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Thread: DIY OEM AFS Bi-Xenon Headlights for MK6 Golf/GTI

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snowboardgti o

Junior Member

Join Date: Nov 8th, 2011 Location: orange county, ca DIY OEM AFS Bi-Xenon Headlights for MK6 Golf/GTI

10-01-2012 01:53 AM

Reply #1

*Warning, I'm not responsible for anything below. Everything is for informational purposes only.

Introduction:

So I have a 2010 GTI and when I got the car, I knew little or nothing about getting projector with AFS. So now, I've taken matters into my own hands to make sure I get my own AFS. I didnt want to spend money on getting OEM projectors w/ AFS and ignoring the AFS feature by simply putting an adapter and calling it a day. I did find Kufatec's kit, but I found it way to hard to justify an additional 520 for AFS. The funny thing was I actually did buy an AFS kit from them almost a year ago for 320! I returned it because it was missing my adapter and I had a change of plans anyways. I don't know what caused the price increase... figures... Anyways, I'll try my best to explain everything possible below and answer PMs or questions to help you guys out. I have received a lot of help from vwvortex and golfmk6 and now its time to give back \bigcirc

First off, the difficulty in this project I'd say is comparable to installing a sound system. You have to remove your rear driver side panel, floor channel panel (don't know the exact name) glove box panel, and fuse (headlight switch) area. Then you have to know how to get through the firewall behind the accelerator pedal (if you've installed an amp, this should be a piece of cake), get behind the rear well grommet (pretty easy here too), install some pins into the CECM, control module and fuse and then an annoying part, get the wiring behind and underneath the rain guard to get your wires from your passenger side over to the driver side and then into the firewall.

Here's how the leveling system works:

You have a pully/lever system on your rear suspension which tells your control module to either tell your lights to aim up or down. Then you have your can bus system you splice into which will tell your lights to move left or right. So both systems communication to your AFS Control Module which I'll explain below on how to make.

Your pinouts to your AFS control module: Understand this diagram and then the parts below will make more sense

12 13 14 40645 CECM Medule Ray Sersor

Parts:

This was the most time consuming part for me, going back and forth to see exactly which wires and pins I needed so hopefully I spared you guys some time. If youre willing to fork out the time, you can save yourself almost 200 bucks versus buying a kit. First off, the part where youll save the most money is buying the AFS control module and level sensor used or from a junk yard.

Rear Level Sensor

- 1 Rear Level Sensor 1K0941273L
- 5 Sensor Mounting Bolts N10430104 5 Riveted Cap Nuts N10597701 1 Grommet 6N0906102

- 1 Corrugated Pipe N90635517 2 Cable Ties N90666101

- 1 HOUSING 4 Pin Sensor 4B0973712 3 Terminal Pins N10335807 / 964274-3

14-Pin Headlight Harness

- 2 HOUSING 14 Pin Harness 1J0973737 11 Small Terminal Pins N10335807 / 964274-3
- 5 Large Terminal Pins N90684405 / 927773-3 2 10A Fuse N10261503
- stnote one small and one large terminal pin is going to be used for the CECM high beam trigger.

AFS Module

- 1 AFS Control Module 5M0907357C 1 HOUSING 26 Pin AFS Control Module 7M3972726B
- 9 Terminal Pins N90764701 (this doesnt seem to be the right pt. number) / 963715-1

**Other things you'll need: Grommets for headlight and level sensor harness/terminals Wire stripper Molex crimp tool Wire terminal removers Friction tape

Also, for the part numbers on the pins, the numbers after the '/' are TYCO part numbers if you prefer to get it from them. And the quantity for pins are quantity needed INDIVIDUALLY. However, I recommend you get more than plenty in case you make a mistake or something.

Installing the Rear Level Sensor:

There are 5 holes in the driver rear suspension. With the nuts and rivets shown in the parts diagram, you install it, make sure the lever is pointing outwards! The harness is a 4 pin harness (check wiring diagram)
Then use the 'corrugated pipe' to cover the wires and guide the wires using the OEM zip tie holders to the rear well (have to remove cover to find grommet). Guide the wire down inside the wire channel along the side of the car and lead it towards the firewall then across the glove box into the AFS module.



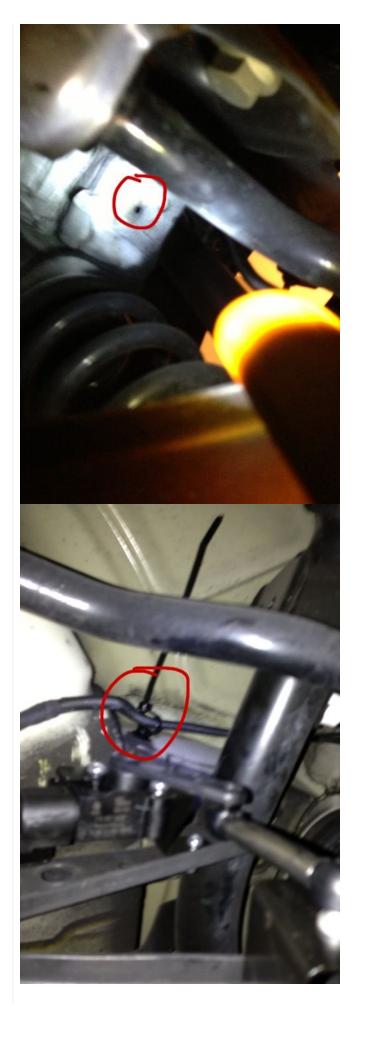


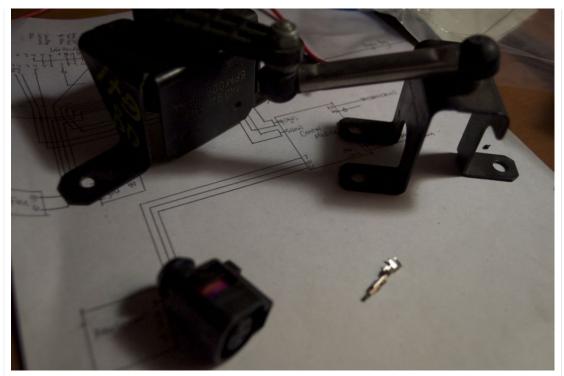
Remove two screws to get access into the cabin





There are two holes for the oem zip ties





When making the 4 pin terminal for the rear level sensor harness, make sure to remove the pink terminal lock slider with a flat head. (you'll have to do this for the 10 pin headlight harness too)





We will wire the 3 pins into the 26 pin housing in the end.

Your pinouts from your 10 pin harness to your 14 pin harness:

I prefer to do this method of de-pinning from your old harness to the new one rather than using an adapter. This will help save clutter from having excess wiring and adapters and give you a clutterfree and more OEM look.

While almost everything stays the same, here are the differences:

-There will be additional pin for ground (for the ballast)

-Pins 1,2 and 4 on the NEW 14 pin harness are for AFS. This is what will allow you to move your headlights in all direction. 1 and 2 are from your AFS control module while pin 4 (powering your AFS module thats underneath the headlight) will be plugged into fuse 5(left), 6 (right). these are actual OEM locations for powering AFS.

-Pin 4 from your OLD 10 pin harness will be moved to pin 12 for DRL, yum. You will HAVE to change your big terminal to the smaller terminal (N10335807).

-Pin 8 from your OLD 10 pin harness will be going to NOTHING.

-Pin 11 on the NEW 14 pin harness is your high beam shutter. This wire will go into your CECM gold connector, 48 and 49. I used parts N90684405 and N10335807 which are not OE but works completely fine and stays secured.

You just have to make sure you UNLOCK the pin harness to ensure removal. To unlock the 10 pin harness, there is a purple slider within the harness. Pull that out using a flat head. Then for the 14 pin harness, you have to move the whole purple block and 'click' it out.

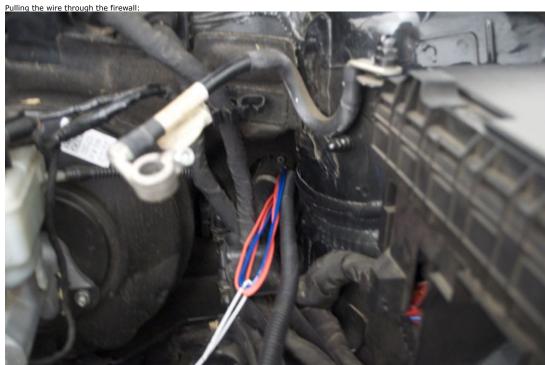
Installing the Wires from the headlights.

There should be 4 wires norm the neadlights. There should be 4 wires on each side of the headlights (two can wires, afs power and high beam trigger wire). The wires on the drive side will simply go into the firewall. It helps removing the whole battery box assembly to get easier access. For the passanger side, the wires will lead back around the coolant and back into the rain tray. Then it'll come back out towards the driver side and go back into the firewall the same way. Removing pins:



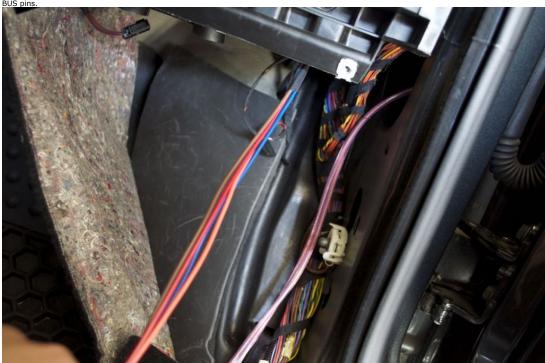
Now OEM harness, no adapter shenanigans:







Under the glove box, behind the fan motor, there is a orange/black(HIGH) and orange/brown(LOW) wire you need to splice into for the AFS CAN BUS pins.



Get access behind the fuse box for 5, 6 for AFS Control Module Power. Perfect opportunity to install your parking light trigger wire for your euro switch



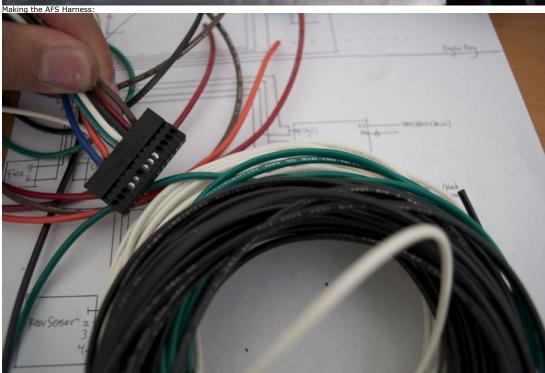
Installing your AFS Module:
Underneath your glove box, there are two screws that are supposed to hold your AFS Module. The downside to the kufatec harness is that its not long enough to reach all the way to the glove box because youre supposed find a random spot underneath the steering wheel column.

As for making the harness, you need a molex crimp tool. You can find these either at an electronic store or on ebay/amazon. Then youll wire up the pins as shown in the wiring diagram.



Installing it in the OEM location





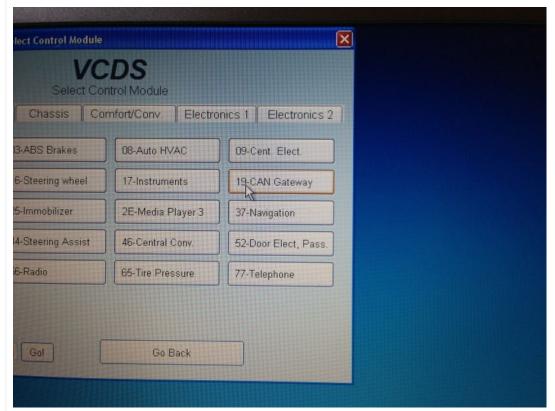


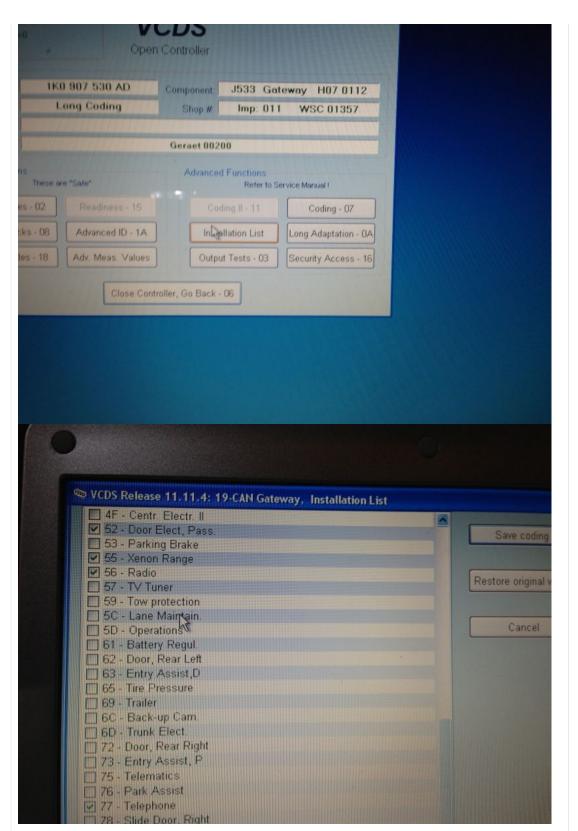
My model is a 2010 Halogen w/ fogs (GTI). I DID NOT HAVE TO CHANGE/UPGRADE MY CECM. While I would like to help you with CECM for you golf owners, I have NO KNOWLEDGE whatsoever so I can't help you on this.

With LEDs and LED Headlights installed, I had to code byte 18 to 21. I had the hardest time trying to figure out why my LEDs on one side wouldnt turn on.. All my wiring was perfectly fine, just had to change it to 21 🙂

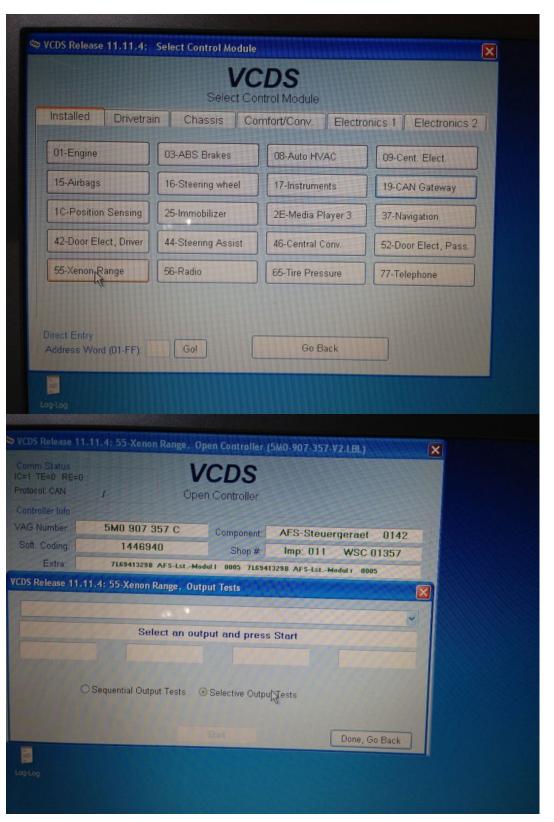
Some Help here: http://golfmk6.com/forums/showpost.p...3&postcount=87 http://www.mk6golfgti.co.uk/forum/index.php?topic=113.0

Most importantly, you have to go into 19 CAN Gateway, and check 55 - Xenon Range. This lets your car know you've installed your AFS Control Module! Then run some tests to make sure everything works!





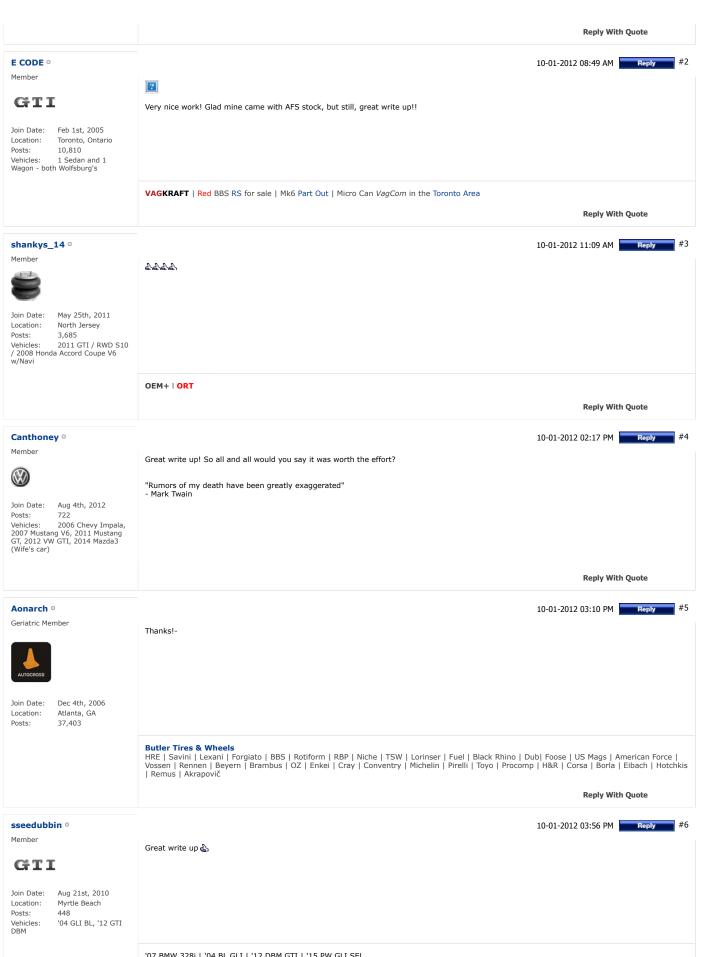
Then you can go into 55 Xenon range and run some tests 🙂



[u2b]CPK3FHCucy0[/u2b]

Some things to mention

-While some VW models need front sensors, the MK6 Golf/GTI models ONLY NEED the rear sensor (OEM is configured this way)
-If one side of the LEDs arn't working, its probably your byte 18 coding
-Expect this project to take anywhere from 3-4 days as a first timer (if you've done audio installation, you could probably do it in 1-2 days)
-After messing with some reps, I can finally see why there are some hardcore OEMers out there. On my aftermarket LED lights, the 10 pin harness broke while I was connecting it. Also, the quality of just 'everything' is not the same. It sounds cheesy but the plastic material just felt cheap. Also, there were way too many blemishes on the paint. Especially the chrome! In sunlight, you could clearly see the swirl marks on the 'eyelids' which was why I repainted my reps 'aluminum gray' when I retrofitted it. On the OEM, the LEDs are nice and bright, the way OEMs should be (audis, mercedes, porsche...). The LEDs on my reps were seriously a joke. I didnt even keep em on as DRLs cause it was way too embarrassingly dim. Plus OEM leds are actually white, not some corny ass 5/6k color.



'07 BMW 328i | '04 BL GLI | '12 DBM GTI | '15 PW GLI SEL

VCDS/VagCom Available (Myrtle Beach area)

Reply With Quote

snowboardgti o

Junior Member

Nov 8th, 2011 Join Date: Location: orange county, ca Originally Posted by Canthoney

Great write up! So all and all would you say it was worth the effort?

thanks for the compliments 😀 im actually doing one for a local member in about a week so III be able to post more comphrehensive step by step pictures. it took a lot longer and more effort than expected.. as always with any DIY especially when it comes to car stuff.. of course doing it again would be a lot quicker.

as for whether it was worth it or not.. definitely, especially if youve done a sound installation because youre already 'primed' for knowing the insides/out of your car. 😝 it was a good excuse to get drls. i really wanted a DRL solution and going with OEM leds were a perfect way to go. i didnt want to try and retrofit an R drl or something and having it in the headlights made it a clean solution.

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10-02-2012 08:22 PM Reply

10-02-2012 02:51 PM Reply #7

Canthoney o

Member



Join Date: Aug 4th, 2012 Posts: 722

Vehicles: 2006 Chevy Impala. 2007 Mustang V6, 2011 Mustang GT, 2012 VW GTI, 2014 Mazda3 (Wife's car)

🔐 Originally Posted by snowboardgti 🔟

thanks for the compliments 🙂 im actually doing one for a local member in about a week so Ill be able to post more comphrehensive step by step pictures, it took a lot longer and more effort than expected.. as always with any DIY especially when it comes to car stuff.. of course doing it again would be a lot quicker.

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Sweet man! I'll be looking forward to your comprehensive step by step. I'll was looking to doing this soon but I don't have any experience with sound system installation: / . I'll just have to wait until one of my friends can help me. Unless I want to pay out the a\$\$ to a local shop to get it

Reply With Ouote

wr3ck o

Member

GTI

Join Date: Sep 29th, 2010 virginia beach, va Location: Posts: 221 Vehicles: 2003 GT

🍌

10-03-2012 09:00 AM Reply

awesome job. i saw a thread about hacking the 12V+ cigarette charger thing and the guy pigtailed a fuse on top of another instead of putting a new fuse spot in through the back and it made me shudder, you did it the right way and i applaud you for it 😃

maybe ill get around to doing this for my wife's car.

Reply With Ouote

10-25-2012 12:59 AM Reply

corz123 º

n00b

Join Date: Oct 19th, 2012

Posts:

Hey this look fantastic 🙂. So the total costs of parts was under 500? Or was the chart on top of the kit you bought earlier. Is there any difference in functionality between this and if it was from the factory?

Last edited by corz123; 10-25-2012 at 01:04 AM.

Reply With Ouote

10-25-2012 09:33 AM Reply

johnnyR32 o

Geriatric Member

Join Date: Aug 31st, 2004 New Jersey Location: 40,880 Posts: Vehicles:

15 S3 / 13 Golf R / 04 R32

'85 Golf (SOLD) - '91 Jetta GL (SOLD) - '97 Jetta Trek (SOLD) - '99 Jetta Wolfsburg (SOLD) - '02 GTI 337 (SOLD) - '04 R32 (SOLD) - '04 R32 - '10 GTI Autobahn (SOLD) - '12 Golf R (SOLD) - '13 Tiguan SEL (SOLD) - '13 Golf R - '15 GTI Autobahn (SOLD) - '15 Tiguan R-Line (SOLD) - '15 S3

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tiskev o

n00h

Join Date: Apr 26th, 2013

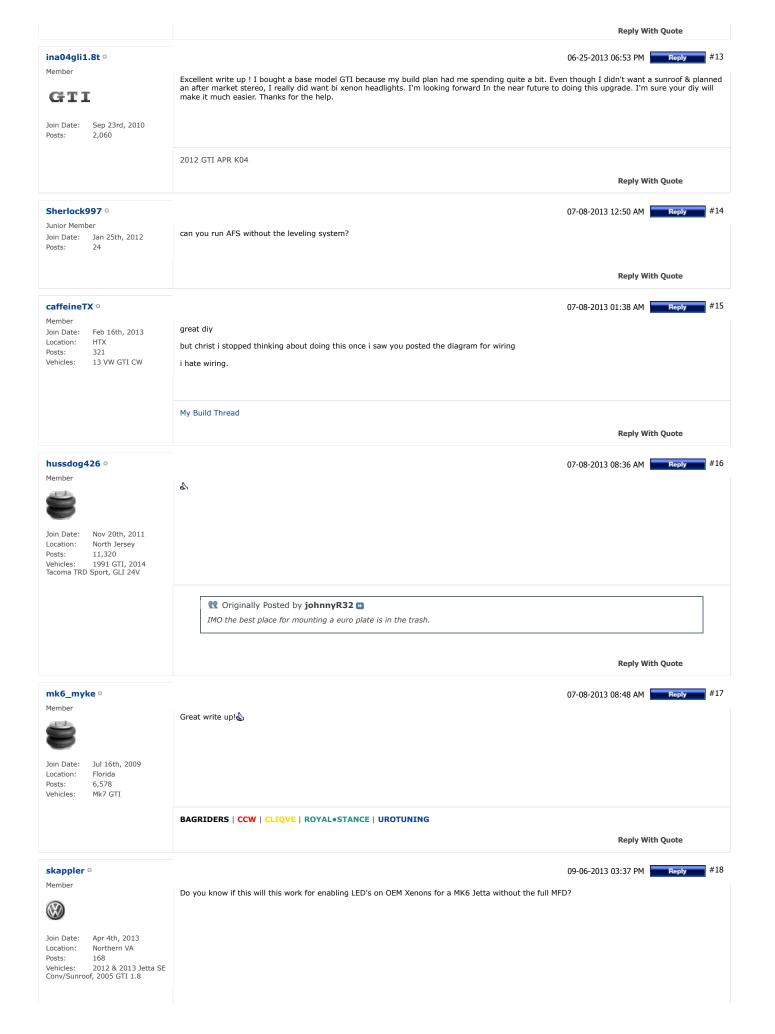
I've got an Audi A3 2010 S Line and looking to fit DRL Xenon headlights.

Would the wiring diagram be the same as this one for an Audi A3?

Thanks you

04-26-2013 04:50 AM

#12



Reply With Quote

lelek º

Junior Member



loin Date: Nov 3rd, 2012 Location: chicago Posts:

Vehicles: 2012 tdi , 2005

lancer evolution

11-09-2013 03:40 PM

how is that pin 4 and 5 on afs module splits and goes to both headlights at the same time and still control each headlight separate? left headlight can turn left and right headlight can turn right at the same time (you can see it when system is performing self check at startup)

Reply With Quote

mggtz o

Junior Member

loin Date: Jun 19th, 2013 Location: New Jersey

Posts:

2012 VW JSW TDI Vehicles:

12-06-2013 07:29 PM Reply #20 help

2012 Sportswagen TDI. I had installed a new BCM, retrofitted OEM bi-xenon w/LED, AFS with auto leveling sensor. The LED on the right side won't come on when the lights are turned on and the high beams don't work.

The MFD says AFS failure and the locks for the KESSY won't work also. I live in North Jersey...someone PLEASE HELP...!?!

VCDS

Windows Based VAG/VAS Emulator

VCDS Version: Release 12.12.0(x64) Data version: 20130910 www.Ross-Tech.com

Dealer/Shop Name: Workshop Code: 000 00000 000000

Workshop Code: 000 00000 000000 Self-Diagnosis Log Tuesday,26,November,2013,11:04:28:01119 VIN: 3VWPL7AJ7CM690446 License Plate: Mileage: Repair Order: Chassis Type: AJ (7N0) Scan: 01 02 03 05 08 09 15 16 17 19 25 2B 2E 37 42 44 46 4F 52 55 56 62 72

Scan: 01 02 03 05 08 09 15 16 17 19 25 28 2E 37 56 62 72
VIN: 3VWPL7AJ7CM690446
01-Engine -- Status: OK 0000
02-Auto Trans -- Status: OK 0000
03-ABS Brakes -- Status: OK 0000
04-Steering Angle -- Status: OK 0000
05-Acc/Start Auth. -- Status: OK 0000
09-Cent. Elect. -- Status: OK 0000
09-Cent. Elect. -- Status: OK 0000
16-Steering wheel -- Status: OK 0000
17-Instruments -- Status: OK 0000
17-Instruments -- Status: OK 0000
25-Immobilizer -- Status: OK 0000
28-Steer. Col. Lock -- Status: OK 0000
28-Steer. Col. Lock -- Status: OK 0000
28-Media Player 3 -- Status: OK 0000
42-Door Elect, Driver -- Status: OK 0000
42-Door Elect, Driver -- Status: OK 0000
45-Central Conv. -- Status: OK 0000
46-Central Conv. -- Status: OK 0000
47-Centr. Electr. II -- Status: OK 0000
48-Steering Assist -- Status: OK 0000
48-Steering Assist -- Status: OK 0000
48-Central Conv. -- Status: OK 0000
48-Central Conv. -- Status: OK 0000
48-Central Conv. -- Status: Malfunction 0010
48-Steering Assist -- Status: Malfunction 0010

55-Xenon Range -- Status: Malfunction 0010 56-Radio -- Status: OK 0000 62-Door, Rear Left -- Status: OK 0000 72-Door, Rear Right -- Status: OK 0000

Address 01: Engine (CJA) Labels: 03L-906-022-CBE.clb
Part No SW: 03L 906 019 HG HW: 03L 907 309 AA
Component: R4 2,0L EDC G000AG 3522
Revision: 12H14--- Serial number:
Coding: 0050078
Shop #: WSC 00066 000 00000

Shop #: WSC 00066 000 00000 VCID: 77FD03F306C91BA6A59-8022

No fault code found

Readiness: 0 0 0 0 1

Address 05: Acc/Start Auth. (J518) Labels: 5K0-959-434.clb Part No SW: 5K0 959 434 B HW: 5K0 959 434

Component: VWKESSYPQ35GP 085 0902 Revision: 00085000 Serial number: 0165490823

Coding: 030C0C
Shop #: WSC 00066 000 00000
ASAM Dataset: EV_KESSYPQ35G A02013
ROD: EV_KESSYPQ35G.rod

VCID: 3467F4FF9F3F30BE40B-8061 No fault code found.

Address 09: Cent. Elect. (J519) Labels: 1K0-937-08x-09.clb Part No SW: 5K0 937 087 T HW: 5K0 937 087 T Component: BCM PQ35 H 021 0068

Revision: BK021001

Coding: 6F380E1F802F3EC4008800C17000084C49050408575D05F0F4 840024A040 Shop #: WSC 18752 008 00032

Snop #: WSC 18752 U00 U0032 VCID: 4683BE37F1A3B22EEEF-8013 Subsystem 1 - Part No: 5K1 955 119 Labels: 1KX-955-119.CLB Component: Wischer 08041 26 0512 Coding: 009795 No fault code found.

Address 19: CAN Gateway (J533) Labels: 7N0-907-530-V2.clb Part No SW: 7N0 907 530 P HW: 1K0 907 951 Component: J533 Gateway H40 1623

Component: 353 Gateway n40 1623 Revision: H40 Serial number: 28031201290437 Coding: 352002 Shop #: WSC 00066 000 00000 VCID: 307101DBA475F1F6BF5-8068

Address 55: Xenon Range Labels: 5M0-907-357-V2.lbl

```
Part No SW: 5M0 907 357 C HW: 5M0 907 357 C Component: AFS-Steuergeraet 0148 Revision: 00H04000 Serial number:
Coding: 1446924
Shop #: WSC 00000 000 00000
VCID: 3467F4FF573F30BE40B-8061
Subsystem 1 - Part No: 7L6 941 329 B
Component: AFS-Lst.-Modul I 0004
Coding: 00000022
Subsystem 2 - Part No: ID-R fehlt
Component: AFS-Lst.-Modul r ....
Coding: 00000255
5 Faults Found:
01042 - Control Module; Not Coded
000 - - - MIL ON
Freeze Frame:
Fault Status: 11100000
Fault Priority: 2
Fault Frequency: 1
Reset counter: 251
Time Indication: 0
Freeze Frame:
Invalid
Invalid
Invalid
O2657 - Power Output Stage for Right Headlight (J668); Not Coded 000 - - - MIL ON Freeze Frame: Fault Status: 11100000 Fault Priority: 2 Fault Frequency: 1
Reset counter: 251
Time Indication: 0
Freeze Frame:
Invalid
Invalid
Invalid
01539 - Headlights Not Adjusted
005 - No or Incorrect Basic Setting / Adaptation - MIL ON
Freeze Frame:
Fault Status: 11100101
Fault Priority: 3
Fault Frequency: 1
Reset counter: 251
Voltage: 11.93 V
Time Indication: 0
Invalid
Invalid
Invalid
02234 - Right Headlight Power Output Stage (J668)
004 - No Signal/Communication - MIL ON
Freeze Frame:
Fault Status: 11100100
Fault Priority: 6
Fault Frequency: 2
Reset counter: 251
Mileage: 34100 km
Time Indication: 0
Date: 2018.14.05
Time: 10:42:24
Freeze Frame:
Speed: 0.0 km/h
ABS 1
02656 - Power Output Stage for Left Headlight (J667); Not Coded
000 - - - MIL ON
Freeze Frame:
Fault Status: 11100000
Fault Priority: 2
Freeze Frame:
Fault Frequency: 1
Reset counter: 251
Time Indication: 0
Invalid
Invalid
Invalid
Last edited by mggtz; 12-06-2013 at 08:35 PM.
                                                                                                                                                                                                         Reply With Quote
```

0-60Motorsports o 03-28-2015 09:38 AM

Can someone help me out and tell me how to code/program bi xenon headlights with afs? I'll post the vagcom readout later on today. Thanks.

Member

Join Date: Dec 27th, 2009 Location: Bahrain Posts: 410

Vehicles: 04 M3 cs, 12 Golf R

<u>🍌 </u>

Last edited by 0-60Motorsports; 04-12-2015 at 04:20 AM.

2004 BMW E46 M3cs. 2012 VW GOLF R, 5 Door, DSG, Euro Spec. IG: 060Motorsports

Reply With Quote

2014GTI º 08-15-2015 08:52 PM

n00b

Join Date: Jul 5th, 2015

HELP

Posts: 4

I have completed all the steps but I have the fault codes

Address 55: Xenon Range
Part No SW: SM0 907 357 C
Component: AFS-Steuergeraet 0142
Coding: 1446940

Part No: ID-L fehit
Component: AFS-Lst.-Modul I
Coding: 00000255

Part No: 7L6 941 329 B
Component: AFS-Lst.-Modul r 0004
Coding: 00000022

I have 7L6 941 329 B installed on both headlights, in the OP he/she only listed one as needed is this true and could it be the reason I am unable to start the afs.

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Digital Point modules: Sphinx-based search