

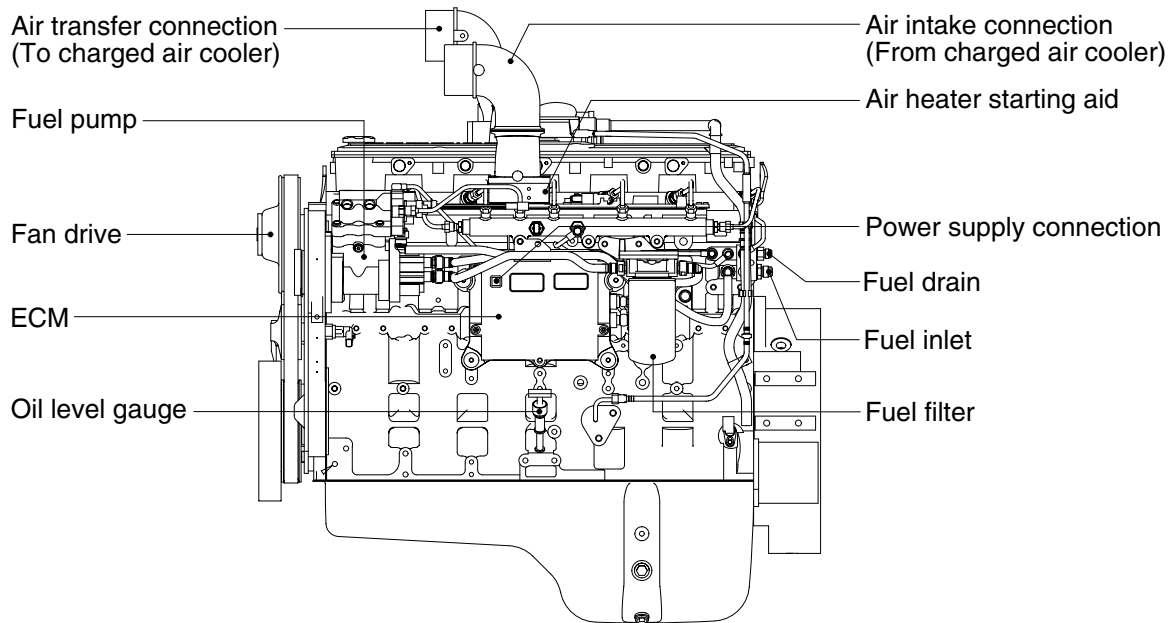
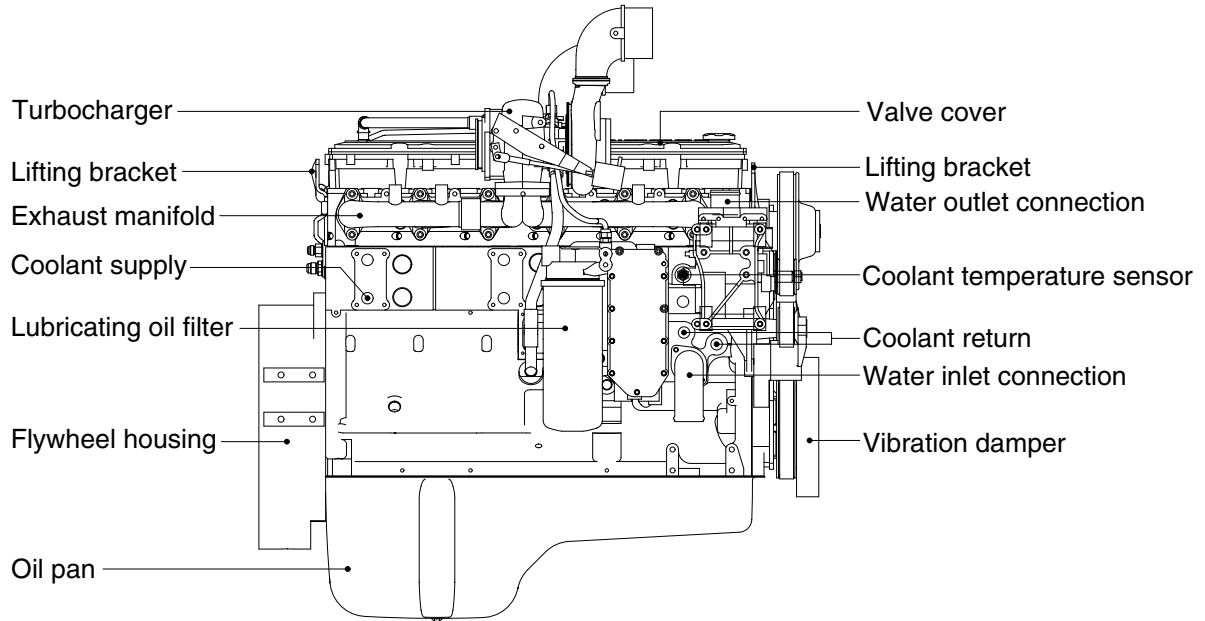
SECTION 2 ENGINE

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SECTION 2 ENGINE

GROUP 1 STRUCTURE AND FUNCTION

1. STRUCTURE



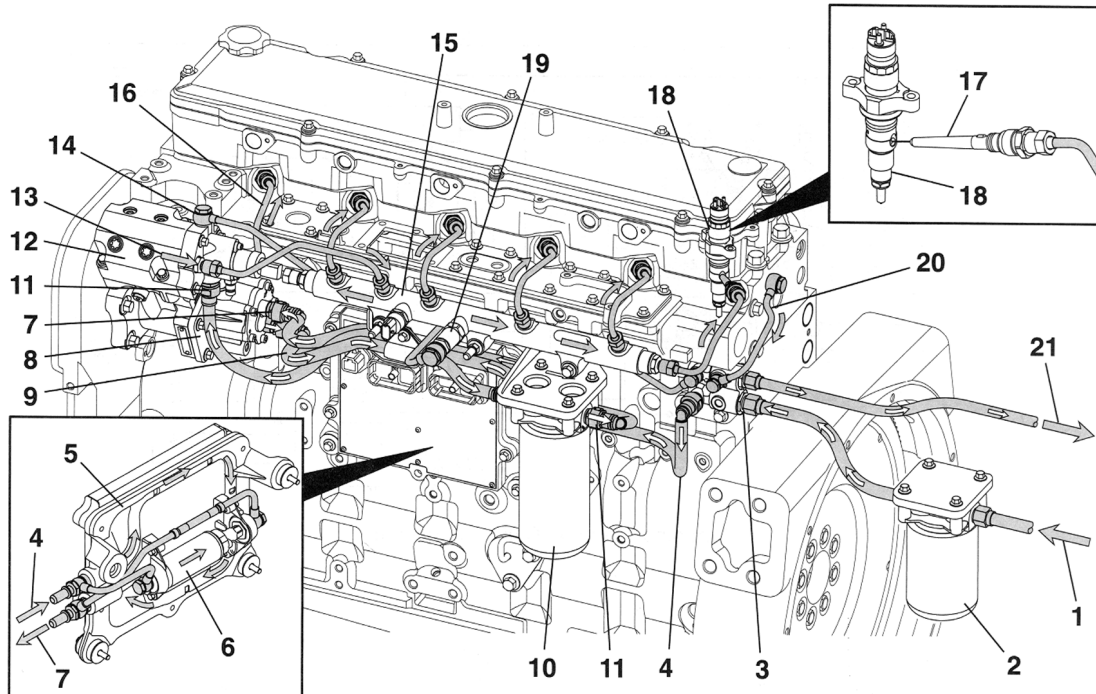
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- Direct 4-stroke, 6-cylinders, water-cooling and charge air cooled diesel engine in installed, cylinder block and cylinder head are made of case iron and turbocharger is attached.

2. SYSTEM DIAGRAMS

The following drawings show the flow through the engine systems.

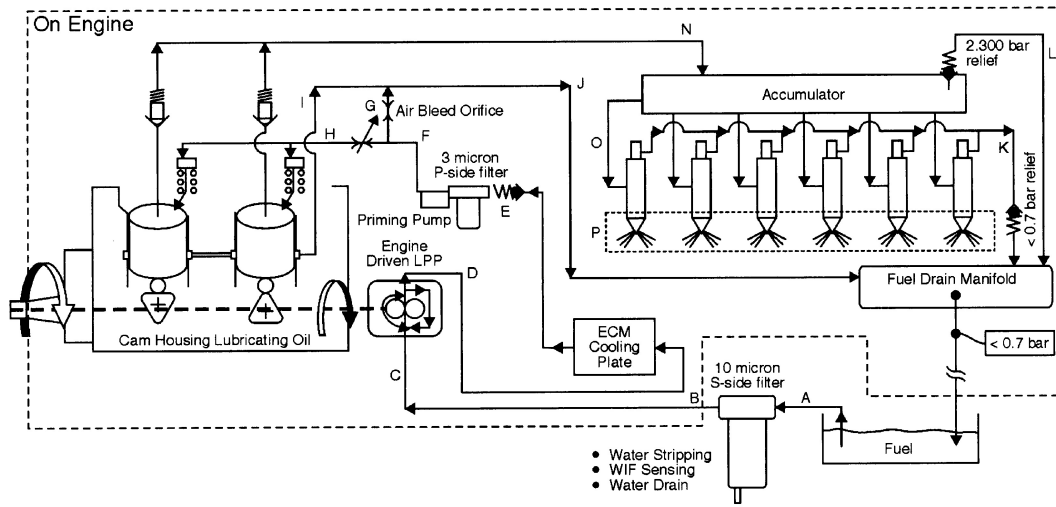
1) FUEL SYSTEM (Common rail fuel system)



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|----|---|----|--|
| 1 | Fuel from fuel tank | 12 | High-pressure fuel pump |
| 2 | Fuel filter and water separator | 13 | Fuel outlet from high-pressure pump |
| 3 | Fuel supply connection | 14 | High-pressure pump drain flow connection |
| 4 | Fuel supply to ECM mounted fuel lift pump | 15 | Fuel rail |
| 5 | ECM cooling plate | 16 | High-pressure injector supply lines |
| 6 | ECM mounted fuel lift pump | 17 | High-pressure fuel connector |
| 7 | Fuel outlet from ECM mounted fuel lift pump | 18 | Fuel injector |
| 8 | Fuel gear pump | 19 | Fuel pressure relief valve |
| 9 | Fuel from gear pump to fuel filter | 20 | Fuel injector drain flow line |
| 10 | Primary fuel filter | 21 | Fuel return to fuel tank |
| 11 | Fuel inlet to fuel pump actuator | | |

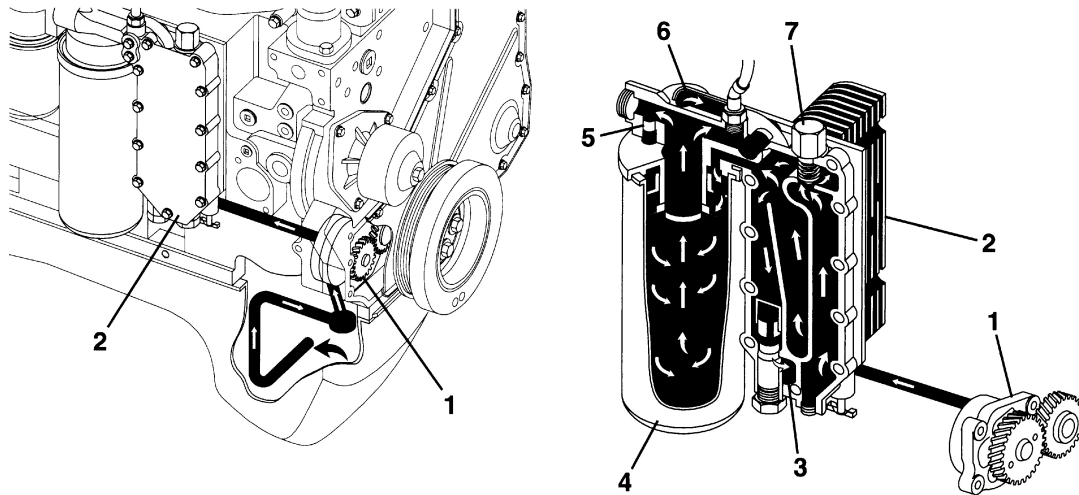
(1) Flow diagram



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2) LUBRICATING OIL SYSTEM

(1) Lubricating oil cooler flow

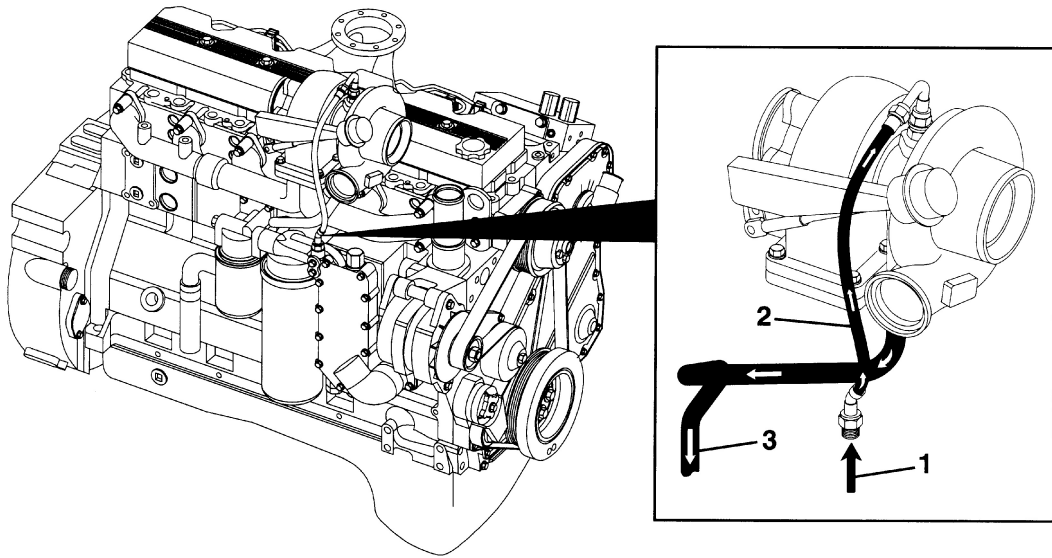


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- 1 Gerotor lubricating oil pump
- 2 Lubricating oil cooler
- 3 To lubricating oil pan

- 4 Full flow lubricating oil filter
- 5 Filter bypass valve
- 6 From lubricating oil filter

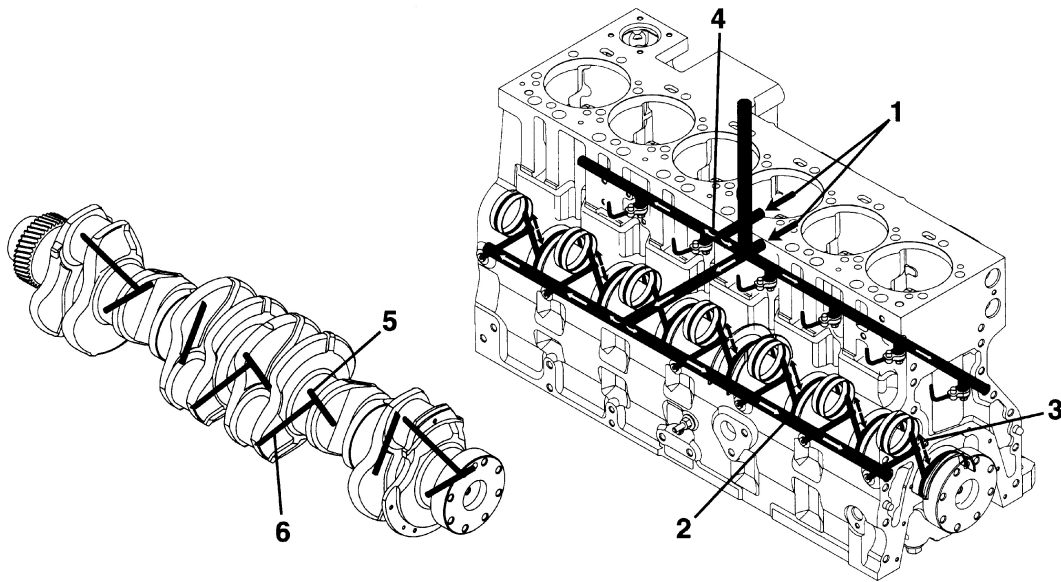
(2) Lubrication for the turbocharger



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|---|-------------------------------------|---|------------------------------------|
| 1 | Lubricating oil supply from filter | 3 | Turbocharger lubricating oil drain |
| 2 | Turbocharger lubricating oil supply | | |

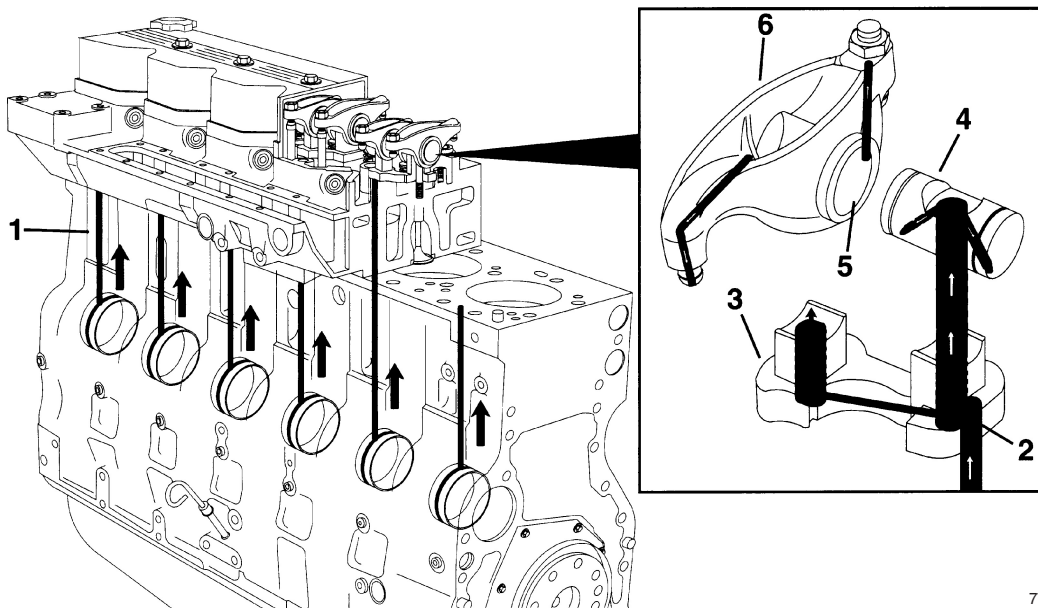
(3) Lubrication for the power components



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

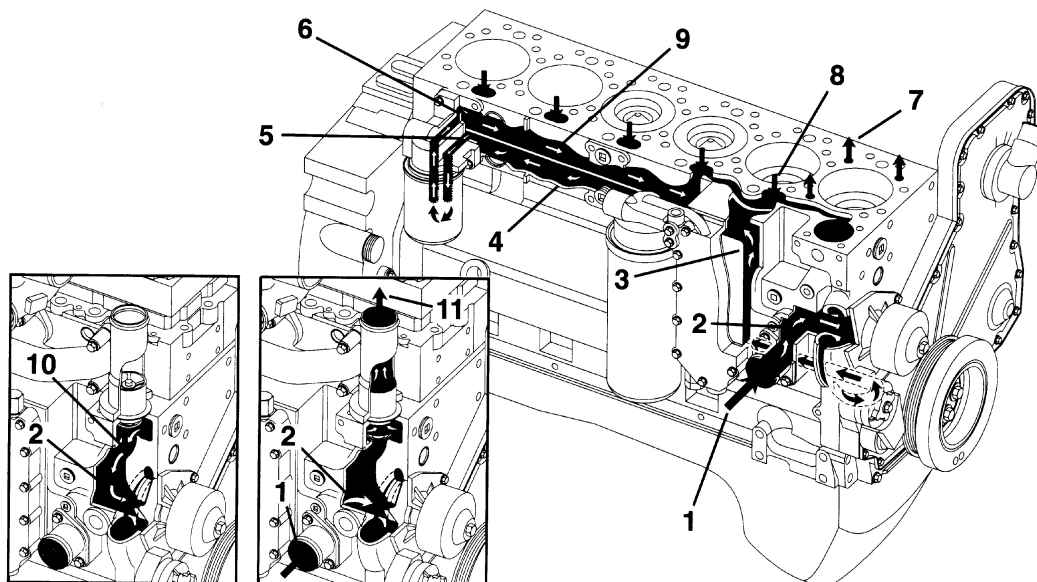
(4) Lubrication for the overhead



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

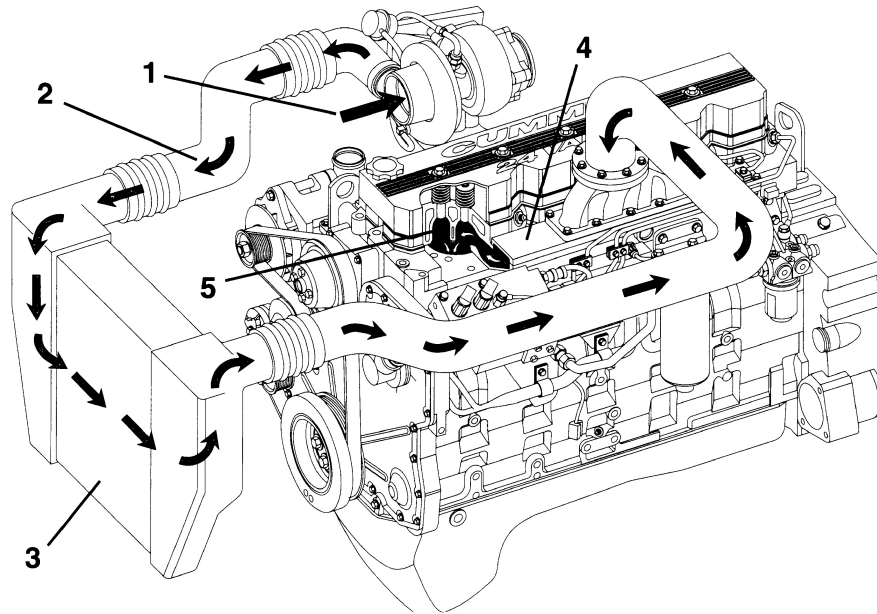
3) COOLING SYSTEM



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

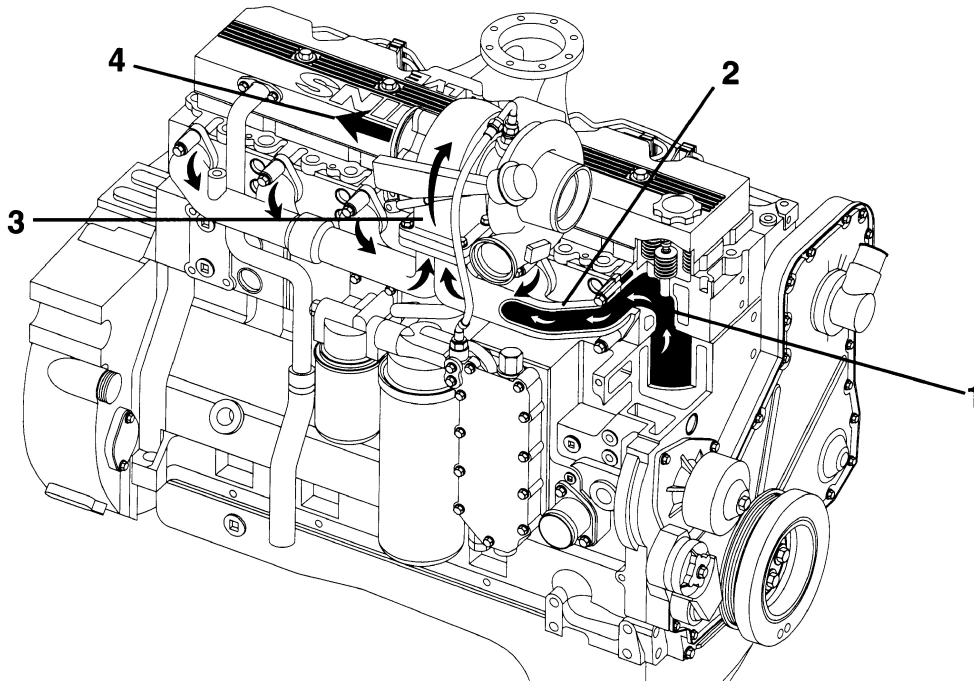
4) AIR INTAKE SYSTEM



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

5) EXHAUST SYSTEM



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