



NEXTUP PnP CONTROLLER
QUICKSHIFTER INSTALLATION MANUAL - VER. 1.1

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INTRODUCTION

This installation manual explains how to install a *Nextup PnP Controller* onto a motorcycle equipped with a quickshifter using the appropriate *Nextup Wiring Harness*. The work should be performed by a trained mechanic working in a shop environment. If the installer encounters any problems along the way they should review the troubleshooting section and then contact the company for support if the problem cannot be resolved.

The *Nextup PnP Controller* is a transmission control system for motorcycle engines. A bike equipped with a *Nextup PnP Controller* and quickshifter should be able to upshift by foot shifting at full throttle without use of the clutch (see disclaimer). Best results are obtained when shifting in the upper RPM range.

STEP-BY-STEP INSTALLATION

1. Prop up the gas tank.
2. Locate the fuel injectors.

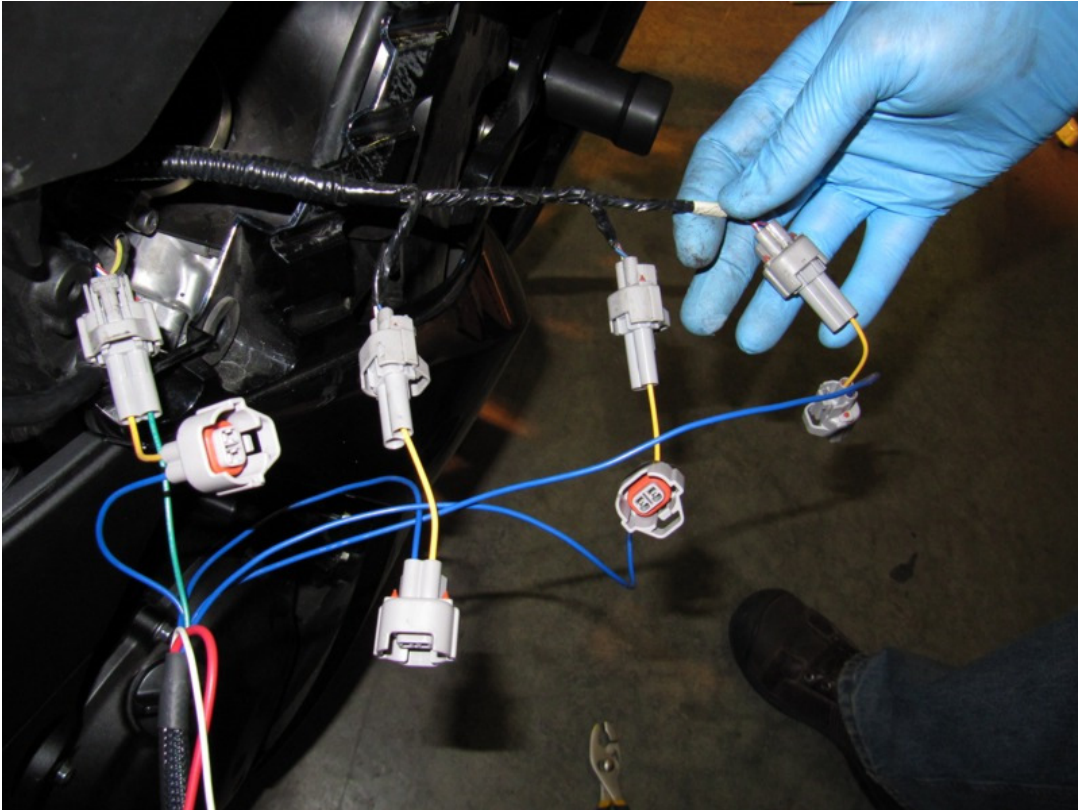


Figure 1 : Harness partially connected

3. Install the wiring harness by making connections as shown in Figures 1 and 2. Each fuel injector will have a male and female pair to plug into. **DO NOT** interchange fuel injectors and fuel connectors. The easiest way to avoid this is by connecting the harness to the fuel injector's **one-at-a-time**.

Note: When used in combination with 3rd party fuel injection boxes (eg. Power Commander), ensure that the *Nextup Wiring Harness* plugs **directly** into the motorcycle fuel injectors.

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Note: Modifications to your gear position sensor including the TRE (Timing Retard Eliminator) may cause your gear position sensor to stop working. Wiring may need to be returned to stock for the gear position input to work.

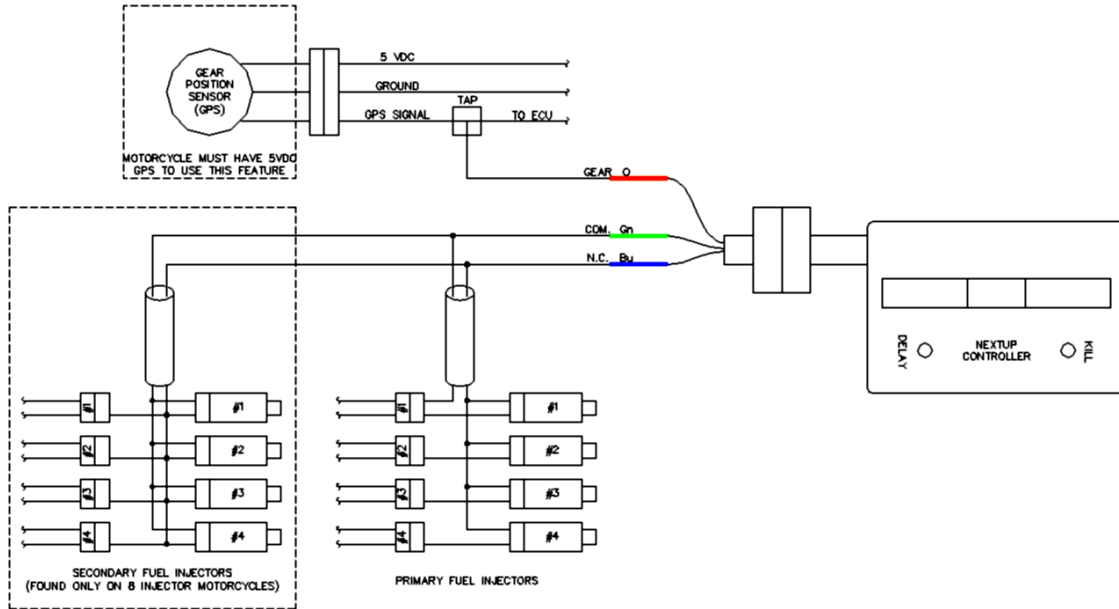
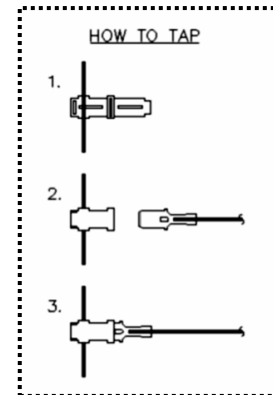


Figure 2: Fuel injector and optional gear position sensor connections

4. If the motorcycle has a 5 volt DC gear position sensor, tap into the gear position signal wire using the ORANGE wire. Refer to the motorcycles wiring diagram to locate this signal wire. If unsure, use a multimeter to test the wire. With the ignition (key) switch and the engine stop switch ON, the signal voltage should vary between 0-5 volts DC when changing gears.



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Power and Ground

5. Connect the ring terminal on the **BLACK** ground wire to the motorcycle battery ground terminal.
6. Determine whether the motorcycle wiring is *type 1* (Figure 3) or *type 2* (Figure 4). Refer to the motorcycle's wiring diagram OR test the OEM horn connector with the ignition ON (Figure 5). *Type 1* wiring can be verified by measuring 12 volts on one of the terminals when the ignition is ON. Note the 12 volt wire colour. *Type 2* wiring can be verified by measuring 12 volts on one of the terminals only when the horn button is pressed.

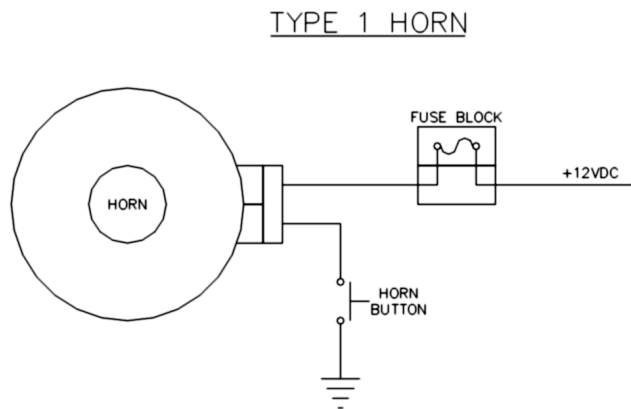


Figure 3 : Type 1 Wiring

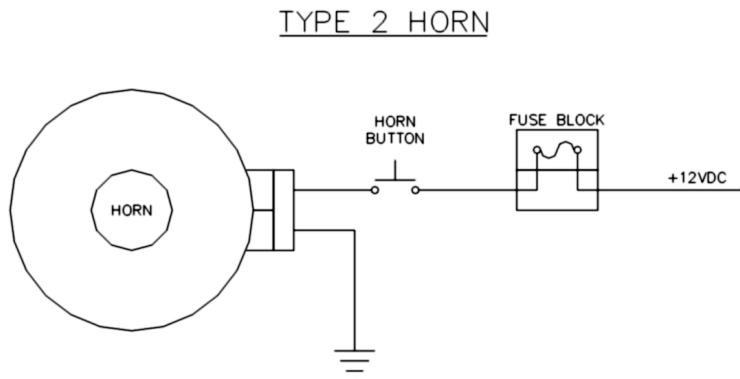


Figure 4 : Type 2 Wiring

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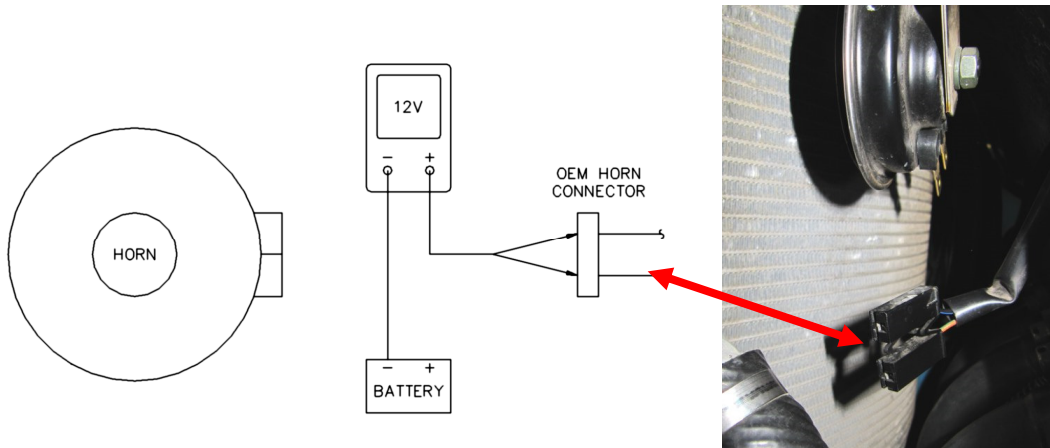


Figure 5 : Test for Wiring Type

7. Turn the ignition off. For *type 1* wiring, make the power and ground connections as per Figure 6 or Figure 7 (customer choice). For *type 2* wiring, make the power and ground connections as per Figure 8.

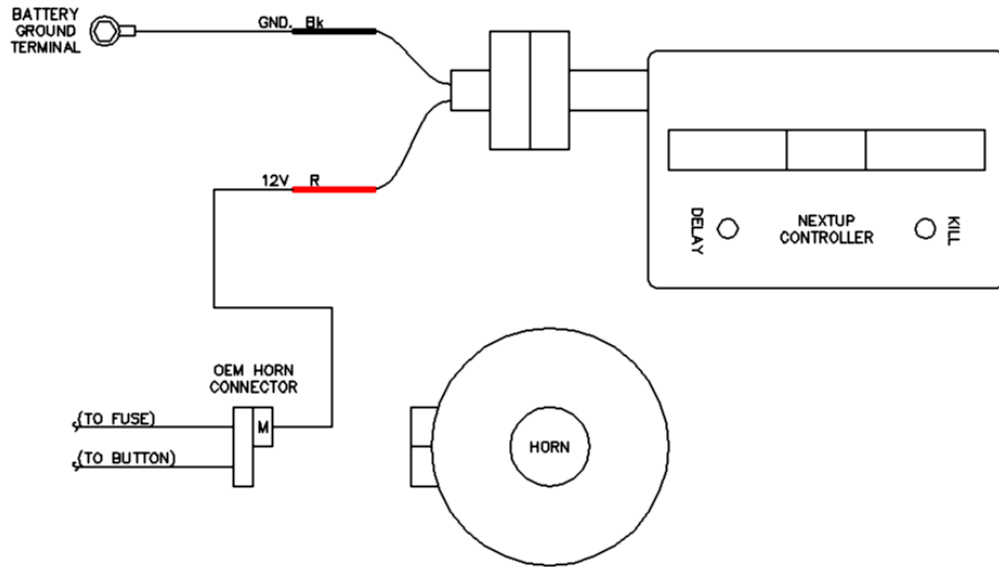


Figure 6 : Type 1 Power and Ground Connections – Horn disconnected

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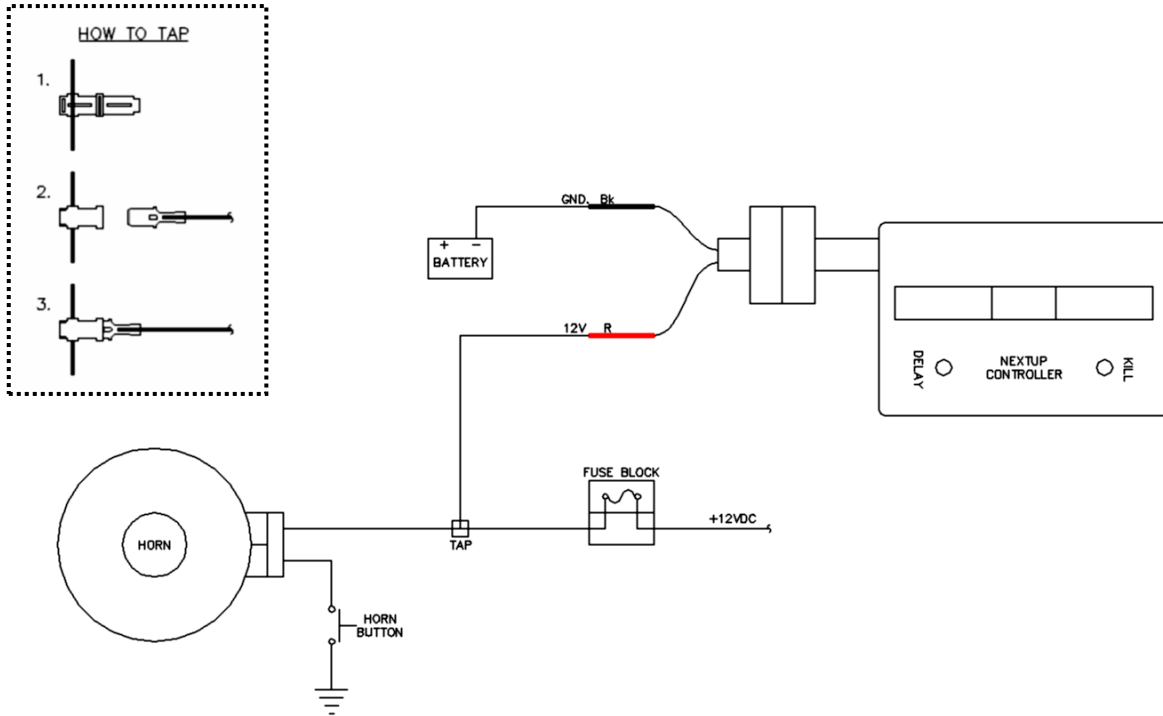


Figure 7 : Type 1 Power and Ground Connections – Horn connected

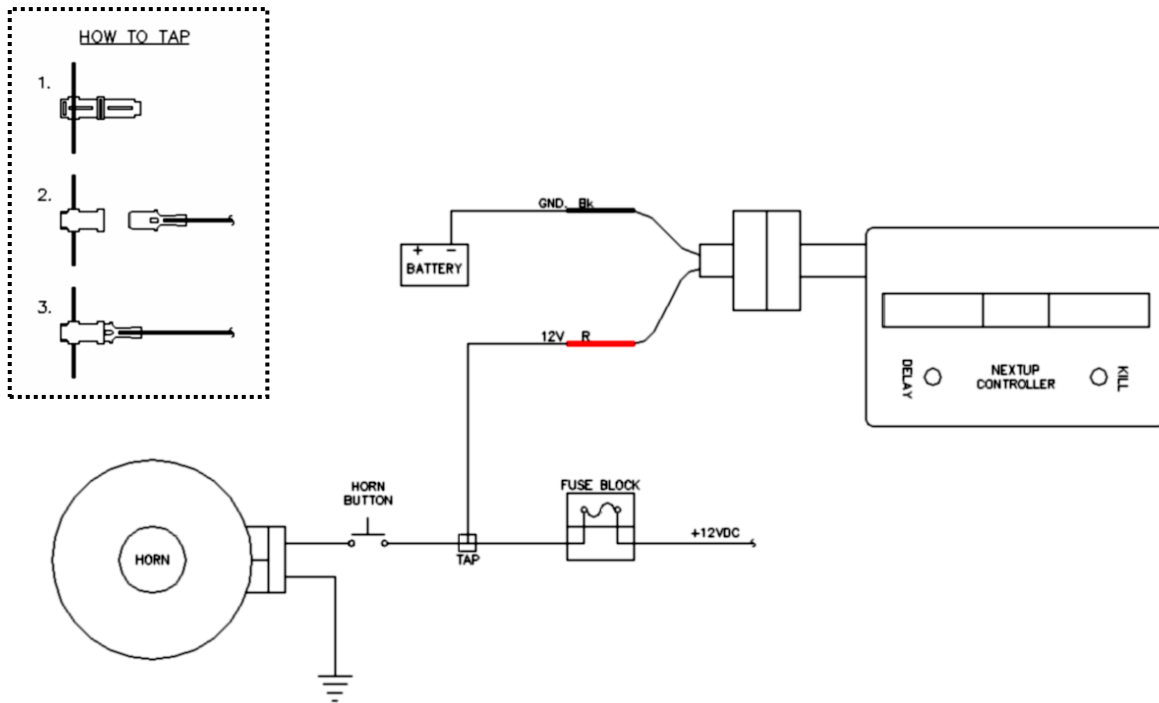


Figure 8 : Type 2 Power and Ground Connections

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Quickshifter

8. Connect the *Nextup Quickshifter*, or 3rd party quickshifter, to the 2-pin connector on the *Nextup Wiring Harness*. Use Figure 6 as a guide.

Note: The *Nextup PnP Controller* will work with 2-wire quickshifters that momentarily close when triggered.

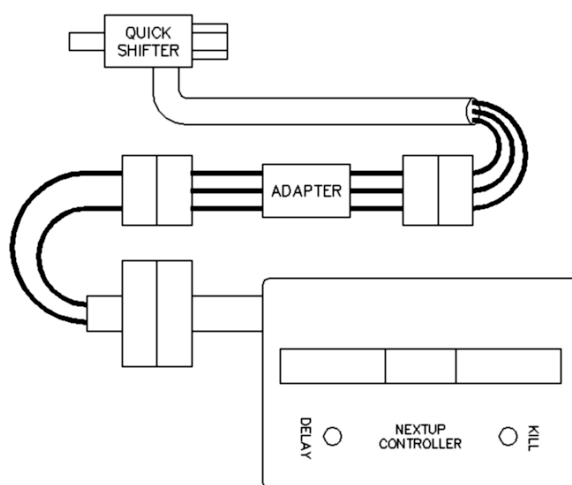


Figure 9 : Quickshifter Connection

9. Thread the main connector on the *Nextup Wiring Harness* through the motorcycle chassis to the location where you would like to mount your *Nextup PnP Controller*.

Note: The *Nextup PnP Controller* should be located in a secure spot, preferably away from water spray or direct heat sources.

10. Securely mount your *Nextup PnP Controller* to the motorcycle chassis using tie-straps or adhesive Velcro.
11. Connect the *Nextup Wiring Harness* to the *Nextup PnP Controller*.
12. Turn the motorcycle ignition ON. Verify that both LED bar graphs are lit on the *Nextup PnP Controller*.

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13. Grasp the shift lever with your hand and upshift into the next higher gear. The shift lever should first rotate a few degrees at which point the quickshifter should stroke about 1mm (1/32") at which point you should hear two quick *clicks* from the *Nextup PnP Controller*. When released the shift lever should spring back into its normal position. Best shifting action will occur when the knuckles joints are setup at 90° (square) angles (figure 10).

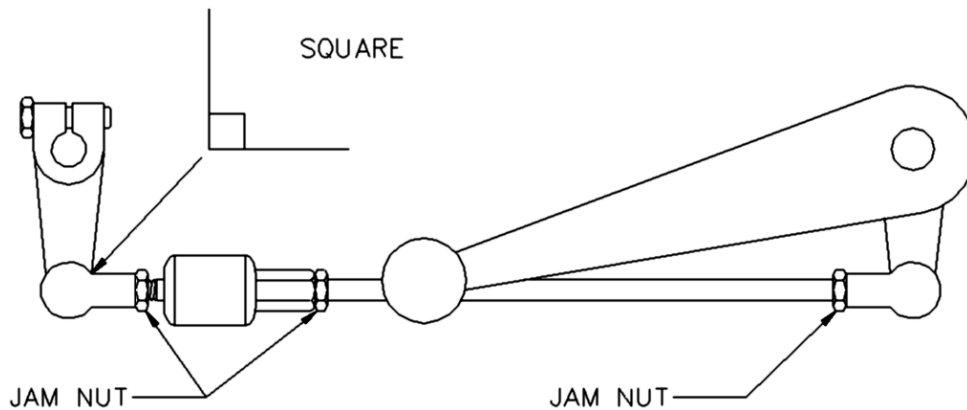


Figure 10 - Quickshifter setup example

14. Use tie straps to bundle and tie down any loose wires.

SETUP AND TUNING

The *Nextup PnP Controller* should now be completely wired into the bike. Test power and ground connections by turning the ignition (key) switch to the ON position. The LED bar graph display should light up and stay lit.

Tuning WITHOUT a Gear Position Sensor

1. The *Nextup PnP Controller* can be used to set the amount of time between when the shift is triggered and when the engine power is cut. This delay value can be set by pressing the Delay button repeatedly until the display bar shows the amount of time, in milliseconds, you want the delay to happen. Wait 2 seconds and the bar graph will sweep the LED lights telling you that the setting has been written to memory.
2. The *Nextup PnP Controller* can be used to setup the amount of time the engine power is cut (aka "kill time"). This kill time can be set by pressing the Kill button repeatedly until the display bar shows the amount of time, in milliseconds, you want the kill to happen. Wait 2 seconds and the bar graph will sweep the LED lights telling you that the setting has been written to memory.

Tuning WITH a Gear Position Sensor

1. Turn both the ignition (key) switch **AND** the engine stop switch to the ON position.
2. **IMPORTANT** – the *Nextup PnP Controller* **MUST** be configured to work with your motorcycles gear position sensor. Motorcycles such as **Suzuki** and **Triumph** use a STANDARD gear position sensor that outputs lower voltage values at lower gear positions. Some motorcycles, such as **Kawasaki**, use a REVERSE gear position sensor that outputs higher voltage values at lower gear positions. If you do not know what type of gear position sensor you can use a multimeter connected between the gear position signal wire and ground to compare the voltage reading in 1st gear and 2nd gear. If the 1st gear value is lower than the 2nd gear value you have a STANDARD gear position sensor.

Refer to Figure 11 when configuring the *Nextup PnP Controller*. Reset your *Nextup PnP Controller* by holding both the Delay and Kill buttons until the LED bars turn OFF (takes about 5 seconds).

- a) Setup the *Nextup PnP Controller* for the STANDARD (Suzuki/Triumph) gear position sensor by releasing the Delay button **first**. The *Nextup PnP Controller* will confirm this by flashing the Delay bar graph.
- b) Setup the *Nextup PnP Controller* for REVERSE (Kawasaki) gear position sensor by releasing the Kill button first. The *Nextup PnP Controller* will confirm this by flashing the Kill bar graph.

Reset the *Nextup PnP Controller* by turning the ignition switch off then on.

The *Nextup PnP Controller* is now configured.

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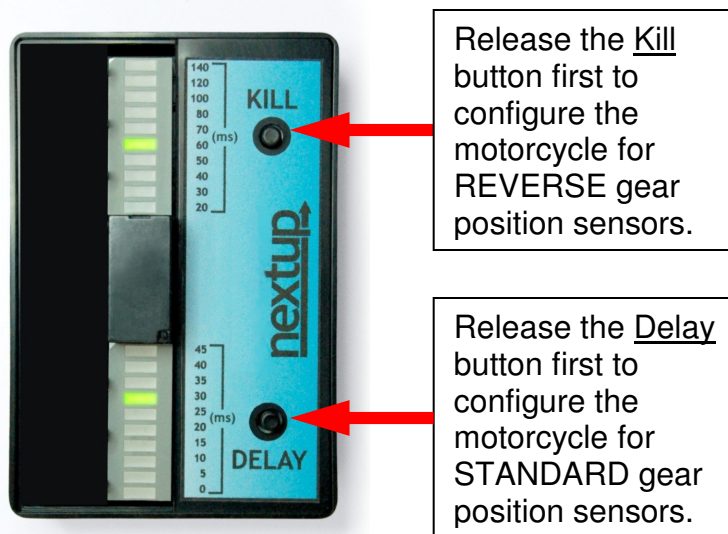


Figure 11 - Nextup PnP Controller Setup

3. Place the motorcycle into 1st gear.
4. The delay value is the amount of time between when the shift is triggered and when the engine power is cut. Set the delay value by pressing the Delay button repeatedly until the display bar shows the amount of time, in milliseconds, you want the delay to happen. Wait 2 seconds and the bar graph will sweep the LED lights telling you that the setting has been written to memory.
5. The kill time is the amount of time the engine power is cut during an upshift. This kill time can be set by pressing the Kill button repeatedly until the display bar shows the amount of time, in milliseconds, you want the kill to happen. Wait 2 seconds and the bar graph will sweep the LED lights telling you that the setting has been written to memory.
6. Repeat steps 4 and 5 for gear positions 2, 3, 4, and 5. It is OK to leave delay and kill times unchanged for two or more gear positions.
7. Once complete, go back through the gears and confirm the LED bar graph displays the correct timing for each gear. Make changes as needed.

Congratulations! You're Done!

SUGGESTED STARTING VALUES

	Engine Setup	
	Naturally Aspirated	Boosted / Sprayed
Delay	10 – 20 ms	10 – 20 ms
1st Gear Kill	40 – 80 ms	60 – 80 ms
2nd Gear Kill	40 – 60 ms	50 – 60 ms
3rd – 5th Gear Kill	30 – 40 ms	40 – 60 ms

When using a **quickshifter**, the *Delay* value can be tuned to vary the amount of preloading done by the foot before the power cut happens. For best results set the *Delay* value between 0 – 20 ms.

TROUBLESHOOTING

The following is a list of trouble signs and possible solutions:

<i>Controller does not light up</i>
<ul style="list-style-type: none">• Blown Fuse - Replace with one of the same rating.
<ul style="list-style-type: none">• Poor ground connection – Check grounding circuit.
<ul style="list-style-type: none">• Ignition in OFF position – Turn ignition ON.

<i>Controller unresponsive when motorcycle is upshifted.</i>
<ul style="list-style-type: none">• Quickshifter is the wrong type – 2-wire quickshifters will usually only work in one direction (push or pull). Check your shifter linkage to ensure that you are using the correct type.• Quickshifter is the wrong polarity – Using a multimeter, check your quickshifter to ensure that the electrical contact momentarily closes when triggered.

<i>Controller bar graph display jumps to incorrect Delay and Kill values in certain gears.</i>
<ul style="list-style-type: none">• Controller incorrectly configured – Repeat setup steps to reset and re-configure controller.• Noisy gear position signal – Check gear position signal connections for looseness.

<i>Rough Engine Idle</i>
<ul style="list-style-type: none">• Fuel Injector Unplugged– Check connections• Fuel Injectors Cross-wired – Check connections

Engine Power Loss at High RPM

- **Controller mounted incorrectly** – The controller uses a relay that is shock resistant to 30 g's. If the vehicle is exhibiting intermittent power loss at high engine RPM's then high vibrations may be causing the relay contacts to open. Reposition and strap down the controller.

CONTACT INFORMATION & DISCLAIMER

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- DISCLAIMER -

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The Purchaser understands and recognizes that this product is subject to many and varied conditions due to the manner in which it is to be installed and used. It is the purchaser's responsibility to determine the suitability of this product for his or her application. The Purchaser agrees to indemnify and hold Biperformance Development Corporation harmless from any loss, damage, injury, cost of repair, or consequential damages of any kind in connection with the sale or use of this product.