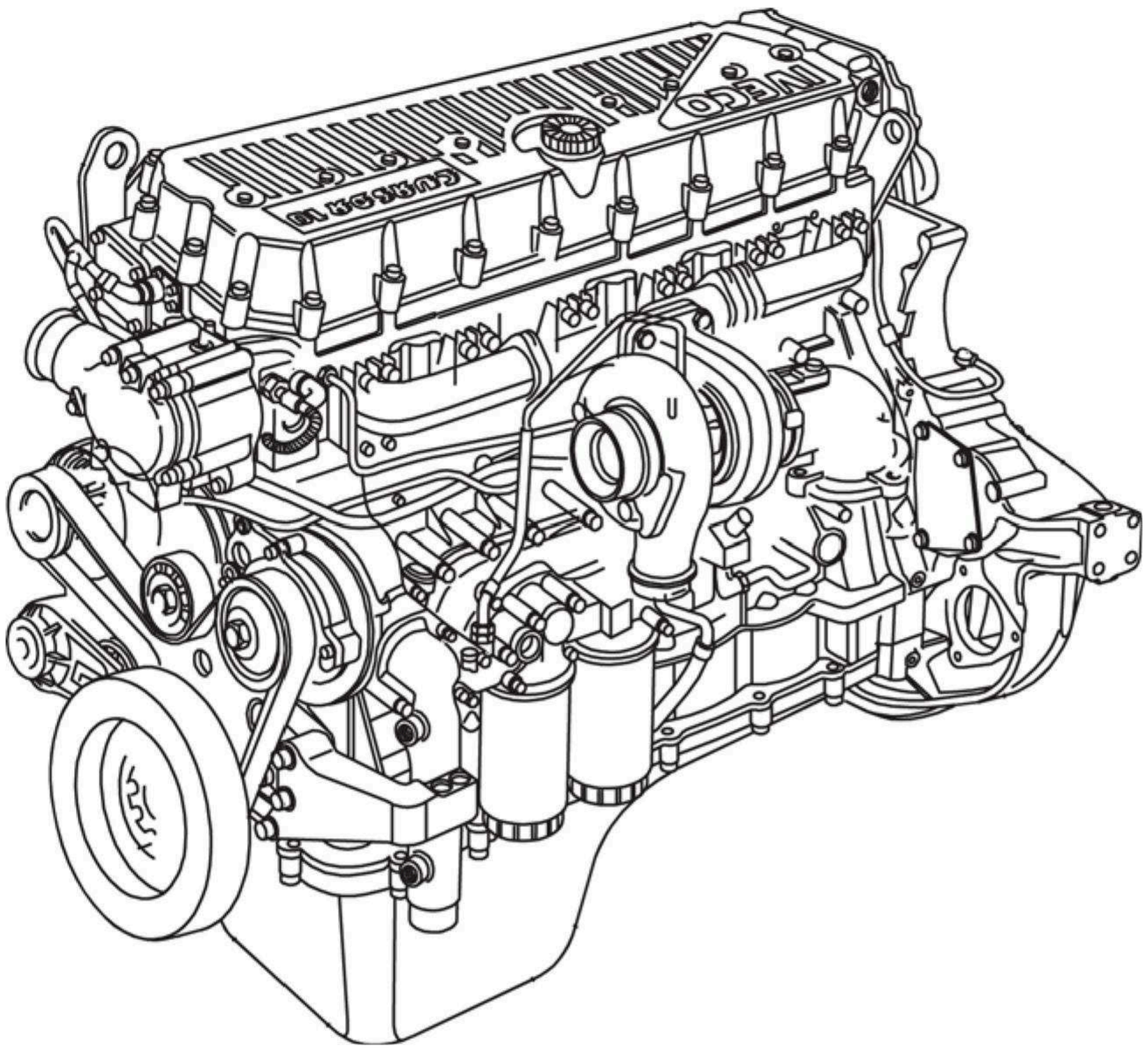


Case IH 12.9L Engine

Repair Manual

87523642

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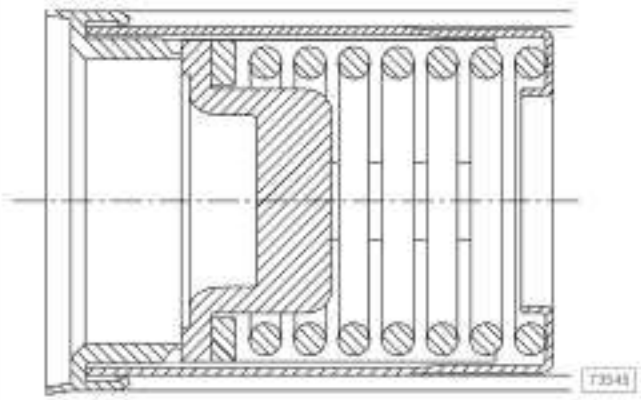
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By-pass valve

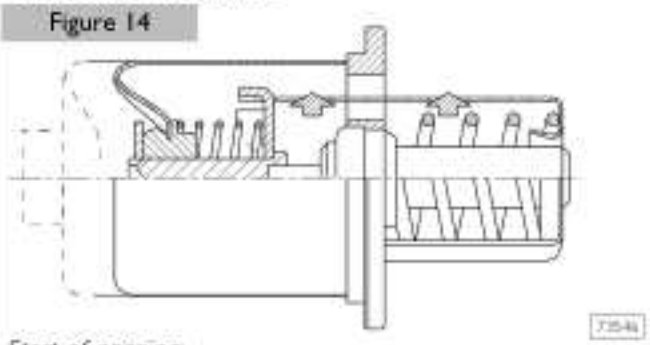
Figure 13



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

Thermostatic valve

Figure 14



Start of opening:

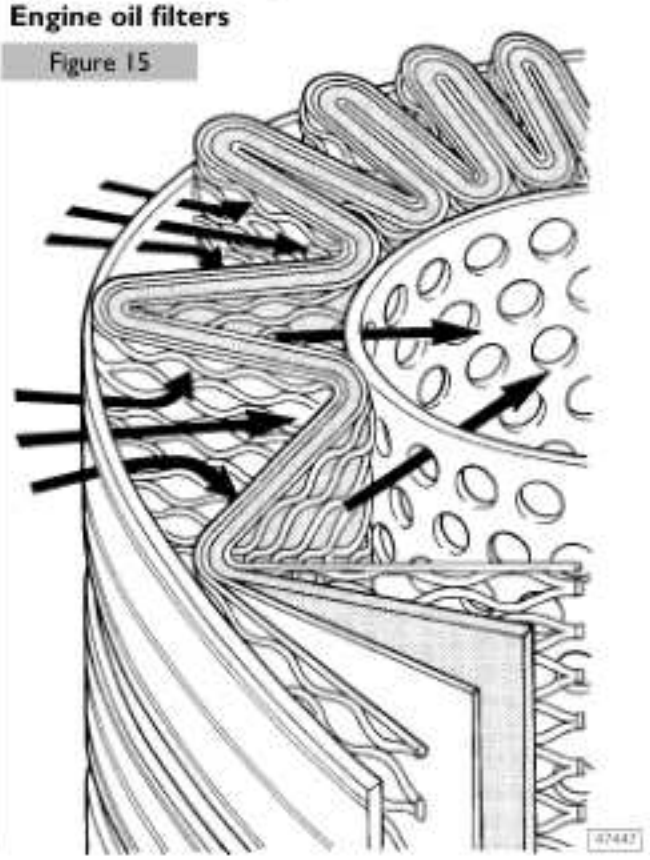
- travel 0.1 mm at a temperature of 82 ±2°C.

End of opening:

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

Engine oil filters

Figure 15



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.

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PREFACE

A successful troubleshooting is carried out with the competence acquired by years of experience and attending training courses.

When the user complains for bad efficiency or working anomaly, his indications must be kept into proper consideration using them to acquire any useful information to focus the intervention.

After the detection of the existing anomaly, it is recommended to proceed with the operations of troubleshooting by decoding the auto-troubleshooting data provided by the EDC system electronic central unit.

The continuous efficiency tests of the components connected to, and the check of working conditions of the entire system carried out during working, can offer an important diagnosis indication, available through the decoding of the "failure/anomaly" codes issued by blinking of the failure led: the "blink-code" (whether programmed).

Please consider that the interpretation of the indications provided by the blink-code is not sufficient to guarantee the solution to the existing anomalies.

Using Iveco Motors processing instruments, it is also possible to establish a bi-directional connection with the central unit, by which not only to decoding the failure codes but also input an enquiry relying on memory files, in order to achieve any further necessary information to identify the origin of the anomaly.

Every time there is a breakdown claim and this breakdown is actually detected, it is necessary to proceed inquiring the electronic unit in one of the ways indicated and then proceed with the diagnostic research making trials and tests in order to have a picture of the working conditions and identify the root causes of the anomaly.

In case the electronic device is not providing any indication, it will be necessary to proceed relying on the experience, adopting traditional diagnosis procedures.

In order to compensate the operators' lack of experience in this new system, we are hereby providing the USER'S GUIDELINE FOR TROUBLESHOOTING in the following pages.

The GUIDELINE is composed of three different parts:

- Part 1: Blink Code, relating to the anomalies identified by the gearbox, mainly of electric and electrical nature;
- Part 2: Troubleshooting guide using PT-01 portable tester.
- Part 3: Guideline for troubleshooting without blink code, divided per symptoms, describing all possible anomalies not detected by the electronic gearbox, often of mechanical and hydraulic nature.



Any kind of operation on the electronic center unit must be executed by qualified personnel.

Any unauthorized tamper will involve decay of after-sales service in warranty.

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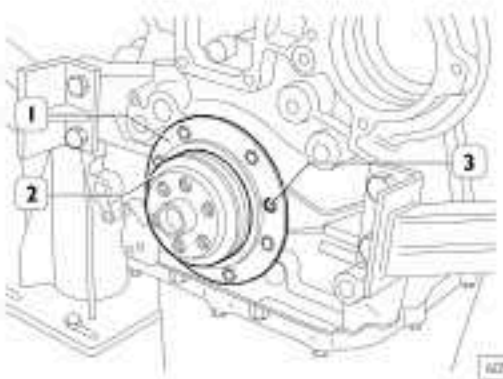
Figure 29



Loosen the screws, then remove suction strainer (1).

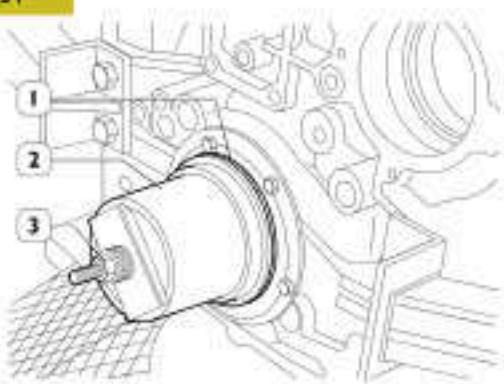
ENGINE ASSEMBLY

Figure 30



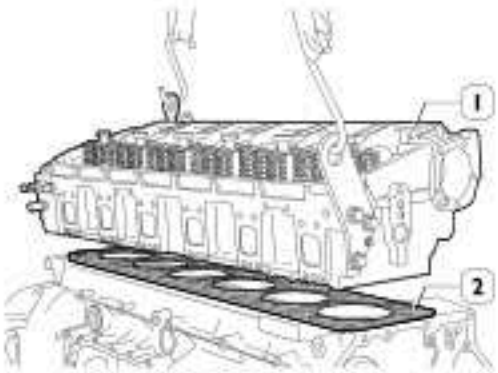
Using the centring ring 380000169 (2), check the exact position of the cover (1). If it is wrong, proceed accordingly and lock the screws (3).

Figure 31



Key on the gasket (1), mount the key 380000126 (2) and, screwing down the nut (3), drive in the gasket (1).

Figure 32



Check that the pistons 1-6 are exactly at the T.D.C.
Put the gasket (2) on the crankcase.
Mount the cylinder head (1) and tighten the screws as shown in Figs. 34-35-36.

Lubricate the thread of the screws with engine oil before assembly.

Figure 33

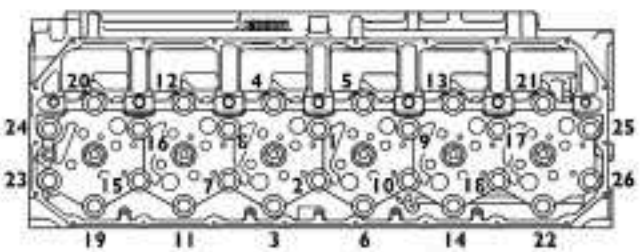
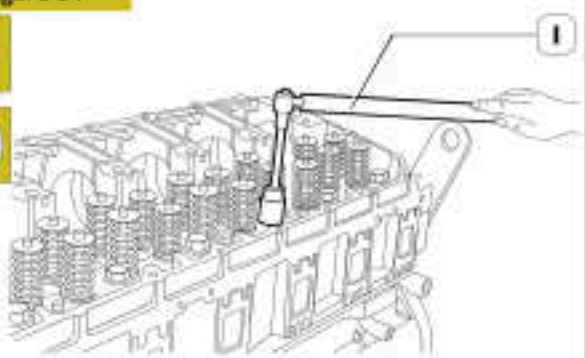


Diagram of the tightening sequence of the screws fixing the cylinder head.

Figure 34

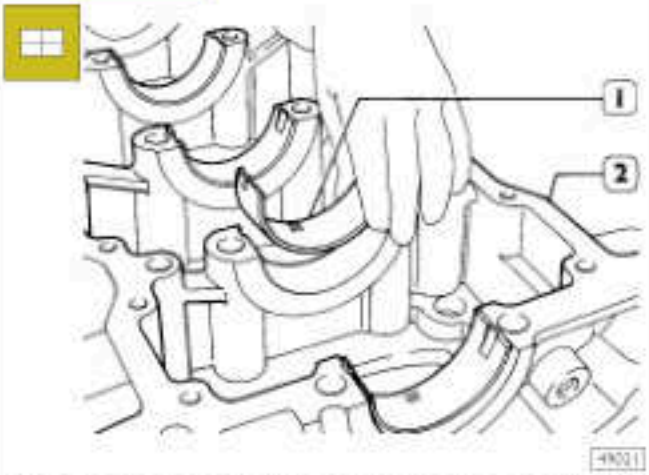


- ❑ Pre-tightening with the torque wrench (1):
  1st phase: 60 Nm (6 kgm).
  2nd phase: 120 Nm (12 kgm).

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ASSEMBLING THE ENGINE ON THE BENCH

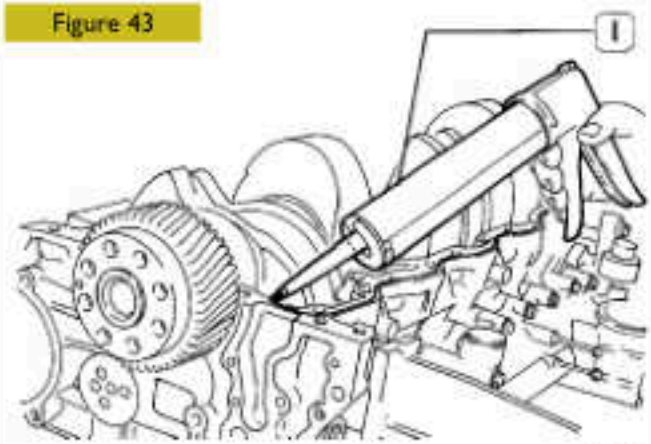
Figure 42



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Place the half-bearings (1) on the main bearings in the underblock (2).

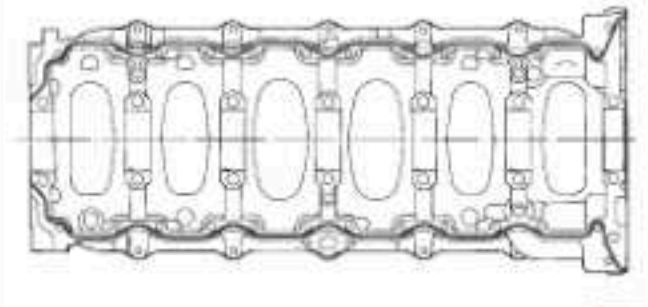
Figure 43



47595

By means of suitable equipment (1) apply silicone LOCTITE 5970 IVECO No. 2992644 to the block, as shown in the figure.

Figure 44

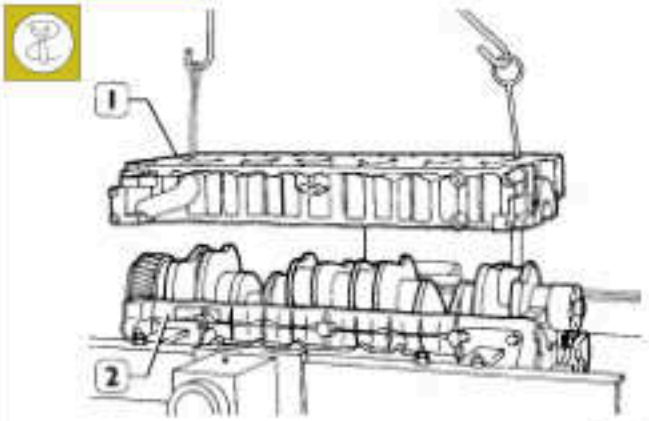


47596

Sealant application diagram

Fit the underblock within 10' of the application of the sealant.

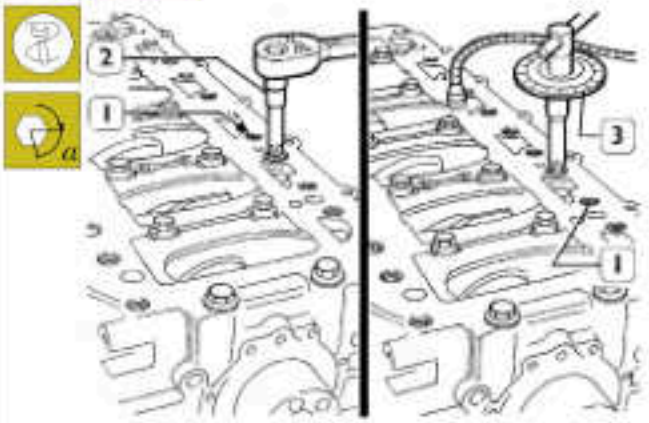
Figure 45



49022

Fit the underblock by means of a suitable hoist and hooks (1).

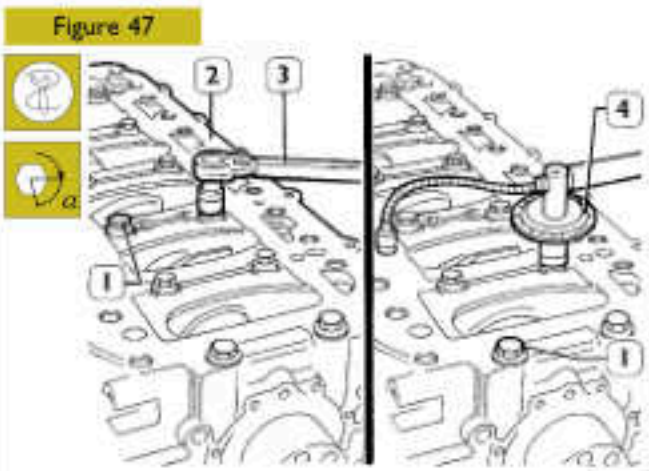
Figure 46



47581

Fit the sub-engine block and use a dynamometric wrench (2) to tighten the outer hexagonal-grooved screws (1) to 30 Nm according to the diagrams on the following page.

Figure 47



47579

Close the inner screws (1) to 120 Nm torque by means of a dynamometric wrench (3), then with two further angular phases 60° + 55°, using tool 380000304 (4). Tighten again the outer screws (1, Figure 46) with 60° angular closing, using tool 380000304 (3, Figure 46).

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