

# HOT LICKS EXHAUST

## Basic Kit Flamethrower Installation Instructions for Automobiles and Motorcycles

### How It Works

Hot Licks Exhaust Inc. flamethrower kit works is by using a 3-pole momentary push button that, when activated, temporarily breaks the circuit powering the engine's ignition coil/s and simultaneously supplies a 12-volt high speed pulse to spark plug/s mounted in the exhaust using a specially calibrated solid-state electronic flamethrower control module. This in turn results in the unburned gas-air mixture passing through the exhaust being ignited into a blue/orange blow torch type flame at the end of the exhaust tip. The shooting flames can be achieved while in park, neutral, or while moving.

If activated while moving, you will have flames an extended period of time depending on your speed. At a standstill you will have flames for a few seconds while the engine winds down until you let off the button just before the engine reaches the idle rpm range. Using this flame kit requires a little practice and should only be used off-road and never on public streets or property.

### Procedures

**Warning:** *Never test flame control module unless spark plug/s are mounted in exhaust tail pipe and connected to the flame control module. Doing so can damage the module and void the warranty.*

1. Measure 8 to 10 inches from the tip of the exhaust. Drill a 9/16" hole about (8) inches from the tip of the exhaust for motorcycles and about (10) inches from the tip of the exhaust for automobiles. If you cannot drill a hole 8-10 inches from the end of the tip get as close as you can. Some tips go directly in to the muffler only allowing you to be at 4-6 inches from the end. This will generally be acceptable if this is your only option, but 8-10 inches is preferred.

#### Caution!!

Once you drill a hole, it is permanent! If you have any questions about where to drill the hole, please call us for advice before you drill. Hot Licks Exhaust, Inc. will not be held responsible for any modifications to your pipes even if your motorcycle or automobile does not produce flames with the kit installed. If you do not want to drill a hole and have spark plugs sticking out of your expensive pipes, you may use a dedicated set of exhaust tips to mount the bung nuts/ spark plugs in. This would allow you to remove the dedicated set of exhaust tips when you do not want to shoot flames and install the tips when you do want to shoot flames, thus leaving your existing exhaust unmodified.

**NOTE:** This may not be a viable option for every application.

2. Weld the spark plug bung nut over the hole you just drilled into the exhaust pipe/s. You do not have to weld completely around the spark plug bung nut, but it must be secure. If you cannot weld them in, you can insert the plug in the hole and then thread the bung nut on from inside the exhaust pipe. If your arm won't fit in the exhaust, use a long boxed end wrench. You can tape the nut into the boxed end with some electrical tape to hold it in place while you stick the wrench up in the exhaust. Install the spark plug by threading it into the bung nut and tighten firmly. Over time vibration may cause the spark plug to loosen and the bung nut may fall out so use some high temp Loctite and periodically check for tightness. Welding the bung nut will alleviate this from ever being an issue. The spark plugs come gapped with a large gap at about 1/8" wide for best results.
3. Mount the Hot Licks Exhaust Inc. flame control module within 4 feet of the tip of your exhaust (for automobiles- in the trunk or under the rear of the vehicle; for motorcycles- under the seat, in a bag, or on the frame). If you want to mount the flame control module box further than four feet from the tip/s of the exhaust you will need additional low profile flame cable (available from Hot Licks Exhaust, Inc.).
4. You can shorten the length of the spark plug cable if you need to before attaching the spark plug boot. The spark plug boots have one end with a silver threaded needle that will screw in to the end of the spark plug cable. Insert the end of the spark plug cable in to the spark-plug boot and turn it clockwise about 4-5 times while applying pressure until it bottoms out.
5. Connect the black wire coming out of the flame control module to a good solid ground on the chassis using the self tapping screws included in the kit. Good solid grounds are important.
6. Drill a 1/2" hole on a flat panel area somewhere easily reachable from the driver's seat to mount the momentary push button. The dash or in the console is usually a good place to mount the button on automobiles, and for motorcycles you may have to get creative to find somewhere to mount the button that is within reach while sitting on the motorcycle. Down by the seat is a good place to start looking. Alternatively for motorcycles, you can use your own handlebar friendly button, but you will need to contact us for a special wiring diagram that requires you to use a relay with your own button.

## Under the Hood

7. Most engines will have 1, 4, 6, or 8 ignition coils on the engine. Your objective is to find the wire/s that send 12 volts to your ignition coil/s only (for efi applications we want the fuel injection system to stay powered). To shoot flames when you press the button we want to divert the power going to all the ignition coils and redirect that power to the flame module for a few seconds at a time. Use a light tester/multimeter to help verify you have the correct wire that sends 12 volts to all the engine's coils when the key is turned on. A wiring schematic for your automobile or motorcycle's ignition system will save you a lot of time

**NOTE:** most Harley Davidson motorcycles use a yellow wire with a green stripe for the 12-volt wire. Not all, but some fuse boxes in the engine bay will have a fuse named "ignition coils". If you have this fuse named "ignition coils" you can disassemble the fuse box and locate the color of the wire going to this fuse, then find that wire right outside the fuse box in the wiring harness.

- 8.** Once you determine the proper wire, you will need to cut it in half. This wire will send 12 volts to your ignition coil/s when the automobile or motorcycle's key is turned on or while the engine is running, no volts when the automobile or motorcycle is turned off. Each automobile or motorcycle is different, so you may have to check several wires with a light tester to find the proper one.
- 9.** After cutting the -12volt wire to the ignition coil/s in half, extend the two halves by crimping some of the 16 gauge primary wire (supplied in the kit) on a butt connector to each wire half. The two new wires should be long enough to pass through the firewall to reach the momentary push button top and bottom terminals.
- 10.** Connect the wire half coming from the coil/s with no voltage to the top terminal of momentary push button closest to the red button top after crimping a blue female spade connector on to the end of the wire .
- 11.** The other wire half should have 12 volts hot when the key is turned on. Connect it to the bottom terminal on the momentary push button after crimping a blue female spade connector on to the end of the wire. Some motorcycles will only send power to the ignition coil/s for a second while the fuel pump cycles and then will have no voltage until the motorcycle is started). If you have an MSD box, cut the red -12volt wire going to the box, not the wire going to the coil.
- 12.** To disassemble the push button in order to install it, pull up the red button top until it pops off and unthread the chrome ring. Insert the push button threaded shaft through the hole you drilled. Thread the chrome metal ring on and tighten, then push the red button top firmly into place. You are ready to test.

## Quick Test:

**Test 1** - Turn the key on without starting the engine and hold the momentary push button down briefly. You should see the spark plug/s sparking in the exhaust pipe. If no spark then make sure you are getting 12 volts at the red wire on the flame module. Also make sure you have a good ground on the black wire from the flame module.

**Test 2**- With the engine idling, press the flame button. The engine should turn completely off if it is wired correctly. If the engine does not turn off when you hold the button down it is not wired correctly. Make sure you find the correct wire or the kit will not work properly.

## How to shoot flames:

Make sure you warm the engine up to operating temperature or you will not get any spark or flames. If the engine is cold or just warm, condensation/water will foul the spark plugs and they will not spark until the exhaust and engine are at operating temp. Rev the motor up a few times about 3/4 of the RPM range. You want to bounce the rpm's up and down just like you were getting ready to race someone. No need to red line the rpm's, but we want some healthy revs.

At the top of any rev push the momentary push button and hold it in. Immediately hold the gas pedal to the the floor. The engine will start to shut down. This is normal and what we want to happen. While the engine rpm's go down, continue holding the pedal to the floor. Let go of the button just before the engine reaches idle rpm's and then release the gas pedal. If you leave your foot off the pedal or hand off the throttle when you let off the momentary push button, you may experience back firing. If you still get backfires, then check for exhaust leaks. If no exhaust leaks exist and you still get backfires, it is probably due to your mufflers having many chambers or baffles in them. The only fix for this is to install a less restrictive muffler without as many chambers/baffles. If possible, we recommend using a special muffler called "Smithy's Mufflers," a glass pack, or a more open style muffler with very few chambers. Each car is different and may take some practice to get the flame throwing art down.

**Warning:** Never use the Hot Licks Exhaust, Inc. flame box on public roads. Only for recreational off road use. Always be safe and have a fire extinguisher nearby. Never use in a garage or closed-in area. Never use within 500 feet of flammable substances such as gas stations or gas cans. Never use while anyone is behind the vehicle. Hot Licks Exhaust, Inc. shall not be liable for accidents, property damage, or bodily injury directly or indirectly from any defect or non-defect in its product/s or from product's use. Hot Licks Exhaust, Inc. makes no warranty expressed or implied that any of our products are merchantable or fit for any particular use or purpose. All photos, instructions and diagrams are copyrighted and must not be used without the express written permission of Hot Licks Exhaust, Inc. Copyright © 2023 Hot Licks Exhaust, Inc. By purchasing this product you have agreed to the above terms

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## Basic Kit Wiring Diagram

Use this diagram for carbureted and E.F.I. motors. This method works on most all applications.

