Puddle Lite Kit™

Installation Document

Off Road Only
ph 651.644.2323
www.offroadonly.com
oro-info@offroadonly.com

This document designed to aid in installation of a circuit to operate the LiteSPOTs under chassis lights with illumination of the dome light on a Wrangler JK and JL, as the doors are unlocked via the remote door control.

Parts in kit:

- Heat shrunk control circuit with harness
- Crimp connectors
- Switch
- Fuse tap
- (6) LiteSPOTs white, or color as ordered
- (6) stainless mounting brackets
- (6) sets of hardware to attach LiteSPOTs to brackets
- Harness supplies to wire as suggested
- Zip Ties

Tools Needed to install in most applications:

- Small screwdriver or knife
- Wire cutter
- Wire Stripper
- Heat gun (High heat hair dryer may work)
- Drill and uni-bit to provide mounting for switch
- Hex Wrench and other hand tools

Wiring color code:

On the control circuit, the wiring is color coded as follows:

Black	Ground, connect to dash structure
Gray	Signal wire, connect this to a circuit that turns on when the dome light is engaged
Red	This wire should go to a fused (10 amp) circuit, its long enough to go to the Tpim module
Yellow	Control circuit number 1 (connect to switched side of rock light circuit)
Green	Control circuit number 2 (optional, designed for interior lights)

The idea here is to insert this control circuit between the factory dome light circuit and the option lights you wish to control via the dome light.

The control circuit is powered from a separate fused circuit and will not tax the vehicles dome light circuit more than the few milliamps to engage the relay. We have designed this circuit to match what we have found to be very functional on our Jeeps. Our application has a set of LiteSPOTs under chassis lights as well as a set of LiteSPOTs used inside the Jeep in the footwells, front and rear, to provide additional light inside the vehicle. This circuit will be added between the switches you have installed to control those circuits and the dome light circuit. When this is wired as we describe, the unlocking of a door or turning on the dome light from the turn signal switch will illuminate the other lights as well.

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The process to do this is quite simple. Install and wire the lights you wish to control. Mount the switch inside the Jeep as you wish to control those lights. Then before you completely wire the switch, specifically the output to the lights from the switch, simply connect the yellow or green wires (just 1 per circuit, there is provisions for 2 separate circuits) into that connection. This way, when the control circuit is engaged, it will provide power directly to that circuit, without the switch. Do this for the second set of lights and connect to the other yellow or green wire.

The black wire on the control circuit will need to be mounted to the dash structure, or any other good chassis ground for the circuit to work.

The Red wire needs to be run directly to a 12 volt power source. If you have a fused lead inside the vehicle, tie to that. We have left this wire long enough to pass thru the firewall and go directly to the Tipm module, the fuse box ahead of the battery on the JK. We have supplied a fuse tap and connector to tie this into a circuit inside the Tipm fuse box, as shown in the following image. This circuit is for the trailer lights and is energized all times, connect to the side as shown (far side of fuse as shown in this image) in the following image.

The last wire is the gray wire. This the one that needs to be tied to the positive side of the dome light circuit. Some JK's have a small LED light in the foot well, you can dissect this light and tie into the power side of this circuit. If your Jeep doesn't have this factory foot well lighting, you will need to remove the instrument cluster to find the dome light control circuit to tie this gray wire to.

If your JK is equipped with the foot well lights (most 2013 and newer models) then remove that light assembly in the drivers foot well and locate the yellow wire with the white trace. This is the wire that should be 12V positive once the dome light circuit is activated. Simply tie the gray wire to this yellow with white trace, and this will turn the relay on when the dome light circuit is activated. We recommend not cutting the wire, but simply removing some of the insulation, piece the strands of sire and pass the new wire thru the opening, then wrap the remaining wire around the original wire, and tape or over with something insulating.

If your JK does not have the foot well lights, then the yellow with white trace wire you need to find is easiest found at the plug on the bottom of the instrument cluster. Removal of the instrument cluster is not hard, most panels are snap together parts. If you are familiar with this process, remove it. We need access to a yellow wire with white trace that is in the plug to the instrument cluster.

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If you are not familiar with the process, easiest way to do to learn how to remove them is by watching Youtube videos. Search for your year of JK and “removing instrument cluster” and you will get some videos, some good, some bad.

Once you get access to the yellow wire, simply tie the gray wire to the yellow with white trace. This is the circuit that energizes the dome lights. When you tie the gray wire into it and have the black wire on the control circuit grounded, this will now turn on the relay, which will turn on the yellow and green wires to power up 2 external light circuits (designed for one inside and one outside)

LiteSPOTS
Under Chassis lighting installation Document

Each LiteSPOT has a single lead wire that has 2 conductors in it. One wire has a black trace on it, this is the ground wire and the wire strands are silver in color. The other, non-black trace wire is the 12 volt positive supply wire, and this wire is copper colored.

Switch

The small light rocker switch included with the LiteSPOTs kit has 3 terminals. The pin out is as follows:

1. 12 volt supply (Outside, opposite the copper)
2. switched output to the light circuit (center)
3. Ground, to operate the light on the switch (copper color terminal)

You may wire the 12 volt supply to nearly any circuit in the vehicle, as these units draw 1/10 of an amp per unit, or 10 of them on one circuit will draw about 1 amp, and most any circuit in the vehicle should be able to handle the draw.

Connecting the supply to a key on circuit will prevent accidentally leaving the lights on after the key is turned off, however, sometimes it is nice to have them on without having the key on, pick your supply circuit accordingly.

Included in the kit is crimp style push on connectors to connect to the switch, and a crimp on ring terminal and self tapping screw, if you need to ground the switch to the vehicle chassis.

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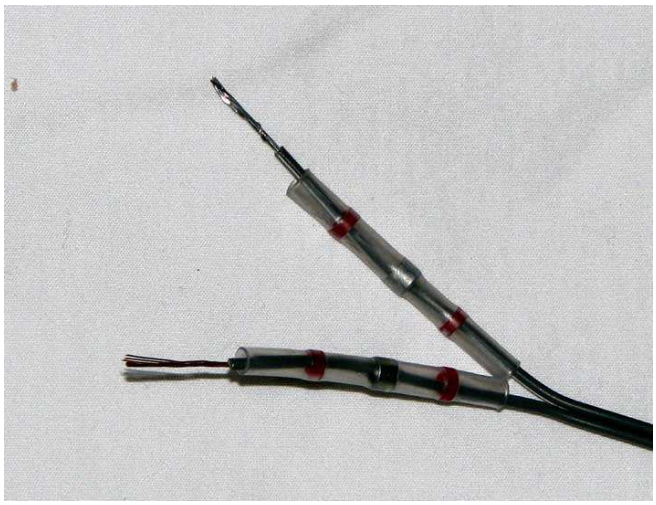
Solder Seal Connectors

There is solder seal connectors included in the kit. These connectors are not only a heat shrink with sealant to seal out moisture, but also have a ring of low temp solder in the center, creating the best possible connection when melted with a high temp heat gun.

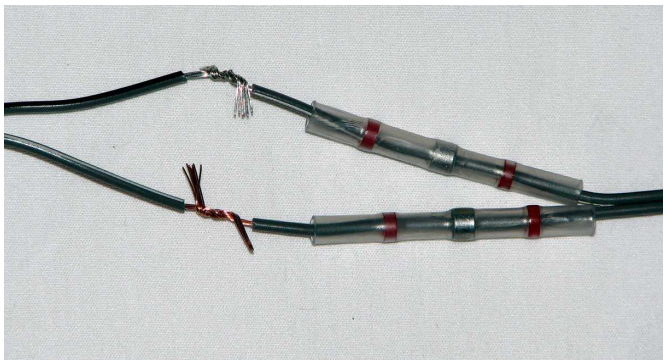
Solder Seal, Step One

After separating the 2 wires for about 2" long, strip approximately ¾" of insulation from the wires. Slide a solder seal over each of the wires as shown.



Solder Seal, Step Two

On the mating wires, again separate the 2 wires for about 2" long and strip approximately ¾" of insulation from the wires. Now, connect them by crossing and twisting the wires, past the point shown in the picture.



Solder Seal, Step Three

Slide the solder seals over the connection, position the silver (solder) ring in the center of the bare wire splice, and heat with high temp heat gun (open flame not the best, hair drier probably not hot enough.) to shrink the shrink and melt the solder to complete the connection.

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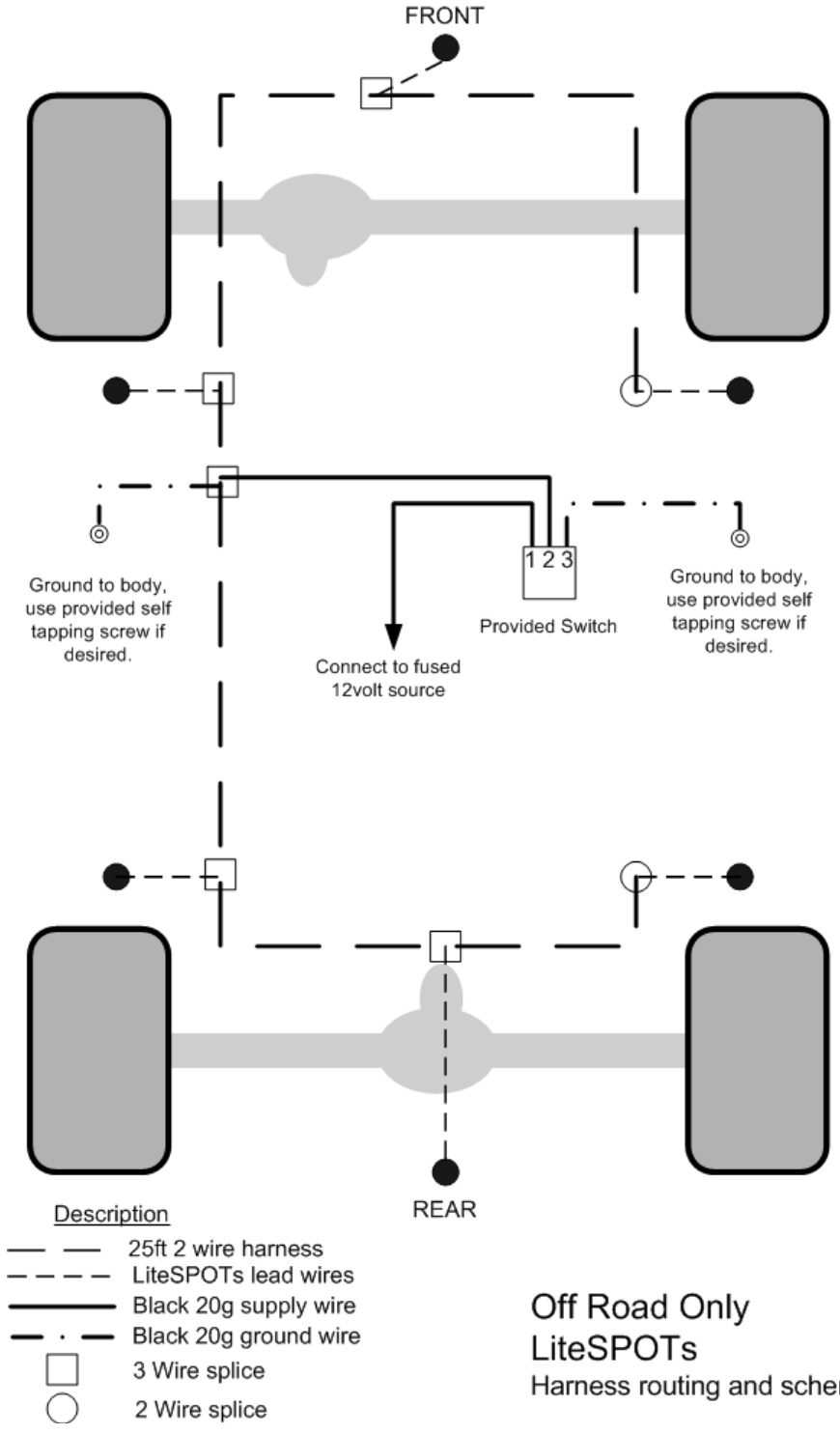
Three wire splice

There is a couple points in the harness that will require a third pair of wires to be tied into the connection. Simply perform steps 1 thru 3, and then with the 3rd pair of wires, simply slide those wires into the solder seal, and heat to shrink. In the following diagram, the 2 pair splices are highlighted with a Circle around the junction; the 3 pair splices are highlighted with a square.

The image on the right shows our typical recommended routing procedure for the LiteSPOTs when used as rock lights. The idea with the Puddle Light kit is to mount all of the lights between the front and rear wheels, however you may mount them whereever you wish!



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