

Heater hose replacement on X308 - 7/06/2005

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It has been quite a while since I have replaced the heater hoses due to a small leak from one, so this is mostly from memory. the basic operation is remove the intake manifold to replace the hoses. It may be done another way, but I wasn't able to find it. This will also be a good time to replace the engine coolant if you haven't recently.

Parts:

- 2 heater hoses
- 8 Intake manifold to head gaskets
- Throttle body gasket
- Coolant
- Distilled water

Tools required:

- various metric sockets
- removal tool for the fuel lines, they come in sets and look something like this:



Removing the heater hoses:

Note: Some of the images here are from the Timing Chain and Tensioner section, so the hood will be removed, which is not necessary here.

- 1) Open the hood (duh!)
- 2) Remove the air intake tube from the throttle body to the air box. There is one bolt holding it to the front of the throttle body, and one bolt holding it to the rear of the throttle body. Also, disconnect the mass airflow sensor behind the air box and the valve cover ventilation elbow.



2) Remove the plastic trim covers that say "Jaguar V8". Pry up the coolant pipes on the left side first than pull the covers off.



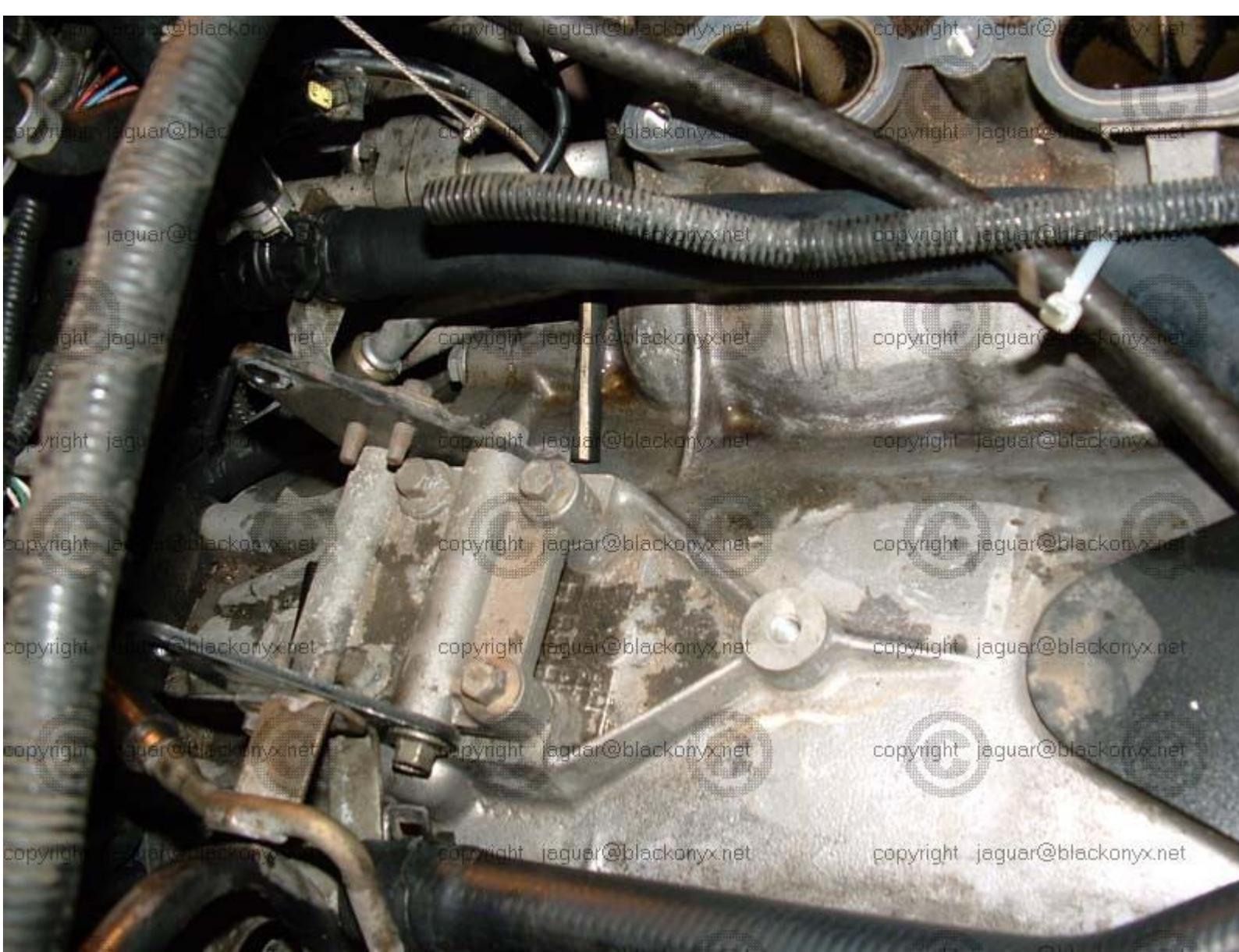
3) Now may also be a good time to drain the coolant from the engine. Easiest way I have found to do this is to

remove the lower radiator hose. try to catch it in a drain pan for proper disposal. An alternate way is to open the drain valve on the radiator.

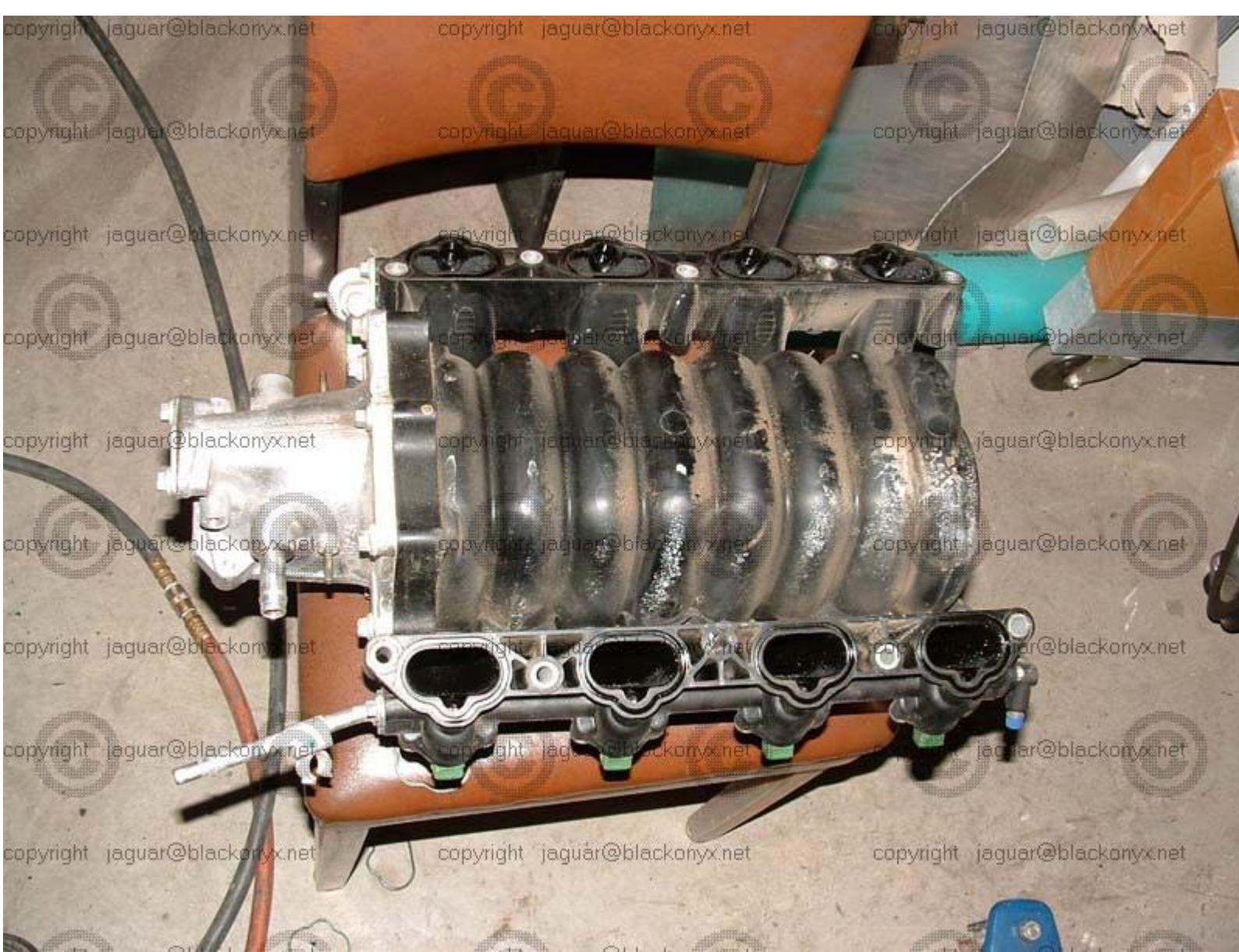
- 4) Depressurize the fuel system by bleeding the valve at the left front fuel injector rail (blue cap). Place a rag under the valve to collect and spillage. Replace the cap.
- 5) Disconnect the plugs from the throttle body. One will be pointed toward the front (round), two rectangular ones on either side pointed toward the rear of the vehicle, and one smaller one on the underside. Also, remove the vacuum line from the throttle actuator (black cylinder thing).
- 6) Disconnect the throttle cable by turning the throttle arm on the throttle body to the completely open position and rotating the cable so it comes out.
- 7) Disconnect the throttle cable mounting by removing the forward nut (try not to move the rearward nut too much)
- 8) Disconnect the coolant hoses from the throttle body. One is located on the underside and particularly difficult to access.
- 9) Remove the four throttle body securing bolts from around the intake.
- 10) Now the throttle body can be lifted from the intake, discarding the gasket. Now would also be a good time to get some sensor same carb cleaning spray and clean the throttle body.



11) Underneath the aluminum elbow where the throttle body sat are IIRC 2 bolts that must be removed. These go to a bracket attached to the engine that support the elbow. There is one bolt on the right side with a vacuum hose, and another bolt on the left side along with a vacuum hose and engine breather pipe. It may be necessary to loosen the two lower bolts on one side as well. The Image below shows this bracket with the manifold and elbow removed.



- 12) Disconnect the electrical connector for each fuel injector located below the injector rails.
- 13) Disconnect the fuel feed hose on the rear end of the left injector rail using one of the fuel/tranny line quick disconnect tools.
- 14) Disconnect the fuel return hose with another fuel/tranny line quick disconnect tools. The feed hose's and return hose's quick disconnect are different sizes.
- 15) Remove ten intake manifold bolts, five on each side.
- 16) The manifold should now easily pull of the engine if nothing is holding it down. Slowly lift it up searching for other items hooked to it as you go.



17) Discard the old intake manifold gaskets.

18) Now you have clean access to the heater hoses, which should be self explanatory in their removal, installation. One note though, there was a vacuum hose that ran along one of the heater hoses which broke. I replaced it with some spare hose and zip tied it to the heater hose.





19) Once you have the hoses installed properly clean all the gasket surfaces. This included both sides of the intake ports, the elbow surface and the throttle body surface. Be careful not to scratch the surfaces.

- 20) Fit the eight new gaskets to the intake manifold
- 21) Fit the intake manifold to the engine, torque the ten bolts to 20-22 Nm
- 22) Reconnect the fuel feed and return hoses just by pushing them on to the pipes
- 23) Reconnect the eight electrical connectors at each injector.
- 24) Refit the elbow support and hoses. A single bolt on each side, two hoses on the left side and one on the right side. Also if you needed to slacken the two lower mount bolts tighten these now.
- 25) Fit the throttle body gasket, making sure it doesn't move when installing the throttle body.
- 26) Install the throttle body and the 4 securing bolts. Torque the 4 bolts to 18-24Nm.
- 27) Reconnect the two coolant hoses on the throttle body.
- 28) Refit the throttle cable and make sure that there is neither tension or slack on the cable. If so, use the two nuts on the throttle cable to adjust it accordingly.
- 29) Reconnect the 4 electrical connector on the throttle body, one underneath, two on either side pointing reward, and one at the top.
- 30) Refit the air intake tube with the two securing bolts on the throttle body, the connector on the Mass Airflow Sensor, and the valve cover breather tube.
- 31) Refit the covers on the V that say "Jaguar V8"
- 32) Refill coolant with a 50/50 mix off coolant and distilled water
- 33) Run engine and check for any coolant leaks while keeping an eye on the coolant level.