

# Installing 4 pin connector on Mini F54

- **Step 1** gather all supplies and tools. You will need:
  - 1 socket wrench with 5/16" deep socket, T 40 torque socket, T15 torque socket, 3/8" socket, 5/16" socket
  - ¼" flathead screwdriver
  - Wire strippers and cutter
  - Flashlight or headlamp
  - Electrical tape
  - Wire connectors: 10 gauge and 14 gauge
  - Wire T-splicers: 14 gauge and 18 gauge
  - Extra 14 gauge wire (about 15 feet)
  - Hand-held metal rotary grinder. (mine is a Dremmel)
  - Box-cutter style knife
  - Owner's Manual
  - Phillips head screwdriver #2
  - Zip-Ties

Authored by Andrew DeCola on 22 January 2017 using American version of 2017 Mini JCW Clubman

Note: I am not a mechanic, just a hobbyist. A mechanic will probably be able to provide better instructions than these.

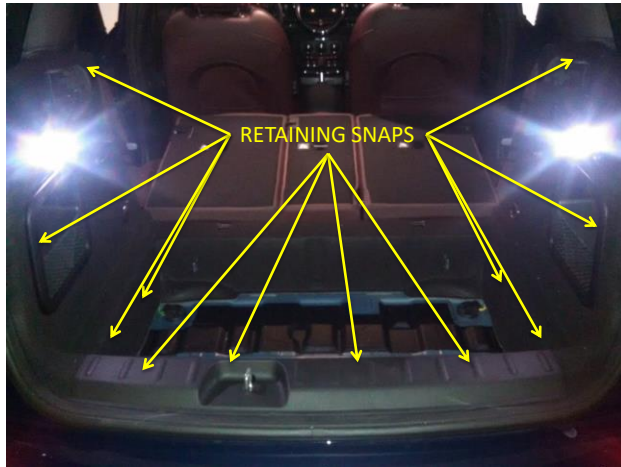
I also am not affiliated with any of the companies I mention in this presentation. I am not receiving any financial compensation for making this presentation. All modifications to your vehicle are at your own risk. Please take appropriate safety precautions while working on vehicles.

## **Step 2:** Give yourself work-room

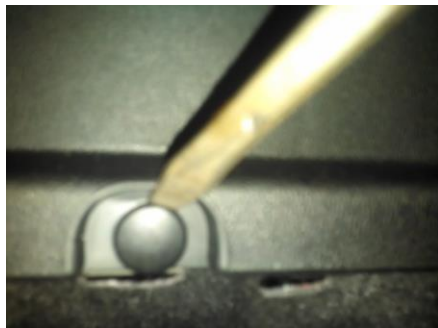
Fold down all rear seats, remove storage compartment cover and boot bottom recessed area access cover



- **Step 3:** Remove retaining snaps for interior lining and boot skid plate as located on the attached picture (12 total). 4 of them are along the skid plate, 2 are on each side of the bottom recessed area, 1 is in each of the cargo storage wells, and 1 is on each side, just behind where the passenger seats usually sit. (access the last one through the rear passenger doors)



To remove the retaining snaps, insert a flat head screw driver behind the top of the snap and pry away from the interior. Once the top is top is removed 1/2" you can remove the snap entirely



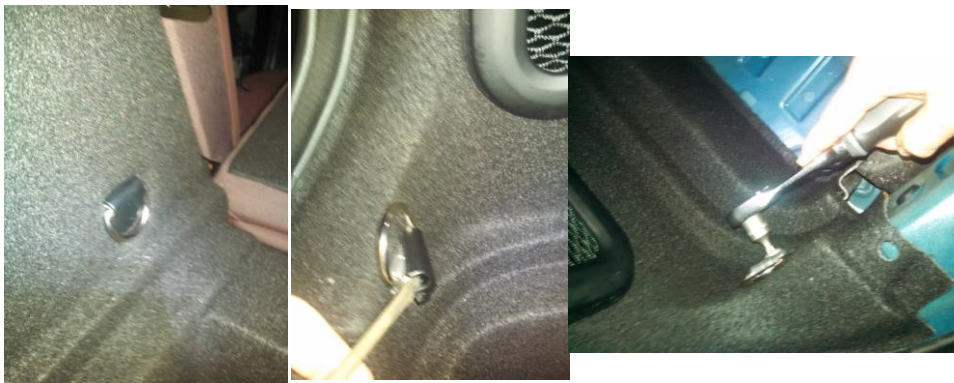
Close up of rear skid plate. I already removed the first snap for the previous slide. (Ignore the wires. They are sitting there and not attached to anything.) Once these four snaps are removed you remove the skid plate by lifting it up. Set the skid plate aside for now.



Close up of inside the drivers side storage well. Sometimes the storage wells are attached to the rest of the interior wall lining and other times they are not. If they are not, remove the storage well and set it aside once the retaining snap is removed.



- To remove the tie down point, use the flat-head screwdriver to pry the cover off as depicted in the pictures below. Then use a size T40 socket to unscrew the torque bit holding the rest of the tie-down point assembly.



- **Step 4:** Remove the tie-down points (4 total)
- **Step 5:** Remove two additional covers. (I do not know the names of the things they are covering. Refer to slide on next slides. It is the thing that holds the recessed area cover horizontally.)



These are the additional plastic covers from step 5 that I do not know the name of. Simply use a flat head screw driver to pry the covers off. They take some fore to snap off, but snap back on quite easily when you are done.



**Step 6:** Detach cargo compartment lights and cigarette lighter outlet.

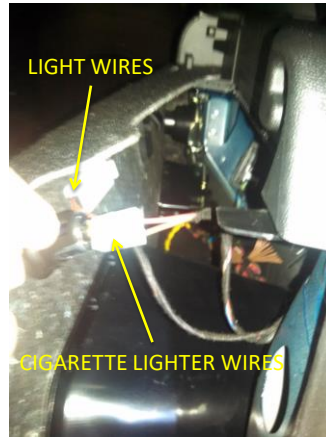
To complete this step, gently pry the wall liners away from the walls. You will see the wires attached to the liner. These wire connectors can be removed by gently pulling back on them with your hand.

Once step 6 is complete, you will now have access behind the wall liners and to about 600 wires.

Drivers side



Passenger's Side



**Step 7:** Detach the wiring harnesses leading to the "barn" doors.

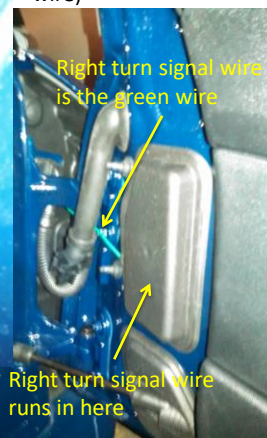
The door wires can be detached by prying up on it with a flat head screwdriver. Once it is fully "up" the door side (male end) wire housing will detach. You can drop it and let it swing freely. Press down on the top of vehicle side (female end). You will feel a "click". Once you feel this click you can push the female end into your vehicle. It can fall freely. There is nowhere for it to go and you will not lose it. You will use this hole to run your left turn signal and reverse light wires through in future steps.

Driver's Side



Passenger's Side  
(complete after running wire)

Utilize this existing hole to run wires through.



Performing step 7 in two pictures



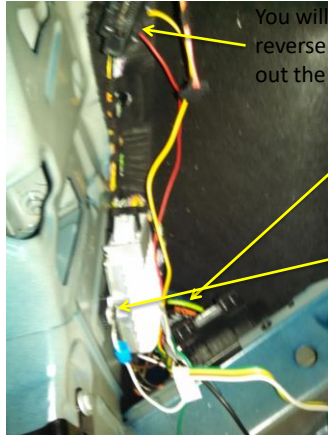
**Step 8:** Grind 1/3" opening in the hole that normally holds the "barn" door wire housing. If you attempt to simply run the wires through the hole without enlarging the hole, you will either not be able to replace the wire housing, crimp your cables, or not be able to attach the male and female ends of the wire housings together. Avoid these problems by grinding a small extension on one part of the hole.

I forgot to take a picture of this step..... Sorry.

**Step 9:** set the converter box in the open space just behind the wheel well. It is next to the hole that was opened when you remove when mounting a hitch to your vehicle. You feed one of your carriage bolts through this hole in order to mount your hitch if you got the recommended hitch from E-trailer. Note: This hole is important later because you run the 4-pin connector and power wire through it.

**Step 10:** Connect the grounding wire.

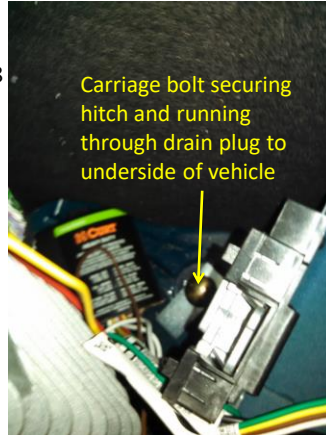
There is a small torque screw next to a wire housing for what I believe is the rear sensing system. Remove the torque screw with a size T15 torque socket and then replace through the ring terminal of the grounding wire. (note, some vehicles use a size T20 torque socket)



You will run the left turn signal and reverse light wires through here and out the hole you made in steps 7 and 8

Converter Box is down here

Secure Grounding Wire Here



Carriage bolt securing hitch and running through drain plug to underside of vehicle

**Step 11:** Connect an additional 2 ½ ft. wire on the ends of the left turn signal and reverse light wire. Also, extend the right turn signal wire by 3ft. and the brake light wire by 6 ft. (You can use either connectors, splice the wires, or solder them)

The wires that came with the converter are too short. You will need to lengthen them.

**Step 12:** Remove the covers on the “barn” doors. The covers are seen on slide 10. Instructions to remove these covers are found in the vehicle’s owner’s manual.

**Step 13:** Run the left turn signal and reverse light wires out the holes you previously exposed and to the driver’s side “barn door”. (To run wire, follow picture in slide 13)

**Step 14:** Splice reverse light wire to the bottom wire that leads to the light housing. (pictured below left)

**Step 15:** Splice left turn wire to middle wire on light housing (picture below right)

Note: Wire color changes from vehicle to vehicle, but position does not



Reverse light splices here on driver's side door



Left turn signal light splices here on driver's side door

**Step 16:** Run right turn signal and brake light wires from the driver's side to the passenger's side of the vehicle.

The wires can be hidden by running them behind where the skid plate usually sits



**Step 17:** Run right turn signal wire out of hole to passenger's side "barn" door in a similar manner that was accomplished in step 13. (green wire in bottom left picture)

**Step 18:** Splice right turn signal wire to middle (second of three) wire on the turn signal wire housing. (bottom right picture)



Brake wire is 1 wire in this bundle of wires

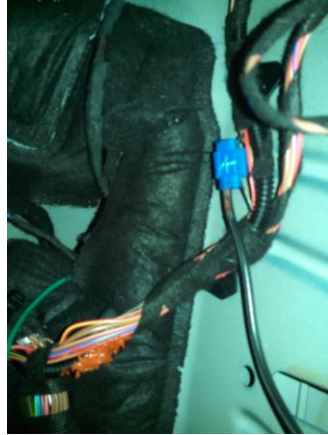


At first I got ahead of myself and forgot to run the wire properly to conceal it. Had to re-splice this connection after re-running the wire properly.



**Step 19:** Locate vehicle brake light wire and converter box break light wire to it.

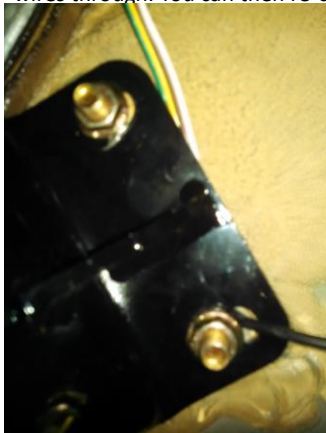
This wire is, by far, the most difficult to locate, but not impossible. You just have to know what to look for. First of all, this wire is smaller than the others because it feeds LED's while the others feed bulbs. The wire is 18 gauge instead of the normal 14 gauge you are used to up to this point. The brake lights are in the roof of the car. When you trace the wires you will only find one bundle that splits from the main one and runs to the roof. That bundle has a plastic hose (used for the rear windshield wiper spray nozzle) and two wires attached to it. Those two wires are the brake light ground and power wires. The ground wire is always brown in the Mini F54, but the powered wire (the one you splice to) changes from build to build. Once you find this wire, trace it back down into the main wire bundle where you can actually reach it and splice to it. Note: You will need to use a box-cutter knife to open the main bundle. Be careful and do not cut through any wires when doing this. Use electrical tape to cover any exposed wire if you cut into any wires.



**Step 20:** Remove Carriage Bolt that holds hitch on vehicle and loosen carriage bolt nut one the same side to allow room to run wires through.

**Step 21:** Grind an extra 1/3" into the hole that you plan to run the wires through. (only grind on one side) This will provide a place to set the wires that will not be crimped when you replace the carriage bolts later.

**Step 22:** Feed power wire and 4 pin connector wire through the hole. Run the power wire towards the front of the vehicle and run the 4 pin wire towards the heat shield that is above the muffler. You will then run that wire over the heat shield and then down to the rear center of your Mini. Note: You have to cut the four pin connector off the four wires in order to fit the wires through. You can then re-connect the wires with a connector, splice, or solder later. (step



Run your wires behind the heat shield, not over the muffler.

I spliced the wires back together after running them



I then folded the wires back on themselves and zip-tied them in place. This keeps any pulling torque off of the splices.



**Step 23:** Run the power wire up to the engine compartment.

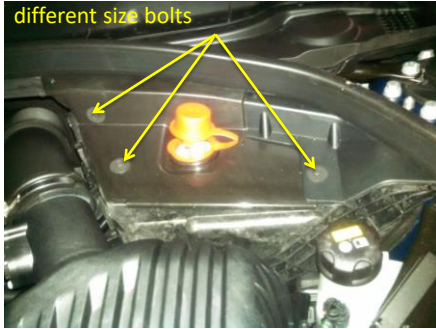
There are several ways to accomplish this. I ran my wire next to existing wires on the underside of the car until I was around the driver's side rear tire assembly. I then ran it under the driver's side side-sill. This is the rubber piece that runs the length of your vehicle between the two tires. There are rubber snaps that secure it in place along the length of the sill. I undid one at a time, put the wire behind the snap, and then re-snapped it in place. The front and rear snaps are secured snaps that require a Phillips head screw driver to loosen. The rest simply pop out when pulled on. When I reached the front driver's side wheel I ran the wire to a hard point I found that was clear of the tire and then behind the tire assembly. I was then able to run the wire on the far side of the tire well. It came out near the rear of the headlight assembly right by the battery compartment.

**Step 24:** Connect power wire to fuse terminal.

**Step 25:** Connect fuse terminal to positive terminal on battery. Note: You need to remove a cover over the battery before you can access it. (Pictured on next page)

Use 5/16" socket to remove three bolts to access battery. Note: some Minis use

different size bolts



How it looks when done...



You now have a choice: Use a 3/8" socket to attach power ring terminal here, or.....



..... use 10mm socket to attach power ring terminal here

All your wires are now connected, but do not turn your Mini on right now. You **WILL** get an error message, the computer will shut down power to several parts of your vehicle, and you will not be able to check your connections. If your rear doors are shut, they will lock and you will **NOT** be able to open them. You will have to **TOW** your Mini to the dealer to disassemble the doors because there is no manual override.

**Step 25:** Reconnect the wiring harnesses for the “barn” doors that you disconnected in step 7. The female end is slightly difficult to put back in place. Push the bottom end in the hole first and then tilt it so the top end goes. You will hear and feel a “snap” when it is in place. Connect the male end to the female end and push the top down to lock it in place. (pictured on slide 11)

**Step 26:** Check your wiring harness connections.

Using either a multi-meter or by plugging your connector into the trailer (easiest), turn your Mini on and ensure that the appropriate lights illuminate for brake, left turn, right turn, and reverse signals. If anything does not work, return to a previous step or call your harness vendor for assistance.

**Step 27:** Re-attach your battery cover. (pictured in slide 21, bottom left picture)

**Step 28:** Remove slack from and secure excess wire. I did not secure my power wire in place while running it to the battery box. Work backwards, removing slack and securing the wire with zip-ties along the way. All of the slack will eventually go back inside the carriage bolt’s hole where you can spool the excess and set it aside. Repeat this for the 4-pin connector’s wires.

**Step 29:** re-tighten the carriage bolt.

Now that you know you have the correct amount of wire under your vehicle you can re-tighten your carriage bolts that are holding your hitch in place.

**Step 30:** Reassemble everything else.

The order that you put everything back together does not matter at this point. You can simply reverse steps 1-6 for a checklist.