OEM All Products
Your Single Source.
• Fans • Dampers • Louvers • Coils

GREENHECK
Building Value in Air.
We have the world’s most comprehensive line of top-quality air movement and control products.

No other manufacturer offers you as many options for air movement and control as Greenheck. To maintain your trust, we employ a talented group of engineers and an experienced customer service team to each of our product areas:

- Utility, Centrifugal & Radial Blowers
- Inline, Ceiling & Sidewall Fans
- Roof Mounted Fans
- Dampers
- Louvers
- Coils

Greenheck is deeply committed to being easy to do business with, anywhere in the world. As an industry-leading manufacturer, our focus is to **build value in air**… by offering the widest range of reliable air movement and control products and to exceed your expectations for on-time delivery, easy installation, performance and operating efficiency. We also pledge to address the industry’s most complex challenges and your future needs by introducing innovative new product solutions you can depend on.

**Our Mission:** To be the market leader in the development, manufacture and worldwide sale of quality air moving and control equipment with total commitment to the customer.

**Our Vision:** Greenheck will be a company that exceeds customer expectations and that others strive to emulate. We will be the worldwide leader in providing timely, flexible and cost-effective solutions focused on the movement, cleaning, tempering, and control of air.
Our Products.
Engineered and manufactured for top performance — and value.

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Can’t find what you are looking for here?
Visit greenheck.com
For our complete product offerings as well as detailed product information.
Greenheck’s worldwide leadership in providing cost-effective, value-added solutions for air movement, control and conditioning challenges evolved from rather humble beginnings. Bernie and Bob Greenheck weren’t sure what lay ahead when they opened their small sheet metal shop in Schofield, Wisconsin USA in 1947. But they were determined that no product would ever leave their shop, unless it met the most stringent quality standards—their own. At first, the company manufactured a variety of sheet metal products. In 1956, Greenheck engineers developed a highly efficient power roof ventilator. This product and the innovative ventilation solutions that followed ultimately enabled us to expand our distribution throughout the world.

Customer manufacturing locations

Every Greenheck product is still designed and built with pride of ownership.

Greenheck employees continue to share an extraordinary commitment to meeting our customers’ needs. We know our future success depends on the value we bring to the market: reliable, top-quality products and exceptional service. At our headquarters in Schofield, Wisconsin USA, and at additional plants in Frankfort, Kentucky; Rocklin, California; Kings Mountain and Shelby, North Carolina; Tulsa, Oklahoma; Saltillo, Mexico; and Delhi, India, you’ll find hardworking and experienced employees designing, manufacturing and delivering the most dependable air movement, control and conditioning equipment available.
State of the Art Manufacturing

Our engineers design and build many of our machines and dies to accommodate the unique value-added features you’ll find in our products. In addition, state-of-the-art, numerically controlled manufacturing systems and a highly efficient, experienced production staff help Greenheck meet the most challenging delivery requirements in the industry. To keep up with the worldwide demand for our products, we operate and maintain over two million square feet of manufacturing and office space.

Innovative Solutions

Our engineers continuously develop and introduce new product solutions based on the input they receive from thousands of Greenheck customers. State-of-the-art computer modeling and extensive prototype testing ensures that our newest products offer more efficient performance and easy, lower-cost installation. Whether it’s developing compact, quieter fans with the lowest industry sound levels or dampers with tighter shut-off and less pressure drop, Greenheck engineers always have one goal in mind: deliver value that exceeds your expectations.

Extensive Product Testing

Because we test our products so extensively, Greenheck offers more products with certifications from AMCA, UL, ETL, CSA and AHRI than any other manufacturer. Our real-life testing procedures measure aerodynamic performance, sound levels, structural integrity, mechanical operation, environmental impact, temperatures, vibration levels and more. We also offer on-site certified air chambers and a certified sound-testing facility. In addition, Greenheck tests new life safety damper products in our on-site UL Certified testing lab. We can also test louver and damper performance on-site with extensive dynamic water tests and missile impact tests. Bearings, pulleys and motors must also meet the industry’s highest standards for reliability and endurance.
Customer Service & Support

We want to be the easiest company you’ll ever do business with.

Giving you the level of customer service that distinguishes us from our competitors has always been a hallmark at Greenheck. Our comprehensive product information, and the technical information needed to specify and select our products, is always available on greenheck.com.

Software

eCAPS® is an Engineer Application Suite designed for HVAC engineers. eCAPS online selection guides you to choose the best value equipment without needing to know a lot about HVAC or our specific model names. It’s quick, easy, and ensures your selection is the most appropriate for your application.

Greenheck’s Computer Aided Product Selection Program (CAPS®) offers detailed product descriptions, application information, dimensional drawings, detailed product performance for all products, 3-D Revit® and AutoCAD® drawings.

Greenheck Customer Service Team

Our dedicated team is ready to meet the needs and expectations of OEM customers. Reach out your regional account manager for contact information.

Greenheck Web Service

Allows the user of an Air Handler Configuration Software to request configuration, pricing, and other relevant design information in real time.

RepNet

- Order management, tracking, project forecasting, invoicing
- Complete parts lists based on model and serial number, exploded view drawings
- Current and obsolete manuals
- B2B interface tool for “one stop shopping”
- Product information, sales bulletins
- Order acknowledgement

Bernard A. Greenheck Education Center

Our updated Education Center comprises 39,000 sq. ft. showcasing the industry’s widest selection of HVAC equipment. Gain invaluable product knowledge from members of our engineering staff who will also answer questions about your particular application needs.

- Customized Touring
- Interactive Learning
- One-on-One Time with Greenheck Engineers

Robert C. Greenheck Innovation Center

The magnificent 71,355 sq. ft. research and development facility, known as the Innovation Center, includes:

- Aerodynamic Lab
- Motor Lab
- Additive Manufacturing Lab
- Structural Lab
- Psychrometric Chamber
- Acoustical Lab
Utility, Centrifugal and Radial Blowers

Greenheck offers a complete line of heavy-duty centrifugal fans and radial blowers for industrial and commercial applications. Greenheck centrifugal products are used for everyday industrial applications involving high-temperature process exhaust, filtration systems, corrosive air exhaust, and material handling. These products are also well suited for commercial applications such as providing supply, exhaust, and return air in air handler-applications.

Utility Centrifugal Fans

The utility fans include both direct and belt-driven fans. They are self-contained units consisting of the fan, motor, and drive for a variety of commercial and light industrial applications.

Model USFD-100

A direct drive model with a backward-inclined centrifugal wheel. The housing is constructed from galvanized steel with a bolted frame. High performance powder coating is optional. Fans are provided with integral speed control for easy system balancing. Simplified wiring and pre programmed VFD (3 phase) make installation quick and easy. Performance capabilities range from 200 to 6,500 cfm (340 to 11,044 m³/hr) and 3 in. wg (747 Pa). AMCA Licensed for Sound and Air Performance.

Model USF

USF tiered models (200, 300, and 400) offer multiple levels of construction for the best value to match the intended application and performance. USF-300 models are NOA certified for high wind. USF-200 and 300 models are OSHPD seismic certified.

- **USF-200** – Constructed of galvanized steel with bolted frame and backward inclined centrifugal wheel makes this model an economical selection when clean air is being moved. Available in 11 sizes, 6 - 22 in.

- **USF-300** – Increased performance along with construction of painted steel with bolted frame and backward inclined centrifugal wheel. For use in applications where a special coating on the housing and the airstream is required. Available in 19 sizes, 6 - 49 in.

- **USF-400** – This model bridges the gap between traditional utility sets and industrial blowers with heavier duty construction and higher performance capabilities. Constructed with painted steel construction and a backward inclined centrifugal wheel. Available in 19 sizes, 7 - 49 in.

Performance capabilities for USF models range from 200 to 66,000 cfm (340 to 112,135 m³/hr) and 9 in. wg (2,240 Pa). AMCA Licensed for Air Performance and AMCA Licensed for Sound and Air Performance. Refer to product catalog for specific AMCA certification by model and size.

Catalog: Centrifugal Fans — SWD, USF and CSW
Industrial Centrifugal Fans

Designed for commercial and industrial applications for exhaust air, supply air, filtration, heating, air conditioning, and industrial process. Greenheck’s centrifugal fans come in two construction options: Permalock™ seam for applications up to 8.5 in. wg (2117 Pa) and heavy-gauge, edge-to-edge, welded housing construction. All AF and BI model fans use air handling quality bearings and are tested with a complete three-plane vibration test prior to shipment.

Single-Width - Model CSW

Model CSW operates in a broad range of fan applications, typically in ducted systems. Versatile construction options allow use in environments which require spark resistance, high temperature tolerance, or resistance to corrosive elements. OPTIONS: Spark-resistant construction, UL 705 Power Ventilators Listing, UL 762 Grease Listing, UL Power Ventilators for Smoke Control Systems Listing. Capacities range from 200 to 231,000 cfm (340 to 392,472 m³/hr) and 21 in. wg (5,226 Pa). AMCA Licensed for Sound and Air Performance. OSHPD seismic certified.

Catalog:  Centrifugal Fans — SWD, USF and CSW
          CSW Single-Width Centrifugal Fan Performance Supplement

Double-Width - Models BIDW/AFDW

Models BIDW/AFDW operate in non-ducted inlet applications, primarily handling clean air below 200°F. Higher volume capacities allow for a more compact system design than with single-width fans. Air handling quality bearings with L₁₀ life in excess of 80,000 hours (equivalent to an average life of 400,000 hours). Each fan is three-plane vibration tested prior to shipment. OPTIONS: UL 705 Power Ventilators Listing. Capacities range from 1,500 to 379,000 cfm (2,549 to 643,925 m³/hr) and 15 in. wg (3,733 Pa). AMCA Licensed for Sound and Air Performance.

Catalog:  Centrifugal Fans — Models BIDW and AFDW
          Centrifugal Fan Performance Supplement — Double-Width

Industrial Process Fans

Industrial process fans are engineered and built for reliable operation in harsh environments where high temperatures, high static pressures, and material handling requirements are encountered.

Open Radial Material Handling Wheel - Model IPO

Model IPO can be utilized for most industrial requirements. Applications include: exhausting abrasive dust such as grinding and buffing wheel exhaust, conveying granular materials, such as sawdust, wood chips, fume exhaust, and high temperature air handling.

Wool Type Material Handling Wheel - Model IPW

Model IPW is designed for handling long, fibrous, stringy material. Applications include: conveying long wood shavings, yarns, and paper trimmings. It can also be used for similar applications as the open wheel, but has higher efficiencies.

Industrial Air Handling Wheel - Model IPA

Model IPA is designed for clean air exhaust to slight material handling. Applications include: smoke and heat exhaust, corrosives, heavy fumes, and light dust loading. The air handling wheel is the most efficient in the industrial process fan series.

Capacities range from 200 to 143,000 cfm (340 to 242,959 m³/hr) and 33.5 in. wg (8,336 Pa). AMCA Licensed for Air Performance.

Catalog:  Industrial Process Fans — IPO, IPW, IPA
Plug Fans

Plug fans are designed and built to provide reliable service in industrial applications where the fan operates unhoused within a pressurized plenum.

Model PLG

Model PLG unhoused plug fans feature compact unit sizes and a high efficiency backward-inclined wheels which make them ideal selections for HVAC installations, spray booths, air curtains and high temperature applications including ovens, dryers, and kilns. Capacities range from 900 to 71,000 cfm (1,529 to 120,630 m³/hr) and 8 in. wg (1,991 Pa), and maximum temperature of 800°F (426°C).

Catalog:  Plug Fans — PLG

Fabricated Pressure Blowers

Fabricated pressure blowers are suitable for air exhaust or supply applications. Typical applications include cabinet or room pressurization, blow-off systems for moisture removal, combustion air for burners, parts cooling, and fume exhaust.

Model FPB

Model FPB fabricated pressure blowers utilize radial aluminum blade wheels to provide peak performance for systems that require low flow and high pressures. FPB pressure blowers are designed with a totally rotatable steel housing with a baked polyester coating. Capacities range from 200 to 2,500 cfm (340 to 4,248 m³/hr) and 9.5 in. wg (2,364 Pa).

Catalog:  Pressure Blowers — FPB
Plenum Fans

Plenum fans are designed for air handling applications where the fan operates unhoused within a pressurized plenum. Plenum fans are designed to be compact in size, have the flexibility to supply multiple air take offs and are economically priced.

Model APD
The APD is a commercial grade plenum fan that incorporates performance and reliability into a lighter duty, economical design. The compact direct drive APD eliminates the cost, maintenance and complexity of traditional belt drive plenum fans. APD is constructed from a formed and bolted galvanized steel frame with a welded and coated steel 7-bladed, backward-curved wheel. Capacities range from 1,000 to 18,000 cfm (1,699 to 30,582 m³/hr) and 10 in. wg (2,488 Pa). AMCA Licensed for Sound and Air Performance.

Model APF
Used in horizontal wall mounted applications with multiple fan arrays or as a retrofit option, an APF plenum is light weight and has a shorter, more compact length. Axial flux motors have integrated controls that only need a 0-10V signal (4-20 mA option), no VFD and no additional wiring required to adjust speeds. Constructed from a formed and bolted galvanized steel frame with a welded and coated steel 7-bladed, backward-curved wheel. Capacities range from 2,000 to 14,000 cfm (3,398 to 23,486 m³/hr) and 6.5 in. wg (1,617 Pa). AMCA Licensed for Air Performance.

Model APM – Light to Medium Duty Plenum Fan
Designed for light and medium duty applications, this model has a galvanized framework at a more cost-effective price point. Efficient operation and lower overall sound with a 12-bladed aluminum airfoil wheel. Units are available in belt and direct drive with a simplified selection of accessories. Capacities range from 1,000 to 41,000 cfm (1,699 to 69,659 m³/hr) and 8 in. wg (1,991 Pa). AMCA Licensed for Sound and Air Performance.

Model APD – Medium to Heavy Duty Plenum Fan
Designed and engineered for medium and heavier duty applications with a fully welded and painted steel configuration. Efficient operation and lower overall sound with a 12-bladed aluminum airfoil wheel. This plenum is available in both belt and direct drive and offers numerous accessories to complement your project. Capacities range from 1,000 to 209,000 cfm (1,699 to 355,093 m³/hr) and 12.5 in. wg (3,111 Pa). AMCA Licensed for Sound and Air Performance.

Model HPA
Model HPA housed plenum fans provide high efficiency while maintaining a compact size and low sound power levels. Utilizing a galvanized framework with integral isolation, the HPA uses a high efficiency, low sound 12-blade wheel with a sound attenuating housing to further reduce sound power levels. HPA fans can be easily stacked together in parallel as a fan array offering 100% redundancy. Capacities range from 900 to 45,000 cfm (1,529 to 76,455 m³/hr) and 7 in. wg (1,742 Pa). AMCA Licensed for Sound and Air Performance.

Vibration Testing
APD, APF, APH and HPA (APM optional) plenum fans are vibration tested (filter-in) before leaving the factory. This testing utilizes a custom data acquisition system with tri-axial accelerometers to measure the vibration in three planes at the design operating speed. Permanent records for each fan’s performance are kept on file and are available upon request.

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*Vibration testing is optional
Greenheck’s inline, ceiling, and sidewall exhaust products are suitable for a wide range of OEM applications. Sidewall fans are wall mounted exhaust units suitable for clean or fume-laden air exhaust. Tubular centrifugal, axial and mixed flow inline products provide higher performance capacity than ceiling and sidewall fans. They are typically horizontally or vertically mounted in duct systems, but can be wall mounted, as well as roof mounted.

**Tubular Centrifugal Fans**

Tubular centrifugal fans, models, TCB, TCBRS and TCBRU, have been designed for commercial and industrial inline or roof upblast applications that demand quiet, efficient and reliable air movement. Tubular centrifugal fans can be mounted in any position from horizontal to vertical providing for installations in the smallest possible space.

**Model TCB**

Model TCB uses a backward-inclined centrifugal wheel for high efficiencies and low sound levels when used in medium pressure ducted systems. All TCB inline fans are belt-driven with the motor out of the airstream and aluminum wheel for AMCA Spark B resistant construction. Capacities range from 300 to 26,000 cfm (510 to 44,174 m³/hr) and 4 in. wg (995 Pa). Model TCB is AMCA Licensed for Sound and Air Performance.

**Catalog:** Tubular Centrifugal Fans — TCB/TCBRU/TCBRS

**Model TCBRS**

Model TCBRS features aluminum backward-inclined wheels for quiet and efficient supply airflow. Greenheck’s fabra hood housing on this model provides a strong, weathertight cover, and is available with filters. Capacities range from 300 to 26,000 cfm (510 to 44,174 m³/hr) and 4 in. wg (995 Pa).

**Catalog:** Tubular Centrifugal Fans — TCB/TCBRU/TCBRS

**Model TCBRU**

Model TCBRU is a belt drive upblast roof exhaust fan. It features a windband section which creates high outlet velocities to carry contaminated exhaust away from nearby make-up air units. Capacities range from 500 to 26,000 cfm (850 to 44,174 m³/hr) and 4 in. wg (995 Pa).

**Catalog:** Tubular Centrifugal Fans — TCB/TCBRU/TCBRS
Mixed Flow Fans

Mixed flow inline fans are an excellent choice for indoor, commercial clean air ventilation applications. This fan design combines the best axial and centrifugal properties: high fan efficiency, low sound levels, and a smooth, steep fan curve for stable fan selections. Their compact design allows for installations in space limited areas.

Models EQD/EQB
Model EQD (direct drive) and EQB (belt drive) are economical mixed flow fans that deliver efficient and quiet performance. EQQ fans can be mounted horizontally in 45 degree increments and EQB fans include a universal mounting system to accommodate any vertical or horizontal installation configuration. Slip-fit duct collars allow for quick and easy connection to ductwork. Model EQD features our Vari-Green® high-efficiency motor. The model EQB utilizes air handling quality bearings with L_{10} life in excess of 100,000 hours (equivalent to an average L_{50} life of 500,000 hours) for years of reliable operation. Capacities range from 1,200 to 26,500 cfm (2,039 to 45,024 m^3/hr) and 3 in. wg (744 Pa). AMCA Licensed for Sound (inlet and outlet) and Air Performance.

Catalog: Mixed Flow Inline Fan — EQD and EQB

Models QEI/QEID
Models QEI (belt drive) and QEID (direct drive) include the universal mounting system for motor position changes in the field. Fans have slip-fit collars for quick and easy connection to ductwork. Typical applications include ventilation of office buildings, concert halls, parking garages, educational facilities, libraries, and dormitories. Air handling quality bearings with L_{10} life in excess of 80,000 hours (equivalent to an average life of 400,000 hours) (QE) and vibration test of complete assembly at the factory prior to shipment. Capacities range from 500 to 116,000 cfm (850 to 197,085 m^3/hr) and 8 in. wg (1,991 Pa). Model QE is OSHPD seismic certified. AMCA Licensed for Sound (inlet and outlet) and Air Performance.

Catalog: Mixed Flow Fans — QEI (belt drive), QEID (direct drive)

Tube and Vane Axial Fans

Axial inline fans are designed for ducted indoor or outdoor applications. They are available in both direct drive and belt drive and with cast aluminum or fabricated steel propellers.

Inline or Roof Upblast: Models TDI/TBI-CA
Models TDI/TBI-CA axial fans feature a cast aluminum hub and airfoil blades. The universal mounting system allows for vertical or horizontal installations. Typical applications include clean air, fume exhaust, and spark-resistant construction. Capacities range from 1,300 to 95,000 cfm (2,209 to 161,406 m^3/hr) and 3.5 in. wg (871 Pa). AMCA Licensed for Air Performance.

Catalogs: Tube Axial Inline Fans — TDI & TBI-CA Level 3
Medium Pressure Axial Fans — TBI-CA Level 4 & 5
Inline or Roof Upblast: Models TBI-FS
Model TBI-FS has a fabricated steel hub and airfoil blades. It is suitable for continuous high temperature (400°F/204°C max.) for inline configurations, (500°F/260°C max.) for roof upblast configuration and is available with UL Power Ventilators for Smoke Control Systems. The universal mounting system accommodates any vertical or horizontal installation configuration. Typical applications involve clean air, industrial processes, and high-temperature exhaust. Capacities range from 6,000 to 77,000 cfm (10,194 to 130,824 m³/hr) for inline configurations and 6,000 to 76,000 cfm (10,194 to 129,125 m³/hr) for roof upblast configurations and 4.5 in. wg (1,120 Pa). Bolt-on straightening vanes are available for increased efficiency. AMCA Licensed for Sound and Air Performance.

Catalog: Medium Pressure Axial Fans — TBI-FS Levels 3, 4 & 5

Inline or Roof Upblast: Model AX
Model AX (direct drive) features a cast aluminum hub and airfoil blades which have a manually adjustable blade pitch. The universal mounting system allows for vertical or horizontal installations. Typical applications include clean air and are available with UL Power Ventilators for Smoke Control Systems and UL 705. Bolt-on straightening vanes (AX-V) are available for increased efficiency. Capacities range from 500 to 125,000 cfm (849 to 212,376 m³/hr) and 5 in. wg (1,244 Pa). AMCA Licensed for Air Performance.

Catalog: High Performance Axial Fans — AX

Model VAB
Model VAB belt drive vane axial fans accommodate for final system balancing and have a manually adjustable blade pitch. These fans are an excellent choice for variable volume HVAC systems, clean rooms, parking garage exhaust, and tunnel ventilation. For sound critical applications, belt drive vane axial fans are available with Greenheck’s sound trap housing. UL/cUL 705 for electrical is available. A complete vibration test of all fans are performed prior to shipment. Capacities range from 2,000 to 145,000 cfm (3,398 to 246,357 m³/hr) and 7.5 in. wg (1,866 Pa). AMCA Licensed for Sound and Air Performance.

Catalog: Vane Axial Fans — VAB and VAD

Model VAD
Model VAD is a direct drive vane axial fan designed for commercial and industrial applications where large volumes of air are required at moderate to high pressures. Direct drive vane axial fans have a manually adjustable blade pitch and require minimal maintenance. These fans are an excellent choice for variable air volume HVAC systems, clean rooms, parking garage exhaust, and tunnel ventilation. For sound critical applications, direct drive vane axial fans are available with Greenheck’s sound trap housing. UL/cUL 705 for electrical is available. A complete vibration test of all fans are performed prior to shipment. Capacities range from 1,200 to 240,000 cfm (2,039 to 407,763 m³/hr) and 10 in. wg (2,488 Pa). AMCA Licensed for Air Performance.

Catalog: Vane Axial Fans — VAB and VAD

Sound Trap Housing for Models VAB and VAD
Sound trap housings effectively decrease inlet and outlet sound power levels while only slightly increasing fan length and adding no additional pressure drop to the system.

Catalog: Vane Axial Fans — VAB and VAD
Sidewall Exhaust, Supply and Reversible Fans

Wall mounted fans include both direct and belt-driven fans with various impeller types. Propeller style fans are available for exhaust, supply, filtered supply, and reversible applications. Use centrifugal exhaust fans for clean or contaminated air applications.

Models AER/S1/S2/SC3/SB/SBC
Sidewall propeller fans are available with a wide variety of accessories including wall housings, wall collars, guards, dampers, and weatherhoods. The Vari-Green® EC motor is available on models AER and select SE direct drive fans. Capacities range from 115 to 87,000 cfm (195 to 147,814 m³/hr) and 2.45 in. wg (610 Pa). AMCA Licensed for Sound and Air Performance. OSHPD seismic certified except AER.

Catalog: Sidewall Propeller Fans — Exhaust, Supply and Reversible
Wall Exhaust and Supply Fans — AER

Models SCR3/SBCR
Reversible sidewall fans offer the ability to exhaust or supply air on demand. Performance is equivalent in both the exhaust and supply modes. Capacities range from 2,900 to 70,500 cfm (4,927 to 119,780 m³/hr) and 0.5 in. wg (124 Pa). OSHPD seismic certified.

Catalog: Sidewall Propeller Fans — Exhaust, Supply and Reversible

Sidewall Mounted: Models CW/CWB
Centrifugal spun aluminum fans are specifically designed for sidewall mounted applications. Contaminated or grease-laden exhaust air is discharged out and away from building walls. The fans feature double-studded isolators for true-vibration isolation. The Vari-Green® EC motor is available on model CW direct drive fans. Capacities range from 70 to 12,500 cfm (119 to 21,238 m³/hr) and 2.5 in. wg (622 Pa). Third-party certified (Florida Product Approved and Miami-Dade County Qualified) for high wind and AMCA Licensed for Sound and Air Performance. IBC and OSHPD seismic certified.

Catalog: Centrifugal Upblast & Sidewall Exhaust — CW/CWB
Roof Mounted Fans

Greenheck offers the world’s widest selection of top quality fans and ventilators for OEM applications. This selection offers you a vast variety of products to ensure you can always find the right fan to meet your precise performance requirements. Discover the value of a Greenheck fan with the world’s best-selling centrifugal roof upblast and exhaust fans with one-piece, leakproof construction. Take advantage of our reputation for quality and reliability by experiencing one of our many Greenheck fan and ventilator products.

Centrifugal Roof Upblast and Sidewall Exhaust Fans

Centrifugal roof upblast fans include both direct and belt-driven fans with backward-inclined centrifugal wheels. The motors on the fans are out of the airstream. These fans are suitable for applications ranging from storage rooms and fume hood exhaust, to contaminated exhaust and smoke control.

Models CUE/CUBE - Roof Mounted

Model CUE/CUBE spun aluminum fans are specifically designed for roof or sidewall mounted applications. The fans feature a one piece windband continuously welded to the curb cap and double-studded isolators for true vibration isolation. Contaminated or grease-laden exhaust air is discharged directly upward, away from the roof surface or discharged out and away from building walls. The Vari-Green® high-efficiency motor is available on the model CUE direct drive fan. Capacities range from 70 to 30,000 cfm (119 to 50,970 m³/hr) and 5 in. wg (1,240 Pa). Third-party certified (Florida Product Approved and Miami-Dade County Qualified) for high wind and AMCA Licensed for Sound and Air Performance. IBC and OSHPD seismic certified. Select models with CE mark.

Catalog: Centrifugal Exhaust Fans — CUE/CUBE
Propeller Tube Axial Fans

Axial fans are a cost-effective option for low to medium pressure applications. Roof mounted models are designed to discharge clean air or fume exhaust up and away from the building. Typical uses are industrial space, warehouses, fume exhaust and paint booth exhaust. Models are available in spark resistance constructions, emergency smoke or continuous high temperature exhaust. Select from direct and belt drive fans with cast aluminum or fabricated steel blades based upon application requirements.

**Roof Upblast: Models RDU/RBU/RBUMO**

Model RBUMO has its motor mounted out of the airstream and is suitable for high temperature emergency smoke removal (500°F/260°C for 4 hours or 1000°F/538°C for 15 minutes) and is available with UL Power Ventilators for Smoke Control Systems. RBU/RBUMO have steel blades and the RDU has cast aluminum blades. Capacities range from 2,800 to 64,300 cfm (4,757 to 109,246 m³/hr) and 1 in. wg (248 Pa). AMCA Licensed for Sound and Air Performance. RBUMO is IBC and OSHPD seismic certified.

*Catalog: Propeller Upblast Roof Fans — RDU/RBU/RBUMO*

**Roof Upblast: Model TAUB-L/H**

Model TAUB-L/H has its motor mounted out of the airstream and is suitable for high temperature emergency UL smoke removal. Typical applications include clean air, industrial processes, and high-temperature exhaust. The TAUB-L/H has steel blades. Capacities range from 5,000 to 58,000 cfm (8,459 to 98,543 m³/hr) and 1 in. wg (248 Pa). AMCA Licensed for Sound and Air Performance.

*Catalog: Tube Axial Upblast Roof Exhauster — TAUB*

**Roof Upblast: Models TAUD/TAUB-CA**

Models TAUD/TAUB-CA have cast aluminum blades. Typical applications include clean air, fume exhaust, and spark resistant construction. Capacities range from 2,800 to 72,000 cfm (4,757 to 122,329 m³/hr) and 1.5 in. wg (373 Pa). AMCA Licensed Air Performance.

*Catalog: Tube Axial Roof Upblast — TAUD & TAUB-CA*
Greenheck duct heaters are specifically designed to meet the demanding requirements for many applications including space heating, primary heating, supplemental heating or reheating. Greenheck duct heaters are configurable, giving you the flexibility to customize your heater for a specific application while maintaining the quality, consistency, and value of a standardized product.

Duct Heaters

All heaters are UL/CSA Listed. Both models feature a fan interlock, power terminal board, control terminal board, grounding lugs, automatic limit switch for primary over temperature protection, and manual reset limit switch for secondary over temperature protection.

Model IDHB
The IDHB series is the most cost conscious model, offering limited sizes and the most basic option and control packages.

Catalog: Electric Duct Heaters

Model IDHC
The IDHC series offers the largest dimensions and capacities along with a full complement of options and control packages.

Catalog: Electric Duct Heaters

Model IDHE
The IDHE series is designed for universal airflow orientation, making it the industry’s most versatile and easiest to configure electric duct heater.
Greenheck offers the most UL Certified dampers and the largest selection of AMCA Licensed dampers in the industry. Our state-of-the-art testing facility allows us to regularly test our products to ensure quality performance is maintained. With in-house testing capabilities, we are able to accelerate new product development concepts that meet the challenging demands of the ever changing market place. For highly corrosive applications, Greenheck also offers severe environment dampers manufactured with 316 stainless steel (SE). 304SS is also available.

Control Dampers

Control dampers are used in buildings to regulate the flow of air in an HVAC system. Greenheck control dampers are configurable to meet the requirements of most commercial applications. Configurable features include: material type (galvanized steel, stainless steel, and aluminum), blade type (3V, airfoil, and round), and actuator type (two position, three position and modulating). When provided with blade and jamb seals, Greenheck control dampers meet the IECC (International Energy Conservation Code) leakage requirements with a leakage rating of 3 cfm (5 m³/hr) per sq. ft. at 1 in. wg (248 Pa) or less.

3-V Blade Type: Models VCD
3-V blades are typically used in low to medium pressure and velocity systems. Fabricated blades are reinforced with three longitudinal structurally designed vee’s. Available with blade and jamb seals for low leakage applications.

Airfoil Blade Type: Models VCD
Airfoil blades are typically used in medium to high pressure and velocity systems. Airfoil blades are constructed with structural reinforcement through the entire length of the blade. All models include blade and jamb seals for low leakage and ultra-low leakage applications.

Round Blade Type: Models VCDR/VCDRM
Round blade types are typically used in low to medium pressure and velocity systems. Available with blade and jamb seals for low leakage applications. The VCDR damper uses a single-blade design while the model VCDRM uses a multiblade design.

Face & Bypass Type: Models FBH/FBV
Face and Bypass types are two dampers connected allowing one damper to open while the other damper closes. The FBH series is a horizontal style (dampers alongside each other). The FBV series is a vertical style (dampers stacked on top of each other).

Catalog: HVAC Control & Balancing Dampers

* SE in model name denotes 316 stainless steel.
**SS in model name denotes 304 stainless steel.
Severe Environment Dampers

Severe environment dampers are entirely constructed of 316 stainless steel material as a standard product offering. This line of severe environment dampers offers an excellent corrosion-resistant option for a variety of applications.

**3V Blade Type: Model SEVCD**

3-V blades are fabricated from a single thickness of 316 stainless steel reinforced with three longitudinal structural V grooves running the length of the blade. Available with blade and jamb seals for low leakage applications.

**Airfoil Blade Type: Model SEVCD**

Airfoil blades are constructed of double-skin 316 stainless steel. This blade design presents a lower resistance to airflow. Typically used in medium to high pressure and velocity systems. All models include blade and jamb seals for low leakage and ultra-low leakage applications.

Catalog: Severe Environment Dampers
Catalog: HVAC Control & Balancing Dampers

Insulated/Thermally Broken Dampers

Model ICD series of dampers were developed for applications where it is necessary to minimize thermal transfer and reduce condensation.

**Insulated Control Damper**

**Model ICD**

Model ICD-44 features a thermally broken insulated blade. ICD-45 features a thermally broken, insulated frame and blade. The ICD series meet the IECC (International Energy Conservation Code) requirements with a leakage rating of 3 cfm/ft² (5m³/hr) at 1 in. wg (248 Pa) or less.

Catalog: HVAC Control & Balancing Dampers

Smoke Dampers

Smoke dampers are designed to be used in conjunction with barriers within a building to control the spread of smoke in the event of a fire. Greenheck smoke dampers have been certified to UL 55S for use in systems up to 4000 ft./min (20 m/s) or 8 in. wg (1,993 Pa). All models are rated for airflow and leakage in either direction.

**Smoke - Models SMD/SMDR/SESMD*/SESMDR*/ SSSMD***/SSSMDR***/HSD-401**

Smoke damper models are available in leakage class I, II, or III. Aluminum, galvanized, 304 stainless steel, and 316 stainless steel construction available. Electric and pneumatic actuators are available.

Catalog: HVAC Control & Balancing Dampers

* SE in model name denotes 316 stainless steel.
**SS in model name denotes 304 stainless steel.
Backdraft and Pressure Relief Dampers

Backdraft dampers are designed to allow airflow in one direction and prevent reverse airflow. A variety of mounting orientations, airflow directions, operation types, and performance ratings are available.

Backdraft
Models BD/WD/ES/EM/HB/HBR/WDR/SSWDR**

Exhaust backdraft damper models are designed to allow exhaust airflow but prevent airflow in the reverse direction and are typically used with a fan or power roof exhauster. Available in vertical or horizontal mount.

Intake backdraft damper models are designed to allow supply airflow into a building but prevent airflow in the reverse direction and are typically used with a fan or gravity intake ventilator. Available in vertical or horizontal mount.

Barometric Relief
Models BR/SEBR*

Barometric relief backdraft dampers have an adjustable start-open pressure for low velocity systems. Typically used for gravity hood ventilation, ductwork outlets, and room or stairwell pressurization.

Pressure Relief
Model HPR

Pressure relief backdraft dampers have an adjustable start-open pressure, which is capable of maintaining pressure at various airflow and closes upon a decrease in differential pressure. Pressure relief dampers are typically used in industrial systems to relieve unexpected overpressure.

Catalog: Backdraft and Pressure Relief Dampers

* SE in model name denotes 316 stainless steel.
**SS in model name denotes 304 stainless steel.
Air Measuring Products

Air measuring products help buildings meet the minimum outdoor air requirements of ASHRAE Standard 62 or California Title 24 by providing accurate monitoring and control of outside air.

Airflow Measuring Station

Model AMS
The AMS is an accurate airflow measuring station and is furnished with a properly sized pressure transducer that outputs a signal proportional to cfm. The AMS is compatible with a field-supplied controller or a factory-supplied LON controller to indicate airflow volume.

Airflow Measuring Station with Damper - Pressure Differential

Model AMD
The AMD series combines the function of an accurate airflow measuring station and a low-leakage control damper into one compact assembly that both measures and regulates airflow volumes to a target set point. The AMD series is compatible with a field-supplied controller or a factory-supplied analog controller. The four available models are:
AMD-23 featuring a 3-V blade control damper
AMD-33 featuring a fabricated airfoil blade control damper
AMD-42 featuring an extruded airfoil blade control damper
AMD-42V featuring a vertical extruded airfoil blade control damper

Airflow Measuring Station with Damper - Thermal

Model AMD-xx-TD
The AMD series combines the function of a highly accurate thermal dispersion airflow measuring station and a low-leakage control damper into one compact assembly that both measures and regulates airflow volumes to a target set point. The AMD-xx-TD series is compatible with a field-supplied controller or a factory-supplied analog or BACnet MS/TP controller. The four available models are:
AMD-23-TD featuring a 3-V blade control damper
AMD-33-TD featuring a fabricated airfoil blade control damper
AMD-42-TD featuring an extruded airfoil blade control damper
AMD-42V-TD featuring a vertical extruded airfoil blade control damper

Catalog: Air Measuring Damper Products – AMS, AMD and AMD-TD

Bubble-Tight Dampers

A bubble-tight damper is a heavy-duty damper designed for isolation applications to meet the requirement for zero leakage. Every bubble-tight damper is factory leakage tested to ensure a bubble-tight seal up to 30 in. wg. Galvanized, 304 or 316 stainless steel. These models are recommended for two position shutoff applications.

Models HBTR/HBT
Model HBTR-151 is rated for pressures up to 10 in. wg (2,490 Pa)
Model HBTR-451/551 is rated for pressures up to 30 in. wg (7,470 Pa)
Model HBT-221 is rated for pressures up to 10 in. wg (2,490 Pa)

Catalog: Bubble-Tight Dampers
Catalog: Heavy-Duty/Industrial Dampers

* SE in model name denotes 316 stainless steel.
**SS in model name denotes 304 stainless steel.
Industrial Control Dampers

Heavy duty flanged style frame dampers with various blade styles and pressure classes. Designed to control airflow and provide shut off in HVAC or industrial process control systems.

Models HCD/SEHCD*: Rectangular
Model HCD/SEHCD are rectangular dampers available with pressure and velocity capabilities up to 45 in. wg (11,161 Pa) and 6,000 fpm (30 m/s).

Models HCDR: Round
Model HCDR is a true round industrial damper available for pressure and velocity capacities up to 20 in. wg (4,960 Pa) and 6,500 fpm (33 m/s).

Catalog: Heavy-Duty/Industrial Dampers

Marine Dampers

Marine dampers are United States Coast Guard Class A-60 division approved. The marine dampers were tested at Underwriters Laboratories (UL) in accordance with International Maritime Organization’s (IMO) Fire Test Procedure code. Fire and combination fire smoke dampers can be used in marine and offshore ventilation systems.

Models IMO/SSIMO**
Models IMO and SSIMO are classified to United States Coast Guard Class A-60, United States/European Union MRA Listed (shipswheel) and American Bureau of Shipping (ABS) Approval Design Assessment (ADA).

Catalog: Marine Products — Dampers, Louvers and Fans

Balancing

Models MBD/MBDR
Models MBD and MBDR are designed to regulate the flow of air in an HVAC system. Not intended to be used in applications as a positive shut-off or for automatic control. Round and rectangular single-blade, and multiblade construction models are available. Models are standard with a locking manual quadrant. An optional standoff bracket is available for installations using insulated duct.

Catalog: HVAC Control & Balancing Dampers

Access Doors

Access doors are designed for use in low to medium pressure duct systems. They provide a durable, practical, and inexpensive means of gaining access to damper components inside the ductwork.

Hinged Style: Model HAD
Cam Style: Model CAD
Round Style: Model RAD
Pressure Relief: Model PRAD/VRAD

* SE in model name denotes 316 stainless steel.
** SS in model name denotes 304 stainless steel.
Greenheck offers the most AMCA Licensed louvers in the industry. Our experienced sales staff and engineers can configure, design and manufacture a wide range of air control and architectural products to meet your highest standards for both performance and aesthetic appeal. Choose from extruded aluminum or galvanized steel louvers in a variety of designs: stationary, combination, adjustable, acoustic, sightproof, thinline, wind-driven rain or Florida Product Approved and Miami-Dade County Qualified. Custom louvered penthouses, equipment screens and brick vents are also available. Most products can be finished as painted or anodized in a variety of standard colors or as a custom color match.

**Stationary Extruded Louvers**

Available in non-drainable, drainable head, drainable blade, and dual drainable blade models. J and K blades with 30 or 45 degree blade angles. AMCA Licensed for Water Penetration and Air Performance (excluded ESID).

**Drainable Blade: Models ESD/EDD/EHM**

Model ESD drainable blade and EDD dual drainable blade louvers have outstanding resistance to water penetration. Optional 35° blades are also available to maximize free area (ESD-435 and 635). EHM louvers offer a recessed mullion design providing a continuous blade appearance. Frame depths: ESD - 2, 4, 6 in.; EDD - 4, 6 in.; EHM - 6 in.

**Drainable Head: Models EDJ/EDK/ESID**

Models EDJ and EDK incorporate a drainable head member, which further decreases water penetration. Optional 30° blades are also available to maximize free area (EDJ/EDK-430). The ESID-430 has both high free area exhaust blades at the top and weather protective intake blades at the bottom, allowing both air discharge and intake ductwork to be attached behind the louver while preventing the short cycling of air. Frame depths: EDJ - 4, 6 in.; EDK - 4 in.; ESID - 4 in.

**Non-drainable Blades: Models ESJ/ESK**

Models ESJ and ESK are quite similar, except the K-blade design incorporates an additional offset or “rain hook” to provide extra protection against water penetration. Both models offer a hidden mullion design for a continuous blade appearance when multiwide sections are necessary. Frame depths: ESJ - 2, 4, 6 in.; ESK - 4 in.

Catalog: Louver Products (Severe Duty, Stationary, Operable)
Wind-Driven Rain Louvers

Wind-driven rain louvers are Greenheck’s most effective louvers in minimizing water penetration through wall openings. Designed to protect air intake and exhaust openings in building exterior walls that are sensitive to the penetration of wind-driven rain. AMCA Licensed for Water Penetration, Air Performance, and Wind-Driven Rain.

Models EVH/EHH

Models EVH and EHH incorporate a drainable head member and vertical (EVH) or horizontal (EHH) rain-resistant blades to provide maximum resistance to wind-driven rain in even the most stringent AMCA 500L test procedure. Frame depths: EVH - 3, 5, 6 in; EHH - 2, 4, 5, 6, 7 in.

Catalog:  Louver Products (Severe Duty, Stationary, Operable)
Catalog:  Severe Duty Louvered Products

Fabricated Louvers

Typically selected where lowest cost is the primary requirement. Fabricated from galvanized or stainless steel, models are available in both non-drainable and drainable blade designs. AMCA Licensed for Water Penetration and Air Performance.

Stationary Blade: Models FSJ/FDS

Model FSJ and FDS steel blade louvers are available in J style blade (FSJ) and drainable blade designs (FDS). Also available in stainless steel. Frame depths: FSJ/FDS - 4, 6 in.

Adjustable Blade: Models FAD

Model FAD louvers are adjustable blade louvers fabricated from galvanized steel and provide similar features as the EAD extruded aluminum models. They are available with drainable blades. Operable blades can be closed for tight air shut off. Typically operated by electric or pneumatic actuators with manual actuators available. Also available in stainless steel and 35º blade angle. Frame depths: 4, 6 in.

Catalog:  Louver Products (Severe Duty, Stationary, Operable)

We have a full line of accessories, so whether your project necessitates security bars or filter racks, we have what you need. In addition to our complete line of standard colors, our custom color matching capabilities are endless. These accessories and options allow Greenheck to complete your project just as you envision it.
Greenheck manufacturers a full line of Florida Building Code Approved and Miami-Dade County Qualified louvers, which may be applied in Florida and throughout the Hurricane Prone Region which spans from Southwest Texas to Maine and includes Hawaii.

All Greenheck Florida Building Code Approved and Miami-Dade County Qualified louvers are AMCA 540 Listed for debris impact protection and several are also AMCA 550 Listed for high velocity wind-driven rain.

Greenheck Florida Building Code Approved and Miami-Dade County Qualified louvered penthouses may be applied in any location where high wind loads and debris impact protection is required.
# Florida Product Approved/Miami-Dade County Qualified Louvers

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Max. Wind-load</th>
<th>AMCA Licensed Performance Data</th>
<th>AMCA Listed</th>
<th>Miami-Dade County, FL NOA No.</th>
<th>Florida Product Approved No.</th>
<th>Applicable Protocols</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFJ-601D</td>
<td>150 PSF</td>
<td>Water Penetration, Air Performance &amp; Sound</td>
<td>AMCA 540 Enhanced Level E</td>
<td>16-0209.01 EXP. 11/20/19</td>
<td>FL16786.1</td>
<td>TAS 201, TAS 202, TAS 203</td>
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<tr>
<td>ESS-502D</td>
<td>110 PSF</td>
<td>Water Penetration &amp; Air Performance</td>
<td>AMCA 540 Basic Level D &amp; Enhanced Level E (with 0.125 blade/frame)</td>
<td>16-0201.02 EXP. 12/6/17</td>
<td>FL10088.3</td>
<td></td>
</tr>
<tr>
<td>ESD-635D*</td>
<td>150 PSF</td>
<td>Water Penetration &amp; Air Performance</td>
<td>AMCA 540 Basic Level D</td>
<td>15-1109.04 EXP. 2/4/21</td>
<td>FL19675.1</td>
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<tr>
<td>ESD-635DE</td>
<td>150 PSF</td>
<td>Water Penetration &amp; Air Performance</td>
<td>AMCA 540 Basic Level D</td>
<td>16-1020.04 EXP. 12/5/18</td>
<td>FL16781.1</td>
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<tr>
<td>EACA-601D</td>
<td>110 PSF</td>
<td>Water Penetration &amp; Air Performance</td>
<td>AMCA 540 Basic Level D</td>
<td>16-0201.03 EXP. 11/1/17</td>
<td>FL10088.1</td>
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<tr>
<td>EHH-601D*</td>
<td>150 PSF</td>
<td>Water Penetration, Air Performance &amp; Wind Driven Rain</td>
<td>AMCA 540 Enhanced Level E</td>
<td>15-1013.12 EXP. 12/24/20</td>
<td>FL19675.2</td>
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<tr>
<td>EHH-601DE</td>
<td>150 PSF</td>
<td>Water Penetration, Air Performance &amp; Wind Driven Rain</td>
<td>AMCA 540 Enhanced Level E</td>
<td>15-0415.05 EXP. 8/6/2020</td>
<td>FL19277.1</td>
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<td>EVH-501D</td>
<td>130 PSF</td>
<td>Water Penetration, Air Performance &amp; Wind Driven Rain</td>
<td>AMCA 550, AMCA 540 Enhanced Level E</td>
<td>16-0201.07 EXP. 10/4/17</td>
<td>FL16785.1, FL16086.1</td>
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<tr>
<td>EVH-660D</td>
<td>150 PSF</td>
<td>Water Penetration, Air Performance &amp; Wind Driven Rain</td>
<td>AMCA 540 Enhanced Level E</td>
<td>16-0201.07 EXP. 10/4/17</td>
<td>FL16785.1, FL16086.1</td>
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<tr>
<td>EHH-601PD</td>
<td>115 PSF</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>16-0201.05 EXP. 6/19/18</td>
<td>FL11350.1</td>
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<tr>
<td>ESD-635PD</td>
<td>115 PSF</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>16-0201.04 EXP. 6/19/18</td>
<td>FL11350.2</td>
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## Florida Product Approved Louvers

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Max. Wind-load</th>
<th>AMCA Licensed Performance Data</th>
<th>AMCA Listed</th>
<th>Miami-Dade County, FL NOA No.</th>
<th>Florida Product Approved No.</th>
<th>Applicable Protocols</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESD-435X</td>
<td>Max. 200 PSF</td>
<td>Water Penetration &amp; Air Performance</td>
<td>AMCA 540 Basic Level D</td>
<td>Not Applicable</td>
<td>FL6876.3, FL15718.3</td>
<td>Standard: TAS 202</td>
</tr>
<tr>
<td>ESD-635X</td>
<td>Max. 200 PSF</td>
<td>Water Penetration &amp; Air Performance</td>
<td>AMCA 540 Basic Level D &amp; Enhanced Level E (with 0.125 blade/frame)</td>
<td>Not Applicable</td>
<td>FL6876.4, FL15718.4</td>
<td>Welded: TAS 201, TAS 202, TAS 203</td>
</tr>
<tr>
<td>EHH-501X</td>
<td>Max. 200 PSF</td>
<td>Water Penetration, Air Performance &amp; Wind Driven Rain</td>
<td>AMCA 540 Enhanced Level E</td>
<td>Not Applicable</td>
<td>FL6876.2, FL15718.2</td>
<td></td>
</tr>
</tbody>
</table>

## FEMA 361 Tornado Grille and Louver

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Max. Wind-load</th>
<th>AMCA Licensed Performance Data</th>
<th>AMCA Listed</th>
<th>Miami-Dade County, FL NOA No.</th>
<th>Florida Product Approved No.</th>
<th>Applicable Protocols</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSG-801</td>
<td>Max. 248 PSF</td>
<td>Not Applicable (UL Listed)</td>
<td>Not Applicable (UL Listed)</td>
<td></td>
<td></td>
<td>ICC 500-2008</td>
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<tr>
<td>AFL-501</td>
<td>Max. 300 PSF</td>
<td>Water Penetration &amp; Air Performance</td>
<td>Not Applicable (UL Classified)</td>
<td></td>
<td></td>
<td>ICC 500-2008</td>
</tr>
</tbody>
</table>
Greenheck specializes in manufacturing competitively priced, quality engineered replacement and OEM coils. Every coil we build is leak tested with 450 PSIG of dry nitrogen to guarantee 100% quality assurance. And just to be sure you get the performance you expect, check for AHRI Certification. Coils are constructed with copper tubes in 5⁄16, 3⁄8, 1⁄2, 5⁄8, and 1 inch OD with aluminum or copper fins and galvanized, stainless steel, or copper casings. Protective coatings are also available.

**Coil Types:**
- Chilled Water
- Hot Water
- Heat Reclaim
- DX Evaporator
- Condenser
- Standard Steam
- Non-Freeze Steam Distributing

**Catalog:** Greenheck Coils

To guarantee your coil is going to perform as required, check for AHRI Certification.

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**Coil Selection Program**

**Software**

Visit greenheck.com/software to obtain Greenheck’s coil selection software. Use of the self-explanatory software will guide the user in proper sizing and feature selection.

**Coil Drawing Worksheets**

Replacement Blank Coil Drawings—which are helpful for recording coil construction details when sizing and ordering replacement coils—are available from our website. The drawings are located on the Coils product Web page under the Other Product Information section.
Construction Features and Options

Rows
- Chilled water and DX coils – 1 to 12 rows
- Hot water coils – 1 to 12 rows
- Steam coils – 1 to 2 rows
- Condenser coils – 1 to 12 rows

Headers
- Type “L” from 3⁄8 in. to 4⅛ in. OD copper

Brazing
- All joints are hand-brazed

Connections
- Water and steam coils
  - Copper, steel or brass
  - MPT, FPT, sweat or Victaulic connections
- DX distributors
  - Standard or hot gas
- DX, condenser and heat reclaim
  - Copper sweat connections
- Supply connections on both ends of steam distributing coils

Casings
- 16 and 14 gauge galvanized steel
- 16 gauge 304 stainless steel
- Copper

Tube Material
- ¼ in. OD x .016 in. wall, copper
- ⅛ in. OD x .016 in., .020 in. wall, copper
- ¼ and ⅛ in. OD x .016 in. wall rifled, copper (optional)
- ¼ in. OD x .016 in., .020 in. wall, copper
- ⅛ in. OD x .020 in., .025 in., .035 in., .049 in. copper
- 1 in. OD x .035 in., .049 in. wall, copper

Fin Materials
- .0045, .006, .0075, .008, .010 and .016 in. aluminum
- .006 in. copper

Fin Spacing
- ¼ in. OD tubing, 8 to 20 fins per in.
- ⅛ in. OD tubing, 10 to 20 fins per in.
- ¼ in. OD tubing, 6 to 16 fins per in.
- ⅛ in. OD tubing, 6 to 14 fins per in.
- 1 in. OD tubing, 4 to 14 fins per in.

Optional Seamless Rifled Tubing
- For enhanced performance

Other Options
- Nonstandard casing flange widths and casing depths
- Special coil coatings
- Additional distributors
- Nonstandard circuiting
- Intertwined circuiting (DX Only)
- Insulated coil sections

Model Number Code

<table>
<thead>
<tr>
<th>Z</th>
<th>CW</th>
<th>58</th>
<th>S</th>
<th>04</th>
<th>F</th>
<th>10</th>
<th>24 x 36</th>
<th>RH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z = Special Feature</td>
<td>CW = Chilled Water</td>
<td>58 = 5/8 inch</td>
<td>S = Sine wave</td>
<td>04 = Quarter</td>
<td>F = Two</td>
<td>10 = Fins Per In</td>
<td>24 x 36</td>
<td>RH = Right Hand</td>
</tr>
<tr>
<td>HW = Hot Water</td>
<td>516 = 5/16 inch</td>
<td>L = Lanced</td>
<td>= Single Feed</td>
<td>= Full</td>
<td>= 6 - 20</td>
<td>RH = Left Hand</td>
<td>Connection hand is determined by looking at the inlet face of the coil, with the air hitting you in the back.</td>
<td></td>
</tr>
<tr>
<td>DX = Evaporator</td>
<td>38 = 3/8 inch</td>
<td>C = Corrugated</td>
<td>= 1 Feed</td>
<td>= Double</td>
<td>= 6 - 20</td>
<td>= Right Hand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HR = Heat Reclaim</td>
<td>100 = 1 inch</td>
<td>F = Flat</td>
<td>= A Feed</td>
<td>= One-and-a-Half</td>
<td>= 6 - 20</td>
<td>= Left Hand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CD = Condenser</td>
<td>= Distributing</td>
<td>= Double</td>
<td>= B Feed</td>
<td>= Three-Quarter</td>
<td>= 6 - 20</td>
<td>= Right Hand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS = Standard Steam</td>
<td>= 0 Feed</td>
<td>= Full</td>
<td>= Half</td>
<td>= 6 - 20</td>
<td>= 6 - 20</td>
<td>= Left Hand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD = Steam Distributing</td>
<td>= DR = Evaporator, Rifled Tubes</td>
<td>= Half</td>
<td>= Q = Quarter</td>
<td>= 6 - 20</td>
<td>= 6 - 20</td>
<td>= Right Hand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DR = Evaporator, Rifled Tubes</td>
<td>= CR = Condenser, Rifled Tubes</td>
<td>= Half</td>
<td>= S = Special</td>
<td>= 6 - 20</td>
<td>= 6 - 20</td>
<td>= Left Hand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR = Condenser, Rifled Tubes</td>
<td>= 0 Feed</td>
<td>= Half</td>
<td>= A = Single Feed</td>
<td>= 6 - 20</td>
<td>= 6 - 20</td>
<td>= Right Hand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>= Single Feed</td>
<td>= 0 Feed</td>
<td>= Half</td>
<td>= B = 2 Feed</td>
<td>= 6 - 20</td>
<td>= 6 - 20</td>
<td>= Left Hand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>= 2 Feed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Fin Type
- S = Sine wave
- L = Lanced
- C = Corrugated
- F = Flat

Rows Deep
- 01, 02, 03, 04, 05, 06, 08, 10, 12, etc.

Fin Height x Fin Length
- 6 - 20
Greenheck’s extensive line of available coatings provide solutions for applications ranging from commercial clean air to industrial high temperature or corrosive. Our standard powder coating process utilizes an in-house, state-of-the-art paint line. This electrostatic powder process provides the benefit of no VOC’s, long life, superior coverage, corrosion protection and reduced labor content, keeping it price competitive.

Identifying, selecting and specifying the right coating for the corrosion protection you require is a complex and demanding process. The corrosion rate for any application depends largely on concentration fumes, temperature and moisture levels. When considering the following coating options, know the specific chemicals involved in your process, concentration levels, temperature, moisture, exposure duration, sunlight exposure level and if abrasives are present.

### Standard Protective Coatings

<table>
<thead>
<tr>
<th>Coating</th>
<th>Max. Service Temp.</th>
<th>Dry Film Thickness</th>
<th>Material Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permatector™</td>
<td>250° F/120° C</td>
<td>2-3 mils</td>
<td>Steel or Aluminum</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Standard powder coating for steel products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Good chemical and corrosion resistance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Good mechanical properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Very good exterior color/gloss retention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Excellent primer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Temperature Silver</td>
<td>500° F/260° C</td>
<td>2-3 mils</td>
<td>Steel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Standard coating applied to high temperature fans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Good chemical resistance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Good mechanical properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Withstands continuous temperatures up to 500° F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hi-Pro Polyester</td>
<td>250° F/120° C</td>
<td>2-3 mils</td>
<td>Steel or Aluminum</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Excellent chemical and corrosion resistance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Excellent mechanical properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Excellent exterior color/gloss retention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• A 2 to 3 mil thickness exceeds the chemical resistance of a 4 to 6 mil thickness of the liquid Air Dry Phenolic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Optional color choices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epoxy</td>
<td>250° F/120° C</td>
<td>2-3 mils</td>
<td>Steel or Aluminum</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Excellent chemical and moisture resistance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Excellent mechanical properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Excellent salt spray results</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Suitable for indoor use only</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial Epoxy</td>
<td>250° F/120° C</td>
<td>2.5-3 mils</td>
<td>Steel or Aluminum</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Superior chemical and corrosion resistance (acids, caustic, solvents, high moisture)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Excellent mechanical properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Excellent salt spray results</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Suitable for indoor use only</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Coatings
Premium Two-Coat Perma-Z and Hi-Pro-Z Coatings

Greenheck’s premium two-coat paint options start with a minimum five stage wash to treat all components prior to painting. Cleaner parts result in better coating adhesion and durability. We then use an advanced two-coat powder and a topcoat of Greenheck’s Permatector™ or Hi-Pro Polyester. The combination of these two topcoats over our zinc-rich basecoat results in the two new coatings; Perma-Z and Hi-Pro-Z. These oven cured coatings provide superior corrosion resistance along with a tough, uniform finish to combat the most extreme conditions.

The Zinc Advantage

The zinc-rich basecoat actively and passively protects the base steel if the coating becomes damaged and the steel is exposed to air and water.

The zinc-rich basecoat has a lower electrochemical potential than the base steel. As a result, the steel is actively held in a neutral state when exposed to a corrosive environment—the driving force of corrosion is halted. A protective layer forms over the damaged surface as a by-product of the chemical reaction and passively protects the exposed steel from further corrosion due to air and water.

- Superior finish with uniform coverage and thickness
- A better coating provides better protection
- The process is environmentally friendly
- Unequaled value

<table>
<thead>
<tr>
<th>Two Coat Process</th>
<th>Perma-Z</th>
<th>Hi-Pro-Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two-coat powder paint coating provides outstanding corrosion protection in many extreme applications</td>
<td>Two-coat powder paint coating is resistant to saltwater, chemical fumes and moisture in corrosive environments</td>
<td></td>
</tr>
</tbody>
</table>

Note: Perma-Z and Hi-Pro-Z are not available on aluminum.

Salt Spray ASTM B117

<table>
<thead>
<tr>
<th>Coating</th>
<th>Permatector™</th>
<th>Hi-Pro Polyester</th>
<th>Perma-Z</th>
<th>Hi-Pro-Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness: 4.0 - 6.0 mils</td>
<td>Permatector topcoat with zinc-rich, epoxy basecoat</td>
<td>Hi-Pro Polyester topcoat with zinc-rich, epoxy basecoat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Durability

<table>
<thead>
<tr>
<th>Coating</th>
<th>Permatector™</th>
<th>Hi-Pro Polyester</th>
<th>Perma-Z</th>
<th>Hi-Pro-Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pencil Hardness ASTM D3363</td>
<td>3H</td>
<td>No Failure</td>
<td>3H</td>
<td>No Failure</td>
</tr>
<tr>
<td>Cross-Hatch Adhesion ASTM D3359-B</td>
<td>No Failure</td>
<td>No Failure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Chemical Resistance Ratings

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Bleach</th>
<th>Sulfuric Acid (10%)</th>
<th>HCl (10%)</th>
<th>MEK</th>
<th>Chlorine (0.1%)</th>
<th>NaOH (20%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permatector™</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>—</td>
</tr>
<tr>
<td>Hi-Pro Polyester</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Perma-Z</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Hi-Pro-Z</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

*Chemical-Resistant Rating Below

Salt Spray ASTM B117 is a comparative test that indicates the corrosion resistance of powder paint coatings.

Pencil Hardness and Cross-Hatch Adhesion tests determine the durability of a coating to withstand scratches, nicks and chips.

Chemical Resistance Ratings provide information on how each coating option will hold-up in certain chemical environments.
Bearing Life

Many Greenheck fans feature, L_{10} 80,000 hour bearings as standard. 80,000 hours is more than nine years of continuous, around-the-clock operation at the maximum operating speed and horsepower. Many models also have options for L_{10} 100,000 hours (11 year) or 200,000 hour (22 year) bearing life.

When considering bearing life, it is important to know the difference between L_{10} and L_{50} bearing life. The L_{10} life is the time period over which 10% of the bearings are expected to fail. The L_{50} life is the time period over which 50% of the bearings are expected to fail. A L_{10} 80,000 hour bearing life is equivalent to a L_{50} 400,000 hour life.

<table>
<thead>
<tr>
<th>L_{10} Life</th>
<th>Equal to L_{50} or Average Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>40,000 hrs.</td>
<td>200,000 hrs.</td>
</tr>
<tr>
<td>80,000 hrs.</td>
<td>400,000 hrs.</td>
</tr>
<tr>
<td>200,000 hrs.</td>
<td>1,000,000 hrs.</td>
</tr>
</tbody>
</table>

For more bearing information, including standard and optional bearing lives, visit greenheck.com and review specific product data for each fan model.
Balance & Vibration

To ensure quality, Greenheck fans are subjected to testing throughout the manufacturing process. Ranging from wheel balancing to final operational and fully assembled fan vibration testing, product testing is integrated into our manufacturing process to expose and correct any product problem before the fan leaves the factory.

Balancing

An unbalanced fan impeller creates excess vibration which reduces bearing life, creates noise and transmits to other parts of the system. To keep these vibrations to a minimum, Greenheck balances every impeller we make to comply with AMCA 204-05 Balance Quality Grade G6.3.

Final Testing

Before leaving the factory, every fully assembled fan is energized and run at its design speed while an inspection is performed. This inspection checks for proper operation of the motor, belts, bearings, shafts and impeller.

Vibration Testing

As an added quality check, the following fan product families are subjected to an additional vibration analysis and testing after the fan is fully assembled:

- Industrial Centrifugal Fans
- Industrial Process Fans
- Plenum & Plug Fans
- Mixed Flow Fans

This testing utilizes a custom data acquisition system with tri-axial accelerometers to measure the vibration in three planes at the design operating speed. Permanent records for each fan’s performance are kept on file and are available upon request. The standard filter-in vibration limits meet the requirements of Fan Application BV-3 as defined in AMCA Standard 204-05 Balance Quality and Vibration Levels for Fans; see table. Consult the factory if more stringent vibration levels are needed.

By performing the vibration test, we are able to provide more than simple trim balancing of the wheel, it’s also a diagnostic tool for finding potential problems. A defective bearing or motor, bent shaft or misaligned sheaves may cause excessive vibration. A complete vibration test exposes these problems before the fan leaves the factory.

Seismic Vibration Limits for Tests Conducted at the Factory

<table>
<thead>
<tr>
<th>Fan Application Category</th>
<th>Rigidly Mounted (in/s)</th>
<th>Flexibly Mounted (in/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BV-1</td>
<td>0.50</td>
<td>0.60</td>
</tr>
<tr>
<td>BV-2</td>
<td>0.20</td>
<td>0.30</td>
</tr>
<tr>
<td>BV-3</td>
<td>0.15</td>
<td>0.20</td>
</tr>
<tr>
<td>BV-4</td>
<td>0.10</td>
<td>0.15</td>
</tr>
<tr>
<td>BV-5</td>
<td>0.08</td>
<td>0.10</td>
</tr>
</tbody>
</table>

Sure-Aire™ Flow Monitoring System

The Sure-Aire™ flow monitoring system is ideal for HVAC applications where airflow verification is required for proper system balancing, improving air quality, and controlling industrial processes.

Sure-Aire™ Operation

The Sure-Aire system determines airflow by measuring the pressure drop across the fan inlet venturi. This is the same approach used by accredited laboratories for certifying fan performance. The Sure-Aire method measures the flow without restricting airflow like traditional flow monitoring probes. The result is accurate flow measurement without increased energy consumption or higher sound levels.

Typical Applications

- Packaged, custom or built-up air handlers
- Clean rooms
- Fume exhaust systems
- Stairwell pressurization
- Isolation rooms
- General exhaust, supply or return air systems

Sure-Aire™ Advantages

- Multiple pressure taps provide a true averaged pressure drop reading to within 3% accuracy
- No increase in the fan energy consumption or sound levels
- Ships completely assembled from factory
- Includes termination plate with low pressure and high pressure taps

Sure-Aire™ Components

1. Easy connection to labeled high and low pressure lines
2. Inlet pressure pitot type port
3. Pressure taps located at narrowest point on inlet venturi for highest accuracy with piezometer ring for true average pressure reading
Disadvantage of Traditional Invasive Flow Probes

Measurements within the inlet cone are desirable because of the uniform, high velocity airflow through the cone. For this reason, traditional flow probes are generally mounted into the smallest diameter of the inlet cone. Mounting flow probes in this fashion causes turbulence and increases system resistance. This can significantly detract from the fan’s performance and cause the system to underperform. To compensate for the added pressure loss, the fan RPM and horsepower must increase. This results in additional energy consumption and higher overall sound levels.

<table>
<thead>
<tr>
<th>Single Width Centrifugal or Plenum Fan (Wheel Diameter)</th>
<th>Max Class I</th>
<th>Max Class II</th>
<th>Max Class III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Static Pressure Loss (in. wg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>1.2</td>
<td>2.0</td>
<td>3.2</td>
</tr>
<tr>
<td>36</td>
<td>0.8</td>
<td>1.3</td>
<td>2.1</td>
</tr>
<tr>
<td>73</td>
<td>0.4</td>
<td>0.7</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Expected pressure loss based on fan size and class due to invasive flow probes. Performance taken at 70% wide open volume (%WOV) and at maximum class RPM.

Optional Electronics Package

The Greenheck Sure-Aire airflow measurement system is available with electronics for reading the fan performance. Resulting data can be tied to the facility Building Automation System (BAS).

- Real time digital LCD display that shows fan performance
- NEMA-4 (IP 56) enclosure suitable for indoor or outdoor use
- Provides a 4-20 mA or 2-10 VDC signal linear to differential pressure for interfacing
- Accuracy to 0.5% of full scale at 77°F
- Two available input options:
  - 100 - 240 volt, AC
  - 24 volt, AC or DC
- Compatible with most Building Automation Systems (BAS)
- Ships loose for field mounting and wiring

Note: The differential pressure controller should be mounted within 75 feet of termination plate.

Visit greenheck.com/library/videos to observe the Sure-Aire and pressure drop demonstration.

Applicable Products for the Sure-Aire™ System

- QE1, QEID Mixed Flow Fans
- APD, APF, APM, APH, HPA Plenum Fans
- USF-400, CSW Series Single-Width Centrifugal Fans
- BIDW/AFDW Double-Width Centrifugal Fans
Greenheck’s Computer Aided Product Selection program (CAPS) is more than just a computerized selection program. It includes product descriptions, application information, dimensional drawings, detailed product performance for all products and AutoCAD® drawings for many products.

CAPS provides complete menu driven support for Greenheck’s fans and ventilators, centrifugal and vane axial fans, dampers, louvers, and coils.

Building Value in Air

Greenheck delivers value to mechanical engineers by helping them solve virtually any air quality challenges their clients face with a comprehensive selection of top quality, innovative air-related equipment. We offer extra value to contractors by providing easy-to-install, competitively priced, reliable products that arrive on time. And building owners and occupants value the energy efficiency, low maintenance and quiet dependable operation they experience long after the construction project ends.

Our Commitment

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

Specific Greenheck product warranties are located on greenheck.com within the product area tabs and in the Library under Warranties.