



Sedan Range

DATE 12/98

03.1-15

SERVICE

TECHNICAL BULLETIN

Throttle Difficult to Open on Cold Engine – Normally Aspirated Engines – Modify Crankcase Breather System

MODEL 1995-97 MY
Sedan (4.0L NA)
VIN 720001-812255

ISSUE:

On some 4.0L NA Sedan Range vehicles, owners may experience slight difficulty in opening the throttle from the closed position after the vehicle has been sitting for some time. Under certain circumstances, oil mist from the crankcase may collect and harden on the throttle body and plate when the engine is cold, where it may cause this condition.

ACTION:

Perform the following modification to include an oil separator in the crankcase ventilation system, along with cleaning operations on the throttle body unit, **only** when there is a history of customer complaint of the condition described above.

MODIFICATION PROCEDURE

1. Open the hood and install fender covers.
2. Disconnect the multiple connectors from the intake air temperature sensor (IATS) and from the mass air flow sensor (MAFS).
3. Disconnect the convoluted hose from the throttle body.
4. Remove the nut that secures the rubber mounting bobbin to the induction elbow; release the air cleaner to MAFS retaining clips and remove the MAFS/ induction elbow assembly to provide further access.
5. Unscrew by ONE turn the throttle stop adjustment screw, so that no air gap exists on either side of the throttle plate. It will be necessary to shorten a standard hexagon wrench (Allen wrench) for access to this screw.
6. Hold the throttle closed and remove the screws that retain the throttle plate to the shaft.
7. Note the direction of assembly to assist during reassembly and then remove the throttle plate after opening the throttle shaft.

Note: During the above operation, ensure that the shaft is not pulled out of the potentiometer. If this occurs, removal of the potentiometer will be required to permit reassembly.

8. Gently return the shaft to the 'closed' position.
9. Use a suitable solvent and shop towel to carefully remove all residual

contaminants from the throttle plate and throttle body air passage. Use care not to allow excess solvent to run down the throttle shaft or enter the intake manifold. Use a mirror to assist in checking that all deposits have been removed. Dry off any residual solvent/deposits.

10. Using care not to disengage the throttle shaft from the potentiometer below, and noting the correct orientation, reinstall the throttle plate in the shaft. Apply thread locking compound to the threads of the securing screws and start, but do not fully tighten, the two securing screws.
11. Check with a mirror that the throttle plate is centered with the throttle fully closed, as the retaining screws are tightened enough to grip the plate. Open the throttle against spring pressure, then allow it to snap closed - this will help center the throttle plate on the shaft and to the venturi. Repeat if necessary, then fully tighten the throttle plate retaining screws.

▲ Caution: No specific torque setting is available for the throttle plate screws. Tighten them appropriately for brass screws of this size.

12. Check that the locking patch of the throttle stop screw is still effective. Sufficient drag must remain to ensure that any setting will not be disturbed by vibration, otherwise apply fresh locking compound. Adjust the screw to open the throttle plate until a narrow 0.002 inch feeler blade can fit between the throttle plate and the venturi.
13. Remove the screws that retain the fuel rail cover and remove the cover.
14. Loosen the clamps and remove the breather hose from the engine.

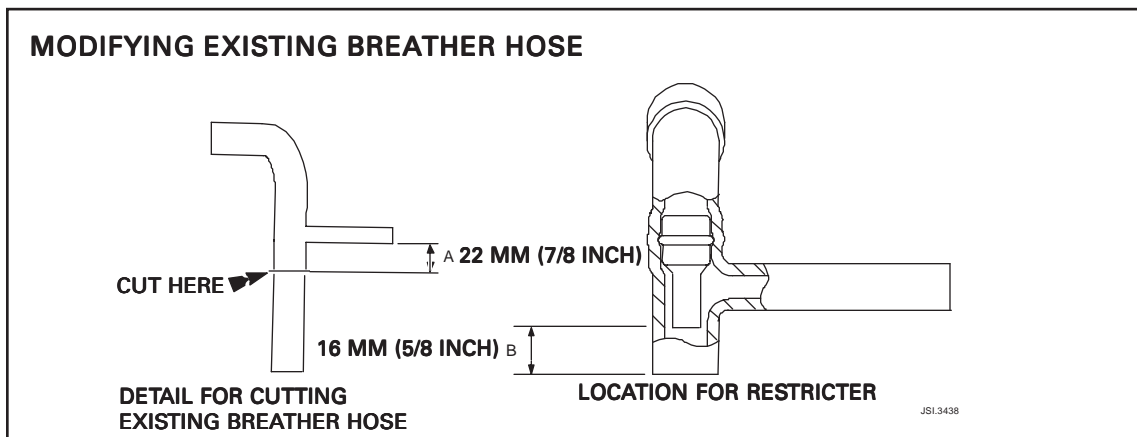


ILLUSTRATION 1

15. Cut the existing breather hose as shown in Illustration 1. Make sure that a clean cut is made, maintaining the 22 mm (7/8 inch) dimension consistently.
16. Insert the larger diameter of a restrictor (Part No. NNB 3956AA) into the cut upper end of the hose. Push the restrictor fully into the hose, until the lower end is 16 mm (5/8 inch) from the cut end, as in Illustration 1.

17. Install a worm drive hose clamp (Part No. JHC 200401) and connect the upper portion of the breather hose to the top stub of the oil separator (Part No. NNB 2102AA), as in Illustration 2.

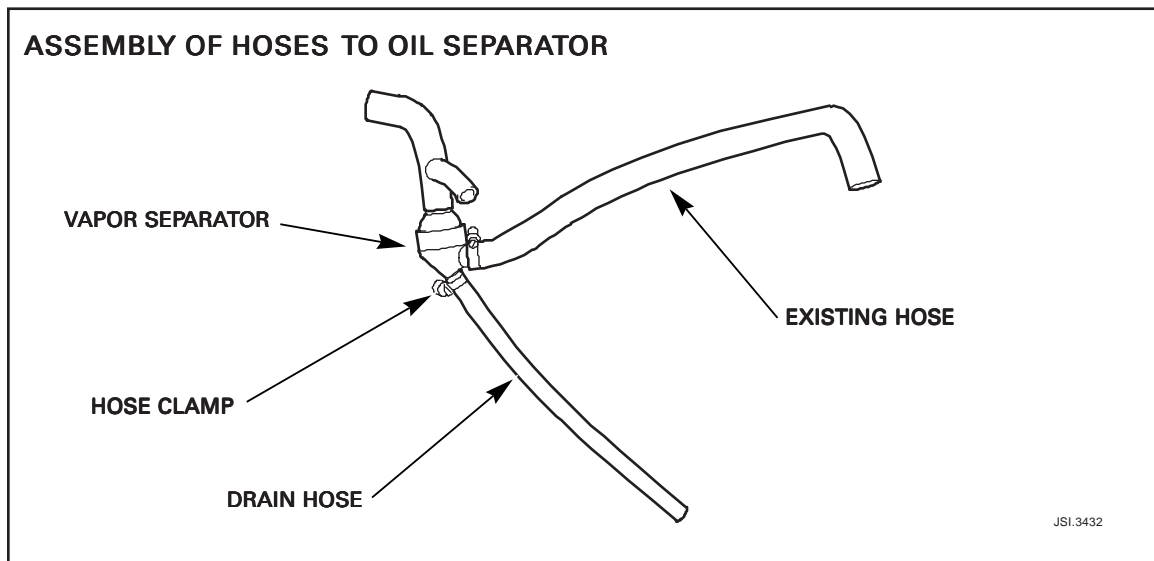


ILLUSTRATION 2

18. Installing a worm drive hose clamp (JHC 200401) to the lower portion of the existing breather tube, connect it to the side stub of the oil separator, and with a hose clamp (JHC 200101) install the drain hose (NNB 5961AA) to the lower stub of the oil separator, as in Illustration 2.
It is important that the worm housing of the hose clamp is installed facing the 'engine' side of the hose and oil separator.
19. Tighten the hose clamps with the hoses positioned as in Illustration 2.
20. Remove the dipstick from the dipstick tube. Wipe it clean and place it aside in a clean location until reinstalled later.
21. Remove the retaining screw at the support bracket and remove the existing dip stick tube from the engine. Remove the existing 'P' clip for reuse before discarding the existing dip stick tube.
22. Ensure that the rubber sealing tube for the dip stick tube remains on the engine.
23. Transfer the 'P' clip to the replacement dip stick tube (NNB 3908AA), install the dip stick tube on the engine (ensuring that it is fully seated). Reinstall the retaining screw on the tube and bracket.

FEEDING BREATHER TUBE UNDER FUEL RAIL

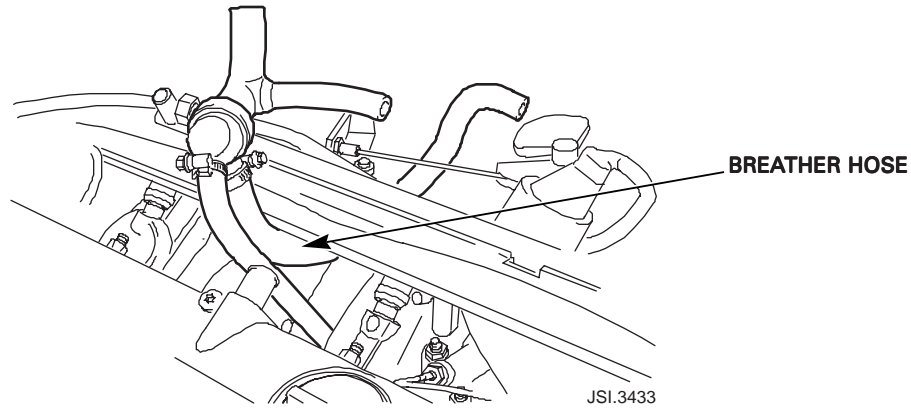


ILLUSTRATION 3

24. As shown in Illustration 3, route the end of the longer breather hose (attached to the side stub of the new oil separator) under the fuel rail. When part-way under the fuel rail, route the thinner drain tube (attached to the bottom stub of the oil separator) between the runners of the intake manifold so that it can eventually be connected to the new dip stick tube.

HOSE INSTALLED WITH VAPOR SEPARATOR

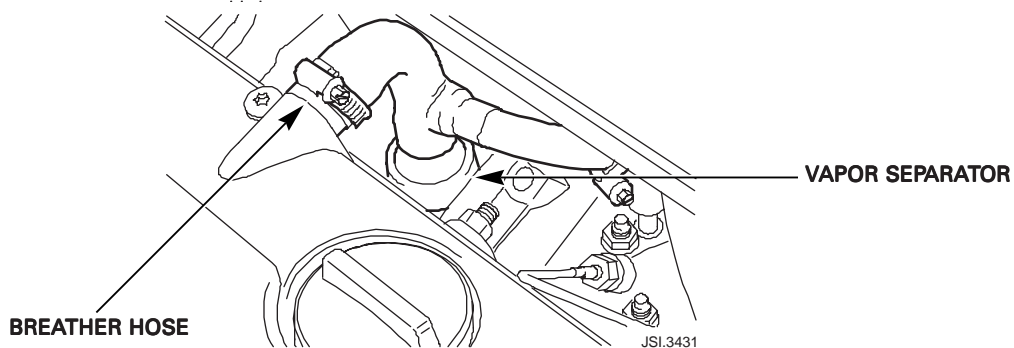


ILLUSTRATION 4

25. Continue to align the breather hose assembly until the upper breather hose can be reconnected to the stub pipe on the camshaft cover and the original hose clamp tightened, as in Illustration 4.
26. Install the drain hose on the side connection on the replacement dip stick tube, installing a worm drive hose clamp (JHC 200101) over the hose, and tightening the clamp once the hose is fully connected and free of any kinks.
27. Check that the dip stick is clean and reinstall it.
28. Reinstall the MAFS/induction elbow assembly and reconnect the multiplugs.
29. Connect the lower end of the breather hose to the stub on the induction elbow and tighten the hose clamp.
30. Reconnect the side hose above the oil separator to its original stub pipe and tighten the hose clamp.

31. At the PDU base station, load JTP 627/2. Select Diagnostics, Vehicle Setup, then select Engine Setup. Connect the PDU to the vehicle. Under Engine Setup, select Throttle Position Sensor AdaptionTest. Answer YES to the question, "Has a new throttle position sensor been fitted?" After the test passes, the idle speed will be correct.
32. Remove the fender covers and close the hood.

PARTS INFORMATION:

The following should be ordered from Jaguar Parts Operations:

<u>DESCRIPTION</u>	<u>PART NUMBER</u>	<u>QTY</u>
Breather Kit	JLM 20709	1
Screw, throttle plate retaining	JLM 20936	*
* only needed if lost or damaged		

CONTENTS LIST - BREATHER KIT JLM 20709 (For Information Only)

<u>DESCRIPTION</u>	<u>PART NO.</u>	<u>QTY</u>
Breather-Oil Separator	NNB 2102AA	1
Restrictor - Part Load Breather	NNB 3956AA	1
Tube - Dipstick	NNB 3908AA	1
Hose - Oil Drain	NNB 5961AA	1
Clamp, Hose, Worm Drive	JHC 200101	2
Clamp, Hose, Worm Drive	JHC 200401	2

WARRANTY INFORMATION:

<u>FAULT CODE</u>	<u>R.O. NUMBER</u>	<u>DESCRIPTION</u>	<u>TIME ALLOWANCE</u>
CD KF 69	17.91.33	Engine Breather System Modification (includes throttle position adaption test)	0.85 hrs.