VOLVO
Volvo Trucks North America
Greensboro, NC USA

Service Bulletin Trucks

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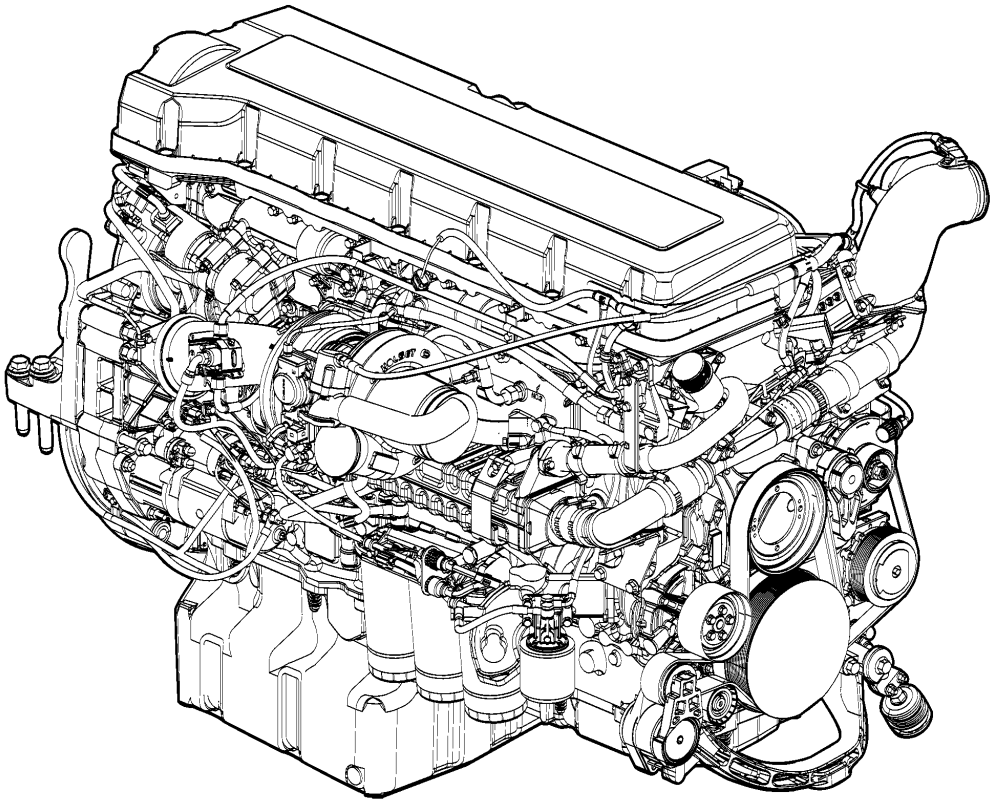
Cooling System
Troubleshooting
D16F

Cooling System Troubleshooting



W2005772

This bulletin provides information regarding cooling system troubleshooting on a vehicle with a Volvo D16F engine.

Contents

Note: Information is subject to change without notice.
Illustrations are used for reference only and can differ slightly from the actual vehicle being serviced. However, key components addressed in this information are represented as accurately as possible.

Troubleshooting

Cooling System Troubleshooting

You must read and understand the precautions and guidelines in Service Information, group 20, "General Safety Practices, Engine" before performing these procedures. If you are not properly trained and certified in these procedures, ask your supervisor for training before you perform the procedures.

Coolant Temperature too High

Abnormally high coolant temperature can be due to:

- Blocked radiator (low airflow)
- Blocked cooling system
- Contaminated coolant
- Low coolant level
- Broken fan belt
- Faulty temperature gauge
- Poor grounding between engine and chassis
- Faulty thermostat
- Faulty temperature-controlled cooling fan
- Leaking cylinder head gasket, lower liner seals
- Leaking coolant hoses
- Faulty coolant pump
- Faulty fan
- EGR Cooler
- EGR Valve

Air Flow-Through, Checking

Should higher than normal coolant temperatures be observed, the passage of air through the charge air cooler, A/C condenser and radiator must always be checked and cleaned if necessary. Any obstruction must be removed. In cases of more serious blockage, the radiator/charge air cooler and A/C condenser must be removed entirely and thoroughly cleaned, especially if the pollutant is oil based.

If the fins of the radiator have been bent by flying stones etc., straighten them with a fin comb.

Check that the rubber seals between the fan shroud and the radiator, and in some cases between the radiator and the front shroud, have not loosened or for any other reason are not providing a good seal.

Coolant Temperature too Low

- Faulty thermostat
- Faulty temperature gauge

Note: Check thermostat function. If you suspect a faulty thermostat, drain sufficient coolant so that the thermostat can be removed. Perform a thermostat function check.

Loss of Coolant

External Leaks

- Leaks at hoses or connections
- Leaks at radiator and/or expansion tank
- Leaks at cab heater
- Leaks at coolant pump
- Leaks at cylinder head gasket

Internal Leaks

- Leak at injector copper sleeve
- Damaged or deteriorated liner seals
- Liners pitted or cracked
- Leaks at cylinder head gasket
- Crack(s) in cylinder head
- Crack(s) in cylinder block

Coolant Leaks Through Overflow

- Faulty pressure cap/relief valve
- Engine running too hot
- Expansion tank installed incorrectly
- Leaks at cylinder head gasket
- Cylinder block cracked
- Liners pitted or cracked
- Coolant losses, warm engine switched off

Note: Coolant losses after having switched off a warm engine are generally due to heavy load operation and subsequent stopping without allowing the engine first to run at idling speed to cool down. Also, check for a faulty pressure cap valve.

Temperature Gauge, Checking

1 Connect VCADS Pro to the vehicle's diagnostic connector.

2 Select Sensor Values, Monitoring for function group 2.

3 Compare the value in VCADS Pro with the coolant temperature gauge in the instrument cluster.

4 If the gauge doesn't work, select Instrument Cluster, Test in VCADS Pro.

5 Perform a gauge sweep test. (This can also be performed using the stalk lever.)

Contaminated Coolant

If the coolant is contaminated it could mean that there is an internal leak (oil) or that the cooling system is clogged (deposits). Check for leaks.

A clogged system is usually the result when coolant is not replaced according to the specific change intervals or using the wrong mixture of coolant and water, or that dirty water has been used. For proper change intervals, refer to Service Information, group 17.