

the ABA motor is a bolt and go operation. you need to remove the aba timing belt covers and either trim the bottom cover or simply not run it for it to fit with the passenger's side motor mount. the motor sits low enough so you do not need to trim your hood. however if you are using an OBDII motor you will need to flip the throttle body assembly. you can fab up a bracket for your throttle cable or you can run down a manifold from a Passat. throttle cable you use is from an early MK2, it's a combination of the MK1 pedal end and the MK3 motor end. the accessory belt setup. i have found this info:

Option 1

1. ABA lower crank pulley
2. ABA alternator
3. ABA alternator bracket / tension-er
4. VR6 water pump pulley

Option 2

1. ABA lower crank pulley
2. ABF alternator part# 030-903-023C, 028-903-025P
3. ABF bracket part#028 903 143 AD?
4. ABF Conti BELT-6PK-0894
5. VR6 water pump pulley

option 1 only requires you to run down a VR6 water pump pulley or a VR6 power steering pump pulley and run a 1066 6pk belt. you can also run this option if you want to use your power steering. you simply run a much shorter belt for the P/S. i couldn't find or remember the size of said belt, sorry.

option 2 requires you to either buy the kit or try to run down the parts to run the euro/canadian setup. both options are more than fine but i just wanted to present both options 🙏

A/C will have to be deleted as the compressor will not fit in stock form *

* if you want to run an A/C system you will have to do one of the following:

MK3's use the same Sanden 508 style compressor as all diesel, cabby and rocco mk1's as well.

a Chinese sanden 508 and a custom made bracket with a March serpentine conversion pulley.

the setup:

B5 Alternator, tensioner and upper bracket

B5 crank pulley

modded b5 waterpump pulley (mk3 VR would have been bolt on)

custom lower brackets

Sanden 508 comp

March serpentine pulley conversion.

second a/c option comes from Sputterputz:

It's an aba compressor even though a g60 one is pictured in one of the shots.

You move the compressor so the bottom compressor tabs mount on the top slot of the bracket. Cut the lower alt tabs off the bracket, make



the alt and the compressor meet and run a bolt through them both.



The rest is just an adapter block and new rubber lines w 134a fittings, mk1 evap and condenser.

exhaust: you can run the stock MK1 dual manifold and down pipe with a simple spacer available from BFI and other suppliers. or you can cut

the down pipe and extend it slightly. other option is to run the MK3 manifold and the TT down pipe. or again, you can modify the MK3 down pipe to make it work. there is a noticeable size difference between the two exhaust setups, however i could not find anyone who's actually done a dyno test between the two to confirm any HP advantages of running one over the other.

coolant lines: the bottom line is an easy swap. simply remove the thermostat housing off the old 8v motor and install it on the aba motor and connect like stock. the top hose requires a bit more modification. there are a couple of different ways to do it and it's just a matter of preference. you can simply cut it down in a couple of places and just use connector pieces to join it back together from a local auto parts store. this is where you can get creative, to each their own 🍷

fuel lines: a couple of ways to go about the fuel lines. option one is to retain their stock location and filter and simply run either a line in front of the motor back over to the fuel inlet on the aba motor, or another variation of this is to run them up into the rain tray and then back over to the fuel inlet on the motor. i do not recommend or advise running them back along the firewall at all. now before you go on about how the OEM hard lines do this, remember they are 1) hard lines, and 2) routed and somewhat protected from the exhaust. another option is to simply rent/borrow a flare tool and simply cut the lines and bend them up on the passenger's side then flaring the ends. there are benefits to doing it this way, however, just remember you need to add a fuel filter in there somewhere. the OEM MK3 one will work and is easily ran inline. the only downside is if you ever decide to sell the car and want to keep the swap and re-install an original 8v you have to address your fuel reroute that you performed for the aba motor.

fuel pump(s): your stock CIS fuel pump is just fine to run as is with an aba. you can run it with or without the accumulator. if you're doing the aba swap on a later cabrio or rocco (late 84 and later) the two pumps that are stock to the system are also fine to run. earlier fuel systems required a higher psi to run and as a result are more than enough psi for the aba (and vr as well). the stock fpr on the aba will easily meter off the excess psi without issue.

TRANSMISSION

any transmission, with the exception of the VR trannys, will bolt up to the aba. there are a couple of things you need to keep in mind when doing this however. if you plan on keeping the transmission that was stock to the A1/MK1 you have nothing to modify. simply use the clutch/pressure plate/flywheel that is stock for the MK1 motor. now if you are using my wiring trick or making the entire car CE2 you can use the MK3 starter with a MK1 trans, it has a different plug in for the solenoid. if you want to use the ABA trans there is a couple of things you have to do. you have to swap over all the linkage assemblies from the A1/MK1 trans first and foremost. next issue is the axles. the aba trans uses 100mm whereas your stock axles are only 90mm* (*if you are an 85 and later rocco or cabriolet you have 100mm axles and can simply bolt and go). there are a couple of solutions to this issue. first would be to simply swap the transmission flanges from the MK1/A1 trans to the aba trans. this would allow you to simply use the MK1 stock axles in your car already. however iirc the only transmission years with flanges that will swap is from 83/84. early MK1 transmissions have flanges that will not work with the aba transmission. if you don't want to swap flanges and have access to the 100mm axles off the MK3 you can swap the inner CV's. however the 100mm axles are thicker than the splines are long on the stock axle assembly. to get around this you can simply, and carefully, grind down the inner section of the 100mm CV to get it to fit correctly and attach the circlip. downside to this is when you need axles in the future you'd have to buy two axles to just make one. and finally the third option for an axle fix is to run the rocco or later model cabriolet hubs which use the 100mm axles (85 and up iirc). i have heard of people using the rocco/cabriolet axles and grinding down parts of the outer CV's or the hub assemblies to allow the axles to fit as well.

WIRING

you have three options to wire this up. four if you count standalone systems like megasquirt. option 1 is making the entire car CE2. this involves pulling all the wiring from the donor car and swapping it over. this is a very straightforward operation, just very time consuming. the wiring for the headlights, wipers, and ignition are all the same color and easily changed over. the rear lights and climate control are different colors and whereas you can simply use a test light to figure out the rear lights you will need a wiring diagram for the fuel pump/sending unit and the climate control.

option 2 is taking the aba wiring and splicing it into the MK1/A1 stock wiring. this requires much more reading and understanding of the tech manuals/wiring diagrams. currently, i put up 3 member's wiring notes. the first one i obtained the information from a reputable member on this board:

my 1981 Caddy and donor car was a 1998 Jetta OBDII...

switched power:

pin G1/4 - track 3 - 2.5 sw - fused 10 amp... for coil, engine speed sensor, cam position sensor

pin G2/4 - track 35 - T68/23 - 1.5 sw/ge - fused 10 amp... ecu power, sort of ties in with above track but I believe mine is seperate

pin G1/8 - track 11 - 1.0 ro/ge - fused 20 amp... O2 sensors

pin Z1 - track 16 - 2.5 ro/bl - fused 15 amp?... fuel injectors

pin G2/8 - track 44 - 0.5 ro/bl - fused 10 amp?... N80, LDP, canister purge valve

constant power:

pin G2/9 - track 10 - T68/54 - 1.0 ro - fused 5 amp... ecu memory

pin G1/9 - track 36 - T68/3 - 0.5 ge/sw Check engine light - MUST have small bulb inline!!

grounds in harness

track 4 - 2.5 br - ground for coil

track 13 - sw - for O2 sensor

track 37 - sw - for O2 sensor

track 40 - 2.5 sw - for ecu and maf

track 60 - 0.5 br/gn - for ect

track 76 - 1.0 br/ws - for vss and coolant level sensor

All of these seemed to ground in two main wires, isn't hard to see them when the covering is opened up. Double check your ground connections with the sensors and pins they are supposed to be grounding. Use an ohm meter!!

other

connect pin G1/3 - 0.5 ge/bl to negative side of coil. This activates the stock fuel pump relay. I didn't try too hard to figure out a priming circuit but it starts exactly like a bone stock Mk3, even with the fuel accumulator out.

track 26 - T68/43 - 0.5 gr/ws - connects to DLC connector pin 7 - there is also a power and two grounds in the DLC but I don't remember their positions right now

cut the alternator connections out of the harness and splice them to the car side. Should be a small 0.5 blue and a large red wire. This turns on the alternator and will use the light in the early cars dash.

I am using a fan relay, radiator fan and switch out of a late Mk1 cabrio. It is wired independent of the ECU and uses the factory power but my application isn't using the relay in the trucks fuse panel. The cabby harness has a relay, two speeds and an input for A/C activation. I haven't put A/C in yet but this will be a nice feature of this harness when I do.

I am also using all the emissions stuff in my truck. I am taking vacuum from throttle body like stock and it goes to the N80 and LDP. The vent from the gas take goes up and tees into both of those and I incorporated the stock charcoal canister in the wheel well. I can get better pictures if you want. I just wanted my car to pass readiness and have a CEL on the dash.

I used two 40 amp relays powered from the positive side of the coil to activate all the switched powers. It was the easiest way I could think of doing it.

my issues

I don't have a vehicle speed sensor setup yet and it turns on my check engine light. I am thinking my solution is going to be pulling one of my axle flanges and welding a tone ring to it and use an engine speed sensor (3 wire) on a bracket to get a signal. The car runs great without it and is pretty strong so I don't believe it uses any of the info to run, the ECU just wants to see it.

Lots of wiring!! I had some spare wires and connectors in the harness and I just ended up taping it all up. I might need them someday but not today. Plus I didn't want to unwrap the entire harness to weed them out. I cut out all the fan wiring and headlight wiring out of the engine harness, that probably took the most amount of time and concentration.

I don't have a tachometer yet. Still working on this one but I have been driving my '78 rabbit for years without one and it doesn't bother me too much.

I didn't use the instrument cluster cts for mine. I got it all buttoned up before I realized it (rabbit doesn't have one of those either). You should be able to use the Mk3 one but I just grabbed a Mk2 black sensor in place of the white A/C switch in the side head coolant flange. I grounded one pin to the head and hooked car side up to the other. Works like a charm!

conclusions

Do it how you want. This isn't a DIY and it might not be complete (it's dark and cold outside so I am not going to double check, but can later). If you even attempt this, be familiar with a DVOM, it will hopefully save you from cutting the wrong thing!!

also here's some more info:

Some ECU pin info OBD 1 94-95 ish
this if for the 68 pin ECU plug

68/1 = Brown & Red - Ground
68/2 = Injector out put
68/5 = Yellow & black - Check engine light
68/6 = yellow & blue -fuel pump relay (switch on)
68/7 = Brown & red - ground
68/8 = Black & Red - coil power side
68/9 = Black & brown - ECU relay sig (whitch on)
68/10 = Brown - Ground
68/14 = Blue - Coolant temp
68/15 = Lilac - EGR temp (cal only)
68/16 = Brown & red - MAF
68/17 = Red - MAF
68/20 = white - o2 signal/ground
68/21 = Yellow - OBD check port
68/22 = Green & black - Power
68/23 = Red & blue- Power in from ECU relay
68/24 = Injector out put
68/25 = injector out put

68/26 = injector out put
 68/27 = White - IAC
 68/28 = white - o2 control unit/relay
 68/30 = Green & gray - EGR valve
 68/31 = Green & yellow - evap valve
 68/33 = Brown - Ground
 68/36 = Blue & green - intake air temp
 68/37 = Green - AC
 68/38 = Black - coil signal side (tack side)
 68/39 = Blue - AC
 68/40 = Green & white - TPS
 68/41 = Black & yellow - TPS
 68/42 = Yellow - o2 signal/ground
 68/43 = Grey & white = OBD check port
 68/44 = White & red - from distributor
 68/51 = Lilac & White - ???
 68/53 = Black & white - IAC
 68/54 = Red & yellow - from distributor
 68/55 = Brown & white - Ground
 68/56 = Brown & white - Ground
 68/58 = White - Ground
 68/65 = Blue & white- vehical speed signal form dash
 68/67 = Red - crank sensor
 68/68 = Green - Crank sensor

there are a couple of other write ups out there in the MK2 forum which are similar to ours, however this was done on a MK1/ABA specifically so hence why i put it up.

member InSaneV also provided this way of directly wiring it and after having been done twice by him on two separate vehicles it's been proven it to work successfully:

Here is the list I have been making of the wires I think are going to need to be spliced to run and have functions like warning lights etc. Please feel free to point out screw ups so I can correct for myself and others thinking of doing this swap and splicing in the obd1 ecu. Please note this is for 83-84 jetta / cabbys with ce1 fuse box's!!

CE1 TO OBD1
SPLICING IN ECU HARNESS

CE1--PLUG NUMBER--WIRE COLOR--DISCRIPTION--WIRE COLOR--PLUG NUMBER--CE2

#85 D26 RED/BLK #85 PIN ON THE FUEL PUMP RELAY YEL/BLK G1/3 PIN #6

#86 -- --/-- #86 PIN ON POWER SUPPLY RELAY BRN/BLK G1/7 PIN #9

TACH B19 RED/BLK TACH SIGNAL ON GAUGE READOUT GRN/BLK G1/12 PIN#22

#87 -- --/-- #87 PIN ON POWER SUPPLY RELAY RED/BLU G1/10 PIN#23

COIL_15 D23 BLK IGN (START/RUN) POWER TO ICPOS BLK G1/4 PIN#38

BATTERY_P RED CONSTANT 12V POWER RED/YEL G2/9 PIN#54

CPR E14 RED/WHT POWER TO HO2S RELAY RED/YEL G1/8 J278

ECT D29 YEL/RED ENG. TEMP. ON GAUGE CLUSTER BLU/WHT G2/3 G2

OIL_PRES_D1 BRN/BLK O. PRES. (LOW) LIGHT ON CLUSTER BLU/BLK G2/11 F22

B_LIGHT C2 BLU BATTERY LIGHT - ALT. EXCITER WIRE BLU F3 C

CHK_ENG D4 BLU/GRY CHECK ENGINE LIGHT ON CLUSTER GRN/BLK G1/9 PIN#5

Power supply relay, 109 is spliced outside of the fuse box as no relay spots available will physically accept the needed one.

Chk. eng. light, Is what normally is the oxy elpsd odmtr light, by pass the odmtr part by hooking up to the blu/gry wir that goes direct to the light.

LEGEND:

J278 – HEATED OXYGEN SENSOR RELAY
 G2 – ENGINE COOLENT TEMP. SENSOR (BLK)
 F22 – 0.3 BAR OIL PRESSURE

C – ALTERNATOR

thanks to mozcar78 for elaborating and clarifying on some of the wiring info posted up originally by the kevin:

T28 (cluster harness)--(cut /)-- (U plug Location) ---spliced into-----MK1 14 pin Harness
 1 - to nothing (connects to G1/2)--/--(U1/7)-----Not used
 2 - coolant level warning light----(U2/5)-----Cut-Not used
 3 - ground--/--(U1/10)-----mk1 ground wire
 4 - to nothing (connects to V/4)--/--(U2/14)-----cut-not used
 5 - fuel level sender ground (to ground wire)--/--(U2/13)----- mk1 ground wire
 7 - vss TO ecu (connected to VSS wire @ pin 27)--/--(U2/2)-----back to ecu through T28/27
 8 - oil pressure switch (high)--/--(U1/3)-----cut-Not Used
 9 - oil pressure switch (low)--/--U1/5)-----Oil press. light
 10 - tach signal from ecu (from T68/22 ecu wire)--/--(U1/6)-----rewired to Post #1 on ignition coil-----MK1 Tach Wire
 11 - Power (from cig lighter circuit)--/--(U2/01)-----positive wire in mk1
 12 - illumination (to dimmer or gray/blue)--/--(U1/14)-----mk1 cluster illumination
 13 - to alarm (i didnt use)--/--(U2/1)-----CUT-Not Used
 16 - battery light --/--(U2/12)-----battery light in mk1
 18 - brake warning light--/--(U2/10)-----HAVENT FOUND A CONNECTION
 20 - check engine light --/--U1/9)-----Cut-Not Used
 21 - fuel level--/--(U1/12)-----MK1 Fuel level wire
 22 - left turn signal indicator (did not use) repinned (U2/6)-----mk1 Turn Signal Wire
 23 - coolant temp--/--(U2/9)-----Mk1 Coolant wire
 24 - right turn signal indicator (did not use) repinned (U2/6)-----MK1 Turn Signal Wire
 25 - high beam indicator--/--(U2/6)-----mk1 Hi Beam Wire
 27 - VSS --/--(U1/11)-----Connect to T28/7

T28B (cluster harness)

3 - seat belt warning light--/--(U2/3)-----HAVENT FOUND A CONNECTION
 6 - to trunk switch--/--Cut-Not Used

Turn Signal Note: For the turn signal indicator light, i did not use the factory wiring. i pulled the MFA wire and repinned the connector to U2/6, flasher relay output, which i connected to the turn indicator lamp. I did this to avoid having to use diodes to prevent the current from bleeding to the other turn signal indicators.

Note: Positive power for the mk1 cluster was attained from repinning to the U2/01 plug which is start/run power.

Anything that was cut-not used, i taped up just in case i need it in the future. Hopefully none of those need to be grounded

option 3 is **my wiring trick...aka "piggy back the box"** you will need a good bit of the wiring from the donor to make this happen. you power up the CE2 fuse block to run just the motor, it takes five wires to accomplish. you tap into the black power wire off the ignition, the starter wire off the ignition, and the wires for the fuel pump. the downside to this trick is you will have an additional fuse block to fit up under the dash.

list of wires with pin connections you need to hook up/join together:

constant power wires:

brown/ground: plug Z2 (which goes straight to the negative side of the battery)

red/power: plug Y4 (which goes straight to positive side of the battery)

ignition:

plug H1

pin #4 black wire. this wire goes to the black wire off the ignition switch

pin #1 red w/black wire. this wire goes to the red w/black wire off the ignition switch

fuel:

plug M

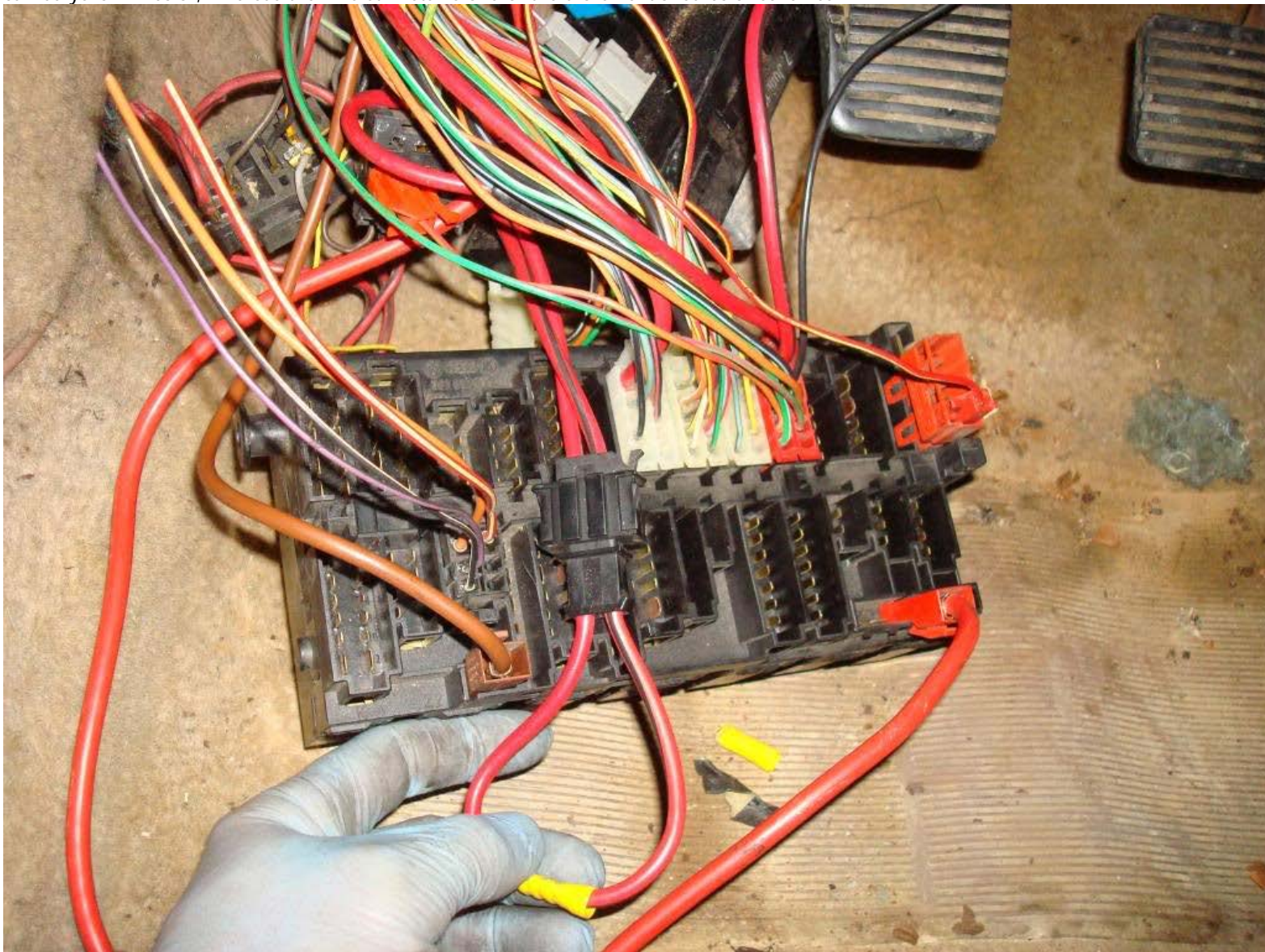
pin#2 red w/yellow goes to power wire from fuel pump (usually black w/green).

starter:

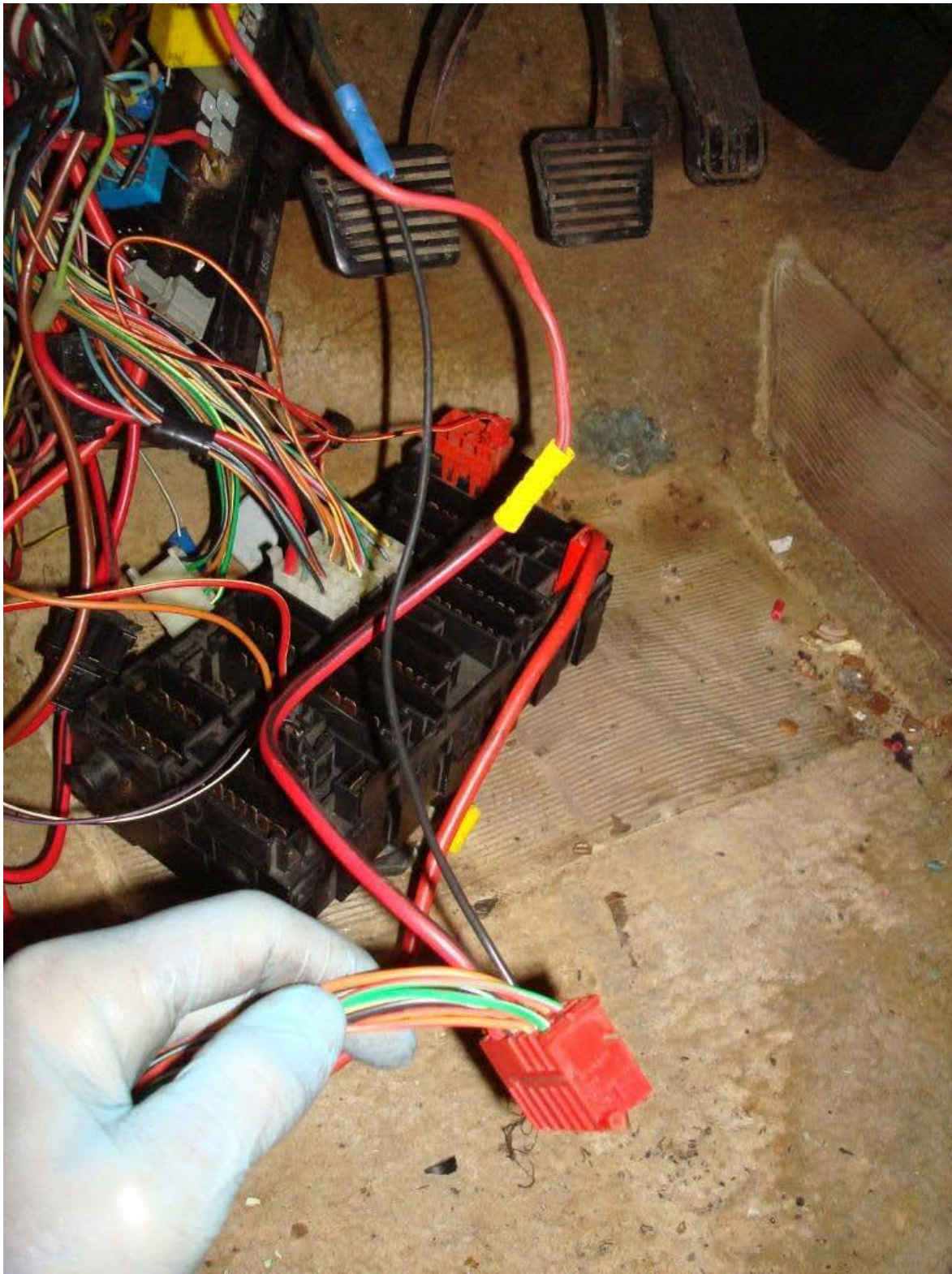
plug F pin #1 is the wire that goes directly to your starter. now there is an alarm control module that this wire generally runs into before going out to your starter. you can simply bypass said module by joining the two wires together at the plug (see below picture). but if you trace this wire it should run directly out to your starter

picture of the fuse block completely hooked up via the piggy back method (except the fuel pump wiring). also pictured is the starter bypass. ****NOTE**** in the upper righthand corner of the picture below you will also see a single wire plugged into the "red" section at the end of the fuse block. this red wire is the constant power wire for the ecu. depending on the year of your motor the color of the wire can vary and be red with either a yellow, white, or blue stripe (it's red with a yellow stripe in the picture below). and in the case of obdII cars the plug itself

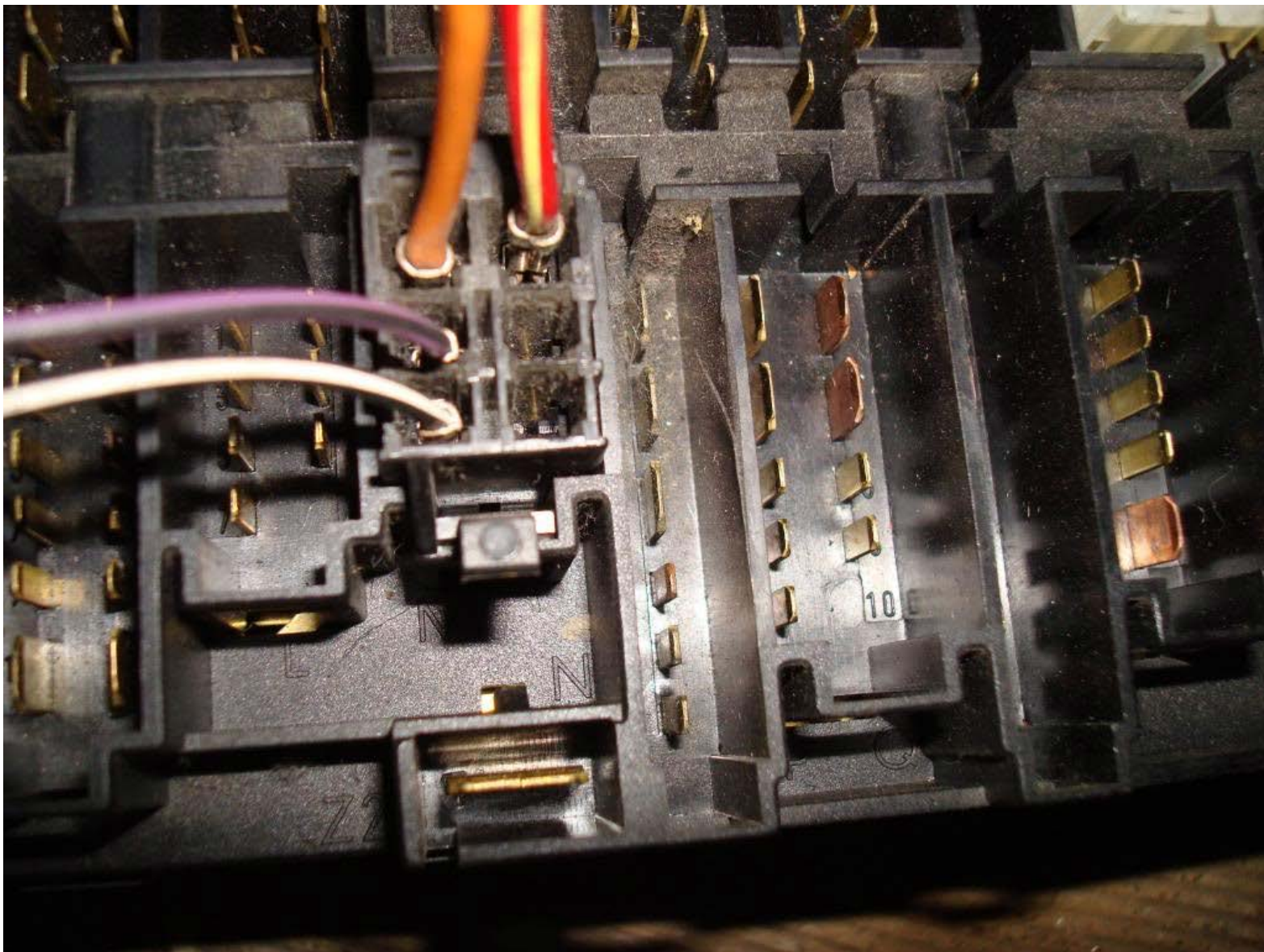
can be yellow in color, whereas the wire still retains one of the aforementioned color schemes



picture of the CE2 connector that you piggy back into. in this picture you can see the red w/black stripe starter wire that i connected to the starter wire off the ignition which is also red w/black stripe. also pictured is the black wire that i connected into the black wire off the ignition.



picture of the plug for the fuel pump. the two larger wires are power and ground for the fuel pump, the two smaller are for the fuel sending unit. the easiest way to run down your fuel pump wiring is to see what colors are at the pump and fuel level sender then find the corresponding wires up under your dash from the rear loom. earlier MK1's use a chassis ground for the fuel pump so it's only necessary to wire up the power wire to get the pump to work. now if you want to use the MK1 cluster you don't need to touch the fuel level sender wiring. however if you want to use the MK3 cluster you need to wire in the fuel level sender.



the coolant temp and oil pressure sensor have to be wired in as well if you are not using the MK3 cluster. you can either go the aftermarket route and use a separate coolant temp gauge and oil pressure gauge...or you can tap into the MK3 wiring via the loom for the cluster (easily identified by the two blue plugs and almost always completely white wiring) and connect that with the MK1 wiring off the stock cluster.

finally sat down and figured out how to make this work. also realized that you need to run the battery light wire as well otherwise the alternator won't charge. now i'm pretty sure that the wiring for the MK3's did not vary enough over the years that my pin location i'm about to list would have changed. however my donor was a 94 if you wanted to double check against it.....to get your stock MK1 cluster coolant temp gauge to work and have your battery and oil warning lights operational as well with my wiring trick you need to run down the two blue plugs for the instrument cluster and a good bit of wire out of a MK3 donor. they are in locations U1 and U2. every plug has the location stamped right next to it and then is numbered for the pins (plugs also number for the pins too). you are after three wires in those two plugs, they are as follows; in plug U2 you want pin #9 and 12. in plug U1 you want pin # 5. those are the three wires that you are after. now in the MK1 wiring you are after a set of three blue wires as well. i will give you the pin and plug locations off my 80' for this write up. they are all on the C plug and are pins; 1,2, and 12. now if you have a different wiring setup than my 80 you can easily trace the wires you need. the small wire off the alternator is easy enough to find and the picture below shows me pointing to the oil pressure sensor (above) and coolant sender (below) off an early 1.7 (but 1.8's are in the exact same location as well.)



generally speaking the sending wires in the MK1 loom are blue with different stripe variations. however they are in the engine harness always so you should be able to track them down easily enough. once you have both sets of three wires (six total) it's time to hook them up. here's the break down of the MK3 wires and what they do:

plug U2 pin #9 is the coolant temp sender wire

plug U2 pin #12 is the alternator charging wire

plug U1 pin #5 is the oil pressure sender wire

plug U1 pin #7 is the tach signal wire (for those who want to run a MK1 cluster with a tach)

all you have to do is take those three wires and hook them up to the corresponding wires in the MK1 wiring. my 80' break out is as follows:

plug C pin #1 is the coolant temp sender wire

plug C pin #2 is the alternator charging wire

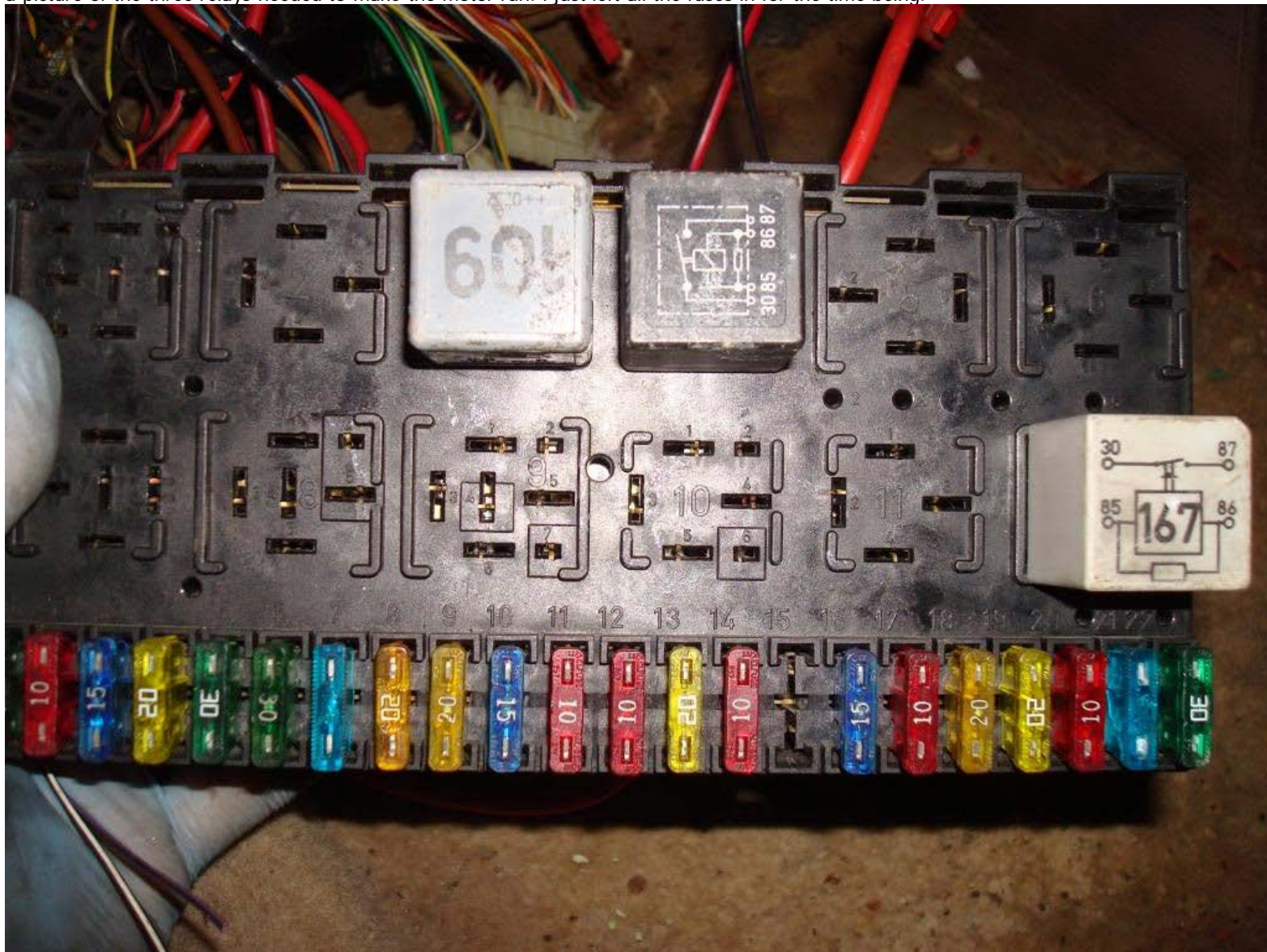
plug C pin #12 is the oil pressure sender wire.

now you have everything necessary to make the aba run and give you proper feed back without having to run a MK3 cluster or aftermarket gauges.

side note about the oil pressure switch(s):

now there are two oil pressure switches. i personally chose the low pressure switch in my application. however you can wire up your high pressure switch if you want to located at the oil filter assembly.

a picture of the three relays needed to make the motor run. i just left all the fuses in for the time being.



Modified by A1steaksauce at 10:09 PM 3-14-2010

Modified by A1steaksauce at 11:17 PM 4-13-2010

Modified by A1steaksauce at 11:39 PM 4-14-2010

SIDE NOTES ABOUT RUNNING THE MK3 CLUSTER

seems i left a few things out about how to make this work. 🇺🇸

1) D8 to E2. your cluster will not work unless you jump these two wires together. Plug D with Pin 8 to Plug E with Pin 2. after you jumper those together you should have a fully functioning cluster...except for

2) the fuel gauge. again this one is really easy to make work. off the plug for the fuel pump you'll see two smaller gauge wires. those are your fuel level sensor wires. all you need to do is remove your back seat, remove the cover on the passenger's side above the fuel tank and inspect the color of the two wires on top of the fuel level sender....then simply locate those two wires in the rear loom up under the dash. once that's done you simply connect them to the two wires in the CE2 fuse block in the fuel pump plug. if you're unsure of which wire goes to which wire simply hook up your cluster via step one, turn the key to on, and hook up the wires the way you think they should be...if the gauge reads correctly you have it right, if it doesn't read at all, well they're backwards 🇺🇸

that's pretty much all you have to do for the cluster to work. it's a very straight forward operation. and on the later westmoreland rabbits and cabriolets the cluster will fit in the dash with some trimming...however the temp gauge and fuel gauge are slightly blocked. you won't be able to see when the car is ice cold and you won't be able to see when the fuel tank is 100% full. honestly i only want to see my temp gauge if it's hot and my gas gauge when it's empty, so imo there's nothing wrong with what parts of the gauges it's blocking 🤔

VSS INFO

there's stories running around that if the vss is not connected the motor will cut fuel above 5k rpm in 4th and 5th gear...or it won't allow you to travel at high speeds on the freeway and that you need to connect it/ground it/run a certain cluster/etc...this seems to occur more randomly in obdII swaps. i personally have not be able to 100% confirm why certain obdII swaps will do it while others will not. however there are simple work arounds to this issue should it arise in your swap be it obdI or obdII. likewise these work arounds will work no matter how you chose to wire up your swap:

thanks to mozcar78 for this obdII solution:

vss TO ecu (connected to VSS wire @ pin 27)--/--(U2/2)-----back to ecu through T28/27

thanks to B4S for this obdI solution:

OBD1 connector, the tach out pin is #22 (green/black), and the VSS pin is #65 (white/yellow). Connect them together and voila, a 12v pulse signal to fool the VSS

and lastly you can replace the chip with a TT performance chip and this will also solve the issue. however like i said you won't know if you have a problem until after you get your swap running. 🙏

that's pretty much the whole swap info. 🙏