

# Injectronics

## TECHNICAL BULLETIN

### FORD / HOLDEN / VW / MITSUBISHI

#T0033

**Make:** Ford / Holden / VW / Mitsubishi

**Model:** Various

**Subject:** Engine immobilisers

Injectronics have received many calls where technicians have had a 'no start' vehicle and are not sure whether they have a faulty engine ECM or a faulty immobiliser. In most cases a digital signal is sent from the immobiliser to the ECM to allow the ECM to operate.

**Ford:** Early EA/EB Ford vehicles did not have what they named a 'smart lock'. Later EB Fords (from 10/92) were installed with a smart lock mounted above the hand brake, and behind the LH speaker in Ute's and panel vans. Smart lock installation in these cars, is indicated by a flashing smart lock light in the dash. This unit disables the starter motor and sends this signal to the engine ECM via pin 4. If the ECM did not receive this signal it will not allow injection. This would happen also if an engine ECM, which needed a smart lock signal, happened to be installed in a vehicle that did not have smart lock fitted. If the smart lock ECM is receiving power, it can give 6 different fault codes and the engine ECM will give a code 44 if it does not see the smart lock signal. It is common for the interior light fuse to blow which means the smart lock loses 12v input and won't allow car to start.

**Mitsubishi:** Some models of Mitsubishi vehicles are equipped with an immobiliser as standard equipment and others are optional. Check to see if your vehicle is installed with an immobiliser. In most cases the engine ECM will log code 54 if it sees a crank signal but not a signal from the immobiliser. To date Injectronics has found that if the Mitsubishi engine ECM does not receive the immobiliser signal it will still operate the ignition and fuel pump but will inhibit the operation of the injectors. Again if an immobiliser type ECM is installed in a non immobiliser equipped vehicle, the engine will not start.

**Holden:** On VN/VP Commodores with the Delco engine management system, the immobiliser will simply disable the power supply to pin A6 on the engine ECM. Check to see if the pin has power as no fault codes will be available to show an immobiliser problem. Later Commodores from VR, equipped with an immobiliser, use the memcal to inform the ECM it is requiring an immobiliser signal. If the ECM does not receive an immobiliser signal a diagnostic trouble code 31 will be logged and the ECM will not enable injection. A common fault with VN/VP immobilisers is a loose alarm key switch in the glove-box or door pillar (the back of the switch falls out) this can cause intermittent engine cut out.

**VW:** On many VW and Audi vehicles including some of the 2.0L and 2.5L VW Transporters from 1992 were installed with an immobiliser which is situated behind the dash cluster. If the immobiliser signal is not sent to the ECM, the engine may start, but stalls after approximately 3 seconds. If the ECM does not receive this signal within those three seconds it will shut down ignition and injection until the ECM is powered down and a restart is tried. In some cases Injectronics has found that the immobiliser module 'Losses' its memory and does not recognize the key being used. In this case the vehicle needs to be towed to a VW Dealership to have the immobiliser reprogrammed (called matching). Another option is for Injectronics to modify the ECM so it does not require an immobiliser signal. This eliminates any possible problems in the future with the immobiliser. On transporters the engine ECM is located behind the battery in the engine compartment.

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