

VOLVO

Volvo Car Corporation

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Press Information

The 1987 Volvo range:

NEW ENGINES, LOWER EMISSIONS AND A COMPLETELY NEW

CHILD SAFETY PROGRAMME

The Volvo Car Corporation is exhibiting its 1987 new car range at the 73eme Salon de l'Auto in Paris, together with a completely new programme of child safety accessories.

The Volvo 780 and 480 are now leaving the production lines for gradual introduction on selected markets during 1987.

Newly-engineered 2.3-litre carburettor engine

Extensive changes have been made to the engine programme for the 1987 range.

B230K is the designation of Volvo's new 2.3-litre carburettor engine featuring better performance and lower fuel consumption than the engine it replaces.

The B230K is also a multi-octane engine which will accept any octane rating from 93 and upwards, leaded or unleaded.

To improve performance while simultaneously reducing fuel consumption and to enable the engine to run on unleaded 95 octane petrol, Volvo has applied a new engineering concept in its engine design involving an entirely new location and shape of the combustion chambers.

The combustion chambers of the B230K engine consist of recesses or bowls in the piston crowns. Through careful attention to detail in the shape of the bowl-in-piston, it has been possible to create a combustion chamber which is more compact than the previous type. This provides for a fast and consistent mixture of air and fuel, the ultimate result of which is higher torque.

The new bowl-in-piston combustion chamber also has a higher knocking resistance, that is to say the engine can operate on lower octane petrol. It has even been possible to increase the compression ratio from 10.3 to 10.5:1.

Another new feature of the 2.3-litre engine is a twin-port carburettor, previously only used on Volvo's 2-litre and 2.3-litre engines powering the 700 Series in markets outside Scandinavia. The new carburettor gives excellent response throughout the entire engine speed range.

Microprocessor-controlled ignition system

For the 700 Series, the 2.3-litre carburettor engine is combined with a newly-developed microprocessor-controlled ignition system. Advanced electronic circuitry is used to control the ignition of the fuel in the combustion chamber. The engine is also equipped with a knock sensor in order to compensate for variations in the grade of fuel and to enable the engine to accept a broad range of octane ratings.

New V6 for the 780 and 760

1987 models of the 780 and 760 will have newly-developed V6 engines designated B280.

Priority has been given in the new engine to comfort characteristics such as low speed torque and idling smoothness. The new six-cylinder power unit is also a multi-octane engine with an extremely advanced ignition and fuel injection system.

Most prominent among the features of the engine is a newly-designed crankshaft. Each crankshaft journal, which was previously used jointly by two connecting rods, is now replaced by two journals interspaced at 30 degrees. This means that the cylinders of the B280 engine fire at even intervals (120 degrees between each firing spark) despite the fact that the engine still has a 90 degree angle between the cylinder banks.

This gives the new engine the steady and vibration-free smoothness of an in-line six while combining the benefits of a V6 engine which make it less space-demanding and versatile in north-south and east-west installations.

In markets where there are overall speed restrictions in force, low-speed torque and pulling power are of more interest than high-speed performance. The detoxed B280E engine for the Nordic market and the B280F with catalyst system therefore have a new cylinder head with "swirl lips" around the inlet valves. The resulting controlled turbulence in the cylinder on the induction stroke leads to a more consistent air/fuel mixture and improves combustion at low engine speeds.

The market's most advanced ignition and injection system

The new Volvo V6 has one of the market's most advanced fuel and ignition systems featuring twin knock sensors. Thanks to the sensors on the engine block, the system registers the slightest tendency to knocking and instantaneously alters the ignition setting individually for each cylinder.

The compression ratio has been increased from 9.5 to 10.0:1 for Europe and for detoxed versions, from 8.8 to 9.5:1.

700,000 catalyst cars

The new V6 is built with two different types of exhaust emission control system depending on market requirements.

The B280E for the Nordic markets has the EGR/Pulsair exhaust emission control system. Output is 156 hp/115 kW which is equal to the output of the previous V6 engine.

The B280F, which will be available in a number of European countries, has a three-way catalytic converter with Lambda-sond. Output is 108 kW/147 hp, an increase of 8 kW compared with the previous F-engine.

Since initially introduced in the USA in 1977, Volvo has sold more than 700,000 catalyst cars, most of them in the USA. Thus, Volvo has accumulated more experience than any other European manufacturer in this area.

Turbo diesel with Intercooler now also available on 760

A turbo diesel with Intercooler (charge-air cooler) will now be available on both the 740 and 760.

The power increase will be a full 12% with a 15% improvement in torque for the 740/760 with the new D24TIC compared with the previous turbo diesel without Intercooler, the D24T.

The D24TIC engine was introduced for the first time last year in the exclusive 780 for selected markets, including Italy, but had then a slightly higher power output.

The basic engine uses a newly-developed, stronger aluminium alloy for the cylinder head. Bearing, valve and gasket materials are also up-rated.

The engine is equipped with an intermediate cooler which gives a considerably lower operating temperature. The exhaust temperature, for example, is about 100 °C lower than in a turbo engine without a charge-air cooler. This gives the basic engine the necessary capabilities to withstand the higher power outputs of the TIC versions.

Other new engine features

To reduce operating temperature, all petrol turbo units will, effective this autumn, have water-cooling to the improvement of dependability and service life. On all 740 and 760 cars with a four-cylinder engine (exception, manual gearbox without Turbo) hydraulic engine mounts will be introduced to the improvement of vibration damping between engine and body.

Automatic fuel shut-off will be introduced on all engines except the B230E. This means lower fuel consumption and also a reduction in evaporative and exhaust emissions.

New long-life exhaust system

The rustproofing protection of Volvo cars is also increased for the 1987 model year.

An exhaust system with improved rustproofing treatment is now a standard feature of all Volvo cars on all markets.

The new exhaust system, which was introduced on selected models last year, is estimated to have an average service life of about seven years.

New child safety accessories

Volvo continues its diligent work in improving the safety of children in cars.

An entirely new series of accessories is being introduced this autumn:

- A freestanding child safety seat, for infants and children up to the age of four, which will fit any of the passenger seats, forward or rearward-facing.
- A backrest-mounted child safety seat, which fits to the back of the front passenger seat and folds up against it.
- A three-point inertia reel belt for the centre rear seat, making this the safest and most popular place in the car for children.
- A backrest and head restraint to match the previous type of seat belt cushion.

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