



Custom Mercedes-Benz Auto Dimming Mirrors

Thank you for purchasing a custom built Mercedes auto dimming mirror. The following guide is to help you get your mirror installed and configured.

The majority of this document is written based off of experience with the W124 chassis. While much of the information is applicable to the other models, some differences will be evident. Always use a VOM (volt ohm meter or digital multi-meter) to check for switched 12 volt power and constant 12 volt power. Some vehicles (e.g. convertibles and non-sunroof equipped cars) may not have a switched 12 volt source in the headliner. If you cannot find a switched 12 volt source, you will need to run additional wiring along your headliner, down you're a-pillar and either to your kick panel or center console area. These additional steps are not covered in this document.

Proper tools are important to ensure the success of the installation. A second set of hands are also helpful, so if possible enlist the help of a friend. You will need; VOM, flat blade screw driver, wire cutters, adjustable pliers and a Philips screwdriver. In addition to the packet of installation accessories provided, if you need to run additional power wire, multi-stranded 18-20 awg wire is suitable and is available at Radio Shack.

IMPORTANT

Always handle your mirror by the bracket. Never handle the mirror by the plastic mirror assembly nor apply any type of force to the plastic assembly. Remember it is plastic and it can break or pop off of the mirror bracket.

W124 Installation

The standard auto dimming mirror is a simple two wire hookup and it includes a ground and switched 12 volt power source. The switched 12 volt power source is taken from the sunroof switch. If you have a vehicle with no sunroof, you may not have a switched 12 volt source available in the headliner. In these cases, you need to run additional power cable down to the kick panel or center console. Use your VOM to test for switched 12 volt power. With the vehicle on, check the wire for 12 volts, then turn the vehicle off. With the vehicle off, the same wire should NOT have any power going to it. If it does, do not use it. The ground wire is almost always a brown wire and it's not uncommon to see a collection of these physically grounded to the frame of the vehicle. I am not going to discuss colors of wires past this point, as they vary from year to year and model to model. You will see different colored wires in the pictures but DO NOT rely on this as a guide, always test the wires before you tap into them.

Let's get started. First you will need to remove your original mirror. You can do this by grasping the bracket and pulling downwards at an angle. Never grasp the plastic mirror body itself, only hold the mirror by the bracket as shown in the picture below.



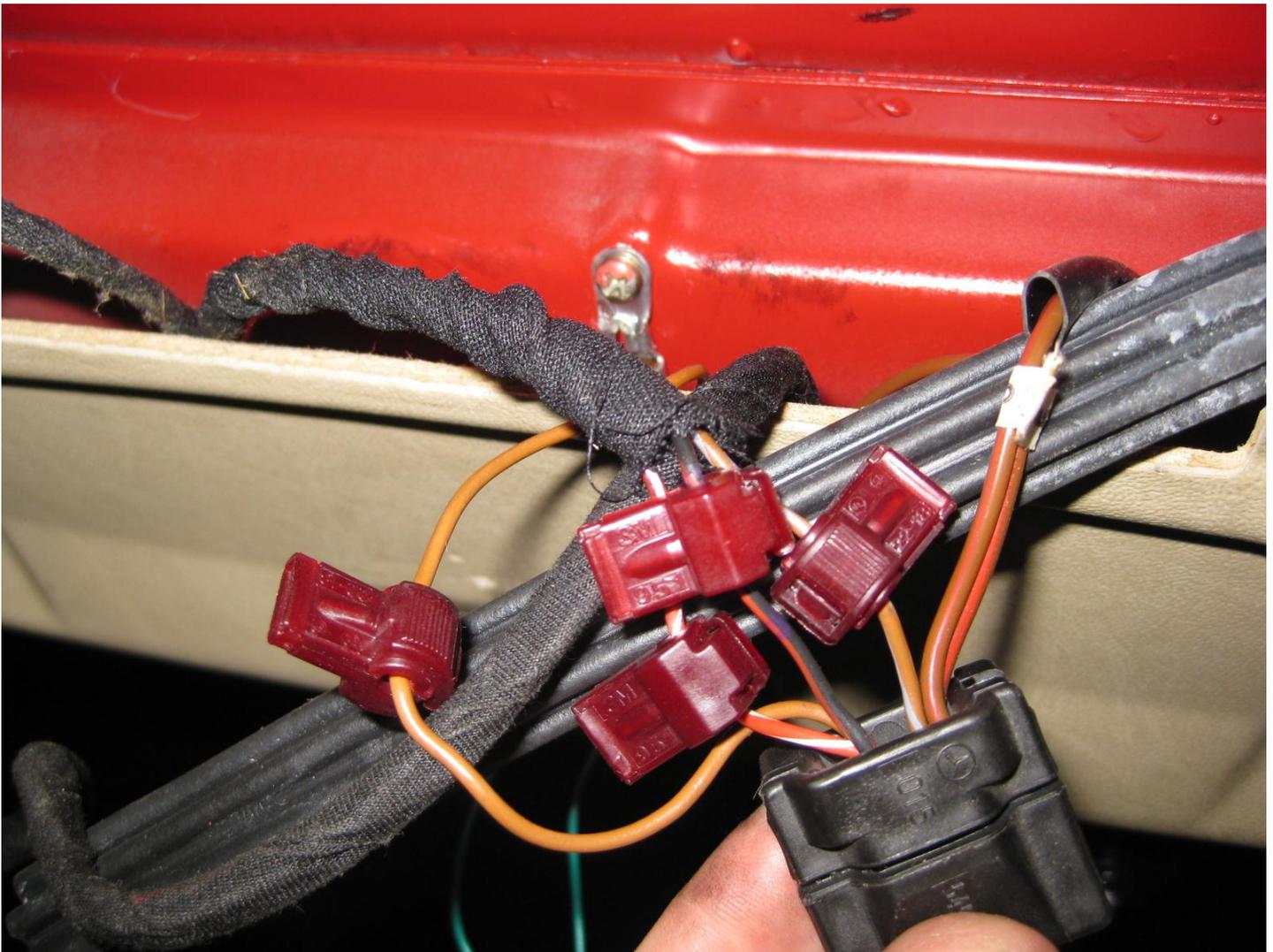
Next, you will need to remove the aluminum mounting bracket and the mini sun visor. There are three Philips screws. Always be careful removing/installing the screws and don't strip/drop them.



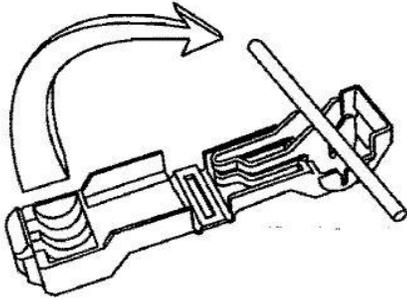
Next you need to remove the map light assembly. This process may vary depending upon which chassis you have, keep that in mind. Using your flat blade screw driver, insert it between the map light assembly and the headliner from the right side (sitting in the passenger seat) and press the metal clip in. You should be able to get this corner out and wiggle the rest of the map light out. Exercise caution so you don't rip or mar your headliner.



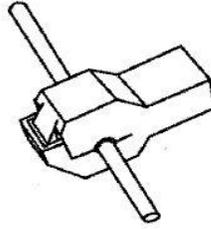
With the map light assembly out, remove the 6 pin connector. This is where you will get your switched 12 volt and ground. Use your VOM to test for the switched 12 volt. With the car on, it should read roughly 12 volts. With the car turned off (key out of the ignition) it should read zero. If it still reads 12 volt with the car off, DO NOT use that wire. Continue your test till you find the correct wire. Do not rely on the wiring colors in my pictures, the colors change from year to year and model to model. You will also see I have many wires tapped in this picture. You will only need to tap two wires. The ground is almost always brown and you can trace it and see that it goes up to a central ground point (see the screw in the picture). Once you have located the proper switched 12 volt and ground, use the enclosed t-taps to tap into the wire and crimp them closed using your pliers. Your included wiring harness has male spades already crimped and ready to insert into your t-taps. Follow the t-tap instructions for proper insertion. Also, the included photo of the wiring harness inserted into the t-taps does show multiple wires. It is for illustration purposes only; your harness will only have two wires.



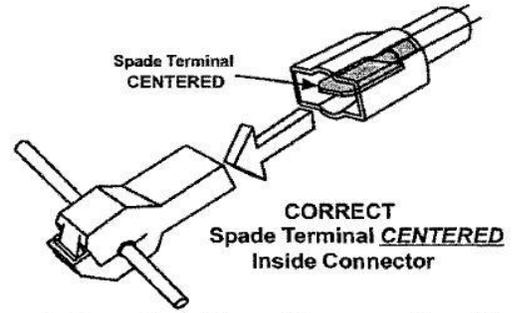
T-TAP INSTALLATION PROCEDURE



1. Place the T-Tap on vehicle wire.

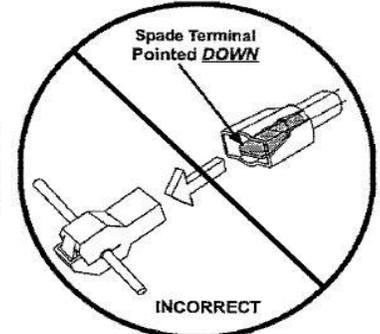
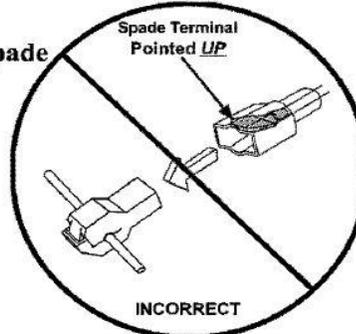


2. Using pliers, close, and crimp T-Tap around vehicle wire.



3. Insert EC Mirror Harness wire with male spade terminal end into the t-tap.

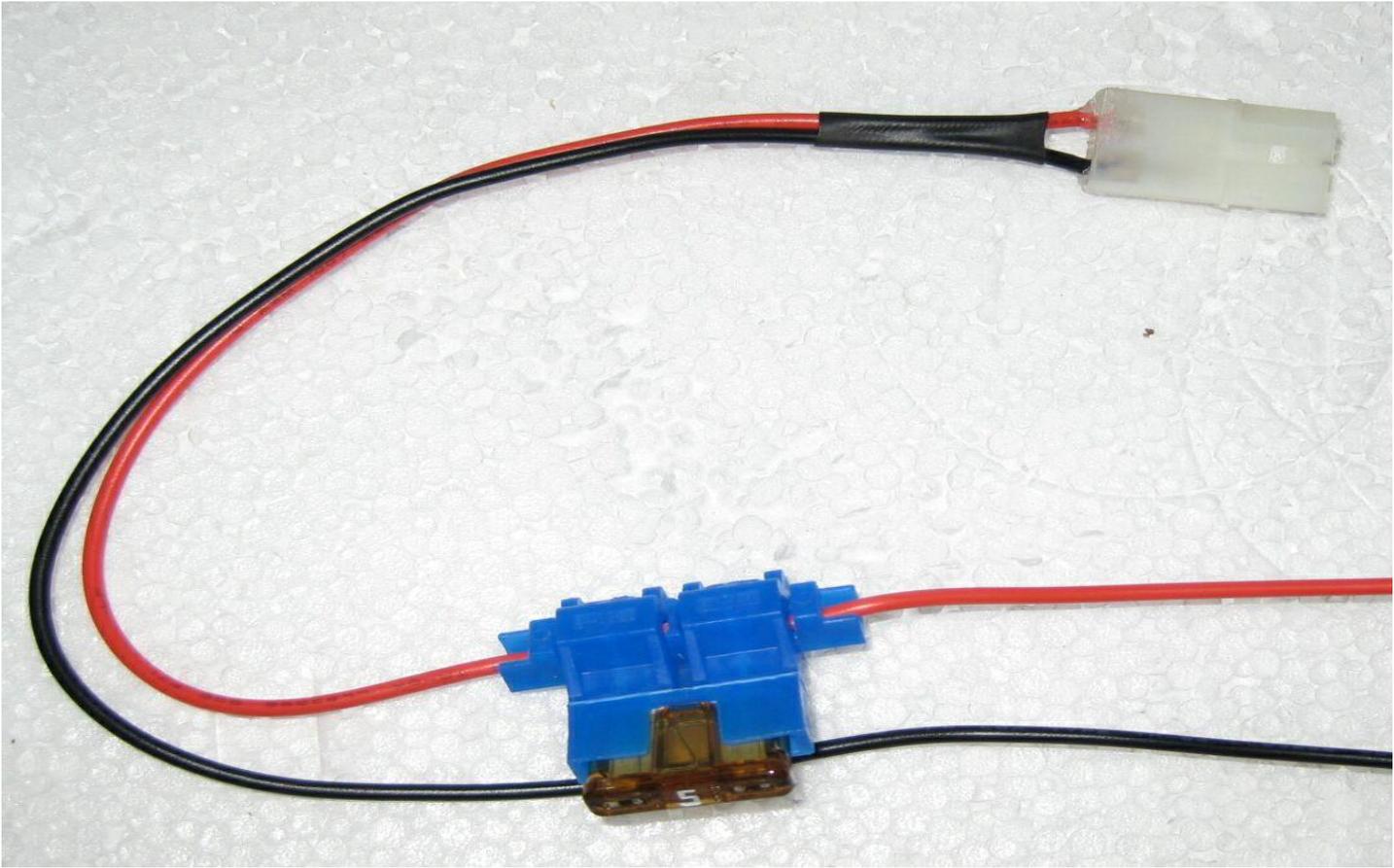
****Extreme care must be taken to ensure that the male spade terminal is inserted into the T-Tap properly.**



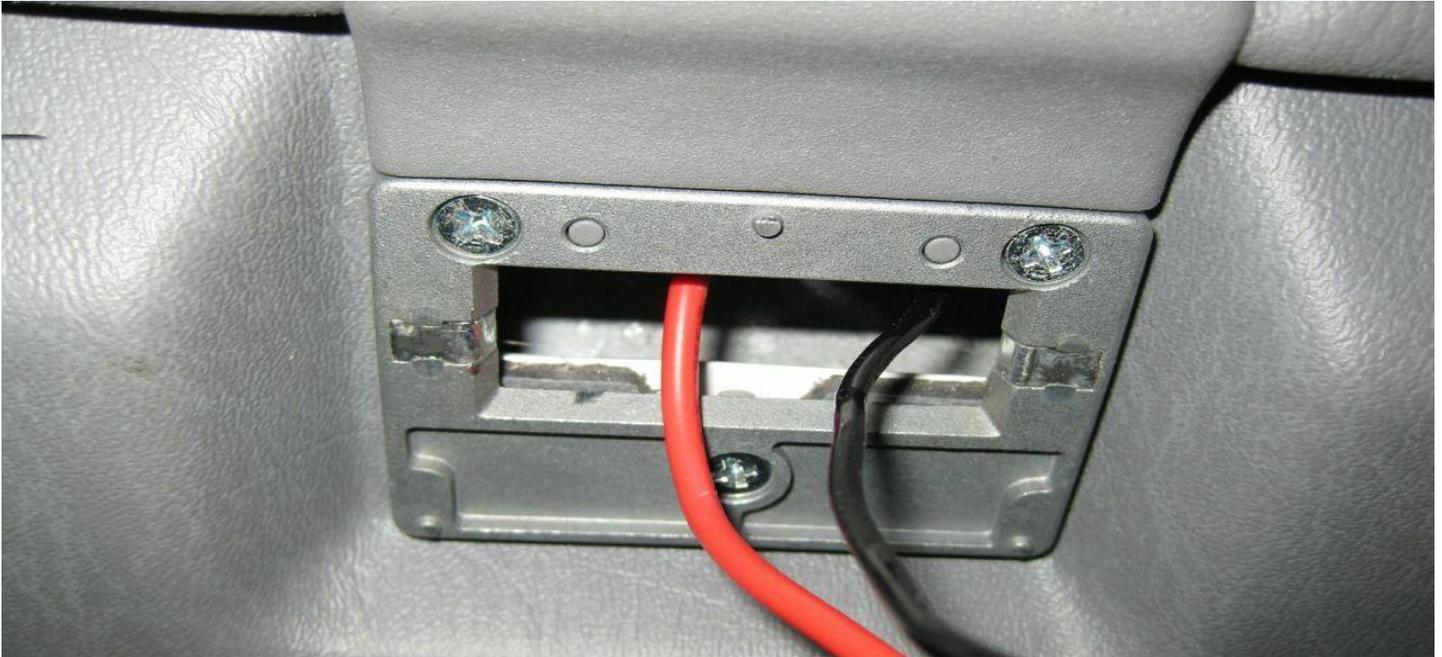
The next step is to run the included wiring harness from the mirror mount opening, back to the map light location. You will see that there are no openings in the sheet metal, so you will be lifting up the headliner slightly and routing the wiring harness under the headliner. You may need to remove one or more sun visors to loosen up the headliner enough to route the wiring harness. When routing the harness, exercise care to ensure that it does not run over any screw holes or anywhere that it can be punctured or pinched. Your wiring harness will look similar to the one in the picture below. It utilizes a Molex style quick disconnect, so after it has been routed you only need to plug it into the mirror. No splicing of wires. In the event you need to unplug the harness from the mirror, only grasp the white plastic area. DO NOT pull the wires; you can destroy your harness or the delicate wires in the mirror this way.

The first picture here shows you what routed wires should look like. Do keep in mind that in that picture it shows raw wire and no Molex connector. On your car, you would see a Molex connector here.

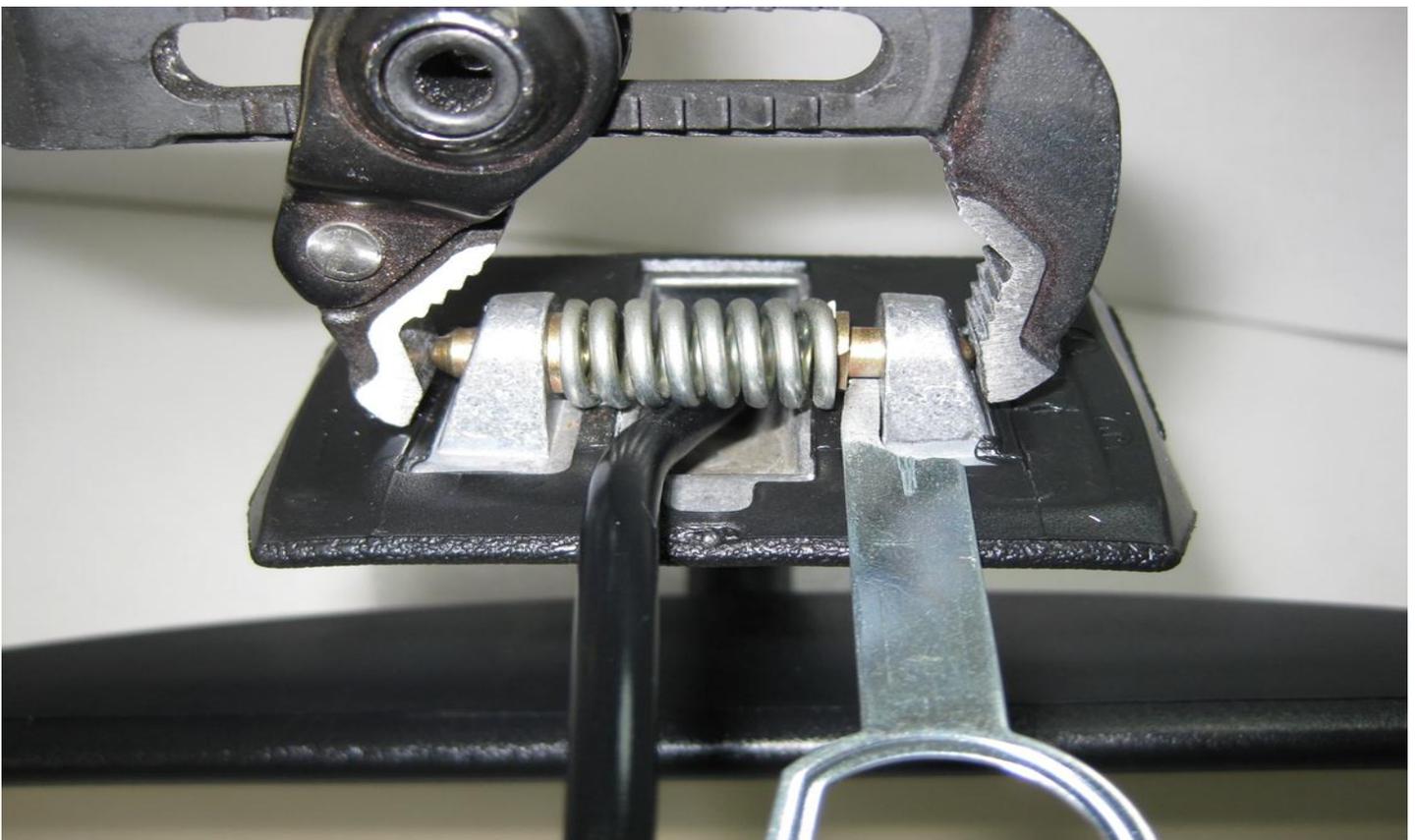




With your wiring harness routed, you can now re-install your aluminum mounting bracket and mini sun-visor (if you have a mini-sun visor). Again, be careful to not route the wires where the screw holes are.



Now you're going to want to "prep" the mirror for installation. Don't plug the wire harness in just yet. Using your pliers, depress the pins on the top of the mirror bracket so that the passenger side one is pressed in fully. Insert the "ring tool" as shown in the pictures below. Make sure the pin is fully depressed and the "ring tool" is between the pin lip and the edge of the aluminum mirror bracket.



You may want to put a slight bend in the “ring tool”.



Plug the mirror into your wiring harness and ensure a solid fit. You may want to test functionality first before proceeding to install the mirror. You can turn the ignition on and the mirror should power up. Once you have confirmed your wiring is good and the connection to the mirror is good, continue on.

Now I don't have a picture showing this next procedure in the car, but I simulated this on my work bench. With the “ring tool” in place, insert the left side of the mirror into the mounting plate. This would be the end opposite of where the ring tool is. You want to make sure that pin is fully inserted into the mounting plate. Then tilt the mirror into place. In the next picture you see the procedure simulated with a mirror bracket and mounting plate



With a firm upward pressure (holding onto the mirror bracket only, do not hold the mirror by the plastic assembly) with your left hand, use your right hand to wiggle the “ring tool” up and down while pulling it towards you. DO NOT twist the “ring tool” (it is light weight metal and you can easily tear the end off). If you wiggle and pull, you should be able to get the “ring tool” pulled out and the mirror bracket pin will pop into its mounting base. Once completed, test that the mirror is properly mounted by applying light downward pressure on the mirror bracket; it should be firmly seated into the mounting base.

Test for mirror functionality again. If everything checks out ok, tie up your wiring in the map light area, plug the map light plug back into the map light assembly and test that your map lights/sunroof work. If everything checks out ok, re-install your map light assembly. Use the opposite procedure you used for removal.

For W126 owners.

These are some notes from a W126 customer and his remarks concerning the installation. I have not been able to verify this data, but it should be helpful during your installation.

1. In the '87 300SDL (Gen 2) there is no need to run the wires under the liner since there is actually a way to route them through the chassis: once the interior light assembly is taken out, there is a hole in the frame a little offset to the left. It's about 15mm in diameter and connects to the open area where the mirror bracket is located. It's not a straight line, so there is a little fumbling involved, but overall it's not a big deal.
2. The ground connection screw for the black wire isn't really accessible in the W126 sedan unless you remove the whole liner; you can actually see it but there is no way to loosen the screw and attach the ground wire directly to the main grounding point. In this case, you should locate one of these black ground wires and tap into it using the supplied t-taps.

Homelink Programming and Setup Guide

All of the mirrors I offer with Homelink operate in the frequency range of 286-299 MHz. Keep this in mind if you are outside of the US. Europe has many garage/gate systems that operate around 420 MHz and my mirrors will not work in this frequency range. Also, my Homelink mirrors are not compatible with Security+ 2.0 (present in garage openers like the Liftmaster 8360/8550 etc.). If your garage opener system uses the Security+ 2.0, you would need to purchase a repeater kit. The repeater kit allows your Security+ 2.0 garage opener system to be backwards compatible with my Homelink mirrors. See <http://mirrors.2phast.com> for more information.



CAUTION!

Before programming HomeLink to a garage door opener or gate operator, make sure that people and objects are out of the way of the device to prevent potential harm or damage. Your motorized garage door or gate will open and close while you are programming HomeLink. Do not program HomeLink if people or pets are in the path of the door or gate. A moving garage door or gate can cause serious injury or death to people and pets or damage to objects.

Vehicle exhaust contains carbon monoxide, a dangerous gas. Do not run the vehicle's engine while programming HomeLink. Exhaust gas can cause serious injury or death. When programming a garage door opener, it is advised to park outside of the garage.

Do not use HomeLink with any garage door opener that lacks safety stop and reverse features as required by U.S. federal safety standards (this includes any garage door opener model manufactured before April 1, 1982). A garage door that cannot detect an object signaling the door to stop and reverse - does not meet current U.S. federal safety standards.

If programming a garage door opener or gate, it is advised to unplug the device during the HomeLink programming and also if performing the "cycling" process to prevent possible motor burn-up.

NOTE: The ignition needs to be turned on or to the second (or "accessory" or ACC) position for training and/or operation of HomeLink. It is also recommended that a new battery be replaced in the hand held transmitter of the device being trained to HomeLink for quicker training and accurate transmission of the radio frequency.

1. For first time training, press and hold the two outer HomeLink buttons, releasing only when the HomeLink indicator light begins to flash after 20 seconds. (Do not perform this step when training the additional HomeLink buttons.)
2. Position the hand-held transmitter 1-3 inches away from the HomeLink surface (located on your mirror), keeping the HomeLink indicator light in view.
3. Using both hands, simultaneously press and hold both the desired HomeLink button and hand held transmitter button. DO NOT release until the HomeLink indicator light flashes slowly and then rapidly. When the indicator light flashes rapidly, both buttons may be released. (The rapid flashing indicates successful training.)

 **Note:** Some garage door openers may require you to replace step 3 with the "cycling" procedure noted in the "[View Canadian Instructions](#)" section.

4. Press and hold the trained HomeLink button and observe the indicator light.
 - If the indicator light is solid/continuous, training is complete and your device should activate when the HomeLink button is pressed and released.
 - If the indicator light blinks rapidly for 2 seconds and then turns a solid/continuous light, proceed with the following training instructions for a rolling code device. A second person may make the following steps quicker and easier. Please use a ladder or other device. Do not stand on your vehicle to perform the next steps.
5. At the garage door opener receiver (motor head unit) in the garage, locate the “learn” or “smart” button (usually near where the hanging antenna wire is attached to the unit). If there is difficulty locating the training button, reference the garage door opener’s manual.
6. Press and release the “learn” or “smart” button (the name and color of the button may vary by manufacturer). NOTE: Once the button is pressed, there are 30 seconds in which to initiate the next step.
7. Return to the vehicle and firmly press and hold the trained HomeLink button for two seconds and release. Repeat the “press/hold/release” sequence up to 3 times to complete the training process.

HomeLink should now activate your device.

Retain the original hand-held transmitter of the RF device you are programming for use in other vehicles, as well as for future HomeLink programming. It is also suggested that upon the sale of the vehicle, the programmed HomeLink buttons be erased for security purposes. To erase the programmed buttons, perform the procedure shown in step number 1.

**To train additional HomeLink buttons, begin with step two.



Indicates that this instruction is important to follow for reasons of personal safety, and that failure to follow the instruction could result in bodily injury.



HomeLink is intended to be used only with HomeLink compatible products that are programmed consistent with the applicable instructions on our website at www.homelink.com. Those instructions and product listings indicated by the  symbol are particularly important for avoiding damage to the programmed device and other property associated with that device. Failure to comply with  instructions or  product listings can result in unwanted property damage. Johnson Controls is not responsible for property damage that results from failure to follow instructions or product listings indicated by the .

These are additional instructions which pertain to Canadian garage doors/remotes, but they may be applicable to the United States as well, so it’s worth trying if you’re having difficulties programming your HomeLink.

Using both hands, simultaneously press and hold both the desired HomeLink button and hand held transmitter button.

During programming, your hand-held transmitter may automatically stop transmitting. Continue to press and hold the desired HomeLink button while you press and re-press (“cycle”) your hand-held transmitter every two seconds until the frequency signal has been learned.

The indicator light will flash slowly and then rapidly after several seconds upon successful training. DO NOT release until the HomeLink indicator light flashes slowly and then rapidly. When the indicator light flashes rapidly, both buttons may be released. (The rapid flashing indicates successful training.)

Press and hold the trained HomeLink button and observe the indicator light.

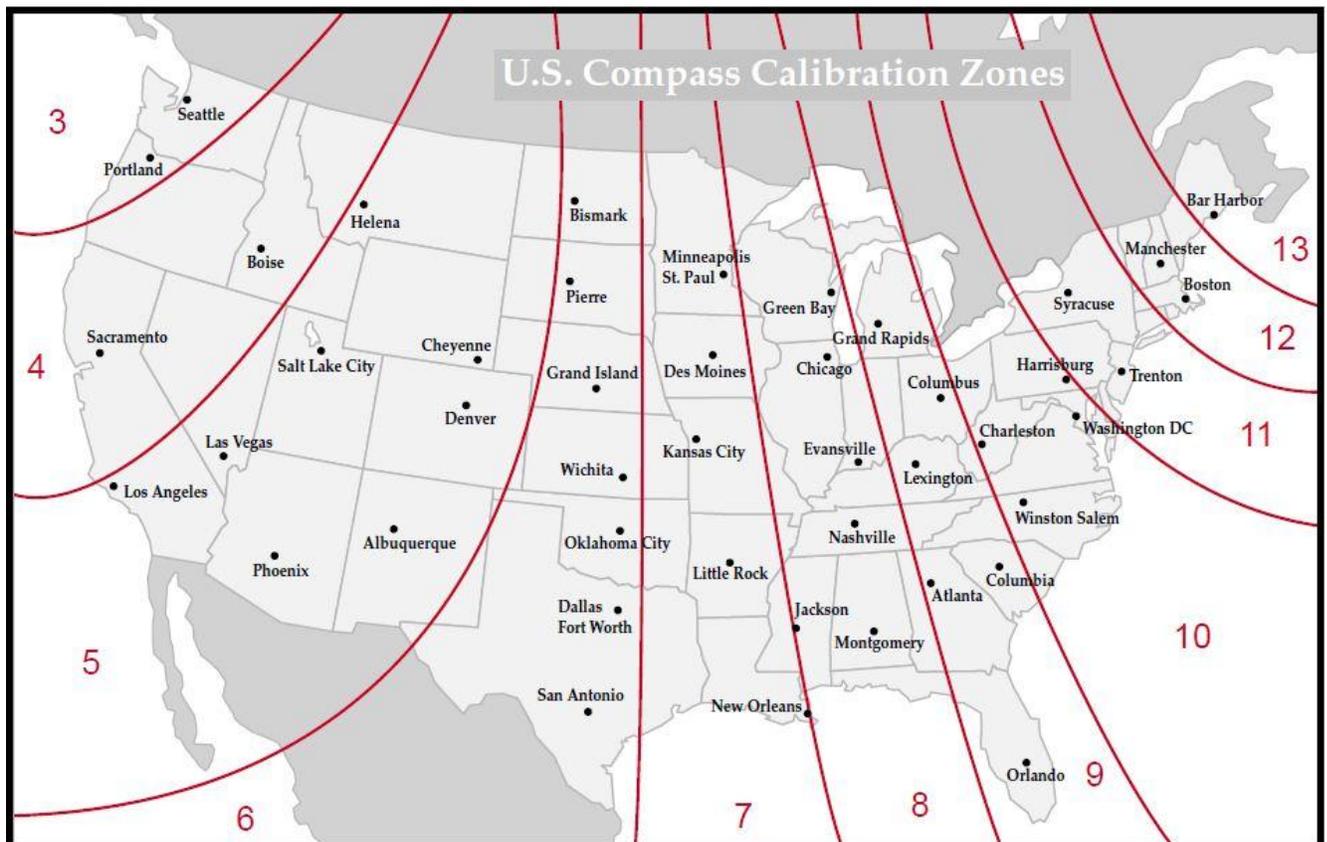
If the indicator light is solid/continuous, training is complete and your device should activate when the HomeLink button is pressed and released.

If the indicator light blinks rapidly for 2 seconds and then turns a solid/continuous light, proceed with the following training instructions for a rolling code device.

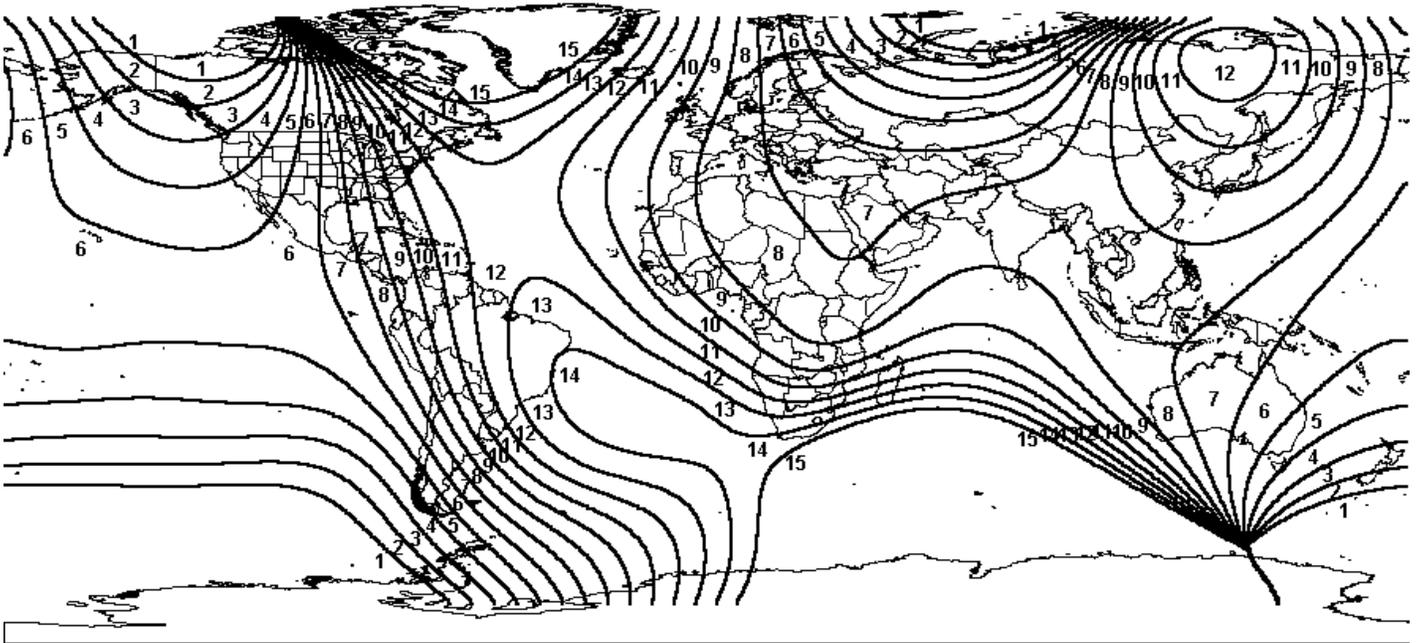
Compass Variance Setting

The compass in your mirror allows you to set the variance between magnetic north and true north. It will be necessary to adjust the compass to compensate for compass variance. If you do not adjust your compass to account for compass variance, your compass will give false readings. To adjust for compass variance, do the following:

1. Use the button located in a recessed hole in the bottom of the mirror.
2. Press and hold the button for three seconds (use an open paper clip) until a zone number appears in the display.
3. Find your current location on the map provided below.
4. Press the button on the bottom of the mirror (using the open end of a paper clip or something similar) until the new zone number appears in the display. After you stop pressing the button in, the display will show a compass direction within a few seconds.



If you live outside of the United States, please consult the chart below for your compass variance setting.

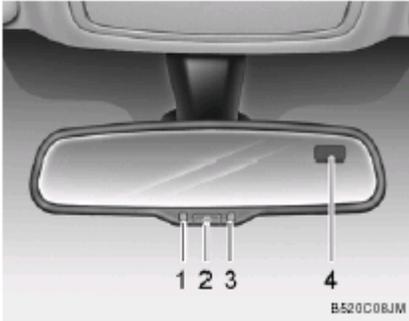


Compass Calibration

After setting your compass zone/variance, it will be necessary to initiate a compass calibration. To calibrate, press the hidden button (located on the bottom of the mirror inside the recessed hole). Press and hold the button until you see "C" in the compass display. Then simply drive your vehicle in a tight circle (in a parking lot for example) under five miles an hour until a compass heading is displayed. Typically this should take less than three complete turns. If this does not work or you don't want to drive in a circle, you can drive your vehicle normally and over the course of a day or so, the compass will calibrate and when it's finished your heading will display.

- Calibration via normal driving can take a day or even longer, depending upon distance and direction traveled.
- An open end of a paper clip works best for pressing the hidden button. Do not use anything sharp.

Operation of 2phast mirrors model 2M-4 and 2M-5 Only



1. Green Status Indicator LED
2. Feature Control Button
3. Rear Light Sensor
4. Compass Display Window

For mirrors without a compass (model 2M-4). By pressing and holding the button for more than 3 but less than 6 seconds the auto dimming function is turned on. Pressing the button for more than 3 but less than 6 seconds again turns the auto dimming feature off. The green light indicates auto dimming is on.

For mirrors with a compass (model 2M-5). By pressing and releasing the button quickly, you can turn the compass on or off.

1. To operate the Compass feature

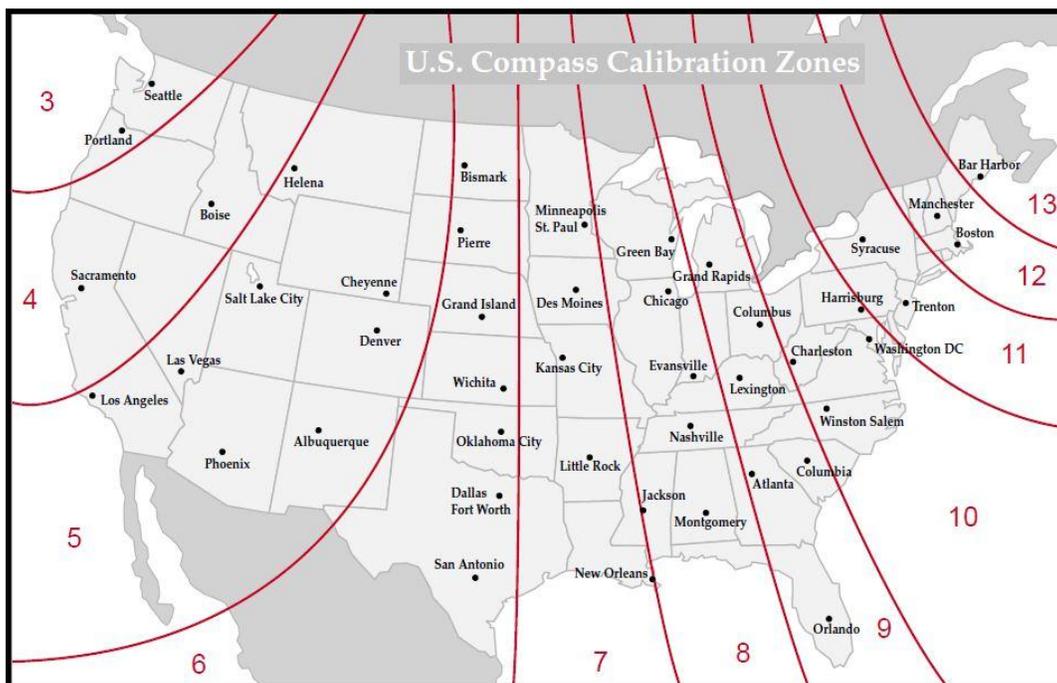
Press and release the button, then the vehicle's directional heading will be displayed. Pressing and releasing the button again will turn off the display.

Heading display;

E= East, W=West, S=South, N=North, NE=North East, NW=North West, SW=South West, SE=South East

2. Setting the compass zone

1. Find your current location and variance zone number on the zone map.



2. Press and hold the button for more than 6 but less than 9 seconds. The current zone number will appear in the display.

3. Press the button until the new zone number appears in the display. After you stop pressing the button, the display will show a compass direction within a few seconds.

3. Calibration procedure

Press and hold the button for more than 9 but less than 12 seconds. When the compass memory is cleared a "C" will appear in the display.

Drive the vehicle in a circle at less than 5mph 2 times or until the compass heading appears. If it does not appear, keep driving in a circle. You can also just drive in a normal fashion but it may take several days to calibrate. During this time do not repeat the calibration steps, just be patient and wait for the compass display to appear.

4. Changing Mirror Angle setting (present only in some versions):

Due to mirror positions being angled towards the driver, the compass mirror can also compensate for drivers seated on the Left Hand side of the vehicle (steering wheel on the LH side of the vehicle) or Right Hand side of the vehicle (steering wheel on the RH side of the vehicle).

To adjust the Left Hand, "L" or Right Hand, "R" setting:

1. Press and hold the button for more than 12 seconds.
2. Release then press the button again to toggle between "L" and "R".

NOTE: This procedure also causes the compass to be de-calibrated. Some versions of this mirror will automatically set the mirror angle. If you are unable to get an "L" or "R" to display, don't worry, auto mirror angle will be set once a compass calibration is completed.

3. To re-calibrate the compass, refer to section 3. (Calibration Procedure).

CAUTION:

- 1. Do not install a ski rack or antenna, etc. which are attached to the vehicle by means of a magnet. They affect the operation of the compass.**
- 2. The compass may not indicate the correct compass point in tunnels or while driving up a steep hill.**
- 4. When cleaning the mirror, use a soft cloth or similar material dampened with glass cleaner. Do not spray glass cleaner directly on the mirror as that may cause the liquid cleaner to enter the mirror housing.**