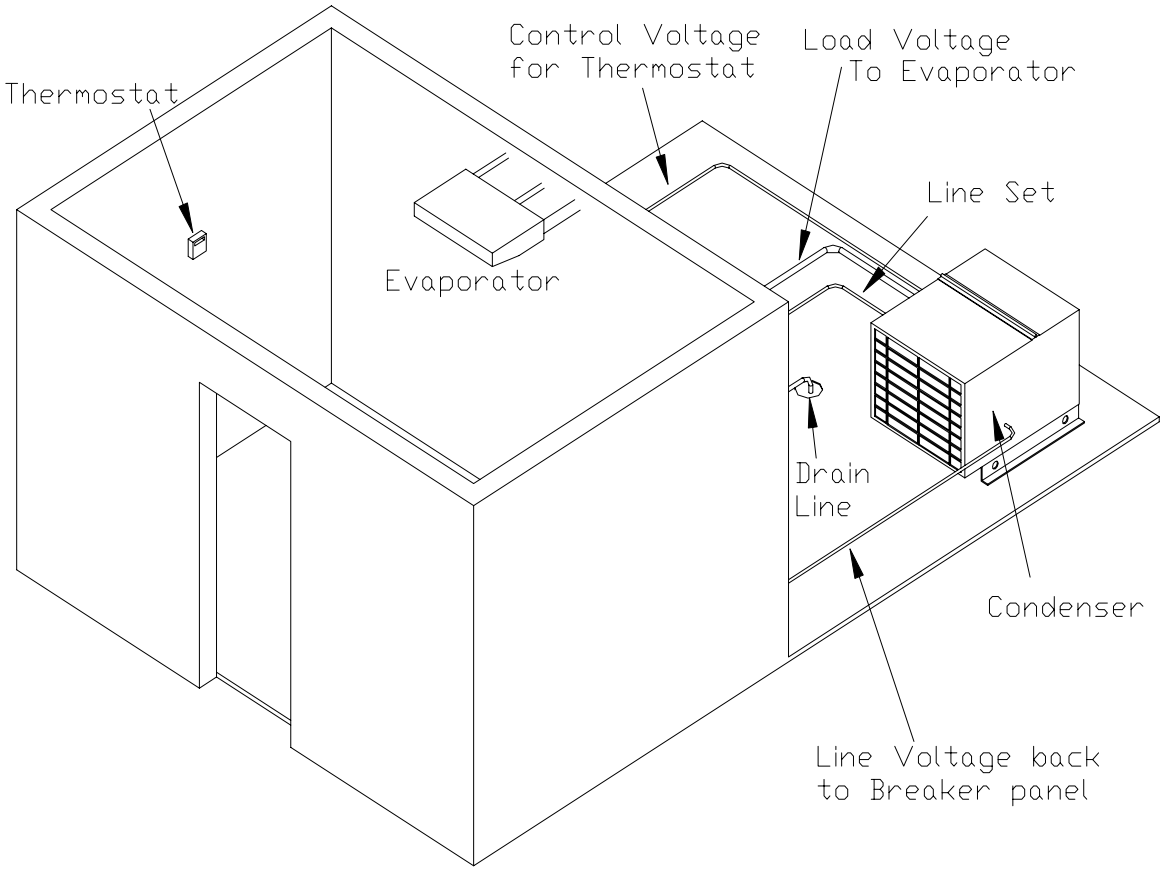


WineZone Ceiling Mount Ductless Split 15

- Requires an HVAC technician to install and charge with R-22 refrigerant.
- Easy to install.
- Unit plugs into wall outlet.
- Industrial grade unit for longer life.
- Indoor and outdoor condensers available.
- Drain line, refrigerant and line sets, and electric supply required.

Supplies and materials needed for installation

1. Refrigeration piping –1/4 liquid line and 3/8 insulated suction line set, not to exceed 80 equivalent feet in length
2. Condenser pad
3. Required electrical services
    A. Dedicated service for condenser and evaporator
    B. 2-conductor low voltage from thermostat to condenser control panel
4. R-22 refrigerant for system
5. Miscellaneous hardware, brackets, sealant etc…
6. Tools and equipment needed to perform the installation

Supplies and Materials Furnished with Equipment

1. Condenser with pre-wired control panel
2. Pre-assembled outdoor upgrade kit, if ordered
3. Ceiling mounted evaporator modified for system
4. Thermostat
5. Filter drier
6. Sight glass
7. Access tees
8. Fan cycle control, mounted and wired.
9. Wiring diagrams
10. 50’line set
11. Installation instructions
12. Warranty information

Refrigerant Piping and Charging Instructions

Caution: This Refrigeration Equipment must be installed by a qualified technician

1. Select a suitable location for the evaporator with respect to air circulation, racking, drain, refrigerant and electrical lines. Provide adequate clearance for airflow and maintenance.

2. Place the condenser at the desired location outside the wine cellar in a well-ventilated area or outdoors. Indoor condensers must be placed in a space twice the volume of the wine cellar to prevent excessive condensing temperatures. Check local codes for proper venting of mechanical rooms. Condenser face must be at least 8" from any obstruction and entering air must not exceed 110° F. When installing an outdoor condenser, be sure that it is located so that leaves or snow do not accumulate and block the airflow. This can be accomplished by setting the condenser on a concrete slab, blocks, etc. Place the unit so prevailing winds do not blow rain, snow and debris into the open ends of the outdoor cover. Air directed toward or away from the dwelling may cause undesirable noise for owners and their neighbors. This must be considered when placing the unit outdoors.

3. Install the 1/4 x 3/8 line set. The evaporator and compressor may have different fitting sizes, so some field supplied reducers will be necessary. Insulate the suction line the entire length of the run. Maximum line length is 80 equivalent feet. Long sweep elbows are equivalent to 5 linear feet. Horizontal line runs should slope ½" per 10 ft. towards the condenser for proper oil return. Avoid sags or bends that will trap oil. For installations with vertical height differences greater than 20 feet, consult Tecumseh Engineer Assistance. Line lengths in excess of 80 linear feet may cause compressor damage and will void the warranty.

4. Install the access tee provided on the receiver flare fitting. Place the fan cycle control capillary tube on the access tee and tighten securely. Install the filter dryer and sight glass. Wrap with a wet rag to prevent over heating during brazing.

5. Perform a leak test with dry nitrogen, but never expose the system to leak test pressures greater than 150 PSI. Test all fittings including factory installed flare fittings that may have loosened during shipping.

6. Evacuate the system to 1000 microns for 1 hour.

7. Install electrical wiring according to the Electrical Requirements on page 5 and the appropriate wiring diagram. Follow all applicable codes.

8. After isolating the vacuum pump from the system, break the vacuum to a positive pressure using nameplate refrigerant connected to the liquid line. Add approximately 2 lbs. of refrigerant

9. Complete the charging process with the compressor running and add the balance of the charge into the suction line of the system. Liquid refrigerant should never enter the compressor directly. Set the condenser fan cycle control to pressures acceptable for R-22 in your geographic location. Factory settings are a cut in of 250 with a differential of 50, and are sufficient for most locations. Slowly add refrigerant until the bubbles in the sight glass disappear. The condenser fan motor must be running to complete the charge.

10. After the wine room has reached 55°, check the sight glass and gauge readings. The sight glass should be free of bubbles. The suction pressure should be 60 to 65 psi and the superheat should be 6° to 10°. At the evaporator, the difference between entering and leaving air should be approximately 8°.

Each installation is unique. Variations in room design, application, local climate, and electrical supply can affect the system performance. Therefore some adjustments to the recommended settings may be necessary. Cool the room to 55° before making adjustments to the fan cycle control or expansion valve.

Always monitor the compressor amp draw with an ammeter when making adjustments. Never allow compressor discharge temperatures to exceed 210° F.

Service and Maintenance

Service Parts	Maintenance Procedures	Period
Indoor unit	1. Clean dirt and debris from grille or panel with a soft cloth, soap, and water.	As necessary
	2. Inspect evaporator coil, gently remove, brush off dirt and debris	As necessary
	3. Check drain pan. Wipe or vacuum clean as necessary. Check water flow; blow out drain as necessary.	Monthly
Outdoor unit	1. Wash condenser coil with appropriate cleanser and garden hose. Check safety devices. Check refrigerant charge. Check system operation	Twice per year By qualified technician

Electrical Requirements

1. Wall receptacle on 110-volt, 15-amp dedicated circuit.

2. Evaporator connects to terminals 3 and 4 in the condenser control panel.

3. Low voltage from Y and R on the thermostat connects to terminals 9 and 10 in the condenser control panel.

4. Each unit must be installed in accordance with the National Electric Code. Check local codes for additional precautions and ordnances to installation.

Field Wiring

Condensing unit

Terminal Board

Terminal 1 – 110 Line voltage from the plug

Terminal 2 – 110 volt neutral from the plug

Terminal 3 – 110 volt hot to the evaporator fan motor

Terminal 4 – 110 volt neutral to the evaporator fan motor

Terminal 9 – Thermostat Y

Terminal 10 – Thermostat R

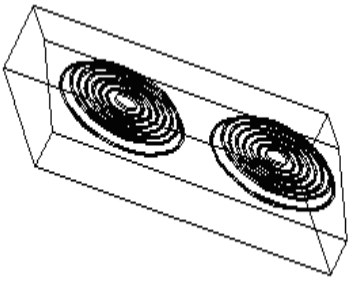
System Ground Lug Above Terminal Boards

Installation of the Evaporator

The evaporator must be securely mounted on a level ceiling, and placed in such a way as to prevent short cycling of the discharge air with the return air. This location must be suitable for piping and drainage, away from doors or windows, and provide suitable clearance for maintenance. Do not discharge air onto the thermostat.

The condensate drain must slope downward, have no traps, and requires an air gap to flow properly. Do not permanently attach or solder drain line to the drain stub.

The evaporator fan motor receives load voltage from terminals 3 and 4 in the condenser control panel. No low voltage wiring is required at the evaporator.



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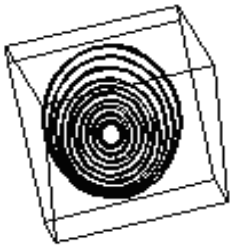

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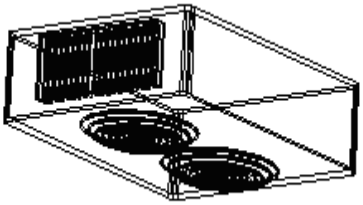
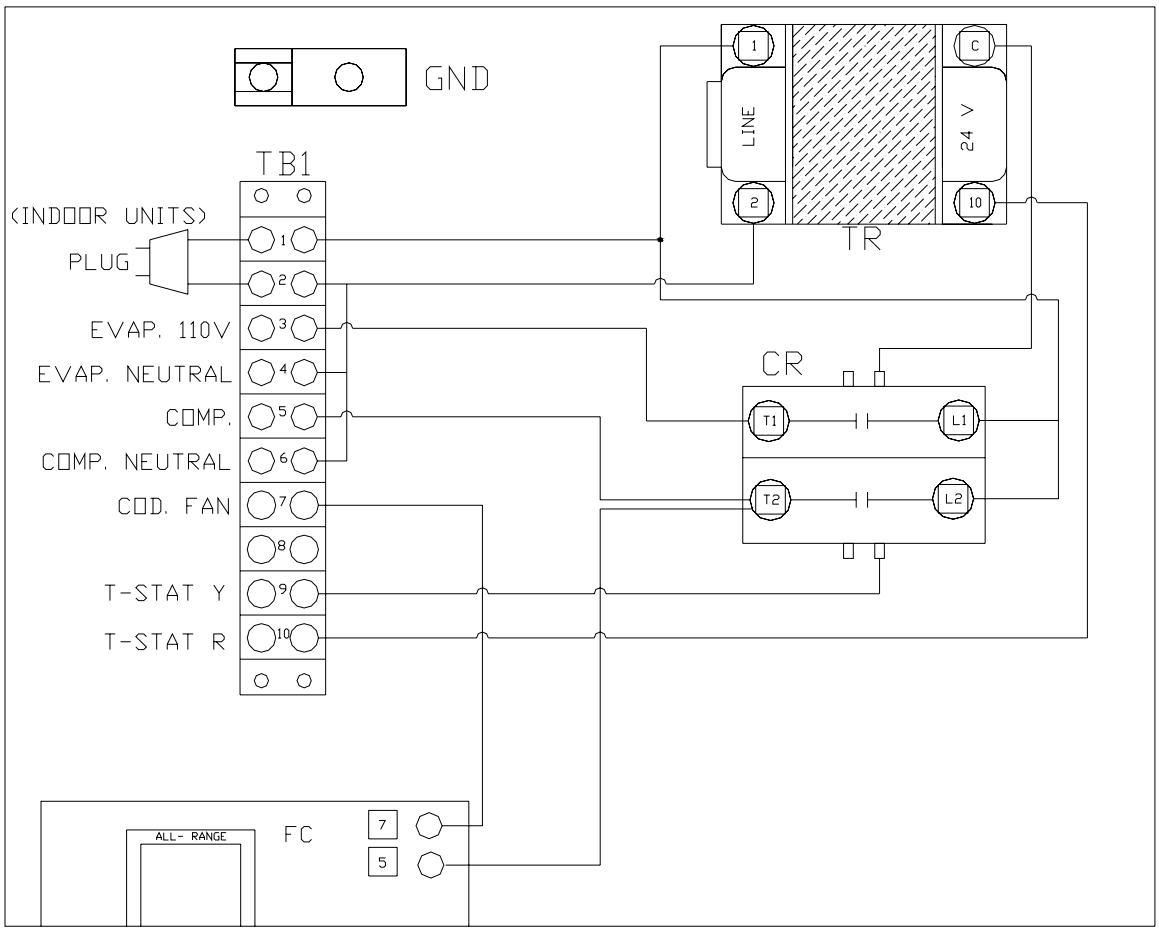


BTO

		Motor Info.		Dimensions (In.)			Connections (In.)		
Model	**CFM**	**Qty.**	**FLA**	**L**	**H**	**W**	**Liq.**	**Suct.**	**Drain**
TA	170	2	1.6	20 1/2	4 1/2	13 1/2	1/2 FN	3/8 ID	1/2 OD
C	235	1	1.0	14 1/4	8 7/8	13 3/4	1/2 FN	3/8 ID	1/2 OD
BTO	240	2	1.6	19 1/8	5 3/4	16 1/8	1/2 FN	1/2ID	1/2 OD



Legend

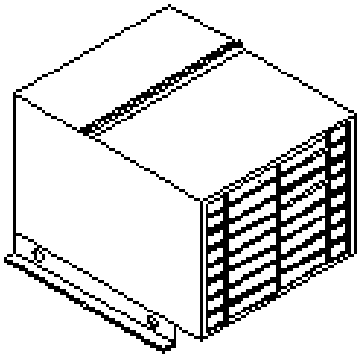
Symbol	Description
CCH	Crankcase Heater
Comp	Compressor
CR	Compressor Relay
Evap	Evaporator Fan Motor
FC	Fan Cycle Control
GND	Ground
TB1	Terminal Board One
TR	Transformer
- - - - - - -	Field Wiring

110 V Compressor 110 V Evaporator

TB1

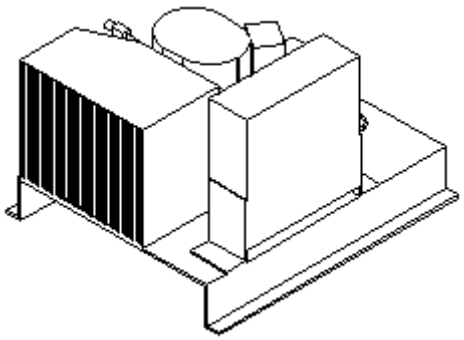
1	Plug
2	Plug
3	110 V Load voltage to evaporator
4	110 V Neutral to evaporator
5	Compressor
6	Compressor neutral
7	Condenser fan motor
8	
9	Thermostat Y 24 V
10	Thermostat R 24 V

Last revision: 10/31/07



Specifications For 1500 BTU Outdoor Condenser

BTU	Length	Width	Height	Liquid Line	Suction Line	Shipping Weight	Power Supply	Min. Circuit Amps	Max. Fuse Size
1500	27”	20”	20”	¼ MF	3/8 MF	93	115/60/1	5.8	15



Specifications for 1500 BTU Indoor Unit

BTU	Length	Width	Height	Liquid Line	Suction Line	Shipping Weight	Power Supply	Min. Circuit Amps	Max. Fuse Size
1500	24”	20”	14”	¼ MF	3/8 MF	60	115/60/1	5.8	15

Troubleshooting

Fault	Cause	Solution
Unit does not run	1. Blown fuse or circuit breaker	Replace fuse/reset breaker
	2. Room at set point	Lower set point
	3. Thermostat not calling for cooling	Lower set point
	4. Faulty thermostat or wiring	Call a qualified technician
Unit runs but does not cool	1. Lack of air flow	Make sure louvers and fan are unobstructed. Clean evaporator if necessary
	2. Unit low on charge	Call a qualified technician
	3. Compressor not running	Call a qualified technician
	4. Unit undersized	Call a qualified technician
Evaporator coil freezes	1. Coil and/or fan wheel dirty	Clean the coil and/or fan wheel
	2. Temperature set point too low	Set thermostat to 55°
	3. Fan cycle cut out set too low	Call a qualified technician
	4. System low on charge	Call a qualified technician
Water leaking from unit	1. Condensate drain clogged	Clear out drain
	2. Evaporator coil frozen	See above
Evaporator fan runs but compressor does not	1. Compressor and/or starting components faulty	Call a qualified technician
Compressor runs but evaporator fan motor does not	1. Faulty fan motor	Call a qualified technician
	2. Faulty fan relay	Call a qualified technician
Compressor short cycles	1. Evaporator blows on thermostat	Move thermostat
	2. Unit low on charge	Call a qualified technician
	3. Condensing fan motor/capacitor faulty	Call a qualified technician
	4. Compressor and/or starting components faulty	Call a qualified technician
Humidity in cellar too low	1. Cellar vapor barrier not sufficient	Install proper vapor barrier
	2. Insufficient air flow	Check evaporator