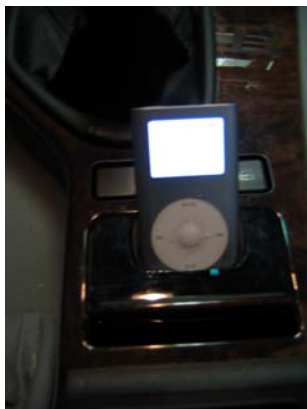




# Dension ice>Link Install 2000 540i with DSP No Navigation



## Dension iceLink Plus / Ashtray Installation



IMPORTANT- PLEASE READ

The following iceLink Plus install can be performed fairly easily with some basic tools. My car does not have the access opening from the trunk to the back seat; however, 5 series cars with access are not affected in a major way.

-----IMPORTANT TIPS -----

READ THROUGH THE ENTIRE INSTALLATION GUIDE BEFORE PERFORMING THIS INSTALLATION! EDITS AND UPDATES WERE ADDED! READING FIRST WILL HELP YOU UNDERSTAND WHY THE UPDATES/ EDITS WERE MADE AND HOPEFULLY KEEP YOU FROM MAKING A TIME WASTING MISTAKE.

BEFORE WE GO...

In your excitement to get your new toy installed and working, you will have the tendency to move very quickly...DON'T!

The best advice I can offer --  
TAKE YOUR TIME -- THIS IS NOT THAT HARD OF AN INSTALL!

LEGAL STUFF

Author assumes no responsibility for damage resulting from the following installation procedure. This guide was written as a reference source only.



# Dension ice>Link Install 2000 540i with DSP No Navigation



Installation Time – (1) Person  
10 hours\*

\* It should be noted this was the first interior modification I have performed since owning the car. I suspect more experienced BMW owners could perform this operation much quicker.

**Cost(s)**  
\$283.00

## **Tools**

Screw Drivers (Flat / Philips)

Dremel Tool – Sanding and Cutting attachments. (See note below)

Bench Grinder

Needle Nose Pliers

Side Cutters

Electrical Tape

Duck Tape – I can not recommend the “Duck Tape” brand of tape. I purchased a new roll less than one month ago and could not get it hold! I found an off brand in my garage that worked flawlessly.

Xacto Knife

Socket Set – 1/4” and 1/2” Ratchet

Sockets – 8mm / 10mm

Shop Light(s)

## **Pre-Installation Notes & Tips**

During the steps, if a specific attachment for the Dremel Tool was used I will explain its description the best I can and/or supply photos. I borrowed a friends Dremel tool so I am not sure of the proper naming of the exact cutting and sanding attachments. Looking at the photos, studying the installation instructions and using your best judgment will guide you. For specific questions or problems, just post them on the forum and I will try to answer.

Store all related parts, screws, etc. in separate Zip Lock bags. Another good idea (one I should have done) is to label the bags.

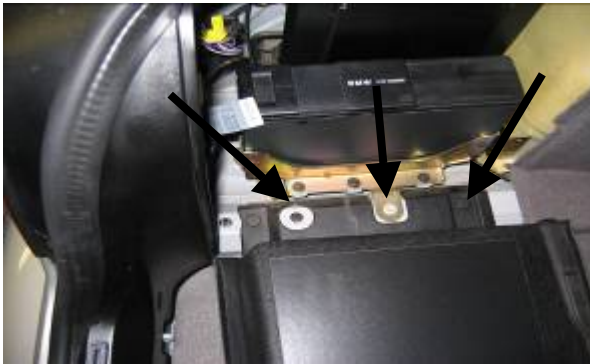
Setup one playlist on the iPod before starting installation.

My car does not have the access opening from the trunk to the back seat; however, 5 series cars with access are not affected in a major way.

## Instructions

### Part I

1. Remove the negative (-) battery cable from the post and tape with electrical tape. No picture here -- If you are unsure how to do this, please **STOP** now and have your system professionally installed.
2. Remove the trunk liner and side door (driver's side) compartment that covers the cd changer. (See Photos). Take a flat head screw driver and carefully pry up on the lip of the fasteners to remove.  
NOTE: Find a clean storage area in your garage, etc. to place the interior trim pieces, rear seat, etc. to protect them from damage and dirt.

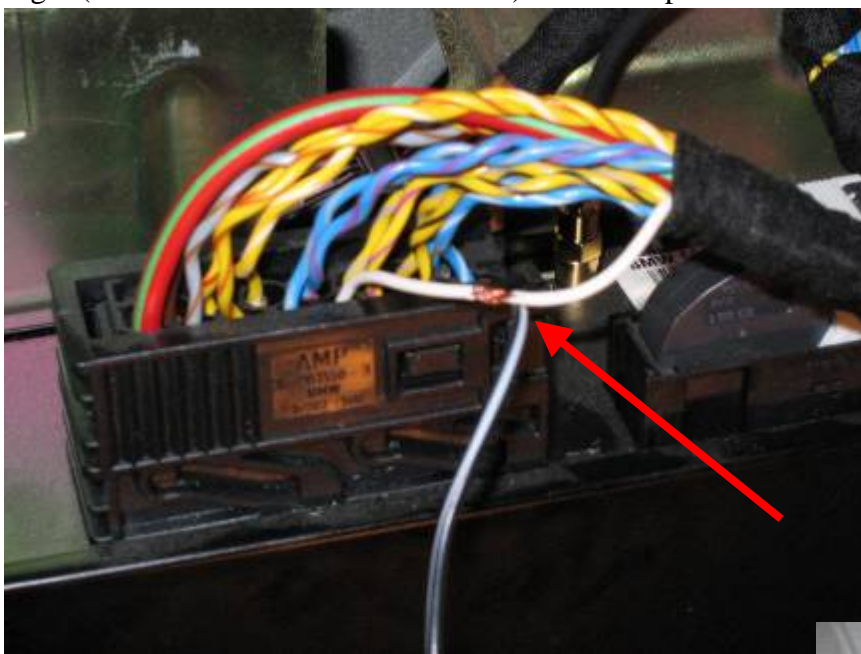


3. Unplug the wiring harness from the cd changer and remove the mounting screws (8mm) from bottom bracket plate. *Carefully lift the unit out ensuring no wires are still attached. Pay attention to the plugs and wires you have removed, they will be used to connect the iceLink DA unit and wiring harness.*
4. The DA Converter requires a 12v source. I tapped power off of the amp wiring harness. (see photo below)

The power wires for the DA Converter are positive + (Black / White Stripe) and Negative – (Solid Black) with a plug on the other each that connects to the converter. *NOTE The photo shows the positive wire as more blue and white – This wire IS black and white. (I found this out the hard way... my + and – wires were not marked from the factory and was forced to research for over two hours to confirm polarity \$\*%&#)*

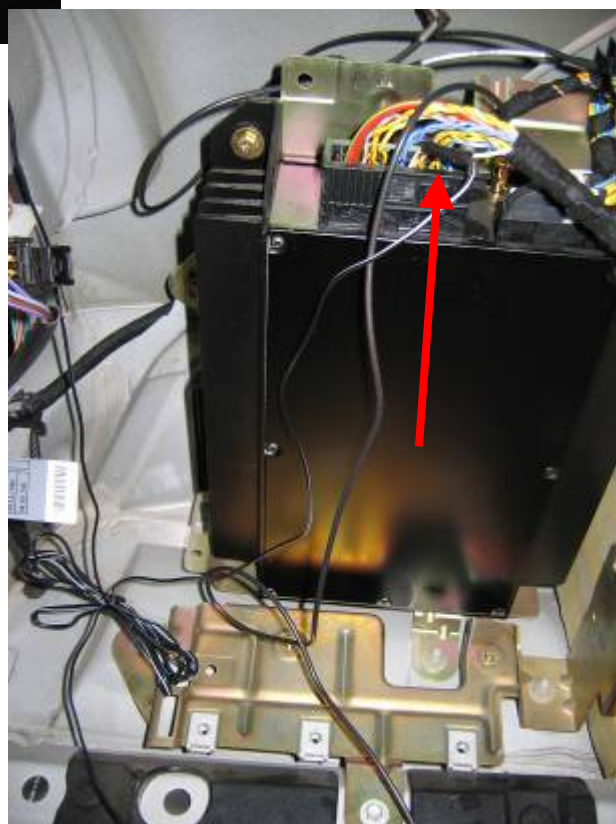
Below I have provided the exact steps to splicing your wires. If I was to do it over again, I would probably run the positive wire to the battery while grounding the negative the same. *Only steady hands should attempt this splice...too deep with the Xacto Knife and ...*

**Splicing Procedure** – Take the Xacto Knife (Very sharp) and VERY CAREFULLY shave back the shroud protecting the wire (white wire going to amp plug). PATIENCE GRASSHOPPER. Once the wire (white) is exposed, take the positive wire (Black / White) from the DA Converter and wrap around the white wire very tight (Better to solder – Just be careful ). Now wrap this connection good with electrical tape.



- IMPORTANT –
1. CHECK TO MAKE CERTAIN THE WIRE YOU ARE SPLICING IS 12v POWER.
  2. MAKE SURE YOUR HARNESS IS THE SAME!

5. Run the Neg. wire (black) to ground. First, place a (U) shaped connector on the negative wire and run it to the closest threaded post on the back of the taillight housing (driver's side - U.S.). Unscrew the nut just enough to place the wire underneath then CAREFULLY tighten the nut back.  
DO NOT OVERTIGHTEN YOU WILL CRACK THE HOUSING!
6. Now get out the BMW Instructions that came with the iceLink and match up the connectors from the cd changer to the DA Converter. Pretty much plug-n-play here...



*NOTE: Remove coax cable from amp (single pin cable left behind after changer removal and is still connected to the amp ... unplug it totally – Keep this cable stored with your changer in case you want to re-install...trust me you won't!*

7. At this point you should have the DA Converter connected. Before we start running the harness to the front and mount the cradle you need to make a DRY TEST RUN to see if the player works.
8. With the key out of the ignition re-connect the battery.

9. Now with everything lying in the trunk, carefully remove the 15' harness and carry it to the front driver's seat. **BE CAREFUL** not to snag the harness on anything or undo the work you've just completed.

10. Place the iPod in the Dension cradle, insert key and turn to the 2<sup>nd</sup> position.

11. Turn the head unit on. If the head unit is not set to the cd changer -- switch to it. *NOTE: If the changer refuses to come up and just displays TAPE temporarily -- STOP! Turn the key to the off position and REMOVE the keys. Go to the rear of the car and remove the 30A & 10A fuses for the head unit and wait 5 minutes. Reconnect and try again.*



12. Now you should see the player come to life. **MAKE SURE YOU HAVE AT LEAST ONE PLAYLIST SETUP. AFTER PLAYING AROUND UNPLUG THE 12v WIRE FROM THE CONVERTER.**

13. Congratulations the easy part is done...GOOD JOB! Get some rest and rejuvenate the patience.

Look over the misc. photos below for reference on connections, etc. Now on to running the harness and trim/ panel removal...

MISC. PHOTOS



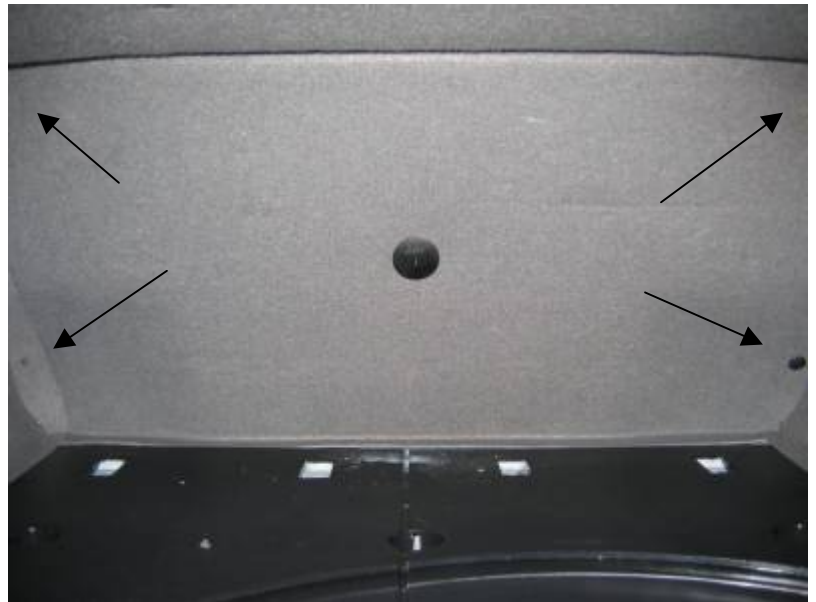
## Wiring Harness & Trim Panel Removal (Driver Side / Trunk)

Before we start running the harness and removing panels, STOP.

Take the time to wrap tape around the connector plugs that connect the harness, etc. to the DA Converter. Note in the photos how I placed some electrical tape about 1" below the red / white RCA plugs. I did this to take some of the pressure of the RCA plugs. It is not necessary to wrap tape around the RCA plugs. The point in wrapping electrical tape around the connectors is to 1). Ensure they are properly seated and stay that way, 2). Protect the wires, pins and connections in general and 3). It's just good safe practice and provides a clean appearance.

Here we go...

1. Remove the drivers side panel in the same manner you removed the access door to the changer (Only one trim grommet is on the side panel – *(same grommet as the access door under the phone badge symbol)*).  
NOTE-The second grommet is DIFFERENT and connects the rear panel to the side panel. THESE TRIM GROMMETS UNSCREW!  
*Learn from me I broke two!*
2. Unscrew the top / bottom left rear trim grommet and carefully remove the side panel exposing the insulation and factory wiring harness'
3. Next remove the remaining rear trim grommets EXCEPT THE LARGE CENTER ONE. (Keep everything together in your Zip Lock bags)  
*NOTE I had a hard time creating resistance to unscrew the grommets. If some break off it's not the end of the world.*
4. Next remove the bottom section of the rear seat.



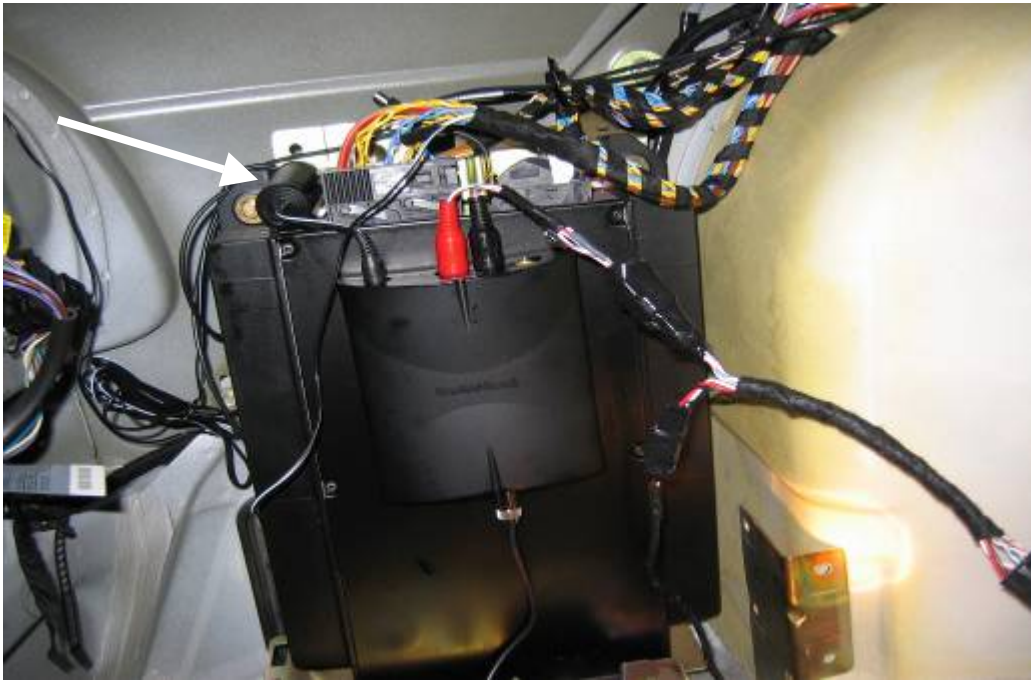
First, raise the center armrest all the way up. Go to the drivers side and grab the bottom of the seat about 1/3 of the way towards the passenger side. Lift up with some force until the seat unclips. Go to the other side and repeat.  
*Place in a clean location out of the way.*

5. With the bottom section of the rear seat out, fold down the center arm rest and locate the backside of the LARGE CENTER GROMMET. (You will have to move the perforated insulation back a little... DO NOT BREAK OFF)
6. Squeeze the tabs and the grommet should pop off in the trunk.
7. Locate the grommet and remove the back panel. Go ahead and remove the floor panel too. (If you remove the floor panel before removing the back panel you may find yourself fishing the grommet out of the spare tire well. Sound like experience, huh?)



8. Now is a good time to mount the DA Converter to the Amp. First, clean the Amp surface and back of converter with degreaser.

9. Evenly space four 3M Dual Lock fasteners to the back of the converter and mount to the amp as shown. *Heavy Duty Velcro may work too?*



10. With the converter mounted to the amp, now clean up the wires around the amp. Note the position of the converter and especially how the filter neatly fits next to the amp plug. IGNORE the wire hanging down... it tucks neatly behind the amp.

11. While in the trunk, take your 11/32 drill bit and carefully drill a hole adjacent to the large grommet hole (SEE PHOTOS). Take your time and do not push too hard – drill just enough to break through. Clean up the rest with the grinder attachment (Dremel Tool) BE SURE TO SMOOTH ALL ROUGH EDGES.



12. Go ahead and run the wiring harness through your newly created hole. DO NOT DRESS THE HARNESS WIRES...THIS IS DONE AT THE END OF INSTALLATION.



## Dension Cradle & Ashtray Fabrication

To mount the cradle in the ashtray location requires some patience. If it's late or you're tired, save this next section until you're well rested – Cutting the required 1/16" lip off the ashtray lid takes steady hands, if not, new ashtray lid. :~)

I chose to mount the iPod in the ashtray for a clean look and to have the ability to remove the iPod and close the ashtray. Also, I wanted the iPod to lean towards the radio at a 45 degree angle. To accomplish this you have to modify (cut) the cradle quite a bit. .

1. Remove the chrome ashtray liner. (Pull the ashtray lid all the way open...then take it a nudge farther. The ashtray liner should pop up). **UPDATE: Take the cradle apart NOW. (See detailed instructions below.)**
2. Note the gear inside the ashtray. Take the cradle and set it in the ashtray with the edge of the cradle resting against the gear. This is the angle I wanted. Also note how the metal support (springy) gets in the way. Let's get rid of it.
3. Take your side cutters and snip it out of the way...Carefully! Set the cradle back in the ashtray. Note how the door will not close without grinding some of the cradle away. Let's go...
4. Grind away about a 1/16" – 1/8" off the top of the cradle. Be sure to shape it the same. TAKE YOUR TIME
5. Once you have a good fit and closure you will realize you need some type of support below the cradle to have a snug fit. Keep in mind you will be seating the iPod in the cradle and this requires a little force. Without something supporting the cradle it will work loose over time...something you definitely DO NOT want to happen.
6. To create the support piece (1/2" acrylic / plastic (clear)) we need to measure the enclosure carefully. *I must apologize here for not having the measurements to post... I lost them during clean up ... I APOLOGIZE!*

Anyway, it's not too hard to make the measurements...just make sure you note the little tabs sticking out in the enclosure and especially the plastic light housing sticking up (drivers side). *Be careful not to break the light housing, it's what makes the cradle installation look so professional at night.*

7. Take your measurements and cut to rough size. Once cut – Use the grinder to smooth the edges. I recommend fitting a piece with a trial and error approach until snug. Now place the cradle in the enclosure and mark for the cut out. If you do not cut out for the cradle **THE LID WILL NOT CLOSE. MARK THE SUPPORT SO IT FITS TIGHT AROUND THE CRADLE.** *Note the points where the cradle touches the support, we will epoxy these areas later.*

### **REFERENCE PHOTOS BELOW.**

*To remove the support for shaping, take a small screw driver and carefully pry up.  
(In front of the ashtray light housing – towards the rear seat)..*





**NOTE THE ARROWS – For the cradle to fit properly, grind this area more than the photo indicates.**

8. (SEE UPDATE ABOVE FOR STEP 8)

To properly check the fit of the cradle in your new support – *CAREFULLY* remove the very small screws located at the bottom of the cradle. *BE CAREFUL* with the circuit board too. *NOTE: THIS STEP SHOULD HAVE BEEN DONE EARLIER BUT WAS LEFT HERE AS A “HOW TO”*

9. Once apart, take the shell (the part with Dension imprinted) to the ashtray and check for fit and closure.



10. For the ashtray to open and close properly – (once the cradle is reassembled (later)) with the plug -- you have to trim the edge underneath the ashtray lid. The edge is about a 1/16” and runs the width of the lid.

11. **GO SLOWLY!** *To perform this procedure I used a Dremel tool with a cut off attachment and the console as a brace. Also, a good shop light is a must!*



12. Now test fit – the ashtray should close and the cradle should hold itself in place pretty good. If not, locate the areas where it touches and reshape (support), etc.
13. Next reassemble the cradle without the screws, foam and circular mounting guide.
14. Note the large convexity of the back after reassembling. There is no way this is going into the ashtray enclosure the way it is... Time to cut ... FUN FUN!
15. Carefully mark and cut most of the backing away. (SEE PHOTOS BELOW)



**Dremel w/ cut-off Attachment  
Grinder -- (The width of the grinder wheel is almost perfect for grinding the shape of the light housing.)**

16. Once cut and reassembled be sure to cover the hole exposing part of the electronics with electrical tape. (A really nice move here would be to fabricate a half moon cover and epoxy to seal. Especially if a drink was to spill. However, I ran out of time and I feel properly covering the opening with electrical tape provides some level of protection.)

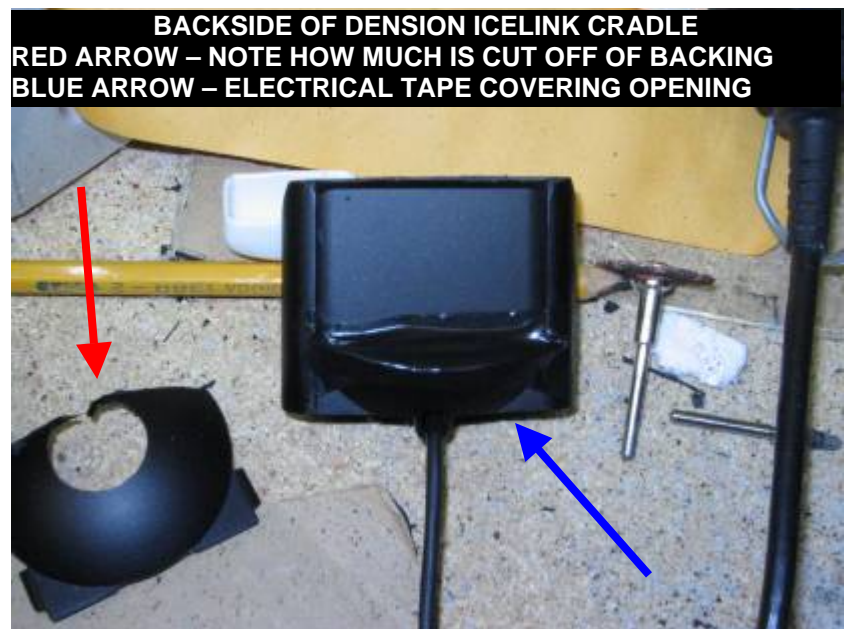
17. Now test fit. Be sure everything fits perfectly ... No turning back once epoxy sets! If everything looks good...GREAT JOB! DON'T EPOXY YET!

18. Now we have to get the wire from the bottom of the ashtray thru the center console to the center of the back seat. WHOA! One step at a time...

19. Still confident everything fits perfectly so far RIGHT? Make sure before proceeding!

20. Ok, now you should remove the top of the center console. This job is not that hard and you only need to raise it off the base about three inches – NOT totally off.

*For detailed steps on how to remove the center console please go to [BMWtips.com](http://BMWtips.com) – Tips & Tricks / Interior / Center Console Removal / e39.*



**BACKSIDE OF DENISON ICELINK CRADLE  
RED ARROW – NOTE HOW MUCH IS CUT OFF OF BACKING  
BLUE ARROW – ELECTRICAL TAPE COVERING OPENING**

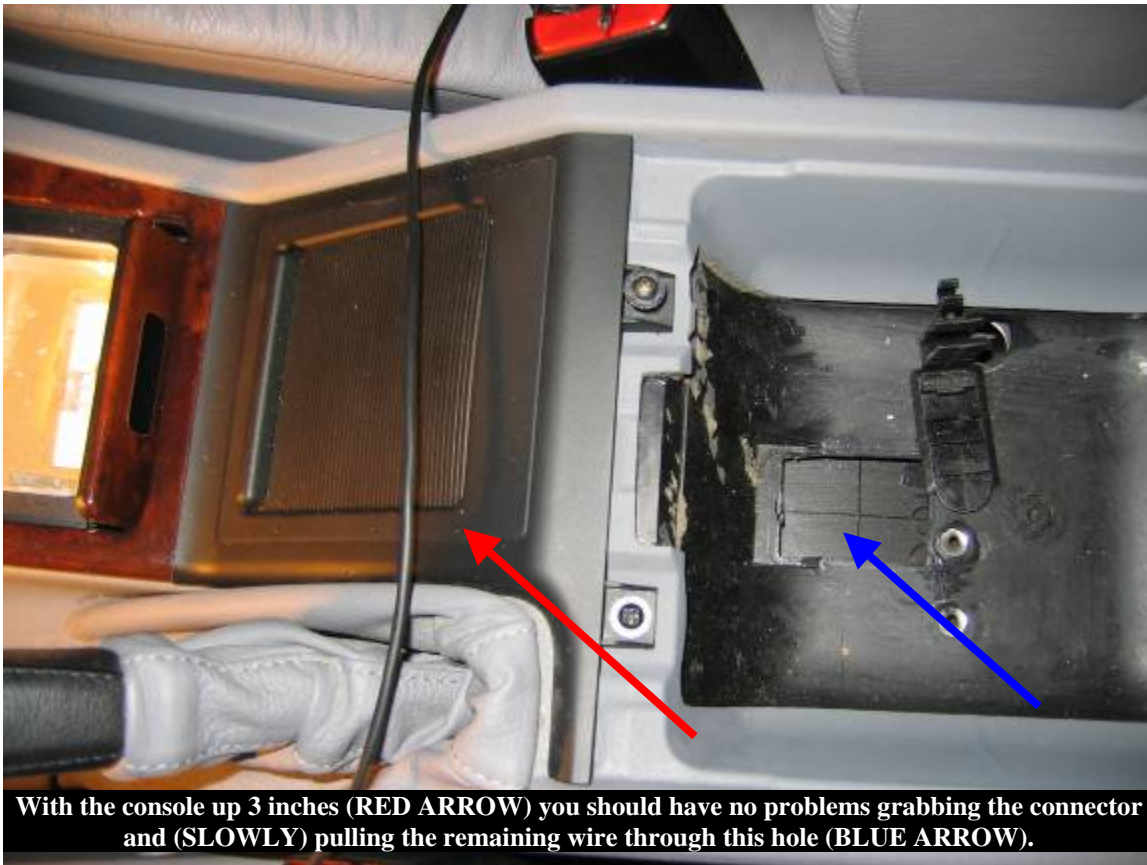
21. With the center console raised about three inches – Drill a hole in the bottom of the enclosure right beneath where the cord comes out of the cradle. Your hole should be centered and towards the rear seat but still on the bottom not the side of the enclosure. **RAISING THE CONSOLE WHILE DRILLING ENSURES YOU DON'T DAMAGE ANY WIRES/ AIR DUCT, ETC.**

22. Make the hole large enough for the connector to come through. You will have to raise the console while pushing the connector through. **TAKE YOUR TIME** this part can be a little frustrating.

23. Once you have the connector and some wire through the hole in the ashtray enclosure try grabbing and gently pulling it through the access hole for the phone wiring harness (**SEE PHOTO BELOW – BLUE ARROW**). Once you have it to this point **STOP** and remove the rear ac vents if not already done. (See [BMWtips.com](http://BMWtips.com) for vent removal help)



**NOTE – Photo shows the hole a little smaller than it actually needs to be.**

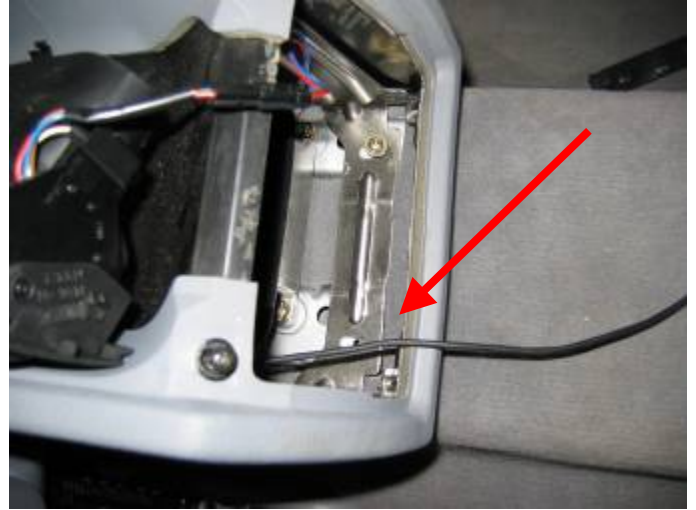


**With the console up 3 inches (RED ARROW) you should have no problems grabbing the connector and (SLOWLY) pulling the remaining wire through this hole (BLUE ARROW).**

24. With the excess wired pulled, now route it down the drivers side of the console, adjacent to the air duct, to the back of the console (Back to the rear ac vent opening).

25. Now we must cut a hole in the carpet here (SEE RED ARROW IN PHOTO) and run the cable ONLY 18" to make the connection. YEAH! *At this point I strongly recommend a second person to help hold the carpet back while the other fishes the wire through. I did not have a person to help out and it cost me AT LEAST an hour and a half of extra labor time.*

26. To pull the carpet back enough to run the cable you must first remove the side kick panels at each rear passenger door. Take a 10mm socket and remove the screw holding the kick panels and top of the rear seat. The screws are located at the bottom rear portion of the door opening about a foot off the sill. (SEE PHOTO – RED ARROW)



27. Next remove the plastic threshold (NOT THE BMW SILL PLATE). Just pull up with some force, they just snap in and out. *I broke a couple of mine during the process. Hopefully there not too expensive or hard to replace?*

28. Unhook the carpet from the rear seat clips. Also, now is a good time to unscrew the rear base console screw (driver's side only). (SEE PHOTO – BLUE ARROW) This will help out a lot when snaking that \$%#(\$ wire.

29. Ok ENOUGH TALK...run that wire!  
IMPORTANT -- DO NOT PULL IT TOO TIGHT!  
Take it down the top left side of the center hump.  
NOT ON TOP – Just off the top edge (driver's side).

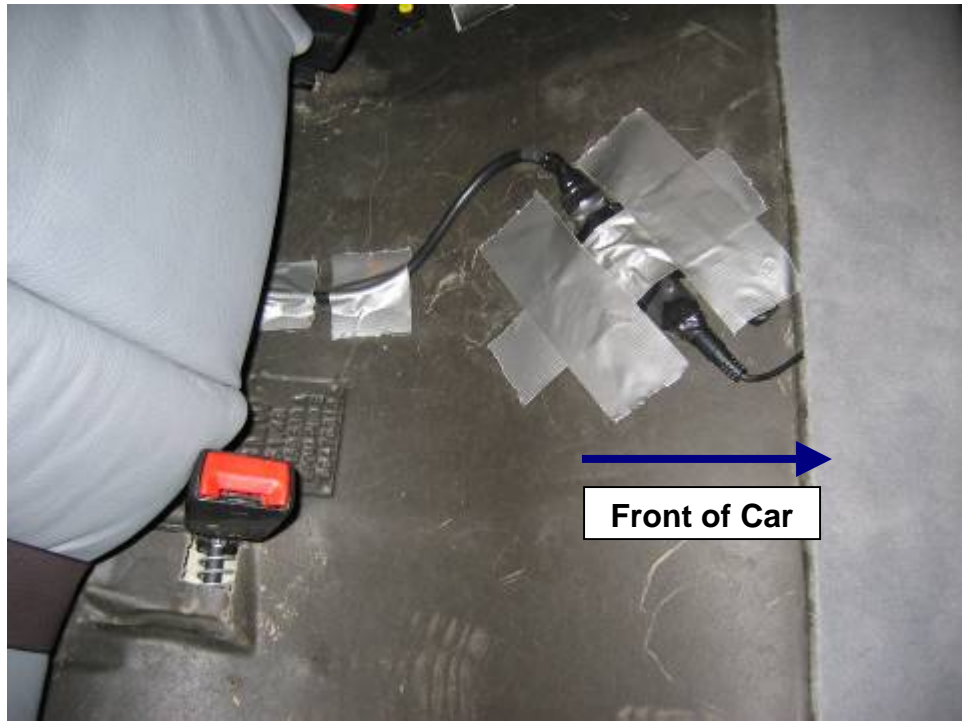
30. Congratulations you're almost home!

31. With the wire run now we can hook up the connectors and mount it to the center of the rear seat. NOTE: You do not have a lot of extra slack coming from the cradle. I suggest mounting the connector and wires the way I have them shown 1.) To ensure no stress is put on the connectors / wires and 2.) To protect them if the center seat is occupied. (See Photo Below)



32. With everything now taped and secure, go to the trunk and route the wires with the factory wiring harnesses. (See photos).
33. Test to make sure everything works.
34. CONGRATULATIONS YOU'RE DONE!

BE SURE TO VISIT:  
[WWW.DENSIONUSA.COM](http://WWW.DENSIONUSA.COM)  
 OR [WWW.DENSION.COM](http://WWW.DENSION.COM)  
 FOR FIRMWARE UPDATES.



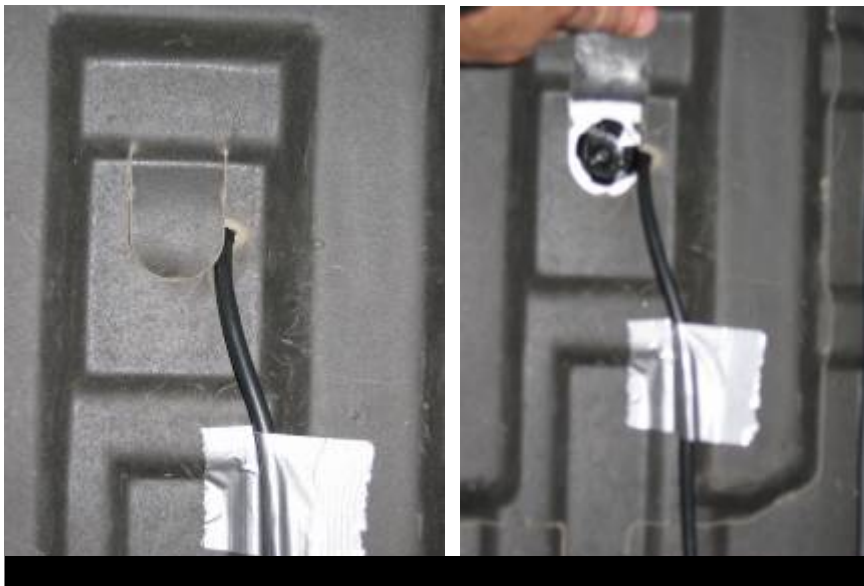
## UPDATE

AS OF DECEMBER 26<sup>TH</sup>, 2005  
 THE LATEST FIRMWARE VERSION  
 IS 2.03 UPDATE YOUR IPOD.

ID3 TAGS ARE NOT  
 SUPPORTED UNTIL THE FIRST  
 PART OF 2005.



This picture shows the DA Converter mounted to the amp. NOTE: *The converter is mounted too high in this picture.* I had to re-mount the converter lower so the panel cover would close. The CD changer MAY fit too once the converter is lowered.



# Miscellaneous Photos

