







# Achieve the impossible.

## INDUSTRIES SERVED

- Microelectronics
- Medical
- Pharmaceutical
- Analytical Instrumentation
- Aerospace / Defense
- Food & Beverage
- Chemical Processing
- Energy
- Petroleum Refining / Petrochemical
- Process Control, Monitoring & Safety
- Environmental / Waste Water
- Manufacturing Equipment
- Biotechnology
- Transportation

Does your project have a unique or challenging filtration or flow control specification? Let us help transform your product concept into reality.

When we collaborate with our customers early in the design phase, there's no challenge we can't address. In fact, you'll find calibrated flow controllers from Mott in unmanned space vehicles traveling throughout the galaxy and precision filters extracting nano-particles in the manufacture of semiconductors around the world.

We focus on precision and quality to custom engineer a solution for you when no off-the-shelf technology exists. For nearly 60 years, dozens of Fortune 100 companies have relied on us to help breathe life into their ideas by teaming up with our engineers from the onset – through the design, concept, prototyping and manufacturing phases. Our customers include some of the most recognized brand names in the world as well as those aspiring to become so.

Our solutions exist in markets everywhere – from bio-pharmaceuticals to microelectronics, from food and beverage to specialty chemical production. Through every challenge, we strive to inspire engineers to escape the ordinary and achieve the impossible.



# Embrace the possibilities.

## Many companies claim to be your partner. We thrive on it.

When you have a unique requirement or a specific challenge that appears too difficult to overcome, we are eager to work with you – to understand your goals and your constraints and to specify an existing product or custom design a solution that brings your vision into focus.

Through the decades, we've found that our most productive and successful relationships were formed when customers approached us early in their design phase.

Our engineers will work side by side with your team throughout the prototyping and manufacturing stages to ensure our components operate precisely the way you envisioned.

## Rapid prototyping and 3D printing enable a world of possibilities.

We're so committed to rapid prototyping that we've dedicated an entire cell to it. It's here that our engineering team works with customers to develop complex prototypes for next-generation technologies – always with an eye toward manufacturability. This enables you to check your design for precise fit earlier in the process and be faster to market than your competition.

And, with new, in-house patent-pending 3D printing technology, we are no longer constrained by the limitations of machining or tooling. This capability enables us to print porous metal parts with complex geometries and precise pore sizes. We even have the capability to produce parts with both solid and porous components in a single print job.

## Quality is at the core of our business.

Our manufacturing facilities are ISO 9001:2008 certified – an accreditation we have proudly upheld since 1997. We also maintain Class 7 and Class 5 clean rooms that filter room air up to 300 times each hour to support the manufacture of contaminant-sensitive components used in semiconductor, pharmaceutical and biotechnology applications.

Our customers have long recognized the value of our quality management system and those in nearly 70 countries depend on us to ensure the quality of their products and services.



# Bring us your challenge.

## Process Filtration Systems and Filter Elements

You will find our filtration systems and components in chemical processing and petroleum refining applications as well as power generation and textile manufacturing processes throughout the world.

Our sintered metal filter elements are a popular choice for many industrial applications because of their resistance to corrosion, wear and heat. In fact, our solutions can be found in processes with temperatures that reach as high as 1700°F (925°C) and cryogenic applications as low as -238°F (-150°C). In addition, our proprietary closed-loop process filtration systems have made some of the most hazardous chemical manufacturing processes much safer for the operator.

## High-Purity Filters

For decades, engineers have relied on Mott high purity and GasShield® filters for applications with the most rigorous filtration standards, such as the manufacture of pharmaceuticals or semiconductors. From point-of-use and bulk filters to surface mounts and the use of fiber media, Mott offers a full line of products to optimize filtration in your processes. Mott's high purity filters screen particles as small as 1.5 nanometers with minimal pressure drop and are manufactured in Class 7 and Class 5 clean rooms to uphold the highest quality standards.

## Porous Metal Filters and Assemblies

Whether you're searching for a filter to recover precious catalyst from biomedical tests or striving to ensure your waste water treatment system is upholding drinking water quality, we have the solution. For decades, we have delivered porous metal filters fashioned from dozens of alloys, in all shapes and sizes and with customized hardware connections to suit a wide range of manufacturing processes across multiple industries.

Our solid-state diffusion bonding process holds filter media together at the molecular level, creating a virtually inseparable bond, even under the harshest conditions.

## Spargers

Hundreds of beverage, chemical, pharmaceutical and biotech companies rely on our robust line of spargers, including our quick-change spargers, to swiftly and effectively diffuse oxygen, carbon dioxide, nitrogen and other gases into liquids. Mott spargers create bubbles that are more numerous and far smaller than those produced by needle valves and drilled orifices. In fact, they have been shown to increase the transfer of gases into liquids by as much as 400% over drilled pipe.

What's more, our inline, non-intrusive models are designed to meet your media, organism and mass transfer specifications, without affecting inline flow rates.

## Flow Restrictors

You will find our industrial and high purity flow restrictors providing accurate, laminar flow in a wide range of applications, including in semiconductor tools, anesthesia and liquid drug delivery devices, firefighter air packs, satellite ion propulsion systems and beverage gas mixing.

Mott flow restrictors channel gas through hundreds of pores, compared to only one in flow orifices, preventing clogging without increasing flow velocity, to minimize friction and maximize restrictor life.

When it comes to accuracy, our flow restrictors are unmatched. We test each device to ensure it meets your specifications. In some applications, our restrictors can deliver accuracy up to +/- 1%. In addition, because they are designed without moving parts, they require no adjustments.





## Chromatography Components

Every day, PerfectPeak™ chromatography solutions from Mott help chromatographers uncover life-saving medicines, keep food safe for consumption and monitor elements in the environment.

These products deliver optimal results in all forms of chromatography, including gas chromatography, high and ultra-high performance liquid chromatography, supercritical fluid chromatography, and mass spectrometry.

Today, we are pleased to offer a new line of patent-pending, inline static mixers that utilize proprietary 3D printing technology to deliver industry-leading baseline noise reduction and lower detection limits. As the industry pushes its boundaries by using more polar and difficult-to-mix solvents, our new static mixers deliver better signal to noise ratios, peak shapes and signal dispersion.

In addition, our line of porous metal column frits, solvent filters and flow restrictors are non-shedding, designed to withstand high-pressure applications and resist highly caustic solvents.

## Gas Diffusers

Among other applications, our diverse line of gas diffuser assemblies disperses gases during semiconductor manufacturing, in wastewater treatment processes and in fuel cell operation.

In fact, our gas diffusers substantially reduce vent times of load lock or vacuum chambers, ensure optimal gas flow and reduce particle contamination to help you maximize manufacturing throughput.

## Flame Arrestors

Mott flame arrestors are critical in applications ranging from welding torches to fuel pipelines to jet engines and we are proud to know that our devices have saved hundreds of lives.

We offer these products in multiple sizes and shapes to accommodate various flow conditions specified by our customers.

Each boasts superior joint strength and sealing integrity and is tested in accordance with internationally recognized standards for porosity/density, permeability and pore size. We are able to furnish the documentation necessary to meet the requirements of UL, CSA, FM, ATEX and other certification standards and directives.

## Materials

We sinter components from a variety of metals and alloys to meet temperature and corrosion resistance requirements.

- Stainless Steel 316L, 304L, 310, 347 and 430
- Hastelloy® C-276, C-22, X, N, B and B2
- Inconel® 600, 625 and 690
- Nickel 200 and Monel® 400 (70 Ni-30 Cu)
- Titanium
- Alloy 20
- Many others

Hastelloy is a registered trademark of Haynes International, Inc.

Inconel and Monel are registered trademarks of Special Metals Corp.





# Expand your capabilities.

## Comprehensive testing services deliver insightful data.

Longstanding customers and newcomers alike rely on our state-of-the-art Materials Characterization Center to help support the development of new products and to identify issues or concerns in existing design and manufacturing processes.

With your samples, and our state-of-the-art laboratory equipment, our experienced professionals can conduct cleanliness and strength tests, porous media characterization tests, lifecycle and failure analysis, filtration efficiency and feasibility tests as well as elemental and chemical analyses. We provide a comprehensive findings report and, upon request, will work with you to mitigate risks and explore solutions to any challenges that arise.

## Decades of experience at work for you.

Through the decades, our engineers have amassed deep expertise in specialties related to nuclear, material, and chemical engineering, and they relish the opportunity to share their knowledge with others. That's why they not only collaborate on projects in the standard fashion, but offer on-site support to achieve even closer alignment with members of your project team.

Several of our most knowledgeable engineers and world-renowned experts are also available to train your associates on the latest filtration and flow control techniques.

## Harness your options.

One question we receive nearly every day from prospective clients is "can you make this?" In most cases, because we've successfully designed and manufactured thousands of products that conform to unique specifications, we're able to rise to the challenge.

Whether you're searching for porous metal components for a small medical implant or a massive oil refinery, whether you need a standard, off-the-shelf assembly or a highly customized fitting, and whether you're looking for components made from ordinary stainless steel or a unique alloy blend, we welcome the opportunity to speak with you.





# Your options abound.

Here is a short, but by no means, exhaustive list of variables we have historically customized to meet our clients' specifications.

- Filtration Efficiency
- Micron Pore Size
- Dimensions
- Shape
- Alloy
- Correlated Flow Rate
- Fittings & Connections
- Fluid Compatibility
- Surface Treatments
- Manufacturing Cleanliness Standards
- Quality Certifications
- Lab Qualification
- Packaging





Mott is owned entirely by its employees. As a result, every one of our associates understands the importance of designing, engineering, manufacturing and servicing the best products in the industry, and providing unparalleled technical expertise to our customers.

The company was founded in 1959 by metallurgist Lambert (Bud) H. Mott, and, for more than half a century, has earned a reputation for ironclad reliability, unparalleled application expertise and attention to customer service. Today, we operate two facilities in the United States and partner with a global network of distributors that attend to our customers' engineering needs in all corners of the world.