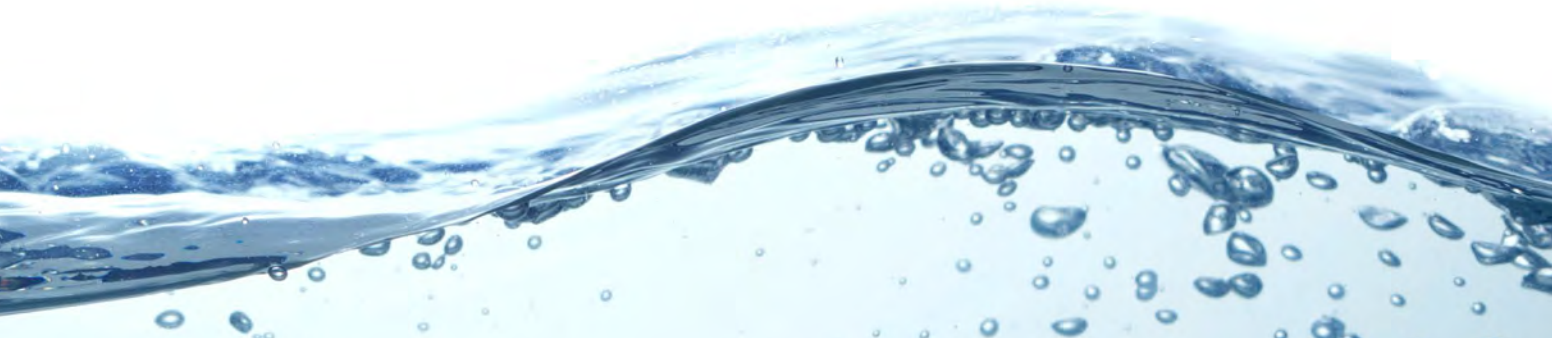




Water-Source Heat Pumps

SB SERIES



SB Series

Vertical Self-Contained Unit Water-Source Heat Pumps (3-18 tons)

Features:

- Vertical self-contained units with capacities from 3-18 tons
- ECM driven direct drive backward curved plenum supply fans for improved energy efficiency and reduced maintenance
- Double wall rigid polyurethane foam injected panel construction reduces air leakage and dampens radiated sound
- 10-100% variable capacity R-410A scroll compressors for load matching cooling and heating with improved load efficiency
- Two-way modulating water flow control valve option for head pressure control and unit operation with lower temperature condenser water
- Flexible control options allowing the control to be matched to the application
- Unit control and compressor are contained within a compartment isolated from the air stream for ease of service and quiet operation

○ *Makeup Air Applications
Up to 100% Outside Air*

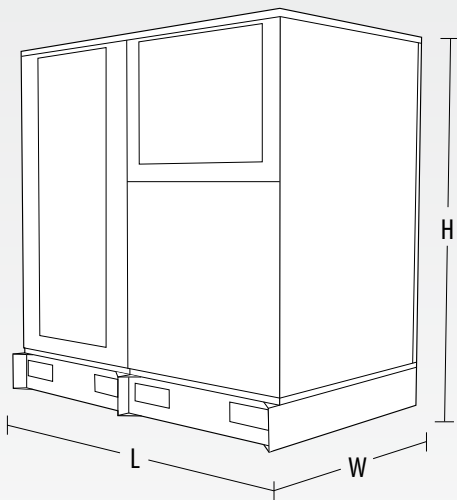
○ *Dehumidification and Premium
Filtration Capabilities*

○ *Variable Air Volume
Applications*

○ *Factory Installed or Customer
Specific Controls Options*

WSHP | SB Series

SB Series self-contained units are engineered for high performance and energy efficient full and part load operation. Variable capacity scroll compressors, variable speed ECM driven direct drive backward curved plenum supply fans, double wall rigid polyurethane foam insulated cabinet construction and heat pump configuration provide the SB Series with unmatched performance.



Superior Features

- Three cabinet sizes with capacities from 3-18 tons.
- Double wall rigid polyurethane foam injected panel cabinet construction has a higher thermal resistance, or R-value, compared with fiberglass construction. Panels include a thermal break, with no metal contact from inside to outside, to prevent heat transfer through the panel and prevent condensation on the outside of the cabinet. Construction also makes the cabinet more rigid and resistant to damage, provides increased sound dampening, and reduces air leakage and infiltration.
- Access doors with chrome plated steel hinges and quarter turn, lockable handles make the unit easily serviceable.
- Unit control and compressor are contained within a compartment isolated from the air stream for ease of service and quiet operation. Compartment includes factory wired LED service lights.
- Double sloped stainless steel drain pans eliminate standing water which can support microbial growth and stainless steel construction prevents corrosion and rust that could lead to water leaks and contaminants in the air stream.
- Direct Drive backward curved plenum fans are more energy efficient, quieter, and require less maintenance than belt driven fans.
- Variable speed supply fans allow precise airflow control and reduced power consumption.
- Variable capacity R-410A scroll compressors provide load matching cooling and improved part load efficiency.
- Coaxial refrigerant-to-water heat exchangers provide energy efficient heat transfer.
- Water-source and geothermal heat pump configurations allow for energy efficient heating and cooling.
- Labeled electrical components and color-coded wiring match the unit specific color-coded wiring diagram which is laminated and permanently affixed inside the control compartment.
- Factory run test report, wiring diagram, and Installation, Operation, and Maintenance manual with startup form are provided in the control compartment of every unit.
- Compressors include 5 year non-prorated warranty.

Premier Option

- Makeup air ventilation with up to 100% outside air.
- Factory provided or customer provided controller can be selected to meet existing or new building control architecture.
- Modulating hot gas reheat humidity control option can provide precise humidity control necessary to maintain occupant comfort, without the temperature swings common with on/off reheat systems.
- Multiple corrosion protection options including 6,000 hour salt spray tested polymer e-coated indoor coil, CuNi coaxial refrigerant-to-water heat exchanger, and 2,500 hour salt spray tested interior and exterior corrosion cabinet protection.
- Multiple high efficiency filtration options, with up to a MERV 14 efficiency rating.
- SCR (Silicon Controlled Rectifier) electric heat control for reduced power consumption, longer heater life and improved occupant comfort.
- Factory installed total or sensible AAONAIRE energy recovery wheels save heating and cooling dollars by pre-cooling, dehumidifying, pre-heating and humidifying the ventilation outside air (depending on ambient conditions). Up to 80% of the exhaust air energy can be recovered by the wheel.

SB Series Self-Contained Water-Source/Geothermal Heat Pump



Units can be shipped in a split configuration with individual modules such each section can fit through a 36" door."

Variable Capacity Scroll Compressors

With 10-100% capacity control, SB Series scroll compressors can precisely match the load needed by the unit. The compressors vary the volume of refrigerant that flows through the refrigeration circuit allowing the unit to tightly control the air temperature and save energy when the unit is not running at full load.

Variable Speed Supply Fans

ECM (Electronically Commutated Motor) driven direct drive backward curved plenum supply fans are standard on SB Series units to provide precise airflow control and reduced power consumption. Direct drive fans do not have belt energy losses and backward curved plenum fans are more energy efficient than housed forward curved fans.

Geothermal/Water-Source Heat Pump Configuration

An SB Series unit can heat the air as energy efficiently as it cools it. By transferring heat from the earth to the building, the SB Series heat pump requires no additional fuel gas or electrical installations.

Double Wall Rigid Polyurethane Foam Injected Panel Construction

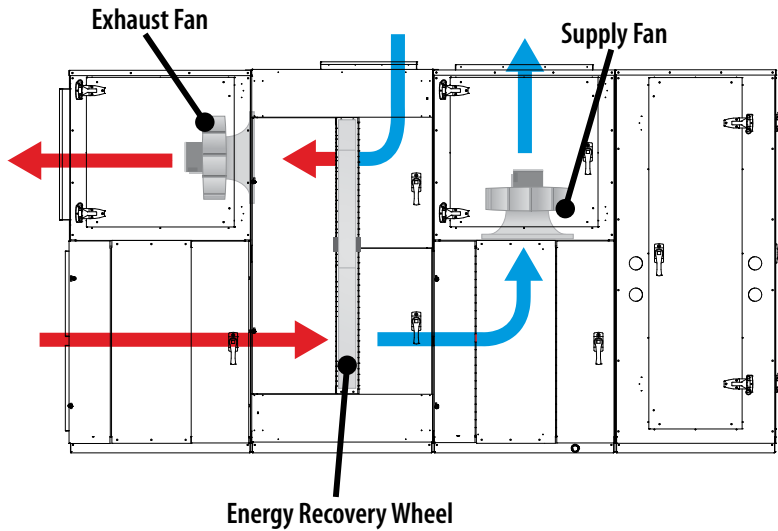
AAON has set a new standard for performance with double wall construction using closed cell polyurethane foam injected insulation. Not only does it have more than twice the insulating R-value, it provides increased sound dampening, and creates a far more rigid and stronger assembly with less air leakage than fiberglass insulated construction.

SB Model	Cabinet	cfm	Width	Height*	Standard Length	Energy Recovery Length
003	B	1,000-2,000	30	53	65	123
004						
005						
006	C	1,800-4,000	42	72	69	135
007						
009						
010						
014	D	3,000-6,000	56	73	69	135
016						
018						

*All dimensions are in inches
 Design cfm may be 30-50% greater or less than nominal cfm.
 "Units can be shipped in a split configuration for ease of installation such that each section will fit through a standard 36" door.
 Dimension may vary depending on options selected

Unique Configurations

SB Series Water-Source Heat Pump with Energy Recovery



Outside air can be pre-cooled or pre-heated with an AAONAIRE energy recovery wheel configuration

AAONAIRE Energy Recovery Wheels

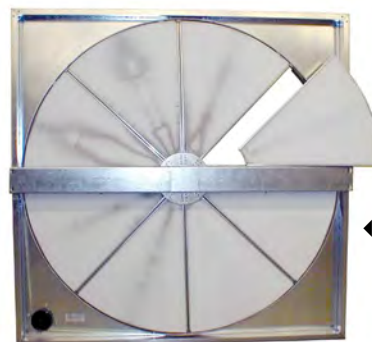
The AAONAIRE Energy Wheel is capable of transferring both sensible and latent energy from the incoming air stream to the exhaust and preconditioning the outside air. The AAONAIRE Energy Wheel is a total energy recovery wheel, transferring both sensible and latent energy from the incoming air stream to the exhaust and preconditioning the supply air. This saves energy by reducing mechanical heating and cooling use, and also lowers costs by increasing effective system capacity by 30% or more which allows smaller equipment to be selected. AAONAIRE systems also enhance indoor air quality by allowing larger amounts of outside air to be provided to the space with improved humidity control.

Energy Savings

By recovering up to 80% of the energy of the exhaust air, far less energy is spent cooling and heating the outside air supplied to the building. This energy savings can typically reduce the operating cost by thousands of dollars per year for a single unit.

Humidity Control

Humidity directly affects the comfort level and health of occupants in the conditioned space. Humidity that reaches excessive levels, for even short periods of time, can create an environment that promotes the growth of fungi and bacteria. Human exposure to fungi and bacteria can cause serious health issues. The application of the AAONAIRE energy recovery wheel can help control the relative humidity and result in more comfortable conditions.



◀ Factory Installed AAONAIRE Energy Recovery Wheel saves heating and cooling energy.

Applications

Water-source heat pump systems are among the most energy efficient ways to heat and cool a building, especially buildings with a wide variety of spaces, such as classrooms, health care facilities, and office buildings. AAON water-source heat pumps include the same unmatched flexibility and complete serviceability as AAON air-cooled systems.



Health Care Facilities

Health care facilities demand a HVAC System that is energy efficient while improving the indoor air quality for a comfortable environment

Energy Efficiency

Direct drive backward curved plenum fans with ECM driven motors for precise temperature control, reduced power consumption, and overall greater system efficiency. Features such as 10-100% variable capacity compressors provide load matching cooling and overall improved part load efficiency. Two-way modulating water flow control valve option allows for head pressure control, lower condenser water temperature (<65°F), and condenser water pump energy savings, with the additional benefit of saving installation time and cost.

Indoor Air Quality and Comfort

Double wall rigid polyurethane foam panel construction is easily cleanable without exposed insulation. Modulating hot gas reheat for energy efficient dehumidification, even with low sensible heat loads for improved indoor comfort. Premier options like high efficiency filters with up to MERV 14 and 95% efficiency are also available to meet filtration requirements common in health care facilities.

Makeup Air Capability

All SB Series water-source heat pump self-contained units can provide up to 100% outside air to the space. Modulating cooling, heating and dehumidification allow control of the air supplied to the space for improved ventilation without sacrificing comfort.



Schools

Educational facilities need an energy efficient and quiet HVAC system that is not disruptive while providing a comfortable learning environment.

Comfortable Learning Environments

AAON SB Series system can modulate fan speed, cooling capacity, and heating capacity to condition a space in the most energy efficient manner possible. Variable capacity compressors provide comfortable and precise supply air temperature control. Variable speed fans provide precise control with reduced sound levels.

Quiet Operation and Cost Savings

SB Series self-contained units provide numerous features and options for quiet operation conducive to an effective learning environment, while also offering cost-savings important to educational facilities.

With 10-100% capacity control, SB Series scroll compressors can precisely match the load needed by the unit. The compressors vary the volume of refrigerant that flows through the refrigeration system allowing the unit to tightly control the air temperature and save energy.

Direct Drive Backward Curved Plenum Fans offer greater system efficiency compared with forward curved fans while providing quieter operation, without belt noise, so as to not disrupt the learning process.

ECM Driven Fans offer precise airflow control and reduced power consumption for further cost savings.

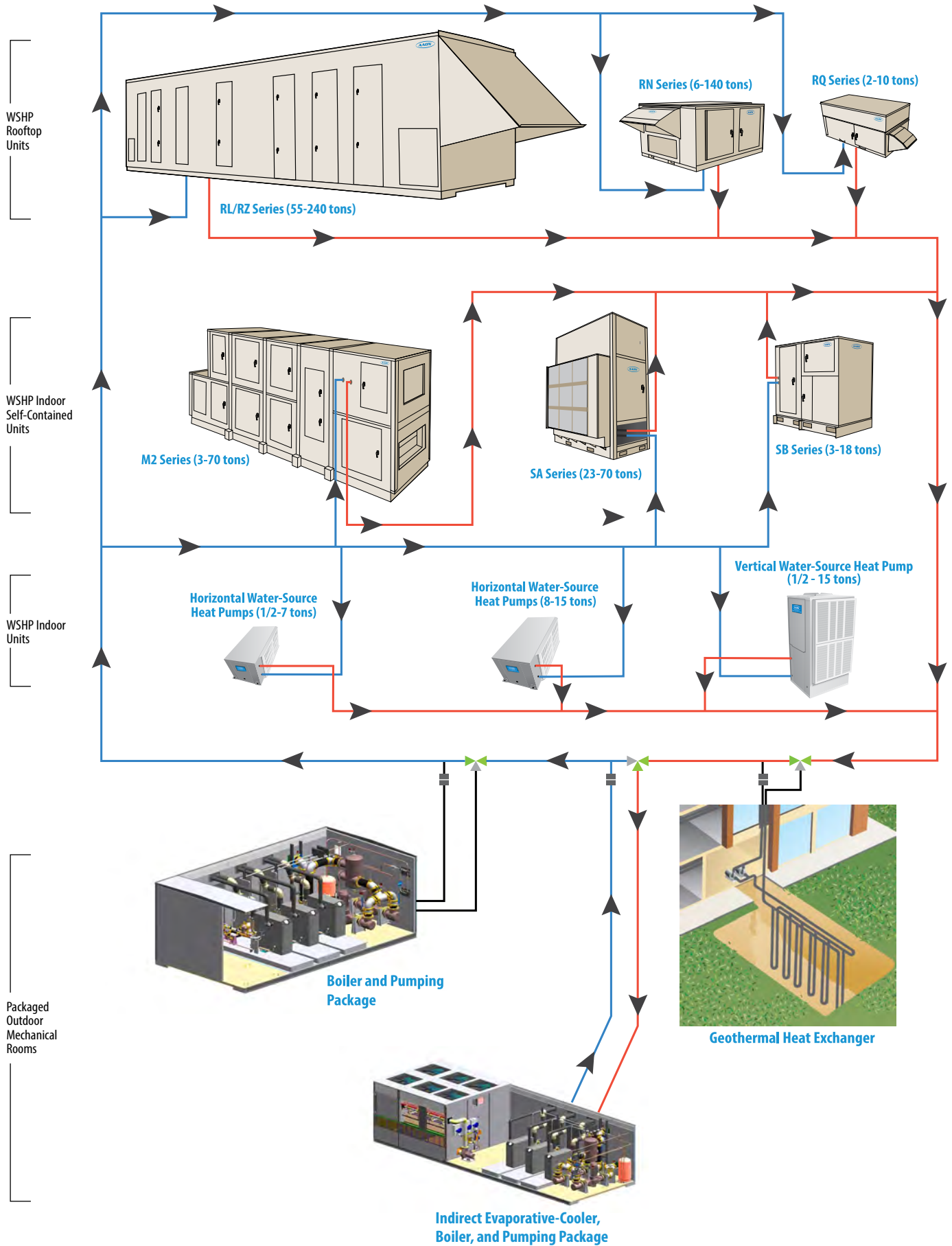
Double Wall Rigid Polyurethane Foam Injected Panel cabinet offers reduced air leakage and infiltration, and along with isolated compressor and controls compartment provides increased sound dampening. Compartment includes perforated galvanized steel sound attenuators. Compressor sound blankets are also available for an even quieter operation.

Single Zone VAV is the most energy efficient system for school applications. AAON SB Series Single Zone VAV systems modulate fan speed to provide precise space temperature control and modulate compressor capacity to provide precise supply air temperature control.

AAONAIRE Energy Recovery Wheels provide increased energy savings by limiting the extreme weather conditions exposed to the unit. AAONAIRE Energy Recovery wheels also provide fresh air to the classroom – contributing to a productive learning environment, while providing improved humidity control – contributing to a comfortable learning environment.



Water-Source/Geothermal Heat Pump System



AAON Environmentally Friendly HVAC Product Family

ROOFTOP UNITS (2-240 tons)



RZ/RL SERIES



RN SERIES



RQ SERIES

OUTDOOR AIR HANDLING UNITS (800 - 100,000 + cfm)



RZ/RL SERIES



RN SERIES



RQ SERIES

CONDENSING UNITS (2-230 tons)



CB SERIES



CF SERIES



CN SERIES



CL SERIES

PACKAGED OUTDOOR MECHANICAL ROOMS (4-540 tons)



BOILER MECHANICAL ROOM



LF SERIES



LN SERIES



FLUID COOLER



LZ SERIES

SELF-CONTAINED UNITS (3-70 tons)



SB SERIES

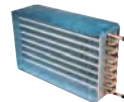


SA SERIES



M2 SERIES

COILS



BOOSTER, HYDRONIC, & DX

INDOOR AIR HANDLING UNITS (800 - 100,000 + cfm)

F1 SERIES



H3 SERIES



V3 SERIES



SA SERIES



M2 SERIES



M3 SERIES

WATER-SOURCE HEAT PUMPS (½ - 230 tons)



RQ SERIES



RZ/RL SERIES



RN SERIES



VERTICAL & HORIZONTAL WSHP



M2 SERIES



SA SERIES

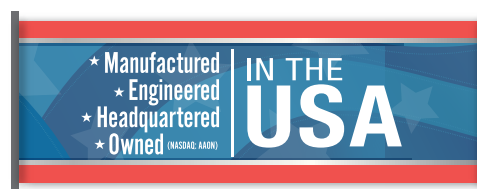


SB SERIES



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