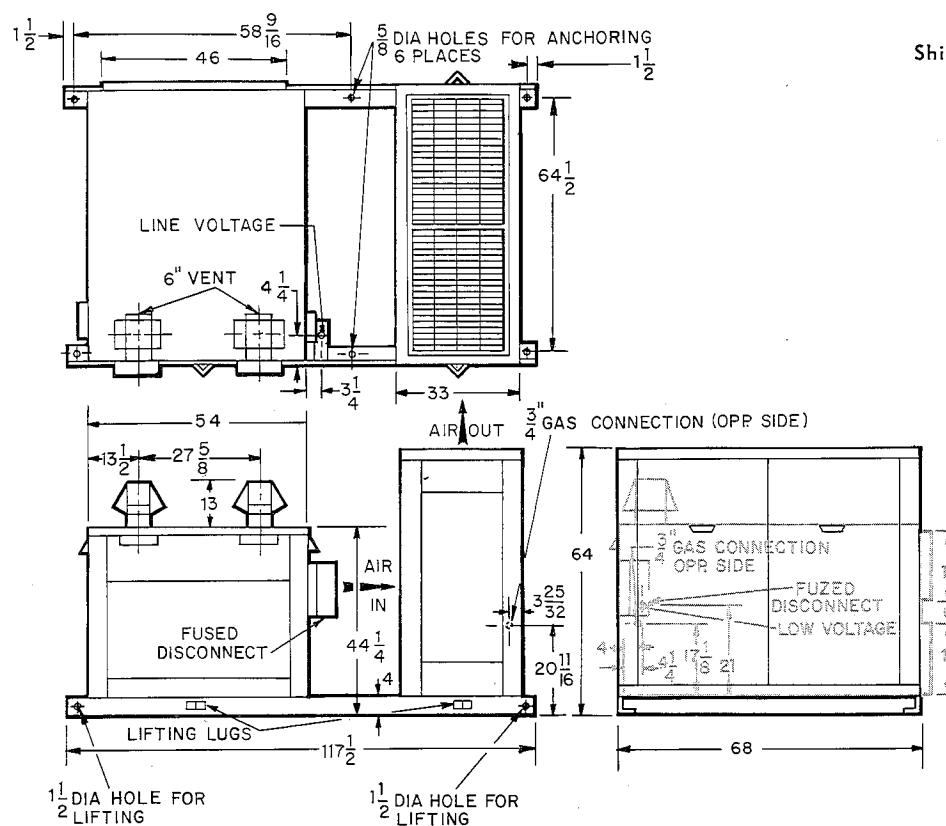




ALL WEATHER HEATING & COOLING UNIT

Product
Data **478**
Sheet Size 90

PDS 478.90.1 10/11/68



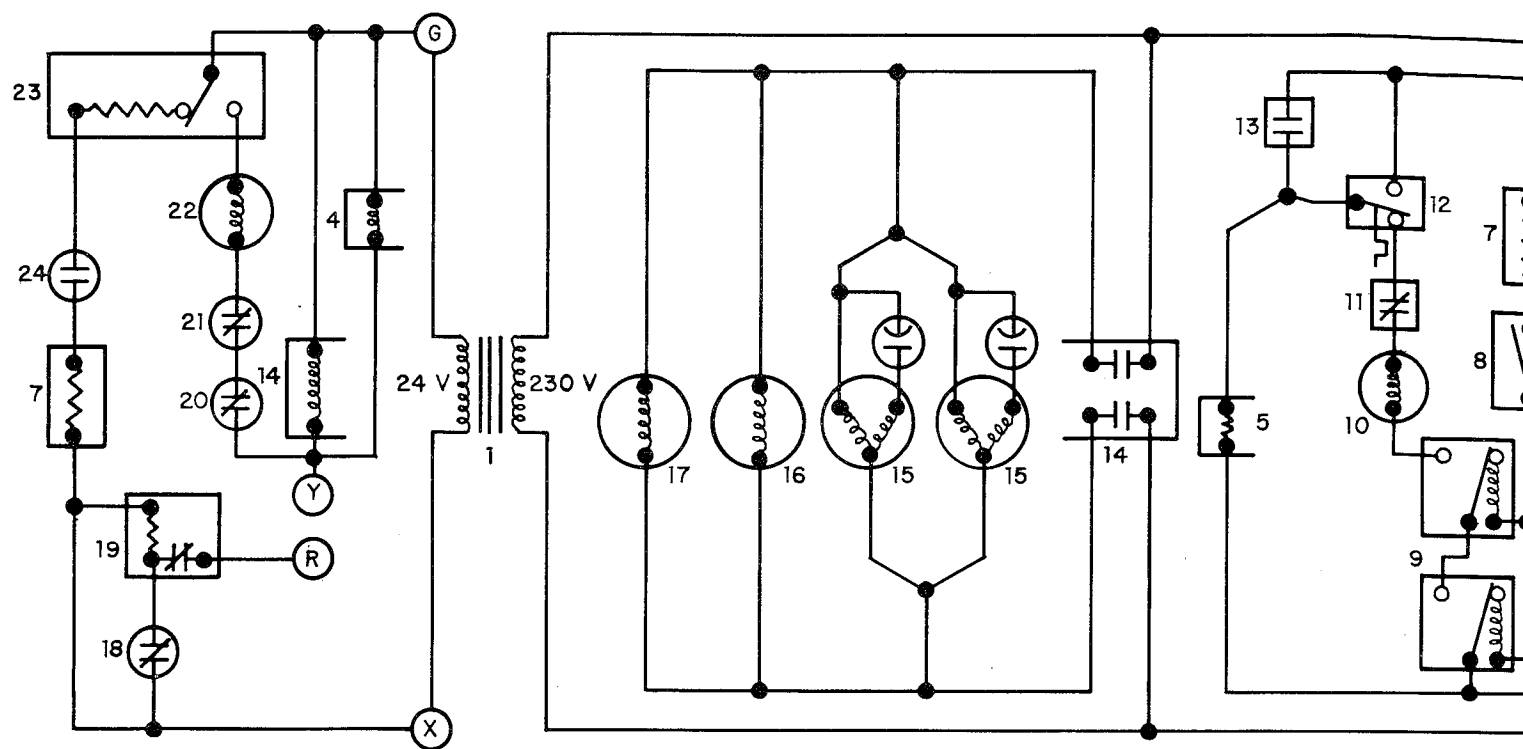
Shipping weight 2300 lbs.

SPECIFICATIONS

This equipment is a gas heating and gas cooling all-weather unit designed for roof-top or ground level installations.

It makes use of an air-cooled Bryant 90-452 gas-fired water chiller combined with a Bryant 300-378 heating unit conveniently mounted on an integral base for easy installation. The unit is rated at 90,000 Btuh cooling and 300,000 Btuh heating input. The heating can be modulated to 100,000 Btuh input for natural gas by using a modulating gas control kit, Part No. 60119CO2. The gas-fired chiller is standard with automatic fuel modulation to save gas under low load conditions. Installation does not interfere with other building trades. No inside floor space and no special vents are required. Just set the unit on slab or adequate roof support and connect duct, gas supply and electric supply. The Bryant absorption cycle is already charged and ready for operation. The weatherproof cabinet is made from heavy gauge zinc-coated steel; the chiller finish is baked-on enamel, and the conditioned-air section is lined with fiberglass to insulate and assure quiet operation.

Removable panels allow easy access to all components and controls for both heating and cooling. Automatic pilot reignition eliminates the need for service calls due to pilot outage; a stainless chromized steel heat exchanger promises long life.



1. Transformer
2. Blower motor
3. Combustion air blower motor
4. Fan relay cooling
5. Delay relay heating
6. Combustion air fan relay
7. Resistor
8. Pilot gas pressure switch
9. Pilot auto reignition

10. Gas valve
11. Limit switch adj.
12. Limit switch non-adj.
13. Combustion air pressure switch
14. Power relay (cooling)
15. Condenser fan motor
16. Chilled water pump
17. Solution pump
18. High temp cut-out (cooling)

19. High temp cut-out (heating)
20. Part load
21. High pressure
22. Gas valve
23. Auto pilot
24. Pilot gas valve

AIR DELIVERY AT INDICATED EXTERNAL S.P. WITH WET COIL

CFM	0		0.1"		0.2"		0.3"		0.4"		0.5"		0.6"		0.7"		0.8"	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2500	500	.464	620	.500	695	.560	725	.666	775	.732	805	.798	860	.866	900	.932	940	1.00
3000	650	.650	700	.734	750	.798	800	.866	840	.932	870	1.00	910	1.10	955	1.20	1000	1.25
3500	740	.900	790	.966	825	1.05	870	1.10	900	1.20	940	1.30	980	1.33	1005	1.43	1050	1.50
4000	835	1.20	890	1.30	920	1.38	960	1.45	990	1.55	1025	1.70	1060	1.80	-	-	-	-

Shaded portions of the table are beyond the standard drive range or motor horsepower. Standard drive range 540-870 RPM.

COMPONENT INFORMATION

Chilled Water Coil			Chilled Fan Motor		(2) 1/2 HP
Area	Sq. Ft.	7.92	Voltage (Std)		208/230-60-1
Height x Width	Inches	30 x 38	Speed	RPM	1075
Tube OD	Inches	1/2	Full Load Amps		3.6
Rows		3	Locked Rotor Amps		10.5
Fins		12/In. Flat	Fan Diameter	Inches	(2) 22.12
Pattern		1.25 x 1.08 Stag.	Chilled Water Pump		
Circuits		9	HP & Service Factor		1/3 - 1.75
Blower Wheels	No.	2	Voltage		208/230-60-1
Diameter x Width	Inches	12-5/8 x 12-5/8	Speed	RPM	3450
Blower Motor (Std)	HP & SF	1 x 1.25	Frame		48
Speed	RPM	3450	Full Load Amps		3.6
Frame		56	Locked Rotor Amps		23.0
Rotation		CCW	Solution Pump Motor		
Voltage (Std)		208-230-60-1	HP & Service Factor		3/4 - 1.25
Full Load Amps		6.7	Voltage		208/230-60-1
Locked Rotor Amps		35	Speed	RPM	1725
Blower Motor Pulley	Inches	PD 2.9 - 1.9	Frame		56
Blower Pulley	Inches	PD 12	Full Load Amps		5.4
Belt Length x Width	Inches	51 x 1/2	Locked Rotor Amps		29.5
Filters		(4) 25 x 20 x 1	Pump Pulley Diameter		Inches 7.84
			Motor Pulley Diameter		Inches 2.3
			Belt Length x Width		36.42 x 3/16

DETAILED COOLING CAPACITIES

AIR ENTERING C.W. COIL		CHILLER ENTERING AIR TEMPERATURE ° F					
		85		95		105	
		Capacity Btuh x 1000		Capacity Btuh x 1000		Capacity Btuh x 1000	
CFM	EWB	Total	Sensible	Total	Sensible	Total	Sensible
2,500	71	93.5	48.1	92.0	47.5	87.0	45.6
	67	89.5	57.8	88.0	57.2	83.5	55.6
	63	81.5	65.9	79.3	65.1	75.0	63.2
3,000	71	93.6	50.2	92.1	49.9	87.1	48.3
	67	92.5	62.5	90.0	61.6	85.7	59.9
	63	85.5	72.3	83.7	71.6	79.5	70.0
3,500	71	93.7	52.5	92.2	52.2	87.2	50.7
	67	93.0	66.2	91.0	65.4	86.0	63.9
	63	87.5	77.9	85.7	77.1	81.3	75.6
4,000	71	93.8	55.3	92.3	54.4	87.3	53.1
	67	93.4	69.6	91.5	69.1	86.5	67.4
	63	89.5	83.4	87.5	82.5	82.5	80.8

Notes:

- Sensible heat capacities shown are based on 80 F entering air at the evaporator.
- Direct interpolation is permissible. Do not extrapolate.
- To interpolate:
 - below 80 F DB**, subtract 800 Btuh per 1000 cfm for each degree below 80 F from the listed sensible capacity.
 - above 80 F DB**, add 800 Btuh per 1000 cfm for each degree above 80 F from the listed sensible capacity.

4. Formula:

$$LDB = EDB - \frac{\text{Sensible Heat Capacity (Btuh)}}{1.08 \times \text{cfm}}$$

$$L_h = E_h - \frac{\text{Total Capacity (Btuh)}}{4.5 \times \text{cfm}}$$

where h = **Enthalpy** (Btu/lb)