

Dear DeLorean owner,

Thank you for your purchase of this quality set of the "Extended Convex DeLorean Mirrors". These mirrors will give you much-improved rear visibility thanks to the extended convex design, and will virtually eliminate the blind spots on both sides of the car. This is a great safety improvement compared to the OEM flat mirrors. You will no longer have to worry about cars 'hiding' in your blind spot.

Another great improvement comes from the heating pads which are installed at the back of the mirrors. Using the wires already factory-installed in the door, your mirrors will now stay dry and clear of moisture (condensation), fog, rain, snow and ice.

Here comes the rear visibility... at last.

The package:

Here's what you should find in the box:



1. Right mirror with heater installed and installation strips
2. Left mirror with heater installed and installation strips
3. Connectors (4pcs) – for connecting the heaters to the existing wiring
4. Connectors (4pcs) – for connecting wires to the heaters
5. Heat shrink tubing (4pcs) for the connectors from pos. 4
6. Two wires necessary to run power from inside the door to the mirrors. They are cut to length. **Do not shorten or cut those wires.**

Tools:

Here are the tools you will need to install the mirrors and to make all the necessary connections:



1. A metal putty knife
2. Wire cutters
3. Small pliers
4. Philips screwdriver
5. Flat screwdriver
6. Box cutter/utility knife
7. Soldering iron + heat shrink tubing tip (a gas lighter might also be used)
8. Solder
9. Windex – so you can clean your new mirrors after they are installed
10. Paper towels – same as above
11. A piece of stiff wire about 2' long (70cm) to pull wires inside the door
12. A heat gun will make the removal of the old mirrors much easier and is highly recommended.

Installation:

This is where the fun begins. The installation of one mirror should take about one hour. Do not rush things. Do it slowly and carefully. Remember that you are working with thin glass mirrors and they can break easily. You only need *two* large mirrors, (*not two thousand tiny ones*) plus, you don't need to cut yourself and give yourself seven years of bad luck. So be careful.

These instructions show the installation of the driver's side mirror (left). The other mirror installs in exactly the same way.

Step 1: The car

What you need:

One DeLorean with two crappy, flat outside mirrors:



After making sure that we have a DeLorean to work on, we can go ahead to step two.

Step 2: Setting the mirror (inside)

Turn the key on and using the power mirror switch, move the mirror all the way out.

When working on the passenger side mirror, you will need to move the selector switch to the right and then move the 'joystick' to the right.



Confirm that the mirror is all the way out. There should be enough room to see behind the mirror and into the housing.



Now you can get out of the car and go ahead to the next step.

Step 3: Setting the mirror (outside)

Grab the mirror housing with your hand and turn it around to gain better access to the mirror. (See picture below)



When you look at the edge of the mirror, you might notice that it is actually coming unglued already. Both of my mirrors looked like this – see picture.



Once you have the mirror set in the correct position, you can start with the removal of the old glass.

Step 4: Removal of the old mirror

Please use eye protection when removing the old mirrors. They are made of very thin glass that can shatter, easily sending small pieces of glass flying everywhere.

Using a metal putty knife, start prying the mirror away from its backing plate. Make sure to wedge the knife between the glass and the plate.



A heat gun would be very useful in this step!



Start heating the glass with the heat gun. Do it evenly and heat the entire mirror, avoiding the edges - you don't want to melt the plastic housing. While heating the mirror, start prying the mirror away from the backing plate and pushing the knife deeper and deeper behind it.



After a few minutes the mirror should come off. Don't force it! Be gentle and use the heat gun all the time. Apply some force to the glass and wait for it to come off. It will eventually. This is what you will see when the glass comes off:



Now just pull the old glue pad away to reveal the backing plate and the screw that holds the plate to the motor.



Using a Philips screwdriver, remove the screw and the plate.

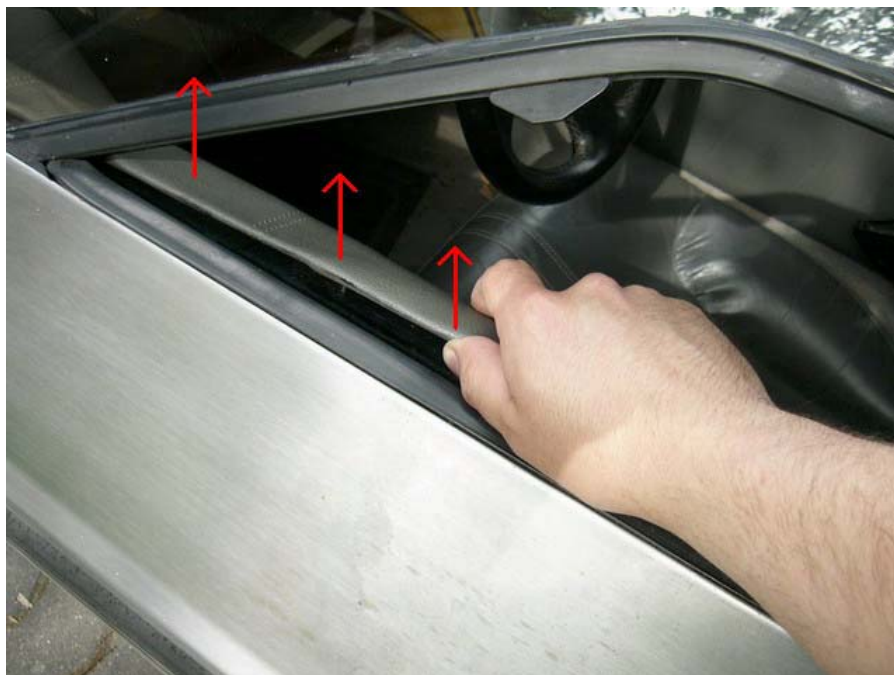


This is the end of the mirror removal process. Now comes the time to take the door apart. Don't be afraid, it's a simple and quick process.

Step 5: Removing the door trim

In this step you will need to remove the upper door trim panel to gain access to the wiring inside the door. An A pillar trim pad will also need to be removed in order to gain access to the bolts securing the mirror to the door.

The upper door trim panel is held in place with seven firtrees. You will need to pull the edge of the panel up as pictured below. Go easy on it, you don't want to break the panel.



Once you pop all the firtrees out, just pull the entire panel up and remove it from the car.



Here's a view of the door after the panel has been removed. The electrical connectors that we want are circled. The three arrows point to the bolts securing the outside mirror. Please notice that two of them are behind the panel.



And so the A trim pad needs to come off. Once more, it's held in place with firtrees. Just pull the pad off as pictured below. Again, go easy on it so you don't do any damage to the panel.



Step 6: Removing the mirror housing from the car

Once you remove the A pillar trim pad, you can see all the bolts securing the mirror. You need to remove these three bolts in order to remove the mirror housing from the car.



Before you can remove the mirror housing, you will need to disconnect the white plug pictured below. This plug provides juice to the power mirror functions. The circled plug, originally designed for future heated mirrors, has three wires leading to it – black, green and green/stripe. The two green wires are spliced together.



With the wires disconnected and the three bolts removed, you can now remove the mirror housing from the door. Next, pull the wiring through, making sure that the plug inside did not get caught on something. Once that is done, remove the mirror housing from the door.



This is what you will find inside the mirror housing after removing the backing plate: The indicated screws secure the drive motor to the housing. It might be a good idea to clean them up or even replace them with stainless steel screws as you will not have any access to them for a long time.



This is the mirror back plate. It needs to be cleaned of any old glue and dirt. Then wipe the entire plate with alcohol and do NOT touch it afterwards.



Step 7: Running wires inside the mirror housing

In this step you will run the necessary wires to connect power to the heating elements. When you look at the bottom of the housing, you will see a small access panel. This panel will need to be removed. Using a thin flat head screwdriver, pry the outside edge in and up as pictured below.



Here you can see how this access panel is attached with three tabs. Go easy on those plastic tabs, they are 24 years old and might break off.



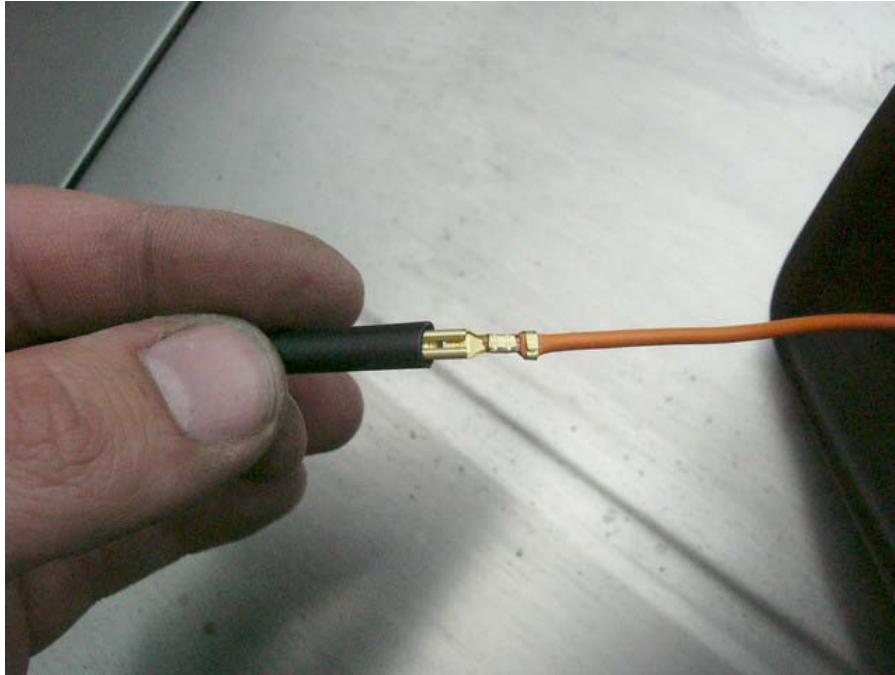
Now you can run the provided wires along the wires that are already in the housing.



Included with the mirrors are two wires of 2 meters each (6 feet). Do not cut those wires. Use one piece for one door. Make a loop and push the two separate ends into the mirror housing as pictured above. The loop at the other end will make it easier to pull those wires through the door. I recommend using heat shrink tubing to protect the wires. It is not necessary but I highly recommend it. You can get heat shrink tubing at any Radio Shack or other place selling electronic components. Once you have pulled the wires in, make sure that you have about 15cm of wires inside the housing (about 6 inches). Then run the wires as pictured below and re-install the access panel removed earlier.



Install the provided connectors at the end of the two wires inside the mirror housing. You can either use small pliers to crimp the connectors on or a special tool designed for installing this type of connector. Then slip the provided heat shrink tubing over the connector and heat it up to make the tubing shrink. Make sure the tube end does not extend more than 1mm over the connector. If it does, just trim the tubing. You need to be able to slip those connectors on without the tube interfering.



This is what you should see after you're done:



Step 8: Installing the mirror

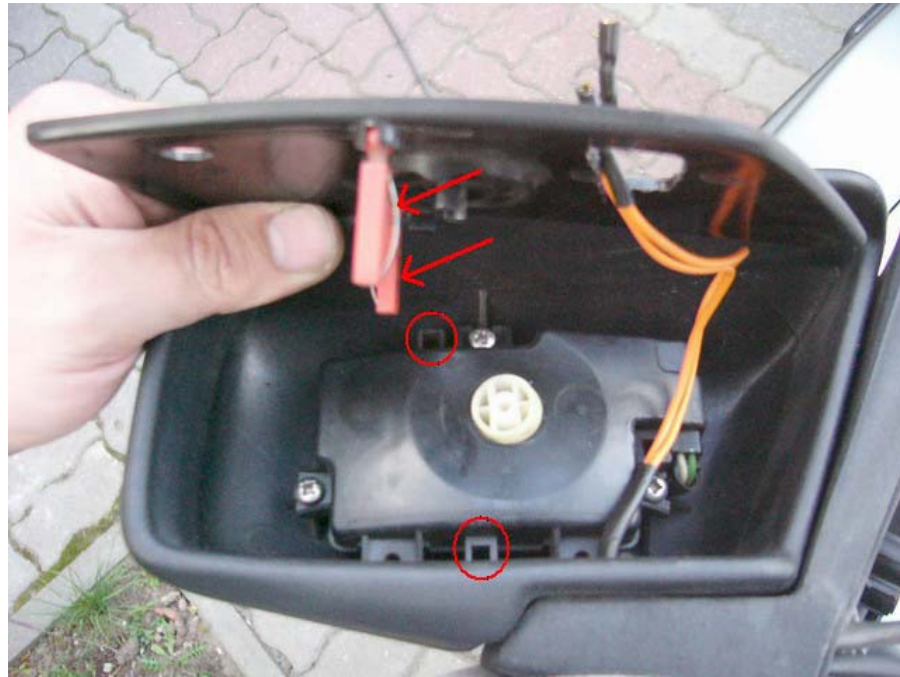
When you look at the back of your new mirror you will notice two metal tabs. Those are the electrical connections for the heating pads (circled below). You will need to cut a hole in the backing plate to provide clearance for those connectors.



This hole needs to be exactly where the metal tabs are. You will run wires through the hole. It doesn't have to be pretty, no one will see it. I used a Dremel-type tool to cut the opening.

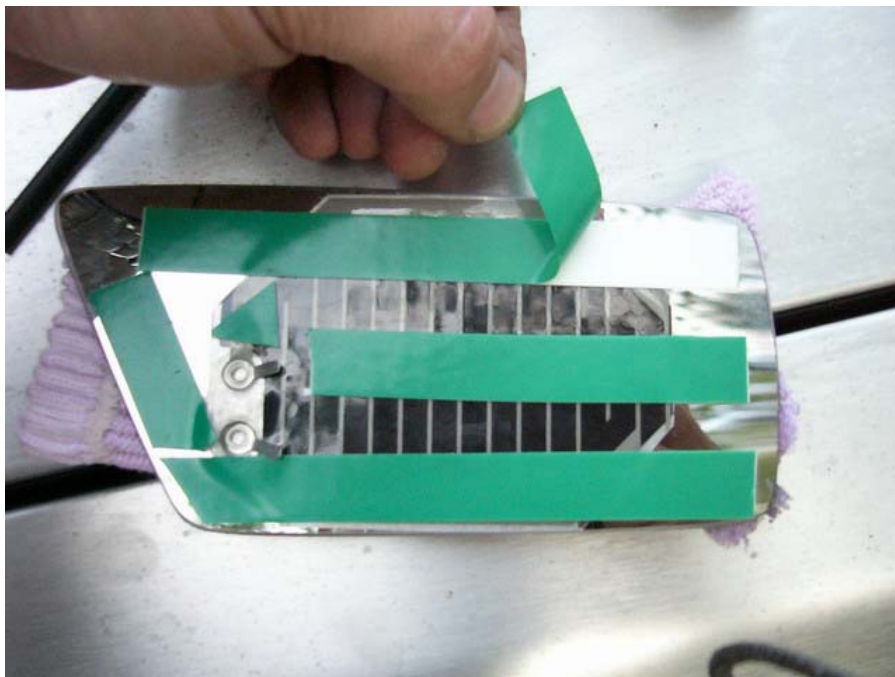


Once you verify that the opening is in the correct position and is not too small, you can start reassembling the mirror. Push the two new wires through the opening you just made. Then make sure that the two red plastic guides are aligned with their seats in the motor assembly (see picture below). Please notice that there are three places where the guides can be installed. Only two guides are provided and their location is not important. Any two of the three places are good.



After the backing plate has been re-installed and secured, you can start with the mirror itself.

Remove the green protective strips from the mirror. After the protective strips are removed, avoid contact with the white adhesive strips!



Connect the wires to the two tabs making sure that the connectors are seated all the way in. Do not use excessive force here – remember, you are pushing against the glass!



Now, carefully position the mirror over the backing plate. Make sure the wires stay below the plate and not between the plate and the glass. Align the mirror with the backing plate and attach the mirror. You can squeeze it together at the edge (if you have small fingers) to get a better hold.



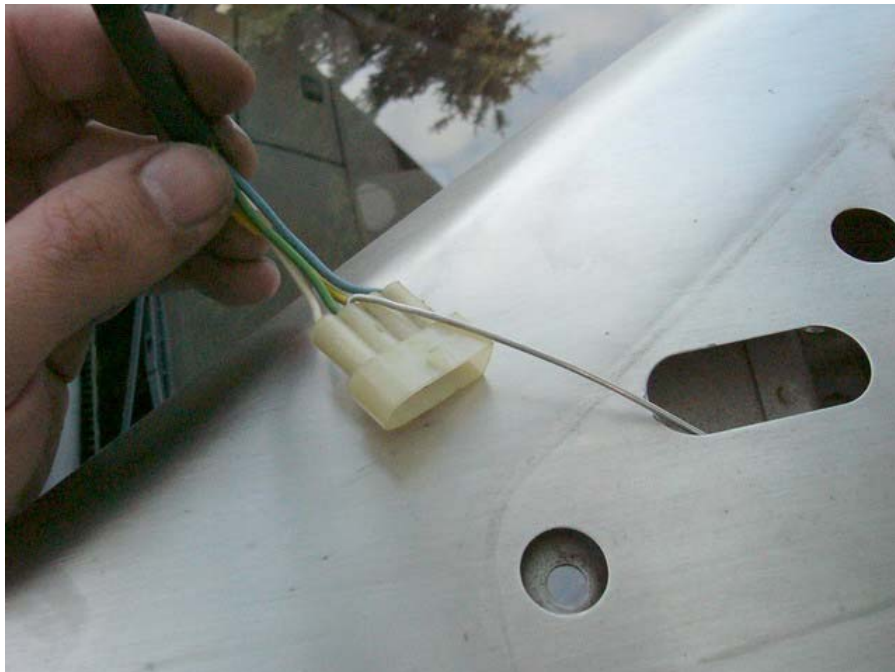
Push the entire mirror in evenly and gently. Again, it is made of thin glass and can break easily! Make sure the entire mirror is seated evenly around the edges. The adhesive strips provided are very strong and specially designed for installing outside mirrors. You can rest assured, they will not fall off.



And just like that the mirror is installed. Now we just need to reassemble the car.

Step 9: Reinstalling the mirror + electrical connections

In this step we will reinstall the mirror and run the wires inside the door. Using a stiff piece of wire with a hook make at the end, you can pull the power mirror connector and the new heater wires through to the inside of the door. Run both together to the same spot inside the door.



Once you have the wires inside you can reconnect the power mirror plug. The plug on the right is the heater plug that we will be using to connect the new wires.

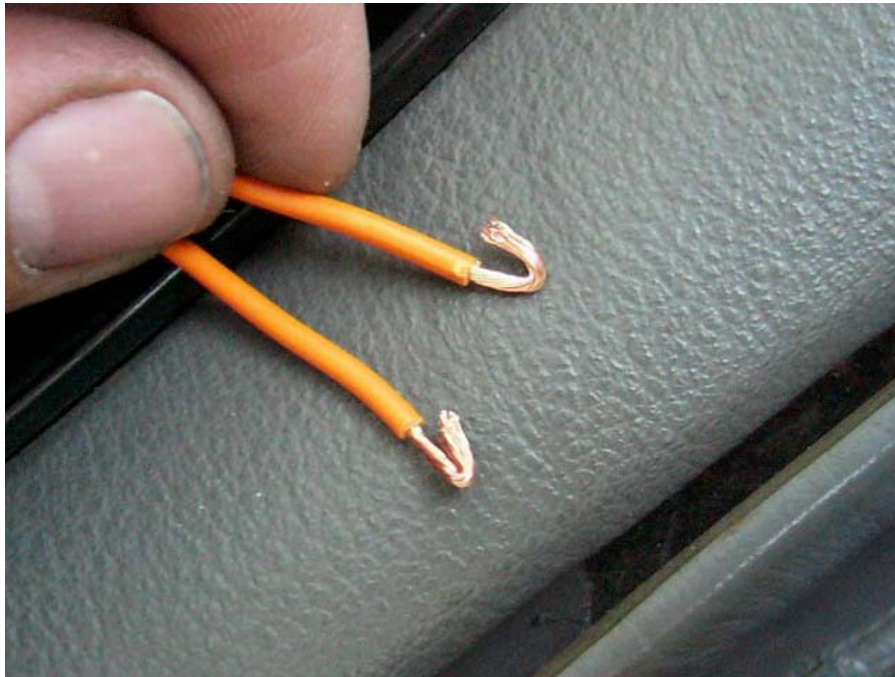


Reinstall the mirror on the door and replace the three bolts securing it to the door. Make sure the mirror doesn't pinch any wires inside the door. They might get in the way of the bolts.

You should have the new wires coming from the mirror to the inside of the door right where the power mirror wires are. Now you can cut the new wire to make two separate ones. The loop was used to pull the wires inside, now you need to cut it.



Remove about 1.5cm (half inch) of insulation and make little hooks at the end of those new wires. You should have something like this:



This is the time where you use the other connectors that I have included. Just slip them onto the wires so that the wire just shows at the end. Do not pull it all the way through.



Using soldering iron, solder the wires inside to the connectors. Try not to get the solder on the outside of the connector. DO NOT try to crimp these connectors! They are not designed to be crimped and will fall apart.



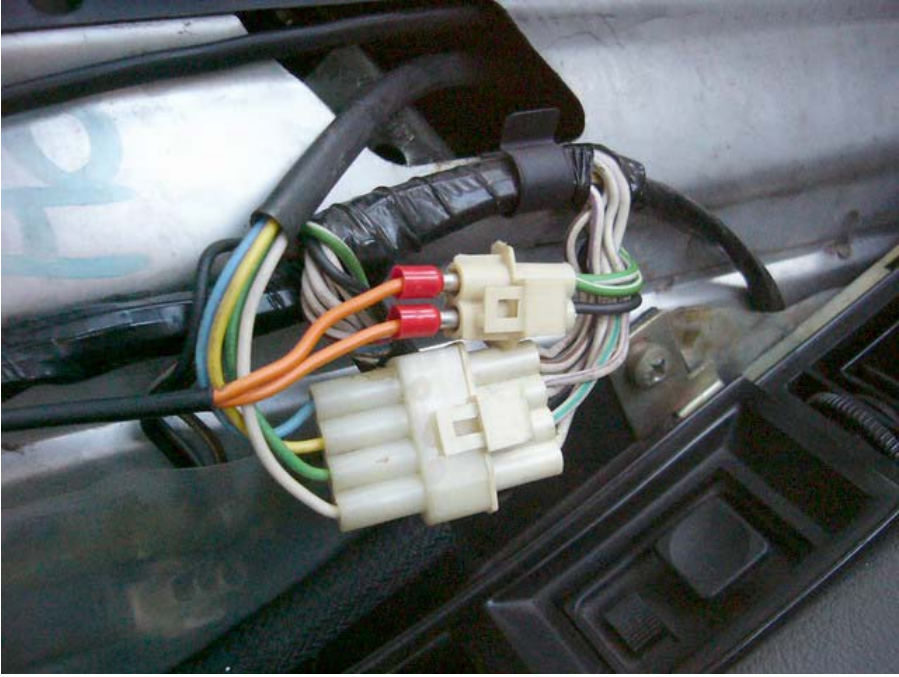
Here's what you should end up with. Now they are ready to be plugged in.



Locate the heater plug described earlier and plug the new connectors in. Don't worry about positive and negative side. A heating element doesn't care which way the current flows. That is why you can run one wire and then cut it in half. Polarity plays no role here.



Here you can see both plugs connected and ready to go.



Tuck the wires and plugs away nicely so they don't interfere with the trim panel.



At this point you can check to make sure that the power mirror works like before and that the mirror gets hot. Switch the ignition on and check the operation of the power mirror. Assuming that it is ok, wait about 30 seconds and carefully touch the center of the mirror to check if it is getting warm. By this time it should be hot to the touch.

Step 10: Reinstalling the door trim

First make sure that all the firtrees are in good shape and replace any that are showing any damage. You should be able to find replacements at the nearest auto parts store. Just take the old ones with you.

Next, start with the A pillar piece and re-install it as shown below. Align all the firtrees with their appropriate holes and push each firtree in firmly.



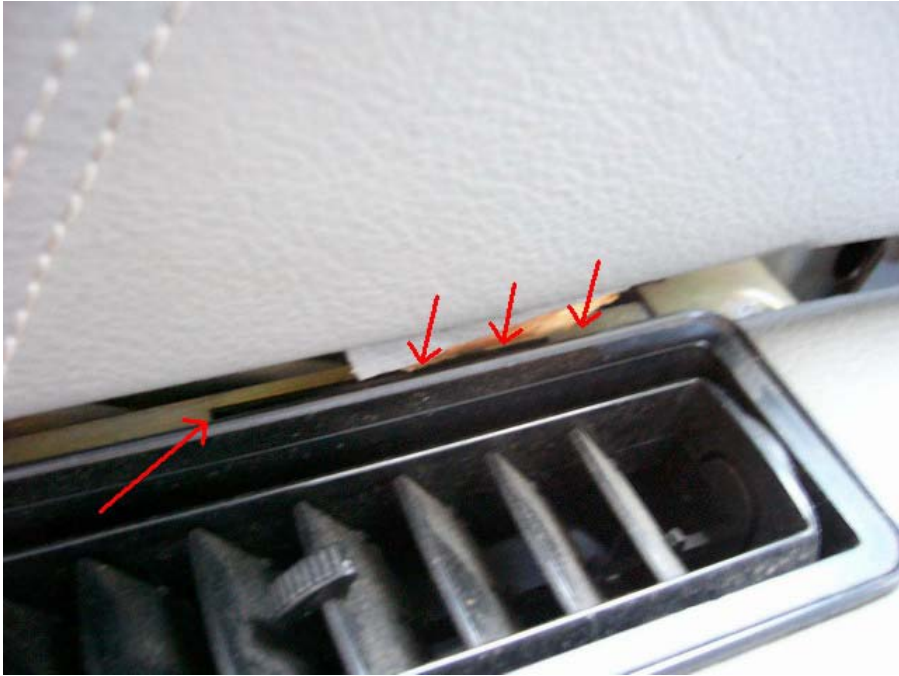
Next will be the upper door trim panel. Make sure all the firtrees are ok and that the two tabs at the bottom are ok (indicated with arrows).



Here's a close up view of one of the seven firtrees holding the panel in place.



When you are ready to install the panel, you need to align the two tabs at the bottom of the panel with the slits in the door. The firtrees need to be aligned with their holes at the top. Both top and bottom go in at the same time.



Here's a close up of one of the firtrees about to be pushed in.



Again push each firtree in firmly. There are seven of them at the top edge of the panel.



All you have to do now is install the other mirror in the same way...And...
Now I can welcome you to the new world of European style extended convex mirrors with built in heaters. The black vertical line shows a point where the extended section starts. Do not use this extended section to judge distance to vehicles behind you. The picture will be distorted. It is there to show you that someone is "trying to hide" in your blind spot.

Some important information at the end – PLEASE READ THIS PART!

- The mirrors that you have just installed on your DeLorean are the best and the newest there are. They are convex with an extended convex edge. By being convex they don't give an exact view of the world behind you. Please remember the usual disclaimer which reads: THE OBJECTS IN MIRROR ARE CLOSER THAN THEY APPEAR. We decided not to put that disclaimer on the mirror for two reasons. One is that almost all European cars have convex mirrors and none of them come with that disclaimer, and Two: a disclaimer like that would not look good on a DeLorean. While improving the functionality of the car, we are trying to make the improvements as 'invisible' as possible.
- Although the mirrors have the extended convex edge to eliminate a blind spot, a small vehicle like a motorcycle riding at the far side of its lane might still be missed. Please use caution when changing lanes. Don't take it for granted that the lane next to you is clear if you don't see anything in the mirror. Always use common sense.
- The heaters which are included with your set are HEATERS. People often confuse them with defrosters. They are more than just defrosters. First of all – they run all the time when the ignition is on. Second, they get VERY HOT!! They will exceed the boiling point of water on a warm day. That means that after they are on for more than one minute, they might reach a temperature of over 100 degrees C (212 degrees F). DO NOT TOUCH the mirrors with your bare hands after the ignition has been on for more than 30 seconds. You might get burnt. The benefit of running the heaters all the time and getting them to such high temperatures is that the mirrors will always stay dry no matter what. They will melt snow or ice easily. Fog and any condensation will disappear in a matter of seconds. Even in rain your mirrors should stay dry because water will evaporate quickly from such a hot surface.
- For the more technical people, here is some info about the heaters:
 - Power: 12 to 15 Watts
 - Current draw at 12V: 1 to 1.5 Amps depending on the temperature of the heating element.
 - Built in overcurrent and overtemperature protection. The heating pad regulates the current consumption depending on the temperature and at about 130 degrees C (265 F) the current is lowered to a point where any rise in temperature is not possible. They will not overheat and will not melt the mirror housing.

Let me thank you one more time for purchasing a set of my Extended Edge Convex Heated DeLorean Mirrors. Hopefully this great improvement will make driving a DeLorean safer and more enjoyable.

Stay safe and always keep the shiny side up ☺

Thank you.

Best regards,
Tom Niemczewski
www.deloreana.com