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## SCROLL - AIR COOLED PACKAGED & SPLIT SYSTEM ICE CHILLERS



1 to 40 Nominal Tons



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## NOMENCLATURE

**Example: P AC T B 30 S 2 - T3 - Z**

**P** P = Packaged ES = Evaporator Section CS = Condenser Section

**AC** AC = Air Cooled Condenser WC = Water Cooled Condenser

**T** T = Tank Model

**B** B = Brewery Model L = Low Temp. Model Blank = Standard Unit

**30** Nominal Capacity MBTUH Ex. 12 = 12,000 BTUH Etc.

**S** S = Single Circuit Unit D = Dual Circuit Unit M = Three Circuit Unit

**2** 1 = R134a 2 = R22 3 = R407C 6 = R404A, R507

**T3** Electrical Requirement  
 S2 = 208/230-1-60 S6 = 220-1-50  
 T3 = 208/230-3-60 T7 = 200/208-3-50  
 S4 = 460-1-60 T9 = 380-3-50  
 T4 = 460-3-60  
 T5 = 575-3-60

**Z** Compressor Type H = Hermetic S = Semi-Hermetic Z = Scroll

Low ambient, or lower leaving water temperatures, can require the recirculation of glycol solutions or other fluid blends. These solutions can effect unit capacities. Please consult the factory on these or other special applications for proper sizing.

## **Air Cooled Selection Procedures**

To properly select a air cooled packaged chiller, the following information must be known.

1. The required cooling capacity, BTUH.
2. Entering process fluid temperatures.
3. Leaving process fluid temperature.
4. GPM of process fluid to be circulated.
5. Design ambient air temperature.

If you know any three of the items 1 through 4 above you can calculate the fourth by using the formulas below.

For 100% water:

$$\text{Cooling capacity ( in BTUH )} = \text{GPM} \times \text{Delta T} \times 500$$

$$\text{GPM} = \frac{\text{Capacity (in BTUH)}}{\text{Delta T} \times 500}$$

$$\text{Delta T} = \frac{\text{Capacity ( in BTUH )}}{\text{GPM} \times 500}$$

Sample selection :

Select a air cooled packaged chiller to cool 6.5 GPM of 100% water from 54°F to 44°F.  
Design ambient air temperature 95°F.

Find :

- A) Air cooled chiller model

Solution :

- A) 1. Chilled fluid Delta T = 54°F - 44°F = 10°F  
2. Capacity (in BTUH ) = 6.5 GPM x 10°F Delta T x 500 = 32,500 BTUH  
3. From the PAC chiller capacity tables, it can be determined that the PAC30S has the capacity to meet the requirements.

\*\*\*\*\* Consult factory on sizing chillers with glycol or any fluid other than water \*\*\*\*\*



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## AIR COOLED SCROLL CHILLER CAPACITY TABLE

Drake Model	Compressor	LWT °F	80			90			95			100			105		
			TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
12S	ZR16KC	42.0	1.2	1.2	7.5	1.2	1.3	6.8	1.1	1.4	6.3	1.1	1.4	6.0	1.1	1.5	5.6
		44.0	1.3	1.2	7.7	1.2	1.3	6.9	<b>1.2</b>	<b>1.4</b>	<b>6.5</b>	1.1	1.4	6.2	1.1	1.5	5.8
		45.0	1.3	1.2	7.8	1.2	1.3	7.0	1.2	1.4	6.6	1.2	1.4	6.3	1.1	1.5	5.9
		50.0	1.4	1.2	8.4	1.3	1.3	7.5	1.3	1.4	7.1	1.3	1.5	6.7	1.2	1.6	6.3
18S	ZR15KC	42.0	1.8	1.7	8.9	1.7	1.8	7.9	1.7	1.9	7.4	1.6	2.0	7.0	1.6	2.2	6.5
		44.0	1.9	1.7	9.1	1.8	1.9	8.1	<b>1.7</b>	<b>2.0</b>	<b>7.6</b>	1.7	2.1	7.2	1.6	2.2	6.7
		45.0	1.9	1.7	9.3	1.8	1.9	8.3	1.8	2.0	7.7	1.7	2.1	7.3	1.7	2.2	6.8
		50.0	2.1	1.8	9.9	2.0	1.9	8.8	1.9	2.0	8.3	1.9	2.1	7.8	1.8	2.2	7.3
24S	ZR19KC	42.0	2.2	1.9	9.7	2.1	2.1	8.6	2.0	2.2	8.1	2.0	2.3	7.6	2.0	2.4	7.1
		44.0	2.2	1.9	10.0	2.1	2.1	8.9	<b>2.1</b>	<b>2.2</b>	<b>8.4</b>	2.0	2.3	7.9	2.0	2.4	7.4
		45.0	2.3	1.9	10.2	2.2	2.1	9.1	2.1	2.2	8.5	2.1	2.3	8.0	2.1	2.5	7.5
		50.0	2.5	1.9	10.9	2.4	2.1	9.7	2.3	2.3	9.2	2.3	2.4	8.6	2.2	2.5	8.1
30S	ZB26KC	42.0	3.1	2.8	10.4	2.9	3.1	9.1	2.9	3.3	8.4	2.8	3.5	7.9	2.7	3.7	7.3
		44.0	3.2	2.8	10.6	3.1	3.2	9.3	<b>3.0</b>	<b>3.4</b>	<b>8.7</b>	2.9	3.5	8.2	2.9	3.7	7.6
		45.0	3.3	2.9	10.8	3.1	3.2	9.5	3.0	3.4	8.8	3.0	3.5	8.3	2.9	3.7	7.7
		50.0	3.5	2.9	11.4	3.4	3.3	10.0	3.3	3.5	9.3	3.2	3.6	8.8	3.1	3.8	8.2
36S	ZB30KC	42.0	3.6	3.4	10.3	3.5	3.8	9.2	3.3	3.9	8.6	3.3	4.1	8.1	3.2	4.3	7.6
		44.0	3.8	3.5	10.6	3.6	3.8	9.4	<b>3.4</b>	<b>4.0</b>	<b>8.8</b>	3.4	4.1	8.4	3.3	4.4	7.8
		45.0	3.8	3.5	10.8	3.7	3.8	9.6	3.5	4.0	9.0	3.5	4.2	8.5	3.4	4.4	7.9
		50.0	4.2	3.6	11.4	4.0	3.9	10.2	3.8	4.1	9.6	3.8	4.3	9.1	3.7	4.5	8.5
48S	ZB38KC	42.0	4.3	4.0	10.9	4.1	4.4	9.5	4.0	4.6	8.9	3.9	4.8	8.3	3.8	5.1	7.7
		44.0	4.5	4.0	11.2	4.3	4.4	9.8	<b>4.2</b>	<b>4.6</b>	<b>9.2</b>	4.0	4.9	8.6	3.9	5.1	8.0
		45.0	4.6	4.0	11.3	4.3	4.4	9.9	4.2	4.7	9.3	4.1	4.9	8.7	4.0	5.2	8.1
		50.0	5.0	4.2	12.1	4.8	4.6	10.6	4.6	4.8	10.0	4.5	5.0	9.4	4.4	5.3	8.7
50S	ZB42KC	42.0	4.8	4.3	11.2	4.6	4.8	9.7	4.4	5.1	9.0	4.3	5.4	8.4	4.2	5.8	7.7
		44.0	5.0	4.4	11.5	4.7	4.9	10.0	<b>4.6</b>	<b>5.2</b>	<b>9.2</b>	4.5	5.5	8.6	4.4	5.9	7.9
		45.0	5.1	4.4	11.6	4.8	4.9	10.1	4.7	5.2	9.3	4.6	5.5	8.7	4.5	5.9	8.0
		50.0	5.5	4.6	12.3	5.3	5.1	10.7	5.1	5.4	9.8	5.0	5.7	9.2	4.8	6.1	8.5
60S	ZB45KC	42.0	5.4	4.6	12.0	5.1	5.1	10.5	5.0	5.4	9.7	4.9	5.7	9.1	4.7	6.0	8.4
		44.0	5.6	4.6	12.3	5.3	5.2	10.7	<b>5.2</b>	<b>5.4</b>	<b>10.0</b>	5.0	5.7	9.3	4.9	6.1	8.6
		45.0	5.7	4.7	12.5	5.4	5.2	10.9	5.3	5.5	10.1	5.2	5.8	9.4	5.0	6.1	8.7
		50.0	6.2	4.8	13.2	5.9	5.3	11.6	5.7	5.6	10.7	5.6	5.9	10.0	5.4	6.2	9.3

1. Capacities on this chart are based on refrigerant 22. Low ambient or lower leaving water temperatures can require the use of a glycol solution or other fluid blends. These solutions affect unit capacities. Please consult the factory on these or other special fluids.

2. kW input is for compressor(s) only.

3. EER = Energy Efficiency Ratio (BTU/watt-hour). Power inputs include compressor(s), condenser fan motor(s) and control power

## AIR COOLED SCROLL CHILLER CAPACITY TABLE

Drake Model	Compressor	LWT °F	80			90			95			100			105		
			TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
70S	ZB58KC	42.0	7.0	5.9	11.1	6.6	6.6	9.8	6.4	6.9	9.1	6.3	7.3	8.5	6.1	7.7	8.0
		44.0	7.2	6.0	11.4	6.8	6.6	10.0	<b>6.7</b>	<b>7.0</b>	<b>9.4</b>	6.5	7.3	8.8	6.3	7.7	8.2
		45.0	7.3	6.0	11.6	6.9	6.7	10.2	6.8	7.0	9.6	6.6	7.4	9.0	6.5	7.8	8.4
		50.0	7.9	6.2	12.3	7.6	6.8	10.8	7.3	7.2	10.2	7.2	7.5	9.6	7.1	7.9	9.0
80S	ZB66KC	42.0	7.9	7.1	10.9	7.5	7.8	9.7	7.3	8.2	9.1	7.2	8.6	8.5	7.0	9.0	8.0
		44.0	8.1	7.2	11.2	7.8	7.9	9.9	<b>7.6</b>	<b>8.3</b>	<b>9.3</b>	7.4	8.6	8.8	7.3	9.1	8.2
		45.0	8.3	7.2	11.4	7.9	7.9	10.1	7.8	8.3	9.5	7.6	8.7	8.9	7.4	9.1	8.4
		50.0	8.9	7.4	12.0	8.6	8.1	10.7	8.4	8.5	10.1	8.3	8.8	9.6	8.1	9.3	8.9
90S	ZB76KC	42.0	9.0	8.4	10.8	8.6	9.2	9.6	8.4	9.7	9.0	9.0	10.1	8.4	8.0	10.6	7.9
		44.0	9.3	8.5	11.1	8.9	9.3	9.8	<b>8.7</b>	<b>9.7</b>	<b>9.2</b>	8.5	10.2	8.7	8.3	10.7	7.2
		45.0	9.5	8.6	11.3	9.1	9.3	10.0	8.9	9.8	9.4	8.7	10.3	8.9	8.5	10.7	7.3
		50.0	10.3	8.7	12.0	9.8	9.5	10.7	9.6	10.0	10.0	9.4	10.5	9.4	9.2	10.9	7.9
120S	ZB88KC	42.0	10.5	9.1	11.9	10.0	10.0	10.4	9.7	10.5	9.7	9.5	11.1	9.1	9.2	11.7	8.4
		44.0	10.8	9.2	12.2	10.3	10.1	10.7	<b>10.1</b>	<b>10.6</b>	<b>9.9</b>	9.8	11.2	9.3	9.5	11.8	8.6
		45.0	11.0	9.2	12.4	10.5	10.2	10.8	10.3	10.7	10.0	10.0	11.2	9.4	9.7	11.9	8.7
		50.0	11.9	9.5	13.0	11.3	10.4	11.4	11.1	11.0	10.7	10.8	11.5	10.0	10.5	12.1	9.3
180S	ZB11M	42.0	13.1	11.8	10.3	12.5	13.1	9.0	11.8	13.8	8.4	11.8	14.6	7.9	11.6	15.4	7.3
		44.0	13.5	11.9	10.5	12.8	13.2	9.2	<b>12.2</b>	<b>13.9</b>	<b>8.6</b>	12.2	14.7	8.1	11.9	15.4	7.6
		45.0	13.7	11.9	10.6	13.0	13.2	9.3	12.4	14.0	8.7	12.4	14.7	8.2	12.1	15.5	7.7
		50.0	14.7	12.1	11.3	14.0	13.4	10.9	13.3	14.2	9.3	13.3	14.9	8.7	13.0	15.7	8.1
250S	ZR250K	42.0	17.7	16.3	10.7	17.0	18.0	9.4	16.6	18.9	8.9	16.3	19.8	8.4	15.8	20.8	7.8
		44.0	18.3	16.6	10.9	17.5	18.2	9.6	<b>17.1</b>	<b>19.1</b>	<b>9.1</b>	16.8	20.0	8.6	16.4	21.1	8.0
		45.0	18.6	16.6	11.0	17.8	18.3	9.8	17.5	19.2	9.2	17.1	20.1	8.7	16.7	21.2	8.1
		50.0	20.0	17.1	11.6	19.3	18.8	10.4	18.9	19.7	9.7	18.5	20.6	9.2	17.9	21.7	8.6
300S	ZR300K	42.0	21.0	19.4	11.0	20.2	21.3	9.8	19.8	22.8	9.2	19.4	23.4	8.6	18.8	24.6	8.0
		44.0	21.8	19.6	11.3	20.8	21.6	10.0	<b>20.4</b>	<b>22.6</b>	<b>9.4</b>	20.0	23.6	8.8	19.5	24.8	8.2
		45.0	22.1	19.7	11.4	21.2	21.7	10.1	20.7	22.7	9.5	20.3	23.7	8.9	19.8	25.0	8.5
		50.0	23.9	20.8	12.0	22.9	22.2	10.7	22.3	23.4	10.0	21.9	24.3	9.5	21.4	25.6	8.8

1. Capacities on this chart are based on refrigerant 22. Low ambient or lower leaving water temperatures can require the use of a glycol solution or other fluid blends. These solutions affect unit capacities. Please consult the factory on these or other special fluids.

2. kW input is for compressor(s) only.

3. EER = Energy Efficiency Ratio (BTU/watt-hour). Power inputs include compressor(s), condenser fan motor(s) and control power



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## AIR COOLED SCROLL CHILLER CAPACITY TABLE

Drake Model	Compressor	LWT °F	80			90			95			100			105		
			TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
72D	ZB30KC	42.0	7.1	7.1	9.8	6.8	7.8	8.7	6.6	8.2	8.2	6.5	8.5	7.7	6.3	8.9	7.2
		44.0	7.4	7.2	10.1	7.0	7.9	9.0	<b>6.9</b>	<b>8.3</b>	<b>8.5</b>	6.7	8.6	7.9	6.5	9.0	7.5
		45.0	7.5	7.3	10.3	7.2	7.9	9.1	7.0	8.3	8.6	6.8	8.7	8.0	6.7	9.1	7.6
		50.0	8.1	7.4	10.9	7.8	8.1	9.7	7.6	8.4	9.1	7.4	8.8	8.6	7.2	9.2	8.1
96D	ZB38KC	42.0	8.8	7.8	11.4	8.3	8.5	10.0	8.1	8.9	9.3	7.9	9.4	8.6	7.7	9.9	8.1
		44.0	9.2	7.8	11.7	8.7	8.6	10.3	<b>8.5</b>	<b>9.0</b>	<b>9.6</b>	8.2	9.5	9.0	8.0	10.0	8.4
		45.0	9.3	7.9	11.9	8.9	8.7	10.4	8.7	9.1	9.8	8.4	9.6	9.1	8.2	10.0	8.5
		50.0	10.2	8.1	12.6	9.7	8.9	11.2	9.4	9.3	10.4	9.2	9.8	9.8	9.0	10.3	9.2
100D	ZB42KC	42.0	9.8	8.4	11.8	9.3	9.4	10.2	9.1	9.9	9.5	8.8	10.5	8.8	8.6	11.2	8.1
		44.0	10.2	8.5	12.1	9.7	9.5	10.5	<b>9.4</b>	<b>10.1</b>	<b>9.7</b>	9.2	10.6	9.0	8.9	11.3	8.3
		45.0	10.3	8.6	12.3	9.8	9.6	10.6	9.6	10.1	9.9	9.3	10.7	9.2	9.1	11.4	8.4
		50.0	11.2	8.9	13.0	10.7	9.8	11.3	10.5	10.4	10.5	10.2	11.0	9.8	9.9	11.7	9.0
120D	ZB45KC	42.0	10.6	9.2	12.0	10.2	10.2	10.5	10.0	10.7	9.7	9.7	11.3	9.1	9.5	11.9	8.4
		44.0	11.1	9.3	12.3	10.6	10.3	10.7	<b>10.3</b>	<b>10.8</b>	<b>10.0</b>	10.1	11.4	9.4	9.8	12.0	8.7
		45.0	11.4	9.4	12.5	10.8	10.4	10.9	10.6	10.9	10.2	10.3	11.5	9.5	10.1	12.1	8.8
		50.0	12.3	9.7	13.2	11.8	10.7	11.6	11.4	11.2	10.8	11.2	11.7	10.1	10.9	12.4	9.4
140D	ZB58KC	42.0	13.9	11.8	12.5	13.2	13.1	10.8	12.9	13.8	10.1	12.6	14.5	9.4	12.3	15.3	8.7
		44.0	14.4	11.9	12.8	13.7	13.2	11.2	<b>13.4</b>	<b>13.9</b>	<b>10.4</b>	13.1	14.6	9.7	12.8	15.4	9.0
		45.0	14.6	12.0	13.0	14.0	13.3	11.3	13.7	14.0	10.6	13.3	14.7	9.8	13.0	15.5	9.2
		50.0	15.7	12.3	13.7	15.2	13.6	12.0	14.7	14.3	11.2	14.4	15.0	10.5	14.0	15.8	9.8
160D	ZB66KC	42.0	15.3	14.0	11.8	14.6	15.5	10.3	14.3	16.2	9.7	13.9	17.1	9.0	13.5	17.9	8.4
		44.0	16.3	14.3	12.3	15.5	15.7	10.8	<b>15.2</b>	<b>16.5</b>	<b>10.1</b>	14.8	17.3	9.4	14.5	18.2	8.8
		45.0	16.5	14.4	12.5	15.8	15.8	10.9	15.5	16.6	10.3	15.2	17.4	9.6	14.8	18.3	8.9
		50.0	17.8	14.8	13.2	17.1	16.2	11.6	16.8	17.0	10.8	16.4	17.8	10.2	16.0	18.7	9.5
180D	ZB76KC	42.0	17.9	16.8	11.7	17.2	18.5	10.3	16.9	19.4	9.7	16.4	20.3	9.0	16.0	21.4	8.4
		44.0	18.5	17.0	12.0	17.7	18.7	10.5	<b>17.3</b>	<b>19.6</b>	<b>9.8</b>	17.0	20.6	9.2	16.5	21.6	8.6
		45.0	18.9	17.1	12.1	18.1	18.8	10.7	17.7	19.7	10.0	17.3	20.7	9.4	16.9	21.7	8.7
		50.0	20.3	17.6	12.8	19.5	19.3	11.3	19.0	20.3	10.4	18.7	21.2	9.9	18.2	22.2	9.2
180M	ZB38KC	42.0	13.1	11.2	12.2	12.5	12.5	10.5	12.2	13.2	9.7	11.9	14.0	9.0	11.5	14.8	8.3
		44.0	13.6	11.2	12.6	12.9	12.5	10.9	<b>12.7</b>	<b>13.2</b>	<b>10.1</b>	12.3	14.0	9.4	12.0	14.9	8.6
		45.0	13.9	11.2	12.8	13.1	12.5	11.1	12.8	13.2	10.3	12.5	14.0	9.5	12.1	14.9	8.8
		50.0	14.8	11.3	13.7	14.3	12.6	11.9	13.8	13.3	11.1	13.5	14.1	10.2	13.1	14.9	9.5

1. Capacities on this chart are based on refrigerant 22. Low ambient or lower leaving water temperatures can require the use of a glycol solution or other fluid blends. These solutions affect unit capacities. Please consult the factory on these or other special fluids.

2. kW input is for compressor(s) only.

3. EER = Energy Efficiency Ratio (BTU/watt-hour). Power inputs include compressor(s), condenser fan motor(s) and control power



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## AIR COOLED SCROLL CHILLER CAPACITY TABLE

Drake Model	Compressor	LWT °F	80			90			95			100			105		
			TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
240D	ZB88KC	42.0	20.9	18.0	12.0	20.0	19.8	10.5	19.4	20.8	9.8	18.9	21.8	9.2	18.5	23.0	8.5
		44.0	21.7	18.2	12.3	20.7	20.0	10.7	<b>20.1</b>	<b>21.0</b>	<b>10.0</b>	19.7	22.0	9.4	19.2	23.2	8.8
		45.0	22.1	18.2	12.5	21.0	20.1	10.9	20.5	21.1	10.2	20.0	22.2	9.6	19.6	23.3	8.9
		50.0	23.8	18.8	13.1	22.8	20.6	11.6	22.1	21.6	10.8	21.7	22.6	10.2	21.3	23.7	9.5
360D	ZB11M	42.0	26.0	23.4	10.9	24.8	26.0	9.5	24.2	27.5	8.9	23.7	28.9	8.3	23.0	30.5	7.7
		44.0	26.7	23.5	11.2	25.2	26.2	9.7	<b>24.9</b>	<b>27.6</b>	<b>9.1</b>	24.3	29.1	8.5	23.7	30.7	7.9
		45.0	27.2	23.6	11.3	25.9	26.3	9.9	25.3	27.7	9.2	24.8	29.2	8.6	24.1	30.8	8.0
		50.0	29.1	23.9	12.0	27.8	26.6	10.5	27.1	28.1	9.7	26.5	29.5	9.1	25.8	31.1	8.5
500D	ZR250K	42.0	35.4	33.0	10.7	33.9	36.1	9.5	33.3	37.8	8.9	32.5	39.5	8.4	31.7	41.6	7.8
		44.0	36.7	33.3	11.0	35.1	36.5	9.7	<b>34.4</b>	<b>38.3</b>	<b>9.1</b>	33.7	39.9	8.6	32.9	42.0	8.0
		45.0	37.3	33.5	11.1	35.8	36.8	9.8	35.0	38.5	9.2	34.3	40.1	8.7	33.3	42.2	8.1
		50.0	40.3	34.5	11.7	38.7	37.8	10.4	37.8	39.5	9.8	37.2	41.0	9.3	36.3	43.2	8.6
600D	ZR300K	42.0	42.8	37.7	11.5	41.1	41.4	10.2	40.2	43.4	9.6	39.3	45.4	9.0	38.4	47.7	8.4
		44.0	44.2	38.1	11.8	42.5	41.8	10.5	<b>41.6</b>	<b>43.7</b>	<b>9.8</b>	40.8	45.8	9.3	39.8	48.1	8.7
		45.0	45.0	38.3	11.9	43.3	42.0	10.6	42.3	44.0	10.0	41.4	46.0	9.4	40.4	48.3	8.8
		50.0	48.8	39.4	12.6	46.8	43.0	11.2	45.8	44.9	10.6	44.9	46.8	10.0	43.8	49.2	9.4

1. Capacities on this chart are based on refrigerant 22. Low ambient or lower leaving water temperatures can require the use of a glycol solution or other fluid blends. These solutions affect unit capacities. Please consult the factory on these or other special fluids.

2. kW input is for compressor(s) only.

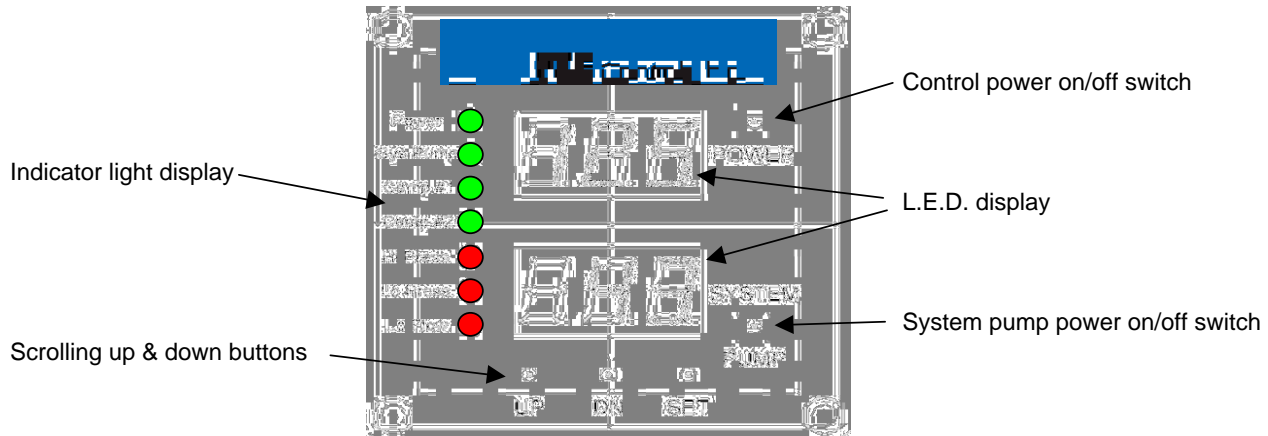
3. EER = Energy Efficiency Ratio (BTU/watt-hour). Power inputs include compressor(s), condenser fan motor(s) and control power





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## MICROPROCESSOR STANDARD FEATURES



### Features:


- Control operates to a +/- 1°F accuracy.
- Powered from the chiller 24volt control circuit. No high voltage interference.
- 1 or 2 compressor control capability
- Operates and displays in °F or °C
- Controls chiller on inlet or outlet temperature
- Scroll through set up and review mode
- 30 second compressor time delay to prevent short cycling and nuisance faults
- 60 second hot gas solenoid delay to prevent false hot gas feeding during compressor start up.
- Lock out relay shuts down the chiller when control fault settings activate
- Automatic compressor lead lag on dual circuit chillers
- Weather resistant for outdoor use.
- Basic chiller functionality for ease of set up and operation.
- Factory default function code to reset the controller to the initial factory settings
- Two L.E.D. display windows.
  - a) Inlet & outlet temperature during chiller operation
  - b) Displays refrigerant high and low pressure in review mode
    - 1) no cap tubes to break causing a loss of refrigerant and down time
    - 2) No refrigerant recovery to change out the pressure transducer
- Indicator lights
  - a) Chiller control power on/off switch with green indicator.
  - b) System pump on/off switch with green indicator.
  - c) Compressor run indicator lights
  - d) High and low refrigerant pressure red fault indicator
  - e) Low fluid flow red indicator
- Display flashes all chiller faults.
  - a) Safety faults:
    - High fluid temperature outlet alarm - ( display only - does not shut down the chiller )
    - Low fluid temperature outlet alarm - ( shuts down the chiller and requires manual reset )
    - High refrigerant pressure - ( shuts down the chiller and requires manual reset )
    - Low refrigerant pressure - ( shuts down the chiller and requires manual reset )
    - Low water flow through evaporator - ( shuts down the chiller and automatically resets when flow is restored )
- Monitors and logs compressor run hours

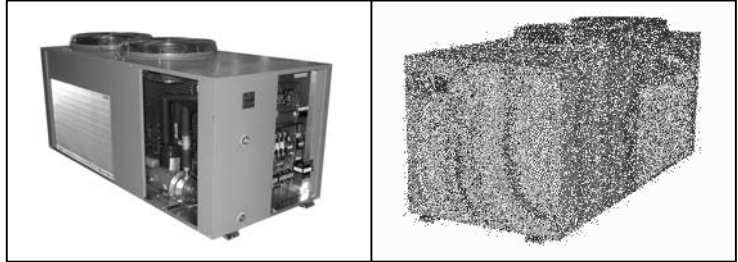


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## PAC & PACT CHILLER STANDARD FEATURES AND OPTIONS

### Standard Features (All Models)

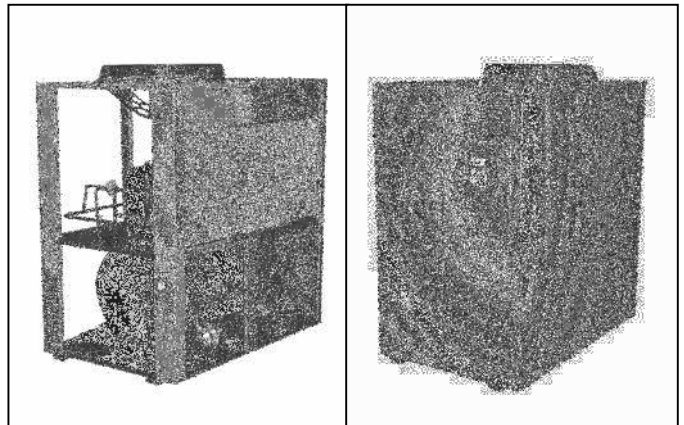
- ETL listed 
- **Microprocessor controller** (See page 9 for features)
- **STAINLESS STEEL** brazed plate evaporator with 1/2" insulation, and secured in a steel bracket
- **Shell & tube 180S to 600D models**
- **Scroll** compressor with crankcase heater
- **Suction accumulator**
- **Water flow switch**
- **Hot gas by-pass capacity control**
- **24V control transformer**
- Direct drive condenser fan motor
- Rust resistant, high CFM, aluminum condenser fan blade
- Condenser(s): copper tube / aluminum fin
- Compressor motor contactor
- Condenser motor and control circuit fusing
- "Hard start kit" (single phase units only)
- Painted galvanized sheet metal cabinet
- 1/2" insulation on all water and refrigerant lines
- Liquid line drier, sightglass, solenoid, TEV
- Full refrigerant charge from factory



PAC90S model shown

### Additional Features On Tank Models Only

- **STAINLESS STEEL** storage tank with 1/2" insulation
- Fused **STAINLESS STEEL** re-circulation pump for tank operation with ball valve and cleanable strainer
- Tank pressure relief valve, vent and drain connections



PACT60S model shown

### AVAILABLE OPTIONS (All Models)

- 4 year extended compressor warranty
- Casters (factory mounted)
- 115 volt (rain tight) service outlet
- Fused disconnect
- Phase monitor
- **Compressor fusing**
- Fan cycle control on Pac90 & 120 units only (+40°F)
- Variable fan speed control (+20°F)
- Flooded condenser with receiver / head pressure control (-20°F)
- Heated flooded condenser with receiver / head pressure control (-20°F)
- Factory installed evaporator heat tape freeze protection thermostatically controlled
- Fused **STAINLESS STEEL** system process pump
- Dual system pump with manual changeover
- Dual system pump with auto changeover
- Low flow bypass valve
- "Gold" finned condenser coil (coastal protection)
- Semi-hermetic compressor
- Shell and tube chiller barrel
- Water flow meter
- Auto city water make up solenoid
- Auto city water changeover panel
- Auto city water changeover panel with 5 micron filter
- Special piping for de-ionized and reverse osmosis water systems
- Blower type condenser fan (forward curve) 12S to 60S

#### Additional Available Options on Tank Models Only

- Storage tank sight glass
- Tank low liquid level indicator with dry contacts

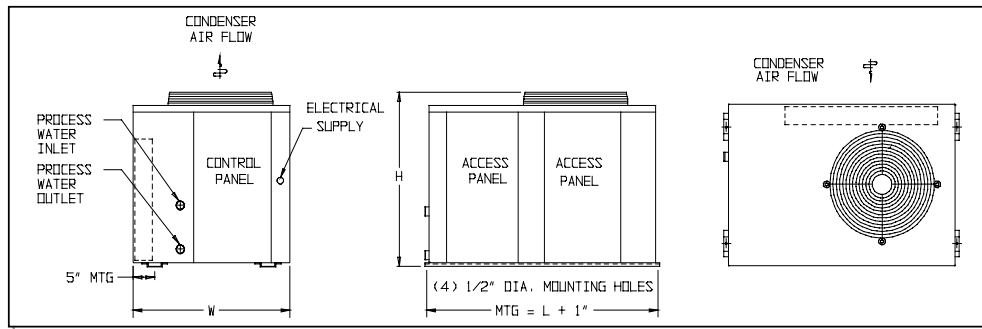


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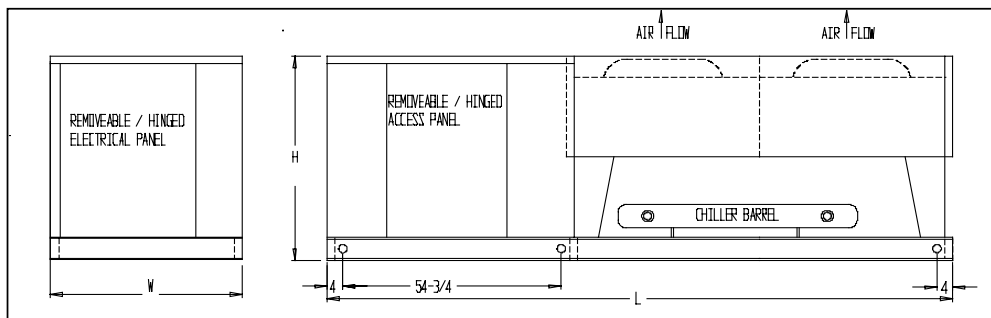
## PAC DIMENSIONAL & ELECTRICAL SPECIFICATIONS

Single circuit packaged air cooled chiller

Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Fluid Conn.	Compressor		RLA ea.	LRA ea.	Fan Motor		MCA	M.O.P.	Weight Pounds
						Qty.	HP			Qty.	FLA ea.			
12S2-S2-Z	14,400	36	34	40	3/4" FPT	1	1.3	10	42	1	3.3	20	25	250
18S2-S2-Z	21,600						2.0	13.6	61.0		3.3	25	30	
18S2-T3-Z							2.0	8.6	55.0		3.3	15	20	
18S2-T4-Z							4.3	27.0	1.6		15	15		
24S2-S2-Z	25,200						2.5	15.7	73.0		3.3	25	35	
24S2-T3-Z							2.5	8.2	63.0		3.3	15	20	
24S2-T4-Z							4.3	31.0	1.6		15	15		
30S2-S2-Z	36,000						3.5	20.7	127.0		3.3	30	45	
30S2-T3-Z							3.5	13.9	88.0		3.3	25	30	
30S2-T4-Z							7.1	44.0	1.6		15	15		
36S2-S2-Z	42,000	4	25.0	132.0	3.3	35	50							
36S2-T3-Z		4	15.0	115.0	3.3	25	35							
36S2-T4-Z		7.4	47.5	1.6	15	15								
48S2-S2-Z	50,400	5	30.1	175.0	3.3	45	70							
48S2-T3-Z		5	20.7	115.0	3.3	30	45							
48S2-T4-Z		8.9	63.0	1.6	15	20								
50S2-S2-Z	56,400	56	34	40	1" FPT	1	5	27.9	129.0	3.3	40	60	575	
60S2-T3-Z	60,600						6	20.7	156.0	3.3	30	45		
60S2-T4-Z	63,600						11.5	70.0	1.6	20	25			
70S2-T3-Z	81,600	85	34	40	1.25" FPT	1	8	32.1	195.0	3.3	50	70	700	
70S2-T4-Z	81,600						8	16.4	95.0	1.6	25	40		
80S2-T3-Z	93,600						9	33.6	225.0	3.3	50	80		
80S2-T4-Z	93,600	85	34	40	1.25" FPT	1	9	17.3	114.0	1.6	25	40	725	
90S2-T3-Z	106,800						10	42.0	239.0	3.3	60	100		
90S2-T4-Z	106,800						19.2	125.0	1.6	30	45			
120S2-T3-Z	123,600	85	34	40	1.25" FPT	1	12	47.0	245.0	3.3	70	110	850	
120S2-T4-Z	123,600						22.1	125.0	1.6	35	50			



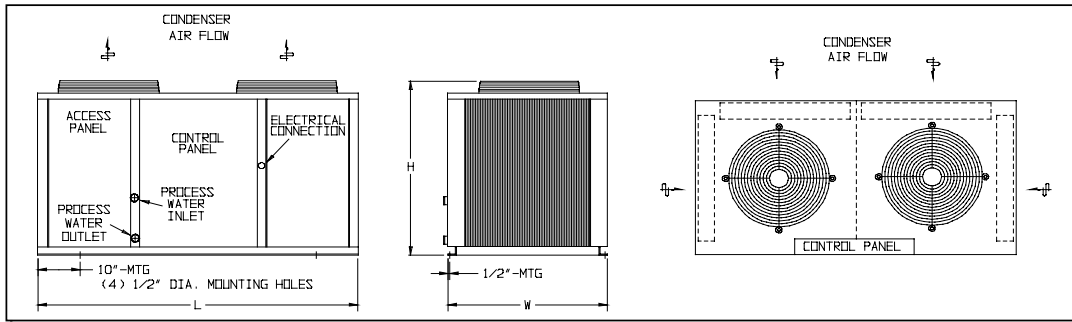
Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Fluid Conn.	Compressor		RLA ea.	LRA ea.	Fan Motor		MCA	M.O.P.	Weight Pounds
						Qty.	HP			Qty.	FLA ea.			
180S2-T3-Z	148,800	157	45	54.5	2" MPT	1	15	55.2	425.0	2	6.6	90	125	1600
180S2-T4-Z							27.2	187.0	3.1		45	60		
250S2-T3-Z	210,000	157	45	54.5	2.5" MPT	1	20	81.0	505.0	2	6.6	125	175	1700
250S2-T4-Z							34.0	225.0	3.1		50	80		
300S2-T3-Z	248,400	157	45	54.5	2.5" MPT	1	25	87.9	500.0	2	6.6	125	200	1800
300S2-T4-Z							43.0	250.0	3.1		60	100		



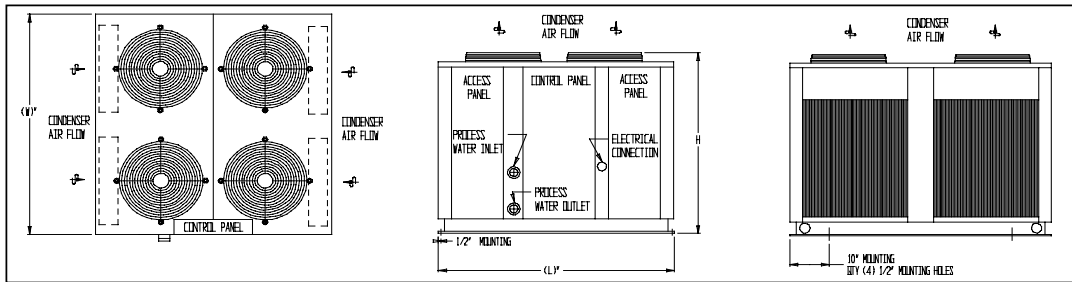
## PAC DIMENSIONAL & ELECTRICAL SPECIFICATIONS

### Dual circuit packaged air cooled chiller

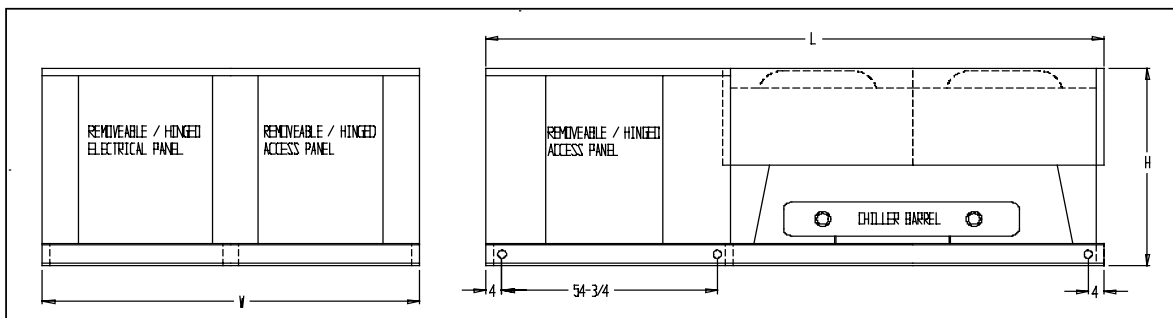
Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Fluid Conn.	Compressor Qty.	HP	RLA ea.	LRA ea.	Fan Motor		MCA	M.O.P.	Weight Pounds
										Qty.	FLA ea.			
72D2-S2-Z	84,000	75	34	47	1.25" FPT	2	4	25.0	132	3.3	70	80	900	
72D2-T3-Z								15.0	115	3.3	45	50		
72D2-T4-Z								7.4	47.5	1.6	20	25		
96D2-S2-Z	104,400	75	34			5	2	5	30.1	175	3.3	80	100	1000
96D2-T3-Z									20.7	115	3.3	60	70	
96D2-T4-Z									8.9	63	1.6	25	30	
100D2-S2-Z	115,200	75	34			5	2	5	27.9	129	3.3	70	90	1100
120D2-T3-Z	127,200								20.7	156	3.3	60	70	
120D2-T4-Z	11.5								70	1.6	30	40		
140D2-T3-Z	164,400	85	40			8	2	8	32.1	195	3.3	80	110	1400
140D2-T4-Z				16.4	95				1.6	45	50			
160D2-T3-Z	186,000	85	40	9	2	9	33.6	225	3.3	90	110	1450		
160D2-T4-Z							17.3	114	1.6	45	50			
180D2-T3-Z	212,400	85	40	10	2	10	42.0	239	3.3	110	125	1500		
180D2-T4-Z							19.2	125	1.6	45	60			



Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Fluid Conn.	Compressor Qty.	HP	RLA ea.	LRA ea.	Fan Motor		MCA	M.O.P.	Weight Pounds
										Qty.	FLA ea.			
240D2-T3-Z	246,000	66	75	49	1.5" FPT	2	12	47.0	245	4	3.3	125	150	1750
240D2-T4-Z								22.1	125	1.6	60	70		



Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Fluid Conn.	Compressor Qty.	HP	RLA ea.	LRA ea.	Fan Motor		MCA	M.O.P.	Weight Pounds
										Qty.	FLA ea.			
360D2-T3-Z	303,600	204	45	54.5	2.5" MPT	2	15	55.2	425	3	6.6	150	175	2600
360D2-T4-Z								27.2	187	3.1	80	90		
500D2-T3-Z	420,000	157	88		3" MPT	2	20	81.0	505	4	6.6	225	250	2900
500D2-T4-Z								34.0	225	3.1	90	110		
600D2-T3-Z	507,600	183	88		3" MPT	2	25	87.9	500	4	6.6	225	300	3200
600D2-T4-Z								43.0	250	3.1	110	150		



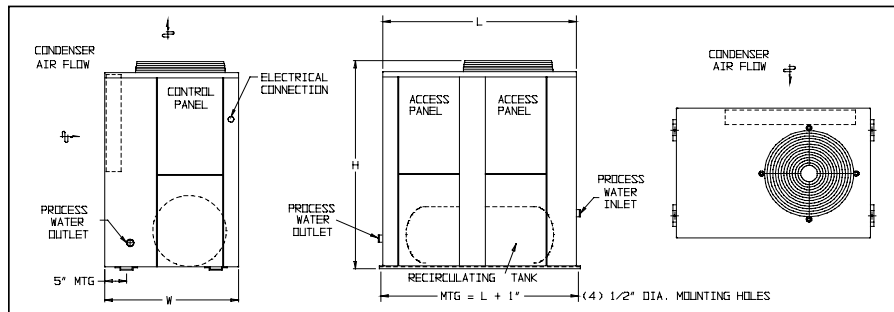


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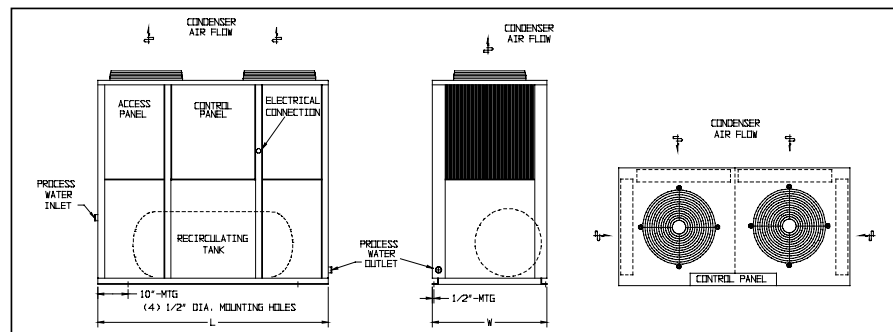
## PACT DIMENSIONAL & ELECTRICAL SPECIFICATIONS

Packaged air cooled chiller with tank

Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Tank Gal.	Fluid Conn.	Compressor			Fan Motor		Evap Pump		MCA	M.O.P.	Weight Pounds					
							Qty.	HP	RLA Ea.	LRA Ea.	Qty.	FLA ea.	FLA				FLA				
12S2-S2-Z	13,500	36	34	60	30	3/4" FPT	1	1	1.3	10	42	3.3	5.1	25	30	550					
18S2-S2-Z	19,500								1.3	13.6	61.0	3.3	5.1	30	35	600					
18S2-T3-Z									2.0	8.6	55.0	3.3	5.1	20	25						
18S2-T4-Z									4.3	27.0	1.6	1.3	15	15							
24S2-S2-Z	24,000								2.5	15.7	73.0	3.3	5.1	30	40	650					
24S2-T3-Z									8.2	63.0	3.3	5.1	20	25							
24S2-T4-Z									4.3	31.0	1.6	1.3	15	15							
30S2-S2-Z	34,000								56	66	60	1" FPT	1	4	20.7	127.0	3.3	5.1	35	50	700
30S2-T3-Z															13.9	88.0	3.3	5.1	25	35	
30S2-T4-Z															7.1	44.0	1.6	1.3	15	15	
36S2-S2-Z	40,000								66	60	90	1.25" FPT	1	5	25.0	132.0	3.3	5.1	40	60	850
36S2-T3-Z															15.0	115.0	3.3	5.1	30	40	
36S2-T4-Z		7.4	47.5	1.6	1.3	15	15														
48S2-S2-Z	48,000	85	60	90	1.25" FPT	1	5	30.1	175.0	3.3	5.1	50	70	875							
48S2-T3-Z								20.7	115.0	3.3	5.1	35	50								
48S2-T4-Z								8.9	63.0	1.6	1.3	15	20								
50S2-S2-Z	53,000	85	66	60	1.25" FPT	1	5	27.9	129.0	3.3	5.1	45	70	900							
60S2-T3-Z	20.7							156.0	3.3	5.1	35	50									
60S2-T4-Z	11.5							70.0	1.6	1.3	20	25									
70S2-T3-Z	76,000	85	66	60	1.25" FPT	1	8	32.1	195.0	3.3	6.7	60	80	1100							
70S2-T4-Z	16.4							95.0	1.6	1.7	30	40									
80S2-T3-Z	33.6							225.0	3.3	7.9	60	80									
80S2-T4-Z	17.3	114.0	1.6	2.0	30	40	1150														
90S2-T3-Z	42.0	239.0	3.3	10.0	70	110															
90S2-T4-Z	19.2	125.0	1.6	2.8	30	45															
120S2-T3-Z	112,000	85	66	90	1.25" FPT	1	10	47.0	245.0	3.3	10.0	80	110	1250							
120S2-T4-Z	22.1							125.0	1.6	2.8	35	50									



Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Tank Gal.	Fluid Conn.	Compressor			Fan Motor		Evap Pump		MCA	M.O.P.	Weight Pounds
							Qty.	HP	RLA Ea.	LRA Ea.	Qty.	FLA ea.	FLA			
72D2-S2-Z	79,000	75	34	73	90	1.25" FPT	2	2	25.0	132	3.3	6.7	70	90	1100	
72D2-T3-Z									4	15.0	115	3.3	6.7	50		60
72D2-T4-Z									7.4	47.5	1.6	1.7	25	25		
96D2-S2-Z	97,000	85	40	135	1.5" FPT	2	2	5	30.1	175	3.3	10.0	90	110	1200	
96D2-T3-Z									20.7	115	3.3	10.0	70	80		
96D2-T4-Z									8.9	63	1.6	2.8	30	30		
100D2-S2-Z	109,000	85	40	135	1.5" FPT	2	2	5	27.9	129	3.3	10.0	80	100	1250	
120D2-T3-Z	20.7								156	3.3	10.0	70	80			
120D2-T4-Z	11.5								70	1.6	2.8	35	40			
140D2-T3-Z	154,000	85	40	135	1.5" FPT	2	2	8	32.1	195	3.3	10.5	90	110	1300	
140D2-T4-Z	16.4								95	1.6	3.2	45	50			
160D2-T3-Z	33.6								225	3.3	7.9	100	110			
160D2-T4-Z	17.3	114	1.6	2.0	45	60	1400									
180D2-T3-Z	42.0	239	3.3	5.6	110	125										
180D2-T4-Z	19.2	125	1.6	2.8	50	60										






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## ES & EST CHILLER STANDARD FEATURES AND OPTIONS

### Standard Features (All Models)

- ETL listed 
- Remote condenser section
- Microprocessor controller (See page 9 for features)
- STAINLESS STEEL brazed plate evaporator with 1/2" insulation, and secured in a steel bracket
- Shell & tube 180S to 600D models
- Scroll compressor with crankcase heater
- Suction accumulator
- Water flow switch
- Hot gas by-pass capacity control
- 24V control transformer
- Direct drive condenser fan motor
- Rust resistant, high CFM, aluminum condenser fan blade
- Condenser(s): copper tube / aluminum fin
- Compressor motor contactor
- Condenser motor and control circuit fusing
- "Hard start kit" (single phase units only)
- Painted galvanized sheet metal cabinet
- 1/2" insulation on all water and refrigerant lines
- Liquid line drier, sightglass, solenoid, TEV
- Full refrigerant charge from factory



ES60S model shown

### Additional Features On Tank Models Only

- STAINLESS STEEL storage tank with 1/2" insulation
- Fused STAINLESS STEEL re-circulation pump for tank operation with ball valve and cleanable strainer
- Tank pressure relief valve, vent and drain connections



EST90S model shown

### AVAILABLE OPTIONS (All Models)

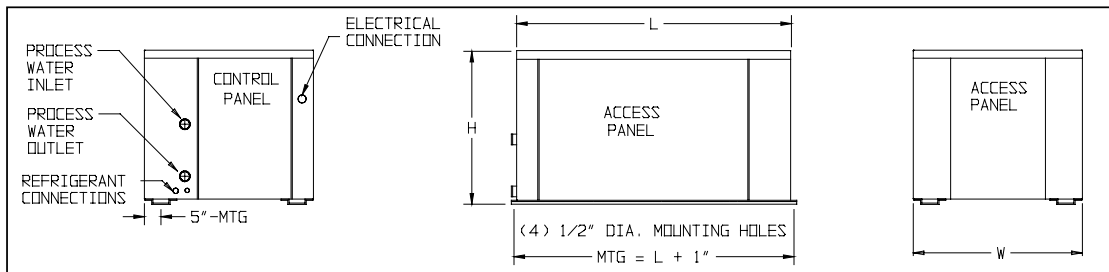
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|--|--|
| <ul style="list-style-type: none"> <li>• 4 year extended compressor warranty</li> <li>• Casters (factory mounted)</li> <li>• 115 volt (rain tight) service outlet</li> <li>• Fused disconnect</li> <li>• Phase monitor</li> <li>• Compressor fusing</li> <li>• Fan cycle control on Pac90 &amp; 120 units only (+40°F)</li> <li>• Variable fan speed control (+20°F)</li> <li>• Flooded condenser with receiver / head pressure control (-20°F)</li> <li>• Heated flooded condenser with receiver / head pressure control (-20°F)</li> <li>• Factory installed evaporator heat tape freeze protection thermostatically controlled</li> </ul> | <ul style="list-style-type: none"> <li>• Fused STAINLESS STEEL system process pump</li> <li>• Dual system pump with manual changeover</li> <li>• Dual system pump with auto changeover</li> <li>• Low flow bypass valve</li> <li>• "Gold" finned condenser coil (coastal protection)</li> <li>• Semi-hermetic compressor</li> <li>• Shell and tube chiller barrel</li> <li>• Water flow meter</li> <li>• Auto city water make up solenoid</li> <li>• Auto city water changeover panel</li> <li>• Auto city water changeover panel with 5 micron filter</li> <li>• Special piping for de-ionized and reverse osmosis water systems</li> <li>• Blower type condenser fan (forward curve) 12S to 60S</li> </ul> |
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#### Additional Available Options on Tank Models Only

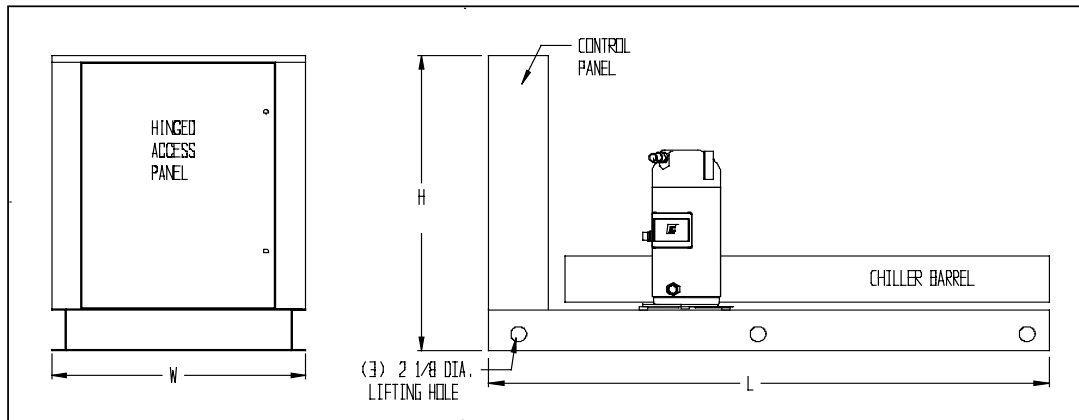
- Storage tank sight glass
- Tank low liquid level indicator with dry contacts

## ES DIMENSIONAL & ELECTRICAL SPECIFICATIONS

Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Fluid Conn.	Compressor		RLA ea.	LRA ea.	Fan Motor		MCA	M.O.P.	Weight Pounds	Condenser Selection								
						Qty.	HP			Qty.	FLA ea.												
12S2-S2-Z	14,400	44	28	26	3/4" FPT	1	1.3	10	42	1	3.3	20	25	225	CS12S								
18S2-S2-Z	21,600															13.6	61.0	3.3	25	30			
18S2-T3-Z																2.0	8.6	55.0	3.3	15	20	225	CS18S
18S2-T4-Z																4.3	27.0	1.6	15	15			
24S2-S2-Z																25,200	15.7	73.0	3.3	25	35		
24S2-T3-Z																	2.5	8.2	63.0	3.3	15	20	370
24S2-T4-Z					4.3	31.0	1.6	15	15														
30S2-S2-Z	36,000				20.7	127.0	3.3	30	45														
30S2-T3-Z					3.5	13.9	88.0	3.3	25	30	500	CS30S											
30S2-T4-Z					7.1	44.0	1.6	15	15														
36S2-S2-Z					42,000	25.0	132.0	3.3	35	50													
36S2-T3-Z						4	15.0	115.0	3.3	25	35	500	CS36S										
36S2-T4-Z		7.4	47.5	1.6		15	15																
48S2-S2-Z	56,400	30.1	175.0	3.3		45	70																
48S2-T3-Z		5	20.7	115.0		3.3	30	45	550	CS48S													
48S2-T4-Z		8.9	63.0	1.6		15	20																
50S2-S2-Z		63,600	27.9	129.0	3.3	40	60	575	CS50S														
60S2-T3-Z			6	20.7	156.0	3.3	30	45	600	CS60S													
60S2-T4-Z			11.5	70.0	1.6	20	25																
70S2-T3-Z	81,600		32.1	195.0	3.3	50	70	700	CS70S														
70S2-T4-Z			8	16.4	95.0	1.6	25	40															
80S2-T3-Z			93,600	33.6	225.0	3.3	50	80	725	CS80S													
80S2-T4-Z		9		17.3	114.0	1.6	25	40															
90S2-T3-Z		106,800		42.0	239.0	3.3	60	100	750	CS90S													
90S2-T4-Z				10	19.2	125.0	1.6	30	45														
120S2-T3-Z	123,600			47.0	245.0	3.3	70	110	850	CS120S													
120S2-T4-Z				12	22.1	125.0	1.6	35	50														



Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Fluid Conn.	Compressor		RLA ea.	LRA ea.	Fan Motor		MCA	M.O.P.	Weight Pounds	Condenser Model
						Qty.	HP			Qty.	FLA				
180S2-T3-Z	148,800	65	34	42	2" MPT	1	15	55.2	425.0	2	6.6	90	125	850	DVC022
180S2-T4-Z					27.2						187.0	3.1	45		
250S2-T3-Z	210,000	65	34	42	2.5" MPT	1	20	81.0	505.0	2	6.6	125	175	950	DVC024
250S2-T4-Z					34.0						225.0	3.1	50		
300S2-T3-Z	248,400	65	34	42	2.5" MPT	1	25	87.9	500.0	2	6.6	125	200	1000	DVC027
300S2-T4-Z					43.0						250.0	3.1	60		



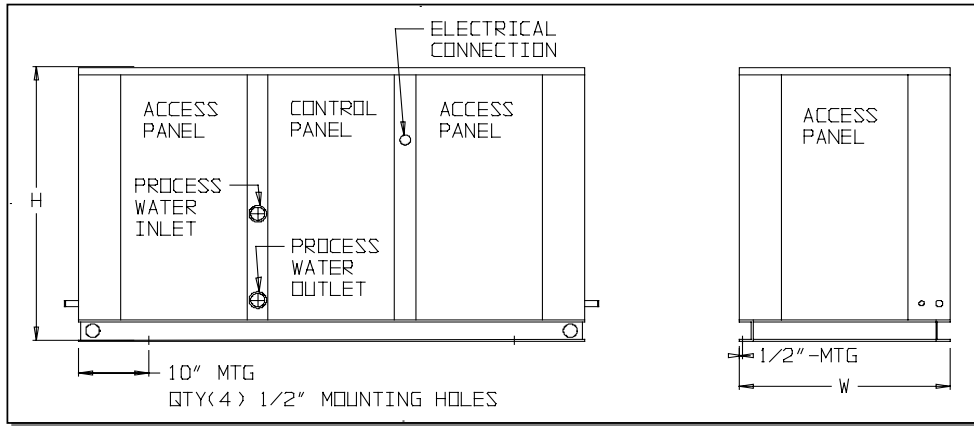
• • See Bulletin D50-DVC-PDI-2 for condenser section specifications.

\* See installation instruction manual refrigerant chart for additional refrigerant charge needed for extended pipe length.

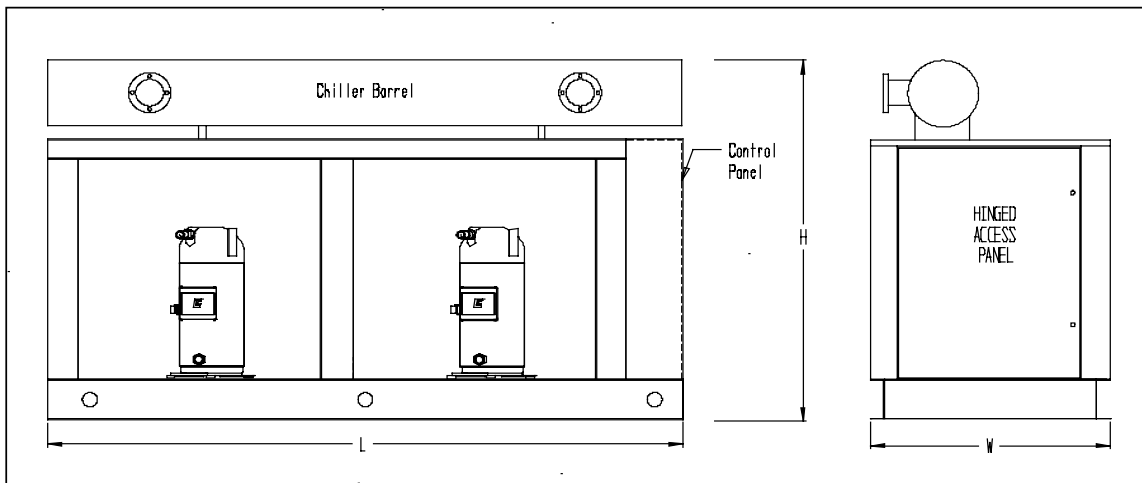
Dual circuit split system air cooled chiller

## ES DIMENSIONAL & ELECTRICAL SPECIFICATIONS

Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Fluid Conn.	Compressor		RLA ea.	LRA ea.	Fan Motor		MCA	M.O.P.	Weight Pounds	Condenser Model												
						Qty.	HP			Qty.	FLA ea.																
72D2-S2-Z	84,000	65	30	39	1.25" FPT	2	4	25.0	132	2	3.3	70	80	900	CS72D												
72D2-T3-Z								15.0	115			3.3	45			50											
72D2-T4-Z								7.4	47.5			1.6	20			25											
96D2-S2-Z	104,400					65	30	39	1.25" FPT	5	5	30.1	175	2	3.3	80	100	1000	CS96D								
96D2-T3-Z												20.7	115			3.3	60			70							
96D2-T4-Z												8.9	63			1.6	25			30							
100D2-S2-Z	115,200									65	30	39	1.25" FPT	5	5	27.9	129	2	3.3	70	90	1100	CS100D				
120D2-T3-Z	127,200															6	6			6	20.7			156	3.3	60	70
120D2-T4-Z	11.5																										
140D2-T3-Z	164,400				8									8	8			32.1	195			3.3	80				
140D2-T4-Z	16.4															95	1.6			45	50						
160D2-T3-Z	186,000															9	9			9	33.6			225	3.3	90	110
160D2-T4-Z	17.3	114	1.6	45	50																						
180D2-T3-Z	212,400	10	10	10	42.0				239					3.3	110			125									
180D2-T4-Z	19.2															125	1.6		45	60							
240D2-T3-Z	246,000					12	12	12					47.0			245	3.3		125	150							
240D2-T4-Z	22.1	125	1.6	60	70																						



Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Fluid Conn.	Compressor		RLA ea.	LRA ea.	Fan Motor		MCA	M.O.P.	Weight Pounds	Condenser Model								
						Qty.	HP			Qty.	FLA ea.												
360D2-T3-Z	303,600	85	34	42	2.5" MPT	2	15	55.2	425	3	6.6	150	175	1500	DVC041								
360D2-T4-Z								27.2	187			3.1	80			90							
500D2-T3-Z	420,000				85		34	42	3" MPT	2	20	81.0	505	4	6.6	225	250	1600	DVC049				
500D2-T4-Z												34.0	225			3.1	90			110			
600D2-T3-Z	507,600								85		34	42	3" MPT	2	25	87.9	500	4	6.6	225	300	1700	DVC057
600D2-T4-Z																43.0	250			3.1	110		



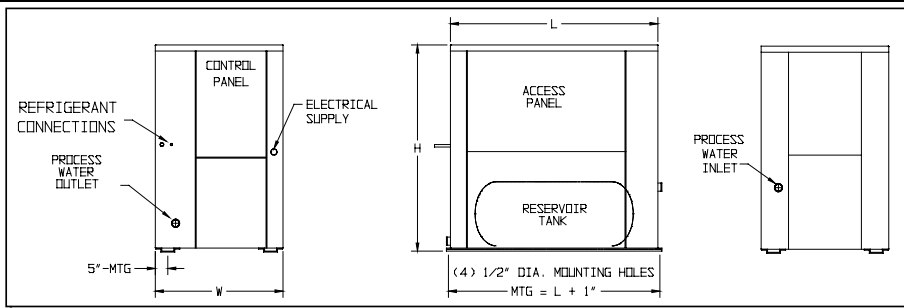
• • See Bulletin D50-DVC-PDI-2 for condenser section specifications.

\* See installation instruction manual refrigerant chart for additional refrigerant charge needed for extended pipe length.

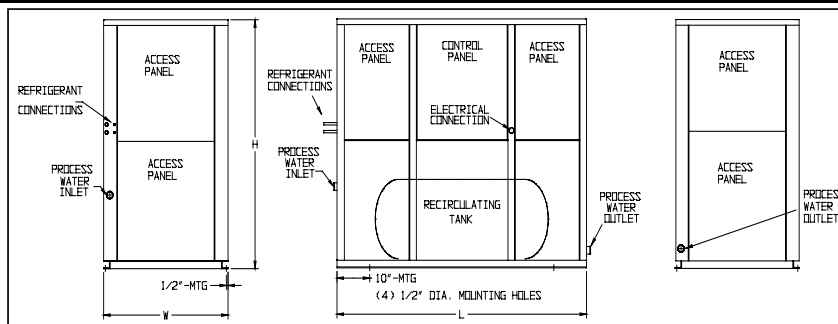


## EST DIMENSIONAL & ELECTRICAL SPECIFICATIONS

Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Tank Gal.	Fluid Conn.	Compressor		RLA Ea.	LRA Ea.	Fan Motor		Evap Pump FLA	MCA	M.O.P.	Weight Pounds	Condenser Selection	
							Qty.	HP			Qty.	FLA ea.						
12S2-S2-Z	13,500	36	34	53	30	3/4" FPT	1	1.3	10	42	1	3.3	5.1	25	30	550	CS12S	
18S2-S2-Z								13.6	61.0	3.3		5.1	30	35				
18S2-T3-Z								8.6	55.0	3.3		5.1	20	25	600			CS18S
18S2-T4-Z								4.3	27.0	1.6		1.3	15	15				
24S2-S2-Z	24,000	36	34	53	30	1" FPT	1	2.5	15.7	73.0	1	3.3	5.1	30	40	650	CS24S	
24S2-T3-Z								8.2	63.0	3.3		5.1	20	25				
24S2-T4-Z								4.3	31.0	1.6		1.3	15	15				
30S2-S2-Z	34,000	36	34	53	30	1" FPT	1	3.5	20.7	127.0	1	3.3	5.1	35	50	700	CS30S	
30S2-T3-Z								13.9	88.0	3.3		5.1	25	35				
30S2-T4-Z								7.1	44.0	1.6		1.3	15	15				
36S2-S2-Z	40,000	36	34	53	30	1" FPT	1	4	25.0	132.0	1	3.3	5.1	40	60	800	CS36S	
36S2-T3-Z								15.0	115.0	3.3		5.1	30	40				
36S2-T4-Z								7.4	47.5	1.6		1.3	15	15				
48S2-S2-Z	48,000	56	34	63	60	1.25" FPT	1	5	30.1	175.0	1	3.3	5.1	50	70	850	CS48S	
48S2-T3-Z								20.7	115.0	3.3		5.1	35	50				
48S2-T4-Z								8.9	63.0	1.6		1.3	15	20				
50S2-S2-Z	53,000	56	34	63	60	1.25" FPT	1	5	27.9	129.0	1	3.3	5.1	45	70	875	CS50S	
60S2-T3-Z	20.7							156.0	3.3	5.1		35	50					
60S2-T4-Z	11.5							70.0	1.6	1.3		20	25					
70S2-T3-Z	76,000	56	34	63	60	1.25" FPT	1	8	32.1	195.0	1	3.3	6.7	60	80	1100	CS70S	
70S2-T4-Z								16.4	95.0	1.6		1.7	30	40				
80S2-T3-Z	86,000	56	34	63	60	1.25" FPT	1	9	33.6	225.0	1	3.3	7.9	60	80	1150	CS80S	
80S2-T4-Z								17.3	114.0	1.6		2.0	30	40				
90S2-T3-Z	100,000	85	34	63	90	1.25" FPT	2	10	42.0	239.0	2	3.3	10.0	70	110	1250	CS90S	
90S2-T4-Z								19.2	125.0	1.6		2.8	30	45				
120S2-T3-Z	112,000	85	34	63	90	1.25" FPT	2	12	47.0	245.0	2	3.3	10.0	80	110	1300	CS120S	
120S2-T4-Z								22.1	125.0	1.6		2.8	35	50				



Drake Model	BTUH @ 95°F amb. 45°F Lwt	Length Inches	Width Inches	Height Inches	Tank Gal.	Fluid Conn.	Compressor		RLA Ea.	LRA Ea.	Fan Motor		Evap Pump FLA	MCA	M.O.P.	Weight Pounds	Condenser Model
							Qty.	HP			Qty.	FLA ea.					
72D2-S2-Z	79,000	85	34	63	60	1.25" FPT	2	4	25.0	132	2	3.3	6.7	70	90	1350	CS72D
72D2-T3-Z								15.0	115	3.3		6.7	50	60			
72D2-T4-Z								7.4	47.5	1.6		1.7	25	25			
96D2-S2-Z	97,000	85	34	63	90	1.25" FPT	2	5	30.1	175	2	3.3	10.0	90	110	1400	CS96D
96D2-T3-Z								20.7	115	3.3		10.0	70	80			
96D2-T4-Z								8.9	63	1.6		2.8	30	30			
100D2-S2-Z	109,000	85	34	63	90	1.25" FPT	2	5	27.9	129	2	3.3	10.0	80	100	1450	CS100D
120D2-T3-Z	20.7							156	3.3	10.0		70	80				
120D2-T4-Z	11.5							70	1.6	2.8		35	40				
140D2-T3-Z	154,000	85	34	63	135	1.5" FPT	2	8	32.1	195	2	3.3	10.5	90	110	1700	CS140D
140D2-T4-Z								16.4	95	1.6		3.2	45	50			
160D2-T3-Z	175,000	85	34	63	135	1.5" FPT	2	9	33.6	225	2	3.3	7.9	100	110	1800	CS160D
160D2-T4-Z								17.3	114	1.6		2.0	45	60			
180D2-T3-Z	200,000	85	34	63	135	1.5" FPT	2	10	42.0	239	2	3.3	5.6	110	125	1900	CS180D
180D2-T4-Z								19.2	125	1.6		2.8	50	60			
240D2-T3-Z	235,000	85	34	63	135	1.5" FPT	2	12	47.0	245	2	3.3	5.6	125	150	1750	CS240D
240D2-T4-Z								22.1	125	1.6		2.8	60	70			



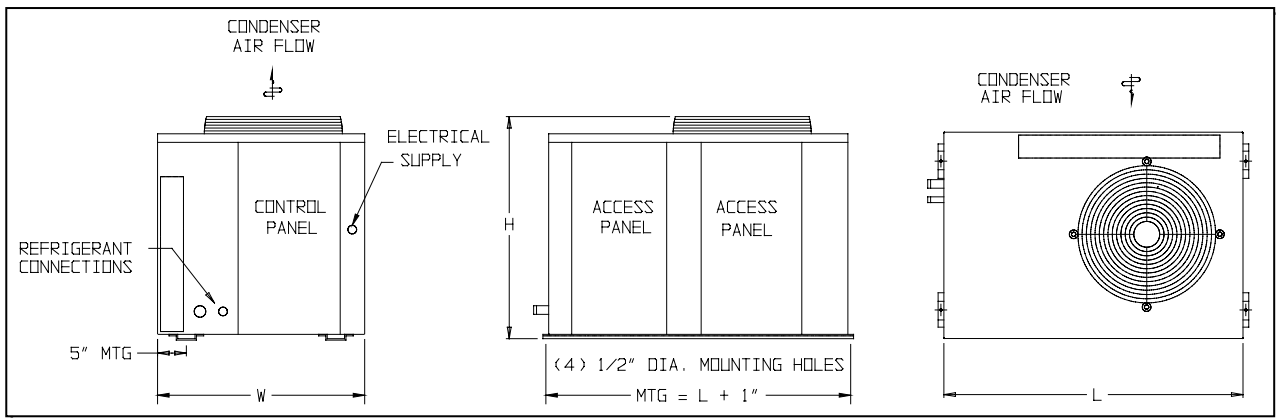


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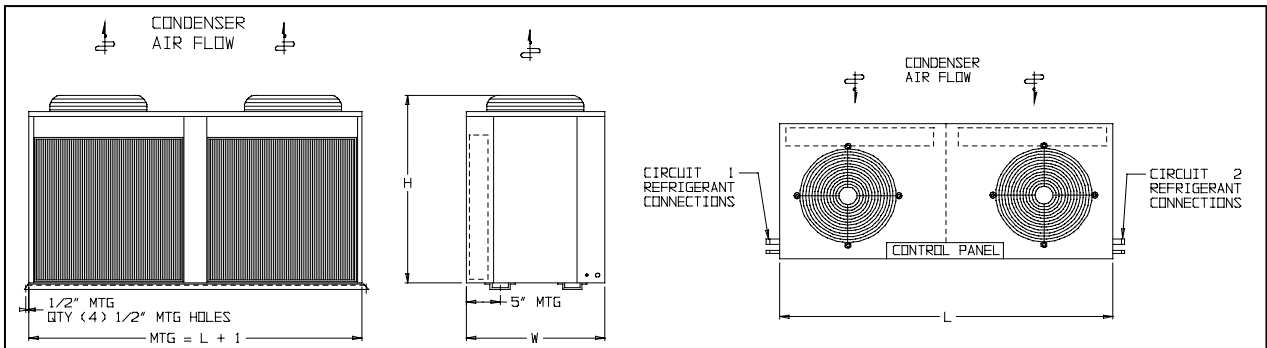
## CS DIMENSIONAL SPECIFICATIONS

### Split system condenser section

Drake Model	Length Inches	Width Inches	Height Inches	Fan Motor		Refrigerant Conn.		Weight Pounds
				Quantity	HP	Discharge	Liquid	
CS12S	36	36	40	1	1/4	1/2"	3/8"	125
CS18S	36	36	40	1	1/4	1/2"	3/8"	135
CS24S	36	36	40	1	1/2	1/2"	3/8"	145
CS30S	36	36	40	1	1/2	1/2"	3/8"	200
CS36S	56	36	40	1	1/2	5/8"	1/2"	225
CS48S	56	36	40	1	1/2	5/8"	1/2"	245
CS50S	56	36	40	1	1/2	5/8"	1/2"	255
CS60S	56	36	40	1	1/2	5/8"	1/2"	255
CS70S	65	36	40	2	3/4	3/4"	5/8"	355
CS80S	65	36	40	2	3/4	3/4"	5/8"	355
CS90S	65	36	40	2	3/4	3/4"	5/8"	355
CS120S	65	36	40	2	3/4	3/4"	5/8"	400

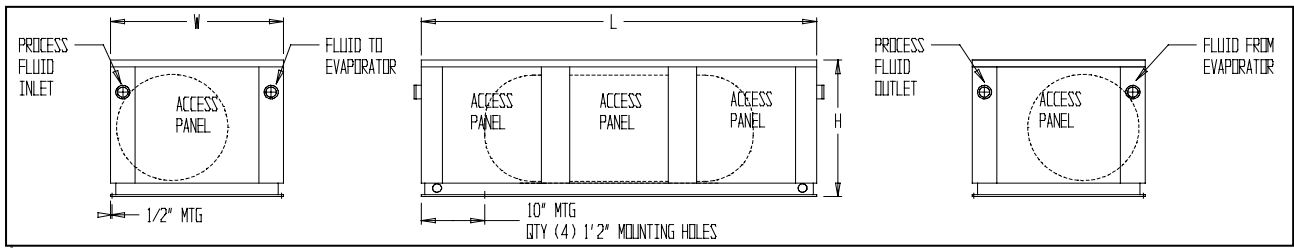


Model	Inches	Inches	Inches	Quantity	HP	Discharge	Liquid	Pounds
CS72D	75	36	47	2	1/2	5/8"	1/2"	500
CS96D	75	36	47	2	1/2	5/8"	1/2"	525
CS100D	75	36	47	2	1/2	5/8"	1/2"	650
CS120D	75	36	47	2	1/2	5/8"	1/2"	650
CS140D	85	40	47	2	3/4	3/4"	5/8"	750
CS160D	85	40	47	2	3/4	3/4"	5/8"	750
CS180D	85	40	47	2	3/4	3/4"	5/8"	750
CS240D	66	75	49	4	3/4	3/4"	5/8"	1000



## TANK SECTION DIMENSIONAL SPECIFICATIONS

Drake Model	Length Inches	Width Inches	Height Inches	Water Connection	Tank Capacity	Recirc. Pump	RLA 230/3Ø	RLA 460/3Ø	Weight Pounds
TS30S	36	34	36	1" FPT	30 Gal.	1/3HP	2.8	1.4	500
TS60S	56	34	36	1" FPT	60 Gal.	1/3HP	2.8	1.4	525
TS90S	75	34	36	1 1/4" FPT	90 Gal.	1/2HP	3.6	1.8	600
TS135S	85	34	36	1 1/2" FPT	135 Gal.	3/4HP	2.6	1.3	625



### STANDARD FEATURES

- **STAINLESS STEEL** storage tank
- 1/2" tank and fluid piping insulation
- Copper fluid piping
- Tank vent and drain connections
- Tank pressure relief valve
- Fused evaporator fluid re-circulating **STAINLESS STEEL** pump
- Fluid pump discharge ball valve and cleanable "Y" strainer
- Control box with pump terminal block
- Painted galvanized steel sheet metal cabinet
- 24 volt L.E.D. process fluid thermometers

### AVAILABLE OPTIONS

- Fused **STAINLESS STEEL** process pump
- Dual system pump with manual changeover
- Dual system pump with auto changeover
- Tank fluid sight glass
- Tank liquid level indicator with dry contacts
- Low flow bypass valve
- Water flow meter
- Auto city water make up solenoid
- Special piping for de-ionized and reverse osmosis water systems
- **STAINLESS STEEL** sheet metal cabinet
- 1" tank and piping insulation in lieu of 1/2"
- Seal-tight electrical connections



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## GLYCOL FACTOR TABLES

### Propylene Glycol Capacity Correction Factor Table

Percent Propylene Glycol by Weight	15%	20%	25%	30%	35%	40%	50%
Freezing Point In °F	24°	18°	15°	9°	5°	- 5°	- 30°
Capacity Factor Multiplier *	0.992	0.986	0.972	0.960	0.950	0.928	0.878
Pressure Drop Multiplier	1.04	1.08	1.13	1.21	1.26	1.47	2.79

### Ethylene Glycol Capacity Correction Factor Table

Percent Ethylene Glycol by Weight	10%	15%	20%	25%	30%	35%	40%
Freezing Point In °F	25°	21°	17°	11°	5°	0°	-10°
Capacity Factor Multiplier *	0.98	0.96	0.95	0.93	0.92	0.91	0.89
Pressure Drop Multiplier	1.08	1.11	1.16	1.21	1.27	1.32	1.38

\* At standard ARI 590 conditions: 54°F entering fluid temperature, 44°F leaving fluid temperature, 95°F ambient temperature, 0.0005 fouling

Due to manufacturer's policy of continuous product improvement, the manufacturer reserves the right to make changes without notice. Drawings in this booklet are representations of the equipment shown. Contact the factory for specific unit drawings.