of closed throttle over-run. This ensures that air is available to maintain a combustible air/fuel ratio under all conditions. Air bleeds into the inlet manifold at 564 mm/Hg 22.2 in/Hg depression.

Test **19.20.21**

Slacken the hose clip securing the over-run valve air feed hose to the throttle body and block the hose.
Start the engine; idle speed should remain correct.
If the idle speed is not correct, renew the over-run valve.

Remove and refit **19.20.22**

Disconnect the battery.
Remove the air-flow meter.
Slacken the securing clip and disconnect the auxiliary air hose from the air distribution block (1, Fig. 11).
Slacken the clip securing the hose from the throttle butterfly housing.
Remove the three screws securing the air distribution block to the inlet manifold.
Lift the air distribution block from the inlet manifold and disconnect the air hose.
Withdraw the over-run valve (2, Fig. 11).
Reverse the above procedure to refit.

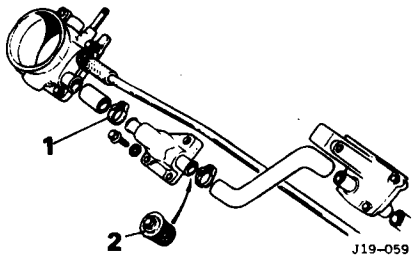

Fig. 11

FUEL CUT-OFF INERTIA SWITCH

Remove and refit **19.22.09**

Removing

Disconnect the battery.
Unclip the switch cover at passenger side of fascia.
Disconnect cables from switch and switch from spring clips.

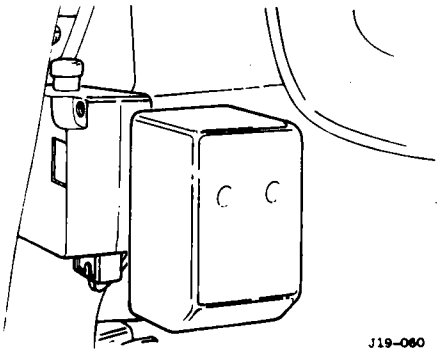

Fig. 12

Refitting

Press switch into spring clips with the ribs towards rear of car and terminals at bottom. Ensuring that the switch is raised in clips to abut on top lip of bracket.
Connect cables and press in plunger at top of switch.
Fit cover and re-connect battery.

OXYGEN SENSOR

Description

The oxygen sensor is located in the exhaust down-pipe. The sensor monitors the oxygen content in the exhaust and sends a proportional signal to the E.C.U., thus maintaining close air/fuel ratio control under all operating conditions.

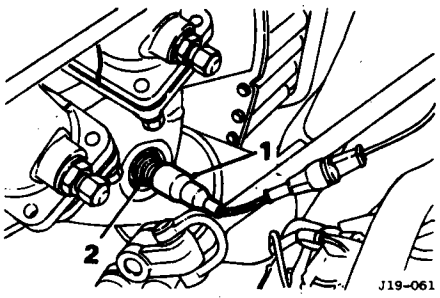

Fig. 13

Remove and refit **19.22.16**

Disconnect the battery.
Disconnect the electrical connector on the oxygen sensor and remove (1, Fig. 13).
Clean the sensor sealing face (2, Fig. 13) and fit new oxygen sensor.
Reset the Service Interval Counter.

COOLANT TEMPERATURE SENSOR

Description

The coolant temperature sensor (Fig. 14) is located at the rear of the water rail.
The sensor comprises a temperature-sensitive resistor with a negative temperature coefficient, that is, the electrical resistance decreases with increasing temperature. The sensor provides the E.C.U. with a coolant temperature parameter that controls the injector signal pulse with respect to engine temperature. Practically, the sensor establishes a rich level of fuelling at low temperature, and a weaker level at high temperature. In conjunction with the auxiliary air valve the coolant temperature sensor forms an equivalent to a carburetter automatic choke.

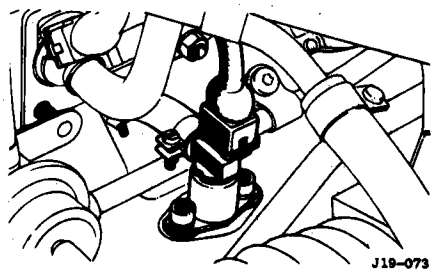

Fig. 14

Remove and refit **19.22.18**

NOTE: This procedure MUST ONLY be carried out on a cold or cool engine.

Disconnect the battery and the connector from the coolant temperature sensor.
Carefully remove the pressure cap from the remote header tank to release any cooling system residual pressure. Replace the cap tightly.
Ensure that the sealing washer is located on a replacement temperature sensor and coat the threads with suitable sealing compound, then remove the temperature sensor from the water rail and screw the replacement temperature sensor into position.
Refit the electrical connector, re-connect the battery and check the coolant level at the remote header tank. If necessary, top-up.

Test **19.22.19**

Disconnect the battery.
Disconnect the cable from the temperature sensor.
Connect a suitable ohmmeter between the terminals; note the resistance reading. The reading is subject to change according to temperature and should closely approximate to the relevant resistance value given in the table.
Disconnect the ohmmeter.
Check the resistance between each terminal in turn and the body of the sensor. A very high resistance reading (open circuit) must be obtained.
Re-connect cable to sensor and re-connect the battery.

Coolant Temperature (°C)	Resistance (kilohms)
−10	9.2
0	5.9
+20	2.5
+40	1.18
+60	0.60
+80	0.325

THERMOTIME SWITCH

Description

The Thermotime switch (Fig. 15) is located at the front of the water rail. The switch comprises a bi-metallic contact opened and closed by coolant temperature and, in addition, auto-excited by a heating element. The switch controls the cold start injector through the cold

start relay and is energized by operation of the starter motor. While the start system is in operation a voltage is applied to the bi-metallic switch contact heating element which then tends to open the contact and isolate the relay and injector. The time that this takes depends upon the initial temperature of the bi-metallic element and can be up to eight seconds under conditions of extreme cold. When the engine is warm, or at normal operating temperature, there will be no fuel supplied by the cold start injector.

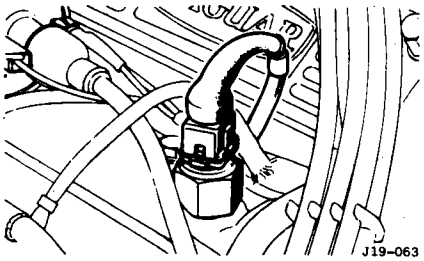
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Fig. 15

Remove and refit 19.22.20

NOTE: This procedure MUST ONLY be carried out on a cool or cold engine.

Disconnect the battery and the connector from the Thermotime switch.
Carefully remove the pressure cap from the remote header tank to release any cooling system residual pressure. Replace the cap tightly.
Ensure that a new sealing washer is located on replacement Thermotime switch and coat the threads with a suitable sealing compound.
Remove the Thermotime switch from the front of the water rail.
Screw replacement Thermotime switch in position.
Refit electrical connector and re-connect battery.
Check coolant level at remote header tank, and top-up if necessary.

Test 19.22.21

Equipment required: Stop watch, ohmmeter, single-pole switch, jump lead for connecting switch to battery and Thermotime switch, and a thermometer.

NOTE: Check coolant temperature with thermometer and note reading before carrying out procedures detailed below. Check rated value of Thermotime switch (stamped on body flat). The test must be carried out with coolant temperature below the operating temperature to ensure correct operation of the switch.

Disconnect the battery earth lead and the electrical connector from the Thermotime switch.
Connect ohmmeter between terminal 'W' and earth. A very low resistance reading (closed circuit) should be obtained.
Connect 12V supply via isolating switch to terminal 'G' of Thermotime switch.
Using stop watch, check time delay between making isolating switch and indication on ohmmeter changing from low to high resistance. Delay must closely approximate to time stated below.
Renew Thermotime switch if necessary and re-connect the battery.

Coolant Temperature	Delay
−20°C	8 seconds
0°C	4½ seconds
+10°C	3½ seconds
+35°C	0 seconds

AIR TEMPERATURE SENSOR

Description

The air temperature sensor is an integral part of the air-flow meter. The sensor provides information to the E.C.U. relating to the ambient air density and temperature thus maintaining an optimum fuel/air ratio.

Test 19.22.23

Disconnect the battery and remove the multi-pin electrical connector from the air-flow meter.
Connect a suitable ohmmeter between terminals 6 and 27 of the air-flow meter.

Ambient Air Temperature (°C)	Resistance (kilohms)
−10	9.2
0	5.0
+20	2.5
+40	1.18
+60	0.60

Note the resistance reading. The reading is subject to change according to the temperature and should closely approximate to the relevant resistance value given in the table above.
Disconnect the ohmmeter.
Re-connect the multi-pin connector and battery.

AIR-FLOW METER

Description

The air-flow meter is located between the air cleaner and the inlet manifold mounted throttle butterfly. The flap in the air-flow meter is opened when the air is drawn into the engine. The E.C.U. uses the flap angle to compute fuel requirements.

Remove and refit 19.22.25

Disconnect the battery.
Slacken the two clips which secure the air-intake hoses on each side of the air-flow meter (1, Fig. 16).
Disconnect the electrical connector from the air-flow meter.
Remove the three screws which secure the air-flow meter to its mounting bracket (2, Fig. 16), remove the air-flow meter and withdraw the air-intake hoses.
After refitting reset idle mixture screw using correct equipment.

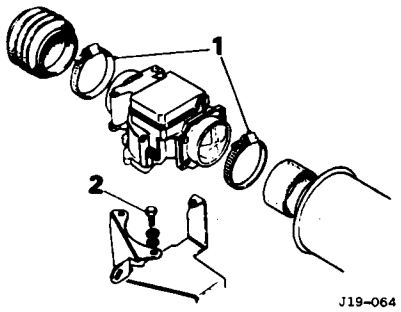

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Fig. 16

COLD START SYSTEM

Test 12.22.32

WARNING: This test results in fuel vapour being present in the engine compartment. It is therefore imperative that all due precautions are taken against fire and explosion.

NOTE: The ambient temperature and the engine temperature must be below 35°C in order for the system to work and be testable.

Remove the electrical connector from the cold start injector.
Connect a voltmeter across the terminals of the connector.
Crank the engine: battery voltage should be obtained.
Remove the setscrew and washer securing the cold start injector to the inlet manifold. Remove the cold start injector.
Arrange a container to collect sprayed fuel, and refit the connector.
Check for fuel leaking past the nozzle.
Crank the engine. The cold start injector should spray fuel out for a few seconds until the Thermotime switch switches off the injector. When the engine is warm the injector should not spray fuel during engine cranking.

ELECTRONIC CONTROL UNIT (E.C.U.)

Description

The E.C.U. is mounted in the luggage compartment against the front bulkhead (Fig. 17). The E.C.U. receives all electrical input signals from the various sensors. This information is used to determine the correct period of time for which the injectors are held open in each engine cycle.

continued

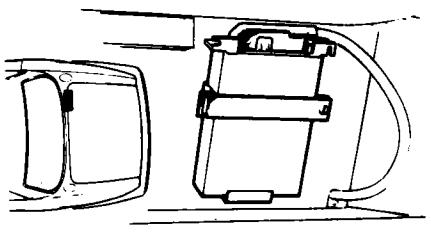
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Fig. 17