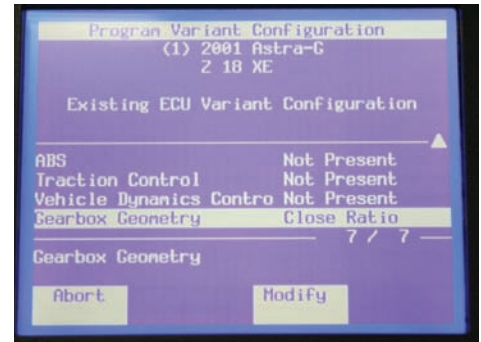
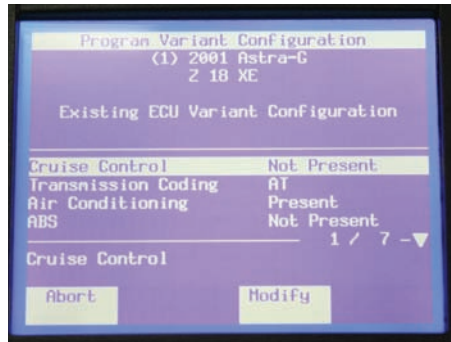
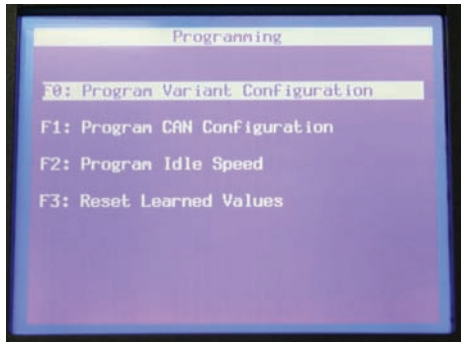


Injectronics

8 Becon Court
Hallam Vic 3803
Phone: 03 8792 6999
Fax: 03 8795 7205

Variant Coding - when part numbers have programmable options!



Variant coding is a process that enables automotive manufacturers to program a vehicle with particular variations. The variations may include tyre size, final drive ratio, transmission ratios, transmission type, Electronics Stability Program (ESP) and so on.

In the Holden TS Astra there are 7 options that need to be programmed, giving a total of 128 variant combinations. In the BA Ford there are also numerous variations applicable to the same part number. European cars such as VW, Mercedes Benz and Audi have been using variant coding as early as 1988. In an attempt to reduce the amount of part numbers, and therefore inventory required to manufacture cars, car makers enable a vehicle to have variations downloaded onto the cars ECU. These variants are programmed according to the options specified on a particular vehicle model.

This reduces the number of ECU part numbers for a particular car model. Compare the 6 cylinder EF ford range which had numerous different ECU's and the BA 6 cylinder

Ford which has a much smaller range of part numbers with more variations that can be programmed using a hand held diagnostic scan tool.

The challenge of vehicle variations comes when replacing a car's ECU. Injectronics has had a number of calls from customers requesting changeover Holden TS Astra ECU and Ford BA ECU's along with several other vehicles that use variant coding. Repairers have four possible solutions to offer their customers. They can replace with a new ECU, replace with second hand or replace with a changeover item, or have the customer's own unit repaired.

When replacing with a new ECU, the vehicle will need to be taken to a dealership to have the vehicles specific variations, coded into the new ECU. Alternatively, buying a secondhand unit for the vehicle will require the ECU, the immobilizer or body control module and key to be purchased as a matched set. This may involve the correct part number on the ECU, however it is likely that the variant coding will be different. This variant



coding must be set correctly to ensure proper functioning of the ABS, traction control, transmission etc. The result could be that the vehicle starts but it may be in limp mode, or have malfunction indicator lamps illuminated on the dash. With the BA Ford, the part number may read the same on the ECU but the ECU needs to be programmed to have the variations loaded to enable the car to operate exactly as intended. If the variant coding is not performed correctly on a BA Ford, then the transmission can remain in limp mode.

With the changeover ECM that suits a vehicle that has variant coding, you will require the correct diagnostic scan tools to program the correct

variations. Alternatively, Injectronics may be able to do this for you before a unit is sent out to you. The ECM will also need to be programmed to the immobilizer or body control module. Alternatively, Injectronics can again perform this task for you "on the bench"

Finally, Injectronics can repair a customer's unit for you. So in most cases, you will be able to install the ECU back into the vehicle without any extra programming.

As vehicle manufacturers all have their own unique way of programming ECMs, we suggest you contact the Injectronics Technical support team who will be able to guide you to the best solution.