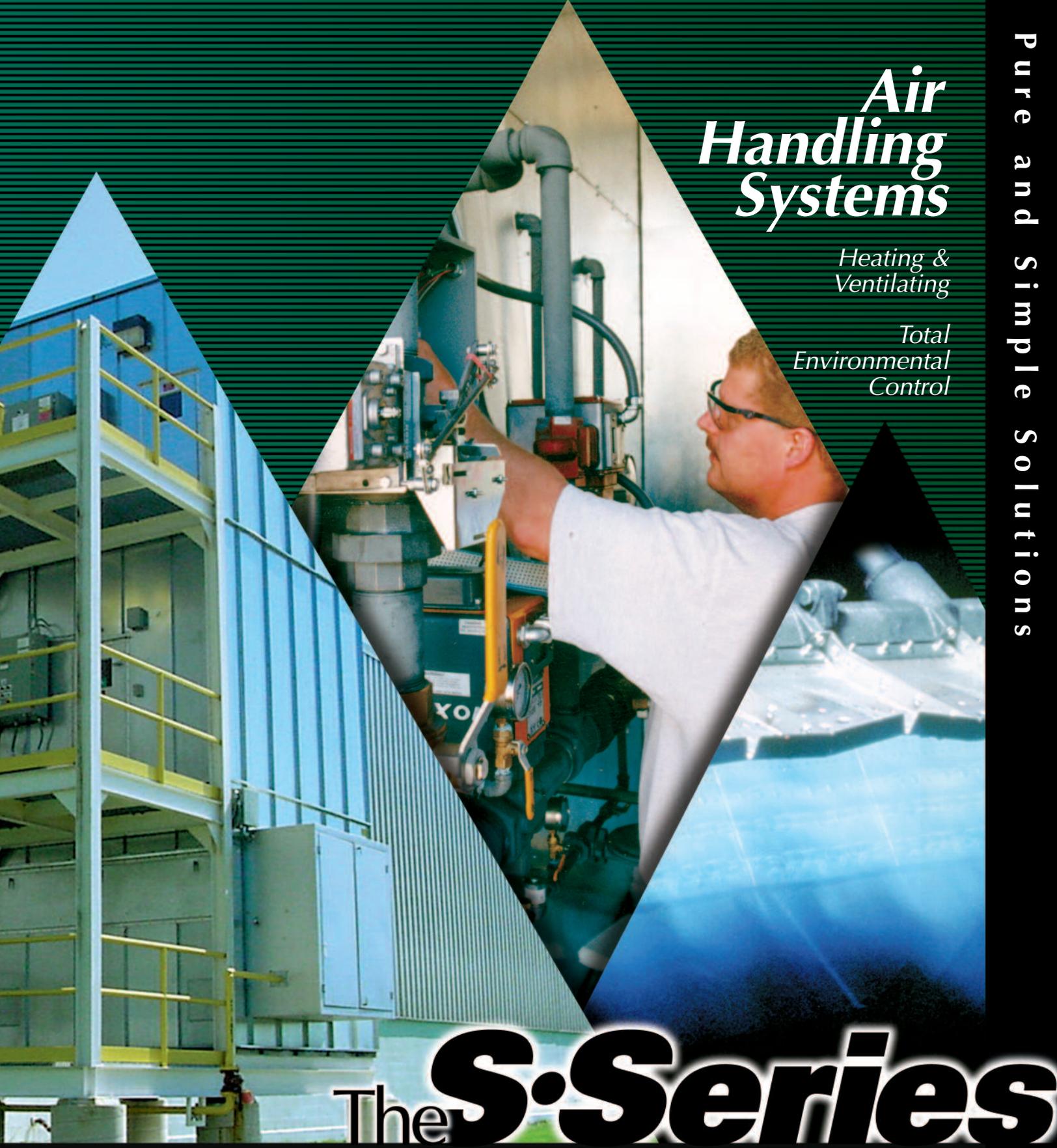


Air Handling Systems

Heating & Ventilating

Total Environmental Control

Pure and Simple Solutions



The **S-Series**



The **S-Series**

AbsolutAire's Air-Handling Systems

An advanced modular design approach to AbsolutAire's S-Series Air-Handling Systems offers optimum application flexibility for industrial heating, ventilating and make-up air, as well as for total environmental control with a wide range of operational options matched to user needs.

Heat Generation options include both direct and indirect gas-fired burners, and steam, hot water and electric coils. Cooling or Dehumidification can be provided with chilled water (CW) or direct expansion (DX) coils. Humidification options include direct evaporative media, steam and water atomization. Filtration can be provided with multiple stages of high-efficiency filtering media. Ventilation and make-up air can be provided by several different fan styles.

Sophisticated, user-friendly PLC system controls set precise operating parameters, closely monitor S-Series system performance and schedule planned maintenance. Optional, climate-controlled service vestibules, easy equipment accessibility, single-point connections and numerous other features help to enhance system serviceability.

Construction highlights include structural-steel framing, aluminized-steel inner and outer skins, high-density panel insulation, thermal breaks, low-leak dampers, vibration-isolation fan bases and multiple sizes and intake/discharge options for both indoor and outdoor installations.

An exhaustive quality-control process, including factory testing to performance specifications, and one of the best warranties in the business help to assure our growing list of satisfied customers that AbsolutAire's S-Series Air-Handling Systems deliver the best available technology for facility air-management needs.



S-Series Advantages

- ▲ Optimum Application Flexibility
- ▲ Complete Design Capability to Match User Needs
- ▲ High-Efficiency Industrial Heating
- ▲ High-Volume Ventilating
- ▲ Add-On Modules for Total Environmental Control (Heating, Cooling, Humidity Control, Filtration)
- ▲ Precise Temperature Control to +/- 2°F, Relative Humidity to +/- 5%
- ▲ User-Friendly, Touch-Screen PLC System Controls
- ▲ Multiple Sizes and Intake Discharge Options for Both Indoor and Outdoor System Installations
- ▲ Quality-Checked and Factory Tested
- ▲ Backed by an Industry-Leading Parts and Labor Limited Warranty



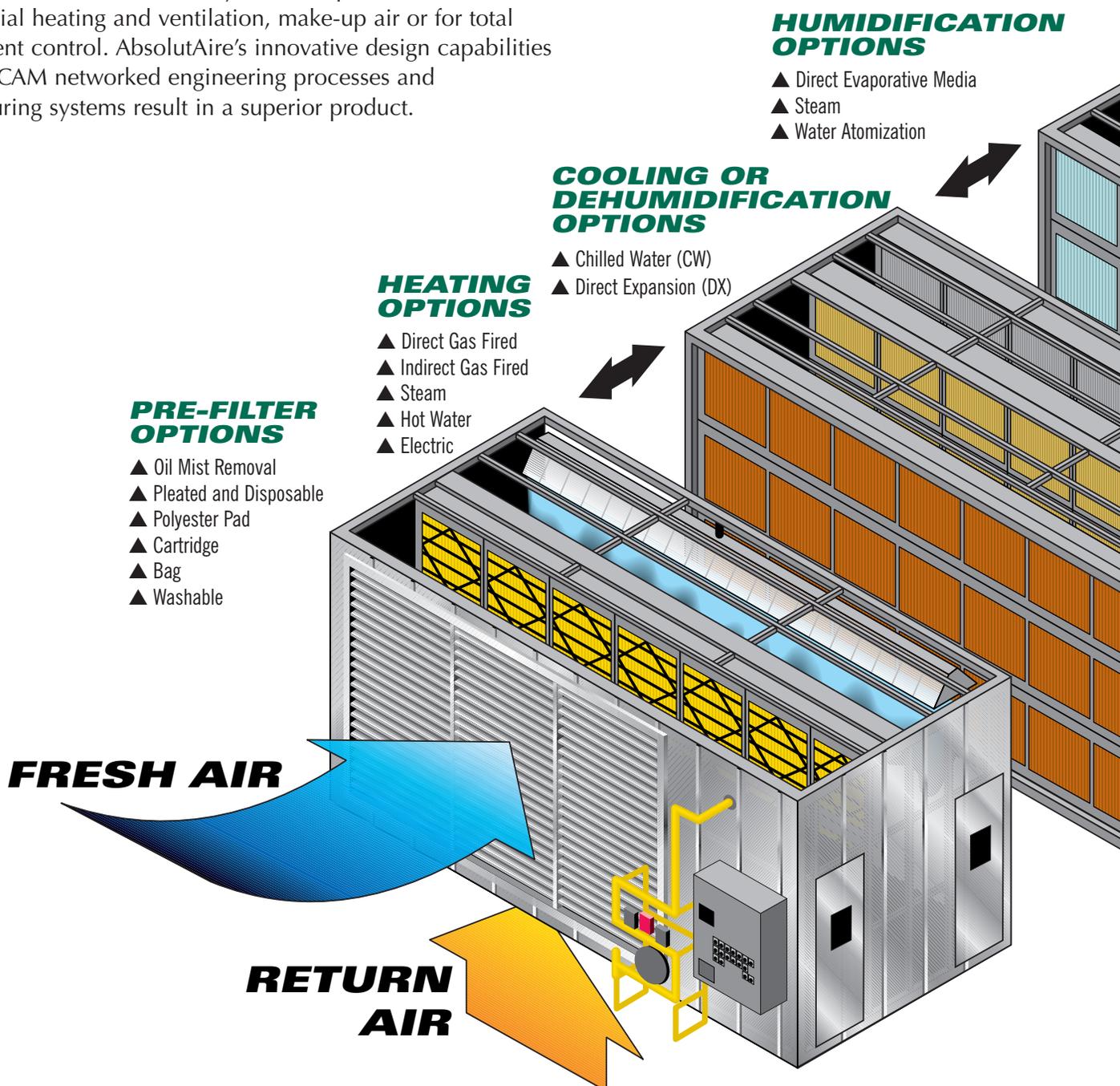
What You Need to Know

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The S-Series

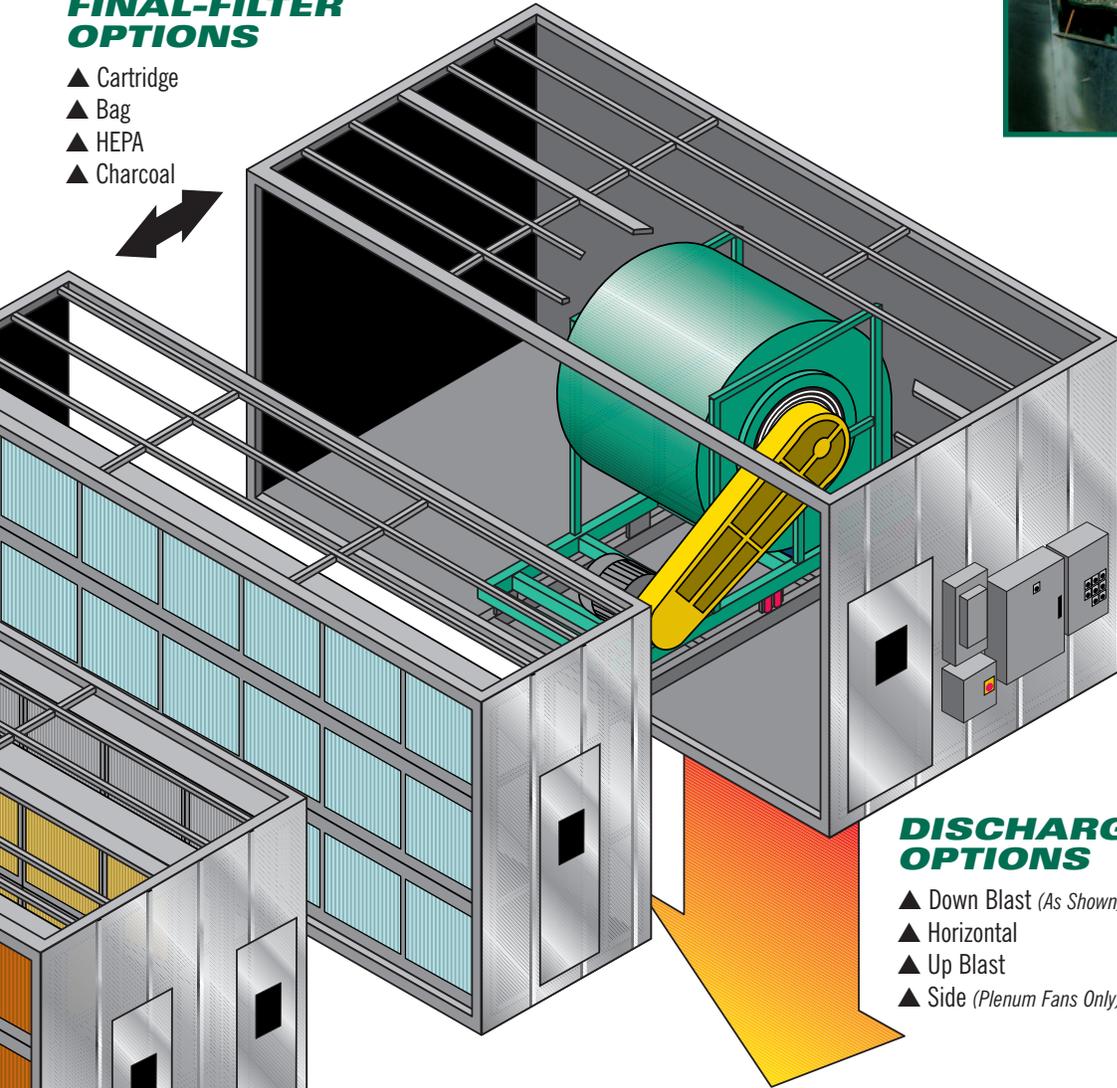
Optimum Application & Operating Flexibility

S-Series Air-Handling Systems deliver optimum application and operating flexibility with an efficient modular design approach. Specific-need sections are matched to owner/operator air-handling requirements as well as to facility-tailored specifications... whether for industrial heating and ventilation, make-up air or for total environment control. AbsolutAire's innovative design capabilities and CAD/CAM networked engineering processes and manufacturing systems result in a superior product.



**FINAL-FILTER
OPTIONS**

- ▲ Cartridge
- ▲ Bag
- ▲ HEPA
- ▲ Charcoal



SUPPLY AIR

**DISCHARGE
OPTIONS**

- ▲ Down Blast (As Shown)
- ▲ Horizontal
- ▲ Up Blast
- ▲ Side (Plenum Fans Only)



Direct Gas-Fired Burner and Manifold

FAN OPTIONS

- ▲ SWSI Externally Mounted
- ▲ DWDI Internally Mounted
- ▲ SWSI Plenum Style
- ▲ Vane Axial



Gas Valve Train



*Vibration-Isolation
Fan Bases*

The S-Series

Heat Generation

Gas-Fired Heating

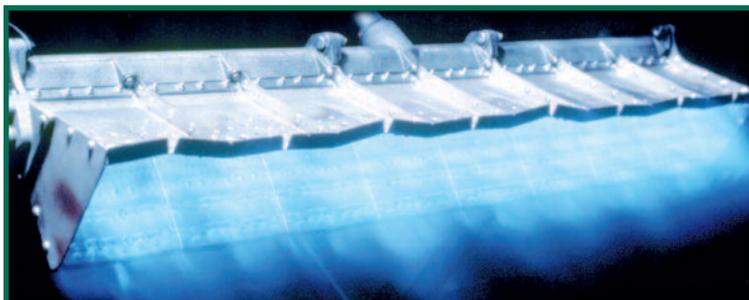
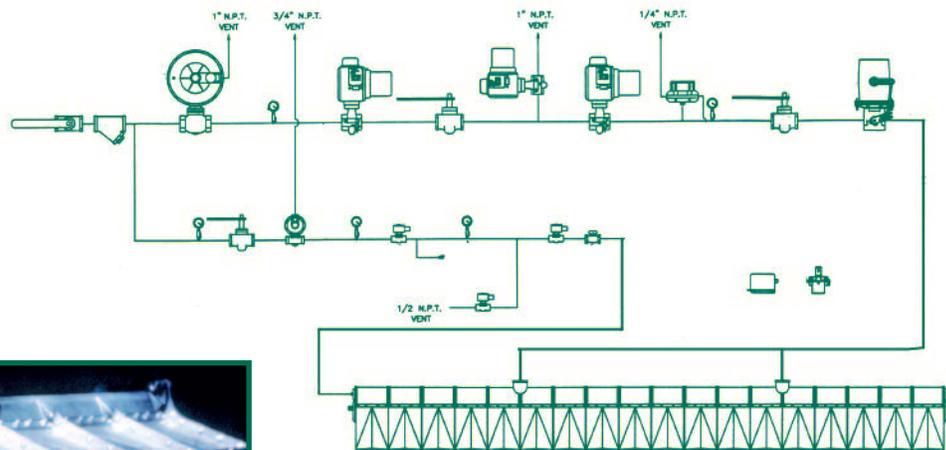
Gas-fired heating sections, fueled with either natural gas or propane gas, are available on S-Series units.

AbsolutAire has built its business on excellence in direct gas-fired heating applications. These advanced heating systems are rated for near 100-percent thermal efficiency and provide turn-down ratios of up to 50:1. Aluminum cast burners with stainless steel baffle plates are standard with S-series burner configurations. Manifolds are pre-piped, wired and configured to meet F.M. or I.R.I. requirements. Design flexibility easily meets or surpasses most space-heating specifications in varied project requirements.



A positive space pressure from this type of heating system prevents cold air infiltration into the heated space and limits the infiltration of dust and other contaminants. This is critical in such applications as paint booths and clean-room inspection or assembly operations. With ample amounts of clean and fresh outside air, improved indoor air quality (IAQ) is assured.

Some S-Series applications may require the use of an indirect gas-fired heating section. In such cases, AbsolutAire uses a stainless steel primary surface heat exchanger and user-specified secondary surfaces. Various burner options, complete with needed operating and safety controls, are available.



Photograph courtesy of Maxon Corporation.

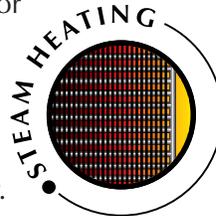
Hot Water Coils

Hot water coils are a common option for S-Series heat generation, especially where process heat or boiler systems are available. These coils are typically used with hot water up to 200°F. Coil circuiting arrangements are selected to optimize heat-transfer capacities. Booster coils or reheat coils may be required to meet humidity requirements.



Steam Coils

Steam coils are another commonly asked for option. Different coil surfaces, tubing diameters and circuit arrangements meet specific application needs. Fin designs focus on heat transfer efficiency and long life. Special casings insure proper steam distribution and condensate removal. Brazed copper tubes and copper headers eliminate unequal thermal expansion and greatly reduce stress on joints. And, free-floating cores provide for expansion and contraction without creating tube stress and wear.



Electric Coils

In some applications, where electricity is plentiful and relatively inexpensive, electric resistance heating coils may be used.

These are available in a range of kilowatt capacities, complete with all of the necessary safety devices such as fusing, airflow switches, and high-limit thermal cutouts. As needed, these coils can be added to an S-Series unit to comply with U.L. requirements.



The S-Series

Cooling and Dehumidification

Chilled Water (CW) Coils

Chilled-Water (CW) coils are a common option for cooling and dehumidification requirements on S-Series Air-Handling Systems. These coils typically are available in a number of drainable circuiting selections and are a good choice for many heat transfer applications.



The design and selection process insures easy cleaning for lasting performance. Other cooling fluid options include glycols. Coil circuiting arrangements are selected to optimize heat-transfer capacities.



Photograph courtesy of Heatcraft, Inc.

Direct Expansion (DX) Evaporator Coils

Direct Expansion (DX) coils offer single, dual or quad circuits to insure precise control of cooling capacity. Interlaced circuiting as well as face or run control options insure uniform refrigerant distribution over the face of the coil. The availability of wide fin spacing reduces the effects of frost build-up on low-temperature applications. DX coils, like the other cooling/dehumidification options, go to work when heating is not required. Typical evaporator coils are designed for use with specific refrigerants, and provide both comfort cooling as well as dehumidification.



Humidification

Direct Evaporative Media

Evaporative media is a common choice for humidification with S-Series Air-Handling Systems. In doing so, AbsolutAire adds grains of moisture to the airstream increasing space humidity content. At the same time, some cooling is achieved by the evaporation of the water through the saturated media, reducing the dry bulb temperature.



Evaporative coolers can be up to 89-percent efficient, providing excellent comfort cooling in some climatic zones and applications in which high volumes of ventilation air are needed.

Steam

Steam humidification is an option to add humidity to the space. AbsolutAire is aware of the need for drip-free rapid absorption of steam in tight spaces to minimize adding length to the air-handling system. Steam dispersion tube-type humidifiers are often required where reheat is not possible. The stainless steel tube utilized in S-Series systems provides spit-free quick distribution of steam into the airstream. This method will operate at steam pressures as low as two PSI.



Water Atomization

With water atomization, high-pressure water is forced through special spray nozzles, which atomize the water into quickly evaporating micro-fine fog droplets.

Some of the benefits in using steam or water atomization methods of humidification include low energy consumption, a variety of custom-designed system options, long-lasting corrosion resistance and reduced reheat requirements.



Photograph courtesy of Munters AB.

The S-Series

Filtration

S-Series Air-Handling Systems can be fitted with multiple stages of filtrating media, using a wide range of filter types and sizes for removing particulates, oil mist and other airstream contaminants.



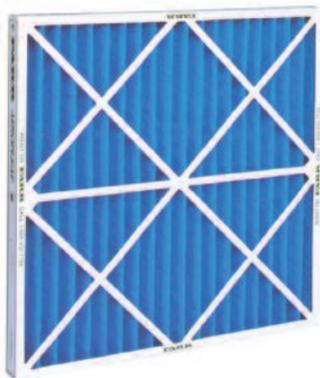
The various pre-filter, intermediate-filter and final-filter stages have efficiencies ranging from 30- to 99.99-percent and include the following types:

- ▲ Medium-Efficiency Pleated Panel Filters – 2- and 4-inch thickness; non-woven cotton/synthetic blend media; efficiencies to 65%.
- ▲ Rigid Box-Type Filters – 6- and 12-inch; synthetic (fiberglass) media; efficiencies from 45% to 95%.
- ▲ High-Efficiency Mini-Pleated Filters – Efficiencies from 65% to 95%.
- ▲ Extended Surface (Bag Style) Filters – For constant-volume applications; efficiencies from 45% to 95%.
- ▲ High-Efficiency HEPA/ULPA Filters – With filtering efficiencies to 99.99%.

Filters can be installed in V-banks, individual holding frames or side-access slide tracks. And, each bank will have a separate access door for easy servicing.



Photographs courtesy of Farr Company.



Fans

S-Series Air Handlers come with a variety of fan options. These include



externally mounted SWSI (single-width, single-inlet) fans, internally mounted DWDI (double-width, double-inlet) fans, or SWSI plenum-type fans or vane axial. Fans are sized to match design requirements for airflow volume, velocity and static pressure, as well as various system configurations.

Both belt-driven and direct-drive fan/motor combinations are used. While the fan and motor are rigidly fixed with respect to



Accurate, User-Friendly PLC System Controls

each other, optional spring vibration-isolation bases, and flexible connections serve to isolate the fan from the unit housing.

Various fan motor options are available. Drive packages are designed to 150% of motor horsepower.

Other key fan options include fan inlet guards and fan belt guards in accordance with OSHA standards. Pillow-block fan bearings are rated for a minimum L10 life (100,000 hours). Extended lube lines can be provided.

S-Series Air-Handling Systems can be equipped with a variety of Programmable Logic Controllers (PLCs).

These sophisticated, state-of-the-art PLCs provide micro-control solutions as well as total control of more complex applications. These controllers offer a wide range of key features, communications capabilities and input/output (I/O) options ... all in the name of flexibility and cost effectiveness.

Flat-panel, touch-screen operator terminals allow quick adjustment of operating parameters, closely monitoring of system performance, and even scheduling of maintenance needs. Screen configurations are variable, with user control over symbols, objects, graphics and imported bitmap images.

Both keypad and keypad/touch screen combination terminals are also offered, depending on the system user needs.



Photographs courtesy of Allen-Bradley, a Rockwell Automation Company.



The S-Series

Structural Integrity & Enhanced Serviceability

S-Series Air-Handling Systems deliver both structural integrity and enhanced serviceability through advanced manufacturing techniques, rugged construction, quality components with unique features and attention to detail. Every effort is made to insure the highest quality fabrication, with both longevity and fail-safe performance in mind. Every aspect of the system design content is scrutinized to insure maintenance ease, module accessibility and overall product serviceability.

DIRECT GAS-FIRED BURNERS

Very low maintenance; cast-aluminum burner manifolds are standard.

COILS

Regularly maintain condensate traps and clean coil fin surfaces; annual testing of freeze protection is recommended.

FILTRATION

Change-out depends on type of heating and if a variable-frequency drive (VFD) is used. On units without VFD and direct gas-fired burners, filters should be changed at 0.60" w.c. On units with VFD and direct gas-fired burners (or any other heating option), filters should be changed at 1.0" w.c. For HEPA filters, consult the factory for change-out recommendations.

HUMIDIFICATION

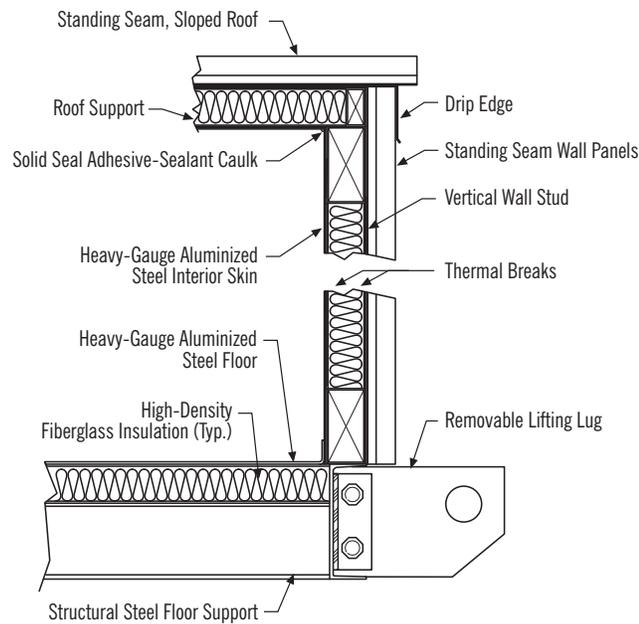
For direct evaporative media, water should be treated with an anti-biological agent, or the system should be flushed daily with clean water and allowed to dry out.

FAN BEARINGS

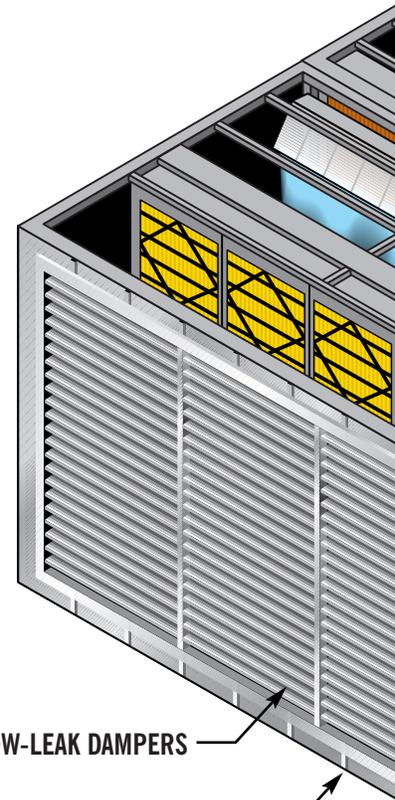
Inspect and lubricate monthly.



Accessible Filter Racks



Welded Structural Frame Insures Rigidity



LOW-LEAK DAMPERS

EPOXY-PAINTED WELDS

*Thermal Breaks and Insulation
Between Interior/Exterior Panels*



Silicone-Free Joint Sealant



PITCHED ROOFS

**INSULATION
(1.5" Minimum)**

**NON-SKID
FLOOR PAINT
(Optional)**

**PHOTO-SENSITIVE
EXTERIOR LIGHT**

**CLIMATE-CONTROLLED
SERVICE VESTIBULE (Optional)**

**FULL-SIZE ACCESS DOORS
(With Thermal Break Gasketing)**

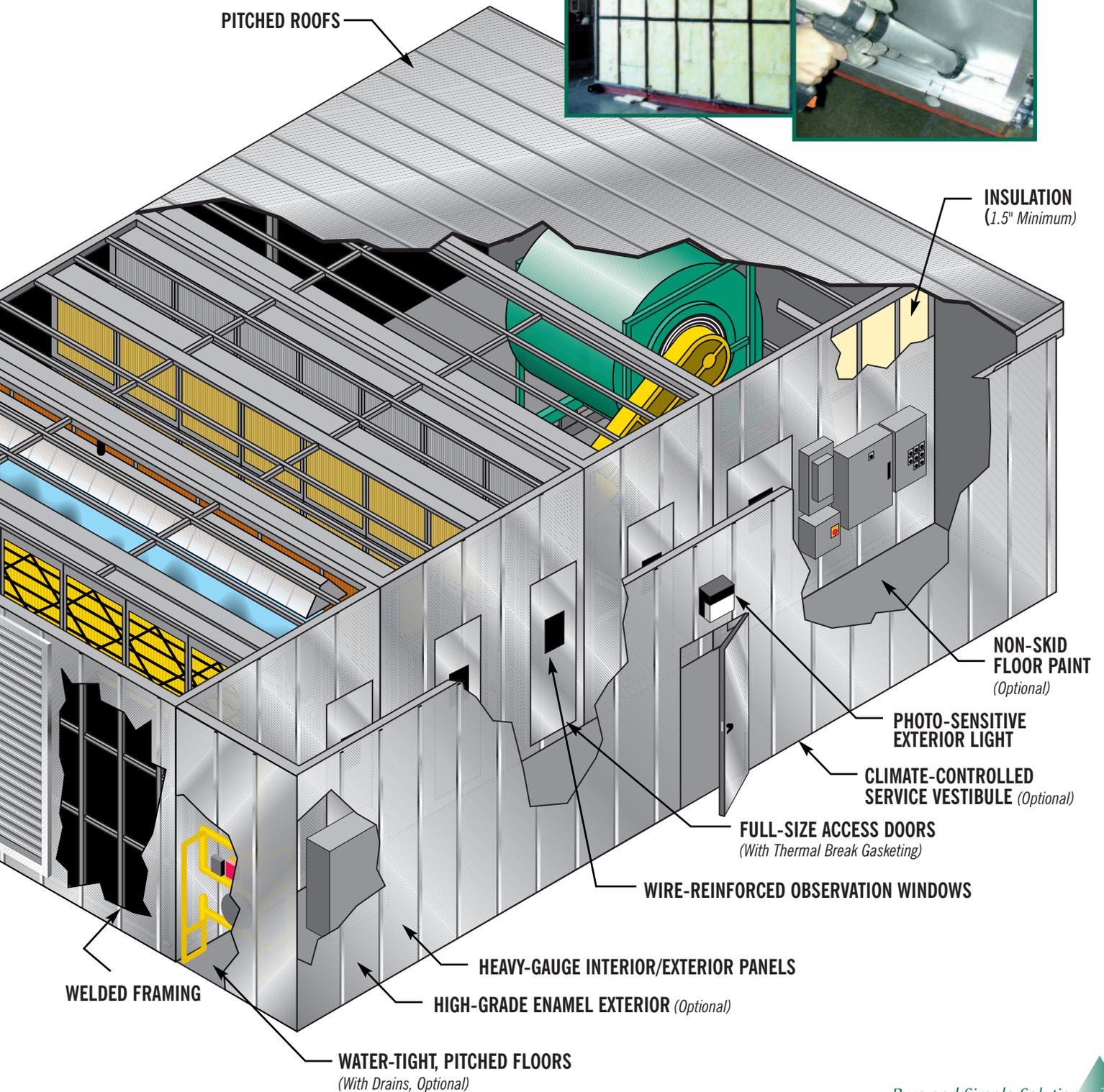
WIRE-REINFORCED OBSERVATION WINDOWS

HEAVY-GAUGE INTERIOR/EXTERIOR PANELS

HIGH-GRADE ENAMEL EXTERIOR (Optional)

**WATER-TIGHT, PITCHED FLOORS
(With Drains, Optional)**

WELDED FRAMING



The S-Series

Construction Highlights and Features

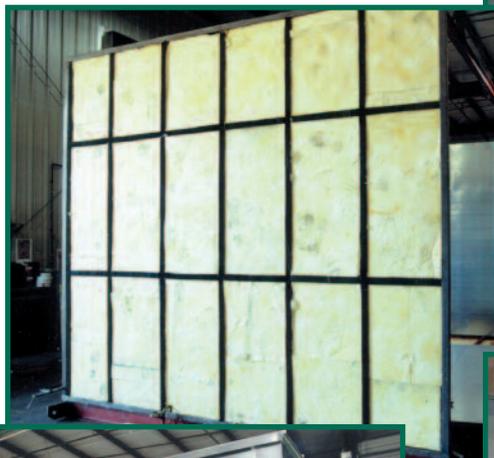
No question, AbsolutAire S-Series Air-Handling Systems are built for operational efficiency, lasting performance and serviceability. Each, of course, takes shape in the mind's eye with our complete design capabilities to match user needs and precise engineering to fulfill those needs. But, the real story comes down to the factory floor where dedicated assemblers use the latest production tools, methods and unforgiving quality-control procedures to build reality from concept.

A Pure and Simple focus: AbsolutAire is committed to cutting costs, ensuring zero-defect quality and delivering on-time. Every time.



Cabling Systems (Optional)

High-Density Insulation with Complete Thermal Breaks



Structural Steel Shapes and Tubular Framing Members

Advanced Electrical Control Panels



Positive-Locking Section Draw Bars



Standing Seam Exterior Panels

System Features...

User Benefits...

Construction:

- ▲ Completely internal structural tube framing system
- ▲ Aluminized (or galvanized) external standing seam siding
- ▲ Heavy-gauge aluminized (or galvanized) steel (or aluminum) floor, continuously welded
- ▲ Insulated walls with thermal break
- ▲ Heavy structural steel channel base
- ▲ Heavy-gauge aluminized, galvanized or stainless steel interior lining
- ▲ Full-size access doors with wire-reinforced glass windows
- ▲ Structural-steel match-drilled mating frames with assembly brackets
- ▲ Sloped or pitched roofs on all outdoor units
- ▲ Spring vibration isolation bases for all fans (DWDI and SWSI)
- ▲ Stainless steel drain pans on all cooling coils and humidifiers

- ▲ Cabinet structural integrity up to 10" w.c. static pressure
- ▲ Water-tight, extra rigid, corrosion resistant
- ▲ Water-tight for wash-down, long life
- ▲ Minimal thermal conductivity
- ▲ Strong, secure foundation
- ▲ Solid water- and air-tight construction
- ▲ Easy visual inspection of all compartments
- ▲ Simplifies field installation
- ▲ Sheds water away from access doors
- ▲ Smooth and quiet operation
- ▲ Corrosion resistant for wet environments

Performance Items Available:

- ▲ Two-inch, 30% efficient pre-filters
- ▲ High-efficiency bag/cartridge or HEPA final filters
- ▲ Direct-fired gas burners (aluminum cast)
- ▲ FM, IRI, automotive-grade or standard gas manifolds available
- ▲ Hot water, electric, chilled water, steam or DX coils
- ▲ Pipe manifolds and valve trains for any coil package
- ▲ Evaporative humidifiers with 6-, 12- or 18-inch media

- ▲ Velocities below 500 FPM ensure reliable performance
- ▲ Optimum particulate removal from air stream
- ▲ Clean combustion, long-lasting, 100% efficient
- ▲ Capable of meeting all owner requirements
- ▲ Versatility in heating and cooling options
- ▲ Complete piping packages as needed
- ▲ Efficient, inexpensive cooling and humidification

- ▲ Complete and reliable state-of-the-art U.L. listed control panels
- ▲ Communication with a variety of building management systems
- ▲ 120-volt load centers for service outlets and lighting
- ▲ Units completely factory-wired to NEC standards
- ▲ Direct-coupled damper actuators with spring return
- ▲ Controls and wiring factory-tested prior to shipping
- ▲ Vapor-proof incandescent or fluorescent lights

- ▲ Quality, performance and easy operation
- ▲ Application flexibility
- ▲ Safe and convenient for maintenance operations
- ▲ Capable of meeting all owner requirements
- ▲ High reliability and low maintenance
- ▲ Ensures operation to job specifications
- ▲ Well-lit interior even in damp environments

The S-Series

Other Options and Accessories

Control Piping Assemblies:

Valve train assemblies include control/diverting valves, isolation valves, thermometer wells and pressure gauges for steam, hot-water or chilled-water coil assemblies.

Door Hold-Open Devices: These devices are used for holding open section-access doors for system inspection and module maintenance.

Exterior Light: Controlled by a photoelectric eye, this type of light fixture is used on the exterior door of an S-Series air-handler service vestibule.

Inlet Hood: Designed to reduce moisture ingestion, this hood is designed for a maximum 500 FPM inlet velocity on a typical system horizontal unit.

Motor Removal Rail: This structurally supported I-beam rail is included to assist with motor removal, if needed.

Rolling Access Ladders: These quality steel structures (OSHA approved) provide for maintenance safety when servicing system filters and other operating sections.

Service Corridor (Vestibule):

A weather-tight enclosure runs the length of the unit. This lighted vestibule is typically five-foot wide and houses controls, piping and module access doors for maintenance. Climate control can be provided with small unit heaters, ventilation fans or air conditioners as optional vestibule features.

Timed Circuit Service Light Switches:

Used in place of standard toggle-style switches, these are set to have an automatic shut-off after a desired period of time. An audible warning device and/or quick-flash indicator is used to indicate when the time limit is about to expire.

Vapor-Proof Fluorescent or Incandescent Light Fixtures:

These are used for lighting of all air house compartments, including service corridors. Electronic ballasts are used as needed on these lights.

Variable Frequency Drives: These are used when variable volumes of conditioned supply air are required. They are controlled in different ways: automatic differential pressure switch; manual potentiometer; or DDC control system.



Service Vestibule



Quality Control and Warranty Services

S-Series Air-Handling Systems are designed and built with a single purpose: To Be The Very Best Available. Our highly unique, self-supervised assembly operations challenge the most dedicated, most skilled to build a superior product. "Built With Pride" is far more than a simple slogan. And, here's why: Each and every unit must pass without fail more than 100 different quality-control checks.

Any flaw, no matter how minor or superficial, must be properly corrected and checked again before final factory operational testing takes place. Then, every unit must perform as promised and meet or exceed exacting performance specifications. Only then, will our name go on and shipping to the jobsite take place.

Beyond this exceptional engineering and manufacturing commitment to first-class quality, AbsolutAire stands behind its product with an impressive, industry-leading parts and labor limited warranty.

Pure and Simple, we know that providing our customers with total value is more than a goal... it's our way of doing business.



The AbsolutAire Two-Year Limited Warranty

Parts furnished by AbsolutAire that prove to be defective at the site of the original installation within **24 months from the date of start-up, or 27 months from the date of shipment**, whichever comes first, will be replaced or repaired at AbsolutAire's discretion at no charge to the customer. **Wear items, such as V-belts, filters, etc., are not included as covered parts under this Warranty.** Defective parts must be returned to AbsolutAire at the customer's expense. Warranty replacement parts will be shipped freight prepaid from AbsolutAire via normal ground service.

The customer must notify AbsolutAire promptly in writing of any claim under this Limited Warranty. AbsolutAire will require information to ensure the equipment has been installed and maintained properly, and operated as intended within the specifications as stated on the AbsolutAire quotation and/or Order Acknowledgment. Components provided by others are not covered under this Warranty. If an AbsolutAire part fails as a result of components furnished by others, the AbsolutAire component may not be covered under this warranty.

Reimbursement for labor to remove and/or install replacement parts is included in this Warranty for a period of 30 days from field start-up or 90 days from shipment, whichever comes first. AbsolutAire is responsible to determine the amount of labor reimbursement allowed, based upon the circumstances for each installation. Labor cost reimbursement must be approved by AbsolutAire prior to work being performed.

Disclaimer: The warranties contained in this written Limited Warranty are made in lieu of all other warranties expressed or implied, statutory or otherwise. In particular, AbsolutAire makes no warranty of merchantability for fitness for a particular purpose, unless written and signed by an officer of the Company referencing this specific disclaimer. AbsolutAire shall have no liability to the customer/owner for direct, consequential or incidental damages of any kind whatsoever.

The S-Series

Performance-Proven Customer Satisfaction

S-Series Air-Handling Systems from AbsolutAire promise optimum application and operating flexibility, along with exceptional on-the-job performance with their structural integrity and enhanced serviceability. That promise is being met with a diverse array of installed systems. A partial list of our satisfied customers includes ...



American Axle Manufacturing

Boeing, Inc.

Bofer Nobels

Corning, Inc.

Cruiser Yachts

Daimler-Chrysler

Delphi Automotive

Durr-Sigma Systems

Ford Motor Company

Freightliner

Garlock Sealing Technologies

General Motors – NAO

General Motors – WFG

Harley Davidson

Holiday Rambler

Hayes-Lemmerz

John Deere

Sommer Allibert

Steelcase, Inc.

Toyota Motor Corporation

Viking Yachts





Other *Pure and Simple Solutions:*

- ▲ E-Series Direct-Fired Air Turnover
- ▲ V-Series Direct-Fired Make-Up Air Value
- ▲ AA-Series Direct-Fired Heating & Ventilating
- ▲ R-Series Direct-Fired Heating & Ventilating
- ▲ Spray & Bake Paint-Booth Heating Systems
- ▲ I-Series Indirect-Fired Heating & Ventilating
- ▲ CH, DH & APD Heaters & Air-Process Dryers
- ▲ M-Series Make-Up Air Fan Boxes
- ▲ Coil & Evaporative Cooling Options
- ▲ LX1 Direct Digital Control (DDC) System



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