### *'Quad Cruise' Electronic Cruise* & Crop Spray Control for Honda TRX420, TRX500 & TRX520 from 2014



Applicable models for this product:

Honda Fourtrax Rancher - TRX420FA, TRX420FM, TRX420TM (420cc EFI liquid cooled motor) Honda Fourtrax Foreman & Rubicon - TRX500FA, TRX500FE & TRX500FM (475cc EFI liquid cooled motor) Honda Fourtrax Foreman & Rubicon - TRX520FA, TRX520FE & TRX520FM (518cc EFI liquid cooled motor)

# NOTE: - The later DCT Automatic versions have different connectors for gear shift position. Later models (possibly only the 520) have different connectors for the brake switch and speed sensor. See the last page for details on how to determine what connectors your Quad has. We need to exactly what year and model the Quad is and what connectors it uses to be able to supply the correct cruise control kit to suit the Quad.

Quad Cruise is a version of the MotorCycle Cruise Control that is designed to operate at speeds from 4 km/h up to 25kph. It can be programmed to operate at higher speeds on request, but 25kph is the 'standard' maximum speed.

There is also an optional 'Accessory/Spray Control' connection harness kit to provide power to any crop spray system fitted to the vehicle – either manually, or only when the cruise control is engaged, via a 10 amp power outlet that is connected into the main cruise control wiring harness. This means that spray operation occurs only when the vehicle's speed is held at the appropriate set speed on the cruise control.

The cruise control can be set to a specific speed to spray a row by pressing the SET button, turned off at the end of the row with any brake lever. The RESume button can be used to set the bike's speed back to the previous speed. The spray system will turn on and off with the cruise control, when the spray switch is in the AUTO position.

If a long job requiring a particular speed is being done, the SET speed can also be 'locked in' to prevent accidental changes to the set speed. Once this is done, both SET and RESume buttons become resume buttons and the SET speed cannot be changed until the cruise control is 'unlocked'. Locking and unlocking the SET speed is a 10 second operation.

Every effort has been made to make the cruise control waterproof. The computer (electronic module) is fully sealed, as is the electric throttle servo. Wherever possible sealed connectors have been used on the wiring harness.

The following provides a brief description of the power consumption and component locations of the Quad Cruise electronic speed and spray control.

Current draw while the cruise control is switched on, but not engaged, is approximately 0.020 amp (0.28 watts). Current draw while the cruise control is engaged is nominally 0.5 amp (6 Watts) with peak draw at 2 amp (24 Watts). By comparison, a head light bulb typically draws about 4 amps (55 Watts), and a tail light bulb (running light) draws about 0.4 amp (5 Watts).

The following provides a brief description of the component locations of the 'Quad Cruise' electronic cruise control.

Current draw is approximately 0.020 amp (0.28 watts).

Installed weight of the cruise control is approximately 2.0kg (depending on model).

Refer to the line drawing on the back of this sheet to identify the component numbers in the text.

The **Computer (Cruise Control ECU) (1)** is installed in the rear storage compartment.



The Electric Throttle Servo (2) is fitted at the rear of the vehicle, on the right side next to the spring/shock unit (for models with swing arm rear suspension) or to the upper wishbone mount (for models with independent rear suspension). It is attached to the frame tube with hose clamps. The photo below left shows the TRX420. The photo below right shows the servo mounted on a TRX500. The servo fits in the same location as the 420, but is hidden behind the black plastic air chamber on the 500 model.







The Cable Interface Unit (4) is located beside the throttle body and has a new cable (5) running from the CIU to the throttle body. The existing throttle cable is disconnected from the throttle body and is connected to the CIU. The CIU 'translates' throttle trigger movement and throttle servo operation to the vehicles throttle body.

This photo shows the servo mounted on a TRX500 with independent rear suspension.

A Servo cable (3) connects the throttle servo to the CIU (see below).



### MotorCycle Cruise Controls

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In most cases, the vehicle speed is detected from the vehicles speedometer speed sender (VSS). In some cases (usually base models with manual shift transmission) the vehicle does not have a speedometer or a sender. In such cases a **speed sensor (6)** and **tone wheel (7)** are supplied to be fitted to the rear axle. This provides speed signal for the cruise control instead of using the vehicles speedometer speed sender.



The **Control Switch (8 & 9)** is mounted on the left-hand rear brake lever handlebar clamp and is located above the left-hand switch block. The bracket mounts between the top faces of the clamp. The clamp must have about 1.5~2mm (0.060"~ 0.080") filed from the top face of the clamp to allow for the thickness of the switch bracket. There are alternate switch brackets for electric shift and manual shift models. The **electric shift (8a & 9a)** (automatic shift) is shown at left below and the **manual shift (8b & 9b)** shown at right below. The switches in the parts drawing **(8a & 8b)** have the optional 'Accessory/Spray Control' fitted to them, the switch in the parts drawing **(9a & 9b)**, do not.

The switch shown below right has the optional 'Accessory/Spray Control' fitted to it (black arrow).





The **Wiring Harness (10)** is dedicated to the vehicle. Power for the cruise control is sourced from the vehicles rear brake light switch connector. The rear brake light switch is disconnected and matching plugs on the cruise control harness are connected to the vehicle's plugs. Neutral gear position detection is sourced from the vehicles neutral switch circuit. Speed signal is sourced from the vehicle's speedometer sender, OR an optional rear axle speed sensor (for vehicles that are not fitted with a speedometer). Ground is sourced from the negative terminal of the battery.

The **Optional 'Accessory/Spray Power Kit' (11)** kit connects to two terminals on the main cruise control wiring harness, and connects to the battery for power. A two pin plug is provided at the rear of the vehicle for connection to the spray equipment or other accessories. Matching plug and terminals are provided in the kit for connection to the spray/accessory unit.

### MotorCycle Cruise Controls





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In recent years there has been a few minor changes to these Honda ATV models. To ensure the correct cruise control kit is provided, it is necessary to identify what type of connectors the ATV has.

The connectors that vary from model to model and model year to model year that effect the cruise control installation are:

The rear brake light switch connector, The speedometer sender connector, The neutral light switch connector.

The following info will allow you to identify what connectors you ATV has so we can supply the correct cruise control wiring harness for the vehicle.

### Rear Brake Light Switch plug.

The connector for the rear brake light switch is clipped to the plastic panels at the front of the right rear wheel 'arch'.

The rear brake switch plug.



MotorCycle Cruise Controls



The plug is accessible from within the right rear wheel arch.

Release this clip so the plug can be pulled out.

Squeeze the tabs together to release the mounting clip.

Pull the plug out of the cavity and disconnect the plug.

Depress the latch to disconnect the two halves of the plug (arrowed).

### MotorCycle Cruise Controls





The two halves of the rear brake switch plug.

The connectors in this photo are the earlier HX040 connectors



The following photos (over the page) show the two different connectors used. To our knowledge, all models up to 2020 or 2021 use the HX040 connector on the rear brake light switch. Some or all models may have changed to the HX060 connector for the rear brake light switch connector in the 2021 or 2022 model year.

# We need to know if your vehicle has the earlier HX040 connectors or the later HX060 connectors on the brake light switch.

NOTE: - The number in the series (040 or 060) refers to the width of the connecting tab on the male terminal, 040 is 0.040" (1mm), 060 is 0.060" (1.5mm).





MotorCycle Cruise Controls



### **Speedometer Sender Plug** Vehicle with a speedometer only.

Locate the speedometer sender junction plug.

This may be in either of these two locations depending on the version (Manual, Electric Shift or DCT Auto Shift).

The three wire colours for the speedo sender are: Green. Pink or pink/green, Black/white or white/green.

If it is in front of the right rear wheel arch, it may be a sixway black HX040 plug (pre-2021 electric shift transmission) or a three-way black HX040 plug (manual shift), or a four-way black HX060 plug.

In either case, three of the wires are speedometer sender wires in the colours indicated above.

Earlier models use the HX040 connector of the same type as the rear brake light switch.

Some later models may have a 4-way HX060 connector.

If it is located on the left front of the air filter housing, it will usually be a the 3-way plug (DCT Auto Shift transmission), again usually the HX040 style connector. We have not yet seen a HX060 connector in this location.

We need to know if your vehicle has the earlier HX040 connectors or the later HX060 connectors on the speedometer sender plug.

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### Neutral sensor connection.

Manual and electric shift models have this large grey connector on the right side, beside the air filter housing.

The Neutral switch wire is in this plug. The neutral switch wire colour is light green/red.

DCT Auto shift models have these three bullet connectors.

One of these connectors is for the Neutral switch. The Neutral switch connector with have a light green wire on one end and a light green/red wire on the other. Pull the black plastic sheath back a little so you can see the wire colours and identify the correct bullet connector.

At this time, we are not aware of any other types of connectors in use for the Neutral indicator switch wire.

# We need to know if your vehicle has the large grey multi-way connector or the bullet terminals on the neutral sensor switch wire.

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