GP SG

MotoGP Technology
Fantastic Precision
Fully Computerized
Amazing Performance
Proven Championship Winner
Moto 3 World Championship
2015 Honda HRC with Danny
Kent.
Nordic BoTT 2010, 2011, 2012,
2014, 2015. PRO Superbike n.o.
2, 2010. n.o. 1 2011.

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274 56 ABBEKÅS
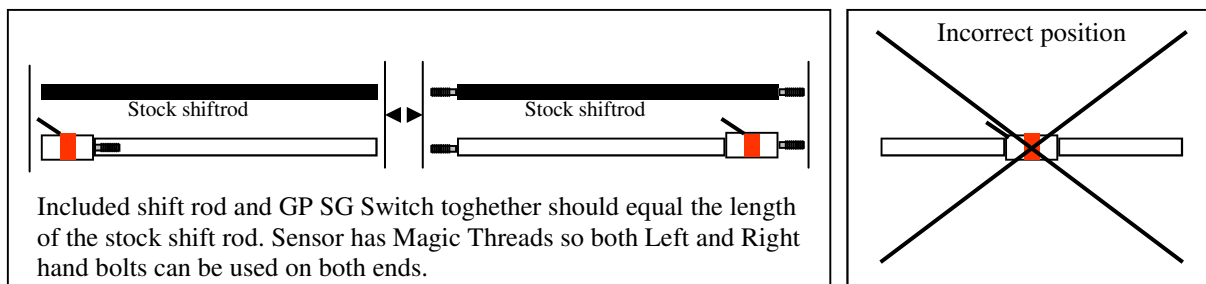SWEDEN

www.cordona.net

Cordona Strain Gauge/Loadcell GP Switch Quickshifter, GP SG type 1.4. Item 416/417 with internal 8 amp Switch and killtime adjust.

No movable parts, i.e. super durable, designed for MotoGP, WSBK and Endurance racing use.
Fully adaptive sensing of either push or pull linkages, will automatically learn which way to up shift.
Preload adjustable 1 kg to 40 kg, force needed for activation.
Temperature, vibration and creep adjustments done automatically with high precision by 20Mhz processor for an absolute stable up shift signal in all riding conditions.
User friendly preload settings done on miniature digital LED panel; located 1m from sensor.
Can be set up to close a loop @ up shift or to open a loop.
Dimensions: 45mm long, 14mm diameter.
Output: closed or open loop digital signal at up shift.
CNC machined with super high precision from stainless steel.
Sensor has Magic Threads, left and right hands treads can be used in both openings.
1.4., dot denotes adjustable killtime, suitable as a standalone quickshifter for most bikes, even CDI ignitions.
Absolutely Waterproof.
Sensor available as spare spart, item 403, will recalibrate new sensor automatically at power up.
Prototype tested to 603 000 activations with 45 kg force, about 12 years of use.
Designed and made with pride in Sweden

Installation

Tools needed: 8mm and 10mm spanner, (Hacksaw, 5 mm drill and m6 tap). Pliers to crimp connector pins.

Remove and measure stock shift rod; cut included shiftrod to correct length and tap M6 if needed, cut a short

Stock shiftrod   Stock shiftrod

Included shift rod and GP SG Switch toghether should equal the length of the stock shift rod. Sensor has Magic Threads so both Left and Right hand bolts can be used on both ends.

Incorrect position

piece at a time and drill beforehand so the drillbit is centered.
Install sensor and rod with uniball links on both ends, most bikes have uniballs stock, check that the shiftrod does not rub or touch anything, could impair sensing. Do not bottom out the studs hard in the GP SG, could impair sensing. **Make sure wire has a slight bend/loop so it does not tighten up and pull at the sensor during up or down shift.** Warranty does not cover ripped out wires.

Connect **Green** wire to ignition switched + 12v and **Brown** to earth/ground, frame or battery (use included Red/black add on harness).
Connect **Yellow to ignition coil wire +12v facing the ECU and White to the same ignition coil wire facing the coil**. Se next page for step by step photos.
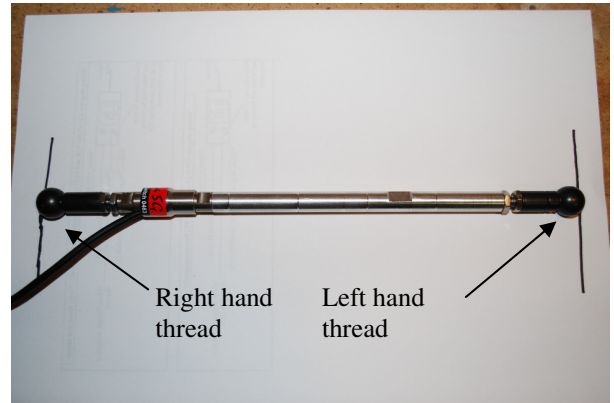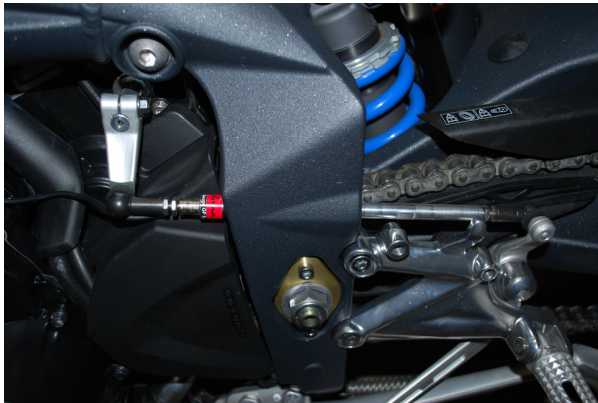
Remove stock shiftrod and measure.

Right hand thread

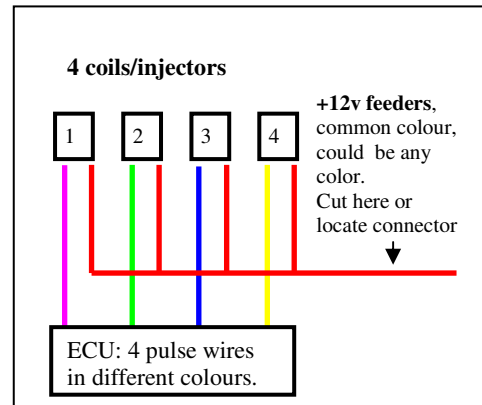Left hand thread

Cut and install sensor and confirm same length as the stock rod. SG sensor has Magic Threads, can take both left and right hand bolts in the same hole.

Install SG Rod.
Secure wire from SG with a ziptie around the ball joint so bending at up shift occurs at the zip tie and not where the wire exits the sensor.

4 coils/injectors

1   2   3   4

+12v feeders, common colour, could be any color.
Cut here or locate connector

ECU: 4 pulse wires in different colours.

1.   Locate +12v wire to ignition coil/s or fuel injectors (normally the same color for all coils/inj).
2.   Cut or use spade connectors if coil has them.
3.   **See next page on how to connect.**

Connect green to +12v and brown to ground/earth by using the red and black add on harness.

Set SG to 11kg, 99% of our customers use 10-12kg. Switch ignition on and hold down both SG buttons simultaneously. Let go of buttons, SG blinks up-up-up. Perform an up shift; you are almost ready to ride Reinstall all parts, nuts, bolts, and ride.
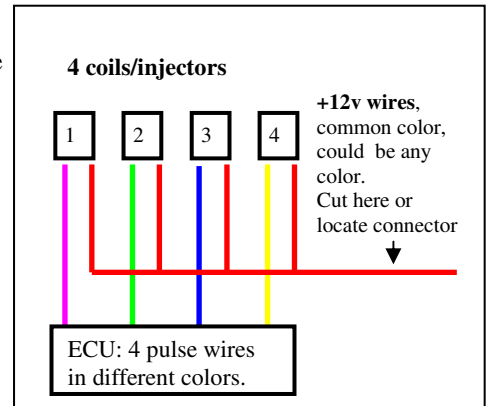
Yamaha R6 2004-2005 special instr Fuel injection. not plug and play.
And other bikes where it is easier to reach the fuelinjection wiring, or when a fuel injection cut is desireable.
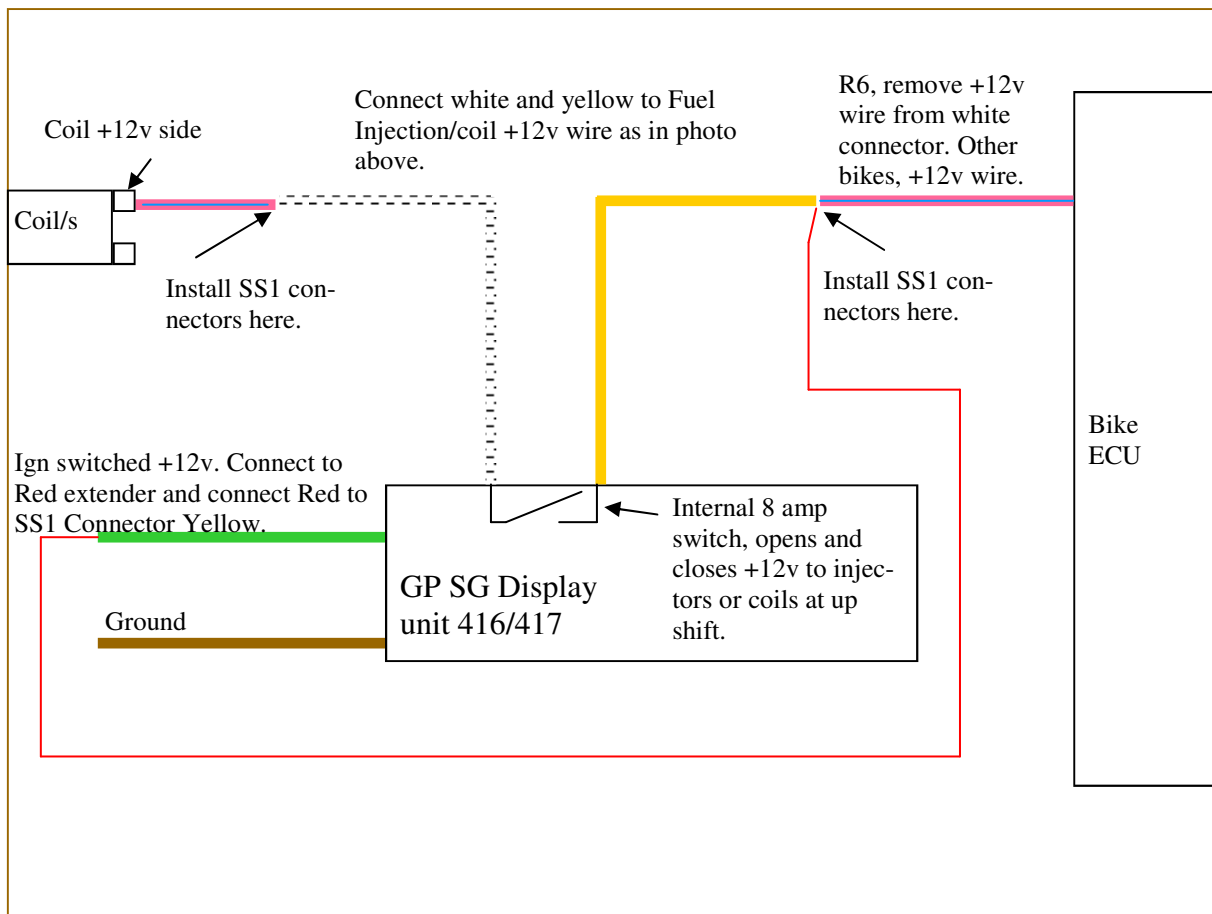
R6 2004-2005.
1. Locate white FI connector under fuel tank, left hand side, and remove pins for striped Pink wire +12v.
2. Install SS1 connectors.

Other bikes.
1. Locate +12v wires to coils,/inj normally in common color, and trace them back up the harness until they become a single wire.
2. cut or locate a connector in on the harness. Remove pins and install SS1 connectors.

R6 below has a white connector where +12v to injection is located.

4 coils/injectors

| 1 | 2 | 3 | 4 |

+12v wires, common color, could be any color.
Cut here or locate connector

ECU: 4 pulse wires in different colors.

Coil +12v side

Connect white and yellow to Fuel Injection/coil +12v wire as in photo above.

R6, remove +12v wire from white connector. Other bikes, +12v wire.

Coil/s

Install SS1 connectors here.

Install SS1 connectors here.

Bike ECU

Ign switched +12v. Connect to Red extender and connect Red to SS1 Connector Yellow.

Ground

GP SG Display unit 416/417

Internal 8 amp switch, opens and closes +12v to injectors or coils at up shift.

Initial set up

1. Switch ON ignition, the GP SG panel should light up if right button is pressed. Switch OFF ignition again and back ON while pressing both buttons (some bikes will have power on for 2 mintues after ign is switched off, if so, disconnect GP SG and plug back in while holding both buttons). Display **flashes up-up-up-up**.

 | u. | p. |
    |:--:|:--:|
    | ▣ | ▣ |
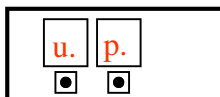
2. With engine not running but ignition On, move shifter pedal and do a simulated **up shift from 2nd to 3rd gear** and hold the pedal for about 2 seconds; display goes black.

3. Now you have succesfully completed set up for your bike's direction of up shift. A new initial Set up can be done at any time in case you change bike or shift pattern.

4. Press right button and display will show up shift **default "15 "(kg),** suitable for most bikes to get going.

6. With ignition on, **Engine off,** shift to 6th gear and try to select a 7th gear (to avoid nasty noise from the gearbox). Shiftlever should move through the spring load in gearbox until gear resistance is felt, now activation of the up shift LED dot should be seen briefly on the panel.

7. Start the engine in 6th gear, **WARNING, make sure clutch lever is pulled all the way in to the handle bar, secure clutch lever with 2 zip ties and keep one hand on it so your bike does not take off out of control, creating a very hazardous situation.** Raise rpm to about 4000rpm; do upshifts to 7th gear and make sure rpm dips breifly and then pick right back up again.

8. **Test ride the bike**. Start at low rpm and work your way up the rev range. Make sure to really move the shifter pedal swift and with force, don't try to caress the next gear in.

Preload (kg) change/ programming

### 99% of our customers use 10-12kg.

To change **up shift preload, can be set 1-40 (kg). 1. press right button, 2. while "15" is showing, hold both buttons until 15 starts to flash, 3. change value up or down, 4. hold both buttons until the new value stops**

1.	5.
▣	▣

Up shift activation LED dot

Max up shift preload is 40kg. 0 is off.
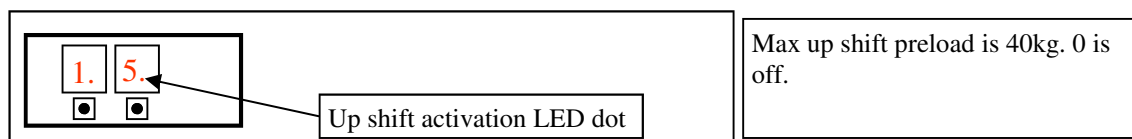
flashing, preload change completed.

To set a killtime, default at delivery is 65ms.
Hold **left** button and then depress both buttons and hold for 10 sec, **t1** will show, then **t2**; continue to hold until **65 shows**, release both buttons and toggle up or down to set a killtime, hold both buttons until value stops flashing and display goes black, killtime is set. Killtime is adjustable 10-400ms, **df** is 150ms and that should be used to return the GP SG to std, i.e. if it is used together with any other
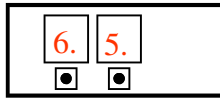
65ms, default setting.
Adjustable 10-99ms.
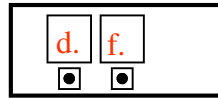
df. To restore std setting if unit is used together with any other ECU than HRC or Dyna.

FAQ: My bike is shifting fine on the stand and while going slow but at high rpm it sometimes won't up shift?
Increase preload, vibrations at high rpm triggers GP SG continuously so when you try to up shift it is already activated. Check the bike's rear sets for play, excessive play can cause the GP SG to trigger at high rpm.
If the sensor is located at the engine, move it to the rear sets, easy because the sensor has Magic Threads.
If the sensor is located at the rear sets, move it to the engine.
Also, try to rotate the sensor 90 degrees by loosening the nuts, sensor is activated by bending so rotating it 90 degrees will make it stiffer or weaker in the direction vibrations are bending it.

The Panel is showing E.1 when I power up the GP SG?
The sensor is damaged and has a broken internal lead or the sensor wire is damaged. Replacement of sensor is needed, available as a spare part from a Cordona dealer, comes with a waterproof connector since the sensor wire needs to be cut at installation. Could also be a fault in sensor circuitry inside display unit.

Starter spins but my bike will not start.
Make sure you have not set the unit to t1, means open circuit. Chnge back to t2 as below.

To set closed or open loop signal (t1 or t2), default at delivery is commonly open loop.
Hold **left** button and then depress both buttons and hold for 10 sec, **t1** will show; continue to hold until **t2** shows, release both buttons, now the GP SG will have a commonly closed circuit
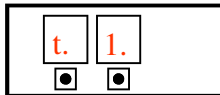
t1. Commonly open circuit = no power to the coils/injectors.
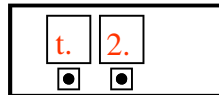
t2. Commonly open circuit = power to the coils/injectors..