RH SERIES AIR COOLED HEAT PUMP UNITS

SPECIFICATIONS Rated in Accordance with ARI Standard 210/240			RH194F		
PERFORMANCE					
		Rated with Optional Air Handler Model	VCH/HCH194		
		Rated CFM	6,000		
	COOLING	Total BTUH	190,300		
		Sensible BTUH	138,700		
		EER	9.5		
	HEATING	Total BTUH	197,900		
		COP	3.3		
ELECTRICAL	SERVICE	Voltage-Phase-Hz	208/230-3-60	460-3-60	380/415-3-50
	COMPRESSOR	(Qty) Type — Nom. Tons	(2) Hermetic — 7½		
		RLA (ea)	27.1	14.2	14.2
		LRA (ea)	183	91	91
		IPLV	9.4		
	Standard Capacity Reduction % Full load — (Optional)		100-5-0 — (NA)		
	CONDENSER FAN MOTOR(S)	Horse Power — (Qty)	1 — (2)		
		FLA (ea)	6.2	3.1	2.2
		Total CFM	11,600		
	UNIT	RLA	66.6	34.6	32.8
		Unit Minimum Circuit Ampacity	74	39	37
		Max. Time Delay Fuse or HACR Breaker	100	50	50
PHYSICAL DATA	CONDENSER COIL Alum. Fins on Copper Tubes	Face Area (sq.ft.)	33.4		
		Rows Deep — Fins per Inch	3 — 12		
		(Qty) — Suction Line OD In.	(2) — 1 1/8		
		(Qty) — Liquid Line OD In.	(2) — 1/2		
	WEIGHTS	Unit (lbs)	1,150		
		Shipping Weight (lbs)	1,250		

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
VCH194 or HCH194	5000	TOTAL BTUH	172,700	185,300	197,900	175,100	185,700	198,700	182,700	187,800	199,600
		SENS BTUH	127,400	105,200	83,100	153,500	132,500	109,900	174,000	158,800	137,800
		WATTS INPUT	17,460	18,070	18,670	17,590	18,100	18,730	17,930	18,210	18,760
		LVG DB/WB	51.8/51.1	55.9/55.3	59.9/59.6	52.1/50.9	55.9/55.2	60.0/59.5	53.4/50.3	56.1/55.1	59.9/59.4
	6000	TOTAL BTUH	178,800	190,700	203,000	183,000	192,000	204,300	193,900	195,400	205,500
		SENS BTUH	140,700	114,500	87,400	170,200	146,700	120,100	184,600	177,500	152,500
		WATTS INPUT	17,700	18,270	18,930	17,960	18,340	18,940	18,460	18,570	19,010
		LVG DB/WB	53.7/52.9	57.7/57.1	61.8/61.4	54.2/52.6	57.8/57.1	61.8/61.3	57.0/51.9	58.1/56.8	61.9/61.3
	7000	TOTAL BTUH	183,100	194,700	207,000	190,900	196,300	208,300	202,800	202,900	210,100
		SENS BTUH	152,300	122,700	92,300	181,800	159,900	129,300	193,100	193,200	166,500
		WATTS INPUT	17,960	18,460	19,070	18,310	18,570	19,130	18,900	18,900	19,230
		LVG DB/WB	55.2/54.2	59.1/58.5	63.0/62.7	56.4/53.8	59.2/58.4	63.2/62.7	59.9/53.2	59.9/58.1	63.4/62.6

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.

Applied Research Laboratories, Inc.

Listed

Form # 0527S-1000 Rev. B (0408)
Supersedes Form # 0527S-1000 A (0701)

Heating Ratings

70°F Air on Coil of Indoor Air Handler Model VCH194 or HCH194

CFM	Capacity	Ambient Air on Outdoor Coil °F							
		10	17	20	30	40	47	50	60
6,000	BTUH	85,100	102,000	109,700	135,400	162,500	180,900	190,900	221,100
	Watts	11,050	11,780	12,090	13,180	14,320	15,050	15,490	17,770

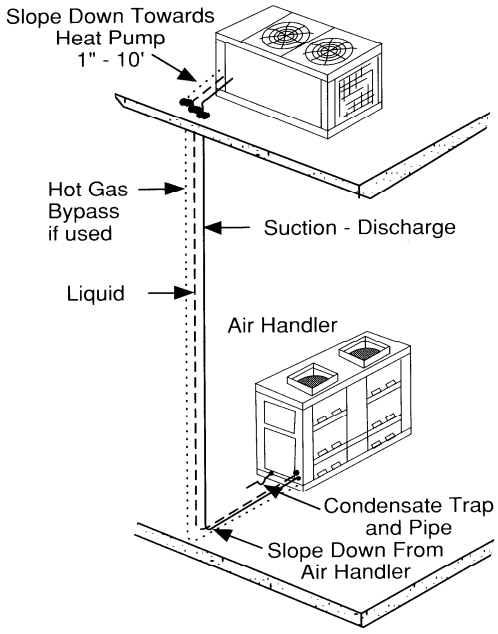
Note: Heating capacities are gross capacities. For net capacities, multiply blower BHP required times 2545 BTU per BHP and add to BTUH in table. Add blower BHP times 746 Watts per BHP to Watts for total power consumption. Refer to Air Handler specification for blower BHP.

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

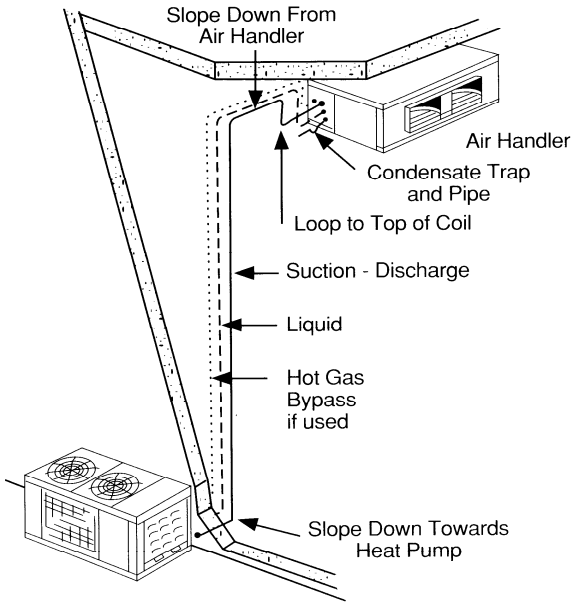
Recommended Refrigerant Line Sizes — Inches O.D.						
Equivalent Line Length – Feet						
0 to 25			26 to 50		51 to 75	
Suction	Liquid	Hot Gas Bypass	Suction	Liquid	Suction	Liquid
1 1/8 1 1/8	1/2 1/2	5/8 NA	1 1/8 1 1/8	1/2 1/2	1 3/8 1 3/8	1/2 1/2

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

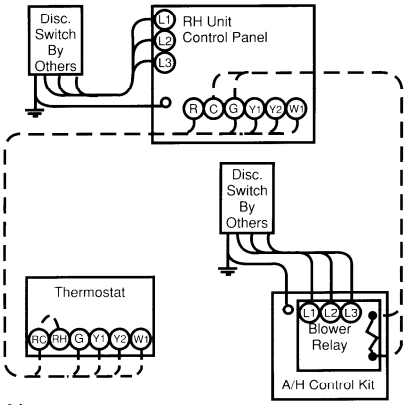


Field Piping: One of the most critical considerations in the installation of a split system heat pump is the proper sizing of piping so that oil will freely circulate with the refrigerant and not be trapped. In order to assure oil being carried upward in a vertical riser along with the refrigerant vapor, 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.

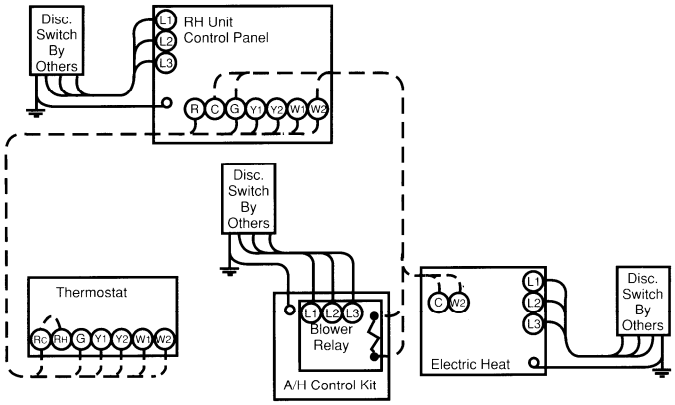
Each refrigerant line run underground in a chase should be insulated with ¾" minimum thickness closed cell foamed plastic insulation. Each line must be insulated separately.

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

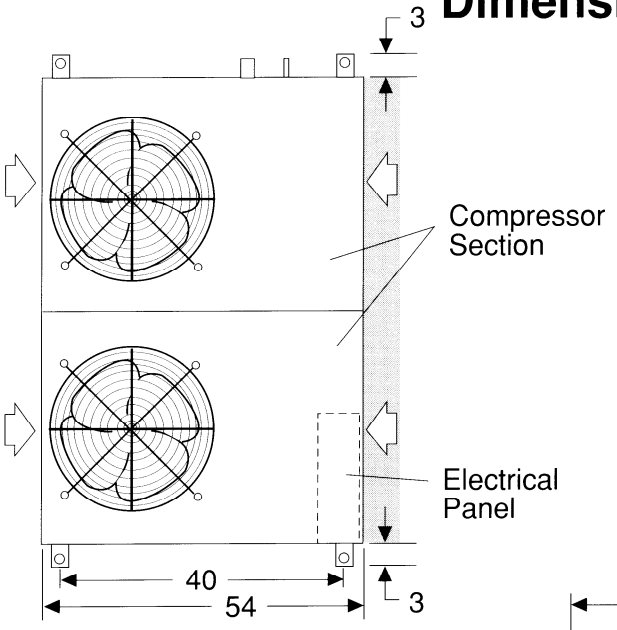
The power distribution system should be sized based on the minimum circuit ampacities in this specification sheet. The heat pumps and air handlers should be fused in accordance with the maximum fuse sizes.

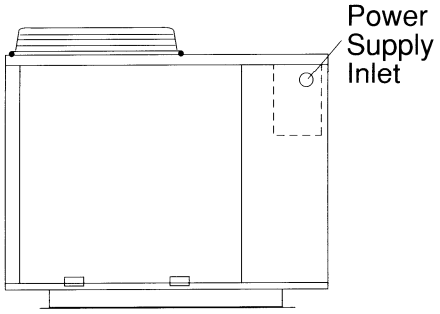
Disconnects may be optionally mounted by the factory or may be furnished and installed by the contractor. Time delay fuses should be used.

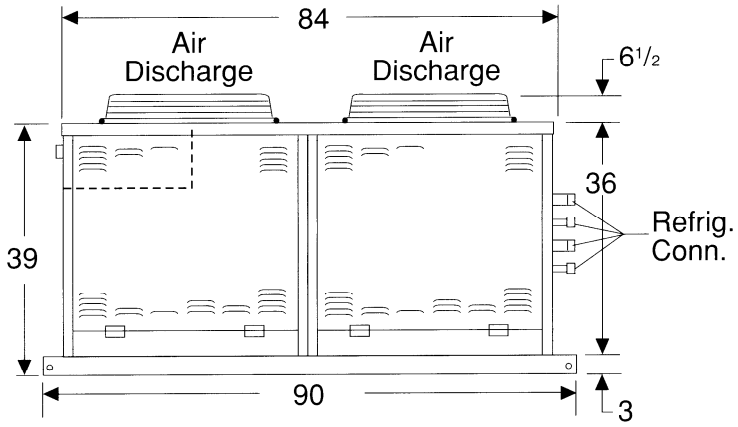
All field installed control wiring must be adequate to assure 24 volts to all controls.

Dimensions

RH194







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.

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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