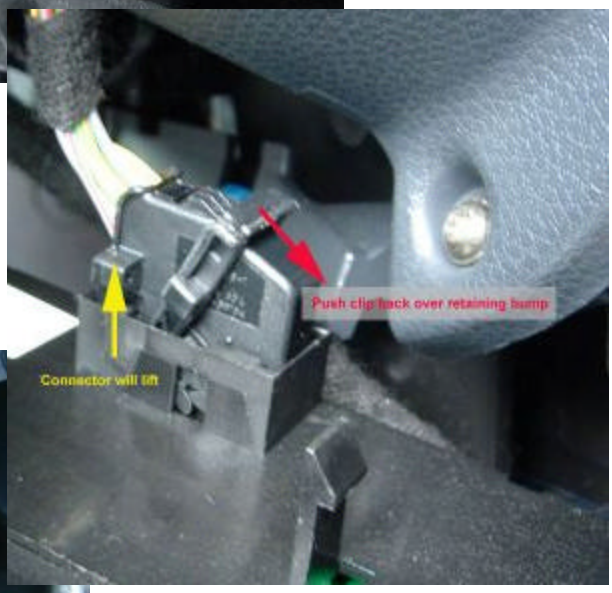
IANS "MINI CIRCUIT" INSTALLATION

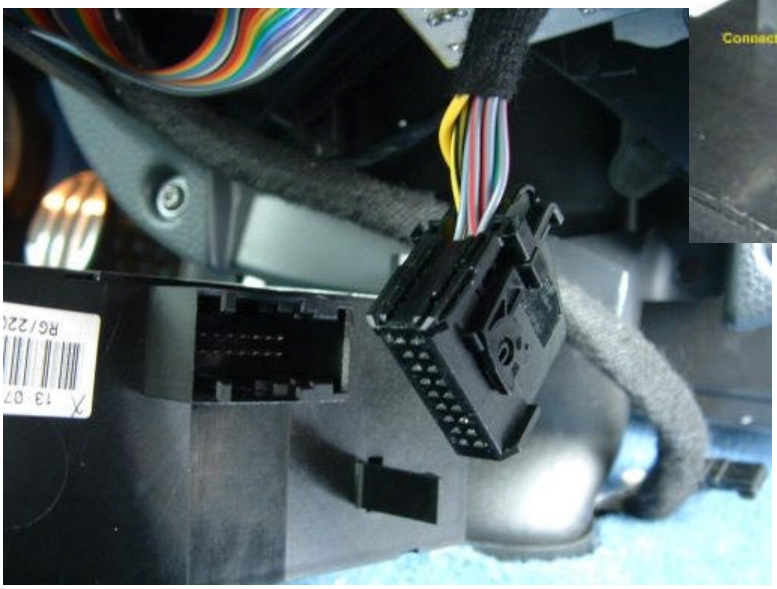
The MINI circuit is installed "inline" to the toggle switch panel. To achieve this, the original connector into the back of the toggle switch panel must be removed, and a new connector (part of the MINI circuit) installed. Access to the back of the toggle switch panel is tricky. One method is to remove the downtubes (see pages 8-10) then remove the toggle switch panel. An alternative is to remove the trim piece below the toggle switch panel, and reach up behind the panel - there is enough space there to work blind, but it is not easy!
Even if you remove the downtubes, you will need to also remove the trim piece because behind it is where the circuit will finally be located. This is because you cannot squeeze the MINI circuit through the hole behind the toggle switch panel, once it is all connected up. You must connect the MINI circuit under the removed trim piece, as the accompanying pictures show!

Here is a picture of the trim piece that you want to remove - it is held by one torx screw, and some clips:

Here the trim piece is removed:

Next you need to reach up behind the toggle switch panel, and feel for the connector - you can follow the wire bundle to find it. The original connector is latched into the back of the toggle switch panel; a retaining bump on the back of the connector must be pushed down to allow a latching clip to be slid over it; this will release the connector from the toggle switch panel:



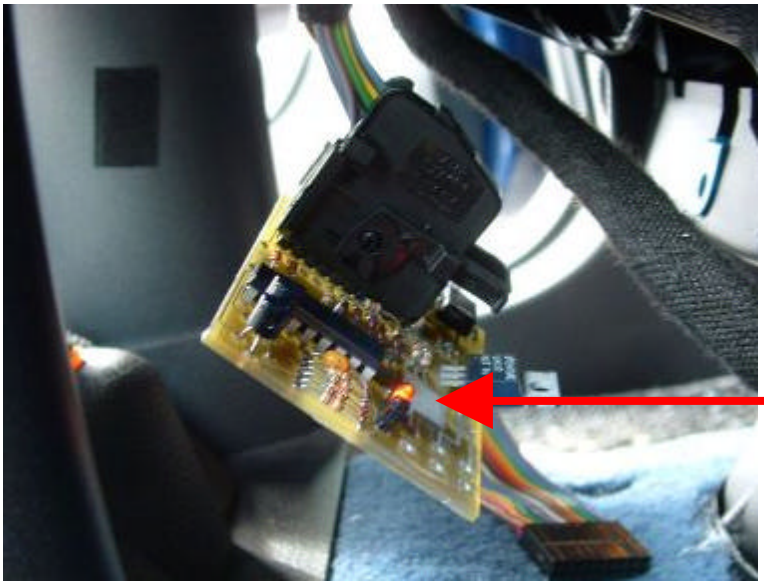


I find it easier to reach the connector from the left side of the car (driver side in USA). Be careful not to reach very high into the car, where this is a similar feeling connector to the a/c controls!

Once the original connector is removed, it can be connected onto the MINI circuit (note that this picture shows the "version 1" circuit, slightly different to the final design). The connector can be fitted many ways, but only one is correct! You must have the connectors wire bundle exiting from the side closest to the edge of the circuit board, and you must have all 18 pins connected.

Stop and Test! (#1)

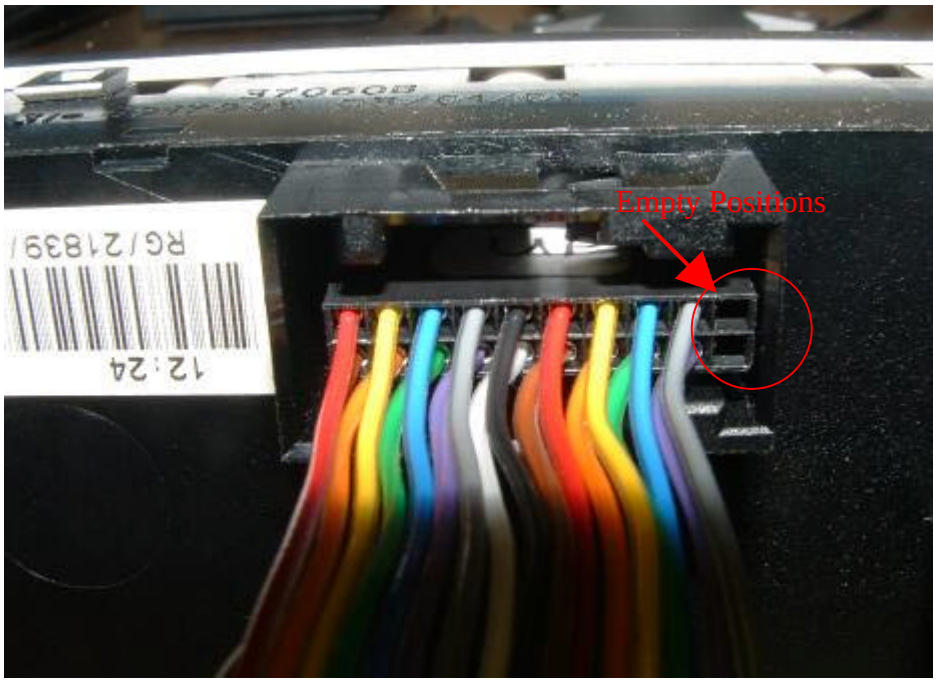
At this point, you should test that the original connector is correct onto the MINI circuit. If you get it wrong you risk blowing fuse F40 in the car, which will disable many features (such as full beam headlights!).
Turn the ignition on; there is no need to start the car but you need to turn the key to position 2 so that the ignition is on. There is a small LED (light) on the MINI circuit - if you have the connection correct the light will come on for three seconds then turn off. If this happens - great! Turn the car off and continue!
If the LED on the MINI circuit does not come on, check the connector and make sure it is the right way up and no pins are missed.



Now you want to connect the new 18 way connector that comes with the MINI circuit into the back of the toggle switch panel. The supplied connector has a side marked "UP"; that side must be "facing the sky" when the connector is plugged into the toggle switch panel. The connector has two empty positions which go to the right (USA: driver side of car) of the opening in the panel and help to guard against mis-alignment.

Here the connector is correctly connected into the back of the toggle switch panel:

This view is “from the engine bay” looking toward the rear of the car!



IMPORTANT: Be **EXTREMELY** gentle when trying to connect to the back of the toggle switch panel. The pins on the back of the panel can be easily bent and will be difficult to straighten - if this happens, you will be forced to replace the toggle switch panel!

Stop and Test! (#2)

Now the MINI circuit should be correctly installed. **Turn the car on again** (to ignition 2) and check that the LED on the MINI circuit again turns on for three seconds then turns off.

Now confirm that the connector is correctly aligned: hold the **door lock/unlock toggle UP (=UNLOCK)** and confirm that the doors unlock. Keep the toggle held up and watch the LED on the MINI circuit - after five seconds it should begin to flash, until you release the toggle (if you keep the toggle held for a really long time, the LED will start to flash quickly!)

If the LED does not come on, you have probably connected upside-down into the back of the toggle switch panel! Don't worry - if you did the earlier test before connecting to the toggle switch panel, the MINI circuit should be protecting your fuse. Just turn the car off, correct the connector and check again.

If the doors do not unlock, the connector is probably mis-aligned into the back of the toggle switch panel: the switches will do strange things - for example the door unlock might lock the car! If the toggles do strange things, turn off the car and re-check the connector alignment.

Setup time!

Your MINI circuit should now be successfully installed. But it won't (yet) do its auto-up trick on either window! You need to choose which window(s) you want to have auto-close, and enable the circuit to function for you.
You need the ignition on position 2. It is also a good idea to have the windows open, so that you can confirm when you have successfully enabled the auto-up function.

To enable (or "unlock") the auto-up function for either window, first hold the door lock/unlock toggle **UP (=UNLOCK)** for more than five seconds, until the LED starts to flash. Now, **while still holding** the door toggle up, **double click the window up toggle** for the driver or passenger side, as appropriate. You should see the window auto-close completely, confirming that you have successfully enabled auto-up for that window. If you wish, you can enable both windows (you do not need to wait for the auto-up to complete on one window before enabling the other, and you do not need to release and re-close the door toggle).

If at any time you wish to disable (or "lock") the auto-up function - perhaps to stop children in the car playing around - then simply hold the door lock/unlock toggle **DOWN (=LOCK)** for more than five seconds (until the LED starts to flash) then again while still holding the toggle, double click either window up toggle to disable auto-up for that window. You can freely choose to disable and enable auto-up on either window as often as you wish and the latest setting will be remembered (even if the battery is disconnected).

REMEMBER: The auto-up feature is activated by a **quick double click up** of the toggle - the same as when you enabled the function (but you don't need to hold the door toggle once the feature has been enabled once - the circuit never forgets!)

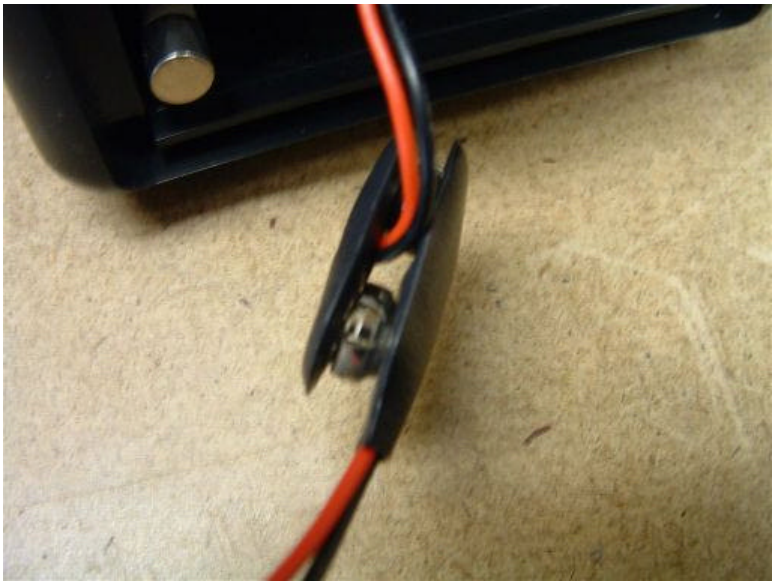
Optional features! TRACK MODE DSC

If you have ordered a MINI circuit with the **track mode DSC control**, this function is initially not active. This means that the car is "normal" with an active DSC.
To enable track mode DSC, hold the door lock/unlock toggle **UP (=UNLOCK)** for five seconds (same as for enabling auto-up windows) and, while still holding it, click the DSC toggle once, then release both toggles. If you were successful you should see the DSC light change state a short time later. To confirm function, turn the car off, then turn it on again - after a short delay the DSC should be disabled (and the DSC light will come on).
When you wish to disable track mode DSC, hold the door lock/unlock toggle **DOWN (=LOCK)** for more than five seconds, then click the DSC toggle. Then turn the car off then on again to confirm that the DSC remains on (and the DSC light remains off).
REMEMBER: When "track mode DSC" is enabled, "DSC" is turned off when the car is started. For normal car operation, ensure "track mode DSC" is **disabled**.

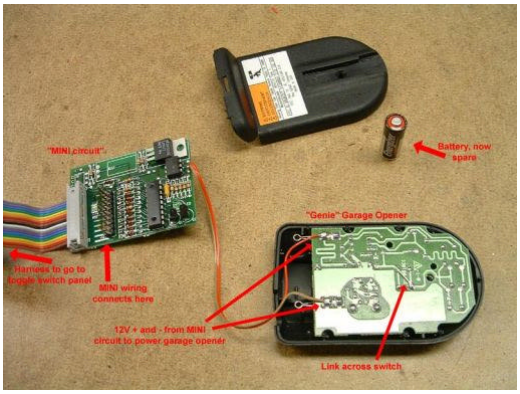
Optional features! GARAGE OPENER

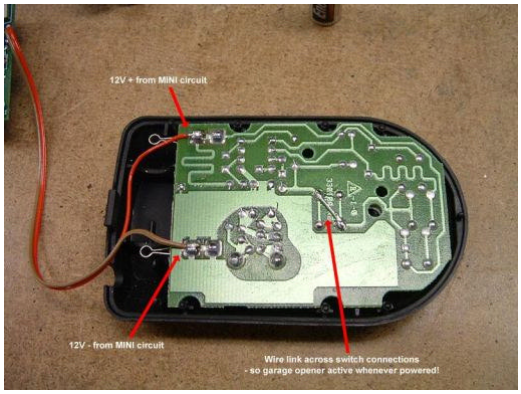
If you have ordered a MINI circuit with the **garage door opener control**, you will need to connect the circuit to your opener and test it. The opener is triggered by the MINI circuit after holding the door lock/unlock toggle up or down for more than half a second - if the two are correctly connected together, this should cause your garage door to open. IMPORTANT: On some MINIs, holding the door toggle up causes windows/sunroof to open; if you have such a MINI hold the toggle down to avoid this!

UPDATE (March 10, 2004): If you have a garage door opener powered by a 9V battery and connected with a flying lead, the MINI circuit can come with a mating connector to make installation easy and solder-free - you just need to mechanically jam the switch always on and have the MINI circuit turn the 9V power on/off. This picture shows two 9V connectors mated together:



UPDATE (May 7, 2004): This week I connected someones 12V garage opener ("Genie" brand) to a MINI circuit - these pictures show how I did it (you can see bigger versions **on my web pages**):





Tidy up!

When everything is working, you should tuck the MINI circuit away and re-install the trim piece. You can check **GadgetGavs install** on my web pages where he used velcro to attach the MINI circuit and his garage door opener to the back of the trim piece.

From my views of the interior of GBMINI, there is no metal in the area under the toggle switch panel that could cause a short-circuit to the MINI circuit, but if you are worried you could wrap the circuit in duct-tape to insulate it. The MINI circuit is supplied with a water-protection coat, but that will not protect from any sharp metal cutting into the coating and shorting to the circuitry.

3/31/2004: IMPORTANT CLARIFICATION!

Enabling & disabling functions uses the door lock/unlock toggle, labelled like this:

It is held for 5s to put the MINI circuit into "program" mode. To enable a function you hold it UP (think **unlock=enable**); to disable a function hold it DOWN (think **lock=disable**). Be sure to keep the door lock/unlock toggle held (up or down) while clicking the other toggle to indicate which function is to be enabled or disabled.

ADDENDUM: DOWN TUBE REMOVAL – from www.mini2.com

Each dash downtube is screwed to the radio-a/c-toggle-switch cluster. The top of each downtube is covered by the dash center fascia [surrounding the speedometer and two air vents], and the bottom of each is anchored in the center console.
To remove them, you may need the following tools: Torx screwdrivers (T40 and T20), #2 Phillips screwdriver

1) Remove the 2 torx screws (T40 or T20) from each downtube:

Accessing the top torx screw where a glovebox or knee bolster is present will require opening the glovebox door or releasing the knee bolster. To release the knee bolster, Grab the top edge with both hands. Pull down sharply keeping the pressure toward the direction of the door in order to prevent the bolster from scratching the downtube when it comes free. Once free it can be swung down out of the way to provide clearance to access the torx screw.

2) Provide clearance under the dash center fascia for the top of each downtube by either steps 3-7 or steps 8-9. I use the quicker steps 8-9 but steps 3-7 are shown here in case you prefer the center console removal method:

3) Remove the gearshift surround:

Pull gently straight up so you don't break any of the 4 pins holding it to the center console.

Pull the surround up as far as possible to avoid creasing the leather while you work.

4) Remove the side-mirror adjustment unit:

Reaching through the opening behind the gearshift, depress the two metal prongs and push up from underneath the unit to pop it up.

5) Remove the 2 Phillips-head screws now visible.

6) Remove the Phillips-head screw from the middle of each cupholder.

7) Provide clearance:

Lift up the console to reveal the polystyrene piece under each downtube, and carefully remove each piece, allowing the downtubes to drop down.

8) Remove the T20 torx screw that secures lower passenger side edge of the dash center fascia near the airbag panel:

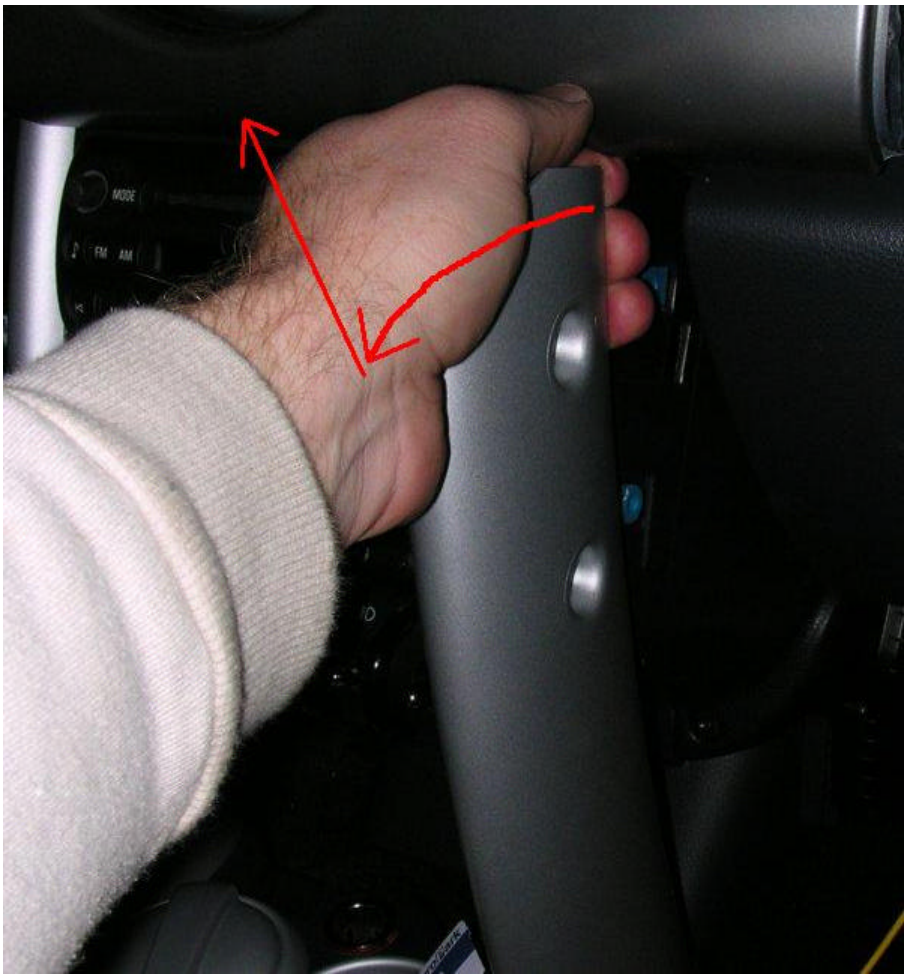
9) Provide clearance:

Pop the lower clips of the fascia by grabbing its lower edges and giving a medium sharp tug.

Pull the fascia outward just far enough for the tops of the downtubes to clear.

10) Remove the downtubes:

Angle the downtubes toward you, pulling the tops under the dash center fascia, and lift them out of the center console:



At this point you can remove the torx screws holding the toggle switch panel, and pull it out to access the connector behind. Remember to install the circuit through the lower trim piece – there is not room to slide the circuit through the opening behind the toggle switch panel once the original connector is plugged onto it.

NOTE: Refitting is reverse of removal – ease the downtubes back under the dash center fascia, push the fascia back into place so that the clips re-engage, replace all torx screws.

Thanks to **www.MINI2.com** and the MINI community for the excellent FAQs from which these instructions are summarized.