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ABN 16 093 260 381

AP500 FAULT FINDING – EXISTING INSTALLATION

This Bulletin covers the AP500 model which is identified by a black plastic Electronic Module with a silver printed label. This module would normally be mounted behind the vehicle dashboard and has the Cruise Control wiring harness connected with a multi pin plug. If you can locate two Brown wires (one with a White trace line) at the vehicle brake lamp switch they will lead you to this module.

AP500 ELECTRONIC MODULE

If your Cruise Control has stopped working for no apparent reason there are some specific areas we should review before proceeding to Diagnostic Tests.

DOES THE CRUISE CONTROL STILL TURN ON?

When you switch the Cruise Control ON (with vehicle ignition on or engine running) does the LED light on the switch (or remote status LED for Steering wheel switch) go GREEN in colour? If not there is a circuit protection fuse in the Cruise Control Orange wire, please check that this has not blown.

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THE IMPORTANCE OF THE VEHICLE BRAKE LIGHT CIRCUIT

Our Diagnostic Test will check correct operation of the brake pedal switch but not the circuit resistance value, so have you stood at the rear of vehicle while another person presses the brake pedal and checked all brake lights are working? A blown brake light bulb or circuit fault will prevent the Cruise Control from engaging. Have you changed the factory brake lamps from bulb type to LEDs? If your vehicle has been fitted with LED brake lamps you will need to increase the resistance of the brake lamp circuit, please refer to LED Brake Lamp Tech Bulletin. Note this does not refer to a third LED brake lamp (such as rear window or spoiler mount) if the primary lamps are still bulb-type.

CONSIDER IF ANY WORK HAS BEEN DONE ON THE VEHICLE SINCE LAST USE OF CRUISE CONTROL

There are too many options to detail, but it may be that work done on the vehicle since the last successful use of the Cruise Control could have inadvertently affected its operation. Please carefully think back about any work that has been done regardless of whether you feel this is relevant. For example, and accessory may have been fitted and connected to the Cruise Control Orange power or Green earth wires and altered the voltage or resistance values, so this is worth careful consideration.

PRIMARY WIRING CONNECTIONS

There are wiring connections that must be correct for reliable Cruise Control operation. Further, these connections should be soldered and insulated to avoid potential problems. Using scotch-lock or crimp connectors, or twisting wires and wrapping with insulation tape will create problems, the only question is how quickly.
Orange power wire – should be connected to the ignition switched wire at the rear of ignition key barrel. Simply probing with a test light or multi meter and connecting to any ignition switched wire is not suitable. If you cannot access the rear of the key barrel locate the primary ignition wire at the fuse panel and connect there.
Green earth wire – must be connected to an independent earth point on the vehicle body. Do not connect to an existing earth where one or more wires go to earth, and do not connect to bolt-on metal items such as steering column or dashboard frame.
Brown and Brown with White trace brake switch wires – One wire must go to power input at the brake lamp switch on the pedal, the other to the switched output that supplies voltage to the rear bulbs when the brake pedal is depressed. Before engaging the Cruise Control will check firstly for 12 volts on one wire and 0 volts on the other (disengaging when it registers voltage on both) and then it will test the 0 volt wire for circuit resistance. If both tests are ok the Cruise Control should engage, if the module registers an incorrect reading it will not.

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PERFORMING DIAGNOSTIC TESTS

When you have confirmed the above points we are ready to proceed with Diagnostic Testing. To perform these tests you will need to look at the small red LED on our Electronic Module (not the LED on the control switch) to confirm the module is receiving the required input signals. Please locate the module in an appropriate position now.

Enter diagnostic mode – We need to instruct the Cruise Control to enter this mode rather than normal Drive mode which is the default setting. To do this press and hold the SET button while you turn the ignition key from the IGNITION OFF to the IGNITION ON position. Release the SET button when ignition is ON. Now switch the Cruise Control ON and the LED on the switch (or remote status LED for Steering wheel switch) should go to GREEN colour. You may notice the LED ***on the Electronic Module*** showing RED for a few seconds which is the module preparing for signal input, when the LED on the Electronic Module goes off you are ready to proceed.

Diagnostic Test A – Press and hold the SET button and the LED on the Electronic Module should go RED, release and the LED should go off.
Press and hold the RES button and the LED on the Electronic Module should go RED, release and the LED should go off.
Press and hold the brake pedal and the LED on the Electronic Module should go RED, release and the LED should go off.

If all inputs are correct you are ready to proceed to Diagnostic Test B
We are now going to test the actuator in the engine compartment, and it will be helpful if you have a second person to assist you. If so, have that person look at the connection of the Cruise Control cable to the vehicle throttle mechanism. Press and hold the SET button and the Cruise Control cable should progressively open the throttle. If successful press and hold the RES button and the cable should progressively close the throttle. If you don't have a second person carefully note the position of the throttle at rest and then press and hold the SET button for approx 8-10 seconds. Re-check the throttle and it should have moved toward the full throttle position. Then press and hold the RES button for a similar amount of time and the throttle should be at (or close to) the idle-stop position. If the throttle does not move go to the AP500 Electronic Actuator (drive motor) and remove the plastic inspection cover from the side of the metal housing. This cover is secured by the cable attachment nut which should be loosened, and one Phillips-head screw which should be removed. With the cover removed ensure the cable is correctly located in the drive pulley and reassemble. If this was intact please contact TCAG Tech Support for advice. There is no charge for this call.

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AP500 ELECTRONIC ACTUATOR


WITH INSPECTION COVER REMOVED

If the throttle opens and closes you are ready to proceed to Diagnostic Test C
We are now going to test for Speed Signal input to confirm the Cruise Control is receiving a speed reference. Start the engine and check switch GREEN light is still ON (press ON button if not) and drive the vehicle, preferably on a quiet road where there is little traffic. While you must ensure you drive safely, you need to check that the LED on the Electronic Module is flashing steadily ON/OFF/ON/OFF etc when the vehicle has reached a speed of 15-20kph. At this speed the rate of flash will be quite slow. As you increase the vehicle speed the rate of flash with also increase by a modest margin. If you reach a speed of 50-60kph and the LED is not flashing check Cruise Control Blue wire is still connected to correct vehicle Speed Signal wire. If it appears intact contact TCAG Tech Support for advice. There is no charge for this call.

If you have successfully completed these tests then the Cruise Control should engage. You will need to turn the vehicle ignition OFF for approx 30 seconds to take the Electronic Module out of Test mode and revert to normal drive mode. Restart the engine, switch the Cruise Control ON, and road test for engagement at different speeds starting at 50kph and working upward within local speed limits.

DISCLAIMER: Command Auto Group Pty Ltd (hereafter referred to as the company) provides this information as a diagnostic support service to customers to assist in fault-finding automotive Cruise Control installations. When followed correctly there is no risk of damage to the Cruise Control, the vehicle to which it is fitted, other property, or personal injury. The company cannot be held liable for damage, loss or injury that occurs though product fitment to non-specified vehicles or other mechanical or electronic devices. Further the company cannot be held liable for damage, loss or injury that occurs from failure to understand and correctly apply this information, or for action taken beyond that described in this or similar technical support documents, or verbal advice provided by TCAG Technical staff.