

## A-1960-61 COMET POLAR AIRE CONDITIONER

The Polar Aire Conditioner cooling unit is mounted under the center of the instrument panel. The operation controls are integral with the unit and are shown in figure 6A-1.

switch and thus adjust the temperature at which the evaporator is operating. Pushing the right hand button adjusts the thermostatic switch, in successive steps, for cooler operation. Pushing the left hand button adjusts the switch, in successive steps, for warmer operation.

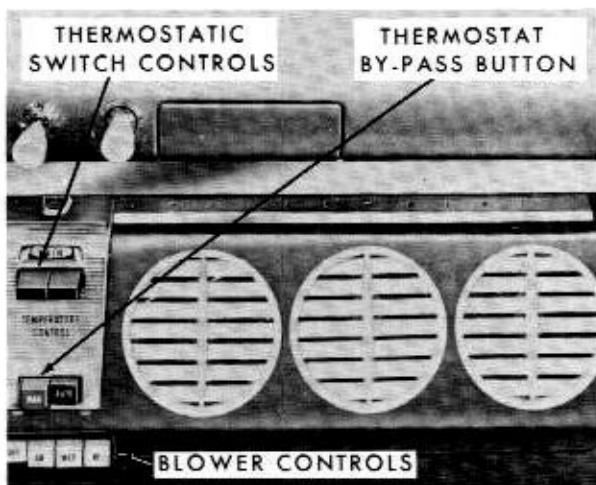


Fig. 6A-1—Polar Aire Controls—(61CT-8801)

In addition to these controls, there are adjustable air louvers at each side and at the front of the evaporator housing.

The "MAN" and "AUTO" buttons operate the compressor. When the "AUTO" button is on, the desired car interior temperature is maintained automatically, the temperature being dependant upon the setting of the thermostatic switch. The "MAN" button by-passes the thermostatic switch and permits the compressor to operate continuously for maximum output.

**NOTE:** *In high humidity areas, continual use of the "MAN" button will cause the evaporator to ice up and cut off the air flow through the evaporator. Should the evaporator freeze up in "MAN" operation, the unit should be defrosted immediately by pushing in the "AUTO" button or by turning the unit off.*

The "OFF" button in the bottom row of controls turns the air conditioner off. The three other buttons control the blower motor for low, medium, and high speed. The blower must be turned on to operate the air conditioning system.

The top two buttons control the thermostatic

# REMOVAL AND INSTALLATION

With the exception of the compressor, replacement rather than repair of the individual unit is usually recommended. In the case of the compressor, replacement kits for certain components are available.

Replacement of the blower and motor assembly, the compressor, or the thermostatic switch can be effected without losing the refrigerant.

Replacement of all other units or lines in the system requires discharging the refrigerant before removal. After the parts are installed, evacuate, charge, and leak test the system.

## CONDENSER

1. Connect a manifold gauge set (Tool ACL-53-3) to the compressor service valves and discharge the system.
2. Remove the hood lock support and grille.
3. Disconnect the two lines from the condenser and plug the lines.
4. Remove the condenser mounting screws and remove the condenser from the car.
5. To install, reverse the removal procedure.
6. After installation evacuate, charge, and leak test the system.

## EVAPORATOR

The evaporator assembly must be removed from the car before removing the evaporator core from the housing.

1. Connect a manifold gauge set (Tool ACL-53-3) to the compressor service valves and discharge the system.
2. Disconnect the two wires at the left side of the evaporator housing.
3. Remove the evaporator housing lower bracket adjusting jam nut and disconnect the two drain tubes.
4. Remove the two nuts and bolts retaining the evaporator assembly to the instrument panel and set the unit on the floor.
5. Disconnect the two refrigerant lines from the evaporator housing and remove the unit from the car. Cap the fittings.
6. Remove the front panel, covers, and expansion valve from the unit.
7. Remove the thermostatic switch temperature sensing tube from between the evaporator fins.
8. Remove the evaporator-to-base retaining screws and remove the screen and evaporator from the base.
9. Assemble the expansion valve to the evaporator.

10. Position the evaporator and screen on the base and install the two evaporator-to-base mounting screws. (See figure 6A-2.)
11. Insert the thermostatic switch sensing tube through the screen and evaporator about the center of the evaporator.
12. Install the evaporator covers and front panel.
13. Set the assembly on the car floor.
14. Connect the refrigerant lines and leak test.
15. Connect the two wires at the left side of the evaporator housing.
16. Reinstall the evaporator assembly under the



Fig. 6A-2—Evaporator Core— (61CT-8802)

instrument panel.

17. Evacuate and charge the system.

## EXPANSION VALVE

1. Connect a manifold gauge set (Tool ACL-53-3) to the compressor service valves and discharge the system.
2. Disconnect the two wires at the left side of the evaporator housing.
3. Remove the evaporator housing lower bracket adjusting jam nut and disconnect the two drain tubes.
4. Remove the two nuts and bolts retaining the evaporator assembly to the instrument panel and set the unit on the floor.
5. Remove the front cover retaining screws and remove the cover.
6. Remove the back cover and the fan protecting screen.
7. Remove the main cover retaining screws and slide the cover up and off of the assembly.
8. Carefully slit the insulation covering the temperature bulb and remove the temperature bulb clamp. (Refer to figure 6A-3.)
9. Disconnect the high pressure line from the expansion valve.
10. Disconnect the evaporator core tube from the expansion valve. Remove the expansion valve and cap the line fittings.
11. Install the expansion valve and leak test.
12. Position the temperature bulb to the low pressure line and install the bulb clamp. Be sure the bulb, line, and clamp are clean and that the

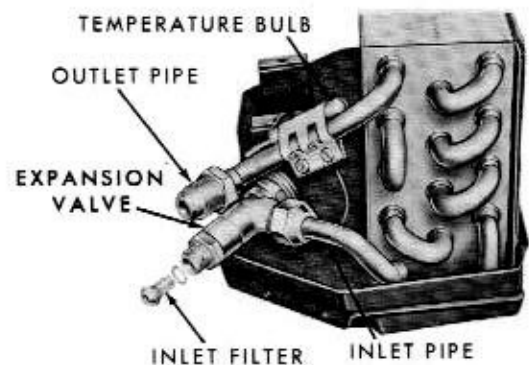


Fig. 6A-3—Expansion Valve Connections (61CT-9903)

clamp is tight.

13. Wrap the insulating material around the temperature bulb and low pressure line. Position the rubber seal over the connection.
14. Slide the evaporator housing cover down over the evaporator and install the retaining screws.
15. Install the front cover, back cover, and fan protection screen.
16. Connect the two wires at the left side of the evaporator housing.
17. Reinstall the evaporator assembly under the instrument panel.
18. Evacuate and charge the system.

## THERMOSTATIC SWITCH

1. Remove the four front panel to evaporator housing retaining screws.
2. Pull the front panel away from the housing and pull the thermostatic switch temperature sensing tube from between the evaporator fins.
3. Remove the control trim plate retaining nut and remove the trim plate emblem and trim plate.
4. Disconnect the wires from the thermostatic switch.
5. Remove the two actuator assembly retaining capscrews and remove the switch and actuator assembly.
6. Remove the two switch retaining screws and remove the switch.
7. When assembling the new switch to the actuator assembly, engage the switch shaft with the actuator and install the retaining screws.
8. Install the switch and actuator assembly.
9. Connect the wires to the thermostatic switch.
10. Position the temperature sensing tube between the evaporator fins. Make certain that the sensing tube goes all the way through the evaporator and makes good contact with the fins.
11. Install the control trim plate and front panel.

## RECEIVER-DRYER ASSEMBLY

1. Connect a manifold gauge set (Tool ACL-53-3) to the compressor service valves and discharge the system.
2. Disconnect the two lines from the receiver and plug the lines. (See figure 6A-4).
3. Remove the two mounting clamp retaining nuts and remove the receiver and mounting clamp.
4. To install, reverse the removal procedure.
5. After installation evacuate, charge, and leak test the system.

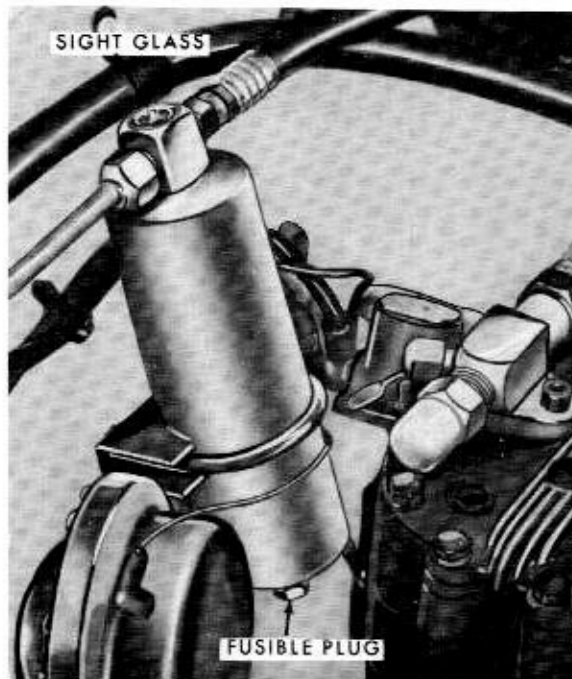


Fig. 6A-4—Receiver Dryer—(61CT-8804)

## BLOWER MOTOR

1. Disconnect the evaporator assembly from the instrument panel and lower support bracket and set the unit on the floor.
2. Remove the fan protection screen and loosen and remove the fan blade assembly. (See figure 6A-5.)
3. Remove the evaporator housing front cover panel.
4. Disconnect the motor wires from the blower switch.
5. Remove the motor mounting screws and clamp and remove the motor.
6. Install the new blower motor. Position the mounting clamp and motor ground lug under one of the screws. Tighten the mounting screws.
7. Connect the motor wires to the blower switch.
8. Install the front cover panel.
9. Install the fan blade assembly on the motor

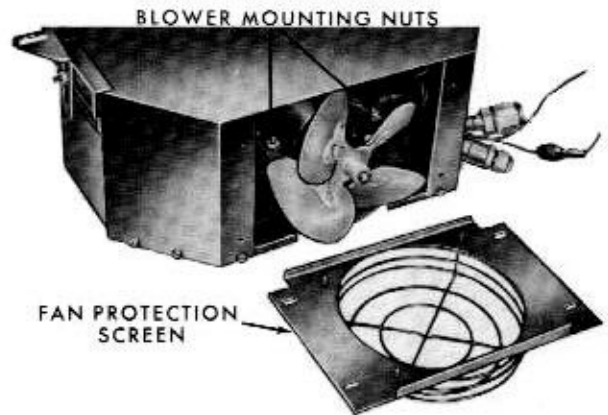


Fig. 6A-5—Blower Motor Mounting—(61CT-8805)

shaft. Check for fan blade clearance.

10. Install the fan protection screen and check blower operation.
11. Reinstall the evaporator assembly under the instrument panel.

## COMPRESSOR

1. Disconnect the negative (ground) cable from the battery.
2. Disconnect the clutch feed wire at the bullet connector.
3. Install the manifold gauge set (Tool ACL-53-3) to the compressor service valves. Front seat the compressor service valves (fully clockwise) and discharge the compressor.
4. Remove two screws from each service valve and remove the service valves from the compressor. Cover the openings to prevent dirt and moisture from entering the system.
5. Loosen the compressor mounting bolts and the belt tension adjusting bolt. (See figure 6A-6.)
6. Slide the compressor toward the engine and remove the drive belt.

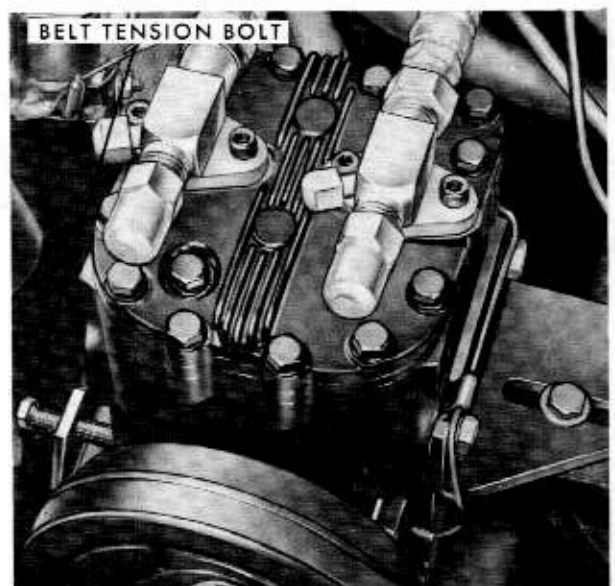


Fig. 6A-6—Belt Replacement—(61CT-8806)

7. Remove the mounting bolts and the compressor.
8. To install, position the compressor to the mounting brackets and install the attaching capscrews.

NOTE: *Before installing the compressor, check the crankcase for the correct amount of oil. Add or remove oil if necessary. Use Suniso "5G", Sun Oil Company; Capella "E", Texas Oil Company; or a refrigerant oil with the same specifications.*

9. Position the drive belt on the compressor pulley.
10. Adjust the compressor drive belt tension to 90 lbs. with a belt tension gauge. (Tool BT-33-73F). Tighten the five mounting capscrews.

11. Use new gaskets and install the service valves to the compressor. Be sure to wet the gaskets with refrigeration oil before installing them. Torque the service valve screws 4-6 lbs. ft; then, re-torque 10-12 lbs. ft.

12. Purge the compressor of air and moisture. See "PURGING THE COMPRESSOR".

13. Connect the clutch feed wire and the battery cable.

14. Check the refrigerant supply and leak test the compressor fittings and crankshaft oil seal. See "REFRIGERANT TESTS".

15. Operate the car for about 10 minutes; then, recheck the drive belt for proper tension. Adjust the drive belt if necessary.

## MAGNETIC CLUTCH

1. Disconnect the negative (ground) cable from the battery.
2. Loosen the compressor mounting bolts and the belt tension adjusting bolt. (See figure 6A-6.)
3. Slide the compressor toward the engine and remove the drive belt.
4. Remove the bolt and washer retaining the clutch assembly to the compressor shaft.
5. Install a 5/8 - 11 x 2" bolt into the clutch retaining bolt hole.
6. Turn the bolt clockwise until the clutch breaks free of the compressor shaft.
7. Remove the clutch assembly from the car.

8. Remove the 5/8 inch bolt from the clutch assembly.
9. To install, position the clutch assembly on the compressor shaft.
10. Install the clutch retaining washer and bolt. Torque the bolt to 18-22 lbs. ft.
11. Install the compressor drive belt.
12. Adjust the drive belt tension to 90 lbs. with a belt tension gauge. (Tool BT-33-73F). Tighten the five mounting capscrews.
13. Connect the clutch feed wire and the battery cable. Check operation.
14. Operate the car for about 10 minutes; then, recheck the drive belt for proper tension. Adjust the drive belt if necessary.

# COMPRESSOR DRIVE BELT

1. Loosen the five compressor mounting bolts and the belt tension adjusting bolt. (See figure 6A-6).
2. Slide the compressor toward the engine and remove the drive belt.
3. Place the new belt in position. Slide the compressor toward the outside of the car.
4. Adjust the drive belt tension to 100-120 lbs. with a belt tension gauge. (Tool BT-33-73F). Tighten the five mounting capscrew.
5. Operate the car for about 10 minutes; then, recheck the drive belt for proper tension (90 lbs). Adjust if necessary.

## MANUAL FAST IDLE DEVICE

Some early vehicles equipped with the HANG-ON air conditioning system, have a hand operated throttle located to the left of the evaporator. (See figure 6A-7.)

This device is to be used only when the transmission selector lever is in the NEUTRAL or PARK position.

To operate the hand throttle, position the transmission selector lever in neutral or park, depress the accelerator for desired faster idle speed, pull the knob and turn it 90° (approximately) clockwise to lock. To release the knob turn it counterclockwise 90° (approximately).

The following is the procedure for adjusting the stop on the Bowden cable:

1. Connect a tachometer to the engine.
2. Place the transmission selector lever in NEUTRAL or PARK.
3. Turn the air conditioning unit "ON" so that the compressor clutch is engaged. (In some cases, it might be advisable to use a jumper wire to the clutch.)
4. Use the hand throttle to reach an engine r.p.m. of 700. Secure the stop on the Bowden wire against the armor so that engine operation above 700 r.p.m. cannot be achieved by the hand throttle. (Turning the hand throttle ("T" handle) 90° clockwise locks the fast idle, turning 90° counterclockwise releases it.)

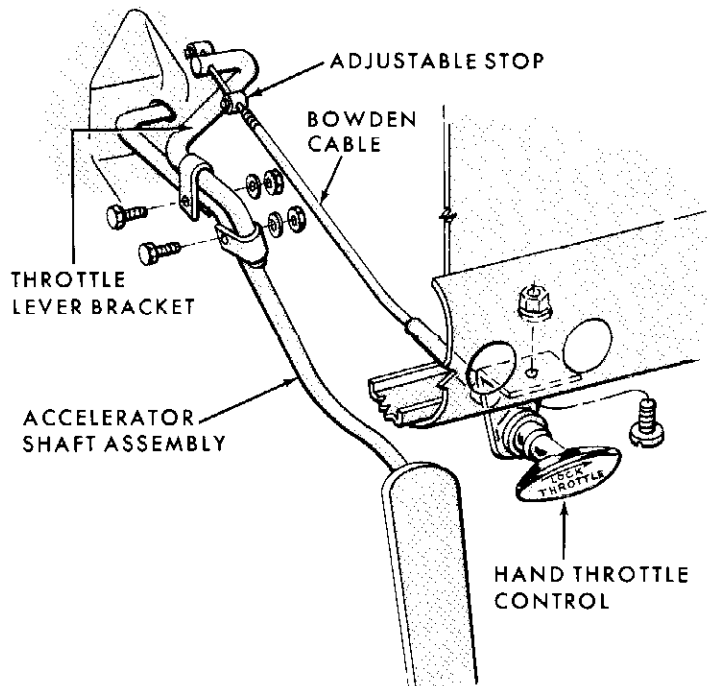


Fig. 6A-7—Manual Fast Idle Device—(61CB-8801)

# B-1959-60 MERCURY COMFORT COOL AIR CONDITIONER

The "Comfort Cool" Air Conditioner (Suspended Type) is similar to the "Climate Dial" Air Conditioner. The compressor, condenser, and receiver-dryer of both units are installed in the same location. However, the Comfort Cool evaporator assembly is different in shape and is separate from the heater. It is mounted under the center of the instrument panel on the tunnel. (See figure 6B-1.) It has no additional ducts and has controls which are integral with the unit.

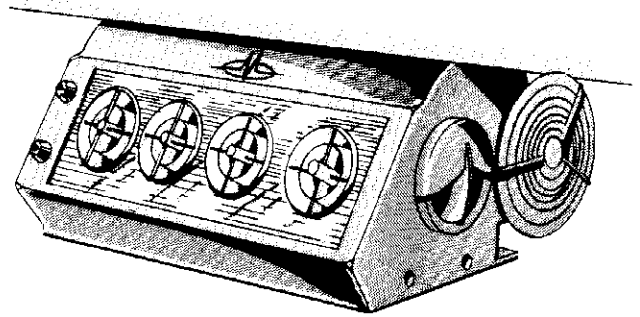


Fig. 6B-1—Comfort Cool Air Conditioner—(61MT-8802)

## REMOVAL AND INSTALLATION

With the exception of the compressor, replacement of the individual unit is usually recommended. In the case of the compressor, replacement of certain components are available.

Replacement of the blower and motor assembly, the blower switch, the compressor, or the thermostatic switch can be effected without losing the refrigerant.

Replacement of all other units or lines in the system, requires discharging the refrigerant. After the parts are installed, evacuate, charge, and leak test the system.

Following are removal and installation procedures for the evaporator and tube assembly and its components.

For removal and installation of the compressor, condenser and receiver-dryer, use the procedures given in Section IV concerning the respective model year.



# EVAPORATOR AND TUBE ASSEMBLY

## REMOVAL

1. Disconnect the negative (ground) cable from the battery.
2. Connect the test manifold gauge hoses to the compressor service valves. Front seat both valves and discharge the compressor refrigerant through the test manifold and into the shop exhaust system.
3. After the pressure is completely relieved, remove the two screws which retain the low pressure service valve to the compressor head. Remove the valve (with hose attached) and gasket. Cover the opening on the compressor head.
4. Disconnect the clutch feed wire.
5. Remove the refrigerant hose clamp at the left radiator support.
6. Disconnect the high pressure hose at the receiver

self-sealing coupling.

7. Loosen the clamps securing the refrigerant hoses to the left fender apron. Remove the tape securing the clutch feed wire to the refrigerant hose.
8. Remove the grommet from around the refrigerant hoses at the dash panel.
9. Pull both the refrigerant hoses up toward the dash panel until sufficient slack is available to allow partial removal of the evaporator and tube assembly inside the car.
10. Remove the glove box and the ash tray.
11. Tape the lower edge of the glove box door to prevent damage to the paint when removing the assembly.
12. Remove the two nuts and bolts securing the evaporator mounting brackets to the instrument panel. Remove the two mounting brackets, one from each side of the evaporator case assembly. (See Figure 6B-2).

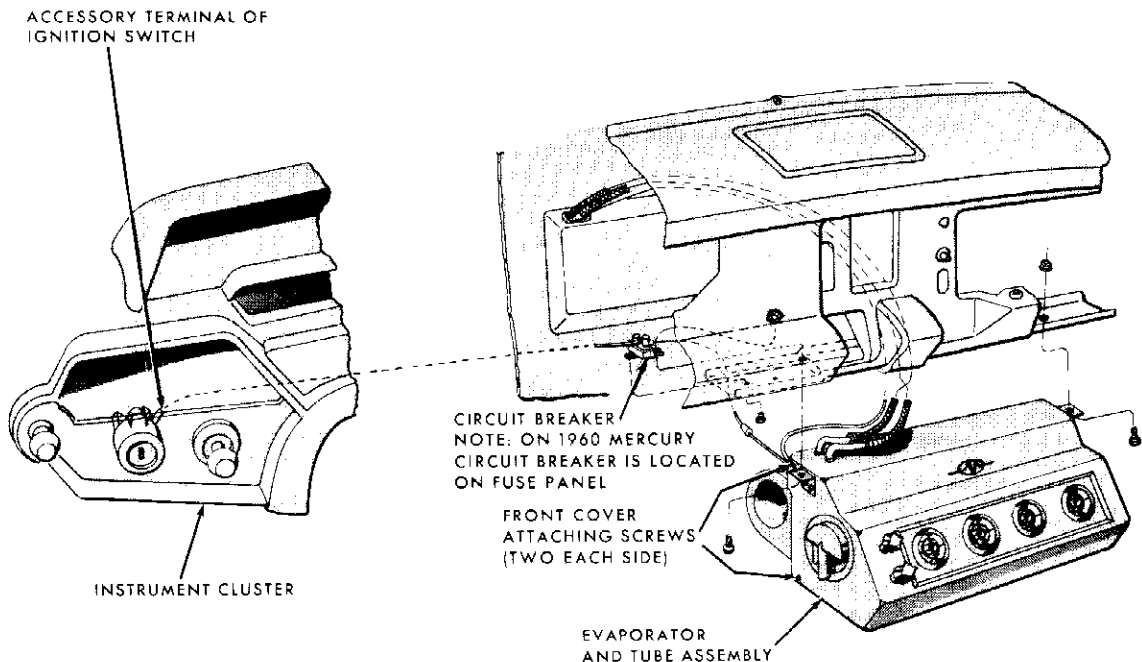


Fig. 6B-2—Evaporator Installation—(61MT-8803)

13. Remove the evaporator drain hose.
14. Disconnect the assembly feed wire at the circuit breaker located under the dash panel. (See figure 6B-2.)

*NOTE: On 1960 Mercury, the circuit breaker is located on the fuse panel.*

15. Disconnect the antenna lead at the radio.
16. Carefully work the evaporator and tube assembly out from under the instrument panel (toward the right side of the tunnel) to the floor. Remove the assembly and refrigerant hoses from the car.

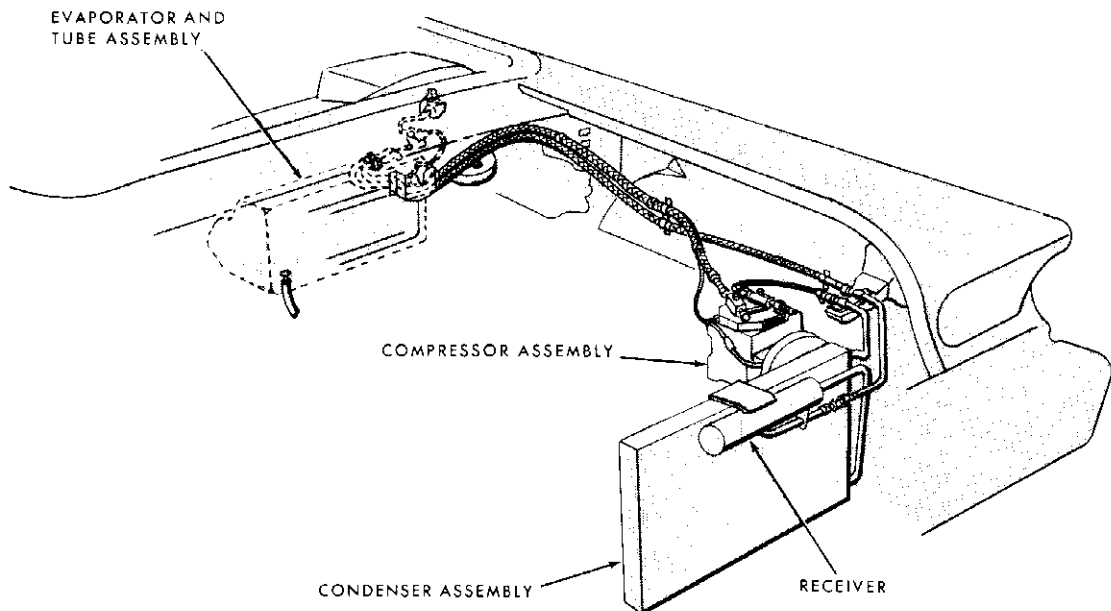
*CAUTION: During removal, avoid damage to the refrigerant hoses, heater bowden cables or servo motors, and the glove box door.*

### INSTALLATION

1. Position the evaporator and tube assembly and refrigerant hoses on the car floor.
2. Route both the refrigerant hoses and the clutch

feed wire under the instrument panel and out through the opening in the dash panel. Use caution when routing the refrigerant hoses.

3. Work the evaporator and tube assembly up under the instrument panel from the right side of the tunnel.
4. Connect the assembly feed wire to the circuit breaker.
5. Connect the radio antenna lead.
6. Assemble the mounting brackets to the evaporator case assembly. Secure the mounting brackets to the lower instrument panel.
7. Route the drain hose through the grommet in the floor and connect the other end to the evaporator drain tube.
8. Remove the tape from the glove box door.
9. In the engine compartment, route both of the refrigerant hoses across the dash panel, under the hood lock bracket, above the brake cylinder, and along the left hand fender apron. (Refer to Figure 6B-3).



**Fig.6B-3—Air Conditioner Components Installed in Engine Compartment—(61MT-9904)**

10. Install the low pressure valve and the refrigerant hose to the compressor, using a new gasket.
11. Connect the high pressure hose to the receiver self-sealing coupling.
12. Connect the clutch feed wire and secure the wire to the low pressure hose with tape.
13. Secure the refrigerant hoses in the clamps located on the left hand fender apron and radiator

- support. (Refer to figure 6B-3).
14. Install the grommet around the refrigerant hoses at the dash panel opening.
15. Connect the battery.
16. Purge the compressor, leak test, and charge the system, if required.
17. Install the glove box and the ash tray.

## BLOWER SWITCH

1. Disconnect the negative (ground) cable from the battery.
2. Remove the blower and thermostatic switch knobs.
3. Disconnect the mounting brackets from each side of the evaporator case. (Refer to figure 6B-2).
4. Remove two evaporator front cover attaching screws from each side of the case assembly. Remove the front cover.
5. Remove one nut retaining the blower switch to the assembly bracket. (See figure 6B-4). Pull the switch to the side of the bracket and disconnect the three wires. Remove the switch.

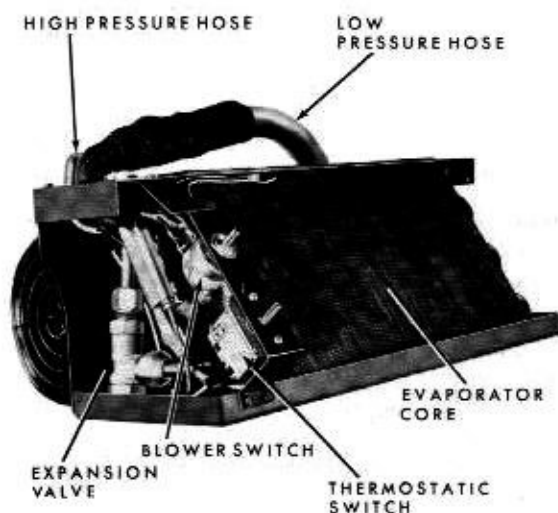


Fig. 6B-4—Evaporator with Front Cover Removed (61MT-8805)

## EXPANSION VALVE

### REMOVAL

1. Install the Manifold Gauge Set (Tool ACL 53-3) to the compressor service valves and discharge the system.
2. Remove the blower and thermostatic switch knobs.
3. Disconnect the mounting brackets from each side of the evaporator case. (Refer to figure 6B-2.)
4. Remove two evaporator front cover attaching screws from each side of the case assembly. Remove the front cover.
5. Loosen and remove the expansion valve temperature sensing bulb clamp.
6. Disconnect the high pressure hose at the expansion valve.

7. Disconnect the evaporator tube fitting at the expansion valve. Carefully remove the expansion valve and the temperature sensing bulb assembly. (Refer to Figure 6B-4).

NOTE: *Caps or suitable protection should be installed on all open connections to prevent dirt and moisture from entering the system.*

### INSTALLATION

1. Install the expansion valve assembly.
2. Install the clamp securing the expansion valve, temperature sensing bulb to the evaporator outlet pipe, making sure that the contacting surface is clean and that good firm contact is obtained.
3. Evacuate, charge, and leak test the system.
4. Install the evaporator front cover.
5. Attach the mounting brackets to each side of the evaporator case.
6. Install the blower and thermostatic switch knobs.

## THERMOSTATIC SWITCH

### REMOVAL

1. Remove the evaporator and tube assembly from the car.
2. Remove the blower and thermostatic switch knobs.
3. Remove the two evaporator front cover attaching screws from each side of the case assembly. Remove the front cover.
4. Remove the evaporator top panel and insulation.
5. Remove the two screws retaining the thermostatic switch to the assembly bracket. (Refer to Figure 6B-4.)
6. Pull the switch away from the bracket and disconnect the two wires. Remove the thermostatic switch and temperature sensing tube assembly.

### INSTALLATION

1. Install the thermostatic switch and temperature sensing tube assembly. (Insert the sensing tube from the top of the evaporator.) Make sure the sensing tube goes all the way into the evaporator and makes good contact with the fins.
2. Connect the two thermostatic switch wires and attach the switch assembly to the bracket with two screws.
3. Install the evaporator top panel and insulation.
4. Install the evaporator front cover.
5. Install the blower and thermostatic switch knobs.
6. Install the evaporator and tube assembly in the car.

## EVAPORATOR CORE

### REMOVAL

1. Discharge the system and remove the evaporator and tube assembly from the car.
2. Remove the blower and thermostatic switch knobs.
3. Remove the two evaporator front cover attaching screws from each side of the case assembly. Remove the front cover.
4. Remove the two strips of tape sealing the blower housing to the evaporator case seams.

5. Remove the evaporator top panel and insulation.
  6. Remove the two screws retaining the blower and thermostatic switch bracket to the evaporator drain pan. Remove the thermostatic switch sensing tube from the evaporator. Set the bracket with switches aside.
  7. Remove the two drain pan supports. (See figure 6B-5).
  8. Remove two screws at each end of the assembly retaining the blower housing to the evaporator end plate.
- NOTE: *On the left side, the upper screw retains the motor ground wire. The lower screw is located behind the expansion valve.*
9. Separate the blower housing from the evaporator

tor case assembly. (See Figure 6B-6.)

CAUTION: *Use care in separating the parts to avoid damage to the plastic blower housing.*

10. Remove the two nuts retaining the evaporator to the drain pan. Remove the evaporator with the expansion valve and refrigerant hoses attached.
11. Remove the expansion valve temperature sensing bulb bracket.
12. Peel back the insulation covering the evaporator tube to low pressure hose fitting. Disconnect the low pressure return hose from the evaporator tube.
13. Disconnect the evaporator tube at the expansion valve.

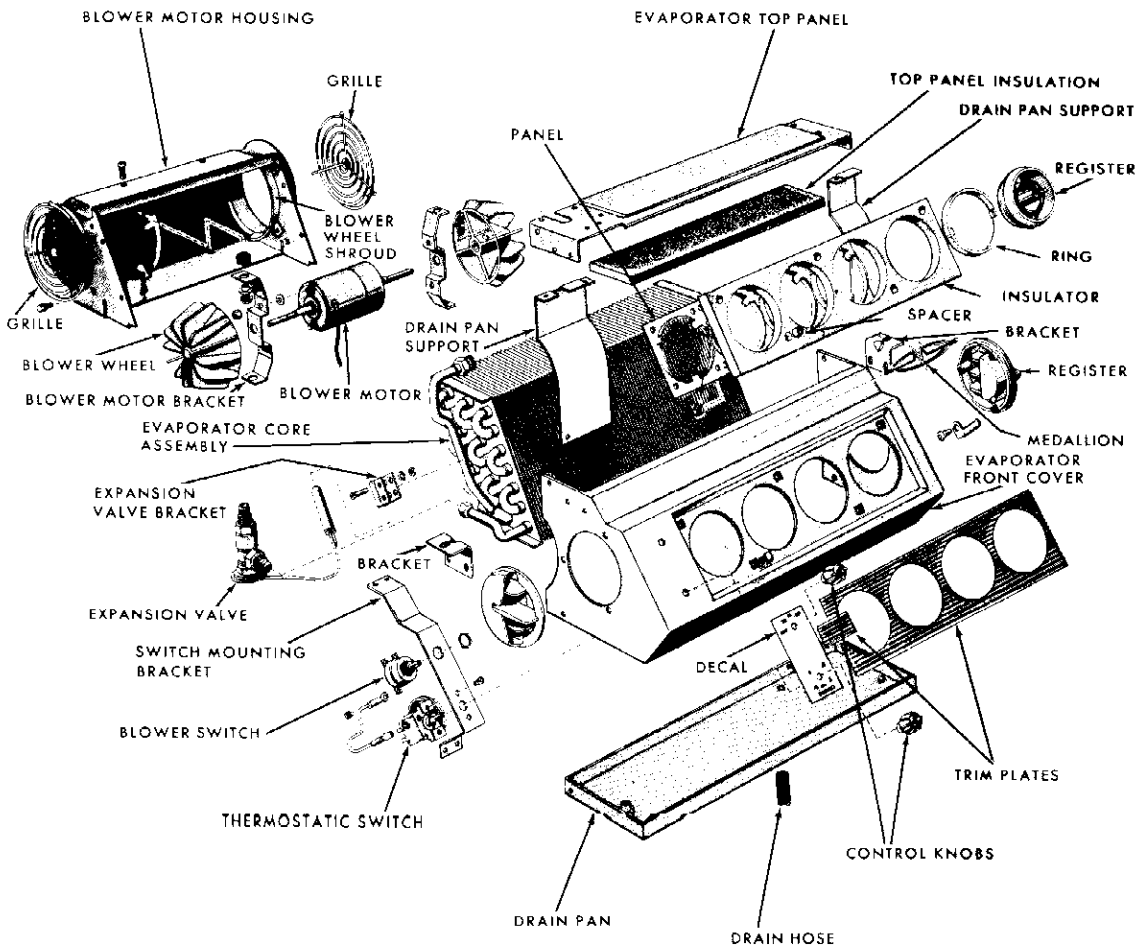
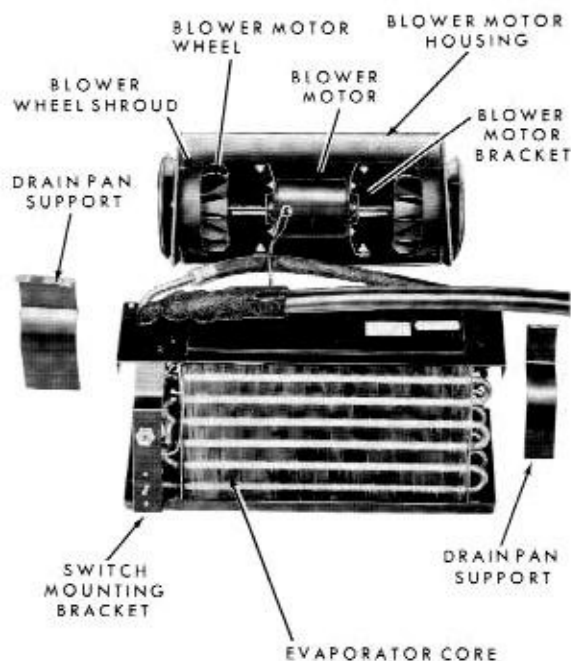


Fig. 6B-5—Evaporator Housing-Disassembled—(61MT-8806)



**Fig. 6B-6—Removing Blower Motor and Housing (61MT-8807)**

1. Connect the low pressure hose to the evaporator tube.
2. Connect the evaporator tube to the expansion valve.

3. Secure the expansion valve temperature sensing bulb to the evaporator outlet line with the bulb bracket.
4. Position the evaporator, with the expansion valve and refrigerant hoses attached, on the evaporator drain pan. Secure with two nuts.
5. Install the thermostatic switch sensing tube into the evaporator core.
6. Secure the blower and thermostatic switch bracket to the drain pan with two screws.
7. Install the blower housing on the evaporator case assembly as follows:
  - A. Retain the blower housing to the evaporator end plate with two screws at each side.
  - B. On the left side, secure the ground wire with the upper screw.
8. Install the evaporator top panel and insulation.
9. Install the drain pan supports.
10. Install the evaporator front cover.
11. Install the blower and thermostatic switch knobs.
12. Apply a strip of tape to both of the blower housing to evaporator case mating seams.
13. Install the evaporator and tube assembly in the car.
14. Evacuate, leak test, and charge the system.

## BLOWER MOTOR

### REMOVAL

1. Remove the evaporator and tube assembly from the car.
2. Remove the blower and thermostatic switch knobs.
3. Remove the two evaporator front cover attaching screws from each side of the case assembly. Remove the front cover.
4. Remove the two strips of tape sealing the blower housing to the evaporator case seams.
5. Remove the two drain pan supports. (Refer to Figure 6B-5.)
6. Remove the screw at the top of the blower housing that retains the blower motor wiring clip.

- Remove two screws at each end of the assembly that retain the blower housing to the evaporator end plate.

**NOTE:** On the left side, the upper screw retains the motor ground wire and the lower screw is located behind the expansion valve.

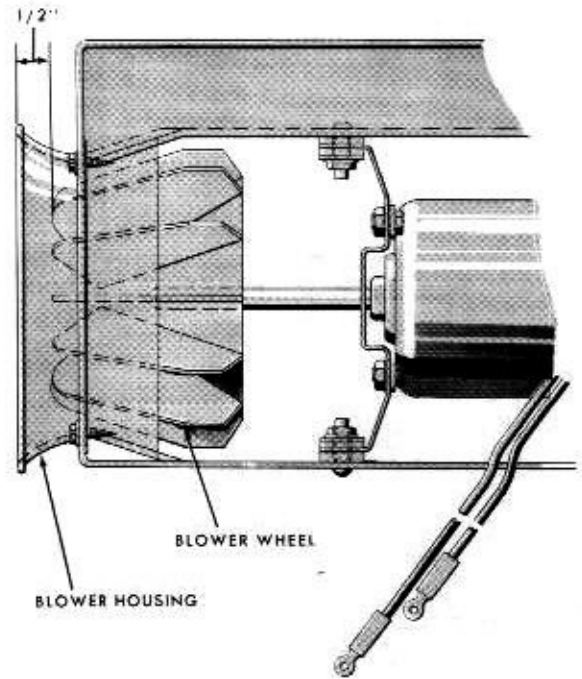
- Separate the blower housing from the evaporator case assembly. (See Figure 6B-6).  
**CAUTION:** Use care in separating the parts to avoid damage to the plastic blower housing.
- Remove the blower switch mounting nut; pull the switch away from the mounting bracket and disconnect the red motor wire from the blower switch.
- Remove the blower wheel shroud from each end of the blower housing. (Refer to Figure 6B-5).
- Remove the four bolts and nuts retaining the blower motor and bracket assembly to the blower housing.
- Loosen each blower wheel Allen set screw; slide the blower wheels inward and remove the motor, brackets, and wheels from the housing.
- Remove the blower wheels from the motor shaft.
- Remove the brackets from the motor.

## INSTALLATION

- Assemble the brackets to the replacement motor.
- Slide the blower wheels on the motor shaft and install the assembly in the blower housing. Secure the motor and brackets to the blower housing with four nuts and bolts.
- Position the blower wheels on the motor shaft so that there will be approximately 1/2" clearance between the outer tip of the blower wheels and the outer edge of the housing. (See Figure 6B-7). Tighten each wheel Allen set screw.

**NOTE:** Rotate both blower wheels to assure that no interference exists.

- Install the blower wheel shrouds.



**Fig. 6B-7—Blower Wheel Installation—(61MT-8808)**

- Transfer the wire retaining clip from the old motor to the wires of the replacement motor, in the same location.
- Connect the red wire from the motor to the blower switch. Assemble the blower switch to the assembly bracket.
- Secure the retaining clip (containing the motor wires) to the blower housing with one screw.
- Install the blower housing on the evaporator case assembly as follows:
  - Retain the blower housing to the evaporator end plate, using two screws at each side.
  - On the left side, secure the ground wire with the upper screw.
  - Install the drain pan supports.
- Install the evaporator front cover.
- Install the blower and thermostatic switch knobs.
- Apply a strip of tape to both of the blower housing and evaporator case mating seams.
- Install the evaporator and tube assembly in the car.

# C-1961 MERCURY

## POLAR AIRE CONDITIONER

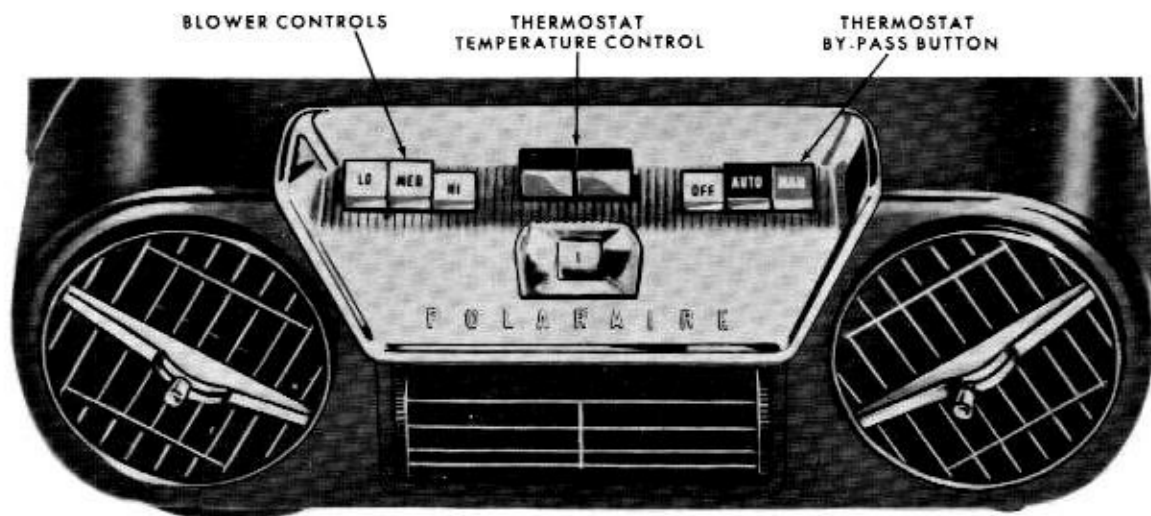


Fig. 6C-1—Polar Aire Controls—(61MT-8809)

The Polar Aire Conditioner uses the same components as the select Aire unit except for the evaporator which is different in shape and mounts under the center of the instrument panel. The unit is separate from the heater, has no additional air ducts and has controls which are integral with the evaporator housing (See figure 6C-1.)

There are three sets of control buttons. The center two buttons control the thermostatic switch and adjust the temperature at which the evaporator is operating. Pushing the right hand button adjusts the thermostat, in successive steps, for cooler operation. Pushing the left hand button adjusts the thermostat, in successive steps, for warmer operation.

operate the compressor. "OFF" disconnects the whole air conditioning system. "AUTO" indicates that the unit is set for automatic temperature control. "MAN" indicates that the unit is set for manual control of the temperature.

*NOTE: In high humidity areas, continual use of the "MAN" button will cause the evaporator to ice up and cut off the air flow through the evaporator. Should the evaporator freeze up in "MAN" operation, the unit should be defrosted immediately by pushing the "AUTO" button or by turning the unit off.*

There are five air outlets, on each side of the lower face of the case and three on the front of the case. The adjustable air outlet louvers allow direction of cooled air as desired.

The "OFF", "AUTO", and "MAN" buttons



# REMOVAL AND INSTALLATION

With the exception of the compressor, replacement rather than repair of the individual unit is usually recommended. In the case of the compressor, repair kits for certain components are available.

Replacement of the blower and motor assembly, the compressor, or the thermostatic switch can be effected without losing the refrigerant.

Replacement of all other units or lines in the system requires discharging the refrigerant. After the parts are installed, evacuate, charge, and leak test the system.

For removal and installation of the compressor, condenser, and receiver-dryer, use the procedures given in Section IV covering the 1961 Model. Procedures for components of the Evaporator Assembly are as follows:

## EVAPORATOR

The evaporator assembly must be removed from the car before removing the evaporator core from the housing.

1. Connect a manifold gauge set (Tool ACL-53-3) to the compressor service valves and discharge the system.
2. Disconnect the evaporator assembly from the instrument panel and set the unit on the floor.
3. Disconnect the two refrigerant lines from the evaporator housing, and remove the unit from the car. Cap all fittings.
4. Remove the front cover, top panel, and the expansion valve from the unit.
5. Remove the thermostatic switch temperature sensing tube from between the evaporator fins.
6. Remove the evaporator-to-base retaining screws and remove the evaporator from the base.
7. Assemble the expansion valve to the new evaporator.
8. Position the evaporator and screen on the base, and install the retaining screws.
9. Push the thermostatic switch sensing tube between the evaporator fins.
10. Install the top panel and front cover.
11. Set the assembly on the car floor. Connect the refrigerant lines and leak test the connections.
12. Reinstall the evaporator assembly under the instrument panel.
13. Evacuate and charge the system.

## EXPANSION VALVE

1. Connect a manifold gauge set (Tool ACL-53-3) to the compressor service valves and discharge the system.
2. Disconnect the evaporator assembly from the instrument panel, and set the unit on the floor.
3. Carefully slit the insulation covering the temperature bulb and remove the bulb clamp.
4. Disconnect the high pressure line from the expansion valve.
5. Disconnect the evaporator core tube from the expansion valve. Remove the expansion valve, and cap the line fittings.
6. Install the expansion valve and leak test the system.
7. Position the temperature bulb to the low pressure line and install the bulb clamp. Be sure that the bulb, line, and clamp are clean, and that the clamp is tight.
8. Wrap the insulating material around the temperature bulb and low pressure line.
9. Reinstall the evaporator assembly under the instrument panel.
10. Evacuate and charge the system.

## THERMOSTATIC SWITCH

1. Disconnect the evaporator assembly from the instrument panel and set the unit on the floor.
2. Remove the evaporator front cover retaining screws and remove the front cover.
3. Remove the top panel retaining screws and remove the top panel and insulation.
4. Disconnect the wires from the switch terminals.
5. Pull the sensing tube from the evaporator fins and pull it through the rubber grommet.
6. Remove the switch retaining screws. Pull the switch from the actuating mechanism.
7. Install the new switch so that the temperature sensing tube is at the left of the unit.
8. Route the temperature sensing tube through the rubber grommet and down through the center of the evaporator core. Make certain that the sensing tube goes all the way through the evaporator, and makes good contact with the fins.
9. Connect the wires to the thermostatic control switch.
10. Install the top panel and front cover.
11. Install the evaporator assembly under the instrument panel.

## BLOWER MOTOR

1. Disconnect the evaporator assembly from the instrument panel and set the unit on the floor.

It is not necessary to disconnect the refrigerant lines.

2. Remove the evaporator front cover retaining screws and remove the front cover.
3. Remove the top panel retaining screws, and remove the top panel and insulation.
4. Disconnect the motor wires from the blower control switch.
5. Remove the blower motor and wheels.
6. To install, route the red and orange wires of the new motor through the insulating grommet and

attach to terminals 1 and 3 respectively of the blower control switch. (See wiring diagram in Figure 6C-2.

7. Position the motor and gaskets in the mounting bracket. Connect the motor ground wire under one of the motor retaining nuts.
8. Install the top panel and front cover.
9. Reinstall the evaporator assembly under the instrument panel.

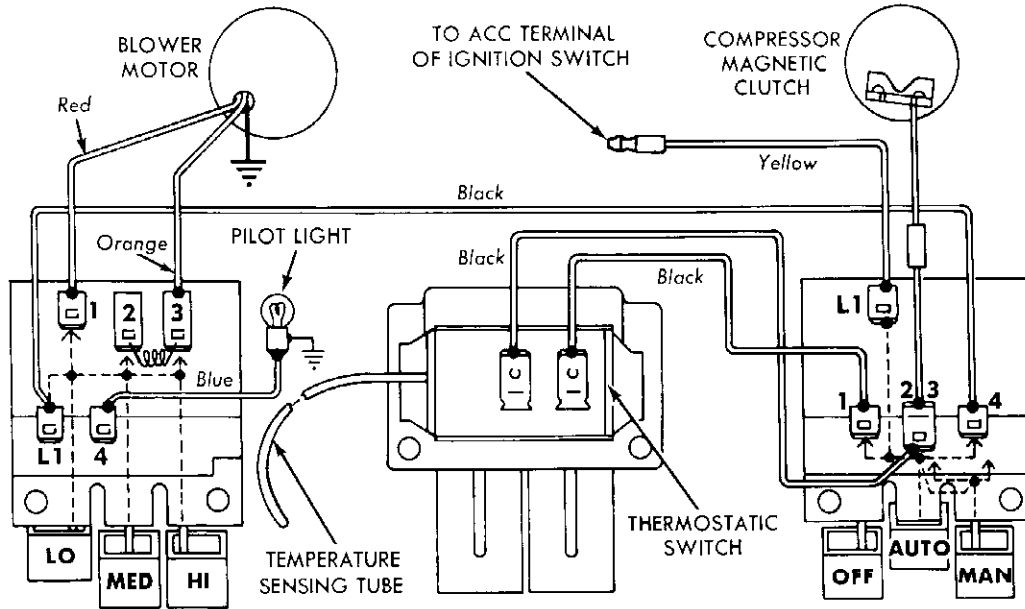


Fig. 6C-2—Polar Aire Electrical Control System—(61MT-8810)

## MANUAL FAST IDLE DEVICE

Vehicles equipped with air conditioning, both **FACTORY INSTALLED** and **HAND-ON UNITS**, have a hand operated throttle located at the left of the evaporator. (See Figure 6C-3.)

An adjustable stop on the Bowden cable, to the rear of the bracket, eliminates the possibility of inadvertently opening the throttle to the wide open

position.

The purpose of the fast idle device is to reduce engine operating temperatures and to improve air conditioning performance during extended periods of idling. This device is to be used only when the transmission selector lever is in the **NEUTRAL** or **PARK POSITION**.

To operate the hand throttle, position the transmission selector lever in NEUTRAL or PARK, depress the accelerator for desired faster idle speed, pull the knob and turn it 90° (approximately) clockwise to lock. To release the knob, turn it counterclockwise 90° (approximately).

The following is the procedure for adjusting the stop on the Bowden cable:

1. Connect a tachometer to the engine.
2. Place the transmission selector lever in NEU-

TRAL or PARK.

3. Turn the air conditioning unit "ON" so that the compressor clutch is engaged. (In some cases, it might be advisable to use a jumper wire to the clutch.)
4. Use hand throttle to reach an engine r.p.m. of 700. Secure the stop on the Bowden wire against the armor so that engine operation above 700 r.p.m. cannot be achieved by the hand throttle.

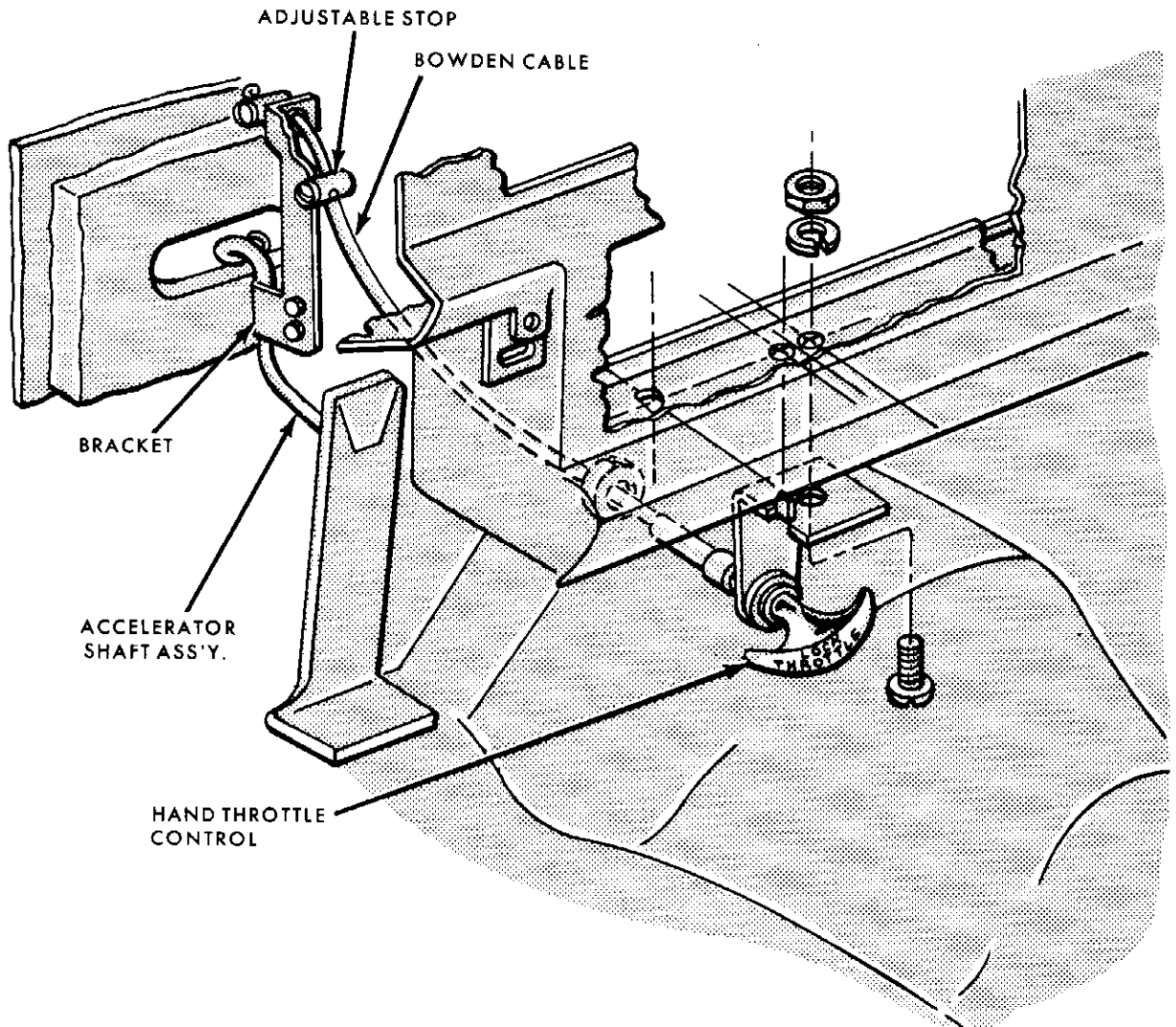


Fig. 6C-3—Manual Fast Idle Device—(61MB-8801)