Subaru Liberty Gen 4 BL/BP
Power Folding & Heated Mirror Upgrade

IMPORTANT DISCLAIMER: The information in this guide is provided in good faith, we bear no responsibility for any damage caused to your car or yourself during installation. All work done on your car is at your OWN RISK. Only undertake this modification if you believe you are competent to complete the work. The information in this guide is believed to be correct and has been used to successfully install mirrors on our own personal cars but no guarantee on the information is provided.

Required Items:

- Pair of Folding Mirrors
- Folding Mirror Switch
- Relay (see Step 4)
- Spare connector female and male pins (see note below)
    - To suit door connectors
    - To suit mirror connectors
- Soldering iron and solder
- Multimeter (Not required but is handy to have)
- Wire
- Heatshrink or electrical tape
- Pin Removal tool
- Fuse Tap
- 15A 'Mini' Fuse

Note On Connector Pins

There are three types of pins required for this install, a large type male and female and a small type male.

The large pins are from the main door-to-chassis connectors, the back of the mirror switch and various other connectors in the car. The small pins can be sourced from another door harness mirror connector. These can either be bought new but they are quite pricey or can be sourced from a wrecked car but you will have to strip the original wire and extend as necessary.

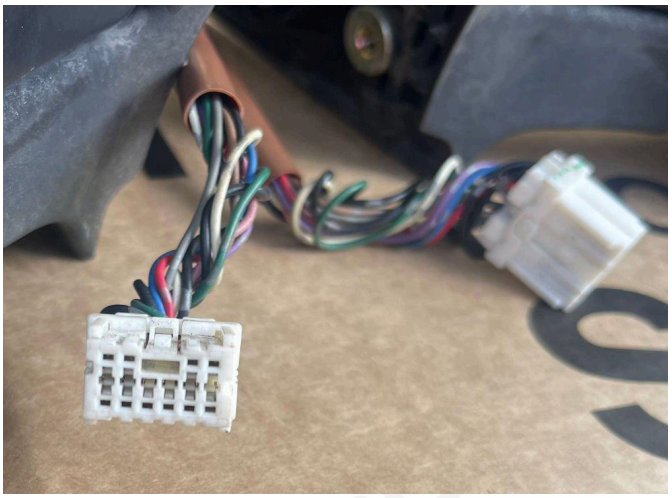
Pin Type	Large Male	Large Female	Small Male
OEM Part Number	Fujikura TM250100P	Fujikura TF250100P	Yazaki 7114-4239-02
Number Required	**4** (PreFacelift and Early PostFacelift) **0** (Late PostFacelift) See Step 1: Identification	**10** (PreFacelift and Early PostFacelift) **6** (Late PostFacelift) See Step 1: Identification	**6** (All Models)
Where to source from wrecked car	Main door connectors	Main door connectors, mirror switch etc	Door mirror harness connector
Image			

Folding Mirror Switch:

Identified by the lower central button with the mirror icon, usually accompanied by the unused left window heat button (JDM Legacy Only)

Folding Mirrors:

Folding Mirrors will always have glass heating on the Gen 4 Liberty. Identified by the 10 pin connector and the Gold/Brown wire sheathing.

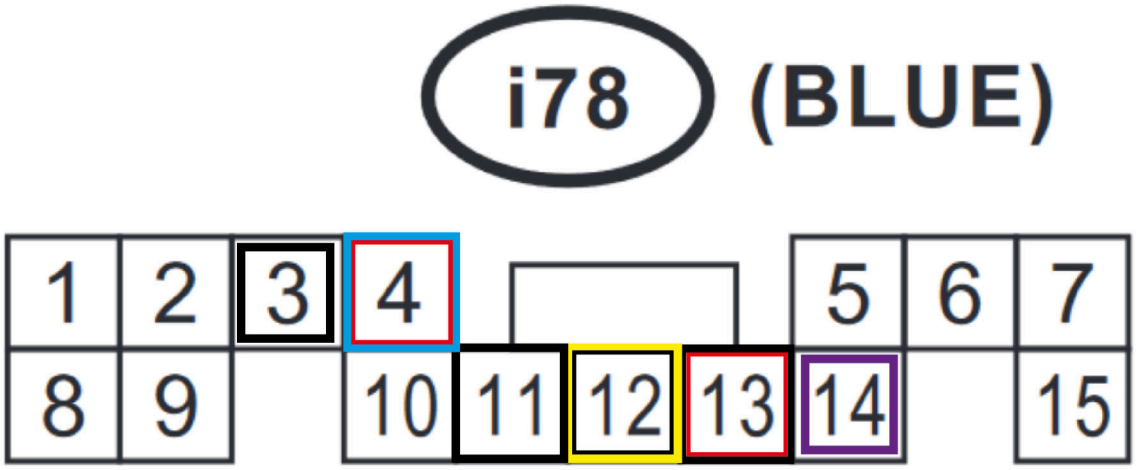


Step 1: Identification

The first step is to identify what wiring already exists within the car/body, from our experience wiring for the heated mirrors exists on the body side of the harness on all Gen 4 models. The power folding mirror wiring is not present in preface models and early postface models. Later postface models have folding mirror wiring present on the body side. No wiring for heat or fold exists in the doors on any model. This must be added regardless of what type you have.

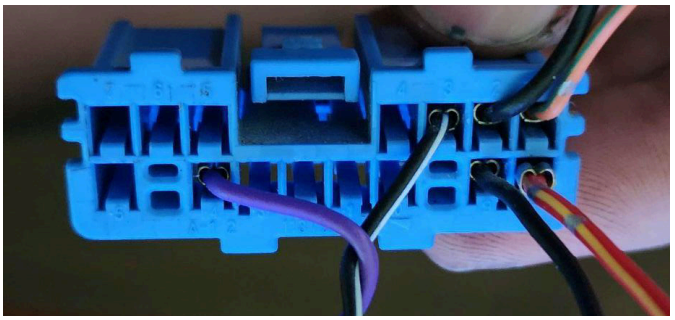
Model	Heat (Body)	Fold (Body)	Heat (Doors)	Fold (Doors)
PreFacelift	✓	✘	✘	✘
Early PostFacelift	✓	✘	✘	✘
Late PostFacelift	✓	✓	✘	✘

The easiest way to identify if the body has the folding mirror wiring already is to look at the back of the mirror switch. This can be accessed by removing the side panel of the dashboard on the drivers side (just pulls off) and then looking at the blue connector on the back. If the body harness has wiring for folding mirrors, it will have 4 extra wires in the middle of the connector, pins 4, 11, 12 and 13.
From experience it will have all or none of these wires, so you should be able to easily spot the yellow wire and follow the correct steps going forward.

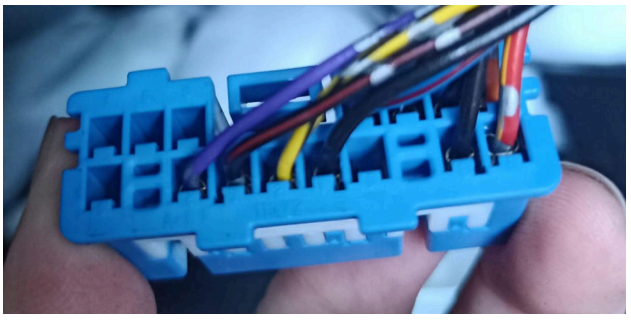


Note: The Factory Service Manual diagram is viewing the connector from the pin side, not the wiring side, so will appear mirrored when viewed from the back in the below images.

Without Fold:



With Fold:



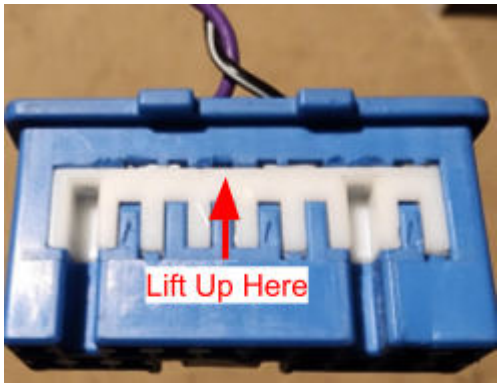
If you have a PreFacelift or <u>DO NOT</u> have fold wiring, continue to Step 2.

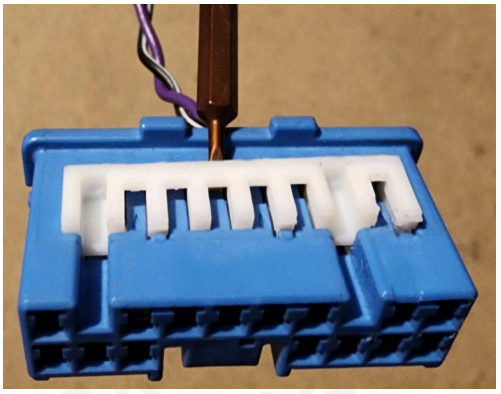
If you <u>DO</u> have fold wiring already present within the body, skip to Step 3.

Step 2: Body Wiring - for PreFacelift or Early PostFacelift

Wiring must be added to the blue mirror switch connector in order to send power from the mirror switch to the mirrors themselves to fold in or out. 4 Wires are required, two of these are to power the switch and the other two branch to both mirrors for the fold motors. The mirror switch power will be completed in step 2.1 and the folding wires completed in step 2.2.

To add wires to the blue connector, the locking bar must be raised up. This can be done by using a small precision screwdriver to lift the white piece up. This should click out and raise ~3mm, it sometimes can pop out but ideally should not be removed fully.





Step 2.1: 12V Power and Ground

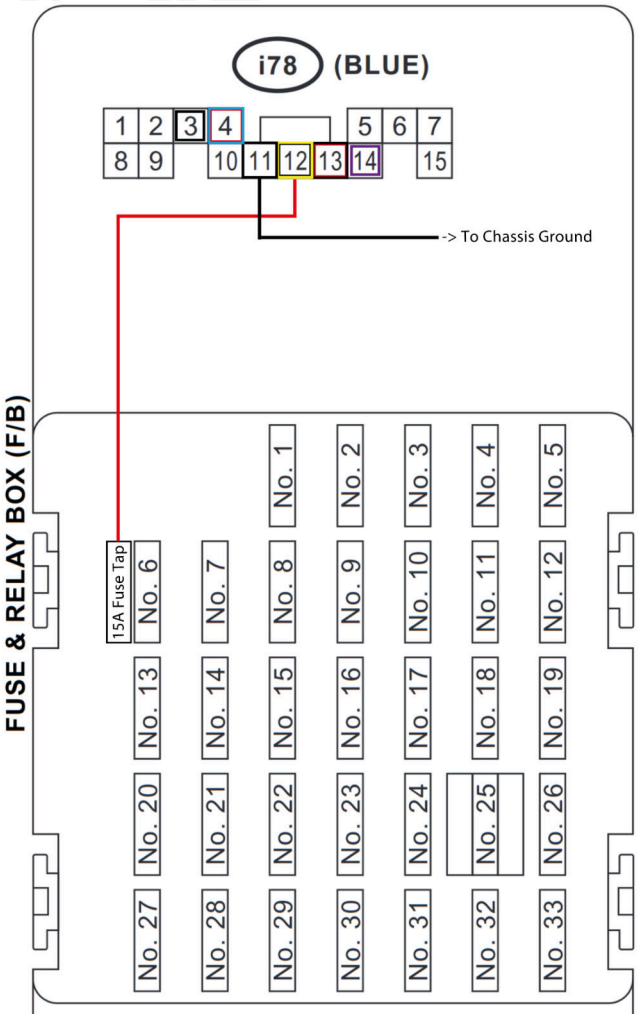
12V Power:

The easiest way to get 12V power to the connector of the mirror switch is to use a fuse tap. This also means that no factory wires need to be cut. If you don't want to buy a fuse tap then you can cut into a suitable power wire and do it that way.

You can choose which circuit you want to place the fuse tap in. We chose to use a circuit which is powered on accessory power. This means the mirrors can only be folded in and out when the key is turned on - this is how it works from Subaru with factory installed folding mirrors. Alternatively you can choose to use a constant 12V circuit which gets power directly from the battery no matter if the key is on or not.

We would suggest using either Fuse 6 (Mirror) for accessory power or Fuse 9 (Wiper/Deicer) for constant 12V. To use the fuse tap remove the factory 7.5A or 20A fuse from the circuit and place it in the lower slot on the fuse tap and then place a 15A fuse in the other slot to power the mirror switch.

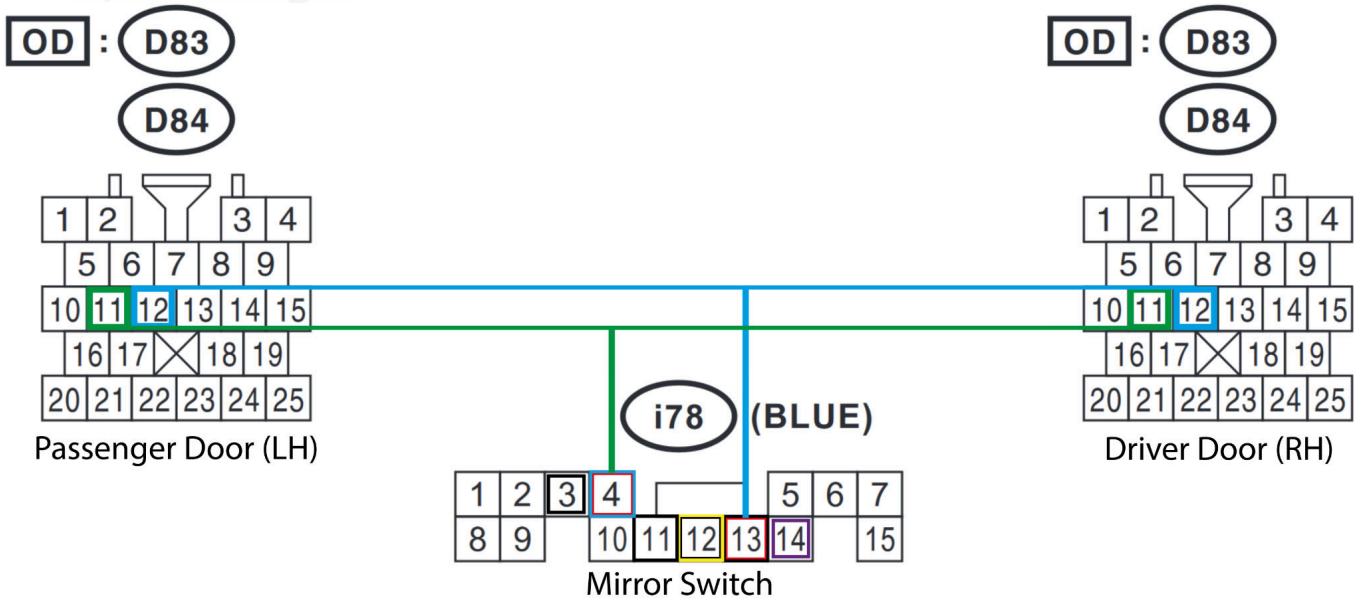
The wire from the fuse tap should be extended and terminated with a large type female pin then run to the blue connector and placed in pin 12 as shown.



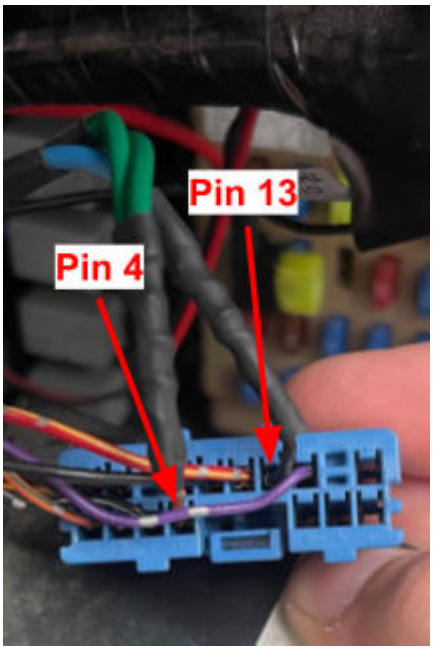
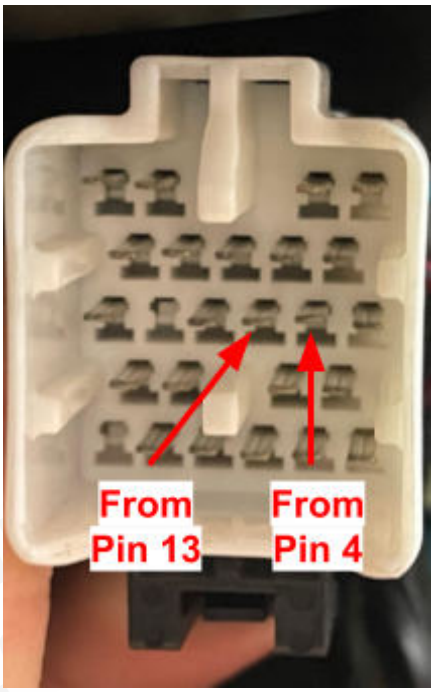
Ground:
The mirror switch pin 11 needs to be connected to the chassis for ground. The best way to do this is to attach a large female pin to one end of a length of wire, route it nicely along the factory harness then attach a ring terminal to the other end at the correct length. The female pin can be placed into the back of the blue connector in position 11 and the other end can be put under the head of a grounded bolt. This bolt (shown below) next to the fuse panel is easy to access and remove for a clean install.

Once connected, use electrical tape to secure these wires out of the way as desired.

Step 2.2: 12V Fold Wires
The next part is to run wires from the blue mirror switch connector to the door connector on either side of the car. These should be routed through the car behind the glovebox, radio, lower dash, etc. 4 large type male pins are required and 2 large type female pins. The wires must be connected as per the diagram below, with each wire from the mirror switch branching out to each door connector. Pin 13 on the mirror switch goes to the Pin 12s on the door connectors. Similarly Pin 4 on the mirror switch goes to the Pin 11s on the door connectors.



Each of the wires terminating at the door connectors must have a large type male pin attached and the two at the mirror switch must have a large type female pin attached. The positions in which these pins need to be installed are displayed in the pictures below.

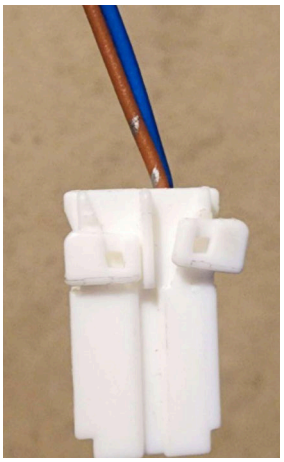
Mirror Switch	Passenger (LH) Door	Driver (RH) Door
		

Once these wires are installed and you have checked that your wiring is correct you can remove the old mirror switch and replace it with the JDM folding mirror switch. The blue connector can then be plugged into the back of the switch.

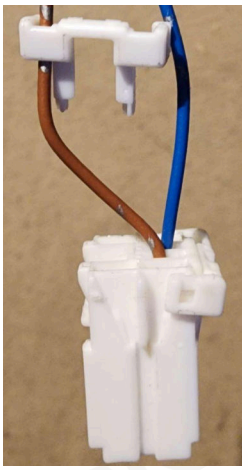
Step 3: Mirror Repinning

The JDM folding and heated mirrors have a 10 pin connector. The Aus Mirrors have an 8 pin connector. The JDM mirror can be converted to utilise the Aus 8 pin connector and retain all functionality. Pins will need to be added to the door harnesses (This is done in Step 4)

To change from 10 pin to 8 pin, the pins must be removed from both connectors and the 8-pin connector plastic swapped over onto the folding mirror. To remove the pins, first the locking retainer clip must be removed from both sides of the connector housing, this is done by slightly prying the clips out on each side to lift it out and back up the connector. The plastic latch may come off or may sit nicely in the unlocked position, either way works.



(Left) Locked



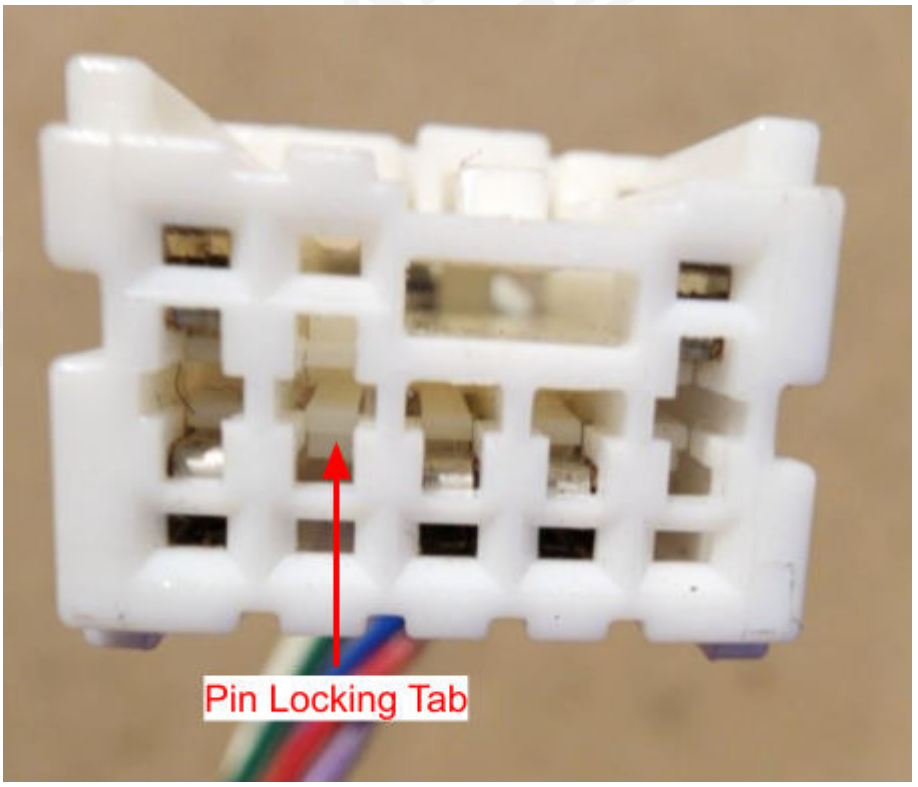
(Right) Unlatched

(Left) Removed

(Right) Unlocked

A pin removal tool is then required to pull away the locking tab on each of the pins. I would recommend taking photos of the order/colours of the wiring in both connectors before doing any modifications.
First remove all of the Aus 8 pin pins from your old mirrors, this allows you to immediately pull the pin out of the JDM connector and swap it straight into the Aus 8 pin connector.

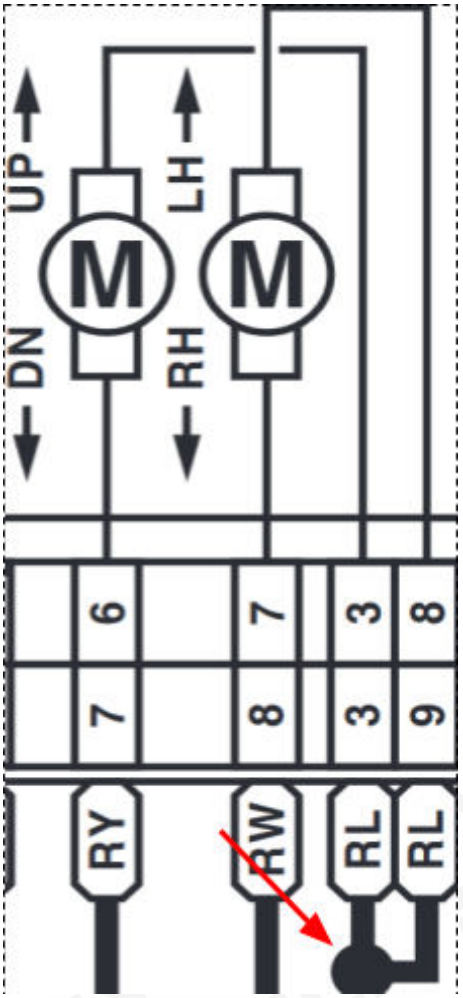
See on the next page for required wiring modifications.



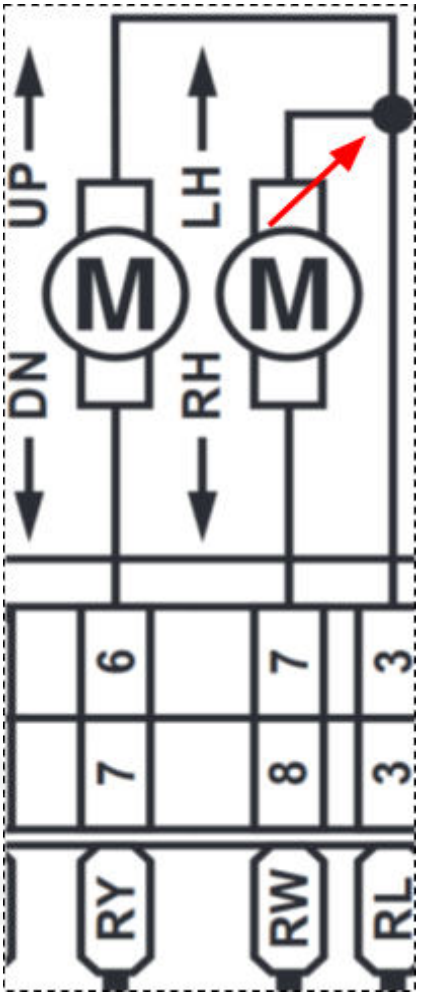
<u>The repinning of wires is dependent on whether you have PreFacelift or PostFacelift mirrors.</u>

The wiring for mirror glass movement changed between the PreFacelift and PostFacelift. The PreFacelift merged 2 of the 4 wires in the door harness, whereas the PostFacelift merged them within the mirrors.

To convert the JDM 10 pin connector down to 8 pins, the PreFacelift mirrors must be converted to operate like the PostFacelift mirrors, effectively freeing up a pin to allow the heat to be added.



On PreFacelift models the harness is merged

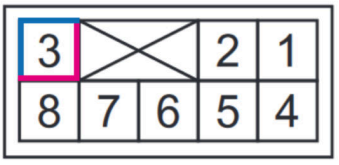


On PostFacelift models the mirror is merged

Both mirrors will need the second wire for the heat to be spliced into the ground for the indicator.

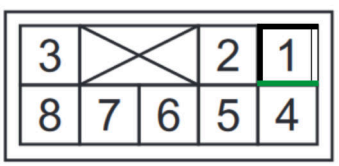
PreFacelift:

On PreFacelift mirrors the mirror movement can be merged to operate like the facelift mirror. This involves splicing pins 3 and 8 (the Pink and Blue wires) together and returning the single merged pin into position 3 of the mirror connector. This will free up pin 8 which will be used to supply power for the heat function.



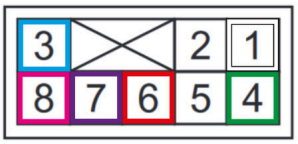
PreFacelift and PostFacelift:

For both generations of mirrors, one of the black heater wires can be installed into pin 8 to receive power for the heat function (Polarity does not matter). This then leaves the second heat wire loose, which needs to be grounded. The indicators are LEDs and use pin 1 that is directly connected to ground. The second heater wire can be spliced into this ground wire (This is the same way the factory ones are installed, usually the merge happens on the door harness side of the connector). This wire is located in position 1, which is a green wire on the Passenger (LH) mirror and a white wire on the Driver (RH) mirror.

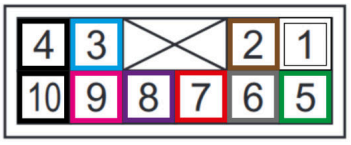


Mirror Pinouts:

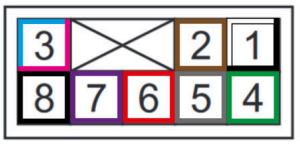
Note: These are for the Drivers side (RH) mirror, the Passenger side (LH) mirror has the White and Green wires swapped. Keep the order the same as your original mirrors. The secondary heat wire must still be merged into pin 1 (top right - colour does not matter) as this is the indicator ground pin for both LH and RH mirrors. RH mirrors will merge with white pin LH mirrors merge with green pin



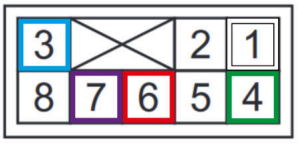
Aus PreFace Pinout



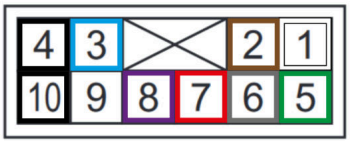
JDM PreFace Pinout



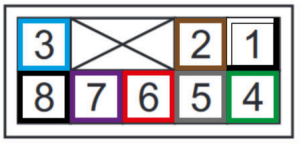
Modified PreFace Pinout



Aus PostFace Pinout



JDM PostFace Pinout



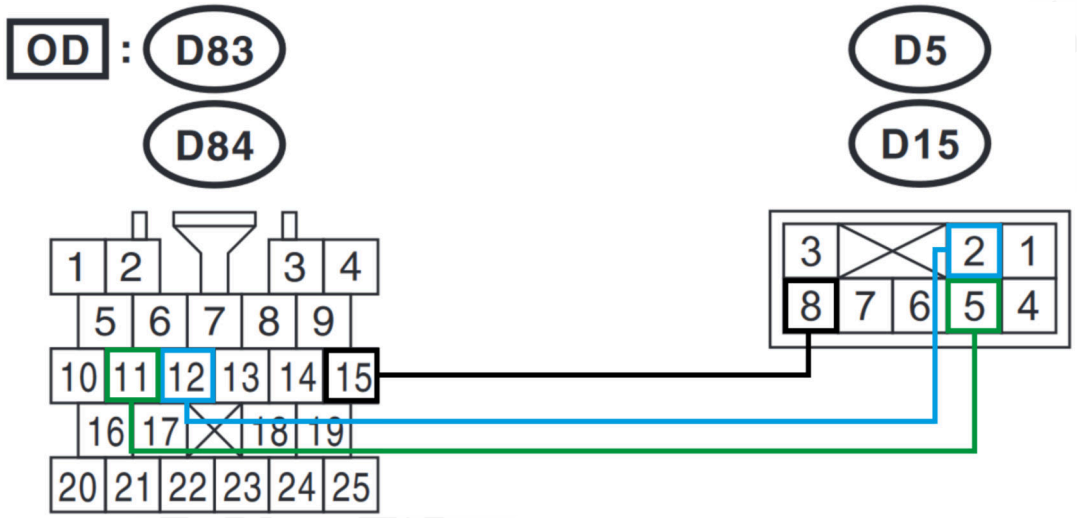
Modified PostFace Pinout

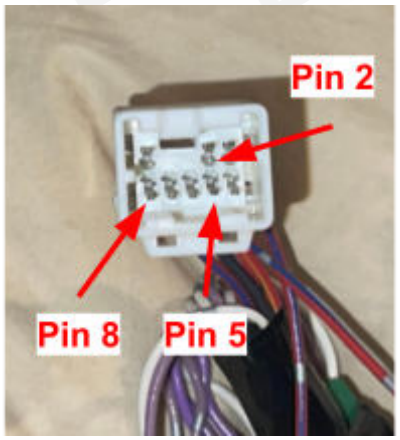
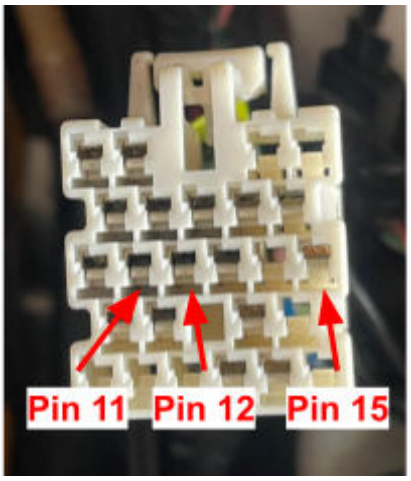
Step 4: Door Wiring

<u>Make sure you have from factory or have added pins 4, 11, 12 and 13 to the folding switch module and body harness before beginning this step.</u>

3 wires in each door harness need to be run from the mirror connector down to the main door connector. They need to be routed through the door following the existing wiring. To do this properly the harnesses need to be removed from the door. One end of each wire will have a small type male pin and the other has a large type female pin. When routing the wires through the rubber part between the door and the body it is helpful to use a stiff wire such as that from a coat hanger to tape the wires to and pull them through. These should be installed into the connectors as per the diagram shown below.

Note: Pin 8 will already be populated on <u>PreFacelift</u> models, because we have modified the wire join to be on the mirror side of the connector this pin can be removed and taped to the harness to isolate it. We can repurpose this connector space as shown below for the heat power wire.



Mirror Connector	Passenger Main Door Connector (LH)	Driver Main Door Connector (RH)
		

Once these wires have been successfully routed through the door to the correct location they can be electrical taped to the existing harness in order to keep them neat and tidy. After confirming your wiring is correct you can now reinstall the harnesses to the doors and plug them in to the main body harness.

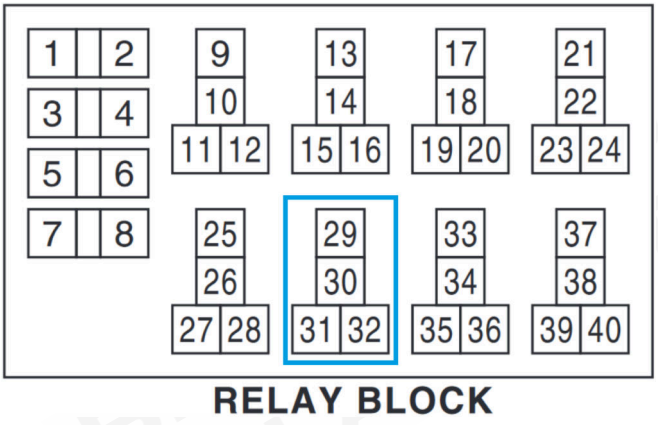
Step 4: Heat Relay

In order to activate the heat function of the mirror glass, a relay is required to be added in the cabin fuse box. This is as simple as pushing it into the correct slot in the relay block. The correct slot is dependent on whether you have a PreFacelift or PostFacelift.

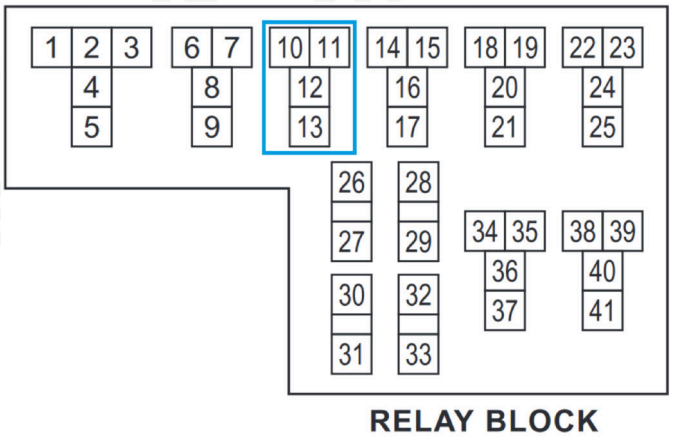
	The required relay is the same as the others in the relay block and must be sourced from a wrecked car or can be purchased brand new (Subaru Part Number: 82501AG040 OR 82501AG041)

Relay Positioning:

PreFacelift:



PostFacelift:



Once this is installed the heated mirrors will automatically activate and deactivate when the rear window defogger (heat) button is toggled. This is a timed function and will turn off automatically with the rear defogger after 15 mins.