



# EVAPORATORS

## 500-C Series

Cool Only, Wall Mount or Between the Seat

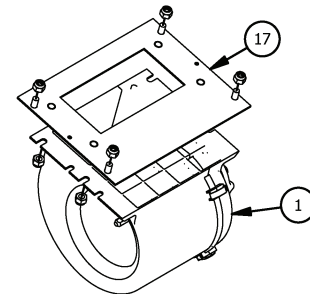
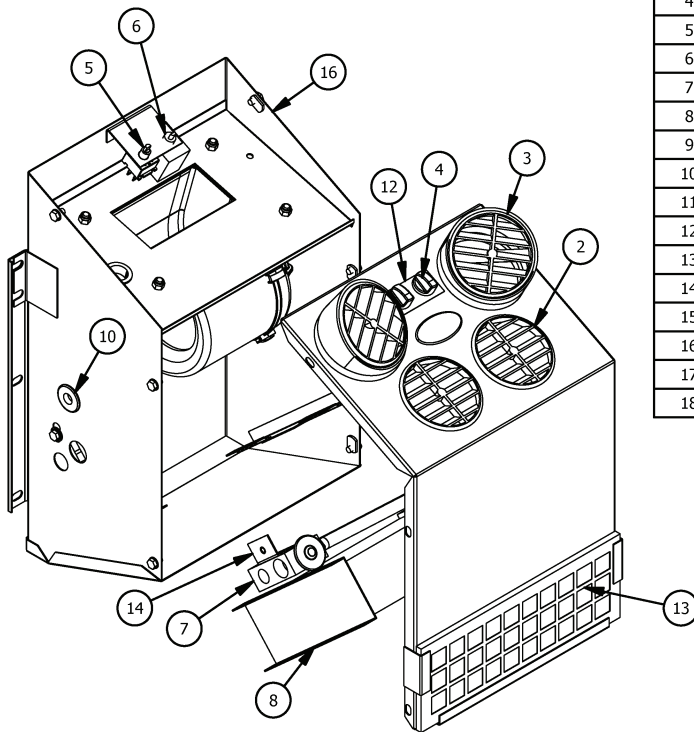
EVAPORATORS



### FEATURES

- New Version Includes Upgrade Blower Assembly
- Available 12 or 24 Volt
- Three Speed Blower Motor
- Adjustable Thermostat
- Filtered Intake Air
- Easy Servicing by Removing Front Panel
- Mounting Flange Welded to Case
- Steel Case with Black Powder Coat Finish

| 500-C Parts List Rev.1 |     |           |                          |      |
|------------------------|-----|-----------|--------------------------|------|
| ITEM                   | QTY | DTAC NO.  | DESCRIPTION              | NOTE |
| 1                      | 1   | 02-04205  | 12V Blower Assembly      |      |
|                        |     | 02-04204  | 24V Blower Assembly      |      |
| 2                      | 2   | 02-16061  | 3-1/2" Louver            |      |
| 3                      | 2   | 02-16073  | 3.5" Angled Louver       |      |
| 4                      | 2   | 03-00165  | Knob                     |      |
| 5                      | 1   | 03-13006  | Rotary 3-Speed Switch    |      |
| 6                      | 1   | 03-14002  | Rotary Thermostat        |      |
| 7                      | 1   | 04-15004  | Block Expansion Valve    |      |
| 8                      | 1   | 07-00500  | Evaporator Coil          |      |
| 9                      | 1   | 12-00026  | Wire Harness             | 1    |
| 10                     | 1   | 12-00116  | One Inch Grommet         |      |
| 11                     | 1   | 12-02140  | 1" Plastic Grommet       |      |
| 12                     | 1   | 12-50739  | Faceplate                |      |
| 13                     | 1   | 50-00005  | Filter 500               |      |
| 14                     | 1   | 50-50500  | Expansion Valve Mnt Brkt |      |
| 15                     | 1   | 50-50701  | Top Housing              |      |
| 16                     | 1   | 50-50702A | Bottom Housing           |      |
| 17                     | 1   | 50-50703  | Motor Mount Plate        |      |
| 18                     | 1   | Note 1    | Item Not Shown           |      |



Blower Assembly Detail

| BTU'S COOL | AIR FLOW | HEIGHT | WIDTH  | DEPTH | WEIGHT | MOTOR | CURRENT DRAW         | DTAC NO. |
|------------|----------|--------|--------|-------|--------|-------|----------------------|----------|
| 20,500     | 475 CFM  | 19.5"  | 11.81" | 8.25" | 26 LBS | 1-12V | 15.5 AMPS @ 13.5 VDC | 500-12C  |
| "          | "        | "      | "      | "     | "      | 1-24V | 8 AMPS @ 26.8 VDC    | 500-24C  |



# 500-C Series

## 500-C Installation Instructions

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Wall units typically mount to an existing wall or to fabricated brackets mounted to the floor or wall. Most of these units will have mounting wings or brackets protruding outward from each side of the evaporator unit. Installation of these style units is the easiest of all types of evaporators; but care should be exercised pertaining to the following areas:

### MOUNTING LOCATION

Choose a location that:

1. Gives operator maximum accessibility to controls and air flow, and considers the safety aspects such as: operators freedom of movement and does not restrict exits.
2. Provides best access for servicing items such as: fan and motor, switches and expansion valve.
3. Provides for best routing of refrigerant and heater lines (if so equipped), drain hose and wiring harness.
4. Provides for hooking up pressurizers and/or filters if needed.

### CLEARANCES

Make sure that all mounting bolts, brackets, hoses and harnesses take into consideration obstructions such as, fuel and hydraulic tanks, electrical panels, window openings, emergency exits, safety devices (i.e. water tanks, fire extinguisher systems, electrical or fuel shut-down switches etc.).

### INSTALLATION

1. Select mounting area.
2. Use template (if provided) or hold unit in desired location, mark mounting hole locations.  
**(NOTE: You might want to mark drain hole and hose entry locations).**
3. Center, punch holes and drill hose sizes desired.
4. Bolt unit to wall.

**NOTE: Seal any hole drilled, to prevent the entry of any undesired dust, air, water, etc. You may need to use large washers or brace straps to provide support, especially if the wall material is thin.**

5. Follow instruction for mounting the other supporting components (i.e. condenser, compressor, drier, safety switches, etc.) and install hoses and wiring per typical diagrams provided.

### DRAIN HOSE INSTALLATION TIPS

1. Install drain hose using care not to kink or pinch to avoid restrictions.
2. Drain hoses on dual drain units may be teed together if the installation warrants.
3. The lower end of drain hose/hoses should be cut off at an angle to prevent air bubble causing blockage.
4. Drain hoses should always be routed outside of cab.
5. Seal around drain hoses where they exit cab to minimize dirt and hot air entering cab.
6. Clean out hoses periodically.

NOTE: DTAC presently only utilizes pickup tube, stack pack, sight-glassed receiver-driers compatible with both R-12 and R-134A refrigerants. These driers are specifically designed to be mounted in a vertical attitude. This vertical attitude is with the sight-glass up. Any deviation from this present policy would be clearly noted by DTAC. Failure to mount the drier as outlined below could result in your warranty being voided.

Guidelines are:

1. Drier should be mounted in a vertical position (sight glass up).
2. No. 6 line from condenser should be attached to the drier fitting port marked "IN".
3. Drier should be securely mounted in a manner to minimize any excessive vibration.
4. Clearance should be allowed for any safety switches and the wiring for these switches.

## CONDENSER INSTALLATION TIPS

### RADIATOR MOUNTED

1. Install with the #8 (large) fitting up when possible (to help minimize backpressure).
2. Install condenser in maximum cool airflow area.
3. Always try to allow condenser to get the cool air first. Mounting condenser behind a hydraulic oil, engine oil or engine coolant coil could affect the condensers efficiently.

### REMOTE MOUNTED

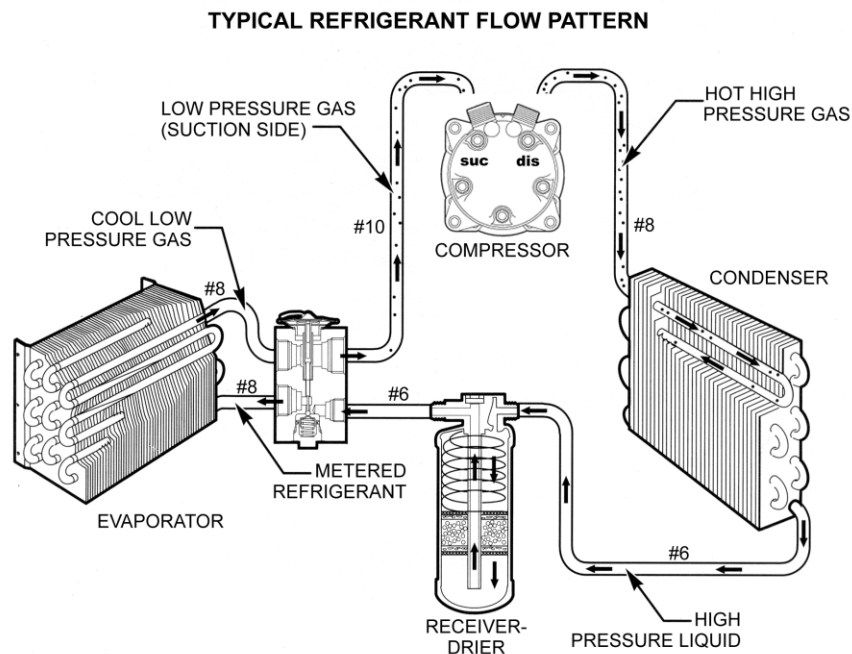
1. Install condenser with at least 3" free air space in all directions.
2. **DO NOT INSTALL IN PATH OF ENGINE EXHAUST.**
3. Install in clean air area if possible.
4. Air off of condenser should not blow onto cab skin or cab glass.
5. Protective covers over condensers should not restrict airflow.

## COMPRESSOR INSTALLATION

See Compressor Mounting Instructions supplied in mount kit.

## PLUMBING INSTALLATION

Plumbing schematic below is provided to speed installation of hoses.



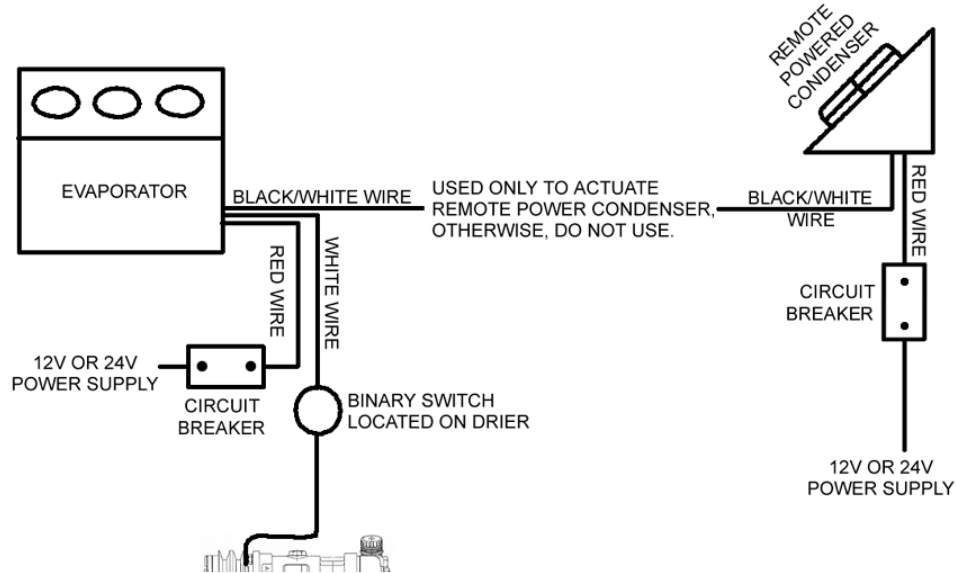
# WIRING INSTALLATION

## SAMPLE SYSTEM WIRING SCHEMATIC

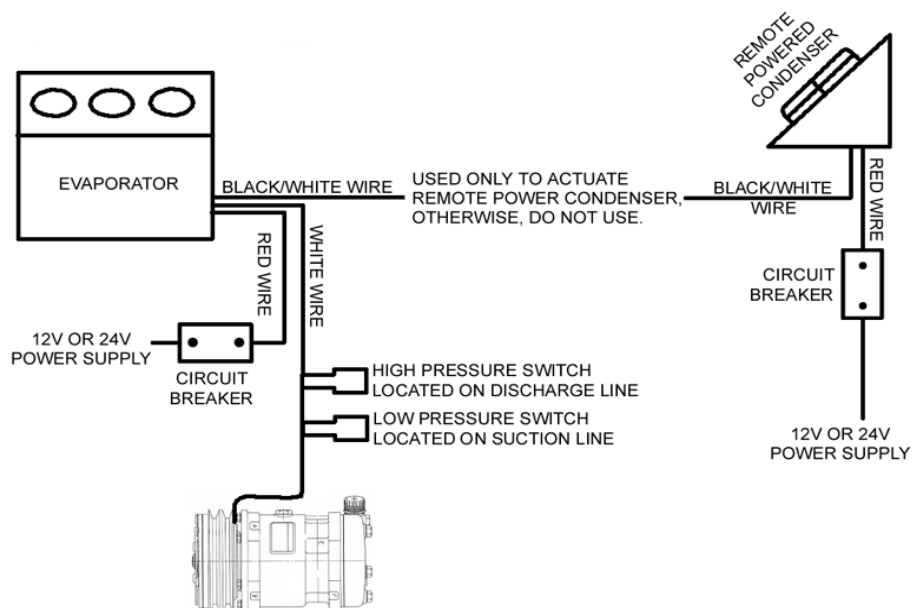
Below is a wiring example of a typical DTAC system. Refer to Wiring Schematic supplied with your unit for exact wiring.

## BINARY SAFETY SWITCH WIRING SCHEMATIC

NOTE: The 500-C evaporator is externally grounded. The solid black wire is ground. The black with white stripe is the condenser activator wire and only used with remote powered condensers.



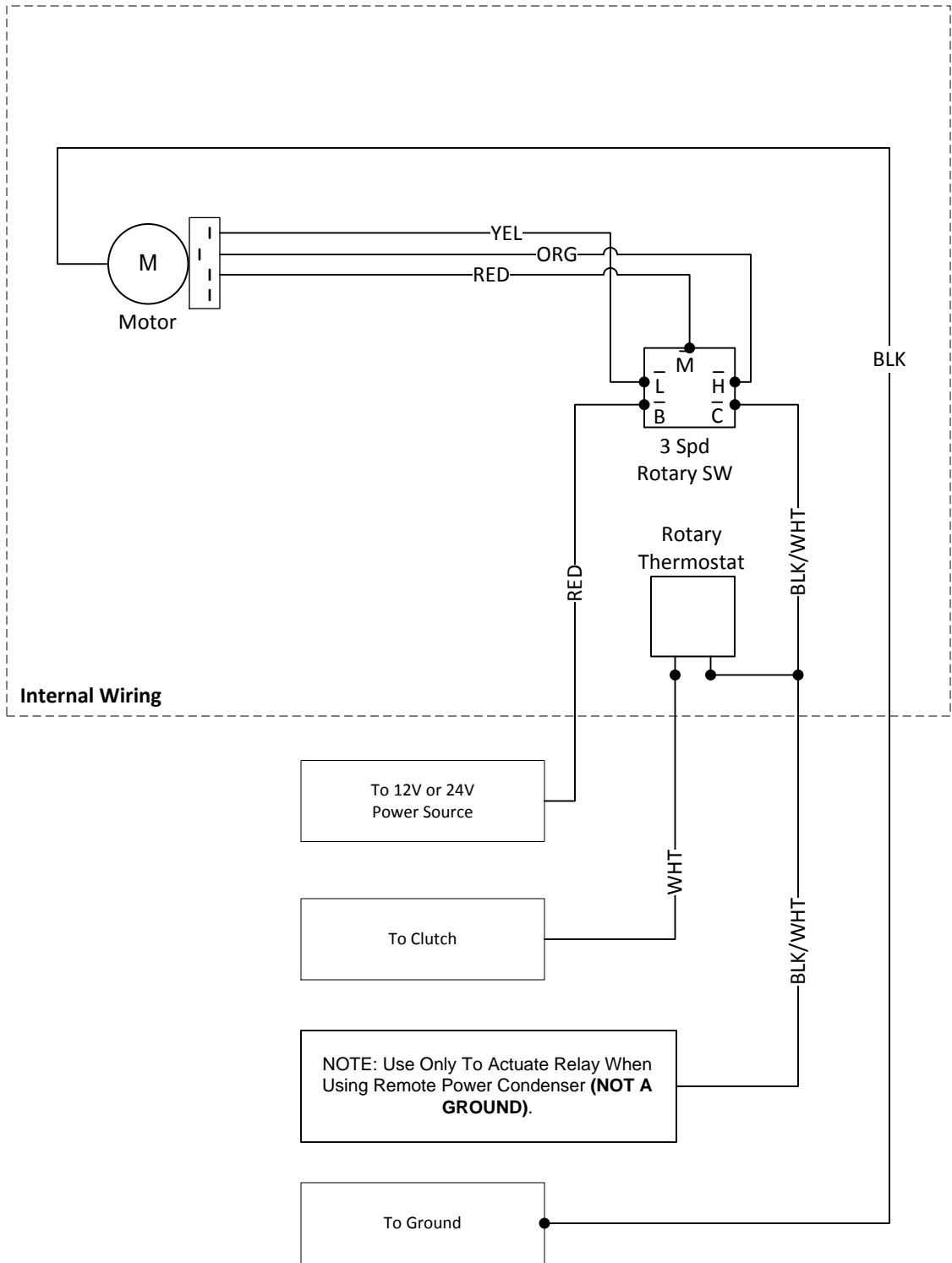
## HI & LOW PRESSURE SAFETY SWITCHES WIRING SCHEMATIC



Manufacturer of Heavy Equipment Heat/Cool Systems  
"Revolutionizing the Heavy Equipment A/C Industry"

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# 500-C Series Wire Diagram



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 07.07.15



## PREVENTATIVE MAINTENANCE

DTAC strives to manufacture A/C systems of superior quality. However, as with all mechanical equipment, normal maintenance must be performed for your A/C to function at peak capacity. A well-maintained A/C system will save on down time and premature component failures.

### **Weekly inspections or every 2 days in severe environments should include:**

1. Inspect compressor clutch drive belts (tightness, wear).
2. Inspect compressor mounting brackets (bolts, alignment).
3. Inspect mounting hardware on evaporator unit and condensers.
4. Inspect air intake filter. (Clean or replace filter).
5. Inspect evaporator and condenser coils. (Clean using air pressure. **DO NOT USE WATER OR PRESSURE WASHERS**).
6. Inspect hose and wire harness for proper routing, leaks and wear.

### **Helpful Hints**

Make sure the evaporator air intake area is not obstructed (i.e. toolboxes, clothing, lunch box, etc.).

Manual thermostats on our systems, when rotated clockwise to the stop position will not allow the A/C compressor clutch to cycle. The compressor will run continuously and the evaporator coil will not defrost. **REMEDY:** Turn the manual thermostat knob clockwise to the stop position, then turn the thermostat knob back counter clockwise  $\frac{1}{4}$  turn.

DTAC thanks you for purchasing our units. It is our endeavor to provide you with a quality A/C unit with trouble free service.

# Tech Knowledge



## Charging A/C System Procedures

- I. Leak Testing Procedure
- II. Evacuating System Procedure
- III. Charging Procedure
- IV. Determine Refrigerant Weight Procedure

### I. Leak Testing Procedure

1. With machine engine off, connect gauges to A/C system.
2. Charge with dry nitrogen. Up to 300 psi may be necessary to detect some leaks.
3. Spray all fittings and areas of concern with soapy water.
4. If bubbles are present or nitrogen pressures drop in fifteen minutes, repair leak and perform leak test again.
5. If nitrogen pressures maintain a constant level for fifteen minutes and no bubbles are present, proceed to the evacuating procedure.

### II. Evacuating System Procedure

1. With machine engine off, connect gauges to A/C system.
2. Install center hose from gauge manifold to vacuum pump.
3. Turn the vacuum pump on.
4. Open the high and low side gauge manifold valves and the pump exhaust valves. System should reach 28-29.5 inches Hg. in less than 5 minutes. If system does not pump down, check connections and return to leak testing procedures if necessary.
5. Evacuate system using vacuum pump for an average of one hour depending on size of pump. This is crucial to remove moisture and air from the system.
6. Close all valves.
7. Shut off vacuum pump.
8. If pressures rise in 5 minutes, check connections and return to leak testing procedures if necessary.
9. If pressures hold level in a vacuum for 5 minutes proceed to charging procedures.

### III. Charging Procedure

1. The system must be in a vacuum to continue.
2. Place refrigerant bottle on scales.
3. Attach charging hose to refrigerant bottle.
4. Purge air from charging hose.
5. Open shut-off valve at refrigerant bottle.
6. Reset scales to zero if necessary.
7. With machine off, open high side manifold valve.
8. After gauge pressures become slow to increase, close high side manifold valve.
9. Start engine and throttle to working rpm.
10. Adjust A/C controls for maximum cooling and engage compressor clutch.
11. Open low side manifold valve.
12. Charge to weight recommended by manufacturer.
13. Check system for cooling.
14. If recommended weight is not available proceed to determine refrigerant weight procedure.

### IV. Determine Refrigerant Weight Procedure

1. Watch sight glass on drier. If bubbles clear on sight glass, system is full. However, some systems are full and still have bubbles in sight glass. Do not try to clear all bubbles if high side pressure is too high.
2. Try to keep low side pressure between 5-35 psi and the high side pressure lower than 295 psi. Keep in mind that pressure readings are greatly affected by ambient temperatures. For example, a high side reading of 295 psi on a 75 degree day would not be good while a high side reading of 300 psi on a 115 degree day would be acceptable, assuming the A/C system was cooling good.
3. Monitor vent temperature with doors closed to cab. If adding refrigerant lowers vent temperature, keep adding refrigerant as long as high side pressure is acceptable. When vent temperature levels out or starts rising, stop adding refrigerant. A 20-degree difference between the vent temperature and the air intake temperature is acceptable.
4. Return line at compressor should be cool and possibly sweating.
5. Cab temperature should be comfortable.
6. Check scales for proper weight and record for future use.

Contact one of our A/C specialists for further questions.  
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