

## Owners Manual: iS2 Systems



### FORWARD

We wish to thank you for choosing this innovative Translogic product. Your new Translogic product is the result of Translogic's advanced engineering, exhaustive testing and continuous striving for superior reliability, safety and performance.

Read this instruction manual before fitting and operating your product so you will be thoroughly familiar with the proper operation of its controls, features, capabilities and limitations. To ensure a long trouble free life for your product give it proper care and maintenance as described at the back of this manual.

*Due to improvements in design and performance during production there maybe, in some cases, minor discrepancies between actual product and the illustrations and text within this manual.*

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### SAFETY

When embarking on the fitment of your Translogic product it is advisable to position the motorcycle/vehicle so it cannot cause injury or damage by falling over/rolling forwards or backwards. The use of a paddock stand is ideal or if necessary chock the wheels.

When removing or adding electrical cables to the vehicle battery or wiring harness always remove the negative earth cable/terminal before the positive cable/terminal. Replace the negative earth cable/terminal last to avoid shorting the electrical system.

## INSTALLATION GUIDELINES

**TAKE YOUR TIME!** When mounting the components ensure that the units are protected from excessive vibration and the environmental elements, and that they are securely mounted. When using adhesive velcro pads to secure the Intellishift ECU ensure that the mounting surfaces are grease/dust free by wiping thoroughly with an alcohol based fluid or `meths`. Use a hot air blower or hair dryer to heat up the mating surfaces so the surfaces are warm to the touch prior to attaching the units in position. Do not allow any part of the Intellishift ECU housing to touch any other objects such as the chassis, bodywork etc. once fitted into position.

**ATTENTION!** BE VERY CAREFUL NOT TO BEND/PULL THE WIRES EXITING THE INTELLISHIFT ECU AND QUICKSHIFTER SENSORS OTHERWISE THE WEATHERPROOF SEALS MAY BE COMPROMISED RESULTING IN WATER INGRESS AND PRODUCT FAILURE.

When routing electrical cables ensure the cables cannot become trapped or pinched which could result in malfunction and secure with cable ties where necessary.

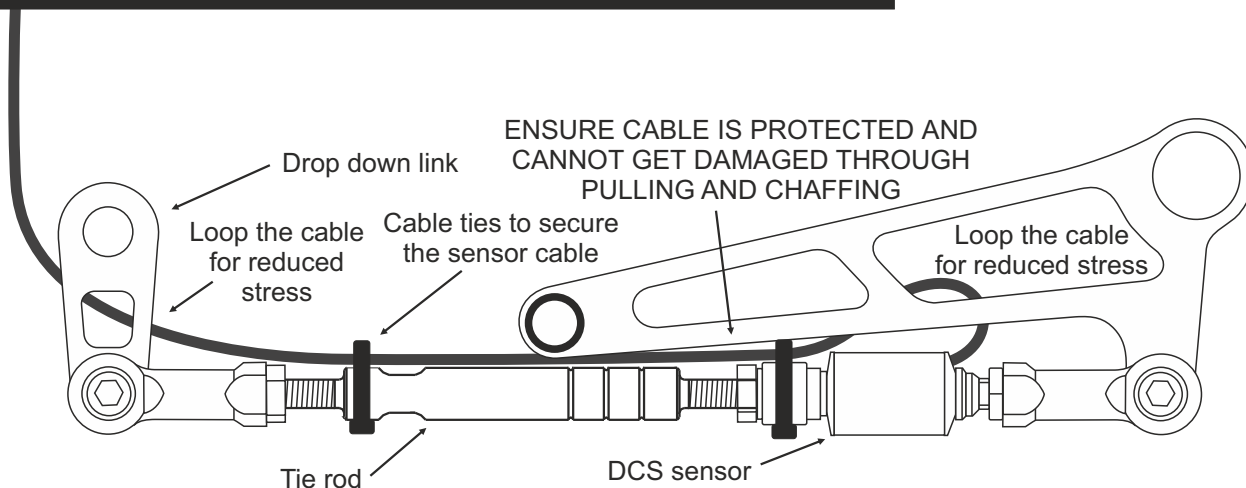
If you encounter difficulties with this installation please do not struggle, call your vendor/supplier for professional assistance.

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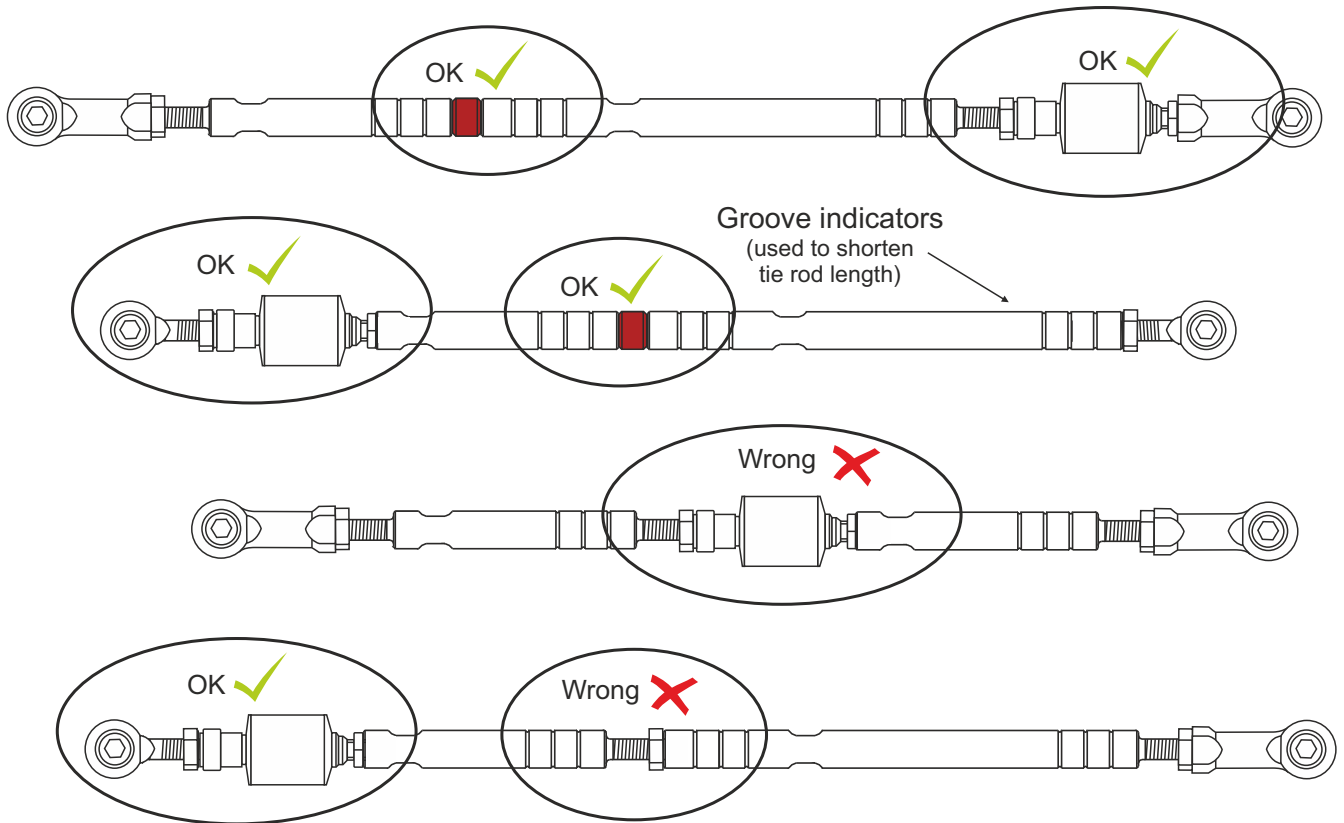
### INSTALLING THE DCS DURASHIFT QUICKSHIFTER SENSOR

**ATTENTION!** The DCS Durashift sensor can operate in either a push or pull format by connecting the corresponding sensor connector. The green and blue wired connector is the push format and the red and blue wired connector is the pull format.

#### **GUIDELINES FOR DCS SENSOR FITMENT USING TLS-TRK**



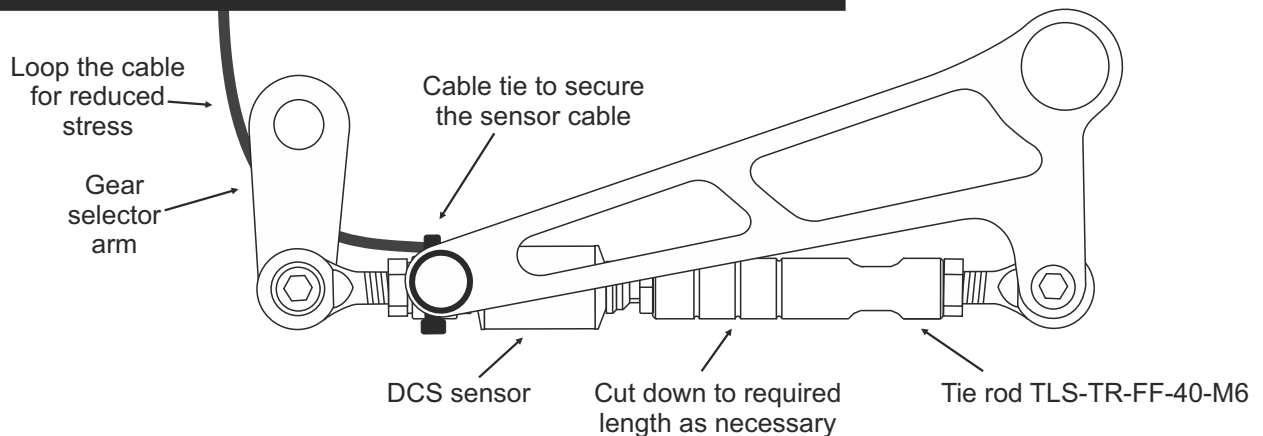
**ATTENTION!** Never install the DCS Durashift sensor in the middle of the tie rod. For best results install the sensor so the male thread enters the rod-end attached to the gear lever or the drop down link.



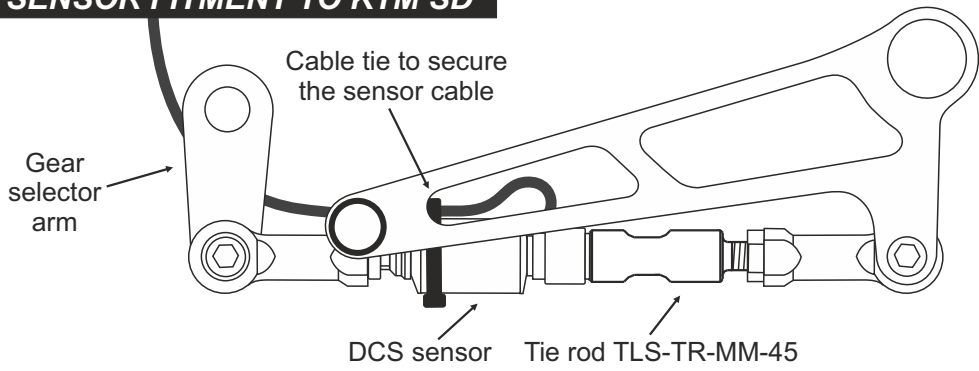
1. Attach the DCS Durashift sensor into the end of the tie rod as shown. Use the universal tie rods and red spacer supplied to achieve the desired length of tie rod. *If you run out of enough adjustment you may have to shorten the tie rod by using the groove indicators to assist you in locating the correct length of rod and then cutting the rod down to length, make sure you cut the tie rod squarely or the lock nuts may come undone.* Now route the sensor cable to the quickshifter harness and plug the corresponding sensor connectors together. **REMEMBER!** Never use thread lock to secure the DCS Durashift sensor into the tie rod or rod ends!

## OTHER DCS DURASHIFT SENSOR INSTALLATION EXAMPLES

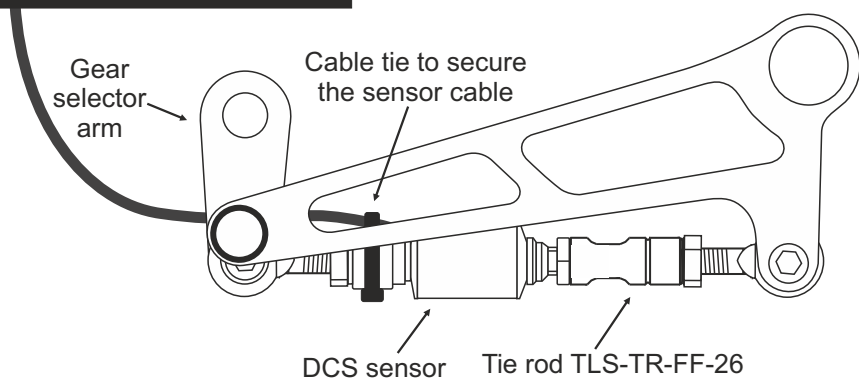
### **DCS DURASHIFT SENSOR FITMENT TO KTM RC8 & RC8R**



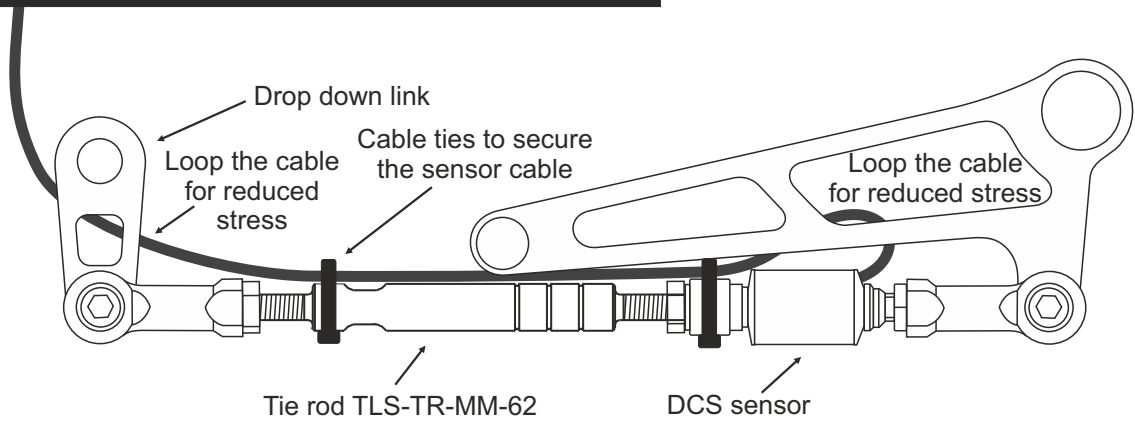
**DCS SENSOR FITMENT TO KTM SD**



**DCS SENSOR FITMENT TO DIAVEL**



**DCS SENSOR FITMENT TO NINJA 250R & 300R**



## INSTALLING THE LINEAR QUICKSHIFTER SENSORS

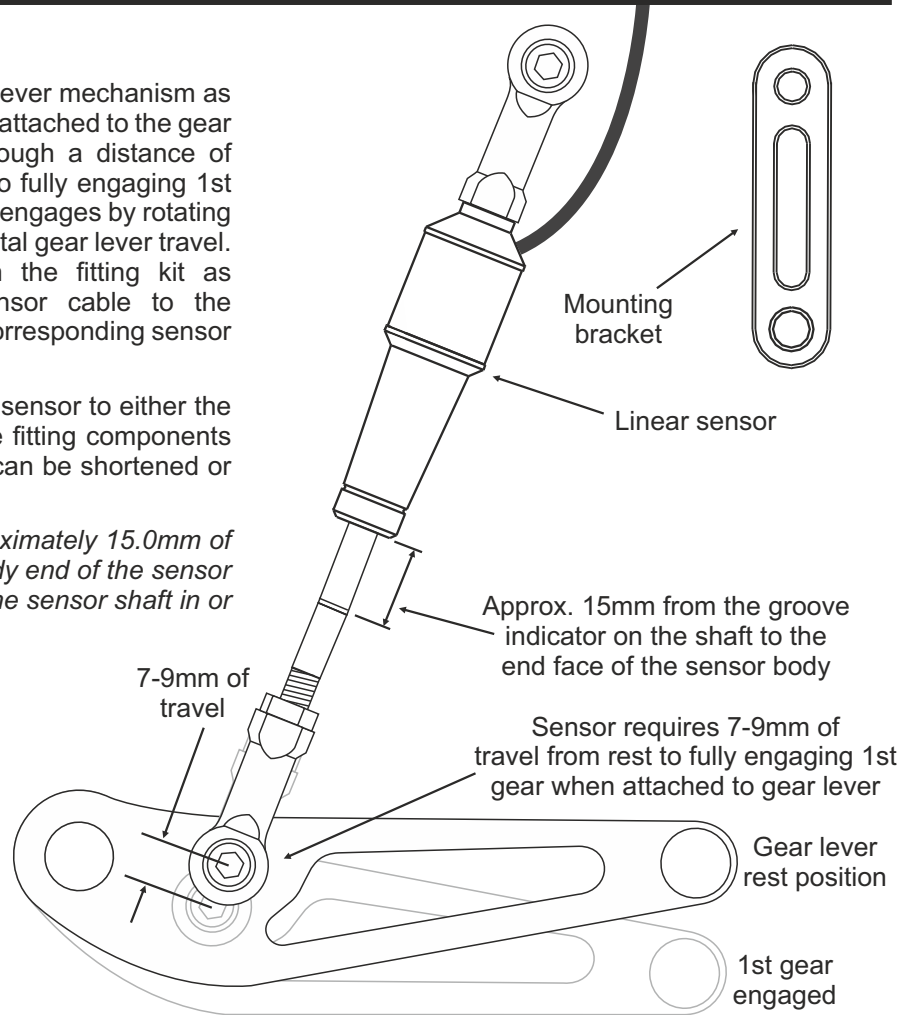
**ATTENTION!** On push format linear sensor installations the interrupt only functions on upshifts when the linear sensor is compressed. On pull version linear sensor installations the interrupt only functions on upshifts when the sensors are in tension.

### **GUIDELINES FOR LINEAR SENSOR INSTALLATION USING STANDARD FITTING KIT**

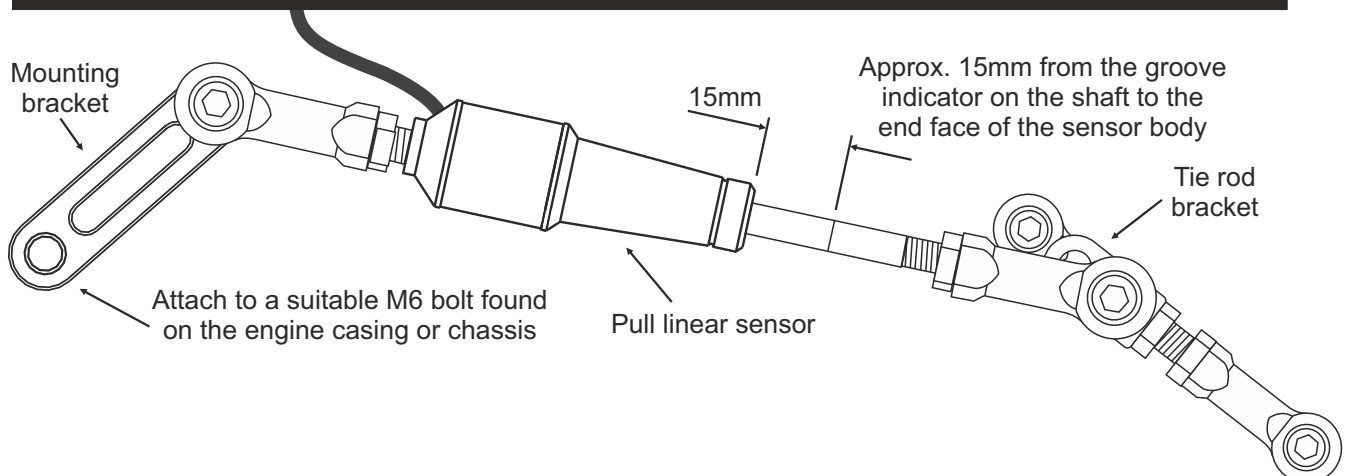
1. Attach the sensor to the gear lever mechanism as shown. Ensure that the rod end is attached to the gear lever at a point which travels through a distance of between 7.0 - 9.0mm from rest to fully engaging 1st gear. Ensure that 1st gear actually engages by rotating the rear wheel when checking for total gear lever travel. Use the accessories supplied in the fitting kit as necessary. Now route the sensor cable to the quickshifter harness and plug the corresponding sensor connectors together.

2. Attach the opposite end of the sensor to either the chassis or engine casing using the fitting components supplied. The mounting bracket can be shortened or bent to suit.

*Be aware that there must be approximately 15.0mm of shaft showing prior to fixing the body end of the sensor which can be adjusted by turning the sensor shaft in or out of the sensor rod end.*



### **LINEAR SENSOR INSTALLATION FOR HYPERMOTARD & MULTISTRADA MODELS**



## FITTING THE INTELLISHIFT ECU

**ATTENTION!** The Intellishift ECU should be positioned so it does not exceed an operating temperature of +70°C and must be installed where it is protected from excessive vibration and harsh environmental elements. Under the riders seat or at the front of the motorcycle forward of the head stock area or near the fairing bracket area is an ideal position.

1. Locate a suitable flat surface area for the Intellishift ECU mounting plate to adhere to. Do not actually fix the ECU into position until you have installed the rest of the components and have routed the relevant cables. Once you have completed the rest of the installation you can then finally fix the ECU into position using the supplied velcro mounting pads. Make sure you degrease and warm up the mounting surfaces prior to peeling the backing off of the velcro pads and securing into position, cold surfaces result in poor adhesion! No part of the Intellishift ECU housing is permitted to touch any other object such as the chassis, bodywork etc.

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## CONNECTING THE QUICKSHIFTER HARNESS

### Denso or Mitsubishi type ignition coils, stick type

These ignition coils may have the positive and negative pins opposite to the illustration shown on page 7. so great care should be taken when checking wire alignment. You might be required to swap the wires ONLY in the Quickshifter harness connectors with the yellow dots ● so that the grey link wire aligns to the original +12volts supply in the OEM ignition coil connector to the ignition coil positive. See Diagram A. **Failure to have the correct wire alignment or 'crossed over' wires in the connectors with the yellow dots ● could result in product malfunction. DO NOT SWAP ANY WIRES IN ANY OF THE OTHER QUICKSHIFTER CONNECTORS!**

**NOTE1:** There will be 2 wires in each OEM ignition coil connector. The wire which is the same colour in each OEM ignition coil connectors will typically be the +12Volt supply wire. In the example shown in **Diagram A** the +12volt wire is 'Gy' (grey) although it might be a different colour with each installation. Using a Digital Volt Meter you can double check to see which of the wires in the OEM ignition coil connector has +12 volts on by un-plugging it from the ignition coil, switch on the ignition and look for which of the wires has +12volts on.

1. Route the harness through the motorcycle/vehicle so the Quickshifter connectors end up in close proximity to the ignition coils. *Try not to run the Quickshifter harness next to the OEM vehicle harness.* One at a time unplug the original connector on each ignition coil and connect one male and female Quickshifter harness connector to the ignition coil and its original connector. You will need to do this on each of the ignition coils.

2. Connect the black eyelet ring terminal wire to the negative battery terminal only.

### Other ignition coil types or fuel injection connections using the Crimp Tool Kit.

**NOTE2:** If your application features different ignition coil connectors or you are connecting to the fuel injector signal wires then use the crimp tool kit 'C2' and refer to Diagram C and Diagram D for connection information and Diagram E for crimp tool use.

3. Route the harness through the motorcycle/vehicle so the Quickshifter connectors end up in close proximity to each of the ignition coils, fuel injectors or fuel injector connectors. *Try not to run*

the Quickshifter harness next to the OEM harness or other third party cables on the vehicle. Typically there will be 2 or 3 wires on each of your OEM ignition coils or fuel injectors. The wire which is the same colour on each OEM ignition coil will probably be the +12Volt supply wire and possibly a common ground if your ignition coil has 3 wires. The wire that is a different colour on each ignition coil will be the signal wire. You can double check which wires carry +12v or ground using a Digital Volt Meter, DVM. In each example you will interrupt the `signal wire` on each ignition coil or fuel injector as illustrated in Diagram C and Diagram D.

**NOTE3:** The single red wire featured in the crimp tool kit will need to be run to an `ignition-on` supply source. This is a wire that receives +12v when the `run button` or `ignition` is switch on.

**Diagram A.**

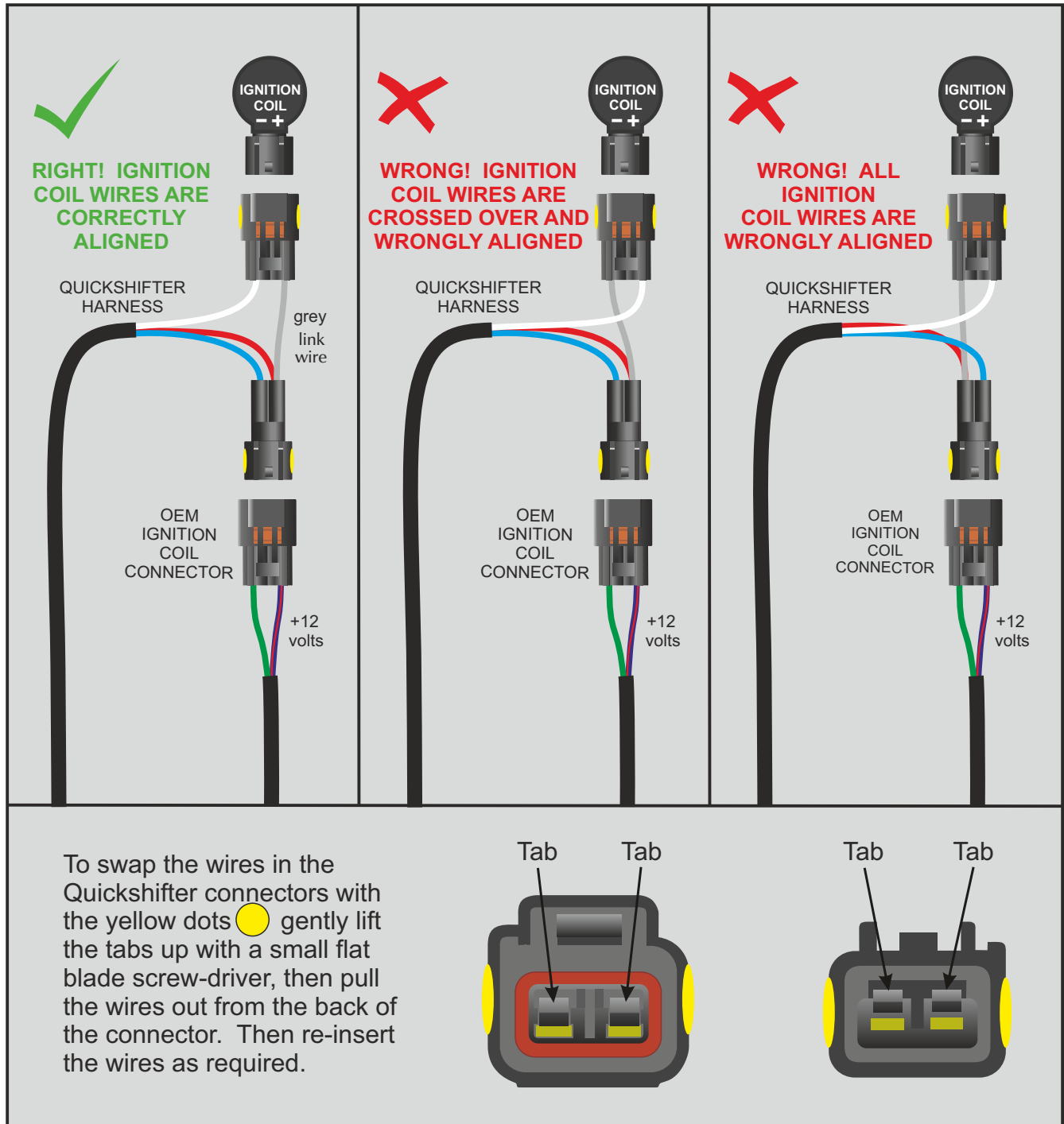




Diagram B.

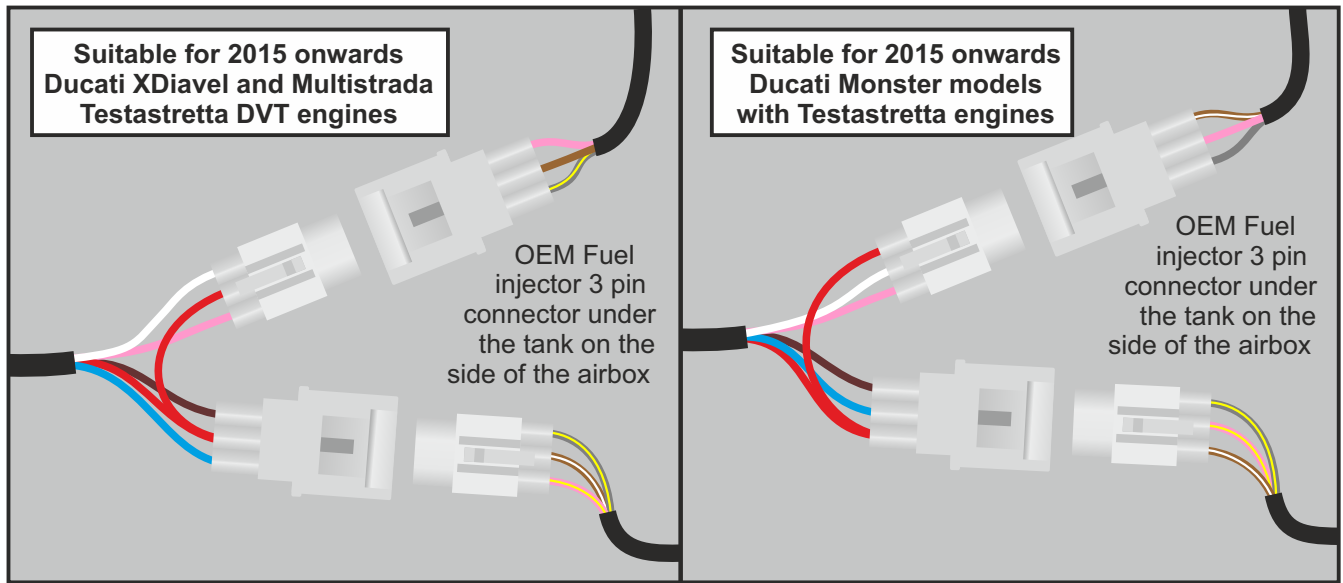


Diagram C.

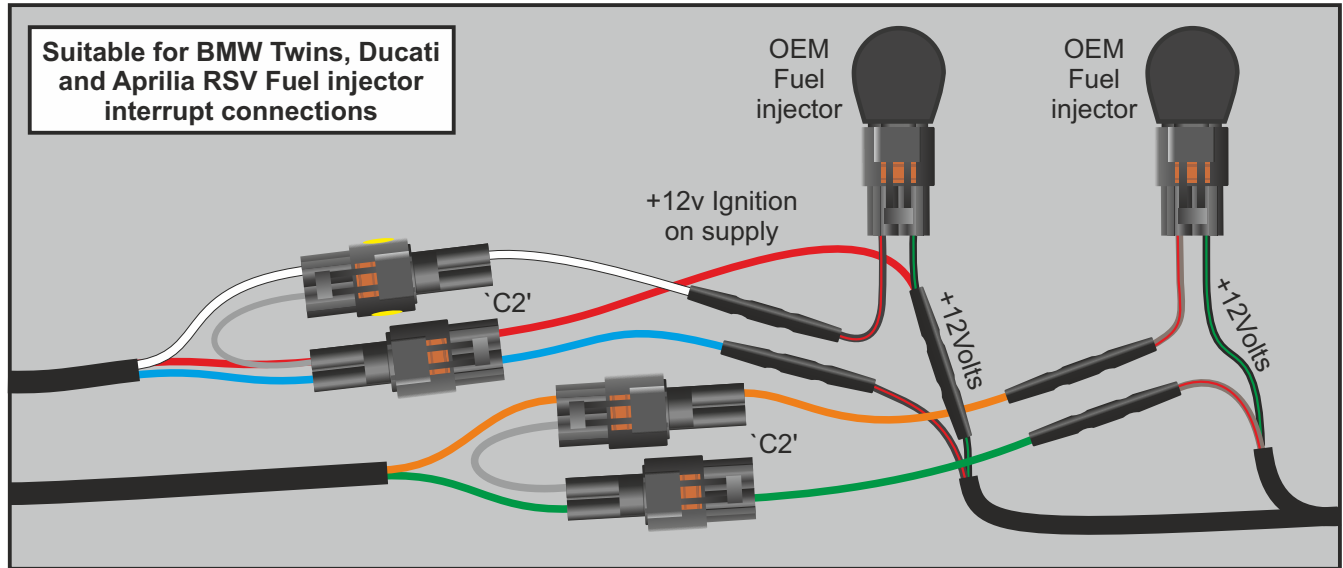
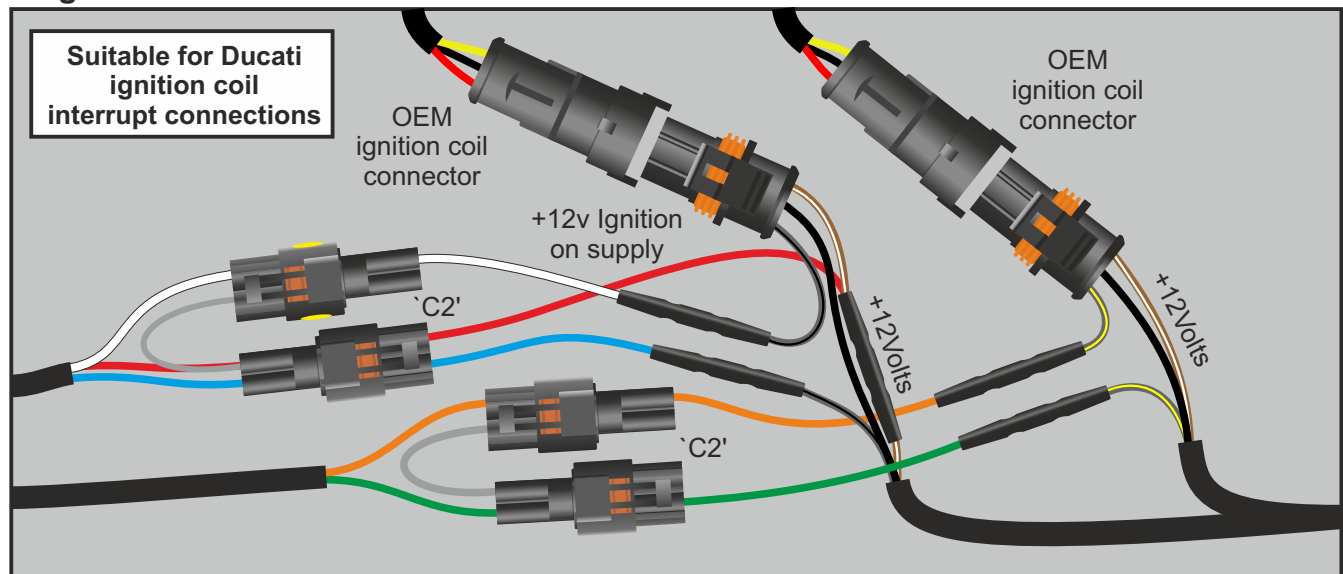


Diagram D.

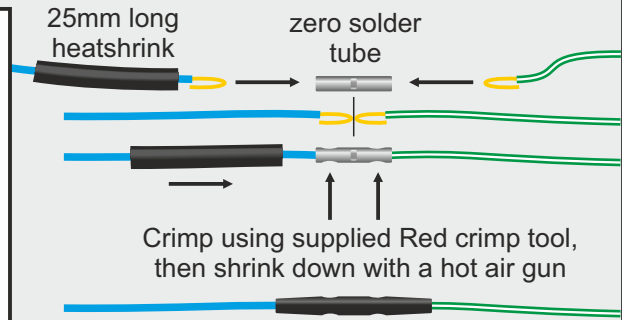




## Diagram E.

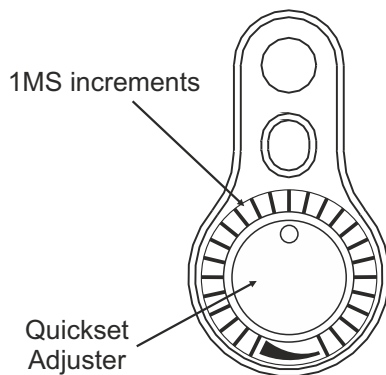
### USING THE SUPPLIED CTK (Crimp Tool Kit)

If your Quickshifter system is not plug & play you can create a plug & play system using the supplied CTK. You will need to remove about 10mm of the PVC off of the wire to allow enough of the wire to be folded in half which is then inserted into the 'zero solder tube'. **ATTENTION!** Don't forget to cut down the black heatshrink into pieces 25mm long and slide over the wires before crimping down both ends of the tube, Position the heatshrink centrally and shrink down using a hot air gun.



## FITTING AND USING THE OPTIONAL QUICKSET ADJUSTER

1. Locate and connect the 'Quickset Adjuster' connector to the quickshifter harness, you may have to remove the blanking plug from the harness, then route the 'Quickset Adjuster' up to the handle bar area and secure to a suitable M6 threaded bolt either holding on the clutch lever assembly or brake lever assembly or similar. *Do not forget to tighten the bolt!*



The 'Quickset Adjuster' gives the user the ability to make small adjustments 'on-the-fly' to the interrupt durations previously set in 'PRO-TUNER-MODE'.

Each segment is equal to approximately 1ms. The 12'o'clock position shown is equal to the 'base' interrupt duration already set by the user. Rotating the adjuster clockwise increases the interrupt duration 1ms per increment and rotating the adjuster anti-clockwise reduces the interrupt duration by 1ms per increment.

**TIP:** Use example: If the track conditions deteriorate then the user might increase the interrupt duration slightly or decrease the interrupt duration for sustained very high RPM shifting.

## PRO-TUNER-MODE ADJUSTMENTS AND TUTORIAL

It should not be necessary to enter Pro-Tuner-Mode unless you wish to experiment with the **FACTORY DEFAULT SETTINGS**. It may be possible to improve the 'feel' of the Intellishift Quickshifter System by incrementing and decrementing the **DEFAULT SETTINGS** to suit a particular rider or vehicle transmission.

**ATTENTION!** Road riding/testing is essential to get the best out of this Intellishift Quickshifter system if you do choose to adjust the settings as a dyno can suppress the feel of the quickshift.

## Entering Pro-Tuner-Mode

To enter 'Pro-Tuner-Mode' switch on the ignition and then within the first 20 seconds move the gear lever into a 'trigger' position where the status LED illuminates solid GREEN and hold in this position for 6 seconds until the GREEN status LED changes to RED then when you release the gear lever the status LED will change to flashing ORANGE to indicate you have entered 'Pro-Tuner-Mode'. You can now release the gear lever.

**NOTE1:** The 'primary' default interrupt duration is 66ms in each RPM band.

**NOTE2:** The status LED will flash ORANGE in the sensor trigger force section.

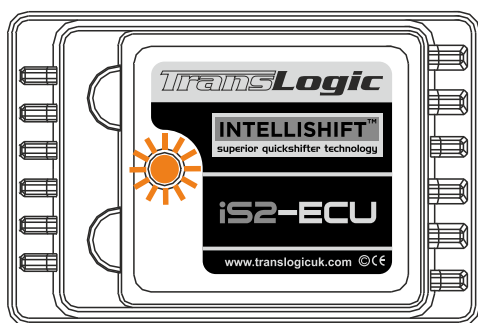
**NOTE3:** The status LED will flash GREEN to indicate what RPM band you are about to adjust, there are 5 bands, 1 flash equals RPM Band #1, 2 flashes equals RPM Band #2 and so on.

**NOTE4:** The status LED will flash RED in each of the RPM bands to indicate the interrupt duration, each flash will increase or decrease the interrupt duration by 2ms (milliseconds).

## Pro-Tuner-Mode tutorial

Go ahead and enter Pro-Tuner-Mode, the status LED will be flashing ORANGE 5 times (default setting) The feel of the sensor trigger force point is a personal thing to the rider. Imagine that you would like to feel a little more force on the gear lever before the quickshift happens. Let's now increase the sensor trigger force a little. See example 1.

### Example 1.



### Action:

Move the gear lever to the trigger position once, you'll see the status LED momentarily change to GREEN when the sensor is in the trigger position, then release the gear lever. You'll now be able to count 6 ORANGE status LED flashes. You can repeat this action up to a maximum of 15 flashes and back to a minimum of 1 flash. (15 flashes will increase the trigger force significantly, 1 flash will have reduced the trigger force).

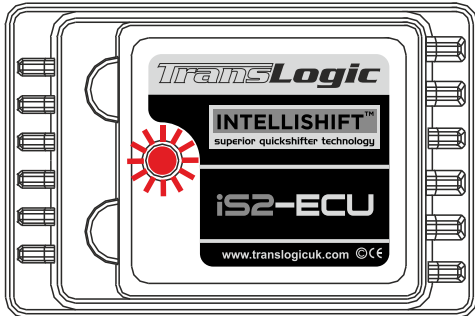
To save the sensor trigger force setting and move onto the next section, the interrupt duration RPM Band#1, hold the gear lever in the sensor trigger position, you'll see the status LED change to GREEN while holding in the sensor trigger position, it will then change to RED after 3 seconds, release the gear lever at this point and then you'll see the status LED flash GREEN once to indicate you are in 'interrupt duration RPM Band#1'. You'll now see the status LED flash RED 10 times to indicate the default interrupt duration. See Example 2.

### Interrupt RPM bands.

RPM Band#1	RPM Band#2	RPM Band#3	RPM Band#4	RPM Band#5
2500 to 4000	4000 to 5500	5500 to 7000	7000 to 8500	8500 +

Imagine the interrupt duration in RPM Band#1 feels too long and the bike appears to come off power for too long as you quickshift, in this case we would decrease the interrupt duration from the default 10 RED status LED flashes. Let's go ahead and do that, reduce the interrupt duration down to 5 RED status LED flashes. See example 2.

### Example 2.



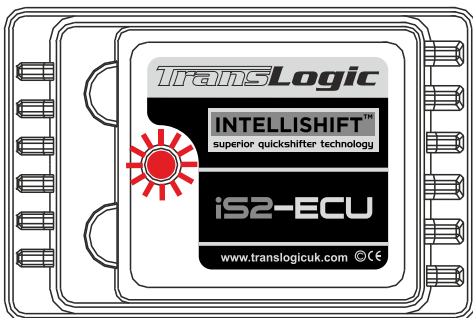
### Action:

Move the gear lever to the trigger position 15 times, you'll see the status LED momentarily change to GREEN when the sensor is in the trigger position, then release the gear lever. Once you have moved the gear lever to the trigger point 15 times you'll now be able to count 5 RED status LED flashes. By doing this you'll have reduced the interrupt duration in RPM Band#1 by 10ms. (Remember, each RED status LED flash is worth 2ms)

To save the interrupt duration in RPM Band#1 and move onto the next section, the interrupt duration RPM Band#2, hold the gear lever in the sensor trigger position, you'll see the status LED change to GREEN while holding in the sensor trigger position, it will then change to RED after 3 seconds, release the gear lever at this point and then you'll see the status LED flash GREEN twice to indicate you are in 'interrupt duration RPM Band#2'. You'll now see the status LED flash RED 10 times to indicate the default interrupt duration. See Example 3.

Imagine the interrupt duration in RPM Band#2 feels too short and the bike appears to snap too fast into the gear as you quickshift, in this case we would increase the interrupt duration from the default 10 RED status LED flashes. Let's go ahead and do that, increase the interrupt duration up to 14 RED status LED flashes. See example 3.

### Example 3.



### Action:

Move the gear lever to the trigger position 4 times, you'll see the status LED momentarily change to GREEN when the sensor is in the trigger position, then release the gear lever. Once you have moved the gear lever to the trigger point 4 times you'll now be able to count 14 RED status LED flashes. By doing this you'll have increased the interrupt duration in RPM Band#2 by 8ms. (Remember, each RED status LED flash is worth 2ms)

To save the interrupt duration in RPM Band#2 and move onto the next section, Interrupt duration RPM Band#3, hold the gear lever in the sensor trigger position, you'll see the status LED change to GREEN while holding in the sensor trigger position, it will then change to RED after 3 seconds, release the gear lever at this point and then you'll see the status LED flash GREEN three times to indicate you are in 'interrupt duration RPM Band#3'. You'll now see the status LED flash 10 times to indicate the default interrupt duration.

Let's imagine you are happy with the interrupt durations in RPM Band#3 and the other remaining RPM bands now that you have had a chance to use the Intellishift Quickshifter system. So let's now skip each of the other RPM bands and exit Pro-Tuner-Mode. See example 4.

#### Example 4.



#### Action:

Move and hold the gear lever in the sensor trigger position, you'll see the status LED change to GREEN while holding in the sensor trigger position, it will then change to RED after 3 seconds, release the gear lever then immediately repeat this action until you have saved the settings in RPM Band#5 and then you'll notice the status LED will go out completely, the Intellishift Quickshifter system is now ready for operation.

OK, that's the Pro-Tuner-Mode tutorial finished. It might seem a little overwhelming to start off with but once you recognise the protocol you'll find it easy to navigate through Pro-TunerMode.

**REMEMBER!** If the interrupt duration feels too long in any of the RPM bands that you can try and shorten the duration. *Be aware that you might feel slightly longer but still smooth gear shifts in the low to midrange RPM area of the engine, this is the Intellishift smoothing out the quickshifts in this difficult RPM range.* If the interrupt duration feels too short and the engine snaps/tugs into the next gear then you'll need to lengthen the interrupt duration slightly.

**NOTE:** When you enter Pro-Tuner-Mode to make an adjustment you will need to go through each of the stages and exit RPM Band #5 to save the settings and changes made.

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## ADJUSTING THE LINEAR QUICKSHIFTER SENSORS

1. To adjust the linear sensor interrupt point switch on the ignition. When the shaft of the push linear sensor enters the main sensor body the Status LED on the Intellishift ECU will illuminate GREEN to indicate the interrupt trigger point. *The inverted pull linear sensor version operates in reverse when the shaft exits the sensor.*

2. With the motorcycle/vehicle standing still select 2nd gear, by hand move the gear lever towards 3rd gear and hold the lever perfectly still when you feel the lever meet the rotating drum in readiness for 3rd gear selection, approximately 2.0 - 3.0mm of travel, now rotate the shaft of the linear sensor in or out of the rod end accordingly so that the Status LED illuminates GREEN at this gear lever position. Finally tighten the rod end locknut and re-check your settings.

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## QUICKSHIFTER SYSTEM OPERATION

To use the Intellishift Quickshifter system make a full and positive gearshift with your foot/hand in an upshift direction without using the clutch or rolling off the throttle. Be aware that the gear lever must return fully to the rest position before the system resets itself for the next gear selection.

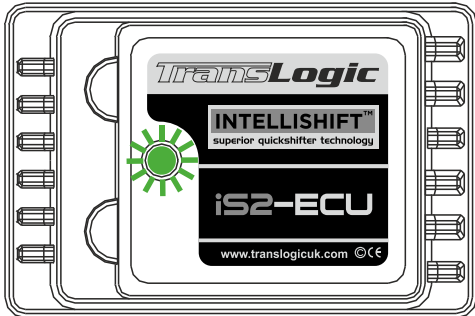
**NOTE1:** The interrupt duration will be longer and provide a smoother gear shift at lower engine RPMs while higher RPM gear shifts will be fast, crisp and seamless.

**NOTE2:** The status LED will flash GREEN in unison with the engine whenever the engine is

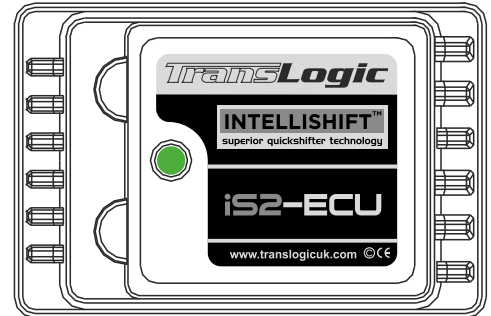
running. See example 5. The status LED will illuminate solid GREEN whenever the sensor is in the trigger position whether the engine is running or not. See example 6.

**NOTE3:** There will be no interrupt/quickshift below the approximate 3000RPM minimum threshold.

**Example 5.**



**Example 6.**



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## **TECHNICIANS INSTALLATION NOTES TO CUSTOMER**

*Notes to installer, please give details of where wiring has been run etc.*

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2. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_

## TROUBLE SHOOTING

- 1. No power-up** - Check for incorrect battery terminal connections, blown fuses, poor negative battery terminal connection. Check for severed or trapped wires.
- 2. No Quickshifter interrupt** - Check the Quickshifter is being operated above approximately 2500RPM. Check for correct connection of the Quickshifter harness connectors with the yellow dots and their associated grey link wire alignment. Verify the Quickshifter sensor output. Check for severed or trapped wires. Check that the Quickshifter harness connectors have not been greased as this will cause a poor electrical connection!
- 3. Engine misfire** - Verify the control unit mounting position and check for isolation from vibration. Check plug and play connections. Verify ignition coil type and suitability and correct connection of the Quickshifter harness connectors with the yellow dots and their associated grey link wire alignment. Check the Quickshifter sensor output.
- 4. For further trouble shooting:** contact your vendor/supplier or Translogic Systems Ltd.

### GENERAL PRODUCT WARRANTY AND SERVICING

As with any technical equipment of this nature it is strongly recommended that the exposed product items such as the Intellishift ECU, DCS/Linear sensors should be kept clean and checked regularly. These units should be cleaned by removing excess dust with a cloth or small nylon brush. **AVOID USING A JET WASH WITHIN THE VICINITY OF THESE UNITS.**

1. This Translogic Intellishift Quickshifter system is covered by a 24 month warranty from the date of purchase, against any defects in materials or workmanship.
2. If any defect should occur during the warranty period the product should be returned to Translogic Systems Ltd, (*see address*), or alternatively to the place of purchase along with proof of purchase. This warranty does not cover return shipping costs.
3. Translogic Systems Ltd will examine the product and if it is found to be defective due to faulty materials or bad workmanship will, without charge, repair or replace the product at their discretion.
4. If the product covered by this warranty is damaged due to accidents, misuse, modification or unauthorised repair, shortening of cables, broken weatherproof seals due to cable exit bending/pulling or incorrect electrical connections then this warranty becomes void.
5. This warranty is personal to the purchaser and is not transferable.
6. Products must not be returned to Translogic Systems Ltd without prior authorisation by email. Returned items should be packed carefully to avoid damage in transit. Please include details of the fault together with your name, address and contact telephone numbers.

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