How It Works

The way the 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 and simultaneously supplies a 12-volt pulse to spark plugs 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. 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.

Getting Started

1. Always be careful not to short out any wires connected to the flame control module box by grounding a positive wire or touching a positive wire to a ground on the box. Unlike all other kits on the market, this kit does not use any automotive coils and will be damaged if connected to automotive coils.

2. This kit comes complete with everything you need to install the kit and shoot flames.

Tools Needed

- Cordless Screwdriver
- 1/2” drill bit
- 9/16” drill bit
- Wire strippers/crimpers
- Light Tester or Multimeter
- Welder (optional)

Procedures

1. Measure 8 to 10 inches from the tip of the exhaust [photo 1]. Drill a 9/16” hole about eight (8) inches from the tip of the exhaust for motorcycles and about ten (10) inches from the tip of the exhaust for automobiles [photos 2, 3, 4].

   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, some people 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 over the hole you just drilled into the exhaust pipe/s [photos 5, 6]. You can use stainless wire with argon silver shield gas to get a weld that will not be as prone to rust. Also, you do not have to weld completely around the spark plug holder nut, but we recommend it. If you only weld the bung nut partially [photo 7, next page], it may allow oxygen to be sucked in when shooting flames, which may cause a backfire.
If you want to use your horn button or some other on/off type handlebar mount friendly button in place of the momentary push button supplied in the kit, you will need to contact us for the schematic that shows how to wire in a relay with any standard on/off button. To remove the black push button, completely unscrew the metal ring and pull up hard enough to pop off the black push button. You have to pull hard, so don’t worry about breaking the switch. Insert the push button threaded shaft through the hole you drilled, thread the black plastic nut on along with the metal ring, and push the black push button firmly into place. Once installed, the button should kill the motor when pressed and simultaneously ignite the spark plugs in the exhaust pipe/s. 

3. Mount the Hot Licks Exhaust Inc. flame control module/s within four (4) feet of the tip of your exhaust [photo 13] (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. Crimp on a blue ring terminal to one end of the four (4) foot piece of low profile flame cable [photo 14]. You can shorten the length of the low profile flame cable if you need to. Unscrew the nipple cap on the top of the spark plug/s. Screw the spark plug into the plug bung [photo 15]. Place the ring terminal over the threaded shaft on top of the spark plug and screw the nipple cap back on the spark plug to hold the ring terminal in place [photo 16]. Use some pliers to tighten it. If you want to use some custom spark plug wires in place of the black four (4) foot piece of low profile flame cable/s, you can.

5. Crimp on a female spade connector to the other end of the flame cable and connect it to the male spade on top of the flame control module/s.

6. Connect the black wire coming out of the flame control module/s to a good solid ground on the chassis using the self tapping screws included in the kit. Good solid grounds are important.

7. Drill a 1/2” hole on a flat panel area somewhere easily reachable from the driver’s seat to mount the momentary push button [photo 17]. 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. The button housing can easily be taken apart to produce a small microswitch that can be attached just about anywhere using some double sided tape.

FOR MOTORCYCLES

If you want to use your horn button or some other on/off type handlebar mount friendly button in place of the momentary push button supplied in the kit, you will need to contact us for the schematic that shows how to wire in a relay with any standard on/off button. To remove the black push button, completely unscrew the metal ring and pull up hard enough to pop off the black push button. You have to pull hard, so don’t worry about breaking the switch. Insert the push button threaded shaft through the hole you drilled, thread the black plastic nut on along with the metal ring, and push the black push button firmly into place. Once installed, the button should kill the motor when pressed and simultaneously ignite the spark plugs in the exhaust pipe/s.
Under the Hood

8. Using a light tester, find the wire that sends 12 volts to your engine’s coil/ignition system when the key is turned on [photo 18]. 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). The distributor should have a plug on it with several wires. You will need to test each wire to determine which one feeds the coil 12 volts. Your objective is to find the 12-volt wire/s that powers your ignition system. Make sure you find the correct wire or the kit will not work properly. You may think you are disabling the engine’s spark just because the engine is shutting down when in reality you might just be shutting off power to another component that allows the engine to run. This will cause you to have no flames. Double check this part of the installation. Again, we want to disable the spark to all spark plugs on your engine when the button is pressed.

9. Once you determine the proper wire, you will need to cut it in half [photos 19, 20]. 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. Look on the side of the push button switch to see the letters beside each terminal for the next 3 steps.

10. After cutting the 12-volt wire to the ignition coil 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 [photos 21, 22]. The two new wires should be long enough to pass through the firewall to reach the momentary push button terminals [photo 23]. The third wire will be discussed in step 13.

11. Connect the wire half coming from the coil (or HEI) with no voltage to terminal NC (top terminal of momentary push button).

12. The other wire half should have 12 volts hot when the key is turned on. Connect it to terminal COM (bottom terminal) on the momentary push button (on some motorcycles this wire will only have power 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 12-volt wire going to the box, not the wire going to the coil.

13. Connect the red wire from the flame control module/s to terminal number NO (middle terminal) on the momentary push button [photo 24]. If installing two modules for dual exhaust, connect both red wires from each flame control module together using a butt connector included in the kit and run a wire from the butt connector to terminal number NO, the middle terminal.

14. To disassemble the push button in order to install it, completely unscrew the metal ring and pull up to pop off the black push button. You have to pull hard, so don’t worry about breaking it. Insert the push button threaded shaft through the hole you drilled. Thread the black plastic nut on, along with the metal ring, and push the black push button firmly into place [photos 25, 26, 27, 28, 29]. You are ready to test and fire. Once installed, the button should kill the motor when pressed and simultaneously ignite the spark plugs in the exhaust pipe/s.
Quick Test

Turn key on without starting the motor, and hold the momentary push button down briefly, and you should see the spark plug/s sparking in the exhaust pipe. A bad ground is usually the problem if you don’t see the spark plugs sparking. Make sure you warm the car up to operating temperature or you will not get any flames. Rev the motor up a few times, and at the top of the rev push the momentary push button and hold in. The engine will start to shut down. This is normal and what we want to happen. While the engine rpm’s go down, try either holding the pedal to the floor or pump the throttle back and forth rapidly. Let go of the button just before the engine reaches idle rpm’s and make sure to have the throttle or pedal pressed 1/4–1/2 way when you let off the button, and then try it again. 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 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 © 2012 Hot Licks Exhaust, Inc. By purchasing this product you have agreed to the above terms.
HOT LICKS EXHAUST
Basic Kit Wiring Diagram

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

- Ignition Switch
- Push Button
- Flame Control Module
- Black Chassis Ground
- Red wire
- Positive side of your factory ignition coil
- Spark plug mounted 8-10 inches from exhaust tip

Spark plug mounted 8-10 inches from exhaust tip

Black Chassis Ground