



# RERVHC SERIES

## PACKAGED ENERGY RECOVERY VENTILATOR WITH INTEGRATED HEATING AND COOLING

- 100% outdoor air applications
- 1,000 to 13,000 CFM
- Modulating OX cooling
- Electric, steam, hot wa modulating indirect fired natural gas heating options
- Compressors are quiet running scroll type mounted In an isolated compartment and are serviceable while unit is running
- Hinged and gasketed access doors
- Single point power connection
- DWDI FC centrifugal blowers
- Airfoil Plenum Supply Air Fan with Natural Gas Heater
- High efficiency TEFC motors
- Adjustable V belt drives
- Evaporator and condenser coils have internally enhanced copper tubes with aluminium fins
- Stainless steel drain pan
- Intake and exhaust hoods with motorized shut off dampers
- Onboard microprocessor control
- 2" Merv 10 filters as standard



>> LET US DESIGN ONE FOR YOU





# RERVHC GENERAL SPECIFICATION



Packaged Energy Recovery units with Integrated Heating and Cooling shall be Spinnaker Industries Inc. Model Series RERVHC . Units shall be factory assembled, wired and tested prior to shipment. Units shall bear a QPS special inspection label. Field wiring shall require a single point power connection and a numbered terminal strip for low voltage remote wiring connections.

## UNIT CONSTRUCTION

Unit construction to suit outdoor applications. All exterior cabinet screws shall be Clima-seal with bonded washer. Unit casing shall be minimum 18 gauge satin coat steel with weather resistant powder coat finish ( Sky Grey ). Units with bear metal or an air dried paint finish will not be accepted. All seams to be sealed with weather resistant caulking. All interior cabinet surfaces shall be lined with 1" thick, 3 lbs/cu ft density foil faced insulation, with seams foil taped. Access doors and center partitions to be lined with ¼" thick foil faced polyethylene bubble insulation, with seams foil taped. The floor shall be double skinned to protect the 2" thick, minimum 1.5 lbs/cu ft density insulation. The base shall be constructed with heavy gauge galvanized steel with integral supports. Perimeter base frame designed to be such that it overhangs when mounted on a roof curb. Access doors shall be double wall constructed internally insulated with 1" thick insulation. A minimum of 2 latch and hinge assemblies shall be provide for each door and shall be rated for ambient temperatures of. -40 deg. F. Each access door shall be provided with a continuous dual durometer extruded automotive style flexible seal rated to -40 deg. F. Units with lift off access doors will not be accepted.

## ENERGY RECOVERY WHEEL ASSEMBLY

The energy recovery wheel assembly casing shall be constructed with heavy gauge galvanized steel, reinforced at sealing surfaces, removable end panels for drive access, inboard no-maintenance permanently sealed roller bearings for small assemblies, external pillow block bearings for large assemblies, and an adjustable non-contact neoprene bulb peripheral and inner seal. The wheel assembly shall slide in and out of the unit on a galvanized steel track for ease of inspection and maintenance.

The wheel media shall be constructed of a corrugated synthetic fiber-based substrate impregnated with a non-migrating water selective 4A molecular sieve desiccant uniformly and permanently dispersed throughout the matrix structure. The wheel media shall be spirally wound to form fluted honeycomb geometry so as to eliminate internal wheel bypass. Wheel layers that can be separated or spread apart by airflow are unacceptable due to the possibility of channeling and performance degradation. Face flatness of the wheel shall be maximized (+/- 0.032 inches) in order to minimize wear on inner seal surfaces and minimize cross leakage. The wheel shall be complete with a purge section, minimizing cross over of return air into supply air, with a non-contact bulb seal. Wheels with large pore size desiccants like silica gel, that are coated, bonded, or synthesized onto the media or without a purge section will not be accepted. The wheel shall consist of evenly spaced galvanized steel spokes, a galvanized steel outer band, and an aluminum center hub.

The standard drive system shall consist of a standard motor, fixed pulley, and link type drive belt constructed from a high performance polyurethane elastomer reinforced with multiple plies of polyester fabric. The drive pulley and belt shall drive the wheel from inside the assembly casing. Wheels with drive pulleys and belts that are exposed will not be accepted. Single phase drive motors shall have integral automatic reset thermal overload protection. Three phase drive motors shall have a manual reset thermal overload mounted in the unit control enclosure.

Wheel media shall be in accordance with NFPA, and be UL tested and UL recognized as a component for heating and heating-cooling appliance accessories. Energy recovery wheels shall be rigorously performance tested using the ASHRAE 84-1991 and ARI 1060 standard method of testing. Recovery wheels shall be ARI certified and must bear the ARI certification stamp.

## FANS

Supply and exhaust fans shall be forward curved double width double inlet with ball bearings. Fan drive shaft shall be polished with keyways for drive pulley mounting. Unit fans with machined flats on fan shafts for drive pulley mounting will not be accepted. Fans shall have ball bearings suitable for operation in ambient temperatures of -65 to 250 deg. F with a minimum L10 life in excess of 100,000 hours at maximum cataloged operating speeds. Fan bearings shall be permanently lubricated and sealed, mounted in resilient neoprene rings. Fan housings shall have extruded holes for base side mounting. Fans in units with air flow capacity greater than 2500 CFM shall have welded steel angle frames. Fans in units with air flow capacity greater than 5000 CFM shall have welded steel angle frames with T bar supports with cast iron pillow block bearings with grease nipples. Fan motors shall be rated continuous duty, ball bearing construction, and have class F insulation. Variable pitch v-belt drives, of cast iron construction and adjustable motor mounts to be provided. Units with fans, motors, and drives that do not meet the above criteria will not be accepted.



# RERVHC GENERAL SPECIFICATION

## **FILTERS**

The supply entering and exhaust entering sides of the recovery wheel shall be complete with 2" deep MERV 8 pleated filters. Units without supply and exhaust filters will not be accepted.

## **CONTROLS AND ELECTRICAL**

The Solid State Electronic DDC onboard Control System provides unlimited flexibility in application and system design and un surpassed control of temperature and humidity. Unit controls shall be mounted with in an integral enclosure(s) with inner hinged access plates and exterior hinged access door so that fan access doors remain fully closed to maintain accurate fan performance during control adjustment. The exterior hinged access door shall be the same construction as the other unit access doors with two latches that require a screw driver to open. Two ½" trade size knockouts shall be provided on the side of the unit that leads into the electrical control enclosure.

Unit controls shall include: fan motor / compressor fuses, contactors, and manual reset thermal overloads, energy recovery wheel drive motor contactor, control transformer(s) with primary and secondary fusing. Unit wiring shall be color coded with a numbered terminal strip for low voltage wiring and field connections. Unit shall have single point power input terminals. Units without separate motor fusing and contactors will not be accepted

## **HOODS & DAMPERS**

Units shall be provided with factory installed fresh air inlet and exhaust hoods. Hoods are constructed with minimum 18 gauge satin coat steel with the same finish as the unit. Fresh air inlet hoods are complete with removable mist eliminator filters. Exhaust hoods are complete with a galvanized steel wire mesh bird screen. All flanges that meet the unit shall be sealed with caulking.

## **ACCEPTANCE**

Verify prior to bidding that the units meet the specified construction, and scheduled performance and electrical characteristics. Units that do not meet the specified construction, accessories, or scheduled performance and electrical characteristics will not be accepted.

## **ADDITIONAL ACCESSORIES**

### **ROOF CURBS**

Roof curbs shall of knock down constructed with minimum 18 gauge galvanized steel with perimeter wood nailer and patented Cliplock corner clips to facilitate field assembly without the use of tools. Adhesive backed foam gasket seal shall be provided loose for field installation to act as a seal between the unit and the roof curb. Bolt together roof curbs will not be accepted.

### **SPRING ISOLATION ROOF CURB**

Spring isolation roof curbs shall consist of an isolation head assembly and a knock down Cliplock roof curb to allow early shipment of the curb portion for installation before unit arrival. The isolation head assembly will ship with the unit for installation prior to unit mounting. The isolation head assembly shall have 1" deflection open type spring isolators mounted within a full perimeter fully welded two piece frame constructed from minimum 18 gauge satin coat steel with baked enamel finish that matches unit finish, complete with a full perimeter dual durometer extruded flexible vinyl seal rated to -40 deg. F to allow movement and maintain a water resistant seal. Flex connectors shall factory installed in the duct openings of the isolation head for down flow applications only. The knock down Cliplock roof curb shall be constructed with minimum 18 gauge galvanized steel with perimeter wood nailer and patented Cliplock corner clips to facilitate field assembly without the use of tools.



# RERVHC GENERAL SPECIFICATION

## **FRESH AIR MOTORIZED INLET DAMPER**

Units shall be complete with factory installed and wired fresh air inlet two position motorized damper assemblies constructed with minimum 20 gauge galvanized steel, stainless steel side seals. Damper motor shall be spring return, 24 volt powered, and complete with an end switch for unit fan activation when damper is fully open. Outdoor applications will require the damper assembly to be mounted within the fresh air hood. Indoor applications will require the damper assembly to be mounted within a sleeve constructed from minimum 18 gauge satin coat steel with baked enamel finish that matches unit finish. All flanges that meet the unit shall be sealed with caulking.

## **EXHAUST AIR MOTORIZED DISCHARGE DAMPER**

Units shall be complete with factory installed and wired exhaust air discharge two position motorized damper assemblies constructed with minimum 20 gauge galvanized steel, stainless steel side seals. Damper motor shall be spring return, 24 volt powered, and complete with an end switch for unit fan activation when damper is fully open. Outdoor applications will require the damper assembly to be mounted within the exhaust air hood. Indoor applications will require the damper assembly to be mounted within a sleeve constructed from minimum 18 gauge satin coat steel with baked enamel finish that matches unit finish.

## **OTHER OPTIONS :**

- D/X cooling system with modulating hot gas by pass for capacity control (410A),internally piped , wired and tested.
- Chilled water coils
- Hot Water / Steam / Glycol heating coils or Electric heat with SCR control
- Modulating Natural gas indirect fired heating with 409 or 304 stainless steel heat exchangers
- Desiccant D/X Dehumidification with re heat
- 1" – 1.5" – 2" thick foam insulation ( R values of 6.2 to 12.4 )
- 22 gauge inner cabinet liner
- Non-fused disconnect switch
- Dirty filter pressure differential switches
- Recovery wheel rotation sensor
- Digital CFM monitor ( read only ) in CFM
- Frost control strategies : Exhaust only  
Recirculation  
Electric pre heat  
VFD
- EBTRON OAFM ( outdoor air flow monitor ) with ALRT remote audible alarm
- Direct drive plenum fans with VFD
- 4"-6"-12" MERV13 , bag filters or HEPA filters
- VFD for supply and exhaust fans
- Internal spring Isolators
- Dirty filter pressure switches
- Energy recovery wheel rotation sensor
- Internal spring Isolators
- Heat exchanger options : Enthalpy fixed plate  
Heat Pipe

## **Extended Compressor Warranty**

An optional, four year extended compressor warranty is available at additional cost at the time of original purchase of the equipment only. This is limited one time replacement only warranty and obligates Spinnaker Industries Inc. to replace f.o.b. factory, a defective compressor of equal capacity free of charge. No responsibility is assumed by Spinnaker Industries Inc. for refrigerant, labor, or freight to and from the factory.



# RERVHC GENERAL SPECIFICATION

UNIT MODEL	MAXIMUM CFM	ROTARY ENERGY RECOVERY WHEEL CASSETTE MODEL No:	(BTU/H) MAXIMUM COOLING CAPACITY ✕	(BTU/H) MAXIMUM INPUT 80% EFF. NAT. GAS HEATING CAPACITY ✕
RERVHC-1	1000	ECW 244	32,300	50,800
RERVHC-2	2000	ECW 364	60,000	96,700
RERVHC-3	3000	ECW 424	94,900	150,200
RERVHC-4	4000	ECW 484	128,800	202,500
RERVHC-5	5000	ECW 486	179,000	295,000
RERVHC-6	6000	ECW 604	187,000	297,000
RERVHC-7	7000	ECW 664	215,300	343,300
RERVHC-8	8000	ECW 664	267,500	415,000
RERVHC-9	9000	ECW 666	308,000	510,300
RERVHC-10	10000	ECW 726	353,400	543,000
RERVHC-11	11000	ECW 726	380,700	628,500
RERVHC-12	12000	ECW 846	390,000	624,500
RERVHC-13	13000	ECW 846	448,200	636,000

✕ Above Cooling & Heating capacities are based on following conditions. Contact factory for custom design condition.

Cooling: OAT: 93/79 °F, SAT: 55/54 °F. RAT: 72/54.2 °F  
Evaporator T: 45 °F, Condensing T: 120 °F, Liq T: 105, Eva./Comp. Superheat: 20 °F, Subcooling: 15 °F

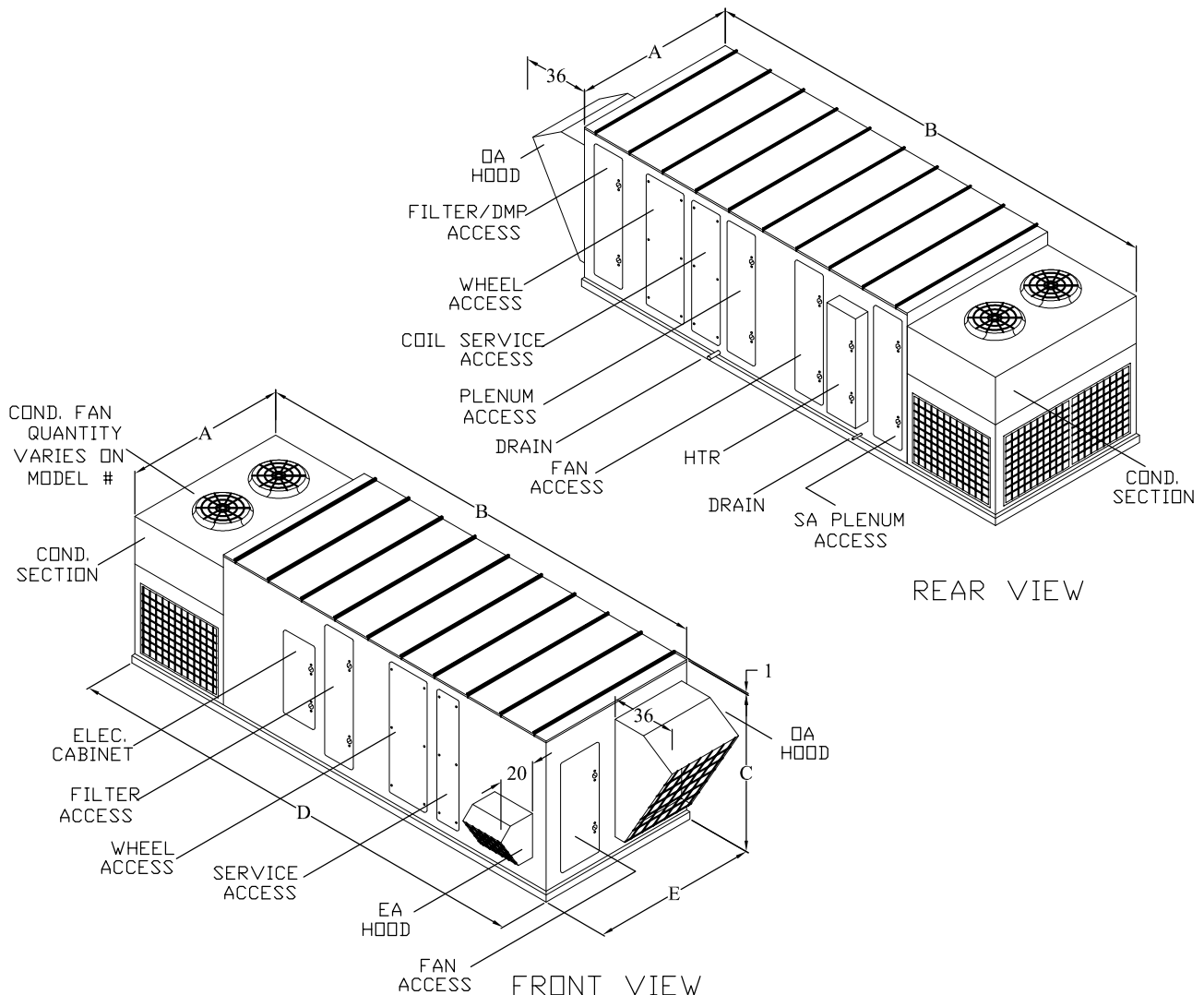
Heating: OAT: -13/-12 °F, SAT: 80 °F. RAT: 72/54.2 °F



# RERVHC MODEL SERIES

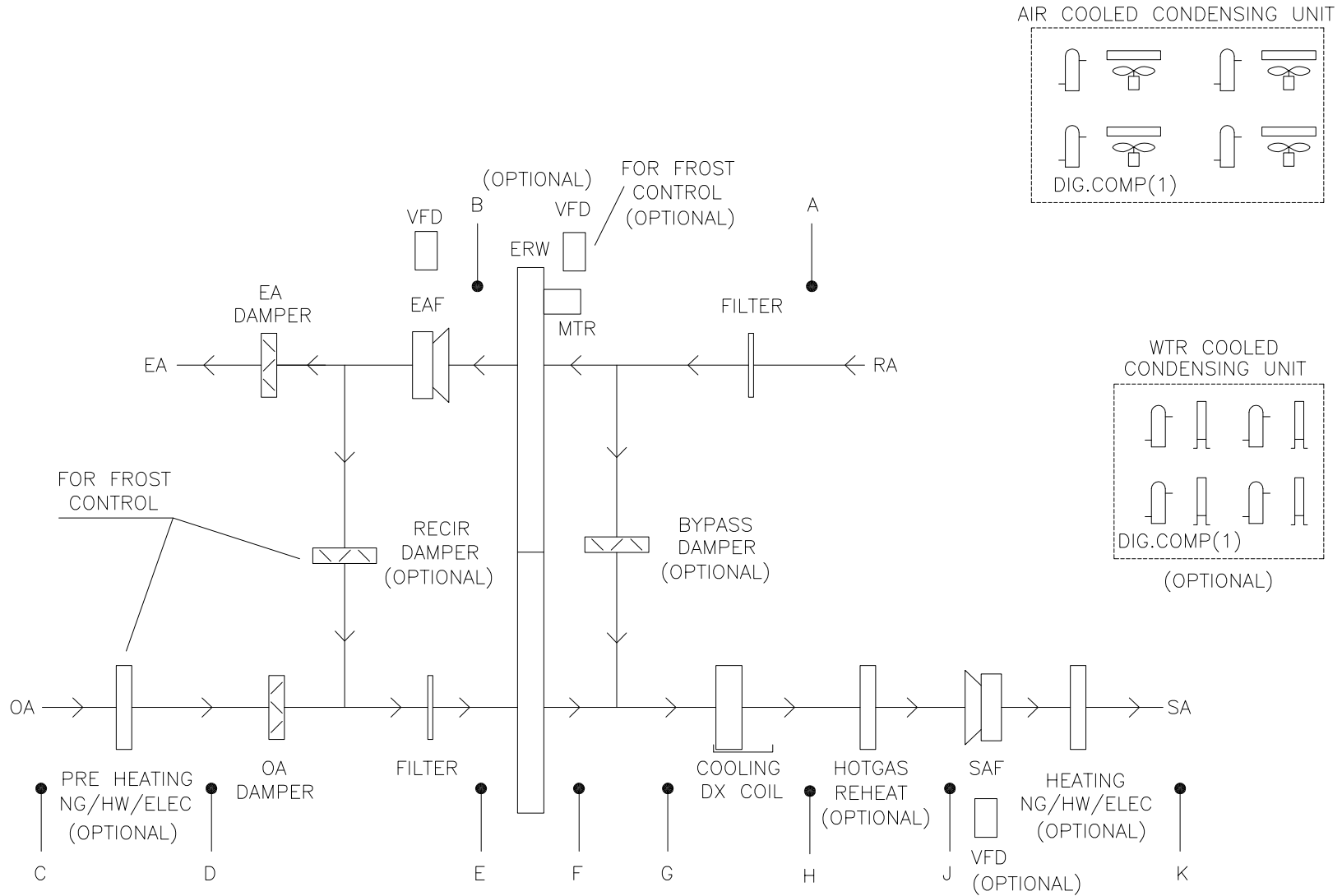
## PACKAGED ENERGY RECOVERY VENTILATOR WITH INTEGRATED HEATING AND COOLING

UNIT DIMENSIONS (INCHES)							
DIM.	UNIT MODEL OPTION-1						
	RERVHC-1	RERVHC-2	RERVHC-5 RERVHC-4 RERVHC-3	RERVHC-8 RERVHC-7 RERVHC-6	RERVHC-11 RERVHC-10 RERVHC-9	RERVHC-13 RERVHC-12	OPTION NOTE
A	53-1/2	53-1/2	66-1/2	89	89	105	UNIT WITH NATURAL GAS HEATER & PLENUM FAN
B	181-1/2	181-1/2	215	265-1/2	287-1/2	328-1/2	
C	42-3/4	52-1/4	66-1/4	88-1/4	88-1/4	104	
D	147-1/4	147-1/4	160-3/4	205-1/4	215-1/4	246-1/4	
E	55-1/4	55-1/4	68-1/4	91-1/4	91-1/4	106-3/4	
UNIT MODEL OPTION-2							
A	53-1/2	53-1/2	66-1/2	89	89	105	UNIT WITH HW COIL OR ELEC. HEATER AND DIDW FAN
B	145-1/2	145-1/2	179	231-1/2	245-1/2	280-1/2	
C	42-3/4	52-1/4	66-1/4	88-1/4	88-1/4	104	
D	111-1/4	111-1/4	160-3/4	205-1/4	215-1/4	246-1/4	
E	55-1/4	55-1/4	68-1/4	91-1/4	91-1/4	106-3/4	

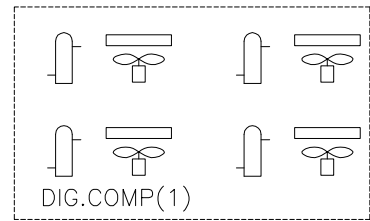


RERVHS  
APR 25/14

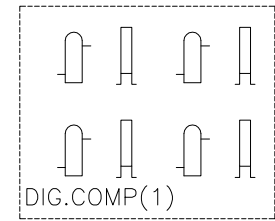
1171 Gorham Road, Newmarket, ON L3Y 8Y2  
Tel: (905) 830-5550 Fax: (905) 830-5507  
4846 Jennings Lane, Louisville, Kentucky, USA 40218  
Tel: 1-800-932-6210 Fax: 1-800-903-7294



AIR COOLED CONDENSING UNIT



WTR COOLED CONDENSING UNIT



**SPINNAKER INDUSTRIES INC.**  
 1171 Gorham Street, Newmarket, Ontario, L3Y8Y2  
 Tel: 905-830-5550 Ext. 140 Fax: 905-830-5507  
 4846 Jennings Lane, Louisville, Kentucky, USA 40218  
 Tel: 1-800-932-6210 Fax: 1-800-903-7294

				PROJECT:	RERVHC				
				NAME:	FLOW SCHEMATIC				
				MODEL:	RERVHC			CFM:	-
REV.	BY	DATE	DESCRIPTION	DRN. BY:	S.P.	DGN. BY:	SP	CHK. BY:	-
				DATE:	JULY-10-2013	SCALE:	NTS	REV.	0



## LIMITED WARRANTY

### COVERAGE AND TERMS

RERVHC Model Series units, and all related accessories as manufactured by Spinnaker Industries, are warranted to the original buyer to be free from defects in materials or workmanship provided that these units and accessories have been installed and maintained in accordance with instructions and operated under normal conditions. Spinnaker Industries sole obligation under this Limited Warranty is to repair or replace, at its opinion, free of charge to the customer (except as provided below), FOB factory, any part determined by Spinnaker Industries (in its sole discretion) to be defective. Warranty terms, from original ship date are as follows:

- ◆ All components ( excluding filters and fan belts ) ..... 1 year from date of shipment
- ◆ Stainless Steel Heat Exchanger (s) ..... 10 years from date of shipment ( pro rated as follows )
  - Year 1 ..... customer pays 0 % of list price
  - Year 2 ..... customer pays 10% of list price
  - Year 3 ..... customer pays 20% of list price
  - Year 4 ..... customer pays 30% of list price
  - Year 5 ..... customer pays 40% of list price
  - Year 6 ..... customer pays 50% of list price
  - Year 7 ..... customer pays 60% of list price
  - Year 8 ..... customer pays 70% of list price
  - Year 9 ..... customer pays 80% of list price
  - Year 10 .....customer pays 90% of list price

### EXCLUSIONS

Spinnaker Industries Limited Warranty does not cover defects, reduced performance, or failure caused, directly or indirectly, by improper installation, abuse, misuse, misapplication, improper maintenance, lack of maintenance, negligence, accident, or normal deterioration, including wear and tear. This Limited Warranty shall not apply to items that require replacement due to normal wear i.e. fan drive belts, filters, etc., or to failures, defects, or reduced performance resulting, directly or indirectly, from use of its products exposed to corrosive gasses or liquids.

**Warranty claims that are not supported with a copy of the original start up report will not be considered.**

Spinnaker Industries Limited Warranty does not include costs for transportation (including, without limitation, freight and return freight charges, costs, and insurance), costs for removal or re-installation of parts or equipment, cranes and hoisting, premiums for overtime, labor for performing repairs or replacement made in the field, roofing contractors or any other sub trades. Spinnaker Industries is not responsible for damages occurring during transport of any product to or from its facilities.

### RETURN PROCEDURE

To return defective parts under these warranty terms, please contact Spinnaker Industries at 1-800-932-6210 to confirm the ship to address. The serial number located on the rating label of the unit must be provided so that the original ship date of the unit can be verified. All defective parts must be authorized for return and shipped pre-paid to Spinnaker Industries for inspection. A purchase order must be received prior to shipment of repaired or replacement parts. Repaired or replacement parts will be invoiced and shipped collect FOB Factory. A credit will be issued only if the defective parts are deemed the responsibility of Spinnaker Industries. Spinnaker Industries is not responsible for any damage or loss occurring during shipment to or from Spinnaker Industries.

**THE OBLIGATION AND LIABILITY OF Spinnaker Industries UNDER THIS LIMITED WARRANTY DOES NOT INCLUDE LOSSES, DIRECT OR INDIRECT, FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. THIS LIMITED WARRANTY IS PROVIDED EXCLUSIVELY TO THE ORIGINAL BUYER OF PRODUCTS AND MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED.**

**THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.**

Spinnaker Industries maintains a continuous product improvement policy , therefore specifications are subject to change without notice