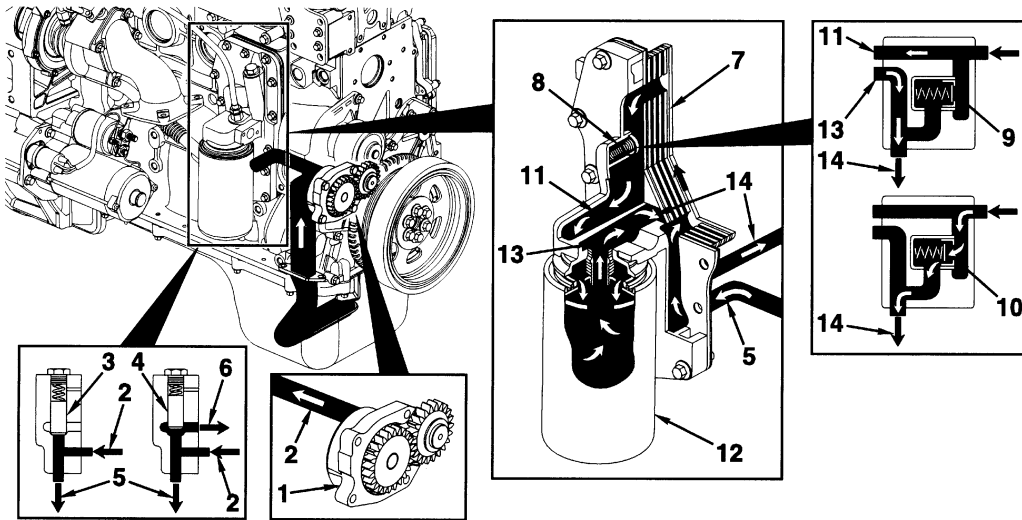


SECTION 2 ENGINE

Group 1 Structure and Function	2-1
Group 2 Engine speed and Stall rpm	2-6

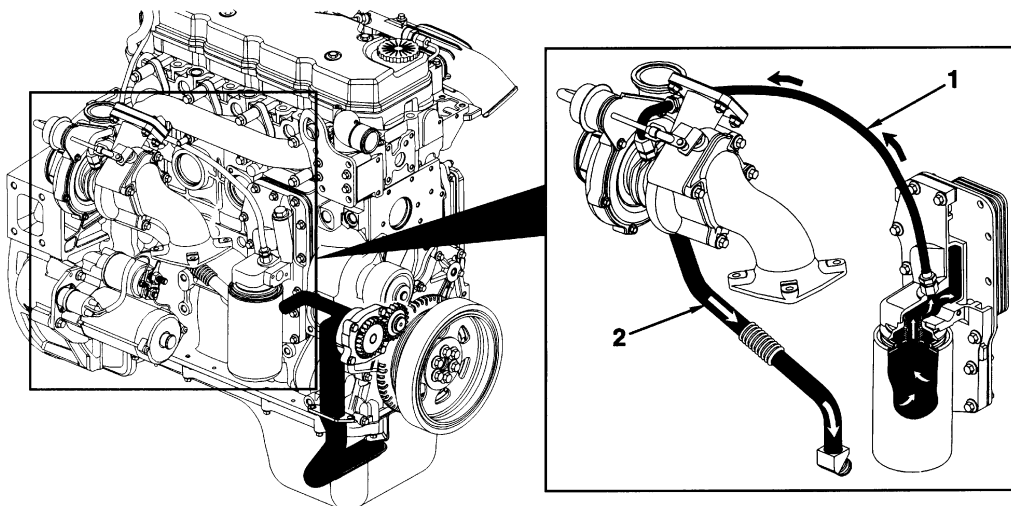
2) LUBRICATING OIL SYSTEM



7607AEG03

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

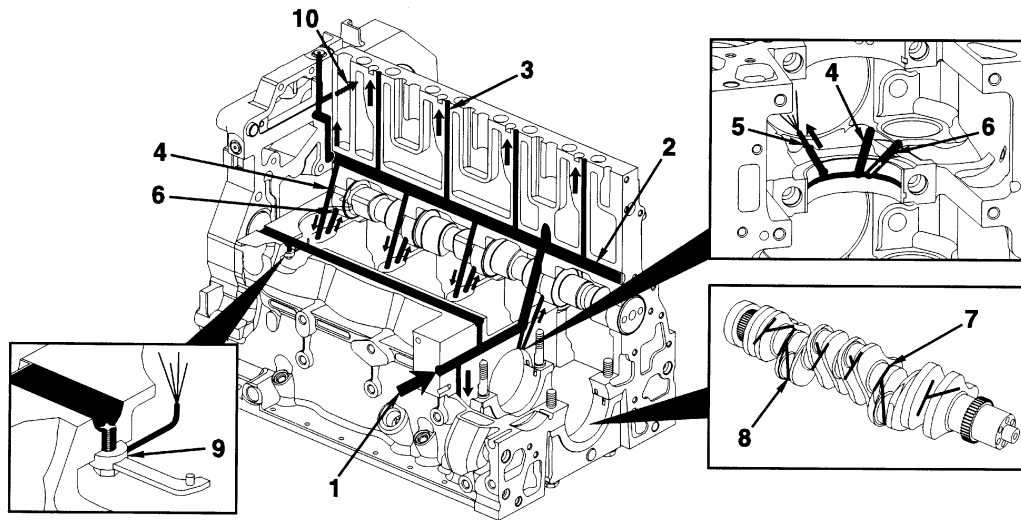
(1) Lubrication for the turbocharger



7607AEG04

- | | |
|---------------------------------------|--------------------------------------|
| 1 Turbocharger lubricating oil supply | 2 Turbocharger lubricating oil drain |
|---------------------------------------|--------------------------------------|

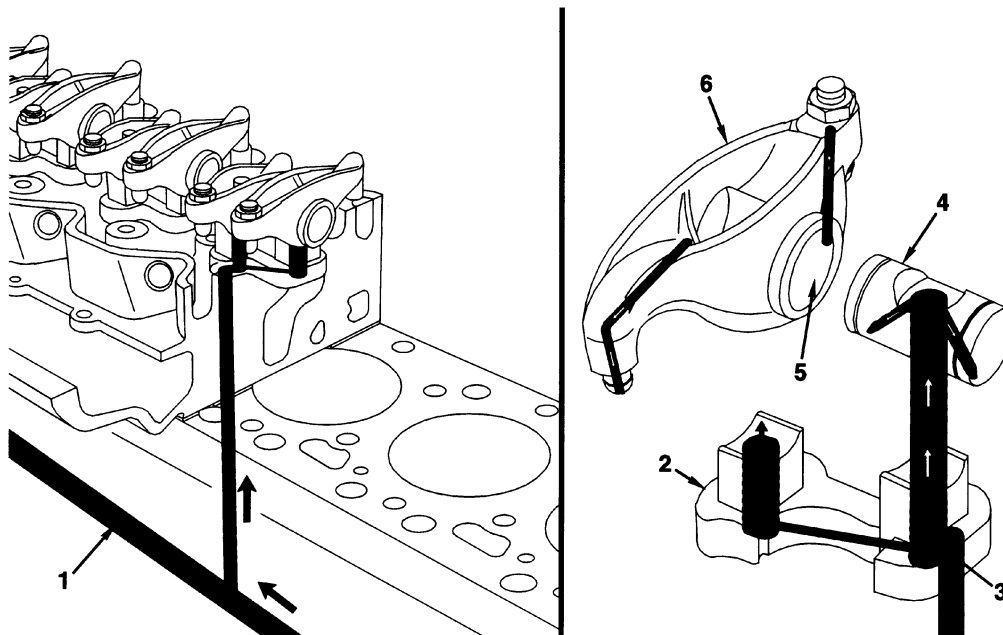
(2) Lubrication for the power components



7607AEG05

- | | | | |
|---|---------------------------------|----|---|
| 1 | From lubricating oil cooler | 6 | To camshaft |
| 2 | Main lubricating oil rifle | 7 | Crankshaft main journal |
| 3 | To valve train | 8 | Oil supply to rod bearings |
| 4 | From main lubricating oil rifle | 9 | Directed piston-cooling nozzle |
| 5 | To piston-cooling nozzle | 10 | To internal lubrication of air compressor |

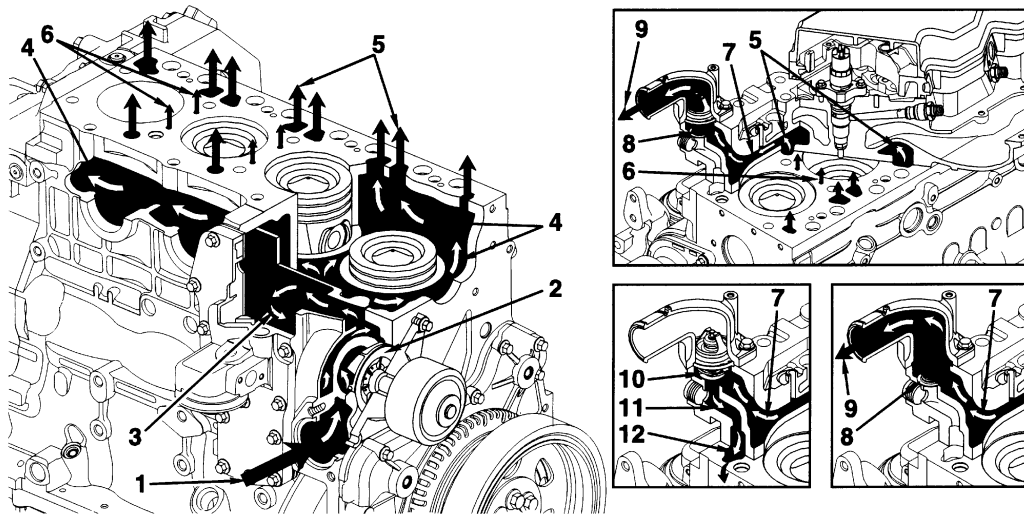
(3) Lubrication for the overhead



7607AEG06

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

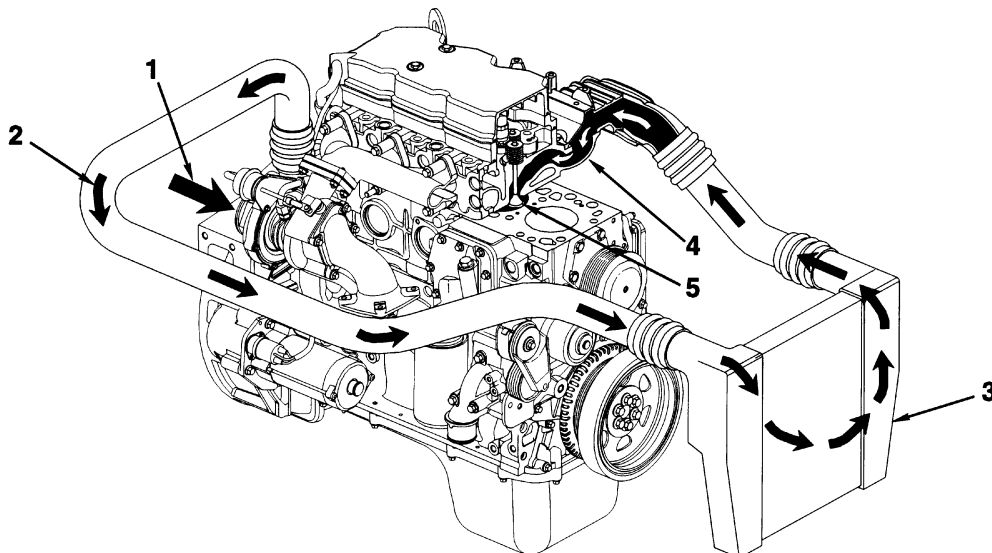
3) COOLING SYSTEM



7607AEG07

- | | | | |
|---|---|----|------------------------------------|
| 1 | Coolant inlet | 7 | Coolant flow to thermostat housing |
| 2 | Pump Impeller | 8 | Coolant bypass passage |
| 3 | Coolant flow past lubricating oil cooler | 9 | Coolant flow back to radiator |
| 4 | Coolant flow past cylinders | 10 | Bypass closed |
| 5 | Coolant flow from cylinder block to cylinder head | 11 | Coolant bypass in cylinder head |
| 6 | Coolant flow between cylinders | 12 | Coolant flow to water pump inlet |

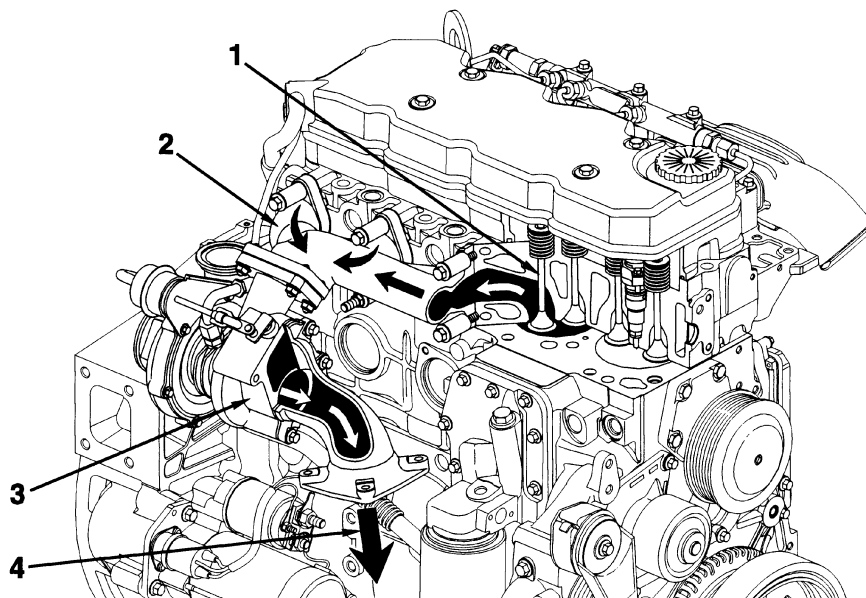
4) AIR INTAKE SYSTEM



7607AEG08

- | | | | |
|---|---------------------------------------|---|---|
| 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



7607AEG09

1 Exhaust valve

2 Exhaust manifold

3 Turbocharger

4 Turbocharger exhaust outlet

GROUP 2 ENGINE SPEED & STALL RPM

1. TEST CONDITION

- 1) Normal temperature of the whole system
 - Coolant : Approx 80°C (176°F)
 - Hydraulic oil : 45 ± 5°C (113 ± 10°F)
 - Transmission oil : 75 ± 5°C (167 ± 10°F)
- 2) Normal operating pressure : See page 6-51.

2. SPECIFICATION

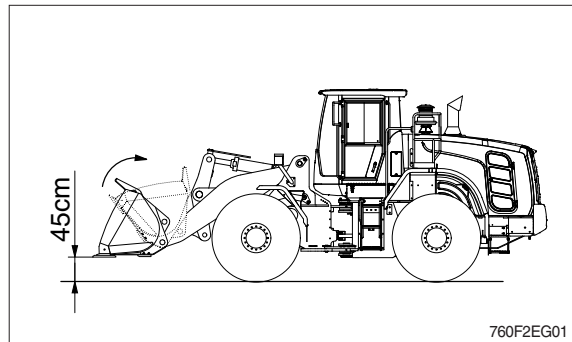
Engine speed, rpm (P mode)						Remark
Low idle	High idle	Pump stall	Converter stall	Full stall	Fan motor	
800±25	2150±50	2150±70	1860±70	1840±100	950±50	

3. ENGINE RPM CHECK

Remark : If the checked data is not normal, it indicates that the related system is not working properly. Therefore, it is required to check the related system pressure : See page 6-49.

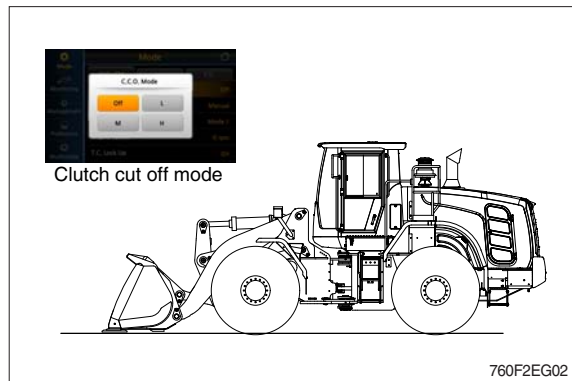
1) Pump stall rpm

- Start the engine and raise the bucket approx 45 cm (1.5 ft) as the figure.
- Press the accelerator pedal fully and operate the bucket control lever to the retract position fully.
- Check the engine rpm at the above condition.



2) Converter stall rpm

- Start the engine and lower the bucket on the ground as the figure.
- Set the clutch cut off mode at the OFF position.
- Press the brake pedal and accelerator pedal fully.
- Shift the transmission lever to the 4th forward position.
- Check the engine rpm at the above condition.



3) Full stall rpm

- Start the engine and raise the bucket approx 45 cm (1.5 ft) as the figure.
- Set the clutch cut off mode at the OFF position.
- Press the brake pedal and accelerator pedal fully .
- Shift the transmission lever to the 4th forward position and operate the bucket lever to the retract position fully.
- Check the engine rpm at the above condition.

