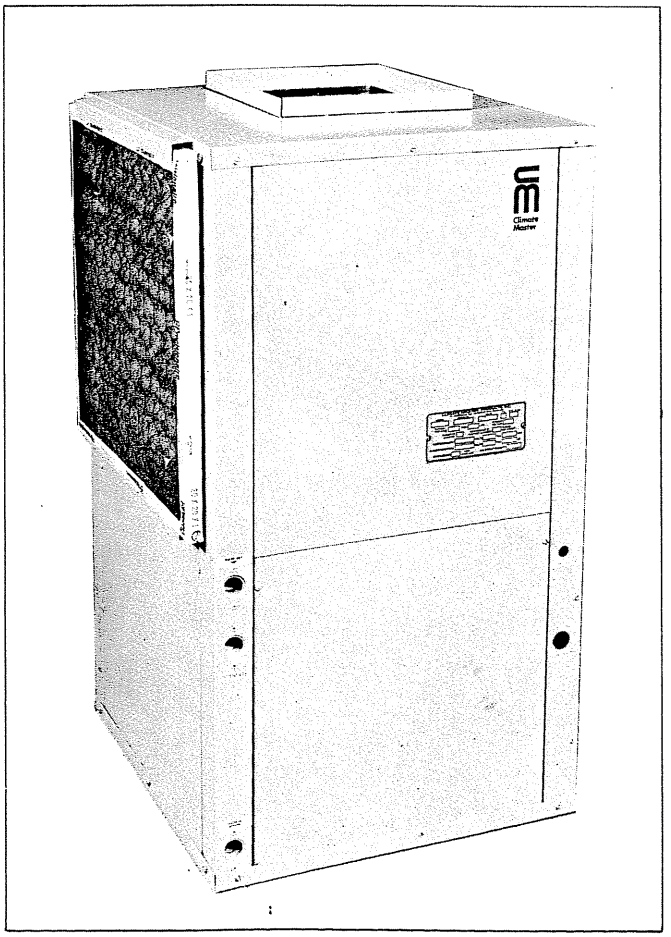
CLIMATE MASTER 42 Series

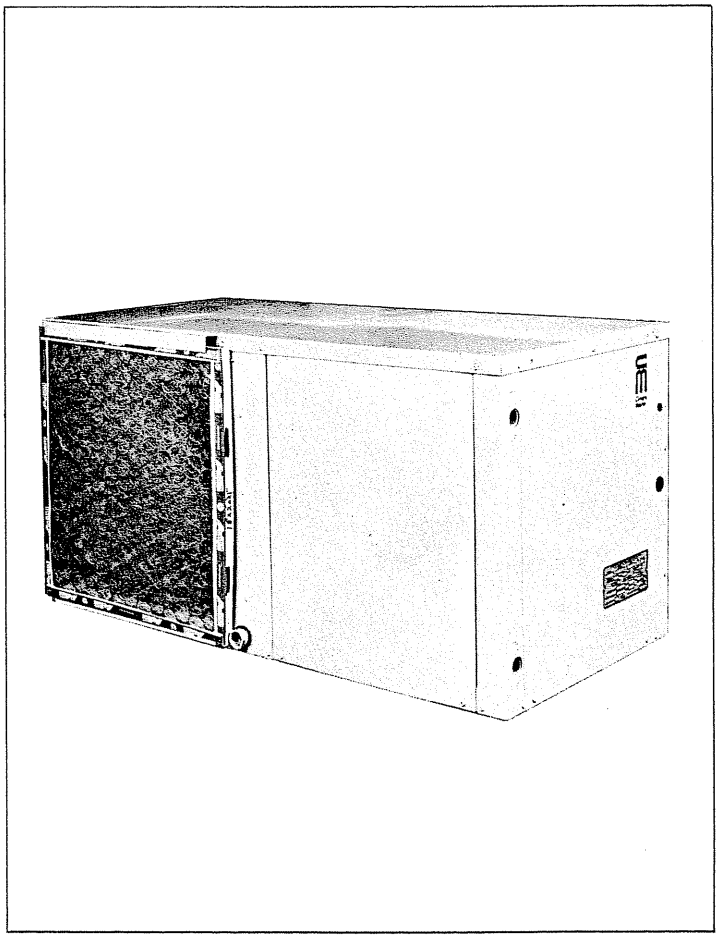
WATER TO AIR **HEAT PUMPS** VERTICAL MODEL HORIZONTAL MODEL

Better Cooling...Better Heating...Economically

CHOOSE FROM VERTICAL AND HORIZONTAL MODELS

- 3 Electrical Options
- Different Return Air Configurations
- Ease of Installation
- Versatility of Application
- Compact, Space-Saving Design
- Designed & Tested for High Efficiency
- Superior Accessibility
- Accoustically Improved





ADVANCED FEATURES and SPECIFICATIONS

MAKE CLIMATE MASTER YOUR BEST BUY IN ALL WEATHER COMFORT...

The Climate Master® is a complete factory-packaged water-to-air heat pump that provides total comfort. Each unit is designed and built per the specifications listed below:

Cabinet:

The cabinet is made of heavy gauge, galvanized steel, and painted electro-statically to prevent corrosion. The interior of the cabinet is lined with high density, coated insulation with improved thermal insulating and accoustical absorbtion characteristics. The units have access panels for ease of inspection and service to all components. The design incorporates externally stubbed water and drain (FPT) connections in the front of the unit for easy installation. The electrical power, control voltage wiring and control box are also accessible from the front of the unit. The supply air opening is provided with a duct collar and the return air incorporates a filter rack permitting removal of the filter in any direction (also optionally available is a flanged filter rack for ducted returns). The horizontal unit has threaded fasteners on the top for ceiling suspended installation.

Compressor:

The hermetic compressor is internally spring-mounted and mounted in the cabinet on rails with vibration isolators for quiet, smooth running operation. The compressor is furnished with internal (line break) motor protection and features an anti-slug device for extended life.

Reversing Valve:

The reverse cycle feature is provided by a four way electro-magnetic reversing valve designed for low pressure drops and reliable operation.

Refrigerant-To-Water Heat Exchanger:

The heat exchanger is coaxial (tube-in-tube) spirally wound with booster fins on the refrigerant side to provide optimum heat transfer. The inner (water) tube is available in copper or 90/10 cupro-nickel construction designed to withstand water pressures of 500 psi. The outer (refrigerant) tube is made of primed and painted steel. Design working pressure on the refrigerant side is 450 psi.

Air-To-Refrigerant Heat Exchanger:

The large face area, fin coil heat exchanger utilizes 5/16" staggered copper tubes with rippled and corrugated aluminum fins for added heat transfer. The refrigerant circuiting is designed for optimum pressure drops and efficiency.

Refrigerant Control:

The optimum factory charge of Refrigerant 22 is metered by precisely designed capillary tubes. The critical charge and sizing of capillary tubes is laboratory researched for balancing on the cooling and heating modes at varied conditions. The refrigerant piping is factory pressure and leak tested. Abnormal pressures within the refrigerant circuit are prevented with safety high and low pressure switches.
Charging and service ports are provided on the high and low pressure sides of the unit as standard equipment.

Blower and Motor:

The centrifugal type blower wheel and housing is custom designed for quiet operation and efficient air delivery. The blower is close-coupled to a PSC motor with inherent thermal overload protection. Each unit is provided with a high velocity type disposable filter.

Controls:

The control box, easily accessible from the front panel, includes a 24 volt control transformer, compressor contactor, blower and impedance relays. The single phase model is furnished with a run capacitor. Completely factory wired, the circuit features a lock-out relay to provide a manual reset at the thermostat in case of interrupted operation by the safety controls. The individual control components are designed for ease of inspection and serviceability. A terminal block is provided for convenient field wiring to the thermostat. A remote thermostat for comfort control is furnished with the unit.

SUPERIOR COOLING CAPACITIES AND PERFORMANCE

COOLING

In accordance with ARI Standard 240-67.
Cooling Capacity: 42,000 BTUH*.
Power Input: 4800 Watts.

*Basis: 1200 CFM of 80° F DB/67° F WB entering air
5.7 GPM of Water entering at 75° F, leaving at 95° F.

APPLICATION DATA

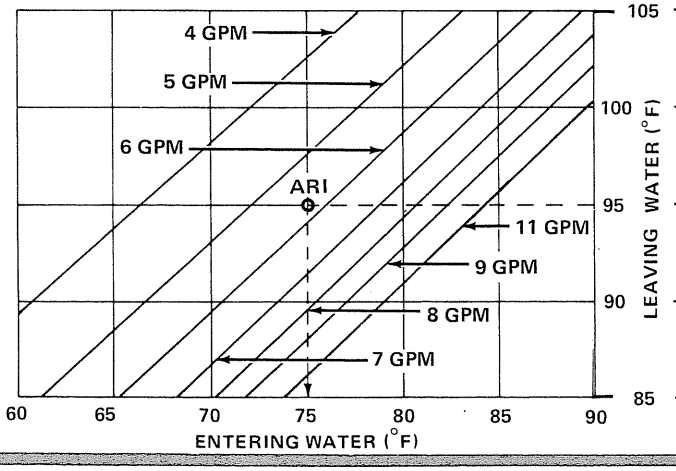
ENTERING AIR (° F) WET BULB	BASED ON 1200 CFM & 95° F LEAVING WATER					
	TOTAL CAPACITY (BTUH)	SENSIBLE CAPACITY (BTUH) ENTERING AIR (° F) DRY BULB				HEAT OF REJECTION (BTUH)
		75	80	85	90	
61	35900	27600	32000	–	–	50700
64	38900	26100	30300	34600	–	54200
67	42000	23900	27700	32800	37800	57000
70	44500	–	25400	29800	35200	60900
73	46600	–	–	27000	31700	64400

CORRECTION FACTORS

(A) VARIATION OF AIRFLOW

CFM	1050	1100	1150	1200	1250	1300	1350
TOTAL CAPACITY	.952	.966	.983	1.000	1.011	1.024	1.036
SENSIBLE CAPACITY	.908	.956	.978	1.000	1.018	1.037	1.058
HEAT OF REJECTION	.973	.982	.990	1.000	1.016	1.032	1.047

(B) VARIATION OF ENTERING WATER TEMP. AND FLOW RATE MULTIPLIER



TOTAL & SENSIBLE CAPACITY MULTIPLIER	HEAT OF REJECTION MULTIPLIER	POWER INPUT (WATTS)
0.930	0.960	5050
0.970	0.980	4920
1.000	1.000	4800
1.027	1.024	4710
1.056	1.046	4620

BLOWER PERFORMANCE (INCLUDES ALLOWANCE FOR WET COIL & FILTER)

BLOWER SPEED	SCFM @ AVAILABLE EXTERNAL STATIC PRESSURE (IWG)					
	.1	.2	.3	.4	.5	.6
HIGH	1360	1305	1250	1190	1125	1040
MEDIUM	1320	1255	1200	1140	1070	–
LOW	1285	1230	1180	1120	–	–

NOTE: ON MODELS V OR H 42-34 MEDIUM SPEED IS UNAVAILABLE.

SAMPLE PROBLEM (COOLING)

1250 CFM AIR ENTERING AT 85° DB/64° WB
7.5 GPM OF 75° F ENTERING WATER

		AIRFLOW CORRECTION		WATER FLOW CORRECTION		
TOTAL CAPACITY =	38900	X 1.011	X	1.027	=	40390 BTUH
SENSIBLE =	30300	X 1.018	X	1.027	=	31680 BTUH
HEAT REJECTION =	54200	X 1.016	X	1.024	=	56390 BTUH

SUPERIOR HEATING CAPACITIES AND PERFORMANCE

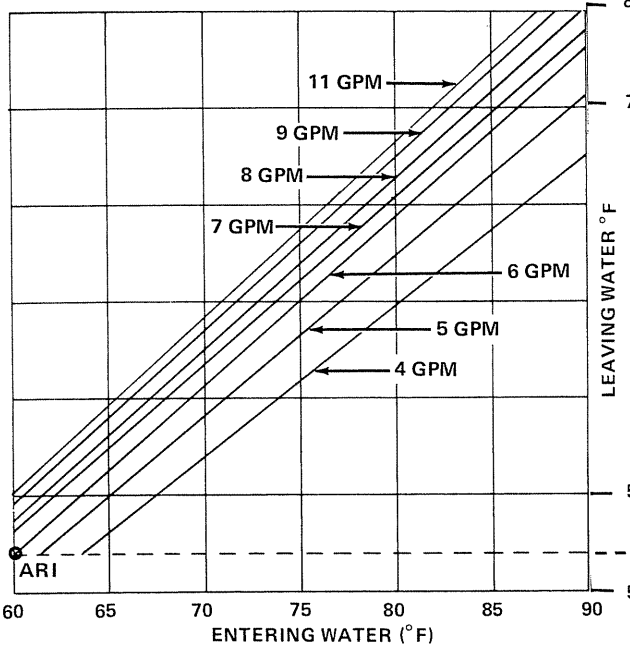
HEATING

In accordance with ARI Standard 240-67.
Heating Capacity: 38,000 BTUH*.
Power Input: 4300 Watts.

*Basis: 1200 CFM of 70° F entering air
5.7 GPM of 60° F entering water.

APPLICATION DATA

VARIATION OF ENTERING WATER TEMPERATURE AND FLOW RATE



HEATING CAPACITY (BTUH)	HEAT OF ABSORBTION (BTUH)	POWER INPUT (WATTS)
55100	38300	4920
52300	35800	4790
49400	33100	4700
46600	30500	4580
43600	27800	4480
40500	25200	4370
38000	22800	4300

VARIATION OF ENTERING AIR TEMPERATURES CORRECTION FACTOR

ENTERING AIR (°F)	60	65	70	75	80
HEATING CAPACITY	1.05	1.03	1.00	.96	.93
HEAT OF ABSORPTION	1.07	1.04	1.00	.95	.94
POWER INPUT	.96	.98	1.00	1.04	1.08

VARIATION OF AIRFLOW CORRECTION FACTOR

CFM	1050	1100	1150	1200	1250	1300	1350
HEATING CAPACITY	.95	.965	.98	1.00	1.01	1.02	1.04
HEAT OF ABSORPTION	.94	.96	.97	1.00	1.02	1.03	1.05
POWER INPUT	1.08	1.05	1.03	1.00	.99	.98	.97

WATER PRESSURE DROP-PSIG.

WATER FLOW RATE (GPM)	4	5	6	7	8	9	10	11
PRESSURE DROP (PSIG)	1.5	2.2	3.1	4.0	5.3	6.5	7.6	8.6

SAMPLE PROBLEM (HEATING)

1250 CFM OF AIR ENTERING AT 75°F
6 GPM OF 73°F ENTERING WATER

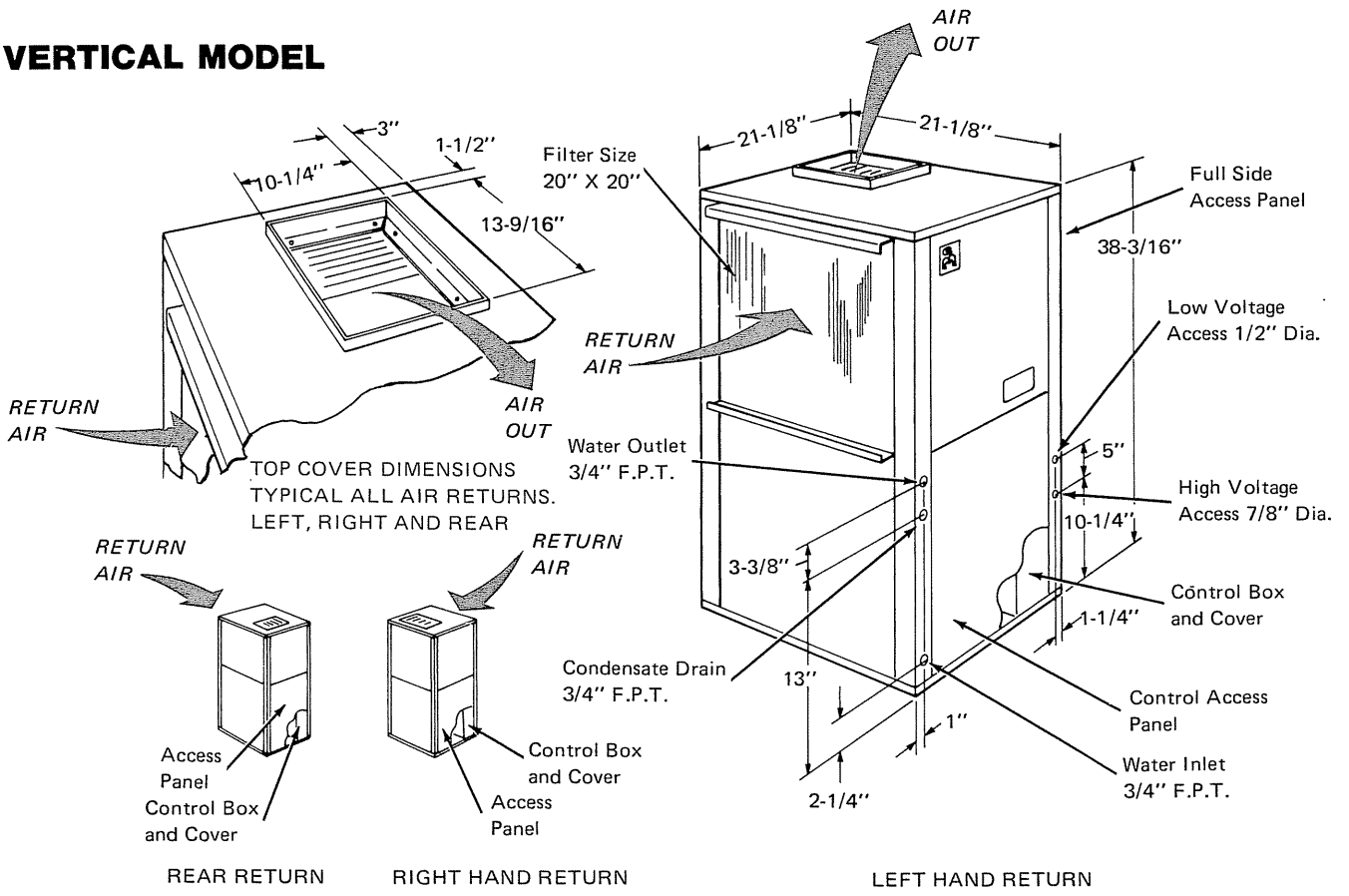
ENTERING AIR CORRECTION
AIRFLOW CORRECTION

HEATING CAPACITY = 46600 X .96 X 1.01 = 45280 BTUH
HEAT OF ABSORPTION = 30500 X .95 X 1.02 = 29560 BTUH
POWER INPUT (WATTS) = 4580 X 1.04 X .99 = 4715 WATTS

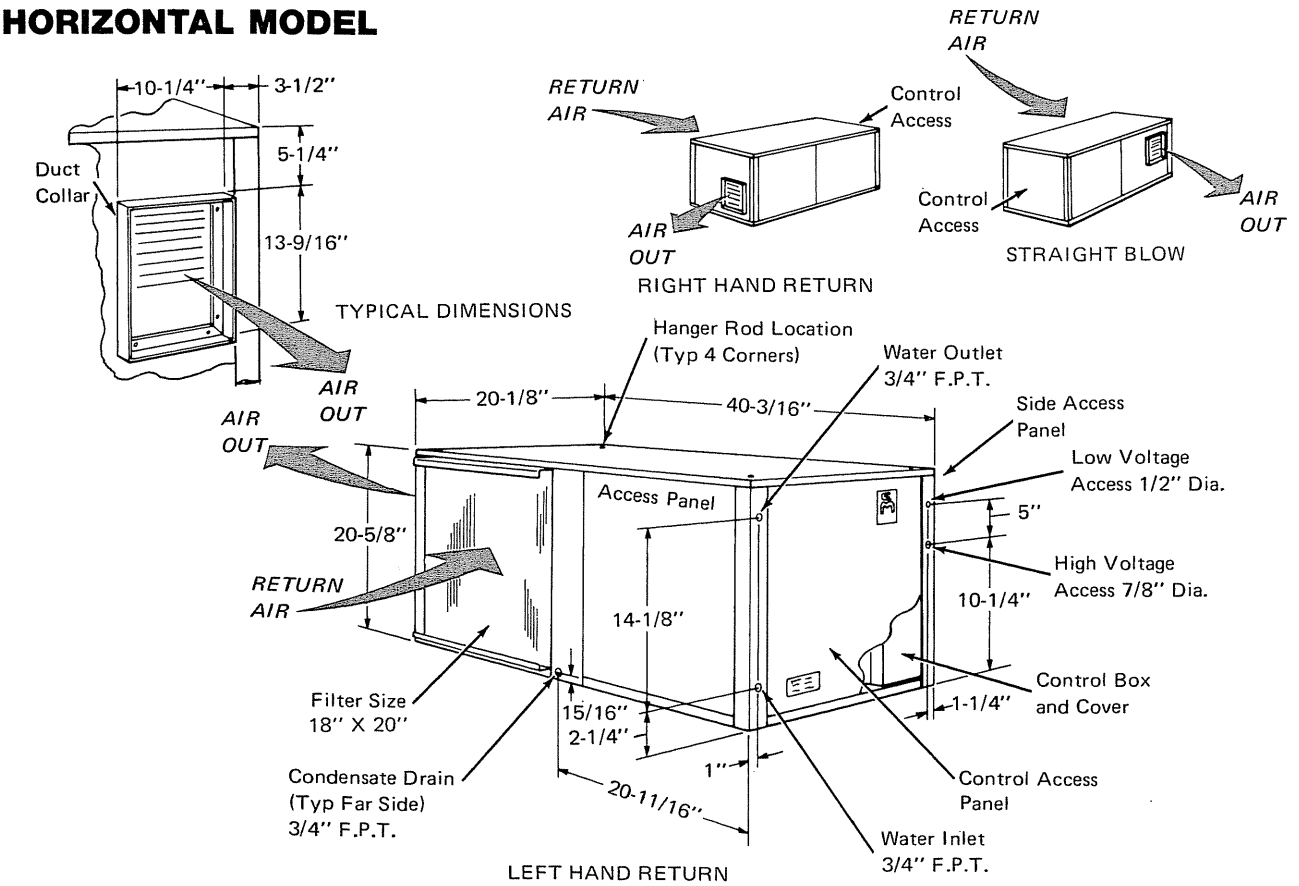
CHOOSE FROM VERTICAL AND HORIZONTAL STYLES

DIMENSIONAL DATA

VERTICAL MODEL



HORIZONTAL MODEL



PHYSICAL DATA

SPECIFICATION CHART

FOR VERTICAL AND HORIZONTAL MODELS

MODEL		V42-12	H42-12	V42-32	H42-32	V42-34	H42-34
CONFIGURATION		VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL
VOLTAGE		208/230	208/230	208/230	208/230	480	480
PHASE		1	1	3	3	3	3
MIN.CIRCUIT AMPACITY		32.3	32.3	20.3	20.3	8.4	8.4
MAX. FUSE SIZE*		50	50	30	30	15	15
COMPRESSOR F.L.A.		21.5	21.5	11.9	11.9	5.6	5.6
COMPRESSOR L.R.A.		103	103	72	72	35	35
BLOWER F.L.A.		5.4	5.4	5.4	5.4	1.4	1.4
BLOWER MOTOR-HP		1/2	1/2	1/2	1/2	1/3	1/3
NO. OF SPEEDS		3	3	3	3	2	2
BLOWER WHEEL DIA.		10	10	10	10	10	10
BLOWER WHEEL LEN.		6	6	6	6	6	6
REF.TO AIR	ROWS	5	5	5	5	5	5
HEAT	FACE AREA	2.29	2.29	2.29	2.29	2.29	2.29
EXCHANGER	FINS/INCH	13	13	13	13	13	13
WATER INLET (FPT)		3/4	3/4	3/4	3/4	3/4	3/4
WATER OUTLET (FPT)		3/4	3/4	3/4	3/4	3/4	3/4
DRAIN (FPT)		3/4	3/4	3/4	3/4	3/4	3/4
FILTER SIZE		20 x 20	18 x 20	20 x 20	18 x 20	20 x 20	18 x 20
OPERATING, WT.(APPROX')		310	320	305	315	305	315

*TIME DELAY TYPE

Climate Master

CLIMATE MASTER PRODUCTS

DIVISION OF WEIL - MC LAIN COMPANY, INC.

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DIVISION W-M WEIL-McLAIN