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# ADDISON™

## VC/HC-SERIES

## SPLIT SYSTEM AIR HANDLING UNITS WITH 100% OUTSIDE AIR AND RECIRCULATING SYSTEM OPTIONS


**R410A**

**Commercial/Institutional/Industrial**
**Heating, Cooling and Dehumidification**

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# ADDISON™ VC/HC-SERIES

## INDOOR AIR HANDLING UNITS
## WITH 100% OUTSIDE AIR AND RECIRCULATING SYSTEM OPTIONS
## 4 To 35 Nominal Tons

Featuring R410A refrigerant, the VC/HC-Series are split system, indoor air handlers typically installed in commercial, institutional and industrial applications, such as hotels, sports arenas, office buildings and manufacturing facilities. Designed to operate with the ADDISON™ RC-Series of split system, outdoor condensing units, the VC/HC-Series are available in flexible horizontal or vertical configurations. Accessories, such as electric heat with a wide range of kW sizes, can be purchased for these models. Options include hydronic heat, corrosion protection, as well as choices for refrigeration and electrical control.

The VC/HC-Series' durable cabinet finish is suitable for installation in areas such as equipment closets, work stations and warehouse spaces. These units include an evaporator, a high efficiency fan motor and excellent cabinet insulation.

The product line consists of three models: VCA/HCA 100% outside air handling units, as well as air handlers for recirculating systems, the VCC/HCC cooling only and VCH/HCH heat pump. Each model mates with the appropriate RC-Series outdoor condensing unit. The 100% outside air combination is the VCA/HCA with the RCA, the VCC/HCC with the RCC creates an air cooled recirculating system, while the heat pump system consists of the VCH/HCH with the RCH.

**Interior of 100% Outside Air Unit (VCA Model)**

**Heat Pump (RCH Model)**


**Horizontal 100% Outside Air Unit (HCA Model)**


## HEATING, COOLING AND DEHUMIDIFICATION
## FOR COMMERCIAL/INSTITUTIONAL/INDUSTRIAL APPLICATIONS

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# 100% OUTSIDE AIR AIR HANDLING UNITS

## VCA/HCA MODELS

Engineered to provide high fresh air capacities demanded by today's indoor air quality standards, VCA/HCA units are field piped to the RCA split system, air cooled 100% outside air condensing units.

Outdoor air has to be ducted in or brought to the air handler and then ducted to the space from the air handler. When outdoor air is used for ventilation, it may be hot or humid. To condition outdoor air, the air flow velocity must be reduced. This reduced velocity helps assure adequate moisture removal and helps prevent condensate carry over.

## VCA/HCA CAPACITIES

| 100% Outside Air Air Handler | 100% Outside Air Condensing Unit | Capacity (Btu/h) | NominalTons | CFM | Leaving Air Temp.-° F* | Leaving Air Temp.-° C* |
|---|---|---|---|---|---|---|
| | | | | | Dry Bulb (DB)/ Wet Bulb (WB) | Dry Bulb (DB)/ Wet Bulb (WB) |
| **VCA/HCA051** | **RCA051** | 50,400 | 4 | 700 | 53.6/52.6 | 12.0/11.4 |
| **VCA/HCA071** | **RCA061** | 60,900 | 5 | 800 | 57.0/57.0 | 13.9/13.9 |
| **VCA/HCA071** | **RCA071** | 75,000 | 6 | 900 | 54.5/54.5 | 12.5/12.5 |
| **VCA/HCA081** | **RCA071** | 82,180 | 7 | 1200 | 56.5/55.4 | 13.6/13.0 |
| **VCA/HCA101** | **RCA101** | 115,100 | 8 | 1500 | 59.2/58.2 | 15.1/14.6 |
| **VCA/HCA141** | **RCA141** | 148,700 | 12 | 2000 | 60.1/59.2 | 15.6/15.1 |
| **VCA/HCA201** | **RCA171** | 192,500 | 16 | 2500 | 62.5/62.2 | 16.9/16.8 |
| **VCA/HCA201** | **RCA201** | 225,000 | 18 | 3000 | 63.2/63.2 | 17.3/17.3 |
| **VCA/HCA271** | **RCA271** | 284,900 | 20 | 4000 | 63.0/63.0 | 17.2/17.2 |
| **VCA/HCA361** | **RCA361** | 335,700 | 30 | 5000 | 57.7/57.1 | 14.3/13.9 |
| **VCA/HCA421** | **RCA421** | 420,400 | 35 | 6000 | 59.3/59.0 | 15.2/15.0 |

*Performance is based on 95° F (35° C) dry bulb , 78° F (25.6° C) wet bulb entering air temperature on evaporator and condenser coil, with matching condensing unit.

# COOLING ONLY AIR HANDLERS FOR RECIRCULATING SYSTEMS

## VCC/HCC MODELS

VCC/HCC cooling only units are designed to match with the RCC air cooled, outdoor condensing units. These units have been engineered for a wide range of air flows and can be customized for specialized applications. VCC/HCC units are available with either single circuited evaporator coils for single compressor units or dual circuited face split evaporator coils for dual compressor units.

VCC units less than 65,000 Btu/h are rated in accordance to AHRI standard 210/240, while units greater than or equal to 65,000 Btu/h, but less than 250,000 Btu/h, are rated in accordance to AHRI 340/360.

## VCC/HCC CAPACITIES

| Recirculating Model | Air Cooled Condensing Unit | Nominal Tons |
|---|---|---|
| **VCC/HCC070** | **RC044** | 3 ½ |
| **VCC/HCC070** | **RC054** | 4 ½ |
| **VCC/HCC070** | **RC064** | 5 |
| **VCC/HCC074** | **RC074** | 7 |
| **VCC/HCC104** | **RC104** | 8 |
| **VCC/HCC134** | **RC134** | 10 |
| **VCC/HCC154** | **RC154** | 12 ½ |
| **VCC/HCC194** | **RC194** | 15 |
| **VCC/HCC254** | **RC254** | 20 |
| **VCC/HCC314** | **RC314** | 25 |
| **VCC/HCC374** | **RC374** | 35 |

# HEAT PUMP AIR HANDLERS FOR RECIRCULATING SYSTEMS

## VCH/HCH MODELS

Split system heat pumps provide year round heating and cooling by removing heat from the building in the summer and adding heat to the building in the winter. VCH/HCH heat pump air handlers are designed to match with the RCH heat pump, outdoor condensing units. VCH/HCH units are available with either single circuited evaporator coils for single compressor units or dual circuited face split evaporator coils for dual compressor units.

Units less than 65,000 Btu/h are rated in accordance to AHRI standard 210/240, while units greater than or equal to 65,000 Btu/h, but less than 250,000 Btu/h, are rated in accordance to AHRI 340/360.

## VCH/HCH CAPACITIES

| Recirculating Model | Heat Pump Condensing Unit | Nominal Tons |
|---|---|---|
| **VCH/HCH074** | **RH074** | 7 |
| **VCH/HCH104** | **RH044** | 3 ½ |
| **VCH/HCH104** | **RH054** | 4 ½ |
| **VCH/HCH104** | **RH064** | 5 |
| **VCH/HCH104** | **RH104** | 8 |
| **VCH/HCH134** | **RH134** | 10 |
| **VCH/HCH154** | **RH154** | 12 ½ |
| **VCH/HCH194** | **RH194** | 15 |
| **VCH/HCH254** | **RH254** | 20 |
| **VCH/HCH314** | **RH314** | 25 |
| **VCH/HCH374** | **RH374** | 35 |

# VC/HC-SERIES' FEATURES AND OPTIONS

## STANDARD FEATURES

- Heavy-gauge, galvanized steel cabinet
- Pre-paint finish-primer (both sides), interior, exterior top coat
- Aluminum fin on seamless copper refrigeration tubing in evaporator coils
- Sloped, insulated stainless steel drain pans furnished with drain fittings
- Refrigerant circuits include check valve (VCH/HCH only) and thermal expansion valve with adjustable superheat and distributors (all models)
- 2" MERV 8, deep pleated filters (VCH/HCH and VCC/HCC only)
- 2" aluminum metal mesh filters (VCA/HCA only)
- High efficiency, open-drip proof (ODP) blower motors
- Double wall cabinet construction with internal galvanized steel liners and closed cell foam insulation
- Single or dual circuits for use with matching single or dual circuit condensing units
- Statically and dynamically balanced, forward-curved double width, centrifugal blower (DWDI)
- Galvanized or galvalume steel blower wheel

## FACTORY INSTALLED OPTIONS

### Heating

- **Hydronic Heating-** accomplished by either one or two-row hot water or steam coils. The hot water coils may be either copper tube with aluminum fins or copper tube with copper fins. The steam coils are copper for both the tube and fins.

### Refrigeration

- **Hot Gas Reheat (staged or modulating)** – single or dual circuit, one-row copper fin aluminum coil to reheat air leaving the evaporator coil.

### Electrical

- **Firestat** – field installed in the return air duct with manual re-set, the firestat turns the unit off when the return air temperature reaches 135° F (57° C).
- **115 Volt Ground Fault Circuit Interrupter Convenience Outlet with 15 amp Breaker** – field wired requires a separate circuit to the GFCI. Provides service personnel with power conveniently located at the unit.
- **NEMA 3R Non-Fused Disconnect** – factory mounted and wired to provide power disconnect at the unit.
- **Exhaust Fan Interlock Relay** – installed in unit control panel and field wired interlocked to operate a remote building exhaust fan.
- **System Lock-Out Relay** - installed in unit control panel and field-wired interlocked to an external source to lock out unit operation.

### Corrosion Protection

- **Corrosion-Resistance and Microbial Coating** - applied to evaporator or coils. Coating is approved up to 10,000 hours salt spray test (per ASTM B117) and applied prior to assembly, providing a high level of protection.
- **Totally enclosed (TEFC) high efficiency blower motor**
- **Coils** - evaporator coils can be furnished with copper fins on seamless copper refrigeration tubing for enhanced corrosion protection.

# FIELD INSTALLED ACCESSORIES

## Electric Heating

Shipped loose for field mounting to the supply air duct connection of the air handler, electric heaters are available from 3.5 kW to 120 kW. Heaters include open coil heating elements, contactors, auto reset primary and manual reset secondary devices and branch circuit wiring per National Electrical Code® (NES) and Underwriters' Laboratories (UL).

Optional air pressure switch, single point power connection, operational safeties and individual fusing protection are available. Dual point power connection to include the blower motor is also optional. One or two-stage control may be ordered. A separate field installed and wired disconnect is required.

## Room Thermostats

Electromechanical, electron and programmable electronic thermostats may be furnished. For single or multiple compressor units, wall mounted room thermostats are available with or without system switch functions. Locking covers for thermostats are also offered.

## Humidistat

The humidistat is wall mounted; the terminals are in the control panel to switch the compressor and/or hot gas reheat helping to provide optimal humidity control. (Humidistat is not available on 100% outside air units.)

## Air Handling Control Kit

The air handling control kit includes blower contactor or starter, transformer, terminal board and blower interlock relay for use with electric heat. The control kit used with the VCH/HCH heat pumps includes the blower contactor or starter. For special applications, interlock relays can be factory installed in the control panel for exhaust fan, outside air damper, heat recovery water pump, etc.

## Filters

Addison offers a variety of filters types as well as a clogged filter indicator. The clogged filter indicator signifies dirty or clogged filters when the preset pressure differential across the filters is reached. This indicator is field installed and manually reset. Contacts for remote annunciation are included.

## Angled Filter Box

An angled filter box is offered for field assembly to the return air opening of the air handler.

## Discharge Plenum

The discharge plenum, with four-way, adjustable grille, is available for free blowing air handler applications. (Vertical VCH 104 – VCH 314 and horizontal HCH 074 – HCH 254 only).


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**Installation Code and Quarterly Inspections:** All installation and service of ADDISON™ equipment must be performed by a contractor qualified in the installation and service of equipment sold and supplied by Addison and conform to all requirements set forth in the ADDISON™ manuals and all applicable governmental authorities pertaining to the installation, service and operation of the equipment. To help facilitate optimum performance and safety, Addison recommends that a qualified contractor conduct quarterly inspections of your ADDISON™ equipment and perform service where necessary, using only replacement parts sold and supplied by Addison.

**Further Information:** Applications, engineering and detailed guidance on systems design, installation and equipment performance is available through ADDISON™ representatives. Please contact us for any further information you may require, including the Installation, Operation and Service Manual.

**This document is intended to assist licensed professionals in the exercise of their professional judgment.**

**Specifications are subject to change without notice.**



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