



**Active Autowerke Programmed
Active Processor 2
(AP2)**

**Installation Instructions
for the BMW 135i/335i/535i**

Edition 1.0 (10-09)

Thank you for your Active Autowerke purchase. We recommend having a qualified professional perform the installation, however, if you feel capable doing this installation after reading the instructions thoroughly then you may proceed. If you have any additional questions, please feel free to contact Active Autowerke during business hours at 305-233-9300 or contact us from our website www.activeautowerke.com

No special tools are required

Tools recommended:

8 mm socket
Philips screwdriver
Medium size flat blade screwdriver
Small flat blade screwdriver
Small sharp pick
Small pliers
Cigarette lighter for shrink wrapping

Note: ALL WARRANTIES EXCLUDE DAMAGE CAUSED DIRECTLY OR INDIRECTLY BY INCORRECT INSTALLATION OR INCORRECT / MISUSE OF PARTS

THIS PART IS WARRANTED AGAINST ANY DEFECTS FOR A PERIOD OF 1 YEAR FROM THE DATE OF PURCHASE

This part is designed for high performance use and will void your factory warranty

Packing list:

- 1) Active Processor AP2
- 2) Active Autowerke AP2 wire harness
- 3) 10 X zip ties
- 4) 24" heat shrink tubing
- 5) Installation CD

Important:

if your vehicle is equipped with the convenience package, please make sure that your key is far away from the vehicle during installation, you could have a problem with the ignition powering up, and having open wires with this can be dangerous!! Disconnect the battery if you feel that you may have a problem.

Recommendations:

- 1) Lock all doors and trunk, do not allow anyone to open and doors or trunk
- 2) If you previously had an Active Processor 1, you will need to remove all wires and return to original configuration, also return the vacuum lines at the boost control solenoids back to the original configuration. The AP2 does not require the vacuum lines modification.

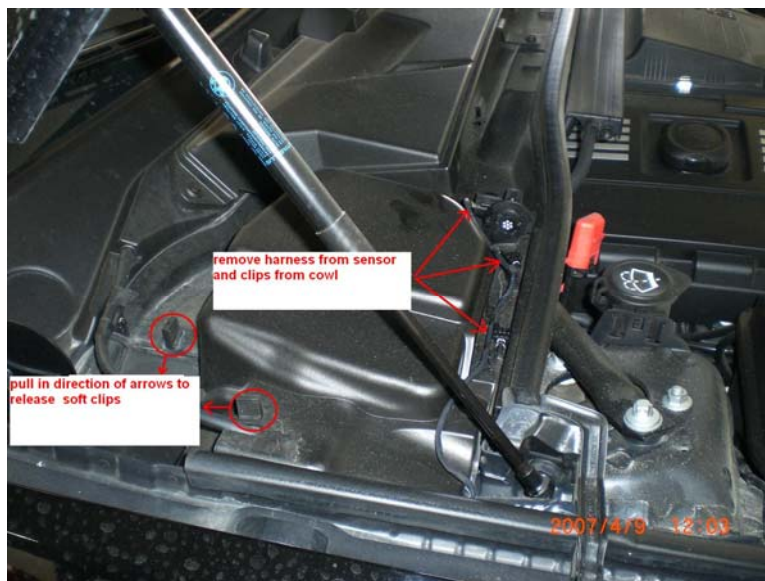
Step 1: removal of cowl cover on left side

Locate the left cowl cover as shown in the picture, slide off the soft clip and release the hard clip at the front. Put the cover aside for re-installation later.



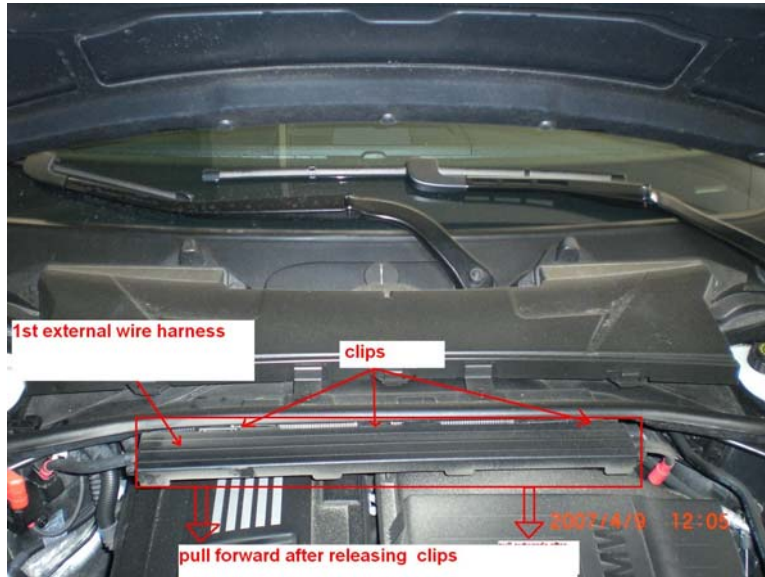
Step 2: removal of cowl cover on right side

Locate the right side cowl cover as shown in the picture, slide off the soft clip and release the hard clip at the front. Put the cover aside for re-installation later.



Step 3: removal of center cowl cover 1st external wire harness

Locate the 1st external wire harness as shown in the picture, press on the clips and slide the harness forward



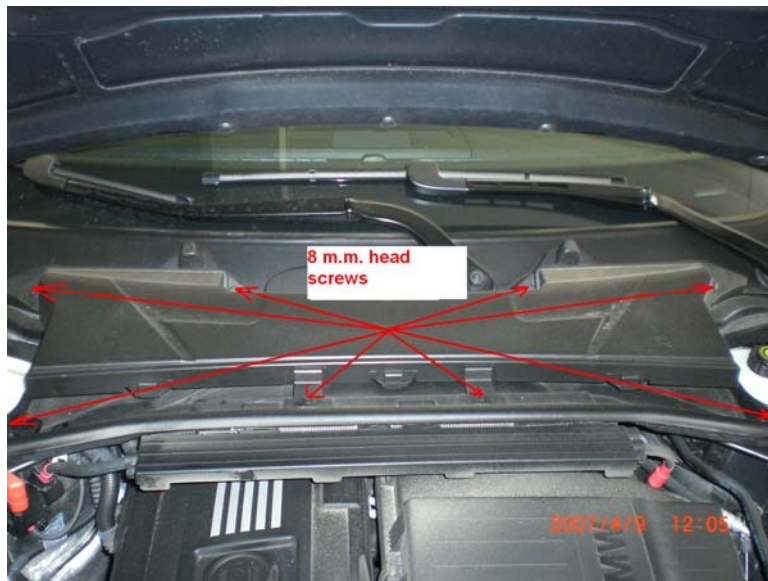
Step 4: removal of the 2nd external wire harness

After removing the 1st wire harness, locate the 2nd wire harness as shown and release the clips, fold them down and remove the wire harness from the holders



Step 5: removal of center cowl cover screws and cover

Locate the 8m.m. head screws as shown in the picture and remove them, lift the cowl slightly and pull forward to release it from the windshield base, lift away the cover and set aside for re-installation later.



Step 6: removal of E-Box cover

Locate the white plastic cover (E box cover) and release the 2 locking clips as shown, plus the 2 releasing clips, remove the cover.

Note: when re-installing this cover be careful and make sure that it sits flat before locking the clips, check by pulling up on the cover, you do not want to have any problems with water or moisture entering the E Box



Step 7: Locate the factory DME as shown by the pics and diagram

Locate the 2 connectors on the DME.

Important!!!

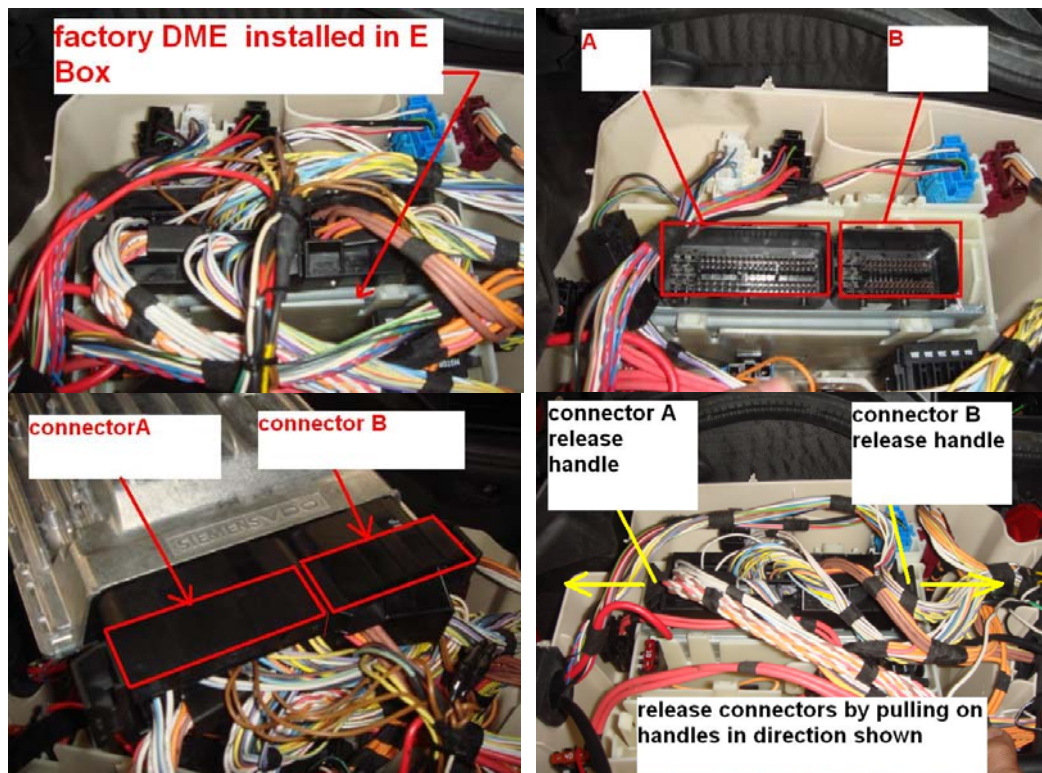
We have designated them as connector A and B, they both have 2 smaller connectors inside of them, we will designate these as “sub-connectors”:

Sub-Connectors A1 (black one with 44 pins) and A2 (white one with 44pins) inside of A

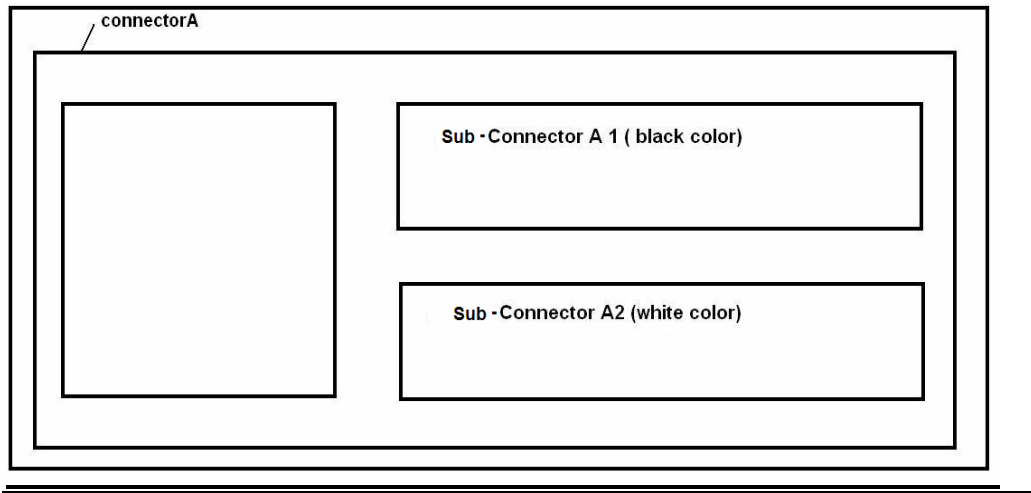
Sub-Connectors B1 (grey one with 26 pins) and B2 (black one with 26 pins) inside of B

You will be modifying all 4 sub-connectors

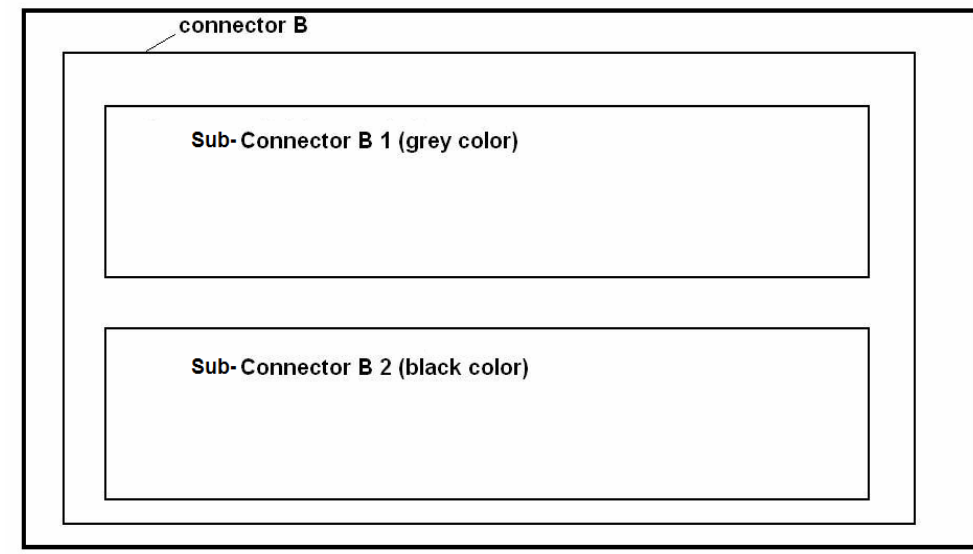
Release the connectors A and B as shown in the diagrams



Sub-Connector A1 and A2 inside of connector A

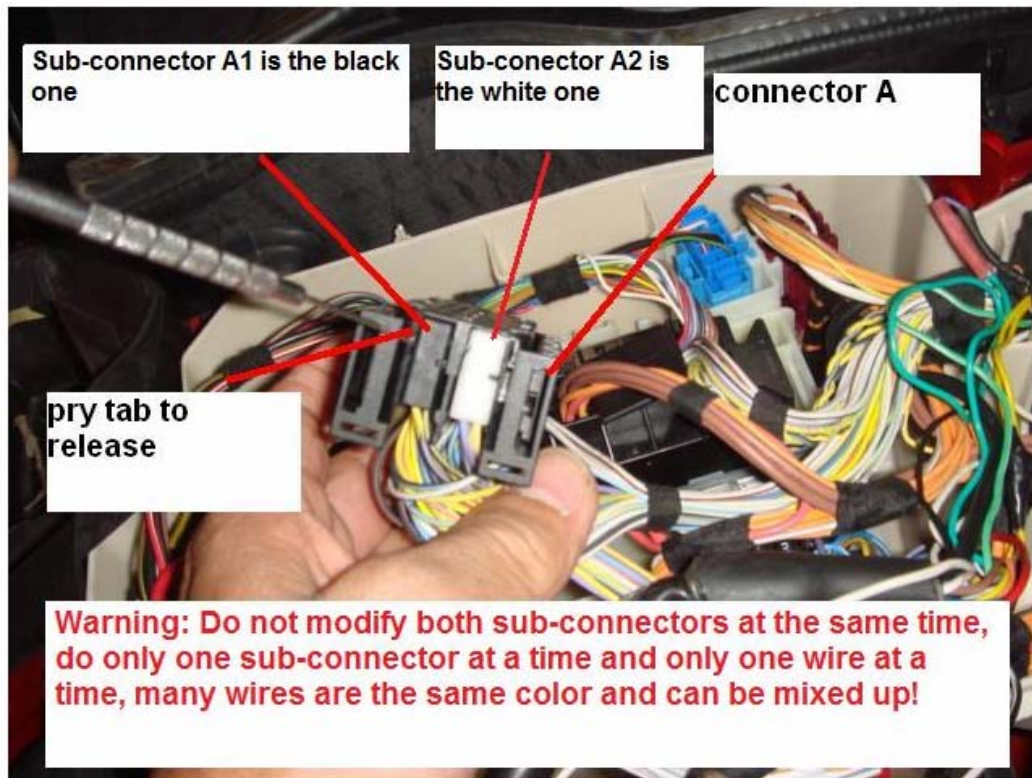


Connector B1 and B2 inside of connector B

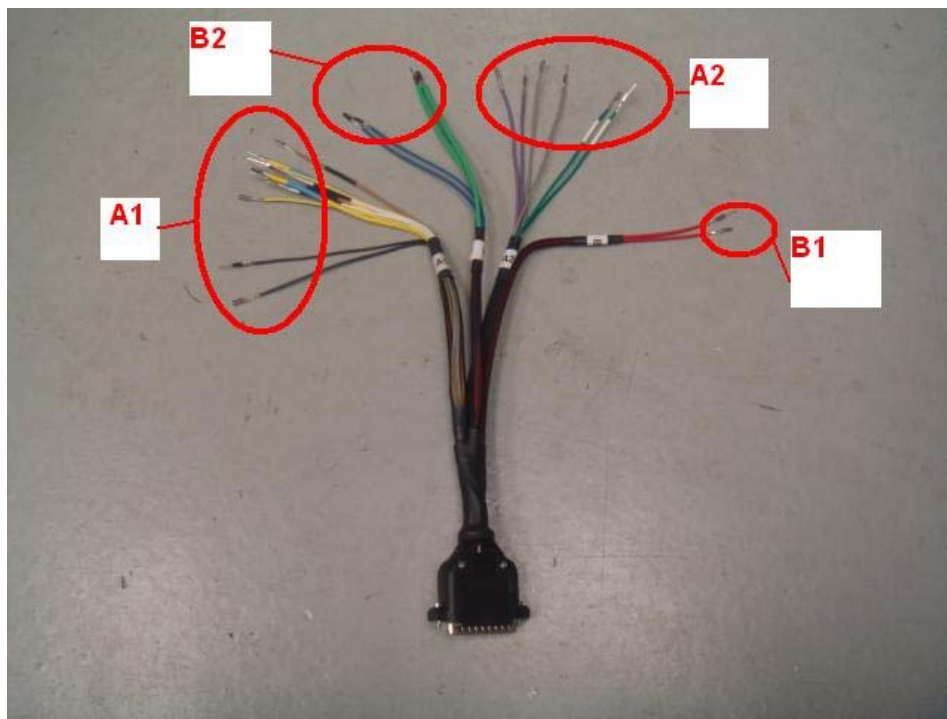


Step 8: remove sub-connectors A1 and A2 from A

Locate Connector A and remove sub-connector A1 (black sub-connector) from it by prying the release tab, slide A1 (black sub-connector) away from A as shown in the picture. Locate A2 sub-connector and slide out in the similar manner.

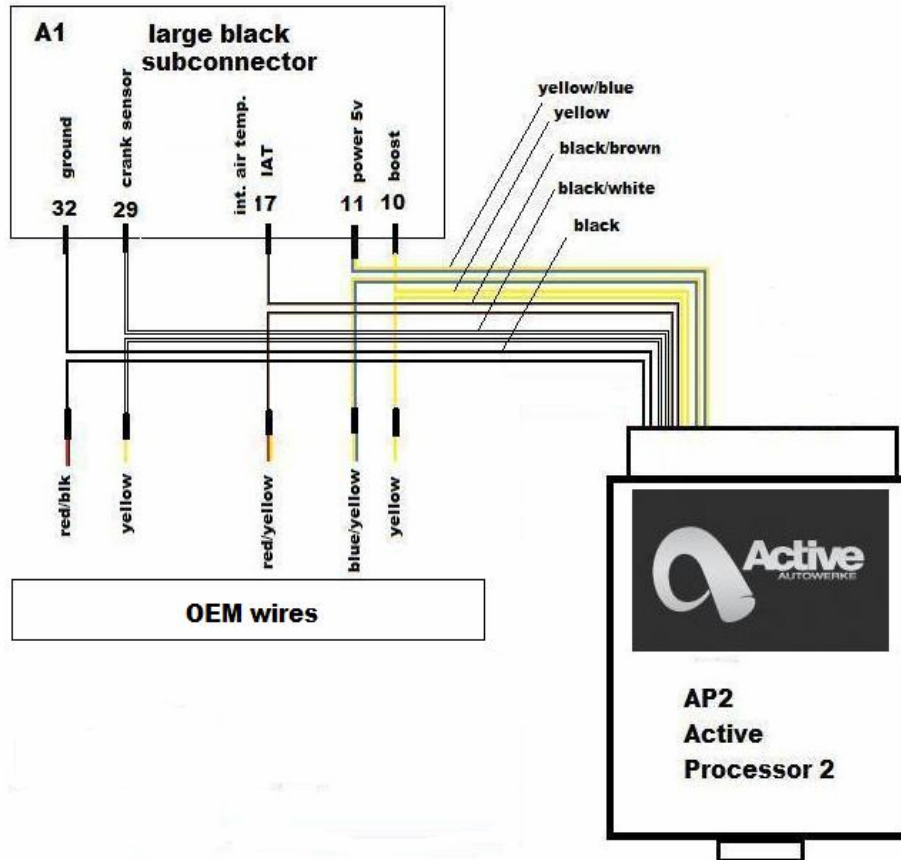


Take A1 and locate the slot numbers in the connector, they are numbered from 1-22 on one side and 23-44 on the other side. It is very important to locate the correct number slot before removing the wire, use the diagram below to assist you. Use the supplied heat shrink tubing to insulate the connection between the OEM wires and the AP2 connecting wires.



A1:

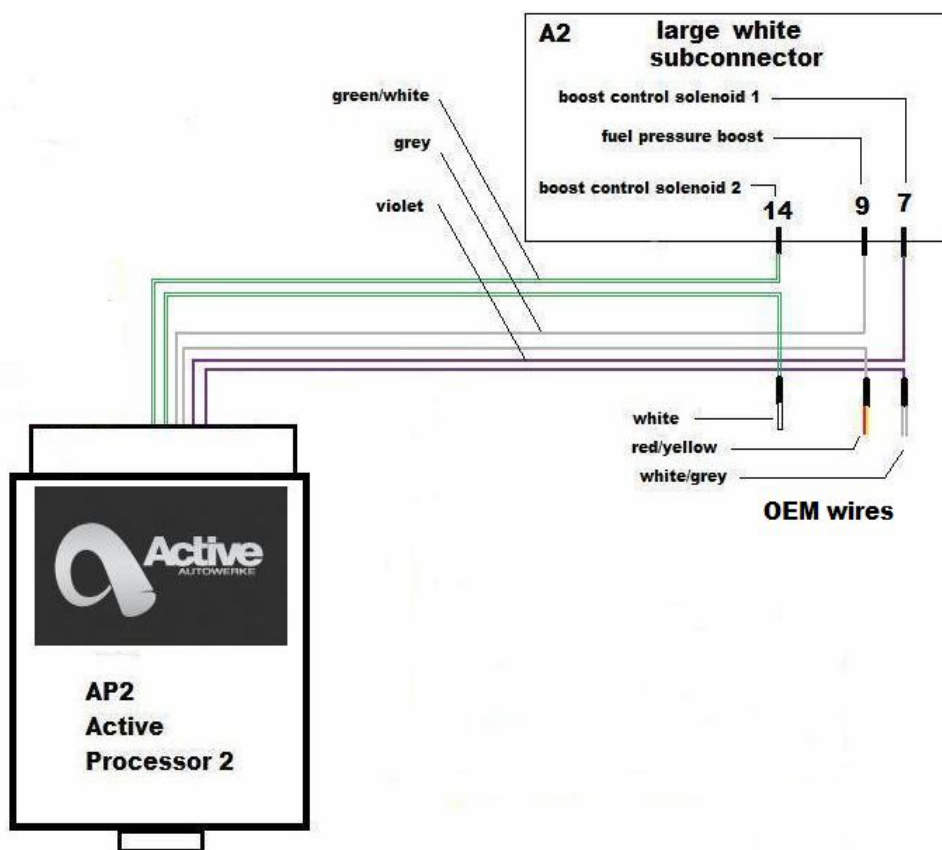
#10 slot.....yellow (#1324)-remove and install yellow from AP2 as per diagram
#11 slot.....yellow/blue-remove and install yellow/blue from AP2 as per diagram
#17 slot.....red/yellow-remove and install brown/black from AP2 as per diagram
#29 slot.....yellow (#494)-remove and install white/black from AP2 as per diagram
#32 slot.....red/black-remove and install black from AP2 as per diagram



Take A2 and locate the slot numbers in the connector, they are numbered from 1-22 on one side and 23-44 on the other side. It is very important to locate the correct number slot before removing the wire, use the diagram below to assist you. Use the supplied heat shrink tubing to insulate the connection between the OEM wires and the AP2 connecting wires.

A2:

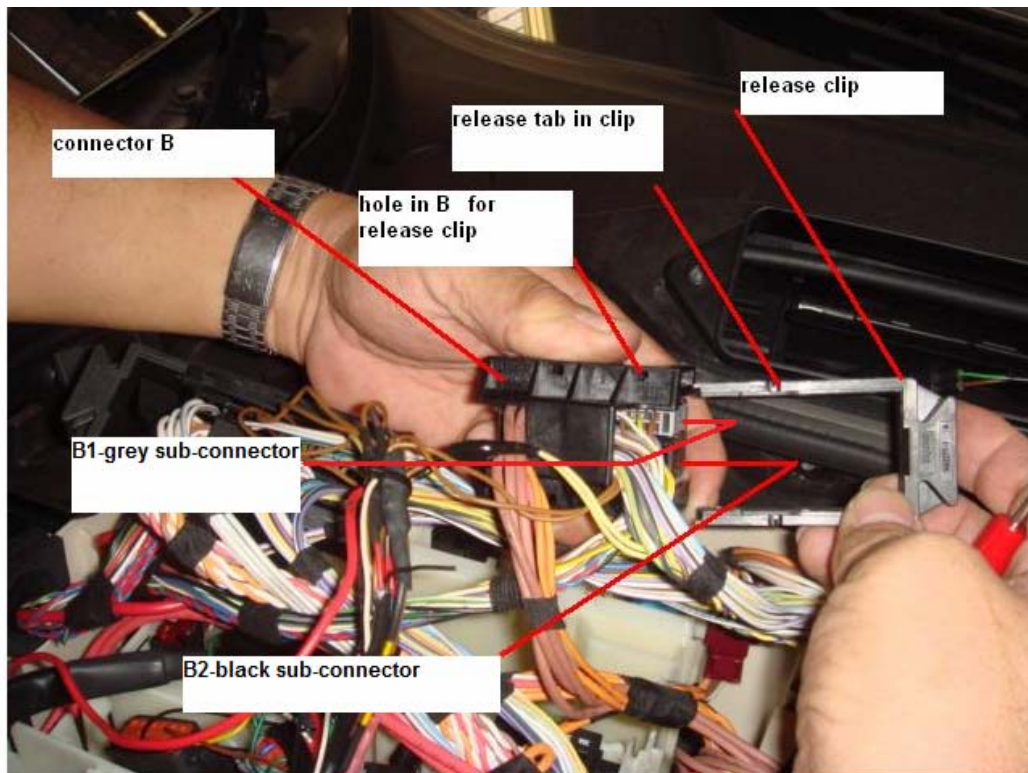
- #7 slot.....white/grey-remove and install violet from AP2 as per diagram
- #14 slot.....white-remove and install green/white from AP2 as per diagram
- #9 slot.....red/yellow-remove and install grey from AP2 as per diagram



Re-install sub connectors A1 and A2 back into the connector A, tidy up the wires and use the supplied zip ties to tie wires neatly in place.

Step 9:remove sub connectors B1 and B2 from B

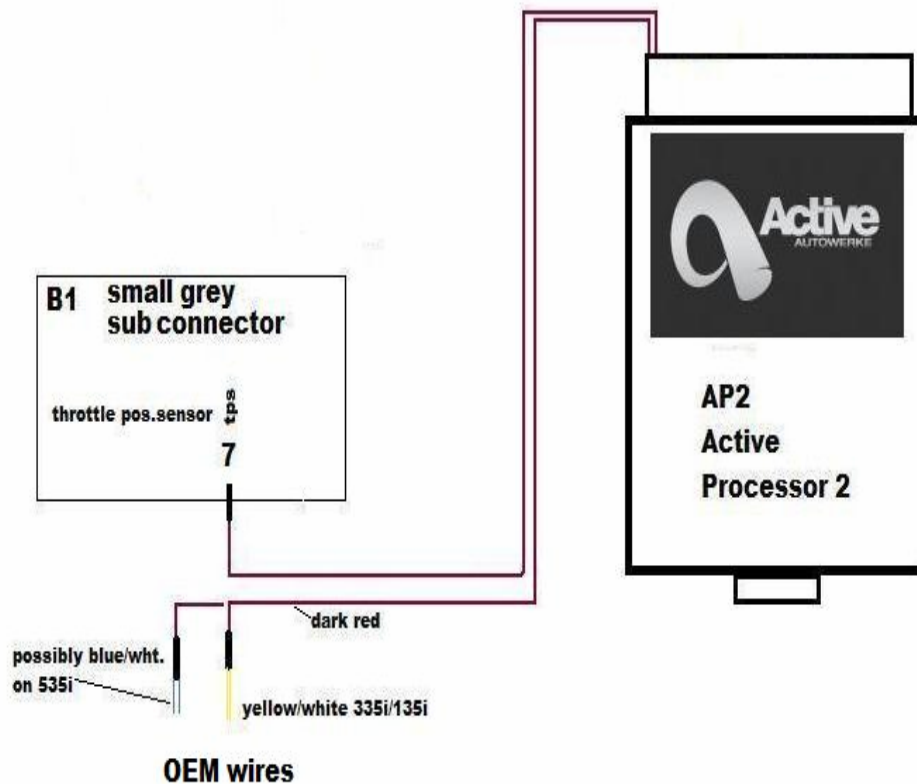
Locate connector B and use a small pick to press in the release tab in the release clip. Remove release clip to gain access to remove sub-connectors B1 and B2



Take B1 and locate the slot numbers in the connector, they are numbered from 1-13 on one side and 14-26 on the other side. It is very important to locate the correct number slot before removing the wire, use the diagram below to assist you. Use the supplied heat shrink tubing to insulate the connection between the OEM wires and the AP2 connecting wires.

B1:

#7 slot.....yellow/white (possibly blue/white on 535i cars) -remove and install red from AP2 as per diagram

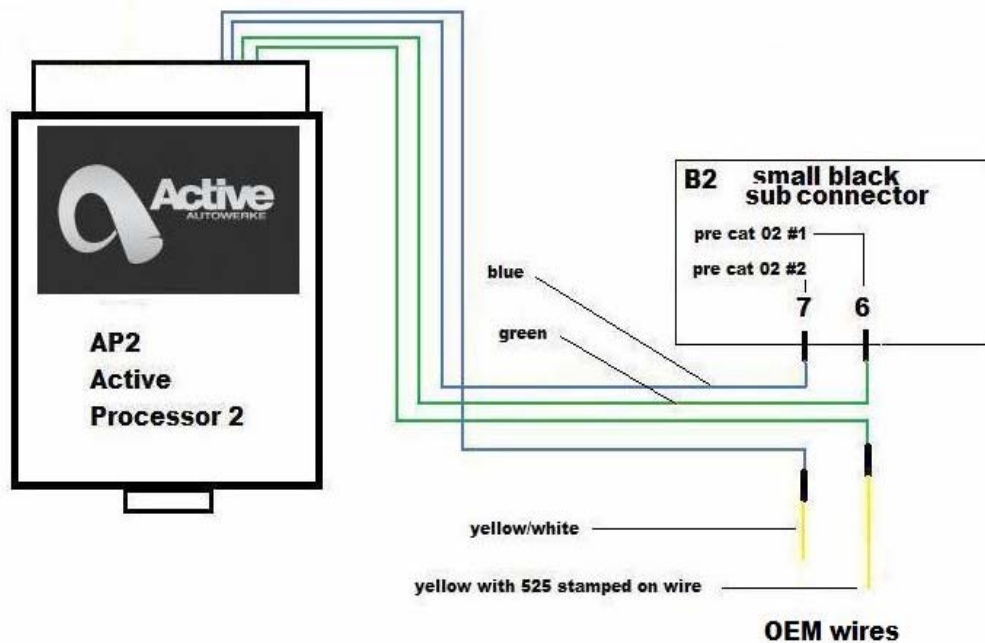


Take B2 and locate the slot numbers in the connector, they are numbered from 1-13 on one side and 14-26 on the other side. It is very important to locate the correct number slot before removing the wire, use the diagram below to assist you. Use the supplied heat shrink tubing to insulate the connection between the OEM wires and the AP2 connecting wires.

B2:

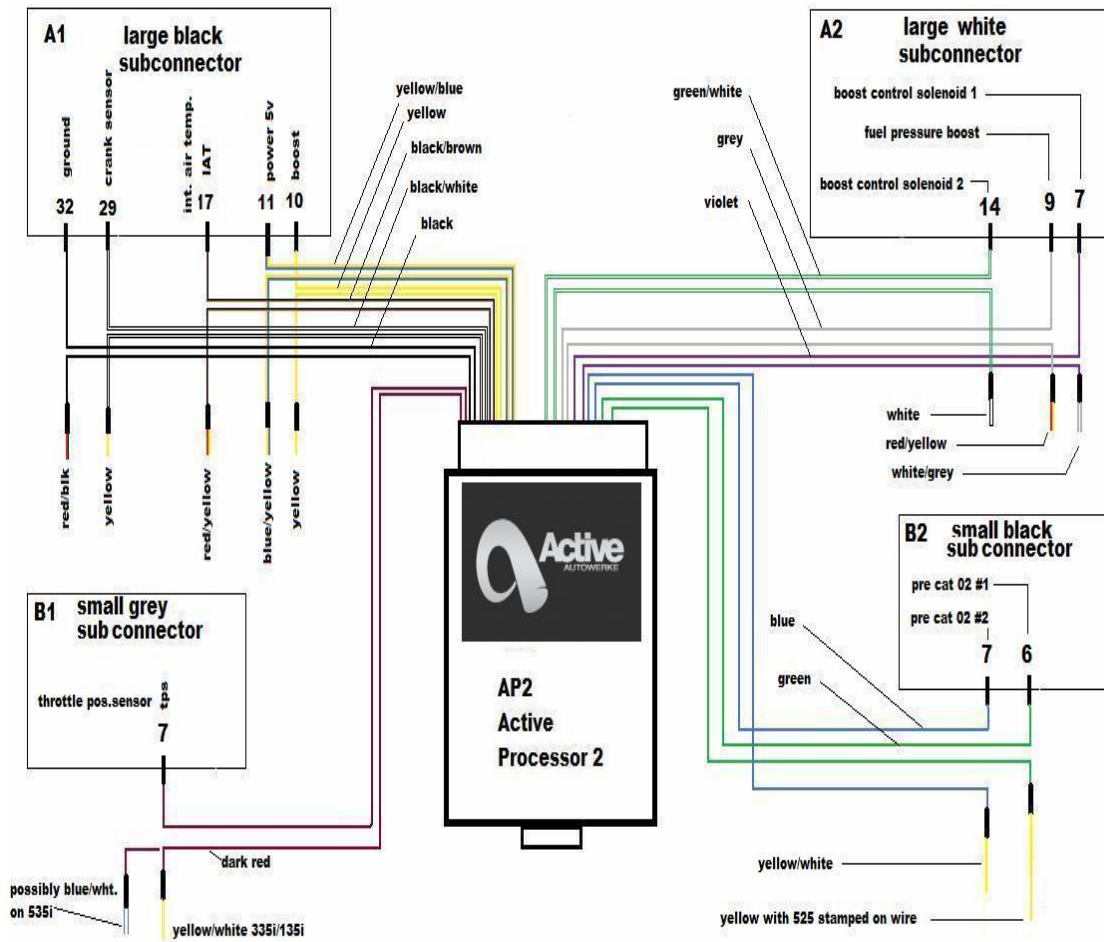
#6 slot.....yellow/white (#525) -remove and install green from AP2 as per diagram

#7 slot.....yellow/white-remove and install blue from AP2 as per diagram



Re-install sub connectors B1 and B2 back into the connector B, tidy up the wires and use the supplied zip ties to tie wires neatly in place.

A wiring schematic for all 4 sub-connectors is shown below showing all connections for double checking your wiring



Overall view of complete Schematic

Step 10:

Take connectors A and B and re-connect to the DME

Take the Active Autowerke processor 2 (AP2) and mount it in the empty slot just in front of the factory DME slot in the E box





Do not install the covers and cowl as yet, open all doors, and start the engine. If it fails to start, takes a long time to start, shows a SES (service engine soon) light, shows a picture of ½ engine or runs rough, then please refer to the troubleshooting information at the end of these instructions.

If the engine starts and runs fine then turn it off and re-install all cowls and covers.

Installation is now complete. The next thing to do is to set up a program in the AP2

Programming the AP2:

The AP2 has the ability to select 8 different calibrations that have been programmed in it for your convenience. The following steps will show you how to set the AP2 in PROGRAM SELECTION MODE and then how to select the programs.

Setting the AP2 in "program selection mode"

- 1) Insert the key in the car, press the START button to have all lights on but do not start the engine.
- 2) Hold the accelerator pedal to the floor for a minimum of 4 seconds or more, then release the pedal, do not turn off the key!

THE AP2 IS NOW IN "PROGRAM SELECTION MODE"

Selecting a program:

Pressing the accelerator pedal to the floor selects the performance programs depending on how many times you press the pedal to the floor. Example: if you press the pedal to the floor 3 times you will end up selecting "program 3", 4 times program "4" and so forth. Once you start the engine the program selected is now locked into the AP2. To select a different program, simply go back to setting the AP2 in "program selection mode" and start over.

Program "0"

If you did nothing else after setting the AP2 in "PROGRAM SELECTION MODE" and started the engine you will be in Program "0" the power will be exactly like a stock car.

Program1:

stg1-low boost ~11-12 psi boost, depending on the mods on the vehicle, weather conditions. Self adapts to bolt on mods and fuel quality. Recommend no less than 91 R+M/2 octane

Program2:

stg2-mid boost ~13-14 psi boost, depending on mods on the vehicle, weather conditions. Self adapts to bolt on mods and fuel quality. Recommend no less than 91 R+M/2 octane

Program3:

Stg2-mid boost~13-14 psi boost, but with more low end boost response, basically the same as program2 with more low end response.
Note: some steptronic car owners may not like this program due to sharper boost in low end.

Program4:

stg3-more boost ~13-15 psi boost, depending on mods, weather conditions. Self adapts to bolt on mods and fuel quality. Recommend 93 R+M/2 octane or better fuel.

Program5:

Stg3-mid boost~13-15 psi boost, but with more low end boost response, basically the same as program4 with more low end response.
Note: some steptronic car owners may not like this program due to sharper boost in low end.

Program6:

Stg3 map~ 15 psi boost, again depending on the bolt on mods and weather conditions, stronger midrange torque with stronger fuelling. Recommend no less than 93 R+M/2 octane fuel. May trigger some "soft error codes"

Program7:

Stg3 map~15 psi boost, same as program 6 but with more low end boost for stronger torque and HP in the midrange. Great for intercooler upgrade, exhaust upgrade, downpipe upgrade. Recommend 93 R+M/2 octane fuel or better

Program8:

For race fuel only !!!! 100 octane or greater, designed for downpipes, intercooler upgrades. Stronger low end boost for added response, recommend an oil cooler upgrade

Troubleshooting:

Troubleshooting the AP2 will be categorized in 2 different categories:

- 1) Category1: During installation you encounter problems
- 2) Category2: No problems during installation, but have problems after driving the vehicle for some time. This is usually caused by “soft codes” then becoming “hard codes” and then popping up after the DME starts to do plausibility checks and see something that is not 100% plausible. These codes will have to be read if you get a SES light or a ½ engine light.

If you encounter problems in category 2, please email us or call us:

Barry Elton... belton@activeautowerke.com or call 305-233-9300 ext 233

Karl Hugh.... karlchugh@activeautowerke.com or call 305-233-9300 ext 226

Category1 common install problems:

Engine cranks but does not start or takes very long to start:

- 1) One or both DME connectors A or B not securely connected, these are tricky connectors, they have to be pushed down while sliding the locks into place, one can easily slide the lock and think that the connector is securely in place.
- 2) One of the wires in sub-connectors A1, A2, B1, B2 is installed in the wrong slot or wrong wire installed. Re-check the wiring thoroughly, start over if you have to.
- 3) The AP2 connector to the AP2 wiring harness is not securely connected.

Engine starts but has a SES light or 1/2 engine light:

- 1) AP2 is not connected
- 2) A loose wire or wrong connection in one of the sub connectors
- 3) Incompatibility with another add on device such as speed limit defender or catless rear O2 sensor simulator.

Engine starts with no SES lights but after driving a SES light comes on:

- 1) This could be normal if the vehicle was driven hard with the AP2 installed and a calibration such as program 7 selected. The vehicle may have to adapt for a while before you can drive the vehicle hard. You may have to erase the error codes and then drive the vehicle normal for a while. If this continues and the vehicle is not upgraded with any exhaust ,intercooler upgrades, you may have to select a less powerful calibration such as program 1 or 2.
- 2) The fuel octane being used is not high enough and the engine is knocking badly and the engine DME is trying to protect the engine. You must either drain the fuel tank and refill with correct octane fuel of 91 R+M/2 or greater. If you are not sure about this, then seek professional help or contact us.

This concludes the troubleshooting