GREAT LAKES FILTERS
Technical Fabrics & Filtration

Automotive Filtration

Great Lakes Filters: Driving Filtration Excellence in Automotive Manufacturing and Performance

In the automotive industry, precision, reliability, and innovation are key to success. Great Lakes Filters brings decades of expertise in technical fabrics and filtration solutions designed to optimize performance across automotive applications. From enhancing cabin air quality to protecting engine systems, our products ensure superior performance, longevity, and efficiency.

Our Filtration Solutions for the Automotive Industry

Acme Mills offers a comprehensive range of filtration solutions designed to improve the performance, durability, and efficiency of thermoforming applications. Our specialized solutions include:

CABIN AIR FILTRATION

Advanced filtration media that improves air quality inside vehicles by capturing particulates, allergens, and odors, ensuring a cleaner and more comfortable passenger experience.

ENGINE AND FUEL FILTRATION

High-performance filter materials engineered to protect vital engine components from harmful contaminants, promoting efficient operation and extending system life.

INDUSTRIAL FILTRATION FOR MANUFACTURING PROCESSES

Precision-engineered filters that enhance production line efficiency, such as paint booth filtration, coolant filtration, and air system filters to maintain a clean and optimized manufacturing environment.

CUSTOM FILTRATION SOLUTIONS

Tailored materials and filtration systems designed to address the unique needs of automotive systems, from hydraulic filtration to fluid management, ensuring optimal performance in every application.

33 Bloomfield Hills Pkwy. #120 Bloomfield Hills, MI 48304 (248) 232-3118

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Automotive Filtration (cont'd)

Why Choose Great Lakes Filters for Automotive Filtration?

- **Custom Solutions:** Collaboration with clients to design filtration products that meet exact specifications and unique operational demands.
- **Proven Expertise:** Decades of experience providing high-quality filtration solutions for automotive systems and processes.
- **Regulatory Compliance:** Our filtration products meet or exceed automotive industry standards for safety, performance, and environmental responsibility.
- **Innovative Technology:** Utilization of cutting-edge filtration materials and techniques to create solutions that enhance performance and reduce downtime.
- **Sustainability Focus:** Commitment to eco-friendly materials and processes that align with the automotive industry's environmental initiatives.

Applications for the Automotive Industry

- **Cabin Air Systems:** Filtration solutions that improve passenger health and comfort by removing airborne contaminants.
- **Engine and Fuel Systems:** Advanced filtration media that ensures clean fuel and lubricants, protecting critical components from wear and tear.
- **Paint Booths and Production Line Systems:** Filters that maintain clean airflow in manufacturing environments, improving paint quality and production efficiency.
- **Hydraulic and Fluid Filtration:** Custom filtration solutions designed to optimize fluid system performance and reduce contamination risks.

Experience the Difference: Automotive Filtration Excellence

Great Lakes Filters is your trusted partner in delivering innovative and reliable filtration solutions for the automotive industry. Discover how our expertise can elevate your operations and support your goals for enhanced performance, reliability, and sustainability.

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Case Study

Optimizing Central Coolant Systems for a North American Automotive Powertrain Supplier

Needs Assessment & Solutions Summary

Great Lakes Filters partnered with a leading automotive supplier of powertrain components in North America to address severe maintenance challenges with their central coolant system. The client operated a 50,000-gallon system that supplied coolant to multiple machining centers critical to their production. Trap oil contamination and hydraulic leaks had disrupted operations, leading to tooling running hot, excessive machining chatter, and unacceptable part quality. These issues not only increased tooling and maintenance costs but also caused frequent downtime, creating a significant bottleneck in production schedules.

The client faced additional constraints, including the inability to perform full coolant system dumps due to the prohibitive cost of waste treatment and downtime. They needed a solution that would allow for efficient filtration and cleaning without halting operations or degrading the lubricity of their water-soluble coolant.

Great Lakes Filters developed a progressive solution involving multiple composite filter roll media tailored to the specific stages of filtration required. This approach allowed the client to gradually clean and balance their system while maintaining optimal performance, leading to improved part quality, extended coolant life, and reduced waste treatment costs. The solution not only restored the efficiency of their production processes but also provided a safer, cleaner working environment for their team.

Automotive Filtration (cont'd)

Project Specifications

- **Client**: Automotive powertrain component supplier (North America)
- **Application**: Filtration of a 50,000-gallon central coolant system supporting machining centers
- **Key Challenges**:
  - Trap oil contamination leading to hot tooling, machining chatter, and poor part tolerances
  - Excessive maintenance and filter roll media costs
  - Downtime associated with coolant system cleaning

Solution Design

TO ADDRESS THESE CHALLENGES, GREAT LAKES FILTERS ENGINEERED A SET OF THREE FILTER ROLL MEDIA DESIGNED FOR INTERMITTENT USE:

- **Oil-Permissive Media**: Allowed trap oil to pass through during initial stages.
- **Oleophilic Media**: Captured trap oils effectively to restore balance.
- **Clean-Up Roll**: Highly oleophilic material used periodically for deep cleaning, removing trap oils while maintaining coolant lubricity.

Applications & Capacity

- The solution enabled periodic cleaning of the coolant system without requiring complete system dumps.
- Supported consistent coolant filtration for extended periods, reducing the frequency of media replacement.
- Ensured machining centers operated within specified tolerances, improving overall productivity.

Potential Industries

AEROSPACE MANUFACTURING

HEAVY EQUIPMENT AND MACHINERY PRODUCTION

INDUSTRIAL PUMP AND COMPRESSOR MANUFACTURING

Automotive Filtration (cont'd)

METALWORKING AND FABRICATION

ENERGY AND POWER GENERATION EQUIPMENT

MARINE AND SHIPBUILDING INDUSTRIES

Manufacturing Details

COMPOSITE CONSTRUCTION

The filter rolls were crafted from ISO-certified oleophilic and oleophobic materials.

CUSTOMIZATION

The composition and layering of materials were optimized to ensure high performance without premature media blinding.

BATCH TESTING

Each roll underwent stringent quality control to verify its filtration capacity and durability.

Quality Control Measures

Great Lakes Filters adhered to stringent quality assurance protocols to meet the client's rigorous pharmaceutical standards:

- **ISO-Certified Production**: Materials and processes met stringent ISO quality standards.
- **Performance Testing**: Each batch of filter rolls was tested for oleophilic and oleophobic properties, ensuring consistent removal of trap oils.
- **Field Validation**: Rolls were tested in real-world conditions to confirm their effectiveness before deployment.

Automotive Filtration (cont'd)

Value Delivered

- **Cost Savings**:
  - Reduced frequency of system dumps, avoiding expensive waste treatment.
  - Extended coolant life, leading to lower chemical costs.
- **Quality Improvements**:
  - Cleaner coolant resulted in higher-quality parts with fewer out-of-specifications.
  - Enhanced tool life and reduced machining chatter.
- **Productivity Gains**:
  - Minimized downtime for maintenance.
  - Reduced waste and created a cleaner, safer working environment.

Contact Great Lakes Filters

Need assistance in maximizing manufacturing efficiencies to ensure quality and optimize costs? Call or email us today and one of our skilled team members will lead the way. (248) 232-3118 ~ info@acmemills.com