UPDATING AUTOMATIC CLIMATE CONTROL SYSTEM - INFO GROUP 87, NO. 86-01

Article Text

1984 Audi 5000S

For chip

Sunday, October 17, 1999 04:49PM

ARTICLE BEGINNING

TECHNICAL SERVICE BULLETIN

UPDATING AUTOMATIC CLIMATE CONTROL SYSTEM

Model(s): 1984-on Audi 5000
Group: 87
Bulletin No.: 86-01
Date: July 22, 1986

SERVICE INFORMATION

This circular describes product updates to the climate control system.

In response to complaint of poor climate control performance, do the appropriate product update items.

Each of the ten update items applies to vehicles within specific VIN ranges.

NOTE: Record the VIN of the vehicle you are repairing on a separate card for easy reference when updating the climate control system.

It is not necessary to make all updates to all vehicles.

For example:

If your VIN is 44E 125 107, it is not necessary to update the programmer relief spring. However, you will have to check the Bowden cable to see if it is the new type with cover.

NOTE: Check each vehicle to see if vehicle has had any product updates performed at an earlier date.

A second generation fully automatic climate control system was introduced during November 1985 for 1986 model year vehicles.

It is not necessary to make product updates to vehicles with the new style climate control system.

NOTE: Vehicles produced in Ingolstadt between VIN 44 GA 053 133 and VIN 44 GA 053 400 may or may not have the new style climate control system.

All vehicles produced in Ingolstadt beginning with VIN 44 GA 053 401 have the new climate control system

NOTE: Vehicles produced in Neckarsulm between VIN 44 GN 056 677 and VIN 44 GN 057 193 may or may not have the new climate control

system.

All vehicles produced in Neckarsulm beginning with VIN 44 GN 057 194 have the new climate control system

1. BOWDEN CABLE, HEATER FLAP AND PROGRAMMER, CHECKING, REMOVING/INSTALLING, ADJUSTING

BOWDEN CABLE CHECKING

On vehicles up to VIN 44E 161 000

- Check to see if new style Bowden cable with sleeve has been installed.

CAUTION: Be careful not to overbend or kink Bowden cable during installation.

NOTE: Also see item 9.

- Check Bowden cable for correct positioning. See Fig. 1.

- Open glove box door.

- Set climate control temperature form maximum cold 60 degrees F (15 degrees C) to maximum heat 90 degrees F (32 degrees C).

- Check lever on programmer.

  * Lever must be in full heat position (all the way to the right) after 2 minutes.

If lever moves slowly or stops before reaching maximum heat position do the following:

- Set temperature to 90 degrees F (32 degrees C) and wait until lever stops.

- Remove Bowden cable form lever on programmer. See Fig. 2.

- Attach pull-type spring scale to eye of Bowden cable.

- Pull scale in horizontal direction.

- Record force required to close heater flap.

  * Force must be 15N or less.

If force required to close heater flap is greater than 15N

- Remove heater box and replace heater flap.

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HEATER FLAP, REMOVING/INSTALLING

NOTE: In vehicles up to VIN 44G 016 229, check heater flaps and adjusting mechanisms of heater for freedom of movement.

- Remove heater housing from vehicle.

- Disassemble heater housing and remove old heater flap. See Repair Manual, Group 80, Audi 5000, 1978-1983.

- Push heater flap into left half of heater housing.

- Install felt ring (A) and thrust washer (B) on heater flap. See Fig. 3.

- Install retaining (C) clip on flap. See Fig. 3.

- Align heater flap and assemble heater housing halves.

- Install heater housing in vehicle.

- Connect Bowden cable.

- Set climate control temperature to 90øF (32øC).

- Loosen mounting clamps at Bowden cable sleeve.

- Push Bowden cable sleeve in direction of arrow until heater flap is fully sealed. See Fig. 4.

- Install mounting clamp on Bowden cable.

PROGRAMMER AND MOTOR, REMOVING/INSTALLING

On vehicles up to VIN 44E 125 105

- Install new style programmer with assist spring (Part No. 443 820 503).

NOTE: Be sure that new style programmer has new higher output motor. Higher output motor is identifiable by black operating lever.

If programmer does not have higher output motor.

- Install higher output motor (with black operating lever).

- Remove old programmer motor (with white operating lever).

- Install new higher output programmer motor (with black operating lever).

In older vehicles,

- Check to see if programmer bracket (C) has tab (D). See Fig. 5.

If tap (D) is present,

- Remove bracket from programmer.

- Cut tab (D) off bracket.

- Reinstall bracket on programmer.

MOTOR, REMOVING/INSTALLING

- Remove mounting screw (A). See Fig. 6.

- Carefully remove brown connector form circuit board.

- Remove motor.

- Install new motor in reverse order.

NOTE: Brown connector must "click" into circuit board.

- Install programmer.

- Install Bowden cable.

NOTE: The eye of the Bowden cable must point upward when installed. See Fig. 6 (arrow).

2. A/C CLUTCH RELAY REMOVING/INSTALLING

On vehicles up to VIN 44F 028 228

- Replace A/C clutch relay with latest version.

CAUTION: Install relays manufactured after the 40th calender week of 1984.

Relays are identified three ways:

A/C clutch relay, identification numbers (refer to Fig. 7)

1 - 40 4
40 = calender week
4 = 1984

2 - 1 40 4
1 = first day of calender week
40 = calender week
4 = 1984

3 - 40 84
40 = calender week
84 = 1984

- Remove old relay from auxiliary relay panel.

- Install new relay in old position. See Fig. 8.

REFRIGERANT LOW PRESSURE SWITCH, REWIRING

- Remove water tray from air plenum.

- Remove both wiring connectors from refrigerant low pressure switch.

- Connect these wires together and tape up in wiring harness.

CAUTION: Protect wires from water spray and possible contact with body.

- Connect brown connectors of wiring harness Part No. 443 971 531 (from Parts Dept.) to terminals of refrigerant low pressure switch.

- Place wiring harness in air plenum and secure with cable binder at (C). See Fig. 9.

- Loosen bracket of A/C refrigerant high pressure line.

- Lift high pressure line and route wiring harness in rubber sleeve. See Fig. 10 (arrow).

- Route wiring harness through grommet above master cylinder and along A/C refrigerant high pressure hose (A).

- Disconnect green wire connectors to A/C compressor clutch below radiator fan motor (E).

- Connect wires of wiring harness Part No. 443 971 531 to disconnected connectors of A/C compressor clutch.

- Secure wiring harness with cable binders (C). See Fig. 10.

3. A/C COMPRESSOR CLUTCH, CHECKING

On vehicles up to VIN G 004 657

- Check A/C compressor clutch for the following:

* Heat discoloration
* Eccentric rotation (moving as through off-center)
* Improper mating between clutch and pulley surfaces
* Incorrect air gap between clutch and pulley

WARNING: Make air gap measurement only when engine is not running.

- Measure air gap between A/C compressor clutch and pulley. See Fig. 11.

  * a = 1.5 mm + 0.6 mm

  If air gap is not within specifications,

- Replace A/C compressor clutch.

  If A/C compressor clutch shows any sign of:

  * Heat discoloration
  * Eccentric rotation
  * Improper mating between clutch and pulley surfaces.

- Replace A/C compressor and clutch with newer style components.

NOTE: Improved A/C compressor with clutch is identifiable by a green paint mark on the compressor housing.

4. A/C REFRIGERANT HOSES, REFRIGERANT LOW PRESSURE SWITCH, CHECKING
REMOVING/INSTALLING

A/C REFRIGERANT HOSES, CHECKING

On vehicles up to VIN 44F 000 000

- Inspect A/C refrigerant lines for wear spots and leaks.

- Replace A/C refrigerant lines if necessary.

CAUTION: When replacing A/C refrigerant hoses, use hoses manufactured after the 20th calendar week of 1984. The date of manufacture 20/84 is stamped on the hoses.

A/C REFRIGERANT LOW PRESSURE SWITCH, CHECKING

If A/C compressor clutch cycles on and off more than 2 or 3 times per minute when outside temperature is approximately 68 degrees F (20 degrees C), check A/C refrigerant low pressure switch as follows:

- Remove electrical connector form A/C refrigerant low pressure switch and bridge terminals.

- Check cooling vent temperature and refrigerant pressure.

  If temperature and pressure are within tolerance,

- Replace A/C refrigerant low pressure switch.

NOTE: Low pressure switch can be removed without discharging A/C refrigerant system.

- Remove wire connectors for low pressure refrigerant switch.

- Remove refrigerant low pressure switch.

- Lightly oil new O-ring with refrigerant oil and install in groove. See Fig. 12 (arrow).

- Install new refrigerant low pressure switch, Part No. 443 959 483C.

- Check center vent outlet temperature.

If temperature at center vent is too high and refrigerant pressure too low,

- Recharge A/C refrigerant system.

- Repeat measurements.

If measurements are not obtained,

- Check Repair Manual, Group 87 for additional troubleshooting hints.

5. IMPROVED TERMINAL CONNECTORS, INSTALLING

On vehicles from March 1985 production up to VIN 44F 100 624

- Check fresh air fan connectors and terminal ends for tightness.

- Remove middle console.

- Locate yellow 4 point connector for fresh air fan.

- Pull connector apart.

- Locate BK/BL wires in each connector half.

- Remove BK/BL wires form connector halves.

- Cut terminals from BK/BL wires.

- Crimp new terminals to wires (Part Nos. N 902 644.02 and N 17 462.3).

- Install BK/BL wires into new connectors (Part Nos. 443 971 959 and 443 971 958).

NOTE: Yellow 4 point connector will now have 3 pairs of wires. BK/BL wires from yellow 4 point connector will now have separate connector.

6. FRESH AIR/RECIRCULATION AIR FLAP VACUUM MOTOR, CHECKING

- Remove water tray from air plenum under hood.

- Set A/C temperature to 90 degrees F (32 degrees C).

  * Fresh air flap must be open and recirculation air flap closed. See Fig. 13 (arrow).

- Set A/C temperature to 60 degrees F (15 degrees C).

  * Fresh air flap must be closed and recirculation air flap open. See Fig. 14.

  If air recirculation flap remains open,

- Check connector piece on vacuum motor.

  If broken,

- Replace vacuum motor.

7. FRESH AIR FAN, ELIMINATING WHISTLING NOISES

  In vehicles up to VIN 44G 001 212

  If there is a whistling noise when using higher fan stages, do the following :

- Remove parcel shelf and footwell vent from driver's side.

- Remove air duct form heater housing.

- Set A/C temperature to 68 degrees F (20 degrees C) or 90 degrees F (32 degrees C).

- Press DEFROST button.

- Check to see if a clamp is mounted on heater flap lever (B). See Fig. 15.

  If no,

- Install new heater flap lever Part No. 443 819 291 E.

Work Sequence

- Remove pull rod (A). See Fig. 15.

- Remove screw and washer.

- Remove heater flap lever with return spring.

- Install new heater flap arm.

- Install return spring (C). See Fig. 15.

- Install washer, screw and pull rod.

- Install air duct, footwell vent and parcel shelf.

8. HEATER VALVE, CHECKING

Refer to Fig. 16.

- Check heater valve for leaks.

- Replace if necessary.

9. PROGRAMMER CONNECTOR, CHECKING

- Remove glove compartment.

- Check programmer connector for good contact with programmer.

- Remove connector from programmer.

- Bend terminal of BK/BL wire (terminal S) to ensure proper contact with programmer. See Fig. 17.

- Replace terminal if necessary.

10 NO HEAT SETTING UP TO AND INCLUDING 84øF (23øC)

- Remove water tray from air plenum in engine compartment.

- Remove yellow 4 point connector from evaporator.

- Remove both sealing gaskets (A) from connector housing with small screwdriver. See Fig. 18.

- Cut off rubber tubes (arrows) of sealing gasket. See Fig. 18.

CAUTION: Do not damage wire insulation when removing rubber tubes.

- Push sealing gaskets into connector housing.

- Reconnect connector.

- Install water tray over air plenum.

- Test climate control regulation at settings from 60øF (15øC) to 84øF

(29øC).

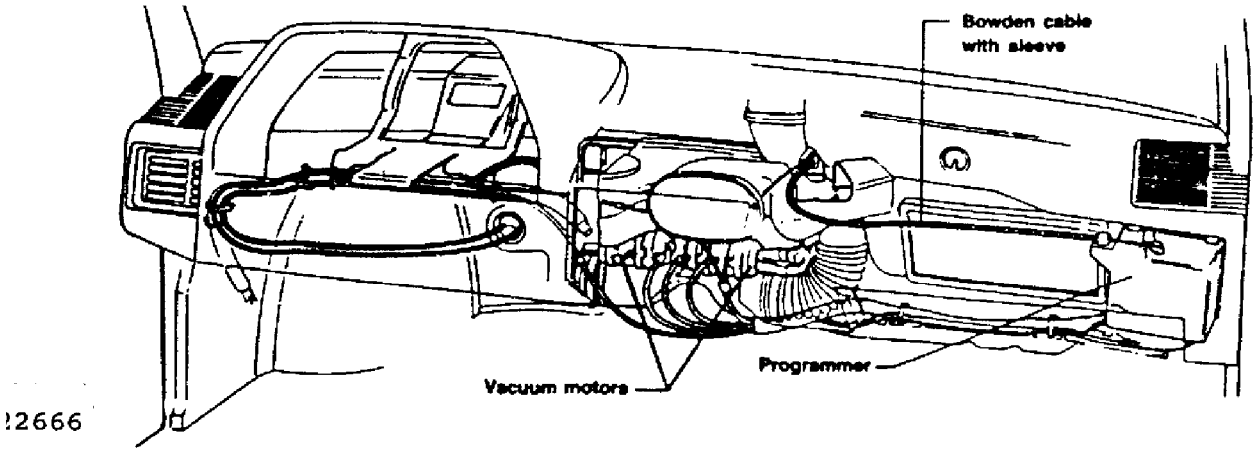


Fig. 1: Bowden Cable Routing

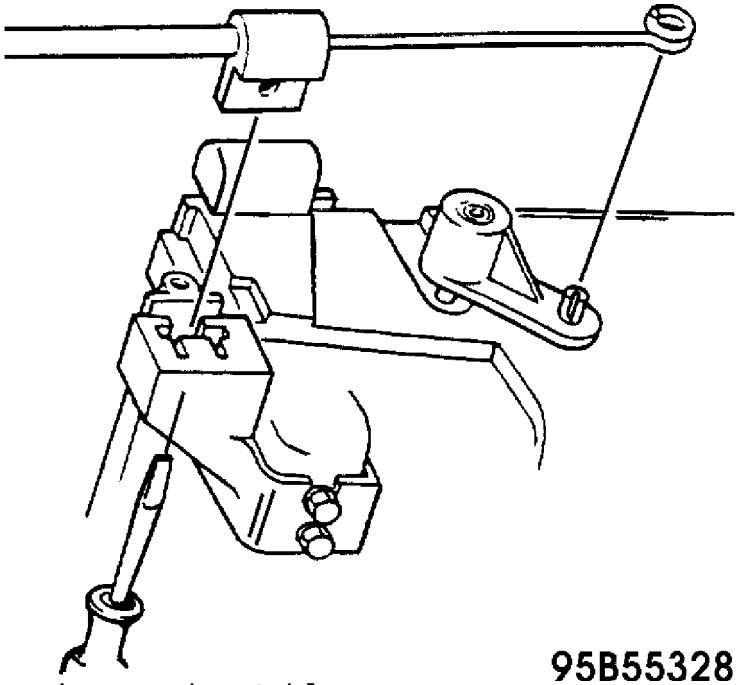


Fig. 2: Removing Bowden Cable From Lever

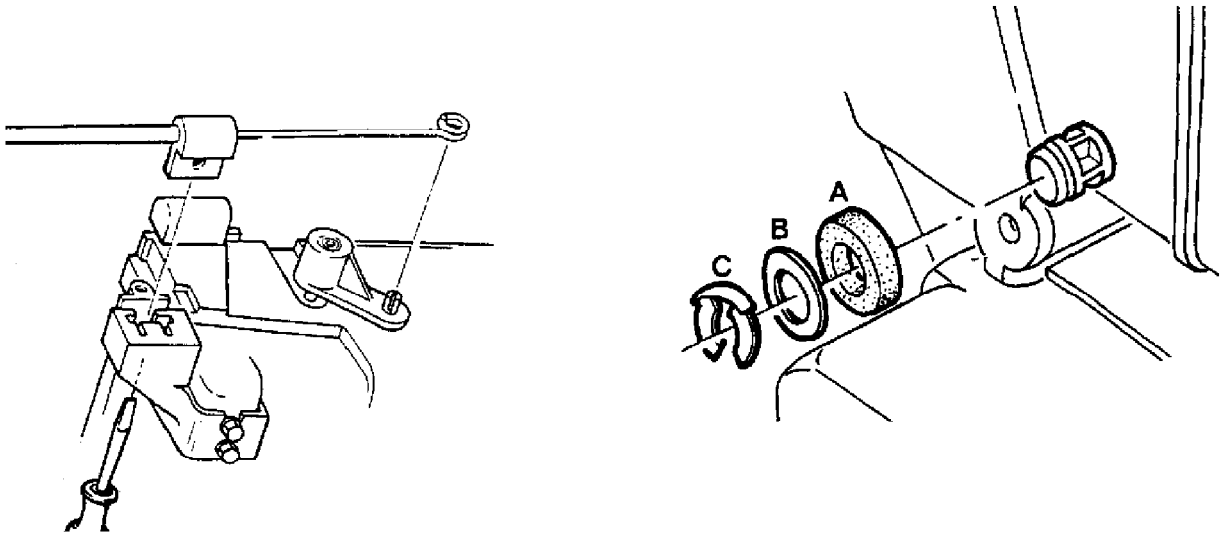


Fig. 3: Installing Retaining Clip

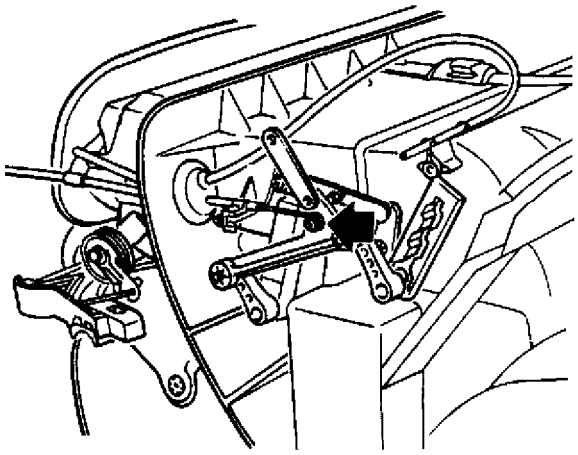


Fig. 4: Seating Heater Flap

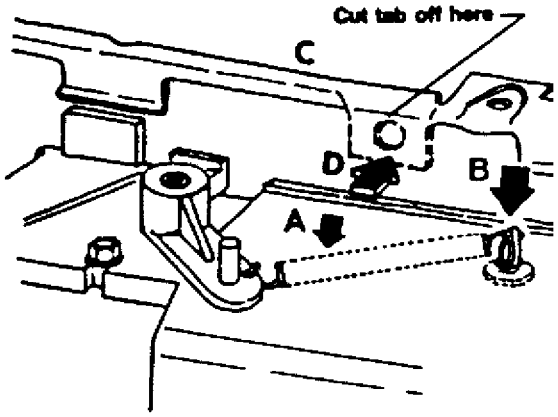


Fig. 5: Location Of Tab "D" On Programmer Bracket "C"

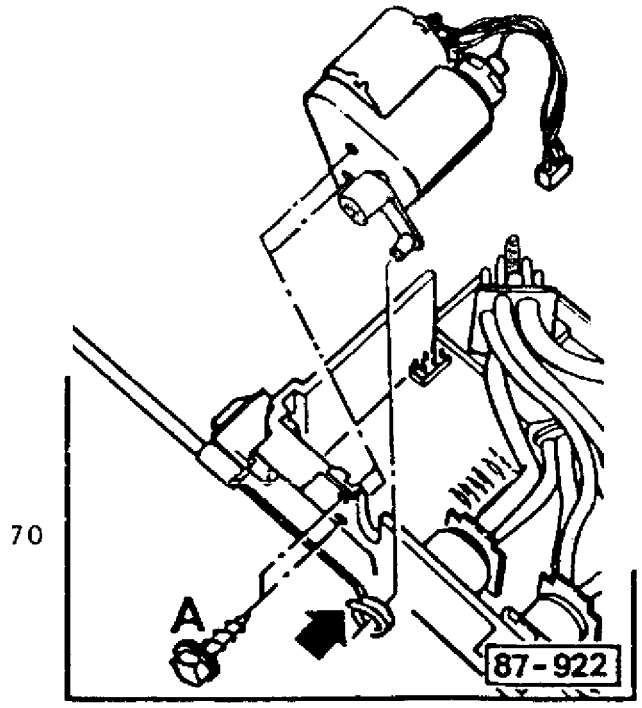


Fig. 6: Removing Motor

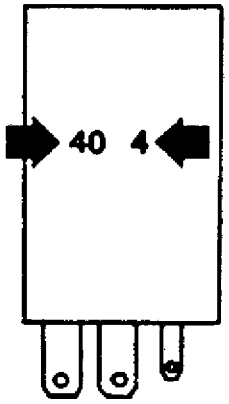
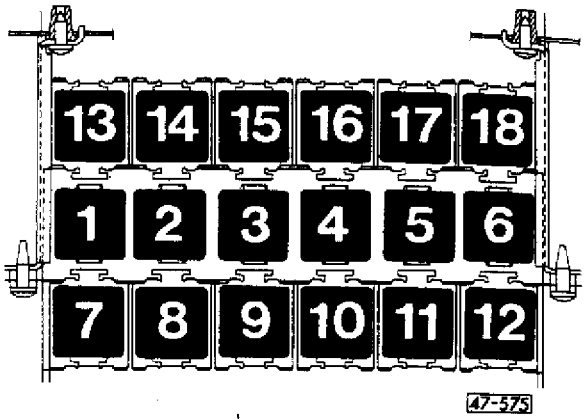


Fig. 7: A/C Clutch Relay Identification Numbers



Vehicle type	Relay number
Audi 5000S	4
Audi 5000S turbo	4
1986 5000S turbo	12 to VIN 44 GA 053 401 or VIN 44 GN 057 194

Fig. 8: View Of Relay Panel

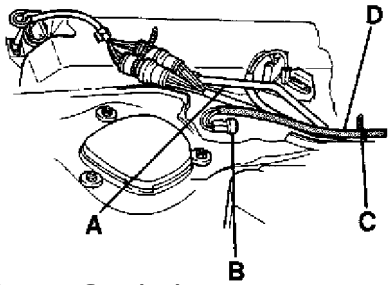


Fig. 9: View Of Wiring Harness

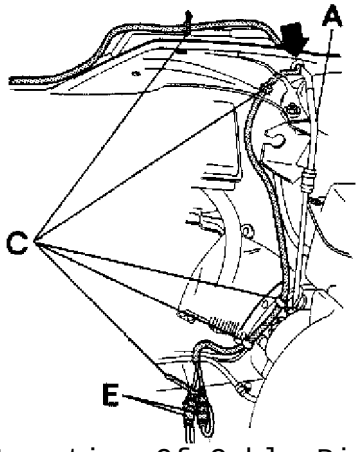


Fig. 10: Location Of Cable Binders

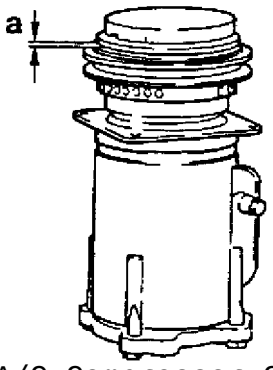


Fig. 11: A/C Compressor Clutch Air Gap

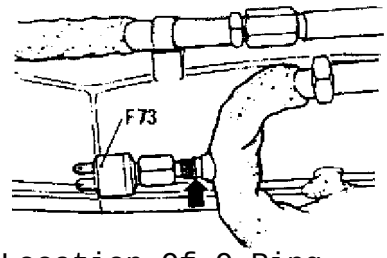


Fig. 12: Location Of O-Ring

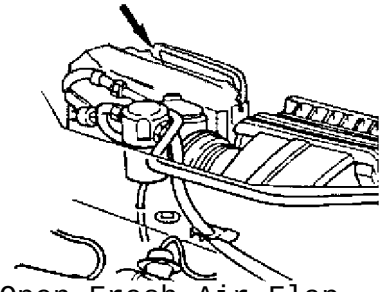


Fig. 13: Open Fresh Air Flap

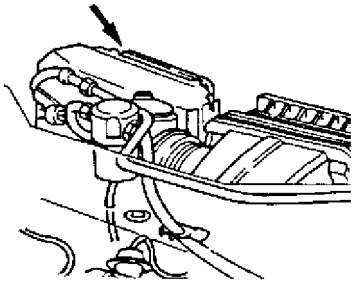


Fig. 14: Closed Fresh Air Flap

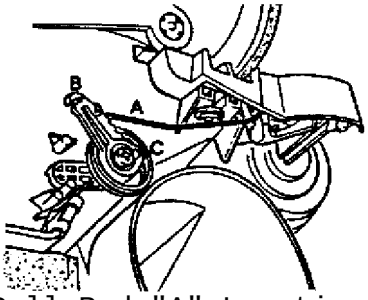


Fig. 15: Pull Rod "A" Location

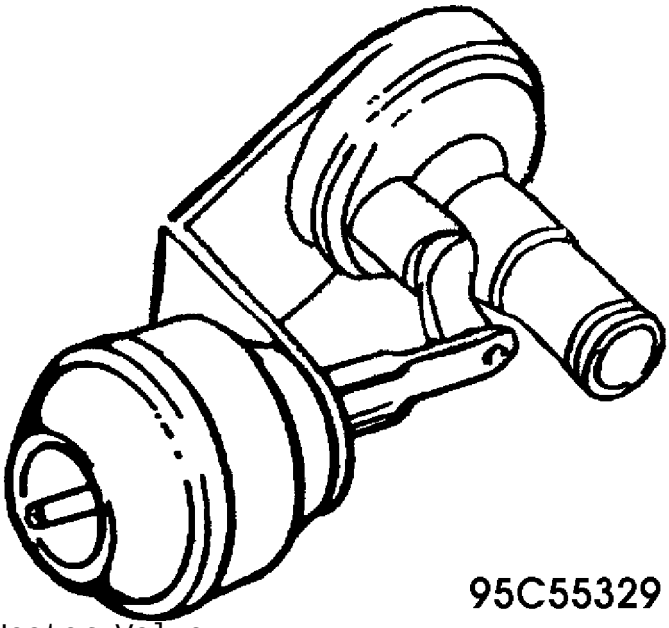


Fig. 16: Heater Valve

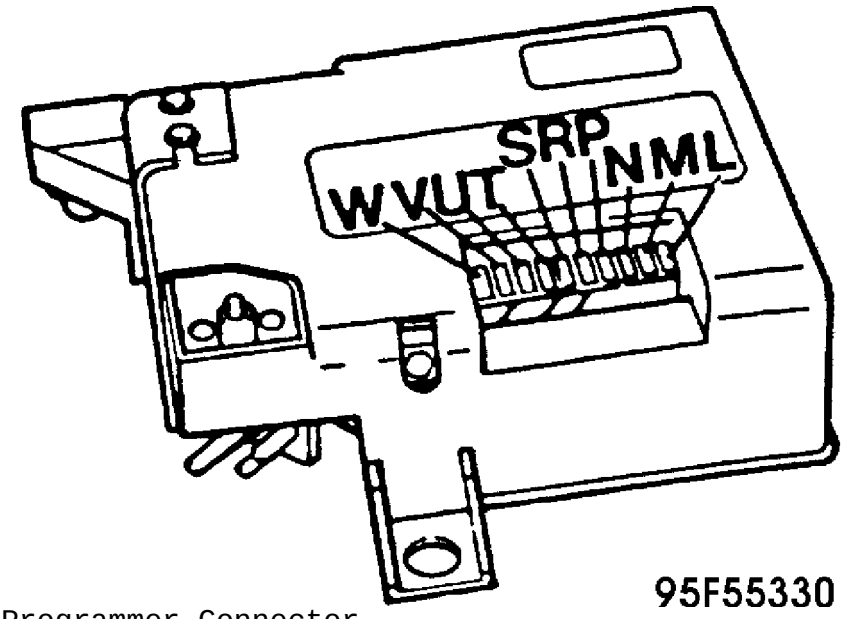


Fig. 17: Programmer Connector

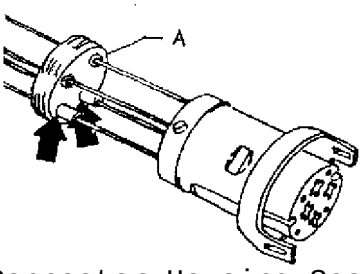


Fig. 18: Connector Housing Sealing Gasket & Rubber Tubes

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