

# V8 2011 Ford Mustang

## N2MB WOT Box Installation Instructions

**NOTE:** If you have a CDI (capacitive discharge ignition system) please contact us at [support@n2mb.com](mailto:support@n2mb.com) for additional instructions. Damage to your WOT Box can occur if the installation is not completed correctly! All stock ignitions are inductive, not capacitive; if you haven't installed a capacitive ignition system on your vehicle, it doesn't have one.

**WARNING:** Spark-based rev-limiters can damage catalytic converters. If you have catalytic converters on your car, N2MB accepts no responsibility for damage caused by the WOT Box. This being said, many successful installs have been made on Catalytic-Converter equipped vehicles. Damage usually is only caused by using the launch-control feature for more than a few seconds, but once again, **USE AT YOUR OWN RISK IF YOU HAVE CATALYTIC CONVERTERS!**

Please visit our website at <http://www.n2mb.com> for the latest version of the WOT Box software and installation instructions.

Solder all joints. The N2MB recommended soldering method is available at <http://www.n2mb.com>. Use a multimeter to verify all wires before they are cut or tapped into. The colors of wires from model year to model year may differ, and may be different on your car from those described in these instructions. Where discrepancies are known, they are described, but there may be more discrepancies than those listed. The best way to know that you have the right wire is to check the connectivity to the ECU and/or sensor at the pins described.

In these instructions, pictures include other aftermarket alterations in addition to the WOT Box. N2MB is not affiliated with these devices. In addition, if you see something that isn't in your vehicle, don't worry.

Route wires in the manner that you want them to lie permanently before connecting them. Cut wires to length before soldering; avoid coiling wires of excessive length as they can cause noise in the circuit, altering the operation of the WOT Box. Spending some extra time here will enhance the aesthetics of the install. Zip ties are included to secure the wires away from heat, moving parts, sharp edges, or anything else that can damage the wires.

Included in the WOT BOX kit:

- WOT Box
- Wiring harness
- USB to Serial Converter for future software upgrades
- Ground lug
- Zip ties
- Heat shrink tubing

You will need:

- Wire Strippers
- Soldering Iron or Station
- Metric Socket Set
- Sandpaper
- Heat Shrink (if more than is included in the kit is needed)
- Electrical tape
- Zip Ties (if more than is included in the kit is needed)
- Razor Blade or Sharp Knife
- Multimeter or Ohm Meter
- Screwdriver or other sharp object
- RTV or Hot Glue (optional)
- 7/16' Rubber Grommet with ¼' internal hole

WOT Box Wire Color	Vehicle Wire Color	Description	Pin @ Device	Pin @ PCM	Pin @ Bussed Electrical Center
Blue	Blue/White	Accelerator Pedal Position Sensor	5	29B	n/a
Yellow	Yellow/Violet	Crankshaft Position Sensor Positive	2	13E	n/a
Green	Green/Violet	Cruise Control Clutch Switch (Clutch Deactivation Switch)	1	21T	n/a
Red	Red	Ignition Coil Power	3	n/a	fuse 40, 15A
Black of R&B Pair	Red	Ignition Coil Power	3	n/a	fuse 40, 15A
Black, Single	n/a	Ground	n/a	n/a	n/a

**Figure I: Wire Pinout**

Notes:

- 1) The letters after the PCM pin numbers indicate which of the three cam lock PCM connectors the pin is a part of. B is the bottom connector, E is the middle connector, and T is the top connector (see step 10.)
- 2) While the wire that the **RED/BLACK WOT Box Pair** must be spliced to connects to Pin 3 on the coils, it is split after the Bussed Electrical Center (“BEC” or “fusebox”) and connected to Pin 2 on EACH coil. If the **RED/BLACK WOT Box Pair** is connected at the coils, each wire of the pair must be spliced to pin 2 of each of the 8 coils. It’s far easier

to disassemble the BEC and splice at the fuse. Pin 2 on a coil may be used, however, for continuity checking to ensure the correct wire has been found.

- 3) There may be multiple wires of the same color in each ECM harness bundle. If in doubt, remove the back covers of the ECM plugs to ensure that you find the correct wire numbers.
- 4) These instructions were written with the help of a 2011 GT500. Your vehicle may differ slightly.

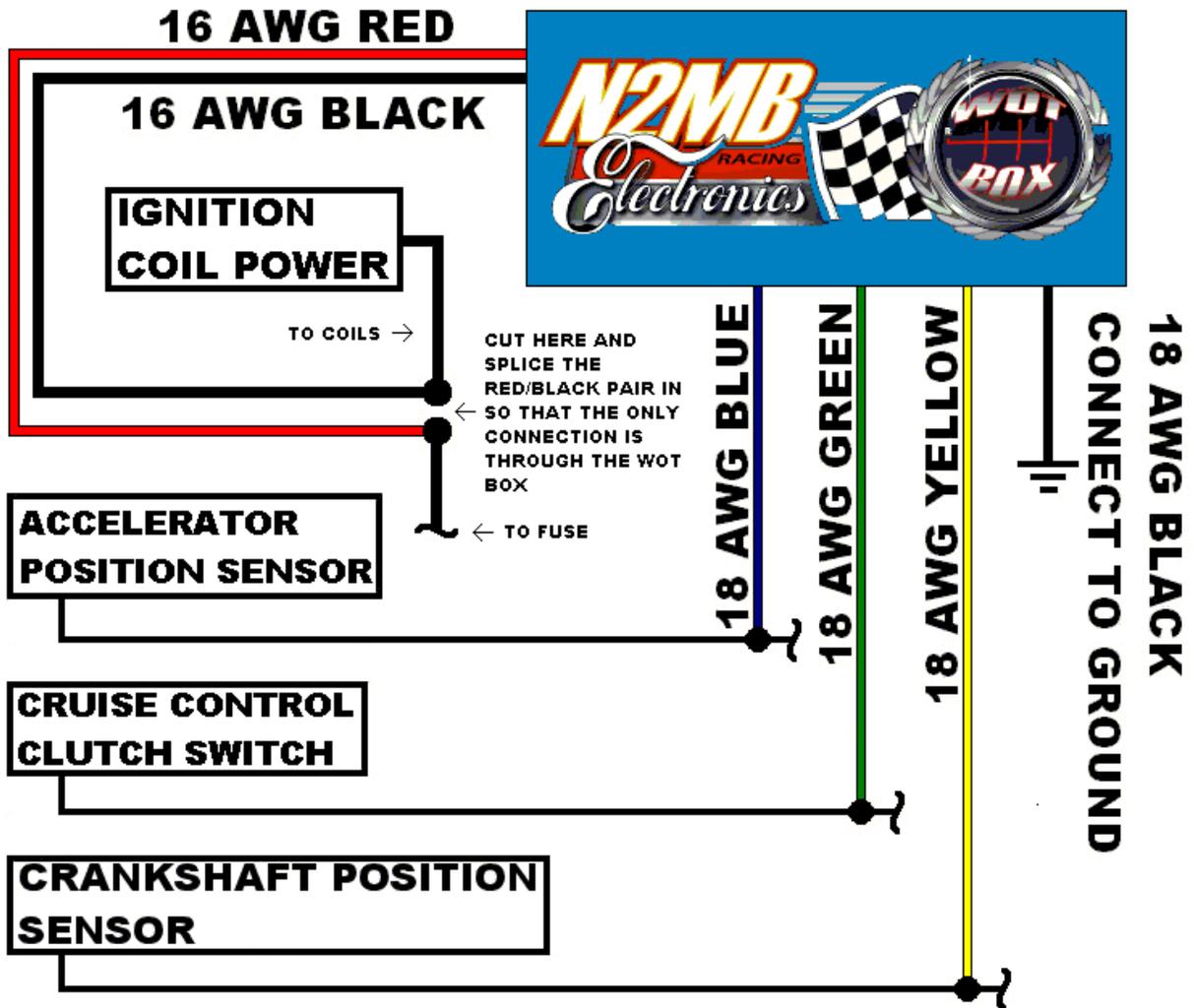


Figure II: Installation Diagram

2)

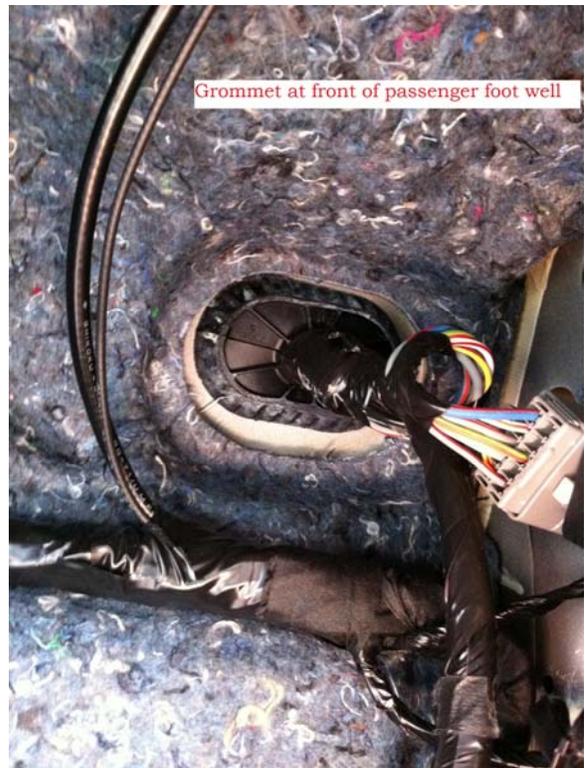
- 1) Open the hood and disconnect the 12V battery negative.



- 2) Remove passenger side front tire for access. Remove passenger side front fender liner for access.

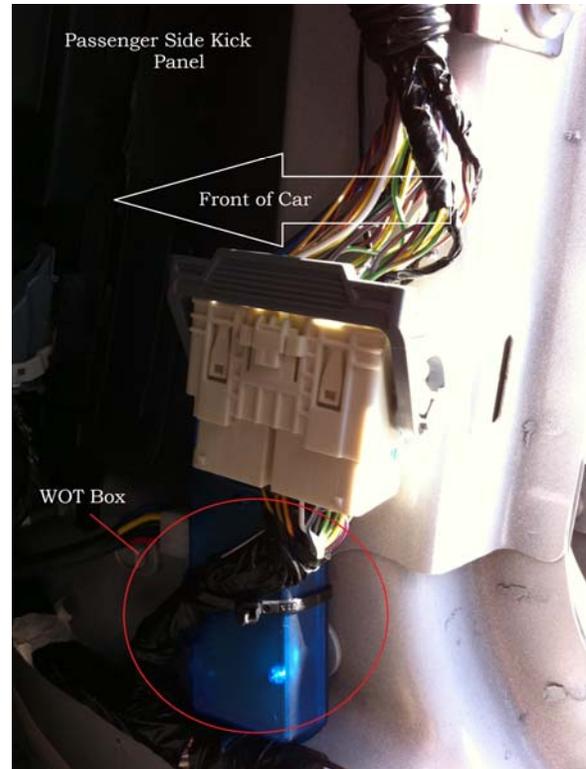
3), 4)

- 3) Remove passenger side floor mats, right kick panel, and pull back the carpet.



- 4) Locate the rubber pass-through grommet in the firewall.

- 5) Pick out a location to mount the WOT Box. The WOT Box must be installed inside the passenger compartment because it is not waterproof. Additionally, you will want to make the WOT Box accessible to the driver. This location under the kick panel works well. Unplug the WOT Box and tape the connector to the mounting location.



- 6) Carefully poke a new hole in the pass-through grommet using a sharp object, such as a screwdriver. Be careful not to damage other wires already in the grommet, and make sure that the hole is only large enough for the WOT Box Wires to pass through. If it is too large, water can leak in. Route all of the WOT Box Wires through the grommet, leaving the WOT Box Connector in the passenger compartment.

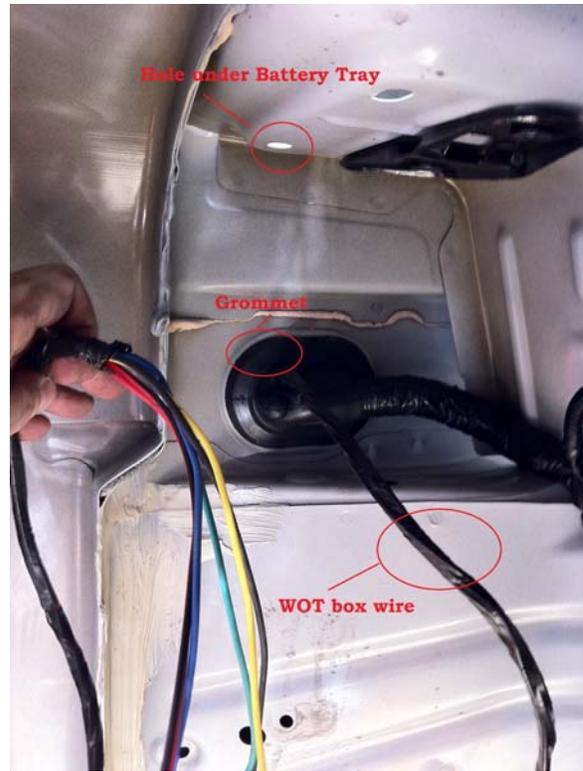
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- 7) Under the hood, remove the battery and the tray underneath it. Underneath the battery tray, there's a hole that will fit the 7/16" grommet. Install the grommet and route the WOT Box wires through it.

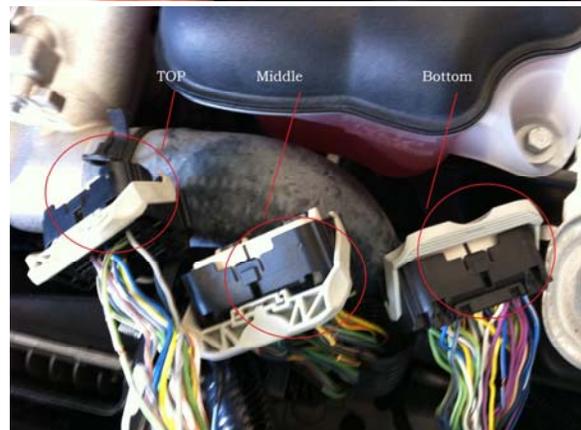
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8)



8) The PCM is located in the front of the engine compartment on the passenger side. Unplug all 3 cam-lock connectors from the PCM by unlocking the grey levers and pulling the connectors out.



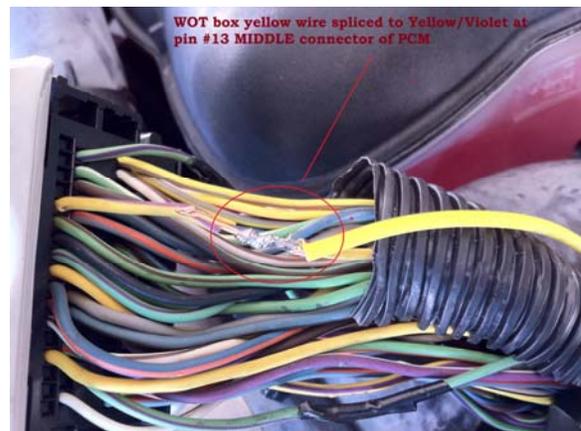
- 9) Remove enough of the loom behind the T connector (the top one) to access the wires. Splice the **GREEN WOT Box Wire** into the **GREEN/VIOLET** wire on pin 21. Use the N2MB recommended soldering technique available at [www.n2mb.com](http://www.n2mb.com).

9)



- 10) Remove enough of the loom behind the E connector (the middle one) to access the wires. Splice the **YELLOW WOT Box Wire** into the **YELLOW/VIOLET** wire on pin 13. Use the N2MB recommended soldering technique available at [www.n2mb.com](http://www.n2mb.com).

10)



- 11) Remove enough of the loom behind the bottom (B) connector to access the wires. Splice the **BLUE WOT Box Wire** into the **BLUE/WHITE** wire on pin 29 of the **BOTTOM CONNECTOR**. Use the N2MB recommended soldering technique. Re-install the loom on all connectors accessed and tape securely with electrical tape. Reattach the connectors to the ECM.

11)



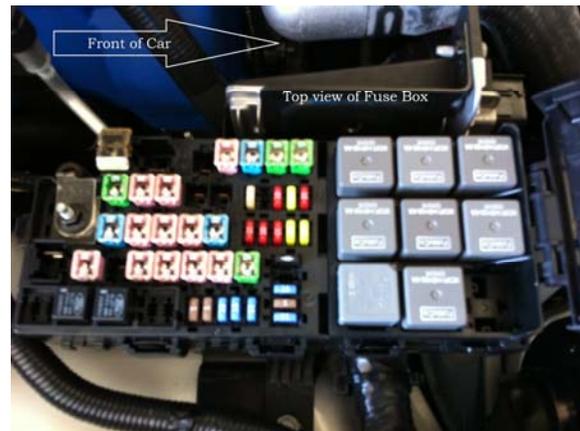
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12) The Bussed Electrical Center is located directly to the passenger side of the PCM. Remove its cover.



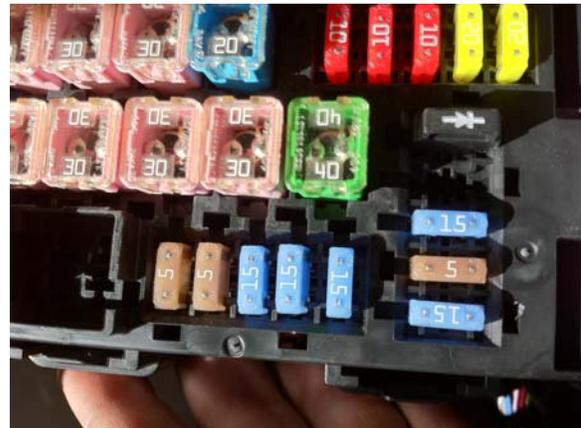
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13) After the cover is removed, the top of the BEC becomes visible. Hold down the plastic snaps on either side, and remove the top of the BEC to allow access to the wires underneath.



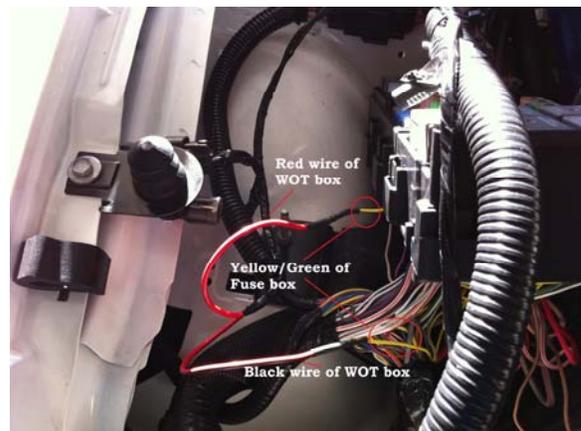
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- 14) Underneath the area indicated, find the **YELLOW/GREEN** wire (it will be connected to Fuse 40, a 15A fuse).



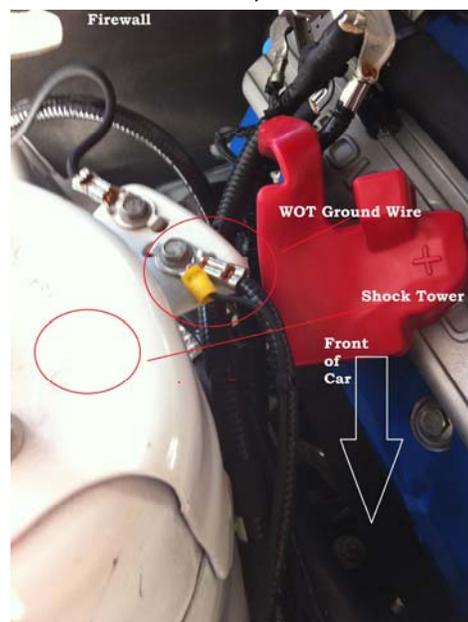
15)

- 15) Cut this wire, making sure to leave enough room on either side to make a splice. Join the **RED WOT Box Wire** to the wire end coming from the fusebox, and the **BLACK WOT Box Wire of the RED/BLACK PAIR** to the side wire end leading away from the fusebox. Reassemble the fusebox, and replace the cover.

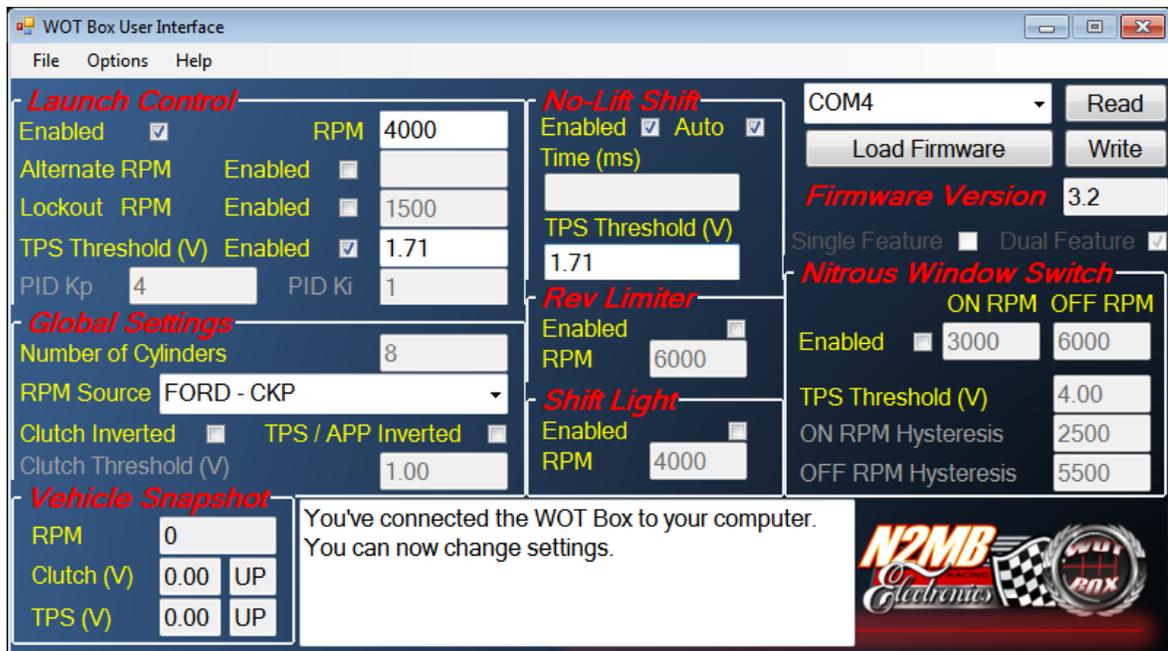


16)

- 16) Crimp the included ground lug onto the **SINGLE BLACK WOT Box Wire** and connect through a bolt to a good body ground. The location on the shock tower shown here works well.



- 17) Ensure that the wires are laying as you would like them to permanently, then replace the wheel well fender liner, the wheel, and the footwell carpet. Ensure that everything that was removed for installation has been replaced besides the 12V battery negative. Insert the WOT Box harness into the WOT Box, reconnect the 12V battery negative, and close the hood.
- 18) The 2011 Mustang uses a different accelerator pedal position sensor than other mustangs. Download the latest WOT Box graphical user interface available at [www.n2mb.com/wotboxsoftware](http://www.n2mb.com/wotboxsoftware). Connect to the interface and set it up for your vehicle in the manner described on the website. If the “TPS” section of the “Vehicle Snapshot” section reads “up” when the accelerator up and “dn” with the accelerator down, you’re done. If not, you will need to change the TPS threshold in BOTH the “Launch Control” window and the “No-Lift Shift” window. To do this, ensure that you have the WOT Box connected to the vehicle, change the TPS threshold to 1.7V, click “WRITE”, and test to determine if the WOT Box reads “up” or “dn” in the “Vehicle Snapshot” section with the accelerator up or down. If the GUI doesn’t acknowledge the correct position of the accelerator, note the voltage to the left of the up/dn indicator, and change the TPS threshold until the GUI reads “up” with the accelerator up and “dn” with the accelerator down. For most 2011 Mustangs, the “TPS Threshold” boxes in the GUI should appear like this:



- 19) Test the WOT Box as described below, and then re-install the right passenger side kick panel.

## Troubleshooting - Testing the WOT Box

1. Key on the car but do not start the engine. Press the gas pedal to the floor. You should see the LED on the WOT Box start to rapidly blink. If it does not, check your **APP sensor signal connection (WOT Box BLUE wire)**.
2. Next, with the gas pedal still depressed, press the clutch pedal to the floor. You should see the LED on the WOT Box briefly go out, and then come back on solid for one second and then finally resume blinking rapidly. If you do not see this, check your **Clutch Pedal Position Switch signal connection (WOT Box GREEN wire)**.
3. Next, start the engine. Quickly press the gas pedal to the floor and immediately step on the clutch. You should hear the engine start to rev up, stumble for a short period while the ignition is cut, then return back on and continue revving. Remove your foot from the gas before you hit the rev limiter. The 2-step will not engage if the gas is depressed before the clutch. This is normal. If the engine does not stumble or pause when the LED turns out, then check the **RED/BLACK** paired wire. Verify that the **RED and BLACK 16 AWG** wires are wired facing the proper way. If they are reversed, the ignition cut will not work.
4. Lastly, test the 2-Step. Press the clutch pedal down and then quickly press the gas pedal all the way down. The gas pedal must be floored for the 2-step to engage. The engine should rev up to the desired RPM and hold. If it does not, be sure to remove your foot from the gas before you hit the rev limiter. If the 2-step does not work, check the **WOT Box YELLOW wire**.
5. The WOT Box Graphical User Interface has some inherent troubleshooting capability. If you have access to a laptop, it may be useful for you to download the GUI at [www.n2mb.com/wotboxsoftware](http://www.n2mb.com/wotboxsoftware) and follow the instructions there.

## Usage

To use the WOT Shift feature, keep your foot fully on the gas and shift quickly using the clutch. Keep the gas fully depressed through the shift. The WOT Box will detect the clutch switch signal and briefly cut the ignition to enable an effortless shift.

To use the 2-Step feature, fully depress the clutch. Next, fully depress the gas pedal to the floor. The engine will rev up and hold the RPM that you have set. Quickly release the clutch while leaving the gas fully depressed to launch the car.

**CONGRATULATIONS!**

**You have successfully installed the N2MB WOT BOX!**

# **N2MB Racing Limited Warranty**

N2MB Racing warrants that all of its products are free from defects in material and workmanship for a period of 1 year from the date of purchase. If an N2MB product is found to be defective within this period, N2MB Racing will repair or replace the product. The choice between these two methods of remedy is made at the sole discretion of N2MB Racing. This shall constitute the sole remedy of the purchaser and the sole liability of N2MB Racing to the extent permitted by law. This warranty is exclusive and in lieu of all other warranties or representations whether expressed or implied. This warranty is limited to the repair or replacement of the N2MB Racing product, and shall never exceed the purchase price of the N2MB Racing product. N2MB shall not be responsible for special or consequential damage or costs incurred as a result of the failure or use of the N2MB Racing Product except as required by law. Unauthorized alteration or repair of N2MB Racing products will void this warranty if the alteration or repair is found to have caused the N2MB Racing product to fail. In the event that a product is warranted, the purchaser shall be responsible for any and all shipping costs.

N2MB Racing reserves the right to improve its products at any time and is at no time responsible for exchange or upgrade of products that were manufactured previously.