

Introduction

Firstly, I wouldn't have been able to consider this retrofit without Bloods previous DIY. This isn't to step on Bloods toes, and it is more than possible to achieve it with that DIY alone. However, this DIY seeks to assist where Bloods DIY might have been sparse, or written based on information or tweaks that were not available at the time.

Things you will need:

- SA430 Mirrors

Things you don't need:

- Window Mirror Switch Block (Unless you want to fold / unfold on demand)
- A degree

Understanding Mirrors

If you have a car that is post Sep 2005, you are likely to have a KGM module. Prior to this, the mirrors were controlled by door modules (no KGM) and the mirrors had multiple plug connectors. This DIY focuses on cars with a KGM (post Sep2005). That is because the cars with no KGM are a lot easier. Simply change the mirror with plugs and code the door modules accordingly.

To be clear, the SA430 mirrors perform the following functions:

- Mirror Fold - Whole mirror casing pivots to and from the car with window switch button or unlock / lock (coded)
- Mirror Dim - The glass is electrochromatic and will dim with the interior mirror (more on this later)
- Mirror Dip - Passenger Mirror dips on selection of reverse. Mirror selector switch should be set to driver's side for this to happen.
- Puddle Lights - Not on all SA430 mirrors, and have to be coded

KGM Based Cars (09/2005 <)

Those cars with a KGM, that do not have folding, dimming, dipping mirrors, had one plug with four wires. These were:

- Pin 1: Green (Mirror Horizontal Movement)
- Pin 2: Brown (Earth / COM)
- Pin 3: Red (Mirror Vertical Movement)
- Pin 4: White (Mirror Heating)

SA430 mirrors that use a KGM have the following:

- Pin 1: Red (Power)
- Pin 2: Green (LIN Bus communication – all mirror action, heating, etc is sent over this line)
- Pin 3: Brown (Earth)

Changing the mirror body

To prep the car, it is best to have the window's down (front).

Prise out the AirBag badge and removing the Torx screw

Near the hinge, prise off the black rubber cap and remove the Philips Screw

Place your chose tool (thin ridged plastic) to pop off the door cover. Start at the rear of the door at the lower corner. Pop off along the bottom and then up both sides.

Lift the door card up to release it from the middle clip.
Unclip all the cabling from the electrical systems (I left the airbag one connected)
Repeat for the other door

The mirrors are held to the door by 3 Torx head bolts. Remove these and the mirror will come away.
If you need to, you can swap over the mirror backs (colour coded parts) and frames (gloss black / matt black) as you need to.

Pull the new wires through ready for wiring and mount the mirror back to the door.

Wiring

Sadly, this is required for cars with KGM modules. It's not complicated. You can bullet connect, solder, heat shrink, whatever you are happy with. This guide is not going to tell you how to make up cable.

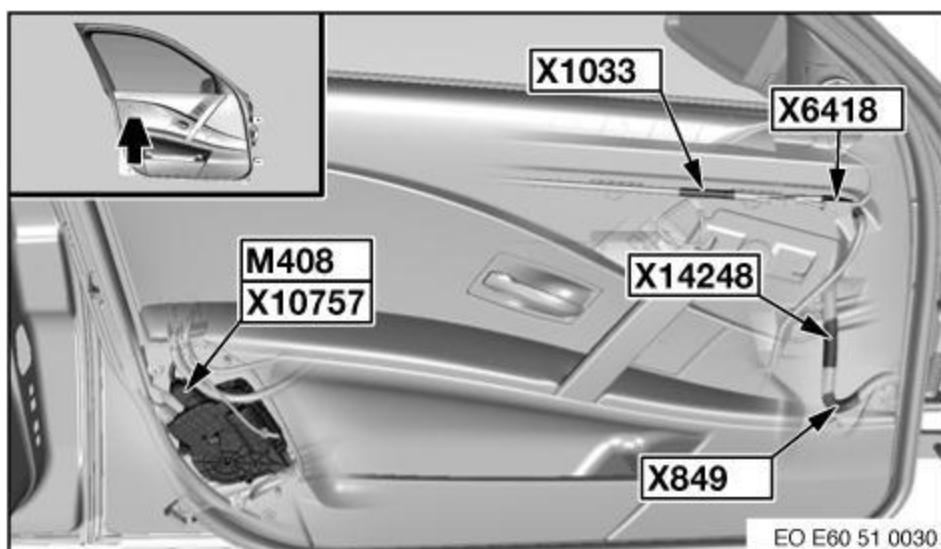
Drivers Side Wiring

We don't need access to the KGM for this side, so we can proceed as follows:

Pin 1 of the mirror (red, power) needs to go to Pin 1 of the Window Switch Block. This is the red/blue/yellow cable. Make up some cable and tap into that line. Even if you are not replacing the mirror switch block, this is the easiest way to get power.

Pin 2 of the mirror (green, LIN Bus) needs to go to Pin 3 of the WSB. Make up some cable and tap into this line. This is the white/blue cable.

Pin 3 needs to go to earth. There are earth modules at the bottom of each door, near the hinges. Remove the sticky acoustic padding and you will see a Torx screw. Make up some cable and terminate it at a spade connector. Replace the screw to the earth module (through the spade connector you just made). X849 in the picture



Passenger Side

Now to get technical. Bar the earth wire from the mirror, which you should complete as per Drivers side, we just need to re-pin the KGM.

Pre-Requisite – Removing the glovebox and trim

Open the glovebox and slide out the plastic pins from the strap on the left, and the plastic pneumatic arm on the other side. Under the glovebox, remove the torx screws holding in the two plastic hinge covers (4 in total, 2 each side). Remove the glovebox. You will have access to the fuse block holders here. It's worth removing the 4 torx screws that hold that fuse panel in place and pulling it out towards you. You need access to the rear of it.

Remove the lower trim. Four Philips screws on the underside of the glovebox, two in the centre console (1 of which is behind some of the carpet trim which slides back towards the rear of the car).

This gives you access to the KGM module and the cable units. As you look at the KGM (Right hand drive cars), the block on the right looks after most of the driver's side stuff and is listed as X16759.

The block on the left looks after most of the passenger side stuff and is listed as X16760.

Release the catches on both blocks and remove the wiring sets. You can slide out the KGM here too, if you want to. Remove the catch covers from the passenger side block. You can release this with a small screwdriver down each side. This gives full access to all the Pins.

Wiring

Your old passenger mirror will have gone like this:

Pin 1 (Green) to Pin 46 at the KGM (white/blue) – Mirror horizontal

Pin 2 (Brown) to Pin 45 at the KGM (brown/yellow) – COM earth (not suitable for new mirror)

Pin 3 (Red) to Pin 47 at the KGM (yellow/green) – Mirror vertical

Pin 4 (White) to Pin 25 at the KGM (blue/yellow) – Mirror Heating

This means we can take Pin 1 of the new mirror (red) and we need to release Pin 46 of the KGM.

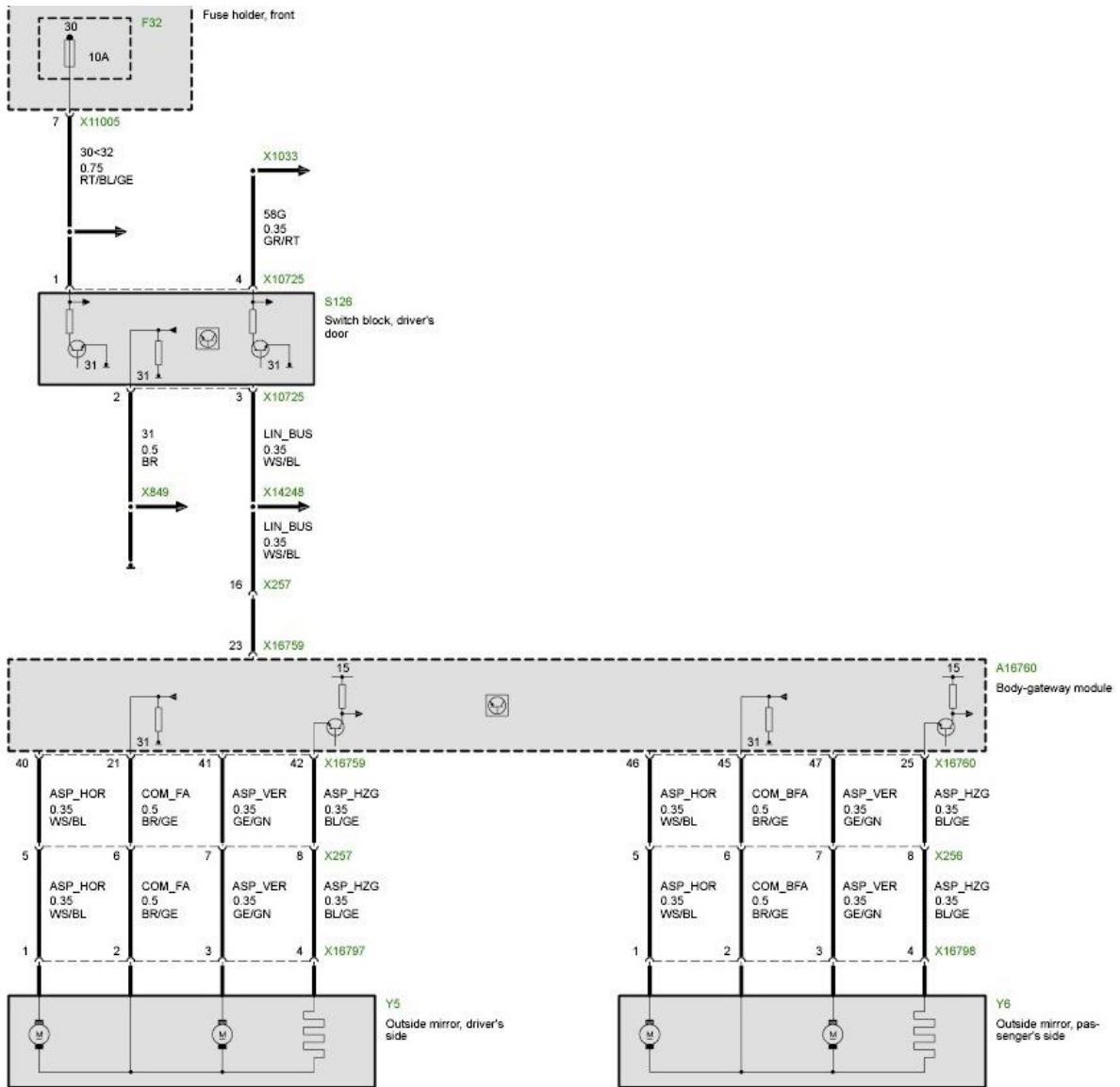
Once released, make up some cable. Connect one end to the loose Pin 46 and cable it up to Pin 7 of the fuse block. Look for Fuse 32. You will see that you can remove that section of fuses from the rear of the fuse block, and that these are listed. Fuse 32 at the front is Pin 7 at the rear. Tap into that wire with the newly made up cable.

Pin 2 of the new mirror (green), so we need to release Pin 45 at the KGM and move it to Pin 14 of the KGM. All of the plug pins are labelled in places so it should be easy to find. On my car, there was no wire in Pin 14.

You can plug the new mirror plug into the existing loom on the passenger side now (bar the earth, which you've run down to the door....right?)

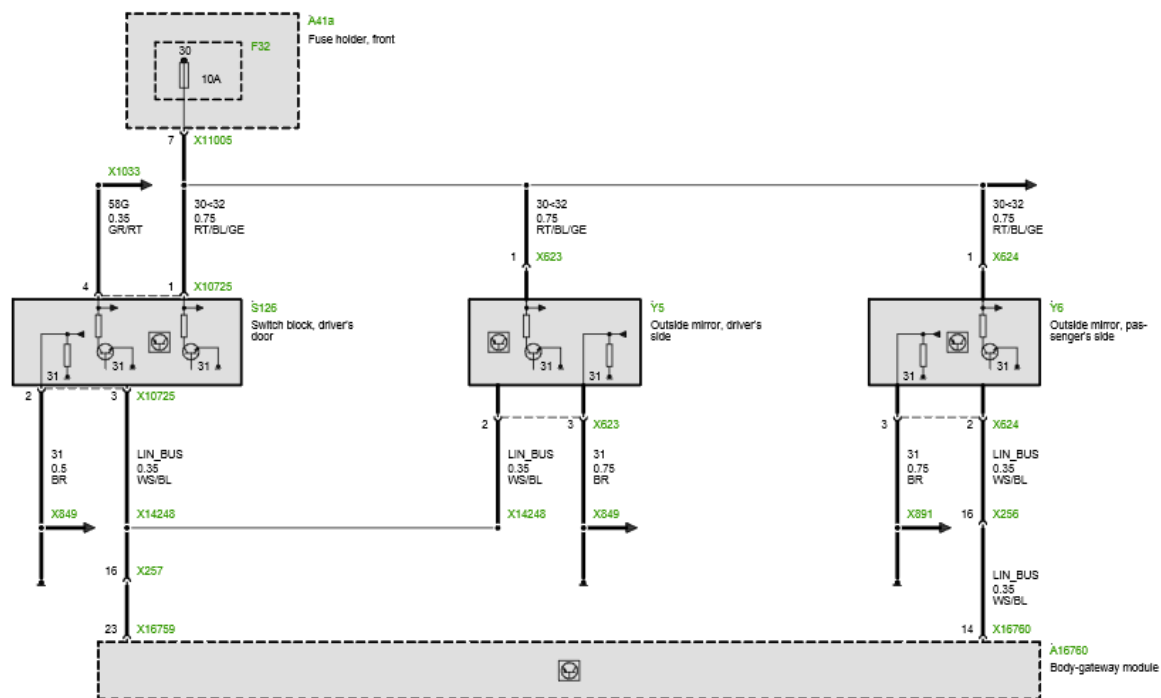
Diagrams

Old Mirrors



E60 E61 Electric outside mirror

New Mirrors



Electrochromatic Dipping

As per BlooDs guide, verbatim, the mirror support housing splits apart, using a small screw driver prise apart the cover.

The easiest way to do this is to pop out the "airbag" badge and unscrew the Torx bolt securing the A pillar trim on the passenger side, carefully pull the trim from its clips. Undo the cross head bolts holding the both of the sun visors to the roof, take out the dome light and Bluetooth/voice control microphone panel, the roof lining should now come down enough to run the new lines.

There`s a 10 pin connector at the front of the mirror support base:-

Put a pin contact into pin 5 and a pin contact into pin 4 of the 10 pin connector.

Make two new lines for these new contacts and then feed them through the rubber grommet and along the left side of the roof, run them down the a pillar and make sure they are under the airbag, push the cables into the edge of the dash board and carefully pull the cables through the side of the dashboard.

Disconnect X16759 of the KGM module and fit two pin contacts to pins 44 and 45, now connect pin 44 to pin 5 and pin 4 to pin 45.

Coding

If you have access to NCSEExpert, NCSDummy, etc, then this is for you. Otherwise, book a trip to the dealer / indy to get coded up. If you do have NCSEExpert, etc, then this DIY assumes you have experience of using them.

Add \$430 to the VO of the car. You should do this for both CAS and LMA modules

Then, using NCSEExpert, read the KGM and code the following:

BEIKLAPPEN_B_KOMFORTSCHL (fold in/out with fob)

Aktiv

ASP_BEIKLAPPEN (folding outside mirrors)

Aktiv

ASP_LIN_SPIEGEL (mirrors with LIN Bus)

Aktiv

In the CAS, code the following:

KOMFORTOEFFNUNG

Aktiv

KOMFORTOEFFNUNG_FB

Aktiv

KOMFORTSCHLIESSUNG

Aktiv

Checks

Check the mirrors move, fold, dip, dim, etc. Then replace:

- Fuse holder
- KGM
- Lower Trim (6 x Philips screws)
- Glovebox (4 x torx screws and plastic pins for strap and pneumatic arm)
- Passenger door (pull the black plastic clip off the door and refit to the door card, 1 x Philips, 1 x Torx)
- Driver's door (pull the black plastic clip off the door and refit to the door card, 1 x Philips, 1 x Torx)