CNG CURSOR SERIES

Vehicle application

C78

C78 ENT G

Technical and Repair manual

SECTION 1

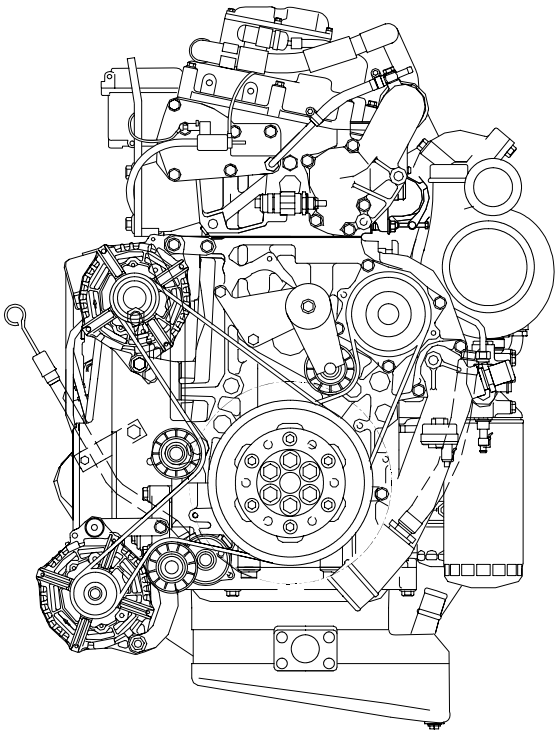
General Specifications

CORRESPONDENCE BETWEEN TECHNICAL CODE AND COMMERCIAL CODE

Technical Code	Commercial Code
F2BE0642A*A003	-
F2BE0642A*A...	C78 ENT G

ENGINE VIEWS

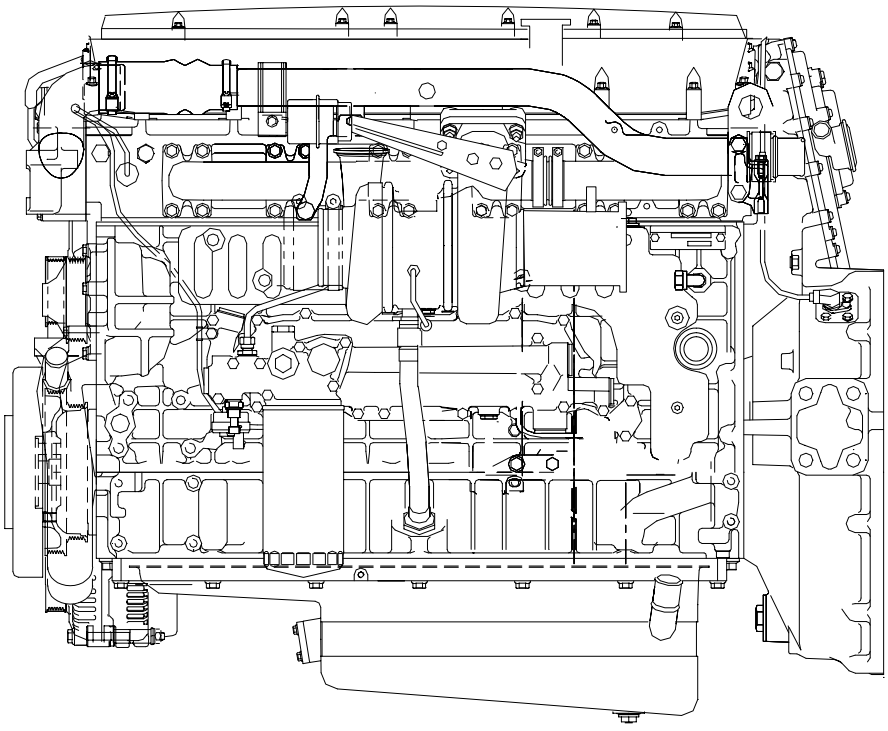
Figure 1



90882

ENGINE FRONT VIEW

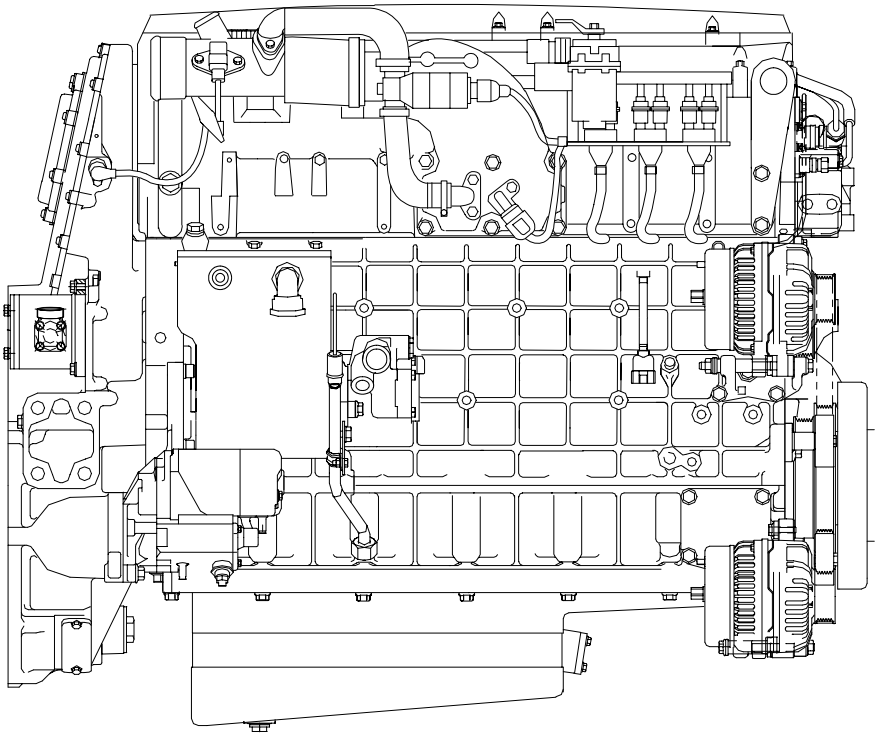
Figure 2



90885

ENGINE LEFT SIDE VIEW

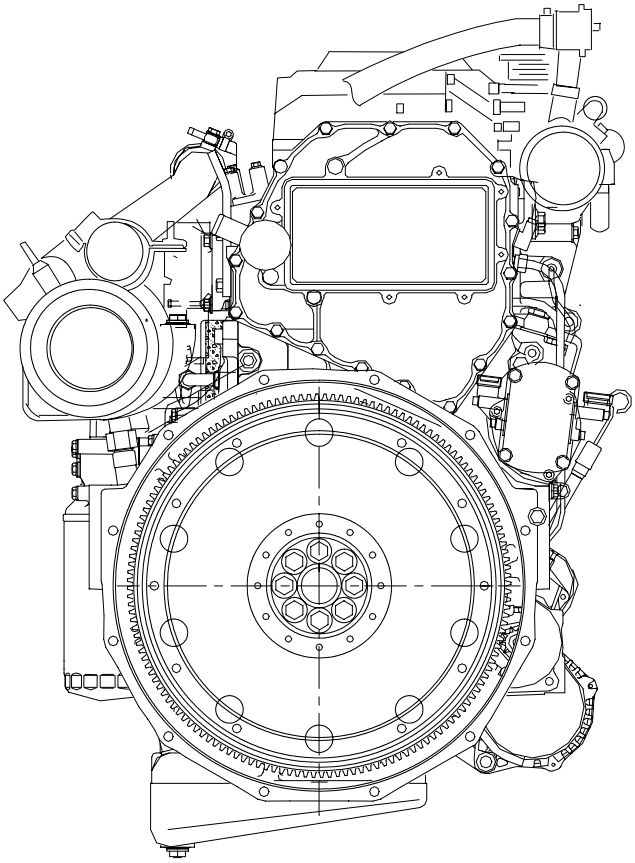
Figure 3



90884

ENGINE RIGHT SIDE VIEW

Figure 4



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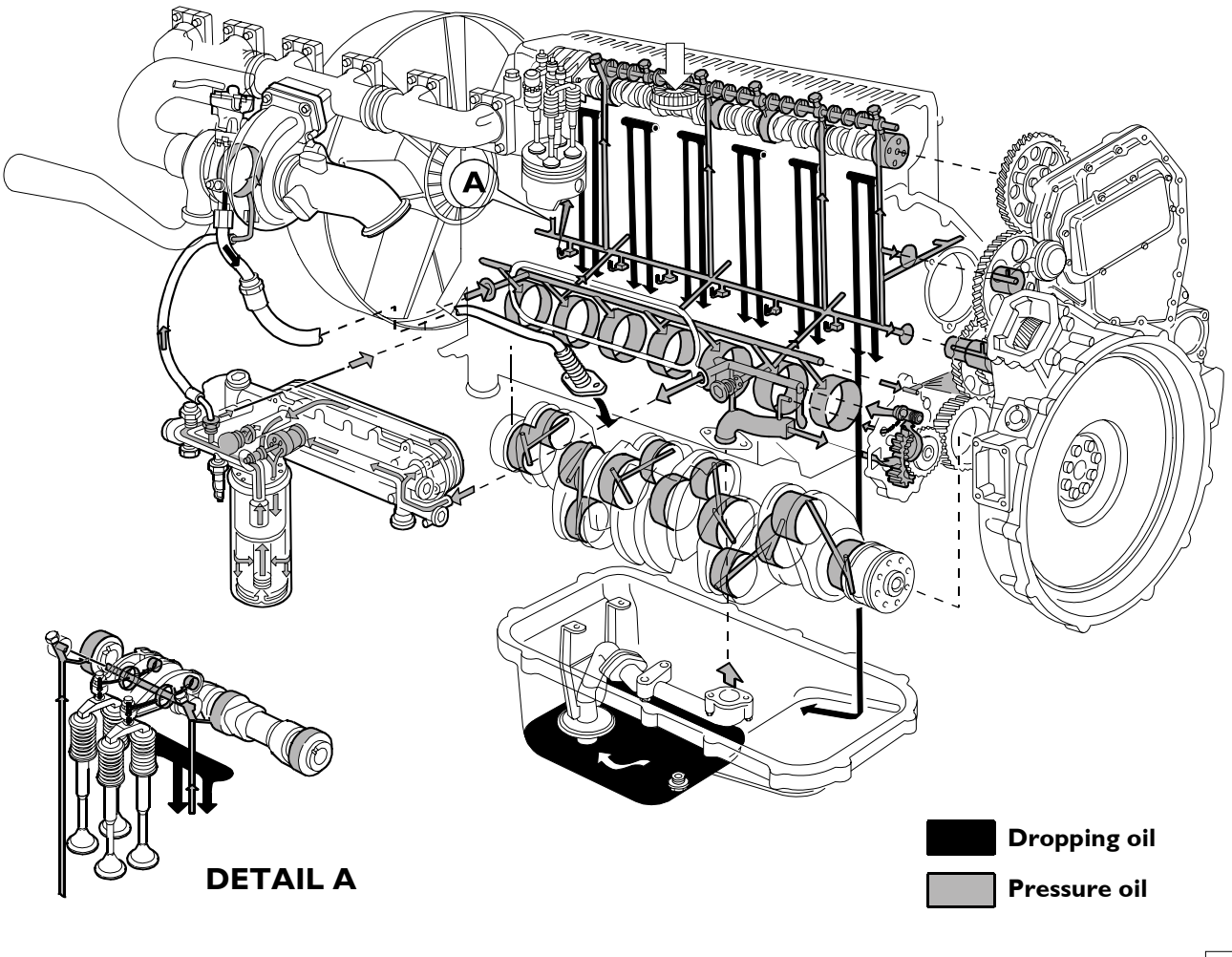
ENGINE REAR VIEW

LUBRICATION

Engine lubrication is a forced circulation type lubrication obtained by means of a gear pump driven through gears from crankshaft.
A heat exchanger governs the temperature of the lubricating oil.
The oil filter, signalling sensors and safety valves are installed in the intercooler.

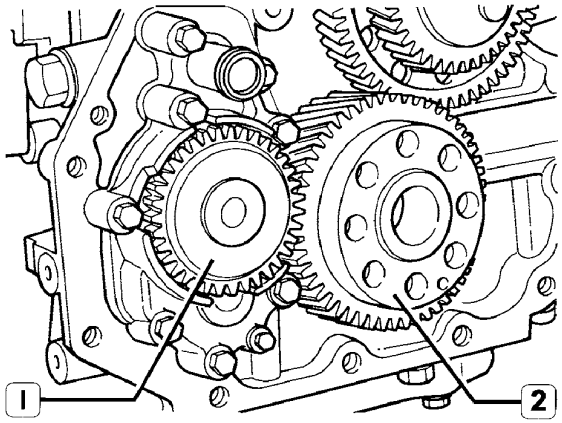
Figure 5 (Demonstration)



LUBRICATION CIRCUIT

Oil pump

Figure 6

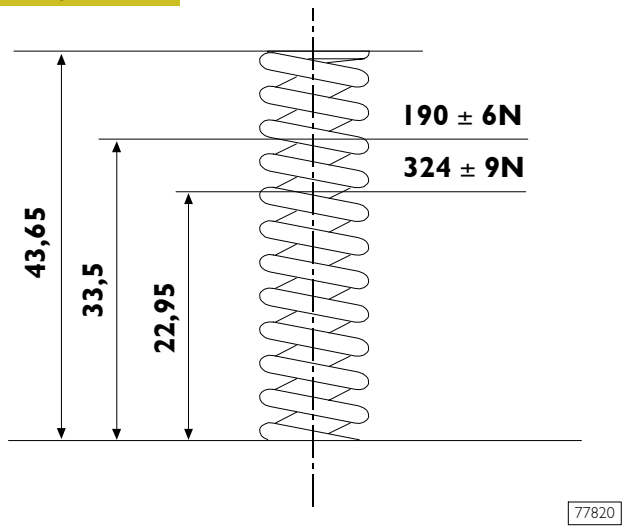


The oil pump (1) cannot be overhauled. On finding any damage, replace the oil pump assembly.

See under the relevant heading for replacing the gear (2) of the crankshaft.

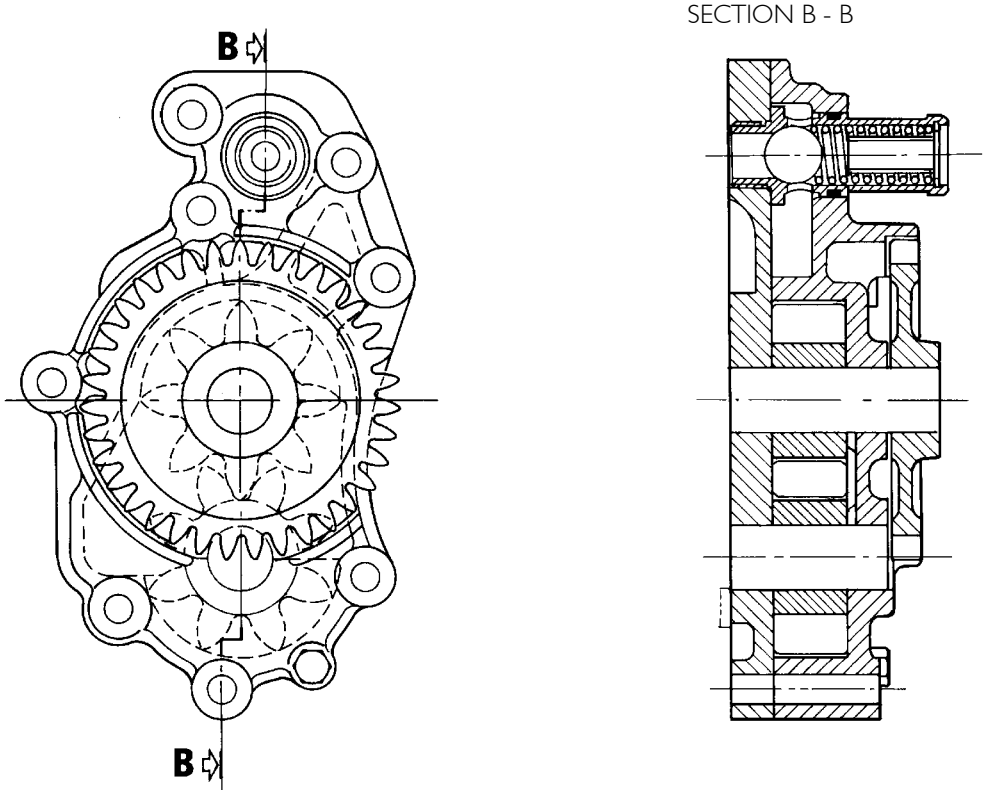
Overpressure valve

Figure 8



MAIN DATA TO CHECK THE OVERPRESSURE VALVE SPRING

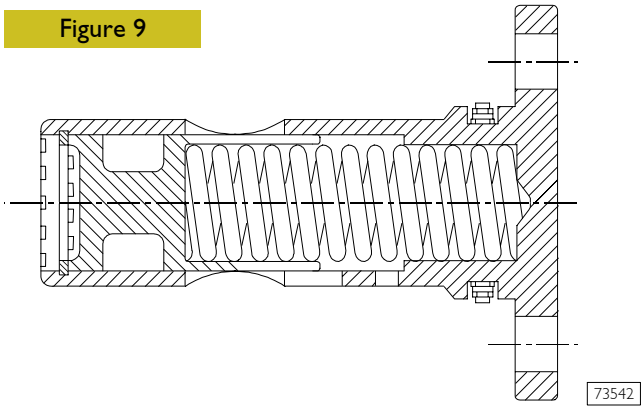
Figure 7



OIL PUMP CROSS-SECTION
1. Overpressure valve – Start of opening pressure 10.1 ± 0.7 bars.

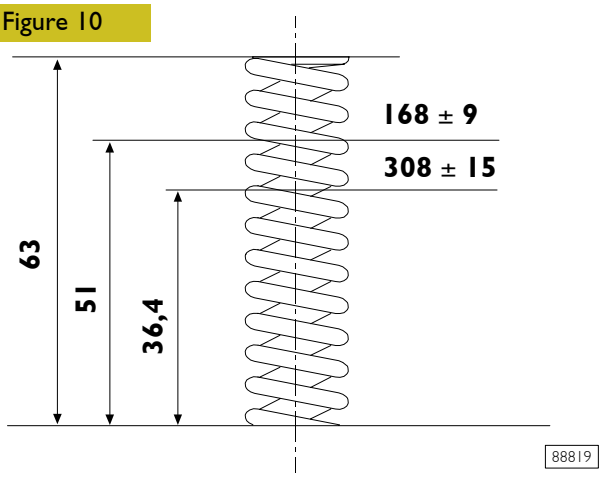
Oil pressure control valve (on the base unit)

Figure 9



The oil pressure control valve is located on the left-hand side of the crankcase.
Start of opening pressure 5 bars.

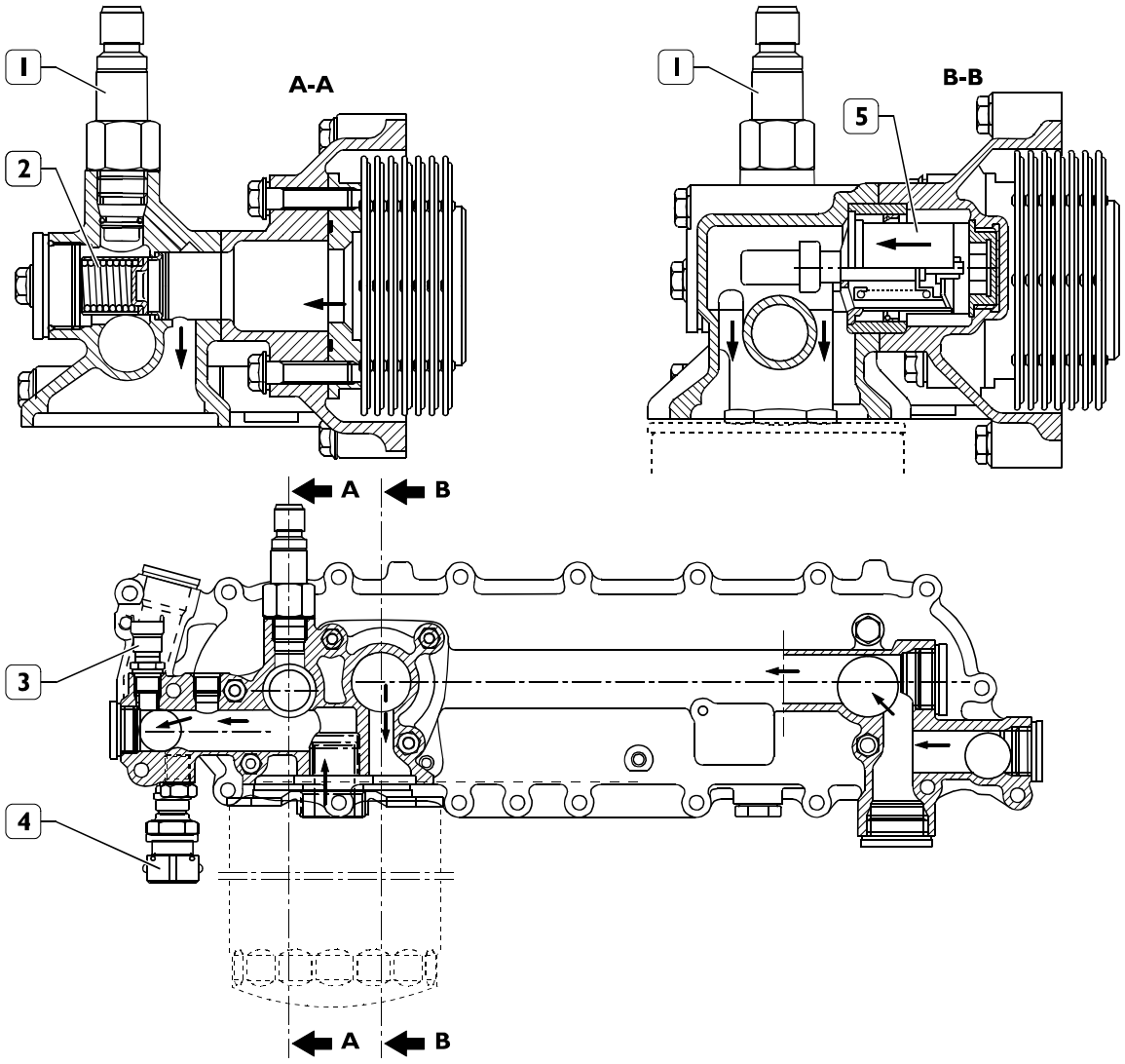
Figure 10



MAIN DATA TO CHECK THE OIL PRESSURE CONTROL VALVE SPRING

Filter support and heat exchanger

Figure 11

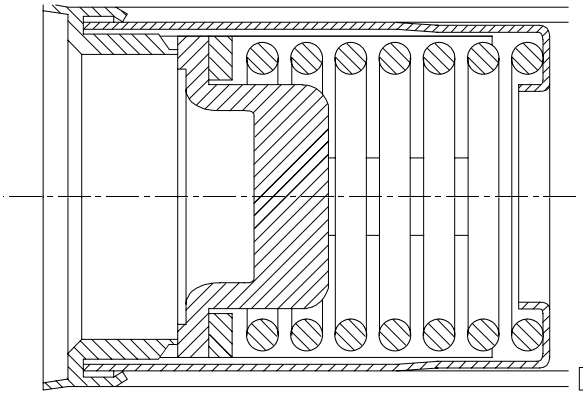


HEAT EXCHANGER

The following elements are fitted on the intercooler: 1. Transmitter for low pressure warning lamp - 2. By-pass valve - 3. Oil temperature sensor - 4. Oil pressure sensor for single gauge - 5. Heat valve. Number of intercooler elements: 7

By-pass valve inside the filter support/heat exchanger assembly

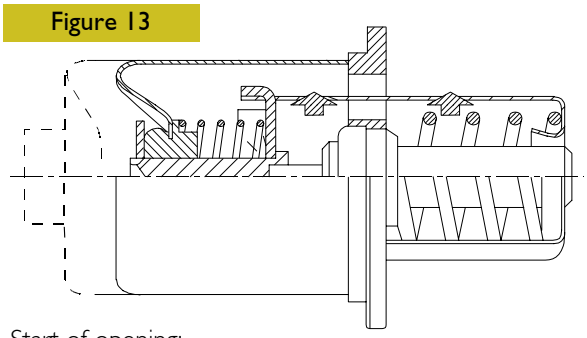
Figure 12



The valve quickly opens at a pressure of: 3 bars.

Thermostatic valve

Figure 13



Start of opening:

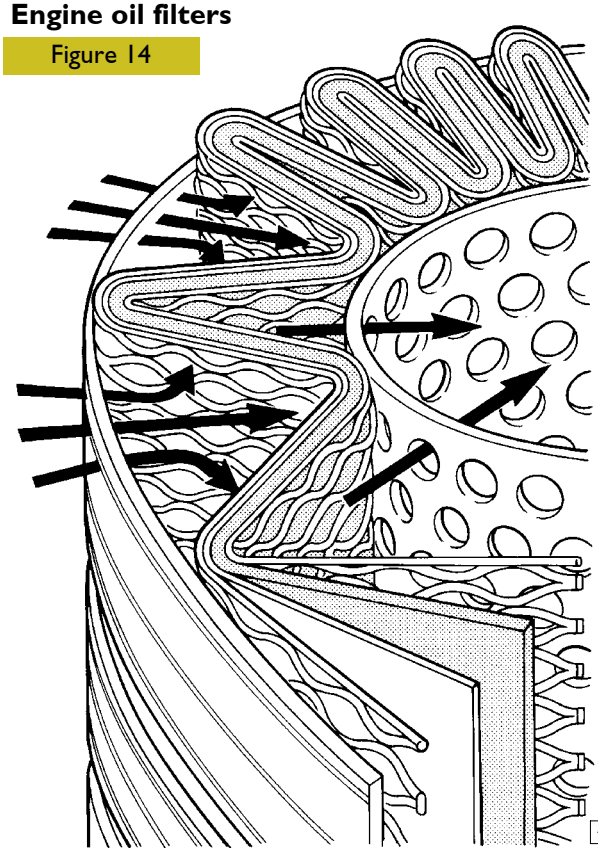
- ❑ travel 0.1 mm at a temperature of 82 ± 2°C.

End of opening:

- ❑ travel 8 mm at a temperature of 97°C.

Engine oil filters

Figure 14



This is a new generation of filters that permit much more thorough filtration as they are able to holder back a greater amount of particles of smaller dimensions than those held back by conventional filters with a paper filtering element.

These high-filtration devices, to date used only in industrial processes, make it possible to:

- ❑ reduce the wear of engine components over time;
- ❑ maintain the performance/specifications of the oil and thereby lengthen the time intervals between changes.

External spiral winding

The filtering elements are closely wound by a spiral so that each fold is firmly anchored to the spiral with respect to the others. This produces a uniform use of the element even in the worst conditions such as cold starting with fluids with a high viscosity and peaks of flow. In addition, it ensures uniform distribution of the flow over the entire length of the filtering element, with consequent optimization of the loss of load and of its working life.

Mount upstream

To optimize flow distribution and the rigidity of the filtering element, this has an exclusive mount composed of a strong mesh made of nylon and an extremely strong synthetic material.

Filtering element

Composed of inert inorganic fibres bound with an exclusive resin to a structure with graded holes, the element is manufactured exclusively to precise procedures and strict quality control.

Mount downstream

A mount for the filtering element and a strong nylon mesh make it even stronger, which is especially helpful during cold starts and long periods of use. The performance of the filter remains constant and reliable throughout its working life and from one element to another, irrespective of the changes in working conditions.

Structural parts

The o-rings equipping the filtering element ensure a perfect seal between it and the container, eliminating by-pass risks and keeping filter performance constant. Strong corrosion-proof bottoms and a sturdy internal metal core complete the structure of the filtering element.

When mounting the filters, keep to the following rules:

- ❑ Oil and fit new seals.
- ❑ Screw down the filters to bring the seals into contact with the supporting bases.
- ❑ Tighten the filter to a torque of 35÷40 Nm.

COOLING

Description

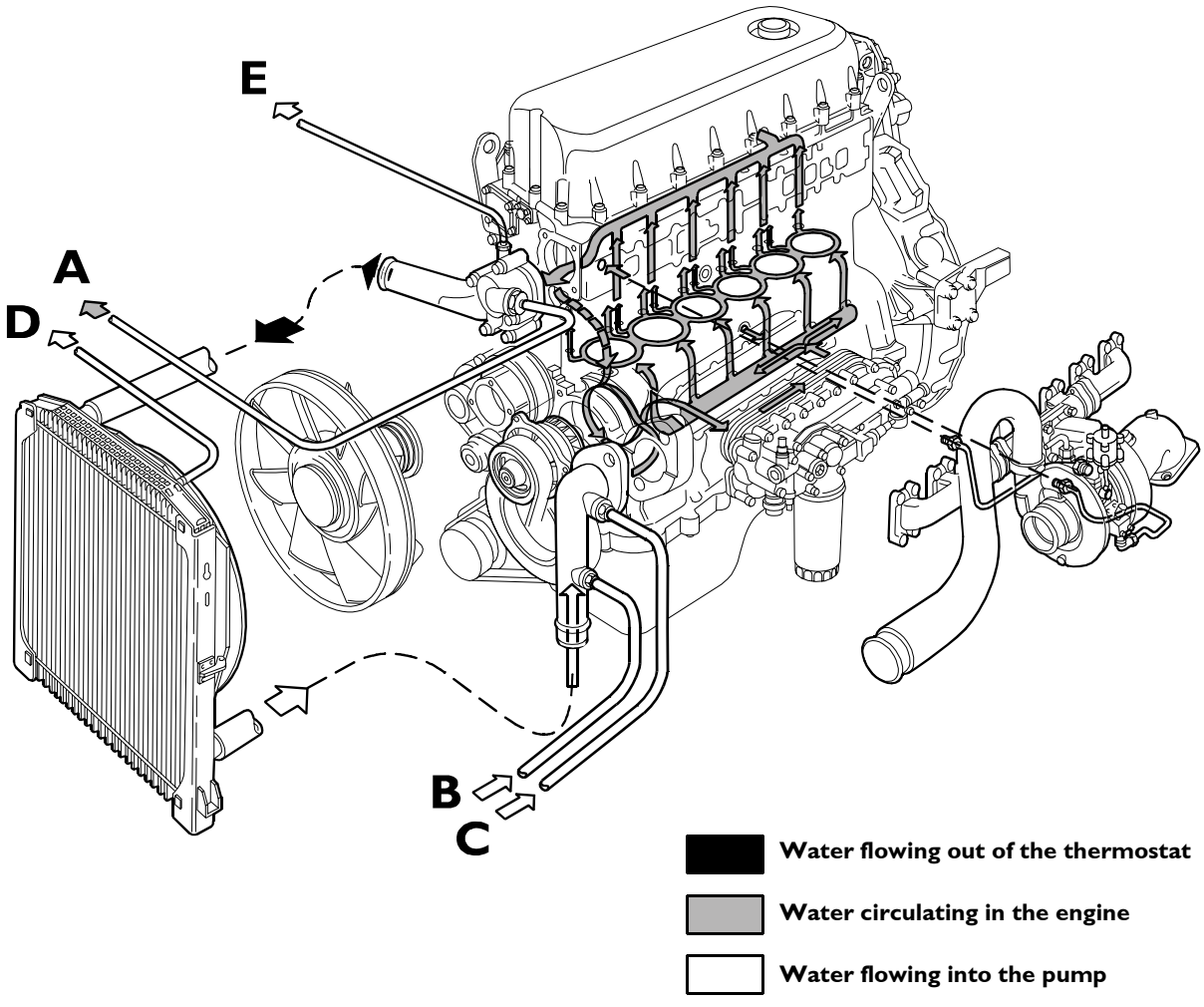
The engine cooling system is of the closed-circuit, forced circulation type.
It consists mainly of the following components:

- ❑ expansion tank, not supplied (by IVECO);
- ❑ a heat exchanger to cool down lubrication oil;
- ❑ a water pump with centrifugal system incorporated in the cylinder block;
- ❑ fan, not supplied;
- ❑ a 2-way thermostat controlling the coolant circulation.

Operation

The water pump is actuated by the crankshaft through a poli-V belt and sends coolant to the cylinder block, especially to the cylinder head (bigger quantity). When the coolant temperature reaches and overcomes the operating temperature, the thermostat is opened and from here the coolant flows into the radiator and is cooled down by the fan.
The pressure inside the system, due to temperature change, is adequately controlled through the expansion vessel.

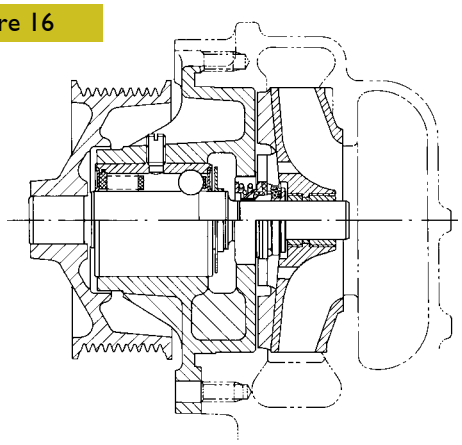
Figure 15 (Demonstration)



A/B outlet/inlet for vehicle heater
C inlet from the expansion vessel
D/E outlet from the radiator and the thermostat body for expansion vessel inlet

Water pump

Figure 16



WATER PUMP SECTION

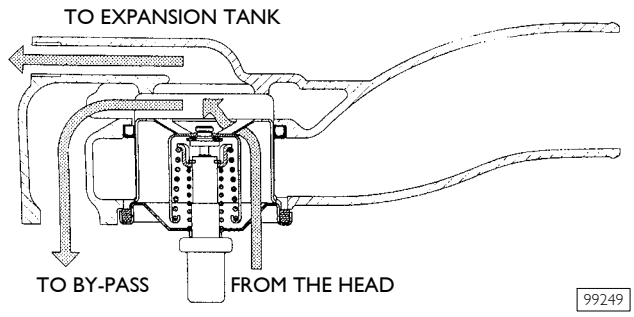
The water pump consists of: rotor, seal bearing and control pulley.

Make sure that the pump casing has no cracking or water leakage; otherwise, replace the entire pump.

Thermostat

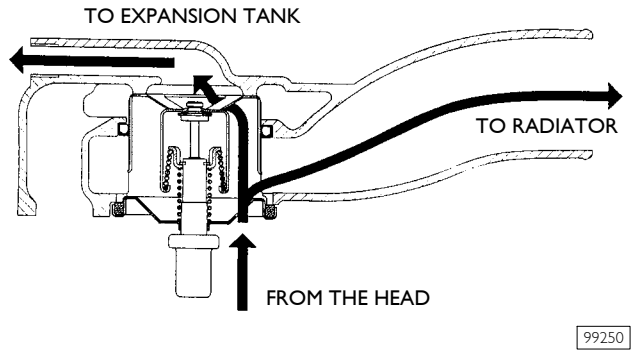
THERMOSTAT OPERATION VIEW

Figure 17



Water circulating in the engine

Figure 18



Water issuing from thermostat

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