

Full Race Unit installation manual ZX-6R(2007-2009)

Please read carefully before attempting any use of this product!

To install the SP-Full Race Unit you will have to:

Gain access to the ignition coils (for best results refer to your motorcycle service manual). FOR STICK TYPE (integrated) COILS - Plug in the female connectors to the ignition coils, and the male connectors to the bike's harness. You must connect each male and female pair connectors to the same corresponding cylinder!

Stick type coils view

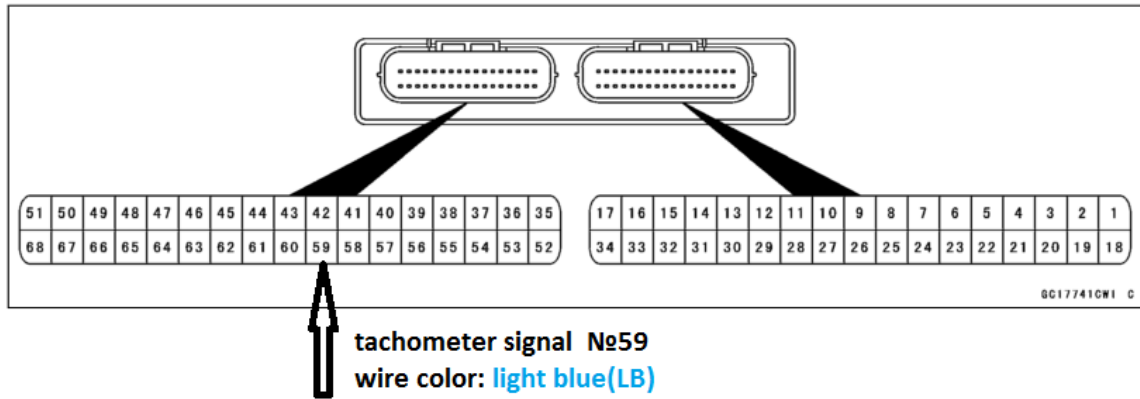


IMPORTANT NOTE: Make sure when plugging the connectors that you press them well enough to lock, as this will provide sealed and reliable electrical connection, vital for the function of the Full Race Unit. Find appropriate place for the Full Race Unit box and route the cables, they are high quality automotive class heat resistant cables but there is some care you should take-(avoid moving parts as they might damage them), the best way is to follow other cables from the bike's harness, use the cable ties provided to fasten them. Make sure the place for the Full Race Unit box is away from heat and it is not constantly exposed to rain and water.

NOTE: The Full Race Unit connects directly to the ignition coils, if you use another product for altering or modifying the ignition coil signals (that needs to be connected to the ignition coils as well) you need to connect SP Full Race Unit first in line to the ignition coils.

1. Connect the Full Race Unit signal yellow wire with the provided quick-splice terminal to the ECU Tachometer signal. This step is very important because the whole system will relay on this signal and if not provided properly it will not function at all. Please look at the following drawings:

Terminal Numbers of ECU Connectors

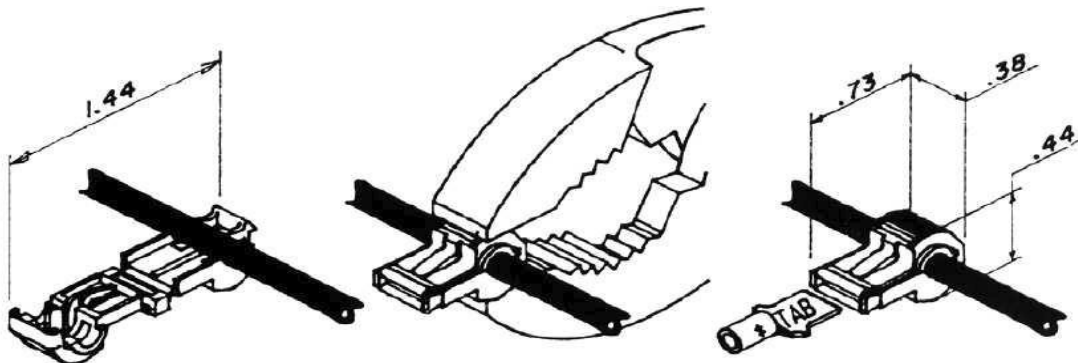


- Locate the correct ECU connector.
- Connect the quick-splice terminal to the ECU terminal №59, this is the Tachometer signal: color (LB) – Light Blue

NOTE: Before disconnecting the ECU coupler make sure to disconnect the battery!

Quick-splice connector installation guide!

1. Do not strip run wire.
2. Place run wire in open channel.
3. Fold connector body until element contacts wire.
4. Crimp connector closed with pliers.
5. Slide completed T-Tap onto male tab.



Tachometer signal checking:

The Full Race Unit will flash continuously the blue "SHIFT" light every time the engine speed exceeds 3000(RPM) so you can check if the ECU tachometer output signal is provided to the Full Race Unit by revving the engine and observing the "SHIFT" light! **Make sure the shift sensor is connected to the Full Race Unit control box when checking the tachometer and speed sensor signals!**

2. Connect the male and female 3-way white connectors to the speed sensor. The vehicle speed sensor is located at the front sprocket cover, follow the sensor wire to locate the connector!

Speed sensor signal checking:

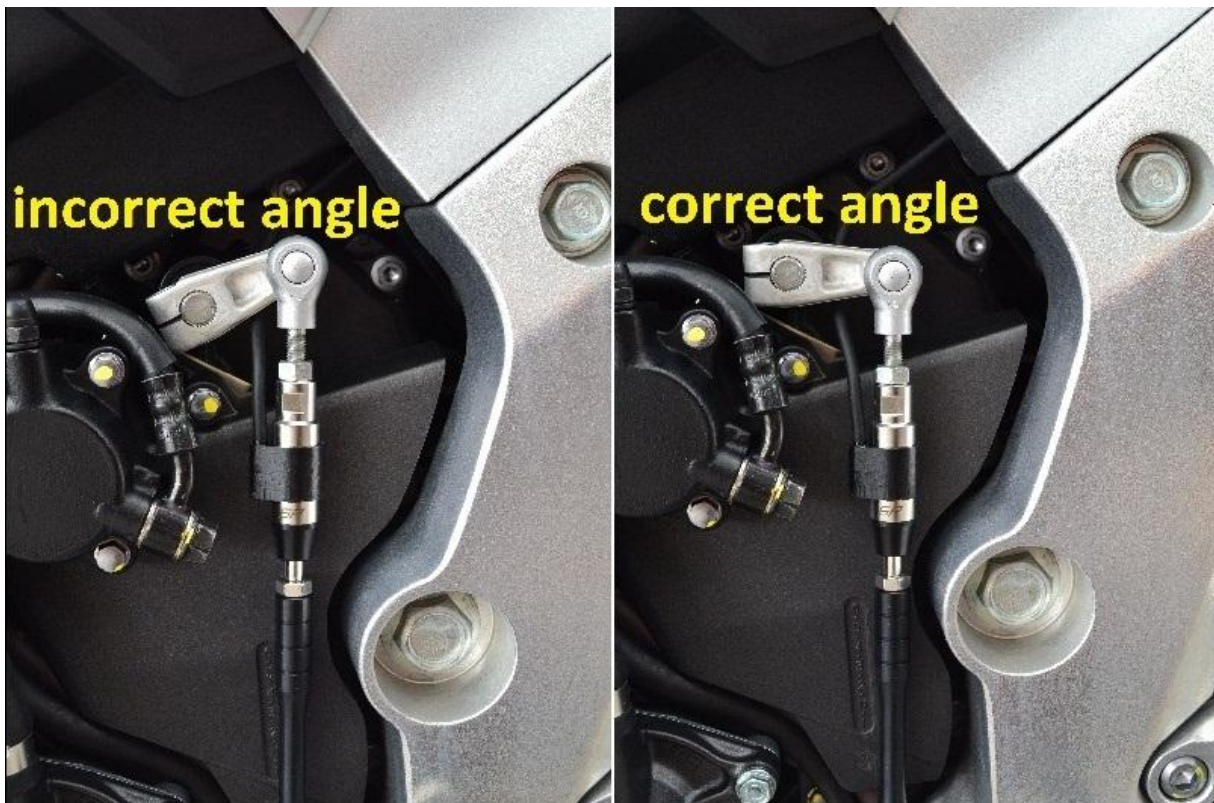
The Full Race Unit will flash the blue "SHIFT" light with every speed sensor impulse! To check if the speed sensor signal is provided to the Full Race Unit do the following: Lift the rear wheel on a paddock stand and rotate the rear wheel by hand – (the ignition switch must be ON and the engine must NOT be running)! Observe the blue "SHIFT" light must flash with every speed sensor impulse. **Make sure the shift sensor is connected to the Full Race Unit control box when checking the speed sensor signal.**

3. The Full Race Unit requires a negative (ground) connection to power up, connect the single black wire to the battery NEGATIVE (-) lead!

4. Remove your original shift rod and install SP-Shift Sensor with the fitting rod(s) provided to its place. Route the wire to the Full Race Unit control box and plug it in. When installing the sensor, make sure all counter nuts are locked and the sensor wire has enough free-play and not under tension when pressing the gear lever all the way up and down! The rod and sensor internal threads are made with DUAL THREADS and they will fit (M6x1) in left and right hand all the same so fitting is universal.

NOTE: Never use the plastic hub on the shift sensor to hold the sensor body! Use the notches in the steel top side and a (10mm) open end wrench - spanner to hold the sensor body when tightening counter locking nuts!

NOTE: The gearbox pivot arm must extend to 90 degrees with the shift rod in order to receive an equal force in both directions, if not set correctly, the gearbox may not react accordingly and miss gears when using the quickshifter!

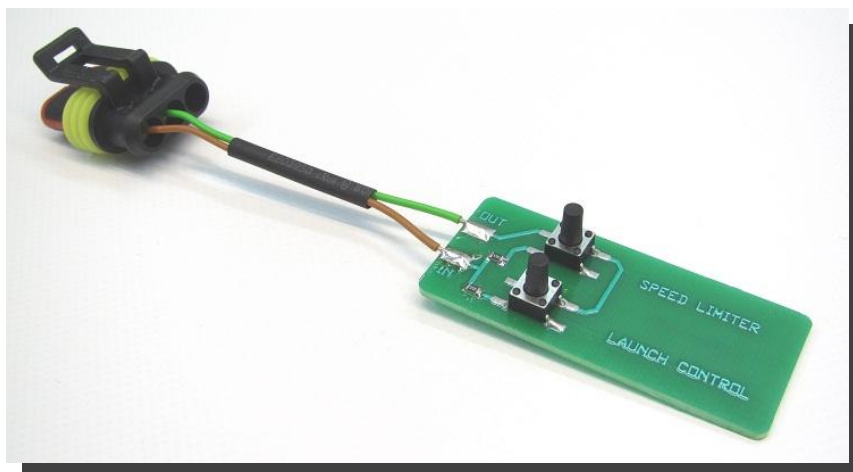


After this is done, turn the ignition key ON, make sure the engine kill switch is in RUN position and the gearbox is in neutral, at this time the red POWER light on the Full Race Unit must be ON, (if not recheck connections and particularly the single black wire for the ground connection)

The Full Race Unit will work to the make and model of motorcycle it is intended, do not install it on another make and model of motorcycles before checking for compatibility as you might damage the ECU or the Full Race Unit permanently!

Fine tuning and adjusting the RPM limits:

Programming board!



Adjusting the Launch Control RPM limit:

- Place the bike on a rear wheel paddock stand or on a dynamometer. Disconnect the shift sensor connector from the Full Race Unit control box, the ignition key must be off!
- Connect the programming board to the Full Race Unit control box –(shift sensor connector).
- Start the engine and put the bike on **1st gear(release the clutch- the rear wheel must rotate)**, then accelerate the engine to the desired range, hold it there and press the “Launch Control”- button. It takes less than a second and you will see the blue “SHIFT” light flashing 10 times, this means that the Full Race Unit has memorised it, you can release the “Launch Control” button after the flashing starts, there is no need to hold it!

NOTE: The Launch Control activates when the rear wheel speed is zero and the engine speed exceeds 4000RPM, you need to gently twist the throttle so the launch control can hook up!

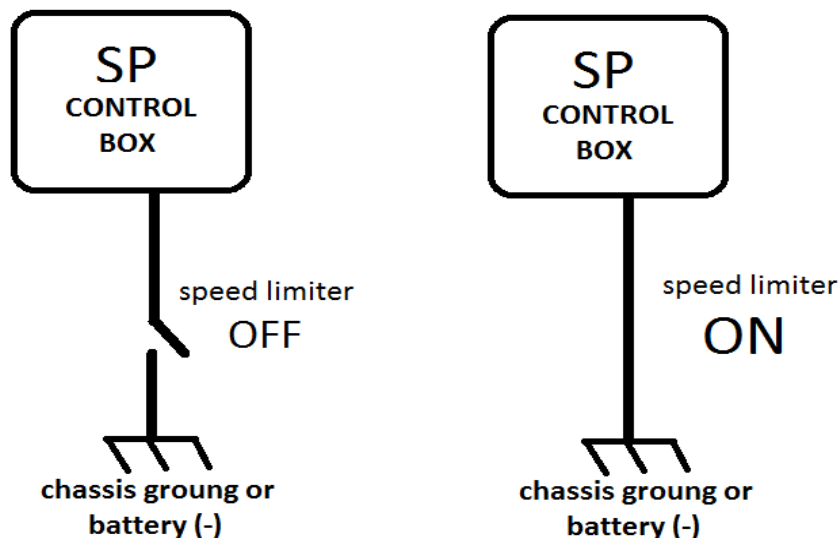
Adjusting the Speed Limiter:

- Place the bike on a rear wheel paddock stand or on a dynamometer. Disconnect the shift sensor connector from the Full Race Unit control box, the ignition key must be off!
- Connect the programming board to the Full Race Unit control box –(shift sensor connector).
- Start the engine and put the bike on **1st gear**, then accelerate the engine to the desired speed, hold it there and press the “Pit Limiter” button It takes less than a second and you will see the blue SHIFT light flashing 10 times, this means that the Full Race Unit has memorised it, you can release the “Launch Control” button after the flashing starts, there is no need to hold it!

Turn the ignition key OFF and reconnect the shift sensor to the Full Race Unit control box!

NOTE: The Speed Limiter activates when the Full Race Unit control box single pin connector is connected to the chassis ground or battery(-)! Use the single Blue wire with connector-(**provided**) and the external handlebar switch-(**provided**) to activate the Speed Limiter mode!

The Speed limiter mode is RPM based so make sure you're using it on 1st gear only.



➤ ST(Shift Time) adjusts the engine interrupt time for which the gearbox must engage the next gear after you apply enough pressure to the gear lever:... turn it clockwise for more time or anticlockwise for less time. The adjuster starts from 50ms(milliseconds), each setting is recognized by a light code on the blue "SHIFT" light. Light codes are implemented to ensure exact settings are selected. The following table shows the time settings with the corresponding light codes:

50ms - one short blink	"-"
55ms - two long blinks	" _ _"
60ms - three long blinks	" _ _ _"
62,5ms - one long blink	" _"
65ms - two long blinks	" _ _"
67,5ms - three long blinks	" _ _ _"

70ms - one continuous blink " _____ "

75ms - one short and one continuous blinks " _ _ _____ "

80ms - one continuous and one short blinks " _____ _ "

To check the ST time setting is correct:

- Turn the ignition key ON, the engine kill switch must be in RUN position and the engine must NOT be running.
- Lift the side-stand and pull the clutch in (to deactivate the interlocking circuit)!
- Press the gear lever in the direction of upshifting all the way in. After the force required for a shift is applied to the sensor the blue SHIFT light will flash with the corresponding light code to indicate which setting is selected!

IMPORTANT NOTE: Do NOT check the SHIFT light code when the engine is running the function is NOT active!!!

Tips on adjusting your Quickshifter!

The Full Race Unit comes with best overall setting to your motorcycle make and model but because each motorcycle sprocket ratio, chain free-play, suspension settings and riding style are different, fine tuning is often necessary for best results and seamless up-shifts. Use the following as a general guide when adjusting your Quickshifter:

If when using the Quickshifter the gearbox seems to push back the shift lever, the shift feels rough and you have experienced missed gears - this means that the gearbox needs more time to react-turn the adjuster clockwise for more time.

If when using the Quickshifter the motorcycle front dives for too long and the shift seems slow - this means that you have to lower the shift time - turn the adjuster anticlockwise for less time.

All GSX-Rs best reaction time is 62,5ms – one long blink!

NOTE: : Before changing the factory setting make sure to remember the length of the Shift Time, so that you will be able to set it back and have a good starting point. Do not attempt to insert a larger screwdriver and never force the adjuster beyond MIN and MAX levels, the turning cycle is 270 degrees. If you want to switch OFF the Full Race Unit functions for some reason, unplug the Shift Sensor from the Full Race Unit control box.

The Quickshifter has RPM threshold which means that the engine speed must exceed the minimum threshold in order to activate the Quickshifter function. The factory setting is over 3000RPM- (Revolutions Per Minute) and this is not adjustable.

If for some reason you're experiencing difficulties with adjusting your Shift Power product, you think it is not functioning as expected or you would like to share your opinion please feel free to contact your dealer-he will support you with a professional help or contact us online.

Web: www.ShiftPower.co.uk **Email:** info@ShiftPower.co.uk

This product is covered by one year limited warranty against malfunctions from the original date of purchase under the following conditions:

1. If any of the components are physically damaged by an external force and/or improper installation, the warranty will be voided, so please make sure it is installed by a professional as most, if not all malfunctions will result from an improper installation.
2. If any malfunction occurs, the faulty component will be exchanged with a new one if repair is not possible: the buyer must send it back to the dealer and he/she is responsible for covering all shipping costs.
3. Warranty will be given to the buyer himself/herself and it begins from the original date of the purchase.

Terms of use:

- ❖ This product is intended for racing use only.
- ❖ The specifications of this product and the contents of this manual can be subject to modification without notice.
- ❖ The manufacturer and its suppliers do not assume any responsibility towards the purchaser or towards anyone else in relation to any damages, expenses, loss of profits or any other loss resulting from the use of this product.

Thank you for using the SP-Full Race Unit!