Please read the installation instructions carefully before using your PSC RACE. Make sure you fully understand and agree with the disclaimer terms before using this product.

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PRESENTS



POWER SLIDE CONTROL

RACE



An NDT MOTO Product

The Power Slide Control RACE is our latest high performance manufacture; we have put down an enormous amount of time and engineering into it. And we have come up with an innovative and a reliably efficient product. It is developed by racers for racers.

The Power Slide Control RACE is an electronic system that allows rider to reduce the rear wheel slide off during accelerations and constant throttle. It is not capable to reduce the slide offs during the deceleration and the braking.

This **ELECTRONIC UNIT** has 2 velocity sensors located at both the wheels (front and rear). The variation in velocities of the wheels is continuously monitored. This feature helps in gauging that rear wheel is not slipping-off. The **Power Slide Control RACE** can recognize the positions of the bike – for example; if it is moving straight; or taking a slow turn or a fast turn; and it acts accordingly. The Power Slide Control RACE can be used as Quick-shifter and Pit Limiter.

DISCLAIMER

The PSC RACE is intended for use on race tracks only. The PSC RACE is not approved for roads. **The Power-Slide Control RACE** is not a safety device. Rather losing control on sliding can possibly result in crash/accident. **The Power Slide Control RACE** aim is, only to support the driver in reducing or eliminating – sliding conditions during acceleration. **It** does not guarantee escaping slide offs or any potential crash. **Power Slide Control RACE** does not guarantee avoidance of crash of the bike, biker or any third parties.

The Power Slide Control RACE requires multiple settings both while installation and to use. A wrong setting can impact, partially or can fully damage system efficiency. Similarly, improper setting of the front and the rear sensors could influence the system performance. Therefore, pay attention particularly while bracing this gadget on the wheels.

Before using this product; please understand the risks attached to it.

The use of this product is at the total discretion of the private parties. The manufacturer of this product is not liable for any kind of damage or injury to the user, vehicle, or to the third party.



WARNING: System modification be it either hardware or software alongside harness and single component modification – can influence the system functionality. Any damage or injury to the rider, vehicle, or to third party will eliminate the product warranty.

Follow the mentioned instructions carefully for installation. It's strongly recommended to test the product and the bike after the installation.



WARNING: Installation is a very critical operation for system efficiency. It should be executed by professionals only.



WARNING: Even after procuring professional assistance while installation – all the pre-use tests should be attempted before using the product. Please refer to Paragraph for Pre-Use Tests.

The **PSC RACE** is a racing product so the warranty on its parts and machineries are only valid for one year, from the date of procurement.

This manual is issued on Feb 03rd 2017 in Rev. 4.1. It's the end user responsibility to periodically visit the website www.irccomponents.com to review new updated manuals.

While operating the ELECTRONIC UNIT it will show the firmware version. Check the website to confirm if it is the recent updated version. The subsequent software update is free of charge excluding shipping expenses.

INSTALLATION MANUAL

Installation must be executed only by a professional. **Do not proceed with installation if you do not have expert assistance.**

1. SENSORS INSTALLATION

WARNING: Installation of sensors require extreme attention as this is the most crucial process.

Effect Hall Speed sensors are contained within in the kit. They are Automotive products and are the advantageous as relaible reader. However, do not allow a fine adjustment of the sensor-target distance.

Connect to the **PSC RACE** according to the instructions printed on labels – **REAR-rear sensor; FRONT-front sensor**. The front sensor is the longer one.

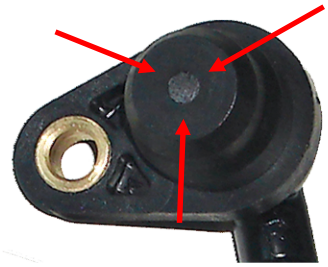
The system works efficiently when the front and rear sensors read as minimum of 3 and maximum of 20 pulses.

These must be equally spaced. 5-10 pulses are ideal. Do not perform oversampling.

Be sure that the reading counterpart can be read by a magnet. i.e. iron bolt and not stainless steel.

WARNING: The actual sensor is located at the center of the circle.

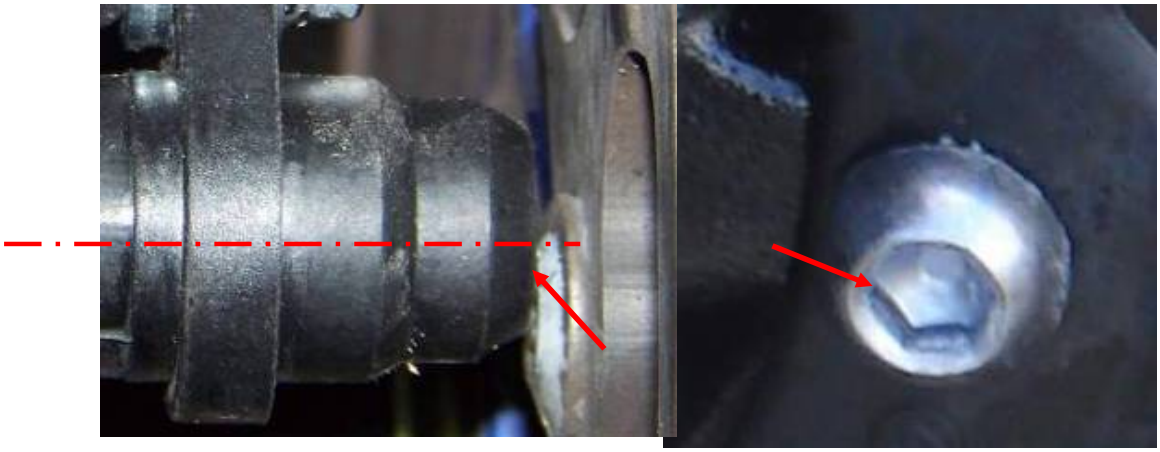
Make sure that the target surface is placed exactly in front of the central circle.



WARNING Place the sensor at a distance of 0.5÷1mm from the target.

Try to arrange same number of pulses in the front and the rear. Avoid mismatch – for instance, 20 pulses in the front and 5 in the rear.

Position the sensors as near as possible to the flat surface to obtain a reliable reading even on the conical side of the bolt.





WARNING: Sensors' brackets must be stiff and well-fastened and not bending. If required, change the sensor's distance, use spacers to avoid bend in the bracket.

Be cautious with the rear sensor's bracket. During the chain adjustment operation, the rear sensor must be aligned with this target. An improper alignment can lead to incorrect readings. Alongside, influencing PSC RACE system operation. Rear sensor positioning on sprocket side will not render reliable reading due to axial movement of the sprocket.





If possible, read the rear disc's spokes. These made of iron and are flat.



1.1 Sensors check

Take an amperohmeter and adjust it to 20V. Leaving the sensor connected to the **PSC PRO**, connect the "**-**" to ground and the "+" to the blue wire of the sensor. Switch on the PSC RACE on and **slowly** rotate the wheel. The sensor will read "**0v**" whenever the it reads target surface.

WARNING: Make sure that the target surface is monitored continuously, i.e. without LED on/off or volts variations. Pay attention to the readings on holed screws.

2. GROUND CONNECTION

Connect the ground wire directly to the battery or, if not possible - then to a common ground.



3. COILS/INJECTORS CONNECTION

WARNING: If other aftermarket electronic products are attached on the bike, connect the PSC RACE directly on the coils and follow other units. Otherwise the other unit will cut the positive +12V that's passing through the coils. In such a scenario, reverse the sequence or cut the red wire that comes with 1st channel harness (where you have a connector with the grey wire too). And connect it to the ignition switch avoiding +12v source. Or onto the rear tail light's supply wire.

The PSC RACE can operate on 4 coils or injectors.

WARNING: Cut on coils can disturb emissions and catalyser's life. To avoid these damages, where catalyser is present, connect the system to the injectors.

WARNING: PSC RACE operates only on **transistorized ELECTRONIC UNIT ignition** and NOT on **CDI ignitions**. Before proceeding with installation, verify that you bike meets the above requirement. Otherwise connect to the injectors.

Connect the PSC RACE to bike's cylinder(s) connector(s). Initiate connecting with the blue wire. If you use fewer connectors, seal the unused ones.

Plug&Play harnesses can be supplied with the system on custom orders.

3.1.1. JAPANESES SPORTS BIKE (Coils on spark plugs), TRIUMPH and KTM,

However, while placing order – if the model and make is specified, the PSC RACE will be delivered with the connectors installed.

WARNING: Even in this case check harness correctness following the instructions below. In

fact, some differences can occur depending on motorcycle production year or lot.

Through electric print diagram, locate the +12v. Usually it is same colour for any coil/injector. If the print is not available, unplug coils and determine which one is the +12v wire with an amperemeter.



WARNING: In Yamaha's recent models you could find both wires as positive. Consider the higher voltage wire as the positive one.

3.1.2. Engines with coils not integrated on spark plugs: (example Honda CB1000)
Cut the +12V from each coil. Usually it is same colour for any coil/injector. Connect the **RED** wire of PSC RACE to the wire that stems from engine ECU and the **ORANGE wire** of PSC RACE to the wire that travels to the coil/injector.

In case of more cylinders, repeat the above process to all arms of the harness.

Seal the unused wires.

4. SYSTEM SETUP

When switched on – the display will show firmware version.

Into the ELECTRONIC UNIT there are 2 buttons.

- Push both to enter the programming.
- Upper button to scroll menu.
- Lower button leads to menu.

Now, working with either one of the 2 button; change the pre-set values.

10 secs of inactivity can switch off the display while saving the data.

IA	Front pulses	Number of front reading points: 3÷20
IP	Rear pulses	Number of rear reading points: 3÷20
rG	Ratio	Measure the circumferences of front ad rear wheels, in the center of the tyre, and calculate the difference. Then set the "Ratio": from 0 to 25 cm.
Pr	Progression Cut	High values give a smoother system acting. From 1 to 20, Default: 3
Ct	Minimum number of cut's cycles	High values give a harder system acting on minimum cut. From 4 to 15. Default: 6
to	Maximum number of cut's cycles	Max number of cons electronic unitive cut cycles. Default 6, Min 0, Max 20.
L	Wheelie timing	From 0 to 30. "0" means no wheelie. Default 6.
GP	Front/Rear wheel circumpherence	The choice between front or rear is function of how PA

		parameter is set. Set is 00÷99. Measure your circumpherence in cm. If your measure starts with “1”, set the other 2 numbers in the between 50÷99 If your measure starts with “2”, set the other 2 numbers in the between 00÷49 For instance: 198cm: set 98; 208cm set 08
Sp	Lean sensitivity	Default =”10”. Set 0 ÷ 20. Values above 10 give more sensitivity a max tilt angle; Values below 10 reduces it.
LS	Wheelie laser setup	From 0 to 5. “0” means no laser; PSC automatically will evaluate the wheelie height. From 1 to 5 Laser is working; higher values means more smoothness on cut.
bo	Pit limiter	Set up of the pit limiter 40÷160Km/h. Default 60Km/h
CA	Quickshifter feature enabling	0 off, 1 activated with rear wheel rotating, 2: always activated
PU	Button Panel	0 off, 1 activated. SET 00. DON’T MODIFY IT IF NOT REQUESTED BY IRC STAFF
PA	Pit Front/Rear	“0” Pit limiter works referring to the rear wheel. “1” Pit limiter works referring to the front wheel.
PI	Wheelie Smoothness	2÷40. Higer values mean smoother cut during wheeling

5. DASHBOARD INSTALLATION

Install the potentiometer, the button switch and the LED, in the carbon plate contained in the kit. Attach these on a place where it is easy to view and monitor by hand.





WARNING: Lay the dashboard making sure that the LED is visible to the driver's eyes.

The sensitivity potentiometer is positioned in order to have the system OFF if rotated completely counter clockwise rotated and maximum sensitivity if rotated completely clockwise, according to the numbers on the sticker. (0 OFF, 10 max sensitivity).

PIT LANE LIMITER. Press and hold the red button; until the pit limiter is switched-on and functioning.

EMERGENCY SWITCH.

Eventually connect to the red and orange wires of the coil harness in the 3-way male connector towards the RACE.

Take the 3way connector to the coils. It has red, orange and blue wire. Connect the emergency switch red over the red, and the black over the orange. PSC RACE is working when the main switch is open and it isn't working when the main switch is closed.

6. PRE-USE CHECKS



WARNING: After a well set-up and installation; it is recommended that the system is check and verified by pre-use checks. **DO NOT TEST THE PSC RACE ON A ROAD - OPEN TO TRAFFIC**. Test it only on race track, putting on safety gear such as- helmet, gloves, boots, rear protector, racing leather suit and so on.



WARNING: If any of the following tests do not pass then, **DO NOT USE THE SYSTEM** and contact our technical support. Switch-off the PSC RACE through the proper emergency switch and disconnect the PSC RACE from the bike.

- Set Ratio "r**G**" on 25, front reading pulses "IA" at the proper value, rear reading pulses "IP" at -1 respective to the proper value. I.E. if you have 5 pulses, set 4. Set max. sensitivity through the trimmer. As soon the bike reach 10Km/h, the **PSC RACE** will start to cut. Continue to accelerate. Bike will accelerate but engine will continue to cut even at higher speeds. For instance, if you have 4 cylinder, the bike will start at 1 cyl. and it must continue to run at 1 even if you accelerate, without using all 4.

If the bike cleared the tests, then set the proper ratio and pulses reading "**IA**" and "**IP**" and sensitivity to maximum.

- Test the **PIT LIMITER** feature by setting it at the highest value you can ride during the test on the road and setting PA=0. If it doesn't clear the test, check the rear sensor positioning.

- Test the **PIT LIMITER** feature by setting it at the highest value you can ride during the test on the road and setting PA=1. You should "feel" the system acting like the test above. If it doesn't clear the test, check the front sensor positioning.

- Test the bike on straight rough road. Whenever the rear wheel loses traction, the system should act.

- Test the system on a turn, but it shouldn't be on 100% full throttle. The **PSC RACE** must cut the power.

- Repeat the above tests at higher speed, proceeding step by step.

Reduce Sensitivity, step by step, till you are comfortable with PSC RACE functions.

WARNING: Remember that "**0**" position of the potentiometer, i.e. complete counter clockwise rotation, means system **OFF**, and functioning.

9. POSSIBLE TROUBLESHOOTING

9.1 **The system always kicks in whenever 10Km/h have been touched.**

Either the rear sensor is reading a double pulse, or the front sensor is not reading all pulses. Check sensors' positioning. (refer paragraph 1.1)

9.2 **The system seems to work properly but acts too stiff on straights or on high speed turns.**

Even if all tests at paragraph 6 have cleared, if you experience issues at high speeds. This will be because, the wheel rotation creates electromagnetic field variations that can influence the hall sensors reading.

9.2.1 Maybe the front sensor is "missing" a few readings at high speed. Check its positioning, make sure to avoid reading of central hole or reducing the distance between sensor and target.

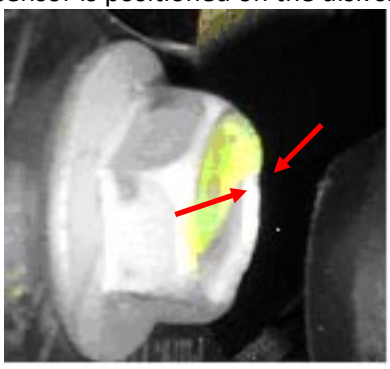
If issue persists, check the rear sensor.

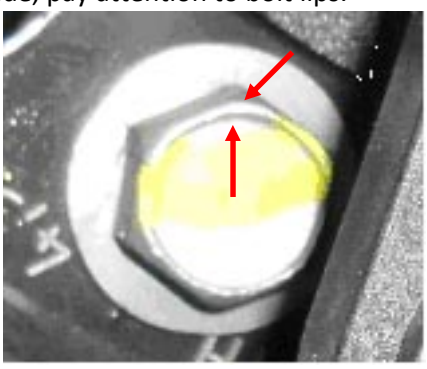
9.2.2 It could read "full-empty" signals. This occurs if the sensor is positioned on the sprocket side and the screw is overwhelming the bolt.



Chances are that sensor is reading bolt, hole and then the nut. In this case increase some distance between the sensor and the target.

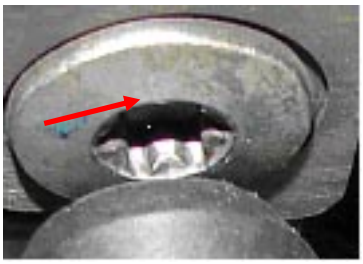
9.2.3 If the sensor is positioned on the disk side, pay attention to bolt lips.



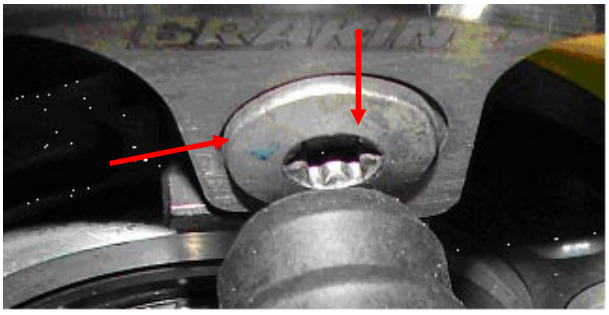


If they are too tall they can misread values. In such a scenario, reduce some of the distance between sensor and target or better replace the bolts or machine the lips.

9.2.3 If the sensor is reading the bolt head – avoid the central hole.



9.2.3 If the sensor is reading the bolt head, don't position the sensor too close to the disc or, at high speeds, it could read the magnetic field generated by the disc.



In this case increase the distance between sensor and target. Consider that sensors have a reading distance of 0.5÷1mm but they can read even up to 1.5mm distance. If sensors space is not verified, it can give out inappropriate values.

8. DIAGNOSTIC SYSTEM AND ERROR LED (RED)

The PSC RACE has a self-diagnostic system that constantly monitors the status of hardware, software and connections.

Red Led Light means system trouble.

8.1: While moving if you witness red LED **fixed** flash – then one of the 2 sensor is reading inaccurate signals.

8.2: while moving and at halted position if you witness red LED **fixed** flash: ELECTRONIC UNIT has a technical issue. Switch-off the system and contact support.

WARNING: This means a big system trouble. Immediately disconnect the PSC RACE acting on emergency switch. DO NOT CONTINUE TO USE THE PSC RACE UNTIL THE PROBLEM IS SOLVED. Stop the bike as soon as possible and physically disconnect the ELECTRONIC UNIT.

Check that the safety switch is on the **TC ON** position. Refer to chapter 5.

9. WHEELIE CONTROL

9.1 The base version of the **PSC RACE** has an inner wheelie control. It's able to understand when the front wheel is rising and it consequently cutting the power till it connects back to the ground.

Pressing (one time) the red button, the led will blink once showing that the wheelie control is activated.

Pressing (second time) again the LED will not blink and the feature will be disactivated.

9.2 As an OPTION it's possible to use a laser sensor "**WLS**" that reads the front wheel height. The benefit is that the wheelie height remains detached from the gear, throttle position and ground conditions. Moreover, it allows at the front wheel to float on the ground without giving "bouncing" effect – normal in other systems.



WARNING: Reading height may vary depending on the surface colour, so make sure on height change between wet and dry surfaces.

9.3 Installation: A **WHITE** wire covered by a sheath with written "**LASER**" is usually included in PSC RACE kit. Seal off if unused.
Laser sensors come with 3 wires of the same colour. Connect the **RED** to a +5V powered (yellow/black of the harness with white 8 poles connector on the main board), the **WHITE** to the PSC RACE **WHITE** and **BLACK** to the ground.

9.4 To adjust wheelie height (in case of WLS)

Take an amperohmeter set on 20Vcc. Put the negative terminal to ground and the positive terminal to white wire of the sensor, leaving it connected and powered-driven.

Aim the sensor toward the ground and, initiate from about 10cm height and rise gradually. Around 30 cm, or 76, in accordance with the chosen model, the sensor signal will change from 5 to 0v. That's the point of wheelie control. Repeat the measurement 3 times. Reduce the height of the value as required (while considering static sag). Maintain it perpendicular to the ground. Slightly rotate the sensor back toward the bike to balance the angle change during the wheelie.

10. QUICKSHIFTER

10.1 Connection

A Yellow wire comes with the PSC RACE. Connect the wire to the quick shifter sensor. Connect the other wire of the quickshifter to the ground. Quickshifter sensor must be digital **NO (Normally Open)** type. If an **IRC SGRACE** is used, connect its blue wire to +12V powered, black and white to the ground, red to this yellow wire.

10.2: To check if quickshifter feature is working, connect the yellow wire to the ground. The engine should stop.

11. DATA LOGGING SYSTEMS

A **Green** wire is passes through the ELECTRONIC UNIT box. Connect it to the data logger. Seal it off if unused.

Telemetry output is analogic type not digital; so, you can know not only when but how much the PSC RACE is maxing. **0v = no cut; 5V = max cut.**

We appreciated your business with us.

For any question contact us via:
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