate discharge slurry.

Pressure vessel codes

International pressure vessel codes are available in LSF filter pressure vessel construction, including ASME III Div 1, PED 97/23 EU.

Metso LSF A Series

The A series produces higher cake solids concentration (% w/w) than D and E Series polishing filters as the cake solids settle in the conical bottom with multiple filtration cycles for each wet cake discharge. Cost-effective design results in maximum filtration area for vessel size. A-Series LSF requires minimal installation space due to vertical through floor vessel configuration.

Read more at
metso.com/portfolio/LSF-filter

Metso LSF D Series

D Series filters offer filtration areas ranging from 80 m² to 360 m². The familiar horizontal cylindrical configuration features a double flanged fixed head unit for expandable options and easy retracting shell coverings.

The largest unit in the series, the Metso LSF D36/36 features 36 x 10 m² elements with Quadrex cloth per side. Smaller units, such as the DD24/36, can be expanded from 240 m² to 360 m² with an insertion of 12 extra elements and corresponding movable shell.

Metso LSF E Series: Cost effective construction

E Series filters range from 200 m² to 720 m² in filtration area. The larger horizontal cylindrical configuration requires small crane/hoist availability for routine element changes. The fixed head unit is double flanged for expandable options and has easy retracting shell coverings.

Typical applications

- Thickener/clarifier overflows
- Solvent extraction and electrowin feed solutions
- Pressure and vacuum filter filtrates
- Centrifuge centrates
- Prior to crystallisation or precipitation
- Inorganic pigment recovery

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LSF filter: quick data

A Series	A5	A6	A10	A15	A21
Effective filter area, with Quadrex cloth (m ²)	15 - 21	30 - 45	60 - 90	130 - 175	200 - 300
Number of elements (pcs)	3 - 5	4 - 6	6 - 10	13 - 15	15 - 21
Recommended max flow @0,8 flux (m ³ /h)	12 - 17	24 - 36	48 - 72	104 - 140	160 - 240
Design pressure / temperature	3,0 bar / 100°C				
Filter height (mm)	2857	3139	3462	3991	5227
Filter width (mm)	970	1348	1653	2152	2770
Filter weight (kg)	430	650	860	1790	2800
Wash water consumption (m ³ /cycle)	0,7 - 0,9	0,9 - 1,2	1,9 - 2,7	4,5 - 4,8	5,6 - 8,7
Process air consumption (Nm ³ /cycle)	20 - 30	30 - 50	60 - 90	130 - 160	180 - 270

D Series (also available D8, D12, D16, etc)	D10	D14	D18	D20	D24	D28	D32	D36
Effective filter area, with Quadrex cloth (m ²)	100	140	180	200	240	280	320	360
Number of elements (pcs)	10	14	18	20	24	28	32	36
Recommended max flow @0,8 flux (m ³ /h)	80	112	144	160	192	224	256	288
Design pressure / temperature	3,0 bar / 100°C							
Filter length (mm)	2221	2621	3021	3248	3648	4048	4448	4848
Filter height (mm)	2550							
Filter width (mm)	2319							
Filter weight (kg)	2600	2900	3100	3300	3600	3900	4100	4400
Wash water consumption (m ³ /cycle)	4,6	6,1	7,5	8,5	9,8	11,2	12,6	14
Process air consumption (Nm ³ /cycle)	110	140	160	180	200	220	250	270

E Series (also available E12, E16, etc)	E10	E14	E18	E20	E24	E28	E32	E36
Effective filter area, with Quadrex cloth (m ²)	200	280	360	400	480	560	640	720
Number of elements (pcs)	10	14	18	20	24	28	32	36
Recommended max flow @0,8 flux (m ³ /h)	160	224	288	320	384	448	512	576
Design pressure / temperature	3,0 bar / 100°C							
Filter length (mm)	2915	3395	3875	4120	4600	5080	5560	6040
Filter height (mm)	3502							
Filter width (mm)	2880							
Filter weight (kg)	6000	6500	7100	7400	7900	8400	8900	9500
Wash water consumption (m ³ /cycle)	7,5	9,6	10,7	13,2	15,4	17,6	19,7	21,8
Process air consumption (Nm ³ /cycle)	220	260	290	330	370	410	450	490