

## Emission Control Systems – 2 Litre Engine

## EMISSION CONTROL SYSTEMS

## EMISSION CONTROL SYSTEM

## – 2 LITRE ENGINE

For system descriptions refer to sub-section B 031

## CRANKCASE VENTILATION FILTER

## To Clean

Slacken the two clips securing the filter.

Separate the two halves of the filter and remove the filter discs.

Clean the discs in paraffin and dry using a compressed air line.

Place the discs in the filter and press the two halves together.

Refit the filter and secure with the two clips.

## AUTOMATIC AIR CONTROL

## DIAPHRAGM MOTOR

The diaphragm motor is integral with the air intake tube of the air cleaner and is not serviced separately.

## To Remove and Refit

Removal and refitting is covered in Sub-section B 210.

## Temperature Sensing Valve

## To Remove

Remove the air cleaner and element Sub-section B 210.

Prise open the legs of the spring grip washer and withdraw it from the sensing valve. Push the valve from the air cleaner base and remove the insulating pad.

## To Refit

Place the insulating pad over the sensing valve with the foam surface away from the valve.

Fit the valve into the air cleaner base and secure with a new spring grip washer.

Refit the element and air cleaner Sub-section B 210.

## FAULT DIAGNOSIS

If a fault occurs the system will usually remain in the "cold air" position, which will give the general impression of a weak mixture with the following related symptoms:-

Rough idling, even with the engine warm.

Stalling of the engine, with a "flat spot" at drive-away with the engine warm, but even more pronounced at low ambient temperature or after a cold start.

## TEST PROCEDURE

Test the components in the following order, rectifying any fault found, before proceeding to the next component.

## Pipes and Connectors

Carefully remove the flexible metallic pipe connecting the hot air pick up box and diaphragm motor assembly. Examine the pipe for leaks and fractures that could reduce the volume and temperature of the heated air. Replace the pipe if necessary after testing the diaphragm motor.

Examine the vacuum pipes, inlet manifold to temperature sensing valve and temperature sensing valve to diaphragm motor, paying particular attention to the fit of the connectors on to the components. Any vacuum leak will affect the efficiency of the system. Renew the pipes and connectors as necessary.

## Diaphragm Motor

Press gently on the diaphragm motor flap valve and check that it moves smoothly against spring pressure, and that the return spring is not broken.



Connect a rubber pipe directly between inlet manifold connection and diaphragm motor so as to "by-pass" the temperature sensing valve. Start the engine, run at idling speed and check that the flap valve moves to the full hot air position.

If the flap valve does not move, renew the air cleaner assembly.

If the diaphragm motor operates, clamp the rubber vacuum pipe to trap the vacuum in the diaphragm motor and stop the engine. The flap valve must remain in the hot air position. If it does not, the diaphragm is leaking and the air cleaner assembly must be renewed.

#### Temperature Sensing Valve

The ambient temperature must not be above 20°C (68°F) and the engine cold.

With the diaphragm motor operating satisfactorily, connect it to the temperature sensing valve with the vehicle pipe and connectors.

Connect the sensing valve to the vacuum connection on the inlet manifold, start the engine and run at idling speed. The flap valve should move to the hot air position. If not, the sensing valve is defective and should be renewed.

Test the components in the following order, rectifying any fault found, before proceeding to the next component.

#### Pipes and Connectors

Carefully remove the flexible metallic pipes connecting the air box and diaphragm motor assembly. Examine the pipes for leaks and fractures that could reduce the volume and temperature of the heated air. Replace the pipes if necessary after testing the diaphragm motor.

Examine the vacuum pipes, inlet manifold to temperature sensing valve and temperature sensing valve to diaphragm motor, paying particular attention to the fit of the connectors on to the components. Any vacuum leak will affect the efficiency of the system. Renew the pipes and connectors as necessary.

#### Diaphragm Motor

Press gently on the diaphragm motor flap valve and check that it moves smoothly against spring pressure, and that the return spring is not broken.

#### AUTOMATIC AIR CONTROL

##### DIAPHRAGM MOTOR

The diaphragm motor is integral with the air intake tube of the air cleaner and is not serviced separately.

##### To Remove and Refit

Removal and refitting is covered in Sub-section B 210.

##### Temperature Sensing Valve

##### To Remove

Remove the air cleaner and element Sub-section B 210.

Use open the top of the sensing valve washer and withdraw it from the sensing valve. Push the valve from the air cleaner base and remove the insulating pad.

##### To Refit

Place the insulating pad over the sensing valve with the lower surface away from the valve.