Graver Technologies

FILTRATION | SEPARATION | PURIFICATION

AIR & GAS FILTRATION PRODUCTS

— Product Offering—

Standard Filter Product

Engineered Filtration Equipment

Custom/OEM Filters

PLE**KX** Composite Web Media

HEPA*fine* & ULPA*fine*

Standard Filter Products: Housings & Elements

Graver Technologies can address a wide range of process filtration applications. Our filters can be found protecting rotating equipment, including vacuum pumps, turbines, and compressors.

Engineered Filtration Equipment

When our standard filters don't meet the full expectation of our customers, our engineering team can provide designs that meets the most stringent of customer specifications. Whether the application calls for a special paint process, the addition of ancillary devices or NDE requirements, we are ready to support your project.

Custom/OEM Filters

Original Equipment Manufacturers rely on more than just our products, they rely on our commitment to customer support and our on time deliveries. Our products include designs for air filtration, and medical equipment that remove exhaust smoke and odor. We offer radial fin, panel, and other special designs. Glue bead technology is offered on many of the Custom/OEM products. We also work with synthetic HEPA/ULPA and Nano-Fiber.

PLE**KX**® — Composite Web Media

PLE**KX** composite web media is a uniform layer of immobilized carbon powder. PLE**KX** is a patented media that is laminated between two flexible supporting substrates. Formulas are available for the adsorption of formaldehyde and other offensive odors. Master rolls are available up to 68" width.

HEPA*fine*® & ULPA*fine*®

When industry demands high efficiency filters for medical, environmental, commercial and industrial applications, they can count on Graver Technologies to provide cost effective solutions for industries most demanding requirements. Our HEPA and ULPA filters can capture particles down to 0.1u @ 99.99% efficiency. Our in-house testing can validate our filters meet this requirement.

Discover the Clear Choice

Graver Technologies has been designing and producing superior filtration, separation, and purification solutions for more than 100 years. Graver Technologies Air and Gas Filtration offers a vast array of filtration products. If your application is fuel gas filtration on an off-shore platform, or the protection of down-stream instrumentation, or the recovery of precious metals, Graver Technologies has a cost-effective filter solution for you.

Industry Leading Quality

- Certified to ISO 9001:2015
- ASME Code, Section XI, Division I and PED 97/23/EC
- In house testing for several HEPA and ULPA test protocols
- Compressed design to prototype lead times
- Dedicated to continuous improvement

STANDARD FILTER PRODUCTS: HOUSINGS & ELEMENTS

Graver Technologies designs and manufactures a variety of standard filter products that support customer's processes. Our air and gas product line addresses a wide range of process filtration applications and can be found protecting all types of rotating equipment; including vacuum pumps, turbines, meters, and compressors.

Our industrial filter elements include:

- Panel-style air intakes
- Cylindrical air intakes and dust collectors
- Oil mist eliminators
- Radial fin sewn end elements
- Molded end and metal end cap style

Graver Technologies also designs low pressure housings for applications under 15 PSIG:

- ASME code and PED/CE dual stamped
- 1 ½" to 4" connection sizes
- 150 psi, 285 psi, and 720 psi designs
- Air intake housings up to 4" connection sizes
- In-line filters for air and gas service with connection sizes of ½", ¾", and 1".

Compressed Air & Gas Filters: CP Series

The CP Series are in-line filters that are designed to remove solids from compressed air and gas streams. The CP series offers sewn end filter element technology that are replaceable and recoverable. The elements frames can be sent back to the factory to be recovered with new media. This is a cost-effective way to reduce the total cost of filtration. The element features a radial fin design that provides maximum surface area to allow for long service life with a very low pressure drop.

- Removes solids from 0.3µ to 50µ
- Available in Carbon Steel, 304 and 316 MOC
- Design: ASME Section XI, Div. 1 and PED97
- Applications: Air, O_2, H_2, He, CH_4, natural gas, N_2, A
- Connections from ½" to 24"
- Temperatures to 600° F
- Pressures from 15 PSIG to 1440 PSIG
- Media: Fiberglass, Teflon, Polyester, Nomex

Compressed Air and Gas Filter: GTX Series

The GTX Series are in-line filters that are designed to remove solids from compressed air and gas streams. The GTX series features our O-ring "Piston Seal" technology. This provides consistent and positive sealing every time. The metal end capped element is a radial fin design that provides additional surface area to allow for long service life with a very low pressure drop.

- Removes solids from 0.3µ to 50µ
- Available in Carbon Steel, 304 and 316 MOC
- Design: ASME Section XI, Div. 1 and PED97
- Applications: Air, O_2, H_2, He, CH_4, natural gas, N_2, A
- Connections from ½" to 4"
- Temperatures to 300° F
- Pressures: 180 PSIG, 270 PSIG and 720 PSIG
- Media: Polyester

Compressed Air & Gas Filter/Separator: AGS Series

AGS Filter/Separators are in line coalescing filters that are designed to remove liquids and solids from compressed air and gas streams. The AGS series offers multi-layer fiberglass coalescing elements. Our units can be designed for both single and multi-stage designs.

- Removes solids and Liquids: 0.2µ and 1µ @ 99%
- Available in Carbon Steel, 304 and 316 MOC
- Design: ASME Section XI, Div. 1 and PED97
- Applications: Air, O_2, H_2, He, CH_4, natural gas, N_2, A
- Connections from ½" to 20"
- Temperatures to 300° F
- Pressures: 180 PSIG, 270 PSIG and 720 PSIG
- Media: Polyester/Fiberglass

Air Intake Filters: CA & PFS Series

The CA (Canister Style) and PFS (Panel Style) are air intake filters. Our designs offer optional materials of construction that meet all environmental conditions. The CA is also utilized as a vent/breather filters for liquid and solid storage tanks.

- Removes solids from 0.3µ to 50µ (available in multi stage designs)
- Available in Carbon Steel, 304 and 316 MOC
- Applications: Air Intake, vent/breathers
- Applications: Air
- Connections from ½" to 24"
- Temperatures to 300° F
- Pressures: 14.7 PSIA
- Media options: Polyester, Fiberglass, consult factory

Exhaust Separators: PME Series

The PME series is designed to remove visible oil/smoke plume from the exhaust of vacuum pumps. The unit can also be used as a vent/breather for a storage tank. Most models employ one element which permits quick and simple element change out.

- Removes solids from 0.3µ and 1µ @ 99%
- Available in Carbon Steel, 304 and 316 MOC
- Pressures: to 14 PSIG Max
- Applications: Air, mixed gases
- Connections from ½" to 12"
- Temperatures to 300° F
- Media: Fiberglass

Vacuum (Suction) Filters: LKV & HKV Series

The LKV/HKV series are solids loading filters that can be designed for full vacuum to 172 PSIG. The series is design to protect vacuum pumps from process debris that can prematurely damage vacuum pumps. The element features a radial fin design that provides additional surface area to allow for long service life with a very low pressure drop.

- Removes solids from 0.3µ to 50µ
- Available in Carbon Steel, 304 and 316 MOC
- Design: ASME Section XI, Div. 1 and PED 97/23/EC
- Applications: Air, O_2, H_2, He, CH_4, natural gas, N_2, A
- Connections from ½" to 24"
- Temperatures to 300° F
- Pressures: Full Vacuum to 180 PSIG
- Media Options: Polyester, Teflon, Nomex, Polypropylene and Fiberglass

ENGINEERED FILTRATION SYSTEMS

The engineering team at Graver Technologies can custom design filtration solutions that meet the demanding requirements of a wide variety of filter applications. We have been providing custom filtration solutions to industry for over 50 years.

We design housings and systems for:

- Power Generating Gas Turbines
- Vacuum Pumps
- Compressors and Blowers
- Pneumatic Conveying Systems

Our products can be found in:

- Industrial Gas Production
- Power Generating Utilities
- Precious Metal Catalyst Recovery
- Chemical Processing
- Refineries
- Food and Pharmaceutical Manufacturing
- Semiconductor Manufacturing
- Silicon Crystal Growing
- LED Production
- Natural Gas Pipelines

Graver can engineer equipment for:

- Gas flow rates to 250,000 SCFM
- Liquid flow rates to 6,000 GPM
- Pressure ratings to 6,000 PSIG
- Carbon steel and stainless steel applications
- NEMA and ATEX regional electrical requirements

CUSTOM/OEM FILTERS

We work with clients to design filters that meets their exact needs. We also manufacture filters of the clients' own design. Our activities include the design and manufacturing of filters for equipment requiring air filtration, devices that remove smoke and odor, and filtration of lubricating oils.

Markets and Applications:

- Refrigeration filters
- Medical and health care devices
- Filters for copiers
- Room air purifiers
- Fuel gas delivery filters
- LED manufacturing
- Range hoods
- Vacuum cleaners
- Auto cabin air filters
- Specialized water filtration
- Aviation air filters

Capabilities:

- On site integrity and HEPA/ULPA testing
- Mold in place gasketing
- Particle removal from 0.12µ to 50µ
- Hydrophilic, hydrophobic and oleophobic media
- Mold in PVC, Polyurethane, Silicon
- Hot glue bead separators for HEPA and ULPA

We work with our clients from the beginning; starting with initial conceptualization and specification, to design, prototyping, pilot manufacturing, and through full-scale production. Our product development team can meet the challenge of very demanding launch schedules.

PLEKX — COMPOSITE WEB MEDIA

PLE**KX** is a unique activated carbon media that can be formulated to remove offensive odors. Special formulas are available to provide formaldehyde and acid gas removal. PLE**KX** can be pleated to extend the surface area and residence time. PLE**KX** can be incorporated in a wide variety of filter designs and can be co-pleated with a wide variety of other synthetic media types. Our unique PLE**KX** activated carbon media can be designed to remove formaldehyde and VOX compounds. PLE**KX** is media that can be pleated to extend the surface area. PLE**KX** can be incorporated in a variety of filter designs and combined with other HEPA or poly media.

Applications:

- Air filters to remove odors
- Breathing mask filters
- Ozone filters
- 3D printer exhaust
- Medical surgical odor filters
- Range hoods
- Vacuum cleaners
- Cabin air filters
- Water filtration

Specifications:

- Available widths: Rolls up to 68"
- Available Weights: 200, 300, 350, 400 and 450 GSM
- Formulations for Acid Gas and Formaldehyde removal
- Rolls can be ordered slit to width
- Pleating services available

HEPA*fine* & ULPA*fine*

HEPA*fine* and ULPA*fine* filters are manufactured and can be certified to meet the strictest application requirements in the industry. The media selected is designed to provide the level of removal efficiency and performance assurance as defined by the customer. The media can be produced from a multitude of raw materials; from formulations of borosilicate microfibers to synthetic fibers.

Every filter undergoes a battery of tests to ensure the final product will meet desired performance requirements. This includes an overall efficiency test using DOP or PAO, and/or a scan test. The final product is then labeled, indicating the level of performance the filter exhibited during the testing process. This label includes the actual efficiency and flow resistance, air flow, dimensions and lot/serial number.

Mini Pleat Pack Advantage

Pleat packs are designed to offer the highest combined flow characteristics, efficiency, and are available in multiple configurations, up to 9 pleats per inch.

Our pleating process is flexible and allows us to produce packs as low as 4.5 pleats per inch.

Applications

The world of electronics is not the only application or market that has evolved over the past 20 years. More recently, the world of instrumentation, power generation, healthcare, industrial vacuums, dust collection and home air cleaning have all demonstrated quantum leaps in progress. With progress comes change and demands for products to meet the new challenges to air quality.

Graver Technologies continues to identify, design, and develop products to meet these challenges and to help users overcome the obstacles created by the need for cleaner air in less conventional environments.

We offer a wide range of products that can be combined with our PLE**KX** carbon media to handle both particles to .1u and odors that might be present in the application flow. Our mini pleat panel filters are available in 2' x 2' and 2' x 4' in 2.75", 3.75" and 4.75" thicknesses.

When you are faced with an air quality problem, Graver Technologies is your source for remediation. We can custom design and build HEPA*fine* and ULPA*fine* in cylindrical, rectangular or circular other configurations to meet the application footprint.

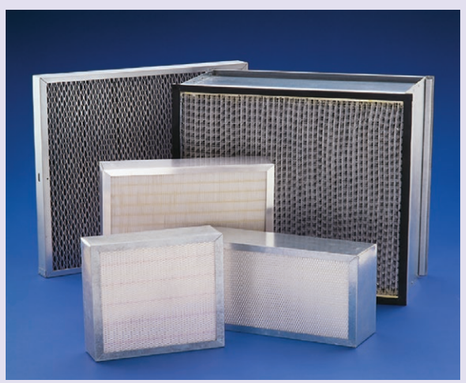
All our products can be designed to meet proprietary efficiencies and pressure drops regardless of the application. We build to your requirements.

HEPA*fine*

- High Efficiency Particulate Air Filters
- For demanding applications

ULPA*fine*

- Ultra Low Penetration Air Filters
- For critical applications



SUPERIOR PRODUCTS & GLOBAL REACH

Whether your business is around the corner or around the world, Graver Technologies can support you with superior products and services. Our ion exchange, adsorbent, filtration, and membrane products deliver exceptional performance in some of the harshest process environments in North America, Europe, Asia, the Pacific Rim, South America, and Africa.

Graver Technologies is a member of The Marmon Group (a Berkshire Hathaway Company), an international group with more than $9 billion in annual sales. Graver Technologies is a fast growing company with the technical resources and financial strength that make us the perfect partner for your business.

GLOBAL PRESENCE

Exporting on average more than 25% of our products, Graver Technologies is recognized worldwide. Our global presence extends from North and South America, across Europe and into Asia — including the Pacific Rim, Japan, and Australia. We are headquartered in Glasgow, Delaware, with additional manufacturing and marketing facilities in Newark, New Jersey; Honeoye Falls, New York; Singapore, and Shanghai, China.

REGISTRATIONS & CERTIFICATIONS

Graver has a number of applicable registrations and certifications to ensure we develop and manufacture products to meet the most rigorous global standards, including:

- ISO 9001
- 10CFR50 App.B — Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants
- ASME Section VIII, Division I
- PED 97/23/EC
- NSF International
- EU 1935/2004

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