

DIY: How-To Enable “Anytime” Fog Lights

2007 – 08 Tundra

For \$15 or Less

Design by Daless2

Note: I have made updates to these instructions to give you a choice as to how your Fog Lights will perform, based on Ignition Key Position.

Your Options Are:

- ❑ Option “A” = Fog Light Operate Independent of Ignition Switch Position
- ❑ Option “B” = Fog Lights “Off” when Ignition Switch is Turned “Off”
- ❑ Option “C” = Fog Lights “Auto Off” 2-Hours after Ignition Switch is Turned “Off”

You get to pick the option of your choice.

I have also added a Version Number to the file name **FogLightsVx.pdf** where **x = a number**. The higher the number is, the more current the document.

Overview of Factory Fog Lights

The Factory Fog Light Switch, mounted on the stalk, does not turn the Fog Lights “On”.

Instead, when you turn this switch “On” it makes a “Request”, (via a ground signal) to the Main Body ECU to turn the Fog Lights “On”.

The Main Body ECU then decides, based on a set of rules, if it will supply a ground to the Fog Light Relay “coil”, and/or if it will supply +12 volts to the other side of the Fog Light Relay “coil”.

The Main Body ECU must supply both a “ground” and a “voltage” at the same time, for the fog lights to turn “On”.

The “rules” which the MB-ECU applies when you “request” the Fog Lights to be turned “On” are as follows:

- ❑ Fog Lights cannot be turned on by themselves
- ❑ Headlights Lights must be “On” for Fog Lights to turn “On”.
- ❑ High Beam Headlights “On” cause Fog Lights to “Turn Off”

Basic Design Description

More than a few Tundra owners have expressed an interest in being able to turn the Fog Lights “ON” anytime they want, regardless of the rules that apply to the truck as it comes from the factory.

This design will do this for you by divorcing the Factory Fog Lights both physical and electrical from the control of the Main Body ECU.

This is accomplished by physically removing the Factory Fog Light Relay, installing and wiring up a New Bosch Type Automotive Relay and cutting one wire.

Please Note: You must be willing to cut this wire. DO NOT under any circumstances think you can just “tap” into this wire. If you do you will put your Main Body ECU at unknown risk.

If you want this function bad enough, step up to the plate, suck it in, be brave, and snip it!

As a second feature, this design will allow you to put your Fog Lights back to the way they work now (factory) in about 5 minutes using no tools. This includes the cut wire.

I performed this modification on one 2007 Tundra and one 2008 Tundra this weekend.

It works.

If you are reading this as a part of a forum thread, please double click on the “FogLightsVx.pdf” file located at the bottom of this post to view and download the most current version of the “How-To” instructions.

Precautions:

Please be sure you take these precautions prior to performing this modification on your Tundra.

- 1.) Disconnect the Battery Negative Terminal. If you have Navigation, wait at least 90 seconds after turning the key off to allow Nav System to save its settings.
- 2.) Prior to cutting the single wire “UNPLUG” Connector J3 just to be safe.
- 3.) Read and understand this entire document “PRIOR” to starting.

Parts You Need

These are common automotive / electrical parts. Just about any auto store will have them. Total cost should be well under \$15.00 total.

Fog Light Parts You Will Need



**12V SPDT 30 AMP
AUTOMOTIVE
RELAY (Qty 1)**



**SOCKET FOR
AUTOMOTIVE
RELAY (Qty 1)**



**1/4" SPADE QUICK CONNECT
MALE, Crimp On (Qty 2)**



**12 Feet - 18 Gauge Wire/
(Black is least Noticeable)**



**1/4" FULLY INSULATED
MALE Crimp On (Qty 1)**



**1/4" FULLY INSULATED
FEMALE Crimp On (Qty 2)**

Please note, if you choose Options "B" or "C" you will need one (1) Wire Tap Connector that will work on 20 gauge wire.

Electrical Wiring Diagram

You need to add a New Relay (and socket) which you will mount outside of the factory Under Hood Relay / Fuse Box. This relay is shown in Yellow in the above drawing.

You will wire this relay up as shown in the Blue wires.

You will need to Remove the Factory “Fog Light Relay” from its socket inside the under hood relay / fuse box. Store this relay in your glove box. If you ever want to put your fog lights back to the original factory spec you will need it.

Please take a look at the diagrams below once you have decided on which Option you want to install. There is only one wiring difference between each of the options yet for clarity I have provided three separate wiring diagrams.

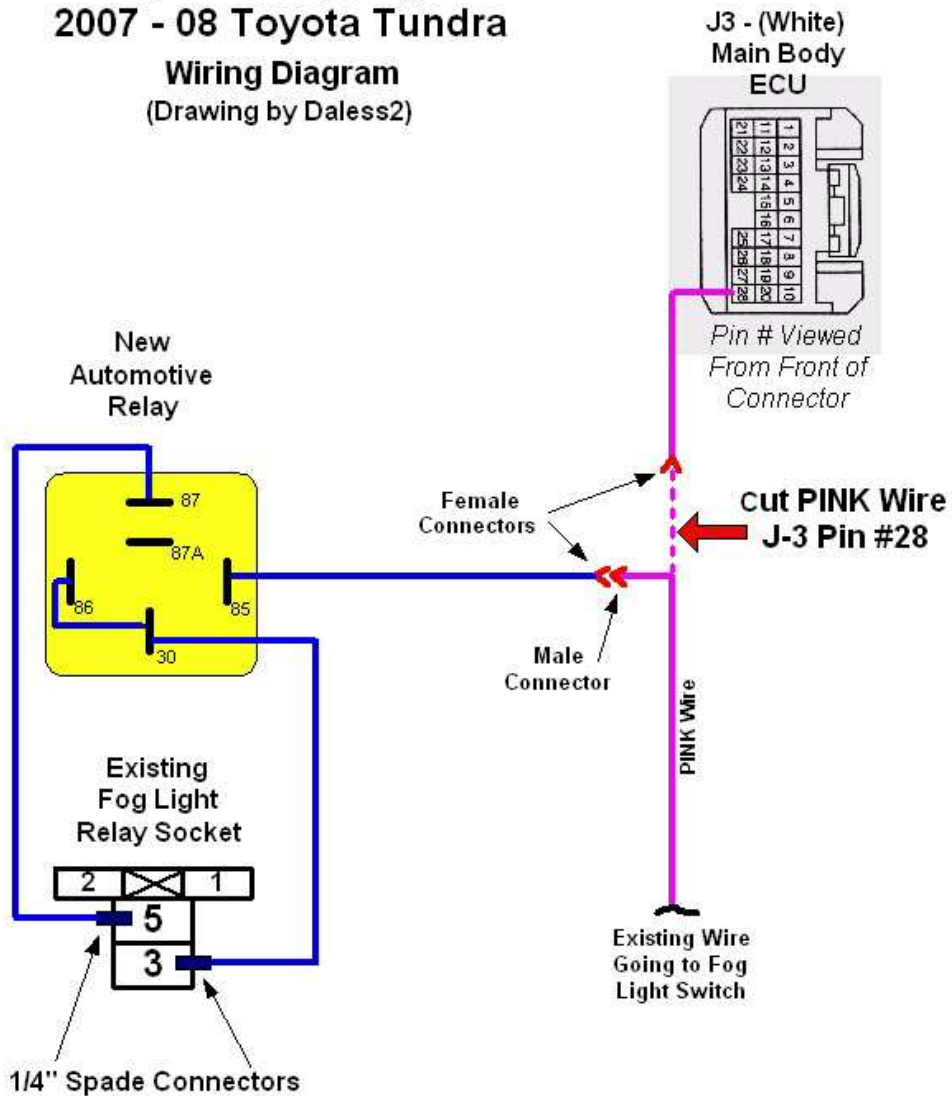
1.)

Choose your Option and follow instructions for 1A, 1B, or 1C

1A.) Option "A" = Fog light Operate Independent of Ignition Switch Position

Option "A" Fog Light On or Off without Ignition Key On

Enabling "Anytime" Fog Lights 2007 - 08 Toyota Tundra Wiring Diagram (Drawing by Daless2)

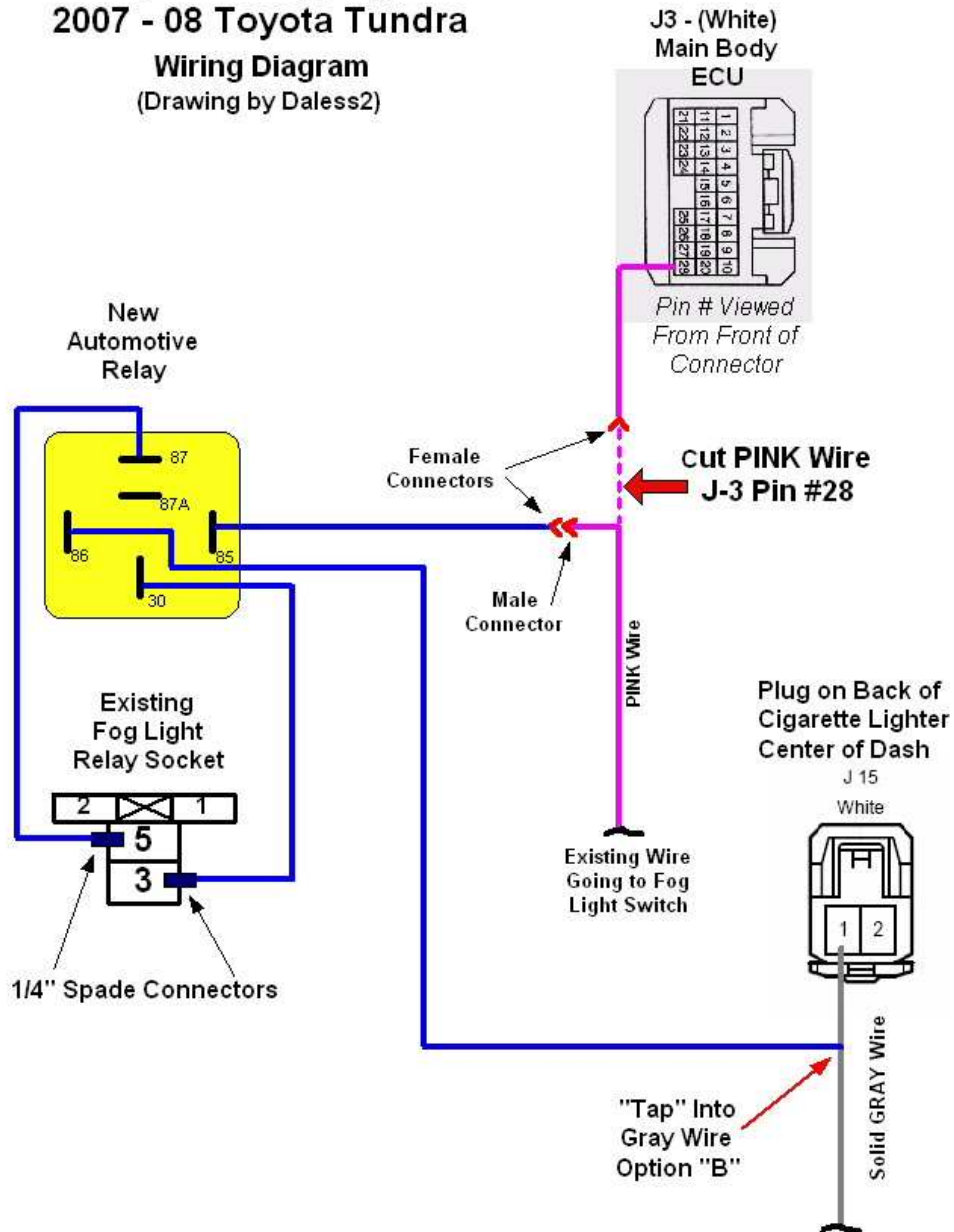


Install a jumper wire from Pin # 30 of the New Relay to Pin # 86 of the New Relay. This will provide power to the relay coil.

1B.) Option "B" = Fog Lights "Off" when Ignition Switch is Turned "Off"

Option "B" Fog Lights Off with Ignition Key "Off"

**Enabling
"Anytime" Fog Lights
2007 - 08 Toyota Tundra
Wiring Diagram
(Drawing by Daless2)**

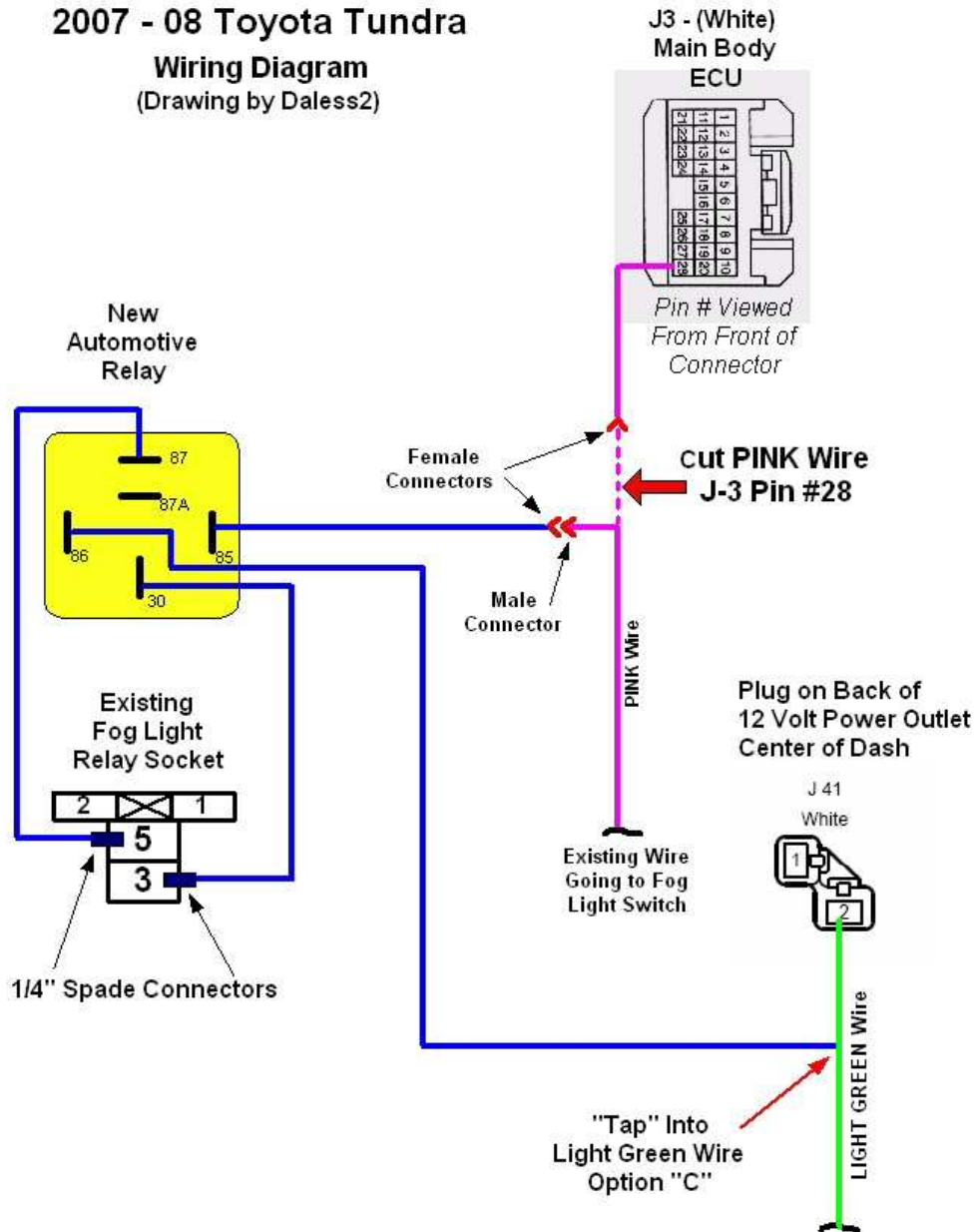


Install a wire from Pin # 86 of the New Relay through the firewall grommet into the cab of your truck. Connect this wire, via a wiretap, into the GRAY wire in Pin #1 of Connector J15 which plugs into the back of the Cigarette Lighter Outlet. You will need to remove the panel below the steering column to get to this connector. Perhaps some other plastic as well.

1B.) Option "C" = Fog Lights "Auto Off 2-Hours after Ignition is Turned "Off"

Option "C" Fog Lights Off 2 Hours After Ignition Key "Off"

**Enabling
"Anytime" Fog Lights
2007 - 08 Toyota Tundra
Wiring Diagram
(Drawing by Daless2)**



Install a wire from Pin # 86 of the New Relay through the firewall grommet into the cab of your truck. Connect this wire, via a wiretap, into the LIGHT GREEN wire in Pin #2 of Connector J41 which plugs into the back of the 12-volt Power Outlet in the center of the dash. You will need to remove the panel below the steering column to get to this connector. Perhaps some other plastic as well.

All remaining wiring is the same, regardless of which Option you have chosen.

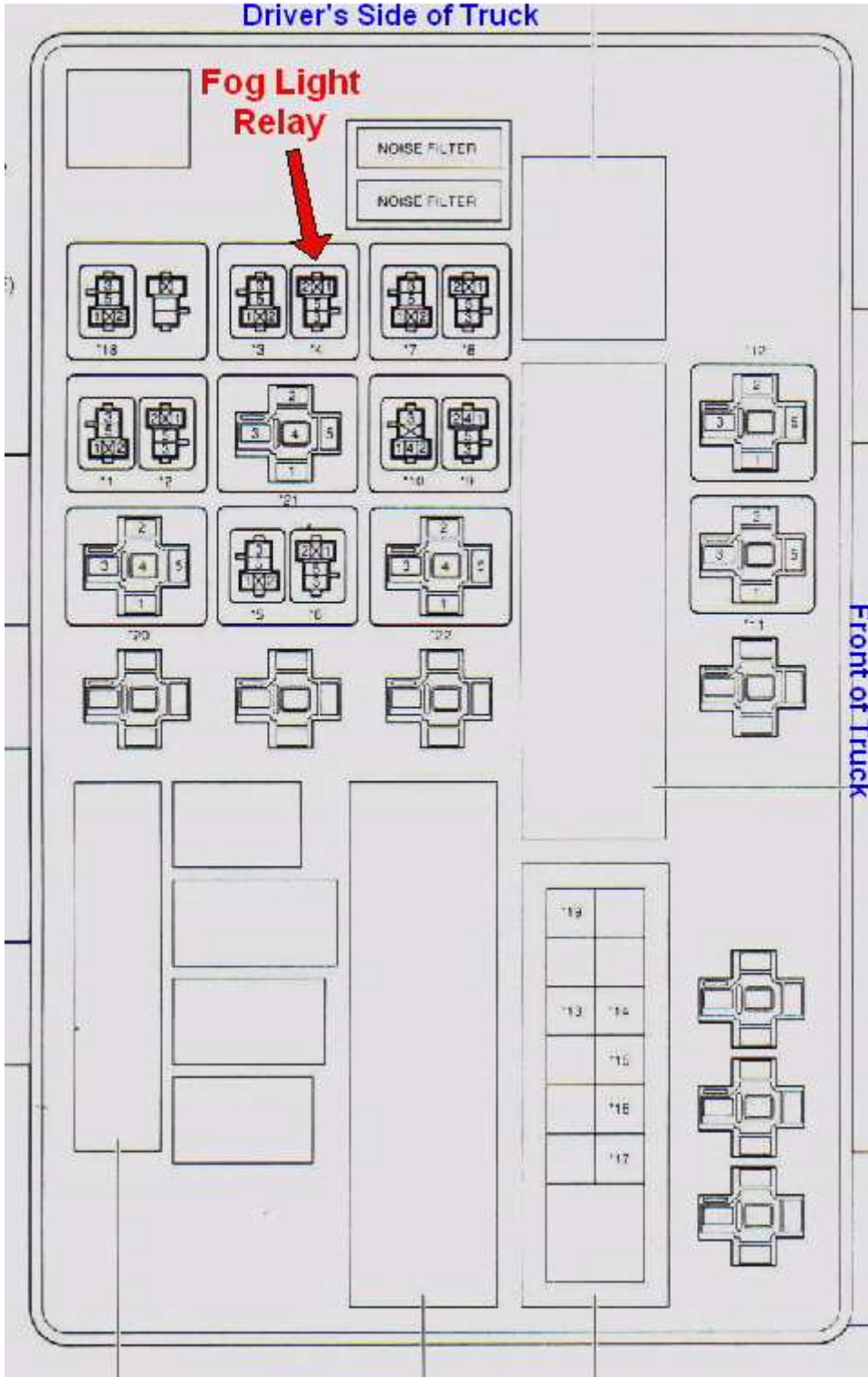
2.)

Run one wire from the New Relay Pin # 87, and connect it to Pin # 5 of the Fog Light Relay **Socket**.

You make the socket connection by crimping a 1/4-inch spade connector to the end of the wire and inserting it into the top of the relay socket, Pin #5.

Fog Light Relay Location

2007 - 08 Tundra
Under Hood Relay / Fuse Box



3.)

Run another wire from Pin # 30 of the New Relay, to Pin # 3 of the Fog Light Relay **Socket**, also via a ¼-inch crimp on spade connector.

There is plenty of room to plug both of these spade connectors to be plugged into the relay socket, but please be sure they do not touch. If they do short together the worst case is you will blow the 15-amp fog light fuse.

Both of the above wires will be coming from the new relay which is mounted outside of the under hood relay / fuse box. You will need to cut two small grooves in the rear top edge of the plastic under hood relay / fuse box to pass these two wires inside. The Cover will hold them in place when you put it on later. (Sorry I dropped my camera. Pout, Pout! No picture of this today.)

4.)

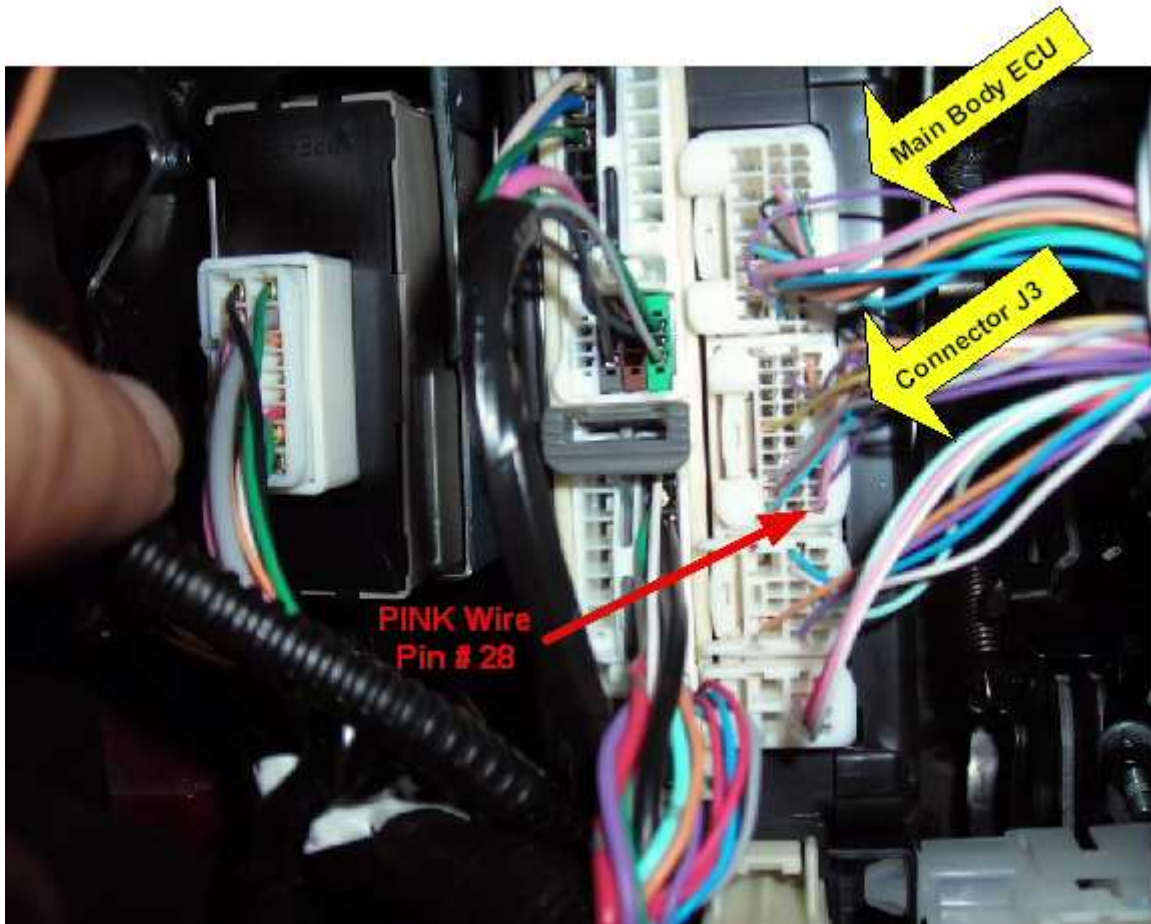
The last wire comes from the New Relay, pin # 85 and must be routed inside your trucks cab through the large rubber grommet in the firewall, below the brake booster. You want this wire to reach the driver side kick panel area.

5.)

If you have not already done so, remove the kick panel next to the drivers left foot. Also remove the plastic panel under the steering column. You need to find Connector J3, which plugs into the Main Body ECU.

Connector J3 is white, and has 28 positions.

Here is a picture.



Unplug Connector J3 from the main Body ECU.

Find the PINK wire in position # 28. Do you see the solid PINK Wire? Good

Cut the PINK wire about 2-inches away from the connector.

6.)

On the PINK wire still attached to the connector J3, crimp on a ¼-inch fully insulated FEMALE connector. Then cover this connector with electrical tape, just to be safe.

On the other end of the PINK wire, crimp on a ¼-inch fully insulated MALE connector.

7.)

Now locate wire you just routed into the cab, coming from the new relay Pin # 85 and crimp on a ¼-inch fully insulated FEMALE connector.

8.)

Plug the Male Connector on the PINK wire into the Female connector attached to the wire coming in from under the hood.

9.)

Plug the J3 connector back into the Main Body ECU. There should be about two-inches of Pink Wire with a Female connector covered in electrical tape attached to this now. This wire remains unused unless or until you wish to put your Fog Lights back to their factory function.

10.)

Reconnect the Negative terminal of your Battery and test out your work.

- ✓ Turn Ignition “On”, Headlights “Off”; turn Fog Light Switch “On”, Fog lights should go “On”.
- ✓ Turn Headlights “On”, turn Fog Light Switch “On”, Fog Lights should go “On”.
- ✓ Turn High Beam Headlights “On”, turn Fog Light Switch “On”; Fog Lights should go “On”.
- ✓ Turn Ignition Switch “Off”, Fog lights should perform based on Option you have chosen (A, B, or C).

Your Fog Lights are now completely divorced from any other light function. Have fun with them!

Tidy up, replace the kick panel, you’re done!!!

Restore to Factory Function

If you want to put things back to the way the Fog Lights worked from the factory there is a three-step process.

- ❑ Open Under Hood Relay / Fuse Box and remove the two wires in positions #3 and #5
- ❑ Replace the Factory Fog Light Relay (It's in your glove box, remember?)
- ❑ Reconnect the Pink wire via the 1/4-inch fully insulated connectors.

That's it you're done.

I hope this is of some value to some folks.

Have a great day. I plan to!

Frank
(Daless2)