



Crankcase emission control system

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Crankcase emission control system

Crankcase emissions are controlled by a closed breather system (see figs. H2-1 and H2-2).

The purpose of the system is to maintain a depression in the crankcase under all operating conditions. To achieve this, crankcase emissions (engine blow-by) are drawn from a connection on the engine oil filler and pass, via a flame trap in the breather housing, into the induction system where they mix with the inlet charge of fuel and air. Once in the induction system the gases are drawn in to the combustion chambers and finally burnt in the engine.

The breather housing has two inlet elbows and two outlet connections. A wire mesh flame trap is situated inside the housing, immediately behind the inlet elbow from the crankcase.

The crankcase is connected to the breather housing from the front of 'B' bank cylinder head via the oil filler (which has a sealed cap). This inlet elbow is connected inside the breather housing, to the air intake duct connection.

The second inlet elbow connects the auxiliary air valve or idle speed actuator to the breather housing. This connection conveys air to the cold start injection galleries in the induction manifold, via a second outlet connection.

Both inlet elbows are connected inside the housing by a small diameter hole.

Naturally aspirated cars

Under normal operating conditions, except when on full throttle, crankcase emissions (engine blow-by) flow from the oil filler via a moulded rubber hose to the breather housing. They are then drawn through the small internal connecting (metering) orifice, into the induction manifold.

When approaching full throttle conditions, manifold depression decreases and the crankcase emissions are drawn from the breather housing to the air intake duct. This is due to the increasing depression created by the air cleaner and associated ducting.

A depression is therefore maintained within the crankcase under all normal operating conditions.

Turbocharged cars

With the system fitted to turbocharged engines the breather housing is more complex. The system has to function with either a depression or when under boost conditions, a pressure existing in the induction manifold.

The basic connections and operation when a depression exists in the induction manifold are very similar for both systems. However, during boost conditions two metal disc valves and a rubber diaphragm control and direct the flow of the crankcase emissions (see fig. H2-5).

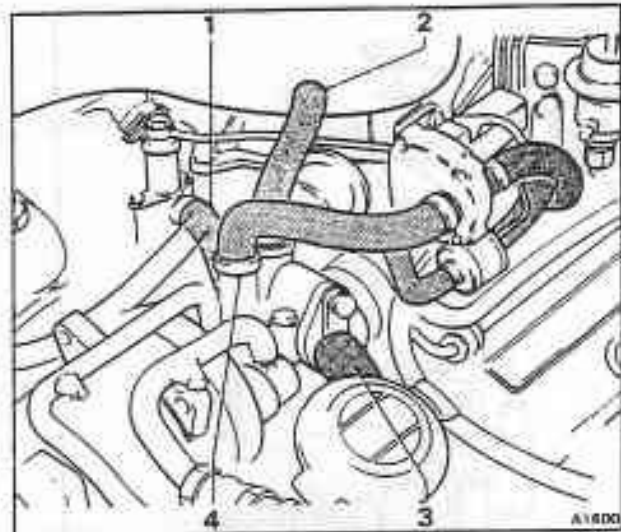


Fig.H2-1 Crankcase emission control system – hose connections (naturally aspirated cars)

- 1 To induction manifold
- 2 To air intake duct
- 3 From oil filler
- 4 From auxiliary air valve

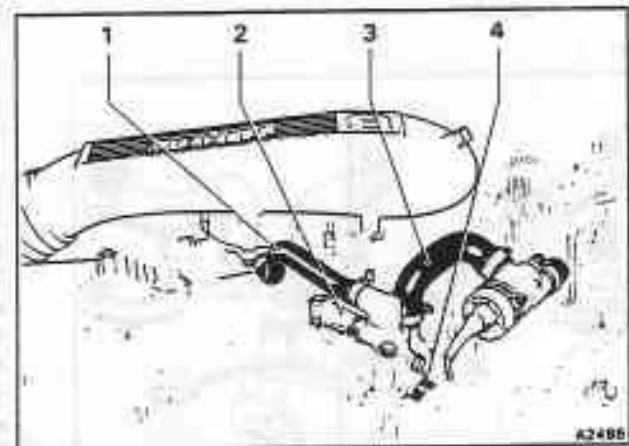


Fig.H2-2 Crankcase emission control system – hose connections (1989 model year turbocharged cars)

- 1 To air intake ducting
- 2 To induction manifold
- 3 From idle speed actuator
- 4 From oil filler

Breather housing – To service
At the mileage/time interval specified in the service schedules, the gauze flame trap (situated behind the



inlet elbow from the oil filler) should be removed and cleaned as follows.

1. Withdraw the starter relay.
2. Unscrew the setscrew retaining the inlet elbow to the housing.

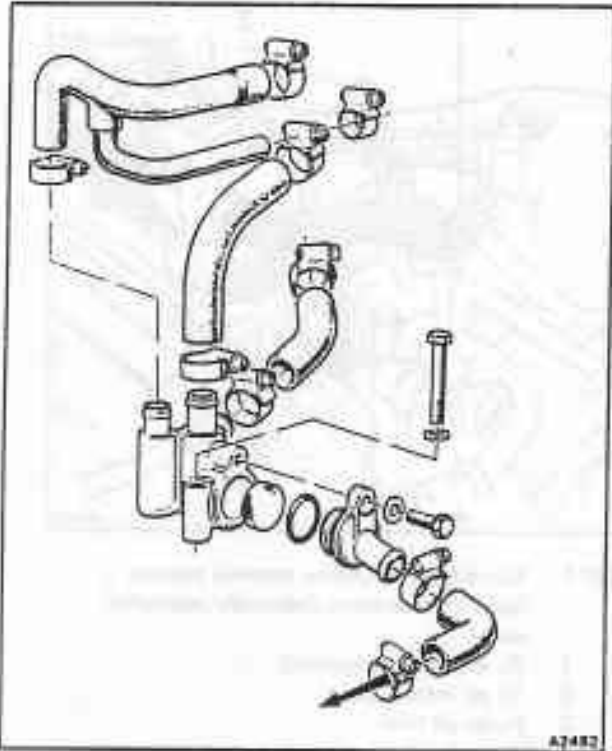


Fig. H2-3 Crankcase breather (naturally aspirated cars)

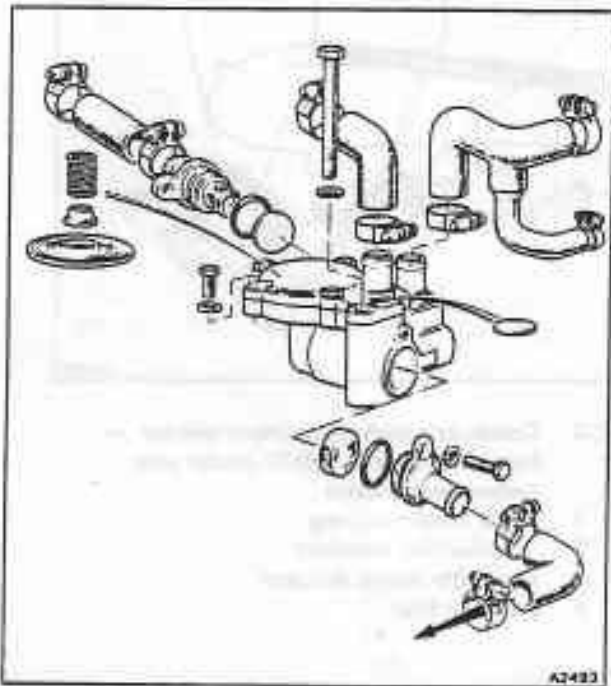


Fig. H2-4 Crankcase breather (turbocharged cars)

3. Ease the flange from the housing, noting that a slight resistance may be encountered due to the rubber sealing ring located on the elbow spigot.
4. Insert a small pointed instrument into the gauze and carefully lever the flame trap from the housing.
5. Wash the components in methylated spirit and dry with compressed air.
6. Visually inspect the gauze for damage. If it appears serviceable, fit it into the housing and assemble the remaining parts by reversing the dismantling procedure.

Breather housing - To overhaul

Complete overhaul of this assembly is only envisaged at very high mileages or in the event of a system malfunction. On these occasions proceed as follows.

All cars

1. Withdraw the starter relay.
2. Slacken the worm drive clips or remove the securing bands on the hoses leading to the breather housing. Label each hose for identification and free each joint.
3. Unscrew the two setscrews securing the breather housing to the engine. Withdraw the assembly.
4. Slacken the remaining four worm drive clips or remove the securing bands, free the joints and withdraw the hoses. Examine the hoses for serviceability and clean as necessary using either soap and water or methylated spirit. If the hoses have covered a high mileage and/or show signs of deterioration they should be discarded and new parts fitted.
5. Unscrew the setscrew retaining the inlet elbow to the housing. Ease the flange from the housing, noting that a slight resistance may be encountered due to the rubber sealing ring situated on the spigot.
6. Insert a small pointed instrument into the gauze and carefully lever the flame trap from the housing.

Turbocharged engines

7. Repeat Operation 5 on the connection to the induction manifold.
8. Collect the metal disc valve situated behind the flange.
9. Unscrew and remove the five small setscrews situated around the top of the assembly.
10. Withdraw the top and collect the spring, guide washer, and diaphragm.
11. Collect the metal disc valve from the smaller chamber located above the aperture for the flame trap.

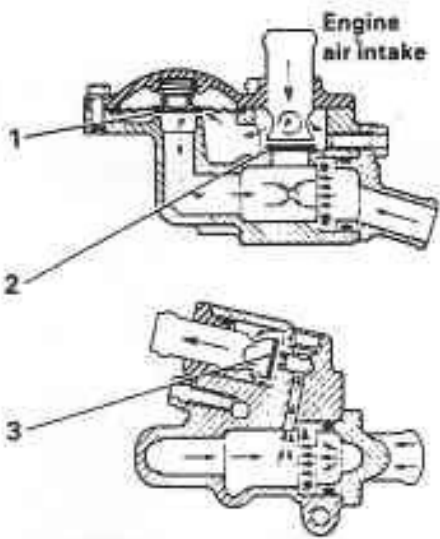
All cars

12. Wash all parts in clean methylated spirit and examine them for serviceability, particularly the rubber sealing ring(s) and diaphragm (if fitted).
If the rubber parts have covered a high mileage and/or show signs of deterioration, they should be renewed.
13. Assemble the breather housing and fit it to the engine by reversing the dismantling procedure.

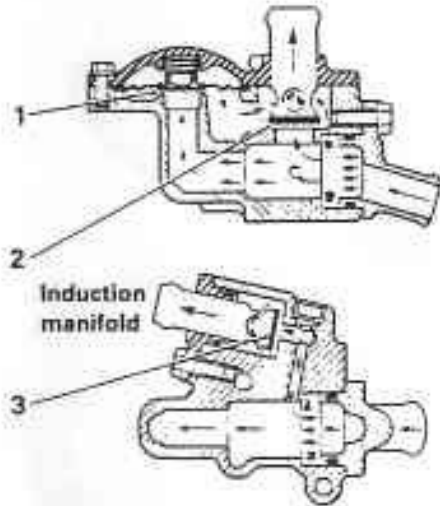
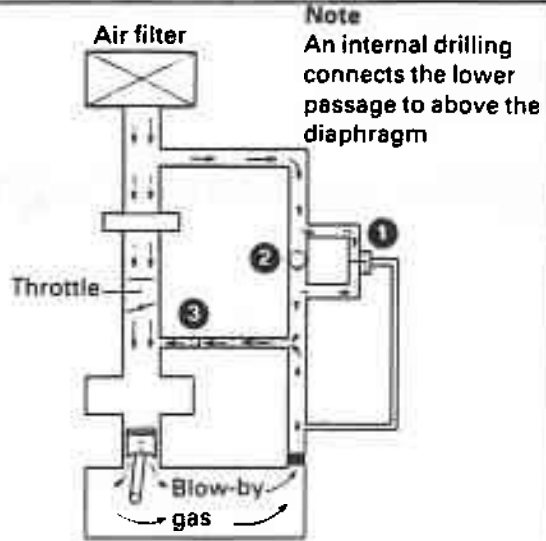


Figure H2-5

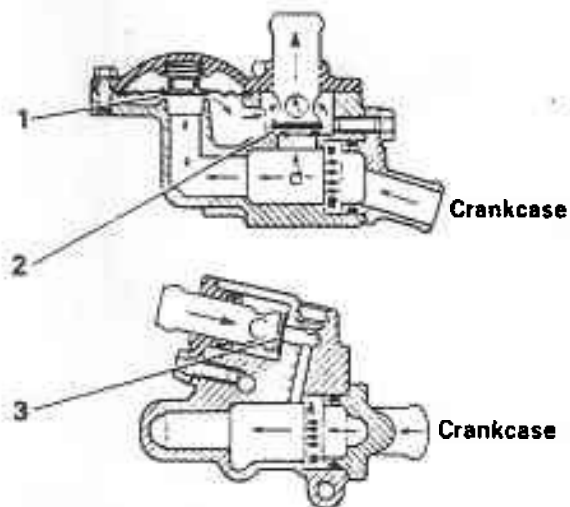
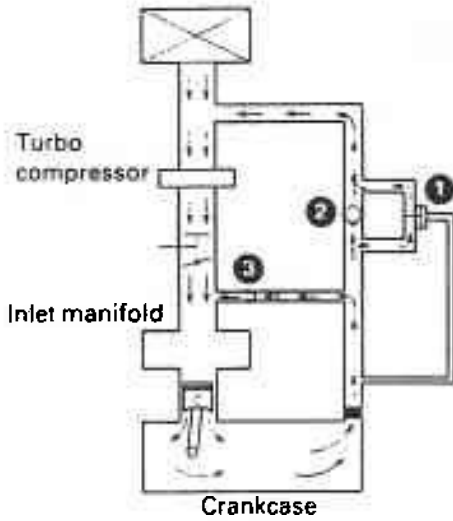
Crankcase breather housing – turbocharged engines



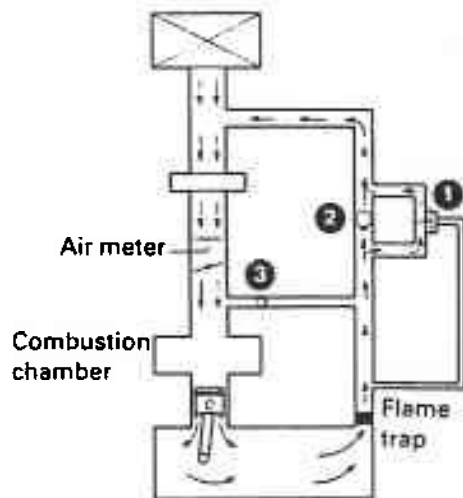
Airflow at idle and low power output



Airflow at intermediate load



Airflow at high load



Airflow at idle and low power output

Under these conditions a large depression in the induction manifold draws blow-by gas from the crankcase via a calibrated restrictor. This signal is also communicated via internal drillings to the chamber above the diaphragm valve (1).

When the crankcase depression increases to a predetermined level [101,60 mm (4.0 in) H₂O] the signal raises the diaphragm from its seat. This opens a passage for filtered engine intake air to by-pass the

valve disc (2) and combine with the crankcase blow-by gas. Thus the mix or ratio of intake air to blow-by gas maintains the correct crankcase depression.

A summary is that disc valve 3 is fully open, disc valve 2 is fully closed and diaphragm valve 1 does not oscillate but stabilizes during steady state engine conditions at a position where it maintains the correct manifold depression.

Airflow at intermediate load

The intermediate load illustration is theoretical and will not normally happen as shown. A combination of events is illustrated whereas in practice these will rarely happen together.

Due to the depression in the induction manifold valve disc 3 is open and blow-by gas will flow from the crankcase, through the restrictor passage, into the manifold.

The diaphragm valve compares the depression in the crankcase with that after the air intake filter. The air filter depression is negligible and therefore valve

disc 2 is closed, unless the airflow through the restrictor becomes less than the amount of blow-by (i.e. the crankcase pressure tends towards atmospheric) when disc valve 2 will open. Blow-by will then also pass to the engine air intake and crankcase depression will be controlled.

If the crankcase depression is greater than [101,60mm (4.0in) H₂O] (valve disc 2 will be closed) the diaphragm lifts off its seat to control the crankcase depression and provide an additional route for the blow-by gas.

Airflow at high load

At high loads the induction manifold is under boost conditions hence valve disc 3 is forced to close off the restrictor passage.

Valve disc 2 is sucked open due to the depression behind the air filter.

The engine breathes by drawing the blow-by gas from the crankcase through the breather housing and into the engine air intake ducting. In this condition

the crankcase depression is solely controlled by the depression after the air filter.

At crankcase depressions greater than 101,60 mm (4.0 in) H₂O the diaphragm lifts off its seat and provides an additional minor route for the blow-by gas to pass on its way to the engine air intake ducting.



Crankcase depression – To check

1. Remove the engine dipstick.
2. Connect a water manometer via a suitable hose to the dipstick tube.
3. Start and run the engine at idle speed.
4. Check the reading on the manometer which should be as follows.

Naturally aspirated engines – manometer reading showing a slight depression.

Turbocharged engines – manometer depression reading should be between 101,6 mm H₂O and 152,4 mm H₂O (4.0 in H₂O and 6.0 H₂O).



Air intake system

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Air intake system

The air intake system (see figs. J2-1 and J2-3) is similar for both naturally aspirated and turbocharged engines.

Air enters the system behind the right-hand side of the front bumper and is conveyed, by a plastic ducting, into the lower half of the filter housing. The housing is located inside the engine compartment at the forward end of the wing valance.

The air is drawn upwards through the filter element situated in the top cover of the housing. It then travels via further ducting and a turbocharger assembly (if fitted), through the cast aluminium alloy intake elbow and on to the air meter housing.

Naturally aspirated engines have a black plastic diffuser fitted into the ducting in front of the cast aluminium intake elbow. This is to eliminate the resonance or noise generated within the system at low engine speeds.

An air bleed is situated in the rear face of the ducting just prior to the intake system entering the filter housing. The purpose of this is to ensure that the engine will continue to run should the main intake become temporarily blocked.

A connection moulded into the side of the filter housing is used to vent the air injection system into the air intake system. On engines not fitted with an air injection system this connection remains blanked.

Air filter element – To remove and fit

1. Release the six retaining clips and withdraw the top cover from the air filter housing.

On Corniche/Continental cars, unscrew the two setscrews securing the filter housing to the valance. Move the assembly further into the engine compartment to allow access to the retaining clips.

2. Turn the top cover as shown in figure J2-2.

3. Withdraw the filter element, taking note of its location in the top cover.

4. Ensure that the housing is clean, then fit the new element into the top cover. Ensure that the seal around the element seats correctly in the top cover recess.

5. Carefully replace the top cover onto the main housing and secure with the retaining clips.

Air filter housing – To remove and fit (see fig. J2-3)

Always blank any open connections as soon as possible to prevent the ingress of foreign matter.

1. From inside the engine compartment, unscrew the worm drive clip securing the main intake hose to the housing. Free the joint and remove the hose.

2. Remove the right-hand front flasher lamp and through the resulting aperture, unscrew the worm drive clip securing the underwing ducting to the side of the housing. Free the joint and move the ducting.

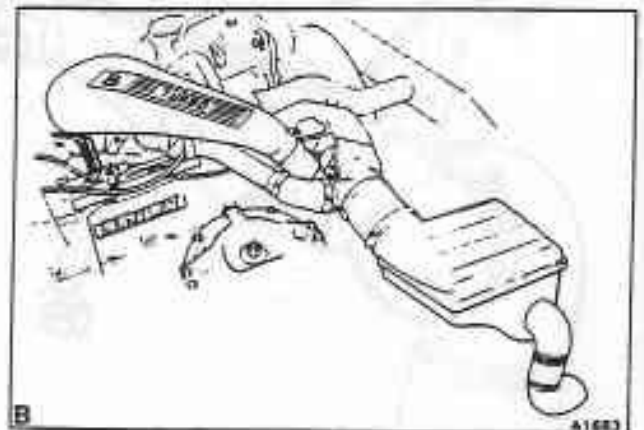
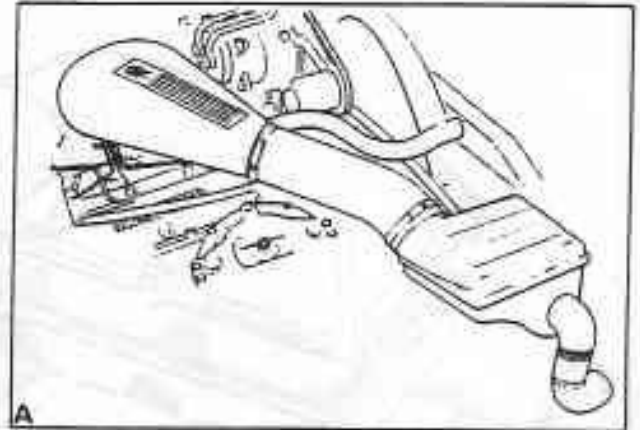


Fig. J2-1 Air intake system
A Naturally aspirated
B Turbocharged

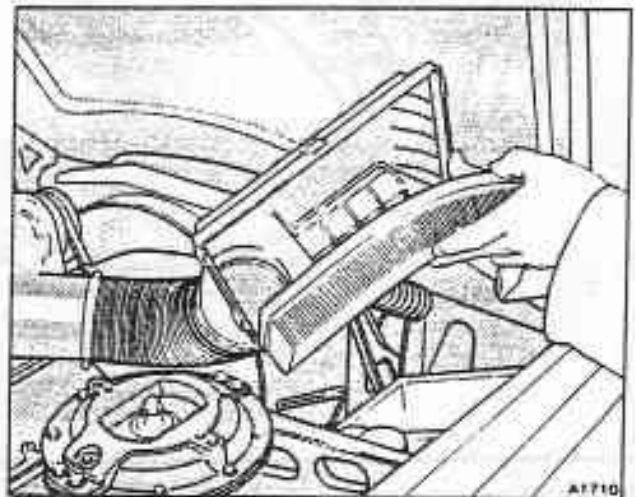
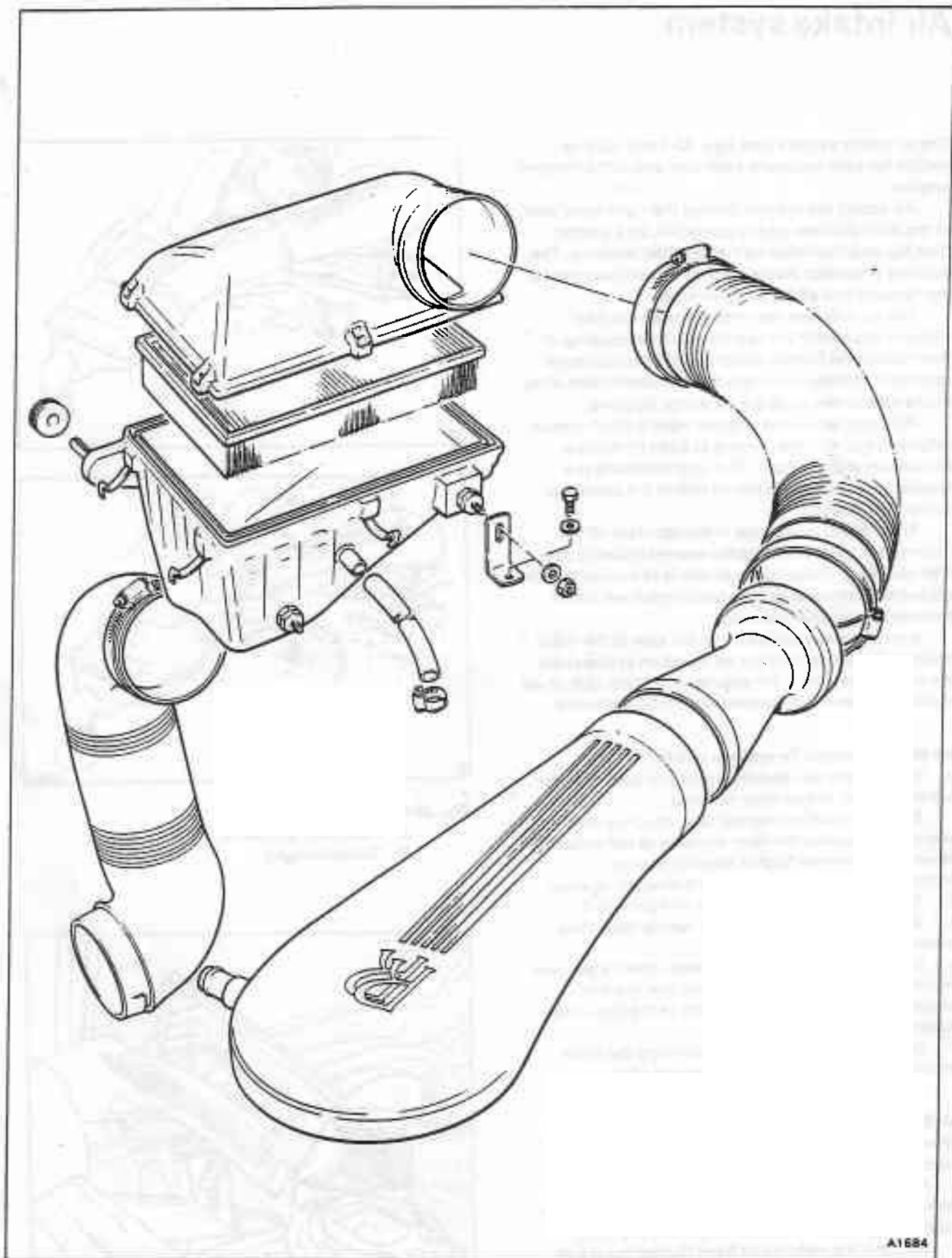


Fig. J2-2 Renewing the air filter element



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**Fig. J2-3 Air intake system and associated components
(Naturally aspirated engines)**

This operation is not required on Corniche/
Continental cars.

3. If the engine is fitted with an air injection system, detach the vent hose from the side of the housing.
4. Slacken the nuts retaining the mounting brackets to the housing.
5. Unscrew the setscrews securing the mounting brackets to the wing valance.
6. Withdraw the filter housing.
7. Fit the filter housing by reversing the removal procedure, noting the following.
8. If an air injection system is fitted, ensure that the small blank in the side of the housing is removed.
9. Ensure that the two mounting grommets situated in the valance are in good condition.

Intake elbow – To remove and fit

The cast aluminium alloy intake elbow connects the flexible ducting of the air intake to the air meter on the mixture control unit.

1. Unscrew the worm drive clips securing the following.
 - a) Main intake hose to the elbow.
 - b) Hose from the breather housing pipe to the intake elbow.
 - c) Return hose from the dump valve connection (turbocharged engines only).
2. Free each hose from its connection.
3. As the main hose is removed from the intake elbow, collect the diffuser (naturally aspirated engines only).
4. Unscrew the two setscrews securing the intake elbow to the mixture control unit (see fig. J2-5).
5. Withdraw the elbow.
6. To fit the elbow, reverse the dismantling procedure, noting that the rubber sealing ring inside the elbow is in good condition.

Intake ducting – To remove and fit

The ducting can be divided into two sections, namely the engine compartment ducting and the underwing ducting.

If work is necessary to the engine compartment ducting, removal and fitting is straightforward as it is retained by worm drive clips.

If work is required on the underwing section, note that the top of the plastic moulding is secured by a worm drive clip and that the bottom clips through the front wing.

Removal of the underwing section (see fig. J2-4) will depend upon the condition of the front wing.

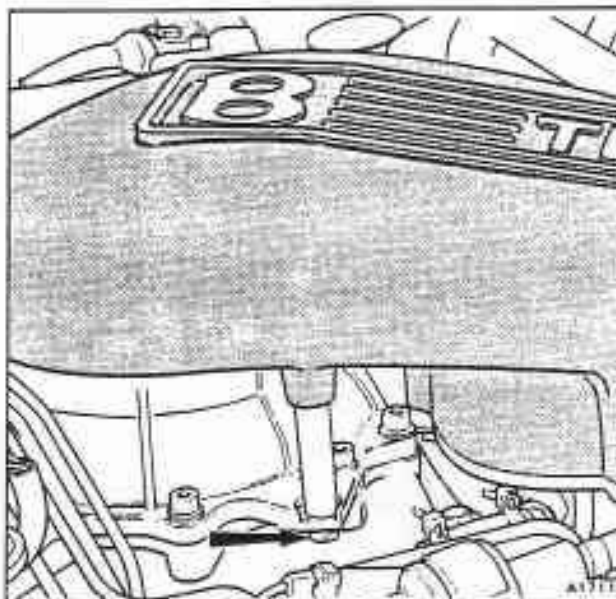


Fig. J2-5 Removal of the air intake elbow

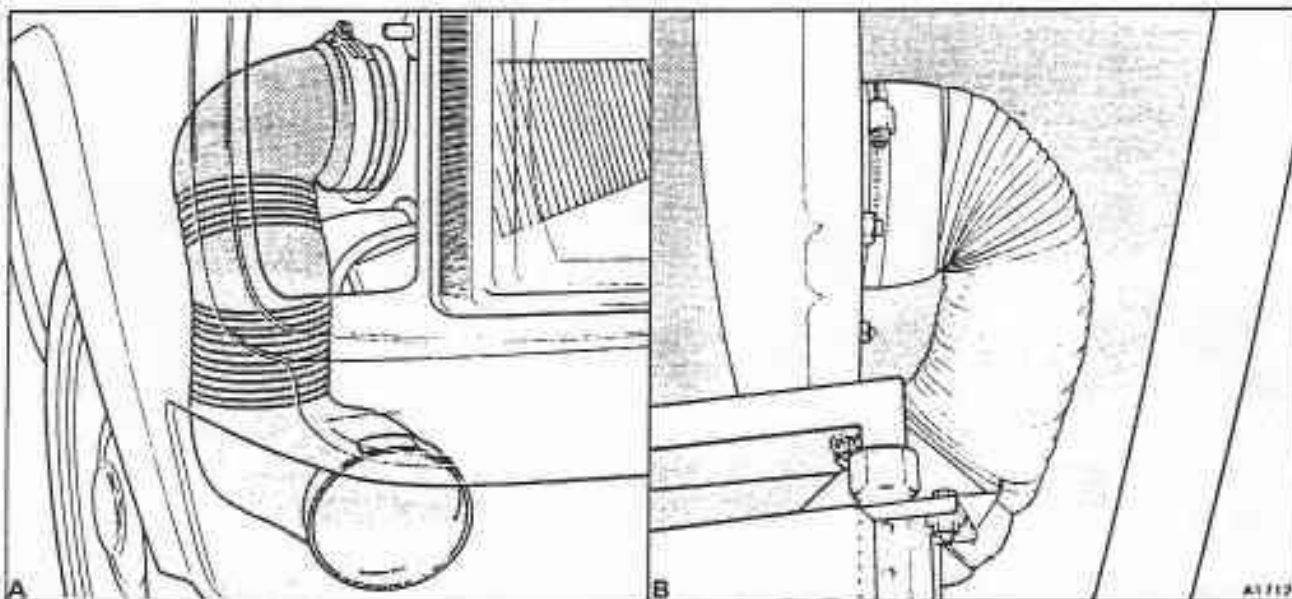


Fig. J2-4 Underwing ducting
A 4 door cars

B 2 door cars



However, it will normally be necessary to remove the snow tray, flasher lamp, front bumper and on turbocharged cars the air dam. Finally, it will be necessary to remove the headlamps washer reservoir securing nuts and bolts, so that the assembly can be moved sideways to accommodate the movement of the ducting.

On Corniche/Continental cars, the underwing section is a convoluted hose secured by worm drive clips. To gain access, remove the front underwing sheet.



Air intake system

The air intake system comprises an air filter element which is installed in a housing on the top of the right-hand front inner wing (see fig. J3-1).

Ambient air is ducted from behind the front bumper into the bottom of the filter housing. The air is then drawn upwards through the filter element

(dirty side of the element will be facing downwards) and passes along flexible ducting to the turbocharger compressor inlet.

Compression of the intake air results in an increase in air temperature. Therefore, a charge air intercooler has been incorporated to reduce the

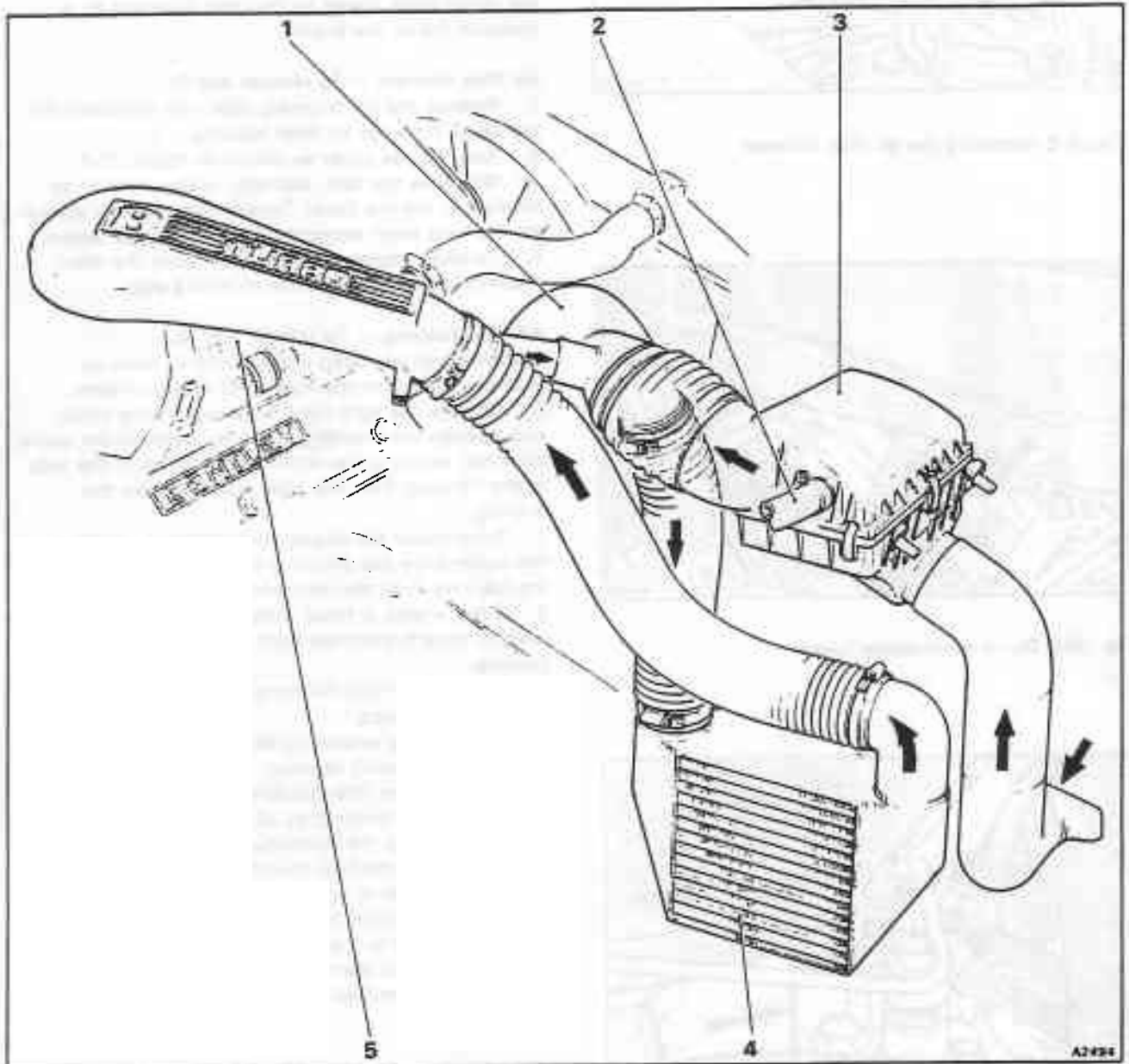


Fig.J3-1 Air intake system

- 1 Turbocharger assembly
- 2 Air injection system feed hose
- 3 Air filter housing
- 4 Intercooler assembly
- 5 Dump valve assembly



Fig.J3-2 Renewing the air filter element

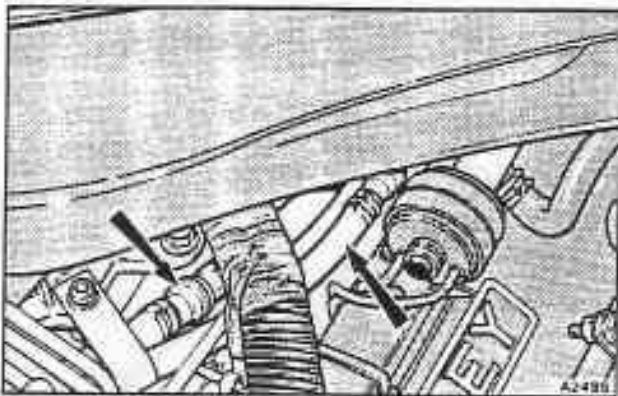


Fig. J3-3 Dump valve signal hoses

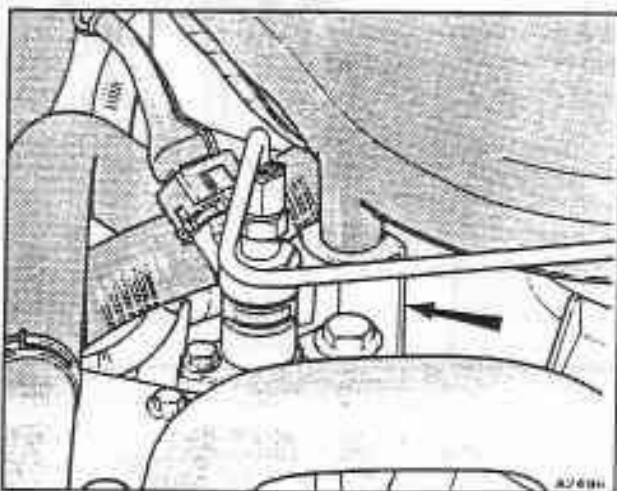


Fig. J3-4 Removal of the air intake elbow

compressor outlet air temperature and avoid a reduction in the density of air supplied to the engine.

The air to air intercooler is mounted below the air cleaner in the ambient air stream under the front bumper.

The cooled charge air then passes along flexible ducting, through the cast air intake elbow and into the air meter housing.

At low engine speeds and loads, the vacuum operated dump valve opens and allows a proportion of the inducted air to return to the inlet side of the turbocharger compressor.

When increased engine performance is required, the dump valve closes so that the inducted air is pressure fed to the engine.

Air filter element – To remove and fit

1. Release the six retaining clips and withdraw the top cover from the air filter housing.
2. Turn the top cover as shown in figure J3-2.
3. Withdraw the filter element, taking note of its location in the top cover. Ensure that the seal around the element seats correctly in the top cover recess.
4. Carefully replace the top cover onto the main housing and secure with the retaining clips.

Air filter housing – To remove and fit

Always blank any open connections as soon as possible to prevent the ingress of foreign matter.

1. Remove the right-hand front underwing sheet and through the resulting aperture, unscrew the worm drive clip securing the underwing ducting to the side of the housing. Free the joint and withdraw the ducting.
2. From inside the engine compartment, unscrew the worm drive clip securing the main intake hose to the housing. Free the joint and detach the hose.
3. If the engine is fitted with an air injection system, detach the hose from the rear of the housing.
4. Slacken the nuts retaining the mounting brackets to the wing valance.
5. Unscrew the setscrews securing the mounting brackets to the wing valance.
6. Withdraw the filter housing.
7. Fit the filter housing by reversing the removal procedure, noting the following.
8. Ensure that the two mounting grommets situated in the valance are in good condition.
9. If an air injection system is fitted, ensure that the small connection in the rear of the housing is clear. Connect the small diameter air injection system feed hose to the connection and secure with a worm drive clip.

Intake elbow – To remove and fit

The cast intake elbow connects the flexible ducting of the air intake system, to the air meter on the mixture control unit.

1. Release the clips securing the following.
 - a) Main intake hose to the elbow.
 - b) Return hose from the dump valve connection.



- c) Small diameter signal hoses to the dump valve (see fig. J3-3).
 - d) Hose from the breather housing pipe to the connection under the dump valve.
2. Free each hose from its connection.
 3. Unscrew the two setscrews securing the intake elbow to the mixture control unit (see fig. J3-4).
 4. Withdraw the elbow.
 5. To fit the elbow, reverse the dismantling procedure, noting that the rubber sealing ring inside the elbow is in good condition.

Intake ducting – To remove and fit

The ducting used inside the engine compartment is of the flexible convoluted type and the intake under the front wing is a plastic moulding.

All ducting is secured to the various components by worm drive clips.

Removal of the plastic moulding under the wing will require the removal of the front underwing sheet.

Intercooler – To remove and fit

An intercooler is fitted behind the air dam on the right-hand side of the vehicle.

1. Locate the forward section of the underwing sheeting, situated under the right-hand front wheel arch.
2. Unscrew the self-tapping screws situated around the sheet.
3. Withdraw the sheet.
4. Unscrew the two nuts retaining the sheeting under the intercooler.
5. Unscrew the worm drive clips securing both the feed and return air hoses to the intercooler.
6. Unscrew the nuts that fasten the four intercooler mounting studs to the body.
7. Remove the undersheet mounting bracket from beneath the intercooler.
8. Lift the intercooler until the mounting studs just clear their respective holes and then turn the intercooler and manoeuvre it from its position.
9. Fit the intercooler by reversing the removal procedure.



Throttle linkage

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Throttle linkage

The procedures described relate to a complete overhaul of the throttle linkage mechanism. In service, the operator need only select those passages relevant to his particular task.

The throttle linkages fitted to all models are very similar (see fig. K2-2) and can be divided into three basic sub-assemblies as follows.

Throttle body linkage

The linkage fitted to the primary and secondary throttle spindles is identical for all cars. However, there is an area at the rear of the throttle housing where a permutation of one or two stub pipe(s) and blank(s) prevents the assembly from being interchangeable.

Intermediate linkage

The intermediate linkage is very similar for all cars, the only minor differences being in the length and shape of the long rod and lower jaw connecting the mechanism to the underfloor linkage.

Underfloor linkage

This linkage is similar for the various models but naturally differs between left-hand drive and right-hand drive.

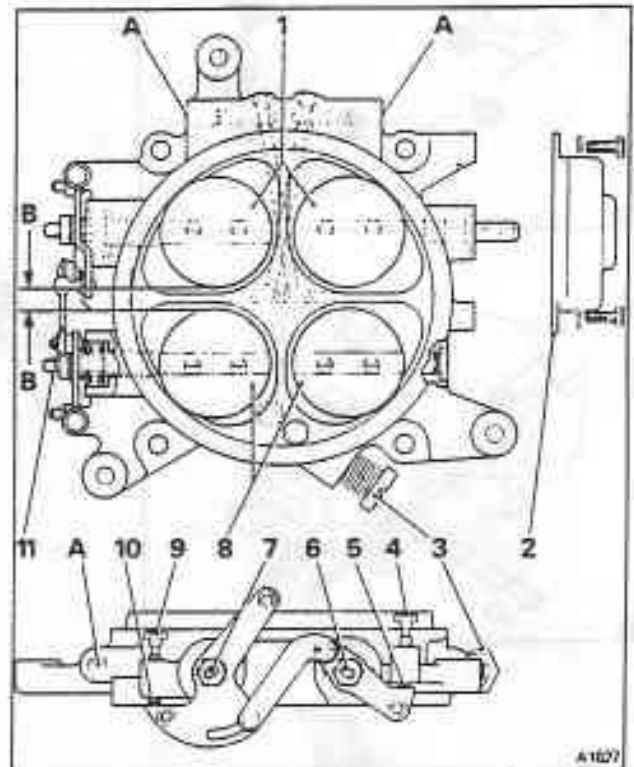


Fig.K2-1 Throttle body linkage

- 1 Primary throttle butterflies
- 2 Throttle position switch
- 3 Idle speed adjusting screw (if fitted)
- 4 Locking screw (secondary throttles)
- 5 Adjusting screw (secondary throttles)
- 6 Secondary throttle spindle
- 7 Primary throttle spindle
- 8 Secondary throttle butterflies
- 9 Locking screw (primary throttles)
- 10 Adjusting screw (primary throttles)
- 11 Throttle linkage
- A Vacuum signal tappings
- B 0,0381 mm (0.0015 in) feeler gauge

Throttle body linkage – To overhaul

1. Withdraw the starter relay.
- Note** If the throttle housing is not to be removed carry out Operation 3 and then proceed to Operation 6.
2. Remove the mixture control unit, refer to Chapter B.
 3. Unscrew the nut and withdraw the pinch bolt from the control rod to throttle body linkage joint. Unscrew the joint pad and release the ball.
 4. Disconnect the spring from both the front and rear of the linkage.
 5. Unscrew the four setscrews that secure the throttle housing to the induction manifold. Collect the washers, withdraw the housing and gasket. Blank off the manifold openings.
 6. Release the lock-washer from around both the primary and the secondary throttle spindle securing nuts.
 7. Withdraw the linkage and collect the metal sealing washer from each spindle.
 8. Unscrew both screws retaining the throttle position switch. Collect the washers and withdraw the switch.
 9. Lightly mark the throttle butterflies to ensure that they are assembled in their original positions.
 10. Carefully close the split legs of the butterfly screws. Unscrew the retaining screws and withdraw the butterflies.

11. Withdraw the primary and secondary throttle spindles.

Both spindles should be carefully tapped out from the bearing end (i.e. towards the throttle position switch end), collect the blank from the end of the secondary spindle.

If the bearings are also to be removed, carefully tap the secondary spindle to remove the blank and then drive each spindle out of the housing towards the bearing end (i.e. from the throttle position switch end).

12. Unscrew the idle speed adjusting screw, together with its spring.

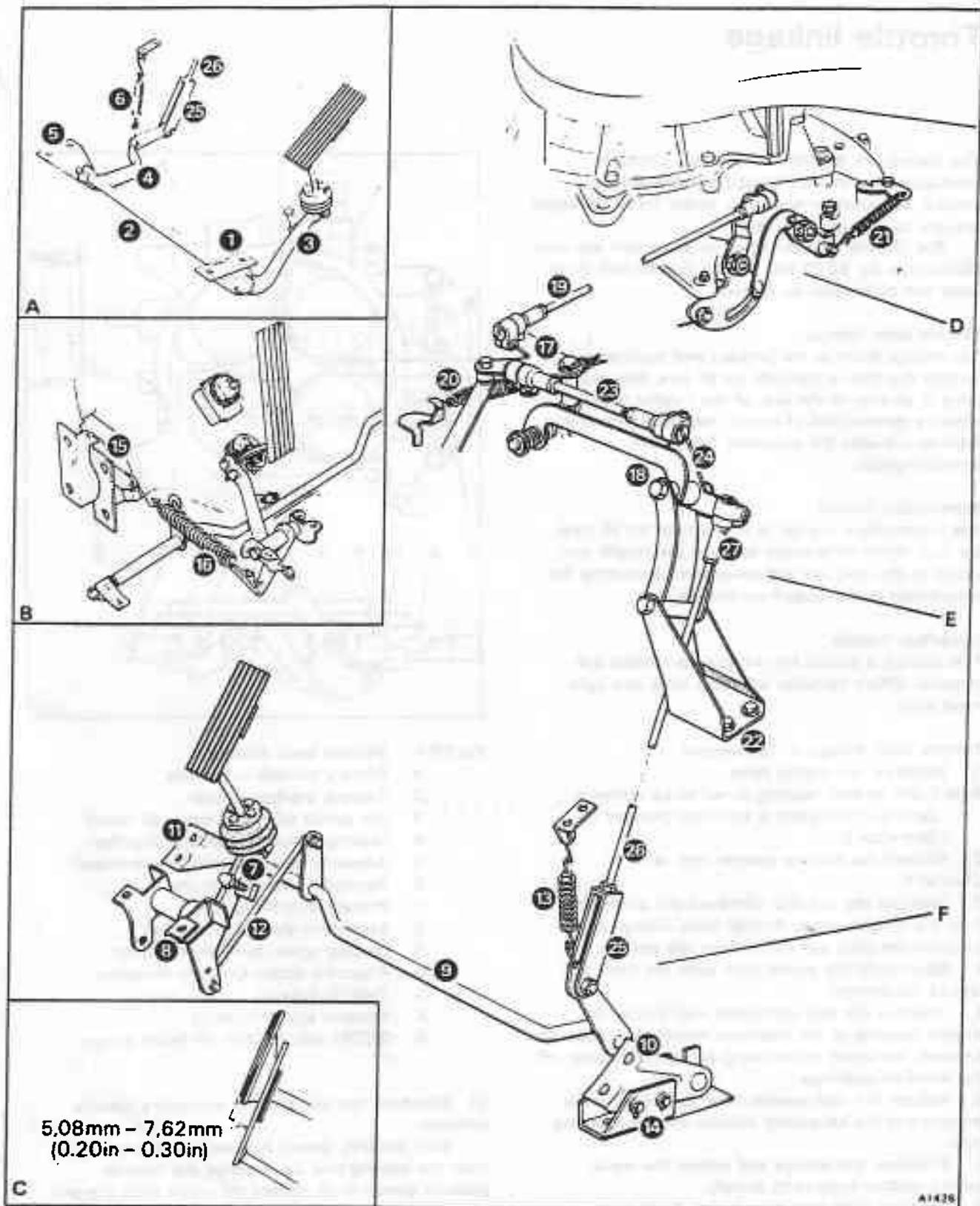


Fig. K2-2 Throttle linkage

- A Underfloor linkage (right-hand drive cars)
- B Additional throttle return spring (cars conforming to a Canadian and USA specification)
- C Relationship between accelerator and brake pedals

- D Throttle body linkage
- E Intermediate linkage
- F Underfloor linkage (left-hand drive cars)



13. Clean all parts.
14. Examine the throttle spindles and bearings for wear and excessive play.
15. Ensure that the throttle butterflies and their respective seating areas are not damaged.
16. Before fitting the butterfly shaft bearings, ensure that the outer surface of each is coated with an approved sealant (i.e. Wellseal).
17. Examine the linkage mechanism and springs for damage or breakage.
18. Assemble the throttle body by reversing the procedure given for dismantling, noting that a new gasket should be fitted between the throttle housing and the manifold. Also note the following basic settings that must be carried out.
19. Check the throttle stop screws, to ensure that there is a gap of 0,0381 mm (0.0015 in) between the raised edge of the secondary butterfly disc and the throttle body, with the throttle body linkage resting against the secondary throttle adjustment screw. If there is any discrepancy between the gaps on each secondary butterfly disc it is the larger gap that should comply with the dimension quoted.

To adjust the gap, first unscrew and remove the original locking screw (without a head). A new locking screw will then be required.

If new parts are to be fitted the gap should be set by rotating the adjustment screw. Screw in the new locking screw until it just contacts the top of the adjustment screw. Do not tighten to break off the head.

20. Repeat Operation 19 on the primary throttle butterfly discs.
21. If necessary (i.e. when new parts have been fitted) tighten the primary throttles locking screw until the head of the screw breaks off. Ensure that the adjustment screw situated below the locking screw has not moved by checking that the gap between the primary throttle butterfly discs and their respective bore is still 0,0381 mm (0.0015 in).
If movement has occurred, adjust by filing the underside of the adjusting screw.
- Note If new parts have been fitted, do not break the head off the secondary locking screw. This is carried out during the engine tuning sequence given in Chapter B.
22. Fit the throttle position switch, setscrews, and washers. Lightly clamp the switch. Rotate the switch to a position where the switch 'clicks' closed as the primary throttle lever touches its stop. Tighten the switch securing screws and then check that the switch does not prevent the primary lever from resting against its stop.
23. Connect a multi-meter across the pins marked 2 and 18 on the switch and carry out a continuity test. Ensure that the switch contacts are closed (circuit continuous) with the throttles closed and that the switch opens as the throttles just begin to move open.
24. Connect the multi-meter across the pins marked 3 and 18 on the switch and carry out a continuity test. Ensure that when the primary throttles are moved to

- the fully open position the switch contacts close (circuit continuous).
25. Unscrew (open) the idle speed setting screw five complete turns from the fully closed position.
Note On 1989 model year turbocharged cars this screw should remain fully closed.
 26. The throttle body and linkage are now complete as a sub-assembly with all the basic settings carried out.
 27. Fit the throttle body and linkage assembly to the induction manifold.

Throttle linkage - To assemble and set (see fig. K2-2)
All bearings and ball joints should be lubricated with Molytone 265 grease prior to assembly.

When adjusting a ball joint, always screw the adjustable pad fully in and then gradually slacken it until there is free movement of the joint, without free play.

1. Set the accelerator pedal off-stop screw to an initial length of 30,38 mm (1.20 in). This dimension should be taken from the top of the boss on the lever to the top of the adjustment screw. Tighten the lock-nut.

Right-hand drive cars

2. Fit the right-hand mounting bracket (item 1) for the accelerator cross-shaft.
3. Insert the cross-shaft (item 2) through the longeron. Fit the accelerator pedal lever (item 3) and insert the cross-shaft into the bush in the right-hand mounting bracket.
4. Mount the control operating lever (item 4) on the opposite end of the cross-shaft, but do not fit the pinch bolt.
5. Fit the left-hand mounting bracket (item 5) onto the cross-shaft. Screw the bracket to the underside of the body.
6. Tighten the accelerator pedal lever pinch bolt.
7. Fit the accelerator pedal to the lever. Check that the pedal fits centrally in the rubber boot. Tighten the pinch bolt, ensuring that the pedal lever assembly still rotates freely.
8. Adjust the cross-shaft end-float to between 0,13 mm and 0,38 mm (0.005 in and 0.015 in) bending the mounting brackets if necessary.
Check that the cross-shaft rotates freely.
9. Fit the return spring (item 6) using the hooks.
10. Slide the control operating lever into its correct position. Fit the pinch bolt and tighten the nut.

Note Cars produced to an Australian or Japanese specification should have the operating lever positioned in the groove nearest to the longeron. All other cars should have the levers fitted in the other groove.

Left-hand drive cars

2. Build a sub-assembly of the accelerator pedal lever (item 7), the pivot bolt and mounting brackets (item 8). Check that the lever moves freely between the brackets.
3. Fit the accelerator pedal lever assembly to the body and check that the lever moves freely.
4. Fit the accelerator pedal to the lever. Check that



the pedal fits centrally in the rubber boot. Tighten the pinch bolt, ensuring that the pedal lever assembly still rotates freely.

5. Fit the accelerator cross-shaft (item 9) into the mounting brackets and fit the mounting brackets (items 10 and 11) to the body longerons.

6. Adjust the cross-shaft end-float to between 0,13 mm and 0,38 mm (0.005 in and 0.015 in) by bending the brackets. Check that the cross-shaft rotates freely.

7. Using the rod (item 12) connect the pedal lever to the cross-shaft. Use the lowest hole. Lock the split pins and check that the rod moves freely.

8. Fit the cross-shaft return spring (item 13) using the hooks.

9. Fit the heatshield (item 14) to the cross-shaft mounting bracket.

10. On cars built to a Canadian and USA

specification, fit the spring anchor (item 15) to the upper rear engine mounting and fit the additional return spring (item 16) between the anchor and the pedal lever as shown in inset B.

All cars

11. Check that the brake pedal is correctly set (the accelerator pedal is set relative to the brake pedal).

Ensure that there is a minimum clearance of 99,44 mm (3.915 in) between the seal housing and the underside of the brake pedal.

Note Full instructions for setting the brake pedal are given in Workshop Manual TSD 4700, Chapter G - Hydraulic systems.

12. Check that the accelerator pedal lies between 5,08 mm and 7,62 mm (0.2 in and 0.3 in) below the brake pedal as shown in inset C. If not, reset of the off-stop screw.

13. Assemble the bellcrank (item 17) and trapeze isolator (item 18) levers.

14. Using the control rod (item 19) connect the bellcrank lever to the ball joint on the throttle body linkage. Set the length of the control rod to dimension A between the inner faces of the lock-nuts.

15. Fit the throttle body linkage return springs (items 20 and 21) using the hooks.

16. Fit the isolator bracket (item 22) to the body longeron.

17. Using the control rod (item 23) set the length to dimension B between the inner faces of the lock-nuts.

Connect the bellcrank lever to the fulcrum lever (item 24) on the trapeze isolator mechanism using the control rod.

18. Fit the jaw (item 25) situated at the lower end of the long rod (item 26) to the control operating lever.

19. Set the length of the long rod to a nominal dimension between the inner faces of the lock-nuts, as follows.

Right-hand drive cars to dimension C.

Left-hand drive cars to dimension D.

20. Offer the upper end ball joint (item 27) on the

long rod to the fulcrum lever and connect the ball joint.

21. Ensure that the entire throttle linkage operates smoothly.

22. Check that full throttle and kick-down are available. If not, adjust the length of the long rod.

23. Ensure that the throttles close fully when the accelerator pedal is released.

24. With the engine at normal operating temperature but not running, repeat Operations 21 to 23 inclusive.

25. Carry out the engine tuning procedure given in Chapter B.

Dimension	Model year
A 52,07 mm-53,34 mm (2.05 in-2.10 in)	1987/88
A 54,36 mm-56,90 mm (2.14 in-2.24 in)	1989
B 78,74 mm-81,28 mm (3.10 in-3.20 in)	1987/88
B 64,26 mm-66,80 mm (2.53 in-2.63 in)	1989
C 434,34 mm (17.10 in)	1987/88
C 485,14 mm (19.10 in)	1989
D 441,96 mm (17.40 in)	1987/88
D 492,76 mm (19.40 in)	1989