

BLINKER-SPLITTER

For cars with LED lamps

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ICOS Technology Blinker Splitter.

Introduction.

The ICOS Blinker Splitter has been designed for converting USA Specification car rear lights to European Standard. The American system of direction indication is by blinking the brake lights, which is not allowed in Europe, as all direction indicators must be Amber. Prior to the invention of the ICOS Blinker Splitter the most common method of converting the lights was to wire from the front indicators all the way to the rear. This entails a lot of work concealing wires, and also creates a problem with the lamp fault indicators, and the brake lights.

Now with the ICOS Blinker Splitter it is possible to modify the cars without all this wiring. To achieve this it is necessary to monitor the brake lights to determine when they are indicating left or right turn. When a turn signal is detected the power to the brake light is diverted to either new amber lights or to amber bulbs in the reversing light. By diverting the supply from the Brake light to a new lamp, the problem of fault indication is also solved.

One Blinker Splitter covers both Left and Right turn and Hazard indication, so there is no need of any other relays or parts.

Overview

The same principal applies for LED lights as for standard filament lamps. Quite simply the center (eye level) brake light is driven directly from the brake pedal (a precaution in case of BCM failure), whilst also feeding the control box. The other lights are all fed from this control box, for the simple reason that the control box must determine whether the brake light should blink or not to indicate turn a signal, this check by the control box causes a small delay to the main brake lights operating. As a requirement by law, all cars are fitted with lamp failure warning on the indicating lights, but as we are changing the indicator lights we must over-ride this lamp failure warning device. LED lamps typically have more than 30.0000 hours of working life, so this is generally not a problem, as the LED lamp will generally outlive the car. For filament bulb lamps the current drain is used as an indication the bulb is functioning correct and is the correct value. As this is not practical for the low current drain of LED lights, a built in light sensor is used to indicate to the control box that all is well. When modifying USA car LED rear lights it is necessary to override this lamp OK signal to prevent the indicator lights blinking at double speed. This is done with the ICOS 'Lamp Failure Override' device available separately.

Note:

- **That the example installation on a Ford Mustang 2011 on the next page is serving as a case example only. You may have to adjust the installation on from car to car depending on manufacturer, year and version.**
- **On the sample instruction the ICOS lamp failure override device is shown.**

Instructions for fitting Blinker Splitter in 2011 Ford Mustang.

First remove trim from inside rear of boot (trunk). This is fastened with 2 screwed fittings and 2 push in plastic rivets and also 2 moulded clips at the top, so it must be lifted upwards, the boot floor must be lifted to allow for this. Disconnect the boot interior light, lower boot floor back into place to work on.

Remove the rear light units on both sides. These are held with 3 X 11mm nuts inside the boot.

Position the Blinker-Splitter to the rear of the boot, in the centre for measuring out wires. When connecting the wires allow spare 200 mm for manoeuvring.

Locate the wiring harness to the boot (trunk) lid, located right hand side. Open and remove the harness cover (black ribbed sleeve, slit down one side), this will be rapped with adhesive taped. Locate the YELLOW wire, this is the eye level brake light feed. Connect a wire from this, tucking it behind the boot lining around to the rear centre of the boot, connect other end to the centre brake input on the blinker splitter.

Connect ground wire from either of the grounding bolts at the back of the boot to the ground of the splitter.

Starting with the left lamp cluster, cut the feed wires to all the brake lights, these are RED, WHITE AND YELLOW/ RED, leave at least 30mm tail at lamp end.

Connect a wire from the WHITE feed end (not the lamp end), thread though the spare grommet and connect to the Left Brake Input on the splitter.

Connect all three brake lamps together (lamp end of RED, WHITE and YELLOW/RED wires), and connect these with a single wire through the grommet to the Left Brake Output of the splitter.

Locate the BLUE wire that connects the 2 reversing lights together. Cut this wire close to the inner reversing light. Connect wire from the outer reversing lamp (BLUE wire) through the grommet to the 'Left Indicator Output' of the splitter.

Locate GREEN/WHITE and BLACK wires from Inner Brake Light. Bare a small length about 3-4mm of each of these about 30mm from lamp, and connect 'Lamp Failure Override' unit 'Output' to GREEN/WHITE wire, 'Ground' to BLACK wire. Connect 'Input' to YELLOW/RED wire feed (not Lamp end).

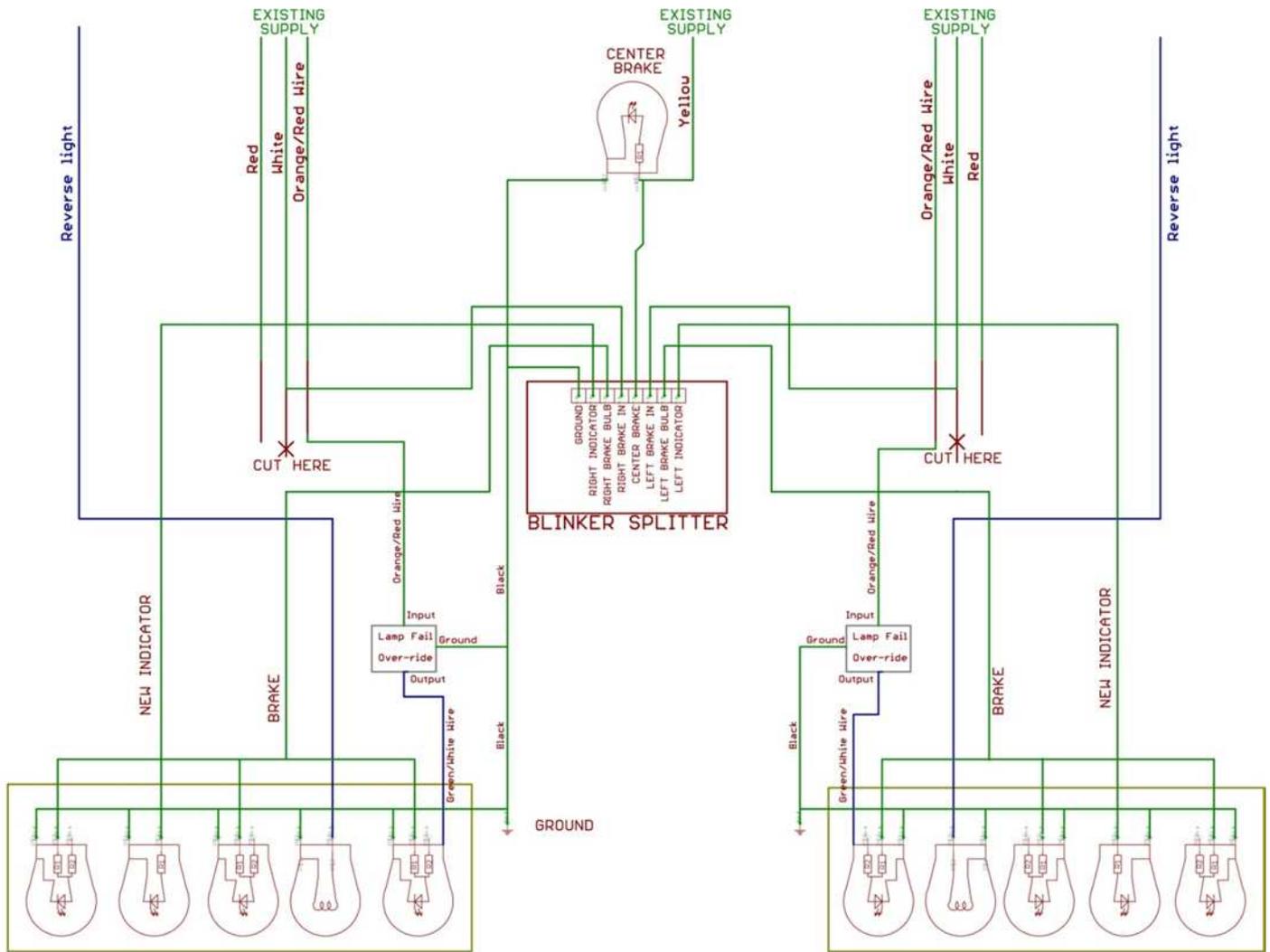
Repeat above for the Right Hand Lamp Cluster, connecting to the appropriate (Right hand) splitter connections.

Insulate any bare wires or unconnected cut ends, tie into a neat loom, and refit both lamp clusters.

To the left of centre of the boot rear, there is a large hole into the bumper, the Blinker-Splitter box can be wrapped in soft material and will fit into this space.

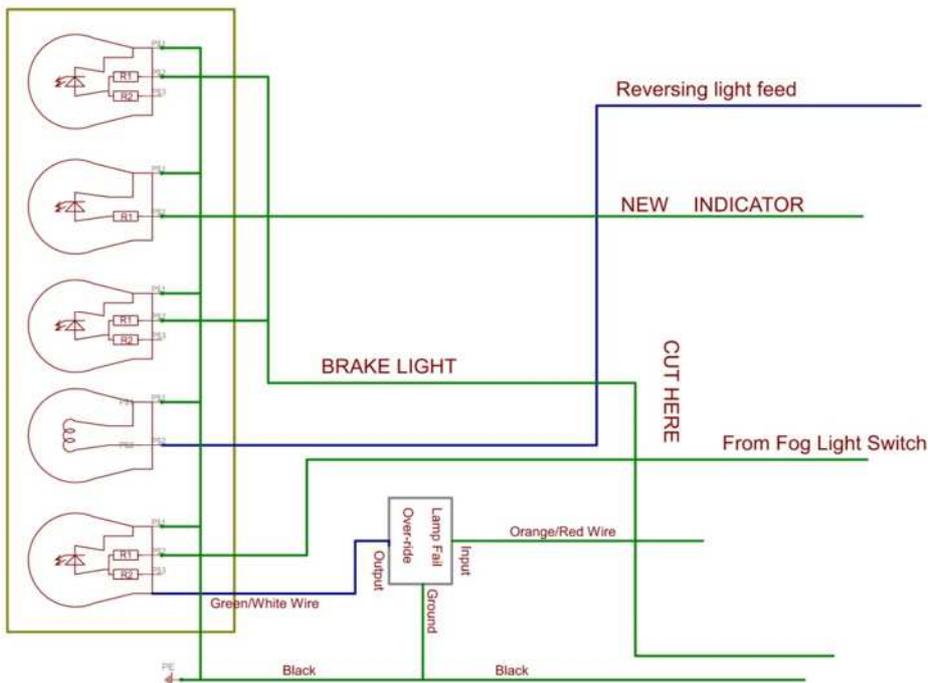
Refit boot rear lining, remembering to connect the interior light. Re-wrap boot lid harness and tape.

Circuit Diagram of Blinker Splitter installation (connections to normal tail lights not shown).



Note.

The inner brake lights could be used as Fog Lights if required, below is a part circuit showing this.



Hints and Tips

Always use good quality new wire, and terminal blocks.

Problems and Solutions

P. No brake lights or indicators at all.

S. Check Ground (Earth) connection to Blinker Splitter.

P. Left or Right hand Indicator not working.

S. Check polarity of connection to lamp (try rotating lamp in socket, LED lamp will only work if they are connected the right way), Check wire to nonworking lamp, check incoming connection for nonworking side.

P. Left or Right hand brake light not working.

S. Check lamp connection, Check wiring from Splitter to nonworking lamp,

P. Incorrect signalling.

S. Check all input wiring and ground connection.

P. Lights blinking too fast.

S. Check lamp failure override device is connected correctly.