



## MAIN APPLICATIONS:

- FINE CHEMICAL
- PETROCHEMICAL
- OIL & GAS
- PHARMACEUTICAL
- POWER GENERATION

## FILTER CHARACTERISTICS:

- Designed under Mott Corporation licensee
- Housings construction materials:
  - Carbon steel
  - Stainless steel
  - Exotic alloys  
*(other materials available as option)*
- Filter elements construction materials:
  - AISI 316L, AISI 310
  - Inconel 600, 625
  - Hastelloy C276, C22, B, X
  - Monel 400
  - Titanium  
*(other materials available as option)*
- Designed according to code:
  - ASME Sect. VIII Div. 1
  - EN 13445  
*(other codes available as option)*
- Suitable for liquid Gr. 1 and 2 filtration
- Designed for solids separation from liquid
- Designed for maintenance free continuous filtration
- Conform to 97/23/CE Directive
- Conform to 94/9/CE Directive
- Available with U-Stamp certification
- Back-pulse cleaning system with pressurized gas
- Fully automatic back-wash cycles control
- **FILTER ELEMENTS CHARACTERISTICS:**
- Sintered metal powder construction
- High resistance to temperature and corrosion
- High porosity
- Low Delta-P even with high specific flow-rate
- Excellent cleanability
- Solids separation efficiency up to 99.9%

# LSI Series

## BACK-PULSE FILTERS TAILOR MADE

### TECHNICAL DATA

#### CONSTRUCTION MATERIAL

##### Body:

- Carbon steel
- 304-SS
- 316-SS
- 310-SS
- Exotic alloys
- Other materials available

##### Filter elements:

- 316L-SS, 310-SS
- Inconel 600, 625
- Hastelloy C276, C22, B, X
- Nichel
- Monel 400
- Titanium
- Other materials available

#### MAX. WORKING TEMPERATURE

##### Oxydising atmosphere:

- 316L-SS 399 °C
- 310-SS 593 °C
- Inconel 600 593 °C
- Hastelloy X 788 °C

##### Reducing atmosphere:

- 316L-SS 538 °C
- 310-SS 815 °C
- Inconel 600 815 °C
- Hastelloy X 927 °C

#### GASKETS

- Spiral wound
- Klingersil

#### ACCESSORIES

- Automatic discharge valve
- Differential pressure switch
- Differential pressure transmitter
- Control unit
- Pressure safety valves
- Skid mounted unit

### High-strength, high-performance filtration of liquids

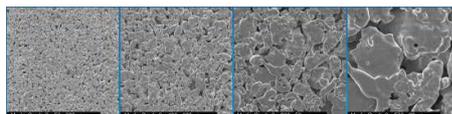
#### What makes Mott Corp. the company of choice for process filtration.

When it comes to developing efficient, long-lasting process filtration systems, no other company has more experience, and as much to offer, as Mott Corp. For decades, users of bag, plate-and-frame, and leaf filters have switched over to Mott for the distinct advantages that Mott systems provide.

Giving you more than you need, but not more than you want.

The optimal balance.

We never rely on "just enough" engineering. Products are routinely designed and tested to perform at the specified flows and differential pressures in pilot tests on-site or in Mott applications laboratory. Which is why each Mott system is designed for maximum process results, extended service life and optimum return on investment. Asco/Mott alliance provides complete filter systems modularized to include all valves, instruments, controls, piping and gauges.



**Uniform, high-precision porosity:** pore size and pore distribution are controlled to create filtration media with distinct porosity characteristics.

**High-strength media:** sintering bonds filter media together at the molecular level, eliminating the tear, fatigue and breakthrough problems typical of other media.

**Reduced spare parts expense:** porous metal filter elements seldom need replacing, unlike disposable cartridges and bags.

**Ease of cleaning:** Mott filters are easily freed of particulate by using back-wash cleaning methods – without scraping, scrubbing, or rotating filter elements. Contaminants may also be removed with water, steam, air, solvents, caustic or acid washing, or with ultrasonic cleaning.

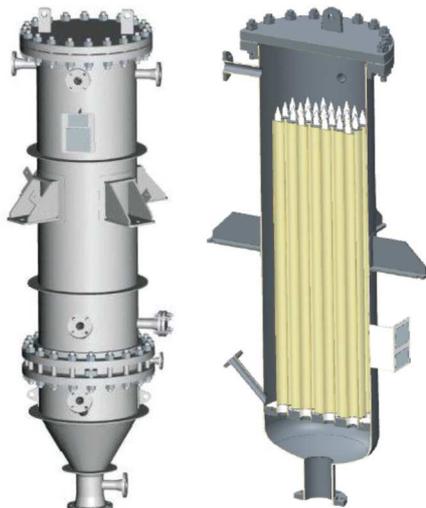
**Totally enclosed:** backwashing filter elements reduce operator exposure to hazardous chemicals.

**Waste minimization:** cleanable filter media eliminates incineration or landfill costs associated with disposable filters.

**Minimal maintenance:** Mott filters have no moving parts, resulting in simpler and less frequent maintenance procedures.

**Single-stage filtration:** An entire train of process filtration steps may often be replaced with a single Mott filter system.

**Wide selection of media:** Mott offers the widest selection of filter media, more than 20 in all, ranging from standard 316L stainless steel to corrosive-resistant nickel and Hastelloy®.



#### An infinite number of ways to design an Asco / Mott solution for you.

These pages merely provide an overview of the available process filtration methods.

Once we establish which method is best suited to your application, then we can begin creating your unique solution.

Selecting the proper materials.

Determining the media grade.

Customizing the design.

Evaluating performance – first in the Mott laboratory, then on-site at your facility.

All of which ensures that your completed Asco/Mott system will be fully engineered to the specific parameters of your process.

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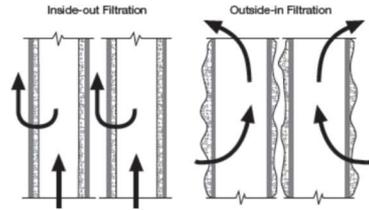
# ASCO FILTRI

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Mott lets you take the best course for your process filtration.

There are many ways to approach process filtration. Some companies offer the traditional outside-in method. And a few can incorporate the benefits of all metal filter elements. But only Mott offers four porous metal filtration designs to separate solids from liquids.



Inside-out filtration in Mott HyPulse® LSI and LSM filters results in more uniform deposition and more secure retention of solids, while eliminating the problem of cake bridging between elements often associated with outside-in filtration.

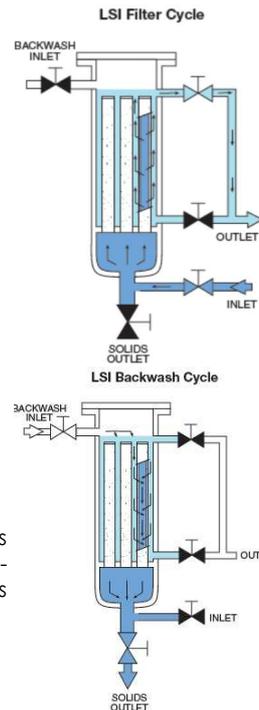
**HyPulse® LSI filters** incorporate inside-out filtration, a method and design unique to Mott Corporation.

At the end of each filter cycle, solids are backwashed off the inside of the elements and discharged as a concentrated slurry or wet cake.

Distinct LSI benefits include:

- Eliminates cake bridging and associated problems
- Higher surface area to volume ratio
- Allows for cake washing
- Minimizes heel
- High solids discharge capability
- Rapid turnaround between cycles maximizes on-stream service
- Can be used without filter aids for filtration applications
- Positive cake retention and control
- Ideal for recovery of carbon-based precious metal catalysts, activated carbon, organic salts, FCC catalyst from slurry oil, and pre-coat filtration applications.

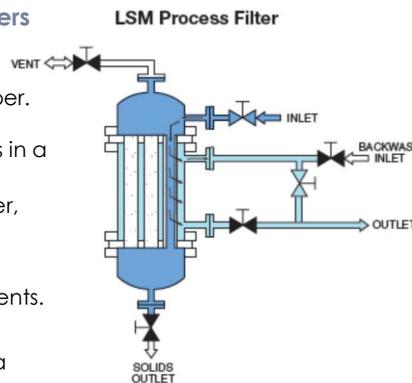
Inherently more efficient than traditional outside-in liquid-solids filter, Mott HyPulse LSI filters pass the slurry through the elements from the bottom-up and inside-out, resulting in less heel, minimal loss of filtrate and easier discharge of solids.



Other unique Mott alternatives, **HyPulse LSM filters**

place inside-out filtration within a double open-ended design. High-density solids are allowed to settle directly into the discharge hopper. LSM filters may be operated on a filter backwash cycle schedule, or can be used as concentrators in a recirculating system.

- Feed can be introduced at the top of the filter, the bottom or both.
- Allows longer cycles.
- Keeps high-density solids from clogging elements.
- Achieves higher solids concentration.
- Can be used as a crossflow concentrator or a continuous-loop reactor filter.
- Incorporates efficiencies of inside-out filtration.
- Ideal for RANEY® nickel catalyst recovery, and for steady-state continuous operation in critical process applications.



**BACK-PULSE FILTERS  
TAILOR MADE**

## APPLICATION DETAILS:

- FLUID CATALYTIC CRACKER
- CATALYTIC REFORMING
- DEHYDROGENATION
- STEAM CRACKER
- POLYPROPYLENE GAS PHASE
- LLDPE/HDPE GAS PHASE
- ETHYLENE
- EDC & PVC INTERMEDIATE
- DIPHENOLS
- COAL GASIFICATION
- BIOMASS PYROLYSIS
- ANILINE
- MALEIC ANHYDRIDE
- HYDROXILAMINE
- AMMONIA
- CATALYST RECOVERY
- ORE SMELTING
- PRECIOUS METAL RECOVERY
- NUCLEAR PLANT
- DECOMMISSIONING
- MICRONIZED ALUMINA
- FUMED SILICA
- VACUUM DRYER
- BICONICAL DRYER

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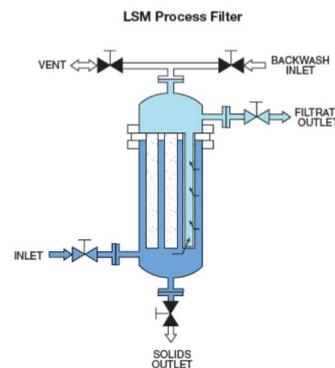
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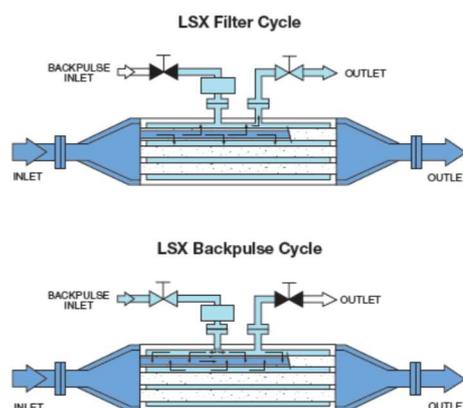
**HyPulse LSP filters** offer conventional outside-in filtration for polishing low solid streams with solids concentration under 100 ppm. Easy to use and maintain, LSP filters provide reliable, permanent filtration that outperforms other types of media in a number of ways:

- Easy access to elements from top.
- Element bundle is removable as an assembly.
- Dense element spacing for compact, economical designs.
- Filter areas up to 200 m<sup>2</sup> withstands differential pressure up to 34 bar.
- Ideal for polishing filter applications, inorganic bromide salts, and ion exchange filtration applications.



**HyPulse LSX Process filters** provide uninterrupted filter cycle performance through crossflow filtration. Slurries flow through the open-ended filter elements, allowing filtrate to exit the system on a continuous basis while particulate remains in the circulating stream. This is the ideal filtration method for slurries with unique particulate characteristics, or for achieving maximum retention of valuable particulate such as expensive catalysts.

- High solids concentration factor.
- High crossflow velocities (1.5-6 m/s) keeps solids in suspension and the filter surface clean.
- Filters out finer particulate.
- Ideal for operation with continuous loop reactors, radioactive waste
- Concentration and very fine particle separation.
- Applicable for batch concentrations or continuous-stage operation.



The tangential flow in Mott HyPulse LSX filters makes them especially well-suited to filtering out fine particulate which tend to be held in suspension. LSX elements can be easily cleaned by back-pulsing the filter while it remain in on-line.

### Handling the most rigorous industrial conditions.

While applications including high temperatures and corrosive environments are Mott's specialty, any pressure-driven filtration process with high operating costs is a potential opportunity for applying our products. We provide each customer with the best solution to their process specifications, improving efficiency as well as protecting their investment in equipment.

**Refinery.** Mott filter systems can be designed to handle high flow rates in continuous operations typical in refinery applications. Hot hydrocarbon streams such as FCCU slurry oil, often require removal of catalysts and other particulate. Removal of catalyst fines and other particulate not only improve the oil product, it also improves downstream operating equipment by preventing fouling and reducing maintenance.

**Chemical/Petrochemical.** Extreme temperatures, harsh elements and other factors that contribute to hostile environments make Mott porous metal the ideal media for chemical/petrochemical filtration applications. Elements sintered from 100% stainless steel, nickel, or Hastelloy offer unsurpassed chemical compatibility, and the ability to withstand years of continuous use under the worst conditions.

Typical applications include: polishing of corrosive liquids and gases, process steam filtration, catalyst retention in fluid bed reactors, catalyst recovery in slurry phase reactors, high-temperature liquids, cryogenic fluids, solvents, ketones, esters, amines, liquid hydrocarbons, polymers, guard filtration for fixed bed reactors.

We reserve the right to change the specifications of this specification without notice.

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