RH SERIES AIR COOLED HEAT PUMP UNITS

SPECIFICATIONS Rated in Accordance with ARI Standard 210/240			RH314F		
PERFORMANCE					
		Rated with Optional Air Handler Model	VCH/HCH314		
		Rated CFM	9,000		
	COOLING	Total BTUH	272,500		
		Sensible BTUH	201,000		
		EER	9.8		
	HEATING	Total BTUH	278,000		
		COP	3.3		
ELECTRICAL	SERVICE	Voltage-Phase-Hz	208/230-3-60	460-3-60	380/415-3-50
	COMPRESSOR	(Qty) Type	(1) Scroll & (1) Scroll		
		RLA	41.4/37.8	21.8/17.3	21.8/17.3
		LRA	350/193	158/125	158/125
		IPLV	10.7		
	Standard Capacity Reduction % Full load — (Optional)		100-57-0 — (100-57-34-0)		
	CONDENSER FAN MOTOR(S)	Horse Power — (Qty)	1 — (4)		
		FLA (ea)	6.2	3.1	2.2
		Total CFM	24,000		
	UNIT	RLA	104.0	51.5	47.9
		Unit Minimum Circuit Ampacity	114.4	57.0	53.4
		Max. Time Delay Fuse or HACR Breaker	150	70	70
PHYSICAL DATA	CONDENSER COIL Alum. Fins on Copper Tubes	Face Area (sq.ft.)	41.8		
		Rows Deep — Fins per Inch	3 — 12		
		(Qty) — Suction Line OD In.	(1) — 1 5/8 & (1) — 1 3/8		
		(Qty) — Liquid Line OD In.	(1) — 5/8 & (1) — 1/2		
	WEIGHTS	Unit (lbs)	1,820		
		Shipping Weight (lbs)	1,990		

Cooling Rating

95°F Air on Outdoor Coil

Rated With Air Handler Model	CFM		Entering Air to Indoor Coil								
			75°F DB			80°F DB			85°F DB		
			63°F WB	67°F WB	71°F WB	63°F WB	67°F WB	71°F WB	63°F WB	67°F WB	71°F WB
VCH314 or HCH314	8000	TOTAL BTUH	257,500	275,400	293,600	262,300	276,700	295,500	276,900	280,800	296,600
		SENS BTUH	194,500	159,400	124,500	237,700	202,500	166,800	263,700	243,900	209,600
		WATTS INPUT	23,910	24,510	25,100	24,100	24,560	25,180	24,570	24,710	25,250
		LVG DB/WB	52.9/52.0	56.9/56.2	60.9/60.5	53.0/51.7	57.0/56.1	61.0/60.4	55.0/51.0	57.3/56.0	61.2/60.4
	9000	TOTAL BTUH	262,900	280,300	298,400	270,600	282,300	300,200	287,500	288,400	302,200
		SENS BTUH	206,600	167,500	128,600	253,900	215,400	175,500	273,800	263,100	223,800
		WATTS INPUT	24,090	24,670	25,260	24,370	24,750	25,360	24,910	24,970	25,430
		LVG DB/WB	54.1/53.1	58.1/57.3	62.0/61.6	54.4/52.8	58.2/57.3	62.3/61.6	57.3/52.1	58.4/57.0	62.4/61.5
	10000	TOTAL BTUH	267,600	284,100	302,400	279,200	286,800	304,300	296,600	296,400	306,900
		SENS BTUH	218,800	175,000	132,500	265,900	228,300	184,300	282,400	278,400	237,300
		WATTS INPUT	24,250	24,800	25,390	24,650	24,920	25,490	25,210	25,240	25,590
		LVG DB/WB	55.1/54.0	59.1/58.3	63.0/62.5	55.8/53.6	59.2/55.1	63.2/62.5	59.3/52.9	59.7/57.9	63.4/62.4

Note: Above performance data gives gross evaporator capacity with 25' refrigerant lines and full condenser operation at 60 HZ.

Correction Factor Multiplier for Other Ambients					
Temperature	95°F	100°F	105°F	110°F	115°F
Total Capacity	1.00	.98	.95	.91	.87
Sensible Capacity	1.00	.99	.97	.95	.93
Watts	1.00	1.03	1.05	1.08	1.11
Gross EER	1.00	.95	.90	.84	.78

50 HZ Application and Performance Multipliers		
Capacity	At 60 HZ Evaporator CFM	At 50HZ Evaporator CFM
Total	0.91	0.88
Sensible	0.95	.086
Watts	0.85	.083

Notes: 50HZ evaporator CFM is 0.83 times full rated CFM shown above.

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Listed

Form # 0527S-1002 Rev. B (0408)
Supersedes Form # 0527S-1002 A (0701)

Heating Ratings

70°F Air on Coil of Indoor Air Handler Model VCH314 or HCH314

CFM	Capacity	Ambient Air on Outdoor Coil °F							
		10	17	20	30	40	47	50	60
9,000	BTUH	132,400	154,200	164,000	198,900	236,600	264,500	276,900	319,400
	Watts	15,720	16,760	17,210	18,680	20,210	21,330	21,790	23,480

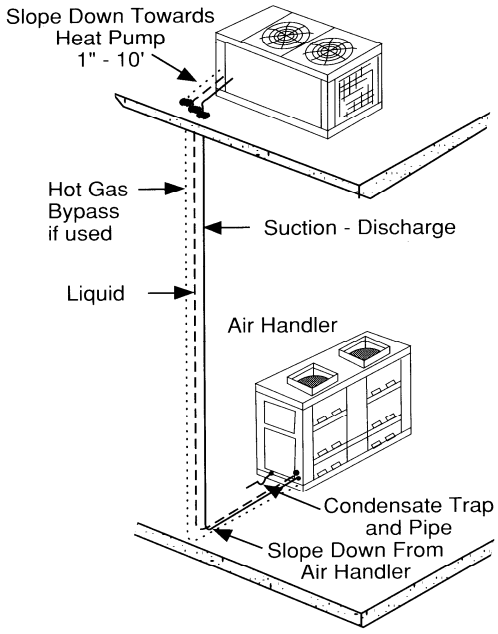
Note: Heating capacities are gross capacities. For net capacities, multiply blower BHP required times 2545 BTU per BHP and add to BTUH in table. Add blower BHP times 746 Watts per BHP to Watts for total power consumption. Refer to Air Handler specification for blower BHP.

Heating Capacity Correction Multiplier To be applied to rated heating capacity to determine capacity at other than rated CFM.	CFM	Multiplier
	- 10%	0.985
	Rated	1.00
	+ 10%	1.015

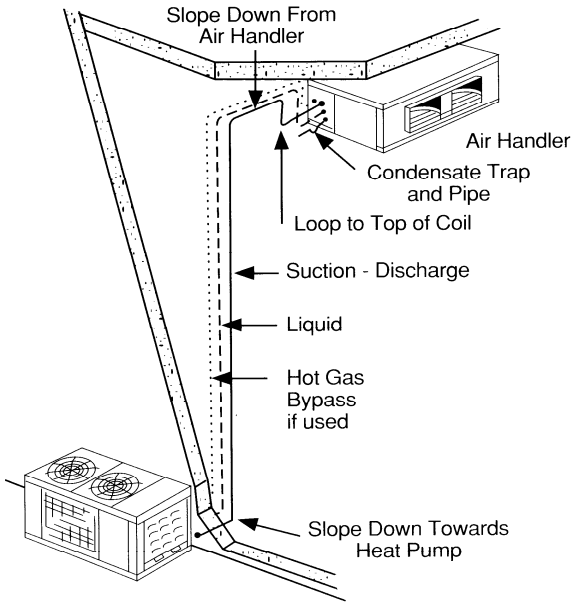
Recommended Refrigerant Line Sizes — Inches O.D.						
Equivalent Line Length – Feet						
0 to 25			26 to 50		51 to 75	
Suction	Liquid	Hot Gas Bypass	Suction	Liquid	Suction	Liquid
1 5/8 1 5/8	5/8 1/2	NA NA	1 5/8 1 3/8	5/8 5/8	1 5/8 1 3/8	5/8 5/8

Notes:
1. Line lengths are equivalent, including all fittings. Use long radius ells only.
2. Line sizes are for both vertical and horizontal runs.
3. Over 75 equivalent feet, **consult factory** for sizing recommendations.
4. Liquid line sizes are designed to minimize system refrigerant charge.
5. Hot gas bypass is typically used with the welded hermetic compressor only with an equivalent line length of 25 feet or less.
6. When condensing unit is above air handler, trap suction line at base and every 20 feet of vertical rise. Consult ASHRAE Refrigeration Handbook.

Heat Pump Above Air Handler



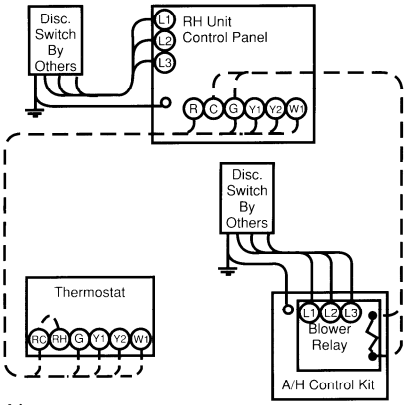
Heat Pump Below Air Handler



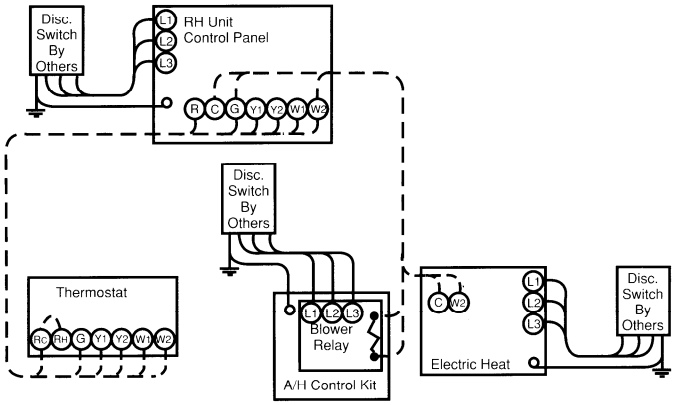
Field Piping: One of the most critical considerations in the installation of a split system heat pump is the proper sizing of piping so that oil will freely circulate with the refrigerant and not be trapped. In order to assure oil being carried upward in a vertical riser along with the refrigerant vapor, a velocity of 1,000 FPM must be maintained. Proper sizing is particularly important in a heat pump system because the discharge pipe on the heating cycle becomes the suction pipe in cooling and line velocities will be different in each cycle. Experience indicated 75 **equivalent** feet of pipe as the maximum practical length on heat pump installations. Pump down solenoids can not be used with heat pumps. When the air handler is installed above the compressor the vertical line must be properly sized to carry oil. The above tabulation indicates proper sizing.
Each refrigerant line run underground in a chase should be insulated with ¾" minimum thickness closed cell foamed plastic insulation. Each line must be insulated separately.

Typical Field Wiring

without Electric Heat



with Electric Heat



Notes:

All field wiring shall conform to N.E.C. and local codes

Line voltage power source ————————

24 volt control circuit – – – – – – –

Field Wiring

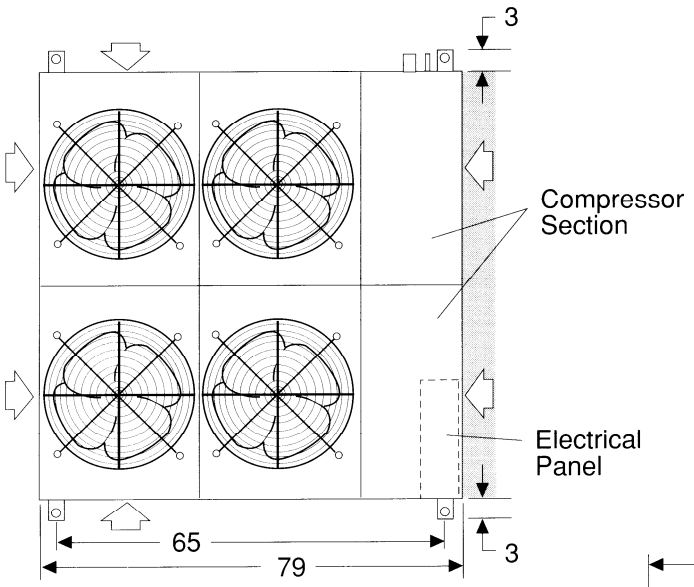
The power distribution system should be sized based on the minimum circuit ampacities in this specification sheet. The heat pumps and air handlers should be fused in accordance with the maximum fuse sizes.

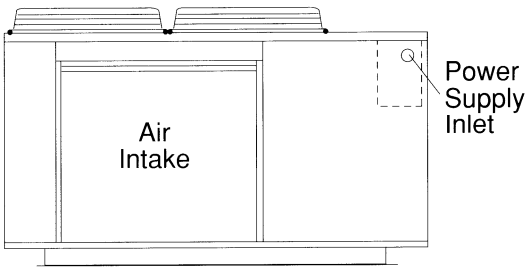
Disconnects may be optionally mounted by the factory or may be furnished and installed by the contractor. Time delay fuses should be used.

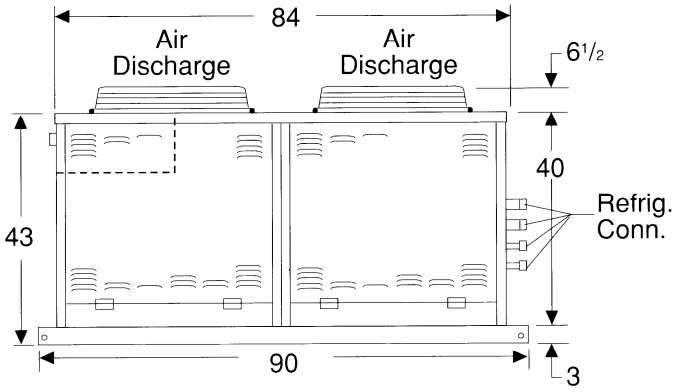
All field installed control wiring must be adequate to assure 24 volts to all controls.

Dimensions

RH314







Indicates air inlet to condenser (leave minimum 2' free clearance).

Shaded area indicates 3' clearance must be left for access to compressor and electrical panel.

Specifications subject to change without notice.

RH314 0203

Installation Code and Annual Inspections:
All installations 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 annually inspect 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.

These products are not for residential use.

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

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