

## SECTION 2 ENGINE

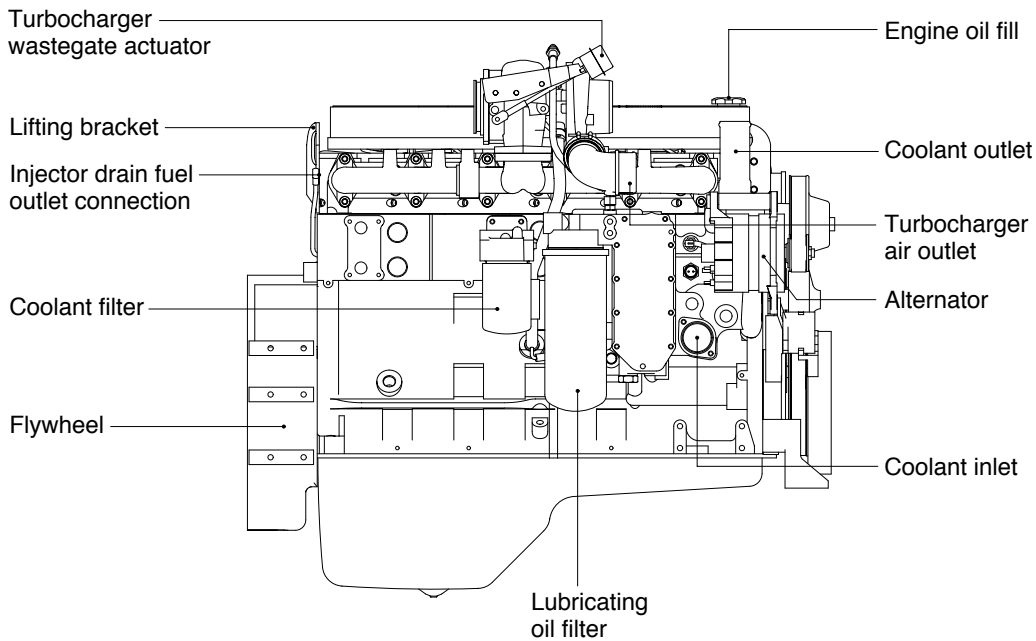
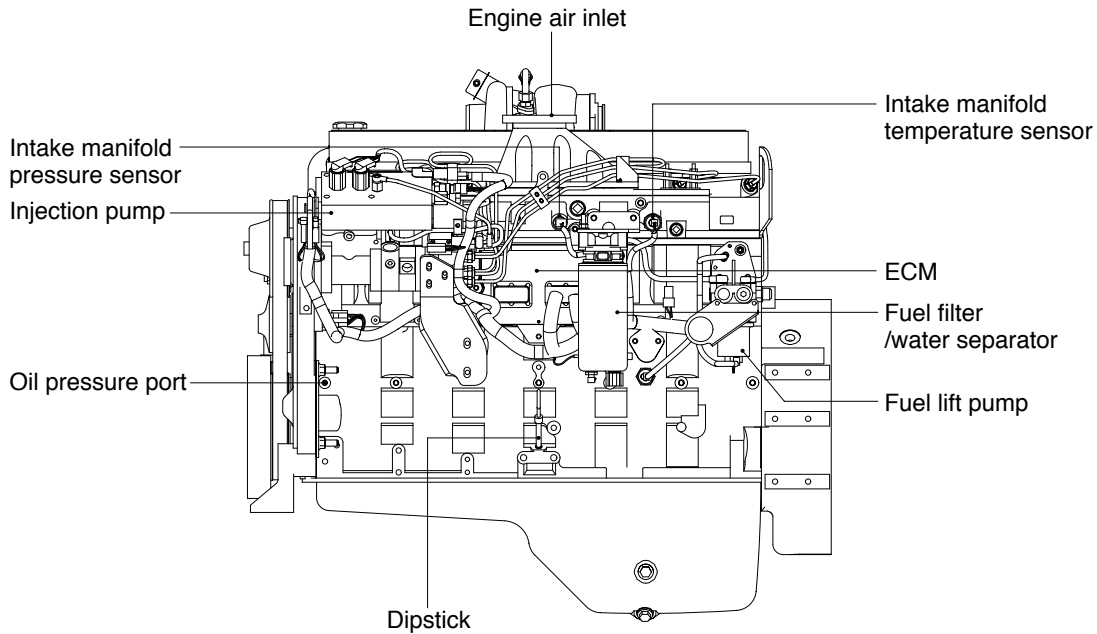


Group 1 Structure and Function ----- 2-1

# SECTION 2 ENGINE

## GROUP 1 STRUCTURE AND FUNCTION

### 1. STRUCTURE



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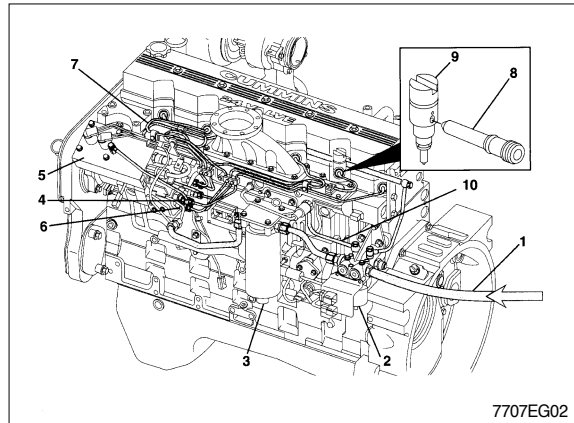
- Direct 4-stroke, 6-cylinders, water-cooling and charge air cooled diesel engine in installed, cylinder block and cylinder head are made of case iron and turbocharger is attached.

## 2. SYSTEM DIAGRAMS

The following drawings show the flow through the engine systems.

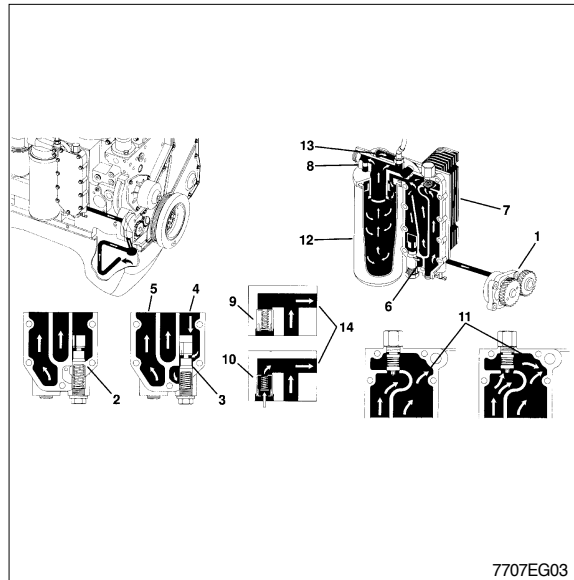
### 1) Fuel system

- 1 Fuel from supply tank
- 2 Electronic lift pump
- 3 Fuel filter and water separator
- 4 Fuel drain line
- 5 Injection pump
- 6 Distributor outlet fitting
- 7 High-pressure supply lines
- 8 Fuel connector
- 9 Injectors
- 10 Fuel return to supply tank



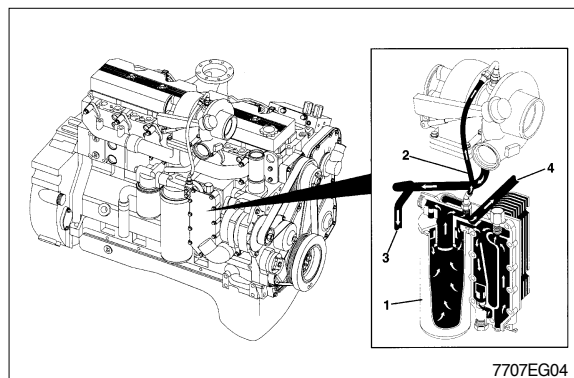
### 2) Lubricating oil system

- 1 Gerotor lubricating oil pump
- 2 Pressure-regulating valve closed
- 3 Pressure-regulating valve open
- 4 From lubricating oil pump
- 5 To lubricating oil cooler
- 6 To lubricating oil pan
- 7 Lubricating oil cooler
- 8 Filter bypass valve
- 9 Filter bypass valve closed
- 10 Filter bypass valve open
- 11 To lubricating oil filter
- 12 Full-flow lubricating oil filter
- 13 From lubricating oil filter
- 14 Main lubricating oil rifle



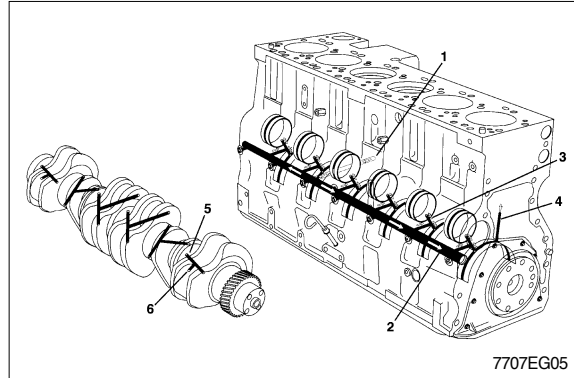
### (1) Lubrication for the turbocharger

- 1 Lubricating oil filter
- 2 Turbocharger lubricating oil supply
- 3 Turbocharger lubricating oil drain
- 4 To main lubricating oil rifle.



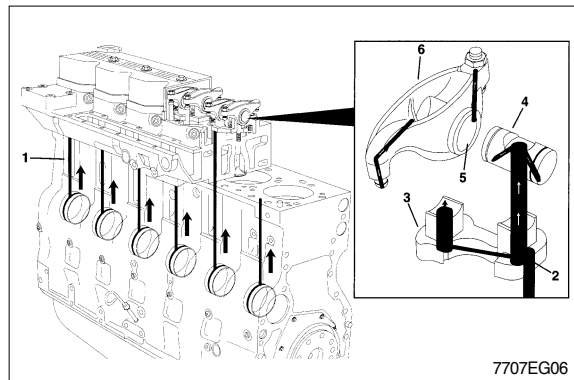
## (2) Lubrication for the power components

- 1 From lubricating oil cooler
- 2 Main lubricating oil rifle
- 3 To camshaft
- 4 From main lubricating oil rifle
- 5 To piston cooling nozzle
- 6 To connecting rod bearing



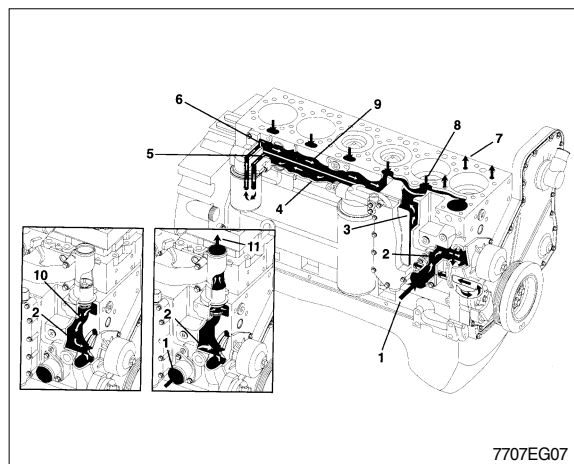
## (3) Lubrication for the overhead

- 1 From cam bushings
- 2 Transfer slot
- 3 Rocker lever support
- 4 Rocker lever shaft
- 5 Rocker lever bore
- 6 Rocker lever



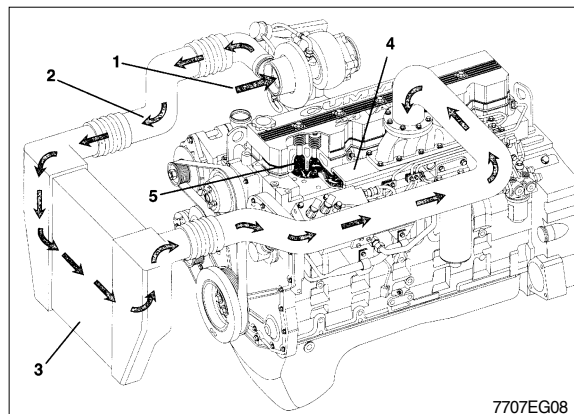
## 3) Cooling system

- 1 Coolant inlet from radiator
- 2 Water pump suction
- 3 Coolant flow through lubricating oil cooler
- 4 Block lower water manifold(to cylinders)
- 5 Coolant filter inlet
- 6 Coolant filter outlet
- 7 Coolant supply to cylinder head
- 8 Coolant return from cylinder head
- 9 Block upper water manifold
- 10 Thermostat bypass
- 11 Coolant return to radiator



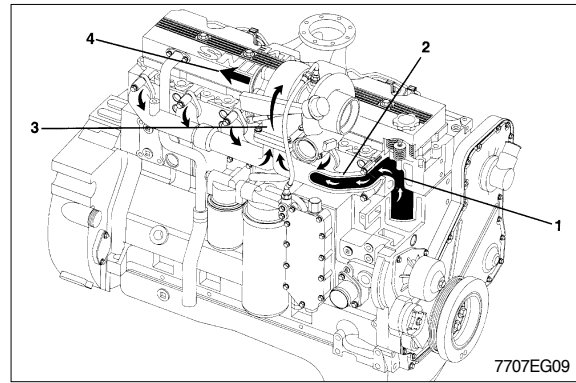
## 4) Air intake system

- 1 Intake air inlet to turbocharger
- 2 Turbocharger air to charge air cooler
- 3 Charge air cooler
- 4 Intake manifold  
(Integral part of cylinder head)
- 5 Intake valve



### 5) Exhaust system

- 1 Exhaust valve
- 2 Exhaust manifold(pulse type)
- 3 Dual-Entry turbocharger
- 4 Turbocharger exhaust outlet



### 6) Compressed air system

- 1 Air in
- 2 Air out
- 3 Coolant out
- 4 Coolant in
- 5 Lubricating oil in
- 6 Lubricating oil out is internal to the gear housing

