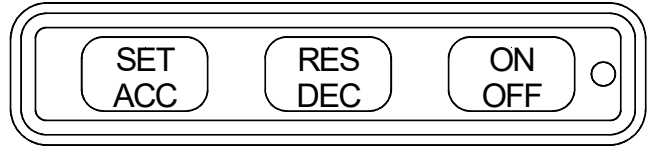


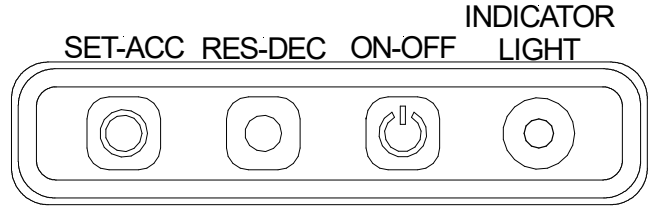
CRUISE CONTROL SWITCH OPTIONS.

MotorCycle Cruise Controls has three different control switches that can be supplied with the cruise control.

The earlier design has three large buttons and a small indicator light on the end of the switch next to the ON-OFF button. The buttons have text written on them for the functions. This switch was phased out in late 2020.



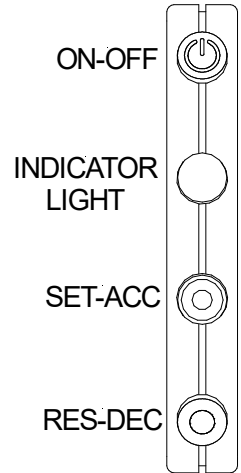
It has been replaced by this switch. The overall size of the switch is the same, it has the same mounting brackets and the same mounting holes. The text has been replaced by pictographs on the buttons. It is a direct replacement for the previous control switch shown above.



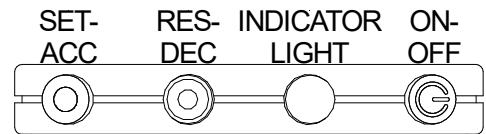
We also have another switch. This design has smaller buttons with no text, only pictographs on the buttons.

The ON-OFF button has a 'standard' power switch pictograph on it.

When it is mounted vertically on the handlebar, as shown here the orientation of the SET and RES buttons is as shown.



In some cases, this switch is mounted below the bike's switch gear, and is mounted horizontally, the position of the SET and RES button are swapped.



Note: - The control switch has an indicator light next to the ON-OFF button. This light has three colours, RED and GREEN and YELLOW. RED indicates power on. YELLOW indicates cruise control engaged. GREEN is used to confirm the cruise control functions during the diagnostic checks and some calibration procedures.

WARNING

Motorcycle Cruise Controls has six different product ranges based on four different computers (electronics modules or electronics ‘box’).

These products all use the same electrical connector, BUT the wire positions are not compatible.

Under no circumstance should the ‘computer’ from one product be swapped for another without first contacting the manufacturer.

The ‘best’ case if a module is ‘swapped’ is a cruise control that will not work correctly. The most likely result is a ‘blown’ computer that is not repairable. The ‘worst’ case is that this could result in a dangerous situation that may result in injury or death.

**DO NOT UNDER ANY CIRCUMSTANCES
EXCHANGE ONE ‘COMPUTER’ FOR
ANOTHER WITHOUT CONTACTING US
FIRST.**

WARNING

A new cruise control computer for Throttle-By-Wire applications is supplied in many of our cruise control kits. This new computer is in the new design plastic enclosure with the MCC logo moulded into the top face of the box.

There are two different versions of the Throttle-By-Wire cruise control computers, both types in the same box and have same connector, BUT the connector pin-outs are different and they are NOT interchangeable.

The first TBW cruise computer has a part number MCS8128TBW on the top of the label. This suits cruise control kits with part numbers MCS6***TBW, the last three digits will depend on what motorcycle it is fitted to.

The later computer part number is MCS10128TBW, and this suits cruise control kit part numbers MCS7***TBW.

THE MCS8128TBW AND MCS10128TBW COMPUTERS ARE NOT INTERCHANGABLE unless the wire positions in the connector are changed.

This box is also used on other cruise control computer designs that are NOT for Throttle-By-Wire applications.

The TBW and other computers look identical and the connectors are the same, but electrically they are very different.

There are also older cruise control computers that used the same connector, but none of these are suitable for Throttle-By-Wire applications.

Do not under any circumstances fit a cruise control computer to a vehicle unless you know that the computer was supplied for that vehicle and the wiring harness is correct for that specific model computer. Refer to the label on the back end of the computer for the computer model and application details.

This photo shows the two previous model computers that have labels on the top face. Under no circumstances should these be fitted to any Throttle-By-Wire vehicle.

The new TBW computer is also in a black plastic enclosure, but the MCC logo is moulded into the top face of the computer.





**Motorcycle
Electronic Cruise Control
Information, Set up & Operation Manual ©
(Sections 1~5 & 8~12)**

Refer to the Installation Manual for Sections 6 & 7

19 July 2024

MOTORCYCLE CRUISE CONTROLS

**MotorCycle Setup Pty. Ltd.
A.B.N. 94 798 167 654
AUSTRALIA**

Some background information for everyone on throttle-by-wire systems and cruise controls.

Frank and I at MCCruise are unapologetically conservative in our approach to this technology. The reasons are simple – even a cursory search for 'sudden unintended acceleration' on Google produces some startling results.

We cannot afford such events occurring on motorcycles – people will die – it is as simple as that. Consequently, we have made modifications and conducted exhaustive tests to ensure our kits will not cause dangerous situations. That said, with throttle-by-wire, we are totally in the hands of the motorcycle manufacturers' over-riding safety and limp-home systems kicking in appropriately. It is an area we have thought long and hard about before entering this market at all.

The other significant issue is what happens when a 'limp-home' event occurs on these vehicles. The most common response to ANY error in the signals from the twist grip/cruise control to the bike's engine management system is that the engine stops responding to throttle completely, and the engine drops to idle and sometimes stops altogether. This means that in the event of any error in signals from the twist grip and cruise control to the bike's engine management, the bike will no longer respond to throttle AT ALL, it behaves as if a throttle cable has broken. To restore control to the twist grip, the ignition switch must be turned off and back on again.

We think riders deserve to know the facts: corrosion, water ingress and electrical noise are serious potential threats on motorcycles and we do not take them lightly.

We still have some reservations generally about throttle-by-wire systems on cars and bikes, we have not heard of any safety issues with bike systems, but a search on Google will find a lot of issues with cars, and bikes use the same type of throttle-by-wire control methods that cars use.

The design of these throttle-by-wire systems means that we physically cannot build in some of the basic safety overrides we built into our previous model cruise controls (for mechanical throttle systems), so more than ever we are reliant on the integrity of the motorcycle manufacturers' throttle control systems and safety overrides and very careful installation on the part of the installer.

Researching all this, designing and testing takes time and costs money. The cost of our product reflects that. We have put a lot of time and effort into making this product as safe as we can, and as easy to install as possible.

From you, the users, point of view, if for some reason an issue does occur, pulling the clutch will prevent the bike accelerating if too much throttle is applied, and if the engine stops producing power, pulling the clutch will allow you to roll to a stop without the engine slowing the vehicle dramatically. The engine may sit on the rev limiter, but engine management systems prevent the engine over revving on all modern motorcycles. You can then use the 'kill', or engine stop switch. With the combination of clutch and kill switch YOU retain control of the motorcycle.

Electronic Cruise Control Information, Set up & Operation Manual ©

READ THIS FIRST

The cruise control computer used has been purpose built for motorcycle applications. Testing has resulted in programming to deliver safe, reliable operation on a variety of motorcycles. It is essential that you install the cruise control in accordance with the advice in the installation instructions precisely, so that electrical interference does not cause the unit to behave erratically or be rendered inoperative.

We strongly recommend against fitting off-the-shelf motor car cruise controls to any motorcycle!

WARNING: - This cruise will function properly only if your vehicle has resistor type (radio suppression) ignition wires (spark plug leads). The cruise control may not function properly if aftermarket SOLID CORE spark plug wires are installed. Please read Section 11, Safety Issues & Features before fitting & using the cruise control.

If, after reading these instructions, you feel you are not competent to install this kit, we strongly urge you to seek the assistance of your local motorcycle dealer.

NOTE: - It is recommended that on most motorcycles the fuel tank is less than 1/4 full before attempting to fit the cruise control. The fuel tank must be lifted for most installations and can be very heavy when full of fuel.

NOTE: - If the bike is fitted with a flasher device or LED brake light globe on the brake light system, this may cause interference with the cruise control brake detection. If the cruise control will not work, try disconnecting the flasher device or replacing the LED globe with a conventional globe. Contact us for ways to enable both your brake light flasher or LED brake light and the cruise control.

CONTENTS

- 1. INTRODUCTION**
- 2. WARNINGS, CAUTIONS AND NOTES**
- 3. TOOLS REQUIRED**
- 4. PARTS LIST**
- 5. OVERVIEW OF CRUISE CONTROL OPERATION**
Refer to the separate Installation Manual provided for your make and model of motorcycle for chapters 6 and 7.
- 6. PREPARING THE BIKE FOR CRUISE CONTROL INSTALLATION**
- 7. INSTALLATION**
- 8. THROTTLE POSITION SENSOR (TPS) CALIBRATION & TESTING**
- 9. DIAGNOSTIC MODE OPERATION**
- 10. CRUISE CONTROL ADJUSTMENTS & ROAD TEST**
- 11. SAFETY ISSUES & FEATURES**
- 12. TROUBLE SHOOTING**
WARRANTY SHEET
SET UP & CALIBRATION PROCEDURES SUMMARY SHEETS AND MENU MAP (LAST PAGES)

1. INTRODUCTION

Congratulations, you have purchased one of the most advanced cruise control systems in the world - and one that is built specifically for motorcycles. All functions are microprocessor controlled, which reduces the complexity of installation.

Before installing your cruise control, take the time to read and understand each step in this manual. Several steps are dependent on others, so it is important know where and how each component is to be mounted before installation commences.

This manual covers the cruise control in general terms, and provides information about set up, calibration and adjustment of the cruise control. You will also find a separate installation instruction set that covers fitting the cruise control to your specific model of bike.

2. WARNINGS, CAUTIONS and NOTES

This manual contains several **cautions**, **warnings** and **notes**, which are prominently displayed. The convention used is:

A **warning** applies whenever injury could result from ignoring the warning;

A **caution** applies whenever damage to the bike or cruise control could result from ignoring the caution; and

A **note** applies where other aspects should be considered before any action to do with installation is undertaken.

EXAMPLES:

WARNING: - Always ensure the bike is properly supported on the side or centre stand and cannot accidentally fall off either stand.

CAUTION: - Before drilling any holes, make sure there are no components that may be damaged on the other side of the surface being drilled. Double check for any wiring harness that might be easily damaged by a drill bit.

NOTE: - Lay the wiring harness in place and connect the components before cable tying the harness in place.

3. TOOLS REQUIRED

NOTE – not all of the tools listed will be required for your installation, but most will be necessary or very helpful to have at hand.

- Socket and/or spanner, hex key set and screwdriver set to suit your motorcycle.
- Torx driver set on some non-Japanese makes (HD, Triumph, BMW etc);
- Electrical Multimeter, Voltmeter or 12V test light (to check for electrical connections).
- Long nose pliers.
- A good quality flat file (useful to install the control switch for some installations).
- A vice with soft jaws or a rag (useful to install the control switch for some installations).
- Side cutters (to cut cable ties).
- Loctite '243' medium strength thread locking compound or equivalent.
- Hot air gun (to shrink heat shrink tube where required). We DON'T recommend the use of cigarette lighters!

The following tools are required for the installation on some cruise control kits, mostly non-Japanese models (BMW, HD, MotoGuzzi, Ducati etc.). These tools are not usually required for Triumphs.

- Electrical terminal ‘roll’ crimpers (to crimp electrical terminals supplied in the kit) Utilux No 61 and No 47A or No 147A crimpers will cover almost all motorcycle terminals in the known universe!
- Soldering iron and electrical solder (where crimpers are not available or not useable).
- Roll of insulation tape.

4. PARTS LIST

Check that all components depicted on the first pages of the separate **INSTALLATION MANUAL** are included in the cruise control kit. Please phone (03) 9808 2804 within Australia, international (61 3) 9808 2804 or e-mail sales@mccruise.com for advice, if any parts are missing;

5. OVERVIEW OF CRUISE CONTROL OPERATION

Cruise control function

The principles behind your cruise control's operation are very simple:

- The computer continuously monitors the road speed from the bikes speedometer signal or CAN-BUS communication system;
- The computer also monitors twist grip position and can generate signals to replicate operation of the twist grip;
- When the SET key on the switch is pressed, the computer stores the speed at the time in memory and then continuously adjusts the throttle position to maintain the speed at the same figure to which it was set. If the speed drops below the set frequency, the computer applies more throttle. If the speed is above the set frequency, the computer releases the throttle. The key is that the computer monitors and reacts to changes very quickly and smoothly so that the speed effectively remains nearly constant.

There are four major components in most installations: The computer, the control switch, a TPS (Throttle Position Sensor), also known as an APS (Accelerator Positions Sensor) wiring harness to connect to the bike's throttle grip and the cruise control main wiring harness. In some cases the TPS/APS harness is supplied fitted to the main wiring harness. The functions of each are described below:

- The computer - monitors road speed, adjusts the throttle position, monitors engine rpm, clutch and/or neutral detection, the brake system and the control switch for instructions from these components;
- The control switch - sends instructions from the rider to the computer;
- The TPS/APS harness: - connects to the bike's throttle grip position sensor (TPS)/accelerator positions sensor (APS) to the cruise control;
- The main electrical wiring harness - which connects the switch and computer to various points on the motorcycle, usually the front brake switch for direct detection of front (and sometimes rear as well) brake operation, and also either to the CAN-BUS system for road speed signal, engine rpm, front and rear brake application and clutch operation or to various electrical connection points on the bike for normal ‘wired’ signals. If CAN-BUS signals are available, these are usually used, if they are not available wires are run to various components for these signals.

When the cruise control is operating, the cruise control sends throttle position signals to duplicate twist grip operation.

If the throttle grip is twisted open while the cruise control is engaged the rider over-rides the cruise control. When the throttle is released, the cruise control will resume control, unless it has been disengaged by brake operation or if the motorcycle exceeds the current set speed by 130% such as during an overtaking manoeuvre or if the acceleration exceeds the pre-set limits in the cruise control. The cruise will also disengage if the speed drops to 70% of set speed such as when riding up hill. This is unlikely to occur on large capacity motorcycles.

6. PREPARING THE BIKE FOR CRUISE CONTROL INSTALLATION

Refer to the separate installation instructions provided for your make and model of motorcycle.

Specific instructions for this will be provided in your 'model specific' parts kit, however usually the following components will have to be removed from most bikes and the following operations performed.

- Saddlebags (if fitted).
- The seat.
- Side covers.
- Fuel tank (not always necessary, but usually is).
- Some fairing parts (if fitted).
- Disconnect the battery negative lead.

7. INSTALLATION

Refer to the separate Installation Manual provided for your make and model of motorcycle.

8. THROTTLE GRIP POSITION SENSOR (TPS/APS) CALIBRATION & TESTING

NOTE: - The following procedure is also included in the installation manual and may be called Throttle grip Position Sensor or Accelerator Positions Sensor Calibration & Testing, with specific details for the make and model of bike, but the following instructions may also be followed.

Explanation:

The cruise control must 'learn' how the throttle twist grip on the bike works electrically. The calibration process 'teaches' the cruise control what signals to send to duplicate the operation of the throttle twist grip.

Good cruise control response and operation requires that the cruise control knows exactly the point where the engine speed is about to increase from idle. On many TBW (Throttle By Wire) vehicles, the engine does not respond to the throttle until some 'free play' is taken up in the grip. In order to respond quickly at low speeds, the cruise control must 'know' where the 'free play' stops and the engine actually starts to respond to throttle.

The following procedure is designed to perform, and test, the throttle calibration procedure.

Some motorcycle models respond quickly and do not need any 'free play' compensation, others do need it.

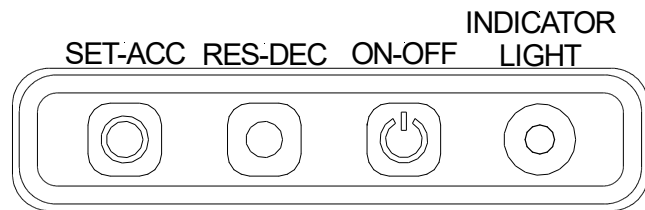
The various testing and diagnostic functions are entered using combinations of pressing buttons on the cruise control switch, operating the bike's ignition switch and operating the controls on the motorcycle.

MotorCycle Cruise Controls has three different control switches that can be supplied with the cruise control.

The earlier design has three large buttons and a small indicator light on the end of the switch next to the ON-OFF button. The buttons have text written on them for the functions. This switch was phased out from late 2020.



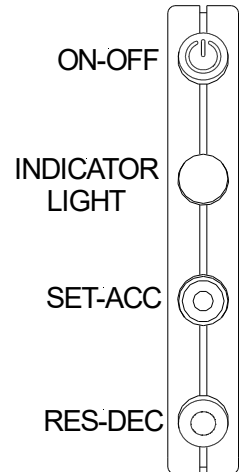
It has been replaced by this switch. The overall size of the switch is the same, it has the same mounting brackets and the same mounting holes. The text has been replaced by pictographs on the buttons. It is a direct replacement for the previous control switch shown above.



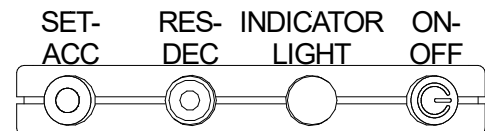
We also have another switch. This design has smaller buttons with no text, only pictographs on the buttons.

The ON-OFF button has a 'standard' power switch pictograph on it.

When it is mounted vertically on the handlebar, as shown here the orientation of the SET and RES buttons is as shown.



In some cases, this switch is also mounted below the bike's switch gear, and is **mounted horizontally, the positions of the SET and RES button are swapped.**



NOTE: - During this procedure, the engine must be started while the cruise control is in a calibration mode. If the battery voltage drops too much while starting the engine, the cruise control will 'reboot' (turn off and back on again), and this will 'drop' the cruise out of calibration mode. This is NOT a disaster, there is an alternate procedure if this happens, but it is simpler if the cruise does stay powered up while the engine is started. In most cases, if you start the engine and warm it up before you perform the following procedures, this will make the cruise more likely to stay powered up, as a warm engine requires less power from the battery to start, AND running the engine will boost the battery voltage bit as well.

For those reasons, we recommend you start the engine and warm it up for a couple of minutes before doing the TPS Calibration and Testing.

Enter diagnostic mode:

With the ignition switch OFF & the Engine Stop switch (Kill switch) in the 'ON' or 'Engine Run' position;

Press and HOLD both the SET and ON-OFF buttons individually on the cruise control switch. Turn the ignition switch on. DON'T START THE ENGINE. Wait until the indicator light on the switch comes on green momentarily or about 2-3 seconds then release the SET and ON-OFF buttons. Do NOT start the engine.

Apply and release the front brake, the light on the switch should come on green while brakes are applied and turn off when the brakes are released. If the light does not come on, turn the ignition off and try again from 'Enter diagnostic mode'.

THE LIGHT MUST COME ON GREEN WITH FRONT BRAKE APPLICATION BEFORE PROCEEDING ANY FURTHER.

Press and release the SET, RES, and ON-OFF buttons **once** only, one at a time. Make sure the light on the switch comes on green when each button is pressed and goes off when the button is released. This test confirms that the buttons are working correctly.

NOTE: - If you press the SET or RES buttons more than once, you may cause a TPS sensor fault (engine warning light) on the bike. If this happens turn the ignition off and start again.

Apply and release the front brake.

Enter TPS/APS Calibration mode:

Press and HOLD the ON-OFF button (green light). While holding the ON-OFF button, press and release the SET button six (6) times. The green light will go out on the first press, and at the 6th press the light will come back on red. Release the ON-OFF button when the light comes on red.

Make sure the throttle is fully released (idle position).

Press and release the SET button. The light will change to green when the button is pressed and go back to red when released.

Twist the grip to apply full throttle and hold it.

Press and release the RES button. The light will change to yellow when the button is pressed and go back to red when released.

Release the throttle.

If you are not happy that the throttle position is correct in either position, you can repeat the procedure (move the throttle to the appropriate position, hold it there, press SET for idle position or RES for full throttle position).

Do NOT turn the ignition off, move to the next section below.

Confirming the calibration.

Press and HOLD the ON-OFF button until the red light changes to green (about 2 seconds).

Slowly apply the throttle. When the throttle position moves from fully released (idle) the light will start to flash green. It will continue to flash green as you apply more throttle.

At full throttle the light will change to solid yellow.

The calibration is correct if:

Throttle released – the light is solid (not flashing) green.

Between fully released and full throttle – flashing green.

Full throttle – solid yellow.

Past full throttle (this should not happen) – flashing red/yellow – This should not occur; it means the calibration is NOT correct.

Less than idle (should not happen) – flashing red/yellow – This should not occur; it means the calibration is NOT correct.

Release the throttle.

Do NOT turn the ignition off, move to the next section below.

Checking throttle operation.

Press and HOLD the ON-OFF button until the green light changes to red (about 2 seconds).

Make sure that the bike is in Neutral gear position.

Observe the red light on the control switch, and start the engine.

NOTE: - The light on the switch should remain solid red while starting the engine. If the light turns off, the battery does not have enough charge to maintain cruise operation during engine starter operation. If the light does go out, there is an alternative procedure over the page marked with an asterisk (*) that can be used to complete the calibration procedure.

If the red light stays on while starting the engine:

Wait for the engine to run/warm enough to idle at its normal idle speed.

The SET button will apply a small amount of throttle with each press; the RES button will release the throttle a small amount with each press.

Press and release the SET button slowly and regularly (about 1~2 presses per second). Each press will apply a small amount of throttle. The engine will usually start to increase speed within 1 to 3 presses, but some bikes may take more presses (up to 20 or more).

Once the engine is above idle speed, press and release the SET and RES buttons to make sure the engine responds predictably and repeatedly to the SET (increase engine speed) and RES (decrease engine speed) button operation.

Checking throttle ‘free-play’.

Note: - This procedure is to establish the exact point where the engine starts to respond to throttle movement.

Apply and release the front brake, the engine should return to idle.

Press and release the SET button slowly and regularly (about 1~2 presses per second). The engine will usually start to increase speed within 1 to 6 presses.

If it takes 3 presses or fewer (1~3 presses) to lift off idle, the calibration is complete. Apply and release the front brake and turn the ignition off.

If it takes more than 3 presses to lift the engine off idle, keep the engine running and continue with the rest of the procedure below.

Calibrating throttle ‘free-play’.

If the engine speed gets too high, apply and release the front brake, the engine will return to idle.

Use the buttons to put the engine speed slightly above idle speed, then press the RES button until the engine JUST drops to idle, then press RES one (1) more time.

Press and release the ON-OFF button, the light will change to green while the button is pressed, then go back to red. The cruise control will record the throttle position.

Apply and release the brake.

Press and release the SET button, the engine speed should start to increase within 1~3 presses. Pressing the RES button a few times should return the engine to idle reliably. Applying the front brake will release the throttle completely.

Repeat the last two lines a couple of times to ensure the result is predictable and repeatable.

NOTE: - If the engine does not return to idle using RES or it takes more than 3 presses of SET to lift off idle after brake application, return to the start and repeat the calibration procedure from the start.

Apply and release the brake. Turn the ignition off. This completes the throttle calibration.

Move on 3 pages to ‘DIAGNOSTIC MODE TESTING’.

If the red light does NOT stay on while starting the engine.

If the indicator light on the control switch turns off while starting the engine, it means power to the cruise control is turning off while the starter motor is in operation. This will re-boot the cruise control in its normal operating mode. It will retain the calibration you have done, but the rest of the calibration procedure is unable to be completed.

The following different procedure allows you to complete the calibration and test the free play.

Because the cruise is ‘turned off’ while starting the engine, we now have to make sure the cruise control re-starts in diagnostic mode after the engine is started.

With the ignition switch OFF;

Press and HOLD the SET and ON-OFF buttons on the cruise control switch. While holding the buttons, turn the ignition switch on and start the engine. Wait until the indicator light on the switch comes on green momentarily or the back lights behind the buttons come on, then release the SET and ON-OFF buttons.

Apply and release the front brake, the light on the switch should come on green while brakes are applied and turn off when the brakes are released. If the light does not come on, turn the ignition off and try again.

Wait for the engine to warm enough to idle at its normal idle speed.

The SET button will apply a small amount of throttle with each press; the RES button will release the throttle a small amount with each press.

Press and release the SET button slowly and regularly (about 1~2 presses per second). Each press will apply a small amount of throttle. The engine will usually start to increase speed within 1 to 3 presses, but some bikes may take more presses (up to 20 or more).

Once the engine is above idle speed, press and release the SET and RES buttons to make sure the engine responds predictably and repeatedly to the SET (increase engine speed) and RES (decrease engine speed) button operation.

Note: - This next procedure is to establish the exact point where the engine starts to respond to throttle movement.

Apply and release the front brake, the engine should return to idle.

Press and release the SET button slowly and regularly (about 1 press per second) and count the number of presses until the engine JUST lifts off idle. The engine will usually start to increase speed within 1 to 6 presses.

Press the RES button ONCE, check that the engine returns to idle. If the engine has not returned to idle, press RES ONCE again.

The **'free play count'** you need to remember is the number of presses of SET, less the number of presses of RES (for example, 6 SET minus 1 RES = 5 presses).

Apply and release the front brake.

Press and release the SET button slowly and regularly (about 1 press per second) the number of times of our **'free play count'**. Check that the engine speed has not increased.

Now press the SET button one more time. The engine speed should just start to increase. If it does, this confirms that your **'free play count'** is correct. DON'T turn the ignition off.

If the **'free play count'** number is 1~3, you have finished the procedure.

If the **'free play count'** number is 4 or above you should follow the rest of this procedure to allow for this in the throttle calibration.

DON'T turn the ignition off. Stop the engine using the 'engine stop' or 'kill' switch.

Turn the 'engine stop switch' back to the 'run' position.

Apply and release the front brake. You should get a green light with the brake applied, and it should go out when the brake is released. This confirms that the cruise control is still in diagnostic mode.

Enter TPS calibration mode. While still in diagnostic mode, press and HOLD the ON-OFF button (green light). While holding the ON-OFF button, press and release the SET button six (6) times. The green light will go out on the first press, and at the 6th press the light will come back on red. Release the ON-OFF button when the light comes on red.

Make sure the throttle is fully released (idle position).

Press and release the SET button. The light will change to green when the button is pressed and go back to red when released.

Twist the grip to apply full throttle and hold it.

Press and release the RES button. The light will change to yellow when the button is pressed and go back to red when released.

Release the throttle.

If you are not happy that the throttle position is correct in either position, you can repeat the procedure (move the throttle to the appropriate position, hold it there, press SET for idle position or RES for full throttle position.

Confirm the calibration. Press and HOLD the ON-OFF button until the red light changes to green (about 2 seconds).

Slowly apply the throttle. When the throttle position moves from fully released (idle) the light will start to flash green. It will continue to flash green as you apply more throttle.

At full throttle the light will change to solid yellow.

The calibration is correct if:

Throttle released – the light is solid (not flashing) green.

Between fully released and full throttle – flashing green.

Full throttle – solid (not flashing) yellow.

Entering the ‘free play count’. Press and HOLD the ON-OFF button until the green light changes to red (about 2 seconds).

Apply and release the front brake.

Press and release the SET button slowly (~1 press per second) the number of times you got in the **‘free play count’**. Press and release the ON-OFF button, the light will change to green while the button is pressed, then go back to red. The cruise control will record the throttle position. Apply and release the brake. Turn the ignition off.

Confirm the ‘free play count’. With the ignition switch OFF;

Press and HOLD the SET and ON-OFF buttons on the cruise control switch. While holding the buttons, turn the ignition switch on and start the engine. Wait until the indicator light on the switch comes on green momentarily or the back lights behind the buttons come on, then release the SET and ON-OFF buttons.

Apply and release the front brake, the light on the switch should come on green while brake is applied and turn off when the brake is released. If the light does not come on, turn the ignition off and try again.

Wait for the engine to warm enough to idle at its normal idle speed.

Press and release the SET button slowly and regularly (about 1 press per second). Each press will apply a small amount of throttle. The engine should now start to increase speed within 1 to 2 presses, 3 is also OK, but it should be 1~2 presses.

Press and release the RES button to reduce speed back to idle.

If the engine speed increases within 1~3 presses or SET, and pressing RES returns the engine to idle, the throttle calibration is complete.

Apply and release the brake. Turn the ignition off. This completes the throttle calibration.

9. DIAGNOSTIC MODE OPERATION

Note: - Refer to the cruise control Menu Map at the back of this manual to see the menu structure for the various functions available on this cruise control.

Diagnostic mode operation is used to confirm correct installation before actually riding the motorcycle. During diagnostic mode operation the speed control programme is disabled, and correct operation of the cruise control can be checked in safety while the bike is stationary. Confirmation that electrical connections are correct is provided by the indicator light on the control switch and by the GREEN indicator light in the computer (inside the computer, either side of the main harness plug).

Note: - The control switch has an indicator light, next to the ON-OFF button. This light has three colours, RED and GREEN and YELLOW. RED indicates power on. YELLOW indicates cruise control engaged. GREEN is used to confirm the cruise control functions during the diagnostic checks and some calibration procedures.

There are also two lights inside the cruise control computer that are only visible when the lights are operating. The lights are visible from the sides of the box, near the connector end of the box. The green light is also visible from above, but the red light is only visible from the side.

During the diagnostic checks many of the features of the cruise control are confirmed by the GREEN light on the CONTROL SWITCH and the GREEN light on the COMPUTER operating. For example, the lights confirm brake switch operation.

During normal operation the RED light on the COMPUTER displays stop and fault codes and is only used to diagnose problems. The control switch can also display the stop codes. See your troubleshooting guide for more details on this function.

- Place the bike on the centre stand (if it has one) and make sure it is in neutral.
- Turn the bike's ignition switch OFF
- Make sure that the bike's engine kill switch is ON (engine RUN position).
- Press and hold the SET and ON-OFF buttons.
- Turn ON the bike's ignition switch - DO NOT START the engine. **HOLD THE BUTTONS FOR AT LEAST 3 SECONDS or until you see the Green LED on the switch light up or the back lights behind the control switch buttons come on.** After 3 seconds (or the lights coming on) release the buttons.
- The cruise control is now in diagnostic mode.

NOTE: - The following pages explain a series of tests to be performed with the cruise control in Diagnostic Mode. If you turn the ignition switch OFF in between the tests, you will need to repeat the

above procedure to re-enter diagnostic mode before performing the next test. If you do leave the ignition switch ON, the cruise control will stay in diagnostic mode.

- Check that the bike is in Neutral. If not, select Neutral (the indicator light MAY come on green. Ignore it for the moment).

WARNING: - Some bikes (scooters and similar) may have transmissions without a neutral position indicator. If that is the case, at any time when the engine is running in diagnostic mode, make sure the bike is on the centre stand and the rear wheel is clear of the ground.

Testing the brake system

- Operate the rear brake pedal a few times. The indicator light on the cruise control switch should illuminate GREEN and the light on the computer should illuminate green when the pedal is depressed and go out when it is released. **Adjust the rear brake light switch so that the light comes on just before the brakes start to operate.** Note: - There may be a slight delay (~1 sec) before the light goes out when the brakes are released on some occasions. This is normal and is NOT a fault. **NOTE: - Some bikes use a pressure switch connected to the bike's brake fluid line instead of a mechanical switch connected to the brake pedal. It is important that the brake lights come on before significant braking effort occurs. If it takes more than light pressure, the switch is faulty and should be replaced.**

NOTE: - If the brake switch is already ON (it is adjusted so that the switch never turns OFF or the switch is stuck on), then the light on the control switch will NOT COME ON AT ALL. The brake light switch must be OFF before applying the brake in order for the control switch light to work. If you cannot get the light to come on, check that your brake lights are not permanently on, and that they do actually work with brake application. If they are stuck on, back off the brake switch adjuster to ensure that the switch DOES TURN OFF. If the brake light globe is blown the light will not come on. In many cases if you have fitted an LED brake light or a brake light flasher system, this will prevent the cruise control detecting brake signal. THE CRUISE CONTROL WILL NOT WORK UNTIL THESE PROBLEMS ARE CORRECTED.

- Operate the front brake lever and the rear brake pedal a few times. The light on the switch should illuminate green when the brakes are used. This indicates that the cruise control will cancel when the brakes are applied. **NOTE: - We have noticed a number of bikes recently where the front brake must be pulled on quite hard before the brake lights turn on. Most of these switches are a spring-loaded plunger that is operated by the brake lever. In several cases we have had to file the end of the plunger to make it shorter, so the brake lights come on slightly before the brakes start to work. It is important that the brake lights come on before significant braking effort occurs.**

NOTE: - If the bike is fitted with LED light globes or a flasher device on the brake light system this may cause interference with the cruise control brake detection. If the cruise control will not work, try replacing the brake light globes with standard globes and/or disconnecting the flasher device. Contact us for information about LED brake modification to enable both your LED/brake light flasher and the cruise control.

Testing the control switch

- Depress the SET button. The switch light will go green when the button is pressed and go out when the button is released. This indicates that both the SET button is working correctly.
- Depress the RES button. The switch light will go green when the button is pressed and go out when it is released. This indicates that the RES button is working correctly.

- Press the ON-OFF switch. The switch light will go green when the button is pressed and go out when it is released. This indicates that the ON-OFF switch is working correctly.

Testing the TPS calibration

- Pull on the brake lever (to ensure that the throttle connection is disengaged and the engine will idle), release the brake and start the engine.

NOTE: - If the battery is not in good condition or is not fully charged, the cruise control computer may 'reset' when the engine is started (drop out of diagnostic mode) due to the drop in voltage when the starter motor is used. If this happens, the cruise control will no longer show any lights in response to button presses or brake application. In order to re-start the computer in diagnostic mode, press and hold the SET and ON-OFF buttons while you start the engine and HOLD the buttons for 3 seconds after the engine starts. When the battery voltage recovers after the engine is started, the computer will 're-boot' in diagnostic mode.

- Press the SET key 1 to 3 times until the engine revs start to increase. Each press will increase the speed slightly.

NOTE: - there should be almost no delay with this operation. It should take 1~3 presses before the engine speed starts to increase. If the engine speed gets too high, the brake lever or the ignition switch will disengage the throttle. The engine kill switch will turn the engine off BUT MAY NOT RELEASE THE THROTTLE as the throttle servo may still be engaged if the kill switch does not remove power to the brake light system. OPERATE THE BRAKE LEVER TO TURN THE THROTTLE SERVO OFF AND RELEASE THE THROTTLE.

NOTE: - The ignition switch will turn the cruise control off. This will also release the cruise from diagnostic mode. You will need to press and hold the SET and ON-OFF buttons while turning the ignition switch back ON to place the cruise in diagnostic mode again. Depress the brake lever to reset the throttle servo before restarting the engine and repeating the previous step.

- Press the RES key several times and the engine should gradually return to idle.
- Operate the brakes to reset the throttle connection.

Testing the clutch/neutral sensor

- Make sure that the cruise control is in diagnostic mode. Press any of the buttons on the control switch. If the indicator light comes on green at each button press, the cruise control is in diagnostic mode. If the light does not come on green, turn the ignition switch off and re-enter diagnostic mode.
- **Make sure the bike is in gear (engine not running, not in neutral) and the side stand is up (retracted). In most cases this test will not work unless these things are done. On some bikes it will work in any gear and any side stand position, but that is not common.**

Clutch sensor – (used on most manual shift bikes)

- Operate the clutch lever. The indicator light on the switch should illuminate green when the clutch is disengaged and go out when it is released. **NOTE: - The clutch switch purpose is as a starter lockout for the motorcycle. In most cases the switch will not 'trigger' until the clutch lever is more than ½ way pulled in. This is normal and not a fault.**

Neutral sensor – (used on some auto or DCT shift bikes)

- Shift gear from neutral to other gears. The indicator light on the switch should illuminate green when neutral is selected and go out when any other gear is selected. **On many bikes, even those where the cruise is connected to the clutch, selecting neutral will also make the indicator light come, but usually only if the side stand is up.**

Configuring the clutch/neutral sensor

Most bikes have a clutch switch or neutral switch that pulls to ground (lo) when the clutch is operated or neutral is selected. A few, mostly older bikes, have this circuit that pulls to 12V (high) instead. The cruise control can be configured to accept either signal. In all cases where the cruise control is supplied for a specific model, the sensor will be configured to suit the bike already, and this will not need to be changed.

On ‘universal’ installations it may be necessary to configure the sensor, particularly on older bike (pre1980’s).

Enter clutch neutral configure mode

NOTE: - not applicable to installations where the cruise is connected to the bike’s CAN-BUS system.

NOTE: - The indicator light on the switch is used to show what settings are selected. The red and green lights in the cruise computer show what stage you are at in the process.

- Turn the ignition off. Press & hold the ON-OFF, SET & RES buttons, turn the ignition on, hold the three buttons until the switch indicator light comes on yellow. When the light comes on, release the buttons. The red and green lights in the computer should be on, not flashing.
- Press and release the brake. The indicator light will change to green or red, usually green. Red means the clutch/neutral sensor is turned off (disabled). Green is turned on (enabled). The lights in the cruise computer should be flashing once very couple of seconds - indicating clutch/neutral sensor enable/disable mode. If the cruise is not connected to either a clutch switch or neutral switch/sensor, you can disable the clutch/neutral sensor. It is not essential to disable it, but you can do so if desired.
Press SET to enable the sensor (green light on the switch).
Press RES to disable the sensor (red light on the switch).
- If the sensor is **enabled**, press and release the brake to move to the next step. If the sensor is **disabled**, turn the ignition off, the procedure is complete.
- After the brake is pressed and released, the lights on the computer should be flashing twice then pause for a couple of seconds (indicating clutch/neutral sensor setup mode). In this step, the sensor can be configured for Hi sensing (red light), Lo sensing (yellow light) or gear position sensing (green light - used on some ATV’s).
Press RES to select Lo sensing (yellow light on the switch) - ground sensing, the most common setting.
Press SET to select Hi sensing (red light on the switch) – 12V sensing.

NOTE: - If your bike/ATV requires gear position sensing press the ON-OFF button (green light). The rest of the procedure for calibrating gear position sensing is in another document.

- Turn the ignition switch off. This completes the configuration. Go back into diagnostic mode to test the clutch/neutral sensor.

Checking the TPS/APS 'free play'.

Refer to the installation manual for details about this.

Typically, the TPS/APS 'free play' test follows this routine.

- Make sure that the cruise control is in diagnostic mode. Press any of the buttons on the control switch. If the indicator light comes on green at each button press, the cruise control is in diagnostic mode. If the light does not come on green, turn the ignition switch off and re-enter diagnostic mode.
- Start the engine. Apply and release the front brakes, make sure the light on the switch comes on green with brake application to check that the cruise control is still in diagnostic mode.
- Allow the engine to settle to normal idle speed.

NOTE: - Do NOT apply the brakes until instructed to do so, unless you need to disengage the cruise control because the engine rpm is too high and won't come back down.

- Press and release the SET button, about 1 press per second or slower, and count the number of presses until the engine just lifts off idle. Normally this should take 1 to 3 presses.
- Press the SET button a few more times to bring engine rpm up to 2,000~3,000rpm.
- Press the RES button at least as many times as you pressed the SET button, then 5 more times, the revs should drop to idle. If the engine does not return to idle, perform the TPS calibration routine again.
- Press and release the SET button, about 1 press per second or slower, and count the number of presses until the engine just lifts off idle. This should take 1~3 presses. If it takes more than 3 presses, perform the TPS calibration routine again.
- Repeat the last three lines (under lined) a few times to see if the results are consistent each time.
- Apply and release the brakes. The engine should return to idle instantly.
- Turn the ignition off. This will release the cruise control from diagnostic mode.

Re-assemble the motorcycle for road testing

CAUTION: - Check that no wires and control cables are crushed or caught by any of the fairing panels, seat or the fuel tank during re-assembly. Check that all wires and cables are restrained and will not be damaged by any moving or stationary parts. Check that the seat will not damage the wiring harness or computer.

10. CALIBRATION, ADJUSTMENTS & ROAD TEST

NOTE: - Cruise control performs a brake test every time the ignition is turned on (power up). If the cruise control is turned ON (ON-OFF button pressed) BEFORE the brakes are applied AND released, the indicator light on the switch will flash red/green alternating and the cruise control will not engage. Apply and release the brakes and the light will change to red and allow normal operation.

NOTE: - There are several sheets at the end of this manual that can be removed and put in a pocket to assist with setup and calibration of the cruise control. One 'set' of sheets is the Menu Map showing the structure of the various menus that can be accessed to configure the cruise control. The other 'set' shows the various calibration procedures that can be performed and the order that they should be performed.

Since the brakes are the fastest way to turn the cruise control off, it is ESSENTIAL that they be adjusted optimally to suit the rider AND that they activate the rear brake lamp as quickly as possible. It is recommended that both front and rear brakes be set up so that the brake lamp turns on as early as possible when either brake is applied. Naturally you have to ensure that the brake lamp does turn off - otherwise the cruise control will not work at all. Careful adjustment of the foot brake lever so that the rider's foot does not have to lift up to reach it is recommended. Next, adjust the brake switch so that it turns on with very little movement of the brake pedal. Repeat this process with the front brake lever if adjustment is available.

WARNING: - If there is any evidence of inconsistent operation or sticking of either brake light switch, replace the switch. The brake light switches are the main components used to disengage the cruise control.

It is recommended you adjust the rest position of the **gear lever** to match the foot brake lever for optimum rider comfort.

NOTE: - If the rear brake light filament or fuse breaks, or the brake light is on, the cruise control will not work at all. If your cruise control appears not to be working, these are the first things to

CALIBRATING AND ADJUSTING THE CRUISE CONTROL

NOTE: - In most cases, the computer will already be supplied configured for your bike. If this is the case, there will be a LABEL on the side of the computer stating what MODEL of bike it is configured for. This configuration is based on our tests with a similar bike to yours.

You may be able to improve the performance of the cruise control by performing the calibration procedures, but it is most likely in model-specific kits that the performance will be satisfactory as supplied as long as you calibrate the TPS (Throttle Position Sensor) properly.

NOTE: - IN MOST CASES THE COMPUTER IS SUPPLIED CONFIGURED FOR YOUR BIKE.

YOU CAN ROAD TEST IT NOW WITHOUT PERFORMING THE CALIBRATION PROCEDURES.

IF AFTER ROAD TESTING, YOU FEEL THAT THE PERFORMANCE COULD BE IMPROVED, EMAIL AND TALK TO US BEFORE PERFORMING ANY PART OF THE PROCEDURES INDIVIDUALLY OR ALL OF THE CALIBRATION PROCEDURES AT ANY TIME.

NOTE: - The following pages discuss in detail the procedures required to adjust the cruise control. There is also a single page sheet at the back of this manual that shows the steps required in brief.

READ the procedure detail first, then use the single sheet as a memory jogger when out doing the adjustment.

There are several steps that may be performed to ‘tune’ the cruise control to your motorcycle and to suit your requirements. They are:

Speed sensor calibration.

This function teaches the cruise control computer how many pulses per wheel revolution it will receive from the speed sensor or the bike’s speedometer sender, so that the cruise control knows what speed the bike is doing. This must be done while riding the motorcycle at 70 kph (45 mph). **NOTE: - This procedure DOES NOT apply to bikes where the cruise control is connected to the bike’s CAN-BUS system. It is not possible to perform speed sensor calibration with CAN-BUS.**

Speed increment adjustment

This adjusts the speed increment on the SET/ACCElerate and RESume/DECelerate buttons when they are used to adjust the speed up or down. The default setting is 2kph per press of the buttons, so if, for example, you are ‘cruising’ at 100 kph, one press of the SET button will increase speed by 2 kph to 102 kph, and the RES button will decrease speed by 2 kph to 98 kph.

This function has four settings; 1kph, 2kph, 1mph and 2mph. #1 is 1 kph, #2 is 2 kph, #3 is 1 mph and #4 is 2 mph. This is entirely for personal preference and has no effect on the performance of the cruise control. The default is #2 (2 kph).

Operational Coarse Sensitivity or ‘Coarse Gain’ adjustment

This function is used to adjust how much the cruise control adjusts the throttle (applies more throttle or back off throttle) in response to speed variation (acceleration or deceleration) from the effects of wind or hills. This adjustment ONLY affects the operation of the cruise control AFTER the initial throttle application when the cruise control is controlling the bike’s speed. It has NO EFFECT on the initial throttle application when the cruise control is first engaged. The process to take is as follows

Initial selection of the Sensitivity or ‘Gain’ number. Normally the gain number is set to around 5 or 6 for powerful bikes, and up to 10 for smaller engine models would be used as a start point. After this is done, the bike must be ridden to see how the cruise control behaves. If the number is too low, the bike will tend to wander and not control speed well, if it is too high, the cruise may be rough or tend to hunt (continuously apply and back off the throttle). The range of numbers available starts at 1 and goes to 15, a low number would be used on very responsive or powerful bikes, a high number would be used on less responsive or less powerful bikes. Note that the bike that is sensitive to small throttle changes has the most influence on the gain setting. A bike with a ‘soft’ throttle response off idle will use a higher gain number. A bike with very sensitive throttle off idle will need a lower number. Note that a bike being responsive does not necessarily mean it is powerful, it is just very responsive to small throttle movements. Some quite powerful bikes are not very throttle sensitive and vice-versa. This number can be used to control how well the cruise control works in transitions to uphill or downhill situations but must also work in steady state flat road situations.

Operational Fine Sensitivity or ‘Fine Gain’ adjustment

This function is also used to adjust how much the cruise control adjusts the throttle (applies more throttle or back off throttle) but has the most effect in controlling the cruise controls response around set speed. If you

cannot find a setting on 'coarse' gain that holds speed well in transition to uphill or down hill that also stops the cruise control hunting or oscillation around set speed on flat going, this adjustment can help. This adjustment is mainly to allow the cruise control to 'settle' on speed without feeling like the cruise control is 'niggling' the throttle when on smooth flat roads. You can often achieve a smooth response in smooth flat running using the coarse gain, but sometimes the cruise becomes unresponsive in transitions to up or down hill. This adjustment can allow you to give good response in transitions with a relatively high coarse gain number, and then reduce the fine gain number to smooth the cruise control out in steady state (flat road) running.

The process to take is as follows:

Select a coarse gain number that gives good overall performance (see the previous section). This might still leave the cruise control feeling a little 'unsettled' in steady state smooth road situations. The fine gain default number is 5, the minimum is 1, the maximum is 10. Adjusting the fine gain modifies only one of the settings that the coarse gain adjusts (coarse gain changes many different settings). If the bike feels like the cruise is niggling at the throttle a lower number may help (speed control is quite good, but it never really feels 'smooth'). If the bike feels like the cruise is not really controlling the speed tightly (it just does not feel responsive), a higher number may help.

Acceleration Spread Gain adjustment

This adjusts how quickly and firmly the cruise control tries to get back to target speed if the speed varies. This is mainly a 'comfort' factor for the rider but it can also be used to improve performance of the cruise control on some bikes.

This function has 5 settings and the default is the mid-point setting of 3. Changing this setting to 1 will make the cruise control very 'relaxed' in 'pushing' the bike back to set speed, changing this to 5 will make the cruise quite aggressive in driving the bike back to set speed, however on some bikes a high number may also induce 'hunting'. Note that this setting does not directly affect the speed holding of the cruise control, which is controlled by the 'Gain' setting above, but it will change how aggressive the cruise control is in pushing the bike back to set speed.

The three previous adjustments (Coarse Gain, Fine Gain and Acceleration Spread) are all available from within one 'Gain Adjustment' procedure. It is not necessary to stop the bike and turn the ignition off and back on to make changes to these three settings, they are all easily accessible without stopping the bike and all can be adjusted 'live' with the cruise control engaged so you can 'feel' the result of a change instantly.

How to perform the adjustment procedures

Speed Sensor Pulse Rate Calibration

NOTE: - (NOT for bikes where the cruise control is connected to the bikes CAN-BUS system.)

- Turn the ignition switch OFF. Press and HOLD the RES and ON-OFF buttons, turn the ignition switch ON, **HOLD THE BUTTONS UNTIL THE SWITCH INDICATOR LIGHT COMES ON GREEN (a few seconds), then release the buttons.** The cruise control is now in speed pulse rate calibration mode.
- Ride the bike at 70 kph (45 mph) and hold the speed STEADY. The GREEN indicator light will be flashing as you ride the bike. The flash rate will vary with the bike's speed and the frequency of the pulses coming from the speed sensor, so the flash rate may be very slow or very fast or anywhere in between, in some cases it may be so fast you cannot see the flashing except at low speeds.

- Press and release the SET button once. The indicator on the switch will change to RED for two seconds and may flash yellow during this time. The computer will record the pulse rate of the speed signal. Hold the speed STEADY at 70 kph (45mph) for two seconds until the red light goes out. The light will resume flashing green from the speed signal after the red goes out.
- If you are not sure that your speed was correct or stable, adjust your speed to 70 kph (45 mph) again and simply press SET again. Each time SET is pressed the speed pulse rate will be recorded and saved overwriting the previous setting.
- Stop the bike and turn the ignition switch OFF, **DO NOT TURN THE IGNITION OFF BEFORE THE BIKE HAS STOPPED MOVING.** This completes the speed signal pulse rate calibration.

Speed increment adjustment

- Turn the ignition switch OFF. Press and HOLD the RES and ON-OFF buttons, turn the ignition switch ON, **HOLD THE BUTTONS UNTIL THE SWITCH INDICATOR LIGHT COMES ON GREEN (a few seconds), then release the buttons.** The cruise control is now in speed pulse rate calibration mode.
- Press and HOLD the ON-OFF button. The indicator light will start flashing green. It will normally flash a number of times to display the setting (twice for setting #2) then pause for a couple of seconds, then flash the number again.
- While HOLDING the ON-OFF button, press SET to increase the number, press RES to decrease the number. #1 = 1 kph (0.6 mph). #2 = 2 kph (1.2 mph). #3 = 3 kph (1.6kph). #4 = 4 kph (3.2 kph).
- Count the number of flashes to confirm your selection.
- Release the ON-OFF button when you are finished making this adjustment (the light will go back to green, no flashing), then turn the ignition switch OFF. This completes the speed increment adjustment.

Initial ‘Coarse Gain’ or ‘Coarse Sensitivity’ Adjustment

The ‘coarse gain’ or coarse sensitivity adjustment has 15 settings and the cruise control uses the indicator light on the switch to ‘flash’ this number, 1 through to 15. It will flash YELLOW the number of times corresponding to the Coarse Gain number, pause for a few seconds and then flash the number again.

Generally as a start point, the Gain number will be set to the same number as the Initial Pull Curve number. This usually gives a good starting point, and often will not need to be changed.

- Turn the ignition switch OFF. Press and HOLD the RES button ONLY, turn the ignition switch ON, **HOLD THE RES BUTTON UNTIL THE SWITCH INDICATOR LIGHT STARTS FLASHING RED/GREEN ALTERNATING OR YELLOW, then release the button. Apply and release the brakes, the light should now flash YELLOW.** The cruise control is now in gain adjustment mode.
- The indicator light will flash yellow about 1 flash per second, then pause for a few seconds and flash the number again. The gain number should be 1 on a new computer, unless the computer is pre-configured for a specific model.
- Either set the Gain number to the same setting as the Initial Pull Curve selected earlier, or refer to the Cruise Control Model Sensitivity list supplied with the cruise control and select an appropriate gain/sensitivity number for your bike.

- Press the SET button to increase the number or press the RES button to reduce number. Each press will change the number by one. Count the yellow flashes to confirm the setting.
- Turn the ignition switch OFF. This completes the initial ‘coarse gain’ or coarse sensitivity adjustment.

Testing and adjusting the gain setting (coarse gain, fine gain and acceleration spread).

The three gain settings can be accessed within one adjustment ‘menu’.

- To enter gain change mode, turn the ignition switch OFF. Press and HOLD the RES button ONLY, turn the ignition switch ON, **HOLD THE RES BUTTON UNTIL THE SWITCH INDICATOR LIGHT STARTS FLASHING RED/GREEN OR YELLOW, then release the button.**
- Apply and release the brakes. The indicator light will now be flashing yellow. The cruise control is now in gain/sensitivity adjustment mode - in Coarse Gain adjustment and displays the gain number by flashing the YELLOW light on the control switch.

Testing and adjusting the Coarse Gain

- Ride the motorcycle at various speeds and press SET to engage the cruise control. The RES button does not work to engage the cruise control in this mode. Use the brake to disengage the cruise control and ride to a different speed, then press SET to engage the cruise control again.
- The cruise control should control the speed smoothly and without too much ‘wander’ in the speed.
- If the cruise control is too abrupt or hunts (applies and releases the throttle continuously), reduce the gain number.
- If the speed wanders too much and the response from the cruise control is slow, increase the gain number.
- Press the SET button to increase the number or press the RES button to reduce the number. Each press will change the number by one. **You can make these adjustments either while riding with the cruise control engaged or with the bike stopped.** If you are stationary, each press of SET or RES will adjust the sensitivity. If you are riding between 35 kph and 180 kph, the first press of the SET button will engage the cruise. The RES will not work until the cruise control is engaged while moving. After the cruise control is engaged, the SET and RES buttons will adjust the sensitivity. **The Gain Number cannot be changed while the bike is moving with the cruise control disengaged, it can ONLY be adjusted when stationary OR when moving with the cruise control engaged.**
- **The minimum setting for Coarse Gain is 1, the maximum setting is 15.**
- If you do not wish to adjust the Fine Gain or the Acceleration Spread, stop the bike (the bike must be stationary) and turn the ignition switch OFF, **DO NOT TURN THE IGNITION OFF BEFORE THE BIKE HAS STOPPED MOVING.**

HINT: - The cruise control may ‘hunt’ on down hill sections as the cruise control tries to balance throttle against speed. This will be more pronounced at lower speeds where very small amounts of throttle movement can cause large changes in speed. This will apply particularly if the throttle is wound all the way off to idle position and then re-applied. You will need to balance the sensitivity number with the performance you want from the cruise control in different circumstances. It may take some time for you to become accustomed to the cruise control and achieve a final setting that you find suitable for all situations. Large changes in load (towing a trailer) may also require a change in the setting.

Testing and adjusting the fine gain

If the ignition is still on and the cruise control is in coarse gain adjustment mode:

- Press and hold the ON-OFF button for more than 2 seconds until the light changes from flashing .yellow to flashing RED. Release the ON-OFF button. The cruise is now in Fine Gain adjustment mode and displays the gain number by flashing the RED light on the control switch.

If the ignition switch has been turned off:

- Turn the ignition switch OFF. Press and HOLD the RES button ONLY, turn the ignition switch ON, **HOLD THE RES BUTTON UNTIL THE SWITCH INDICATOR LIGHT STARTS FLASHING RED/GREEN OR YELLOW, then release the button.**
- Apply and release the brakes (the cruise control will not engage until it has received a signal from the brake detection circuit. The indicator light will now be flashing yellow. The cruise control is now in Coarse Gain adjustment mode.
- Press and hold the ON-OFF button for more than 2 seconds until the light changes from flashing .yellow to flashing RED. Release the ON-OFF button. The cruise is now in Fine Gain adjustment mode and displays the gain number by flashing the RED light on the control switch.
- It will flash a number of times to displays the setting (once for setting 1) then pause for a couple of seconds, then flash the number again. The default setting is 5. The settings range from 1 to 10.
- Ride the motorcycle at various speeds and press SET to engage the cruise control. The RES button does not work to engage the cruise control in this mode. Use the brake to disengage the cruise control and ride to a different speed, then press SET to engage the cruise control again.
- The cruise control should control the speed smoothly and without too much ‘wander’ in the speed.
- If the cruise control feels like it is ‘niggling’ at the throttle (it is holding speed well, but never seems to quite ‘settle’, try reducing the fine gain number (press RES to decrease the gain number).
- If the speed does not feels like it is ‘locked in’, increase the gain number (press Set to increase the gain number).
- Press the SET button to increase the number or press the RES button to reduce number. Each press will change the number by one. **You can make these adjustments either while riding with the cruise control engaged or with the bike stopped.** If you are stationary, each press of SET or RES will adjust the sensitivity. If you are riding between 35 kph and 180 kph, the first press of the SET button will engage the cruise. The RES will not work until the cruise control is engaged while moving. After the cruise control is engaged, the SET and RES buttons will adjust the sensitivity.
- **The minimum setting for Fine Gain is 1, the maximum setting is 10.**
- If you do not wish to adjust the Acceleration Spread or make another change to the Coarse Gain, stop the bike (the bike must be stationary) and turn the ignition switch OFF, **DO NOT TURN THE IGNITION OFF BEFORE THE BIKE HAS STOPPED MOVING.**

Changing the Acceleration Spread adjustment

The last adjustment available is the Acceleration Spread. This adjustment is independent of the gain, but can have an effect on what gain number can be used.

If the ignition is still on and the cruise control is in fine gain adjustment mode:

- Press and hold the ON-OFF button for more than 2 seconds until the light changes from flashing red to flashing GREEN. Release the ON-OFF button. The cruise is now in Acceleration Spread adjustment mode and displays the gain number by flashing the GREEN light on the control switch.

If the ignition switch has been turned off:

- Turn the ignition switch OFF. Press and HOLD the RES button ONLY, turn the ignition switch ON, **HOLD THE RES BUTTON UNTIL THE SWITCH INDICATOR LIGHT STARTS FLASHING RED/GREEN OR YELLOW, then release the button.**
- Apply and release the brakes (the cruise control will not engage until it has received a signal from the brake detection circuit. The indicator light will now be flashing yellow. The cruise control is now in Coarse Gain adjustment mode.
- Press and hold the ON-OFF button for more than 2 seconds until the light changes from flashing yellow to flashing RED. Release the ON-OFF button. The cruise is now in Fine Gain adjustment mode and displays the gain number by flashing the RED light on the control switch.
- Press and hold the ON-OFF button for more than 2 seconds until the light changes from flashing red to flashing GREEN. Release the ON-OFF button. The cruise is now in Acceleration Spread adjustment mode and displays the gain number by flashing the GREEN light on the control switch. It will flash a number of times to displays the setting (once for setting 1) then pause for a couple of seconds, then flash the number again. The default setting is 3.
- The settings range from 1 to 5. 1 will be very soft and the cruise control will be very ‘relaxed’ about getting back to the set speed. 5 will be much more aggressive, and the cruise will attempt to get back to set speed quite quickly. If the bike tends to hunt with the gain number you feel is right, try reducing the acceleration spread number, this will often ‘cure’ a bike that is prone to hunting. Other than that, the acceleration spread is mostly a matter of what ‘feels’ comfortable to you.
- Ride the motorcycle at various speeds and press SET to engage the cruise control. The RES button does not work to engage the cruise control in this mode. Use the brake to disengage the cruise control and ride to a different speed, then press SET to engage the cruise control again.
- Press the SET button to increase the number or press the RES button to reduce number. Each press will change the number by one. **You can make these adjustments either while riding with the cruise control engaged or with the bike stopped.** If you are stationary, each press of SET or RES will adjust the sensitivity. If you are riding between 35 kph and 180 kph, the first press of the SET button will engage the cruise. The RES will not work until the cruise control is engaged while moving. After the cruise control is engaged, the SET and RES buttons will adjust the gain.
- **The minimum setting for Acceleration Spread is 1, the maximum setting is 5.**
- If you do not wish to adjust make more adjustments to the Coarse Gain or Fine Gain, stop the bike (the bike must be stationary) and turn the ignition switch OFF, **DO NOT TURN THE IGNITION OFF BEFORE THE**

BIKE HAS STOPPED MOVING.

- In order to ‘scroll’ through the three adjustments, press and hold the ON-OFF button for more than 2 seconds to change to the next adjustment. The cruise will always start in Coarse Gain (yellow flashing light), then Fine Gain (red flashing light) then Acceleration Spread (green flashing light), then back to Coarse Gain (yellow) and so on.

Road testing the cruise control

Start the bike.

NOTE: - THE CRUISE CONTROL COMPUTER TAKES A FEW SECONDS (LESS THAN 5 SECONDS) TO ‘BOOT UP’. AVOID PRESSING ANY BUTTONS FOR THE FIRST FEW SECONDS AFTER TURNING THE IGNITION SWITCH ON OR STARTING THE BIKE.

Apply the brakes at least once. The cruise control will not engage until it detects the brake have been applied. If you turn the cruise ON before applying the brakes, the light on the switch will flash red/green and the cruise control will not engage. Once the brake has been applied AND released it will change to red and the cruise will work.

NOTE: - On most bike, the bike’s brake light switches are directly connected to the brake light and both switches are on the same circuit, so operating either front or rear brake does the same thing electrically. Some newer bikes with CAN-BUS communications, the brake switches do NOT operate the brake light, they send a signal to the bike’s system which then turns on the brake light. We connect to one brake switch only, usually the front brake switch on most of these types of bikes. In these cases, only that switch will enable the cruise control after the ignition is turned on. The cruise control also monitors the CAN-BUS signal for brake application so the cruise will disengage with either front or rear brake application, but ONLY the switch the cruise is directly connected to will stop the red/green flashing and allow the cruise to engage.

To turn your cruise control ON, press the ON-OFF button once. The indicator light will come on RED to indicate power is ON. To turn the cruise control OFF, press the ON-OFF button again. The red indicator light will go out. The light is reasonably bright, but will not be easily visible in full sunlight. ***The light may be flashing red/green if the brakes have not been applied.***

When riding, pressing the SET or RES buttons will engage the cruise control and the indicator light will turn yellow.

If the bike’s ignition switch is turned OFF, the cruise control will turn OFF. When the bike is started again next time, the cruise control will be OFF and SET or RES will NOT work. Press the ON-OFF button to turn the cruise control back ON (red indicator light will come on) to enable the SET and RES buttons.

- Press the ON/OFF switch once to turn the cruise control ON (red light ON);
- ***Apply the brakes at least once if the light is flashing red/green, it will then change to red.***
- Ride the bike to 60kph (35mph) and press the SET key. The cruise control should engage and smoothly maintain speed;
- Depress one of the brake levers to disengage the cruise control;

- Use the throttle to accelerate the bike up to 80kph (50mph) and press the SET key. The cruise control should engage and smoothly maintain speed within 2kph (about 1.5mph);
- Press the SET key 5 times. The cruise control should smoothly increase the speed by about 10 kph (6mph) (if the default speed increment is still used, otherwise it should change speed according to the selected increment of 1kph, 2kph, 1mph or 2mph).
- Press the RES key 5 times. The cruise control should smoothly decrease the speed by about 10 kph (6mph) again depending on the speed increment selected.
- Apply the brakes and slow down to about 60 kph (35mph). Press the RES key once. The cruise control should engage and smoothly accelerate to the previous SET speed and maintain speed within 2kph (about 1.5mph).

Testing the clutch and/or tach sensor.

The clutch and/or tach sensor may be road tested by setting the cruise on a suitable speed (ie. 60kph or 35 mph) while on a level road or slight uphill, and pulling in the clutch. The engine will rev higher initially but should drop quickly (within 1/2 second) back to idle. If this takes longer than this, check that you are not holding the throttle open and that the diagnostic tests for the clutch switch is working correctly.

This completes the testing & adjustment procedure.

11. SAFETY ISSUES & FEATURES

Electrical 'Noise'.

Noise is a broad term used to describe the electromagnetic radiation of energy. Noise is generated during rapid changes in voltage or current levels or by radio transmitters (ignition systems, alternators, mobile phones and other heavy current carrying wires). If noise gets coupled into the cruise control wiring harness it can create disturbances within the cruise control computer. The cruise control may drop out after engagement or not engage at all, but still pass all diagnostic tests.

The most likely causes of electrical noise interference on a motorcycle is faulty spark plug leads or fitment of non suppressed spark plug leads, or the electrical system could be in poor repair due to age or lack of appropriate preventative maintenance.

WARNING: - It is ESSENTIAL that the spark plug leads are radio suppression type leads and that they are in good condition. Inspect the spark plug leads for any cracks, and replace if required. All original equipment high-tension ignition leads, in optimal condition, should be acceptable, but the cruise control MUST NOT BE USED IF AFTERMARKET, SOLID CORE HIGH TENSION LEADS ARE FITTED.

Ideally all cruise control wiring should be kept as far as possible from all high voltage and high current wiring. This is often difficult to achieve on a motorcycle due to space limitations, so it is important to FOLLOW THE WIRING HARNESS INSTALLATION INSTRUCTIONS CAREFULLY.

Make sure that the bike's battery and charging system are in good condition and the battery electrolyte levels are correct and the battery connections are clean and tight. The battery acts as an electrical 'buffer' and absorbs electrical spike energy and stabilises voltage in the electrical system.

CruiseSafe throttle cut off.

As an additional safety measure, MotorCycle Setup has developed a new component for use on motorcycle cruise controls; the CruiseSafe cut off.

The MotorCycle Setup 'CruiseSafe' *cut off* cuts the connection to the vehicle's throttle grip position sensor whenever the brake is applied. This innovative safety device built in to the MCS product range and demonstrates the company's dedication to building product to the highest possible levels of safety, quality and reliability.

The 'CruiseSafe' cut off is a simple 'switch' incorporated into the brake circuit so that when the brake light switch operates, power to the cruise control throttle connection is broken.

WARNING: - In order to stop the motorcycle in the event of cruise control electrical malfunction, simply pull on the brakes. This will disconnect the TPS connection immediately.

WARNING: - In the event of a major malfunction, the cruise control may re-apply the throttle when the brakes are released. If this occurs, remove the cruise control power fuse in the cruise control wiring harness until the cause can be found and remedied.

WARNING: - Any erratic behaviour from the cruise control should be regarded as suspicious, if the cruise control disengages at random or it fails to engage without turning the ignition switch off and back on, the cruise control fuse should be removed until the cause can be found and remedied.

The 'CruiseSafe' protects you against accidental damage to the wiring loom or any sort of electrical failure or interference in the cruise control electronics causing a malfunction, because whenever the brakes are applied, the cruise control is disconnected from the throttle control system.

Its operation is failsafe, which means that if you lose power to the brakes, the brake light globes blow, a wire becomes disconnected or the 'CruiseSafe' fails, the power to the cruise control throttle is disconnected. The ONLY electrical failure it cannot protect against is if the brake light switch/s fail. Then you must turn the cruise control and the bike OFF using the bike's engine kill switch or ignition switch to kill the engine.

Other safety features.

The cruise control can be shut off by any of the following methods:

- Applying the brakes;
- Pulling in the clutch (as long as clutch and/or tach sensing are connected);
- Pressing the ON/OFF button to OFF;
- Accelerating to 130% of the SET speed or exceeding the maximum speed;
- Decelerating to 70% of the SET speed or running under the minimum speed (35kph, 22mph);
- Turning the engine kill switch OFF (this stops the engine but may NOT turn off the cruise control);
- Turning off the ignition key.

The cruise control will disengage if any of the connectors become separated, if the brake light filament breaks or the brake light system loses power - for example if a fuse blows.

There are numerous safety features designed into the computer to ensure that should one or more components fail there is still a way to turn off your cruise control.

For safe riding NEVER operate this cruise control in heavy traffic conditions or on wet roads or other hazardous conditions.

WARNING: Your cruise control is designed with numerous safety features, but only the motorcycle KILL SWITCH or the IGNITION KEY can overcome a runaway condition.

Regular inspection of control cables (if fitted) is recommended to prevent jamming of the throttle, which could occur if cables were frayed or damaged.

12. TROUBLE SHOOTING

A potential source of problems is electrical interference. Your kit has been developed based on testing to avoid this type of problem by installing the loom and computer in unaffected areas. However, as the speed rises the electrical fields generated by the bike increase. Also, older bikes tend to produce larger electrical fields from old spark plug leads or coils. If you experience this type of problem, check that you have followed the installation instructions precisely. Correct any obvious mistakes. If the problem persists call MotorCycle Setup for advice. As a last resort, we will refer you to our local installer if you are prepared to pay for him to check the installation and follow his recommendations. If our dealer/installer network is unable to make the unit work properly, you will receive a full refund of the cost of the cruise control (NOT including freight) on return of the kit. If the cruise control was purchased through a dealer (or other third party) it must be returned via that third party.

There is a separate trouble-shooting guide supplied with the kit. Refer to the trouble-shooting guide for detailed problem diagnosis.

The most common cause of problems is intermittent/dirty electrical connections. Check the connections for continuity at all connection points. Perform a diagnostic mode check (see the trouble shooting guide or section 8 in this manual), as this will provide an indication of what components are not working correctly.

Refer to the Operation and User Manual for more information on operating the cruise control.

MotorCycle Cruise © MCS7000 TBW CAN-BUS ISOM V5.157+
MOTORCYCLE SETUP PTY. LTD.

12 MONTH CONSUMER SATISFACTION GUARANTEE REGISTRATION

Please keep this card and your receipt in a safe place. Copies of both are required if warranty service is needed.

Name: _____

Address: _____

Telephone Number: _____

Item Model Number: _____ Date Purchased _____

Name of Retailer: _____

Installed By: _____

Year, Make and Model of Motor cycle: _____

I have read the warranty agreement below and accept its terms.

Customer signature: _____

Warranty service requires a copy of the sales receipt.

12 MONTH WARRANTY

MotorCycle Setup Pty. Ltd., Unit 13,137-145 Rooks Road, Nunawading, Victoria 3131, AUSTRALIA hereby warrant that it will repair or replace to the original purchaser products which prove to be defective under normal use and service in workmanship or material.

MotorCycle Setup obligation under this warranty is limited to the repair or replacement of the product at its option without charge for parts and labour at its warehouse located at the above address at Mount Waverley, when the product is returned with postal charges prepaid and examination of the product shall disclose it not to have been defective in the respects aforesaid during the warranty period.

The repairs or replacements will be made promptly and the repaired unit will be returned with all postal charges prepaid.

Coverage under this warranty is limited to the original purchase of the product at retail. When requesting warranty service a copy of the sales receipt or guarantee card must be submitted.

The warranty period for cruise controls is limited to a period of 12 months from the date of purchase. No warranty is implied for the installation and therefore MotorCycle Setup will not be responsible for installation or re-installation charges.

This warranty does not apply to products or equipment or components used in conjunction with the cruise control.

Warranty does not cover unauthorised repairs, improper installation or application, damage or misuse or product which has not been maintained or used in accordance with the operating specifications as set forth in the written instructions.

The warranty term shall not extend beyond its original term with respect to subsequent warranty replacement.

Under no circumstances shall MotorCycle Setup be liable for consequential damages or breach of this warranty or for any implied warranty.

MotorCycle Setup neither assumes nor authorises any person to assume for it or any obligation or liability other than herein expressly stated.

MOTORCYCLE SETUP CUSTOMER SERVICE POLICY

You will receive free consultation on any problem you might encounter in the assembly or use of MotorCycle Setup products. Just drop us a note, e-mail us at sales@mccruise.com or give us a call on +61 3 9808 2804.

You can obtain parts directly from MotorCycle Setup by writing to us or from your dealer. Use your packing list to describe your requirements.

If you are not satisfied with our service or with our products, write direct to the Managing Director, MotorCycle Setup Pty. Ltd., Unit 13,137-145 Rooks Road, Nunawading, Victoria 3131, AUSTRALIA. He will make certain your problem receives immediate personal attention.

The benefits conferred by this guarantee are in addition to all other rights and remedies in respect of the product, which the consumer has under the Trade Practices Act, and other State and Territory Laws.

Set up & Calibration procedures (MUST be performed in the following order)

Calibrate Throttle Position Sensor.

- Enter Diagnostic mode (SET and ON-OFF held, turn ignition ON, **wait 3 seconds**, release the buttons) **DO NOT START THE ENGINE.**
- Apply and release front brake, Green light should come with brake, if not return to start.
- Press and HOLD ON-OFF (green light), press SET (green light turns off) 6 times until light comes on red, then release buttons.
- Closed throttle, press SET, green light while pressed, back to red when released.
- Apply full throttle, press RES, yellow light while pressed, back to red when released.
- Press and HOLD ON-OFF until red light changes to green (2 seconds).
- Confirm calibration, operate throttle, closed throttle green light, full throttle yellow light, in between flashing green light. Should not get red/yellow flashing lights.
- Press and HOLD ON-OFF until green light changes to red (2 seconds).
- Start engine, light should stay red during and after engine started. Allow engine to warm until normal idle.
- SET increases throttle position in small increments, RES reduces throttle position in small increments. Press and release SET to increase rpm, press and release RES to reduce rpm. Test that both buttons work predicably and consistently in changing engine rpm. Apply front brake to return to idle.
- Press and release SET, about once per second until engine rpm starts to increase. If engine rpm increases after 1st or 2nd press, no free play calibration is required (apply and release brake and turn ignition off). If more than 2 presses required, slowly press and release RES until rpm just back to idle, then press RES one more time.
- Press and release ON-OFF, red light will change to green while button pressed and record the throttle setting.
- Apply and release the front brake. Press and release SET, about once per second until engine rpm starts to increase. If engine rpm increases within 1~3 presses, calibration is correct. Apply and release front brake.
- Turn ignition OFF.

NOTE: - In most cases the following procedures do NOT need to be performed, the cruise control is already pre-calibrated for the bike it is fitted to.

Calibrate Speed Signal. NOTE: - Not for CAN-BUS cruise systems.

- Enter Speed Pulse Rate Calibration mode (RES and ON-OFF held, turn ignition ON and start engine, wait for light to come on green, release buttons).
- Ride to **steady 70kph, (45mph)**. Green light flashing.
- Press SET, light goes red/yellow for 2 seconds.
- **Bring bike to a stop**, then turn ignition OFF to exit.

SET/RES button speed increment adjustment.

- Enter Speed Pulse Rate Calibration mode (RES and ON-OFF held, turn ignition ON and start engine, wait for light to come on green, release buttons).
- Press and HOLD the ON-OFF button (green light flashes to display current increment number)
- While holding the ON-OFF button, press SET to increase the increment number (higher number), press RES to decrease the increment number (lower number). Count green flashes to read number.
#1 = 1kph incr. #2 = 2kph incr. #3 = 1mph incr. #4 = 2mph incr.
- Release ON-OFF button exit back to Speed Pulse Rate Calibration mode.
- Turn ignition OFF **OR** stay in mode for the next step.

Coarse Gain/Fine Gain/Acceleration Spread Setting.

Coarse Gain setting.

- Enter Coarse Gain Adjustment mode (RES held, turn ignition switch ON, wait for light to flash red/green OR yellow, release button).
- Apply and release brakes, light flashes yellow to display Coarse Gain number.

- Press SET to increase gain (higher number), press RES to decrease gain (lower number). Count yellow flashes to read number (gain numbers are 1 thru 15).
- Ride at various speeds, press SET to engage cruise control, then use SET and RES to increase and decrease Coarse Gain as needed **while cruise control is engaged**.
- Use brakes to disengage cruise control.
- Press SET to re-engage cruise control at different speeds and make adjustments to gain/sensitivity using SET and RES.
- Adjustments may also be made when stationary using SET and RES if desired.
- If desired, Fine Gain and Acceleration Spread may be adjusted next (see next section) **OR**
- **Bring bike to a stop, then** turn ignition OFF to exit.

Fine Gain setting.

Already in Coarse Gain setting (see above), yellow flashing light.

- Press and HOLD the ON-OFF button for more than 2 seconds until light flashes red to display Fine Gain number (default = 5).
- Press SET to increase gain (higher number), press RES to decrease gain (lower number). Count red flashes to read number (gain numbers are 1 thru 10).
- Ride at various speeds, press SET to engage cruise control, then use SET and RES to increase and decrease Fine Gain as needed **while cruise control is engaged**.
- Use brakes to disengage cruise control.
- Press SET to re-engage cruise control at different speeds and make adjustments to gain/sensitivity using SET and RES.
- Adjustments may also be made when stationary using SET and RES if desired.
- If desired, Acceleration Spread may be adjusted next (see next section) **OR**
- **Bring bike to a stop, then** turn ignition OFF to exit.

Acceleration Spread Setting.

Already in Fine Gain setting (see above), red flashing light.

- Press and HOLD the ON-OFF button for more than 2 seconds until light flashes green to display Acceleration Spread Gain number (default = 3).
- Press SET to increase the Accel Spread number (higher number = high accel), press RES to decrease the Accel Spread number (lower number = low accel). Count green flashes to read number (numbers are 1 thru 5).
- Ride at various speeds, press SET to engage cruise control, then use SET and RES to increase and decrease Acceleration Spread as needed **while cruise control is engaged**.
- Use brakes to disengage cruise control.
- Press SET to re-engage cruise control at different speeds and make adjustments to Acceleration Spread using SET and RES.
- Adjustments may also be made when stationary using SET and RES if desired.
- If desired, Coarse Gain may be adjusted next (see next section) **OR**
- **Bring bike to a stop, then** turn ignition OFF to exit.

Return to Coarse Gain Setting.

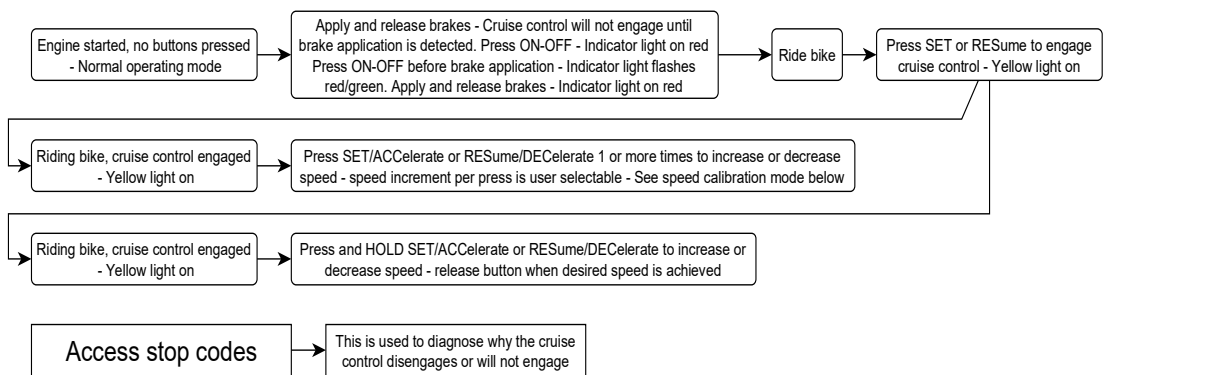
Already in Acceleration Spread setting (see above), green flashing light.

- Press and HOLD the ON-OFF button for more than 2 seconds until light flashes yellow to display Coarse Gain number.

Cruise Control Menu Map

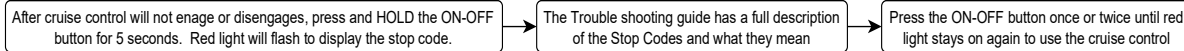
Menus for normal operation

Normal cruise control operation

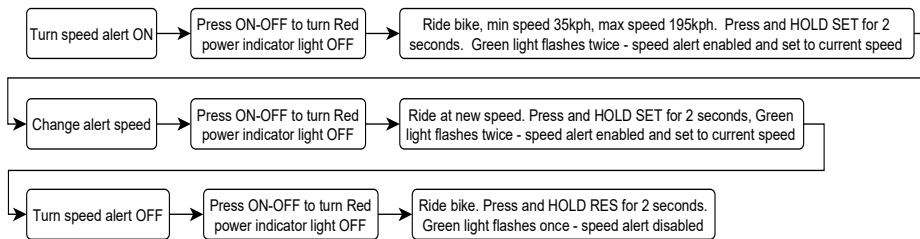


Access stop codes

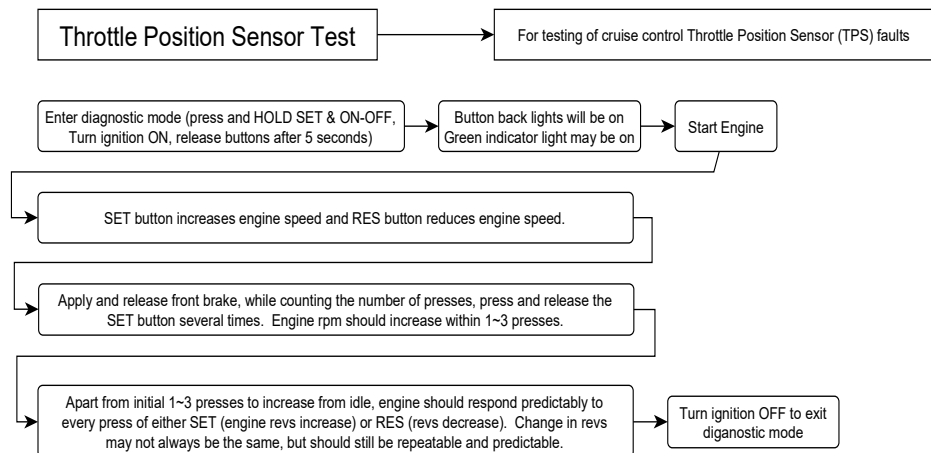
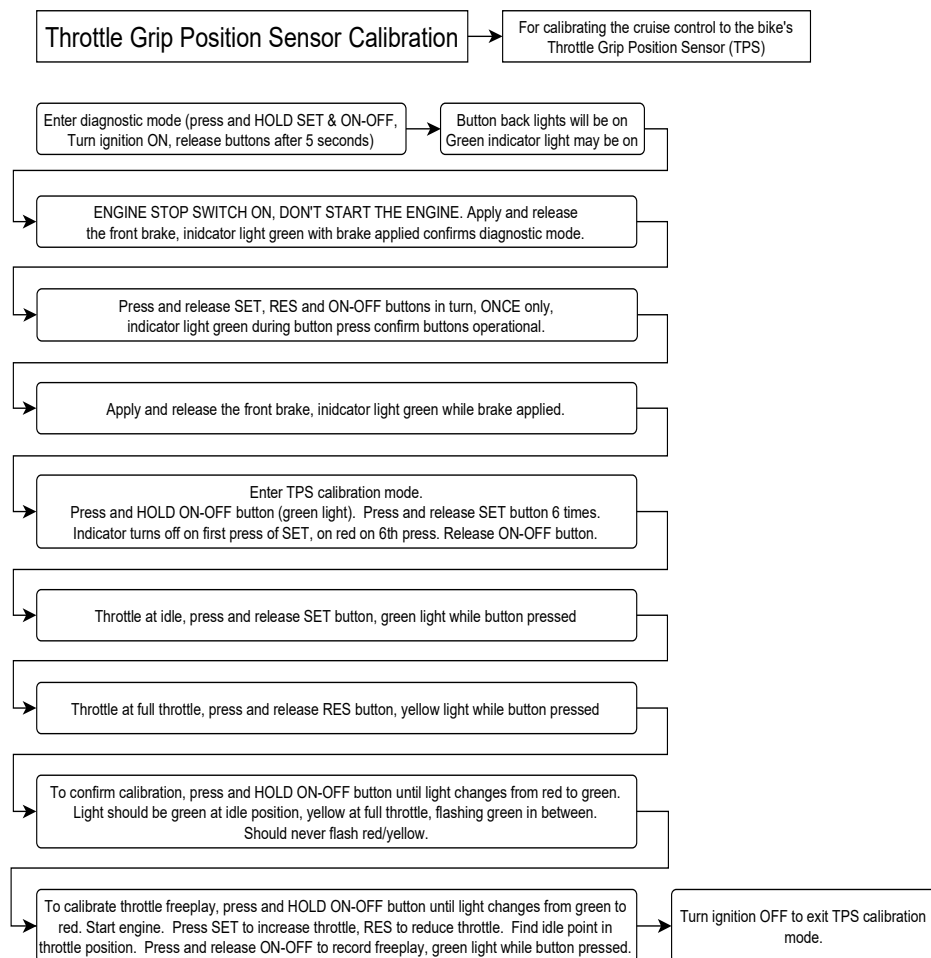
This is used to diagnose why the cruise control disengages or will not engage



Speed Alert operation



Menus for normal calibration & testing after installation.



Menus for 'fine tuning' or adjusting the cruise control performance.

