

Installation – TCS4C_CBR600_RR_0304.AA (revision_02, 07.03.2013)

Author – Mick Boasman

NEMESIS - TCS

Nemesis-TCS 'Traction Control System Installation manual Honda CBR600 RR 2003_04 with race seat

Kit part No.	TCS-4C_CBR600_RR_0304.AA
This application is designed for use with the Honda CBR600 RR 2003_2004 with race seat	

Speed pick up components	Part No	Checked	Qty
front wheel speed sensor mounting bracket	CSD1398		1
M8 x 50 Cap head screw zinc	CSF1054		2
Speed sensor	23813030401		1
M6 x 16 Zinc Hex head cap screw - Speed sensor	CSP1019		1

Traction module components	Part No	Checked	Qty
Traction Control Module - 4c	CSP1048		1
TCS Back plate - horizontal	CSD1378		1
Honda CBR600 2003_04, TCS mount bkt	CSD1421		2
Honda CBR600 2003_04, TCS mounting angle block	CSD1420		2
M8 x 20 low head cap screw	CSP1034		4
M4 x 20 Button head allen s/s screw	CSF1069		4
Spacer D-10, ID4.5 ,L-14	CSD1426		2
Bobbin - Dia 10x17, M4 female	CSP1046		4
M4 x 8 SS button head allen screw	CSF1045		8
M4 spring washer	CSF1050		8

Wiring	Part No	Checked	Qty
Main Wiring	CSW1427		1
Front Wiring	CSW1371		1
Quick link (red) Throttle / rear speed	CSP1015		2

Display module components	Part No	Checked	Qty
Display module	TC-Pod		1
Spacer - Dia 11, ID 6.5, L 6.5	CS1258		1
M6 x 35 s/s cap head screw - black	CSP1016		1
Push button assembly - blue/green TC-Pod	CS972		1
M3 x 8 Hex button head	CSP1018		2
TC-Pod mounting bracket - triple clamp	CSD1399		1

Miscellaneous components	Part No	Checked	Qty
Cable ties - 200mm x 4mm	CSP1021		10
Printed TCS over view manual			1
Printed TCS Honda CBR600 0304 AA manual			1
Nemesis-TCS stickers	CSP1022		6

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IMPORTANT – To be read by ALL installers and owners

Notes –

- This kit is designed for use on bikes fitted with a 'race type' seat fairing and standard rear speed pick fitted into the gearbox with **24/28** ratio in 6th gear.
- Power for the TCS system is via the Kill switch. After Kill-ON (bike in Run position) the TCS system needs 3 seconds to 'boot up', the engine will not start during this period.
- This kit uses the rear speed sensor on the gearbox output shaft (front sprocket). For customers who are not using our default sprocket ratio of **16/42** you will need the additional WinTC programming tool to change this.

Terms of use

The presence of the Nemesis-TCS does not take away the responsibility of the rider to operate the bike correctly within their own abilities, the track conditions and the laws of physics.

The system is designed to achieve greater on-track performance by the use of power modulation during wheel slip events, but in no way should it be considered possible for the system to recover from every conceivable loss of grip. The onus for safety always rests with the rider to stay within his or her own abilities, and to ensure that the 'on-bike' equipment is programmed, setup correctly, and an appropriate TC level selected for the skill of the rider, the bike and the track conditions.

This equipment is intended for racing or track day performance use only and where exhaust emission controls are not applicable.

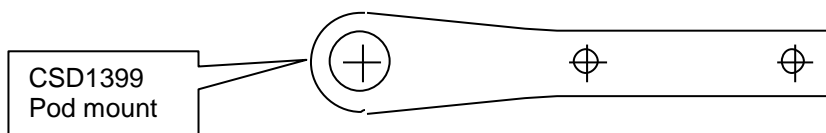
By installing and using the Nemesis-TCS you automatically indemnify Competition Systems Ltd, our suppliers and our authorised dealers from all first party or third party loss or damages. Normal components warranty is not affected

Preparation. Remove these parts from the bike.

- All fairing panels
- Fuel tank
- Air box and intake
- Seat fairing

TC-Display pod Fitting:

- Mount the display pod to the bracket using the M3x8mm screws.
- This bracket for mounting the display is supplied straight. For optimum installation on the Honda you should bend this until the display is aligned correctly, as seen here.
- Fit the angled bracket to the upper triple clamp bolt.
- The wiring can be secured to the ignition switch to damp out some vibration.
- Take care to ensure full steering movement without collision with the display pod
- Mount the CS972 switch assembly to the clutch lever assembly cylinder clamp using the M6 bolt and spacer provided. Connect the switch assembly to the display wiring via the 4-way connector
- Do not secure any wires in place at this stage, as there will be further wires added in this region.
- If installing a pit limiter switch, mount it on the right brake lever assembly.



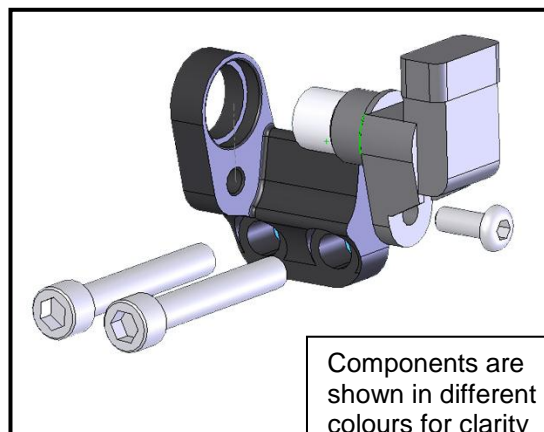
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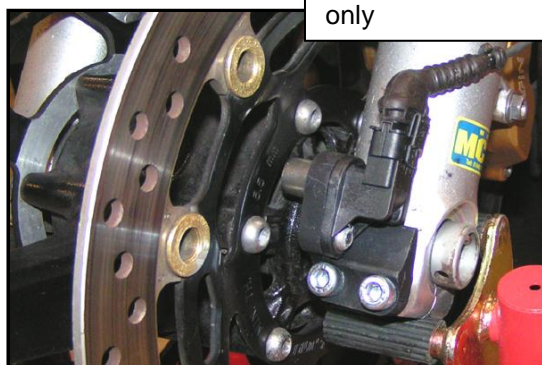
Front Wheel Speed:

Your TCS kit comes with a dedicated bracket, sensor and spacers to pick up from the standard disk bolts. This system is designed to use the standard ferrous bolts; titanium or stainless bolts may not be used.

- Remove the two M8 spindle clamp bolts from the left fork leg. Use the two new longer M8x50mm bolts, spacers and bracket but do not at this stage tighten these bolts.
- Remove the rubber O ring from the sensor body and fit into the rebate of the sensor bracket.
- Push the sensor into the bracket. Lock in place using the M6x16 dome cap screw
- **Check the gap between the sensor face and the surface of one of the new disc bolts, set to 1mm to 2.5mm** and now tighten the two M8 bolts to the manufacturers recommended torque.
- The sensor maximum range is approx 4mm for smaller targets and 6mm for larger targets, therefore no other ferrous objects should be installed anywhere near this sensor
- **These are safety critical components and could result in wheel locking, brake failure or TCS damage if fasteners come loose.**



Components are shown in different colours for clarity only



IMPORTANT – Care should be taken when using paddock stands not to damage the wiring or sensor mounting

Wiring

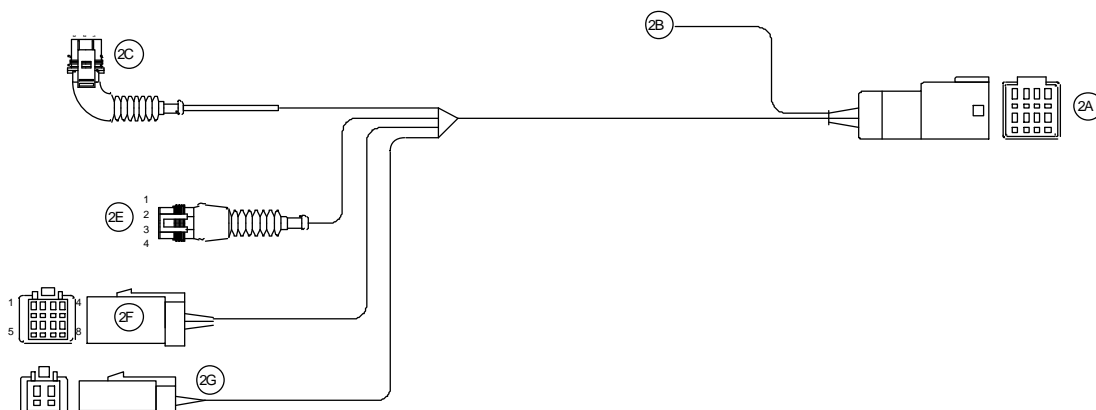
The wiring provided in this kit comes in 2 parts to simplify the installation and enable crash damaged parts to be replaced without a major strip down. It is recommended that the front wiring loom be installed first.

Wiring – Front section

The front section wiring (part No.CSW1371) has connections for all of these elements

- 2C - Front speed sensor
- 2F - TC-Pod display
- 2G - Pit lane speed limiter switch
- 2E - PC communication point (4 way AMP)
- 2A - Chassis link
- 2B - Throttle signal (single wire)

This wiring is designed to be routed along the left side of the bike. Do not cable tie the wiring in place until all wiring is laid within the bike and connected



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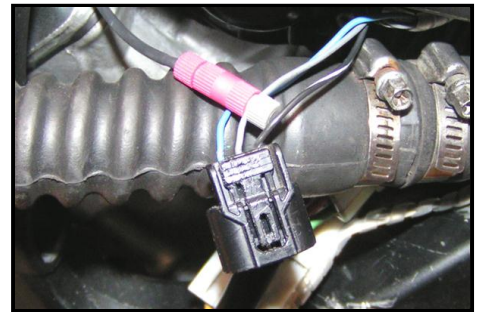
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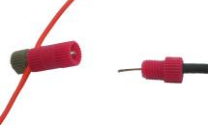
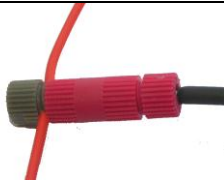
Wiring / Front - Throttle

The throttle input is the wire **2B** of this loom. This needs to be attached to the **yellow/red Signal** wire of the standard bike throttle position connector using the red quick link provided in the kit. This is the middle wire of the 3

Attach the quick link as shown in the steps below.

Note that the signal wire is supplied long and may be shortened as necessary



<p>The quick link is made up of three parts as seen here on the right:</p>	
<p>Using the green section with the slot, push it over the throttle signal wire of the bike loom until the wire rests at the bottom of the slot:</p>	
<p>The large red centre section must be fitted the correct way around or the link will not work. Locate the end with the sharp pointed tip protruding from the end of the outer body and screw this end onto the green section until it rests firmly against the wire. The sharp tip will pierce the outer sleeve but not sever the inner core of the wire:</p>	
<p>Strip back the sleeve of the throttle input wire on the TCS loom so that 8mm of inner metal core is exposed. Push this into the red cap as seen here on the right with inner core showing:</p>	
<p>Screw this cap and wire into the main body ensuring that metal inner core and wire cores are sandwiched and held securely.</p> <p>Shrink sleeving can be put over this quick link if required.</p>	

Wiring / Front – TC-Pod display

Connect the front wiring loom to the TC-Pod display via the 8 way connector **2F**

Wiring / Front – front wheel speed

Route the front speed wiring **2C** across the front of the bike and following the same route as the brake line to the left calliper, connect it to the front speed sensor. The wiring for sensor must be routed taking all of the following into consideration.

- Movement of forks
- Rotation of the steering
- Positioning of paddock stands

Wiring / Front – PC connector

The 4 way PC connector **2E** should remain accessible but securely cable tied to the existing harness. Avoid water ingress at this connector

Wiring / Front – Pit limiter switch

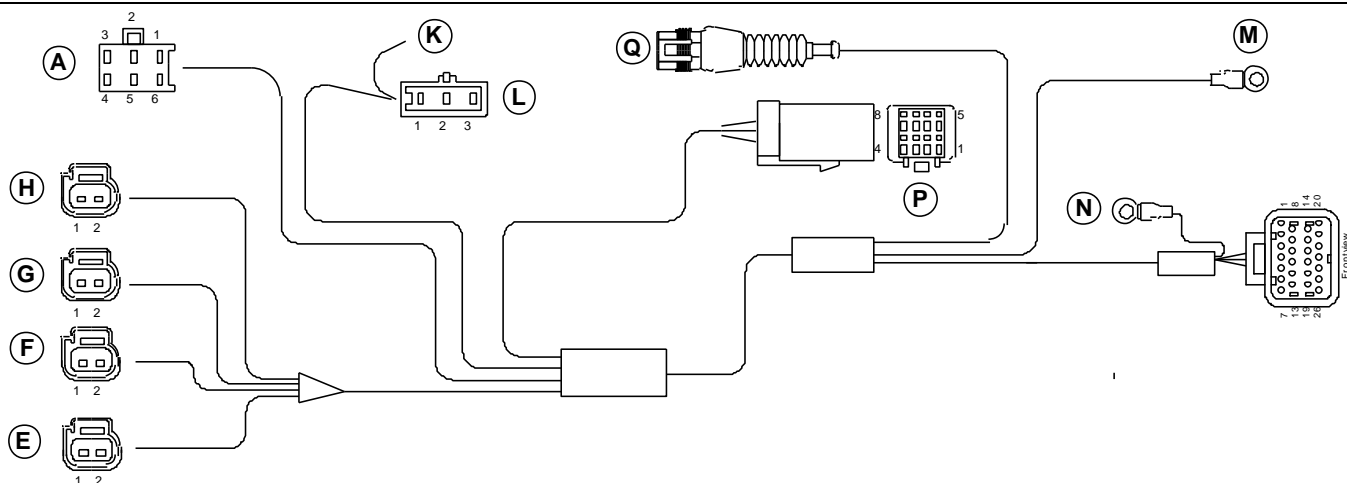
The 2 way pit limiter switch connector **2G** can be cable tied out of the way if not needed or plugged into the dedicated red switch assembly CSP1041 shown in this picture (not supplied as part of the kit)



Wiring – Rear section / Ignition coils

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Route this loom section along the **LEFT** side of the bike following the standard wiring route and starting from the rear compartment where the TCS module will be located.

On this bike there is a separate sub-loom for the ignition coils with a 6 way connector located at the rear right of cylinder 4. Disconnect this and remove completely the coil sub loom.

Connect connector A to the bike wiring at the same place you just disconnected the sub-loom. This provides 'signal inputs' to the TCS system as well as power.

The following 4 connections are all ignition coil **OUTPUT** signals from the TCS to the drive the ignition coils and must be routed on the

E - Connect to Coil 1 on the bike

F - Connect to Coil 2 on the bike

G - Connect to Coil 3 on the bike

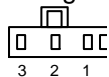
H - Connect to Coil 4 on the bike

IMPORTANT – It is vitally important that the coil inputs and outputs are connected correctly or the bike may not start on all cylinders, or may even damage the engine.

Wiring – Rear speed

Locate the connector of the rear speed sensor connector, which can be found on top of the gearbox. Open this connector and plug in connector **L** to the sensor side wiring.

Now attach the single wire **K** to the **PINK** wire (pin 1) of the original loom side wiring using the remaining red quick link.



In this way the rear speed signal is shared between the TCS module and the dashboard/ECU.



Wiring – Front link

Connector **P** should be routed along the **LEFT** side of the bike all the way to connect up with **2A** from the front loom.

Wiring – Battery connections

This vital connection **M** must be connected directly to the battery negative connector, not to the engine block or any other ground source.

IMPORTANT – Failure to fit the ground securely can lead to misfire / engine not starting / TCS module damage. This is the main power ground for the coil system.

Wiring – Quick shifter input

Connector **Q** is available for use with most type of OFF/ON switch type quick shifter.

Pin 1 – Vbat power

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Pin 2 – Ground

Pin 3 - Signal

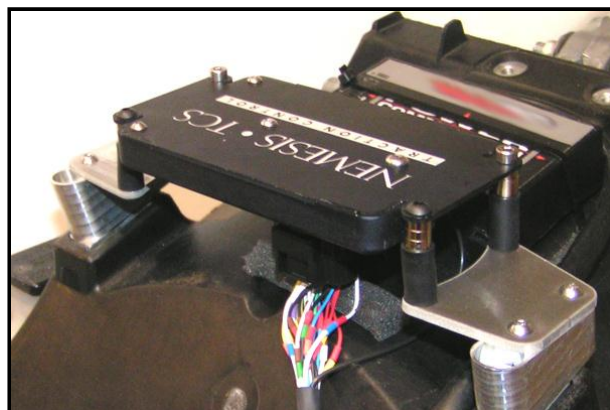
For more information on quick shifter connections please refer to the 'System manual'

Wiring – TCS module and ground

Connect the main wiring loom to the TCS module. It is vitally important that the small ground wire with the 4mm eye (**N**) be connected securely to the M4 stud using the M4 Nyloc nut. Without this the module or coils could be damaged as well as TCS not functioning correctly.

The TCS module mounting bracket and TCS module are held together using the 4 rubber mounts, screws, washers and brackets shown in the images on the next page.

IMPORTANT – Failure to fit the module in the orientation shown and mounted on a horizontal axis will significantly affect the functionality of the TCS system, if any adjustment is necessary use M4 plain washers under the rubber mounts.



PC Setup

Your TCS module should be loaded with the following bike :

BIKE - TCS-4C_CBR600_RR_03_04_C

TYRE – To suit your installation

CONFIG - TCS_4C_Base_35_02.CONFIG

Default rear sprockets for maps are: 16/42

Gear box tooth count per output shaft rotation: 28

Status **Position** offset value –

Stronger - **0.21 to 0.32** – Refer to **WinTC View Data**

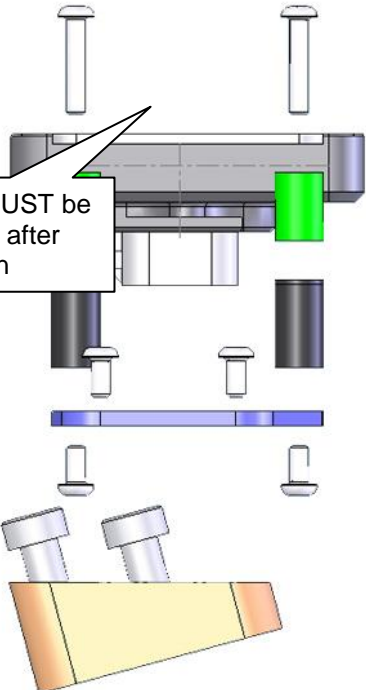
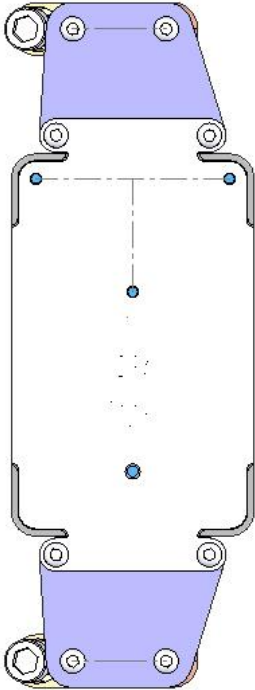
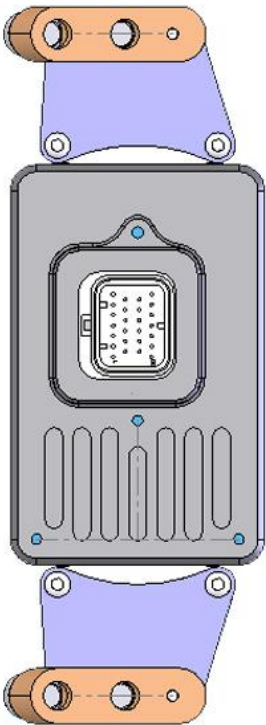
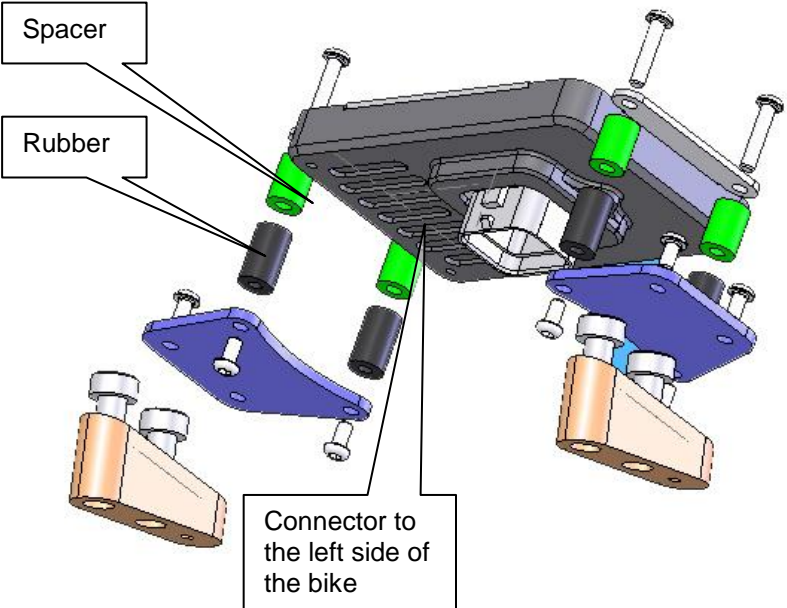
Normal - **0.32 to 0.37** – Refer to **WinTC View Data**

Weaker - **0.37 to 0.47** – Refer to **WinTC View Data**

Note : The WinTC installation guide can be found in the manual - Win-TC 4C manual_v2.05_a.pdf

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View from left side of the bike – Front is to the left	View from top – Front is to the left
 <p>Module MUST be horizontal after installation</p>	 <p>Components are shown in different colours for clarity only</p> <p>Spring washer to be used on all M4x8 screws. This washer is not shown in these graphics</p>
View from underneath – Front is to the left	Angle view from front left
	 <p>Spacer</p> <p>Rubber</p> <p>Connector to the left side of the bike</p>

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Notes: