## **NISSAN** Learning Academy

ZD30DDTi CRD Engine

Nissan Australia July 2008.

## **ENGINE MECHANICAL - EM**

#### ZD30DDTi Intake Manifold

The Intake Manifold as shown right is mounted on the RH side of the Cylinder Head.

An electrically operated Air Intake Control Valve is utilised & the Swirl Valves have been incorporated inside the intake manifold.

#### Electric Throttle Control Actuator;

On the previous ZD engine as well as the non DPF YD25 engine, the Air Intake Control valve was vacuum controlled. Now on the new ZD30 CRD engine, the valve has the same purpose as previous, however it is electrically operated. Its operation is very much the same as a ETC unit found on many petrol engines.

The Throttle valve is fully opened when the engine is running. The valve is closed only to perform smooth engine stop when the ignition switch is turned OFF. A feedback sensor (Throttle Position Sensor – TPS) is also installed to ensure the ECM can detect the throttle plates position.

#### (Vacuum operated) Swirl Valves:

The swirl control valve is installed inside the manifold assembly. While idling and during low engine speed operation, the swirl control valve closes, thus the velocity of the air in the intake passage increases to produce a swirl (rush of air to promote cleaner burning when the fuel is injected into the air) into the combustion chamber. Once the engine speed increases to a certain speed, the valves open to allow more air to enter the engine. Further information regarding the components shown right can be found in section EM & EC of the Service Manual.

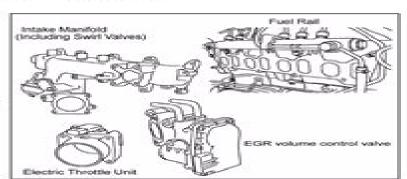
#### ZD30DDTi Exhaust Gas Recirculation (EGR) System

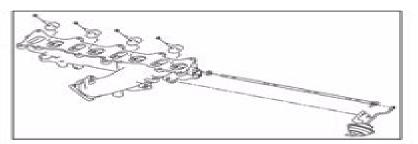
Major changes have occurred with the EGR system on the new ZD30 CRD engine.

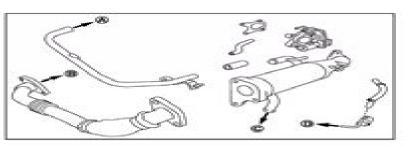
The EGR volume control valve continues to be electrically controlled by the ECM, however it has a throttle valve arrangement & works in a similar way to an ETC unit found on current petrol engines.

The Pipe linking the exhaust manifold to the EGR control valve assembly is also water cooled as it is on R51 / D40 YD25 A/T models.

Further information regarding the components shown right can be found in section EM & EC of the Service Manual.







A, C, D: Engine Coolant

B: Exhaust Gases

# **Gu Patrol Workshop Manual Zd30 Motor**

**Daniela Niemeyer** 

#### **Gu Patrol Workshop Manual Zd30 Motor:**

Patrol, GU Series, ZD30 Turbo Diesel Engine Les Garam, Jonathan Eagleton, 2002 Nissan Patrol 1998 to 2009 Vehicle Repair Manual Max Ellery, 2009-12-15 Nissan Patrol 1998 to 2009 Diesel and Petrol Gasoline Engines including Turbo with World Wide Spec s This manual has over 500 pages It has step by step instructions in every chapter Covering both model produced the Station Wagons and tray models Engine chapters The book covers all diesel engines RD28 TD42 and ZD30 including the common rail engine turbocharged engines are covered All petrol gasoline engines TB42 TB45 and TB48 the TB42 was an option in some countries in the first few years of production Chapters are full of step by step instructions plus plenty of photographs and line illustrations to give the reader explicit detail suitable for everyone regardless of whether you require minor engine work or a major rebuild Nissan Patrol 1998 to 2009 Vehicle Repair Manual Max Ellery, 2009-12-15 Nissan Patrol 1998 to 2009 Diesel and Petrol Gasoline Engines including Turbo with World Wide Spec s This manual has over 500 pages It has step by step instructions in every chapter Covering both model produced the Station Wagons and tray models Engine chapters The book covers all diesel engines RD28 TD42 and ZD30 including the common rail engine turbocharged engines are covered All petrol gasoline engines TB42 TB45 and TB48 the TB42 was an option in some countries in the first few years of production Chapters are full of step by step instructions plus plenty of photographs and line illustrations to give the reader explicit detail suitable for everyone regardless of whether you require minor engine work or a major rebuild Nissan Patrol Motor Co. Ltd Nissan, 1977 Nissan Patrol Model Y60 Series, Supplement I ,1989 Service Manual .1975 Nissan Patrol Model Y60 Series. Nissan Patrol Model Y60 Series, Supplement III, 1991 Patrol, GU, GUII and GUIII Series Diesel Engines ,2004 **Nissan Patrol Automotive** Supplement IV, 1993 Repair Manual Jeff Killingsworth, John Harold Haynes, 2011 Series GU with 4 6 cylinder engines 4 5L 4 8L petrol and 2 8L 3 0L42L diesel Motor Imported Car Repair Manual: Nissan thru Yugo ,1991 Nissan Patrol Ford Maverick 2. 8 and 4. 2 Litre Diesel 1988-1997 Universal Publishers, 1993-04-01 Nissan Patrol Y61 service manual Nissan Jidōsha Kabushiki Kaisha,1997 Motor Truck & Diesel Repair Manual Louis C. Forier, 1974 Patrol GU Series 1998-2011 ,2011 Nissan Patrol, Ford Maverick Diesel 1988-1993, 1993-07 Motor Truck & Diesel Repair Manual Motor (New York, Isuzu Workshop Manual G161Z Model Gasoline Engine Isuzu Jidōsha N.Y.),1974 Nassan Patrol service manual, Kabushiki Kaisha, Isuzu Motors, 1975 The M.G.M.G.B. Workshop Manual British Motor Corporation Service, Ltd, 1964

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