

CREDIT FOR THIS WRITE UP TO: MAC'S HACK SHACK "on Titan Talk "

(TITAN TALK LINK:) <http://www.titantalk.com/forums/titan-faq-how-area/383882-adding-power-fold-mirrors- puddle-light-mirror-turn-signal-titan-armada.html>

(YOU TUBE VIDEO OF MIRRORS WORKING:) https://www.youtube.com/watch?v=I9r1Zpd_JYY&feature=youtu.be

- I recently added power folding mirrors to my 2008 Titan SE and I imagine someone else out there is thinking of doing the same thing. **The info I include here will be 100% relevant for any Titan from 2004 2015 that has the square shaped mirror switch. If you have the knob style one, then connections to the mirror switch will use different pins, but everything else should be the same.**
- If you have the LE trim your install should be very simple, maybe even plug and play simple. **If you have the XE or SE trim like me, you will have to do some custom wiring.** I've included 11 pictures with notes to detail the connections that are made. A word of caution when looking for the mirrors to buy. The diagrams on the Nissan website do not differentiate between the different mirror options, it just shows a generic diagram. It also doesn't list the options each mirror supports. I originally bought two mirrors, one from Amazon and one from eBay. The Amazon one was a Doorman brand after market and the one from eBay was a OEM Nissan mirror. They both claimed having power fold in their descriptions, the eBay one listing it in multiple locations. Neither one actually had power fold and I had to return them both. The eBay seller apparently has a stock of mirrors. Even though I contacted them explaining it doesn't have the power fold option and detailing how I know, they are still selling them with the false description. They told me "Nissan website SAYS it is the options shown - we are just going by their data..." Which is funny since the Nissan website doesn't list that info. **For reference Partsbrokerllc is their eBay name. So be warned,** I found description info that sellers posted to be inaccurate. This was even true on the actual Doorman website. You gotta have a solid part number to go by. So after that fiasco, I did some more research. **I came to the conclusion that all Titan and Armada mirrors before 2016 will bolt up and work.** So I went on eBay and **found a 2013 Armada Platinum which listed power fold mirrors. I took its VIN over to the Nissan website and got some part numbers.**

96302-9FK0A (driver side mirror)

96301-9FK0A (passenger side mirror)

- I wanted brand new OEM mirrors, and **I found the best price at DealerDirectParts (I am not affiliated), they had them for \$179.** Not cheap, but I have to park in the garage every time I'm home. It requires me to fold in both mirrors when I go in and pull them back out when I back out. So it was still worth it to me. The mirrors have every option available. **Tilt position sensors, chrome cap, heated, puddle light, electric anti-dazzle (auto dim), turn signal and of course, power fold.** I also **ordered a used mirror switch from a 2006 LE Armada that had the power fold switch and even included the plug that went into it, ready to be spliced into the truck (if needed be).** Come to find out later I could've bought a **brand new one for the same price 32\$, but it wouldn't have come with the pig tail** which I salvaged pins out of to add to the harness that was in my truck.
- **Here's the factory part #25570-ZA320 (Door Mirror Remote Switch/with power fold)**

- So after getting everything, I tested the mirrors and they indeed had power fold and removed all doubt that I was right about the original two not having that option. The power fold ones are noticeably heavier and actually have the wires for the power fold. (Surprising!) (Note: You can manually fold the power fold mirrors.)
- **The mirror switch** I expected to be straight forward swap, minus having to add a couple extra wires to the vehicle harness, but boy was I wrong. After looking at wiring diagrams, I quickly realized that the **LE mirror switch worked completely differently from the SE switch when it came to tilting the mirrors**. The standard SE mirror switch tilt circuit works just like any other old school mirror switch, it's connected directly to the mirrors and sends power to the mirrors 2 motors and reverses the polarity to go in the opposite direction. In the case of the LE mirror switch, it sends a signal to the Automatic Drive Positioner (A.D.P.) and that in turn actually moves the mirrors. My Titan SE doesn't have the A.D.P., that is the option where you have 3 buttons on the door labeled "1", "2", and "set" which will automatically adjust the pedals, seat position and mirrors to what you have saved in the pre sets. No SE trimmed Titan/Armada will have the A.D.P.
- I was fairly certain at this point that I would have to abandon my plans for a factory looking setup and would have to install a aftermarket switch in the dash instead. So holding the two mirror switches in my hands they appeared identical minus the fact the LE one has a mirror fold switch, and my original SE one has a blank in that spot, just showing a mirror symbol. I took them both apart and to my surprise the SE switch had the sliding contacts for the fold mirror switch inside of it. this was huge, Nissan apparently had designed the switch so it could be used with out the ADP and still have the power fold option. What is surprising is that this was possible, but doesn't appear to have ever been a factory offered setup since **none of the service manual's wiring diagrams show this configuration**. Looking at the circuit board it was obvious that the 2 switches differed electrically when it came to tilt. Which confirmed what I had gathered from the wiring diagrams. So I took the plastic top part off the LE switch with the buttons and switches, and combined it with the electrical guts and button membrane of the SE switch. I then added the very top plastic trim piece from the LE switch which had the hole for the fold switch. (I've included a picture of the switches in parts showing how I combined them.) After that I added the 4 wires for the fold option to my truck's factory mirror switch harness. Two of those wires I ran to the passenger side mirror and the other 2 went to the driver side mirror. I tested it and It worked perfect, I had power fold. (See pictures for the wires and their pin locations that I added to the harness.)
- **Note The button membrane is that soft rubber with electrical contacts on it to make connection when the tilt button is pressed. It's the same thing you find in keyboards and calculators underneath the actual plastic buttons. Unfortunately I didn't get it in my picture of the 2 switches apart side by side.*
- *Note 2: Both mirror switches look like they use the same plug, but the LE one I bought has a brown colored plug and is keyed with plastic strips on the side differently from the one that was in my truck (SE) which is a white plug with the key plastic strips positioned differently. In other words you can't plug the wrong switch into the wrong harness. Which is a good thing since even though the power fold output uses the same pins, the tilt output is a completely different setup.*

- Note 3: There are no relays or any other devices connected between the mirror switch's power fold output and the mirrors. It is a simple direct wire setup.
- Note 4: Any double pole, double throw switch can be wired to control the power fold on the mirrors. Doesn't need to be momentary contact either. When testing the electric folding ability on my workbench, I hooked a amp meter up in line between the power supply and mirror, the mirror stops drawing power after it reaches its end of travel. When the voltage polarity is reversed the mirror will draw current and move in the opposite direction and stop drawing power when it reaches its other end of travel. Not sure exactly how this is accomplished inside the mirror, but that is how it works.
- So even though my only real goal for this project was to have power folding mirrors, I wasn't going to leave the other abilities of the mirror unused. The heated mirror circuit was already present in my door's six pin connector for my original mirrors. I cut the 6 pin connector off my old mirror and spliced it to the appropriate wires on the new mirror. I did have to add two pins to the old mirrors 6 pin connector for the defrost, because my old mirror did not have that function, even though it was available in the doors wiring harness. Also the other 3 wires in the 6 pin connector controlled the mirror tilt function which obviously I needed. Doing it this way allowed me not to have to chop up the truck's factory door harness. If I could change one thing about this project it would've been to acquire a couple of the door side 16 pin mirror connectors and running all splices to that. This would've allowed me to swap mirrors quickly in the event one was destroyed. Plus I wouldn't have to void my brand new mirrors warranty immediately. I recommend if you do exactly as I did that you test all the mirror functions before splicing it. Yet what I really recommend is that you get yourself the door side mirror plugs, then you don't have to chop the mirrors up or chop up the wiring harness in the door. There are a lot of of Titans and Armada wrecks parted out on ebay every day. Any LE trimmed truck from 2004 onward will have the right connector, you may have to insert some pins in it if they are not all there, but that is very easy with the way the connectors are designed. You will have to have a sacrificial plug to harvest pins from though which can be harvested from pretty much any Nissan I imagine. Hooking up the puddle lights was a little less straightforward than I initially expected. You would think I could just tap into the step light in the bottom of the door. Unfortunately that light is only on when the door is actually open. It is on the "step lamp circuit" which also runs the foot well lights (if so equipped).
- In the logic diagram for the lighting circuits, it shows the puddle lamps run off the "interior light circuit", and should be on whenever the interior lights are activated, such as when you unlock the truck with the remote. Which makes sense since the puddle lamps would be fairly pointless if the door has to be open for them to work. The logic diagram also showed a Battery Saver line which all interior lights and the bed light are connected to. It is the positive side for all the lights. This circuit automatically shuts off after 30 minutes of the Body Control Module (B.C.M.) not detecting any change of state from the door open/close switches, lock buttons, ignition key insertion switch, or key fob use. So I tapped into the Battery Saver circuit via the red with green stripe wire that went to the step light in the door. I connected the other puddle light wire to the interior light circuit by running a wire into the cab and connecting it to the interior light output on the B.C.M. The B.C.M. is located behind the driver side kick panel which is below the steering wheel. Once the kick panel is removed you will find it mounted behind the OBDII port. The

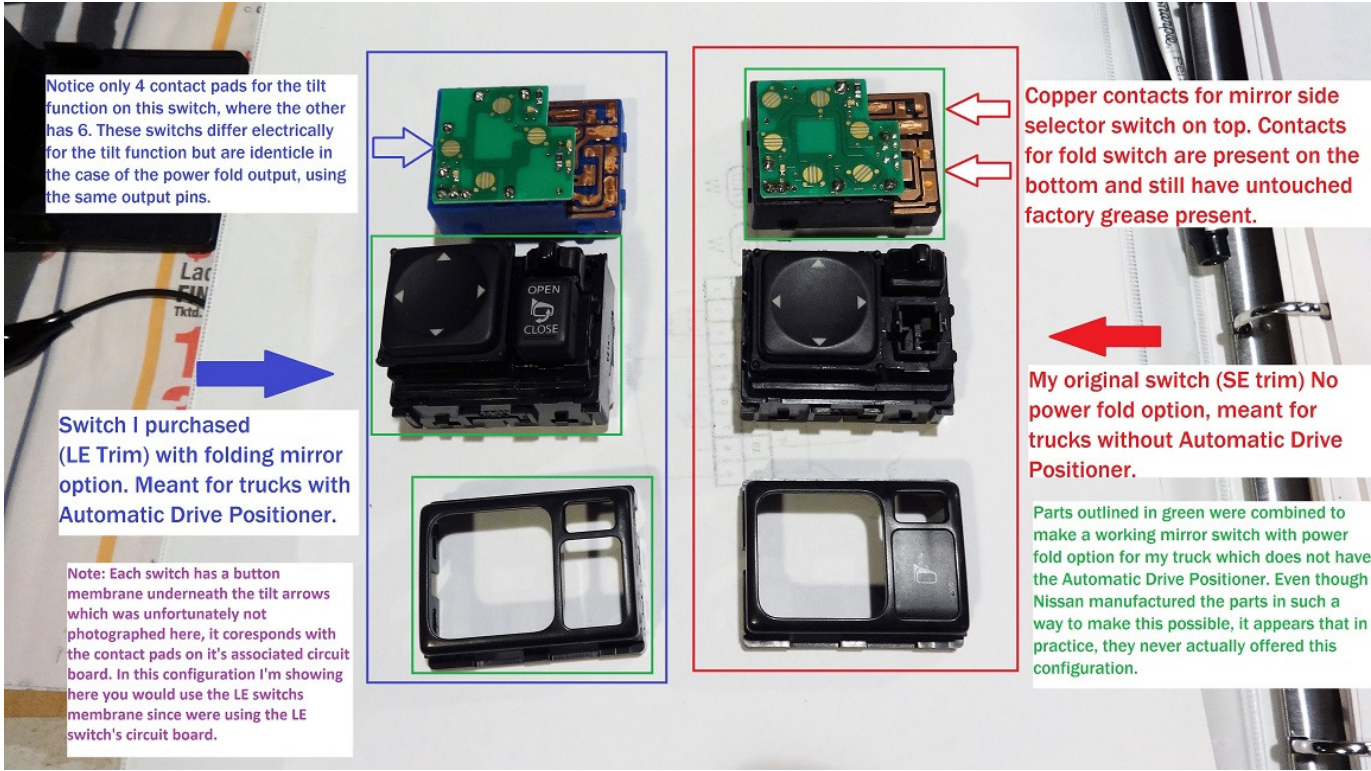
B.C.M. will have multiple connectors plugged into it, you are looking for the connector colored black. More info in the attached photos for wire colors, and the connector pin out. The mirror turn signals have a shared ground with the defroster circuit which I already wired into the old 6 pin mirror plug. There's only one wire connected to that pin, meaning the ground is shared internally in the mirror. So I only had to run one wire (per mirror) for the signals into the cab and that connected to one of the 2 mirror turn signal wires (left or right depending on which door) on the B.C.M. Those outputs on the B.C.M. are for the mirror turn signals only I believe, and I thought it was strange that the wires were already present on the B.C.M. I could not figure out where they went to and checked the extra connectors that are hidden behind the plastic kick panel located to the left of your feet while sitting in the driver seat. I figured for sure I would find the left turn signal output there, but did not. So I used a easy splice connector to hook into the wire coming out of the B.C.M. for each signal. The anti-Dazzle (autodim) feature of the mirrors require that you have the inside auto dimming rear view mirror already in the truck. Which I do not. The wires would connect directly to the interior auto dim mirror and it would control the outside mirrors. After looking into the wiring diagrams for this, it looks like it would be fairly straight forward to add the autodim interior mirror to the truck because it works completely stand alone and does not need to be connected to the truck's BCM, CPU or any sensors. I ran the wires for the auto dim into the cab and left them zip tied inside the dash. So if I decide to add a auto dim mirror later I don't need to rip the door apart or fight with running more wires. Speaking of which, I figured out ahead of time how many wires I would have to run into the cab from each door and ran them all at once. I used a bicycle brake cable sheath to snake my way through the rubber hose in the door jam and taped my wires to the other end of it and pulled it through. I did this in steps though, first from the cab to outside, then into and out of the rubber hose and finally into the door. It was a pain in the arse. So make sure you run enough wires the first time so you don't have to do it all over again. The tilt position sensors account for the last 4 wires left coming from the mirror. These are only used by the Automatic Drive Positioner (A.D.P.) that my Titan SE doesn't have. I looked into what it would take to add that feature, and the amount of wiring and having to replace the front seats is way more effort and money than I care. So I just cut them off.

Indulgences and assumptions:

- I noticed that the manual for my 2008 had two sets of wiring diagrams for the mirrors. Each set included a diagram "with power fold and A.D.P." and another diagram "without Power Fold or A.D.P." The 2 sets differed entirely on the pin outs for the mirror switch's fold and mirror tilt output pins and even power. After digging through Titan service manuals from 2004 - 2015 I realized these following things: 2008 was the only year with both sets of diagrams. where 2004-2007 only had the 1st set and 2009 - 2015 only had the second set. I would think that means 2004 - 2007 have compatible Remote mirror control switches and 2009 - 2014 are compatible. 2008 will be compatible if it looks like your factory switch and not the new joystick looking mirror switch. Also the power fold option first came available in 2006 but can be retrofitted to 2004 and 2005 without doing anything differently then if you were actually just adding it to a 2006, 2007 or 2008. This is also true if you have the A.D.P. (Auto Drive Positioner) I also noticed that the wiring pin-out for the mirrors doesn't change at all 2004 - 2015 so all first generation Titan/Armadas have electrically and physically compatible mirrors. All that matters is, if you have the 6 pin harness or

the 16 pin. Or in our case that doesn't even matter because you can't get power fold on the 6 pin connector so you're going to be doing some splicing. Also, because of the fact there is no actual wiring diagram of the way I set mine up, that even though they produced the parts in a way it can be done they never actually used it in practice. In other words, if your truck had power fold then it also had the A.D.P. even though the A.D.P. has nothing to do with the power fold circuit. I imagine the power fold option only came default on the most accessorized models. Which if you had a fully accessorized Titan it would've had the Big Tow Mirrors anyway. All you need to find, is a switch that looks like the one in your truck, but with the power fold switch on it. I know they used this square style switch on 06 thru 08 Armada, Titan and the Maxima. I also know that some titans continued to use this switch even after 08 and some used the new style. If your truck has the A.D.P., you just plug the new switch directly into your mirror switch's harness and maybe have to add the pins for the fold output. If you don't have the A.D.P. you do what I did and swap the guts around and you definitely have to add the 4 pins to the mirror switches harness.

Another thing I noticed when looking at interior photos on google is that some titans after 2008 have a new style mirror switch with a new style door panel, and some have the old style switch and door panel like mine. I would think the new mirror switch wiring diagrams would correspond with the new style switch and the older diagrams would correspond with the trucks that have the older style switch. I mean why re-invent the wheel for no apparent reason? Yet if that is the case why do they not include the older wiring diagrams in the service manuals after 2008? It's the Chewbacca defense, it does not make sense. If anyone has any info on this please post. Everything in the Indulgences and assumptions area is only to the best of my knowledge. I have included all the info for what connects to what in the attached photos, which I gathered from looking through a lot of wiring diagrams in different sections through out the service manual. If you would like to see the factory wiring diagrams they can be found in the service manual which is available here. [Nissan Titan Factory Service Manuals](#) The picture I included of the 6 pin and 16 pin mirror connectors photographed from the front with pin info came from 2 separate pictures I found somewhere on the forum. I do not know who originally created them, but if anyone does I would like to give the original contributor credit. I can only upload 5 pics at a time that is why they are broken up into multiple post. I hope you have found this guide helpful.



Notice only 4 contact pads for the tilt function on this switch, where the other has 6. These switches differ electrically for the tilt function but are identical in the case of the power fold output, using the same output pins.

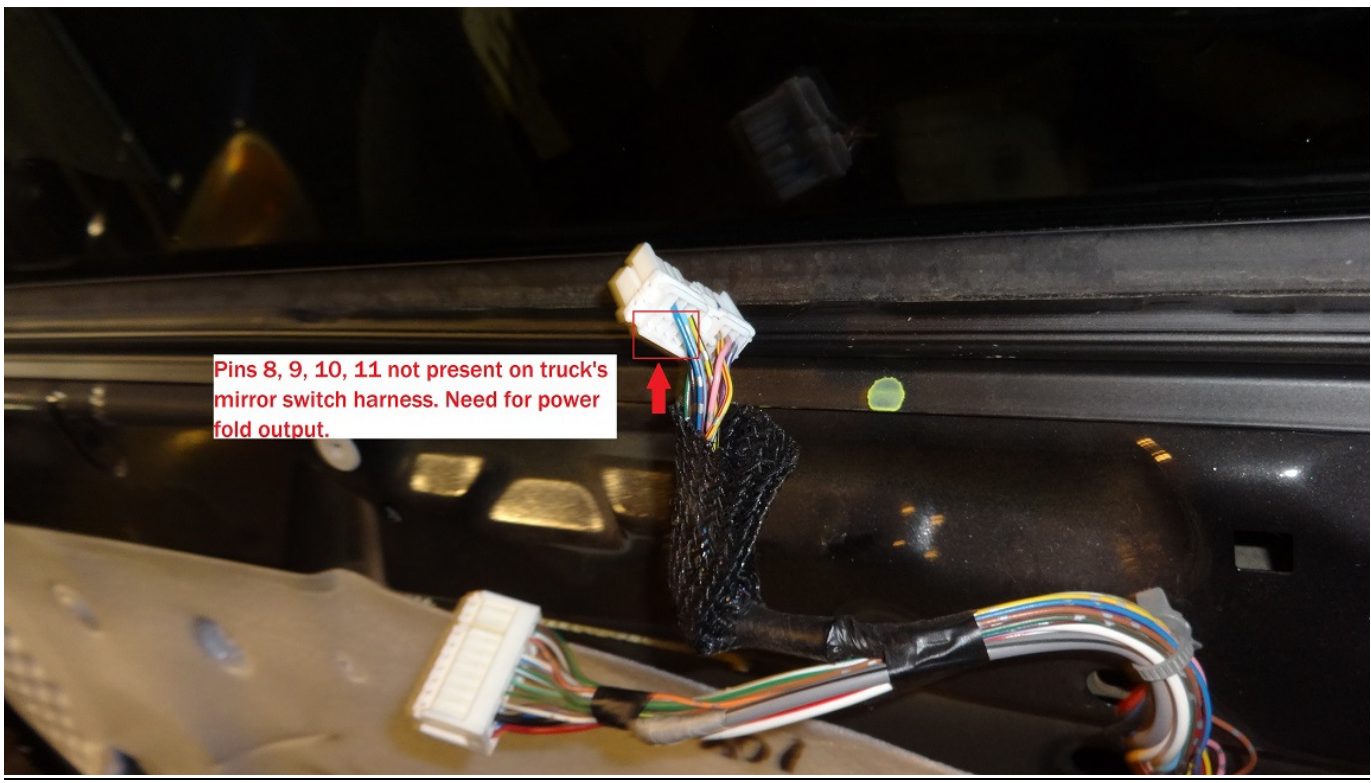
Switch I purchased (LE Trim) with folding mirror option. Meant for trucks with Automatic Drive Positioner.

Note: Each switch has a button membrane underneath the tilt arrows which was unfortunately not photographed here, it corresponds with the contact pads on it's associated circuit board. In this configuration I'm showing here you would use the LE switches membrane since were using the LE switch's circuit board.

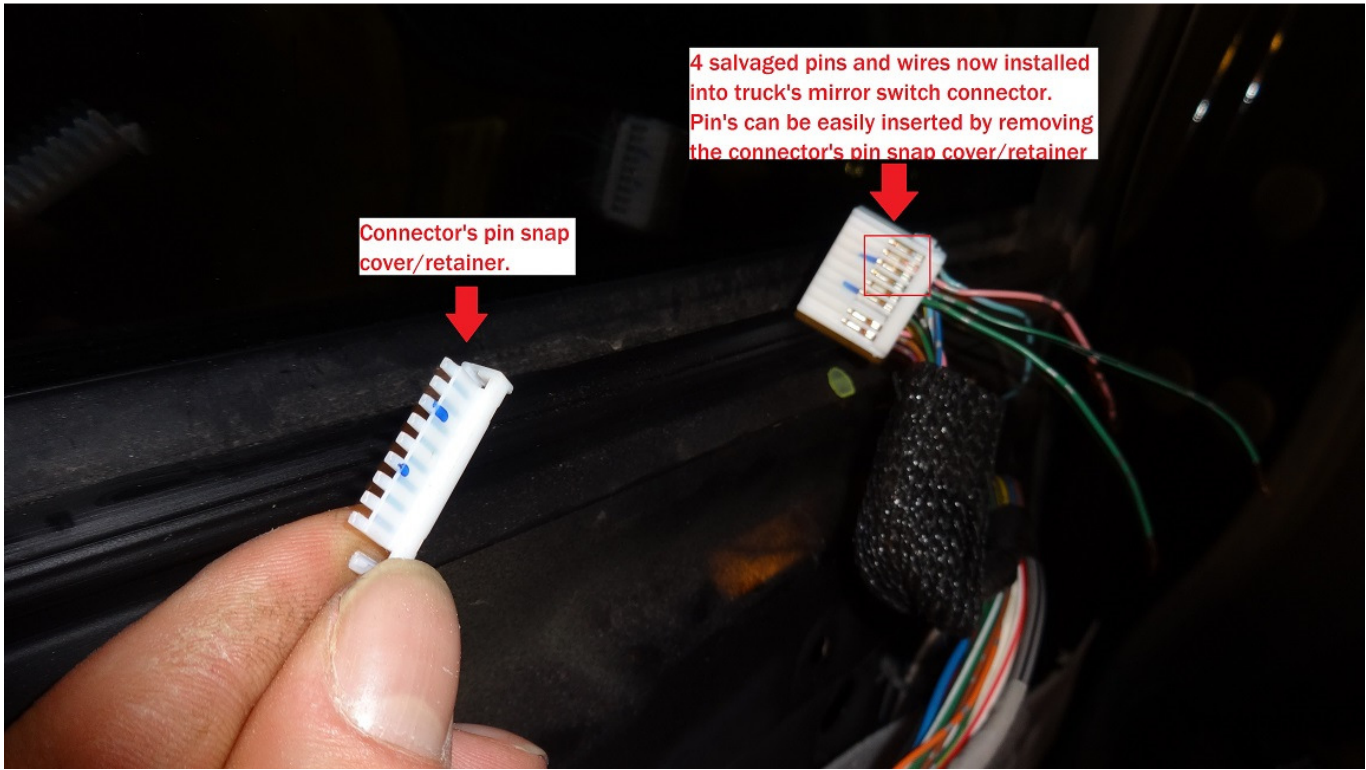
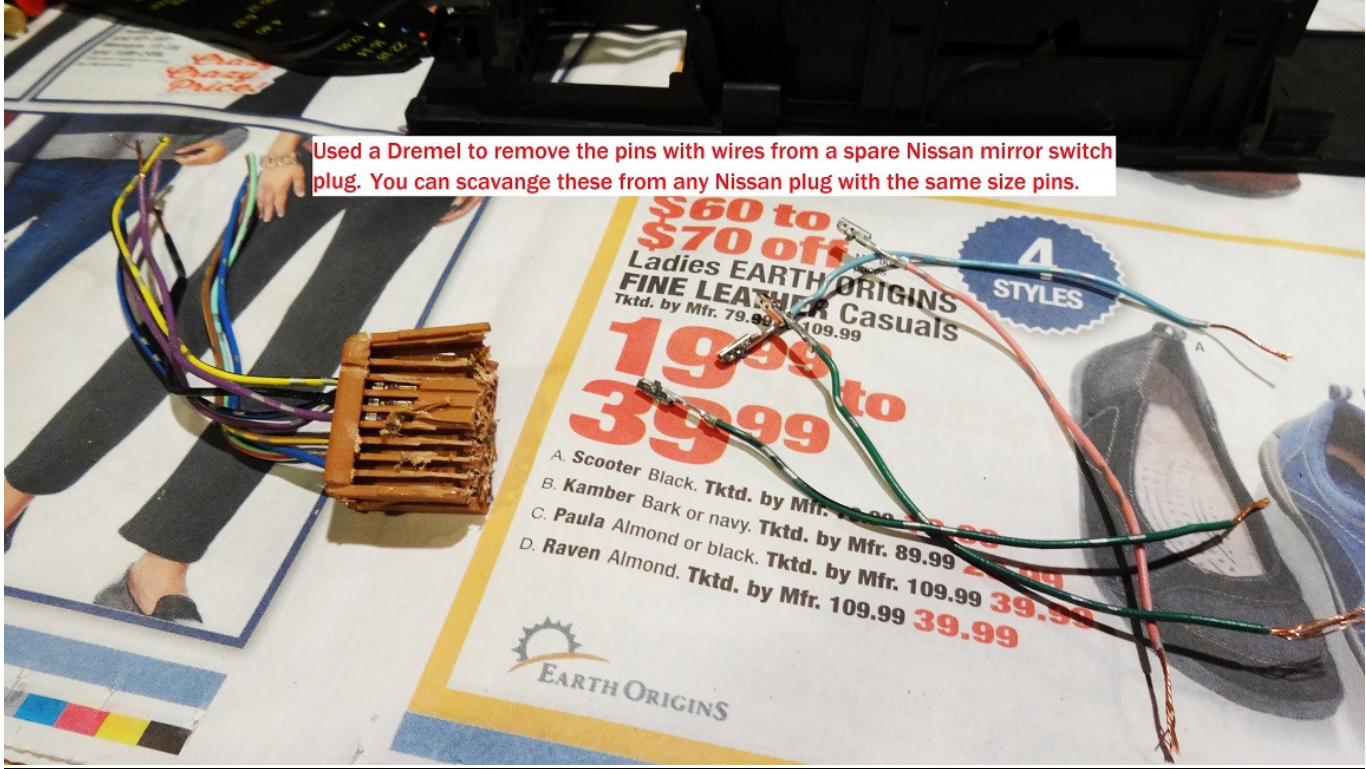
Copper contacts for mirror side selector switch on top. Contacts for fold switch are present on the bottom and still have untouched factory grease present.

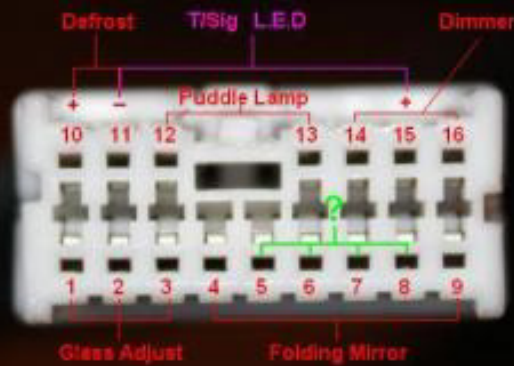
My original switch (SE trim) No power fold option, meant for trucks without Automatic Drive Positioner.

Parts outlined in green were combined to make a working mirror switch with power fold option for my truck which does not have the Automatic Drive Positioner. Even though Nissan manufactured the parts in such a way to make this possible, it appears that in practice, they never actually offered this configuration.



Pins 8, 9, 10, 11 not present on truck's mirror switch harness. Need for power fold output.





Pins 5,6,7,8 are for the glass tilt position sensors. Only needed if your vehicle has the Automatic Drive Positioner.

Mirror Connector

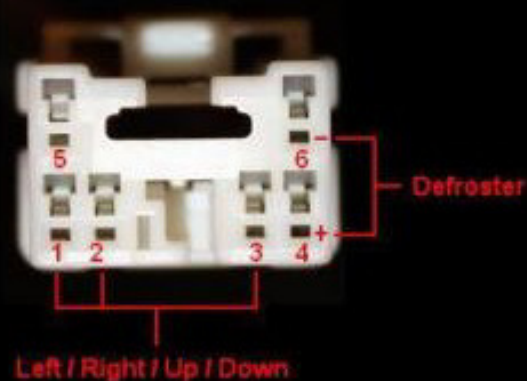
(From Outside Door Mirror)

LE Trim, 16 pin

Mirror Connector

(From Outside Door Mirror)

SE Trim, 6 pin



- Pin Terminal# 1 - Blue Wire (w/ Red Tracer)
- Pin Terminal# 2 - Yellow Wire (w/ Red Tracer)
- Pin Terminal# 3 - Violet Wire (w/ White Tracer)
- Pin Terminal# 4 - Grey Wire
- Pin Terminal# 5 - (NO Wire)
- Pin Terminal# 6 - Black Wire

Nissan Titan / Armada 2004-2008

Mirror power fold connections on Door mirror Remote Control switch

Connector No.	D10
Connector Name	DOOR MIRROR REMOTE CONTROL SWITCH
Connector Color	WHITE

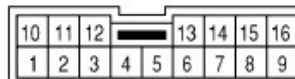


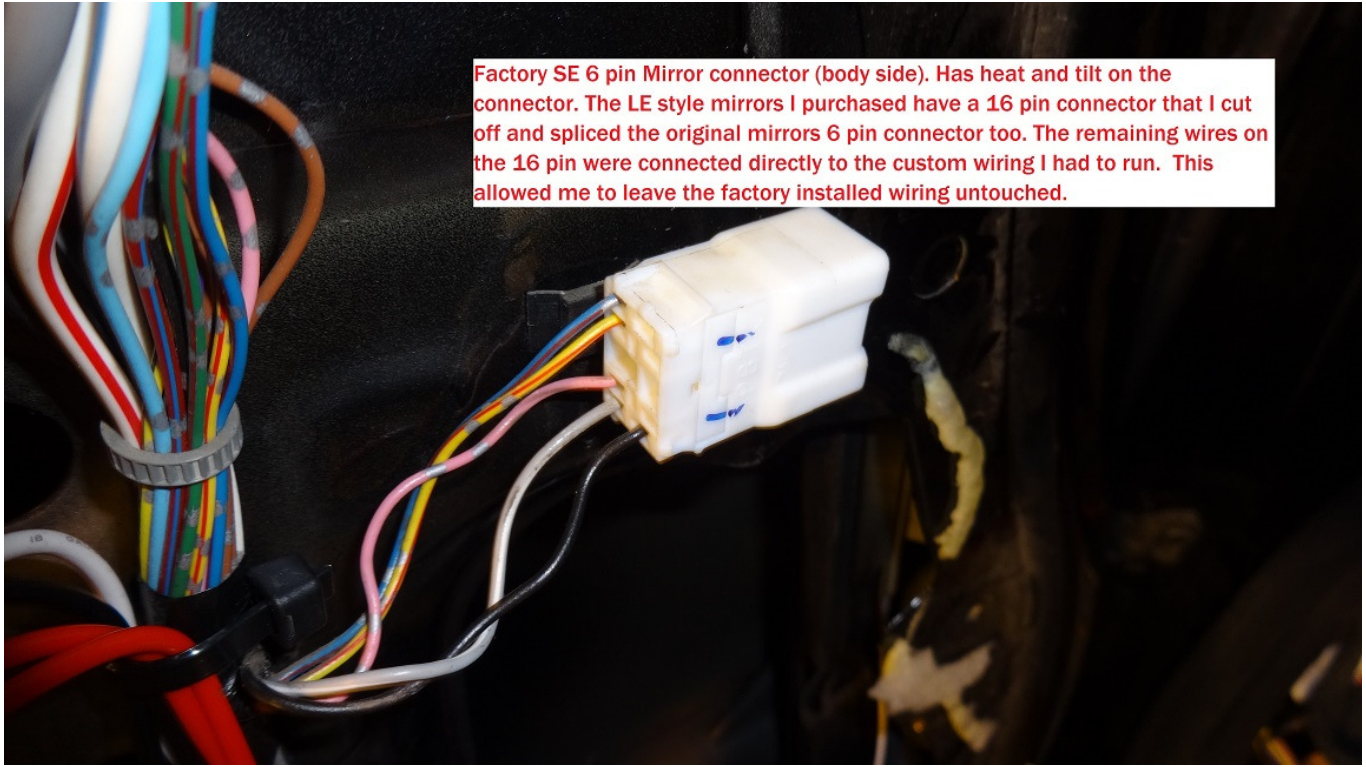
Mir SWITCH (D10) Pin #	Mirror Side	Door Mirror (D107) (D4) Pin #
8	LH	9
9	RH	9
10	LH	4
11	RH	4



This is saying pin 8 on the mirror switch is connected to pin 9 on the left hand (LH) side mirror.

Connector No.	D107 & D4
Connector Name	DOOR MIRROR (RH & LH)
Connector Color	WHITE





Factory SE 6 pin Mirror connector (body side). Has heat and tilt on the connector. The LE style mirrors I purchased have a 16 pin connector that I cut off and spliced the original mirrors 6 pin connector too. The remaining wires on the 16 pin were connected directly to the custom wiring I had to run. This allowed me to leave the factory installed wiring untouched.

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



56	57	58	59	60	61	62	63	64
65	66	67	68	69	70			



BCM is located directly behind the OBD port. It has multiple connectors on it, this one is black. It is positioned vertically as opposed to horizontally as seen here.

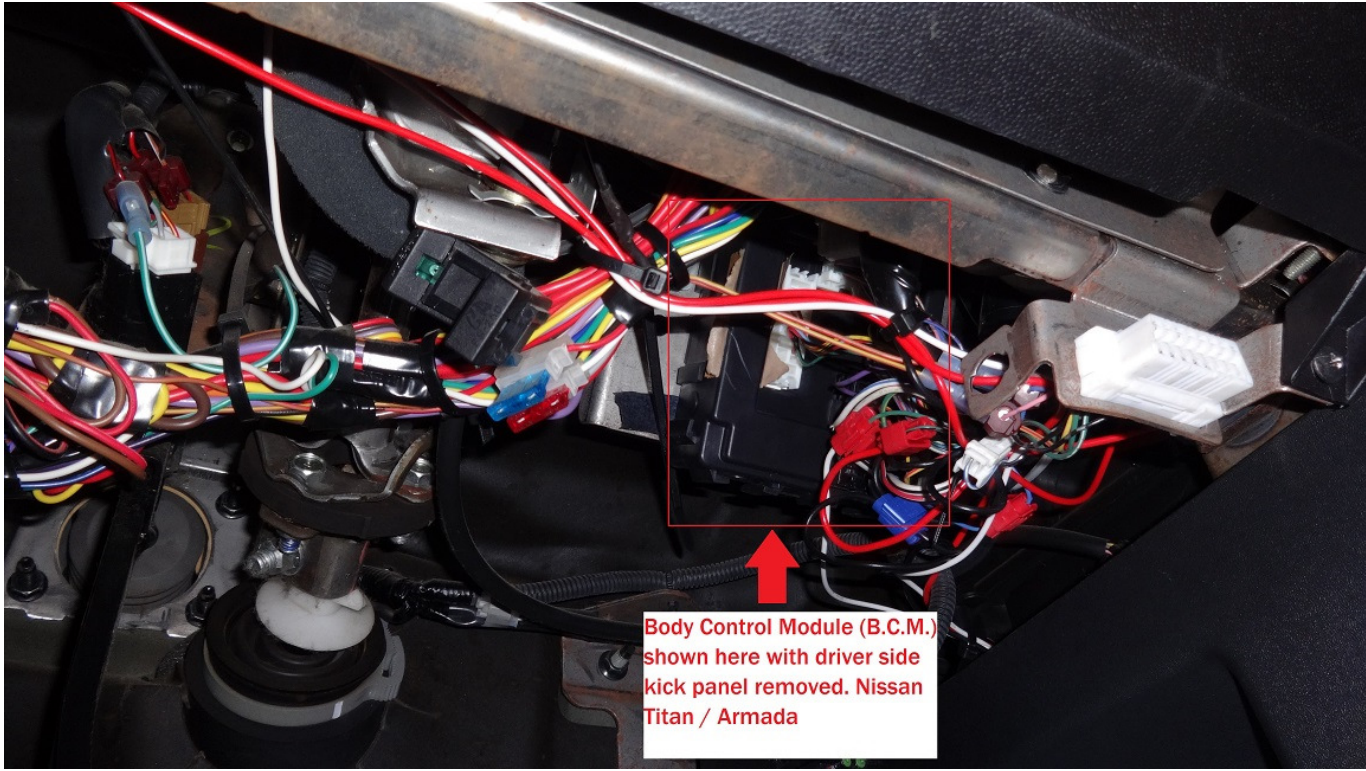
Terminal No.	Color of Wire	Signal Name
56	R/G	* BATTERY SAVER OUTPUT
60	G/B	L/H Mirror Turn Signal
61	G/Y	R/H Mirror Turn Signal
63	Blue	* Interior Lamp Output



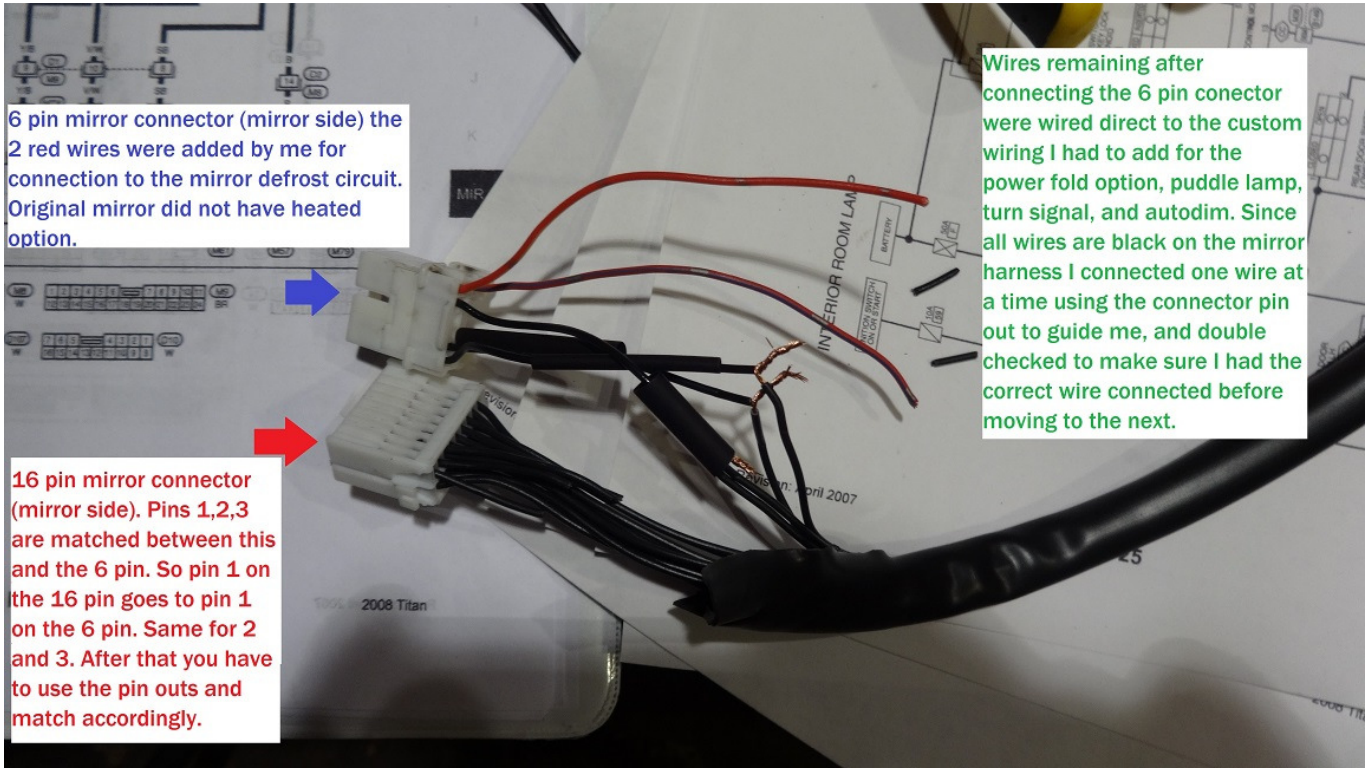
This wire is present inside the door also same color connected to the step lamp.

Color code, first letter is wires main color 2nd letter is wires stripe. Ex. R/G = Red with green stripe

*Pin 56 and 63 go to puddle lamp



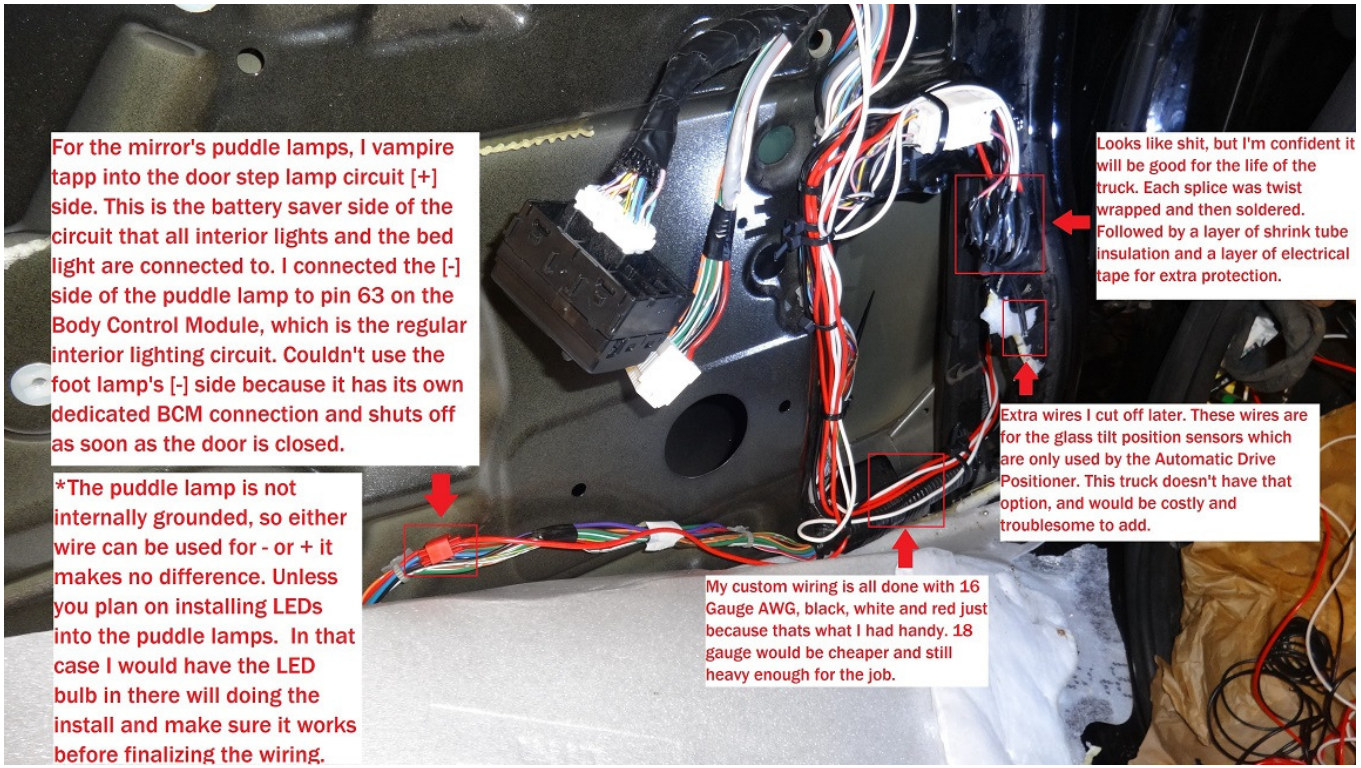
Body Control Module (B.C.M.) shown here with driver side kick panel removed. Nissan Titan / Armada



6 pin mirror connector (mirror side) the 2 red wires were added by me for connection to the mirror defrost circuit. Original mirror did not have heated option.

16 pin mirror connector (mirror side). Pins 1,2,3 are matched between this and the 6 pin. So pin 1 on the 16 pin goes to pin 1 on the 6 pin. Same for 2 and 3. After that you have to use the pin outs and match accordingly.

Wires remaining after connecting the 6 pin connector were wired direct to the custom wiring I had to add for the power fold option, puddle lamp, turn signal, and autodim. Since all wires are black on the mirror harness I connected one wire at a time using the connector pin out to guide me, and double checked to make sure I had the correct wire connected before moving to the next.



For the mirror's puddle lamps, I vampire tap into the door step lamp circuit [+] side. This is the battery saver side of the circuit that all interior lights and the bed light are connected to. I connected the [-] side of the puddle lamp to pin 63 on the Body Control Module, which is the regular interior lighting circuit. Couldn't use the foot lamp's [-] side because it has its own dedicated BCM connection and shuts off as soon as the door is closed.

*The puddle lamp is not internally grounded, so either wire can be used for - or + it makes no difference. Unless you plan on installing LEDs into the puddle lamps. In that case I would have the LED bulb in there will doing the install and make sure it works before finalizing the wiring.

Looks like shit, but I'm confident it will be good for the life of the truck. Each splice was twist wrapped and then soldered. Followed by a layer of shrink tube insulation and a layer of electrical tape for extra protection.

Extra wires I cut off later. These wires are for the glass tilt position sensors which are only used by the Automatic Drive Positioner. This truck doesn't have that option, and would be costly and troublesome to add.

My custom wiring is all done with 16 Gauge AWG, black, white and red just because that's what I had handy. 18 gauge would be cheaper and still heavy enough for the job.