



# Paisley News



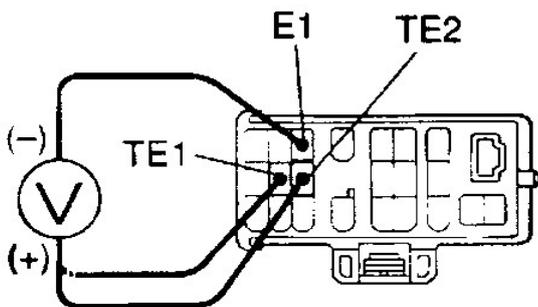
Issue 6 30/03/09 **J . E . P A I S L E Y & C O L T D**

**For all your Diesel Fuel Injection,  
Turbocharger & Auto Electrical  
Requirements**

4 Nen Street  
Oamaru

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We have seen an increasing number of 2LTE and KZTE engines with a no start complaint, either after work was carried out on the engine or after the vehicle was switched off. If work was just carried out and the engine refuses to start, it is unlikely a pump fault (although not impossible) Check first the 15 amp ECD fuse located in the engine bay fuse and relay box. Next locate the diagnostic box under the hood, check E1 to earth, if there is no continuity the most likely cause is the earth wire at the back of the head. This is almost impossible to see and get at but be assured it should be there. This wire comes out of the main loom on the passenger side and crosses over to the rear of the head on the drivers side. This is the ECU earth. Also check for 9-14 volts between E1 and TE1 and TE2. this proves there is power to the ECU



E1 to earth = continuity

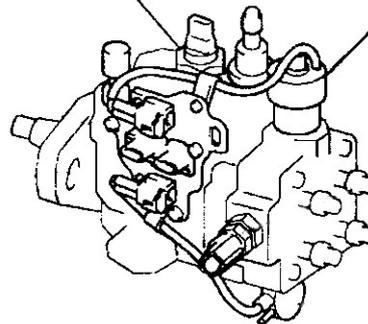
E1 to TE1 and E1 to TE2 = 9-14 volts

If the vehicle just stopped or refused to start after it was switched off the most likely cause is the engine speed sensor located on the top cover of the injector pump. There should be **220 ohms** across the pins (or check with a scope) Next check the spill control valve for an open circuit. There should be **1-2 ohms** across the unplugged pins. (top grey plug on side bracket of pump) these are the two main pump faults. The ECD and spill control valve relays should be checked next along with their wiring. Ring us for there location as it varies, and we'll send you the information for checking the relays.

Next issue we'll look at obtaining and clearing the flash codes.

Engine Speed Sensor  
**220 ohms**

Spill Control Valve  
**1-2 ohms**



### Exchange pumps Available for

VP44 fitted to Nissan—MAN—Isuzu — Cummins

Japanese pumps available for WL Mazda - Ford Courier—4M40 Mitsubishi - Toyota 1HD T

Nissan Covic TD27Ti

Others available, ring us for details with the vehicle model and engine type

Authorised Service to the world's leading Diesel Fuel Injection systems



# J E Paisley & Co Ltd



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**Why** you should time *before and after* you remove the injector pump. The cold hard reality is that timing specifications for some of the Japanese import vehicles we work on are simply not readily available. By checking the timing before you remove the pump or doing a cam belt, will give you a fall back position when you refit the pump or cam belt and you can't find a spec for that engine. It also gives you a reference or starting point if the owner complains because the vehicle doesn't perform like it used to. It may surprise some to learn that there can be three or four different timing specifications for the same engine depending on what country it was destined for. Although these different settings may appear minor, they can and will have an influence on engine performance. ***Time before and after.***

**Timing** For the benefit of new members and revision for existing customers we will once again explain the how to time a diesel fitted with the VE type pump.

**The basic procedure is as follows**  
Block the CSD if fitted by insert-



ing a 5-10mm block as shown. With the engine on TDC (ensuring number 1 cylinder is firing) remove the bolt from the head plug located between the injector pipes and Insert the timing gauge ensuring a slight preload.

Rotate the engine against the direction of rotation watching the timing gauge pointer until the



needle stops moving.

At this point zero the gauge and slowly rotate engine back to TDC. The Gauge should indicate the correct plunger lift for the engine being timed. If the lift is incorrect loosen the pump flange securing bolts and the rear mounting bolt, carefully rotate the pump to achieve the correct lift. Retighten the flange and rear securing bolts. Rotate the engine back until the gauge stops moving and repeat the procedure. **LOAN Gauges available**

Just give us a ring

**Points to note:**

Watch or have someone watch the gauge carefully when rotating the engine to ensure the

needle has not moved around past one rotation leading you to an incorrect reading, e.g. you think the gauge has moved to 0.20mm when in fact it has moved around to 1.20mm. Also make sure you have 0.50mm to 1mm preload when fitting the gauge to ensure the gauge pin is in contact with the plunger. Both of these are the most common causes of timing difficulties.

**Also note,** some vehicles are timed after TDC, predominantly Mitsubishi but there are others. Make sure you have the correct timing information for the engine you are timing. Also ensure the TDC mark is correct. Front pulleys with rubber inserts are known for slipping. If you are in doubt check the TDC mark by removing the rocker cover and rocking the valves or fit a whistle to number 1 cylinder. If you are having problems give us a call and we will gladly talk you through it.

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