

Engine Cooling - 2.4L Duratorq-TDCi HPCR (103kW/140PS) - Puma - Engine Cooling

Diagnosis and Testing

Overview

For information on the operation of the systems:

REFER to: [Engine Cooling](#) (303-03 Engine Cooling - 2.4L Duratorq-TDCi HPCR (103kW/140PS) - Puma, Description and Operation).

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect for obvious mechanical or electrical faults.

Visual Inspection Chart

Mechanical	Electrical
<ul style="list-style-type: none">• Coolant leaks• Coolant hoses• Coolant expansion tank• Radiator• Heater core• Accessory drive belt• Viscous fan	<ul style="list-style-type: none">• Fuses<ul style="list-style-type: none">- Fuse 29, passenger compartment• Harnesses• Loose or corroded connector(s)• Cylinder head temperature (CHT) sensor• Engine oil temperature (EOT) sensor

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. Use the approved diagnostic system or a scan tool to retrieve any diagnostic trouble codes (DTCs) before moving onto the symptom chart or DTC index.
 - Make sure that all DTCs are cleared following rectification.

Symptom Chart

Symptom	Possible cause	Action
Coolant loss	<ul style="list-style-type: none">• Hoses• Hose connections• Radiator• Water pump• Heater core• Gaskets• Engine casting cracks• Engine block core plugs	Carry out a visual inspection. If there are no obvious leaks, carry out a pressure test using your workshop tester. Rectify as necessary.
Overheating	<ul style="list-style-type: none">• Low/contaminated coolant• Thermostat• Viscous fan• Cylinder head temperature (CHT) sensor• Restricted air flow over the radiator	Check the coolant level and condition. Carry out a pressure test using your workshop tester. Rectify as necessary. Check the thermostat and rectify as necessary. Check the viscous fan operation, make sure the viscous fan rotates freely. Check for obstructions to the air flow over the radiator. Rectify as necessary.
Engine not reaching normal temperature	<ul style="list-style-type: none">• Thermostat• Viscous fan• Electric fan	Check the thermostat operation. Check the viscous fan operation, make sure the viscous fan is not seized. Rectify as necessary.

DTC Index

- NOTE: If a control module or component is suspect and the vehicle remains under manufacturer warranty, refer to the Warranty Policy and Procedures manual (section B1.2), or determine if any prior approval program is in operation, before the replacement of a component.
- NOTE: Generic scan tools may not read the codes listed, or may read only 5-digit codes. Match the 5 digits from the scan tool to the first 5 digits of the 7-digit code listed to identify the fault (the last 2 digits give extra information read by the manufacturer-approved diagnostic system).
- NOTE: When performing voltage or resistance tests, always use a digital multimeter (DMM) accurate to three decimal