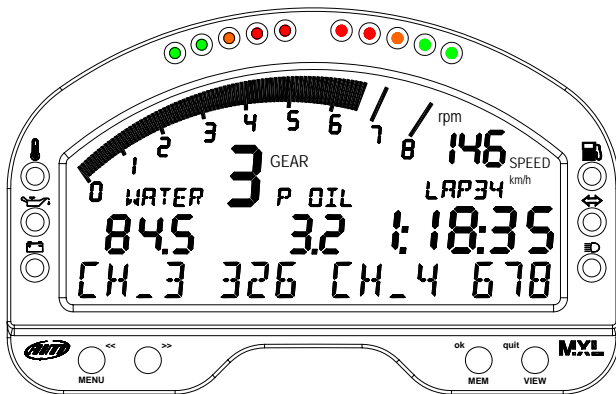


INSTALLATION DOCUMENTATION	30/05/2005	P&P KIT	Kawasaki ZX6R – 6RR 2003-2004-2005
Installation procedure for <b>MXL Strada / MXL Pista</b> Kawasaki ZX6R-ZX6RR - 2003-2004-2005 kit – Version 1.01			

## MXL Strada / Pista Plug and Play kit for Kawasaki ZX-6R and Kawasaki ZX-6RR



### MXL STRADA DASH

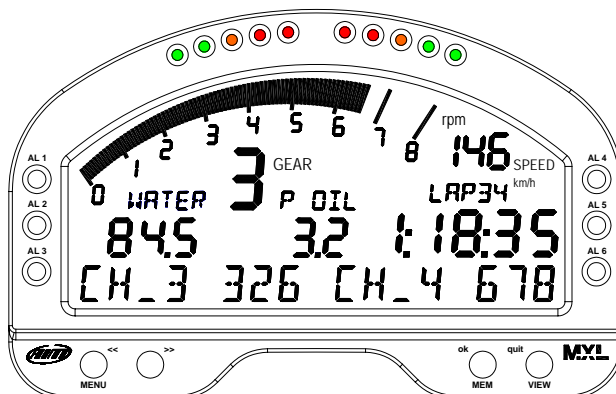


It works like a dash with 6 already configured channels that show:

- RPM
- Speed
- Water Temperature
- Oil Pressure
- Fuel Level
- Turning Lights
- High Beam
- Engaged Gear Number

**MXL Strada** can also receive a beacon signal, records RPM, speed, water temperature and oil pressure max and min values and has **2 other free channels**.

### MXL PISTA DASH AND DATA LOGGER



It works both like a dash and a data logger and has two configured channels. It shows:

- RPM
- Speed
- Water Temperature
- Engaged Gear Number

**MXL Pista** can also receive a beacon signal and has **6 free channels**.

## KIT DESCRIPTION

The plug and play kit for **Kawasaki ZX-6R – 6RR** is composed of the following objects:

### MXL Strada kit

- **MXL Strada**
- Plug and play wiring for **MXL Strada**
- Installation kit with a dedicated bracket
- USB cable for Pc Interface
- CD-ROM with **Race Studio 2** software
- Infrared beacon receiver and transmitter (optional)
- Documentation

### MXL Pista kit

- **MXL Pista**
- Plug and play wiring for **MXL Pista**
- Installation kit with a dedicated bracket
- Infrared beacon receiver and transmitter
- USB cable for Pc Interface and data download
- CD-ROM with **Race Studio 2** software
- Documentation

**MXL<sup>(\*)</sup>** kit for **Kawasaki ZX-6R – 6RR** has been developed for the following year models.

Cubic capacity (cc)	Year 2002	Year 2003	Year 2004	Year 2005
ZX-6R (600 cc)	•	√	√	√
ZX-6RR (636 cc)	•	√	√	√

√ = supported

• = NOT supported

(\*) When you find **MXL** this means we are speaking of **MXL Strada** and **MXL Pista**.

**MXL Strada / MXL Pista - Kawasaki ZX-6R – 6RR** has been designed and developed to be a “plug and play” system to connect to the “on-board” wiring. The aim of this kit is to merge the functionalities of the stock dash with these of a professional data acquisition system.

**MXL Strada / MXL Pista - Kawasaki ZX-6R – 6RR** version may be used both on track (lap times, split times, engine parameters, gyroscope to track maps; this one only for **MXL Pista**) and on street (odometer, water temperature, oil pressure alarm, fuel level).

The gauge, as the stock dash, is powered by the bike’s master switch and when installing **MXL Strada / MXL Pista**, you do not have to cut, bend or drill anything: each component of the kit has been designed to be plug and play.

The gauge has to be connected to the standard head light using the bracket supplied with the system. The bracket is made in anodized Aluminum, lightweight and mechanically resistant.

## GENERAL NOTES – Read this before installing the system

- Do not cut any wiring: the wiring supplied with the kit is plug and play.
- Be careful not to damage the on-board connectors when plugging / unplugging them.
- If You bought a **MXL Pista** and you want to connect the **TPS** cable, please do not install it when the engine is hot, because **TPS** on-board connector is quite near to the engine and you can burn yourself.
- Be careful not to loose screws and washers nor to damage the fairing.

## INSTALLATION STEP # 1 –Removing front transparent fairing and mirrors.

The first installation step consists in removing the bike front transparent fairing and the lateral mirrors.

The front transparent fairing is fixed to the bikes chassis through 6 screws circled in **Figure 1**. Please unscrew them and remove the front transparent fairing.



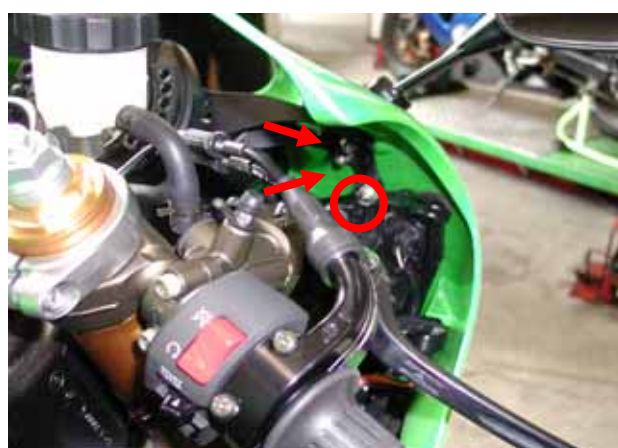
**Figure 1:** front transparent fairing – screws location

It is now necessary to remove both lateral mirrors. The lateral mirrors are fixed to the bikes chassis through 2 screws fixed to a little internal chassis. This chassis is covered by a little fairing and to remove this last one you need to remove the screw circled in **Figure 2**. Please repeat this operation on both sides of the bike.



**Figure 2:** .Lateral screw to remove.

Once removed the external lateral screw of Figure 2 and the plastic fairing, please remove the two screws highlighted with two arrows in **Figure 3**, that fix the lateral mirror to the bike chassis, and the screw circled in **Figure 3** that fixes the stock dash to a little internal chassis. It is now possible to remove the lateral mirror. Please repeat this operation for both mirrors.



**Figure 3:** Lateral mirrors screws.

## INSTALLATION STEP # 2 – Removing the stock dash.

The second installation step consists in removing the stock dash.

The stock dash is fixed to a little internal chassis and to remove it you need to unthread the same chassis. In **Figure 4** are circled the three screws that fix chassis and stock dash to the bike. Please unscrew them.



**Figure 4:** location of the little internal fairing screws

Before removing the stock dash you need to unplug the stock wirings connector. To unplug it, please press the little black tongue highlighted with an arrow in **Figure 5** and unplug the connector.

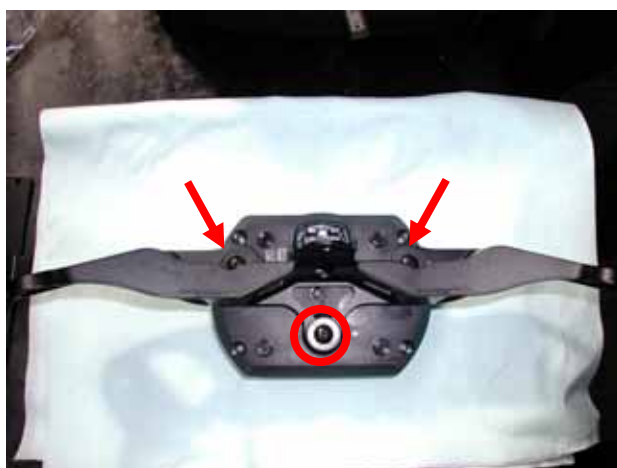
It is now possible to unthread this little chassis together with the stock dash.



**Figure 5:** the on board wiring connector

Once the chassis and the stock dash have been unthread from the bike you need to separate the two objects. Please unscrew the three screws circled and highlighted with an arrow in **Figure 6**.

When the stock dash has been separated from the chassis, **please remount the chassis on the bike without any dash** using the screws you removed before (see **Figure 4**).



**Figure 6:** screws that fixes the stock dash



### INSTALLATION STEP # 3 – Assembling the kit.

The third installation step consists in assembling **MXL Strada / MXL Pista** kit. First of all, please fix the anchor plugs you find in the kit as shown in **Figure 7**. The four holes circled and highlighted by an arrow in the figure on the right are used to fix **MXL Strada / MXL Pista** to the same bracket.

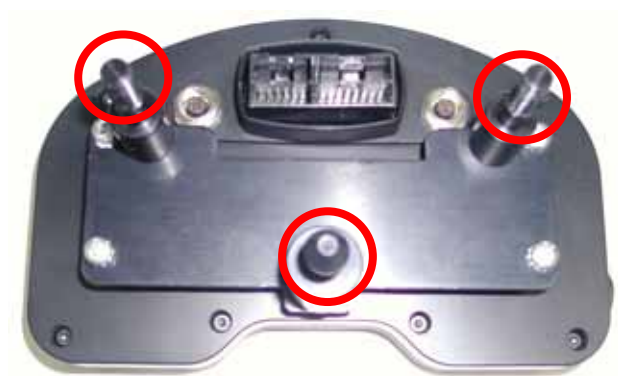


**Figure 7:** Anchor plugs are fixed to the bracket

The kit You receive, has already mounted the four anti-vibration mountings on the back of your **MXL Strada / MXL Pista**; Install your **MXL Strada / MXL Pista** on the aluminium bracket fixing the bracket to your **MXL Strada** in correspondence of the 4 anti-vibration mounting and using 4 screws and 4 Grover washers.

**Figure 8** shows the correct assembly of **MXL Strada / MXL Pista**, bracket and washers (rear view).

The anchor plugs, highlighted in the figure will lately be inserted in the holes shown in **Figure 6**.



**Figure 8:** assembled kit, rear view.

## INSTALLATION STEP # 4 – Wiring connection

The fourth installation step consists in installing **MXL Strada / MXL Pista** wiring. First of all, please pull back the protective plastic cover highlighted with an arrow in **Figure 9** and plug the stock connector in the kit one. You can then replace the plastic cover.

**Please note:** if you bought an **MXL Pista** you will find in the kit the **TPS wiring** too. This cable, that is highlighted with a red arrow in **Figure 9** can be connected later; please leave it with the connector looking the right side of the bike.

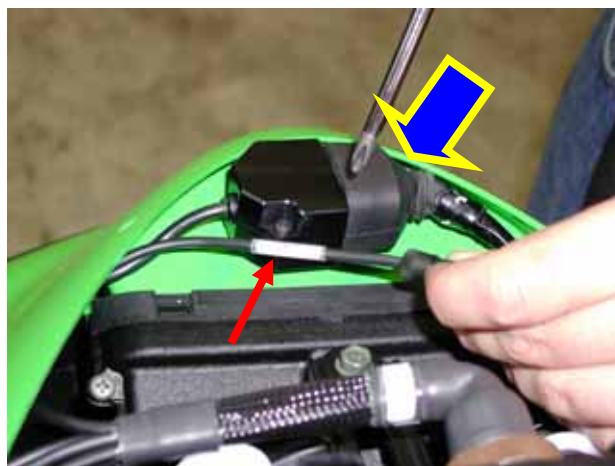


Figure 9: wiring connection

In **Figure 10** you can see **MXL** correctly installed on a **Kawasaki** bike.



Figure 10: MXL correctly installed.

## INSTALLATION STEP # 5 – Connecting the TPS cable.

If you have bought an **MXL Pista** you find in the kit an **AIM TPS cable** too (shown in **Figure 11**). This cable is a split one and is made of two connectors: a male connector (labelled as “**AIM – M**” in **Figure 11**) and a female one (labelled as “**AIM – F**” in **Figure 11**).

If you want to connect it, please follow this procedure.

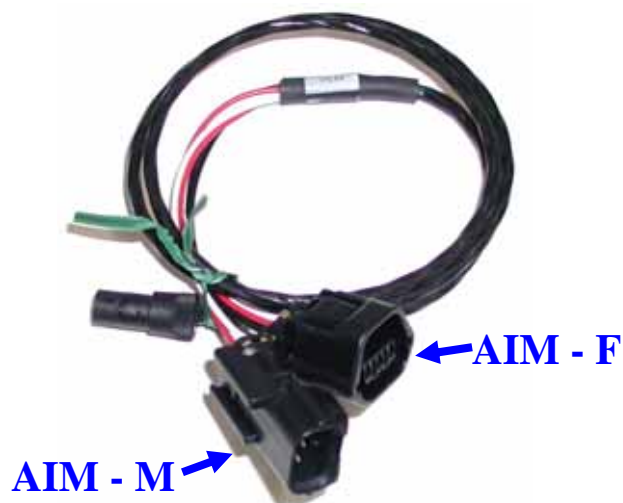


Figure 11: AIM TPS Cable

To find the stock **TPS** connector you need to remove the bike seat and to uplift the gas tank.

The bike seat is fixed to the bike with **two screws**, hidden by two little lateral plastic chassis. To remove the little plastic protective chassis, please unscrew the screw circled in **Figure 12** and the two screws located on the other side of the bike.



Figure 12: location of right plastic chassis screw

When the little protective plastic chassis has been removed, you need to unscrew the two screws that fix the seat to the bike. The **first screw** is circled in **Figure 13**, while **the second** is specular on the other side of the bike.



Figure 13: the screw that fixes the seat to the bike.

When the bike seat has been removed it is necessary to uplift the bike gas tank. In **Figure 14** is circled the screw that fixes the gas tank to the bike, please unscrew it and uplift the gas tank using the bracket supplied with the bike. Please remember not to do this installation when the bike is hot, because the available space is quite reduced and you can burn yourself.



**Figure 14:** location of the gas tank screw

When you have uplifted the gas tank the bike is as in **Figure 15**. The **TPS Connector** is very deeply hidden behind the engine on the right side of the bike. Please follow the wirings of the white connector circled in **Figure 15** and you will reach the primary throttle valve and the **TPS connector**.



**Figure 15:** the gas tank has been uplifted

The stock **TPS connector**, is a male one, like the one labelled as “**M**” in **Figure 16**. Please unplug it and connect it to the AIM female connector (labelled as “**AIM - F**” in **Figure 11**); then connect the other connector, labelled as “**F**” in **Figure 16**, with the AIM male connector (labelled as “**AIM - M**” in **Figure 11**).



**Figure 16:** the TPS connector

**PLEASE NOTE:** before re-mounting the front transparent fairing, the mirrors, the seat and the gas tank, we suggest You to turn on the bike in order to check the system integrity and its correct working.



## FIRMWARE FOR MXL KAWASAKI ZX 6R – 6RR - 2003-2004-2005

As your **MXL Kawasaki** has been designed both for street and track use and as the information the driver wants to display are different for street and track use, your **MXL Kawasaki** is equipped with a special firmware version which provides you with a **second virtual dashboard**.

When you are driving on a street, the display is set to “**street mode**” and shows the following parameters:

- RPM graphical bar: settable upper limit;
- RPM digital value / Battery voltage / Total odometer / Partial odometer / Current date and time: Fuchsia colour (button **VIEW/QUIT** to switch between them);
- Speed: red colour;
- Gear number: green colour;
- 2 fixed analog inputs (not switchable): Blue colour
- 4 switchable analog inputs or static string: Light Blue colour.



Figure 17: Street display

Once you start running on a track and your gauge triggers a lap (you pass in front of a switched-on lap transmitter), the display switches automatically to “**track mode**” and shows the following parameters:

- RPM graphical bar: settable upper limit;
- Lap time / RPM digital value / Battery voltage / Current date and time: fuchsia colour (button **VIEW/QUIT** to switch between them);
- Speed: red colour;
- Gear number: green colour;
- 2 fixed analog inputs (not switchable): Blue colour
- 4 switchable analog inputs or static string: Light Blue colour.



Figure 18: Track display

In order to step back from “**track mode**” to “**street mode**”, please switch off the gauge and then re-switch it on. The gauge sets automatically to “**street mode**”.

**NOTE:** for further information concerning the display management and its configuration, please refer to the **MXL Strada / Pista / PRO** user’s manual.

## MXL Pista / MXL Strada KAWASAKI Configuration [Race Studio 2]

Your **MXL Pista / MXL Strada Kawasaki** may be interfaced with the PC in order to:

- download the data stored in the internal memory;
- upgrade the gauge firmware;
- configure the gauge.

Once you buy a **MXL Pista / MXL Strada Kawasaki**, the gauge already includes a configuration properly developed for your **Kawasaki** bike: all sensors, calibration curves, engine parameters, speed parameters, etc... have already been set to a default value which guarantees you the possibility to plug in the input cable and start running.

Anyway, if you wish to change, for instance, the RPM upper value or the shift lights, if you wish to add a potentiometer sensor or a gyroscope on your **MXL Pista / MXL Strada Kawasaki** and you need to calibrate them, if you change the crown or the pinion with a “different teeth number” one, you need to use our software **Race Studio 2**.

The CD-ROM including software, USB drivers, installation documentation and user manual is included in the **MXL Pista / MXL Strada Kawasaki** kit. If you have any doubt about software or USB drivers installation, please refer to the installation manual included in the CD-ROM.

The following table shows the input channels for **MXL Pista / MXL Strada Kawasaki**.

### MXL Pista - Kawasaki

Ch. 1	Water temperature
Ch. 2	Free input channel – use RS 2 <sup>(*)</sup>
Ch. 3	Free input channel – use RS 2 <sup>(*)</sup>
Ch. 4	Free input channel – use RS 2 <sup>(*)</sup>
Ch. 5	Free input channel – use RS 2 <sup>(*)</sup>
Ch. 6	Free input channel – use RS 2 <sup>(*)</sup>
Ch. 7	Free input channel – use RS 2 <sup>(*)</sup>
Ch. 8	“On board” gear sensor

### MXL Strada - Kawasaki

Ch. 1	Water temperature
Ch. 2	Free input channel – Use RS 2 <sup>(*)</sup>
Ch. 3	Oil Pressure
Ch. 4	Free input channel – Use RS 2 <sup>(*)</sup>
Ch. 5	Fuel Level
Ch. 6	Direction Lights
Ch. 7	High Beam
Ch. 8	“On board” gear sensor

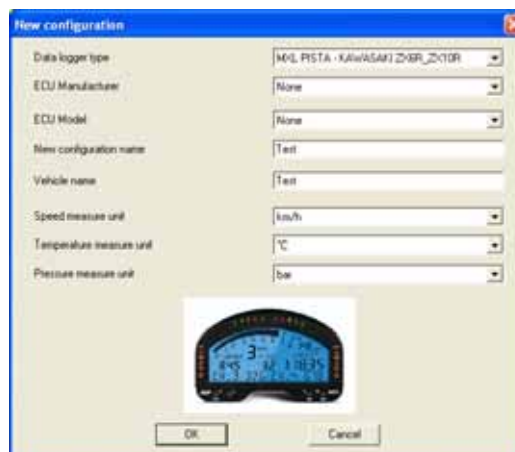
(\*) RS2 = **Race Studio 2** software

To correctly configure your gauge and use **Race Studio 2**, please follow these instructions.

Run **Race Studio 2** and select “**MXL**” pushbutton in the buttons toolbar.

Press “System manager” button and then “New” button: the screenshot shown in **Figure 19** is prompted.

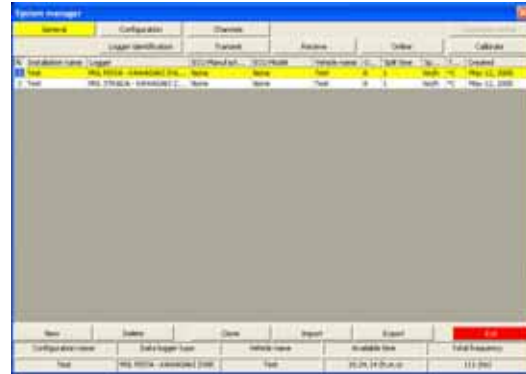
Please the following configuration parameters (Logger type, vehicle name, speed, temperature and pressure unit of measure, etc...) and then press OK button.



**Figure 19:** Race Studio 2 – New configuration

Once pressed OK button, System Manager window is prompted on your monitor, as shown in **Figure 20**.

In order to correctly configure the input channels, please select it among the available ones (in **Figure 20**, for instance, there are 2 available configurations: the yellow-highlighted is the selected one) and press button “Channels”.



**Figure 20:** Race Studio 2 – System manager window

The screenshot in **Figure 21** is prompted.

### MXL Strada Kawasaki:

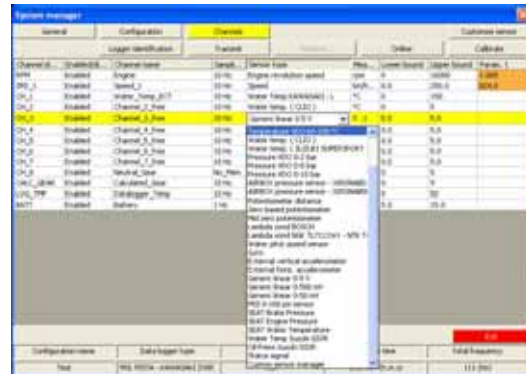
This logger has 2 free input channels , Channels labelled an CH. 2 and CH. 4. Clicking in the correspondent cell (row “CH. 2” or row “CH. 4” column sensor type) you may set the input channels among a long list of pre-defined sensors or you may set a custom sensor selecting “custom sensor manager”.

### MXL Pista Kawasaki:

This logger has 6 free input channels, labelled from CH. 2 to CH. 7. Clicking in the correspondent cell (row “CH 2 / CH. 7” column “Sensor type”) you may set the input channels among a long list of pre-defined sensors or you may set a custom sensor selecting “custom sensor manager”. Moreover, you may set channel name and sampling frequency.

Once all sensors have been correctly set, please press button “Configuration”.

Configuration window (**Figure 22**) allows the user to set shift lights and alarms threshold value, change unit of measure, to modify the speed parameters, etc...



**Figure 21:** Race Studio 2 – Input channels window



**Figure 22:** Race Studio 2 – Configuration window

## Speed:

The speed sensor on your **Kawasaki** bike is installed on the jackshaft that connects the gearbox to the pinion. The number of magnets installed is **4**.

The wheel circumference written in the proper cell is an “equivalent circumference” calculated using the following formula:

$$\text{Equiv Circumf} = \frac{\text{Wheel Circumf} * N_p}{N_c}$$

$N_p$  = Pinion teeth number  
 $N_c$  = Crown teeth number

Using the default values for crown/pinion teeth number and wheel circumference, the equivalent circumference is **824 mm (32.44 inches)** for **Kawasaki ZX 6R-6RR**. If you change the pinion or the crown and you do not want to manually compute the equivalent circumference, please refer to “[Equivalent Circumference Compute](#)” paragraph.

## Shift lights:



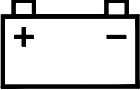



The values described in the 5 cells may be modified by the user in order to switch on the led at the desired RPM value. The 5 default values are the proper ones for a **Kawasaki ZX 6R-6RR**.

## RPM:

Please, DO NOT modify the “Multiply factor” (the default value is **/1**).

To change RPM scale upper limit, please select the desired value among the 7 default ones.

## Alarm leds **MXL Strada Kawasaki**:

AL 1		Water Temperature	Maximum alarm Default value: <b>100 °C (212 °F)</b> .
AL 2		Oil Pressure	Minimum alarm Default value: <b>2 Bar (29 PSI)</b> .
		Battery Voltage	Minimum alarm Default value: <b>13 V</b> .
		Fuel Level	Minimum alarm Default value: <b>100</b> (corresponding to the stock dash treasure value). Please do NOT modify threshold value; you might run out of petrol.
		Turn Signal	Minimum alarm Default value: <b>250</b> . Please do NOT modify threshold value; you might not see the turn signal on the display.
		High Beam	Maximum Alarm Default value: <b>250</b> Please do NOT modify threshold value.



## Alarm leds **MXL Pista Kawasaki**:

AL 1



Water Temperature

Maximum alarm  
Default value: **100 °C (212 °F)**.

From AL 2 to AL 6

You can set the proper threshold value of the sensor you have installed on each channel

## Gear sensor:

Suzuki plug & play kit allows you to sample the gear directly from an “on-board” sensor installed inside the gearbox. In order to allow your **MXL** to sample the gear, please do NOT modify the gear sensor default value which is set to **calculated with Neutral signal**.

## Calibrating auto calibrating the sensors, transmitting the configuration:

### **MXL PISTA** Kawasaki owners:

If you install a gyroscope (to map tracks) and/or a fork travel potentiometer (or a rear shock travel potentiometer), these sensors needs calibration to sample correct data. Please, click on “Calibrate” button: the window shown in **Figure 24** appears.

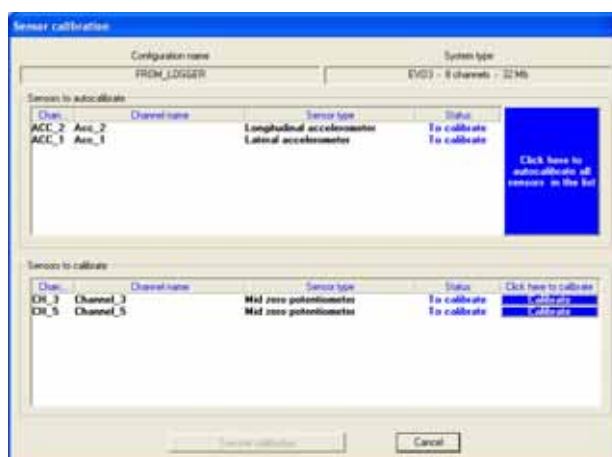
There are 2 categories of sensors: “to be auto-calibrated” and “to be calibrated”.

### The “to be autocalibrated sensors” are:

- Gyroscope
- Potentiometer distance

### The “to be calibrated sensors” are:

- Zero based potentiometer
- Mid zero potentiometer

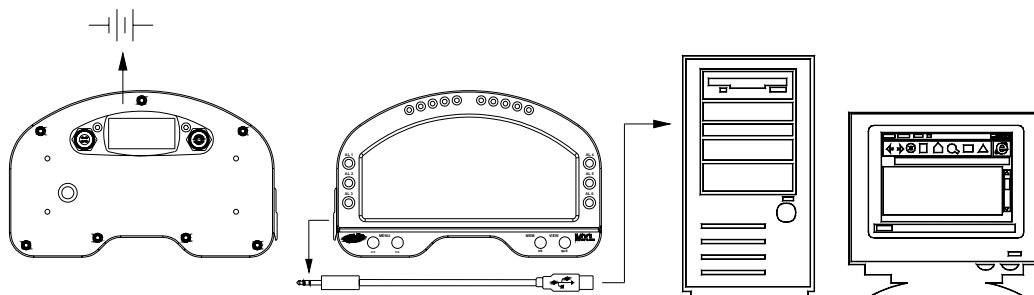


**Figure 24:** Race Studio 2 – Calibration window

Refer to the user manual for more information about calibration / auto-calibration procedure. Once calibrated / auto-calibrated the sensors, please transmit the configuration to the logger pressing button “Transmit calibration” inside the “Sensor calibration” window.

**Once set the desired input channels on your MXL and/or the desired threshold values for the alarm led of the shift lights, please transmit the configuration to the logger: to do so, please press OK button and then “Transmit” button on the next screenshot.**

**ATTENTION:** before transmitting the configuration, please ensure that the logger is connected to a switched on PC as shown in **Figure 23**.



**Figure 23:** How to connect the logger to the PC

## EQUIVALENT CIRCUMFERENCE COMPUTE

If you need to compute the equivalent circumference to be inserted in the correspondent “Configuration” window of **Race Studio 2** software, you can use “**Bike.exe**” software you find in **Race Studio 2** software CD. To do so please browse the Cd:

Double click on “**Bike.exe**” icon and the following window appears.

Please:

- insert “Drive gear teeth number”
- insert “Driven gear teeth number”
- select circumference unit of measure
- insert circumference value
- press compute button



The software computes the equivalent circumference and the final value appears in the related cell (red circled).



Please insert this value in the related cell of **Race Studio 2** Configuration window.



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## MXL PISTA / MXL STRADA SUZUKI MAINTENANCE

**MXL Strada / MXL Pista** plug & play **SUZUKI GSXR** kits do not need any special maintenance. Provided that adequate care is taken of display unit and component, the only required maintenance is periodical upgrading of software and firmware.

This installation manual has been written using the following parameters:

- **Software: Race Studio 2 – Version 2.20.11**
- **Firmware: MXL – Version 14.33**

To check if new software/firmware versions have been published by **AIM**, please connect to our website [www.aim-sportline.com](http://www.aim-sportline.com) and go to “software download” page where all last software and firmware versions are freely downloadable.

If you find a new software or firmware version, please download and run it and then follow the instruction prompted on your Pc monitor.



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