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Forum VW Model-Specific Forums **Passat (B6)** Head Gasket R&R and DIY 3.6L BLV 2008 Passat



Results 1 to 9 of 9

### Thread: Head Gasket R&R and DIY 3.6L BLV 2008 Passat

Thread Tools Display

**nater**

Head Gasket R&R and DIY 3.6L BLV 2008 Passat

12-14-2015 12:35 PM

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#1

**Angry Turtle Administrator**



Join Date: Apr 10th, 2000  
 Posts: 87,055  
 Vehicles: 2008 3.6L Passat 4Mo,  
 98 O2M 3.0L VRT, '04 .:R32, 2010  
 Routan

This is the way I performed this, based on a little bit of [Bentley](#) and mostly on my prior experience with this engine/car. There may be better ways (or better chronology) to do things.  
 This is meant as a guide, I omitted certain procedures on purpose and maybe by accident.

#### Tips/notes to save hassle:

\*if you put the vehicle into "service position" everything (and I mean everything) is much easier. True service position is a bit of its own pita, requiring disconnecting trans cooler lines and discharging the AC, re-aiming the headlights, etc.  
 I decided to do this WITHOUT service position. As I type this I'm kicking myself just a little bit.  
 I suggest doing this in service position.

\*Random tool to buy before you start (trust me, you'll thank me later:

Go to [tools.vw.com](http://tools.vw.com) and search for [T10363](#)

\*It will help you keep the oddball oblong HPFP sprocket from moving every time you try to put the chain on. Without it this is a pita.  
[Camshaft](#) alignment tool. T10068A: it's about \$90 but there are cheaper ways to do it.

Here's what these two tools look like:

T10363



T10068A



\*Do a VCDS full scan, save the file for later (just in case).  
 OK, let's rock....

#### Disable Fuel Pump:

Go under passenger side rear seat, disconnect harness to the [fuel](#) pump.

The point of this is to save a dangerous situation of high pressure fuel coming out of [fuel](#) lines at the HPFP and [fuel](#) rail (you'll need to disconnect). Then start and run the car until it stalls out (no more [fuel](#)).

#### Disconnect battery

2 piece intake manifold:

Remove (7) torx 30 bolts. 5 bolts holding upper to lower manifold.

2 bolts towards throttle body (left and right side of intake runners)

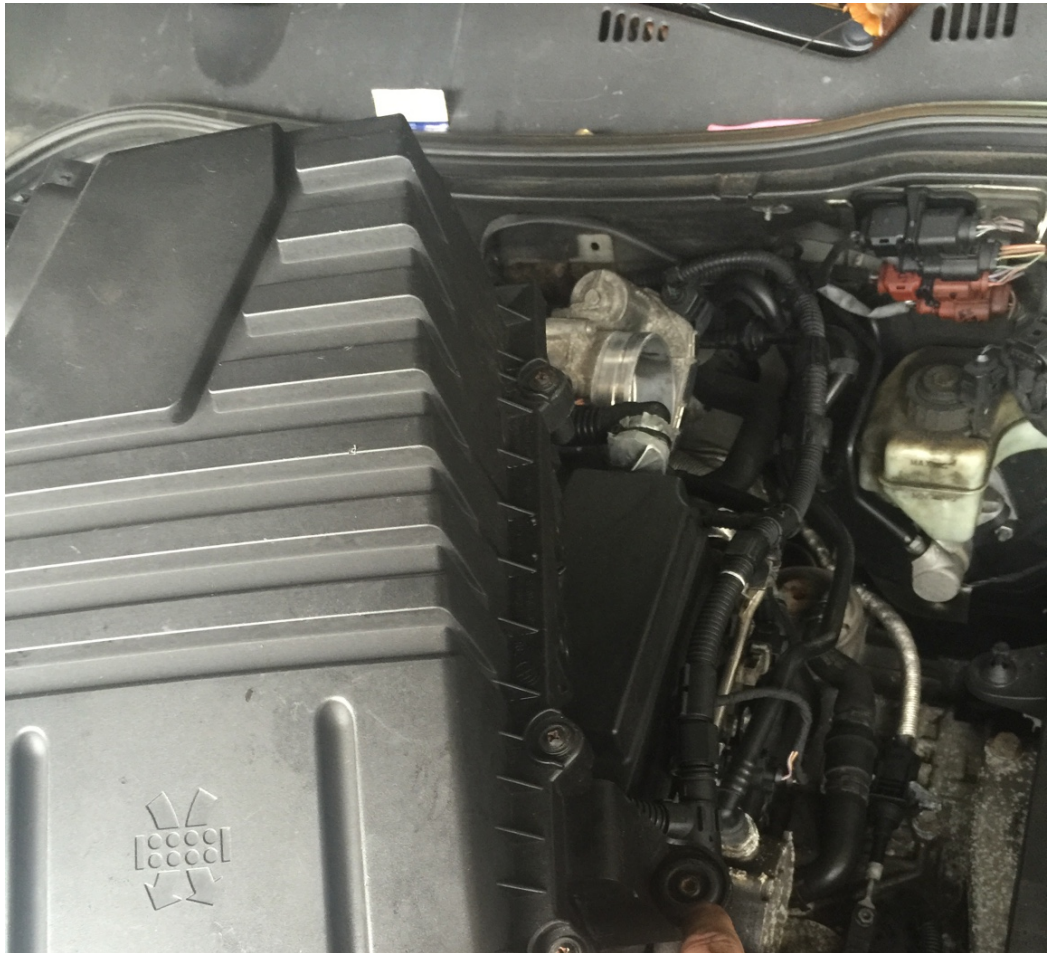
Remove (1) bolt (10 mm 12-point socket) that secures rear of manifold.



Remove air box:

One (5mm Allen) bolt seen in right lower part of pic (pointing to) is what holds it in.

Don't forget to disconnect [MAF sensor](#) (simple flat head in plug with a light turn to release plug+ pull) and loosen clamp that holds intake tube to TB.



×

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Close

A close-up photograph of a person's hand reaching into the engine compartment, likely to check or adjust something. The hand is positioned near the bottom right of the engine area, with the fingers extended. The background shows the engine components and the air filter housing.

Opens things up a bit:





AAN Ad

2017 Volkswagen Passat



Close



Let's get this thing off:  
Quick video on how to remove these plugs from almost every connector in here:

# Sorry

This video does not exist.

And pull on it and it's off:





Don't forget to pop out the harness by simply pulling up (see the Christmas tree fasteners underneath?):



Before pulling up on the manifold to remove you'll need to carefully remove the 2 vacuum lines in the rear of it. One (passenger side) will come off by pulling the drivers side one is a quick connect-so don't break it! Pull while pressing in the white part (see pic):





Remove, and here's a peek at the 2 larger [gaskets](#) on the lower manifold (orange) and the 4 smaller ones on the upper.





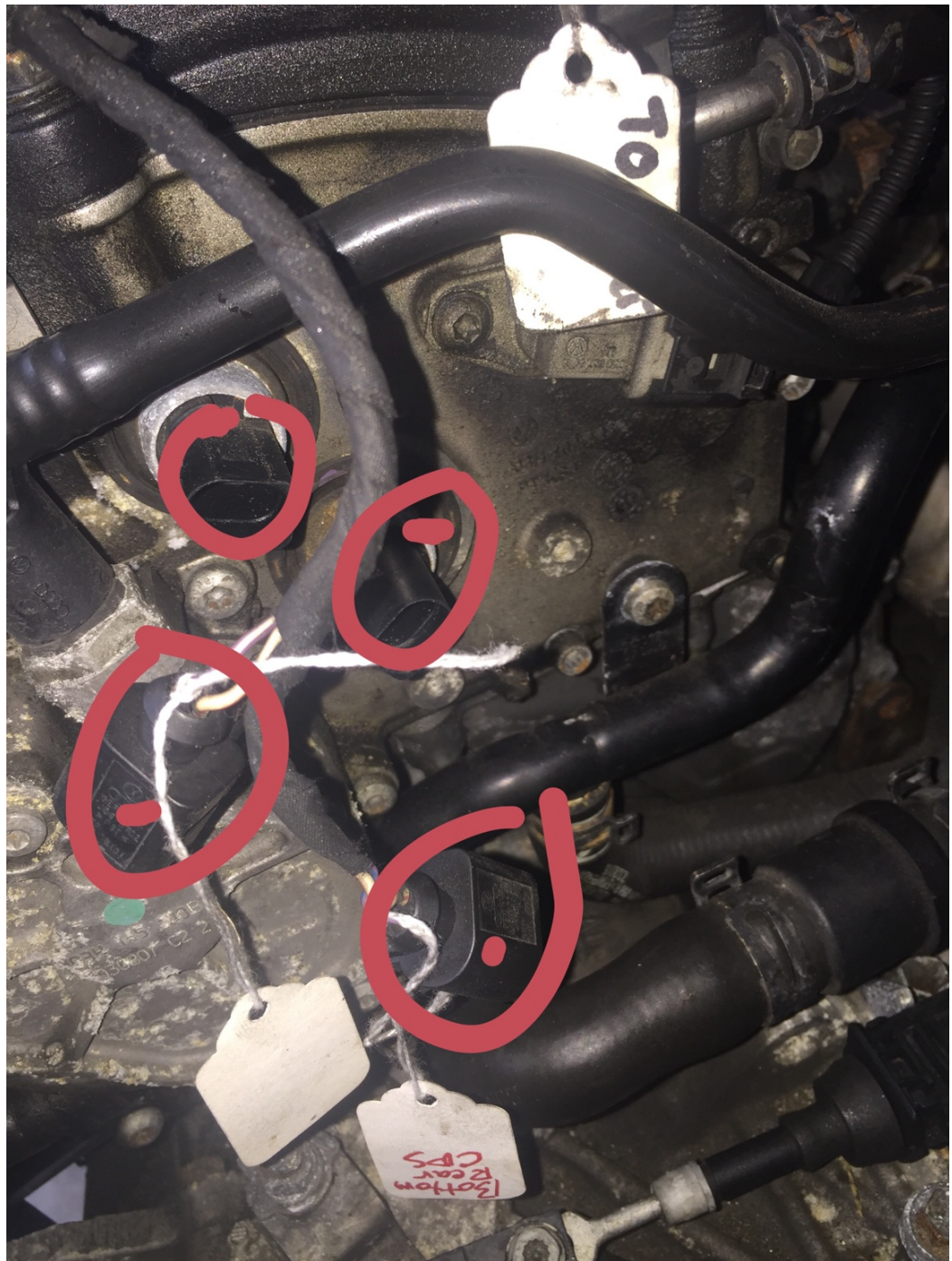


Start disconnecting and I advise you mark some things. I tag everything with a location or plug color. Keep in mind the 2 [cam sensors](#) share the exact plug so they can be interchanged and will cause driveability issues.  
Fuel line:



CPS plugs:





Out of habit I stuffed the intake to keep crap from getting inside, even though I'm pulling the head.  
Don't forget to remove the dipstick, where it attaches to the intake-I'm trying to remove the head with the intake on...

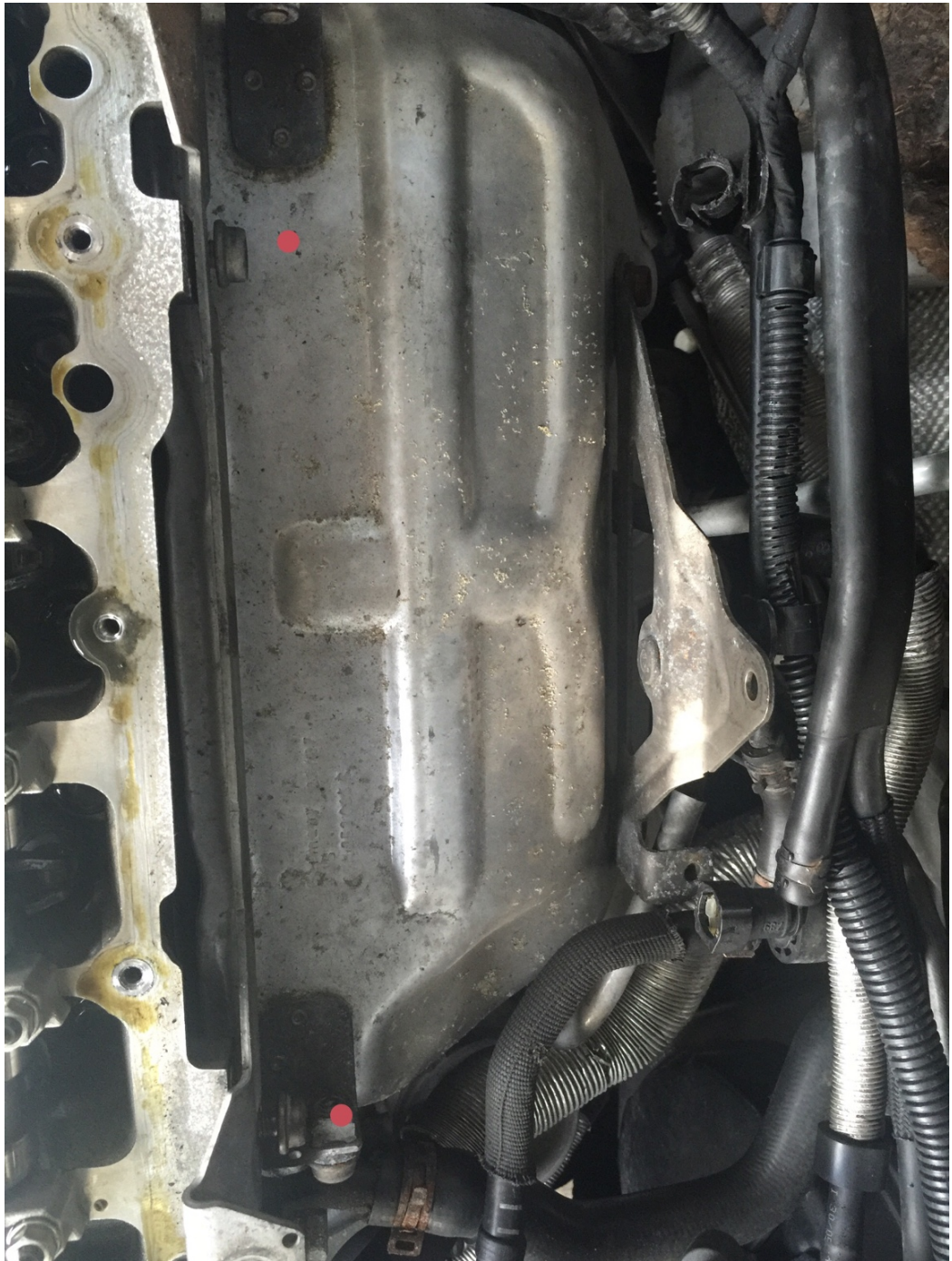


Remove your valve cover (14 screws, 13 are 10mm hex and one is a t-30 torx).





Remove that heat shield using your trusty [10mm 12pt socket](#). There are 2 bolts marked with red dots (sorry about the orientation):



Let's get the car to TDC, shall we?

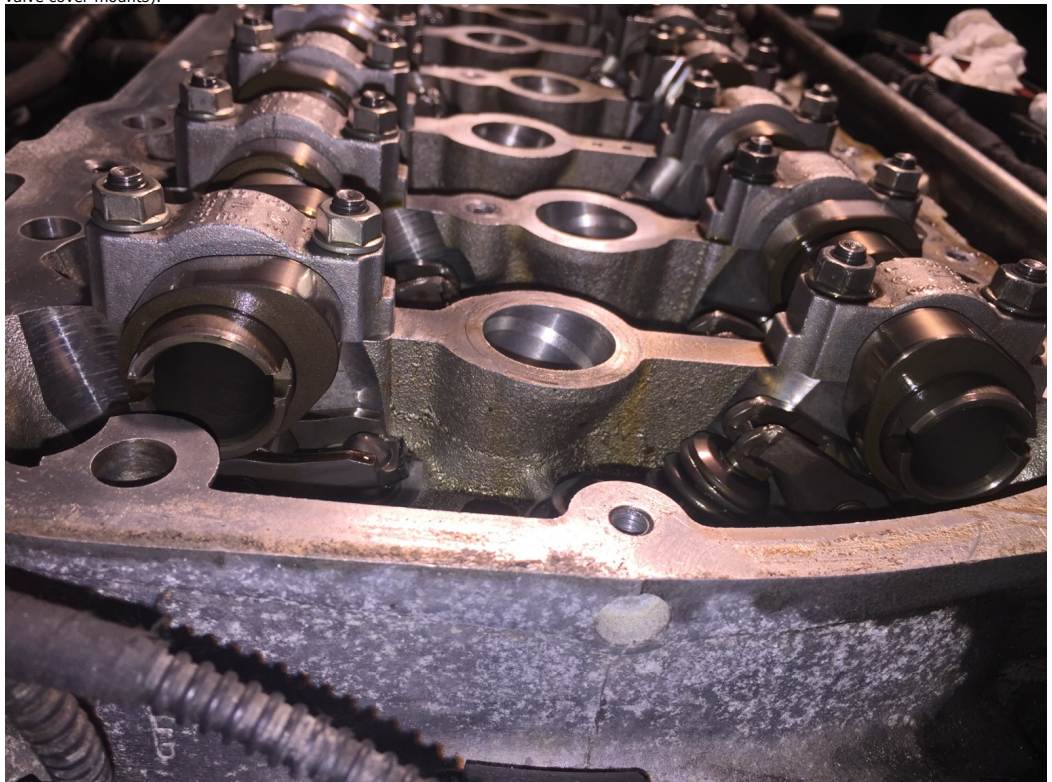
Turn [engine](#) in the direction of normal operation. I believe this is clockwise, which is the way I turned it-using a ratchet and 27mm socket on the [crank pulley](#). Let the notch on the pulley meet the line on the block (see red markings):





Now, you must make sure the cams are where they need to be. Two ways to do this (both must be true):

- 1) lobes on cams must point towards each other,
- 2) That a flat tool (don't laugh-I lost mine and I used a saw to check this) can fit into the slots EVEN/FLAT with the top of head (where valve cover mounts).







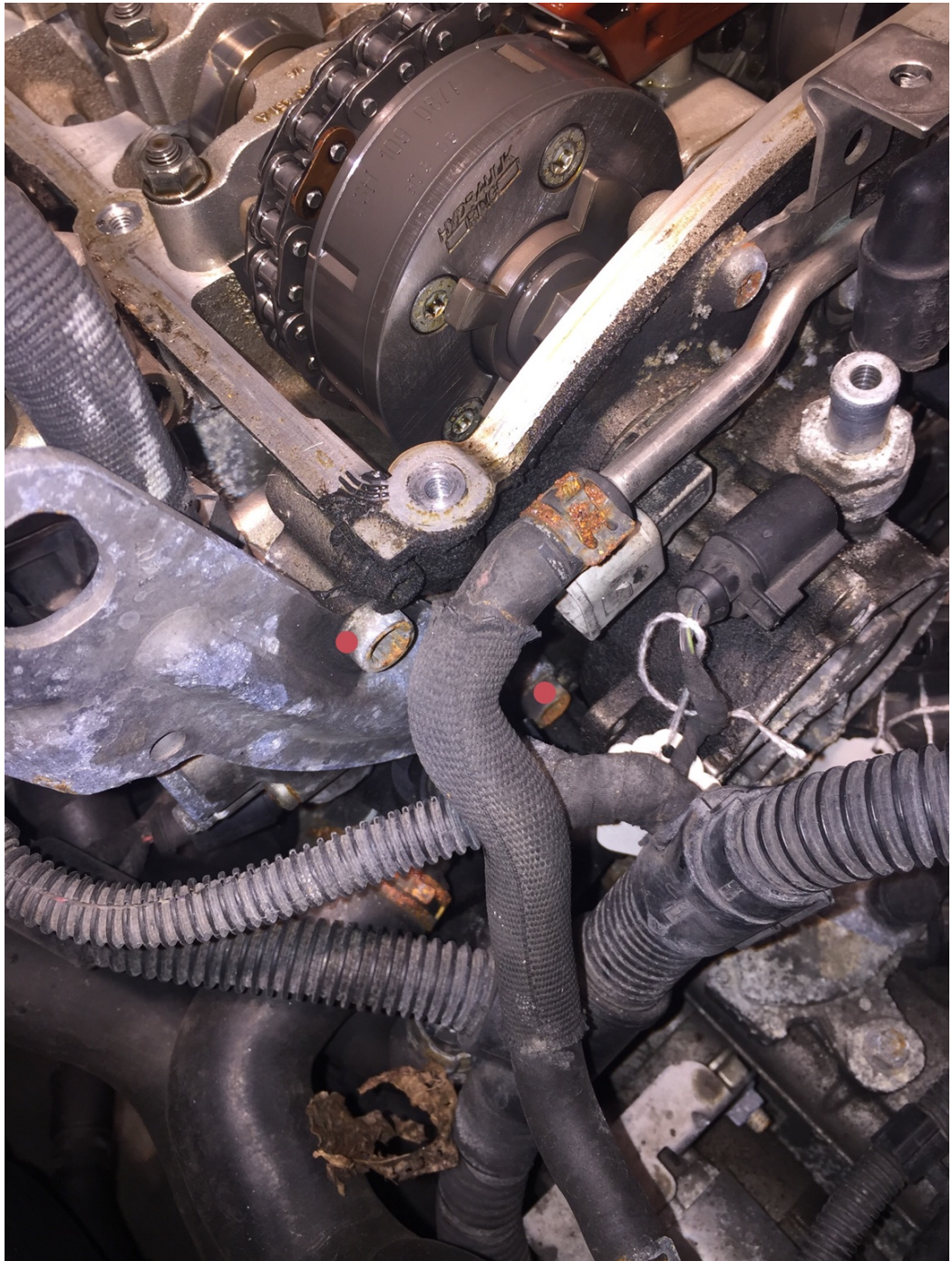
Ideally, get a much stronger flat piece of steel that will not bend if something pops free. The cams cannot move-it's not the end of the world-but save hassle and keep everything where it's at.

Now,

Let's remove the HPFP:

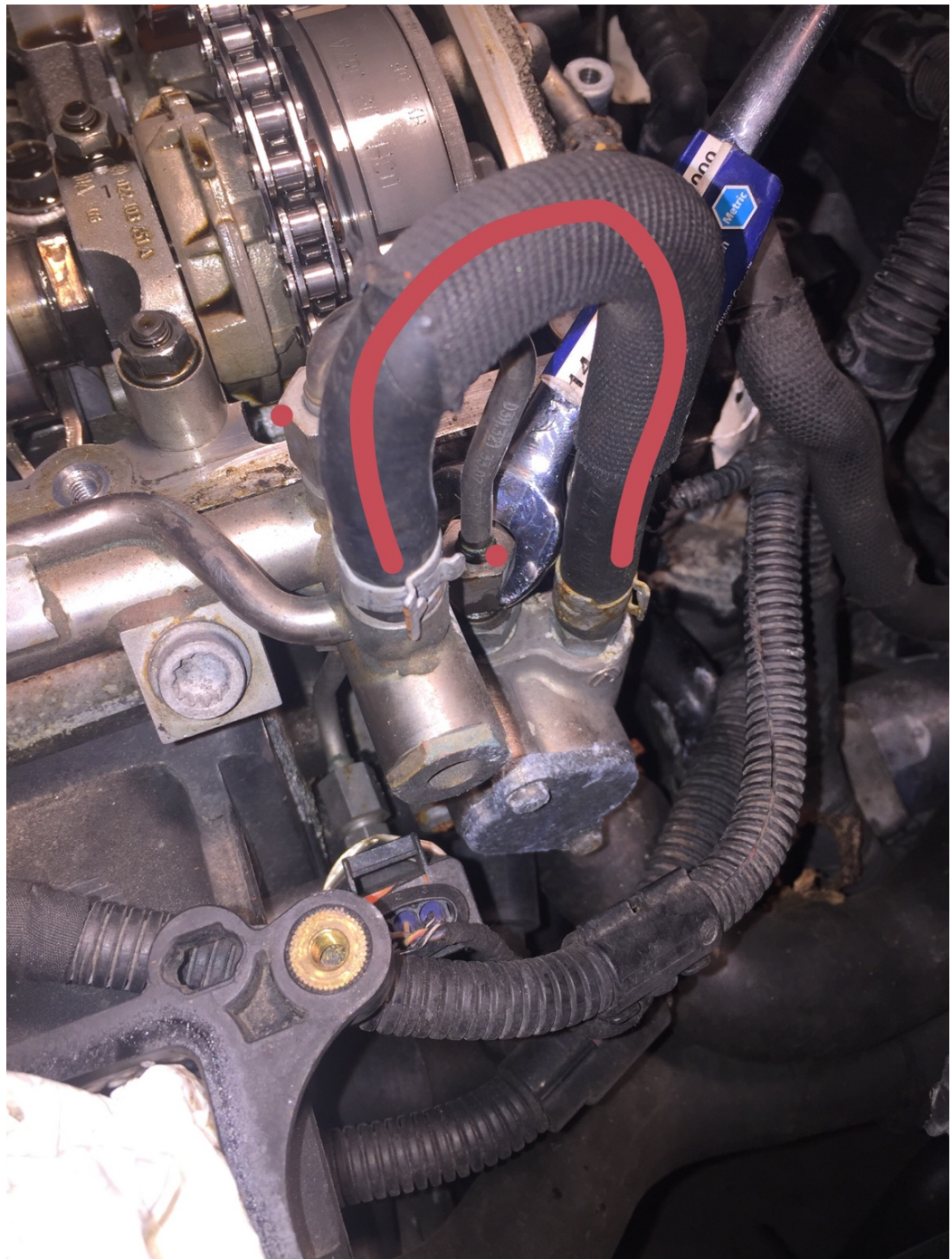
First you MUST remove the head bracket using a 10mm 12pt. There are 2 bolts holding it to the head: see the red dots:





Now,  
Get that weird 90° rubber low pressure fuel line off (replace it per Bentley—they say the barbed fitting damages it while pulling it off—don't mess with fuel!). Line marked:





Also note (ABOVE PIC) the two red dots. Use a 14mm open end wrench and loosen those nuts. It's a tight fit but you only need an 1/8th turn to break them free then the rest is done with your fingers.  
Like so:



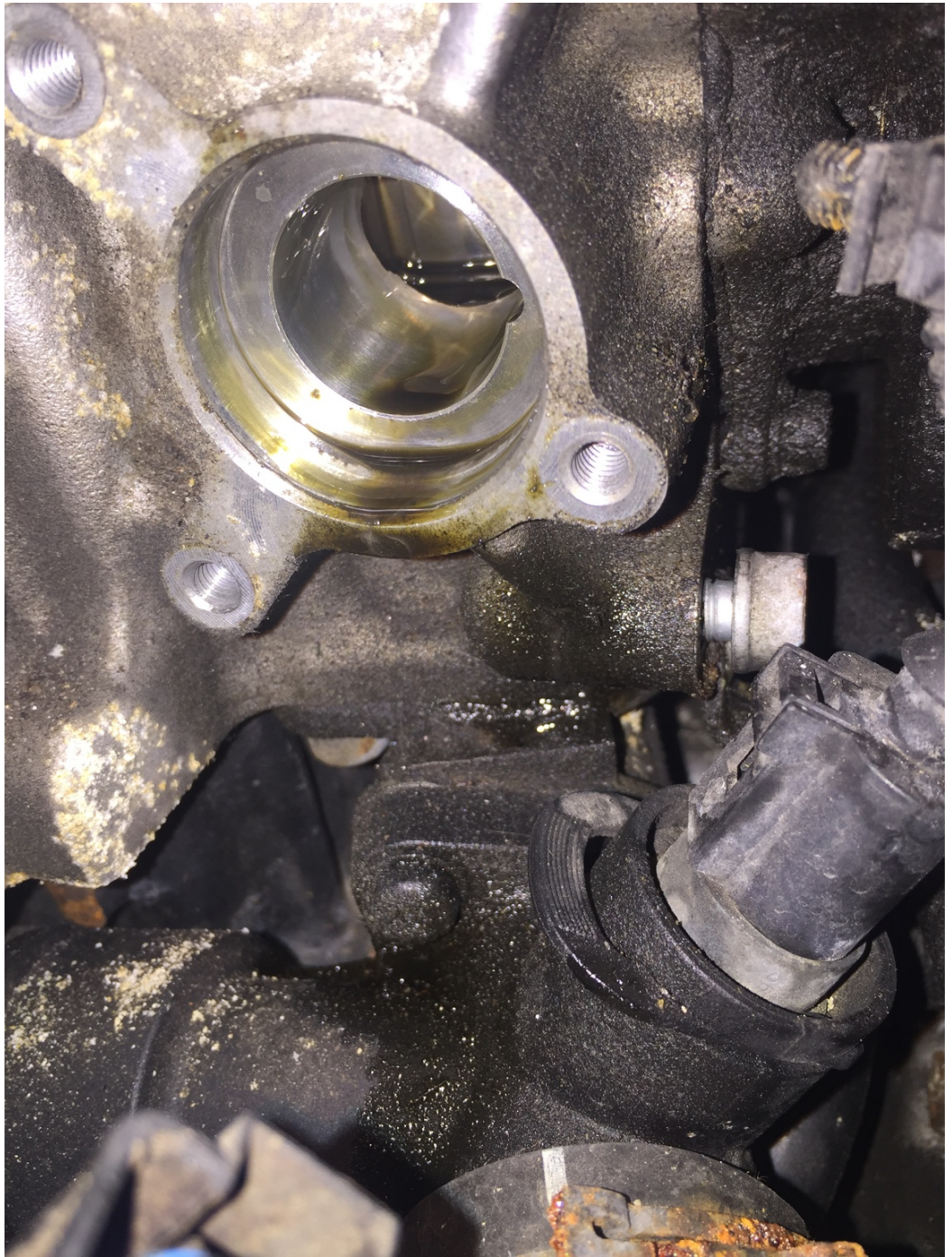


Let's remove the pump:  
You'll need a T27 torx. There are 3, marked by the Red dots. Sorry, no pic while in car but you get the idea.



Pull it straight out. A little wiggle so it pulls away from the head.  
Here's what's left:  
And be careful to not allow the plunger to fall out (it's not pictured here-I already removed it):



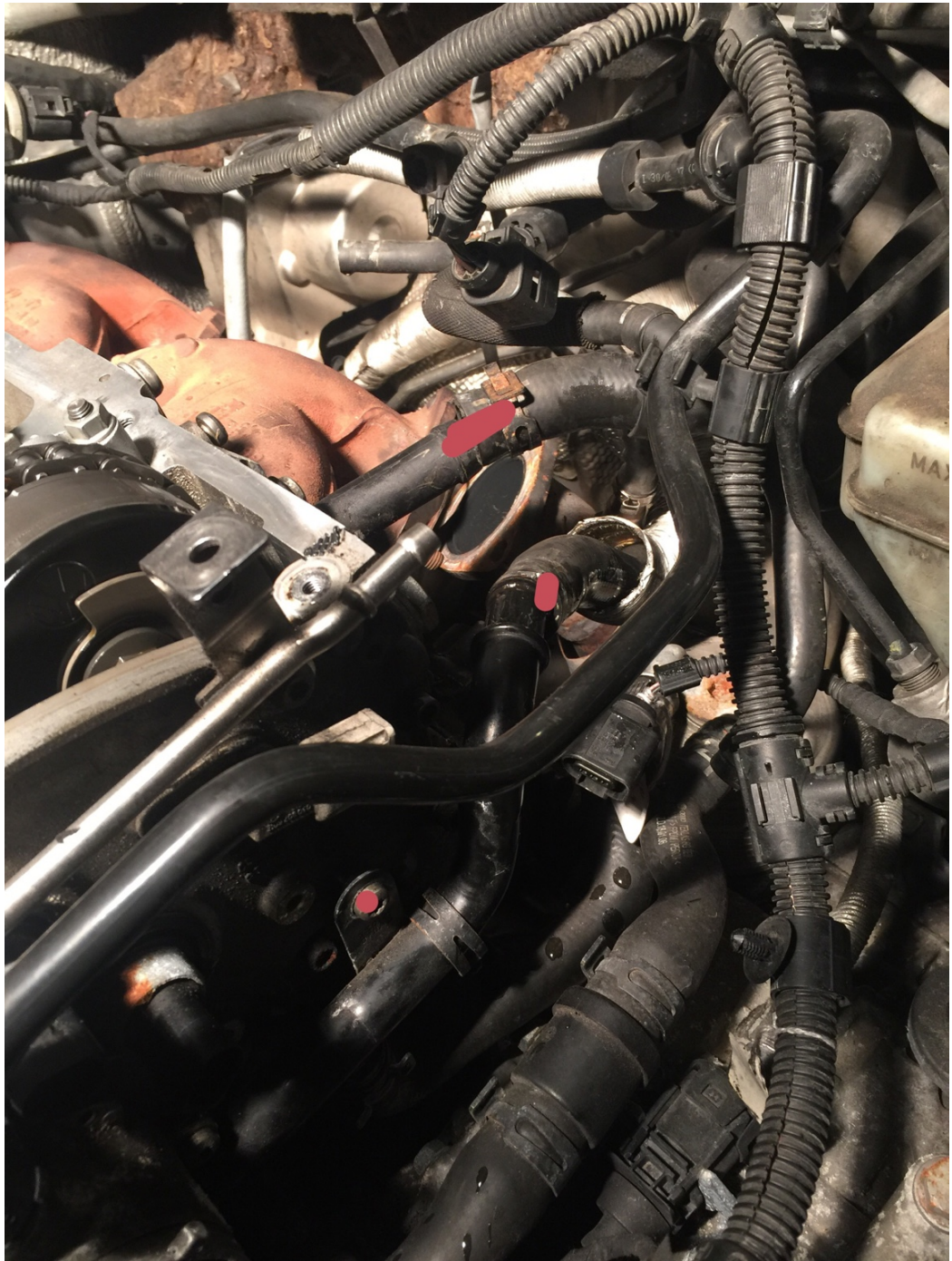


Here is the plunger:



You need to get the side [timing cover](#) off now:  
Disconnect coolant hoses from the aluminum bypass, miscellaneous hoses here and there.  
See the 3 marks:





One is a T30 torx bolt that holds a water pipe to the head. The other two are hoses. You should replace them because they are tough to get at later. They are your two [heater](#) core hoses  
If your car has the vacuum pump:



Remove it using just 3 T30 bolts. NOTE:  
Uppermost bolt is the shortest.  
Here are the locations of bolts (red):



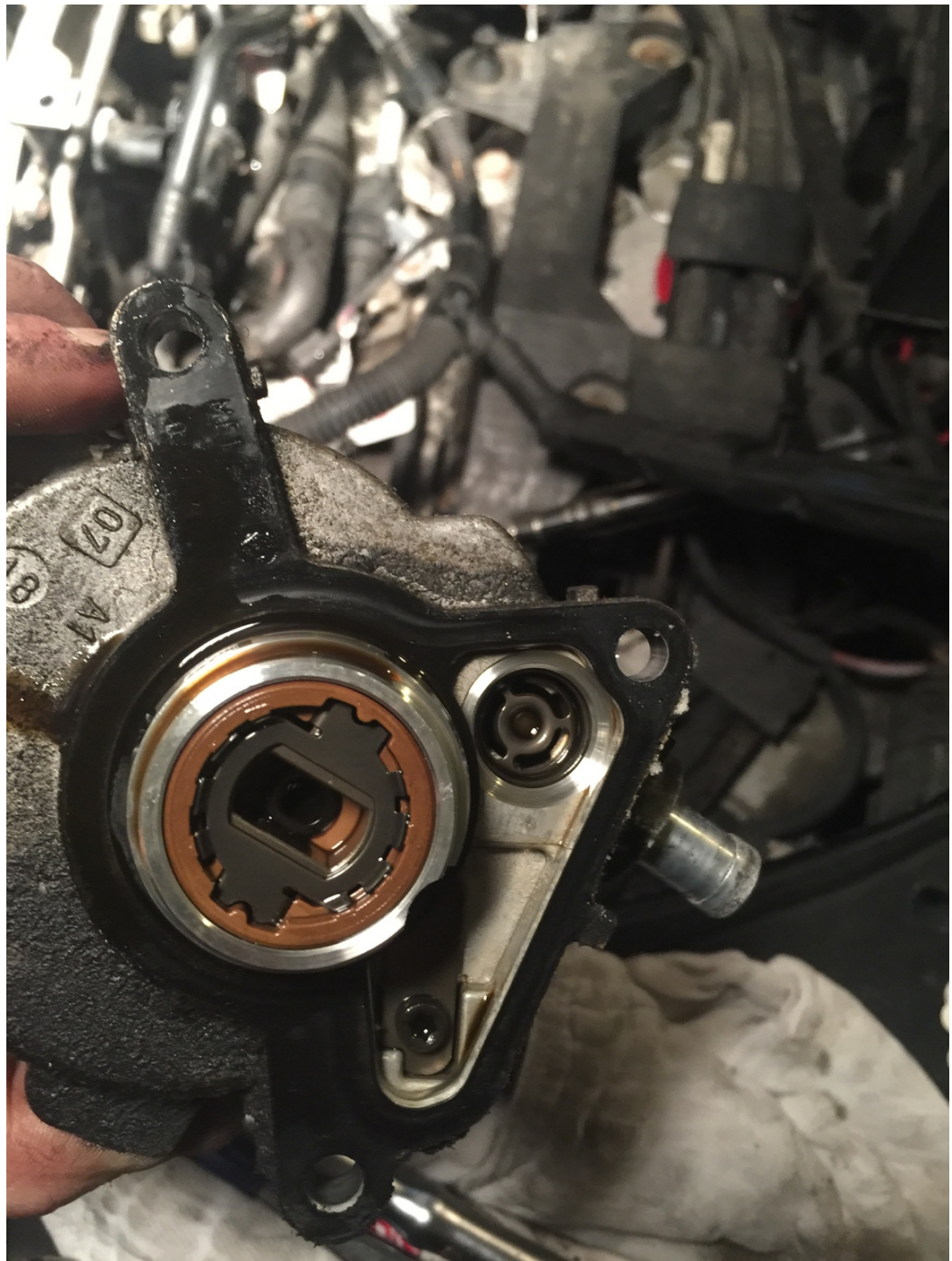


And the void left:



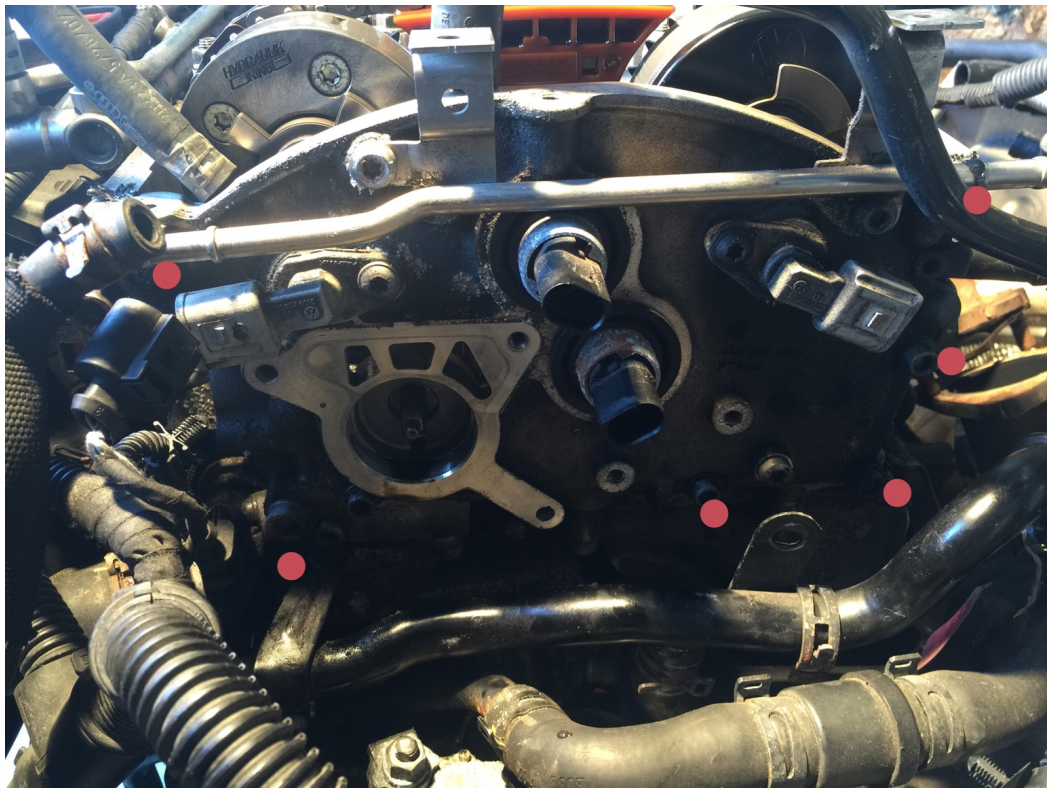
Underside of vacuum pump:





Now remove the side [timing cover](#).

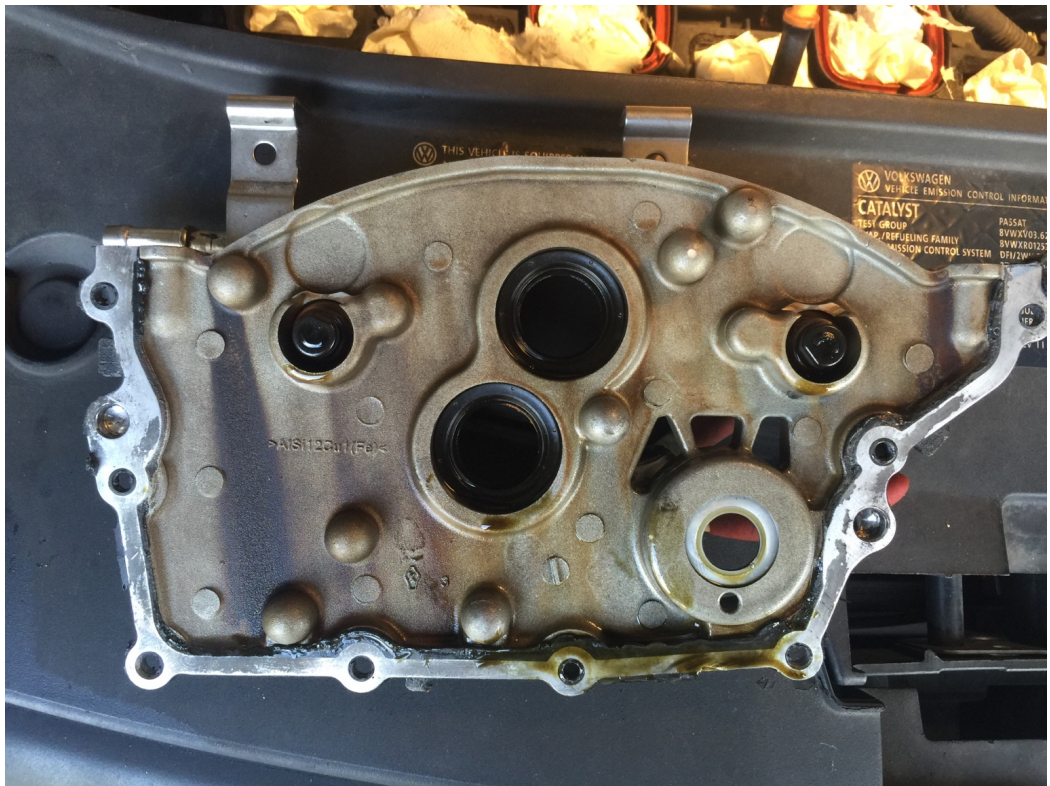
Use your 8mm 12pt and remove upper timing cover bolts. There are 6. Marked in red.



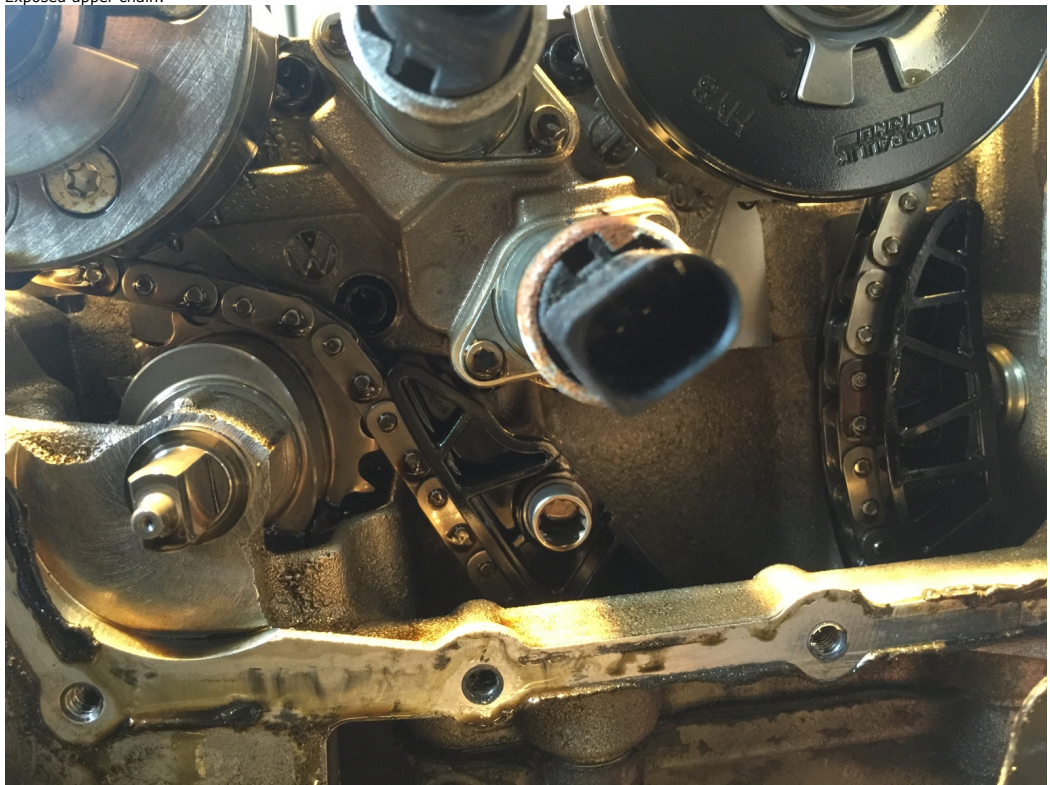
Cover, off:





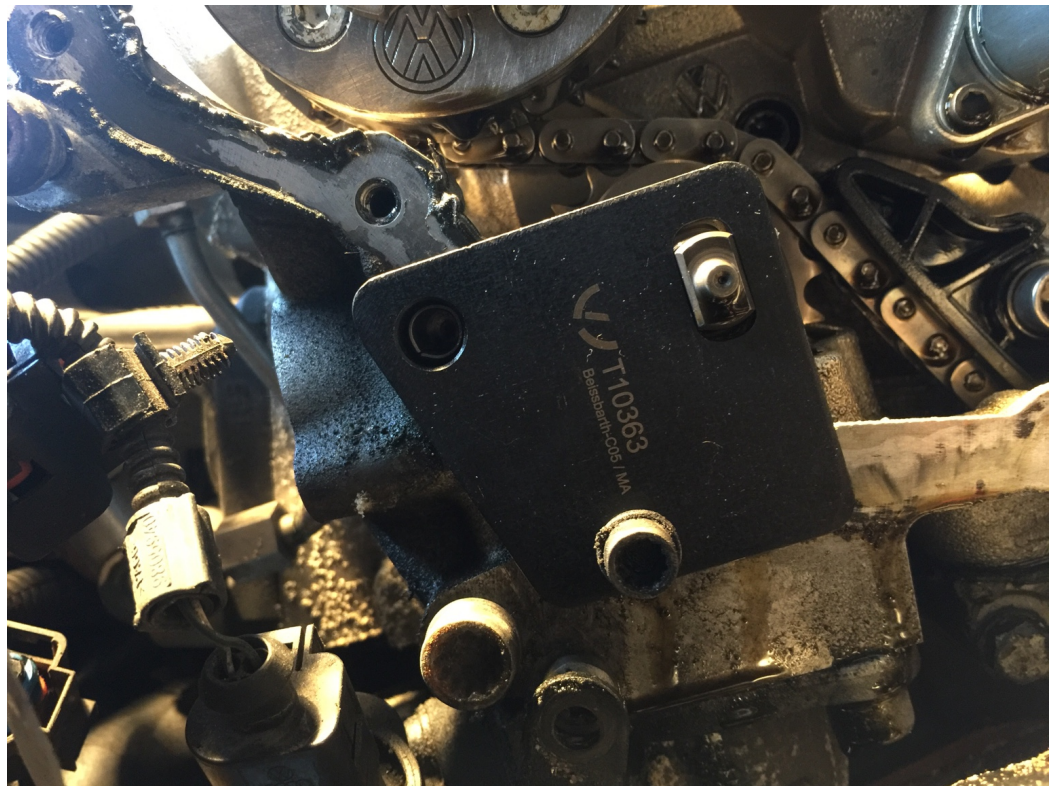


Exposed upper chain:

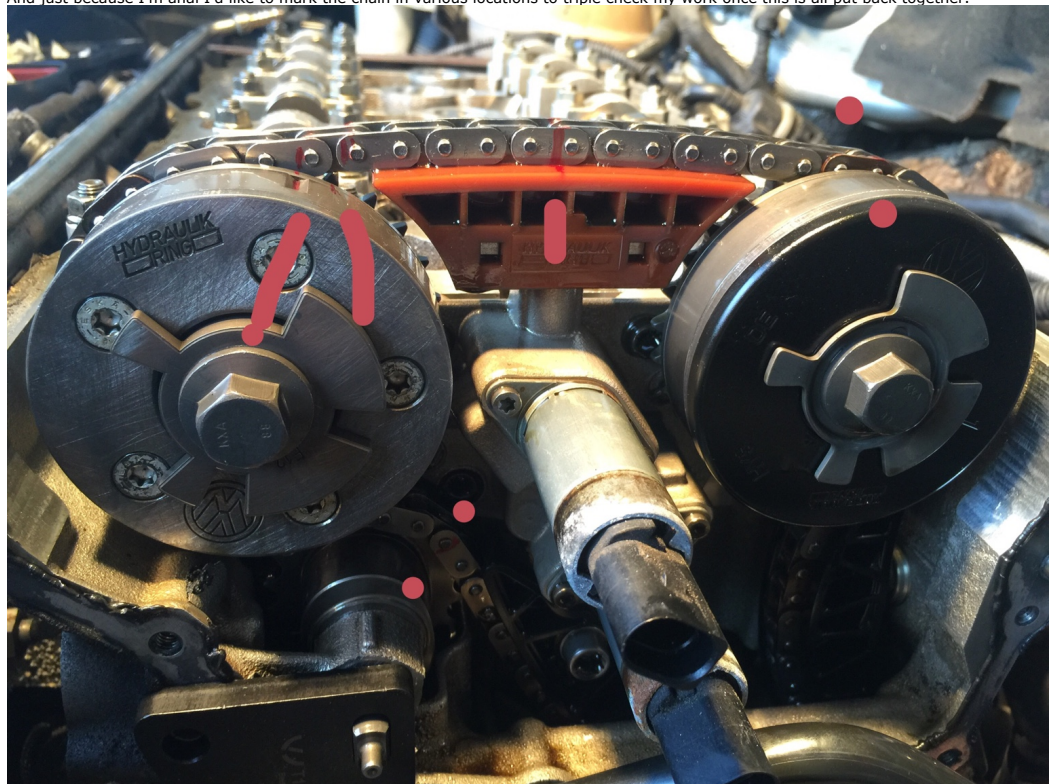


Sample of my [T10363](#) attached. Well worth it's weight in gold!





. It seems this tool will only fit in like this if the [engine](#) is at TDC and the HPFP sprocket is installed correctly. It's keyed, so with the keying, setting the cams/crank to TDC PLUS this tool you'll have no worries!  
And just because I'm anal I'd like to mark the chain in various locations to triple check my work once this is all put back together.

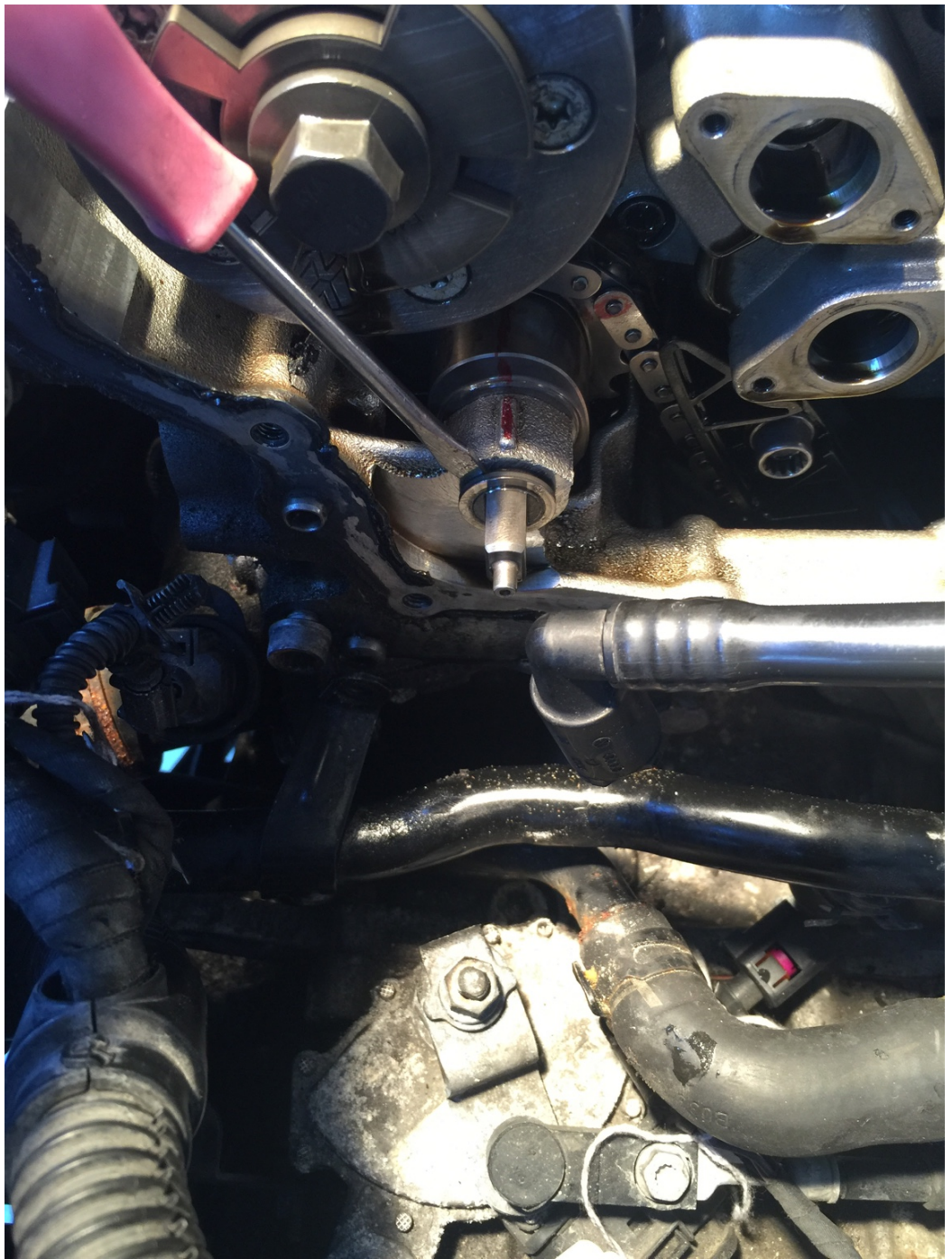


Remove your rear tensioner bolt, 27mm at rear of head.  
You'll want to remove this outlet housing first:



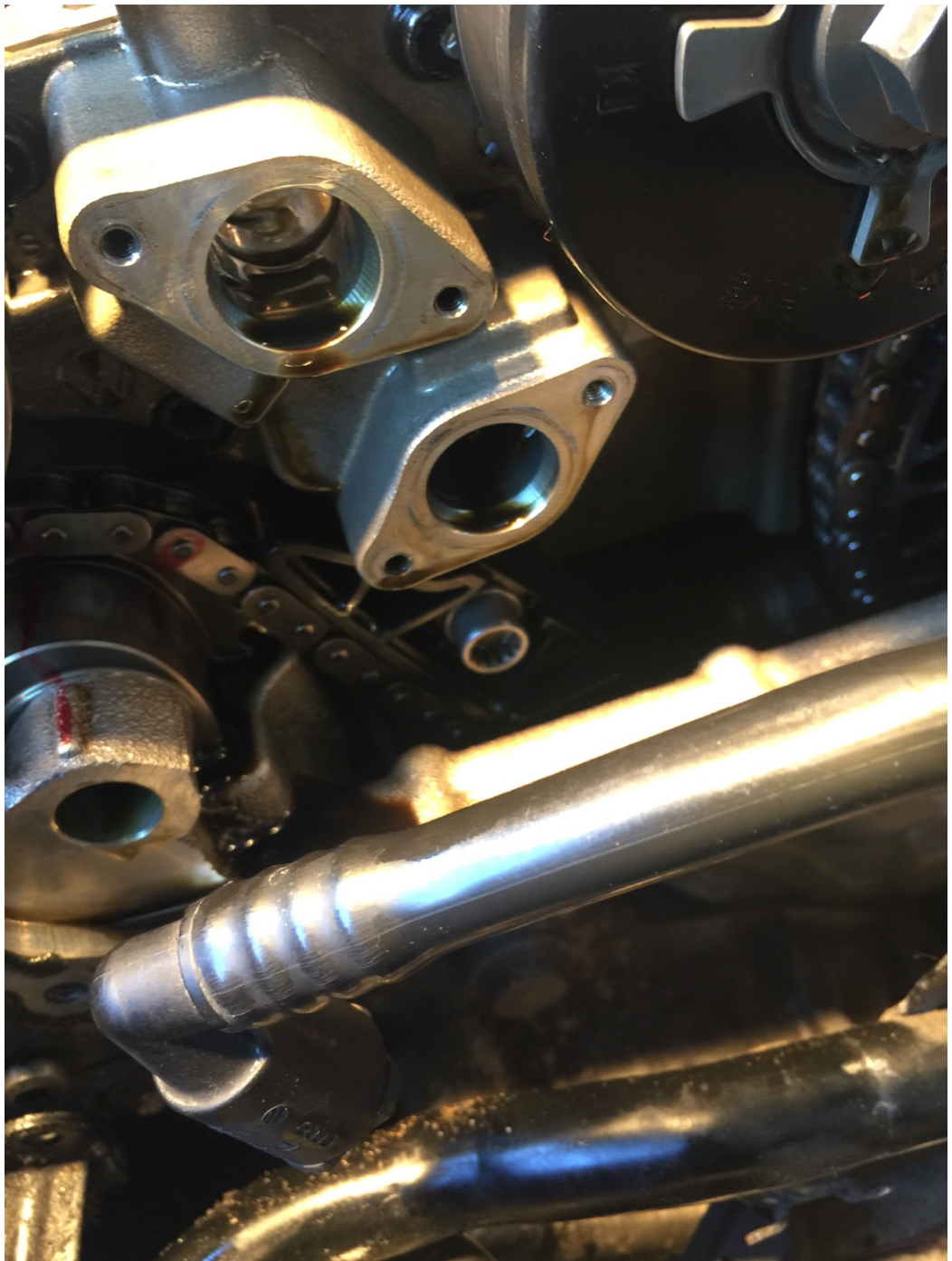


Bentley wants you to remove the HPFP drive, presumably so you can slide the sprocket out of the way, so you can get some chain-slack to allow you to get the camshaft adjusters/sprockets off the cams.  
Pry carefully on the drive to pull it out of the head:



Out:



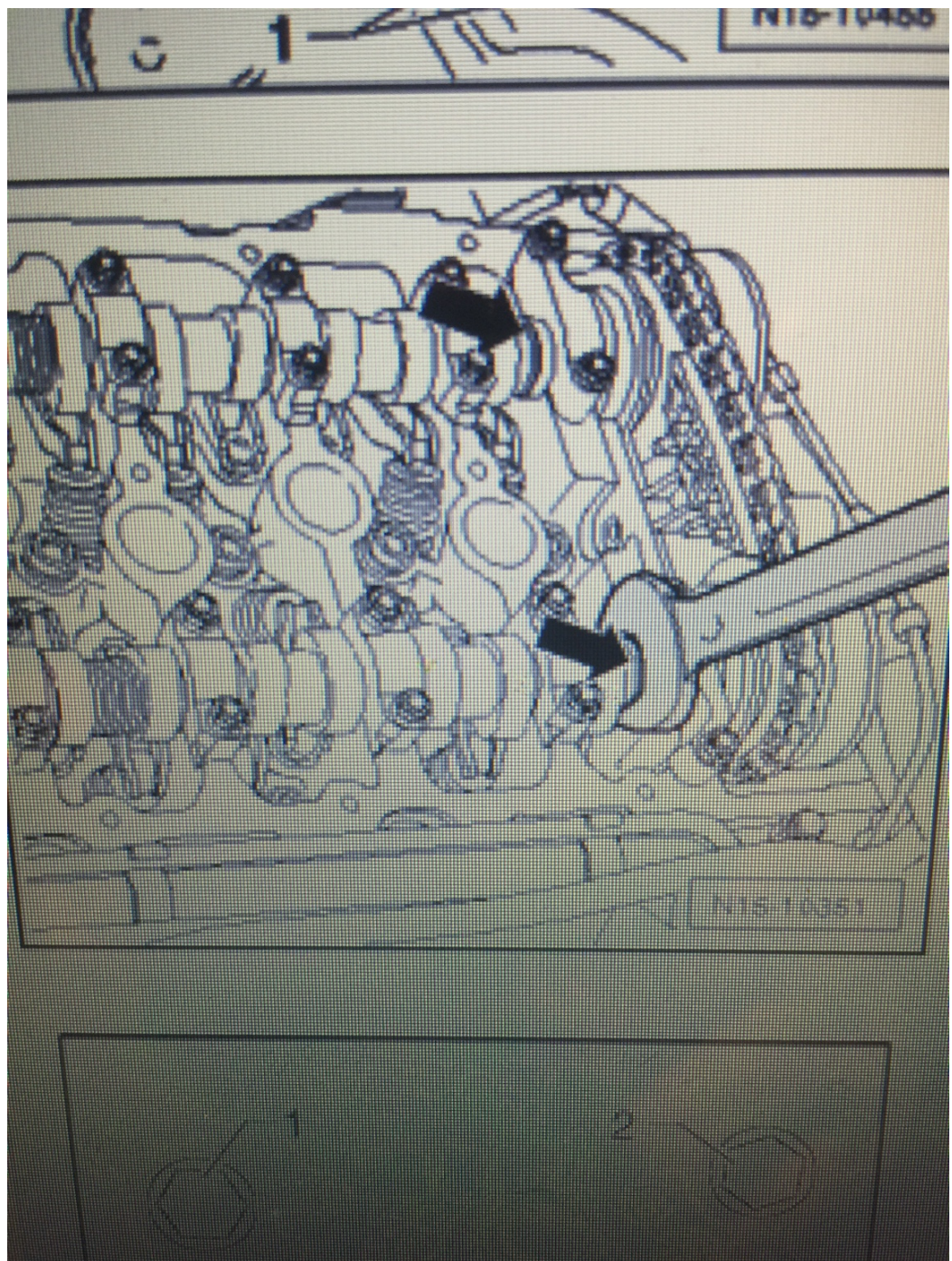


You may notice the cam phasers (think that's what they are called) removed. They don't need to be.

Let's get these cam sprockets off!

Use a 27mm open ended wrench to counter-hold the cam while loosening the 15mm bolt on the cam adjuster/sprocket. I didn't take a pic of that but here's an illustration from [Bentley](#):



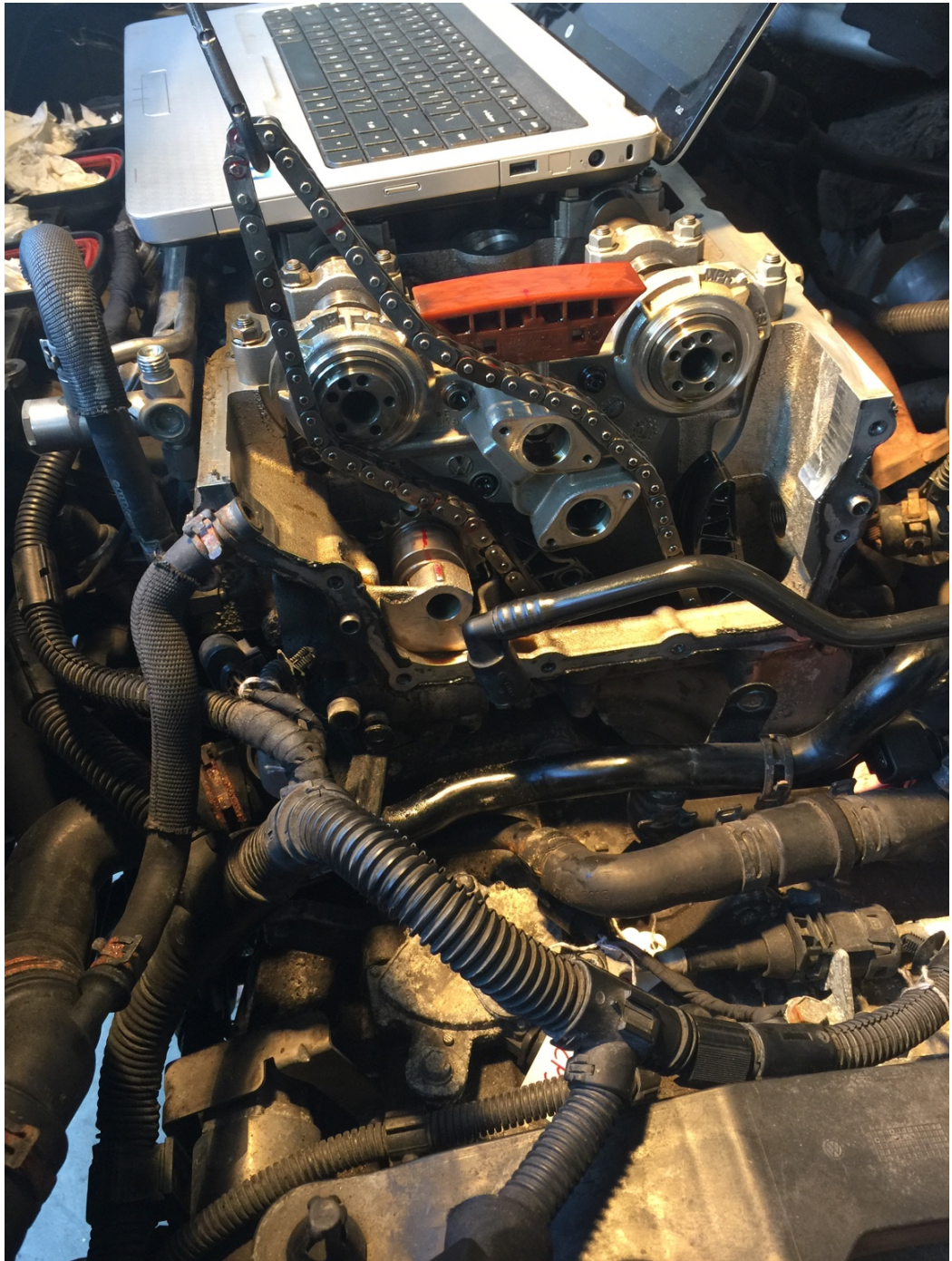


And it's off:





I pulled the slack out of the chain because remember I put marks on the chains, relative to the sprockets. I'd rather not have the chain skip a tooth down below...would make things a little more hard.

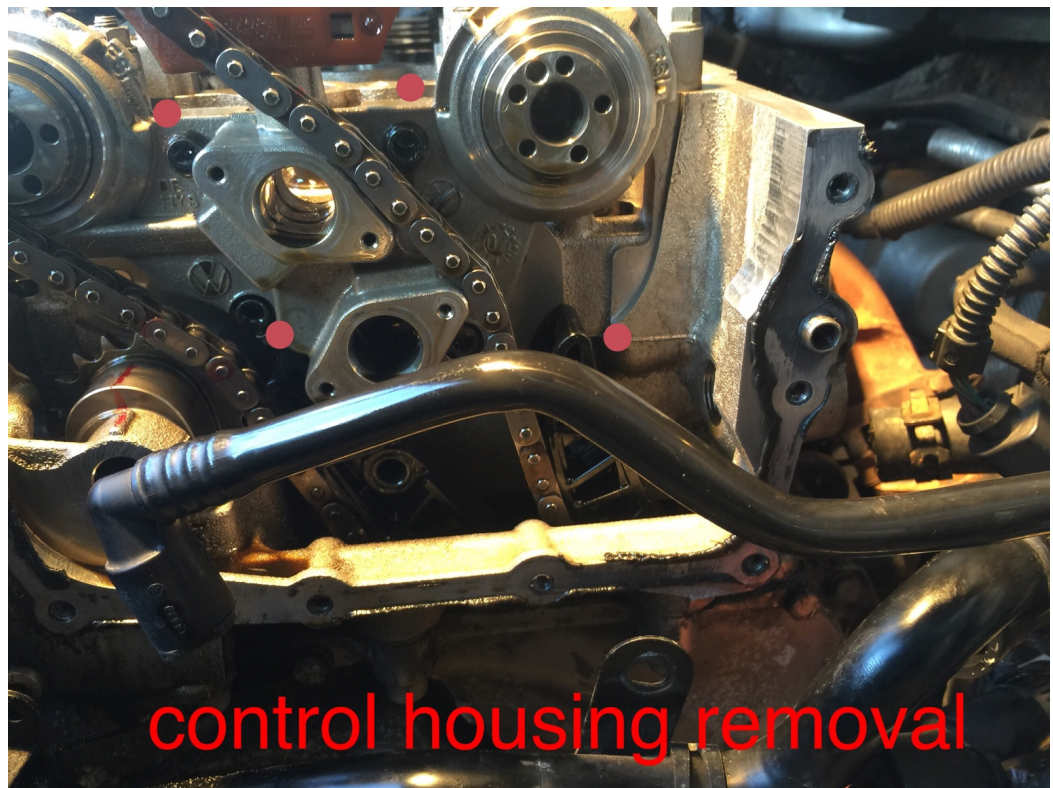


But when I pull the head up how will I clear the bungee cord? Use another steady hand or do what I did...zip tie the chains together-tight on the chain guide. Ingenious!





Remove control housing:  
DONT DROP ANY BOLTS INTO THE LOWER COVER OR TRANS WILL NEED TO COME OUT!!! Steady hands, people!



control housing removal





Without the sprockets on the cams cover them so no debris gets in. Ziplock bags with zip ties work great!



Oh yea...

Disconnect the water outlet housing from the head with the 3 bolts (I marked the locations in red).

Loosen the head bolts:

Loosen the 20 bolts from outside to inside:

3 7 13 19 14 8 1 rear bolts  
5 11 17 20 16 10 4 center bolts  
9 12 18 15 6 2 front bolts

TWO **HIDDEN BOLTS** (no picture): remove the 2 Allen bolts that attach the lower **timing cover** to the head. They are not visible from the top, and they go in upside down. The head won't come off without removing these.

Loosen #1 first, #20 last. You get the picture.

Start to lift the head from the block.

Since you didn't remove the front clip (service position) you'll need to remove the lower manifold now.

Reason you need to remove the lower manifold is just so you can pull the plugs off the injectors. The plugs don't have room to be pulled out with the lower manifold attached.

Start lifting the head with a hoist, get access to lower manifold bolts (and injector rail) and remove.

Head will lift off the block now.

Next post will be the installation.

Hope this helps you all!!

*Last edited by nater; 12-20-2015 at 07:06 PM.*

Nate  
2006 B6 PASSAT FS  
FORUM RULES  
O2M Swap  
B6 3.6L Spun Bearing / Engine Replacement

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nater

Angry Turtle Administrator



Join Date: Apr 10th, 2000  
Posts: 87,055  
Vehicles: 2008 3.6L Passat 4Mo,  
98 O2M 3.0L VRT, '04 .:R32, 2010  
Routan

Head Gasket R&R and DIY 3.6L BLV 2008 Passat

12-16-2015 06:11 PM

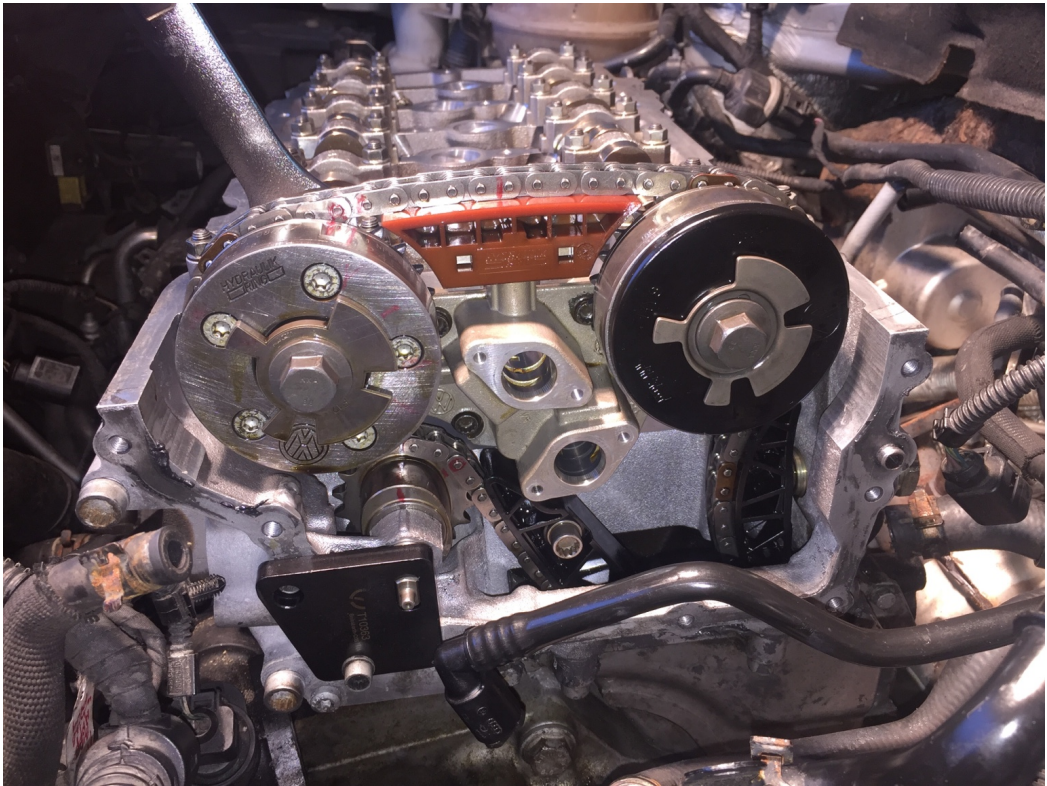
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#2

Reinstallation is basically reverse.

Put the head back on today:





Make sure the [intake camshaft adjuster](#) is all the way clockwise. You can make sure of this while it's attached to the camshaft by using your 27mm wrench to turn it. I marked everything so it went back together perfectly, all marks line up.

*Last edited by nater; 02-10-2016 at 05:54 PM.*

Nate  
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**nater**   
[Angry Turtle Administrator](#)



Join Date: Apr 10th, 2000  
Posts: 87,055  
Vehicles: 2008 3.6L Passat 4Mo,  
98 O2M 3.0L VRT, '04 .:R32, 2010  
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Head Gasket R&R and DIY 3.6L BLV 2008 Passat

12-20-2015 12:59 PM [Reply](#) #3

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*Last edited by nater; 12-20-2015 at 07:08 PM.*

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**jddaigle**   
Member

12-20-2015 08:56 PM [Reply](#) #4

Awesome  Thanks for taking all the photos along the way and documenting it so thoroughly!





Join Date: May 30th, 2003  
Location: Denver, CO  
Posts: 6,588  
Vehicles: 2008 Passat Wagon  
VR6 4motion, 2013 FIAT 500 Sport

- Jeff  
[B6 Passat 3.6 & 4motion Resource Thread](#)  
Now: 2008 VW Passat 3.6 4motion Wagon, 2013 Fiat 500 Sport  
Then: 1987 Volvo 745GLE, 1989 Volvo 740GL, 1994 Volvo 940T, 1995 Infiniti G20, 2000 VW Passat 1.8T, 2001 VW Jetta Wolfsburg Ed (x2), 2004 VW Golf TDI, 2006 Jetta TDI

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**v b chil-n**

Member



Join Date: Nov 6th, 2000  
Location: Florida  
Posts: 2,585  
Vehicles: 03 Jetta, 06 Passat 3.6,  
11 Tiguan SEL

12-26-2015 08:59 AM [Reply](#) #5



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**superman1969**

Junior Member

Join Date: May 26th, 2008  
Location: Boise Id  
Posts: 68  
Vehicles: 2005 Audi S4 Avant &  
2007 VW Passat 3.6 4Motion Wagon

12-26-2015 10:43 AM [Reply](#) #6

Great work !!!!!!!!!!!!!!!

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**mecaniser**

n00b



Join Date: Apr 5th, 2016  
Posts: 1  
Vehicles: 2014 VW CC 3.6l VR6  
4Motion Executive

2014 vw cc 3.6 cylinder head

04-05-2016 11:49 PM [Reply](#) #7

Awesome thread !!! You made a super hard work to look like doable job.

I'm working on a 2014 vw cc vr6 4motion, and my mechanic changed the cylinder head from a 2010 vw cc vr6 fwd. Honestly I have no idea what he did and what was the procedure but now there not enough compression, each cylinder is showing 60psi which is definitely not a good thing, also no pulse to injectors. I will really appreciate any of your ideas. 😊

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**SEANMAC24**

Junior Member



Join Date: Jan 17th, 2016  
Posts: 31

04-06-2016 08:31 PM [Reply](#) #8

Great job Nater this needs to be stickied or in the 3.6 resource thread! Thanks for this write up it will help me out a lot with the valve cover gasket job. Is there any way I can get at the oil pump bolts from the service position? Or does the engine need to be out of the car?

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**nater**

Angry Turtle Administrator



Join Date: Apr 10th, 2000  
Posts: 87,055  
Vehicles: 2008 3.6L Passat 4Mo,  
98 O2M 3.0L VRT, '04 ::R32, 2010  
Routan

Head Gasket R&R and DIY 3.6L BLV 2008 Passat

04-06-2016 08:36 PM [Reply](#) #9

Originally Posted by **SEANMAC24**

Great job Nater this needs to be stickied or in the 3.6 resource thread! Thanks for this write up it will help me out a lot with the valve cover gasket job. Is there any way I can get at the oil pump bolts from the service position? Or does the engine need to be out of the car?

Trans needs to come out to get at the oil pump.  
Impossible without trans removal.

Nate  
2006 B6 PASSAT FS  
FORUM RULES  
O2M Swap  
B6 3.6L Spun Bearing / Engine Replacement

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