

**4.2a** The cooling fan fusible links (arrow) are located next to the battery earth cable

The cooling fans are protected by two fusible links near the battery earth cable (see illustration). There are also two wire-style fusible links (with gauges smaller than the wire it is designed to protect) in the positive battery cable harness (see illustration).

Wire fusible links cannot be repaired, but a new link of the same size wire can be put in its place. The procedure is as follows:

- a) Disconnect the negative cable from the battery.
- b) Disconnect the fusible link from the wiring harness.
- c) Fit the new fusible link.
- d) Connect the battery earth cable. Test the circuit for proper operation.

## 5 Circuit breakers - general information

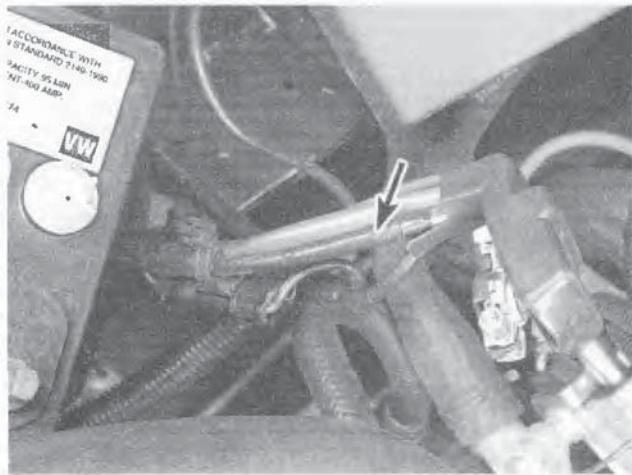
Circuit breakers may be used to protect some components such as power windows, power door locks and headlights.

On some models the circuit breaker resets itself automatically, so an electrical overload in a circuit breaker protected system will cause the circuit to fail momentarily, then come back on. If the circuit doesn't come back on, check it immediately. Once the condition is corrected, the circuit breaker will resume its normal function. Some circuit breakers must be reset manually.

## 6 Relays - general information and testing

### GENERAL INFORMATION

- 1 Several electrical accessories in the vehicle, such as the fuel injection system, power windows, power door locks and air conditioning use relays to transmit the electrical signal to the component. Relays use a low-current signal (the control circuit, which is opened and closed by the circuit's switch) to turn the high-current flow in the main circuit on and off. If the relay is defective, that component will not operate properly.
- 2 Some relays are grouped together in the engine compartment fuse box. There are others near the fuse centre under the steering column.
- 3 If a faulty relay is suspected, it can be removed and tested using the procedure below or by a dealer service department or a repair shop. Defective relays must be renewed as a unit.



**4.2b** The battery positive cable harness contains a wire-type fusible link (arrow)

### TESTING

- 4 It's best to refer to the wiring diagram for the circuit to determine the proper hook-ups for the relay you're testing. However, if you're not able to determine the correct hook-up from the wiring diagrams, you may be able to determine the test hook-ups from the information that follows. The relays used are all of the four or five terminal design.

### RELAYS WITH FOUR TERMINALS

- 5 On most relays with four terminals, two of the four terminals are for the relay's control circuit (they connect to the relay's coil which, when energised, closes the large contacts to complete the circuit). The other two terminals are for the relay's power circuit (they are connected together within the relay when the control-circuit coil is energised).
- 6 Relays are sometimes marked as an aid to help you figure out which two terminals are for the control circuit and which are for the power circuit. As a general rule, the two thicker wires connected to the relay are for the power circuit; the two thinner wires are for the control circuit.
- 7 Remove the relay from the vehicle and check for continuity between the relay's power circuit terminals. There should be no continuity.
- 8 Connect a fused jumper wire between one of the two control circuit terminals and the positive battery terminal. Connect another jumper wire between the other control circuit terminal and earth. When the connections are made, the relay should click. On some relays, polarity may be critical, so, if the relay doesn't click, try swapping the jumper wires on the control circuit terminals.
- 9 With the jumper wires connected, check for continuity between the power circuit terminals. Now there should be continuity.
- 10 If the relay fails any of the above tests, renew it.

### RELAYS WITH FIVE TERMINALS

- 11 If the relay has five terminals, it's best to check the wiring diagram to determine which terminals connect to which of the relay's components.
- 12 Often it is easiest and fastest to simply renew a relay that does not click.