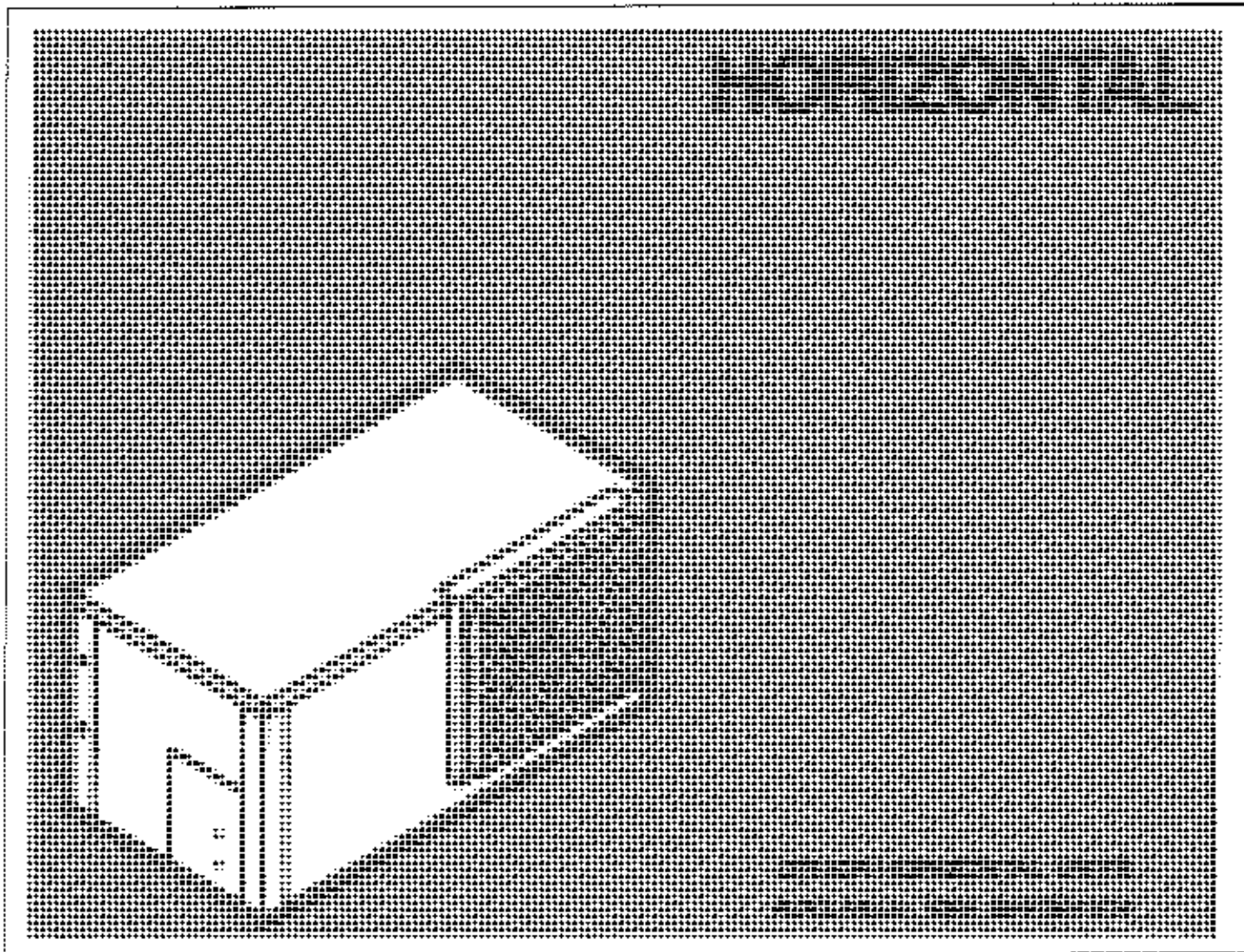


SPECIFICATIONS



Climate Master 904/804

COOLING ONLY

HEAT PUMPS

SERIES

WATER-TO-AIR
HEAT PUMPS

ClimateMaster

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

ARI RATINGS

804 SERIES PERFORMANCE DATA AT ARI RATING CONDITIONS (ARI STD. 320-81)

Model Number**	Cooling							Heating					
	Net BTUH	Sensible BTUH	Power Input Watts	EER Rating	Heat of Reject. BTUH	Water GPM	Air CFM	Net BTUH	Power Input Watts	COP	Heat of Absorp. BTUH	Water GPM	Air CFM
804-009	9100*	6461	825	11.0	11915	2.4	350	10800*	850	3.7	7900	2.4	350
804-012	12500	8625	1225	10.2	16690	3.34	400	15700	1325	3.5	11179	3.34	400
804-015	14500	10295	1400	10.4	19300	3.90	500	19000	1625	3.7	13800	3.90	500
804-019	19000	13670	1750	10.9	25000	5.0	650	23000	1875	3.6	18800	5.0	650
804-025	25400	17580	2275	11.2	33182	6.6	800	35000	2650	3.9	25360	6.6	800
804-031	30000	21860	2900	10.3	39900	8.0	1000	49500	3200	3.7	29580	8.0	1000
804-037	35600	24400	3360	10.6	47034	9.4	1250	42500	3550	3.5	30400	9.4	1250
804-043	43000	32170	4000	10.8	56652	11.3	1500	57000	4200	4.0	40665	11.3	1500
	42000	31400	4050	10.4	55819	11.2	1450	57000	4450	3.8	41987	11.2	1450
804-048	48000	37250	4750	10.1	64212	12.8	1700	59000	4650	3.7	43190	12.8	1700
804-060	62000	46800	6100	10.2	82819	16.6	2000	68000	5600	3.6	48892	16.6	2000
804-096	96000	74950	9400	10.2	128082	25.6	3400	112000	9100	3.6	80950	25.6	3400
804-120	124000	93550	12200	10.2	165639	33.1	4000	137000	11500	3.5	97762	33.1	4000

* For Units operating at 208V, deduct 200 BTUH from capacity ratings (009 Models only).

** Cooling only: Units available 903/904.

GENERAL DATA CHART

Model Number	Voltage	PH	Min. Wire	Min. CAPC Ampacity	Max. Fuse	Comp ERA	Comp RLA	Blower FLA	Total FLA	Blower Whl. Dia.	Blower Whl. Lbs.	Blower HP	Ref. to Air Face Area	Coil Depth	Fins /In.	Blower Type	Shipping Wt. Lbs.
804-009	208/230	1	#14	4.6	15	20.0	3.3	.50	3.8	5.5	5.0	1/20	.97	3.00	14	DDMS	118
	265	1	#14	4.0	15	16.0	2.8	.50	3.3								108
804-012	208/230	1	#14	8.7	15	31.0	6.3	.90	7.1	6.0	4.0	1/10	.97	3.75	14	DDMS	123
	265	1	#14	6.9	15	27.0	4.9	.81	5.71								117
804-015	208/230	1	#14	8.25	15	36.0	5.9	.86	6.76	6.0	5.0	1/12	2.22	2.25	14	DDMS	150
	265	1	#14	7.35	15	33.0	5.0	.82	5.82								153
804-019	208/230	1	#14	11.1	15	40.6	7.8	1.5	9.1	9.0	4.0	1/6	2.22	3.0	14	DDMS	173
	265	1	#14	8.7	15	34.0	6.0	1.2	7.2								180
804-025	208/230	1	#10	15.4	25	54.0	11.8	1.6	13.4	9.0	7.0	1/4	2.50	2.25	13	DDMS	210
	265	1	#12	14.4	20	45.0	9.8	1.5	10.8								213
804-031	208/230	1	#10	19.5	30	65.0	14.0	2.0	16.0	10.0	6.0	1/4	2.50	3.0	13	DDMS	225
	208/230	3	#12	13.9	20	60.0	9.2	2.0	11.2								
	265	1	#10	17.2	25	55.0	11.2	1.6	12.8								
	460	3	#14	6.6	15	28.0	4.4	1.0	5.4								
804-037	208/230	1	#8	23.0	35	75.8	15.8	3.2	19.0	9.0	7.0	1/2	3.33	2.25	14	DDMS	248
	208/230	3	#10	16.7	25	65.0	10.4	3.2	13.6								
	265	1	#8	21.6	35	70.0	13.5	3.2	16.7								
	460	3	#14	8.3	15	32.0	5.2	1.8	7.0								
804-043	208/230	1	#8	28.7	45	93.0	19.4	3.4	22.6	10.0	6.0	1/2	3.33	3.00	14	DDMS	278
	208/230	3	#10	19.4	30	74.0	12.5	3.4	15.9								
	460	3	#14	9.6	15	41.0	8.3	1.8	8.1								
804-048	208/230	1	#8	30.0	45	104.0	19.8	5.4	25.2	10.0	10.0	3/4	4.17	3.25	14	DDMS	312
	208/230	3	#8	23.0	35	72.0	14.1	5.4	19.5								
	460	3	#14	11.0	15	35.0	7.0	2.2	9.2								
804-060	208/230	1	#8	39.8	60	132.0	26.0	5.8	31.6	12.0	10.0	1	4.17	4.33	13	DDMS	339
	208/230	3	#8	26.4	40	108.0	16.1	5.8	21.9								
	460	3	#12	12.5	20	54.0	7.9	2.6	10.5								
804-096	208/230	3	#6	37.4	50	72.0	14.1	5.7	33.9	(2)	(2)	1-1/2	8.33	3.25	14	DDVP	680
	460	3	#10	18.4	25	35.0	7.0	2.6	16.5	10.0	10.0						
804-120	208/230	3	#4	44.6	60	103.0	16.1	7.5	39.7	(2)	(2)	2	8.33	4.33	13	DDVP	800
	460	3	#10	21.2	25	54.0	7.9	3.4	18.2	12.0	10.0						

PERFORMANCE CHARTS

804-009

COOLING PERFORMANCE TABLE							HEATING PERFORMANCE TABLE					P.D. Fl. of Water
Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total BTUH	Sensi- ble BTUH	Heat of Reject. BTUH	Power Input Watts	Leaving Wat. Temp. °F	Ent. Wat. Temp. °F	Heating Total BTUH	Heat of Absorp. BTUH	Power Input Watts	Leaving Wat. Temp. °F	
1.50	85°	9300	6400	11660	752	60.8	60°	9300	8000	775	51.1	1.7
2.00	85°	13000	9200	11660	422	75.9	60°	9300	8870	600	50.3	2.9
2.50	85°	16700	12000	11774	233	91.0	60°	9300	7070	500	54.3	4.3
3.00	85°	20400	14800	11774	72	106.1	60°	9300	7170	600	59.2	6.0
1.50	75°	9200	6400	11930	820	60.9	65°	5900	7170	800	55.4	1.7
2.00	75°	13000	9200	11930	490	76.0	65°	5900	7294	625	57.7	2.9
2.50	75°	16700	12000	11930	275	91.1	65°	5900	7424	525	56.0	4.3
3.00	75°	20400	14800	11930	75	106.2	65°	5900	7564	425	59.9	6.0
1.50	65°	8950	6400	11804	650	100.7	70°	15200	7584	825	50.8	1.7
2.00	65°	12650	9200	11816	425	115.8	70°	15200	7739	650	52.2	2.9
2.50	65°	16350	12000	11816	235	130.9	70°	15200	7899	550	53.7	4.3
3.00	65°	20050	14800	11816	85	146.0	70°	15200	7999	450	54.7	6.0
1.50	55°	8600	6400	11766	375	105.7	80°	11500	8214	375	58.9	1.7
2.00	55°	12300	9200	11766	225	120.8	80°	11500	8314	275	61.5	2.9
2.50	55°	16000	12000	11766	135	135.9	80°	11500	8414	175	64.1	4.3
3.00	55°	19700	14800	11766	65	151.0	80°	11500	8514	75	74.3	6.0
1.50	85°	8600	6400	11672	920	100.6	90°	11900	8829	930	78.2	1.7
2.00	85°	12300	9200	11686	675	106.7	90°	12100	9029	680	81.0	2.9
2.50	85°	16000	12000	11700	425	121.8	90°	12100	9129	500	82.8	4.3
3.00	85°	19700	14800	11714	175	136.9	90°	12100	9129	300	82.9	6.0

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°	0.670	0.871	1.286			0.936	0.980	80°	1.003	1.018	0.982	
64°	0.585	0.719	0.935	1.150		0.948	0.993	65°	1.001	1.006	0.991	
67°	1.000	0.570	0.785	1.030	1.215	1.000	1.000	70°	1.000	1.000	1.000	
70°	1.265		0.637	0.852	1.087	1.048	1.048	75°	0.999	0.991	0.919	
73°	1.150		0.492	0.708	0.921	1.104	1.104	80°	0.996	0.982	0.938	

CORRECTION FACTORS FOR VARIATION IN AIR FLOW

Air Flow CFM	Total Cooling Capacity	Sensible Capacity	Heat of Reject.	Power Input	Total Heating Capacity		
					Total Heating Capacity	Heat of Absorp.	Power Input
250	0.956	0.953	0.951	0.950	0.950	1.054	1.025
270	0.959	0.958	0.958	0.953	0.958	1.056	1.038
300	0.963	0.958	0.978	0.977	0.990	1.074	1.051
350	1.000	1.000	1.000	1.000	1.000	1.000	1.000
400	1.002	1.004	1.002	1.002	1.002	0.996	0.998
450	1.004	1.009	1.004	1.005	1.004	0.995	0.998

804-012

COOLING PERFORMANCE TABLE							HEATING PERFORMANCE TABLE					P.D. Fl. of Water
Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total BTUH	Sensi- ble BTUH	Heat of Reject. BTUH	Power Input Watts	Leaving Wat. Temp. °F	Ent. Wat. Temp. °F	Heating Total BTUH	Heat of Absorp. BTUH	Power Input Watts	Leaving Wat. Temp. °F	
1.75	85°	12800	8600	16725	1150	84.1	60°	13200	9104	1000	49.6	1.3
2.50	85°	18600	12500	16554	1100	78.2	60°	13200	9819	1225	52.3	2.6
3.25	85°	24400	16400	16489	1075	75.1	60°	14200	9531	1250	53.9	3.9
4.00	85°	30200	20300	16569	1075	73.3	60°	14400	10124	1250	54.9	5.7
1.75	75°	12500	8600	16651	1225	84.1	65°	14100	9824	1250	53.8	1.3
2.50	75°	17000	12400	16710	1175	88.4	65°	14100	10343	1275	56.7	2.6
3.25	75°	21500	16200	16623	1150	85.2	65°	15000	10563	1300	58.5	3.9
4.00	75°	26000	20100	16725	1150	83.4	65°	15100	10862	1300	59.7	5.7
1.75	65°	12100	8500	16507	1300	104.0	70°	15000	10563	1300	57.5	1.3
2.50	65°	16600	12300	16506	1250	99.3	70°	16400	10963	1300	61.2	2.6
3.25	65°	21100	16100	16581	1225	95.3	70°	16700	11179	1325	63.1	3.9
4.00	65°	25600	20000	16261	1225	93.3	70°	16800	11278	1325	64.4	5.7
1.75	90°	12300	8500	16522	1325	108.9	80°	16300	11692	1350	65.6	1.3
2.50	90°	17200	12300	16637	1300	103.3	80°	16600	11937	1375	70.5	2.6
3.25	90°	22100	16100	16552	1275	100.7	80°	16800	12107	1375	72.5	3.9
4.00	90°	27000	20000	16656	1250	98.3	80°	16900	12207	1375	73.9	5.7
1.75	80°	11700	8400	16393	1375	113.7	90°	17200	12522	1400	75.7	1.3
2.50	80°	16600	12300	16522	1325	108.2	90°	17300	12722	1400	79.5	2.6
3.25	80°	21500	16100	16537	1300	106.3	90°	17800	12872	1400	82.1	3.9
4.00	80°	26400	20000	16637	1300	103.3	90°	17900	12922	1400	85.5	5.7

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°	0.879	0.871	1.056			0.936	0.977	80°	1.002	1.003	0.999	
64°	0.940	2.7-3	0.935	1.150		0.948	0.989	65°	1.001	1.015	0.964	
67°	1.000	0.570	0.785	1.030	1.215	1.000	1.000	70°	1.000	1.000	1.000	
70°	1.080		0.637	0.852	1.087	1.048	1.048	75°	0.999	0.984	0.938	
73°	1.121		0.492	0.708	0.921	1.104	1.104	80°	0.996	0.982	0.972	

CORRECTION FACTORS FOR VARIATION IN AIR FLOW

Air Flow CFM	Total Cooling Capacity	Sensible Capacity	Heat of Reject.	Power Input	Total Heating Capacity		
					Total Heating Capacity	Heat of Absorp.	Power Input
320	0.972	0.969	0.969	0.968	0.972	1.068	1.024
350	0.983	0.981	0.981	0.980	0.983	1.089	1.018
380	0.993	0.985	0.985	0.982	0.989	1.011	1.035
400	1.000	1.000	1.000	1.000	1.000	1.000	1.000
425	1.009	1.013	1.010	1.010	1.009	0.985	0.983
450	1.018	1.009	1.019	1.023	1.018	0.972	0.985

PERFORMANCE CHARTS

804-015

COOLING PERFORMANCE TABLE							HEATING PERFORMANCE TABLE					
Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total BTUH	Sens. Side BTUH	Heat of Reject BTUH	Power Input Watts	Leaving Wat. Temp. °F	Ent. Wat. Temp. °F	Heating Total BTUH	Heat of Absorp. BTUH	Power Input Watts	Leaving Wat. Temp. °F	P.F. of Water
2.50	65°	14800	10220	4627	1320	57.2	60°	15950	11277	1375	48.8	1.6
3.00	65°	14800	10220	4627	1320	57.2	60°	15950	11277	1375	48.8	1.6
4.00	65°	14800	10220	4627	1320	57.2	60°	15950	11277	1375	48.8	1.6
5.00	65°	14800	10220	4627	1320	57.2	60°	15950	11277	1375	48.8	1.6
2.50	75°	14500	10220	4278	1420	64.3	60°	14000	12130	1425	52.9	1.6
3.00	75°	14700	10220	4324	1320	57.9	60°	17800	12789	1475	56.5	3.4
4.00	75°	14800	10220	4377	1320	58.8	60°	18200	13051	1520	56.5	5.7
5.00	75°	14800	10220	4437	1320	61.7	60°	18300	13281	1530	59.7	8.0
2.50	85°	14100	10220	3934	1475	104.1	70°	10600	12926	1475	57.0	1.6
3.00	85°	14400	10220	4054	1425	97.8	70°	11700	13481	1525	61.0	3.4
4.00	85°	14500	10220	4128	1400	94.6	70°	12000	13755	1520	65.1	5.7
5.00	85°	14500	10220	4233	1375	101.7	70°	12300	13995	1525	74.4	8.0
2.50	95°	13800	10220	3705	1525	108.1	80°	13700	14410	1550	65.6	1.6
3.00	95°	14200	10220	3924	1475	102.8	80°	20200	14895	1575	70.1	3.4
4.00	95°	14300	10220	4184	1425	95.5	80°	20400	15025	1600	72.5	5.7
5.00	95°	14400	10220	4284	1425	97.7	80°	20600	15139	1600	75.9	8.0
2.50	95°	13800	10220	3890	1550	113.0	90°	23600	15339	1600	74.7	1.6
3.00	95°	13800	10220	3920	1500	107.7	90°	24200	15654	1625	79.6	3.4
4.00	95°	14100	10220	4124	1475	104.6	90°	24400	15884	1625	82.1	5.7
5.00	95°	14200	10220	4234	1475	108.7	90°	24600	16084	1625	83.7	8.0

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						
60°	0.932	0.871	1.000			0.979	0.976	60°	1.002	1.078	0.950	
65°	0.951	0.719	0.536	1.150		0.960	0.938	65°	1.001	1.009	0.990	
70°	1.002	0.570	0.375	1.002	1.215	1.034	1.020	70°	1.000	1.000	1.001	
75°	1.047		0.637	0.852	1.057	1.088	1.017	75°	0.999	0.921	1.020	
80°	1.091		0.490	0.706	0.921	1.125	1.024	80°	0.998	0.960	1.040	

CORRECTION FACTORS FOR VARIATION IN AIR FLOW

Air Flow CFM	Total Cooling Capacity	Sensible Capacity	Heat of Reject.	Power Input	Total Heating Capacity	Heat of Absorb.	Power Input
460	0.998	0.975	0.968	0.997	0.998	1.029	1.011
470	0.988	0.981	0.991	0.990	1.015	1.061	1.008
480	0.996	0.981	0.985	0.988	1.008	1.060	1.007
500	1.000	1.000	1.000	1.000	1.000	1.000	1.000
520	1.006	1.019	1.029	1.012	1.008	0.988	0.992
550	1.017	1.037	1.040	1.018	1.017	0.969	0.983

804-019

COOLING PERFORMANCE TABLE							HEATING PERFORMANCE TABLE					
Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total BTUH	Sens. Side BTUH	Heat of Reject. BTUH	Power Input Watts	Leaving Wat. Temp. °F	Ent. Wat. Temp. °F	Heating Total BTUH	Heat of Absorp. BTUH	Power Input Watts	Leaving Wat. Temp. °F	P.F. of Water
2.50	65°	19400	13820	25031	1630	66.0	80°	19100	13293	1750	48.4	2.5
3.75	65°	19300	13720	24873	1575	76.3	80°	20800	14227	1750	50.4	3.2
5.00	65°	19300	13531	24725	1525	74.3	80°	23800	14740	1725	54.1	3.7
6.25	65°	19300	13520	24739	1525	72.8	80°	27000	14942	1775	55.2	4.0
2.50	75°	19200	13820	24073	1730	95.0	85°	20600	14427	1750	50.5	2.5
3.75	75°	19200	13820	2507	1675	88.3	85°	21400	15257	1800	56.9	3.2
5.00	75°	19400	13630	25031	1620	85.3	85°	22000	15771	1825	58.7	3.7
6.25	75°	19400	13820	24146	1625	83.5	85°	22200	15898	1825	59.9	4.0
2.50	85°	18500	13820	24874	1810	104.8	70°	27600	15371	1825	67.7	2.5
3.75	85°	19000	13820	24853	1775	106.3	70°	28800	16205	1850	61.3	3.2
5.00	85°	19000	13950	24970	1725	95.5	70°	33400	15601	1875	63.4	3.7
6.25	85°	19700	13900	24957	1725	93.5	70°	35200	16801	1875	66.6	4.0
2.50	90°	18700	13700	24955	1830	108.7	90°	25600	17125	1825	60.3	2.5
3.75	90°	18500	13850	24825	1825	108.2	90°	24400	17920	1825	70.8	3.2
5.00	90°	18500	13850	24940	1820	100.5	90°	24800	17945	1950	72.8	3.7
6.25	90°	18500	13900	24958	1775	96.5	90°	24800	18145	1950	74.2	4.0
2.50	95°	17700	13500	24355	1950	114.5	90°	25200	18459	1875	75.2	2.5
3.75	95°	18200	13700	24598	1875	108.1	90°	25600	18855	1975	79.9	3.2
5.00	95°	18400	13600	24874	1820	104.8	90°	26300	19374	2000	82.4	3.7
6.25	95°	18500	13800	24829	1825	102.5	90°	26000	19174	2000	80.9	4.0

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°	0.916	0.871	1.000			0.922	0.942	80°	1.007	1.029	0.928	
62°	0.955	0.719	0.536	1.150		0.974	0.971	85°	1.000	1.014	0.961	
65°	1.000	0.570	0.375	1.002	1.215	1.000	1.020	70°	1.000	1.000	1.000	
70°	1.047		0.637	0.852	1.057	1.043	1.029	75°	0.999	0.988	1.035	
80°	1.091		0.490	0.706	0.921	1.088	1.058	80°	0.998	0.971	1.071	

CORRECTION FACTORS FOR VARIATION IN AIR FLOW

Air Flow CFM	Total Cooling Capacity	Sensible Capacity	Heat of Reject.	Power Input	Total Heating Capacity	Heat of Absorb.	Power Input
522	0.972	0.930	0.959	0.989	0.994	1.012	1.000
575	0.985	0.954	0.982	0.982	0.984	1.007	1.000
620	0.994	0.986	0.983	0.983	0.994	1.003	1.000
634	1.000	1.000	1.000	1.000	1.000	1.000	1.000
698	1.016	1.035	1.038	1.018	1.016	0.992	1.000
800	1.052	1.072	1.068	1.027	1.022	0.967	1.000

PERFORMANCE CHARTS

804-025

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	Ent. Wat. Temp. °F	Heating Total BTUH	Heat of Absorb. BTUH	Power Input Watts	Leaving Wat. Temp. °F	P.D. Ft. of Water
3.25	65°	26500	17600	33358	2150	65.5	60°	29000	70804	29175	47.7	3.5
3.00	65°	24500	17300	33197	2050	78.0	60°	30600	22635	2475	51.1	7.6
4.75	65°	26200	17200	33026	2020	74.8	60°	31500	23665	2300	53.2	13.1
8.50	65°	26200	17100	32941	1975	72.8	60°	32200	23497	2550	54.5	18.8
3.25	75°	25400	17600	30155	2275	86.4	65°	31000	22553	2675	51.1	3.5
5.00	75°	25200	17500	30223	2175	68.3	65°	32600	23817	2580	50.4	7.6
6.75	75°	26000	17500	33253	2125	84.3	65°	33400	24625	2600	57.7	13.1
8.50	75°	25000	17400	33167	2100	92.8	65°	35000	24326	2600	59.1	18.8
3.25	85°	24600	17500	32677	2425	106.2	70°	30500	24297	2550	55.0	3.5
5.00	85°	25200	17500	33135	2325	38.3	70°	34400	25526	2600	59.6	7.6
6.75	85°	25400	17500	33166	2275	31.8	70°	35000	26056	2600	62.5	13.1
8.50	85°	26000	17500	33279	2250	32.5	70°	35400	26356	2600	63.6	18.8
3.25	90°	24400	17300	32547	2475	110.1	80°	30000	25766	2700	53.5	3.5
5.00	90°	24800	17300	32991	2490	103.2	80°	37000	27612	2750	68.0	7.6
5.75	90°	25200	17500	33921	2350	95.8	80°	37600	28214	2750	71.8	13.1
8.50	90°	26200	17600	33153	2325	92.8	80°	37800	28414	2730	73.2	18.8
3.25	95°	23600	17150	32303	2550	114.9	90°	28500	28944	2600	72.2	3.5
5.00	95°	24400	17150	32762	2450	109.1	90°	29000	29444	2600	75.2	7.6
6.75	95°	24800	17500	32961	2420	104.3	90°	29500	29944	2600	81.1	13.1
8.50	95°	24800	17500	32906	2375	102.7	90°	30000	29773	2650	83.0	18.8

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°	0.835	0.871	1.085	1.150	1.215	1.067	1.287	60°	1.004	1.026	0.932	
64°	0.823	0.719	0.935	1.100	1.215	1.067	1.287	65°	1.001	1.015	0.968	
67°	1.003	0.570	0.785	1.000	1.215	1.067	1.287	70°	1.000	1.000	1.000	
70°	1.070		0.637	0.852	1.067	1.067	1.287	75°	0.998	0.966	1.034	
73°	1.131		0.490	0.705	0.921	1.067	1.287	80°	0.998	0.972	1.069	

CORRECTION FACTORS FOR VARIATION IN AIR FLOW

Air Flow CFM	Total Cooling Capacity	Sensible Capacity	Heat of Reject.	Power Input	Total Heating Capacity	Heat of Absorb.	Power Input
600	0.969	0.860	0.868	0.864	0.969	1.035	1.018
700	0.903	0.861	0.861	0.860	0.903	1.020	1.009
750	0.891	0.861	0.860	0.860	0.891	1.010	1.004
800	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1000	1.035	1.078	1.069	1.040	1.035	0.991	0.980
1150	1.087	1.166	1.066	1.070	1.061	0.991	0.989

804-031

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	Ent. Wat. Temp. °F	Heating Total BTUH	Heat of Absorb. BTUH	Power Input Watts	Leaving Wat. Temp. °F	P.D. Ft. of Water
4.00	65°	30800	21800	39968	2700	65.0	60°	33800	23902	2900	46.0	2.2
6.00	65°	30800	21800	39968	2600	78.2	60°	36800	25361	3000	51.5	4.6
8.00	65°	30800	21400	39503	2550	74.9	60°	36500	26190	3050	53.8	7.8
10.00	65°	30800	21400	39300	2500	72.9	60°	37200	26790	3050	54.5	11.7
4.00	75°	30000	21800	39968	2900	84.9	65°	36200	25661	3090	52.9	2.2
6.00	75°	30400	21800	39956	2850	88.0	65°	37900	27220	3100	55.3	4.6
8.00	75°	30600	21800	39966	2750	65.0	65°	38000	27718	3150	58.1	7.8
10.00	75°	30800	21800	39915	2700	63.0	65°	39000	28248	3150	59.4	11.7
4.00	85°	29200	21800	39780	3100	104.9	70°	38500	27920	3100	66.0	2.2
6.00	85°	29800	21800	39966	2350	98.3	70°	40100	29078	3200	60.3	4.6
8.00	85°	30000	21800	39966	2300	85.0	70°	40500	29578	3200	62.6	7.8
10.00	85°	30200	21800	39927	2850	83.0	70°	41000	29908	3250	64.0	11.7
4.00	90°	28600	21600	39051	3150	109.7	80°	42000	30908	3250	64.5	2.2
6.00	90°	29400	21800	39870	3050	103.3	80°	43000	31737	3300	69.4	4.6
8.00	90°	29600	21800	39859	3000	100.0	80°	43500	32066	3350	72.0	7.8
10.00	90°	29800	21800	39868	2950	98.0	80°	43500	32066	3350	73.6	11.7
4.00	95°	28000	21400	38662	3250	114.5	90°	44000	33166	3350	73.5	2.2
6.00	95°	28800	21600	39531	3150	108.2	90°	45000	33396	3400	78.9	4.6
8.00	95°	29200	21800	39780	3150	104.9	90°	45000	33396	3400	81.5	7.8
10.00	95°	29400	21800	39810	3050	103.0	90°	46000	34396	3400	83.1	11.7

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°	0.835	0.871	1.085	1.150	1.215	1.067	1.287	60°	1.004	1.026	0.932	
64°	0.823	0.719	0.935	1.100	1.215	1.067	1.287	65°	1.001	1.015	0.968	
67°	1.003	0.570	0.785	1.000	1.215	1.067	1.287	70°	1.000	1.000	1.000	
70°	1.066		0.637	0.852	1.067	1.067	1.287	75°	0.998	0.966	1.034	
73°	1.120		0.490	0.705	0.921	1.067	1.287	80°	0.998	0.972	1.069	

CORRECTION FACTORS FOR VARIATION IN AIR FLOW

Air Flow CFM	Total Cooling Capacity	Sensible Capacity	Heat of Reject.	Power Input	Total Heating Capacity	Heat of Absorb.	Power Input
600	0.972	0.920	0.922	0.968	0.972	1.026	1.010
700	0.903	0.861	0.861	0.860	0.903	1.016	1.005
750	0.891	0.861	0.860	0.860	0.891	1.006	1.000
800	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1000	1.035	1.078	1.069	1.040	1.035	0.987	0.985
1150	1.087	1.166	1.066	1.070	1.061	0.970	0.968

PERFORMANCE CHARTS

804-037

COOLING PERFORMANCE TABLE

Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total STUH	Sens-ible BTUH	Heat of Reject. STUH	Power Input Watts	Leaving Wat. Temp. °F
5.00	65°	26420	24200	47154	3150	83.9
7.00	65°	35600	24000	18339	3000	74.4
9.00	65°	38620	24000	48680	2950	74.4
11.00	65°	28620	24000	48480	2900	73.8
5.00	75°	35600	24400	47034	3560	95.8
7.00	75°	38600	24400	19922	3200	88.4
9.00	75°	36200	24200	48931	3150	88.4
11.00	75°	26400	24200	48820	3100	83.5
5.00	85°	34800	24300	46918	3860	105.8
7.00	85°	38000	24400	46804	3400	96.4
9.00	85°	36300	24400	47804	3250	96.8
11.00	85°	26300	24400	47803	3200	93.6
5.00	90°	34000	24200	46457	4050	108.6
7.00	90°	37800	24200	46745	3600	103.4
9.00	90°	35000	24400	46775	3450	103.4
11.00	90°	25200	24400	46804	3400	98.8
5.00	95°	33400	23800	46199	4750	113.5
7.00	95°	34200	24200	46487	3650	109.3
9.00	95°	34600	24200	46718	3550	105.4
11.00	95°	24800	24200	46743	3500	103.4

HEATING PERFORMANCE TABLE

Ent. Wat. Temp. °F	Heating Total STUH	Heat of Absorb. STUH	Power Input Watts	Leaving Wat. Temp. °F	P.Q. Ft. of Water
60°	35600	24672	3250	50.1	3.8
61°	37420	25157	3300	52.5	7.2
62°	38500	25656	3350	54.0	11.0
63°	39000	25866	3350	55.0	16.2
64°	40000	26566	3350	57.0	3.9
65°	41000	27066	3400	57.0	7.2
66°	42000	28226	3450	58.6	11.3
67°	43000	29226	3450	59.7	16.2
70°	40500	28725	3450	58.5	3.9
70°	41500	29545	3400	51.6	7.2
70°	42500	30384	3350	50.2	11.3
70°	43000	30584	3350	64.4	16.2
80°	41200	31715	3200	67.0	3.9
80°	42000	32545	3200	75.7	7.2
80°	43000	33272	3200	73.7	11.3
80°	46000	33372	3200	73.9	16.2
90°	47000	34201	3250	75.3	3.9
90°	47500	34701	3250	82.1	7.2
90°	48000	35001	3250	82.2	11.3
90°	48000	35031	3300	83.5	16.2

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°	0.915	0.871	1.286			0.960	0.988	60°	1.001	1.011	0.970	
64°	0.966	0.719	1.295	1.150		1.053	0.984	63°	1.051	1.065	0.939	
67°	1.000	0.570	1.288	1.000	1.215	1.020	1.000	70°	1.000	1.000	1.000	
70°	1.046		1.267	0.852	1.067	1.040	1.015	80°	1.040	1.040	1.011	
73°	1.060		1.190	0.703	0.921	1.023	1.032	90°	0.958	0.959	1.021	

CORRECTION FACTORS FOR VARIATION IN AIR FLOW

Air Flow CFM	Total Cooling Capacity	Sensible Capacity	Heat of Reject.	Power Input	Total Heating Capacity	Heat of Absorb.	Power Input
1000	0.972	0.938	0.969	0.988	0.977	1.000	0.992
1100	0.968	0.955	0.951	0.981	0.983	1.000	0.985
1175	0.982	0.991	0.991	0.990	0.992	1.000	0.999
1250	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1400	1.017	1.037	1.019	1.018	1.017	1.000	1.008
1500	1.026	1.062	1.001	1.002	1.026	1.000	1.008

804-043

COOLING PERFORMANCE TABLE

Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total BTUH	Sens-ible BTUH	Heat of Reject. BTUH	Power Input Watts	Leaving Wat. Temp. °F
5.00	65°	42300	31400	55640	2850	87.3
8.00	65°	42000	31000	52457	2850	74.9
11.00	65°	43000	30900	55116	3550	75.0
14.00	65°	43000	35600	51945	3500	72.8
5.00	75°	42000	31400	55385	4100	97.1
8.00	75°	42500	31400	55011	2900	89.0
11.00	75°	42000	31200	55808	3600	85.2
14.00	75°	42000	31200	55788	3750	83.0
5.00	85°	42600	31200	55947	4350	107.2
8.00	85°	41800	31400	55664	4150	96.8
11.00	85°	42000	31400	55829	4050	95.1
14.00	85°	42000	31400	55690	4000	93.0
5.00	90°	39400	30800	54698	4450	111.5
8.00	90°	41000	31200	55225	4250	103.3
11.00	90°	41500	31400	55854	4150	100.1
14.00	90°	41500	31400	55483	4100	97.9
5.00	95°	38900	30400	54200	4600	116.7
8.00	95°	40500	31000	55017	4400	108.5
11.00	95°	41200	31200	55876	4300	105.1
14.00	95°	41200	31200	55405	4250	102.9

HEATING PERFORMANCE TABLE

Ent. Wat. Temp. °F	Heating Total BTUH	Heat of Absorb. BTUH	Power Input Watts	Leaving Wat. Temp. °F	P.Q. Ft. of Water
60°	46500	33019	3950	46.0	4.0
60°	50500	33836	4100	51.0	8.4
60°	51500	37165	4200	53.2	16.6
60°	52500	37995	4250	54.6	23.6
65°	50200	35606	4150	50.7	4.0
65°	52000	38406	4200	56.4	11.4
65°	54500	39583	4350	57.8	16.6
65°	55000	40132	4350	59.5	23.6
70°	55500	40024	4300	54.5	4.0
70°	58000	40883	4400	58.5	9.4
70°	57000	41312	4450	62.4	16.6
70°	57500	42112	4500	64.2	23.6
80°	58500	43142	4500	62.7	4.0
80°	60000	44300	4600	68.9	9.4
80°	61000	45375	4600	71.8	15.5
80°	61500	45620	4650	70.5	23.6
90°	62000	45120	4650	71.5	4.0
90°	63500	47480	4700	79.1	9.4
90°	64000	47788	4750	81.3	15.5
90°	64500	48228	4750	80.1	23.6

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°	0.862	0.871	1.025			0.980	0.981	60°	1.004	1.022	0.953	
64°	0.927	0.718	0.935	1.150		0.950	0.991	63°	1.022	1.011	0.976	
67°	1.000	0.570	1.288	1.000	1.215	1.020	1.000	70°	1.000	1.000	1.000	
70°	1.050		1.267	0.852	1.067	1.040	1.015	80°	1.040	1.040	1.011	
73°	1.067		1.190	0.703	0.921	1.023	1.032	90°	0.958	0.950	1.021	

CORRECTION FACTORS FOR VARIATION IN AIR FLOW

Air Flow CFM	Total Cooling Capacity	Sensible Capacity	Heat of Reject.	Power Input	Total Heating Capacity	Heat of Absorb.	Power Input
1150	0.971	0.936	0.969	0.987	0.971	1.019	1.004
1250	0.981	0.967	0.979	0.992	0.981	1.042	1.003
1350	0.990	0.973	0.988	0.998	0.990	1.068	1.001
1450	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1550	1.010	1.021	1.011	1.011	1.010	0.994	0.996
1620	1.016	1.056	1.016	1.019	1.016	0.990	0.998

PERFORMANCE CHARTS

804-048

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	Ent. Temp. °F	Heating Total BTUH	Heat of Absorb. BTUH	Power Input Watts	Leaving Wat. Temp. °F	F.D. Ft. of Water
6.00	55°	25000	37200	84359	4500	88.5	80°	45000	34165	4200	48.6	4.2
9.25	85°	43000	38800	83876	4300	78.8	50°	50000	37150	4050	52.0	8.0
12.50	95°	48500	35600	83835	4200	75.2	80°	55000	39483	4400	53.6	16.9
15.75	95°	48500	35600	83835	4200	75.2	80°	60000	38212	4450	55.1	24.1
6.00	75°	45000	37200	84392	4900	96.4	80°	45000	37150	4350	52.6	4.2
9.25	75°	45000	37200	84392	4900	96.5	55°	55000	39312	4450	56.1	9.0
12.50	75°	45000	37200	84392	4900	96.5	55°	56000	40471	4550	58.5	15.9
15.75	75°	45000	37200	84392	4900	96.5	55°	57000	41471	4650	61.7	24.1
6.00	85°	45000	37200	84392	5100	101.3	70°	45000	40147	4500	56.6	4.2
9.25	85°	45000	37200	84392	5100	101.3	70°	50000	42300	4650	59.9	9.0
12.50	85°	45000	37200	84392	5100	101.3	70°	55000	43192	4650	63.1	15.9
15.75	85°	45000	37200	84392	5100	101.3	70°	56000	43488	4700	64.6	24.1
6.00	90°	45000	36600	83943	5200	111.3	80°	45000	44498	4700	61.7	4.2
9.25	90°	45000	36600	83943	5000	103.0	80°	50000	48118	4800	70.0	9.0
12.50	90°	45000	36600	83943	4800	100.3	80°	55000	48547	4850	72.6	15.9
15.75	90°	45000	36600	83943	4850	99.1	80°	60000	48947	4850	74.6	24.1
6.00	95°	44500	36200	82900	5400	116.0	90°	44500	47798	4900	74.1	4.2
9.25	95°	44500	36200	82900	5150	108.7	90°	49000	49108	4950	79.4	9.0
12.50	95°	44500	36200	82900	5000	105.2	90°	56000	49108	4950	82.7	15.9
15.75	95°	44500	36200	82900	5050	103.1	90°	60000	50108	4950	83.6	24.1

CORRECTION FACTORS FOR VARIATION IN ENTERING AIR TEMPERATURE

Ent. Air °F WS	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°	0.895	0.871	1.063			0.907	0.937	60°	1.001	1.019	0.954	
64°	0.957	0.718	1.185	1.150		0.955	0.969	65°	1.001	1.009	0.977	
67°	1.000	0.570	0.755	1.000	1.215	1.000	1.000	70°	1.000	1.000	1.000	
70°	1.045		0.627	0.852	1.067	1.040	1.040	75°	1.000	0.981	1.025	
73°	1.088		0.480	0.706	0.921	1.086	1.063	80°	1.000	0.982	1.047	

CORRECTION FACTORS FOR VARIATION IN AIR FLOW

Air Flow CFM	Total Cooling Capacity	Sensible Capacity	Heat of Reject.	Power Input	Total Heating Capacity	Heat of Absorb.	Power Input
1550	0.998	0.975	0.966	0.966	0.966	0.984	
1625	1.004	0.996	0.983	0.983	0.984	0.997	
1700	1.000	1.000	1.000	1.000	1.000	1.000	
1800	1.018	1.008	1.018	1.019	1.018	1.008	
2100	1.058	1.073	1.068	1.040	1.035	1.018	

804-060

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	Ent. Temp. °F	Heating Total BTUH	Heat of Absorb. BTUH	Power Input Watts	Leaving Wat. Temp. °F	F.D. Ft. of Water
6.00	60°	53000	45500	32795	5000	80.7	80°	55000	39435	5000	50.1	4.1
12.50	65°	53500	48000	32777	5000	78.7	60°	59000	41752	5400	53.0	8.6
15.50	65°	53500	48000	32777	5400	75.2	50°	61000	43411	5500	54.6	14.0
20.00	65°	53500	48000	32777	5000	73.7	80°	65000	44111	5500	55.6	21.4
6.00	70°	52000	47000	32815	5100	81.7	80°	50000	42752	5000	54.3	4.1
12.50	75°	53000	47000	33157	5000	88.9	55°	55000	45076	5400	57.5	8.6
15.50	75°	53000	47000	33157	5700	85.3	55°	60000	46929	5600	59.2	14.0
20.00	75°	53000	47000	33157	5700	85.3	55°	65000	47229	5600	61.3	21.4
6.00	80°	50000	46500	32185	5500	100.5	70°	61000	45576	5400	58.0	4.1
12.00	85°	61500	47000	32811	5200	96.6	70°	67000	46229	5400	62.3	8.6
16.00	85°	62000	47000	32819	5100	95.4	70°	70000	46887	5500	63.9	14.0
20.00	85°	52000	47000	32178	4800	83.7	70°	75000	45887	5500	65.0	21.4
6.00	90°	50000	46000	31627	6200	110.8	80°	70000	50545	5700	67.4	4.1
12.00	90°	60500	46000	32343	6400	103.7	80°	75000	52205	5800	71.3	8.6
16.00	90°	61000	47000	32502	6000	100.0	80°	79000	53016	5800	73.5	14.0
20.00	90°	51500	47000	32581	6000	94.3	80°	80000	53205	5800	74.7	21.4
6.00	95°	37500	45500	31650	6800	119.3	90°	70000	54860	5800	76.5	4.1
12.00	95°	39500	46000	32076	6600	128.7	90°	75000	55860	5900	80.7	8.6
15.00	95°	40000	46000	32165	6500	125.0	90°	80000	56522	6000	83.1	14.0
20.00	95°	40500	46500	32043	6400	123.7	90°	85000	56522	6000	84.3	21.4

CORRECTION FACTORS FOR VARIATION IN ENTERING AIR TEMPERATURE

Ent. Air °F WS	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°	0.897	0.871	1.056			0.912	0.917	60°	1.000	1.001	0.952	
64°	0.947	0.718	0.935	1.150		0.945	0.975	65°	1.001	1.011	0.978	
67°	1.000	0.572	0.785	1.000	1.215	1.000	1.000	70°	1.000	1.000	1.000	
70°	1.058		0.637	0.852	1.067	1.040	1.040	75°	1.000	0.989	1.024	
73°	1.120		0.490	0.706	0.921	1.086	1.063	80°	1.000	0.998	1.046	

CORRECTION FACTORS FOR VARIATION IN AIR FLOW

Air Flow CFM	Total Cooling Capacity	Sensible Capacity	Heat of Reject.	Power Input	Total Heating Capacity	Heat of Absorb.	Power Input
1800	0.988	0.969	0.984	0.964	0.980	0.988	
1900	0.993	0.985	0.992	0.992	0.989	0.998	
2000	1.000	1.000	1.000	1.000	1.000	1.000	
2100	1.007	1.016	1.008	1.008	1.007	1.005	
2200	1.014	1.021	1.018	1.018	1.016	1.005	

PERFORMANCE CHARTS

804-096

COOLING PERFORMANCE TABLE							HEATING PERFORMANCE TABLE					F.D. Ft. of Water
Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total BTUH	Sens. BTUH	Heat of Rejct. BTUH	Power Input Wats	Leaving Wat. Temp. °F	Ent. Wat. Temp. °F	Heating Total BTUH	Heat of Absorb. BTUH	Power Input Wats	Leaving Wat. Temp. °F	
12.00	65°	92000	75000	128376	8500	56.4	50°	92000	64000	8200	40.3	4.7
18.00	65°	138000	112500	192564	12750	79.1	50°	138000	96000	12300	52.3	6.7
24.00	65°	184000	147000	256752	17000	101.8	50°	184000	128000	16400	64.3	9.7
30.00	65°	230000	193000	320940	21250	124.5	50°	230000	170000	21500	86.3	12.7
12.00	75°	95000	75000	129424	8600	56.4	60°	100000	69000	8800	43.3	4.7
18.00	75°	142500	112500	195572	12900	81.2	60°	140000	94000	12400	56.3	6.7
24.00	75°	190000	147000	256720	17100	103.9	60°	180000	126000	16500	69.3	9.7
30.00	75°	237500	193000	317868	21300	126.6	60°	220000	168000	21600	92.3	12.7
12.00	85°	98000	74000	130472	8700	56.2	70°	105000	74000	9000	46.3	4.7
18.00	85°	145500	110000	196620	13000	81.2	70°	140000	98000	12500	59.3	6.7
24.00	85°	193000	145000	257768	17200	103.9	70°	180000	130000	16600	72.3	9.7
30.00	85°	240500	190000	318916	21400	126.6	70°	220000	172000	21700	95.3	12.7
12.00	95°	101000	73000	131520	8800	56.0	80°	110000	78000	9200	49.3	4.7
18.00	95°	148500	110000	197668	13100	81.0	80°	140000	102000	12600	62.3	6.7
24.00	95°	196000	145000	258816	17300	103.7	80°	180000	134000	16700	75.3	9.7
30.00	95°	243500	190000	319964	21500	126.4	80°	220000	176000	21800	98.3	12.7

CORRECTION FACTORS FOR VARIATION IN ENTERING AIR TEMPERATURE

Ent. Air °F WB	Total Cooling Capacity	Sensible Capacity Entering Air Dry Bulb					Heat of Rejct.	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°	0.896	0.871	1.168	0.945	0.973	0.907	0.927	80°	1.000	1.000	0.951	
64°	0.931	0.719	1.038	1.035	1.001	1.003	0.969	85°	1.000	1.000	0.977	
67°	1.000	0.570	1.000	1.000	1.000	1.000	1.000	90°	1.000	1.000	1.000	
70°	1.048	0.420	0.957	0.952	0.967	1.000	1.042	95°	1.000	0.981	1.023	
73°	1.08	0.270	0.900	0.706	0.921	1.000	1.075	100°	1.000	0.951	1.047	

CORRECTION FACTORS FOR VARIATION IN AIR FLOW

Air Flow CFM	Total Cooling Capacity	Sensible Capacity	Heat of Rejct.	Power Input	Total Heating Capacity	Heat of Absorb.	Power Input
2800	0.975	0.945	0.973	0.978	0.975	0.988	0.988
3000	0.984	0.984	0.982	0.981	0.984	0.985	0.982
3200	0.992	0.992	0.991	0.991	0.990	0.988	0.988
3400	1.000	1.000	1.000	1.000	1.000	1.000	1.000
3600	1.016	1.008	1.018	1.019	1.010	1.005	1.008
4000	1.002	1.075	1.087	1.098	1.058	1.010	1.010

804-120

COOLING PERFORMANCE TABLE							HEATING PERFORMANCE TABLE					F.D. Ft. of Water
Water Flow GPM	Ent. Wat. Temp. °F	Cooling Total BTUH	Sens. BTUH	Heat of Rejct. BTUH	Power Input Wats	Leaving Wat. Temp. °F	Ent. Wat. Temp. °F	Heating Total BTUH	Heat of Absorb. BTUH	Power Input Wats	Leaving Wat. Temp. °F	
16.00	65°	120000	90000	158551	11600	87.1	50°	120000	78000	10000	48.3	4.0
23.00	65°	180000	135000	237826	17400	120.6	50°	180000	117000	15000	62.3	6.6
30.00	65°	240000	180000	317101	23200	154.1	50°	240000	156000	20000	86.3	9.2
16.00	75°	123000	94000	160327	11800	87.1	60°	125000	84000	10200	51.3	4.9
23.00	75°	184500	141000	241273	17400	120.6	60°	180000	124500	15200	67.3	6.6
30.00	75°	246000	182000	322220	23200	154.1	60°	240000	163500	20200	91.3	9.2
16.00	85°	126000	93000	164100	12100	101.0	70°	125000	90000	11000	54.3	4.9
23.00	85°	189000	139000	246650	17400	120.6	70°	180000	129000	15200	71.3	6.6
30.00	85°	252000	184000	328200	23200	154.1	70°	240000	168000	20200	98.3	9.2
16.00	95°	130000	97000	170734	12400	111.7	80°	140000	102000	11700	66.3	4.0
23.00	95°	195000	145000	252285	17400	120.6	80°	190000	141000	15200	83.3	6.6
30.00	95°	260000	190000	333836	23200	154.1	80°	250000	180000	20200	110.3	9.2
16.00	95°	140000	100000	176195	12500	115.3	90°	150000	108000	12100	78.3	4.0
23.00	95°	210000	150000	261746	17400	120.6	90°	210000	156000	15200	95.3	6.6
30.00	95°	280000	200000	347297	23200	154.1	90°	280000	204000	20200	122.3	9.2

CORRECTION FACTORS FOR VARIATION IN ENTERING AIR TEMPERATURE

Ent. Air °F WB	Total Cooling Capacity	Sensible Capacity Entering Air Dry Bulb				Heat of Rejct.	Power Input	Ent. Air °F DB	Total Heating Capacity	Heat of Absorb.	Power Input
		70°DB	75°DB	80°DB	85°DB						
61°	0.887	0.871	1.086	0.912	0.922	0.927	80°	1.000	1.000	0.957	
64°	0.947	0.719	0.935	1.100	0.968	0.979	85°	1.000	1.000	0.976	
67°	1.020	0.570	0.986	1.000	1.000	1.000	90°	1.000	1.000	1.000	
70°	1.058	0.420	0.937	0.952	1.000	1.049	95°	1.000	0.989	1.024	
73°	1.120	0.270	0.880	0.706	0.921	1.120	1.000	1.000	0.976	1.048	

CORRECTION FACTORS FOR VARIATION IN AIR FLOW

Air Flow CFM	Total Cooling Capacity	Sensible Capacity	Heat of Rejct.	Power Input	Total Heating Capacity	Heat of Absorb.	Power Input
2400	0.979	0.954	0.977	0.978	0.970	0.989	0.980
2700	0.990	0.977	0.988	0.988	0.980	0.990	0.986
3000	0.997	0.994	0.997	0.997	0.990	0.990	0.990
3300	1.000	1.000	1.000	1.000	1.000	1.000	1.000
3600	1.007	1.008	1.008	1.008	1.000	1.000	1.000
4000	1.014	1.031	1.013	1.016	1.014	1.000	1.000

BLOWER PERFORMANCE

With wet rot and clean filter

BLOWER PERFORMANCE CHART

Model Numbers	Fan Speed	CFM at External Static Pressure I.W.G.									Minimum CFM
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
804-009	High	366	332	306	254						240
	Medium	330	306	280	250						
	Low	300	280	260	240						
804-012	High	450	410	406	384	360				320	
	Medium	430	412	392	372	350	325				
	Low	410	395	378	356	334	320				
804-015	High	560	545	528	507	486				460	
	Medium	540	528	510	492	473					
	Low	516	507	493	478	460					
804-019	High	800	760	715	665	600				520	
	Medium	700	675	635	600	550					
	Low	650	625	600	560	520					
804-025	High	1150	1070	970	895	790				620	
	Medium	1020	945	860	775	730					
	Low	890	825	760	690	620					
804-031	High		1165	1100	1035	955	880			800	
	Medium	1110	1055	990	930	865	805				
	Low	1020	965	910	850						
804-037	High	1560	1420	1340	1250	1170	1080			1000	
	Medium	1360	1310	1250	1190	1110	1000				
	Low	1290	1240	1190	1120	1030					
804-043	High	1620	1545	1455	1375	1275				1150	
	Medium	1475	1415	1340	1270	1190					
	Low	1385	1335	1275	1205						
804-048	High	2130	2050	1960	1860	1750	1630			1400	
	Medium	1980	1900	1810	1720	1620	1520				
	Low	1810	1730	1650	1570	1490	1400				
804-060	High	2200	2140	2080	2010	1940	1860			1700	
	Medium	2110	2050	2000	1940	1870	1800				
	Low	2060	2000	1940	1880	1820	1760	1700			
804-096	Closed			4200	4040	3880	3700	3500	3270	3040	2800
	1 Turn		4150	4000	3840	3650	3450	3220	2980		
	2 Turns	4100	3960	3800	3600	3400	3200				
	3 Turns	3940	3770	3580	3380	3140	2890				
	4 Turns	3760	3590	3370	3030	2800					
	5 Turns	3540	3340	3090	2800						
804-120	Closed				4360	4400	4230	4035	3850	3660	3400
	1 Turn				4060	4160	3990	3830	3680		
	2 Turns		4190	4240	4060	3900	3740	3590			
	3 Turns		3980	4010	3860	3710	3560	3400			
	4 Turns	4150	3980	3820	3670	3520					
	5 Turns	3920	3770	3610	3400						

CAUTION: Unit should not be operated at CFM below minimum specified above.

208 VOLT CFM CORRECTION FACTORS FOR THE FOLLOWING MODELS ONLY

Model Numbers	High Speed	Medium Speed	Low Speed
804-009	.931	.914	.892
804-025	.958	.899	.854
804-037	.965	.935	.905
804-043	.971	.937	.927
804-048	.980	.945	.918
804-060	.975	.944	.912

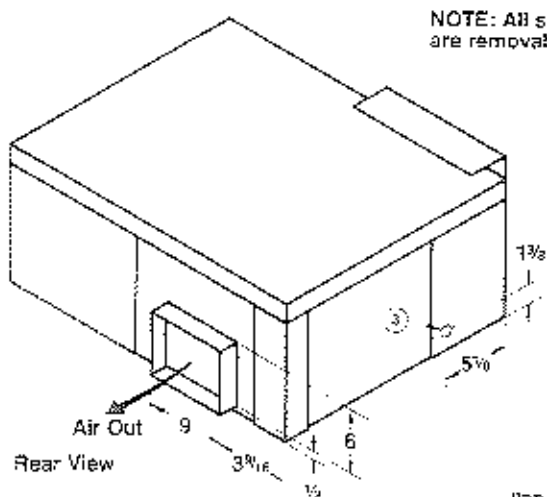
Units should not be operated below minimum CFM in Blower Performance Chart.

Air flow data is based on rated voltage and the most restrictive unit air flow arrangement. Duct system design should allow balancing for actual job requirements.

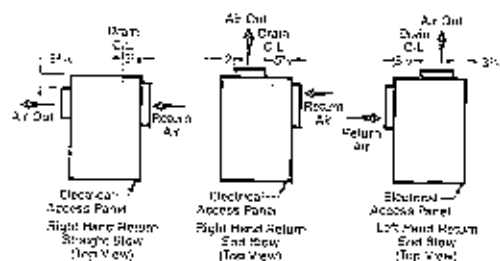
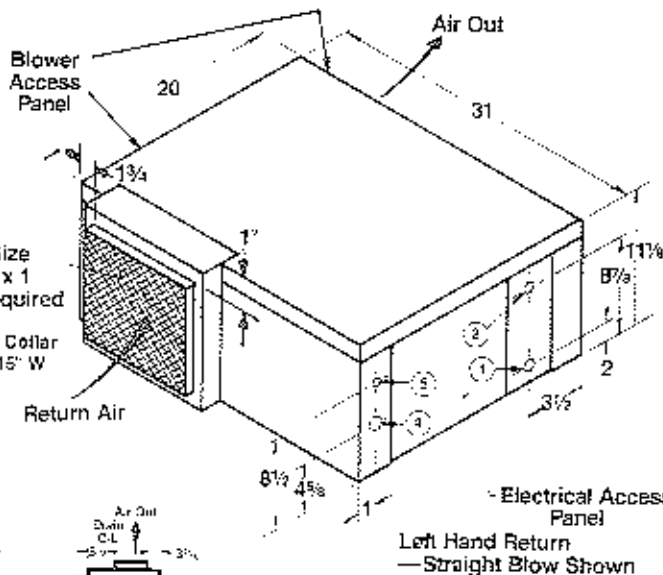
DIMENSIONS

804

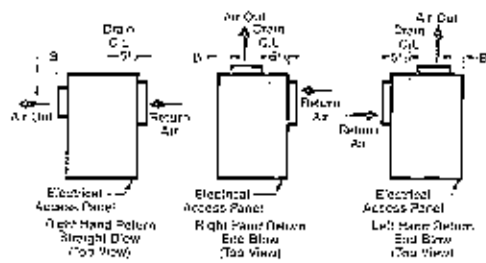
804-009 & 012



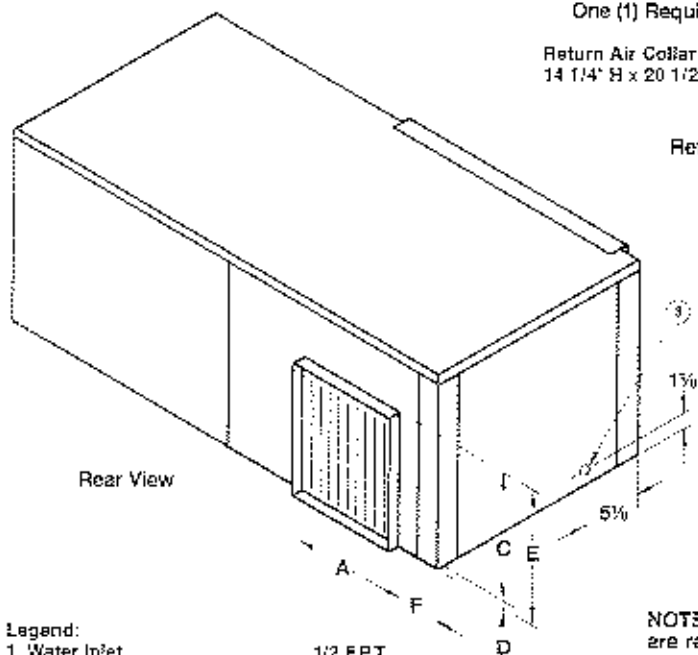
NOTE: All side panels are removable.



- Legend:
- 1. Water Inlet 1/2 F.P.T.
 - 2. Water Outlet 1/2 F.P.T.
 - 3. Condensate Drain 3/4 F.P.T.
 - 4. High Voltage Access 7/8, 1-1/8 K.O.
 - 5. Low Voltage Access 1/2 Dia.

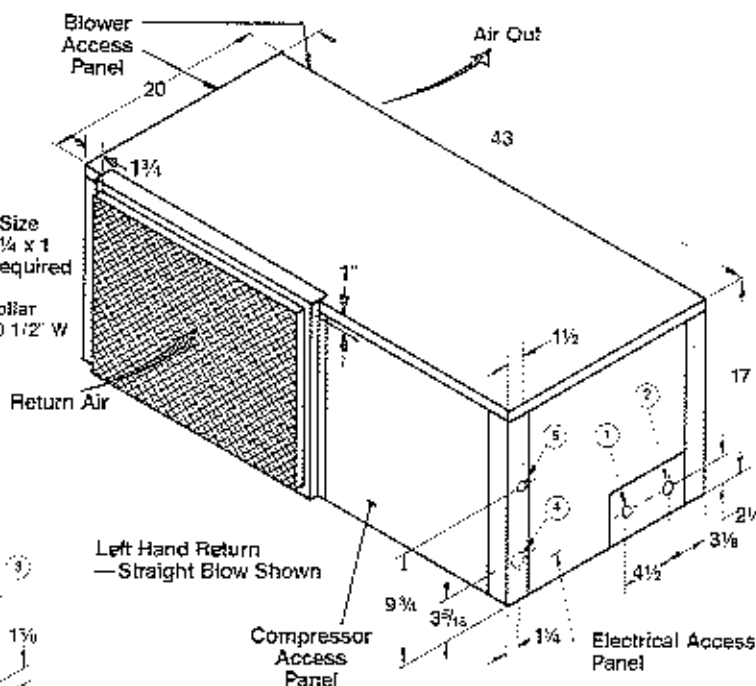


804-015 & 019



Filter Size
16 x 22 1/4 x 1
One (1) Required

Return Air Collar
14 1/4" H x 20 1/2" W



- Legend:
- 1. Water Inlet 1/2 F.P.T.
 - 2. Water Outlet 1/2 F.P.T.
 - 3. Condensate Drain 3/4 F.P.T.
 - 4. High Voltage Access 7/8, 1-1/8 K.O.
 - 5. Low Voltage Access 1/2 Dia.

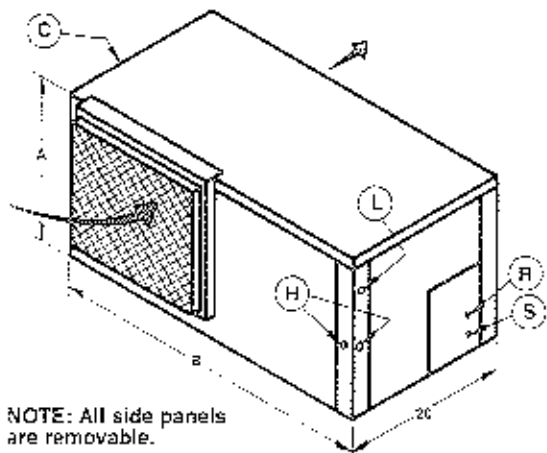
NOTE: All side panels are removable.

	015	019
A	10	9
B	3 5/8	3 1/8
C	7 1/2	12 1/2
D	11 1/4	0
E	8 3/4	12 1/2
F	6 3/8	7 7/8

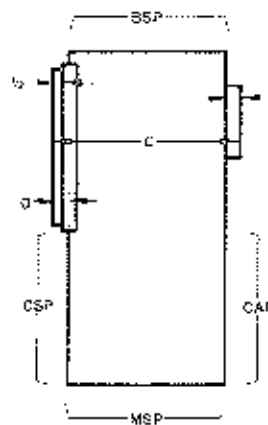
DIMENSIONS

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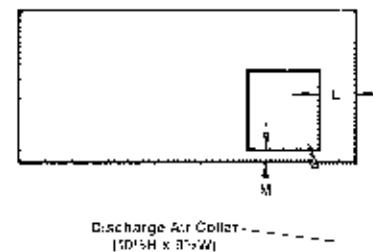
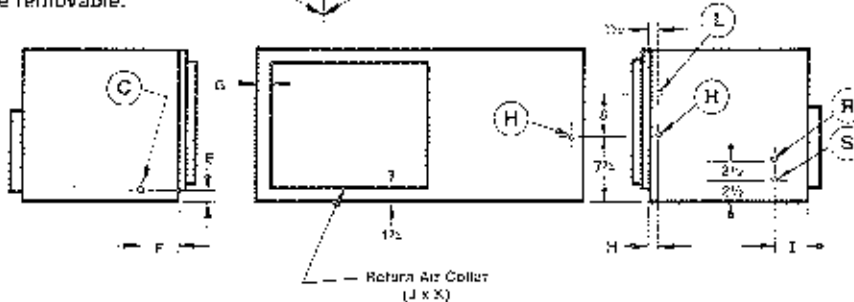
Left Hand Return—Straight Blow



NOTE: All side panels are removable.

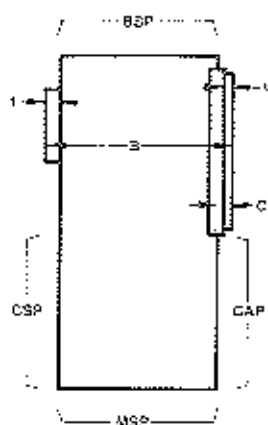
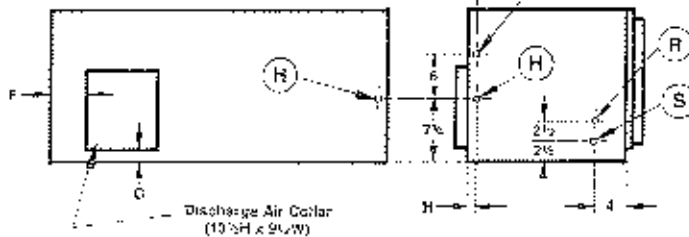
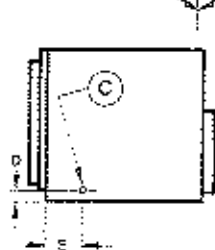
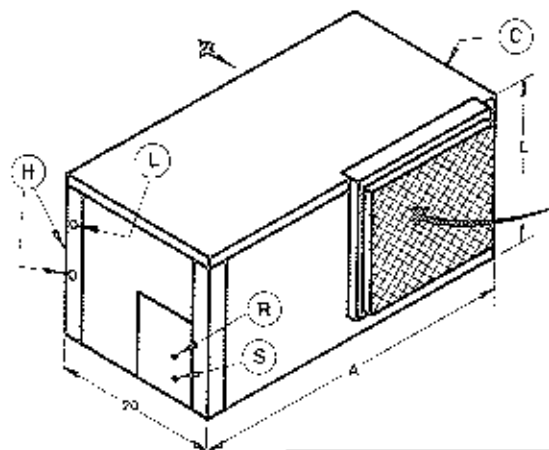


	025	037/043
A	19	21
B	43	47
C	22 $\frac{3}{4}$	22 $\frac{1}{2}$
D	1 $\frac{3}{4}$	1 $\frac{1}{2}$
E	1 $\frac{1}{2}$	1 $\frac{1}{4}$
F	5 $\frac{1}{8}$	5
G	1 $\frac{3}{4}$	2 $\frac{1}{4}$
H	1 $\frac{1}{4}$	1
I	4 $\frac{1}{8}$	5 $\frac{1}{4}$
J	16 $\frac{1}{4}$ H	18 $\frac{3}{4}$ H
K	20 $\frac{1}{2}$ W	23W
L	7 $\frac{3}{8}$	8 $\frac{1}{8}$
M	1 $\frac{1}{16}$	2 $\frac{1}{16}$

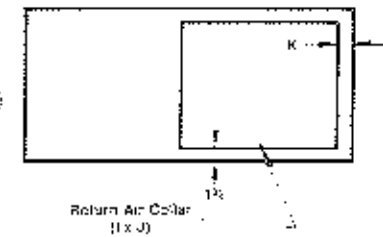


804-025/037/043

Right Hand Return—Straight Blow



	025	037/43
A	43	47
B	22 $\frac{3}{4}$	22 $\frac{1}{2}$
C	1 $\frac{3}{4}$	1 $\frac{1}{2}$
D	1 $\frac{1}{8}$	1 $\frac{1}{4}$
E	5 $\frac{1}{8}$	5
F	2 $\frac{3}{8}$	4
G	1 $\frac{1}{16}$	2 $\frac{1}{16}$
H	1 $\frac{1}{4}$	1
I	16 $\frac{1}{4}$ H	18 $\frac{3}{4}$ H
J	20 $\frac{1}{2}$ W	23W
K	1 $\frac{3}{4}$	2 $\frac{3}{4}$
L	19	21



NOTE: All side panels are removable.

Service Access

MSP—Main Service Panel—High & Low Voltage Connection, Controls.

Service Trouble Shooting, Compressor/Condenser Replacement.

BSP—Blower Service Panel—Access to Blower Assembly; Condensate Pan & Air Coil Inspection.

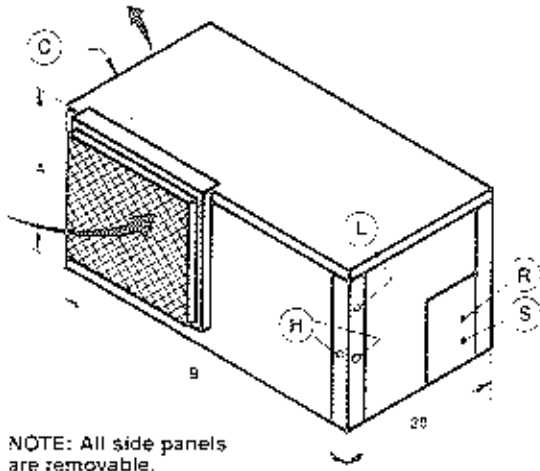
CSP—Compressor Service Panel—Facilitates Compressor Replacement.

CAP—Condenser Access Panel—Facilitates Condenser Coil Replacement.

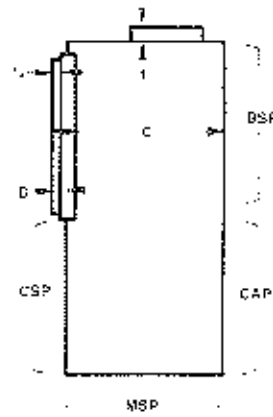
DIMENSIONS

804

Left Hand Return—End Blow

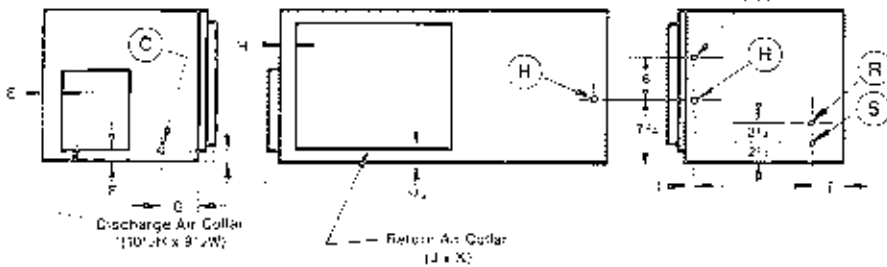


NOTE: All side panels are removable.

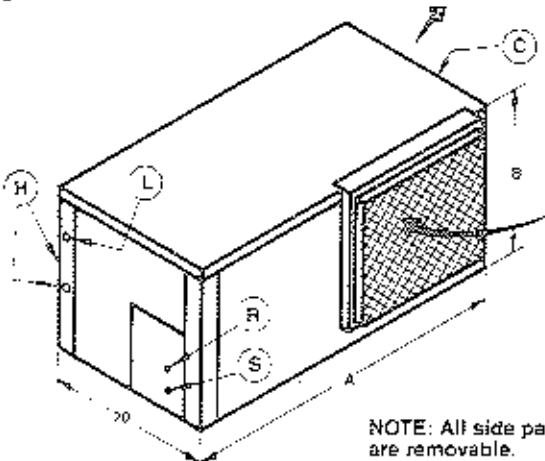


	025/031	037/043
A	19	21
B	43	47
C	21 $\frac{3}{4}$	21 $\frac{1}{2}$
D	1 $\frac{3}{4}$	1 $\frac{1}{2}$
E	2 $\frac{3}{8}$	4
F	11 $\frac{1}{16}$	2 $\frac{7}{16}$
G	5 $\frac{1}{8}$	5
H	1 $\frac{3}{8}$	2 $\frac{1}{4}$
I	4 $\frac{3}{8}$	5 $\frac{1}{4}$
J	16 $\frac{1}{4}$ H	18 $\frac{1}{4}$ H
K	20 $\frac{1}{2}$ W	23W

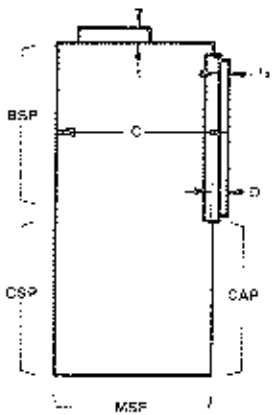
*031—11 $\frac{1}{2}$ H x 8 $\frac{1}{2}$ W



Right Hand Return—End Blow

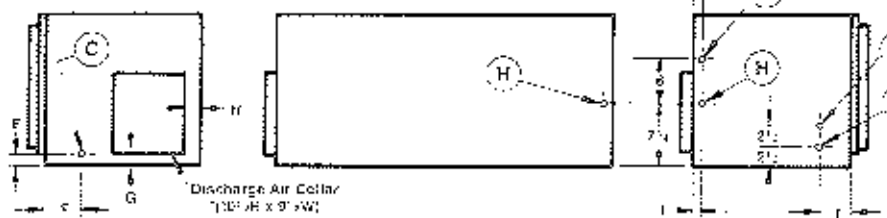


NOTE: All side panels are removable.



	025/031	037/043
A	43	47
B	19	21
C	21 $\frac{3}{4}$	21 $\frac{1}{2}$
D	1 $\frac{3}{4}$	1 $\frac{1}{2}$
E	1 $\frac{1}{2}$	1 $\frac{1}{4}$
F	5 $\frac{1}{8}$	5
G	11 $\frac{1}{16}$	2 $\frac{7}{16}$
H	2 $\frac{3}{8}$	4
I	4 $\frac{3}{8}$	5 $\frac{1}{4}$
J	1 $\frac{3}{4}$	2 $\frac{1}{4}$
K	16 $\frac{1}{4}$ H	18 $\frac{1}{4}$ H
L	20 $\frac{1}{2}$ W	23W

*031—11 $\frac{1}{2}$ H x 8 $\frac{1}{2}$ W



Return Air Collar
(K x L)

Condensate Trapping: Differential Trapping Required.

Filter Size: 025 and 031 Models: 18 x 22 $\frac{3}{4}$ x 1" (1 Rec.) 037 and 043 Models: 20 x 25 x 1" (1 Rec.)

Filter Access: Left and Right on Unit By Removing Side Cap

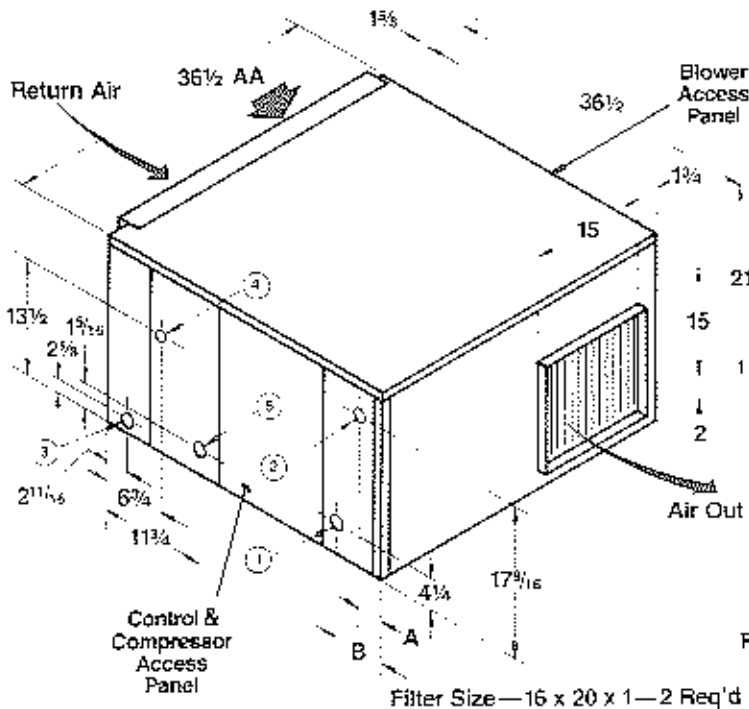
- ① — 1/2 FPT — Supply & Return Water Connections
- ② — 1/2 FPT — Condensate Connection
- ③ — H: Voltage — 1/2 — 3/4 — Combination Knockout (Optional Location On Side)
- ④ — 1/2 Voltage — 1/2 Dia.

804-025/031/037/043

DIMENSIONS

804

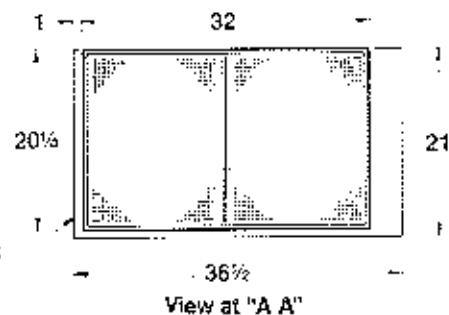
804-048 & 060



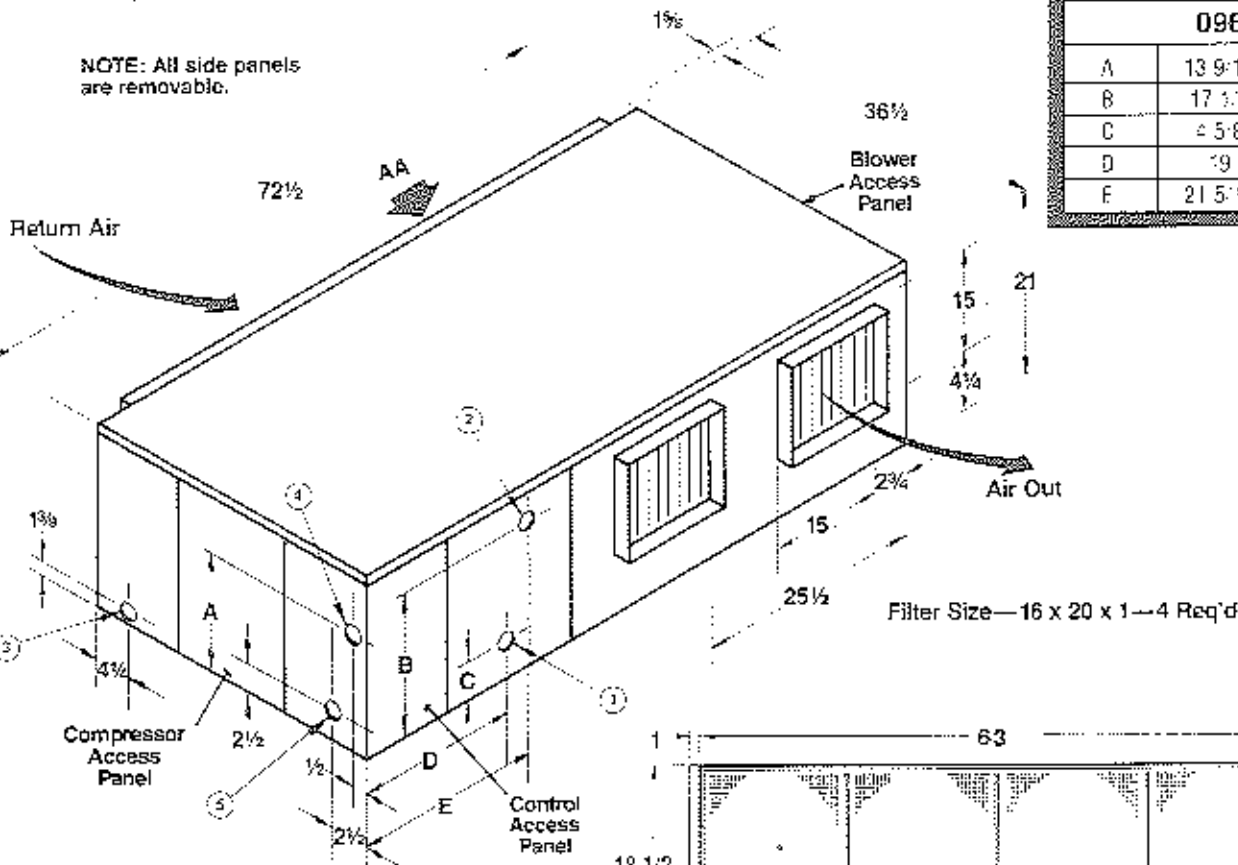
	048	060
A	3	4 1/8
B	6	5 3/8

NOTE: All side panels are removable.

- Legend:
- 1. Water Inlet 1 F.P.T.
 - 2. Water Outlet 1 F.P.T.
 - 3. Condensate Drain 3/4 F.P.T.
 - 4. Low Voltage Access 1/2 Dia.
 - 5. High Voltage Access 7/8 Dia.



804-096 & 120

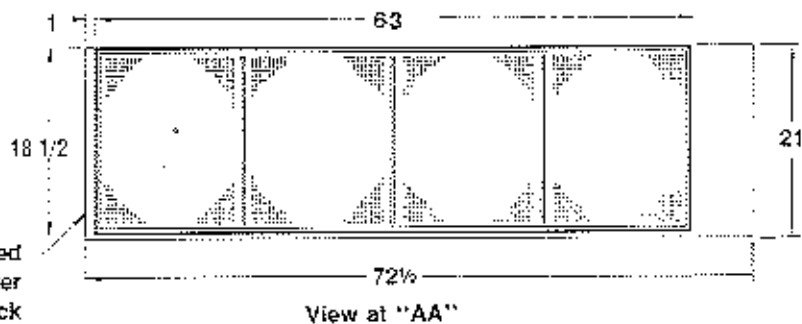


	096	120
A	13 9/16	13 13/16
B	17 1/2	16 3/16
C	4 5/8	4 1/8
D	9	15 1/2
E	21 5/16	20 5/8

NOTE: All side panels are removable.

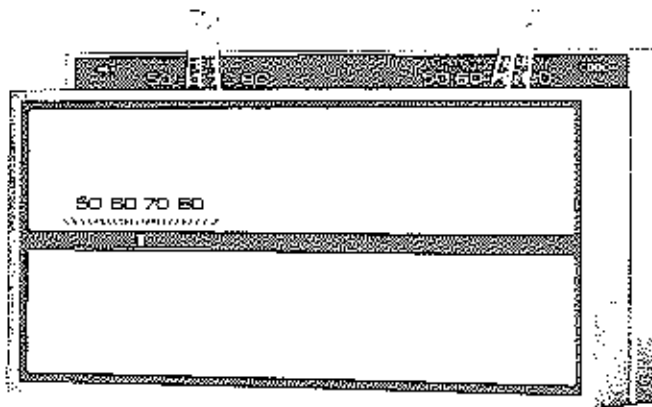
- Legend:
- *1. Water Inlet 1-1/4 F.P.T.
 - *2. Water Outlet 1-1/4 F.P.T.
 - *3. Condensate Drain 3/4 F.P.T.
 - 4. Low Voltage Access 1/2 Dia.
 - 5. High Voltage Access 1-3/8 K.O.
- *804-096 Model 1 F.P.T.

Flanged Filter Rack

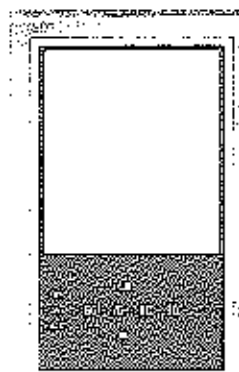


OPTIONS

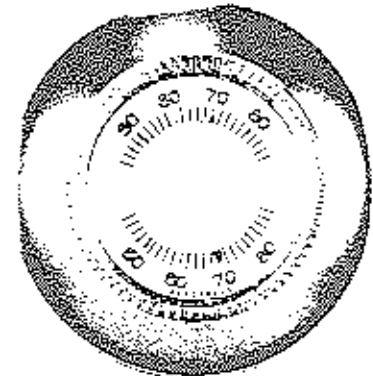
MANUAL AND AUTO CHANGEOVER THERMOSTATS



Thermostat	Subbase	Description
*AT5854	AG5826	ACC — Single Stage
*AT5411	AG5224	MCO — Two Stage
*AT5411	AG5523	ACC — Two Stage



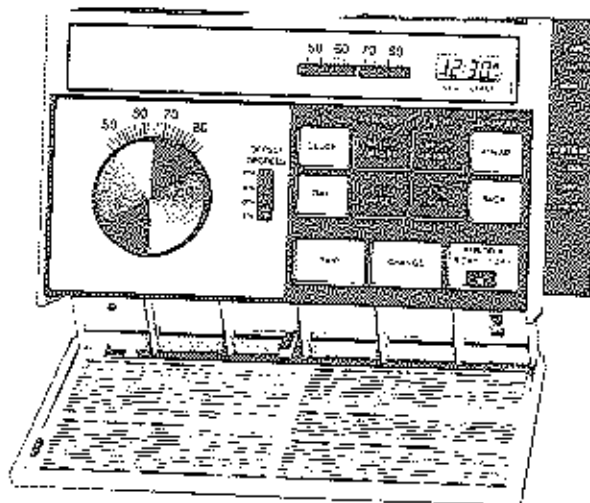
Thermostat	Subbase	Description
*AT4175	A04766	MCO — Single Stage



Thermostat	Description
AT7599	MCO — Single Stage

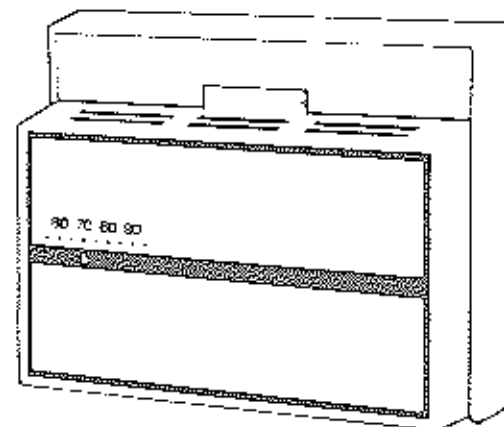
*Dual Scale °C/°F

PROGRAMMABLE SOLID STATE



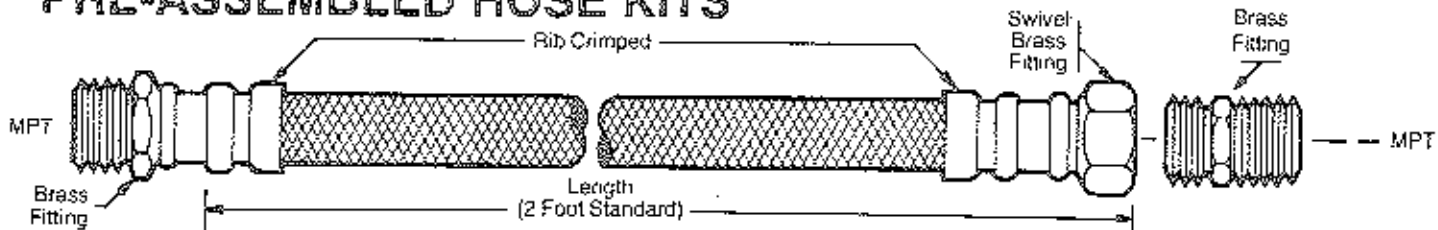
Thermostat	Description
AT6202	Programmable Solid State — MCO — Single Stage
AT6200	Programmable Solid State — MCO — Two Stage

SECURITY COVERS



Cover	Description
AM5417	Locking Cover With External Thermometer (Shown)
AM5409	Locking Cover With Internal Thermometer
AM5045	Universal Plastic Cover With Lock — Clear
AM5050	Universal Plastic Cover With Lock — Beige

PRE-ASSEMBLED HOSE KITS

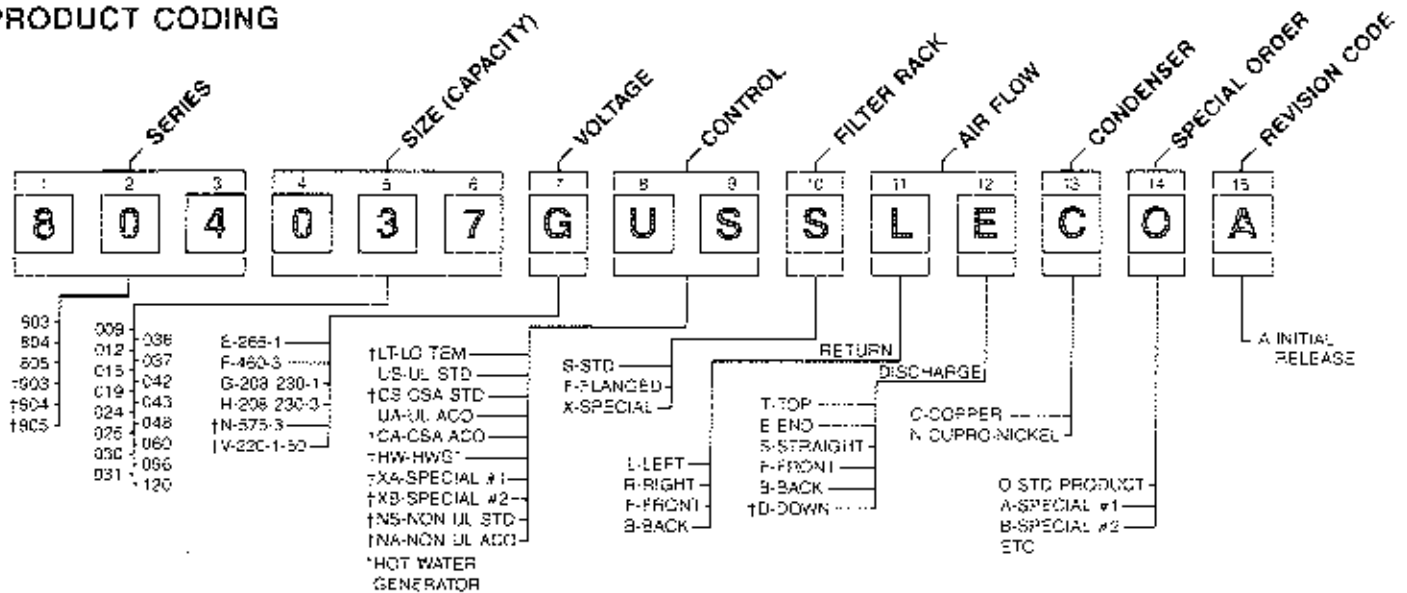


Hose Size	Outside Diameter	Min. Bend Radius	Galvanized Braid			Stainless Steel Braid*		
			Part Number	Operating Pressure (PSI)	Bursting Pressure (PSI)	Part Number	Operating Pressure (PSI)	Bursting Pressure (PSI)
1/8"	3/32"	2 1/8"	AK5042	300	1200	AK5032	375	1500
3/4"	1 1/8"	4 1/2"	AK7542	225	900	AK7532	300	1200
1"	1 1/8"	5 1/2"	AK1042	175	700	AK1042	225	900
1 1/4"	1 7/16"	6 1/4"	AK1212	150	600	AK1222	200	800

*Optional—on order only.

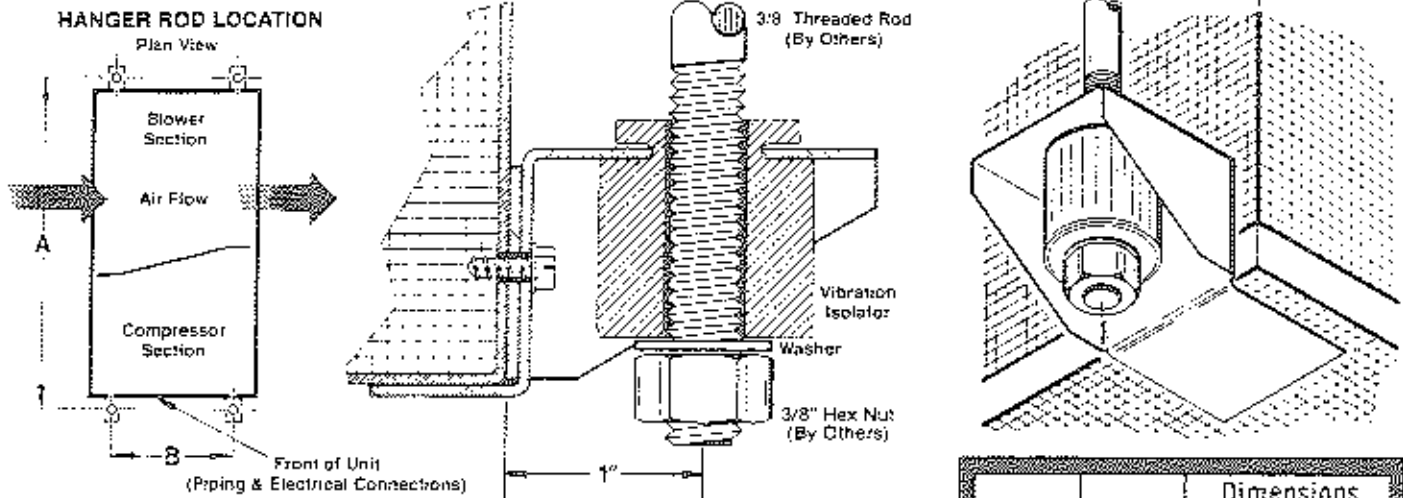
OPTIONS

PRODUCT CODING



Note: Not all options are available, consult factory for availability.
Model 31 available only in LE & RE

HANGER AND VIBRATION ISOLATION KIT



Notes:

1. Kits shipped unassembled and bulk-packed (4 hangers assy-unit).
2. Total head space required: unit height ÷ 1/2 inch + condensate trapping.
3. See unit dimensional drawings for further information.

Model	Kit	Dimensions		
		A	B	
804-009 804-012	AB6412	33	18	
804-015 804-019 804-025 804-031		45	17 1/4	
804-037 804-043		49	17 3/4	
804-048 804-060		38 1/4	34 1/8	
804-096 804-120		AB8055	74 1/8	34 1/8

SPECIFICATIONS

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

GENERAL

All units must carry ARI certification (Per Std. 320-81) and UL listing via appropriate labeling. The Manufacturer's warranty, unit serviceability and project start-up assistance shall be given economic consideration in bids. Tabulated efficiency and capacity shall be considered minimum.

CABINETRY

Shall be of heavy gauge furniture steel, electrostatically painted and baked to form a thermo-set coating for corrosion protection. The interior side of the cabinet shall be insulated with 1/2" fiberglass. There shall be an insulated partition between the blower and compressor compartments to minimize compressor sound transmission. All water connections shall be female pipe threaded and mounted flush to the cabinet exterior. Service panels shall be easily removable, and sufficiently large to allow access to all components. All units (except horizontal units under 14,000 BTU capacity) shall allow sufficient service access to replace the compressor without removing unit. Standard construction shall include a factory mounted discharge air duct collar and filter retaining rack (804 series only).

REFRIGERANT CIRCUIT

Hermetic compressors shall be internally sprung and externally isolated to minimize sound transmission. Coaxial (tube in tube) refrigerant to water heat exchanger shall be of copper inner water tube rated to withstand 350 PSI water working pressure and steel refrigerant outer tube design, rated to withstand 450 PSI refrigerant working pressure.

The fin-tube refrigerant to air heat exchanger shall be of aluminium fin and copper tube construction rated to withstand 425 PSI refrigerant working pressure. A 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 the refrigerant metering device (Capillary tubes or expansion valves) shall be carefully selected for optimum performance. Refrigerant high and low pressure cut-outs (low water temperature cutout on 009 and 012 units) shall protect the system against hazardous operation. All interconnecting tubing shall be copper. Access fittings shall be factory installed on the high and low refrigerant lines to facilitate field service.

ELECTRICAL

Single phase blower motors shall be PSC type. All units through 5 tons nominal capacity shall be direct drive with three speed taps. All units over 5 tons shall be belt driven with variable-pitch sheaves. All compressor and blower motors shall be individually protected against current and/or heat overload. Blower motors shall be able to operate continuously for 3 years without lubrication.

CONTROLS

Unit control shall be 24 volt, including a unit mounted 24V terminal board (and an optional remote thermostat). The compressor lock-out circuit shall allow reset at the remote thermostat or via the main power breaker.

OPTIONS

CABINETRY

RETURN AIR DUCT COLLAR The cabinet shall include a factory mounted return air duct collar designed to accept a return air filter.

HANGER/VIBRATION ISOLATOR KIT

The units shall be provided with hardware to facilitate installation and minimize vibration.

REFRIGERANT CIRCUIT

CUPRO-NICKEL EXCHANGER The coaxial (tube in tube) refrigerant to water heat exchanger shall be 90/10 cupro-nickel inner water tube and steel refrigerant outer tube design.

COOLING ONLY The units shall be designed to perform in the cooling mode only with heating supplied by others.

ELECTRICAL

REMOTE THERMOSTAT The unit shall be provided with a 24 Volt anticipating type wall thermostat:

A) **MANUAL CHANGEOVER** The thermostat shall be a manual changeover type with OFF-HEAT-COOL selector switch and FAN-AUTO selector switch.

B) **PROGRAMMABLE SOLID STATE** The thermostat (manual changeover) shall be of solid state microelectronics designed to change temperature up to twice a day, five or seven days per week. The offset temperature difference shall be adjustable from 0 to 15 degrees.

C) **AUTO CHANGEOVER** The thermostat shall be an auto changeover type with OFF-AUTO selector switch and FAN-AUTO selector switch.

D) **THERMOSTAT COVER** The thermostat shall be covered with a clear (or Beige) plastic cover with tumbler type key lock. (The cover locks in place of the standard cover with the temperature thermometer visible or concealed - AM5417 or AM5409).

PROGRAM RELAY The unit shall have factory mounted program relay that accepts a 24 volt signal from a centrally located time clock which establishes the occupied/unoccupied modes.

RANDOM START RELAY The unit shall be provided with a factory mounted, heater type or solid state random start relay which delays the normal start of the compressor.

POWER SUPPLY RESET The unit shall be wired so that the compressor lock-out circuit shall allow reset only from the main power breaker.

PIPING

PREASSEMBLED HOSE KITS The units shall be provided with factory assembled hose kits for the supply and return connections to expedite zone piping. A two or three foot hose shall be factory installed with male and female brass fittings and rated at 250 PSI working pressure and 1000 PSI burst pressure. The hose shall be available in 1/2", 3/4" and 1" sizes.



ClimateMaster

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