

AHP090

Commercial Heat Pump Water Heating Systems

AIR SOURCE HEAT PUMP



DESIGNED ★ ENGINEERED ★ ASSEMBLED

USA



AHP090

Specifications

Operating Conditions	Model Number	AHP090
	Recovery Rate [†]	133 Gal/hr
	Compressor Type	Scroll
	Refrigerant	R134a
	Max Water Temperature	158° F
	Ambient Operating Range (CWP)	40° F - 120° F (35°F-120°F)
	Min Ambient Exposure (CWP)	33° F (-13° F)
	Max Working Water Pressure ^{††}	150 psig



Multi-Pass Unit Sizing	Water Connections		1 ½" FPT Copper	
	Water Flow Rate		20 GPM	
	Condenser Pressure Drop ^{†††}		12.5 ft Head	
	External Head Pressure Allowed by Unit ^{††††}		12.5 ft Head	
Single-Pass Unit Sizing	Water Connections		1" FPT Copper	
	Average Water Flow Rate		9 GPM	
	Condenser Pressure Drop ^{†††}		5.9 ft Head	
	External Head Pressure Allowed by Unit ^{††††}		11.6 ft Head	
Unit Specifications	Air Flow Rate		2,800 CFM	
	Dry Weight		750 lbs	
	Operating Weight		775 lbs	
	Model	Dimensions (L x W x H)	Standard Sound Rating	
	Axial	70¼" x 32 ¾" x 40 ¼"	87 dB (Axial) 76 db (Blower)	
Power Requirements		Axial Fan		Blower Fan
Voltage		208-230/3/60	440-480/3/60	208-230/3/60 440-480/3/60
Compressor LRA		239	125	239 125
Total RLA		37.1	18.8	39.7 20.1
Wire & Disconnect Sizing ^{†††}	MCA	50	25	52 27
	MOCP	84	42	87 44

† Water heated from 50° F to 150° F with 75° F entering air temperature and 60 % relative humidity

†† 150 psi on dhw side w/integrated pump, 250 psi on dhw side w/out integrated pump.

††† Single point electric service.

†††† Pressure drop for external pump applications at design flow rates.

††††† Pressure drop allowed by integral circulator for external piping.

Legend

CWP: Cold Weather Package

LRA: Locked Rotor Amps

RLA: Rated Load Amps

MCA: Maximum Current Ampacity (used for wire sizing)

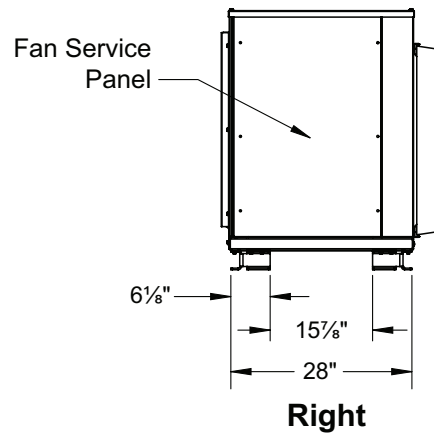
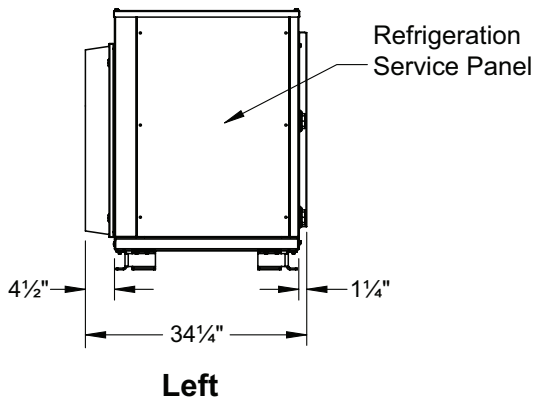
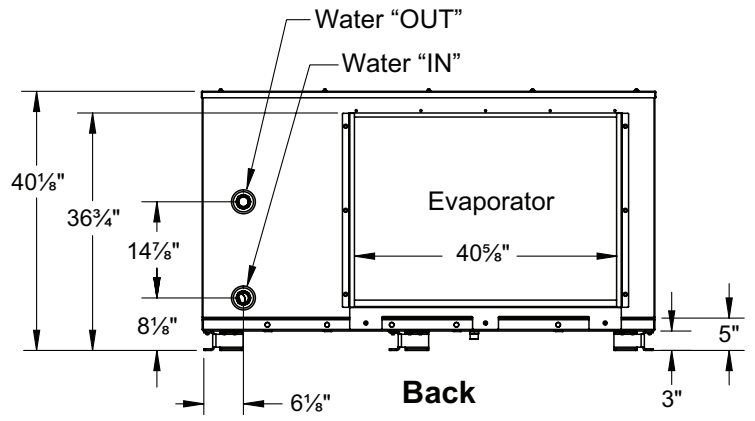
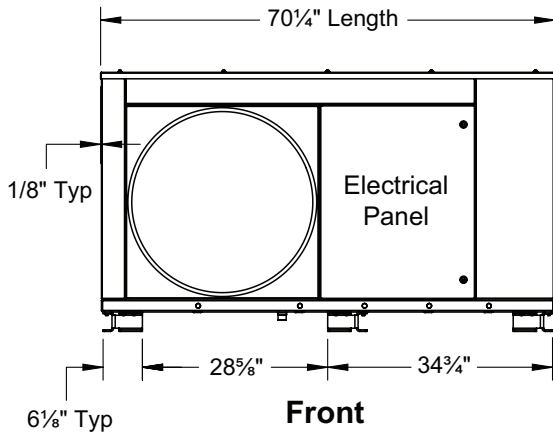
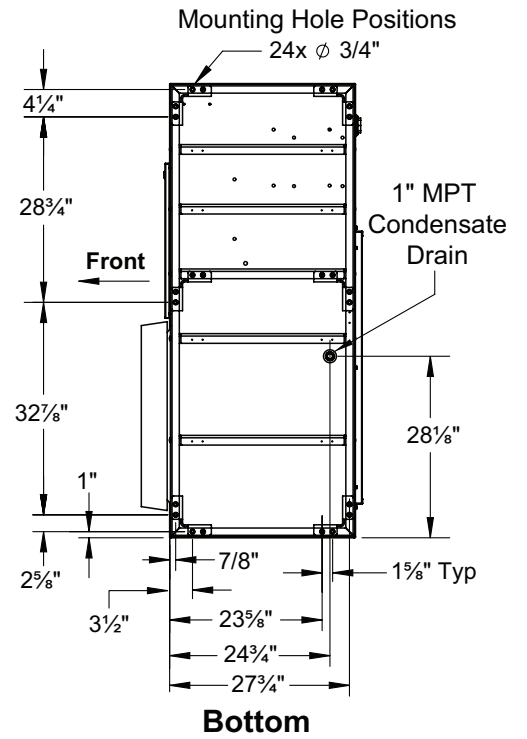
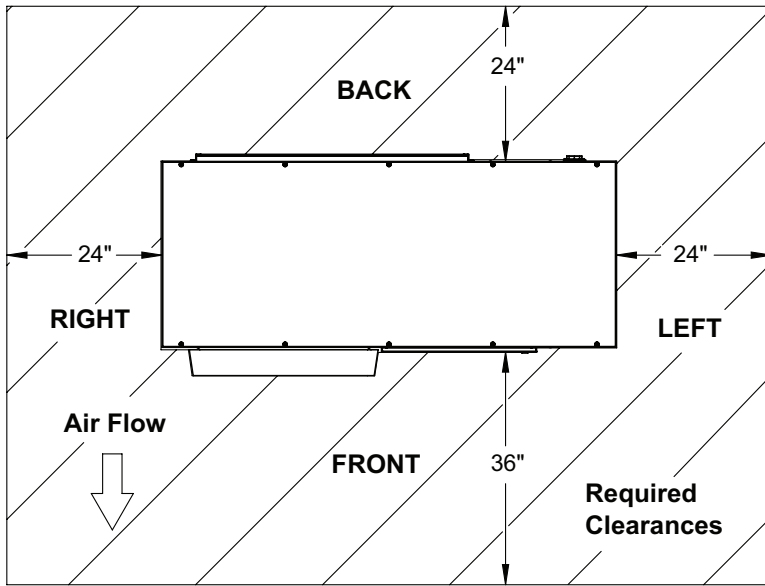
MOCP: Minimum Overcurrent Protection (minimum disconnect size to be used)

Performance Data

Entering Air Condition	Air Cooling Capacity (Btu/hr)	Entering Water Temp (°F)	Leaving Water Temp (°F)	Supply Heating Capacity (Btu/hr)	Axial Unit				Blower Unit			
					Power Input (kW)	Heating COP	Cooling COP	Combined COP	Power Input (kW)	Heating COP	Cooling COP	Combined COP
40°F 60% RH	60200	50	57	73700	3.50	6.2	5.0	11.2	4.58	4.7	3.9	8.6
	57000	60	67	71600	4.00	5.2	4.2	9.4	5.08	4.1	3.3	7.4
	54500	70	77	70000	4.40	4.7	3.6	8.3	5.48	3.7	2.9	6.7
	51500	80	87	69200	4.80	4.2	3.1	7.4	5.88	3.4	2.6	6.0
	49100	90	97	68300	5.40	3.7	2.7	6.4	6.48	3.1	2.2	5.3
	47600	100	107	67900	5.95	3.3	2.3	5.7	7.03	2.8	2.0	4.8
	44300	110	117	67500	6.55	3.0	2.0	5.0	7.63	2.6	1.7	4.3
	42100	120	127	67100	7.00	2.8	1.8	4.6	8.08	2.4	1.5	4.0
	40800	130	137	66500	7.40	2.6	1.6	4.2	8.48	2.3	1.4	3.7
	38500	140	147	65400	7.90	2.4	1.4	3.9	8.98	2.1	1.3	3.4
50°F 60% RH	67900	50	58	83500	3.80	6.4	5.2	11.7	4.88	5.0	4.1	9.1
	66500	60	68	82200	4.30	5.6	4.5	10.1	5.38	4.5	3.6	8.1
	64000	70	78	80900	4.67	5.1	4.0	9.1	5.75	4.1	3.3	7.4
	61500	80	88	79900	5.10	4.6	3.5	8.1	6.18	3.8	2.9	6.7
	59000	90	98	79100	5.60	4.1	3.1	7.2	6.68	3.5	2.6	6.1
	56000	100	108	78000	6.15	3.7	2.7	6.4	7.23	3.2	2.3	5.4
	53000	110	118	77200	7.94	2.8	2.0	4.8	9.02	2.5	1.7	4.2
	49800	120	128	76700	7.55	3.0	1.9	4.9	8.63	2.6	1.7	4.3
	48500	130	138	71900	7.95	2.7	1.8	4.4	9.03	2.3	1.6	3.9
	47200	140	148	70400	8.40	2.5	1.6	4.1	9.48	2.2	1.5	3.6
60°F 60% RH	81900	50	59	97800	4.20	6.8	5.7	12.5	5.28	5.4	4.5	10.0
	79500	60	69	96200	4.60	6.1	5.1	11.2	5.68	5.0	4.1	9.1
	76500	70	79	95000	5.00	5.6	4.5	10.1	6.08	4.6	3.7	8.3
	74000	80	89	93400	5.40	5.1	4.0	9.1	6.48	4.2	3.3	7.6
	70500	90	99	92100	5.90	4.6	3.5	8.1	6.98	3.9	3.0	6.8
	66000	100	109	90700	6.50	4.1	3.0	7.1	7.58	3.5	2.6	6.1
	62500	110	119	89400	7.15	3.7	2.6	6.2	8.23	3.2	2.2	5.4
	59000	120	129	88000	7.90	3.3	2.2	5.5	8.98	2.9	1.9	4.8
	57100	130	139	87100	8.20	3.1	2.0	5.2	9.28	2.8	1.8	4.6
	55400	140	149	85900	8.60	2.9	1.9	4.8	9.68	2.6	1.7	4.3
70°F 60% RH	95000	50	60	112500	4.50	7.3	6.2	13.5	5.58	5.9	5.0	10.9
	91500	60	70	110900	4.96	6.6	5.4	12.0	6.04	5.4	4.4	9.8
	87500	70	80	108100	5.30	6.0	4.8	10.8	6.38	5.0	4.0	9.0
	83500	80	90	105600	5.70	5.4	4.3	9.7	6.78	4.6	3.6	8.2
	80000	90	100	104200	6.20	4.9	3.8	8.7	7.28	4.2	3.2	7.4
	76000	100	110	102200	6.80	4.4	3.3	7.7	7.88	3.8	2.8	6.6
	71500	110	120	99900	7.45	3.9	2.8	6.7	8.53	3.4	2.5	5.9
	68000	120	130	98500	8.20	3.5	2.4	6.0	9.28	3.1	2.1	5.3
	65400	130	140	96700	8.90	3.2	2.2	5.3	9.98	2.8	1.9	4.8
	61800	140	150	95000	9.40	3.0	1.9	4.9	10.48	2.7	1.7	4.4
80°F 60% RH	111000	50	62	129500	4.80	7.9	6.8	14.7	5.88	6.5	5.5	12.0
	107000	60	72	128600	5.10	7.4	6.1	13.5	6.18	6.1	5.1	11.2
	104000	70	82	126600	5.75	6.5	5.3	11.8	6.83	5.4	4.5	9.9
	99500	80	92	124000	6.15	5.9	4.7	10.7	7.23	5.0	4.0	9.1
	95000	90	102	121200	6.65	5.3	4.2	9.5	7.73	4.6	3.6	8.2
	90500	100	111	118600	7.20	4.8	3.7	8.5	8.28	4.2	3.2	7.4
	87000	110	121	115800	7.80	4.4	3.3	7.6	8.88	3.8	2.9	6.7
	82000	120	131	113500	8.65	3.8	2.8	6.6	9.73	3.4	2.5	5.9
	79500	130	141	111400	9.10	3.6	2.6	6.1	10.18	3.2	2.3	5.5
	74900	140	151	109500	9.70	3.3	2.3	5.6	10.78	3.0	2.0	5.0
90°F 60% RH	130000	50	63	152100	5.10	8.7	7.5	16.2	6.18	7.2	6.2	13.4
	126700	60	73	148400	5.70	7.6	6.5	14.1	6.78	6.4	5.5	11.9
	122000	70	83	145100	6.20	6.9	5.8	12.6	7.28	5.8	4.9	10.8
	118000	80	93	142300	6.55	6.4	5.3	11.6	7.63	5.5	4.5	10.0
	112000	90	103	137900	7.00	5.8	4.7	10.5	8.08	5.0	4.1	9.1
	109500	100	113	135200	7.40	5.4	4.3	9.7	8.48	4.7	3.8	8.5
	105400	110	122	132900	7.90	4.9	3.9	8.8	8.98	4.3	3.4	7.8
	101900	120	132	129500	8.60	4.4	3.5	7.9	9.68	3.9	3.1	7.0
	99400	130	142	126000	9.50	3.9	3.1	7.0	10.58	3.5	2.8	6.2
	95800	140	152	123900	10.20	3.6	2.8	6.3	11.28	3.2	2.5	5.7

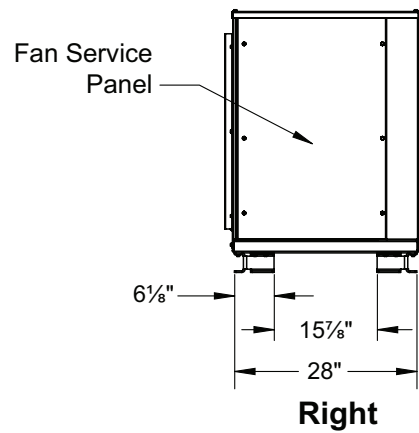
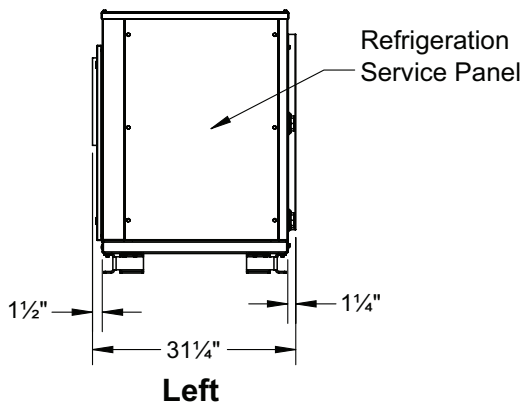
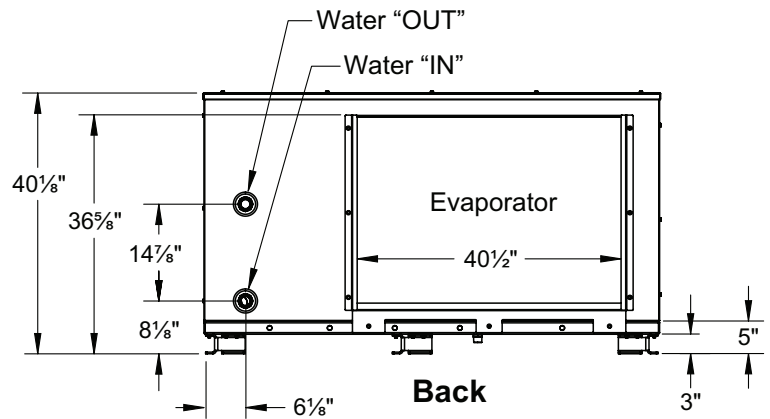
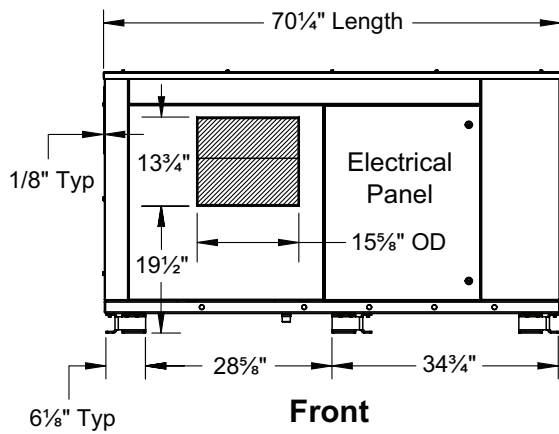
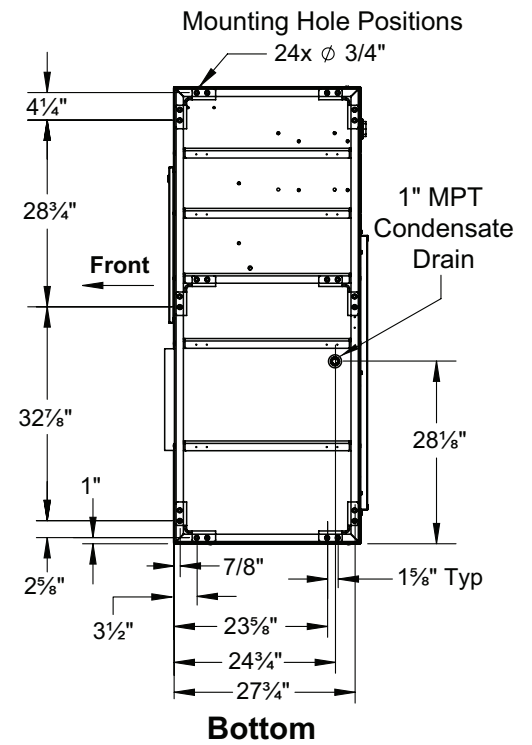
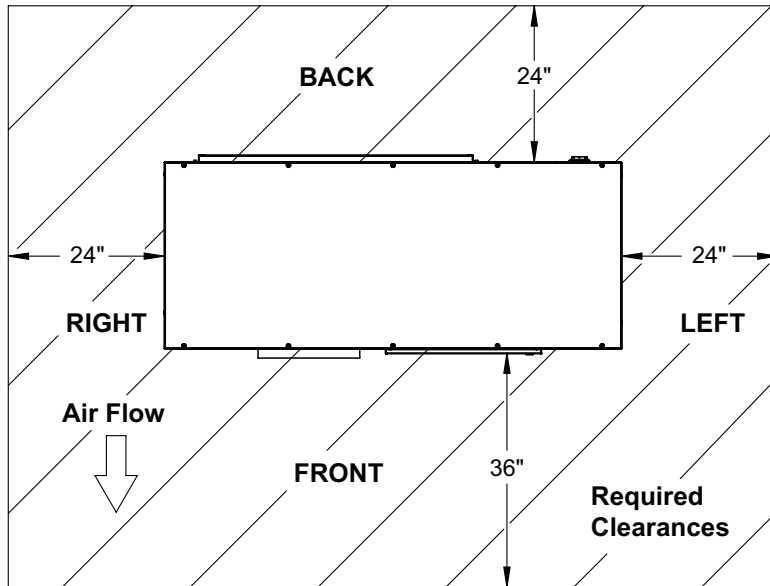
Axial Unit Dimensions

Note: All Tolerances +/- 1/8"



Blower Unit Dimensions

Note: All Tolerances +/- 1/8"





AHP90-03 (replace AHP90-02 10/22)

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