TITLE Cleaning the Jaguar XK8/XKR Throttle Body, MAFS, and Part-Load Breather

Project Time Required: Approx. 1 Hour **Last Update: April 11, 2008 – Version 2.5**

Author	Parts Store Items Needed	Tools Needed	Skill Level
Dan Pechonis dpechonis@austin.rr.com Forum name: MrTexasDan	• Throttle Body Cleaner – *NOT* carburetor cleaner. (Recommend CRC brand) • Electrical contact cleaner – Must dry residue-free. (Recommend CRC brand) • Lint-free cloth	• Flat blade screwdriver • 8mm and 10mm nut drivers or sockets and ratchet • 3/32" (2.5mm) drill bit • Vise Grips • Pliers • Phillips-head screwdriver • 10mm wrench (for battery terminal)	☐ Basic ☒ Intermediate ☐ Professional

Author Comments

I own a 2000 XKR. At 82k miles, I was experiencing hard starting and hesitation/rough running when the engine was cold. Also, at any engine temperature when I stepped on the gas from a standing stop, the response was quite "jerky" and the car lurched.

After some online research, I set out to do a little maintenance that probably has never been done on my car (I bought it at 67k miles). Namely, I cleaned the Throttle Body, Mass-Air Flow Sensor (MAFS), and Part-Load Breather Tube orifice.

After performing these steps (in less than an hour!), the hard starting and hesitation were gone, the throttle response was smooth, and I got noticeably more power. I have added this procedure to my maintenance schedule for every 10k miles.

Many thanks go to Jeff Cline, SidVaga, and Bloodworm for their help and posts on this subject. If I ripped off any of your words, it is only because I couldn't have said it better. Any inaccuracies or omissions are my responsibility alone and not that of these fine people.

Corrections or suggestions for improvement would be sincerely appreciated.

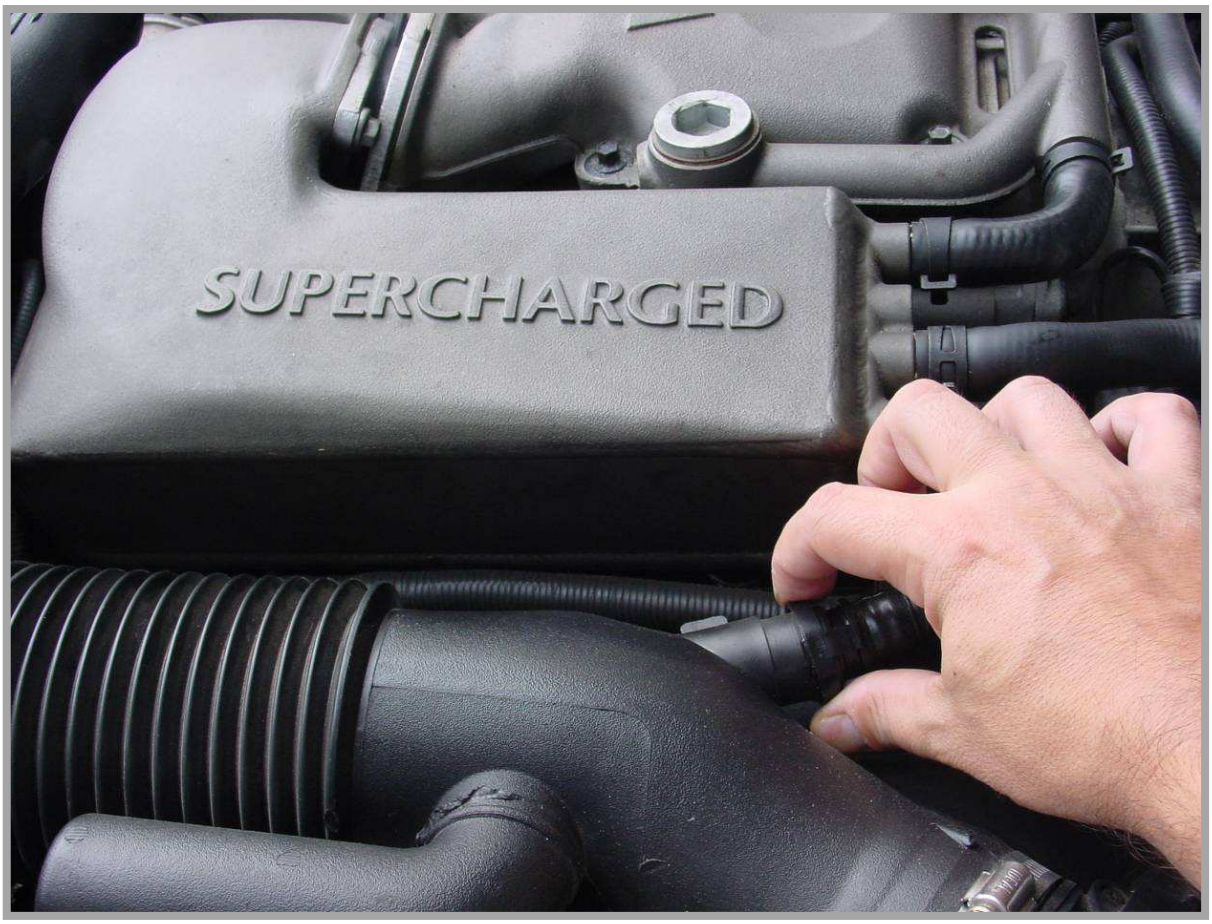
Procedures

- Clean connectors, hoses, and other parts as you go. This is good practice in general. Clean parts are happy parts.
- Under-hood plastic is notorious for being brittle and breaks quite easily. Handle with care.
- Care should always be taken to protect the paint while you lean over the fender. Wash dirt off the bodywork *first*, put covers on both fenders, remove belt buckles, and watch for rivets in jeans or metal zippers, or other potential hazardous bits.

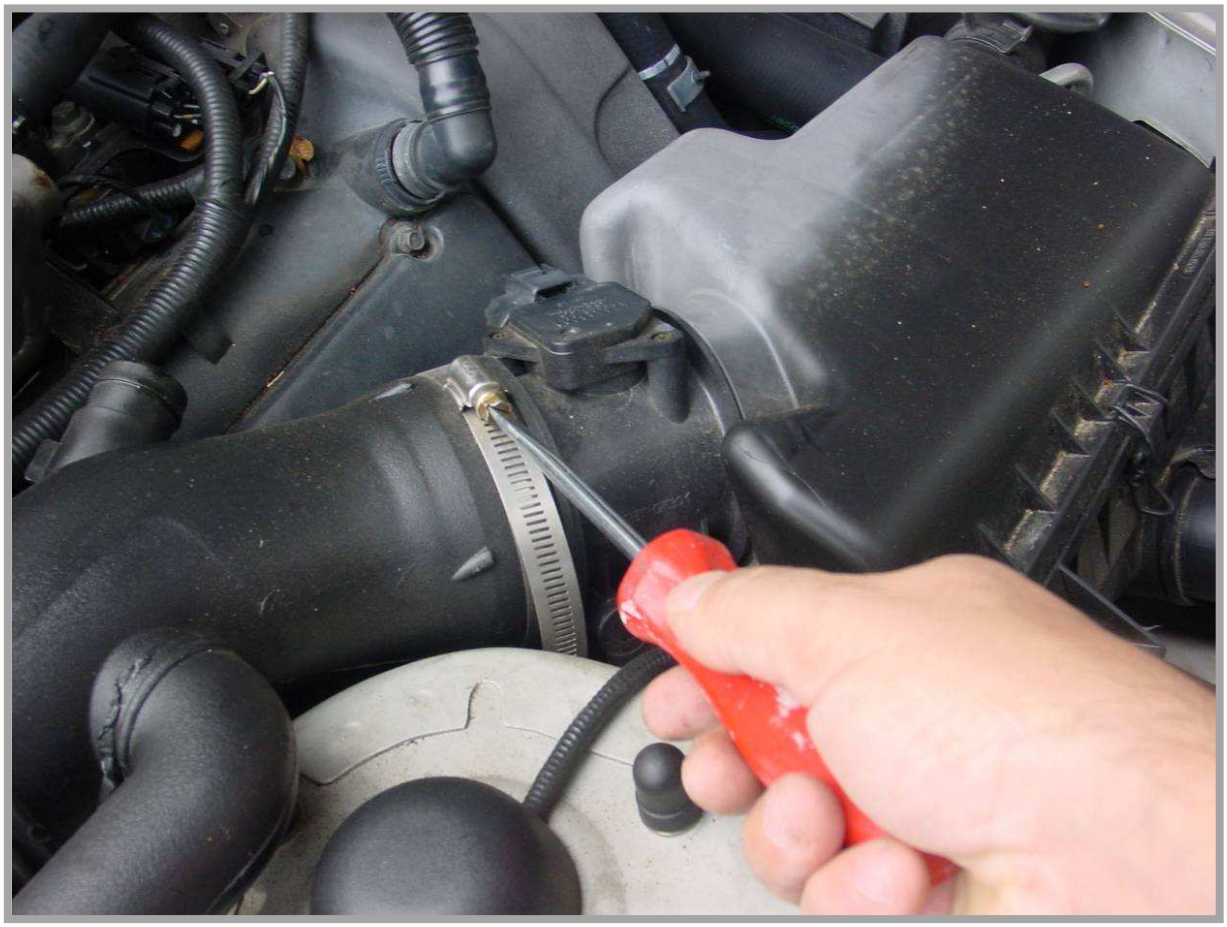
Instructions

STEP 1 Disconnect the full-load breather tube from the big air intake duct by squeezing as shown. This releases the tangs securing the tube so that it then can be pulled out from the duct. Rotate the breather tube out of the way.

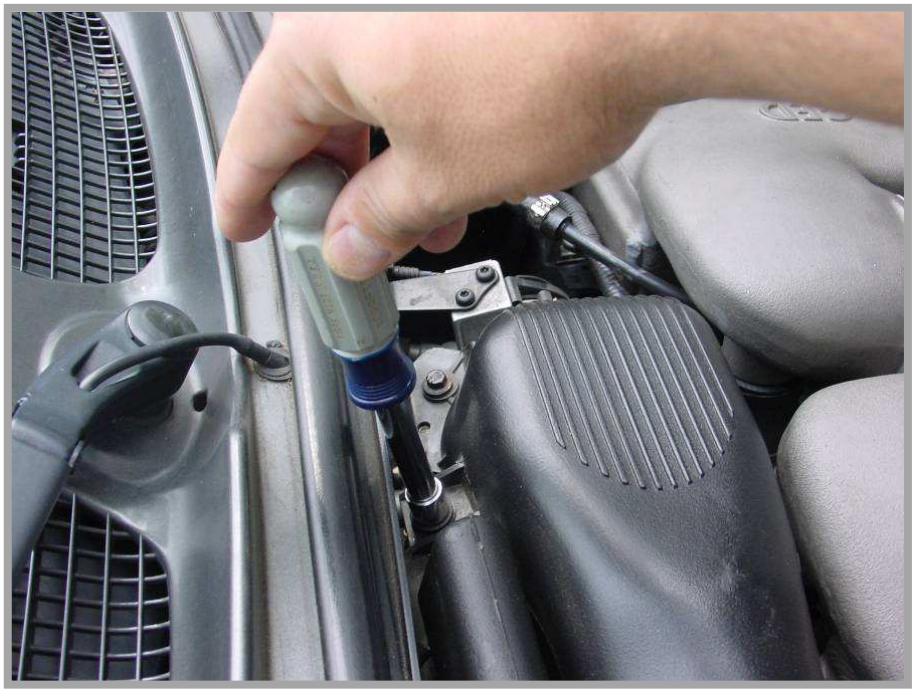
Note: *Do this very carefully, as it is quite easy to break old brittle plastic here … a new one cost me $17 at Jaguar. Also check that the full-load breather tube has no cracks or leaks. Even small air leaks here will throw off the air-fuel mixture.*



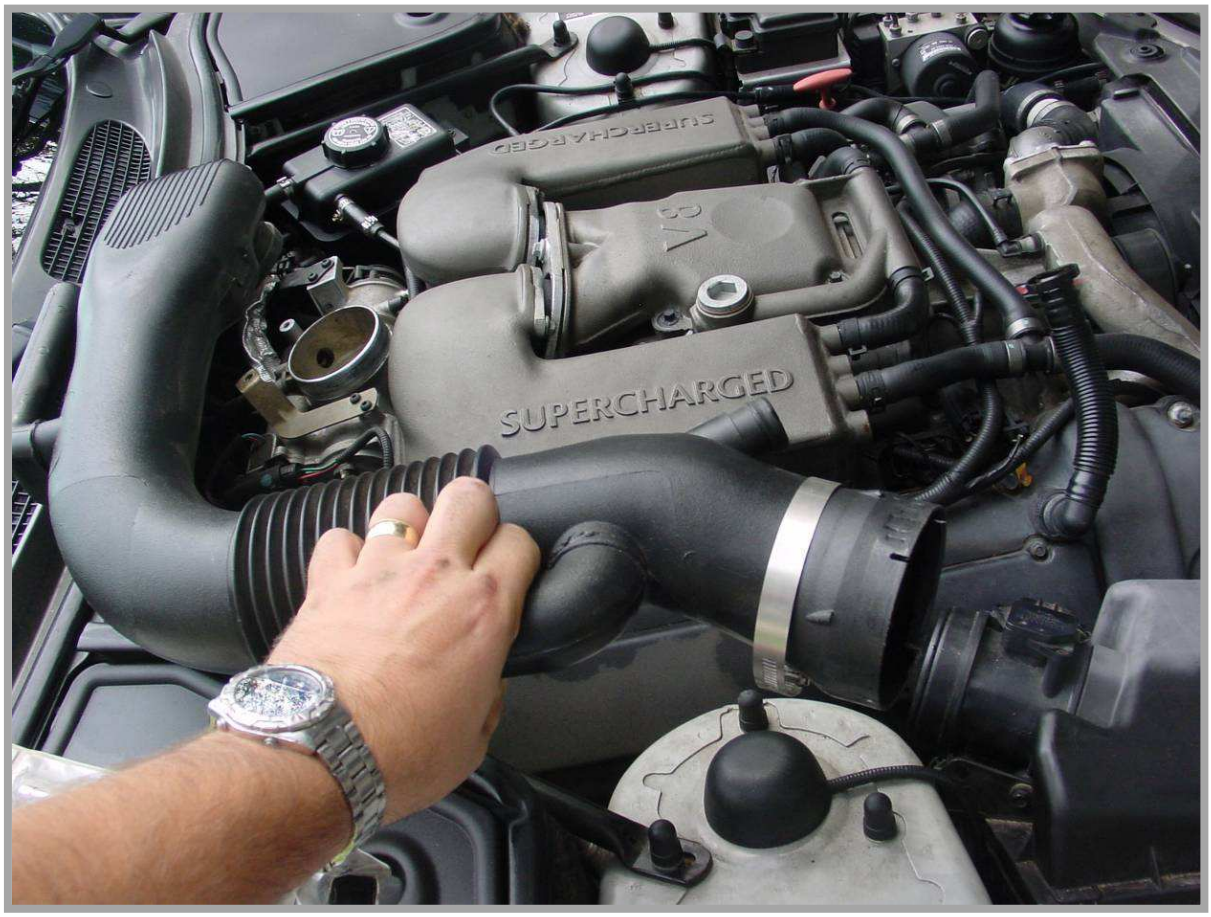
STEP 2 Loosen the hose clamp securing the large air intake duct to the air cleaner box.



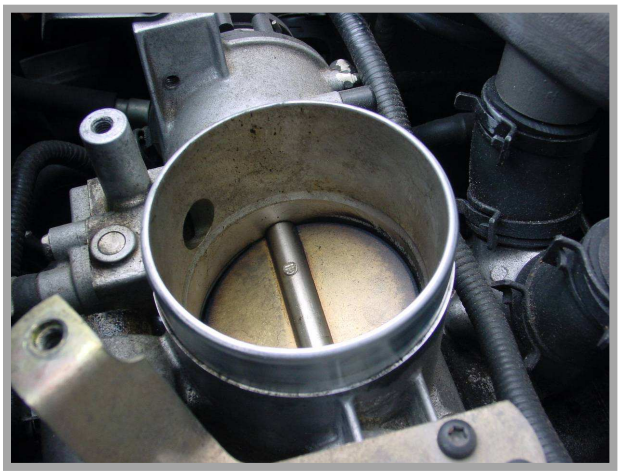
STEP 3 Remove the 2 bolts securing the air intake duct to the throttle body. The upper bolt is 10mm and the lower bolt is 8mm (why – I don't know. And for that matter, why they are both on the same side while there is no bolt on the other side is a big automotive engineering mystery).



STEP 4 Remove the intake air duct …



… To reveal this *very* dirty throttle body.



STEP 5 Have someone hold down the throttle pedal to make it easier to open and clean the throttle body valve. If you have no friends to do this, use something like what I rigged up in the picture. Notice the bunched-up rag to protect the leather.

STEP 6 Here's where we get to cleaning. Spray throttle body cleaner on a lint-free rag. Reach in and open the throttle valve, and wipe down the throttle bore as far in as you can get with your fingers. On my car, the gunk was so thick that it took many wipes to get clean. Also clean the throttle valve itself, especially on the edges.

Note: *Use only your fingers and the rag, and not any hard sharp implements. It is easy to damage the coatings on the throttle bore and valve.*

Warning: *DO NOT spray cleaner directly into the throttle bore. This would cause flammable cleaner to pool up at the bottom of the throttle body (and supercharger on XKR). I'm guessing an explosion in here would be bad.*

… This is the cleaned throttle. The cloth was white when I started.

STEP 7 Release the throttle pedal.

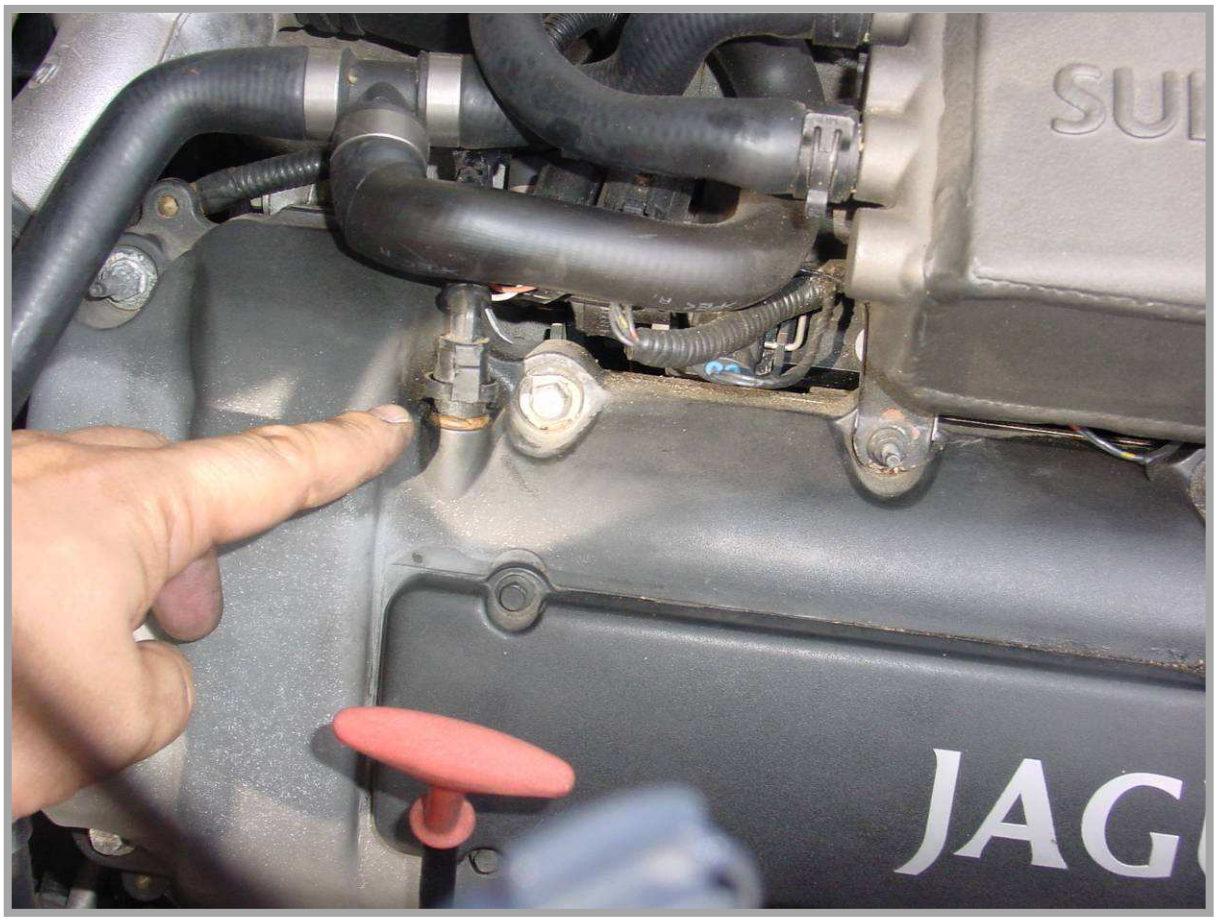
STEP 8 Check that the air intake duct has no cracks or leaks. Even small air leaks here will throw off the air-fuel mixture. See the following picture from *tllama* showing a deteriorated bellows area on the duct.

STEP 9 Clean the air intake duct. The following is a note and picture from Mark Morgan …

My air intake duct itself was absolutely filthy. I washed the whole air duct in 3 gallons of warm soapy water and used a flexible alloy wheel brush to clean inside. By the end of the process I couldn't see the bottom of the sink as the water was that brown. Remember that you either dry it out overnight at room temperature of else use a hairdryer for 15 minutes as you don't want any of that moisture in your engine. This is a worthwhile task otherwise all that crud will just end up back on your throttle body.

STEP 10 Re-install the air intake duct.

STEP 11 Locate the Part-Load Breather Tube on the drivers-side (for left-hand drive) cam cover.



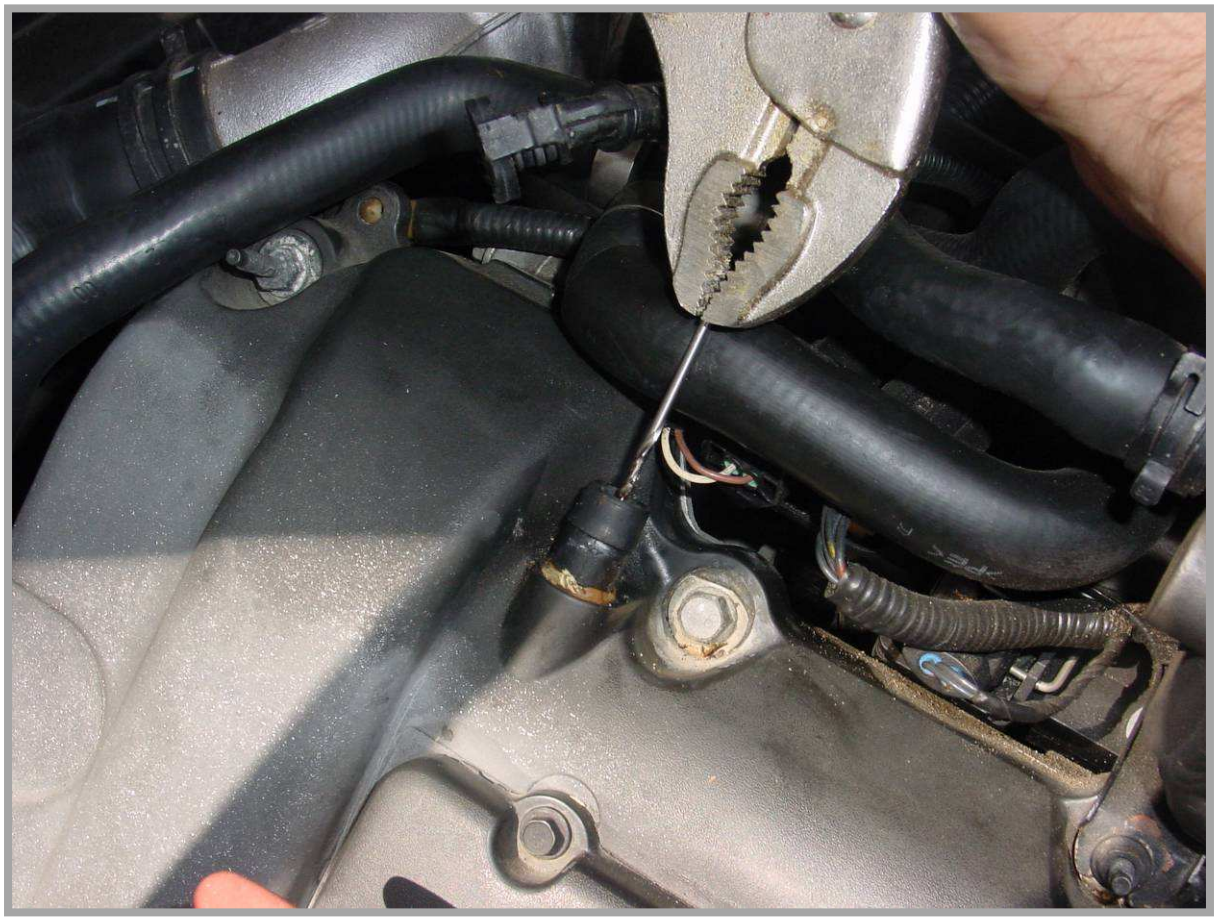
STEP 12 Remove the tube from the cam cover. This tube has the same type connector as the Full-Load Breather Tube described in Step 1. Be very careful not to break the plastic. I must admit in my case the tube was difficult to remove, so I used pliers to gently squeeze the connector, while oh-so gently prying up the tube with a screwdriver. Whew … it didn't break. I didn't take a picture of this because I only have 2 hands.

STEP 13 Clean the Part-Load Breather orifice in the cam cover using a 3/32" (2.5mm) drill bit *firmly* clamped in a Vise-Grip as shown. You can also use a pin vise; the idea is to keep the drill bit from falling into the cam cover. This would be bad.

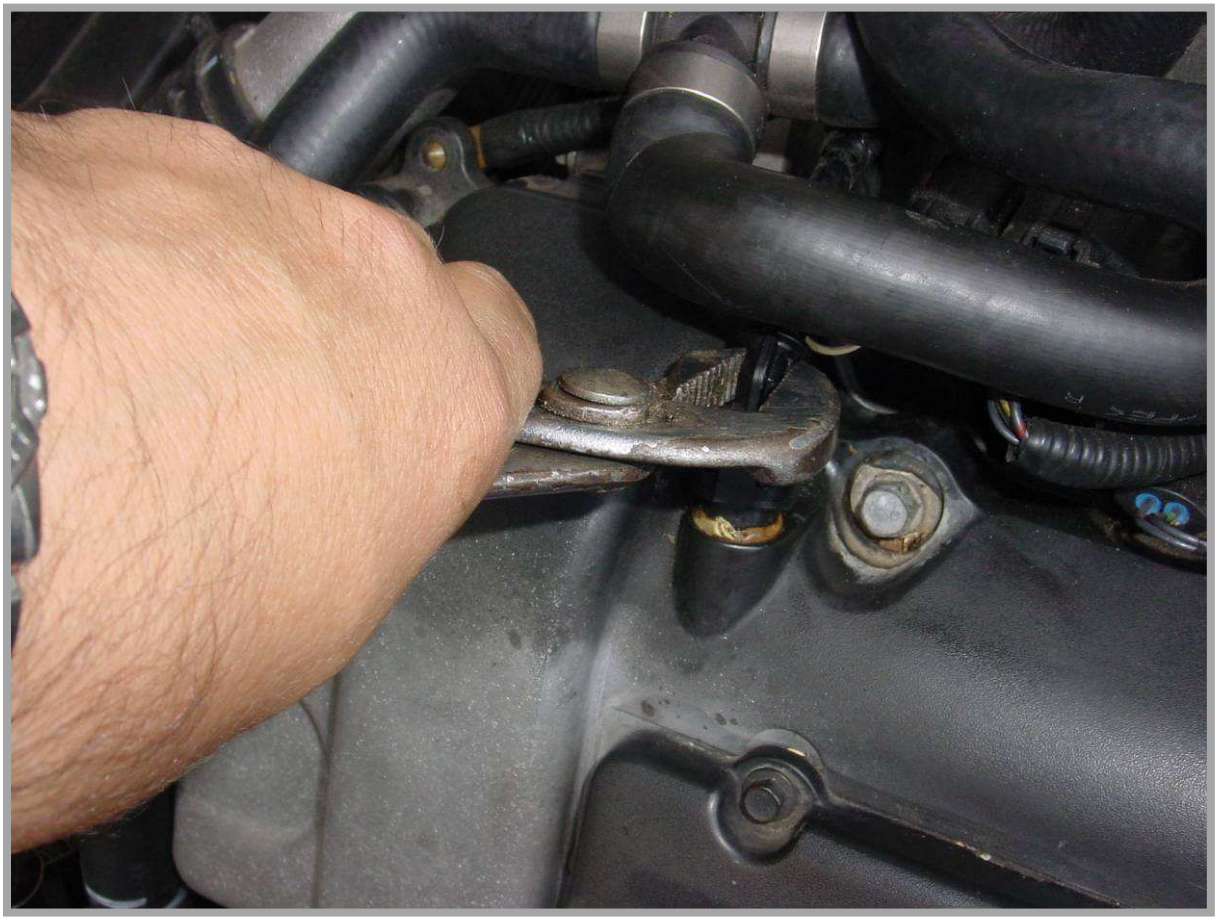
Note: *You could also use a paper clip or kabob stick to clean out the orifice.*

Warning: ***Do not allow the drill bit to penetrate more than 45mm or just under 2" from the top edge of the breather stub.***

My Part-Load Breather orifice was blocked with gunk and required a little pressure to punch the drill through.



STEP 14 Install the Part-Load Breather Tube. I found it difficult to press hard enough to get this back on, so again I cheated by using a pliers to press down (Not squeeze) on both sides of the tube connector, as shown. Again, by the grace of all that is good and holy, I did not break the connector.

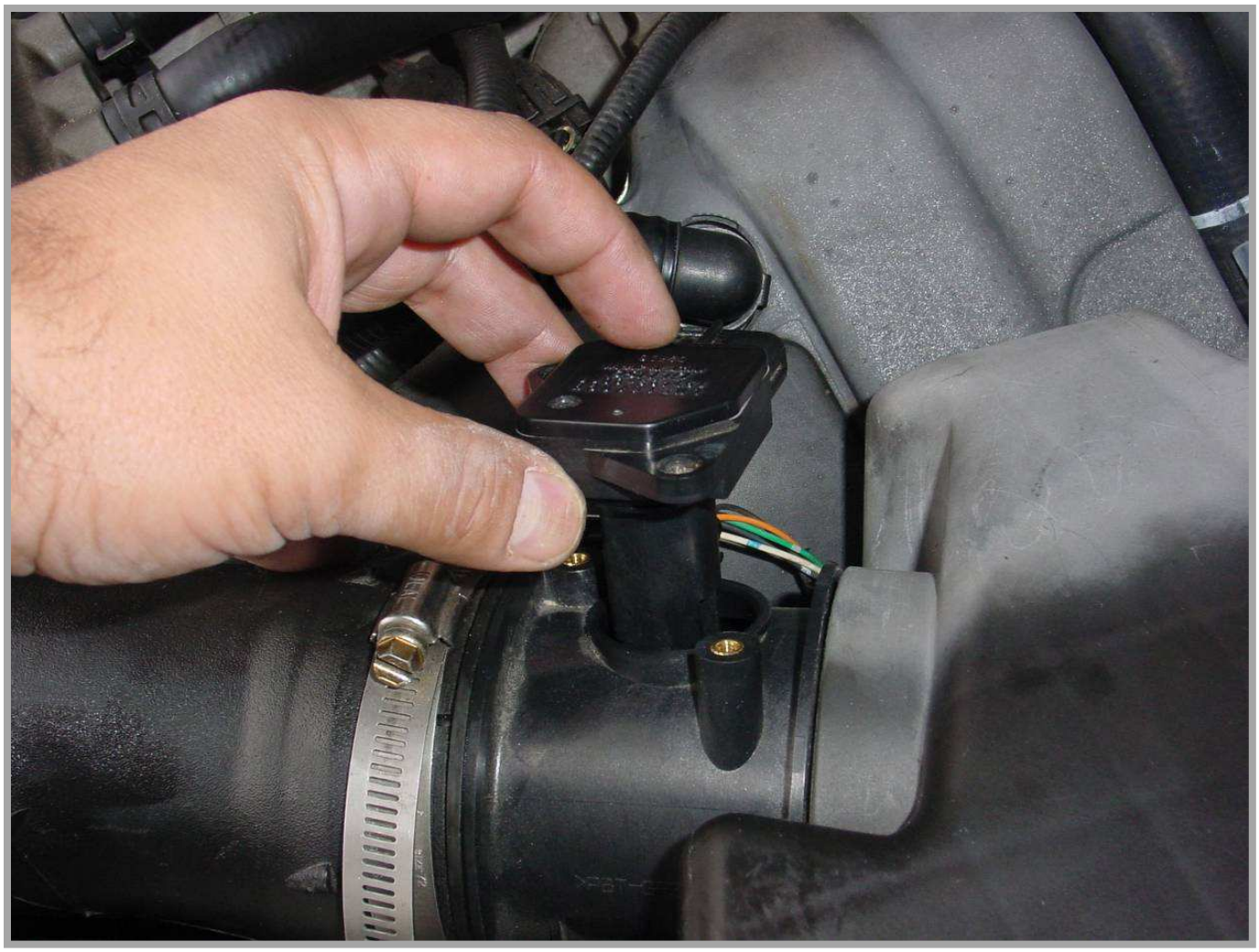


STEP 15 Remove the wiring connector to the MAFS (located on the air cleaner cover) by pressing down on the lever to release the tang, and carefully wiggling the connector free, as shown.

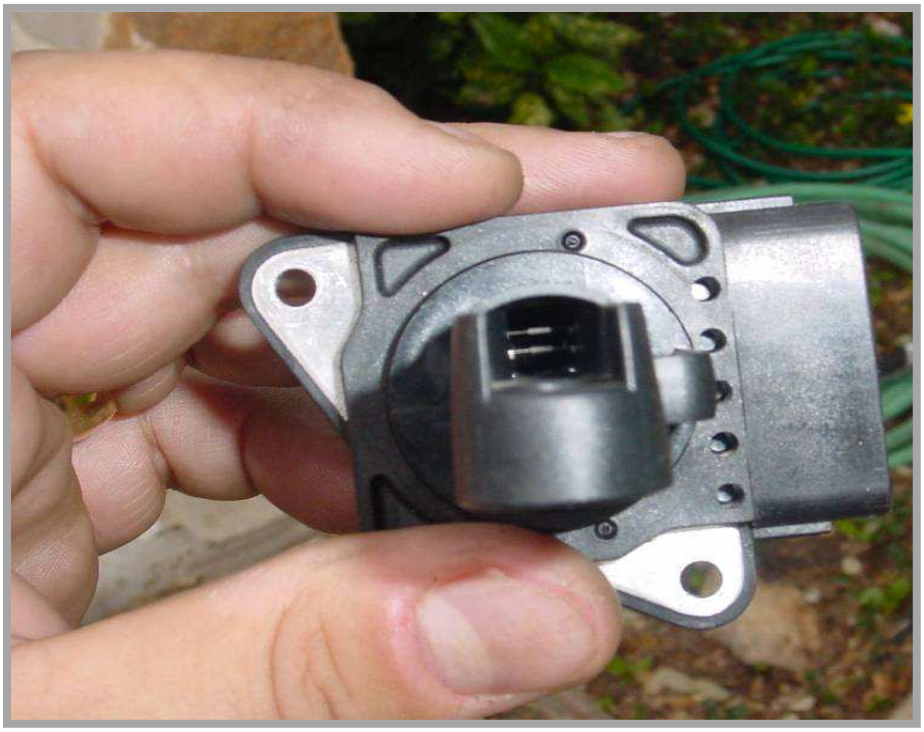
STEP 16 Remove the two Phillips-head screws securing the MAFS to the air duct.

Note: *On some older models the MAFS is integrated to the air box cover. You may have to remove the cover to get at the MAFS sensor wires for cleaning.*

STEP 17 Gently twist and pull MAFS free from the air duct.



… And notice the two thin wires down in the MAFS tube. Mine had some gray stuff coating the wires. The first picture is of the XKR MAFS. The second is of an XK8 MAFS.



STEP 18 Spray residue-free electrical contact cleaner on the MAFS heater wires down in the tube. The gray powdery residue cleaned off to a shine after about 10 short sprays.

Warning: ***DO NOT* touch the wires with the spray tube.**

… And while you're there, spray clean the air flow temperature sensor.

STEP 19 Wipe off o-ring seal and re-install MAFS on air duct. Re-install MAFS wiring connector.

STEP 20 I disconnected the battery negative terminal for 10 seconds to clear the computer.

Note: *This is a good time to clean the battery terminals and wipe off any dirt from the top of the battery, as necessary. You will need to reset the windows … with the doors shut, roll the windows all the way down and hold the button in the down position for 10 seconds. Then roll the windows all the way up and hold the button in the up position for 10 seconds. On some later models (post 2001?) you will need your codes to re-enable the radio.*

STEP 21 Drive at varying conditions over the first several hours to help the computer re-learn.

A Happy XKR!

REVISIONS

October 29, 2006 – Version 1.0

October 29, 2006 – Version 1.1

- Added notes about resetting windows and radio codes after disconnection battery (Thanks Sid Vaga !).
- Added list of tools needed.
- Very minor formatting improvements

November 4, 2006 – Version 2.0

- Changed maintenance frequency to 10k miles per Jaguar Part-Load Breather TSB (thanks TriTom !)
- Reworked MAFS cleaning procedure. Previously this covered only the air flow temperature sensor. Added procedure to remove the MAFS and clean the heater wires. (Thanks to Martin Holbrook and Andy Dorn for the additional MAFS-cleaning info.)

November 7, 2006 – Version 2.1

- Format tweaks and added distribution note.

November 12, 2006 – Version 2.2

- Added step to clean air intake duct (Thanks Mark Morgan!)

December 23, 2006 – Version 2.3

- Strengthened warning about not spraying cleaner into throttle bore (Thanks Gary61!)
- Added notes to check full-load breather tube and air intake duct for cracks and leaks (Thanks tllama and Gary61!).

March 9, 2007 – Version 2.4

- Changed metric drill bit size from 2.4mm to 2.5mm per Jag bulletin. (Merci Francis F!)
- Added note that drill bit cannot penetrate into part load breather orifice more than 45mm past top edge of breather stub. (Merci Francis F!)

April 11, 2008 – Version 2.5

- Changed references from wrong forum to correct forum… MaxPerformanceCars.com.
- Added picture of N/A MAFS wires (Thanks SidVaga!)