



## Nissan R35 GTR 12 Injector Driver Kit Fitting Instructions

This kit requires ECUtek software tuned vehicles running Phase 5 RaceRom configured for 12 injector operations. This in conjunction with the ASNU driver kit allows 6 additional injectors to be controlled.

Inside the kit you will receive:

- Driver box
- Main driver harness & secondary injector harness



We strongly advise that this installation should be carried out by an experienced technician or professional

This kit requires the use of the Secondary Air injection (SAI) control relay or Exhaust Gas Recirculation (EGR) relay. This makes the secondary air system or Exhaust gas recirculation inoperable.

To install the ASNU driver kit you will require a 10mm spanner, 10mm socket and ratchet with extension bar, small flat head screwdriver, Stanley knife or similar, Allen key set.

### Preparation

Open the bonnet and remove the battery compartment cover located off to one side at the rear of the engine compartment.

Make notes of any access codes (radio or similar) that may be lost upon removal of power.

Disconnect the battery earth/negative and tuck the earth lead out of the way preventing accidental contact with the terminal.

### Install instructions

- Remove the plastic water shield around the battery compartment and across the bottom of the windscreen

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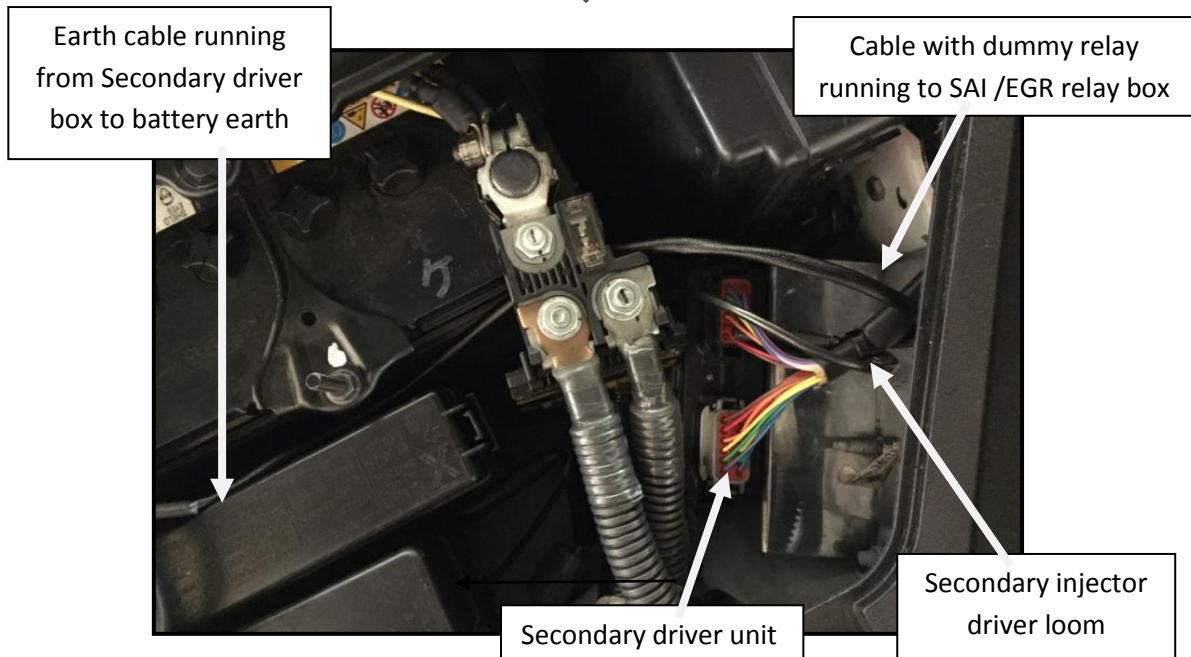
- Mount the driver to the driver box frame using M6 bolts, with the connector plugs facing upwards (this allows you to see the fault /operating LED) on early models. Later units have a status indicator that can be dash mounted on a flying lead.



- Mount the driver box to the unused studs next to the fuse box and secure with nuts.
- Located in front of the battery is the SAI /EGR relay box. De-mount and then remove the upper and lower housing of the SAI and EGR relay box. Run the wire and dummy relay through the existing hole in the underside of the lower housing and internally up through the empty relay hole and into the relay housing. Fit the dummy relay and ensure it is fully engaged. Rebuild and refit the relay box.
- SAI possible locations - SAI relay is light blue in colour as shown below:



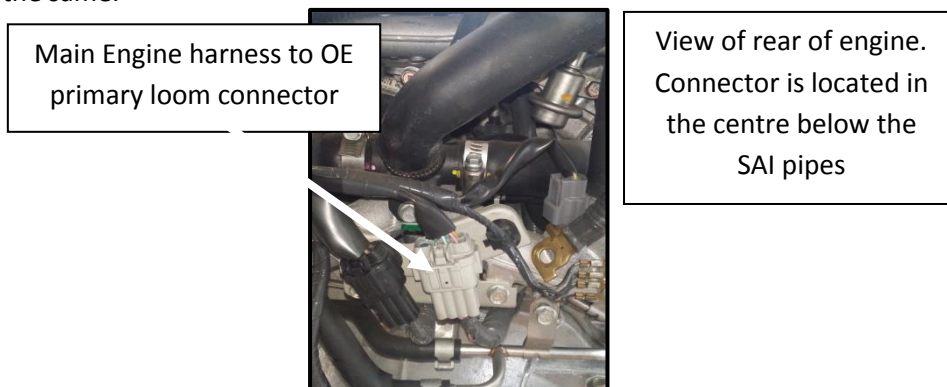
- Connect the main driver harness to the driver box. The plugs are different and will only fit one way round; ensure they are fully engaged.



- Run the driver harness along the back of the bulkhead/firewall until you reach the centre of the engine bay. Next to where the OE harness passes through the bulkhead there is a redundant grommet.



- Carefully pass the driver harness and secondary loom through the bulkhead grommet taking care not to trap or damage any wiring and reseal with tape.
- Refit the plastic covers.
- Locate the main engine to injector driver harness located on the back of the engine (shown below in light grey). Unclip the two halves of the connector and clip the two matching connectors in place ensuring they are locked in. You will now have 2 pairs of connectors that look the same.





- Run the secondary injector loom up to the top of the engine and connect to the injectors. The loom is numbered for each injector. The firing order on a VR38DETT engine looking into the engine bay is 1, 3, 5 on the left hand bank running front to rear and 2, 4, 6 on the right hand bank.
- Go back to the battery compartment and connect the battery earth and the driver ring terminal to the battery earth.
- Unplug LED from the end of the indicator harness, pass the harness connectors through the bulkhead and pull the wiring loom through. Make sure it does not interfere with any pedal travel or operation then clip into place.
- Drill 6mm hole in an appropriate location that can be accessed from the rear. Feed the connectors on the LED through from the front and push the indicator LED fully home. Connect the LED back to the indicator harness.



### **Post Installation Testing**

Running a 12 injector setup on a 6 injector fuelling map, may cause an exceptionally rich running condition. This can cause damage such as bore wash and could allow the engine to hydraulic lock and the secondary injectors will operate when SAI or EGR is requested by the ECU.

### **Diagnostics & Safety**

The driver unit is equipped with a status indicator LED for fault diagnostics: RED for fault present, AMBER indicates OK ready to operate or in standby only operating 6 injectors, GREEN for correct operation.

The driver is a pass through design, meaning it has the capability to both control the secondary injectors and to shutdown both the primary and secondary injectors in case of a fault. If the main engine ECU shuts down an individual injector, the ASNU driver will also shut down the corresponding secondary injector.

The system is equipped with a low battery voltage cut out to prevent damage to the engine or driver system if low battery voltage occurs. In this condition neither the primary or secondary injectors will operate. The shutdown threshold is 9 volts. To show this the LED will show RED.



With our system, standard injector diagnostics will still continue to function within the main ecu as in ECUtek Racerom 5.

If the main engine ecu were to detect an injector fault, it will increase or decrease the injector duty as appropriate. The injector driver will copy and increase/decrease the duty on both the primary and secondary injectors until the fuelling is corrected or, if changing the duty cycle is unsuccessful, then the main ECU will shut down that injector and the secondary injector driver will also shut down the secondary injector.

### **Temporarily disabling the system**

Go to the EGR SAI - Relay box, remove lid and disconnect the dummy relay. This will stop the driver triggering the secondary injectors. This should be done if the car is to be placed in long term storage. If the car has to be driven in this condition, ensure that the dummy is insulated and cannot cause a short within the box, and that a 6 injector fuel map is re-installed.

### **Emergency start for low voltage**

Should the battery voltage drop below the 9 volt threshold, disconnecting the driver MAY allow the engine to start. Disconnect two pairs of connectors on the back of the engine and reconnect the factory looms; bypassing the driver.

### **Tuning**

The speed density VE Map for a 12 injector setup is noticeably different from 6 large injectors.

Please initially tune the car at low speed on the primary injectors, with low boost and ethanol content. Secondary injector trigger points should initially be set at 85% IDC during full throttle operation and increased as required to a max of 90% idc.

