

Chapter 4 Part C:

Fuel and exhaust systems - K-Jetronic fuel injection - 16 valve engines






The following information is a revision of, or supplementary to, that contained in Part B of this Chapter

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4C

Degrees of difficulty

Easy , suitable for novice with little experience 	Fairly easy , suitable for beginner with some experience 	Fairly difficult , suitable for competent DIY mechanic 	Difficult , suitable for experienced DIY mechanic 	Very difficult , suitable for expert DIY or professional 
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Specifications

Air cleaner

Type	Automatic air temperature control
Element	Champion U502

Fuel filter

Application:	
1.8 litre Golf	Champion L203
1.8 litre Jetta	Champion L206

Injection system

Type	K-Jetronic, continuous injection system (CIS)
Application	1.8 litre (code KR) engine
Idle speed	950 + 50 rpm

1 General information

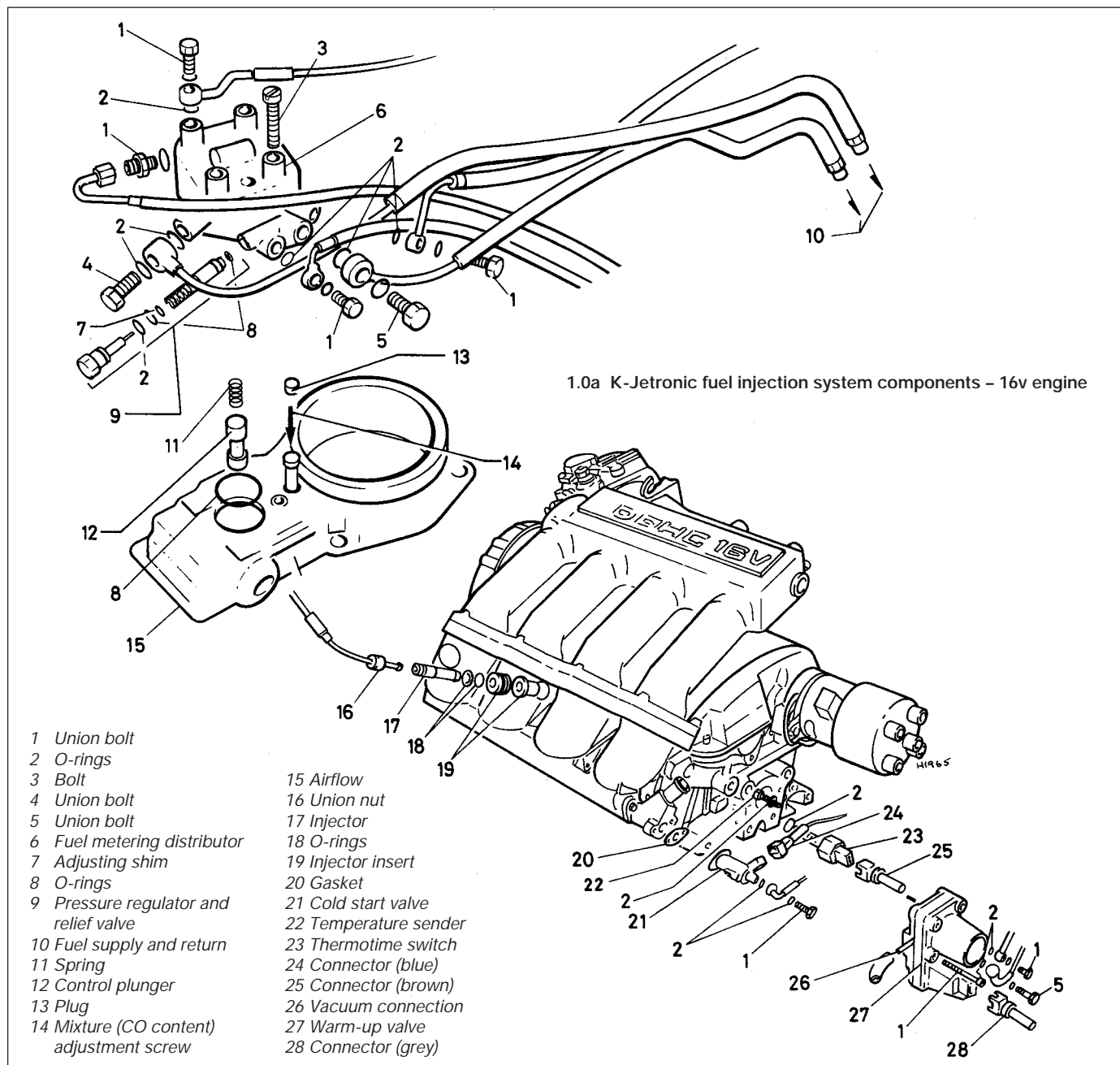
The components of the K-Jetronic fuel injection system fitted to the 1.8 litre 16V engine are as shown (see illustrations). All procedures are the same as described in Part B of this Chapter except for those given in the following Sections.

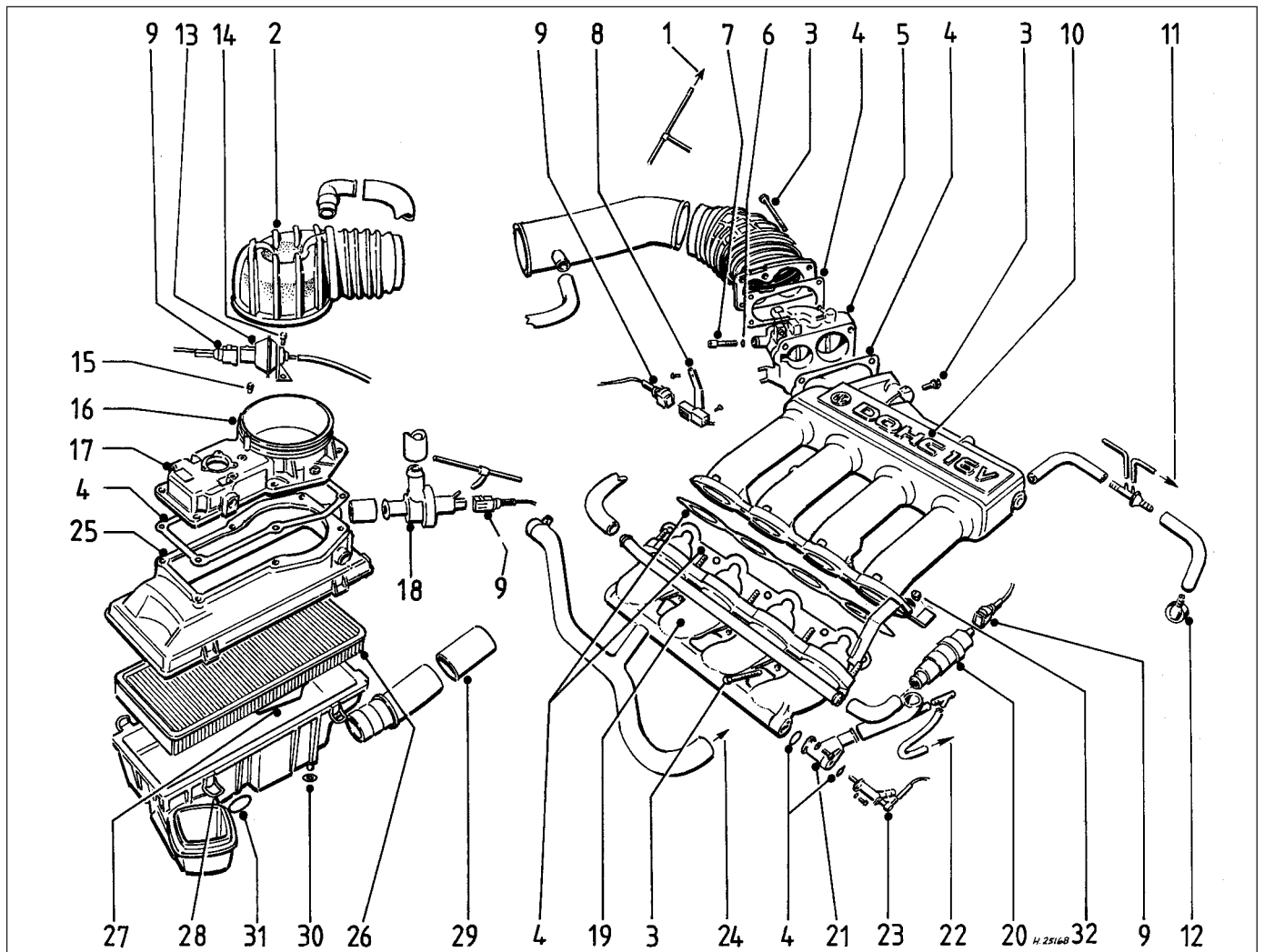
2 Idle speed - adjustment



- 1 Run the engine to normal operating temperature, then check that all electrical components are switched off. Note that the electric cooling fan must not be running during the adjustment procedure.
- 2 Disconnect the crankcase ventilation hose (see illustration).
- 3 Connect a tachometer and an exhaust gas analyser to the engine.
- 4 If the injector pipes have been removed and

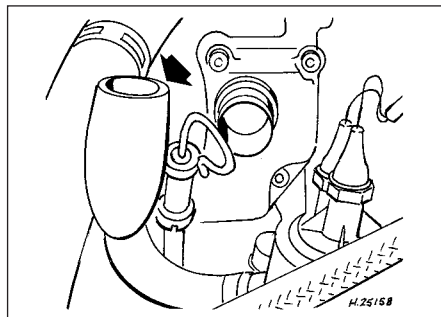
- refitted just prior to adjustment, run the engine to 3000 rpm several times then allow it to idle for at least two minutes.
- 5 Check that when the ignition is switched on, the idling stabilisation control valve is heard to buzz. If not, check the system with reference to Section 3.
- 6 Disconnect the wiring plug for the idle stabilisation system. This is located near the ignition coil (see illustration).
- 7 Allow the engine to idle, then check that the idle speed is 1000 ± 50 rpm. If necessary, remove the cap and turn the idle speed adjustment screw as required (see illustration).



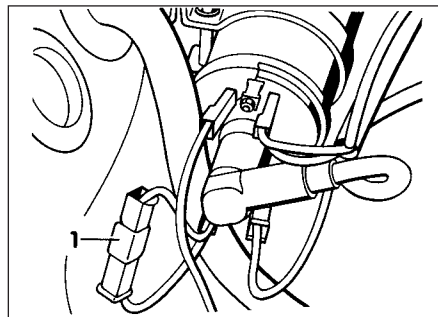


1.0b K-Jetronic system inlet manifold and associated components - 16v engine

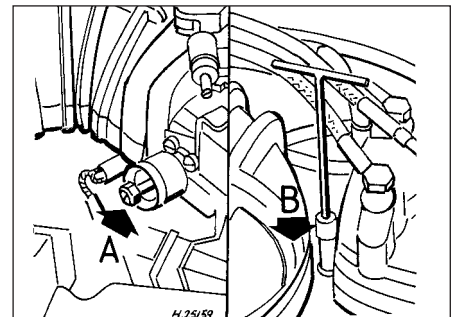
- | | | | |
|-------------------------------|------------------------------------|-------------------------------------|-----------------------------|
| 1 To ignition control unit | 10 Upper section of inlet manifold | 17 Airflow meter | 25 Upper air cleaner |
| 2 Intake elbow | 11 To multi-function indicator | 18 Overrun cut-off valve | 26 Air cleaner element |
| 3 Screw | 12 To brake servo unit | 19 Lower section of inlet manifold | 27 Temperature control flap |
| 4 Gaskets | 13 Diaphragm pressure valve | 20 Idle stabilisation control valve | 28 Lower air cleaner |
| 5 Throttle valve housing | 14 Screw | 21 Elbow | 29 Warm air hose |
| 6 O-ring | 15 Plug | 22 To warm-up valve | 30 Washer |
| 7 Idle speed adjustment screw | 16 Mixture (CO) adjustment screw | 23 Cold start valve | 31 Retaining ring |
| 8 Throttle valve switch | | 24 To crankcase breather | 32 Nut |
| 9 Connector | | | |



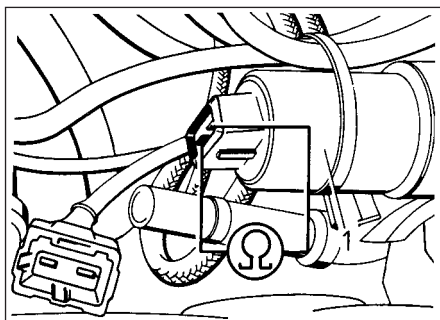
2.2 Disconnecting crankcase ventilation hose



2.6 Idle stabilisation wiring plug (1)



2.7 Idle speed (A) and mixture (B) screws



3.1 Checking continuity of idling stabilisation control valve wiring

8 Check that the mixture (CO reading) is as specified. Temporarily block off the exhaust tailpipe not fitted with the analyser probe while making the check. If necessary, turn the mixture screw as required after removing its cap. A special key is necessary in order to turn the screw but a suitable tool may be used as an alternative. Note that the screw must not be depressed or lifted and that the engine must not be revved with the tool in position.

9 Refit the crankcase ventilation hose. If the CO reading increases, the engine oil is diluted with fuel and should be renewed. Alternatively, if an oil change is not due, a long fast drive will reduce the amount of fuel in the oil.

10 Reconnect the wiring plug and remove the test instruments. Note that after reconnecting the wiring plug, the stabilisation system will return the idling to the specified speed.

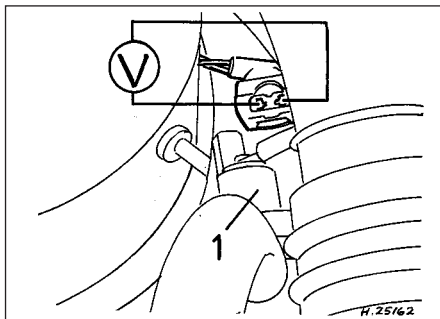
3 Idle speed stabilisation system - testing



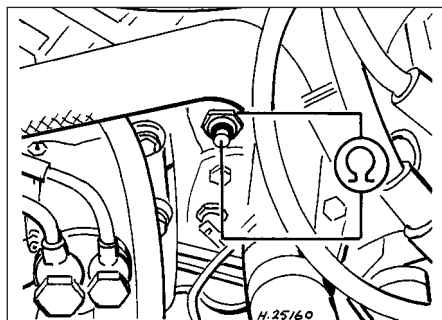
1 Check that the stabilisation control valve buzzes when the ignition is switched on. If not, use an ohmmeter to check the valve continuity after pulling off the connector (see illustration).

2 Similarly, check the system temperature sender resistance at the following temperatures (see illustration):

- a) At 20°C - approximately 1000 ohms
- b) At 60°C - approximately 250 ohms
- c) At 100°C - approximately 75 ohms



4.1 Checking overrun cut-off valve (1)



3.2 Checking temperature sender resistance

3 If the system fault cannot be traced using the previous test then check all associated wiring. If necessary, renew the control unit which is located behind the centre console.

4 The operations of the control valve may be checked by connecting a multi-meter to it. With a tachometer connected, run the engine (hot) at idle speed and note the control current. Now pinch the hose shown (see illustration) and check that the current rises. Release the hose, increase the engine speed to 1300 rpm and actuate the throttle valve switch. The control current should drop below 430 mA. With the wiring disconnected as described in paragraph 6, Section 2, the control current should be constant between 415 and 445 mA.

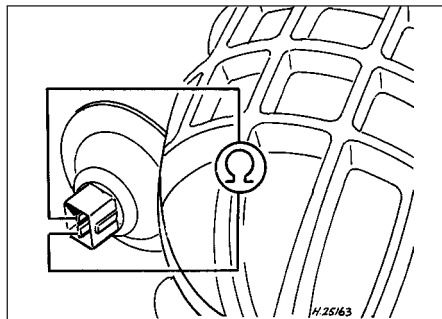
4 Overrun cut-off valve - testing



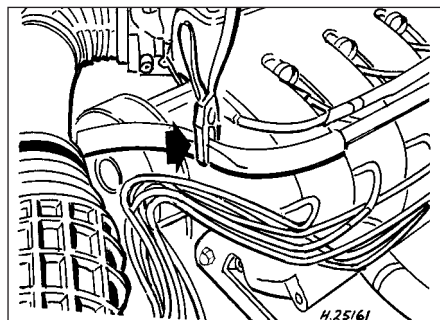
1 With a tachometer connected, run the engine (hot) at 2500 rpm. Operate the throttle valve switch and check that the engine hunts (ie. its speed fluctuates). If not, let the engine idle, disconnect the valve wiring and connect a voltmeter to the terminals as shown (see illustration). Zero volts should be registered.

2 Increase the engine speed to 4000 rpm, then quickly close the throttle. At 1400 rpm, battery voltage should be indicated.

3 If necessary, renew the control unit which is located behind the centre console.



5.1 Checking diaphragm pressure switch



3.4 Checking idle stabilisation valve by pinching hose (arrowed)

5 Diaphragm pressure switch - testing



Pull the wiring connector from the switch, then connect an ohmmeter to the switch terminals (see illustration).

With the engine idling, the reading should be infinity. Quickly open and close the throttle and check that the resistance drops briefly then rises to infinity.

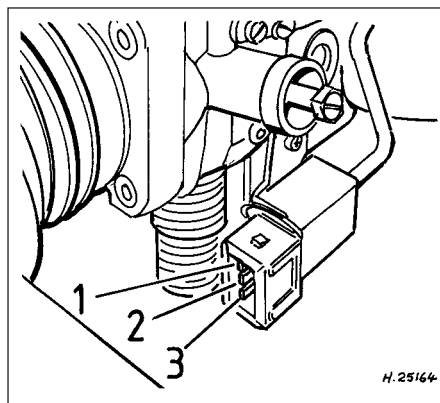
6 Throttle valve switch - testing



1 Pull the wiring connector from the throttle valve switch.

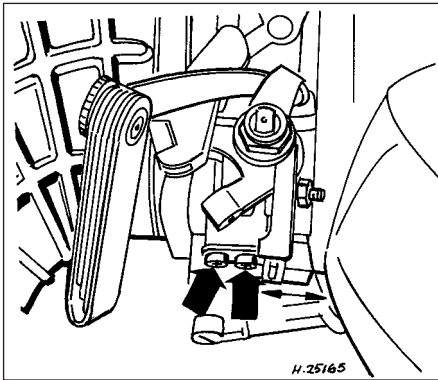
2 Using an ohmmeter, check that with the throttle closed there is zero resistance between terminals 1 and 2 but a reading of infinity between terminals 2 and 3. With the throttle open, the readings should be reversed (see illustration).

3 To adjust the switch, insert a 0.10 mm feeler blade between the throttle lever and stop (see illustration), then loosen the screws and move the switch towards the lever until the contacts are heard to click. Tighten the screws on completion and remove the feeler blade.



6.2 Throttle valve switch connector terminals

See text for terminal identification



6.3 Throttle valve switch adjustment

7 Inlet manifold - removal and refitting



The inlet manifold is in two sections. When refitting the upper section, fully tighten the nuts securing it to the lower section first before attaching it to the rear support bracket.

8 Exhaust system - inspection, removal and refitting



The exhaust system incorporates four silencers together with twin downpipes and tailpipes (see illustration).

The manifold/downpipe flange is of standard type with a gasket. Refer to Section 20 in Part A of this Chapter for the relevant procedures.

8.1 Exhaust system components

- | | | |
|-------------------------------|-------------------------------|--------------------|
| 1 Nut | 6 Nut | 11 Rubber mounting |
| 2 Gaskets | 7 Nut | 12 Rear silencer |
| 3 Exhaust manifold | 8 Intermediate silencers | a = 5.0 mm |
| 4 Downpipe and front silencer | 9 Front of car | b = 12.0 mm |
| 5 Heatshield | 10 Preload dimension = 5.0 mm | c = marks |

