

AmericanAirFilter®
Power & Industrial
Products and Capabilities

- *Air Pollution Control*
- *Machinery Filtration and Acoustic Systems*
- *Nuclear Environmental Systems*



Power & Industrial Products and Capabilities

Air Pollution Control

Modern industrial processes produce significant quantities of airborne pollutants in all forms — particulate, gases, vapors, fumes, and mists. Many are toxic and concentrations often exceed safe levels of exposure. Reducing the pollutants to acceptable levels is critical for the safe operation of many industrial processes and mandatory to meet stringent emission regulations. Many of the technologies used to control air pollution were originally developed by AmericanAirFilter.

Today, AmericanAirFilter brand cyclones, bag collectors, cartridge collectors, wet collectors, mist collectors, and side access housings can be found in thousands of installations in every industrialized country. Our complete line of air pollution control equipment allows us to recommend the most efficient and economical environmental solution. Our extensive experience with numerous applications and industries ensures our customers receive a dependable, quality system that meets their exact air quality requirements and complies with existing regulations.



OptiFlo®

Cartridge Collectors

OptiFlo® cartridge collectors utilize multiple cartridges made of pleated media in a cylindrical configuration. Highly effective on dry particulate, cartridge collectors are among the most popular of the collector designs available today. Many options, including explosion vents, are available.

Fabric Collectors

One of the universally applied air pollution control systems is the fabric collector which removes particulate matter from the gas stream via filtration through special fabric materials.

The Millennium™ is modular in design, and the modules are available in different heights to accommodate a range of fabric bag lengths, as well as pleated bags. The ArrestAll® self-contained dust collector is a shaker-type fabric collector which offers a cost effective, compact solution to air quality problems. The M FabriPulse® was designed for applications requiring small, compact filter sizes and low air volumes.



Type N RotoClone®



Millennium™



Type W RotoClone®

Wet Collectors

Type W and Type N RotoClone® wet dust collectors remove particulate matter from the air by capturing them in a liquid medium, and are particularly suited to explosive and "sticky" dust capture. AmericanAirFilter supplies a wide range of wet products to handle applications from small nuisance dust problems to extremely large gas cleaning systems.

Filter Housings

AmericanAirFilter also makes a variety of Side Access Filter Housings and systems for removing airborne particulate. Our housings are designed for use with a variety of filters of varying efficiencies, and are available in a wide range of sizes and options to suit individual duct layout and filtration needs. Let us help you select the proper housing and filter for your application to ensure the correct degree of efficiency is provided.



AmericanAirFilter® Genuine Parts

Each AmericanAirFilter air pollution control product is designed for cost-effective, reliable performance. Manufactured to the same high quality ISO Standards as our original equipment, and guaranteed to fit and work perfectly, AmericanAirFilter replacement parts help maintain the integrity of your AmericanAirFilter equipment. To protect your investment and ensure maximum performance, insist upon genuine AmericanAirFilter replacement parts and service.

Mist Collectors

The DynaPure® mist collector is a centrifugal filtration system for removal of oil mist created by wet machining, spraying, and lubrication systems. It is a unique, simple method for the elimination of mist problems.



DynaPure® Mist Collector

Industrial Air Pollution Control Systems and Services

AmericanAirFilter has unmatched understanding and experience with complex air pollution control issues, and has developed a strategy for finding and implementing clean air solutions from concept to final installation. AmericanAirFilter can supply a wide range of air pollution technologies and ancillaries such as air-to-air heat exchangers, evaporative coolers, fans, instrumentation and controls, and erection supervision and commissioning. Our design team upgrades Electrostatic Precipitators to meet the stringent emission standards of today.

AmericanAirFilter pollution control systems clean gases up to 260° C (500° F) and inlet dust concentrations up to 1000 grams/m³ without upstream separators, and handle gas volumes in excess of 2,000,000 m³/hr. (1,200,000 CFM). Our customers can rest assured that in AmericanAirFilter they have a partner with the resources to solve virtually any air pollution control challenge.



Air Pollution Control Systems Group

AmericanAirFilter offers comprehensive installation and service solutions ranging from start-up to full turn-key programs. Drawing on vast air pollution control experience and proven technology, our engineers and technicians provide the innovation and excellence you have come to expect for even the most difficult air cleaning problems. Call on our consultants to deliver complete solutions for specialized and unique applications, as well as basic inspections and analysis to solve routine air cleaning problems.

Technical Services:

- Licensed professional engineers on staff
- Project management
- Installation supervision
- Equipment start-up
- Application review and analysis
- Site and equipment surveys
- Engineering and design services including full system design

Installation Services:

- New equipment
- Full turn-key installation of AmericanAirFilter equipment
- Equipment upgrades and refurbishment
- Guaranteed solutions for air cleaning problems



Do you have a unique application? Our expert engineers are ready to design a custom solution to meet your particular air quality requirements.

Custom Solutions Unique Applications

AmericanAirFilter customers all over the world benefit from our custom designed solutions. Our engineers designed custom ventilation filtration systems for encapsulating biological threats for the United States Postal Service and high efficiency air cleaning systems for secure applications such as embassies, safe rooms, and high value target protection. We have created custom solutions for indoor firing range air cleaning systems, and inlet air cleaning for fine bubble diffusers in wastewater treatment plants, as well as explosive dust containment in industrial applications.

Systems Service and Parts

With over 85 years of experience in the air pollution control industry, AmericanAirFilter has earned its industry wide reputation for expert service by providing our time proven technology and precipitator maintenance system support. Our professional staff of design engineers, sales, and service personnel offer years of expertise in dealing with the ever changing requirements of keeping your air pollution control equipment operating at the optimal level of performance. Our experience transcends the many decades of continued service to the industry, based on our non-wavering dedicated commitment to help the industry meet and, in many cases, exceed their mandates for clean air emissions. With trained professional crews, we offer the industry a clear choice for safety, quality, and the highest level of commitment to achieve the goals of our customers.

Machinery Filtration and Acoustic Systems

Extensive experience in the design and application of filtration and acoustic systems for gas turbines and other machinery such as air compressors, as well as, diesel and gas engines. This experience combined with our global manufacturing capabilities, makes AmericanAirFilter a uniquely qualified provider of total systems and top-quality products. As a single-source supplier, we offer customized total solutions for your air filtration, noise control, and inlet heating and cooling needs. Our project managers work closely with our customers, filtration, structural, and acoustic engineers to ensure that all systems and products meet your specifications.

AmericanAirFilter equipment is installed on more than 4000 units worldwide. Select from our standard products or let us custom design equipment to meet your specific requirements.



Filtration

Our product line of filters is as diverse as the challenges presented to them. Gas turbine and diesel machinery systems are located in the most arduous environments in the world, spanning arctic, desert, marine, industrial, process, and agricultural. AmericanAirFilter has developed cutting edge products to handle filtration needs in all of these difficult environments.

All of our filters are certified to international and original equipment manufacturers' (OEM) standards, ensuring the protection of your critical assets.

AmericanAirFilter investment in Field Simulation Equipment (FSE) allows laboratory, as well as onsite modeling of your existing and future operations. Using this tool, engine performance is fine tuned and improved throughout its service life. Our LTSA program provides many advantages including:

- Quarterly GT efficiency checks for your whole fleet
- Equipment health check
- Removal, fit, commission, and disposal service
- Filter management program

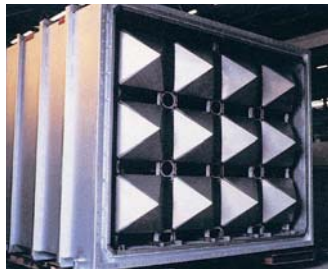
Acoustic Systems

AmericanAirFilter is a leader in full-service noise control systems, based on years of successful employment of gas turbine packaging. Our flexible approach means we can provide solutions for an entire plant or individual components for new and existing plants.

We provide turnkey solutions with guaranteed results derived from a long history in cutting edge noise mitigation. Our team designs, manufactures, and assembles all AmericanAirFilter equipment. We also provide technical assistance for plant feasibility studies.

Our multi-disciplined team of acoustic, mechanical, and structural engineers work together to develop the optimum solution for your plant. AmericanAirFilter Product Development Centers use acoustic modeling and mapping software to evaluate plant solutions and include the following considerations:

- Proven output gains
- Noise survey and modeling
- Acoustic consulting and calculation
- Project design and feasibility
- Engineering
- Production and trial assembly
- Packing and shipment
- On-site assembly
- Verification measurement
- Maintenance and upgrade
- Legislation consulting



Equipment Solutions

Our reputation in global gas turbine and diesel engine markets is second to none. We offer a complete range of equipment solutions to meet the most stringent requirements for machinery intake and exhaust needs including:

- Inlet filtration
- Chilled water coils
- Anti-icing systems
- Evaporative cooling systems
- Inlet ductwork
- Inlet silencers
- Expansion joints
- Acoustic enclosures
- Exhaust silencers
- Support structure
- Ventilation systems

Machinery Filtration and Acoustic Systems

Performance-Enhancing Upgrades

We specialize in retrofitting and upgrading aging gas turbine and compressor systems to enhance performance. Our engineers are experienced in a variety of industries and understand the challenges of designing cost-effective solutions. We have representatives located around the globe which means that we can handle all requests for enhancements quickly and efficiently. We can also support retrofits/ upgrades with start-up supervision, key personnel training, and a complete line of replacement filters and parts.

Our state-of-the-art engineering capabilities provide the support to maximize the impact of our solutions. We excel in the use of Computer-aided Engineering, Computational Fluid Dynamics (CFD), and Finite Element Analysis (FEA) to provide power augmentation, lower toxic emissions, increase component life, and improve fuel efficiency.



Cooling

Inlet cooling can provide significant power and thermal improvements. Solutions using evaporative techniques and modular chilling through mechanical refrigeration can all be modeled to provide a bespoke solution.

Our consultation services can be employed to conduct accurate feasibility and specification writing to prescribe the best available technology and its commercial payback.

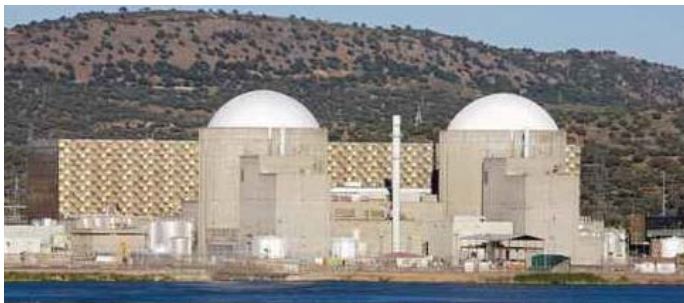
The AmericanAirFilter advantage is in our group resources. World leaders in air conditioning, collaboration between our parent company Daikin and our sister company McQuay together establishes a highly qualified proven technology base with world class global resources.

Solutions are tailored to both complement plant operating regime and enhance revenue streams.



Nuclear Environmental Systems

AmericanAirFilter has pioneered the nuclear air processing industry. From high quality High Efficiency Particulate Air (HEPA) filtration products and filter houses, to air handling units and coils, we have been providing solutions to the world's nuclear power plants for more than 40 years. Development and participation in nuclear codes and standards committees has always been and continues to be a top priority for AmericanAirFilter. Many of the technologies and systems used to provide clean and tempered air for safety and non-safety systems were developed by AmericanAirFilter engineers.



Industry Leading Custom Solutions

AmericanAirFilter provides unequalled products and services by offering engineering, design, manufacturing, testing, and commercial grade dedication. Answering today's challenges in existing nuclear power plants, AmericanAirFilter is the driving force in providing integrated engineered solutions and commercial grade dedication.

AmericanAirFilter offers custom designed equipment for the safe collection of toxic and hazardous fumes, vapors, and particulate matter. We provide HEPA/carbon filtration systems that remove contaminants and condition the air to be either recirculated or discharged to the atmosphere depending on system design.

AmericanAirFilter products meet the requirements of the US government and industry codes and standards. Our Nuclear Environmental Systems team provides custom designed safety and non-safety filtration systems (Bag In/Bag Out and Walk In), air handling units, containment coolers, emergency coolers, coils, filters, carbon adsorbers, fans, motors, dampers, and replacement parts. The Nuclear Environmental System group is NUPIC audited and operates under an ASME NQA-1 quality program.

Nuclear Power Plants

High Efficiency Particulate Air (HEPA) Filters

AstroCel® nuclear grade HEPA filters are used to remove radioactive particulates down to 0.1 micron diameter, and are designed to have a minimum efficiency of 99.97% for 0.3 micron particles. All AstroCel nuclear grade HEPA filters are designed, manufactured, and tested under an NQA-1 quality program and meet all requirements of ASME AG-1, ASME N509-1989, DOE-STD-3020-2005, and UL 586.

Medium Efficiency Filters

VariCel® nuclear grade filters are medium and high efficiency rigid cell side disposable air filters utilized for the removal of atmospheric dust and particulates. The VariCel filters offer high dust holding capacity and low initial resistance. All VariCel nuclear grade filters are designed, manufactured, and tested under an NQA-1 quality program and meet all requirements of ASME AG-1, ASME N509-1989, and UL 900.

Nuclear Grade Carbon Adsorbers

AmericanAirFilter Carbon Adsorbers remove gaseous radioactive iodine from the airstream in the form of elemental iodine (I_2) or methyl iodide (CH_3I) by adsorption. The charcoal adsorbent can be impregnated with potassium iodide, iodine, TEDA, or blends to improve its adsorptive capability of radioactive iodines and iodides. AmericanAirFilter Type II, Type III, and Type IV Adsorbers are available to meet specific system flow rates and design requirements.

Fan Coolers and Containment Coolers

As with nuclear air cleaning systems, certain air cooling in nuclear power plants is vital to the safe operation of the plant in normal conditions and in providing cooling needed for safety shutdown should emergency conditions occur. AmericanAirFilter fan coolers are used to maintain normal containment atmospheric temperature as well as emergency function condensing coolers.

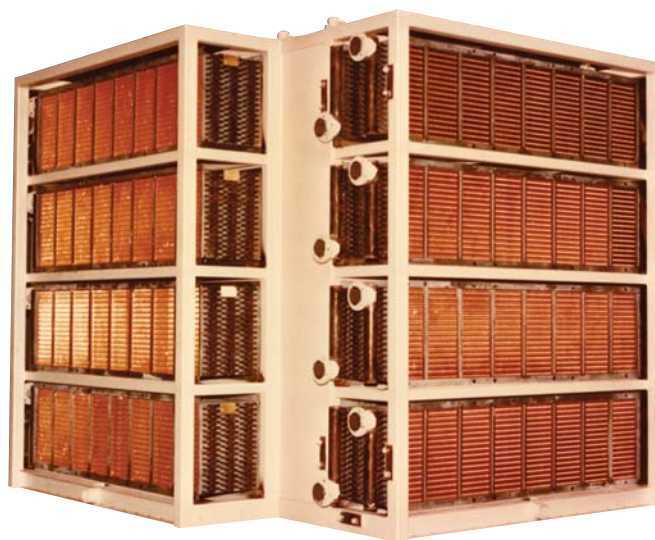
AmericanAirFilter containment cooler designs, found in nearly half of all operating Pressurized Water Reactors, are available in a wide range of specification requirements and containment sizes.

Coils

AmericanAirFilter offers ASME "N" stamped coils, safety related and non-safety related coils depending on customer specifications. When required, AmericanAirFilter nuclear coils are built and tested to ASME Section III "N" stamp requirements for certified quality assurance, aspects of design, material traceability, manufacturing, and testing. AmericanAirFilter furnishes coils to more than half of all nuclear power plants in the US.



*AstroCel® I, AstroCel® III,
and VariCel® filters;
Type IV Nuclear Grade
Carbon Adsorber*



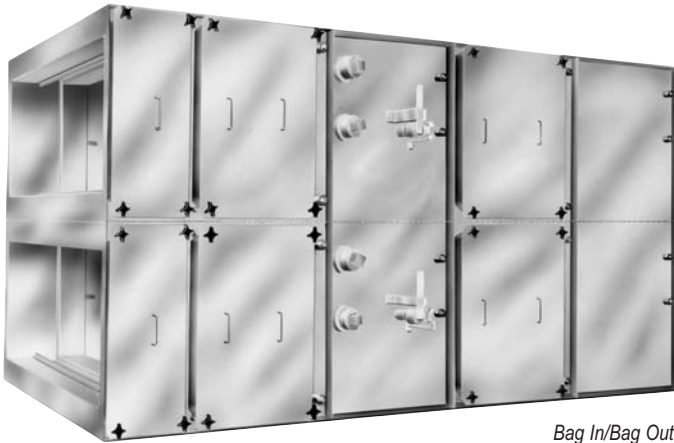
Containment Coolers

Housings

AmericanAirFilter housings are available in a broad range of sizes and configurations that meet all nuclear industry standards. All nuclear housings are built and tested per ASME N509 and ASME AG-1.

Technical Support Centers (TSC)

Type TSC Side Access Housings are especially suited for applications where airflow is less than 5,000 CFM and where uniquely qualified components, such as demisters, heat transfer coils, electric heaters, filters, and special depth charcoal beds are required. Side Access Housings eliminate internal access space requirements, making the housing ideal where space is a premium. The housing can be designed to meet any environmental and pressure conditions.



Bag In/Bag Out

Bag In/Bag Out (BIBO)

AmericanAirFilter Bag In/Bag Out Side Access filter system is a safe, simple, reliable method for removing contaminated particulate filters and gases in hazardous environments. The system protects maintenance personnel from direct contact with the interior of the housing and hazardous contaminants during filter change-out. BIBO housings can be supplied with any number of connected sections to contain roughing filters, prefilters, HEPA filters, charcoal adsorbers, and in-place test sections.

Side Access Housings

AmericanAirFilter Side Access Housings allow filter servicing to be performed by personnel stationed outside the housing.

Walk-in Housings

AmericanAirFilter walk-in housings, engineered for nuclear power plants, are available in a wide range of sizes and dimensions. Operating in systems up to 30,000 CFM, walk-in housings offer the greatest flexibility in selecting arrangements and process features. These housings can be designed to accommodate any combination and sequence of components.



Side Access Housing

Nuclear Power Plant Commercial Grade Dedication

AmericanAirFilter has provided commercial grade dedicated items for use in nuclear safety related systems for over 10 years. Reduced availability of products specifically engineered, designed and manufactured for use as safety related product has made it increasingly necessary to purchase commercial grade items and dedicate them for use in safety related applications.

Our process for the dedication of commercial grade items is defined in AmericanAirFilter internal procedure EP&P 121, which closely follows EPRI-NP-5652 and NRC guidelines.



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AAF has a policy of continuous product research and improvement and reserves the right to change design and specifications without notice.

ISO Certified Firm

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