



DESIGN GUIDE
CONSOLE
Water-to-Air Heat Pumps
THE 801 SERIES

ClimateMaster

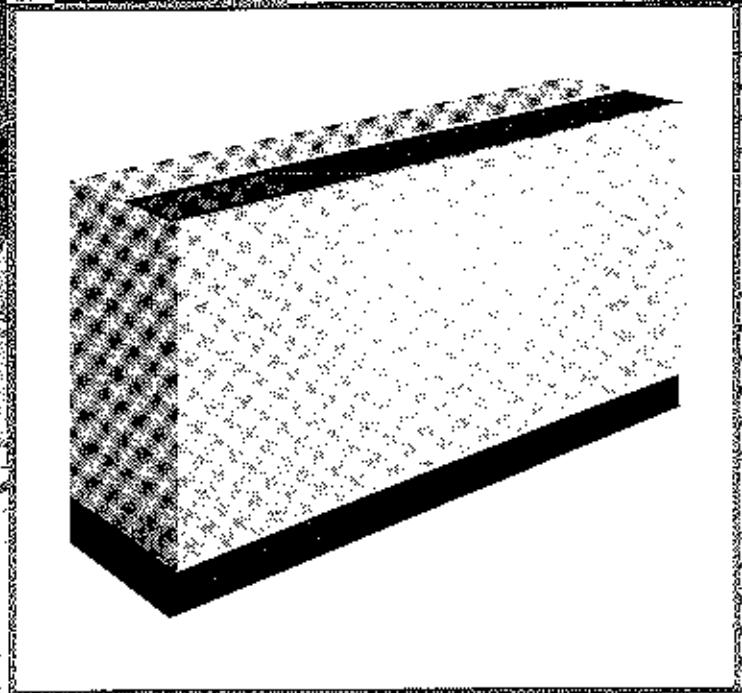
A COMBINATION OF CHP CORP. AND
FRIEDRICH™ CLIMATE MASTER, INC.

THE NATURAL SOLUTION ... USING

CLIMATE MASTER WATER SOURCE HEAT PUMP SYSTEM



Climate Master has experience, equipment, service and support that no one can match. We have the largest selection of units and ship more water source equipment than any other manufacturer in the world. Climate Master is "The world leader in the water source heat pump industry."



801 CONSOLES IN PERIMETER AREAS

A DECENTRALIZED APPROACH

Our equipment is applied at the point of need and thereby provides unparalleled individual comfort control. Our economies of operation are superior because we always operate at peak efficiency with this decentralized approach.

WATER SOURCE HEAT PUMP SYSTEMS

Designed for year around heating and cooling of both new and renovated commercial, industrial and multi-family buildings, our water source heat pump systems offer lower first costs, flexibility of control, and high economies of operation.

A non-insulated two pipe continuous loop system carries moderate temperature water to and from each unit. All units function independently, either adding heat to or removing heat from the water loop. This not only provides independent zone control, it also assures maximum efficiency with the potential of continuous heat recovery.

A typical system includes some type of heat rejection equipment along with a heat adder to maintain the moderate loop temperatures. Optional storage tanks and solar collectors can be added to reduce heater and cooler operation.

801 CONSOLE WATER-TO-AIR HEAT PUMPS

801 console units are attractive, versatile self-contained conditioners designed to please the most demanding occupant. These compact units bring exciting installation flexibility to the Climate Master water source heat pump system. Ideal for perimeter areas, 801 units provide individual comfort control with no outside wall penetration required. Available for both right or left hand water connections, they simplify piping layouts.

First cost savings are significant! 801 units eliminate costly duct work and unnecessary mechanical room/equipment closet areas. Electrical first costs are lower through smaller switch gear, wire sizing, transformer, etc. Lower heat of rejection levels are typically required, reducing the size of heat rejection equipment.

Service time is reduced with easy access to units. Maintenance can immediately restore conditioning to any affected space by simply exchanging the slide in chassis with a spare.

Noise problems are minimized. The fan and compressor are enclosed in insulated compartments with removable insulated steel panels. The exterior cabinet is completely insulated both thermally and acoustically.

Multiple options are available. See pages 8 and 9.

WARRANTY

Climate Master warrants 801 products to be free from defects in material and workmanship under normal use and maintenance. This limited warranty covers replacement or repair, at our option, of all parts for 12 months. The costs of labor, refrigerant materials, service, and transportation are not included. See Terms of Limited Warranty for details.

PERFORMANCE CHARTS

801-08

COOLING PERFORMANCE TABLE

HEATING PERFORMANCE TABLE

Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total BTUH	Sensible BTUH	Heat of Reject. BTUH	Power Input Watts	Leaving Wat. Temp. °F	Heating Total BTUH	Heat of Absorp. BTUH	Power Input Watts	Leaving Wat. Temp. °F	P.D. Ft. of Water
1.2	60°	7600	6300	9899	615	76.5°	7800	5411	700	51.0°	1.44
1.6	60°	7900	6200	9948	600	72.4°	8200	5777	710	52.8°	2.41
2.0	60°	7900	6200	9914	590	69.9°	8400	5960	715	54.0°	3.60
2.4	60°	7900	6200	9880	580	68.2°	8500	6043	720	55.0°	5.00
1.2	70°	7600	6200	9853	660	86.4°	8900	6391	735	59.3°	1.44
1.6	70°	7700	6300	9884	640	82.4°	9200	6657	745	61.7°	2.41
2.0	70°	7800	6300	9950	630	80.0°	9400	6840	750	63.2°	3.60
2.4	70°	7800	6300	9933	625	78.3°	9500	6940	750	64.2°	5.00
1.2	85°	6800	5800	9257	720	100.4°	10100	7421	785	72.6°	1.44
1.6	85°	7100	5900	9506	705	96.9°	10200	7487	795	75.6°	2.41
2.0	85°	7200	6000	9555	690	94.6°	10300	7570	800	77.4°	3.60
2.4	85°	7300	6100	9638	685	93.0°	10400	7653	805	78.6°	5.00
1.2	90°	6400	5500	8926	740	104.9°	10300	7570	800	77.4°	1.44
1.6	90°	6700	5700	9174	725	101.5°	10400	7635	810	80.5°	2.41
2.0	90°	6900	5800	9340	715	99.3°	10500	7718	815	82.3°	3.60
2.4	90°	7000	5900	9406	705	97.8°	10500	7701	820	83.6°	5.00
1.2	95°	6000	5200	8694	760	109.3°	10500	7718	815	82.1°	1.44
1.6	95°	6400	5500	8943	745	106.2°	10600	7794	825	85.3°	2.41
2.0	95°	6600	5600	9109	735	104.1°	10600	7767	830	87.2°	3.60
2.4	95°	6700	5700	9174	725	102.6°	10600	7750	835	88.5°	5.00

CORRECTION FACTORS FOR VARIATION IN ENTERING AIR TEMPERATURE

Ent. Air °F WB	Total Cooling Capacity	Sensible Capacity Entering Air Dry Bulb					Heat of Reject.	Power Input	Ent. Air °F DB	Total Heating Capacity	Heat of Absorb.	Power Input
		70°DB	75°DB	80°DB	85°DB	90°DB						
61°	.940	.871	1.086	1.302	1.517	1.732	.952	.987	60°	1.025	1.053	.920
64°	.970	.719	.935	1.150	1.365	1.580	.973	.994	65°	1.015	1.023	.960
67°	1.000	.570	.785	1.000	1.215	1.430	1.000	1.000	70°	1.000	.994	1.000
70°	1.030		.637	.852	1.067	1.282	1.026	1.006	75°	.980	.950	1.040
73°	1.060		.490	.706	.921	1.136	1.047	1.013	80°	.955	.892	1.080

ARI RATED: 10.4 EER, 3.5 COP

EXAMPLE SELECTION

To estimate the performance of a Model 801-08 under the following conditions:

COOLING MODE—High Speed Fan, Return Air of 80°F EDB, 64°F EWB, EWT of 90°F at 1.6 GPM.

HEATING MODE—Same conditions, plus Return Air of 65°F EDB and a EWT of 60°F.

EXAMPLE SOLUTION

COOLING

	TOTAL BTUH	SENSIBLE	WATTS	Formula
From Chart:	6700	5700	725	Cooling BTUH + (Watts × 3.413) = HEAT OF REJECTION
Factors:	× .970	× 1.150	× .994	6499 + (720.65 × 3.413) = 8958.58
Answer:	6499	6555	720.65	

HEATING

	TOTAL BTUH	WATTS	Formula
From Chart:	8200	710	Heating BTUH - (Watts × 3.413) = HEAT OF ABSORPTION
Factors:	× 1.015	× .960	8323 - (681.60 × 3.413) = 5996.70
Answer:	8323	681.60	

Note: Heat of Rejection and Heat of Absorption factors are for quick estimation only. See the above example for exact formulas.

DESIGN POINT DATA

Design Point Data is a IBM compatible software package that contains a complete, up-to-date catalog for all Climate Master equipment. By varying the entering conditions, ratings and data are immediately calculated and displayed at the selected design point, then printed and/or saved. DPD saves time and assures calculation accuracy.

PERFORMANCE CHARTS

801-10

COOLING PERFORMANCE TABLE

HEATING PERFORMANCE TABLE

Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total BTUH	Sensible BTUH	Heat of Reject. BTUH	Power Input Watts	Leaving Wat. Temp. °F	Heating Total BTUH	Heat of Absorp. BTUH	Power Input Watts	Leaving Wat. Temp. °F	P.D. Ft. of Water
1.3	60°	9800	7500	12665	810	80.1°	9000	6150	835	50.2°	1.89
1.8	60°	9800	7500	12462	780	74.2°	9500	6599	850	52.5°	3.47
2.3	60°	9800	7400	12411	765	71.0°	9800	6865	860	53.9°	5.45
2.8	60°	9800	7400	12377	755	69.0°	10000	7048	865	54.9°	7.82
1.3	70°	9400	7400	12335	860	89.7°	10400	7414	875	58.1°	1.89
1.8	70°	9600	7500	12450	835	84.2°	10800	7762	890	61.1°	3.47
2.3	70°	9700	7500	12499	820	81.1°	11000	7928	900	63.0°	5.45
2.8	70°	9800	7500	12565	810	79.1°	11100	8011	905	64.2°	7.82
1.3	85°	8400	6800	11625	945	103.6°	11800	8592	940	71.3°	1.89
1.8	85°	8800	7100	11923	915	98.6°	12000	8758	950	75.0°	3.47
2.3	85°	9000	7200	12072	900	95.7°	12100	8824	960	77.2°	5.45
2.8	85°	9100	7300	12138	890	93.8°	12200	8906	965	78.5°	7.82
1.3	90°	7900	6500	11211	970	107.9°	12100	8824	960	75.9°	1.89
1.8	90°	8400	6800	11625	945	103.3°	12200	8889	970	79.9°	3.47
2.3	90°	8600	7000	11757	925	100.5°	12300	8955	980	82.0°	5.45
2.8	90°	8800	7100	11923	915	98.7°	12300	8938	985	83.5°	7.82
1.3	95°	7300	6100	10696	995	112.1°	12300	8955	980	80.7°	1.89
1.8	95°	7900	6500	11211	970	107.8°	12400	9021	990	84.7°	3.47
2.3	95°	8200	6700	11469	955	105.2°	12400	8987	1000	87.0°	5.45
2.8	95°	8400	6800	11625	945	103.5°	12500	9070	1005	88.4°	7.82

CORRECTION FACTORS FOR VARIATION IN ENTERING AIR TEMPERATURE

Ent. Air °F WB	Total Cooling Capacity	Sensible Capacity Entering Air Dry Bulb					Heat of Reject.	Power Input	Ent. Air °F DB	Total Heating Capacity	Heat of Absorb.	Power Input
		70°DB	75°DB	80°DB	85°DB	90°DB						
61°	.915	.871	1.086	1.302	1.517	1.732	.936	.984	60°	1.040	1.085	.930
64°	.958	.719	.935	1.150	1.365	1.580	.969	.992	65°	1.020	1.034	.965
67°	1.000	.570	.785	1.000	1.215	1.430	1.002	1.000	70°	1.000	.996	1.000
70°	1.040	.637	.852	1.067	1.282	1.282	1.035	1.008	75°	.980	.946	1.035
73°	1.077	.490	.706	.921	1.136	1.136	1.060	1.016	80°	.960	.908	1.070

ARRANGED: 10.0 EER, 3.6 COP

801-12

COOLING PERFORMANCE TABLE

HEATING PERFORMANCE TABLE

Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total BTUH	Sensible BTUH	Heat of Reject. BTUH	Power Input Watts	Leaving Wat. Temp. °F	Heating Total BTUH	Heat of Absorp. BTUH	Power Input Watts	Leaving Wat. Temp. °F	P.D. Ft. of Water
1.4	60°	12200	8200	15852	1070	82.6°	10200	6889	970	50.2°	2.76
2.2	60°	12400	8200	15864	1015	74.4°	11100	7704	995	53.0°	6.23
3.0	60°	12500	8100	15879	990	70.6°	11500	8053	1010	54.6°	10.89
3.8	60°	12500	8100	15828	975	68.3°	11700	8236	1015	55.7°	16.67
1.4	70°	11700	8000	15591	1140	92.3°	11900	8419	1020	58.0°	2.76
2.2	70°	12200	8200	15903	1085	84.5°	12600	9033	1045	61.8°	6.23
3.0	70°	12300	8200	15918	1060	80.6°	12900	9299	1055	63.8°	10.89
3.8	70°	12400	8200	15967	1045	78.4°	13000	9382	1060	65.1°	16.67
1.4	85°	10200	7300	14432	1240	105.6°	13600	9880	1090	70.9°	2.76
2.2	85°	11100	7700	15161	1190	98.8°	14000	10195	1115	75.7°	6.23
3.0	85°	11400	7900	15376	1185	95.3°	14200	10360	1125	78.1°	10.89
3.8	85°	11600	8000	15525	1150	93.2°	14300	10443	1130	79.5°	16.67
1.4	90°	9500	6900	13852	1275	109.8°	14000	10195	1115	75.4°	2.76
2.2	90°	10500	7500	14681	1225	103.3°	14300	10409	1140	80.5°	6.23
3.0	90°	10900	7700	14996	1200	100.0°	14400	10475	1150	83.0°	10.89
3.8	90°	11100	7800	15144	1185	98.0°	14500	10558	1155	84.4°	16.67
1.4	95°	8800	6400	13271	1310	114.0°	14300	10426	1135	80.1°	2.76
2.2	95°	9900	7100	14200	1260	107.9°	14500	10541	1160	85.4°	6.23
3.0	95°	10400	7400	14598	1230	104.7°	14600	10590	1175	87.9°	10.89
3.8	95°	10600	7500	14764	1220	102.8°	14600	10573	1180	89.4°	16.67

CORRECTION FACTORS FOR VARIATION IN ENTERING AIR TEMPERATURE

Ent. Air °F WB	Total Cooling Capacity	Sensible Capacity Entering Air Dry Bulb					Heat of Reject.	Power Input	Ent. Air °F DB	Total Heating Capacity	Heat of Absorb.	Power Input
		70°DB	75°DB	80°DB	85°DB	90°DB						
61°	.896	.871	1.086	1.302	1.517	1.732	.917	.978	60°	1.010	1.032	.940
64°	.949	.719	.935	1.150	1.365	1.580	.956	.989	65°	1.010	1.022	.970
67°	1.000	.570	.785	1.000	1.215	1.430	1.002	1.000	70°	1.000	1.000	1.000
70°	1.049	.637	.852	1.067	1.282	1.282	1.041	1.011	75°	.980	.957	1.030
73°	1.096	.490	.706	.921	1.136	1.136	1.073	1.022	80°	.950	.903	1.080

ARRANGED: 9.6 EER, 3.6 COP

PERFORMANCE CHARTS

801-15

COOLING PERFORMANCE TABLE

HEATING PERFORMANCE TABLE

Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total BTUH	Sensible BTUH	Heat of Reject. BTUH	Power Input Watts	Leaving Wat. Temp. °F	Heating Total BTUH	Heat of Absorp. BTUH	Power Input Watts	Leaving Wat. Temp. °F	P.D. Ft. of Water
1.7	60°	15600	9500	20003	1290	83.6°	13000	8734	1250	49.7°	1.11
2.8	60°	15900	9500	20047	1215	74.3°	14500	10097	1290	52.8°	2.74
3.9	60°	16000	9400	20027	1180	70.3°	15000	10546	1305	54.6°	4.97
5.0	60°	16000	9400	19976	1165	68.0°	15300	10812	1315	55.7°	7.77
1.7	70°	14800	9200	19476	1370	92.9°	15300	10812	1315	57.3°	1.11
2.8	70°	15500	9500	19920	1295	84.2°	16400	11792	1350	61.6°	2.74
3.9	70°	15700	9500	20017	1265	80.3°	16900	12141	1365	63.8°	4.97
5.0	70°	15800	9500	20049	1245	78.0°	17000	12307	1375	65.1°	7.77
1.7	85°	12800	8300	17902	1495	106.1°	17700	12905	1405	69.8°	1.11
2.8	85°	14100	8900	18946	1420	98.5°	18300	13385	1440	75.4°	2.74
3.9	85°	14600	9100	19344	1390	94.9°	18500	13517	1460	78.1°	4.97
5.0	85°	14800	9200	19476	1370	92.8°	18600	13600	1465	79.6°	7.77
1.7	90°	11900	7800	17156	1540	110.2°	18200	13302	1435	74.4°	1.11
2.8	90°	13400	8600	18400	1465	103.1°	18700	13683	1470	80.2°	2.74
3.9	90°	14000	8900	18881	1430	99.7°	18900	13815	1490	82.9°	4.97
5.0	90°	14300	9000	19129	1415	97.7°	18900	13781	1500	84.5°	7.77
1.7	95°	10900	7200	16293	1580	114.2°	18600	13600	1465	79.0°	1.11
2.8	95°	12600	8200	17737	1505	107.7°	19000	13863	1505	85.1°	2.74
3.9	95°	13300	8500	18334	1475	104.4°	19000	13812	1520	87.9°	4.97
5.0	95°	13600	8700	18566	1455	102.4°	19100	13878	1530	89.4°	7.77

CORRECTION FACTORS FOR VARIATION IN ENTERING AIR TEMPERATURE

Ent. Air °F WB	Total Cooling Capacity	Sensible Capacity Entering Air Dry Bulb					Heat of Reject.	Power Input	Ent. Air °F DB	Total Heating Capacity	Heat of Absorb.	Power Input
		70°DB	75°DB	80°DB	85°DB	90°DB						
61°	.855	.871	1.086	1.302	1.517	1.732	.884	.978	60°	.997	1.021	.940
64°	.933	.719	.935	1.150	1.365	1.580	.946	.989	65°	1.005	1.021	.970
67°	1.000	.570	.785	1.000	1.215	1.430	.998	1.000	70°	1.000	.997	1.000
70°	1.056	.637	.852	1.067	1.282	1.482	1.044	1.011	75°	.982	.964	1.030
73°	1.100	.490	.706	.921	1.136	1.336	1.086	1.022	80°	.951	.914	1.060

ARI RATED: 10.5 EER, 3.6 COP

801-19

COOLING PERFORMANCE TABLE

HEATING PERFORMANCE TABLE

Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total BTUH	Sensible BTUH	Heat of Reject. BTUH	Power Input Watts	Leaving Wat. Temp. °F	Heating Total BTUH	Heat of Absorp. BTUH	Power Input Watts	Leaving Wat. Temp. °F	P.D. Ft. of Water
2.2	60°	20400	13000	25758	1570	83.4°	16800	11156	1595	49.9°	2.05
3.5	60°	20800	13000	25885	1490	74.8°	18200	12620	1635	52.8°	4.72
4.8	60°	20800	12900	25749	1450	70.7°	18900	13251	1655	54.5°	8.33
6.1	60°	20800	12800	25681	1430	68.4°	19200	13517	1665	55.6°	12.82
2.2	70°	19400	12700	25117	1675	92.8°	19400	13700	1670	57.5°	2.05
3.5	70°	20200	13000	25627	1590	84.6°	20600	14747	1715	61.6°	4.72
4.8	70°	20400	13000	25690	1550	80.7°	21200	15278	1735	63.6°	8.33
6.1	70°	20600	13000	25822	1530	78.5°	21400	15444	1745	64.9°	12.82
2.2	85°	16900	11400	23129	1825	106.0°	22400	16291	1790	70.2°	2.05
3.5	85°	18400	12200	24356	1745	98.9°	23000	16754	1830	75.4°	4.72
4.8	85°	19000	12500	24819	1705	95.3°	23400	17086	1850	77.9°	8.33
6.1	85°	19300	12600	25051	1685	93.2°	23400	17052	1860	79.4°	12.82
2.2	90°	15800	10800	22216	1880	110.2°	23000	16771	1825	74.8°	2.05
3.5	90°	17500	11800	23626	1795	103.5°	23600	17218	1870	80.2°	4.72
4.8	90°	18200	12100	24190	1755	100.1°	23800	17349	1890	82.8°	8.33
6.1	90°	18600	12300	24522	1735	98.0°	23800	17315	1900	84.3°	12.82
2.2	95°	14500	10100	21087	1930	114.2°	23400	17035	1865	79.5°	2.05
3.5	95°	16500	11200	22797	1845	108.0°	23800	17281	1910	85.1°	4.72
4.8	95°	17300	11600	23478	1810	104.8°	24000	17430	1925	87.7°	8.33
6.1	95°	17700	11900	23792	1785	102.8°	24000	17379	1940	89.3°	12.82

CORRECTION FACTORS FOR VARIATION IN ENTERING AIR TEMPERATURE

Ent. Air °F WB	Total Cooling Capacity	Sensible Capacity Entering Air Dry Bulb					Heat of Reject.	Power Input	Ent. Air °F DB	Total Heating Capacity	Heat of Absorb.	Power Input
		70°DB	75°DB	80°DB	85°DB	90°DB						
61°	.878	.871	1.086	1.302	1.517	1.732	.903	.986	60°	1.013	1.041	.930
64°	.943	.719	.935	1.150	1.365	1.580	.951	.993	65°	1.012	1.028	.965
67°	1.000	.570	.785	1.000	1.215	1.430	.999	1.000	70°	1.000	1.001	1.000
70°	1.049	.637	.852	1.067	1.282	1.482	1.040	1.007	75°	.977	.949	1.035
73°	1.090	.490	.706	.921	1.136	1.336	1.072	1.014	80°	.943	.890	1.070

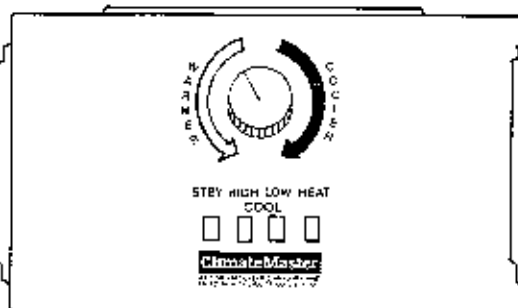
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GENERAL DATA/CONTROL OPTIONS

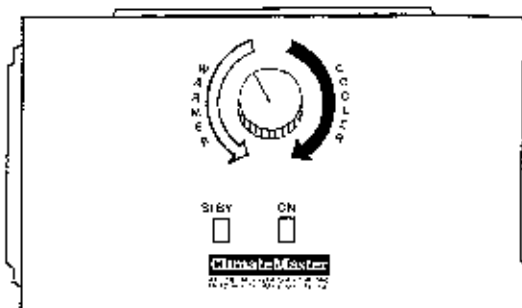
GENERAL DATA CHART

Model Number	Voltages 1 Phase	Min. CRC Ampacity	Max. Fuse	Comp LRA	Comp RLA	Blower FLA	Total FLA	Hi Speed CFM	Lo Speed CFM	Hi Speed RPM	Lo Speed RPM	Blower HP	Wt. Lbs.
801-08	208/230	4.82	15	22.4	3.50	.45	3.95	350	320	1040	1000	1/20	178
	265			19.0	3.00	.45	3.45						
801-10	208/230	5.95	15	21.3	4.40	.45	4.85	350	320	1010	990	1/20	180
	265			22.3	3.90	.45	4.35						
801-12	208/230	7.58	15	28.0	5.70	.45	6.15	380	355	1130	1035	1/20	195
	265			27.4	5.00	.45	5.45						
801-15	208/230	8.30	15	36.0	6.20	.55	6.75	510	430	1320	1170	1/12	200
	265			33.0	5.40	.50	5.90						
801-19	208/230	10.30	15	40.6	7.80	.55	8.35	545	500	1440	1330	1/12	220
	265			34.0	6.70	.50	7.20						

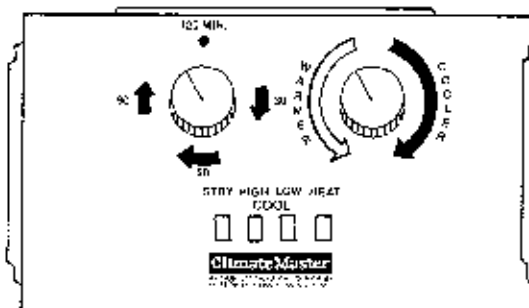
CONSOLE CONTROL PLATE OPTIONS



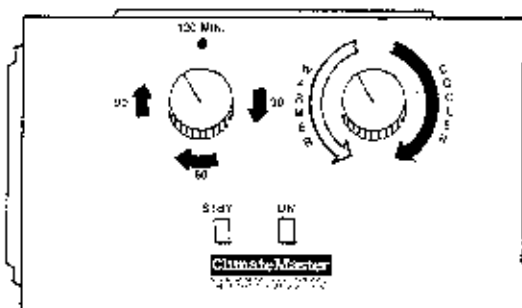
Manual Changeover



Auto Changeover



Manual Changeover with Override Timer



Auto Changeover with Override Timer

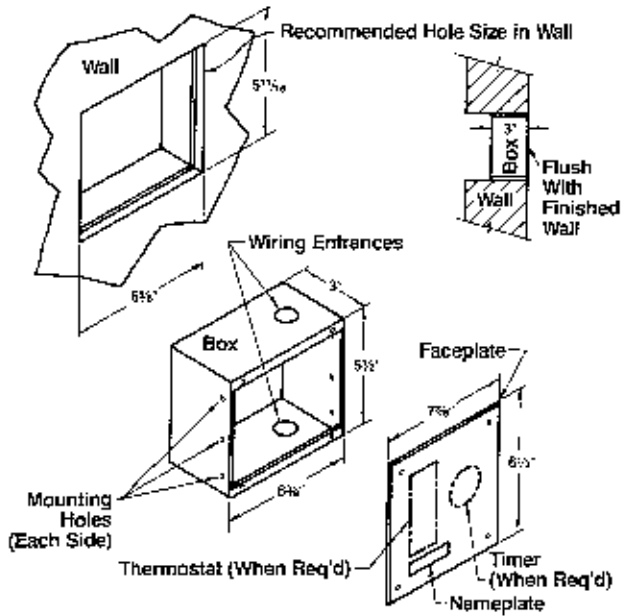
OPTIONS

801 CONTROL OPTIONS	CHASSIS MOUNTED CONTROL	REMOTE CONTROL
THERMOSTAT Manual Changeover Auto Changeover	X X	X X
PROGRAM RELAY Unit Mounted External Mounted	X —	— X (See "A")
MASTER-SLAVE OPTION	—	X
NIGHT SETBACK OPTION	X	X
NON-OCCUPIED OVERRIDE TIMER	X	X
BOILERLESS OPERATION	X	—
UNIT MOUNTED PLC RECEIVER	X	—
FRESH AIR DAMPER CONTROL	X	X

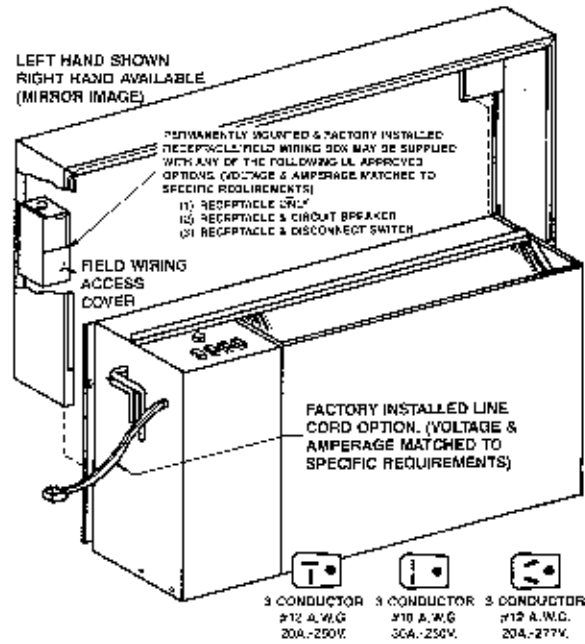
801 CABINET OPTIONS	FACTORY ENCLOSED	ENCLOSED BY OTHERS
CHASSIS WITH SUBBASE AND CABINET	X	—
CHASSIS ONLY WITH SUBBASE	—	X
CHASSIS ONLY	—	X
FRESH AIR CABINET	X (See "E")	—
ADJUSTABLE DISCHARGE GRILLE	—	X (See "C")
KEY LOCK CONTROL DOOR	X	—
FACTORY PRE-PIPED SUBBASE	X	X (See "D")

801 POWER-PIPING OPTIONS	
CONNECTIONS:	From left side From right side
POWER WIRING:	Field supplied Factory supplied cord, plug and Receptacle (See "B") • with circuit breaker • with non-fused disconnect
PIPING:	Plain end, field supplied connections Factory supplied Male or female threaded connectors Unions • with ball valves • with motorized zone valves

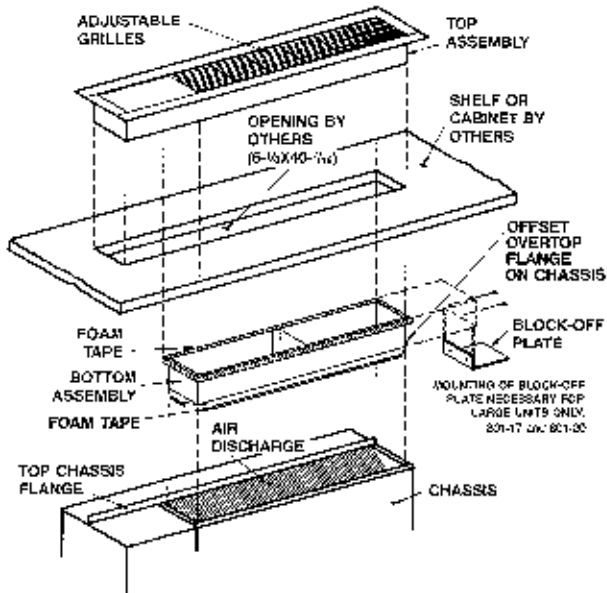
A PROGRAM CONTROL BOX OPTION



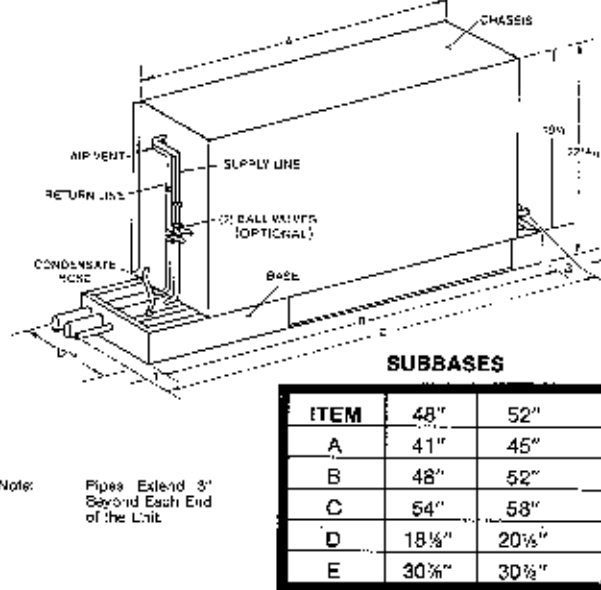
B POWER CONNECTIONS OPTION



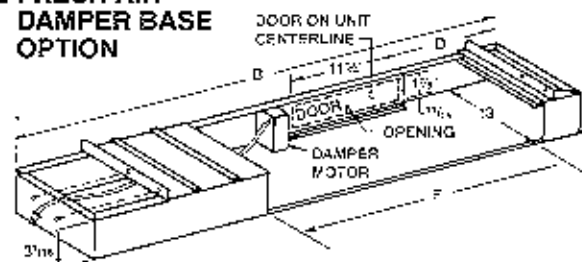
C ADJUSTABLE DISCHARGE GRILLE OPTION



D PRE-PIPED SUBBASE OPTION

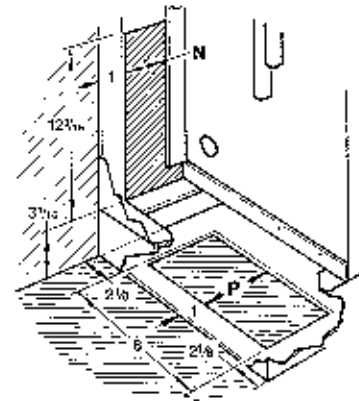
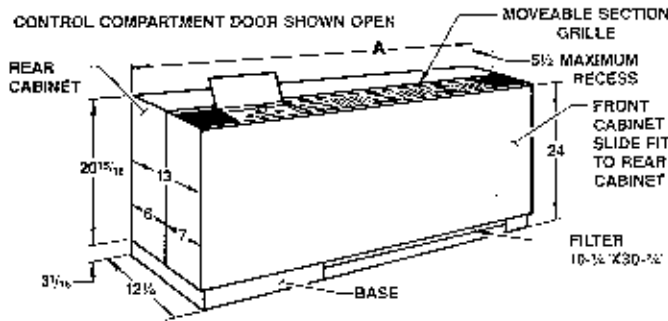


E FRESH AIR DAMPER BASE OPTION

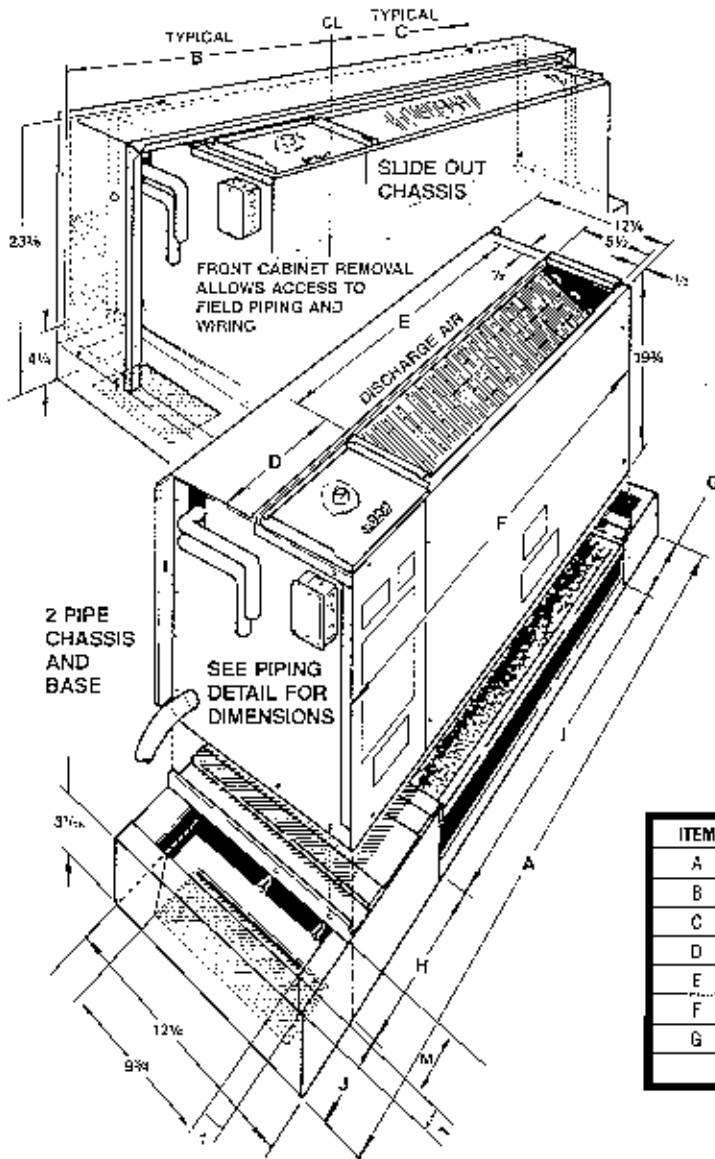


DIMENSIONS

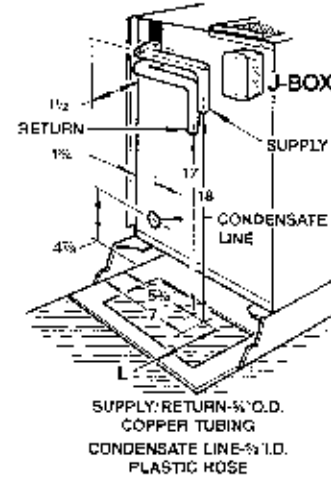
LEFT HAND 2 PIPE



OPTIMUM PIPING LOCATIONS

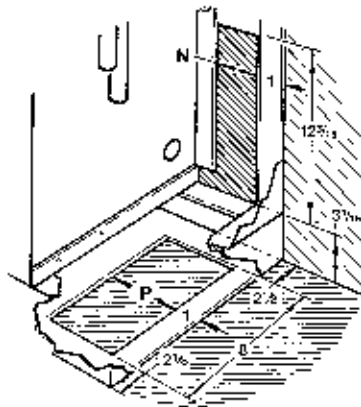


PIPING DETAIL

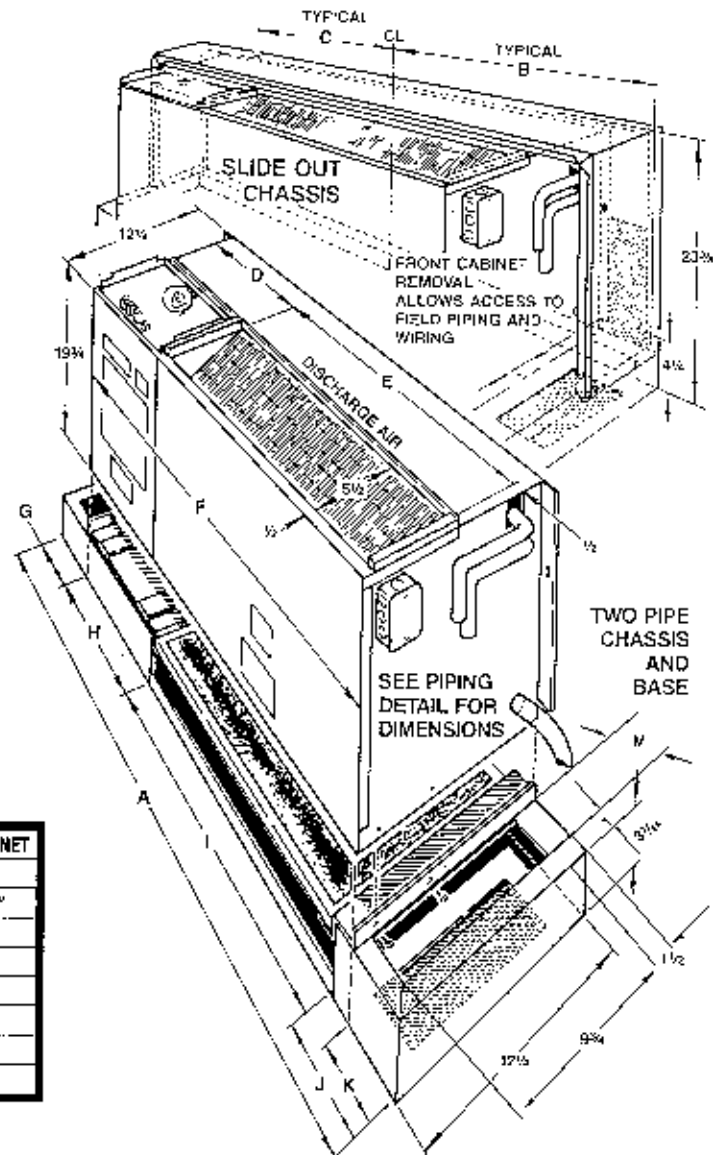
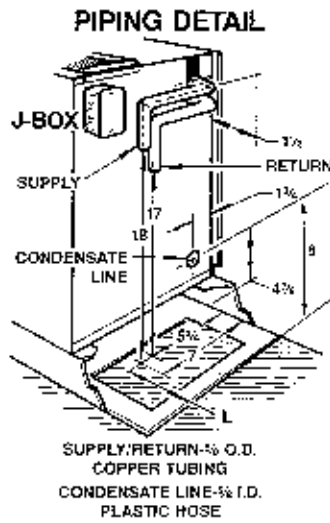
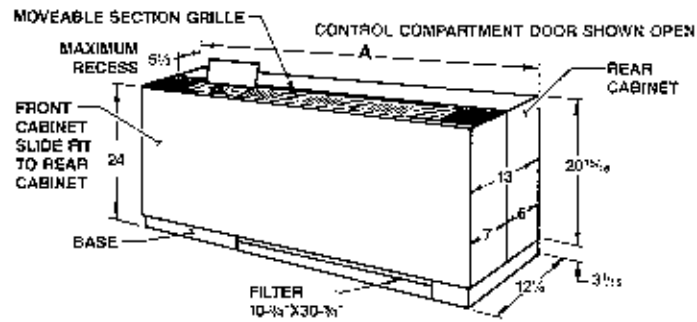


ITEM	48 CABINET	52 CABINET	ITEM	48 CABINET	52 CABINET
A	48"	52"	H	8 1/2"	9 1/2"
B	23 3/4"	25 3/4"	I	30 3/4"	30 3/4"
C	14"	16"	J	5 1/2"	7 1/4"
D	9 1/2"	9 1/2"	K	4 1/2"	6 1/2"
E	31"	31"	L	3 3/8"	3 3/8"
F	41"	41"	M	3 1/2"	3 3/4"
G	2"	4"	N	3"	3"
			P	4 1/4"	6 1/4"

RIGHT HAND 2 PIPE



**OPTIMUM
PIPING
LOCATIONS**



ITEM	48 CABINET	52 CABINET	ITEM	48 CABINET	52 CABINET
A	48"	52"	H	9 1/4"	9 1/2"
B	23 3/4"	25 3/4"	I	30 3/4"	30 3/4"
C	14"	16"	J	5 1/2"	7 1/2"
D	9 1/2"	9 1/2"	K	4 3/4"	6 3/4"
E	31"	31"	L	3 3/8"	5 3/8"
F	41"	41"	M	3 1/2"	5 3/4"
G	2"	4"	N	3"	5"
			P	4 1/8"	6 1/8"

SPECIFICATIONS

GENERAL

All units must carry ARI certification (Standard 320) and UL listing via appropriate labeling. All electrical and/or refrigeration components shall be UL recognized. The manufacturer's warranty, unit service and project start-up assistance shall be given economic consideration in bids. Tabulated efficiency and capacity shall be considered minimum.

CABINETWORK

Cabinet shall be heavy gauge furniture steel finished in baked enamel with bottom return and top discharge. Cabinet shall be two-piece with back portion for wall or floor mounting. Front portion shall slide fit to rear portion without tools required. Removal of cabinet front shall give complete side and front access to chassis piping and wiring. Hinged control door shall provide access to unit control box. Cabinet shall be thermally and acoustically insulated.

CHASSIS

Chassis shall be removable without dismantling cabinet. Both compressor and fan compartments shall be insulated and have removable insulated steel cover plates giving (with cabinet insulation) double acoustical protection between the space and the compressor/fan.

REFRIGERANT CIRCUIT

Hermetic compressors shall be internally sprung, externally isolated, and rail-mounted to minimize sound transmission. Co-axial (tube in tube) refrigerant-to-water heat exchanger shall be copper inner water tube and steel refrigerant outer tube designed for 450 PSI refrigerant pressure and 350 PSI water pressure.

Fin-tube refrigerant-to-air exchanger shall be aluminum fin plate and copper tube construction rated to withstand 425 PSI refrigerant working pressure. Four-way solenoid activated refrigerant reversing valve shall allow heating operation should the solenoid fail to function. R-22 refrigerant charge shall be precisely metered and refrigerant metering devices (capillary tubes) shall be carefully selected for optimum performance. All interconnecting tubing shall be copper.

ELECTRICAL

Motor and dual blower assembly shall be removable without disturbing the chassis. Compressor and blower motors shall be individually protected against current and/or heat overload.

CONTROLS

Standard control shall be mounted with manually adjustable thermostat. The control box shall have four buttons consisting of STANDBY, HI COOL., LO COOL and HEAT.

POWER CONNECTION

UL approved units shall be provided with a factory mounted junction box on the side of the chassis for direct wire connection.

The unit shall operate with either 208/230V or 265V, single phase, 60hz supply current.

CONTROL OPTIONS (UL)

UNIT-MOUNTED AUTO CHANGEOVER The thermostat shall be a unit-mounted automatic changeover type. The control box shall have two buttons consisting of STANDBY, ON.

PROGRAM RELAY The unit shall be provided with a relay that accepts a 24 volt signal from a central time clock which establishes occupied/unoccupied modes. This functions with a manual (auto) changeover unit mounted thermostat.

REMOTE THERMOSTAT The unit shall be provided with a 24 volt anticipating type wall thermostat.

a) The thermostat shall be a manual changeover type with an OFF, HEAT, COOL selector switch and a FAN, AUTO selector switch.

b) The thermostat shall be an auto changeover type with an OFF, AUTO selector switch and a FAN, AUTO selector switch.

MASTER-SLAVE The master-slave operation shall be accomplished with a remote thermostat operating the master unit. Additional (slave) units shall be connected with the operation of all dictated by the single wall mounted thermostat.

NIGHT SETBACK/OVERRIDE TIMER

The override operation shall be accomplished with a unit mounted manual (auto) changeover thermostat and a random start relay. A zero to two hour timer shall override a 24 volt signal from the centrally located time clock that establishes occupied/unoccupied modes with a night setback function to maintain a minimum space temperature of 50°F.

BOILERLESS UNIT The unit shall have an electric heating coil (1.0kw to 4.5kw), aquastat and override switch such that when the water temperature drops below 60°F, the unit controls will shut off the compressor and activate the electric coil. The override switch permits electric heating in the event of the compressor's failure.

MOTORIZED ZONE VALVES The unit shall be provided with a factory mounted motorized zone valve. When the compressor operates in either heating or cooling modes, the valve is open. The valve closes when the compressor is off.

FRESH AIR DAMPER The unit shall be provided with a motorized fresh air damper, factory mounted and wired, that will cycle with both heating and cooling. A manual override switch will be provided.

PROGRAM CONTROL BOX The unit shall have a factory installed and wired program control box with a random start relay and/or night setback and/or override timer. (Call factory for software/hardware options.)

POWER OPTIONS

FACTORY SUPPLIED PLUG The unit shall be provided with a factory mounted cord and plug, conforming to NEMA (6-20P or 7-20P or 6-30P).

FACTORY SUPPLIED RECEPTACLE

The unit shall be provided with a factory mounted receptacle conforming to NEMA (6-20R or 7-20R or 6-30R). The receptacle box shall be mounted on the back half of the cabinet to receive the power connection. (The unit shall be provided with a factory mounted circuit breaker or disconnect switch.)

CABINET OPTIONS (NON-UL)

ENCLOSURE BY OTHERS The unit shall be chassis only or chassis on subbase.

a) **FRONT RETURN** The unit is less subbase but with a front air return.

b) **ADJUSTABLE REMOTE GRILLE** The unit shall be with chassis on subbase with an adjustable supply air duct collar and grille for enclosure by others.

PIPING OPTIONS

FACTORY PIPING KITS The unit shall be provided with factory installed supply and return water connection on right or left side.

a) **BALL VALVE AND UNION** A ball valve and union shall be factory mounted on the supply and return water connections.

b) **THREADED CONNECTIONS** A half inch male or female pipe threaded fitting shall be factory mounted on the supply and return water connections.

c) **PRE-PIPED SUBBASE** A subbase shall be provided. The subbase shall consist of supply, return and condensate piping. The piping shall be total copper or total PVC or PVC condensate with copper headers. Factory mounted union and shut-off valves shall be provided for ease of connection to chassis.



Continuing engineering research results in steady improvements. Therefore, these ratings and specifications are subject to change without notice.

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ClimateMaster

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