

# Memo for Modification of ECU for Subaru vehicles with "C/S/L" Function Alternators

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This problem is inherent for later model (2001-on ONLY) **Subaru Forester, Impreza, Legacy, Outback** vehicles, using either a Mitsubishi or Hitachi Alternator with **3 Pin Regulator with "C / S / L" Terminations ONLY.**  
(Alternator # - 14-624; Regulators # - 75-161, 82-157, 82-160)

## Symptom / Fault:

- Battery keeps going flat.
- Engine check light is on and Alternator appears to undercharge (can be intermittent).
- ECU Fault Code is logged ("Alternator Circuit Low" - often # P0558).
- The Alternator Warning light does NOT come on.

## Background / Cause:

The Subaru ECU system has an "Alternator Charge Cut-out Function" that is governed by the electrical loading on the vehicle. The Alternator has a 3 Pin plug (C = Computer Control; S = Battery Sense; L = Warning Lamp). If the ECU senses a "no load" situation, after 20 seconds > 1 minute, it will pull the "C" Terminal (the blue wire) to ground, which reduces the Alternator output to around 12.9V from normal 14.2V > 14.4V.

This feature is presumably designed to only reduce engine load by disengaging the Alternator ??...but as we know, more commonly it will also cause the battery to receive little (if any !!) charge – particularly if the car is being used on short runs, starts a lot, idles a lot, or does not use the lights or A/C system etc very often (apparently the radio/memory going or aftermarket "add-on" loads such as beacons etc, makes no difference !)

If the Fault Code is cleared - (even if a new Regulator or Alternator is installed) - after the vehicle is started, the charge rate returns to normal around 14.3V. After a short period, the ECU function automatically occurs and voltage drops to around 12.9V. The ECU will then bring on the Engine check light and log the Fault Code again.

## Remedy:

The ECU must be modified to "imitate" a load is always present (thus disabling the cut-out function). Forester's apparently have an ECU software upgrade that will fix the problem and can be performed via the Subaru Dealer (if desired), but for all other vehicles there is NO software update - and the following procedure must be performed:

1. **Locate the main ECU and the vehicle Wiring Diagram.**
2. **Locate the Park Light wire going into the ECU**  
(normally thin Black with white trace – pin B17 ? – check to verify ?)  
**Cut this wire and permanently ground the wire from the ECU to the large main ECU earth wire (normally Black/White too)**
3. **Tape up the wire from the park light switch end.**

This modification simulates the vehicle park/tail lamps being on all the time, thus causing the Alternator to charge above 14V at all times.

**NOTE: Ensure the Alternator and Regulator is fully tested / checked AS WELL !!**