SPECIFIC CHECKS

EEC IV 2.4/2.9 without cat.
EEC IV 2.4/2.9 reg. cat.

Check No.	Check	Action in Event of Fault
1	**Fuel pressure** **⚠ CAUTION** **This check must not be carried out on vehicles featuring an intank fuel pump (chassis mounted fuel pumps were introduced prior to '90½ M.Y. with early level fuel regulator (refer Fig. 2a) and intank fuel pumps were introduced from '90½ M.Y. onwards with late level fuel regulator (refer Fig. 2b)).** • Release the pressure in the fuel rail through the Schrader relief valve provided (Fig. 1A). **⚠ CAUTION** **When the engine is warm, the Schrader valve (Fig. 1A) must be carefully operated several times (at intervals of about 1 minute) to release the pressure in the system.** **NOTE** **On vehicles with the modified quick-release coupling, connect the pressure gauge to the connector near the fender inner panel and not to the fuel rail (Fig. 1B).** Connecting the test hoses to the vehicles with the modified quick-release coupling: • Detach the quick-release coupling using Special Tool 23-027A. • Connect test hoses 23-024-06 and 23-024-07.	

Continued on the next page.

Fig. 1A Pressure relief valve

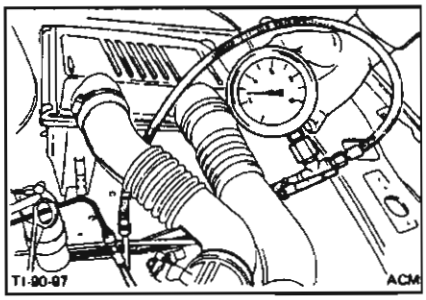

Fig. 1B Connection near inner fender

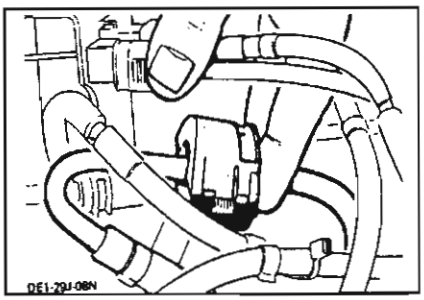

Fig. 1C Detaching fuel line in disconnector (2.9 EFI)

Fig. 1 Checking fuel pressure

SPECIFIC CHECKS

EEC IV 2.4/2.9 without cat.
EEC IV 2.4/2.9 reg. cat.

Check No.	Check	Action in Event of Fault
1 (cont'd)	**Fuel pressure**	
	Connecting the test hoses on other vehicles:	
	• Make sure that the plastic ring is fitted to the plug-in connecting line (Fig. 1D).	Check the system for leaks and damage.
	• Remove the plastic ring from the fuel rail and fit it to the fuel feed line (Fig. 1E).	If necessary, change the filter or fuel lines.
	• Connect the test hoses to the fuel rail and the fuel feed lines, making sure that both the plastic rings jump out.	If necessary, fit a new fuel pump.
	Checks for 2.4/2.9 vehicles (see first caution on page 6.9 - 2 before commencement of tests):	
	• Connect a pressure gauge with valve towards the fuel rail.	
	• Close valve on the pressure gauge.	
	• Disconnect the wiring from the ignition coil and injectors.	
	• Switch the ignition on and off twice. The system pressure should rise above **5 bar.**	
	• Check that the pressure is maintained for approximately 1 minute.	

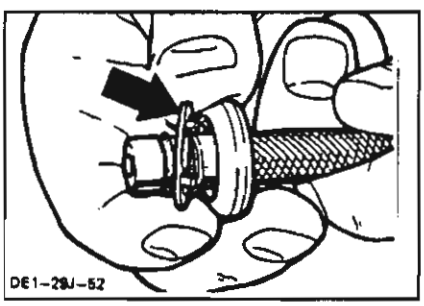

Fig. 1D Plastic ring of plug-in connecting line (2.9 EFI)

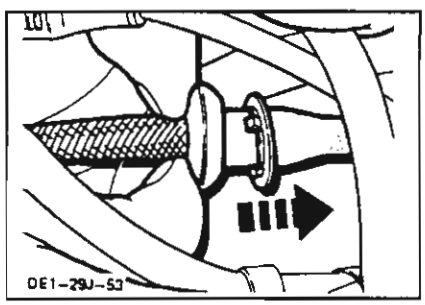

Fig. 1E Plastic ring of fuel feed line (2.9 EFI)

Fig. 1 Checking fuel pressure (steel fuel rail shown) (cont'd)

SPECIFIC CHECKS

EEC IV 2.4/2.9 without cat.
EEC IV 2.4/2.9 reg. cat.

Check No.	Check	Action in Event of Fault
2	**Pressure in fuel rail is correct and constant** • Refer to check no. 1 for test equipment. • Open valve on the pressure gauge (Fig. 2). • Switch on the ignition, but do not start the engine. • Wait until the pressure has stabilized. The following pressure should be indicated: Control pressure - **2.7 bar** (early level regulator with steel fuel rail - Fig. 2a) Control pressure - **3.0 bar** (late level regulator with aluminium fuel rail - Fig. 2b) • Switch off the ignition and wait 5 minutes. The pressure in the fuel rail should not drop more than approximately **0.8 bar**.	Check the fuel pressure regulator for leaks - refer to check no. 3.
3	**Fuel pressure regulator for leaks** (not required if the pressure in the fuel rail is ok) Disconnect the fuel return line and vacuum line from the fuel pressure regulator. No fuel should leak from the regulator.	Fit a new pressure regulator.

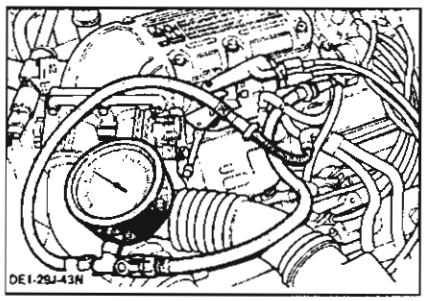

Fig. 2 Checking pressure in fuel rail

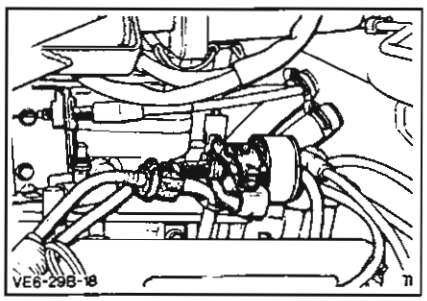

Fig. 2a Early level regulator with steel fuel rail

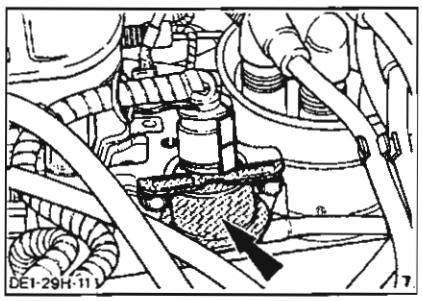

Fig. 2b Late level regulator with aluminium fuel rail

SPECIFIC CHECKS

EEC IV 2.4/2.9 without cat.
EEC IV 2.4/2.9 reg. cat.

Check No.	Check	Action in Event of Fault
4	**Function of fuel pressure regulator** • Refer to check no. 1 for test equipment. • Open valve on the pressure gauge. • Start the engine and allow it to idle. • The pressures measured should be as follows: **2.4 bar ± 0.2 bar** (early level regulator with steel fuel rail - Fig. 2a) **2.7 bar ± 0.2 bar** (late level regulator with aluminium fuel rail - Fig. 2b) • Disconnect the vacuum hose at the fuel pressure regulator. The pressure should drop by approximately **0.5 bar** (nominal pressure of fuel pressure regulator). • Switch off engine. • Carefully disconnect the pressure gauge and test hoses. Use the special tool 23-023A for early level fuel rail connections. • Refit the plastic ring (early level vehicles) on the connector of the fuel feed line (Fig. 3A). • Press the connector (early level vehicles) onto the fuel rail until the plastic ring is ejected (Fig. 3B). • Secure the fuel rail connector retaining clip.	Fit a new regulator.

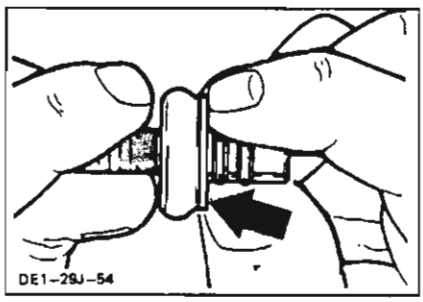

Fig. 3A Plastic ring fitted to the fuel feed pipe

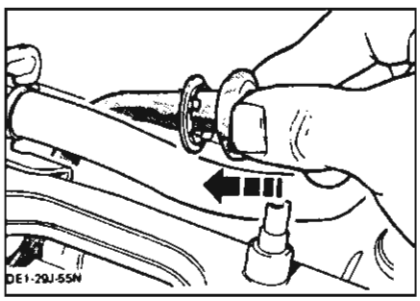

Fig. 3B Plastic ring ejected showing correct fitment of feed pipe

Fig. 3 Connecting early level fuel rail to fuel line fuel rail

SPECIFIC CHECKS

EEC IV 2.4/2.9 without cat.
EEC IV 2.4/2.9 reg. cat.

Check No.	Check	Action in Event of Fault
5	**Function of crankcase breather valve**	
	• Start the engine and allow it to idle.	Fit a new crankcase breather valve.
	• Compress the crankcase breather hose to block it (Fig. 4). The engine idling characteristics should remain unchanged.	
	• Listen carefully for the valve switching. The valve should remain closed when the hose is blocked.	
6	**EEC IV 2.9 reg. cat. with EGR or Thermactor air system (where fitted)**	
6A	**EGR valve for correct operation**	
	• Ensure that the engine is to normal operating temperature.	Fit a new EGR valve.
	• Connect a hand held vacuum pump to the EGR valve and start the engine (Fig. 5).	
	• Apply a vacuum at the EGR valve. The engine idle speed should deteriorate.	

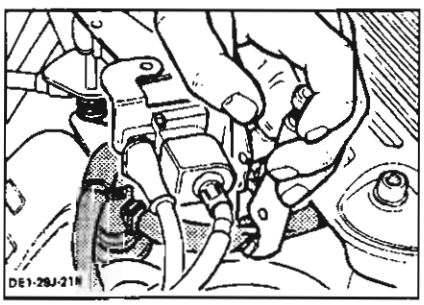

Fig. 4 Checking crankcase breather valve

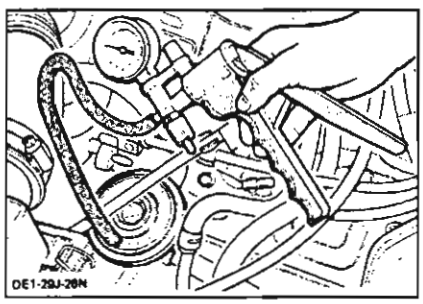

Fig. 5 Checking EGR valve

SPECIFIC CHECKS

EEC IV 2.4/2.9 without cat.
EEC IV 2.4/2.9 reg. cat.

Check No.	Check	Action in Event of Fault
6B	**Function of air pump (Thermactor air system)**	
	⚠ WARNING **When carrying out the following test, ensure that you do not touch any drive or fan belts, or any moving ancillary item.**	
	• Disconnect the air hose at the rear of the pump and run the engine.	Fit a new air pump.
	• Close the air outlet with your thumb (Fig. 6). Pressure should be detectable.	
6C	**Function of vacuum-controlled air valve (Thermactor air system)**	
	• Remove the valve.	Fit a new valve.
	• With a hand held vacuum pump apply a vacuum of 30 cm Hg at the valve (Fig. 7).	
	• Try to blow through the valve. The passage through the valve should be clear.	
	• Allow the vacuum to decay. Venting should take place through the valve filter to atmosphere.	
	• Refit the valve if OK (ensure fitment is the correct way round in system, refer Fig. 8).	

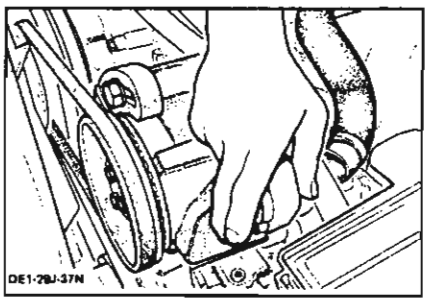

Fig. 6 Checking air pump

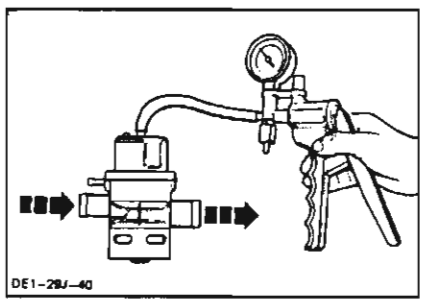

Fig. 7 Checking vacuum-controlled air valve

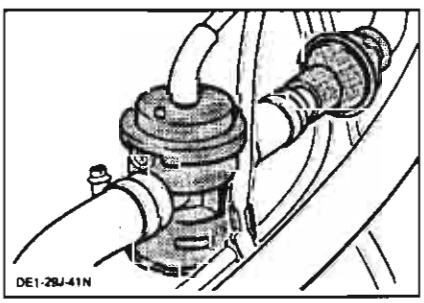

Fig. 8 Checking non-return valve

Check No.	Check	Action in Event of Fault
6D	**Function of non-return valve (Thermactor air system)**	
	• Disconnect hose from the valve and start the engine (Fig. 9). No exhaust should escape through the valve.	Fit a new non-return valve.
	• Refit the non-return valve if it is OK.	
6E	**Power supply of Electronic Vacuum Regulator (EVR)**	
	NOTE **The function of the Electronic Vacuum Regulator (EVR) is identical to that of the pulse air solenoid (PUA).**	
	• Check that all the vacuum hoses are connected correctly.	Carry out the system test using the Breakout Box - refer to Section 7.
	• Carry out the engine off self-test procedure (refer to Section 3).	
	• When **all** the codes have been displayed, depress the accelerator pedal fully and release it.	
	• Measure the voltage at the multiplug. It should be **12 V** (Fig. 10).	

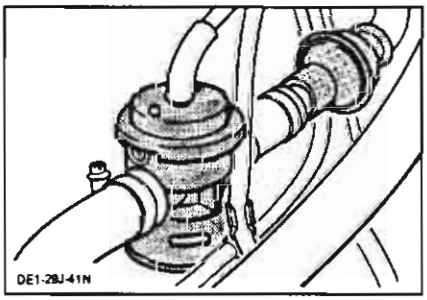

Fig. 9 Checking non-return valve

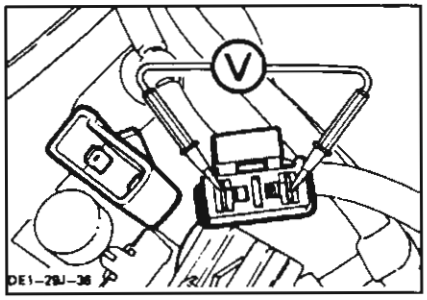

Fig. 10 Checking power supply of Electronic Vacuum Regulator (EVR)