



FireStick

LED SEQUENTIAL BRAKELIGHT KIT

for '96 - '04 Mustangs

Firestick 1996-2004 Mustang Sequential LED Brake Light Kit

Installation Manual

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Thank You for buying our product!

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Firestick Mustang Sequential Brake & Tail Light Kit

**‘96-’04 Standard
OEM Harness
(only TWO Brakelights)**



**‘96-’04 Firestick Sequential
Turn Signal Harness
(THREE Brakelights)**

The Firestick Mustang Sequential Brake & Tail Light Kit converts the three bulb incandescent brake and tail light system of a 1996-2004 Mustang (**NOT** for amber lights or lenses) into a fully functional three LED sequential brake and tail light system.

These model years provided for a TWO brake light and THREE parking light assembly. The Firestick system converts this system into a full THREE brake light and THREE parking light system, making the brakes and turn signals brighter and more pronounced.

The conversion to the full three LED system is transparent to the existing Mustang Wiring. No wiring or splicing is required for the Firestick installation. The removal of the Lens Assembly is accomplished with a small 10mm or 12mm wrench.

Removing the lens & harness and replacing the incandescent lamps with the Firesticks is not difficult, and is detailed in the next few pages. Remember to take your time, since the lenses are made entirely of plastic. Force anything the wrong way and the sound you hear is the cash register ringing up the sale for a new rear lens assembly. Even then, the cost of new rear lenses is only around \$50/set. If your present lenses are cracked or badly scratched, consider replacing them now while you are installing the Sequential Firestick Kit.

This is also a good time to upgrade your 1994-1995 lenses assemblies that utilize a small side marker incandescent lamp as part of the turn signal system. The newer ‘96-’04 lens housings are an exact fit on your vehicle (non-Amber systems only) and allow you to use the standard ‘96-’04 OEM brake and tail light harness that utilizes three full size 3157 dual purpose incandescent lamps for brake and turn signals. Our Firesticks are compatible only with these ‘96-’04 lens housings & harnesses utilizing three 3157 lamps.



Open Trunk, and locate trunk liner retainer fitting



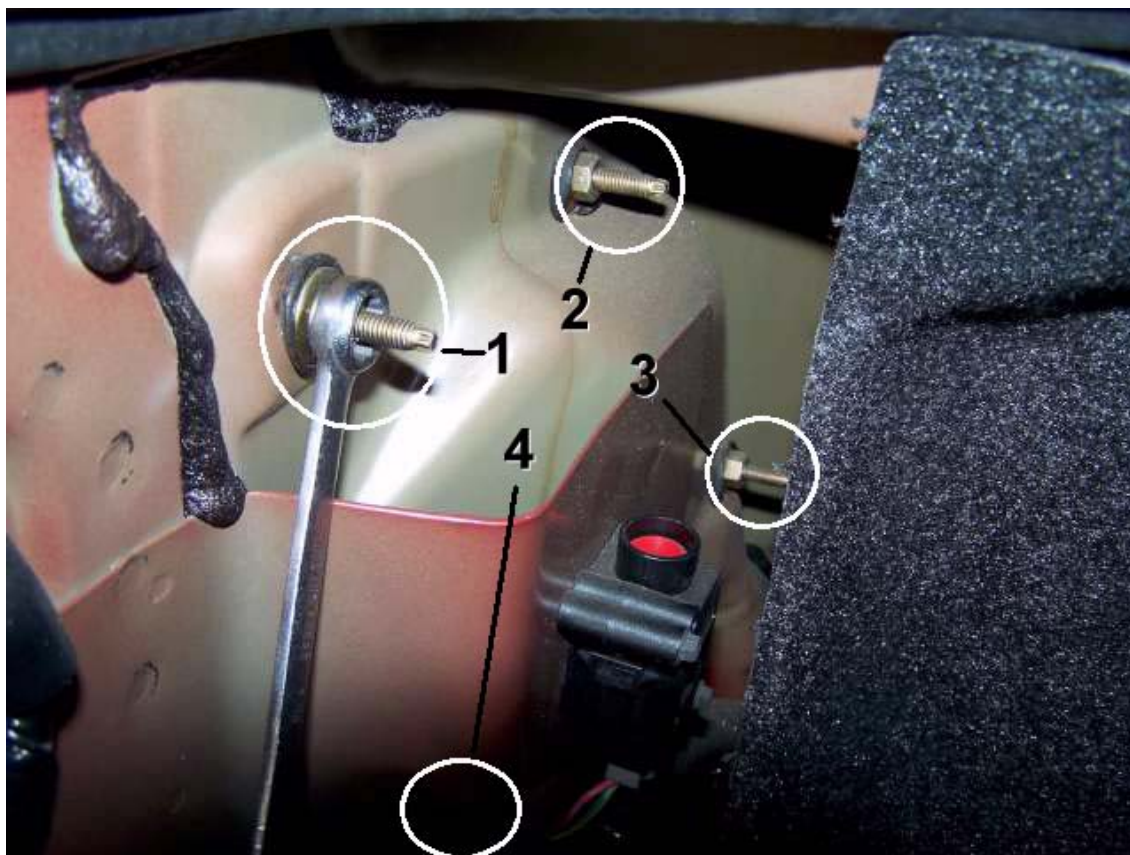
Unscrew and remove threaded plastic barrel fitting



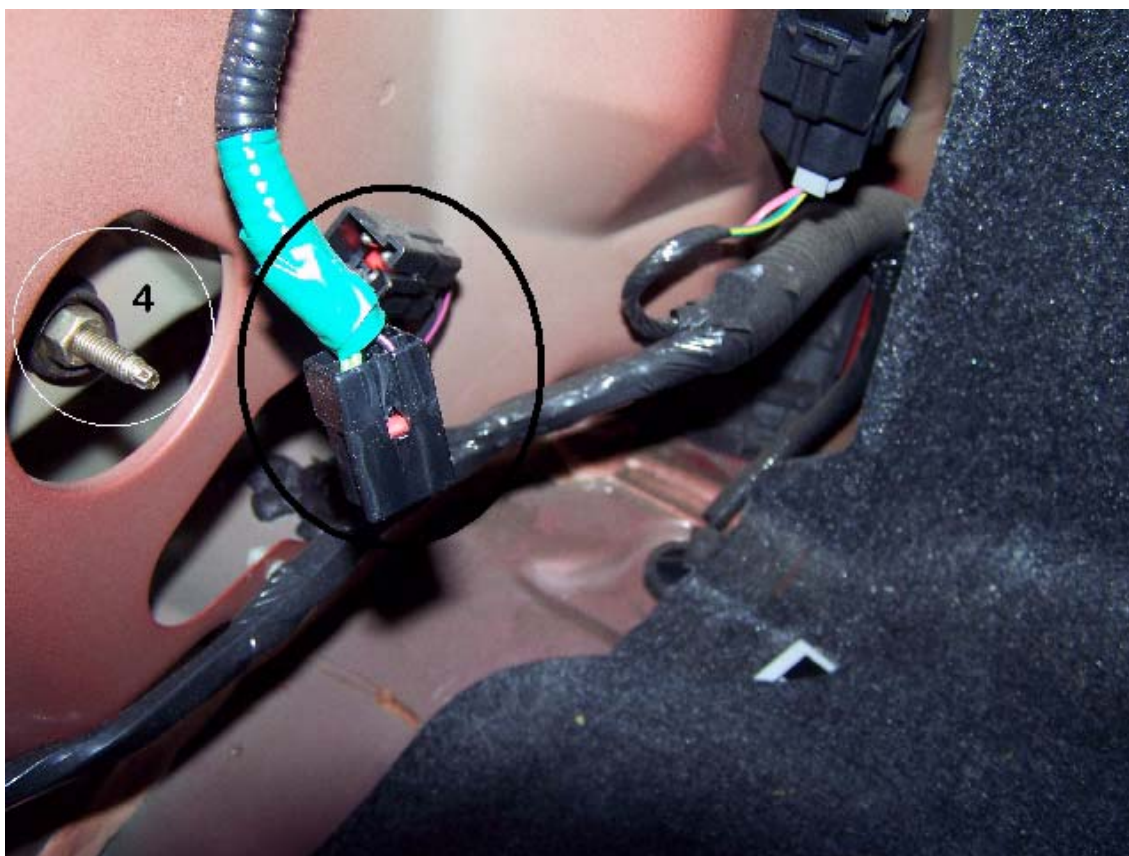
Locate and pry out plastic serrated lower trunk trim retainer



Remove the retainer, Fold away the trunk liner to expose Lens Mount



Locate and remove the four 10mm lens retainer nuts and rubber anti-vibration washers



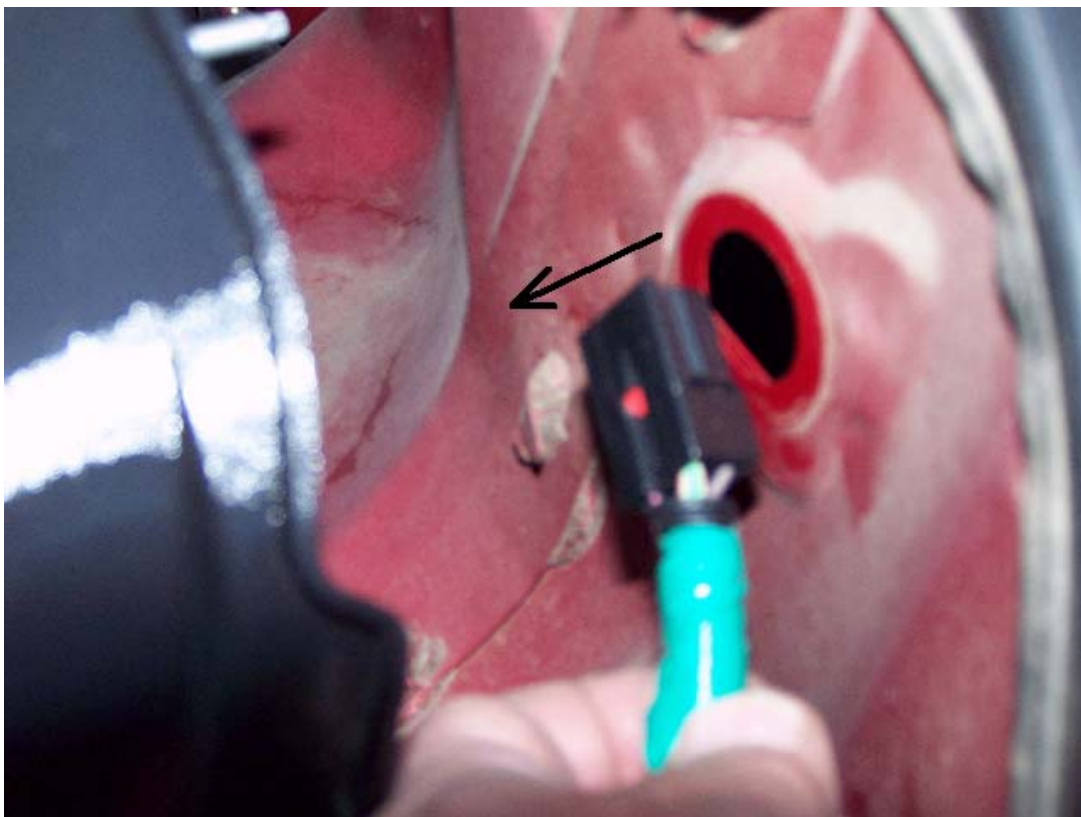
Separate the 4-pin tail light electrical quick disconnect (lift tang and slide the connectors apart).



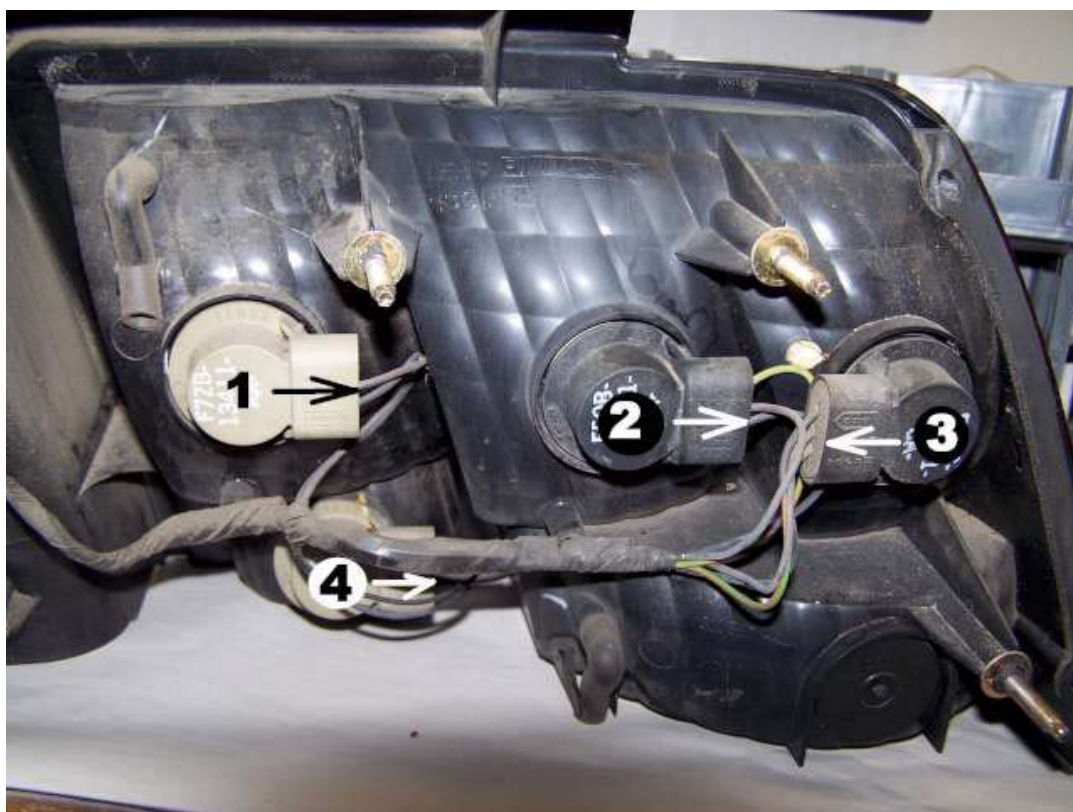
Slide out the lens from the body. There are four studs and two alignment pins to separate the lens from the body.



Compress the rubber grommet and push it through the mounting hole towards the red lens

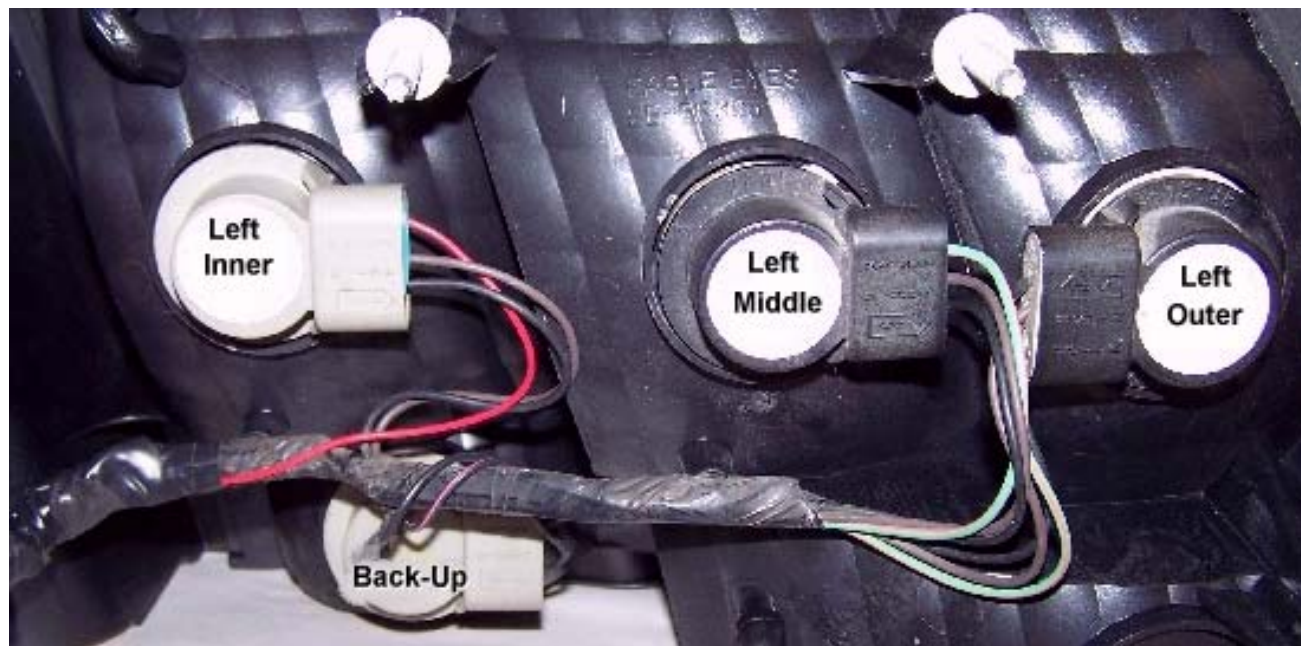


Pull the 4-pin electrical connector through the grommet hole towards the red lens, being careful not to cut or snag the wires on a burr or the sharp edge of the access hole.

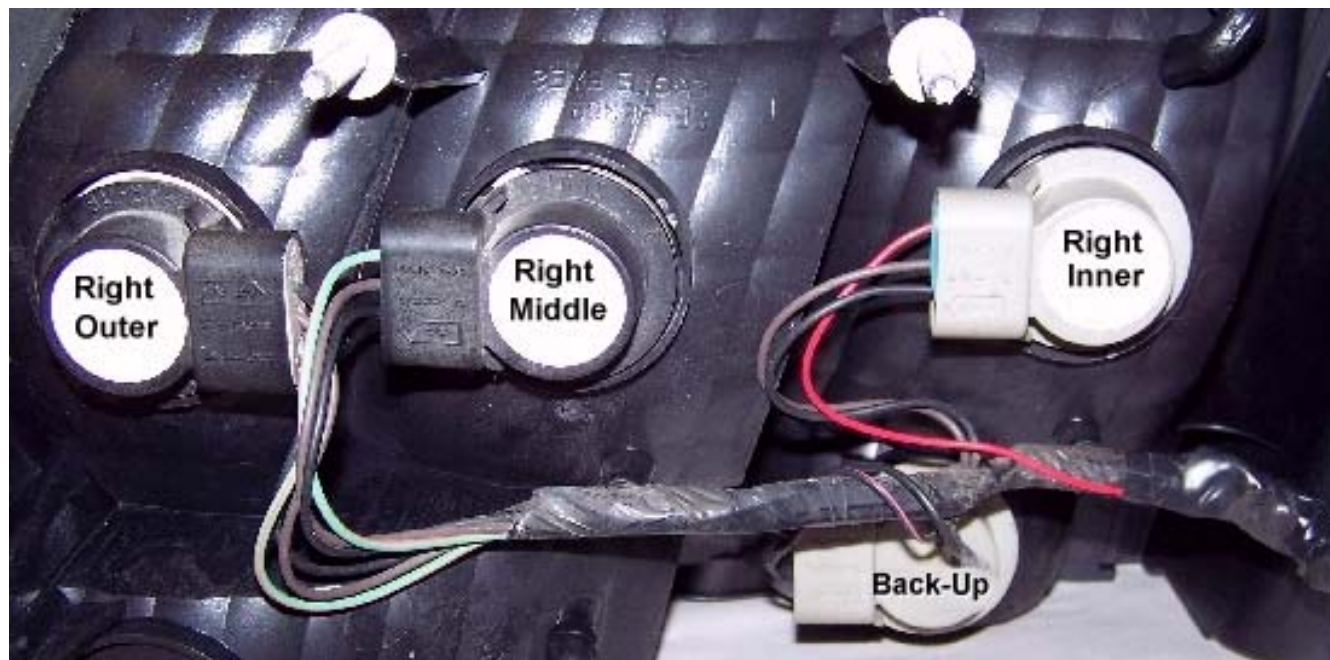


Set the lens on a clean, sturdy, flat surface and note the relative position of each of the four lamp connectors

Inner, Middle, & Outer Socket Orientation



Left Lens



Right Lens

Mustang Sequential Firestick Installation Guide

Replacing the LEDs

Work with one Lens at a time. Remove each socket, one-by-one, with a quarter turn counterclockwise and replace the incandescent lamp with the corresponding Firestick marked I/M/O (for Inner/Middle/Outer). Then reinstall the socket into the Lens Assembly with a quarter turn clockwise. Note the orientation of the Firestick in the socket in the photo below. Plugging a Firestick in backwards will destroy the on-board timer chip.



The Inner and Middle Firestick are connected together with a single wire. Carefully stretch out the wire. Install the Inner Firestick into the Inner socket, then install the Inner socket into the Lens Assembly with the wire routed out of the socket hole in the Lens Assembly. Be sure to route the wire to minimize crushing the wire when the socket is seated - there is plenty of room for the extra wire.

Install the Middle and Outer Firesticks into the Middle and Outer Sockets and install into the Lens Assembly in the same manner as the Inner Firestick. Note that the Outer Firestick does not have an extra wire connected to it as does the Inner and Middle Firesticks.



Re-installing the Lens Assembly is the reverse of removal. Place the Lens Assembly near its opening. Push the harness wires, connector and rubber grommet through the hole in the trunk wall. Connect the 4-pin harness connector to the receptacle in the trunk wiring harness. Make sure no wires are pinching against sharp metal.

Testing the Sequential Firestick System

Before securing the Lens Assembly to the trunk wall with its mounting nuts, test the Brake & Parking Firestick LEDs for proper operation - easier to troubleshoot now rather than once everything is buttoned up.

Activate the 4-way hazard light button behind the steering wheel. The Inner, Middle and Outer Firestick Brake Lights should fire, in sequence, from the center of the vehicle toward the fender. If they are sequencing backward, reverse the Inner and Outer Firesticks in the Lens Assembly.

Turn your headlights on to be sure that the parking LEDs are functioning properly.

Turn the headlights and 4-Way Hazard Warning Lights off, and convert the other Lens Assembly to LED Firestick operation. Temporarily re-install the Lens Assembly and run the same test again to verify LED Firesticks are installed correctly.

Check your backup light (which is still an incandescent lamp in the Lens Assembly Harness) by having someone verify that the lamp lights when you put the vehicle's transmission into Reverse (ignition key will need to be On). Easier to replace a backup lamp now than after remounting of the lenses.

After the test, return the transmission to Park, shut off all power & remove the ignition key.

Slow Cycle Time Flasher

Most folks like the sweeping sequential look to the Firestick Sequential LED System with the stock flasher cycle time, others find that the OEM cycle rate too fast and would rather see a slower, more pronounced dwell at the end of the sequence.

A Slow Cycle Firestick Flasher is available from MustangSequentialFirestick.com. It is a custom Flasher designed to work with the Firestick Sequential LED timing on your 96-2004 Mustang. The Firestick Flasher is internally configured for a slightly slower cycle time than the stock flasher.

Ensure that your Firestick Flasher packing box is marked with an “S” that indicates that the flasher has been configured for a slower cycle time than stock OEM Flasher.

The MustangSequentialFirestick.com website can provide you prices and ordering information for the Slow Cycle Firestick Flasher.

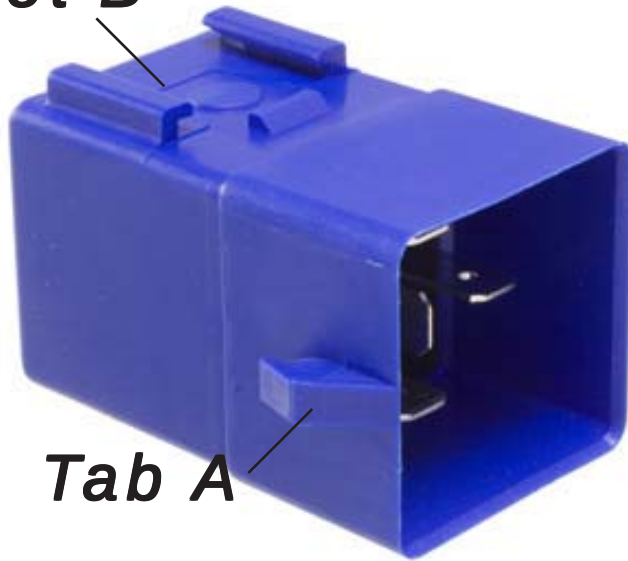


Your OEM flasher is located behind your dash panel, just above the driver's right kneecap. The brightly colored OEM flasher is clipped to the either the firewall, frame support or transmission tunnel, and its connector has a latch to firmly hold the connector to the flasher, and keep the flasher from moving around behind dash.

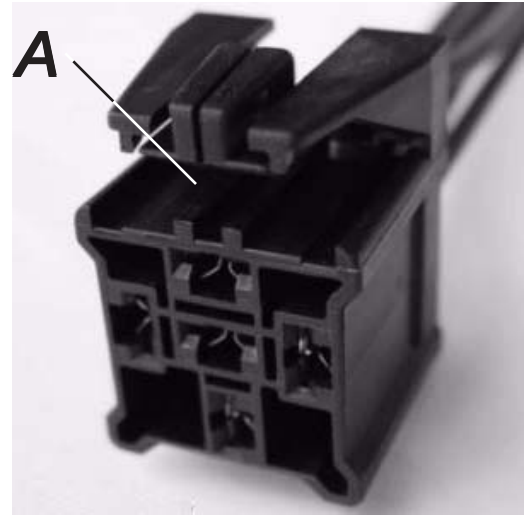
Reach up and grasp the flasher and connector as a group. Then carefully (wiggle &) slide the flasher down and out of the metal clip that is attached to the firewall, frame support, or transmission tunnel. Be circumspect while doing this - there are a lot of sharp edges and pokey things that can (and will) draw blood. Once the flasher is down, lift the latch and separate the flasher from the connector. The plastic latch should still be pliable enough to allow you to lift it and release the flasher, but if you break off the latch, don't fret, it isn't all that necessary.

If you are having trouble separating the OEM flasher from its connector, the following photo should help.

Slot B



Slot A



Tab A of the flasher slides into Slot A of the connector, Slot B on the flasher friction fits onto a metal clip attached to the firewall, frame support or the transmission tunnel. The stock OEM Flasher may have a blue, yellow or green body.

This is what most replacement Electronic Flashers look like. Since there are no latching posts (i.e. no tabs or slots) in the body of the flasher, a nylon wire-tie is usually provided to wrap around the flasher body and metal mounting clip on the vehicle to secure the flasher body and keep it from wandering around under your dash. Black electrical tape can also be used to secure the flasher. The friction of the spade lugs (the 5 electrical connections) holds the flasher and the connector together if there is no tab on the flasher.



Note also that the OEM flasher has 6 blades that fit into the connector, while the replacement flasher may only have 5 blades. This is normal since, typically, the after market manufacturer eliminates the alignment (smaller, non-electrical) blade. The remaining 5 (electrical) blades are all that are necessary for proper operation. Be careful to align all the blades accurately with the connector when installing the replacement flasher.

TroubleShooting

There are three types of Firestick Circuit Boards that we provide in the Kit.

The Inner Board, which is marked “I” on the Board, comes with a red wire attached, and is intended to fit into the Inner Socket closest to the centerline of the vehicle (the other end of the red wire is attached to the Middle Board).

The Middle Board which is marked “M” on the Board, comes with a red wire attached, and is intended to fit into the Middle Socket between the Inner and Outer Sockets on the vehicle (the other end of the red wire is attached to the Inner Board).

The Outer Board, which is marked “O” on the Board, is intended to fit into the Outer Socket furthest from the centerline of the vehicle.

Any of the boards will work in any of the three 3157 brake light sockets. But mixing up the location of the sockets or the Boards in the sockets, will result in a odd sequencing of the directional signals (out of order). Whichever Board/Socket that lights first is the Inner (“I”) Circuit Board/Socket, the second Board/Socket to light is the Middle (“M”) Board/Socket, and the last Board/Socket to light is the Outer (“O”) Board/Socket. You can rearrange, if your harness permits, the sockets into their correct firing sequence, or you can move the Circuit Boards to their correct Sockets for proper operation. Follow the Installation photos.

Installing a Circuit Board backwards in a socket with power applied will probably smoke (as in, destroy) the timing chip and copper etch on the Circuit Board. The Warranty does not cover the replacment of timing chip or repairing the copper etch on the Circuit Board for free - there is a small fee for this Non-Warrenty service (Call Sales at 928-493-3687 for Non-Warranty fees). Indications of a reversed Circuit Board is smoke, burned trace on the board, or board ceases to sequence at all, when subsequently installed correctly. Please be care to align the PCB in the socket as indicated in the photos in the installation section before applying power.

Sometimes, aged Flashers, which can still barely provide enough power to run Incandescent lamps, will not successfully trigger Electronic LED Sequencers. A new Flasher will solve the problem. Generally indications of a faulty Flasher is when the 4-way Hazard switch will cause all the LEDs to trigger and sequence normally, but the LEDs will not trigger or sequence when selecting the Directional Signal Switch. We stock Flashers for the SN95 Mustang body style (1996-2004). The MustangSequentialFirestick.com website has prices and order info.

If you notice that only the Inner and Middle Circuit Boards are Sequencing, or the Outer Board is on for too short of a time, there is a good chance that your Flasher has internally changed its timing through aging of electrical timing components and is creating too short a duration flash cycle. A replacement OEM flasher can sometimes solve the problem. We can supply a Slow Cycle Flasher which is a brand new Mustang compatible replacement Flasher with the cycle rate slowed down just a tad to allow all of the Circuit Board LEDs to fire without being interrupted with a new Flasher cycle. Again, our website has prices and order info.

On the following page is a table of voltages and resistance measurements you (or your mechanic) can make which can help pinpoint trouble spots if you are having difficulty troubleshooting a non-working system. When returning product for repair, you may be asked to provide a copy of the filled out table with your returned unit.

Brake and Tail Light Wiring Voltages					
		Left Side Brake Light	Left Side Tail Light	Right Side Tail Light	Right Side Brake Light
Socket Voltages					
Parking Lights Off					
	No Action	volts	volts	volts	volts
	Left Directional Only	volts	volts	volts	volts
	Right Directional Only	volts	volts	volts	volts
	Brake Lights Only	volts	volts	volts	volts
	Brake & Left Directional Only	volts	volts	volts	volts
	Brake & Right Directional Only	volts	volts	volts	volts
Parking Lights On					
	No Action	volts	volts	volts	volts
	Left Directional Only	volts	volts	volts	volts
	Right Directional Only	volts	volts	volts	volts
	Brake Lights Only	volts	volts	volts	volts
	Brake & Left Directional Only	volts	volts	volts	volts
	Brake & Right Directional Only	volts	volts	volts	volts
Build Two Sheets of Above Measurements: 1) Engine off, Key ON, and 2) Engine Running					
Resistance Measurements					
All Power Off		To Left Socket	To Left tub	To Right Socket	Right Tub
	From Chassis Ground	ohms	ohms	ohms	ohms

Returns

Stewart Instruments warrants this product against electronics manufacturing defects for 90 days, and against remaining manufacturing defect for one year. Please use this page if you are going to return one of our products.

- 1) Please email Sales@MustangSequentialFirestick.com (or call 928-453-3687) for an RMA number. Please explain why you are returning your product. We will email you an RMA Number and the exact address to return your product.
- 2) Once you have received the RMA number, please fill out the bottom of this form and include it with your product.
- 3) Package your product carefully so that it gets to us in the condition it left you. We are not responsible for any damage due to shipping and usually do not accept packages that have been damaged in transit. Package your product carefully and securely to minimize delay.
- 4) Generally the cost of Upgrades or Repairs are covered by MustangSequentialFirestick.com if your product is within its warranty period. However, you are responsible for the shipping cost to and from our plant. Please include a check or credit card number in the amount of \$5 to cover return shipping. We can also send you a Paypal invoice for shipping costs if you prefer. Product will be shipped when shipping payment clears.
- 5) If you are retuning a NEW product for refund, you will still need to obtain an RMA (as above), and your product must be returned UNOPENED. Product that we receive that has been opened will be subject to a restocking charge if in New Condition. If in Used condition, product will be repaired and returned to you, freight collect.

Name of Product: _____

Date you Purchased Product: _____ What was the price of the product: _\$ _____

Dealer where you purchased product: _____

Your Name: _____

Your Shipping Address: _____

City State Zip: _____

Your Email Address (Make this painfully legible, please): _____

For Shipping Costs (Circle One): CHECK (enclosed) Credit Card (MC or VISA only) Paypal

Name on Credit Card: _____

Credit Card Number: _____ Exp Date: _____

Credit Card Address: (From your statement) _____

City State Zip: _____ Your Paypal Account ID: _____