

Installation Instructions

1973-79 Ford Pickup (w/ Heater Only Cab)

CAP-7379E Hurricane Systems



1201 Forum Way South, Fort Worth TX 76140
(817) 531-2665 or FAX 531-3257

This system is a combination heat/cool and defrost system. Requires removal of the original ac & heater unit. Installation is straight forward, appearance is neat, and performance is unsurpassed. Basic mechanic tools are required, a 1 1/4" hole saw, and a 3" hole saw. This modular design provides accessible behind dash area not offered by most other systems.

To be effective, an air conditioner must remove heat from the air in a vehicle faster than it is added. It is therefore very important to reduce the "heat added" by insulating the roof, firewall, and floorboards. You should also seal all holes in the firewall, insure airtight door and window seals, and consider window tinting.

For maximum cooling performance a clutch style or steel six-blade fan should be installed with shroud if possible. We DO NOT recommend flex fans. Another alternative and a definite plus for any system is the addition of an electric condenser fan, dedicated to the A/C System. If the vehicle is equipped with only an electric radiator fan, it MUST be wired to engage with the A/C system. A/C head pressure increases much faster than the engine temperature, which can damage the compressor and other components. Steel Fan Blades and High Quality Electric Radiator & Condenser Fans are available from Old Air Products, at a very reasonable cost.

PREPARATION

- 1) Read the instructions prior to starting installation.
- 2) Start by disconnecting and removing the battery.
- 3) Drain coolant from engine and radiator and remove original heater hoses.
- 4) Remove the glove box door, glove box, control, factory ac & heater unit, instrument bezel and Passenger side fresh air door..
- 5) If installing complete system remove the original compressor, hood latch assembly, radiator and fan assembly to access the front of the core support to install condenser assembly.
- 6) Remove the air/heat & defrost unit from the box, and lay parts out so they can be located as required.

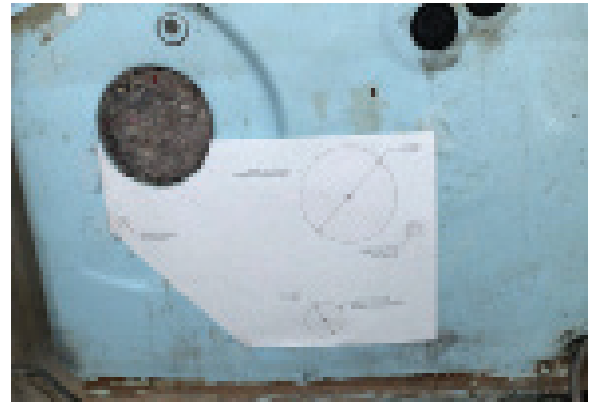


Photo 1 - Align template to fire wall.



Photo 2 - Install Block-off to fire wall

Unit Installation

- 1) Align template on firewall as shown. (Photo 1)
- 2) Mark and drill (1) 3" hole and (1) 1-1/4" hole using a hole saw as shown on template.
- 3) Apply silicone sealer to the inside edge of block-off plate, align Block-off plate and secure to firewall using (2) 1/4"-20 X 1" Button Head Allen bolts and (2) 1/4"-20 KEPS Nuts. (Photo 2)
Note: Tighten these bolts to secure block off plate to firewall at this time, the extra length of these bolts will act as mounting studs for unit mounting plate in step 9.

3) Install fresh air block off plate to passenger side kick panel using original OEM hardware. (Photo 3)

4) Attach unit mounting plate to Hurricane Unit using (3) 1/4"-20 X 5/8" Hex bolts and spacers. (Diagram 2)

5) Attach bracket to front of Hurricane unit using (2) #8-32 X 3/8" Phillips screws. (Diagram 2)

6) Install Thermostat and intake grill. (Diagram 1)

- a) Locate the intake grill w/ thermostat.
- b) Gently feed the thermostat's capillary sensor tube through the small hole in top lip of large inlet air opening (Diagram 1). Gently bend the end of the sensor tube about a 90 degree angle approximately 2" from the end and insert it straight into the fins of the coil about 1/2" up from bottom and centered from front to back of the inlet opening. Correct sensor tube location will be marked with a label and plastic pin on the evaporator coil.
- c) Snap intake grill onto the side of the Hurricane unit.

NOTE: Thermostat sensor location is important to cycle the compressor to keep the coil from freezing up and achieve maximum cooling performance. Rotate thermostat completely clockwise then rotate counterclockwise approximately 1/8 turn until you feel the indent. The adjustable thermostat will allow some adjustment for fine tuning the system.

7) Attach 2 small pieces of 2" duct hose to defrost outlets. The duct hose is easier to attach to unit before it is installed in dash. Other end will be trimmed to length and routed to a "Y"-duct then to defrost duct after unit is installed.



Photo 3 - Install Fresh Air Block-off plate.

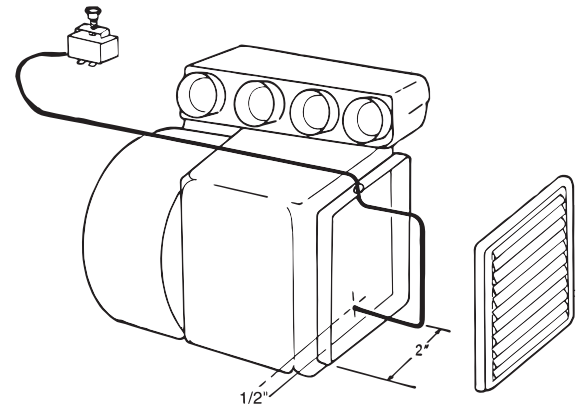


Diagram 1 - Thermostat Placement

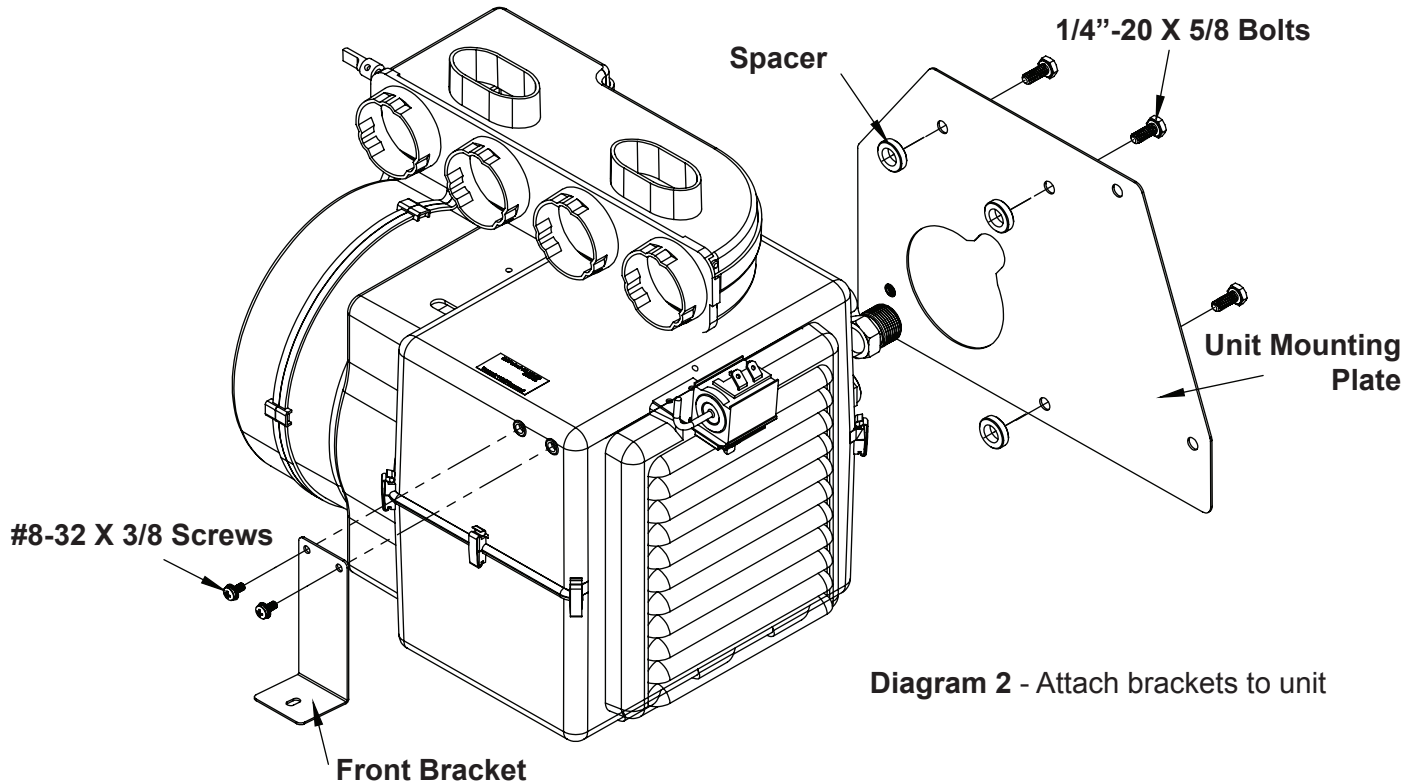


Diagram 2 - Attach brackets to unit

For Steps 8 thru 14 - See also exploded view of unit to firewall mounting diagram on page 4

8) Remove original mounting bolt that secures bottom passenger side of the dash to kick panel. This will allow dash to be pulled out for additional clearance to install unit. **Note:** Use painters tape on kick panel to protect paint from scratches when bottom edge of dash is pulled out to make clearance for unit installation in step 9.

TIP: Install a piece of insulating material (Not supplied) on inside of firewall at this time so it will be sandwiched between the firewall and unit mounting plate.

9) Pull bottom edge of dash out for a little extra clearance, insert unit into dash, insert fittings through 3" hole in firewall plate then align unit mounting plate with bolts/studs in firewall plate. Loosely attach with 1/4"-20 KEPS Nuts. **Tip:** Do not tighten at this time to allow space to install rubber grommet in step 11. (Photo 3)

10) From engine side insert 1/4"-20 X 1" Button Head Allen screw through firewall plate into threaded nutsert in unit mounting plate. **Tip:** Do not tighten at this time to allow space to install rubber grommet in step 11. (Photo 5)

11) Install rubber 4 hole grommet over heater and ac tubes and tuck inner lip into 3" round hole in firewall plate. (Photo 4) **TIP:** To make installation of grommet easier do not remove caps from tubes, lubricate grommet and tubes with a soap/water solution or window cleaner such as Windex.

12) After rubber grommet is in place tighten hardware and secure unit and mounting plate to firewall. (Photo 4)

13) Replace original dash mounting bolt and tighten.

14) Insert rubber grommet for drain tube into firewall plate. (Photo 4)

15) Insert drain tube through grommet and onto drain nipple on the bottom of unit. Trim tube and use 90 degree fitting/nipple to route drain tube downward behind inner fender. (Photo 4)

16) Using a #8 X 3/8" Pan Head screw secure front mounting bracket to bottom edge of dash. (Photo 5)



Photo 3 - Install unit to fire wall.

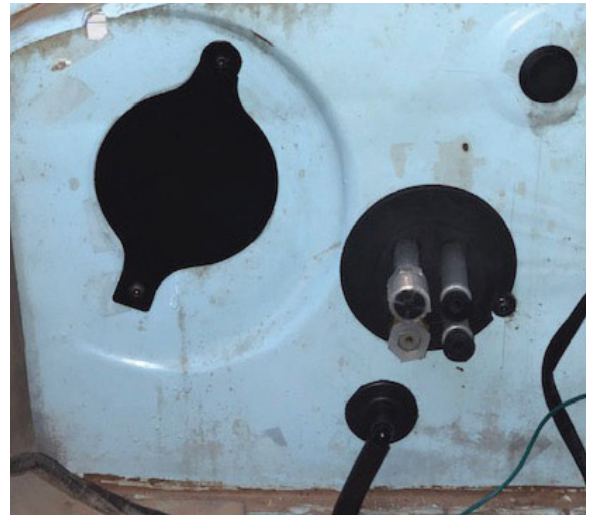
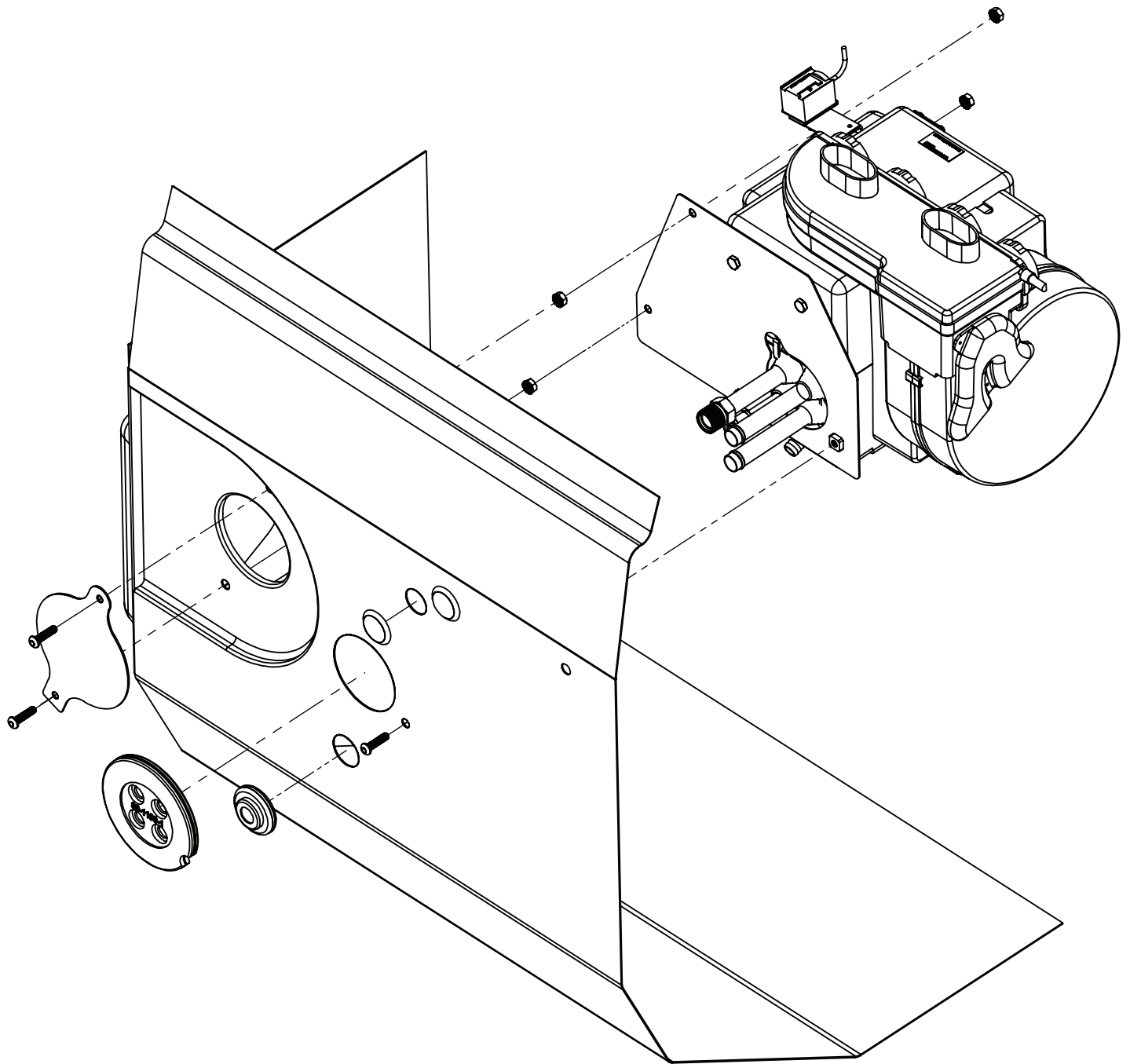


Photo 4 - Install Screw, grommet & Drain Tube.



Photo 5 - Attach front bracket to dash

Exploded view of unit and mounting plate



INSTALL DEFROST ADAPTER

- 1) Remove the two tabs from the original defrost duct. (Photo 6)
- 2) Align adapter with original defrost duct inlet. Using adapter as template drill (4) 3/16" holes and secure adapter with (4) 10-32 X 1/2" Phillips screws and (4) 10-32 KEPS nuts. (Photo 7)
- 3) Attach defrost support bracket to the firewall using original hole in firewall with 1/4-20 X 1/2" Phillips Screw and 1/4-20 KEPS nut. (Photo 9)
- 4) Secure bracket to Defrost duct using #8 X 1/2" screw. (Photo 8)
- 5) Attach the two hoses from the defrost outlets on the Hurricane unit to the two 2" ports of the "Y" duct.

Important Note: Use caution when routing duct hose in steps 3 & 4 to leave clearance and avoid contact with the windshield wiper motor and linkage.

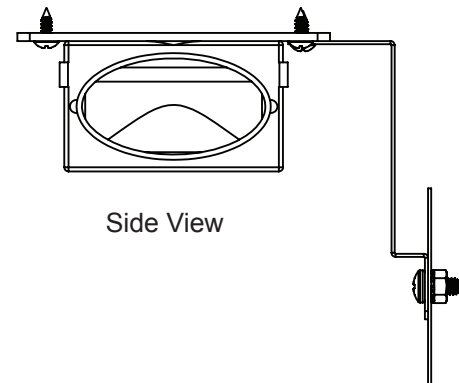
- 6) Route a piece of 2-1/2" duct hose from the "Y" duct to the defrost adapter installed in step 3.



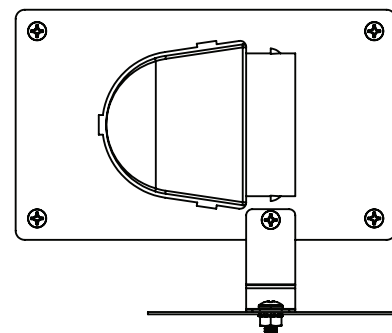
Photo 6 - Remove Tabs from defrost duct



Photo 7 - Install Defrost Adapter



Side View



Bottom View

Photo 8 - Install Defrost Adapter Bracket

INSTALL CONTROL PANEL & WIRE HARNESS

Refer to instructions included in control package.

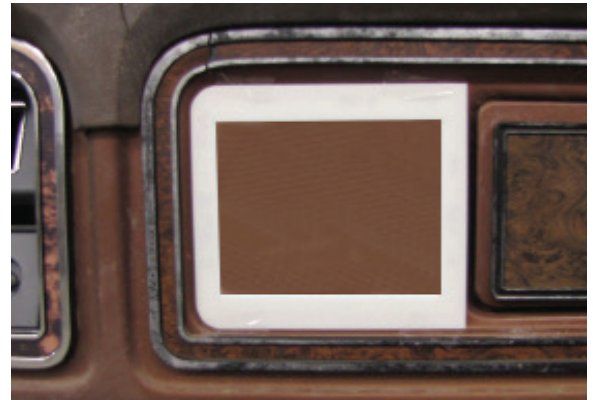
INSTALL DASH LOUVERS

1) Align louver templates on dash. Mark dash and cut openings for louvers. Center louver and passenger side louvers will fit into metal portion of dash. Driver side louver will be installed into dash bezel. (Photo 9) **CAUTION:** Do not oversize the hole/dash openings

2) Place adhesive strips on inside of dash openings for center and passenger side dash openings where locking tabs on louvers secure louver to the dash. This will fill gap between dash and tab for a tighter fit to prevent rattling. (Photo 10)

3) Install louvers into openings.

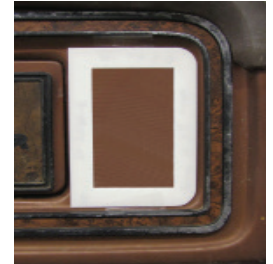
4) Route a piece of 2" duct hose from the Hurricane unit to each of the (4) dash louvers. Cut & trim duct hose to length as required for installation.



Center Template



Driver Side
Template



Passenger Side
Template

Photo 9 - Attach louver templates to dash



Photo 10 - Attach Adhesive Spacer Strips

INSTALL EXPANSION VALVE

1) Locate the brass 90 degree expansion valve and a # 8 o-ring. Lubricate the O-ring with refrigerant oil, place o-ring over end of fitting and install the expansion valve onto the lower A/C fitting. (Photos 11) Tighten the fitting using a 5/8", and 7/8" wrench. Use caution not to over tighten and crush or damage the O-ring seal. (Photo 11)

Note: The expansion valve in this kit may have a 134-A label. This refers to the refrigerant used in the sensor tube, not the refrigerant to be used in the system. The expansion valves included with our systems are compatible with both R-12 and 134-A systems.

2) Gently bend the "pig tail" sensor of the expansion valve so it is parallel and against the suction tube on the unit and align at a 2 o'clock or 10 o'clock position. Use the clip provided to secure the "pig tail" to the tube (Photo 11). Wrap the clip, "pig tail", and tube with the black tacky tape provided (Photo 12).

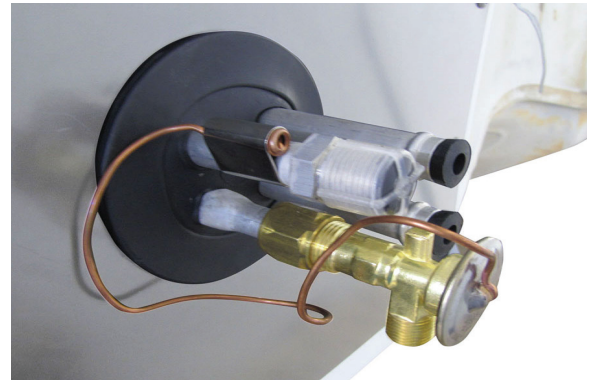


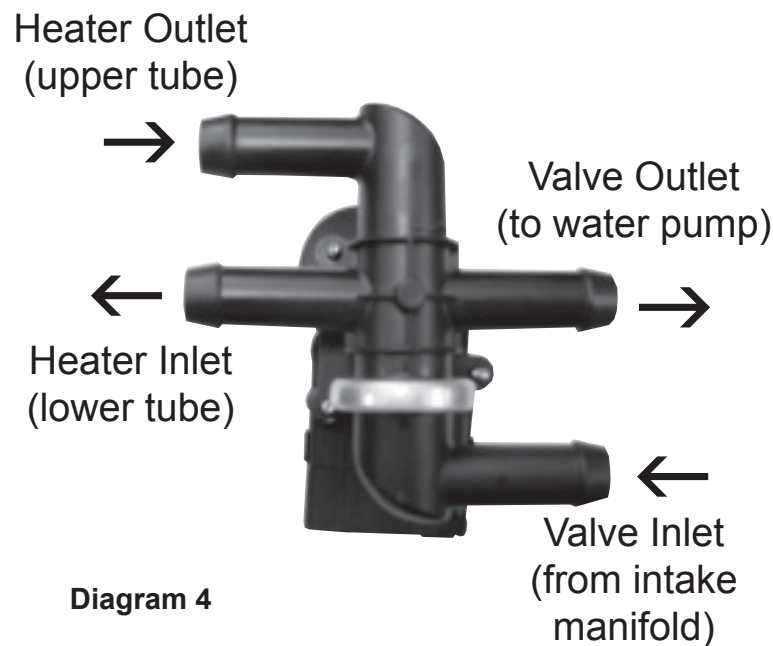
Photo 11 - Install Expansion Valve



Photo 12 - Wrap Expansion Valve Sensor

HEATER VALVE INSTALLATION, ENGINE COMPARTMENT

- 1) Locate area where heater valve will be installed (Be sure wire harness will reach and electronic servo motor on heater valve body is not too close to exhaust manifold).
- 2) Route section of heater hose from the engine heater outlet (usually on the intake manifold) to the heater inlet fitting (bottom tube) on the unit.
- 3) Route a second section of heater outlet fitting (top tube) on the unit to the heater return fitting on the engine (usually on the water pump).
- 4) Position the heater valve in desired location. Inlet fitting on heater valve can be rotated on valve body for installation of inlet heater hose. Splice into heater hoses and connect as shown in diagram 4.
(If vehicle is equipped with 3/4 heater hose install sleeve adapters to water valve fittings.)
Tip: We recommend gear type clamps be used to fasten the heater hoses and caution should be taken not to over torque the clamps creating damage to the heater valve.
- 5) Fill radiator with antifreeze for a minimum protection of -10 degrees Fahrenheit.



Caution

This is not a blend system. The heater valve should not be open while operating the air conditioning. You must maintain antifreeze protection in cooling system for a minimum of -10° Fahrenheit.

The heater valves should be opened to allow antifreeze to flow into the heater core before operating the A/C system to prevent freezing and rupturing the heater core.

Neglect of these cautions will cause damage to your system and Void Manufacturers Warranty.

This should complete the installation of the Inside Package, If you purchased a complete system continue with the condenser, compressor and a/c hose instructions.

CONDENSER INSTALLATION

Refer to the instructions included with the condenser assembly for installation.

Old Air Products offers two custom condenser assemblies for the 1973-79 Ford Trucks. We recommend condenser assembly #51-7379PS for vehicles with compressor mounted on Passenger side or #51-7379DS for vehicles with compressor mounted on driver side.

COMPRESSOR & BRACKET INSTALLATION

Locate the compressor and the mounting bracket. Refer to the instructions in the bracket hardware bag for installation. During installation the compressor may mounted with fittings pointed up or rotated to either side for easier hose routing but **DO NOT MOUNT COMPRESSOR UPSIDE DOWN**. We recommend waiting until the system is ready for the refrigerant charge before making this connection to the compressor clutch to avoid compressor damage.

NOTE: New compressors from Old Air Products are filled with adequate oil for the complete system, unless it is being installed for use with dual evaporator system.

A/C HOSE & PRESSURE SWITCH INSTALLATION

NOTE: Depending on the compressor and bracket combination used this kit may contain either a pre-cripped or universal a/c hose kit. All o ring fittings will require using an o ring seal. Use refrigerant oil to lubricate the o-rings on all hose fittings and connections. Protective caps and plugs should not be removed until refrigerant hoses are ready to be connected. O-Ring fittings should be tight, although excessive over tightening will crush o-ring seal. Avoid sharp bends when installing hose. Hoses should not be too close to the compressor clutch, or touch hot or moving parts of the engine. Slide necessary grommets on hose before routing through firewall and core support. Grommets will help prevent cutting hoses on sharp metal edges. **Hose Clamps should not be used with R-134A Refrigerant, a beadlock crimper is required to secure fittings to the hoses. (use of linear or hydrophilic hose crimping tool will void warranty)** Even though hose clamps are acceptable for use with R-12 refrigerant, it is recommend that all hose fittings be crimped for neatness, and to facilitate easy conversion to another refrigerant if desired, at a later date.

If installing with a universal hose kit the hoses may be cut and assembled to desired length. Most A/C shops or auto supply stores can also crimp the a/c hoses for a modest fee or We will crimp them at no charge.

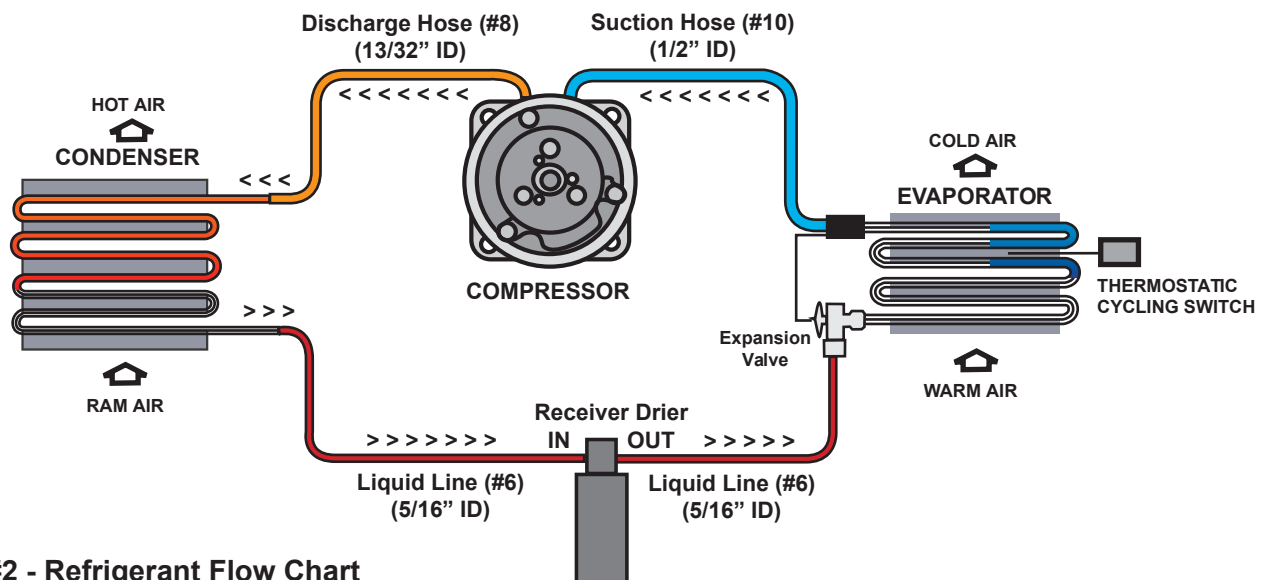


Diagram #2 - Refrigerant Flow Chart

Refer to Diagrams #2 & #3 for the Following Steps 1-5.

1) Install the #6 Condenser outlet tube. Use a lubricated # 6 O-Ring and connect to #6 bulkhead fitting at core support and route along inner fender and secure tube to inner fender with wrap around clamp and #10 X 1/2" sheet metal screw. (Photo 13)

2) Route the # 6 (5/16") hose from the condenser outlet tube to the expansion valve and install pressure safety switch on service port. The 90 Degree fitting attaches to the expansion valve and the straight fitting with switch/port connects to the condenser outlet tube installed in step 1. Use lubricated # 6 O-Rings with a 3/4" and a 5/8" backup wrench to secure fittings.

IMPORTANT NOTE: a straight #6 fitting with a port for the pressure safety switch is included with the condenser kit. It is intended to be installed on the condenser outlet tube where it passes through the core support on the passenger side.(Photo 14)

3) The # 8 (13/32") discharge hose routes from the outlet of the compressor to the condenser inlet tube. Use lubricated # 8 o-rings with a 7/8" and 3/4" backup wrench to secure fittings. *Tip: If the compressor is on the passenger side, we recommend first routing back toward the firewall then looped forward to the inlet of the condenser. This allows for engine torque and vibration without damaging A/C hoses or fittings.*

4) The # 10 (1/2") suction hose routes from the inlet of the compressor to the outlet of the evaporator. **TIP:** A 180 degree tube is included for use with driver side compressors to route the #10 suction hose neatly back and across the top of the firewall to the driver side of the engine compartment. (Photo 15) This is not necessary for use with Passenger side mounted compressors. Use lubricated # 10 O-Rings with a 1" and a 7/8" backup wrench to secure fittings. Tip: Likewise, this hose may be routed forward and looped back to the outlet of the evaporator. Using a pull tie where this meets the discharge hose in the center makes for a clean installation.

5) Place connector with rubber boot on safety switch. (make sure switch terminals go into electrical connectors) Connect one wire to green wire from thermostat and other wire to compressor clutch.

6) Install wrap-around hose clamps or pull-ties as necessary to secure all wires and hoses away from sharp edges, moving parts and exhaust manifold or headers to avoid damage to wires and/or hoses.

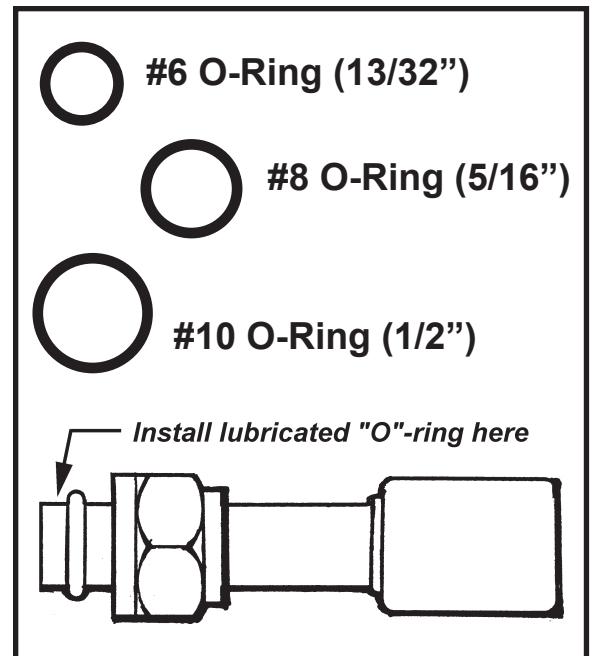


Diagram #3 - O-Ring Seals

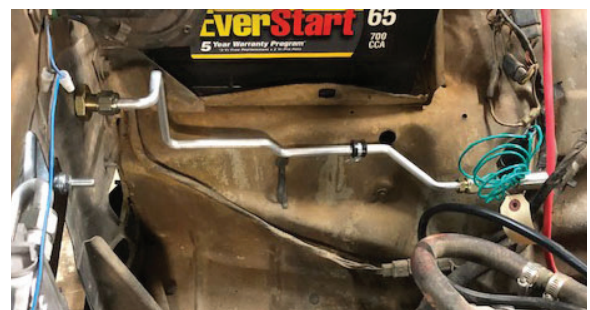


Photo 13 - Condenser Outlet Tube



Photo 14 - Pressure Switch Port



Photo 15 - Evaporator Outlet Tube

REFRIGERANT SERVICE

IMPORTANT! - BEFORE ADDING REFRIGERANT TO A/C SYSTEM - *Make sure the cooling system contains an adequate amount of antifreeze for a minimum of -10 degrees Fahrenheit. Engine must be operated with the heater valves open to allow antifreeze to flow into the heater core before operating the A/C system. If antifreeze is not properly circulated into the heater core it can freeze and rupture the tubes within the heater core. Operating the a/c system without adequate antifreeze protection will cause damage to your system and Void the Manufacturers Warranty.*

1) This system should be serviced/charged by a certified technician and requires a minimal vacuum pump evacuation of 45 minutes.

NOTE: When charging the system it will be necessary to put in about 12 to 18 ounces of refrigerant before the pressure safety switch will engage the compressor clutch.

2) A) **R-12 Systems** will require 30 to 36 ounces of refrigerant. This is only a guide line, and the sight glass (under the dimple area) on top of the drier should be monitored. The exact charge will be relevant to the length of hose, compressor capacity, and size of condenser.

B) **134-A Systems** will require 28 to 32 ounces of refrigerant. An exact charge with 134-A is more critical for maximum performance than that of R-12. The exact charge will be relevant to the length of hose, compressor capacity, and size of condenser. We recommend adding a partial charge, and monitor temperature at vents while slowly adding remaining charge, while testing for point of maximum performance.

NOTE: This should be done with the doors shut, windows closed, convertible top up, fan on high blower, and an electric fan in front of the radiator. If excessive high pressure exists adding an electric condenser fan is recommended if space permits.

3) Test all A/C connections for leaks.

4) Place a copy of these installation instructions in glove box for future reference.