

# ADDING A SUBWOOFER TO A BOSE EQUIPTED MK2 AUDI TT COUPE



Mark Davis  
March 2008

## **Obligatory Disclaimer**

This document remains the copyright of Mark Davis. No unauthorised distribution or sale of this document, either in part or full. The copyright owner may take action against anyone found infringing this copyright.  
The author accepts no responsibility for damage or loss relating to the information given herein.

## Adding a Stealth Subwoofer into a MK2 TT Coupe

If, like me, you have been a little disappointed with the Bass performance with the Bose system installed in the Audi TT MK2 Coupe, you may want to add a little more 'oomph' to the sound. This guide explains how to add an additional Subwoofer in the unused tyre recess in the boot. This will enable you to achieve a nice low-end punch to the sound, whilst keeping the boot space completely unchanged :o)

### **Tools / Sundries Required**

- Soldering Iron (Battery or Gas powered is preferable)
- Solder
- Cutters
- Wire Strippers
- Bread knife or Saw
- Electrical Tape
- Radio Removal Keys
- T30 Torx head driver
- Junior Hacksaw
- 10mm ring spanner
- Crimp tool
- Heavy Duty Velco

### **Parts Required**

- Pioneer UD-SW104S Shallow mount subwoofer enclosure £40 from [www.online-caraudio.co.uk](http://www.online-caraudio.co.uk)
- Pioneer TS-SW1041D Shallow Mount Subwoofer 10". £95 from [www.online-caraudio.co.uk](http://www.online-caraudio.co.uk)
- Sony XM-1S Mono Amplifier. £125 from [www.online-caraudio.co.uk](http://www.online-caraudio.co.uk)
- Amplifier wiring Kit 360W - Autoleads PC4-20. £20 from [www.online-caraudio.co.uk](http://www.online-caraudio.co.uk)
- 2 x RCA Phono Sockets - £5
- Bullet Plugs (Red). £1.29 (JH85G from Maplin)
- Bullet Sockets (Red). £1.29 (JH83E from Maplin)
- Heat-Shrinkable Sleeving (2.5mm pre-shrunk diameter) Maplin BFU87U

## 1. Remove Tool Tray on Left-Hand-Side

Remove the tool tray from the boot. It is wedged under the panel on the Left and 'interlocked' with the tool tray on the right. A bit of lifting of the tool tray on the right will allow you to pull the tray on the left away from the interlock points and slide the tray out towards the right.



## 2. Remove the Luggage Net Hook

Using the T30 Torx Head Driver, remove the two screws holding the luggage Net Hook. The Hook can then be removed.



### 3. Remove Left Hand Side Boot Panel

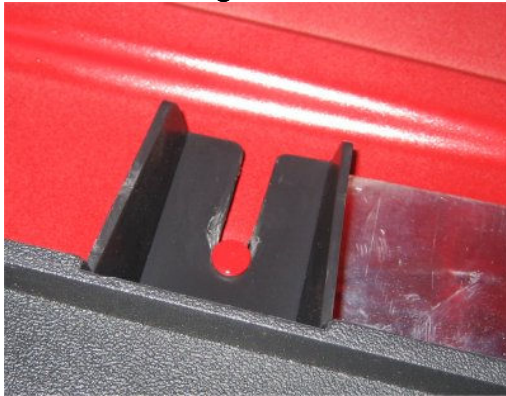
First push the back seats down.

Then the boot panel is removed by simply pulling it away from the car. It is held in place with metal pinch hooks - a bit of force pulling away from the car may be required. The panel flexes quite a bit, but don't worry about this, as it will be okay! It is easier to remove the end closest to the back seat first, and then slide it out from the rear panel.

### 4. Trim the tab on the rear panel

The left hand tab on the rear panel needs to be trimmed if you are fitting the subwoofer enclosure that I have chosen. Cutting the tab allows the enclosure to be positioned further back so it fits into the tyre well recess. Take a junior hacksaw or Stanley knife and trim the tab as shown below.

**Before Cutting**



**After Cutting**



### 5. Partially remove the Bose Amplifier

Using the 10mm ring spanner, remove the two nuts that secure the Bose amplifier to the car. The amplifier can then be pulled free from the locating rubber bung.





## 6. Wiring (part1)

The following procedure explains how to splice into the wiring loom to provide a line-level signal to the additional amplifier and a switched power signal to turn on the amplifier. I chose to cut into the loom and solder wires to form the new connections. Alternatively, you could use 'Scotchlock' connectors to splice into the loom without cutting or soldering. I chose to use solder because I believe you get a more reliable connection.

6.1. Using the wire in the wiring kit, create a short piece of wire (7cm). Strip the insulation from both ends. This piece will be used in the loom as a bridging piece later.



6.2. Create another piece of wire as above, crimp or solder a bullet plug on one end and a spade terminal (from the wiring kit) on the other.

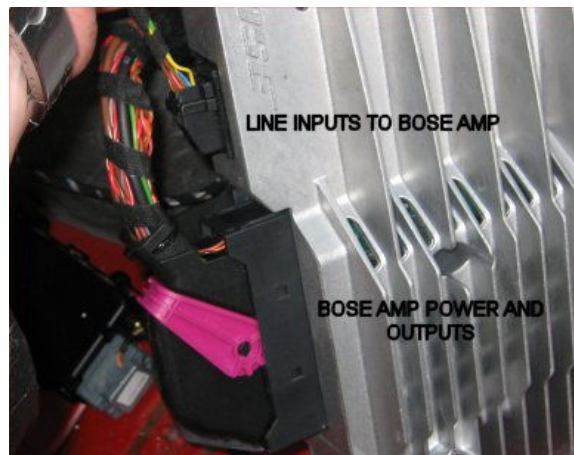


6.3. Cut a piece of wire to approx. 40cm length. Strip the insulation from both ends. Crimp or solder a Bullet socket onto one end.



6.4. At this stage I would strongly advise disconnecting the loom going to the back of your headunit in order to minimise the risk of causing heat or electrostatic damage to the unit.

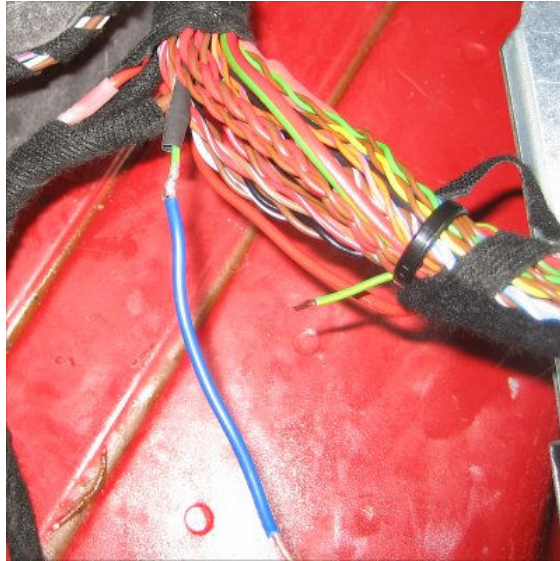
6.5. Next, Locate the two connectors on the side of the Bose amplifier housing. Disconnect the two connectors by pushing the retaining tab in and swinging the locking mechanism back.



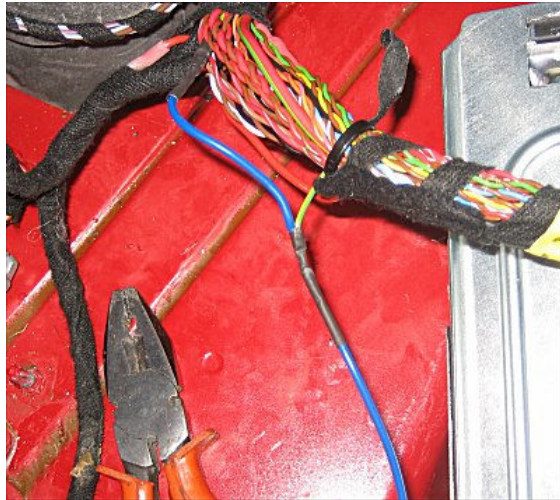
6.6. Locate the Green / Yellow Striped wire in the loom. It is easiest to access at the base of the loom. This wire is the 'switched power' connection that will 'wake-up' your additional amplifier.



6.7. You will notice that there isn't a great deal of slack in the loom to splice into the switched power lead, so to ease the stress on the new joints you will need to add a 'bridging piece'. Cut into the wire, strip the insulation back on both sides and add the small length of wire created in 6.1 (above) to one of the connections. Apply solder to the twisted wires and insulate with some heat shrink sleeving.



6.8. Take the wire created in 6.3 (above) and twist the three wire ends together (remember to add the piece of heat shrink to the long wire first). Apply solder to the joint and slip the heat shrink over the joint.



6.9. Locate the small connector that connects to the Bose amplifier. You will need to splice into this connector to tap-in to the Line-out signals from the headunit. The wire designation is as follows:

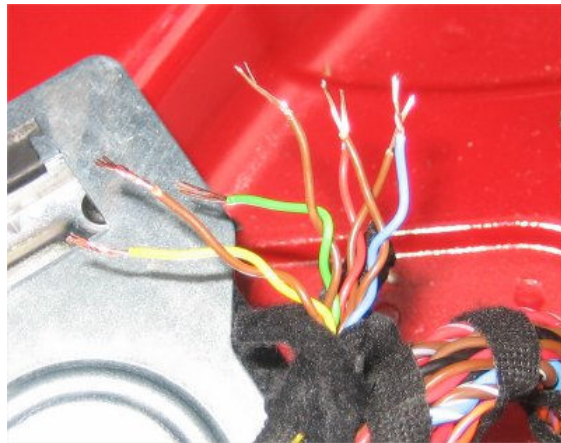
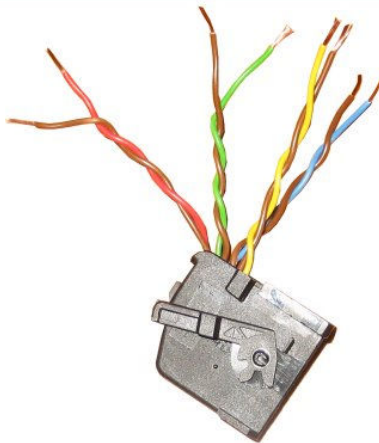
Front Left = Blue  
Front Right = Yellow  
Rear Left = Green  
Rear Right = Red



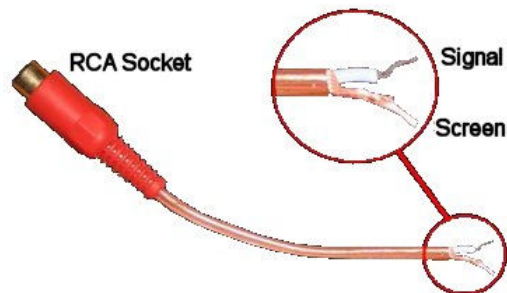
Each wire has a brown wire twisted around it for the audio ground signal.

Which pair to splice into (front or rear) is up to you. I decided to splice into both sets so that I could have a choice of how to configure the system later.

6.10. Cut into the loom and strip the insulation from the wires at the ends. All four twisted pairs have been done here.



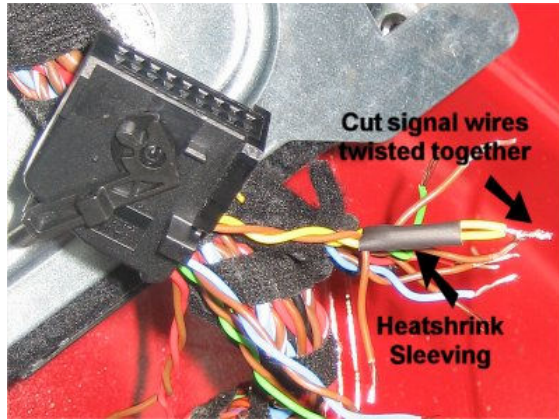
6.11. Take your RCA lead and strip the insulation from the ends to reveal the wire as in the picture on the right. Do this to two leads (or four if you are tapping into both front and rear like I have).





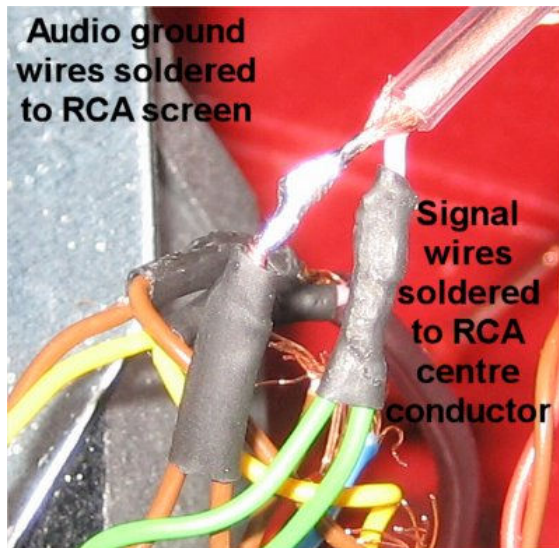
6.12. Prepare to solder the RCA lead (11 above) to the loom. First, take a pair of signal wires and twist the ends together (yellow to yellow, green to green etc.) Slip some heatshrink sleeving over the pair (but don't shrink it yet).

Do the same for the corresponding audio ground wires.

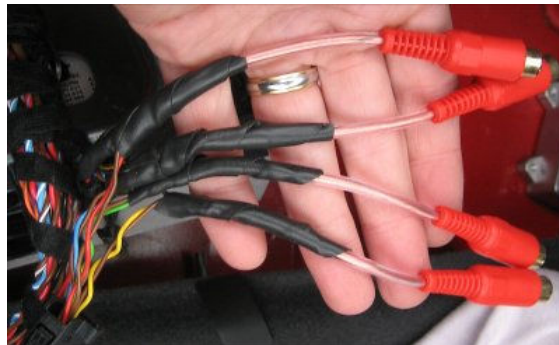


6.13. Take the RCA lead and twist the wires onto the signal and ground wires. Apply solder to the joints and then slip the heatshrink over it.

Repeat this for the remaining 1 (or 3) audio pair(s).



6.14. Bind the connections with electrical tape.





## 7. Assemble Your Subwoofer Enclosure

Connect the subwoofer to the wires inside the enclosure. The Pioneer enclosure I have used comes with the internal wires already connected to the terminal block. The wires are then simply connected to the terminal posts on the speaker. At this point you may wish to add some acoustic wadding to the enclosure to help dampen any box resonance. Screw the speaker to the enclosure using the screws provided.



## 8. Connect Up the Amplifier (wiring part 2)

Take the wiring kit and proceed to connect the amplifier to the various connections. The short piece of wire created in section 6.2 is used to connect the amplifier to the switched power lead created in section 6.8. The Bose amplifier can be reconnected to the car's wiring loom and secured back onto its mounting points. The earth connection for the new amplifier can be inserted under the nut for the lower Bose amplifier mounting point.

Connect the RCA sockets to the RCA lead and then to the new amplifier input channel. Lower the subwoofer enclosure into place in the tyre well. Connect the speaker wires from the amplifier to the enclosure. The amplifier can be secured to the car using heavy duty Velcro.

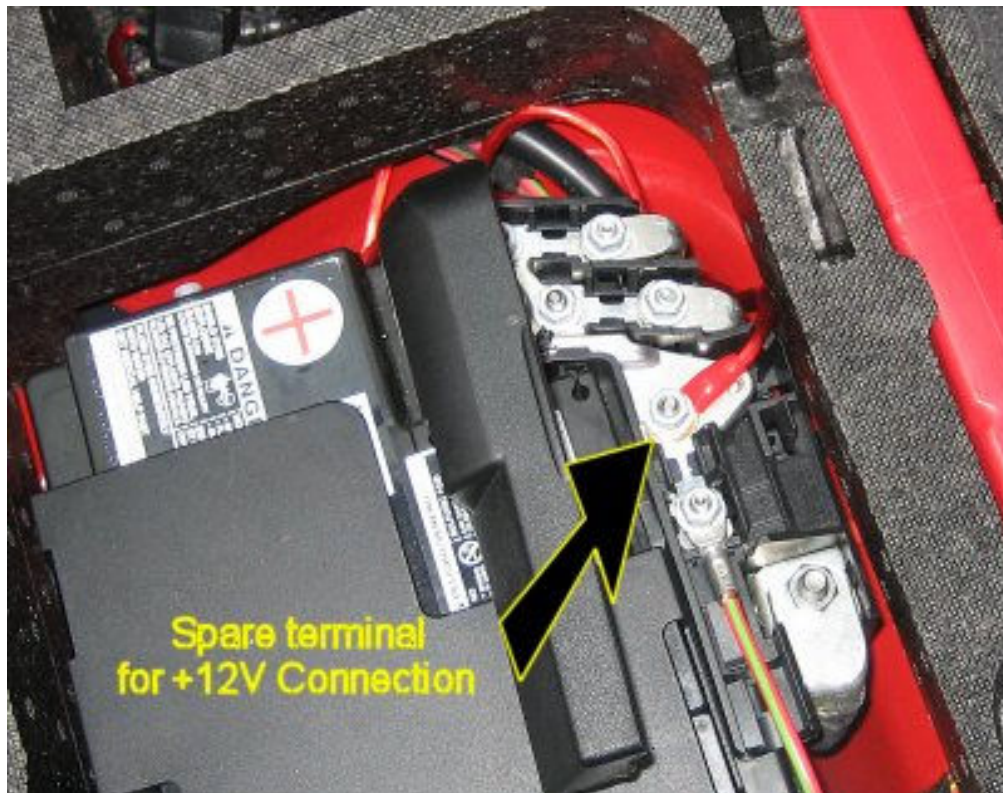


Connect the power cable to the amplifier side first. Route the cable under the tool tray (yellow dashed line below). Remove the in-line fuse from the fuse holder on the lead. Ensure that the fuse holder can be easily accessed.



Flip the cover up that covers the battery terminals. You will see a spare connection point on the battery +12V side. Remove the nut (10mm spanner) and connect the amplifier power lead to the terminal. Replace the nut and tighten.

Re-connect your headunit to the loom. Insert the fuse for the +12V amplifier feed back into the fuse holder. Start the car and check for any whirring, buzzing or high pitched noises through the speakers when you rev the engine. If any of these exist you probably have a ground loop problem. This is caused by an electrical ground difference between your new amplifier and the Headunit. Check your earth connection and reposition if necessary (Note: the connection point I have used has no problems for me).



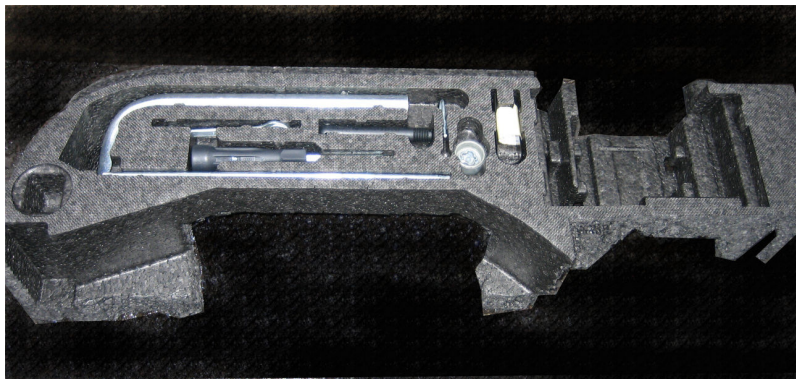


### 13. Cut the tool tray

The tool tray can be sliced up with a bread knife or saw to fit around the subwoofer enclosure. Start by cutting the tyre recess from the tool area as shown below. If you are not happy about modifying the original tool tray, you can buy a new one from Audi for £18 - part number 8J0 864 501.



Cut the tool tray to fit over the amplifier as shown below.



The tray for the Jack can be cut so that it fits next to the subwoofer enclosure.





## The Finished Installation



The finished installation is shown above.

In operation the boot floor covers the subwoofer. Due to the floor area not being completely sealed, the bass propagates into the cabin. The system has been set-up with a cut-off frequency of 150Hz, with a small amount of boost at 40Hz. All these parameters are adjustable on the Sony XM-1S. This setting seems to give the best balance in sound quality and lets the Bose Subwoofer produce the punchy mid-bass whilst the additional subwoofer provides the low-end 'thump' for kick drums and R&B basslines etc.

The system is rated at 290W RMS, which is plenty enough power for the TTs small cabin. Okay, you're not going to win SPL sound-offs, but that's not the intention with this set-up.