

# Cruise control troubleshooting for the BMW K1200RS



## **Intro / background**

Starting in 2001, the K1200RS was offered with a cruise control option. Although the cruise control unit has been very reliable, a few K1200RS owners have reported the cruise refusing to engage or disengage inadvertently while riding.

This article will help you troubleshoot any issues you may have with the cruise-control, including how to run the built-in diagnostic routine. Specifically, we will cover the following:

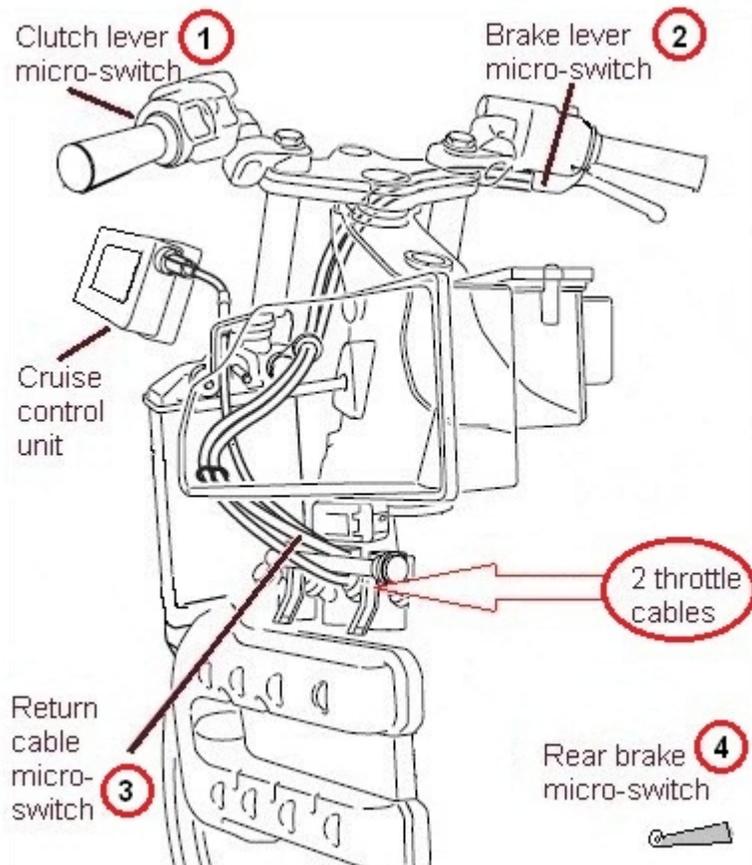
- Many tips not found in the factory shop manual or the Clymer manual.
- Which BMW models use this cruise control ?
- How it works – the BIG picture.
- Learn about the “built-in” system diagnostic for the cruise control and how it is used by BMW dealer mechanics.
- Most common reasons for the cruise not to engage.
- Cruise control issues related to a defective rear light.

## **Which BMW models use this cruise control system ?**

- Although this article is for the K1200RS, most of this information also applies to the K1200LT and the 1st generation of K1200GT.
- This electronic cruise control was originally designed for the K1200LT (1999-2009).
- From 2001 to 2004, the same cruise was offered as a factory option on the K1200RS. It was also installed on the 1st generation K1200GT (2003-2005).
- Some sections of this article are specific to models equipped with the “EVO integral ABS”. If you are uncertain which ABS system you have do the following test: with the ignition ON and the engine not running, if you hear the ABS pump whining sound when you apply the front brake lever, then your model is equipped with the “EVO integral ABS”.

**NOTE:** although a similar cruise control system is installed on the new K1200GT and K1300GT (2006 and later), this article does not cover these more recent models.

## **How it works – the BIG picture:**



When you turn the twistgrip it activates 2 throttle cables (one to pull and another to “push” or return).

The cruise-control unit maintains the speed by pulling the throttle using a separate cable.

Deactivation of the cruise is linked to 4 micro-switches:

- at the clutch lever,
- the front brake lever,
- the rear brake pedal,
- and the throttle-body.

On top of the engine, attached to the throttle-body, a micro-switch will sense the closed twistgrip position when the “push” cable reaches the forward limit.

The cruise-control unit depends on fuse #8 (K1200RS 2001-2002 models) or fuse #10 (K1200RS/GT 2003-2005 models) located in the right fuse box under the seat.



### **Factory "built-in" cruise-control system diagnostic:**

In this procedure, the words "(light ON)" and "(light OFF)" refer to the yellow SET light on the dash. If any step is skipped, you need to restart a new test sequence. A word of caution: If you have to repeat this test sequence many times, the battery may need to be recharged.

The engine is NOT running during this procedure.

Begin the diagnostic with the bike on the centerstand and the ignition OFF.

1. Switch the cruise-control ON (slide to the right). Press forward and hold in the SET position, then turn the ignition ON (after a few seconds, the SET light will be ON). Release the SET button (SET light should now be OFF).
2. Press the set button down to the RESET position (light ON). Release the RESET button (light OFF).
3. Slide the cruise switch to the left (light ON). Slide the cruise switch to the right (light OFF).
4. Rotate and close the throttle full-forward (light ON). Open the throttle slightly and release (light OFF).
5. Pull in the clutch lever (light ON). Release the clutch lever (light OFF).
6. Pull in the front brake lever (light ON). Release the front brake lever (light OFF).
7. Press the rear brake pedal (light ON), hold for 5 seconds (light should go OFF). Release the rear brake pedal (light ON).
8. With the bike still on the centerstand, rotate the rear wheel (light flashes ON/OFF).
9. Switch the ignition OFF. This is the end of the cruise diagnostic.

#### **NOTES:**

- At any point, if the yellow "SET" light on the dash does not behave as expected, the switch connected to the device you were testing is the problem area to troubleshoot.
- **However, there is one important caveat to keep in mind when using the diagnostic procedure to pinpoint the problem area.** The electrical diagram is designed in such a way that the switches in steps 4 and 5 are linked on the same signal wire. If either switch does not close, the diagnostic will determine which one is not working. But if a switch is stuck in the closed (clicked) position you will not be able to determine which switch is causing the problem, as the error will appear in both steps 4 and 5. To resolve this ambiguity, you should alternate and try throttle first, then clutch first.
- Step 8 will test the response of the rear wheel ABS sensor that also serves as a speedometer sensor on 2001 and later K1200RS/GT equipped with the "EVO integral ABS" system. On earlier models (ABS II), a separate speedometer sensor is located on top of the rear drive unit.

## **Most common reasons for the cruise not to engage:**

- By design, the cruise will only engage at speeds between 25 and 100 mph (40 – 160 km/h).
- By design, on models fitted with ABS, the cruise will NOT engage when the rear light is defective (more on this subject later).
- If any of the 4 micro-switches are activated (or stuck open), the cruise will not engage. Start with the cruise control diagnostic procedure to isolate the problem area.
  1. The most common cause is the micro-switch located on the throttle-body. The problem is generally caused by incorrect throttle cable free play.
  2. The 2nd most common cause is the micro-switch located in the clutch lever housing. It is designed in such a way that it will be activated by a very small movement of the clutch lever. The switch is located under the master cylinder housing of the clutch.
  3. The 3rd most common cause is the rear brake micro-switch. It's inadvertent activation is often caused by a bent metal tab or debris limiting its free movement.

## **Cruise control issues related to a defective rear light:**



- The tail/brake light of the K1200RS/GT is a single bulb with dual filaments (21/5 watts). The K1200LT is equipped with 2 bulbs for the tail/brake light, plus a center license plate bulb.
- If the rear light filament is defective, the ABS unit will illuminate the brake light element at half power to emulate a taillight until you can replace it. This clever behaviour may mislead you to think the bulb is functioning properly. This safety feature is specific to models equipped with the "EVO integral ABS". On the K1200LT, only the center license plate bulb is monitored.
- When the system detects this condition, the cruise control is disabled and the "general warning" light (triangle symbol) on the instrument panel will stay ON (not flashing). If, after having driven a short distance, the "ABS warning" light also flashes, then the problem is not the tail/brake bulb.
- This defective bulb condition can also be caused by a broken/loose wire, a non standard bulb, or the installation of an incompatible brake light relay (sometimes called a brake modulator).

## **Final thoughts**

Should you experience problems with your cruise control, a good understanding of the various warning lights and the built-in diagnostic routine should help you quickly determine the cause.

Also, while troubleshooting, keep in mind that there are human factors involved in some cases. A rider with a new stiff pair of boots could unknowingly keep a slight pressure on the brake pedal while riding. This could cause the brake micro-switch to make contact and the cruise would disengage.

Jean Lussier

Version 1.0 (April 28, 2011)