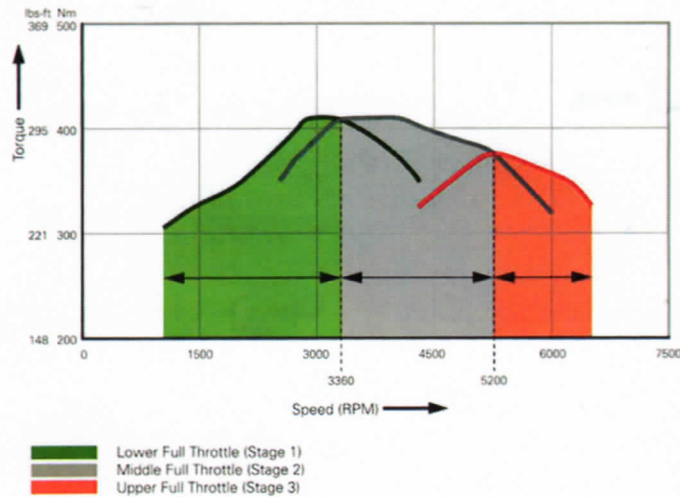
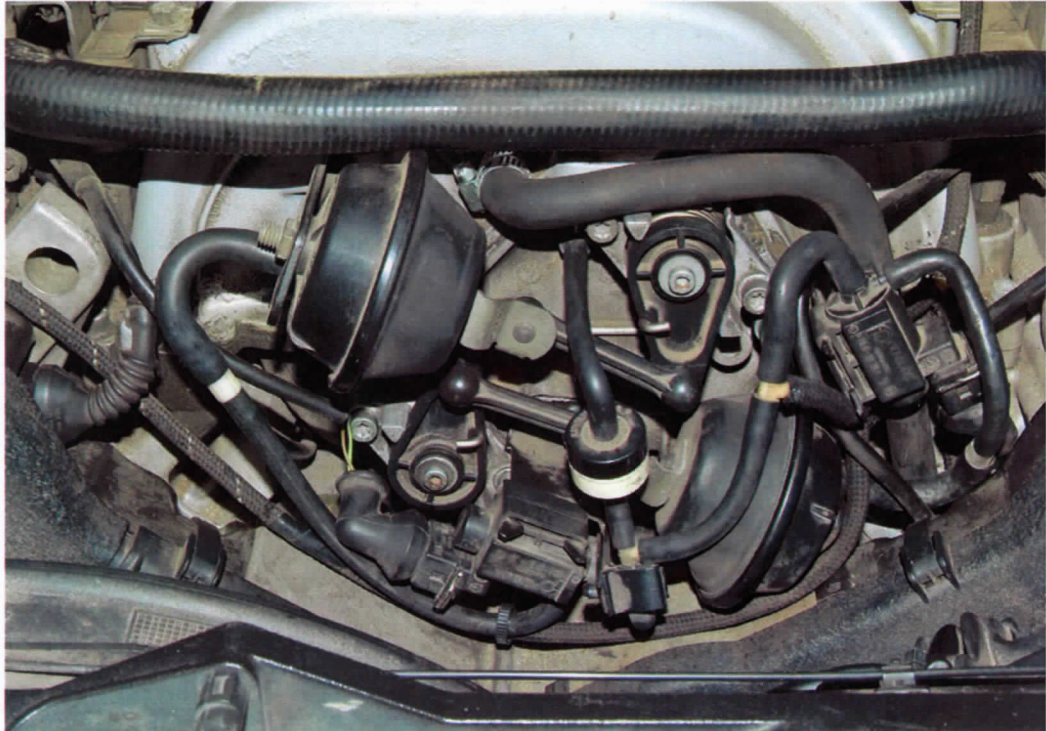


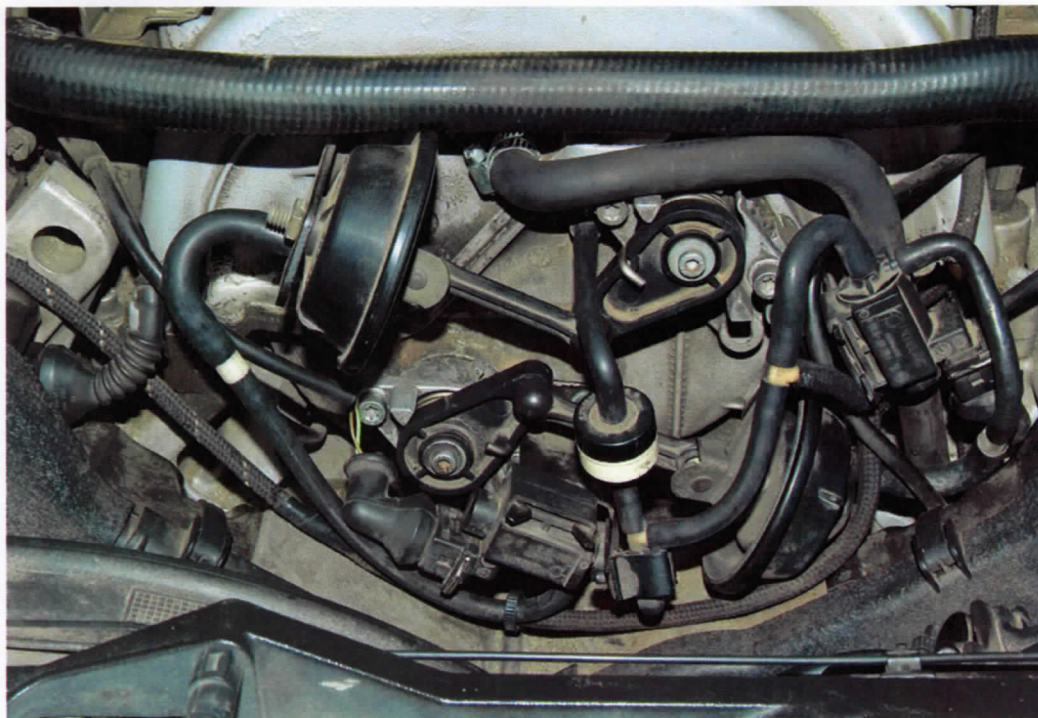
You can see what would happen to engine torque if any stage was not working...well worth the trouble to get it freed up and working.



With engine off, the actuators should look like this. Both levers held against stops by springs...vacuum pods inflated. Should go to this immediately (not slowly) when engine is switched off. If not, they are seized or too sluggish.



When engine is started, they should go immediately (not slowly) to this. Both vacuum pods evacuated and both levers pulled away from stops fully, against spring tension. If not, your intake manifold changeover is not operating properly and you're missing out on the full of a really cool system...losing torque in some part of the rpm range.



Bentley has nothing on this, because Audi says the system cannot be repaired and the entire manifold needs to be replaced...not so.

Before you start, take photos or make notes about vacuum connections/routing. Also, if I need to tell you **individual tools, sizes and details** for each step (except as noted/shown), you don't need to be tackling this job. It's not terribly difficult but includes a couple of "delicate" steps and a little "feel" required for things you can't see without taking the manifold apart (NOT necessary).

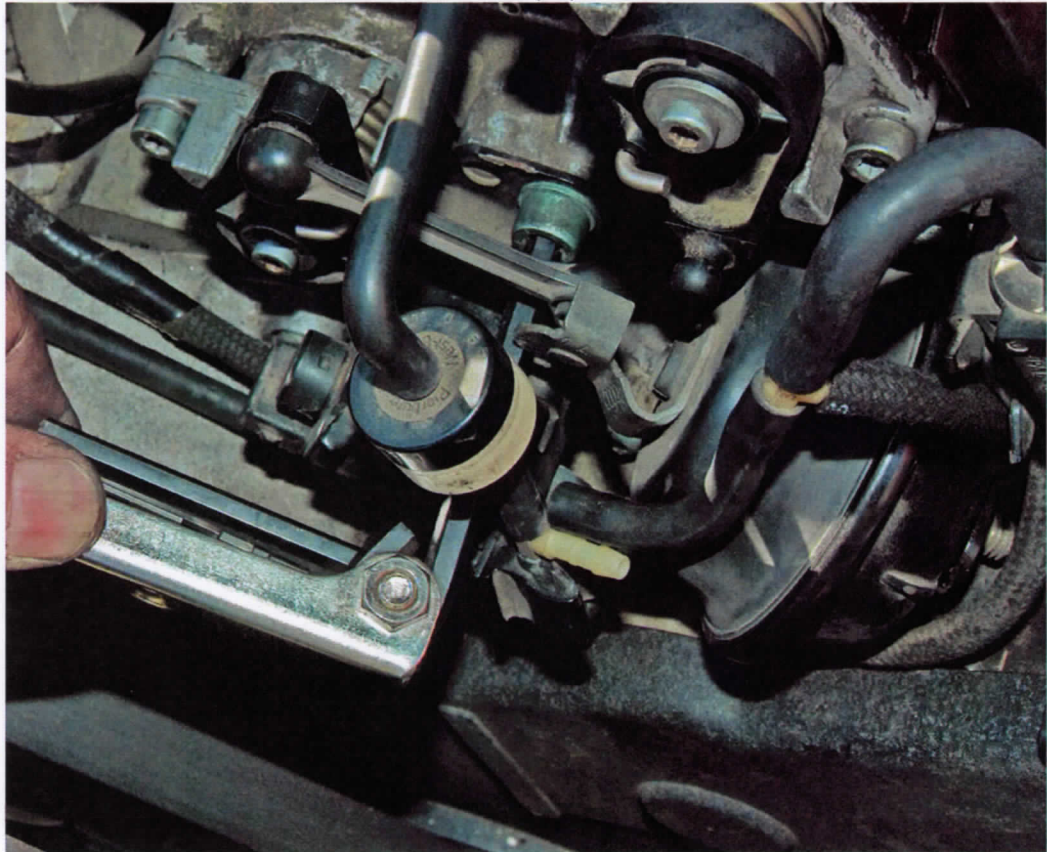
"Greg's" post (see link) in the FAQ Digest has photos of the manifold's interior, to help visualize how the other end of the "flap rods" fit the pivots on the far end of the manifold. You'll have to feed them back into these when reassembling...it's blind, but very possible...I've done it a few times. You can actually see the top pivot hole back inside the manifold, looking in with a flashlight, while the upper flap is out of that pivot, but it is a blind fit when it comes time for reassembly.

First remove top vacuum pod and ball joint link...can pry ball joint off manifold actuating level with a wide flat screwdriver.

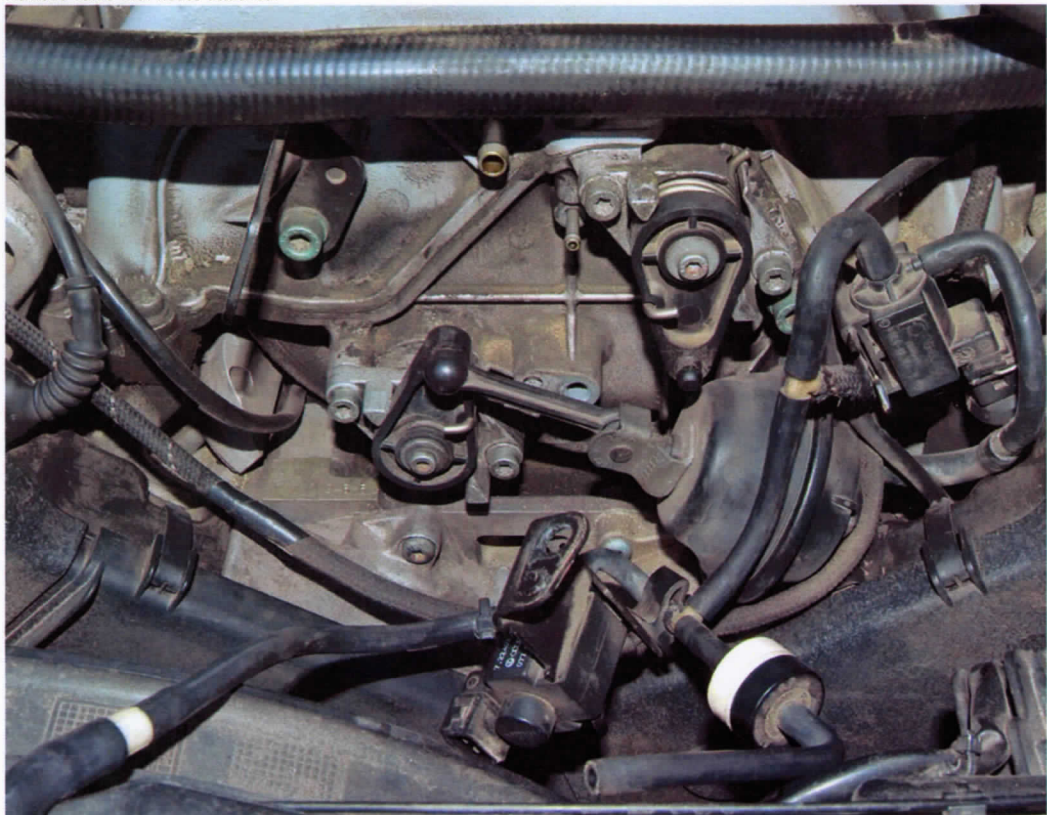




Disconnect elec connection to bottom left actuator valve and unbolt (one) from manifold.

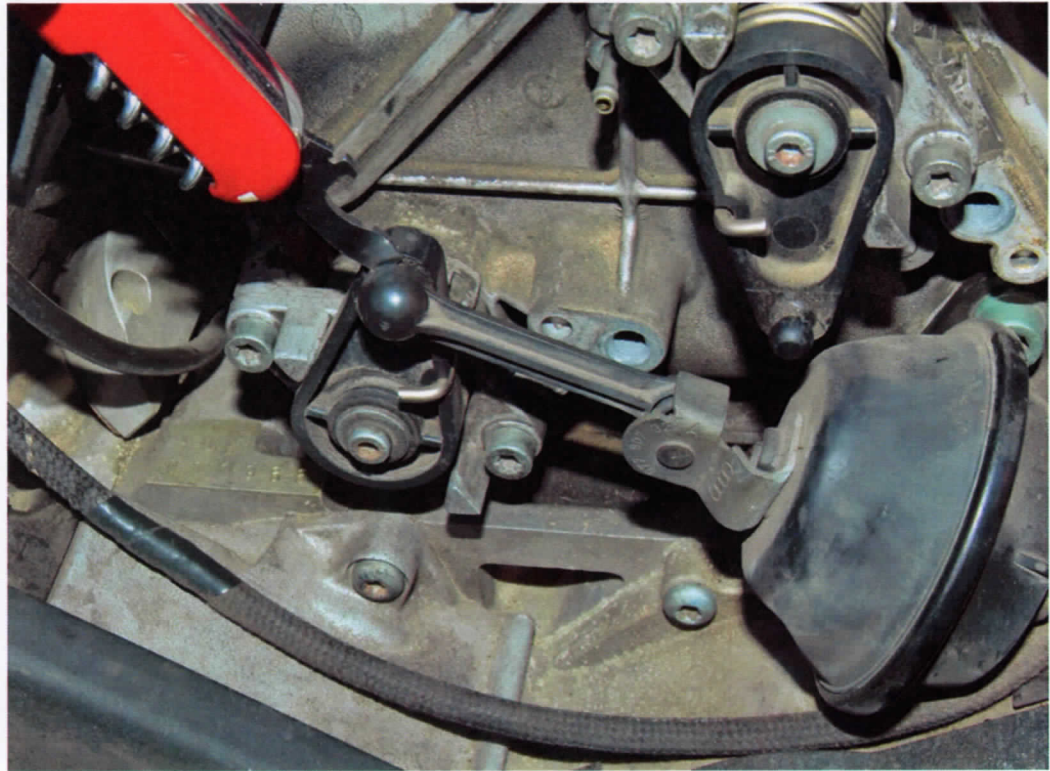


Remove valve with hoses attached.

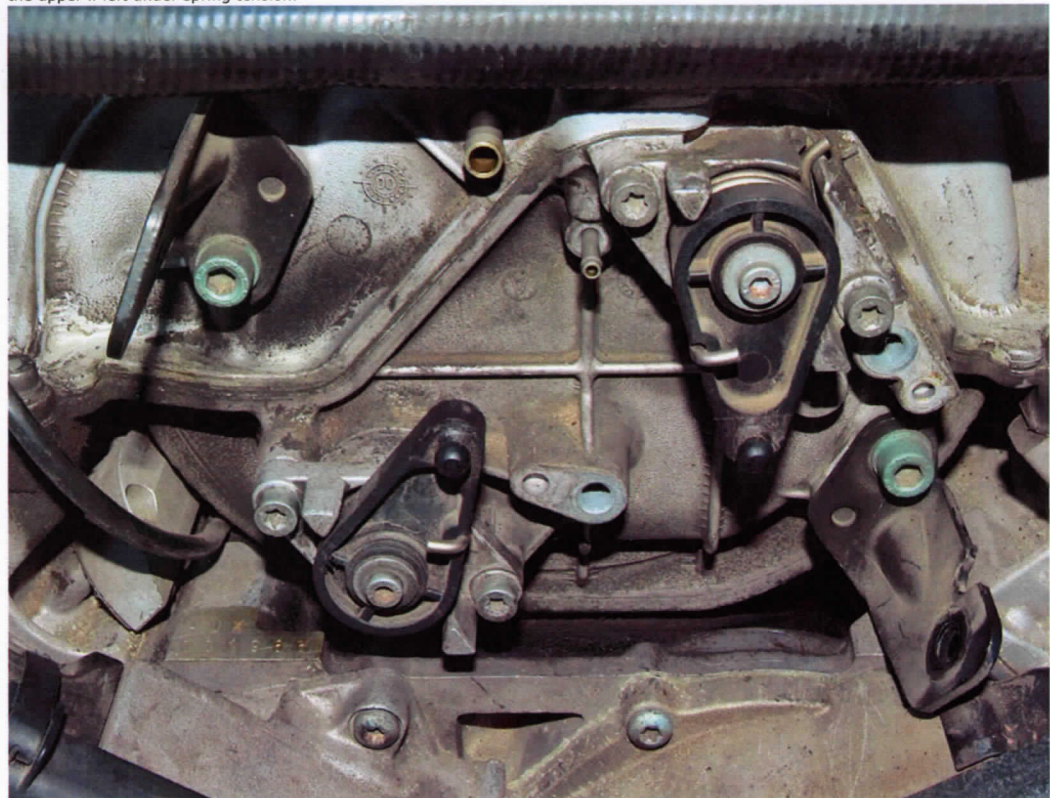


After disconnecting upper right actuator valve and removing with hoses attached, remove lower vacuum pod with ball joint link.



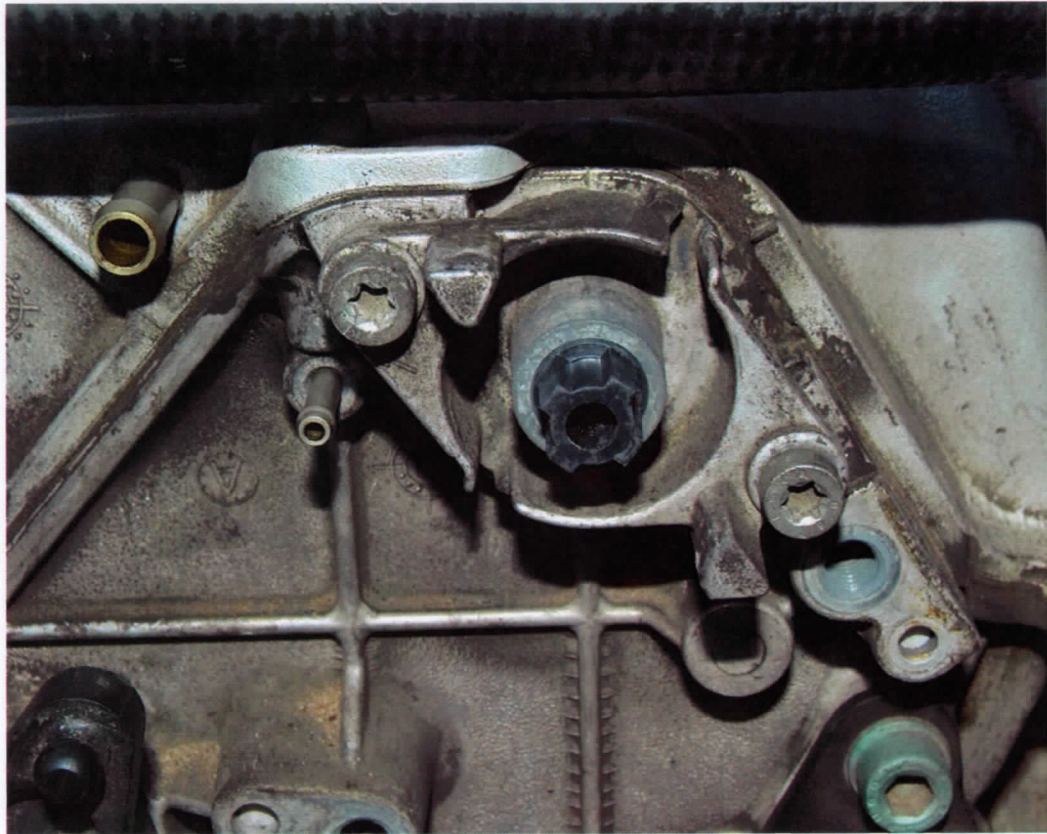


Time to take the plastic lever off the top pivot..center allen bolt. I recommend completely repairing the upper one, before disassembling lower one. I found that the internal flaps can interfere with each other when both are free at the same time. Lower stays out of the way of the upper if left under spring tension.

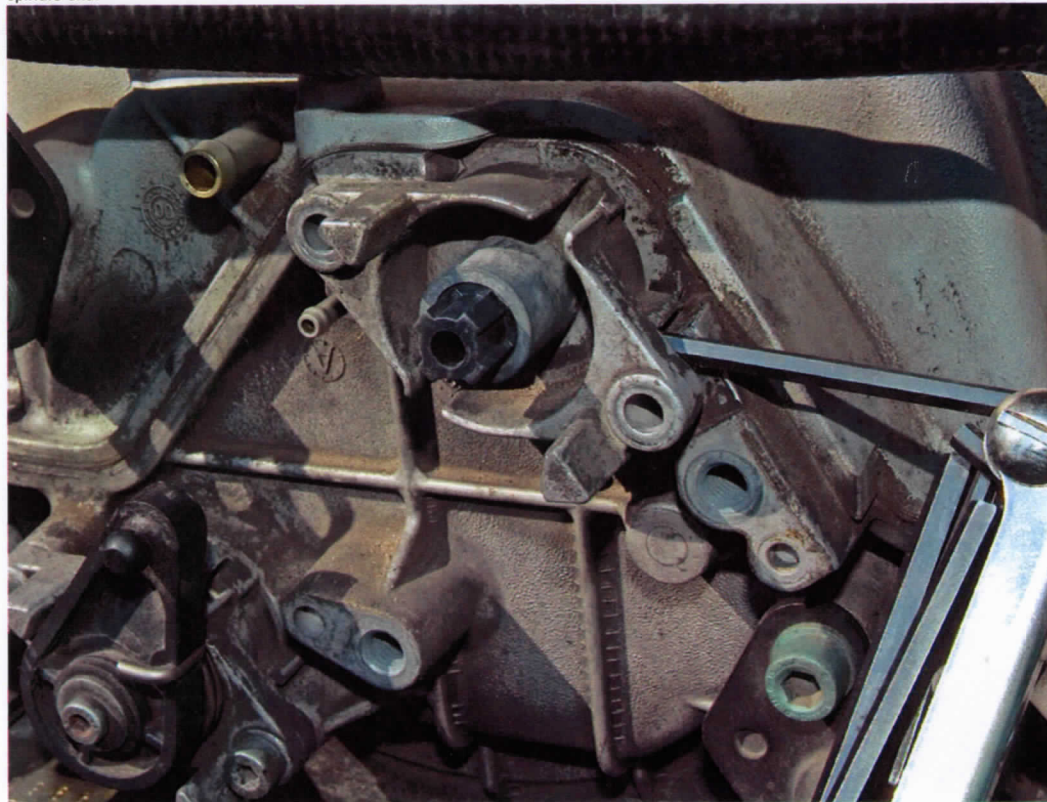


Take note, before removing aluminum pivot casing (2 torx bolts), that the smaller triangle stop (next to upper torx bolt) needs to be at the top...must reassemble this way...same on upper and lower pivots.



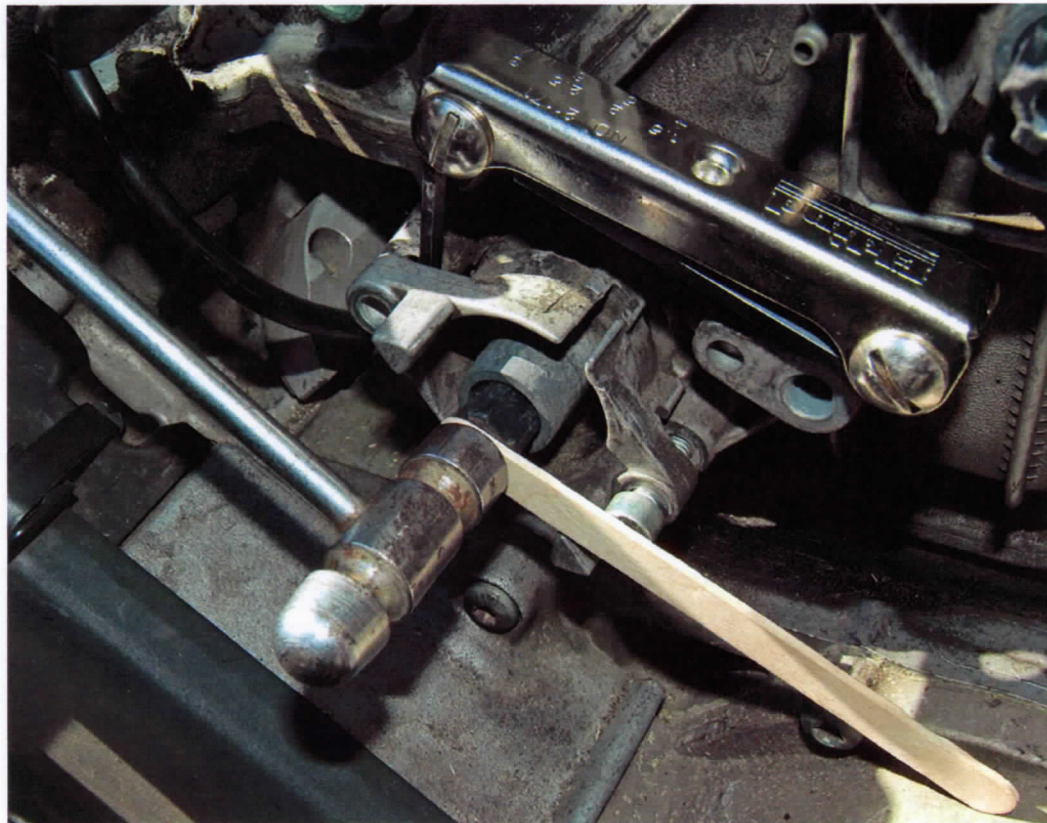


Pull casing out just far enough to get something behind it...there's enough play on the other end (inside manifold) to start "tapping" it. At this point, of course, if you have the proper gear puller (I don't...used what I had), you could carefully press/pull outer pivot casing off spindle end.

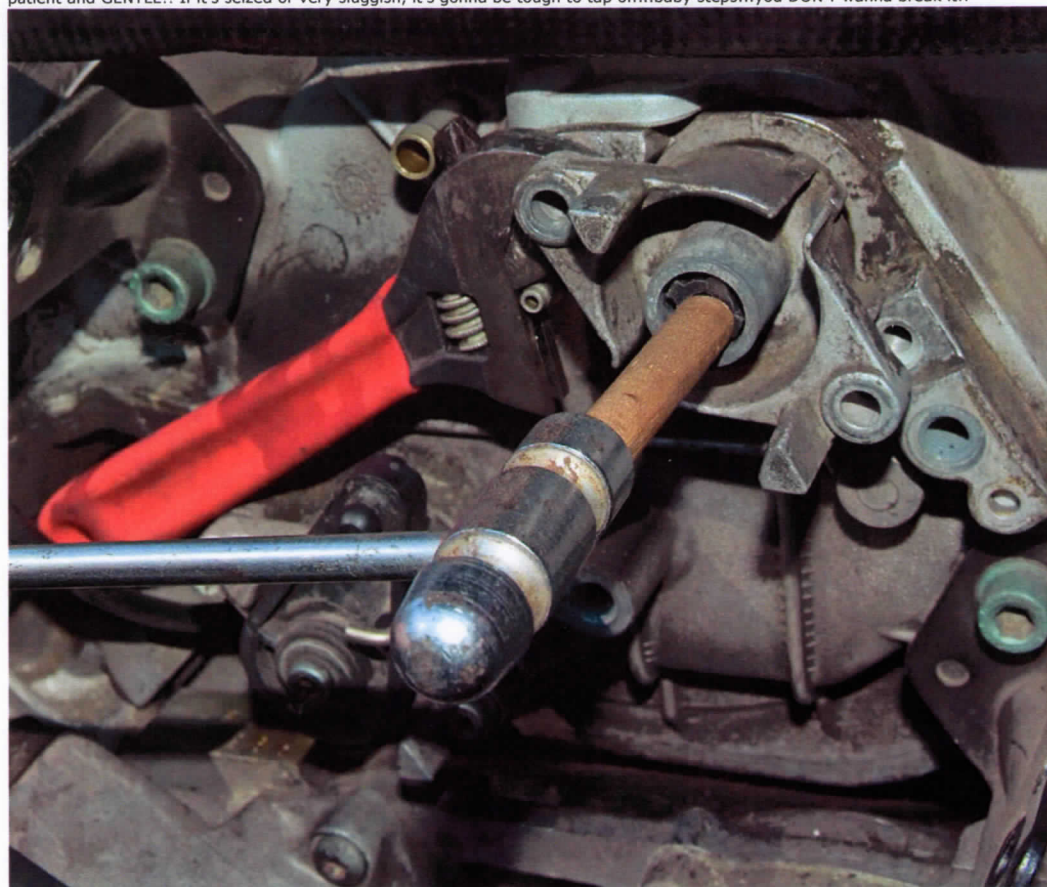


The first few mm's are the toughest..helps to put lever back on and rotate a little a few times. The right gear puller would indeed be ideal for this, but....



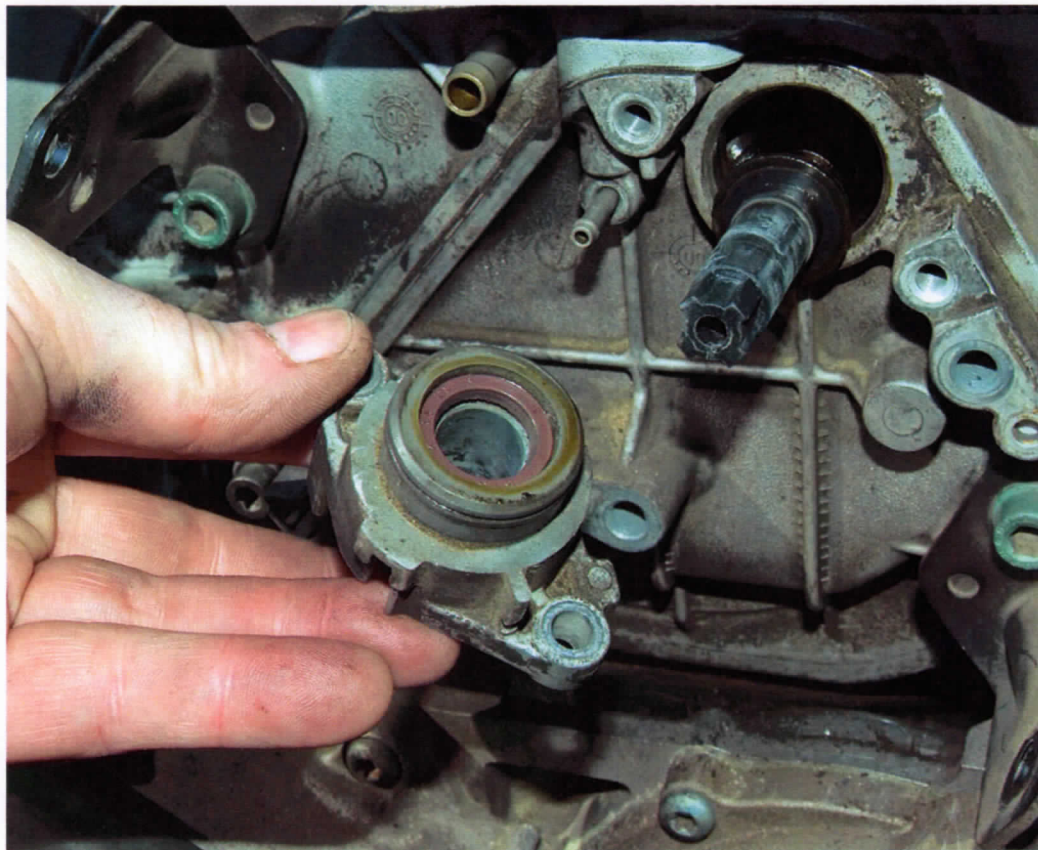


I went with progressively thicker back-stops (see crescent wrench), to assure rear clearance to continue driving the casing off the spindle and GENTLE!! If it's seized or very sluggish, it's gonna be tough to tap off...baby steps...you DON'T wanna break it!!

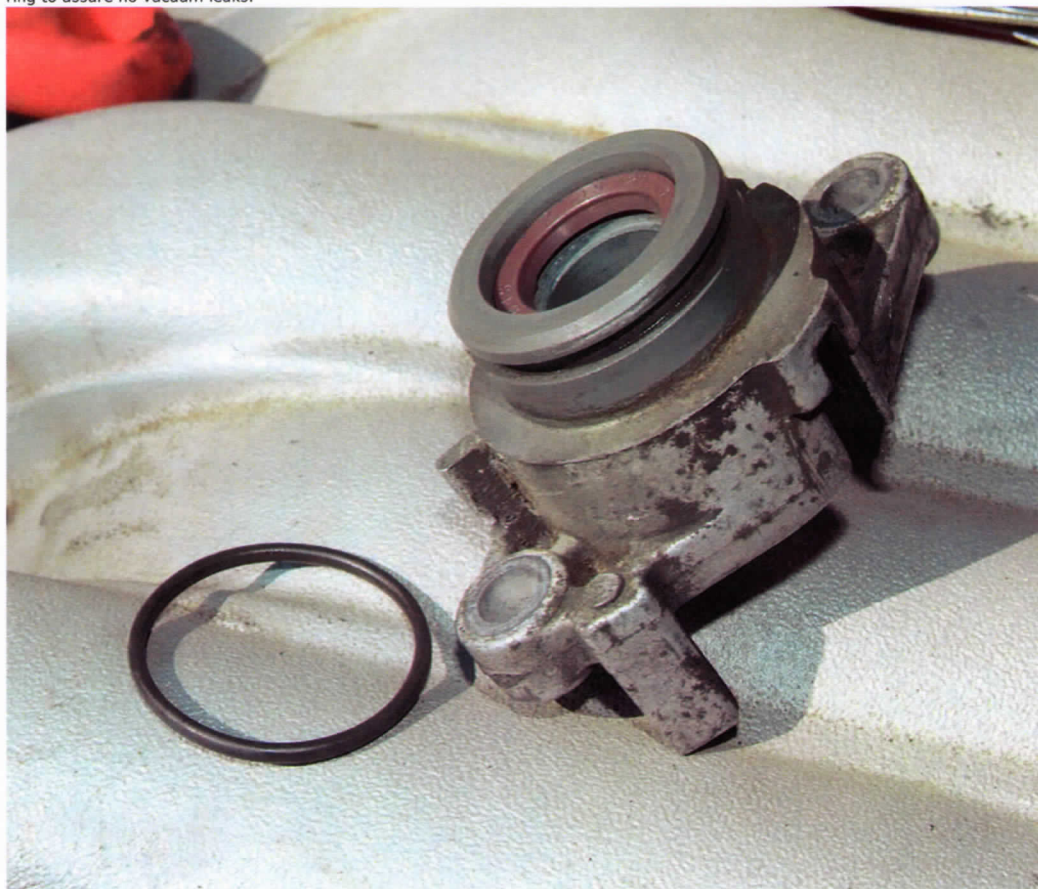


There's your problem part...corrosion/build up/schmutz on the inside of the outer race casing.  
Notice the plastic spindle in the manifold (end of internal "flap rod") is out as far as it will go...out of the hidden inside pivot hole on the manifold.  
I carefully cleaned the plastic spindle with a plastic brush wheel on a Dremel...not much build up there...just clean it.



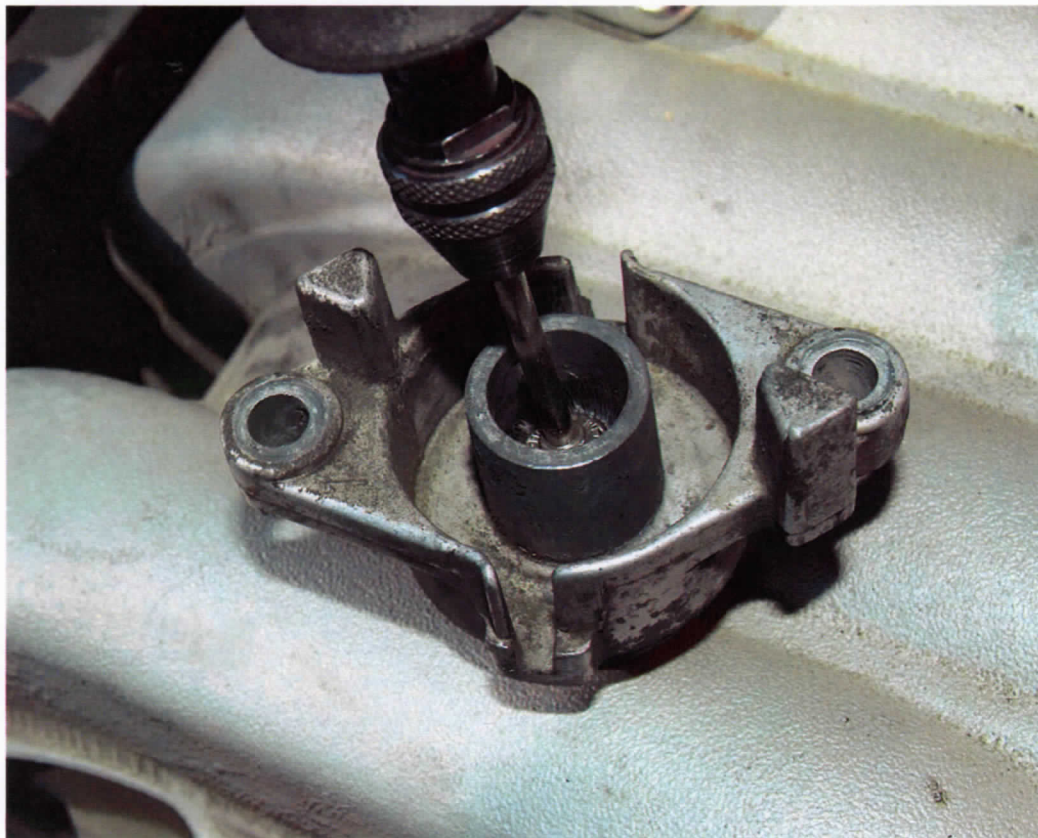


Notice the tiny lip seal inside casing...rides on raised inner lip at base of plastic spindle end. Be very careful not to damage this or outer ring to assure no vacuum leaks.



I found cleaning alone was NOT enough in the outer aluminum pivot casing. I used a soft (carbon steel) wire wheel on a Dremel, being careful NOT to damage the little lip seal. Do a little at a time and test fit it on the plastic spindle...snug, but easy turning on the spindle as far as you want to go. I used the wire brush just to the point of getting a shine and it was a perfect fit.



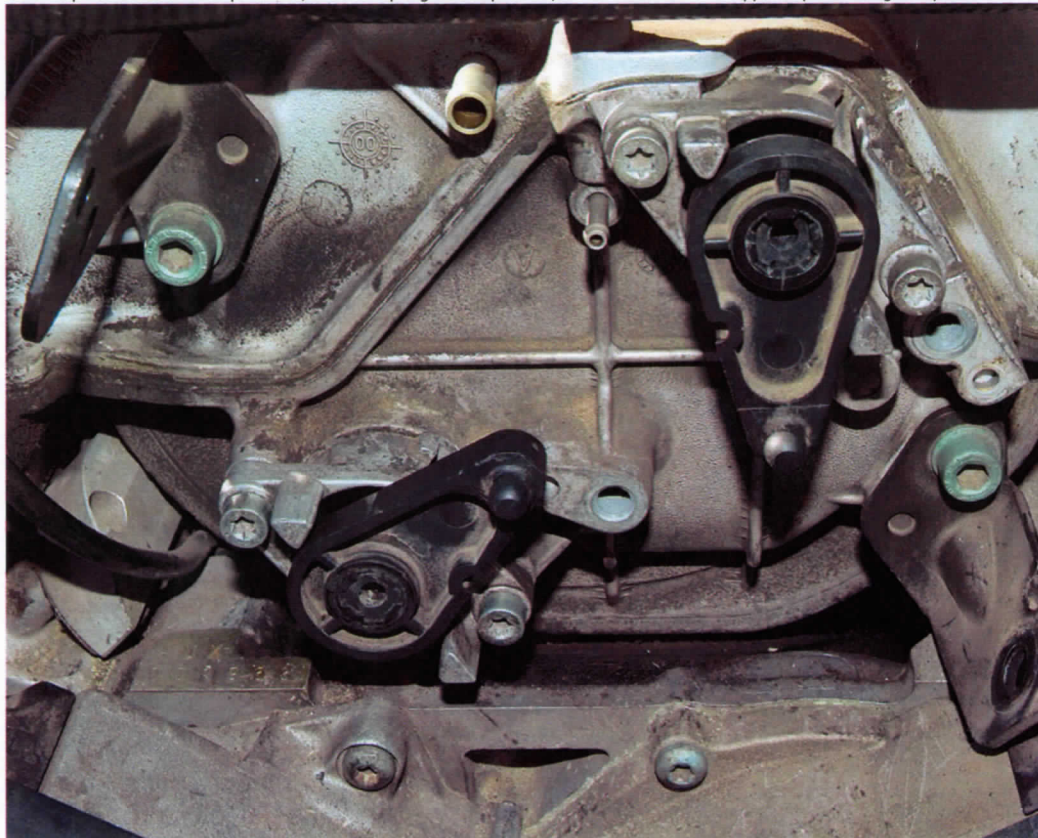


I coated the spindle end and inside of outer pivot race with a thin coat of silicone grease. Reassembly by fishing "flap rod" back into re pivot, put outer casing on spindle, torx bolts back in (taking care that small triangle stop is up).

Photo shows levers test fitted correctly with flaps free to fall into place under gravity.

Notice that the lower lever will be harder to tension spring far enough to fit casing onto spindle correctly.

Note reminder: You may have to assemble lower pivot/lever (including spring in place) before fishing upper "flap rod" into rear hole. If lower flap rod is out of inner pivot and/or out of spring loaded position, it "can" interfere with upper flap rod fitting into place.

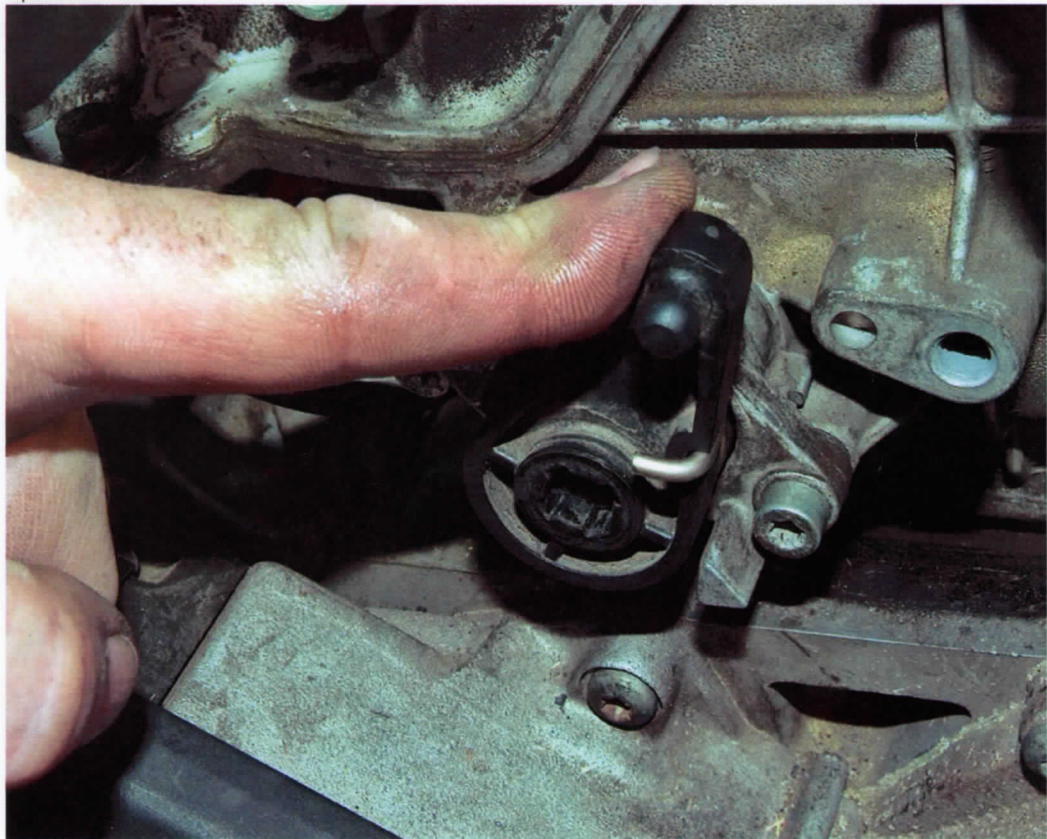


With spring on lever, fit end of spring into lower slot (out of view).



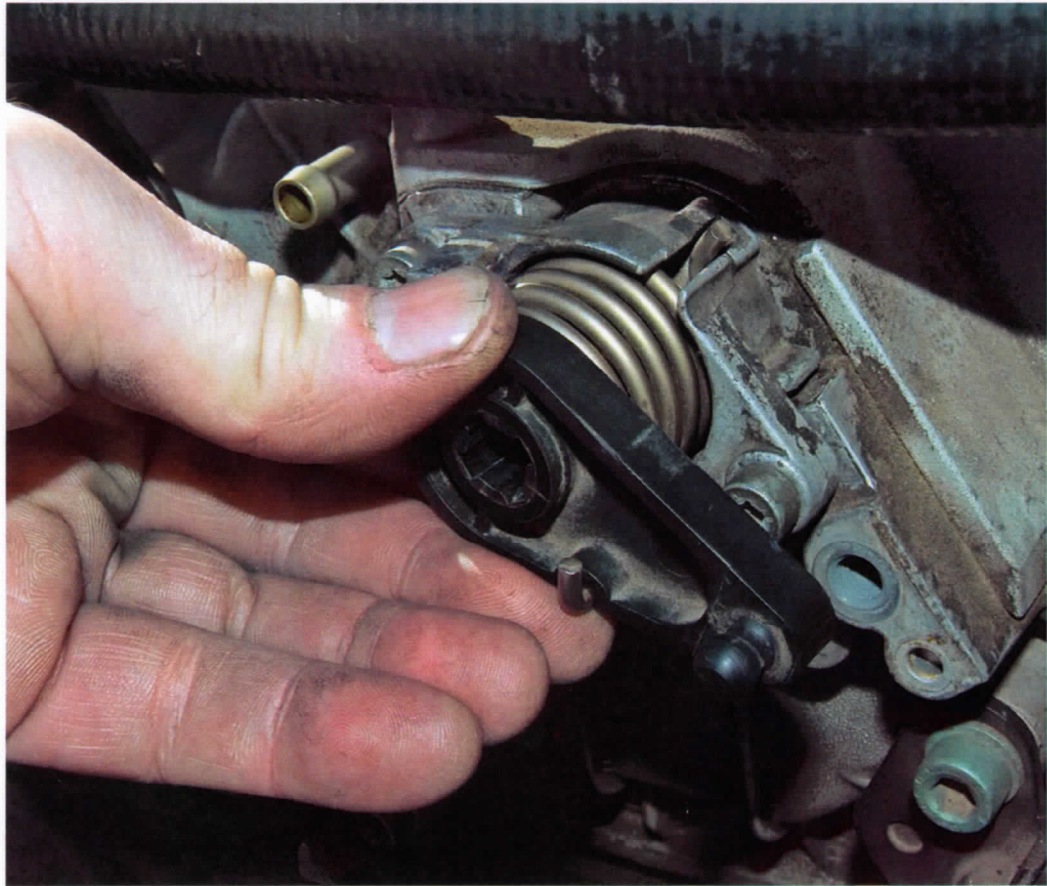


Not easy, but turn lever clockwise back against spring to this position so that lever engages spindle at it's proper "rest" point. Push on replace allen bolt.

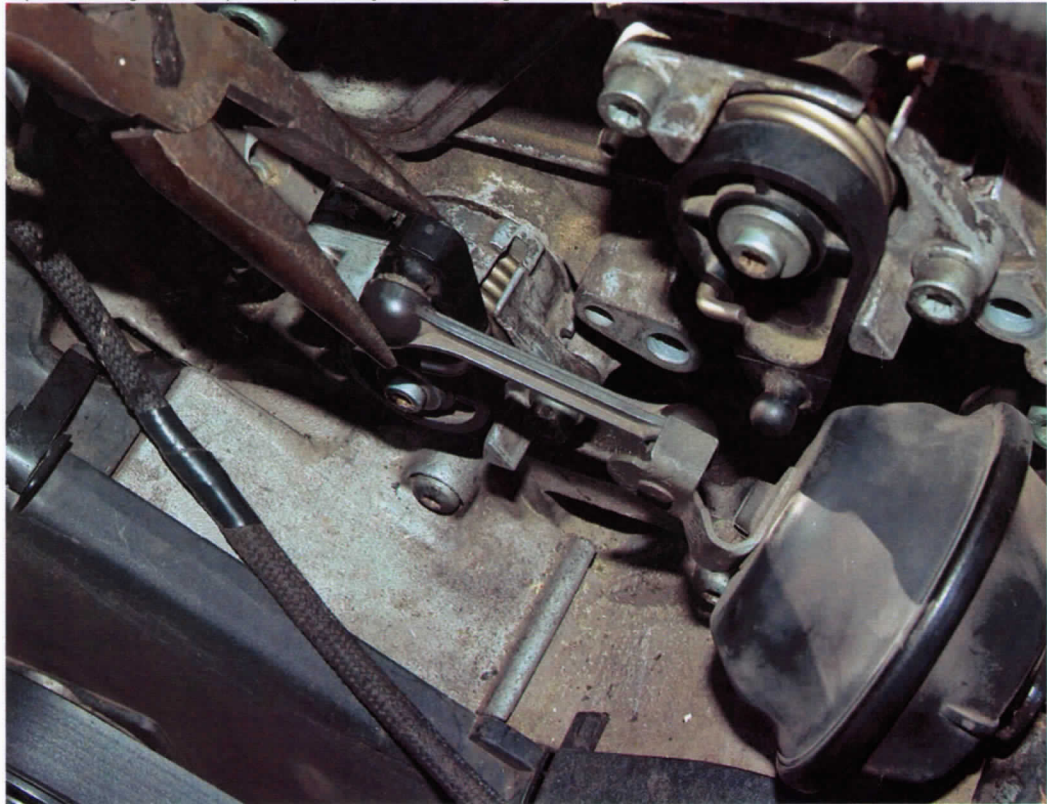


Upper lever is much easier to fit. Spring in slot, then turn clockwise just past lower triangle stop and it should slide onto spindle there. on and bolt.



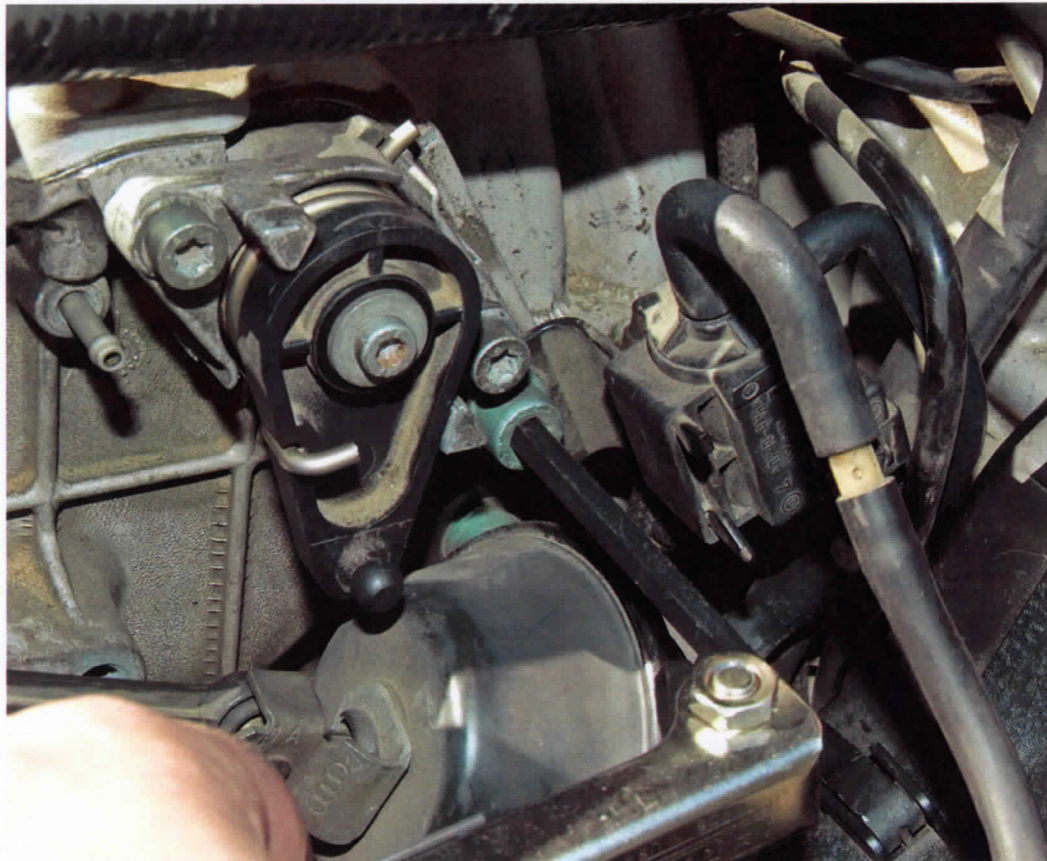


Replace lower right vacuum pod and press ball joint link back together.

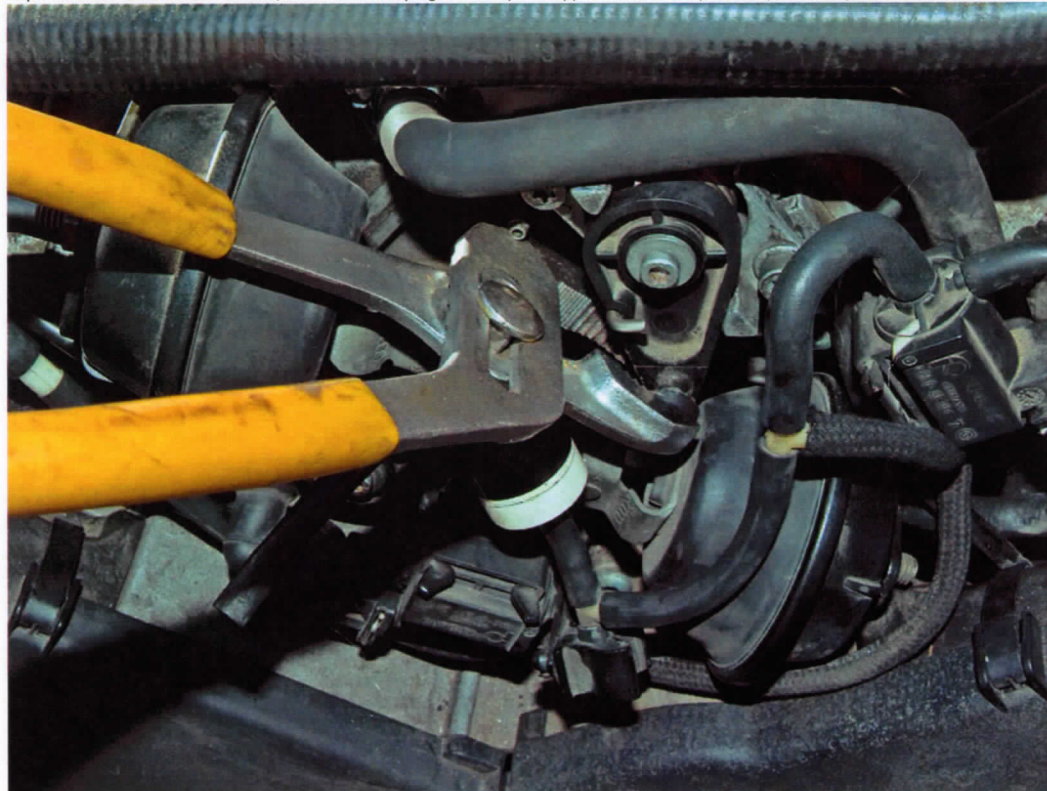


Replace upper right actuator valve w/hoses and elec plug.





Replace lower left actuator valve w/hoses and elec plug. Then replace upper left vacuum pod and press ball joint link back together.



Make sure all your hoses are routed and back on correctly (and snug)...elec plugs on valves, too.

Put your engine cover back on.

Start it up and take a drive...don't forget to close the hood 😊

Take it up to redline a few times and see what ya think.