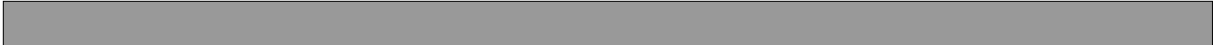


SECTION 2 ENGINE

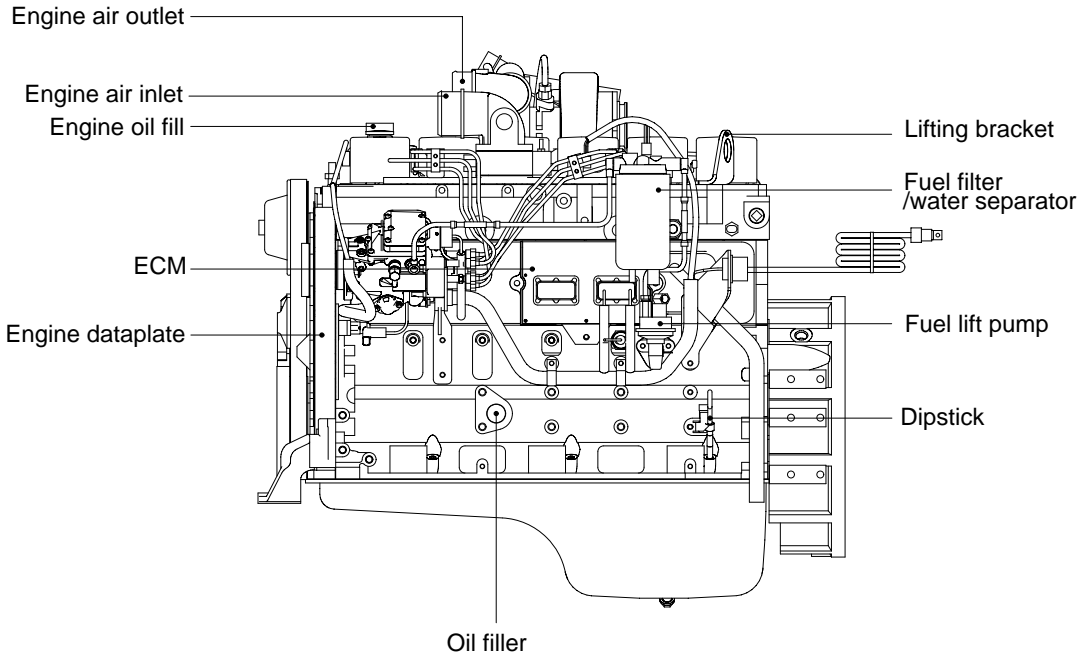
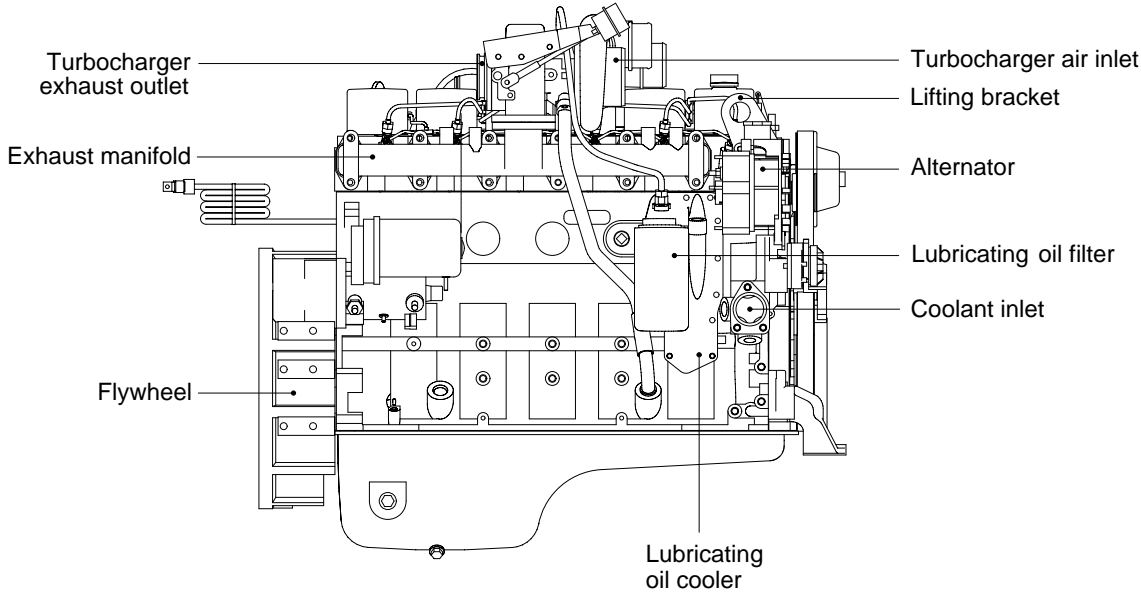


Group 1 Structure and Function ----- 2-1

SECTION 2 ENGINE

GROUP 1 STRUCTURE AND FUNCTION

1. STRUCTURE



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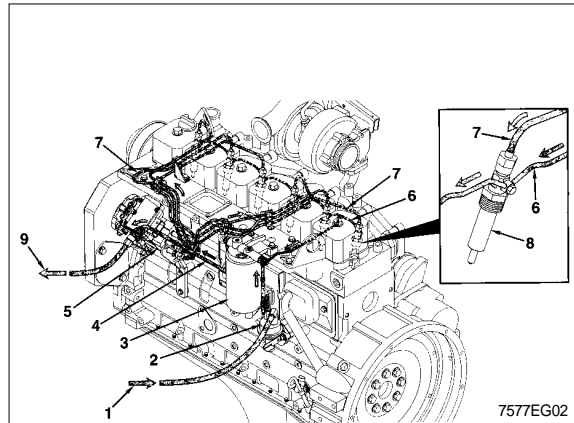
- Direct 4-stroke, 6-cylinders, water-cooling and charge air cooled diesel engine in installed, cylinder block and cylinder head are made of case iron and turbocharger is attached.

2. SYSTEM DIAGRAMS

The following drawings show the flow through the engine systems.

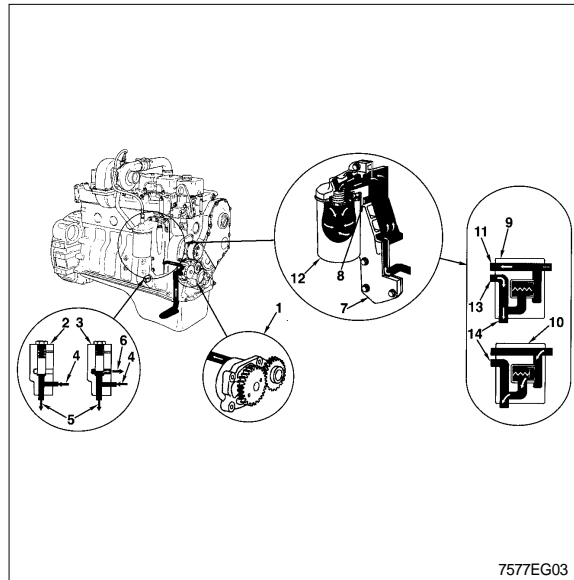
1) Fuel system

- 1 Fuel from supply tank
- 2 Electronic lift pump
- 3 Fuel filter and water separator
- 4 Low pressure supply lines
- 5 Injection pump
- 6 Fuel drain manifold
- 7 High pressure supply lines
- 8 Closed nozzle injectors
- 9 Fuel return to supply tank



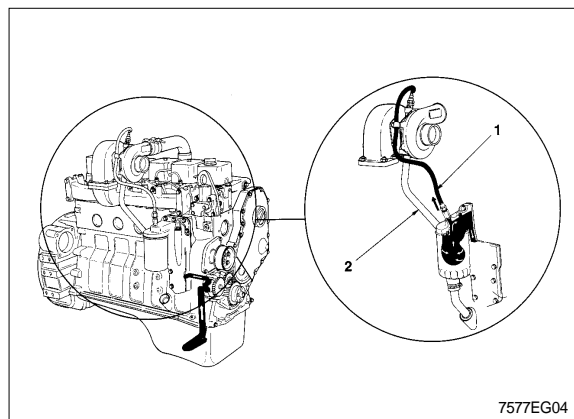
2) Lubricating oil system

- 1 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 Lubricating oil filter
- 13 From lubricating oil filter
- 14 Main lubricating oil rifle



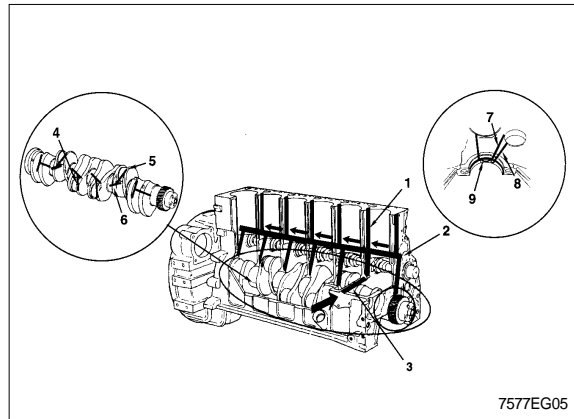
(1) Lubrication for the turbocharger

- 1 Lubricating oil supply
- 2 Lubricating oil drain



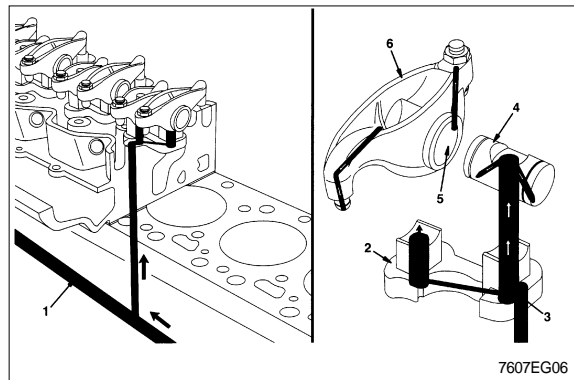
(2) Lubrication for the power components

- 1 To valve train
- 2 Main lubricating oil rifle
- 3 From lubricating oil cooler
- 4 Conneting rod journal
- 5 To connecting rod bearing
- 6 Crankshaft main journal
- 7 From main lubricating oil rifle
- 8 To camshaft
- 9 To piston cooling nozzle.



(3) Lubrication for the overhead

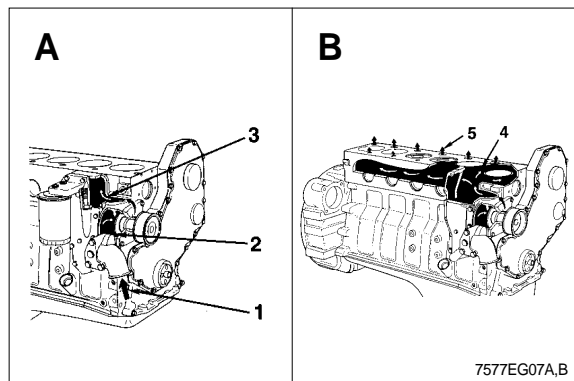
- 1 Main lubricating oil rifle
- 2 Rocker lever support
- 3 Transfer slot
- 4 Rocker lever shaft
- 5 Rocker lever bore
- 6 Rocker lever



3) Cooling system

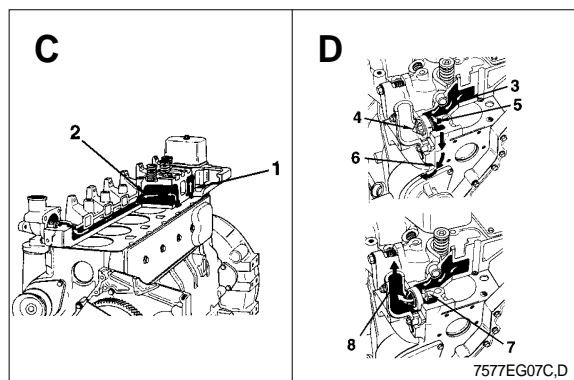
Views A and B

- 1 Coolant inlet
- 2 Pump Impeller
- 3 Coolant flows past lubricating oil cooler
- 4 Coolant flows past cylinders
- 5 Coolant flow to cylinder head



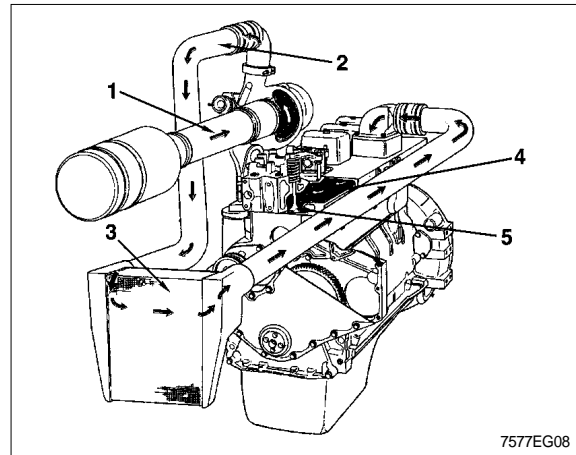
Views C and D

- 1 Coolant flow from the cylinder head
- 2 Coolant flow to thermostat housing
- 3 Coolant flow past injector
- 4 Thermostat
- 5 Coolant bypass passage
- 6 Coolant flow to water pump inlet
- 7 Coolant bypass closed
- 8 Coolant flow back to radiator



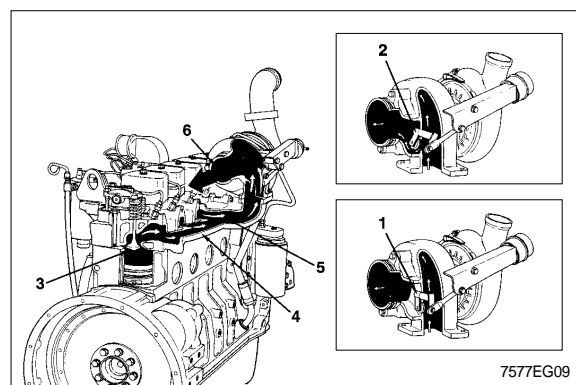
4) Air intake system

- 1 Intake air inlet to turbocharger
- 2 Turbocharger air to charge air cooler
- 3 Charge air cooler
- 4 Intake manifold
- 5 Intake valve



5) Exhaust system

- 1 Wastegate closed
- 2 Wastegate open
- 3 Exhaust valve
- 4 Exhaust manifold
- 5 Turbocharger exhaust inlet
- 6 Turbocharger exhaust outlet



6) Compressed air system

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

