



RN/RQ Series



PACKAGED ROOFTOP UNITS, AIR-SOURCE HEAT PUMPS, WATER-SOURCE/ GEOTHERMAL HEAT PUMPS, & OUTDOOR AIR HANDLING UNITS



RQ Series



RN Series

Features:

- Air-cooled or water-cooled condenser, with unit capacities from 2-140 tons
- Available as a chilled water or non-compressorized DX air handling unit, from 800-49,100 cfm
- Air-source, water-source, and geothermal heat pump options
- R-410A scroll compressors - one, two, or four compressor systems
- Variable capacity and variable speed R-410A scroll compressors for load matching cooling and improved part load efficiency
- Electric, gas, steam, or hot water heating
- AMCA certified low leakage economizer dampers
- Direct drive backward curved plenum fans
- Power exhaust and power return options
- Factory installed AAONAIR® total and sensible energy recovery wheels
- Double wall rigid polyurethane foam panel construction with a minimum R-value of 13
- Service access doors with full length stainless steel piano hinges and lockable handles
- Sloped stainless steel drain pans

Application Flexibility
Minimizes Installation Time and Reduces Cost

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

○ *Dehumidification and
Filtration Capabilities*

○ *Large Tonnage Rooftops
with Small Footprints*

○ *Factory Installed or Customer
Specific Controls Options*

RN/RQ Series Rooftop/Air Handler

AAON RN and RQ Series rooftop units continue to lead the packaged rooftop equipment industry in performance and serviceability. Double wall rigid polyurethane foam insulated cabinet construction and direct drive backward curved plenum fans allow RN and RQ Series units to have quiet, energy efficient airflow with high static pressure capabilities. RN and RQ Series units also feature lockable hinged doors which provide service access to all sections of the unit.

Superior Features

- Cabinet construction consists of rigid polyurethane foam panels with G90 galvanized steel on both sides and a closed cell polyurethane foam interior core. The inner wall protects the insulation from moisture damage, prevents microbial growth, and is easy to clean.
- Two inch rigid polyurethane foam insulated panels have a thermal resistance R-value of 13 or greater, which exceeds the R-value of a cabinet with four inch thick fiberglass construction. They also make the cabinet more rigid and resistant to damage and provide increased sound dampening.
- Access doors with full length stainless steel piano hinges and quarter turn, lockable handles provide improved reliability over single point hinges and make the unit easily serviceable.
- Corrosion resistant polyurethane paint exceeds a 2,500 hour salt spray test.
- AMCA Certified low leakage gear driven economizer dampers are standard on RN and RQ Series rooftop units. AAON low leakage dampers meet the California Title 24 damper air leakage requirement. Optional Economizer Fault Detection and Diagnostics is also available with the low leakage dampers to meet the California Title 24 requirements.
- Compressors and unit controls are contained within a compartment isolated from the air stream for ease of service and increased sound dampening.
- Direct drive backward curved plenum fans provide improved energy efficiency and reduced maintenance versus belt driven fans.
 - Double sloped stainless steel drain pans eliminate standing water which can support microbial growth and stainless steel construction prevents corrosion that could lead to water leaks and contaminants in the air stream.
 - Run test report, wiring diagram, and Installation, Operation, and Maintenance manual with startup form provided in control access compartment of every unit.
 - 5 year non-prorated compressor warranty, 15 year non-prorated aluminized steel gas heat exchanger warranty, and 25 year non-prorated stainless steel gas heat exchanger warranty.



▲ 6-30 ton RN Series Water-Source/Geothermal Heat Pump Packaged Rooftop Unit or Chilled Water Rooftop Air Handling Unit



▲ 55-140 ton RN Series Microchannel Air-Cooled Condenser Packaged Rooftop Unit

Air-Cooled or Water-Cooled Condensers

Premier Options

- Variable capacity and variable speed R-410A scroll compressors for load matching cooling and improved part load efficiency.
- Air-source, water-source, and geothermal heat pump options for energy efficient heating.
- Factory installed total or sensible AAONAIRE energy recovery wheels.
- Humidity control options including: High Capacity Coils, Modulating Humidity Control, Return Air Bypass, and Mixed Air Bypass.
- Chilled water cooling coils allow unit to tie into existing chilled water system.
- Hot water or steam heating coils allow unit to tie into existing boiler system.
- Polymer e-coated coils are available to extend the life of the coils and protect them in corrosive environments.
- Power exhaust and power return fans with economizer for application flexibility.
- VFD controlled and ECM driven supply, exhaust, and return fans for precise airflow control, building pressure control, and reduced power consumption.
- Modulating gas heat with stainless steel heat exchanger provides greater fuel efficiency, longer heater life, and improved occupancy comfort.
- SCR (Silicon Controlled Rectifier) electric heat control for reduced power consumption, longer heater life, and improved occupant comfort.
- Multiple high efficiency air filtration options.
- Unit controls options including factory installed customer provided controls.
- VFD controlled or ECM driven condenser fans for energy savings and refrigerant head pressure control.



▲ Factory installed AAONAIRE energy recovery wheel saves heating and cooling energy.

R-13 Double Wall Rigid Polyurethane Foam Panel Construction

AAON is setting a new standard for performance with double wall construction using closed cell polyurethane foam insulation. Not only does it have several times the insulating R-value, it creates a far more rigid and stronger assembly with less air leakage than fiberglass insulated panels.

Dehumidification

AAON offers many humidity control options. High capacity cooling coils are available which allow for more dehumidification versus standard cooling coils. Return air bypass and mixed air bypass are available on RN Series units for single coil humidity control. Modulating humidity control is available to provide energy efficient dehumidification, even with low sensible heat loads, without the temperature swings common with on/off reheat systems.

AAONAIRE Energy Recovery Wheels

AAONAIRE energy recovery wheels, total or sensible, provide energy savings by recycling energy instead of losing energy through exhaust air streams. AAONAIRE systems also enhance indoor air quality by allowing larger amounts of outside air to be provided to the space and through improved humidity control.

▼ Cutaway of panel showing thermal break and foam core.



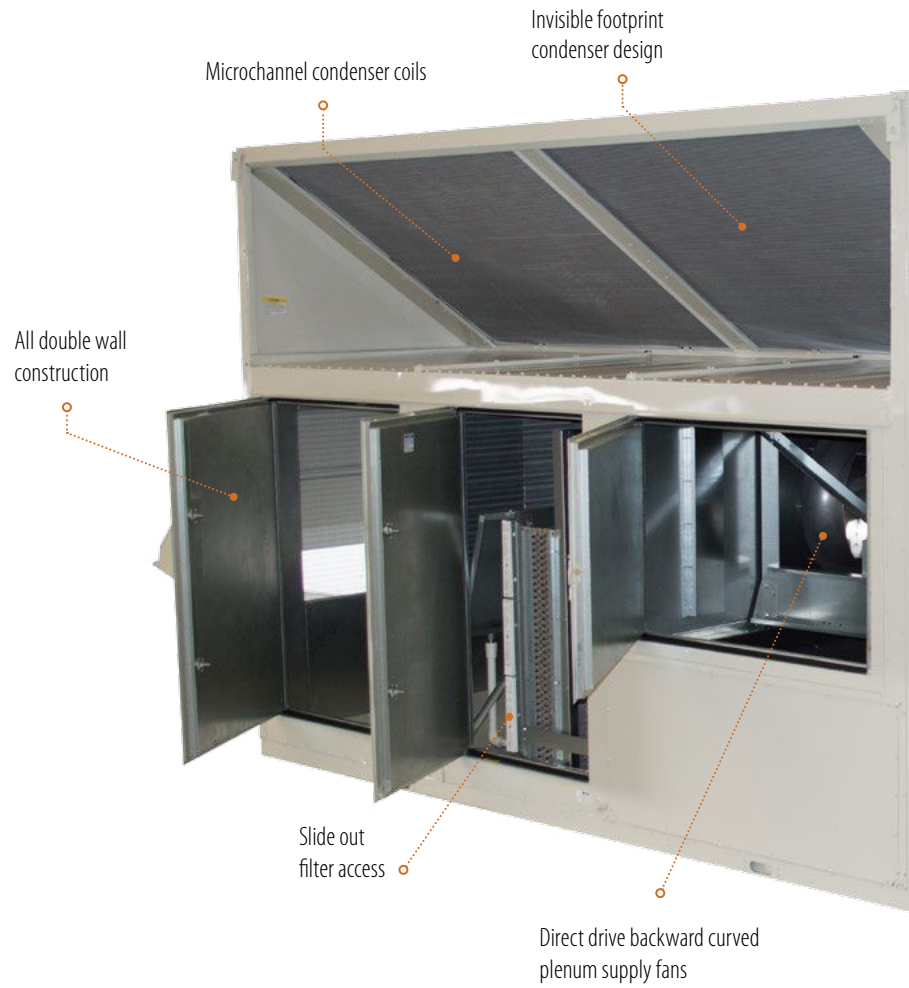
RN/RQ Series
Rooftop / Air Handler

Ease of Service

AAON equipment is designed from concept to completion with minimum service time as a primary factor. Readily accessible compressors and control components allow timely evaluation of service issues without delay. Color-coded wiring diagrams allow fast connection identification and analysis and thus a reduction in down time and cost. Individual components and wires are also labeled for quick circuit evaluation. The result of this AAON standard procedure is low service cost and greater unit run time.

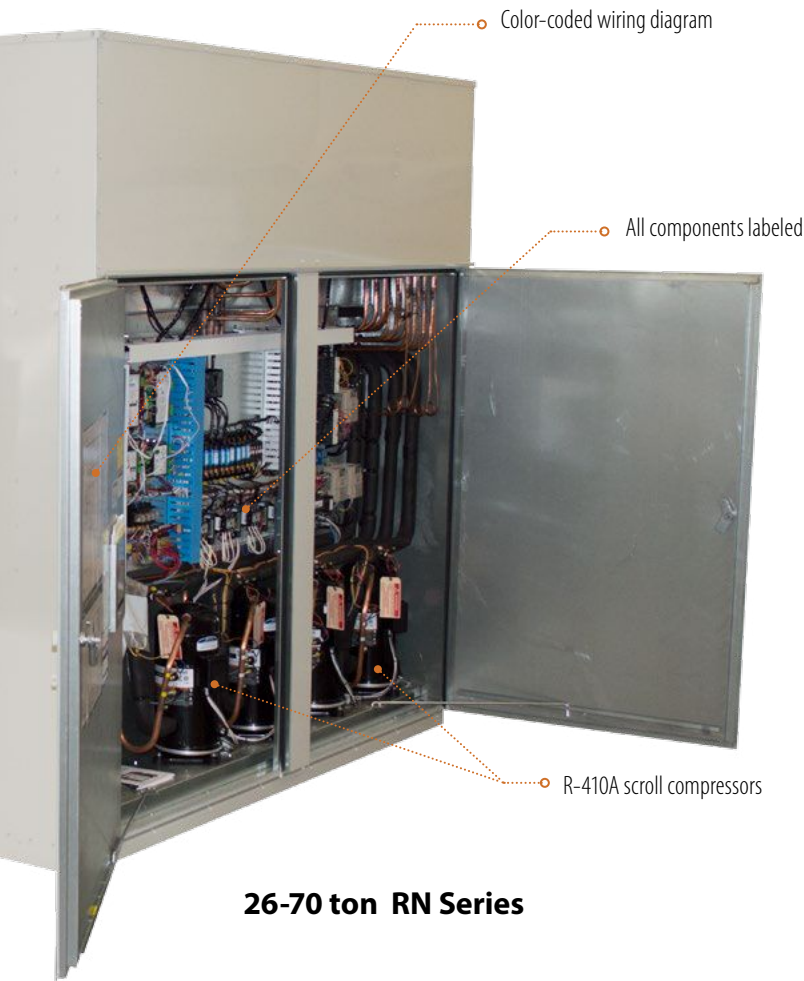
Air Handling Unit Option

AAON RN and RQ Series outdoor air handling units provide a hydronic cooling and heating option. Gas, electric, steam, and hot water heating are available on an RN and RQ Series air handling units. Cabinet construction is similar to the packaged rooftop units with easily accessible coil connections.



2-6 ton RQ Series





○ Color-coded wiring diagram

○ All components labeled

○ R-410A scroll compressors

26-70 ton RN Series

AMCA Certified Low Leakage Dampers



▲ Gear driven economizer eliminates the excess play and bind that occurs with linkage type economizers. Standard AMCA Certified AAON Low Leakage Dampers meet the California Title 24 damper air leakage requirement.

Makeup Air Capability

AAON RN and RQ Series units have makeup air capability and can be specified with up to 100% outside air. AAON AIRE energy recovery wheels are available on makeup air units to increase the unit's energy efficiency. High capacity cooling coils are available to handle the higher latent load of outside air. Modulating gas heat and SCR electric heat are available to provide energy efficient supply air temperature heating. Modulating humidity control is available to provide dehumidification without over cooling when the outside air humidity is above setpoint. Variable capacity scroll compressors are available to provide energy efficient supply air temperature control.



◀ VFD controlled variable speed scroll compressors provide load matching cooling and improve part load efficiency.

▶ 10-100% variable capacity scroll compressors provide load matching cooling and improve part load efficiency.



Rooftop Units (6-140 tons)

RN Model	Cabinet	Air-Cooled EER	Water-Cooled EER	Nominal cfm	Width*	Height*	Length*
RN-006	A	Up to 14.0	NA	2,200	79	44	82
RN-007				2,500			
RN-008				2,800			
RN-010				3,400			
RN-009	B	Up to 13.9	NA	4,000	96	50	88
RN-011				4,600			
RN-013				5,200			
RN-015				5,800			
RN-016	C	Up to 12.7	NA	4,800	101	59	110
RN-018				5,400			
RN-020				6,000			
RN-025			Up to 16	7,500			
RN-030				9,000			
RN-026				D			
RN-031	10,100						
RN-040	12,800						
RN-050	15,000						
RN-060	18,000						
RN-070	21,000						
RN-055	E	Up to 12.1	Up to 15.2	21,000	142	105	241
RN-065				24,000			
RN-075				27,000			
RN-090				22,000			
RN-105				26,500			303
RN-120				31,000			
RN-130				34,000			
RN-140				37,000			

*Dimensions vary depending on options selected.

All dimensions are in inches.

Design cfm may be 30-50% greater or less than nominal cfm.



- ▲ Dimpled heat exchanger provides energy efficient heat transfer and has no internal turbulator, which can corrode over time.



- ▶ 6-30 ton RN Series Air-Cooled Condenser Packaged Rooftop Unit

Air-Source Heat Pump Option

Energy efficient cooling and heating can be achieved by reversing the flow of the unit's refrigeration circuits. This allows the indoor coil to be used as either a cooling coil or heating coil. This is a more efficient method of heating than electric resistance heating because a heat pump can reject more heat to the space per the amount of energy used. Thus, the operating costs of heat pump heating are always less than the operating costs of electric resistance heating. Heat pump heating is also a more efficient method of heating than gas heating and, depending on the cost of electricity and natural gas or propane, heat pump heating can have less operating costs than gas heating.

Water-Source/Geothermal Heat Pump Option

Energy efficient cooling and heating can be achieved by reversing the flow of the unit's refrigeration circuits. This allows the indoor coil to be used as either a cooling coil or heating coil. Geothermal heat pumps take advantage of the relatively constant temperature of the earth below ground level to transfer heat to or from the building. Depending on latitude, ground temperatures range from 45°F to 75°F. This ground temperature is warmer than the air above it during the winter and cooler than the air in the summer.



◀ Microchannel condenser coils are durable, more efficient, lighter, and use less refrigerant than traditional fin and tube condenser coils.



▼ Direct Drive Backward Curved Plenum Fans are more energy efficient, quieter, and require less maintenance than belt driven fans. VFD controlled and ECM driven supply, exhaust, and return fans are available for precise air flow control, building pressure control, and reduced power consumption.



▲ 2-6 ton RQ Series Water-Source/Geothermal Heat Pump Packaged Rooftop Unit

Rooftop Units (2-6 tons)

RQ Model	Air-Cooled SEER	Air-Cooled EER	Nominal cfm	Width	Height*	Length*
RQ-002	Up to 19.2	Up to 14.8	800	44	43	82
RQ-003			1,200			
RQ-004			1,600			
RQ-005			2,000			
RQ-006			2,400			

*Dimensions vary depending on options selected.
All dimensions are in inches.
Design cfm may be 30-50% greater or less than nominal cfm.

AAON Environmentally Friendly HVAC Product Family

**Custom & Cataloged
Air Handling Units** ■
(800-200,000+ cfm)

Condensers & Condensing Units ■
(2-230 tons)

**Chillers (Air-Cooled, Evaporative-
Cooled, Heat Pumps)** ■
(4-540 tons)

Rooftop Units ■
(2-240 tons)

Outdoor Equipment Rooms ■
(Chillers, Boilers & Pumps)

Self-Contained Units ■
(3-70 tons)

Residential Systems ■
(2-5 tons)

Geothermal & WSHP Units ■
(2-230 tons)

Air-Source Heat Pumps ■
(2-230 tons)

Heating and Cooling Coils ■
(Booster, Hydronic, & DX)

Fluid Coolers ■
(50-450 tons)

Heating and Cooling *for...*

Auditoriums
Convenience Stores
Health Clubs
Healthcare Facilities
Homes
Lodgings
Manufacturing
Museums & Libraries
Natoriums
Office Buildings
Restaurants
Retail Stores
Schools
Supermarkets



Defining Quality. Building Comfort.

2425 S. Yukon Ave.
Tulsa, OK 74107-2728
www.AAON.com

It is the intent of AAON to provide accurate and current product information. However, in the interest of product improvement, AAON reserves the right to change pricing, specifications, and/or design of its product without notice, obligation or liability. Copyright © AAON, all rights reserved throughout the world. AAON® and AAONAIRE® are registered trademarks of AAON, Inc., Tulsa, OK.