



# Paisley News



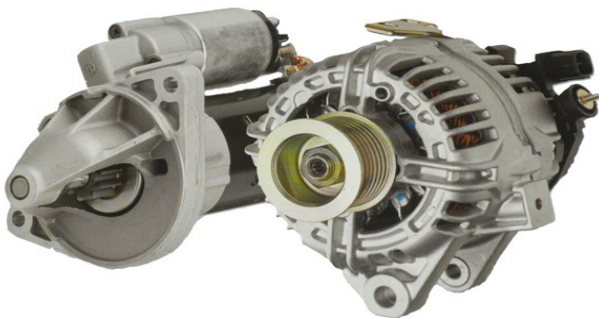
Issue 4 18/08/08 **J . E . PAISLEY & CO LTD**

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

4 Nen Street  
Oamaru

**Phone 03 434 8967  
Fax 03 434 8389  
E Mail [john@jep.co.nz](mailto:john@jep.co.nz)**

**Isuzu 4JB1** turbo's available to Capricorn members for \$635.00, as you know these roller bearing turbo's are unserviceable so we have endeavoured to keep the price of new units as low as possible.



**Auto Electrical Division.** Due to the demand for on vehicle diagnosis and the necessity to repair today's Hi-tech common rail and electronically controlled vehicles, Paisley's now have an experienced, fully qualified auto electrician on its staff. A full range of auto electrical work will be carried out onsite including the servicing of starter motors and alternators. An electrical test bench capable of load testing starter motors and testing alternators up to 160amps output has been installed. An exchange programme will be announce shortly. In the mean time quick turn around times at competitive rates will given to workshops wishing to make use of this new service. Ask for Graeme on 03 434 8967

With the growing numbers of COVEC equipped vehicles coming due for service work to the fuel injection equipment we will give a brief insight to it operation. At Paisleys a large investment in original equipment manufactures test equipment guarantees fuel and advance adjustments made to this equipment will be to factory settings, this results in maximum performance and economy.



## 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 Covec 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



**BOSCH**

**ZEXEL**



**STANADYNE**

**DENSO**

# J E Paisley & Co ltd



**Diesel & Electrical Systems  
Oamaru**

**4 Nen street**

**Oamaru**

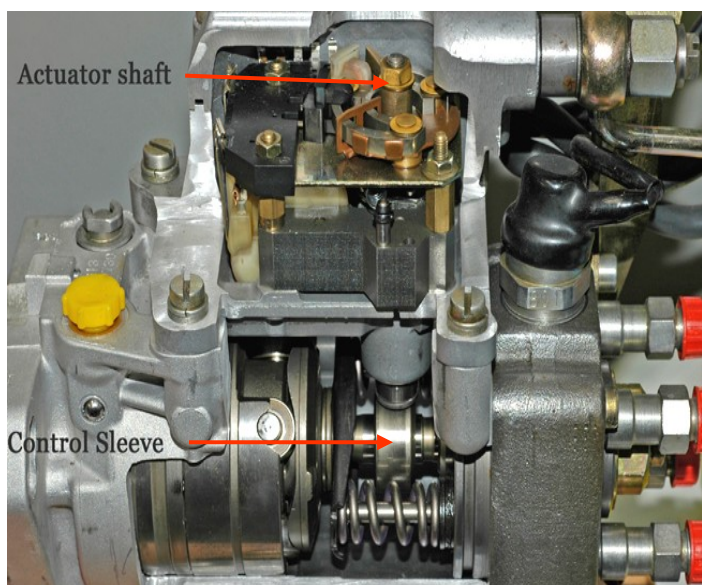
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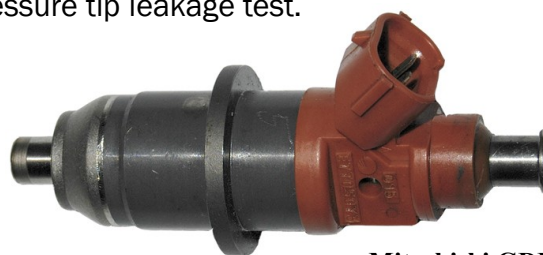
Unlike conventional VE pumps, COVEC type pumps adjust fuel quantity electromagnetically. The control unit receives information from various sensors, and based on this information performs calculations using programmed set values, it then outputs control signals to each control section— pump advance (Timing control valve), and fuel delivery via the actuator (Electronic governor). Control sleeve position is detected by the control sleeve position sensor and feed back to the ECU. This Ensures precise fuel delivery and advance control. The actuator rotor is then rotated against spring force to increase or decrease fuel delivery. The common complaint of surging at idle is caused by the actuator shaft (rotor) moving erratically beyond the control of the ECU. This indicates worn components inside the actuator and necessitates it's replacement.



**Timing control valve (TCV)**

As with conventional pumps. Injection pump timing is varied by the timer piston movement being transferred to the roller assembly. The difference is the COVEC pump can control advance over a much wider range. This is achieved by the overflow valve being equipped with a ball type check valve so that even at starting there is sufficient pressure for the ECU to control advance. When current is applied to the TCV the valve is opened allowing the advance piston to move against spring force advancing timing. Injection timing can therefore be varied by utilizing the ON-OFF duty ratio of the current flow to the TCV from the ECU. Injection timing is retarded when the duty ratio decreases from 100%.

**PETROL injectors.** Injectors are flow tested ultrasonically cleaned and then reflowed. Tip leakage is then checked to ensure seat tightness. Mitsubishi GDI injectors undergo the same test and cleaning procedure with the addition of a high pressure tip leakage test.



**Mitsubishi GDI**

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