



# INTEGRAL AUDIO

## INSTALLATION GUIDE

### BMW Z3 SUBWOOFER SYSTEM

MODEL 81S

#### SKILL LEVEL REQUIRED

**DO-IT-YOURSELF**

#### INSTALLATION DIFFICULTY

**2 OUT OF 5**

#### INSTALLATION TIME

**1.5 HOURS**

#### APPLIES TO

96-02 Z3 ROADSTERS WITH FACTORY INSTALLED ROLL HOOPS



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## IMPORTANT

- Read this Guide completely BEFORE you begin.
- Disconnect the battery negative terminal while working on the vehicle.
- ALWAYS check behind panels and components before drilling, cutting, or screwing into any part of a vehicle for any reason!

- I. MODEL 81S SUBWOOFER ENCLOSURE [BLACK OR BEIGE]**
- II. CUSTOM ALUMAPRO ALUSONIC EX8 SUBWOOFER**
- III. HARDWARE KIT**
  1. Mounting Brackets (2)
  2. #10 x 1" Pan Head Sheet Metal Screw (4) [Enclosure Mounting]
  3. #10 Fender Washer (4)
  4. Rubber Washer (4)
  5. #10 Clip-on Nut (4)
  6. 10"x12" sheet of cut foam
  7. #10 x 3/8" Black Pan Head Machine Screw (8) [Speaker Mounting]
  8. Trim Cord
- IV. WIRING KIT**
  9. Wiring Harness [Pre-assembled, Pre-terminated]
  10. Self-sealing Cable Gland
  11. Threadlock Wire Splices (4)
- V. INTEGRAL AUDIO LOGO BADGE**

- I. PHILIPS SCREWDRIVER
- II. SOCKETS:
  - 1. 10mm
- III. WIRE STRIPPER
- IV. SCISSORS
- V. UTILITY KNIFE
- VI. SMALL FLASHLIGHT
- VII. DREMEL WITH CUTOFF BLADE [OR] HACKSAW BLADE HOLDER
- VIII. MAGNETIC PARTS TRAY [OPTIONAL]



### 1. REMOVE FRONT GRILLE

Remove the grille from the front of the subwoofer compartment by pulling out and lifting at the bottom edge.



### 2. LOOSEN FRONT EDGE OF COVER

Pull up firmly on the front edge of the compartment cover to release two friction clips.



### 3. REMOVE COVER

Pull firmly on the rear edge of the cover to release the two rear clips. Remove the cover.



### 4. REMOVE ENCLOSURE

Remove the (4) Phillips head screws and remove the enclosure.



### 5. REMOVE MOUNTING BRACKETS

Remove both of the existing mounting brackets with a 10mm socket. KEEP THESE MOUNTING BOLTS! You will be re-using them.



## 6. REMOVE METAL FLANGE

Loosen the (2) Phillips screws and remove the metal flange at the front edge of the compartment and remove the flange.



## 7. CUT OFF PLASTIC FLANGE

Using a Dremel or a Hacksaw, cut the plastic flange off flush with the edge of the compartment. When you are done the front edge of the compartment should look like the image to the left.



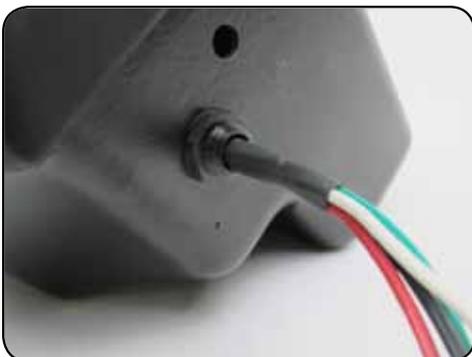
## 8. CUT OFF REAR SCREW BOSSES

Using the Dremel (or hacksaw), cut the screw bosses (the round things) on the back wall of the compartment flush with the horizontal rib along the wall. NOTE: these are not present on all vehicles.



## 9. SLIDE CABLE GLAND OVER WIRING HARNESS

Remove the thin backing nut from the Cable Gland (leave the rubber washer in place). Loosen the rounded clamping nut completely. Insert the stripped wires end of the wiring harness into the rounded nut end of the cable gland. Tighten/Clamp the gland down firmly over the wrapped portion of the cable, about 2" from end of the heatshrink. Insert the stripped wire ends through the large hole in the side of the enclosure from the inside.



## 10. INSTALL CABLE GLAND

Tighten the backing nut securely - finger tight plus 3/4 turn.



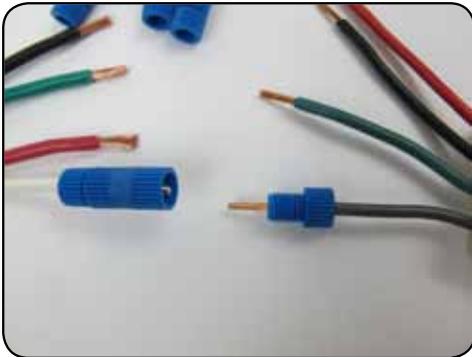
### 11. CUT PLUG FROM OLD SUBWOOFER

Cut the plug off of the old enclosure, at least 3" from the plug.



### 12. STRIP WIRE ENDS

Strip 3/8" of insulation from the ends of the plug wires.



### 13. SPLICE PLUG TO WIRING HARNESS

Unscrew the ends of the threadlock splices. Insert the stripped end of the wire through the end. Work the wire strands around the metal cone and into the base of the connector. Hold the wire firmly in place and tighten the threaded end. Repeat for both ends of each wire.

CONNECT: Red to Red, Green to Green, Black to Black, and White to Gray.

### ALTERNATE WIRING COLORS!

### 14. IF YOUR VEHICLE'S WIRING COLORS ARE DIFFERENT:

You should be able connect whatever wire is in pin 1 (at square end of the connector) to White, pin 2 to Green, pin 3 to Black, and pin4 (at the round end of the connector) to Red. Confirm that the woofer is operating correctly! If everything is connected correctly you will get significant excursion (movement) of the woofer cone. The BMW documentation does not list the colors and connections for all vehicles, but this wiring pattern holds for all vehicles that are listed and has held for every vehicle we have seen.



### 15. ATTACH CLIP NUTS TO NEW BRACKETS

Slide the clip nuts over the brackets. The clip nuts will be in the first and third holes (from front to back) once installed.



## 16. ATTACH MOUNTING BRACKETS

Using the original mounting bolts, attach both mounting brackets. Tighten the bolts finger tight - the brackets should not be loose, but you should be able to move them.



## 17. TEMPORARILY PLACE ENCLOSURE IN SUB COMPARTMENT

Slide the enclosure into the compartment, cable gland side first. Make sure the wiring and plug are clear of the underside of the enclosure. The enclosure should sit flush and even with the console on either side.



## 18. ALIGN THE MOUNTING HOLES

Use the flashlight to site inside the speaker mounting hole. Use the #10 x 1" machine screws to align the mounting holes and the clip nuts/brackets by threading them, centering them, centering the enclosure in the compartment, then removing the machine screws.

Remove the enclosure. Firmly tighten the bolts securing the mounting brackets.



## 19. INSERT FOAM SHEET

Place the 10"x12" foam sheet along the bottom of the subwoofer compartment. The sheet should cover both the upper and lower portions of the sheet metal and cross beam in the compartment.



## 20. MOUNT ENCLOSURE

Replace the enclosure.

Place a fender washer and a rubber washer over each of the #10 x 1" machine screws. The rubber washer should be between the fender washer and the enclosure. Attach the enclosure to the brackets. Center the enclosure in the compartment and tighten the screws firmly.



## 21. IDENTIFY WOOFER + AND -

Look for the “+” and “-” near the terminals tabs on the woofer



## 22. CONNECT WIRING TO WOOFER

Connect wires VC1 to + and - of one voice coil, and wires VC2 to the second coil. It doesn't matter which coil is 1 or 2 as long as you observe correct polarity.

DO NOT CONNECT THE COILS IN SERIES. A SERIES CONNECTION RESULTS IN A WOOFER WITH DIFFERENT PARAMETERS.



## 23. MOUNT THE SPEAKER

Rotate the speaker as needed to align the mouting holes with the threaded inserts in the mounting flange. Attach the speaker with the #10 x 3/8" black machine screws. Tighten the screws in a star pattern until the woofer is snug. Tighten firmly but be careful not to overtighten.



## 24. INSTALL SPEAKER GRILLE

The speaker grille is a simple press fit - work the grille down into the outer rubber gasket of the speaker.



## 25. INSTALL TRIM CORD

Lay the trim cord into the gap between the outside of the speaker's rubber gasket and the vinyl top of the enclosure. Carefully cut the trim cord. Using a blunt flat or rounded object, work the trim cord firmly into the gap.

**26. ENJOY!**

That's it! Affix the Integral Audio logo badge to the front grille (replace the HK logo if desired). Give your new enclosure a wipe down with Armor All or your favorite protectant regularly, and if you are using an aftermarket amplifier give your Alumapro woofer a few hours of moderate volume levels before you really crank it!

**TROUBLESHOOTING**

Having Trouble? The best thing to do is contact us at [support@integralaudio.com](mailto:support@integralaudio.com) or via the phone number listed on the receipt that was emailed to you. We'll get you fixed up ASAP!