



Type

JE0 S

JE0 K

# ESPACE

*fitted with G9T 710 engine*

**Cancels and replaces Technical Note no. 4130A from OCTOBER 2001.**

**Modifications:** changes to the technical solutions.

## 10A SUMMARY OF G9T 710 ENGINE FAULTS

Other sub-section concerned:

08A

09A

**Engine and peripherals**

- Engine: **G9T 710**
- Gearbox: **XXX**

Basic manual:

Workshop Repair Manual: **Mot. G9T**

Procedural Technical Note: **3090A, 3426A, 3444A, 3449A,  
3502A, 3540A, 3653A, 3708A,  
3731A, 3745A, 3747A**

Fault Technical Note: **4068A, 4175A, 4198A, 4200A,  
4292A, 4293A, 4313A**

THIS GREEN SUMMARY TECHNICAL NOTE IS ONLY A SUPPLEMENT TO THE DOCUMENTS YOU ALREADY HAVE.

For any operation, it is **ESSENTIAL** to use:

- The engine Workshop Repair Manual, the specific mechanical Procedural Technical Notes.
- The fault finding Technical Note corresponds to the injection computer fault finding version to correctly interpret the default codes.

**Note:** The injection computer fault finding version can be read in the computer history menu using the diagnostic tool.

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PRECAUTIONS TO TAKE WHEN CARRYING OUT WORK ON A G9T ENGINE			
AFTER-SALES	RESULT	CAUSE	PRECAUTIONS TO TAKE
Top up the engine oil	Engine overcharge requiring: replacement of: – the engine (if the pistons have melted), – the turbocharger, – the pre-catalytic converter, – the air intercooler. Cleaning the air pipes.	Non-observance of engine oil level.	Do not exceed the maximum oil level shown on the engine oil dipstick.  <b>NOTE:</b> dCi engines are very sensitive to excess engine oil.
Replacing the fuel filter	1. Engine stalling and red injection warning light coming on. 2. Lack of lubrication leading to damage to the high-pressure pump and injectors. 3. High-pressure pump and injectors seizing.	1. Air present in the high-pressure fuel circuit. 2. Ingress of water into the high-pressure fuel injection system. 3. Contamination present in the high-pressure fuel circuit.	1. Fill the fuel filter cistern before starting the engine to prevent the high-pressure system operating with air. 2. It is essential to empty the fuel filter cistern. 3. Remove all contamination from the fuel filter cistern.
Removing and refitting the high-pressure fuel pipes	Fuel leaks.	1. Injector rod filter nut does not stay in place. 2. High-pressure pipes incorrectly positioned. 3. Non-observance of high-pressure pipe tightening torque.	1. It is essential to hold the injector holder rod filter nut in place with a wrench when untightening the high-pressure pipe union. 2. Screw the high-pressure fuel pipe mounting nuts in place, checking that the pipe is correctly positioned.  <b>IMPORTANT:</b> if a pipe is not correctly positioned, untighten the nuts, reposition the pipe and screw the nuts back in. 3. Tighten the high-pressure pipes to a torque of: <b>2.5 daNm</b> on the injectors <b>2.7 daNm</b> on the high-pressure rail.

# ENGINE & PERIPHERALS

## Precautions

# 10A

AFTER-SALES	RESULT	CAUSE	PRECAUTIONS TO TAKE
Refitting the gear train	<p>1. Gears worn and presence of filings in the engine oil circuit requiring replacement of:</p> <ul style="list-style-type: none"> <li>– the engine,</li> <li>– the turbocharger,</li> <li>– the turbocharger oil supply and return pipes,</li> <li>– the oil filter.</li> </ul> <p>2. Impossible to start the engine without the warning light coming on.</p>	<p>1. Gears fitted with automatic play compensation without using special tooling.</p> <p>2. High-pressure pump gear shifted by <b>180°</b> in relation to the position of the crankshaft.</p>	<p>It is essential to use the special tooling and follow the procedure described in <b>Mot. G</b>.</p>
Removing and refitting the accessories belt	<p>Filtering pulley damaged after a few hundred miles, causing loss of power and causing the battery charge warning light to come on.</p>	<p>Starting the engine without accessories belt.</p>	<p>Do not run engines fitted with filtering pulleys without an accessories belt. Engine acyclisms cause damage to the filtering section of the pulley.</p> <p><b>NOTE:</b> use a non-filtering pulley <b>Part No.: 82 00 207 437</b> to run the engine without the accessories belt (e.g.: for noise test).</p>
Removing and refitting the injector	<p>Seizing of injectors leading to:</p> <ul style="list-style-type: none"> <li>– rough idle speed,</li> <li>– engine running on 3 cylinders,</li> <li>– engine stalling,</li> <li>– pistons melting with engine stalling (engine damage).</li> </ul> <p>Damage to the cylinder head injector mounting threads.</p>	<p>Re-using the original injector mounting bolts.</p>	<p>It is essential to replace the original injector mounting bolts with a stud kit with spacer <b>Part No.: 77 01 473 487</b>.</p> <p>The tightening torque and procedure described in the Workshop Repair Manuals only apply to the studs.</p> <p>Reminder of procedure:</p> <ul style="list-style-type: none"> <li>– Oil the threads of two new studs and fit them.</li> <li>– Tighten the studs by hand down to the bottom of the thread.</li> <li>– Fit the injector with its flange and locking strap ring.</li> <li>– Oil the nut threads.</li> <li>– First tighten the nut located on the timing side to a torque of <b>0.6 daNm</b>.</li> <li>– Tighten the nut on the engine flywheel side to a torque of <b>0.6 daNm</b>.</li> <li>– Retighten the nut on the engine flywheel side only to <b>360° ± 30°</b>.</li> </ul>

LACK OF POWER WITH WARNING LIGHT COMING ON			
CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
<p>Reduction in engine output. Injection warning light comes on.</p>	<p>The diagnostic tool indicates the following fault code: – <b>DF019 04.DEF</b></p> <p>Check that the wiring harness connector is properly clipped to the flowmeter connector. Check that the air ducts between the air filter unit and the inlet manifold are in the correct position.</p> <p>Carry out PR050 following Technical Note <b>3502A</b>.</p>	<p>Clogging of the air flowmeter.</p>	<p>Replace the air flowmeter.</p> <p><b>NOTE:</b> process modified starting from vehicle fabrication number: <b>JE0K T021674</b> <b>JE0K K001743</b> <b>JE0S T006998</b> <b>JE0S K003294</b></p>
<p>Significant loss of engine power. Injection warning light comes on intermittently.</p>	<p>Diagnostic tool displays the following fault code(s): – <b>DF019 02.DEF</b> – <b>DF019 04.DEF</b> – <b>DF077 01.DEF</b> – <b>DF078 01.DEF</b> or <b>DF205 01.DEF</b> – <b>DF078 02.DEF</b> or <b>DF205 02.DEF</b></p> <p>Ensure that there are no air leaks from the air flowmeter.</p>	<p>Clogging of the EGR valve with carbon particles locking the valve in the open position.</p>	<p>Apply Technical Note <b>4198A</b> Apply the fault finding procedure corresponding to the computer version: VDIAG No.: 08 <b>3747A</b> VDIAG No.: 0C <b>3748A</b> VDIAG No.: 14 <b>3745A</b></p>
<p>Significant lack of engine power, the vehicle will not go faster than 50 mph (80 km/h). Injection warning light comes on.</p>	<p>The diagnostic tool indicates the following fault code: – <b>DF078 01.DEF</b> or <b>DF205 01.DEF</b></p> <p>Ensure that the inlet air duct flexible sleeve is removed.</p>	<p>Removal of the air inlet duct flexible sleeve from the turbocharger. <b>Note:</b> the computer switches to fail-safe mode.</p>	<p>Refit the air duct. <b>IMPORTANT:</b> it is <b>ESSENTIAL</b> to clean the air duct to prevent this recurring.</p> <p><b>NOTE:</b> process modified starting from vehicle fabrication number: <b>JE0K K003275</b> <b>JE0K T035022</b> <b>JE0S K006429</b> <b>JE0S T012247</b></p>

LACK OF POWER WITH WARNING LIGHT COMING ON			
CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
Lack of engine performance at low speeds. Injection warning light comes on intermittently.	<p><b>The fault occurs before 6 000 miles (10 000 km).</b>                      The diagnostic tool indicates the following fault code:                      – <b>DF078 01.DEF or DF205 01.DEF</b></p> <p>Ensure that the vacuum pipe is disconnected from the capsule.                      Ensure the capsule is unwelded from its mounting.</p>	Turbocharger control vacuum capsule has come unwelded. One of the three welding points does not hold.	Replace the turbocharger.  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 033000</b>
Significant loss of engine power. Injection warning light comes on.	<p><b>The fault occurs before 18 500 miles (30 000 km).</b>                      The diagnostic tool indicates the following fault code:                      – <b>DF078 01.DEF or DF205 01.DEF</b></p> <p>Check if the turbocharger turbine is seized.</p>	Turbocharger turbine seized.	Replace: – the turbocharger. – the oil filter, – the engine oil, – the air intercooler. Clean the air pipes to prevent engine overcharge.  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 039990</b>
Reduction in engine output. Injection warning light comes on.	<p><b>The fault occurs within the first few miles.</b>                      The diagnostic tool indicates the following fault code:                      – <b>DF078 02.DEF or DF205 02.DEF</b></p> <p>Ensure that the turbocharger control vacuum pipe is disconnected.</p>	Turbocharger control vacuum pipe disconnected, turbocharger side.	Reconnect the turbocharger control vacuum pipe.  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 008500</b>
Lack of engine power under full acceleration. Injection warning light comes on.	<p>The diagnostic tool indicates the following fault code:                      – <b>DF078 02.DEF or DF205 02.DEF</b></p> <p>Ensure that the outlet supplying the turbocharger is partially or completely blocked.</p>	4-track connector between vacuum pump and brake servo blocked internally by a plastic piece. <b>Note:</b> this 4-track connector supplies at a vacuum the turbocharger capsule control and the cut-off unit control diaphragm.	Replace the 4-track connector with <b>Part No.: 82 00 174 859</b>  <b>NOTE:</b> modification to the 4-track connector from the following fabrication number: <b>C 057897</b>

# ENGINE & PERIPHERALS

## Lack of power with noise

# 10A

### LACK OF POWER WITH NOISE

CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
Reduction in engine output. Sound of air escaping.	Engine runs on two or three cylinders. One or more injectors are not being supported (broken bracket). Loss of compression from the injector well.	One or more injector brackets broken.	<ul style="list-style-type: none"> <li>– Check the condition of the cylinder head at the injector and repair, depending on the result of the test.</li> <li>– Replace the injector bracket.</li> <li>– Replace both original mounting bolts with the special after-sales studs (following the procedure given on page 04).</li> </ul> <p><b>NOTE:</b> process modified starting from engine fabrication number: <b>C 057624</b></p>
Reduction in engine output. Engine noise.	Constant cyclic noise at a steady speed.	Oil leak from the rocker hydraulic piston: the valve does not open completely, the play compensation is ineffective.	<p>Check the condition of the rocker and replace, depending on the results of the check.</p> <p><b>NOTE:</b> process modified starting from engine fabrication number: <b>C 050000</b></p>
	At a steady speed, the noise is random and varies in duration. The tone changes according to the position of the rocker. Check whether the valve stem is worn.	Movement of the rocker causes wear of the valve stem and hydraulic piston.	<p>Repair the engine.</p> <p><b>NOTE:</b> process modified starting from engine fabrication number: <b>C 050000</b></p>

ENGINE JERKING			
CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
<p>Engine jerking. Injection warning light comes on.</p>	<p>Diagnostic tool displays the following fault code(s):</p> <ul style="list-style-type: none"> <li>– <b>DF099 01.DEF</b></li> <li>– <b>DF100 01.DEF</b></li> <li>– <b>DF101 01.DEF</b></li> <li>– <b>DF102 01.DEF</b></li> </ul> <p>Check whether the engine wiring harness is coming into contact with air conditioning high-pressure pipe and/or the engine accessories mounting.</p>	<p>Engine wiring harness coming into contact with the air conditioning high-pressure pipe and/or the engine accessories mounting.</p>	<p>Engine wiring harness with annealed sleeve, injector side: apply Technical Note <b>4292A</b>.</p> <p>Engine wiring harness taped, injector side: Apply Technical Note <b>4293A</b>.</p> <p><b>NOTE:</b> process modified starting from vehicle fabrication number: <b>JE0K K004528</b> <b>JE0K T044068</b> <b>JE0S K008348</b> <b>JE0S T018238</b></p>
<p>Engine jerking at steady speed. Intermittent lack of power.</p>	<p>Check that the wiring harness is in contact with the heater exhaust mounting bracket.</p>	<p>Wiring harness is coming into contact with the heater exhaust mounting.</p>	<p>Repair the engine wiring harness. Close the annular sleeve with plastic collars. Fit the annealed sleeve to the heater exhaust mounting bracket.</p> <p><b>NOTE:</b> process modified starting from vehicle fabrication number: <b>JE0K K000968</b> <b>JE0K T012541</b> <b>JE0S K001646</b> <b>JE0S T003924</b></p>



# ENGINE & PERIPHERALS

## Starting is impossible and/or engine stalling

# 10A

STARTING IS IMPOSSIBLE AND/OR ENGINE STALLING			
CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
Engine jerking. Engine stalling. Impossible to start. Injection warning light comes on.	Diagnostic tool displays the following faults: – <b>DF070 02.DEF</b> – <b>DF070 03.DEF</b> Apply fault finding Technical Note <b>4313A</b> .	Sensitivity of TDC sensor.  TDC sensor is away from its target.  TDC sensor connections worn by vibration.	Apply Technical Note <b>4313A</b> .  <b>NOTE:</b> TDC sensor, mounting clip and connections modified.
Impossible or difficult to start the engine. Engine stalling. Injection warning light comes on.	Diagnostic tool displays the following fault code(s): – <b>DF070 03.DEF</b> – <b>DF070 04.DEF</b>  Check there is oil in the camshaft sensor connector. After removal, check that the camshaft sensor has an aluminium section.	Camshaft sensor not sealed against engine oil.	Replace the camshaft sensor. Clean the engine wiring harness connector.  <b>NOTE:</b> modified camshaft sensor from fabrication number: <b>C 070536</b>
Impossible to start the engine and engine runs too quickly when activated by the starter.	Engine runs very quickly when activated by starter. Ensure that the inlet air cut-off flap is locked in the closed position.	Inlet air cut-off flap is locked in the closed position.	Apply Technical Note <b>4175A</b> .  <b>NOTE:</b> removal of the inlet air cut-off flap from the following fabrication number: <b>C 042123</b>
Impossible to start. Engine stalls.	Check the pressure in the high-pressure rail. When the starter is running the pressure in the high-pressure rail is below <b>250 bar</b> .	Dirt in the fuel pressure regulator valve.	Replace the fuel pressure regulator: – the fuel pressure regulator with filter, – the special seal <b>Part No.: 77 01 053 558</b> if it is not supplied with the fuel pressure regulator.  <b>NOTE:</b> modification of the fuel pressure regulator from the following engine fabrication number: <b>C 039998</b>

# ENGINE & PERIPHERALS

## Starting is impossible and/or engine stalling

# 10A

STARTING IS IMPOSSIBLE AND/OR ENGINE STALLING			
CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
<p>Impossible to start. Engine stalling. Oil leak from the power assisted steering pump after swerving sharply. Fuel leak and odour with engine stopping.</p>	<p>Accessories belt frayed, causing:</p> <ul style="list-style-type: none"> <li>– Shut-off of the fuel supply pipe.</li> <li>– Damage to the power assisted steering pump seal.</li> <li>– Oil leak from the power assisted steering system.</li> </ul>	<p>Accessories belt frayed.</p>	<p>Depending on the condition, replace:</p> <ul style="list-style-type: none"> <li>– the fuel supply pipe,</li> <li>– the power-assisted steering pump,</li> <li>– the accessories belt.</li> </ul> <p>For AC/PAS versions, replace the crankshaft filtering pulley. Check the condition of the rubber mountings underneath the vehicle.</p> <p><b>NOTE:</b> process modified starting from engine fabrication number: <b>C 032187</b></p>
<p>Engine clanking and running on three cylinders, then stalling. Impossible to start the engine. Injection warning light comes on.</p>	<p>Diagnostic tool displays the following fault code(s):</p> <ul style="list-style-type: none"> <li>– <b>DF072 02.DEF</b></li> <li>– <b>DF072 03.DEF</b></li> <li>– <b>DF072 05.DEF</b></li> <li>– <b>DF072 06.DEF</b></li> </ul> <p>Disconnect each injector one by one to identify the cylinder at fault.</p>	<p>The injector remains locked open. Contaminated or seized injector.</p>	<p>Ensure that there is no water in the fuel filter housing. Check the condition of the preheating plugs. If the preheating plugs are damaged measure the compression and repair the engine. Replace the injector concerned and the original mounting bolts with an injector mounting kit.</p> <p><b>NOTE:</b> process modified starting from engine fabrication number: <b>C 062000</b></p>
<p>Engine stalling followed by the red severe injection warning light coming on and "STOP" displayed.</p> <p>Impossible or difficult to start the engine without the warning light coming on.</p>	<p>The diagnostic tool displays one of the following fault codes:</p> <ul style="list-style-type: none"> <li>– <b>DF072 05.DEF</b></li> <li>– <b>DF072 06.DEF</b></li> </ul> <p>Check the injector return flow following fault finding Technical Note <b>3743A</b> corresponding to the injection computer. Check that there is no air leak in the fuel supply circuit.</p>	<p>Fuel return flow on one injector excessive.</p>	<p>Replace the injector with the excessive fuel return flow.</p>
<p>Impossible to start the engine. Engine runs slowly when the starter is activated and smoke is emitted from underneath the bonnet.</p>	<p>Check:</p> <ul style="list-style-type: none"> <li>– the condition of the power fuse,</li> <li>– the condition of the earth between the engine and the chassis,</li> <li>– the starter supplies,</li> <li>– the operation of the starter motor.</li> </ul>	<ol style="list-style-type: none"> <li>1. Power fuse melted.</li> <li>2. Engine earth not correct (paint present).</li> <li>3. Centrifugal starter.</li> <li>4. Short circuit inside starter.</li> </ol>	<p>Depending on the result of the check:</p> <ul style="list-style-type: none"> <li>– Replace the power fuse or engine wiring harness.</li> <li>– Repair the engine earth.</li> <li>– Replace the starter.</li> </ul>

ENGINE NOISE			
CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
"Metallic clanking" noise when the ignition is switched off.	Ensure the flap is functioning correctly when the ignition is switched off following Technical Note <b>4175A</b> .	Noise from the twin-mass damping flywheel linked to the lack of or non-operation of the cut-off flap.	Apply Technical Note <b>4175A</b> .  <b>NOTE:</b> removal of the inlet air cut-off flap from the following engine fabrication number: <b>C 042123</b>
Knocking sound when starting the engine.	The knocking occurs on new vehicles or when a new accessories belt has been fitted. It disappears after the running in phase for the accessories belt (approximately 200 miles (300 km)).	New accessories belt lacks flexibility. <b>NOTE:</b> the knocking is coming from the new accessories belt.	The knocking sound does not affect the reliability of the engine. It disappears after the running in phase of the accessories belt (approximately 200 miles (300 km)).
Clanking engine noise on the timing side.	Check that the noise appears at idle speed or under light acceleration with the engine speed below 2000 rpm.  Remove the timing housing. Check the marking on intermediate gear no. 1: intermediate gears no.1 correct or have a letter <b>G, M</b> or <b>X</b> .	Slack take-up system integrated into intermediate timing gear no. 1 insufficiently calibrated.	Replace intermediate timing gear no. 1. This clanking noise does not cause any damage to the engine.  <b>NOTE:</b> intermediate gear no.1 modified, from engine fabrication number: <b>C 065000</b>
Engine clanking at idle speed when cold, disappears when warm.	The clanking comes from the timing side. Check the position of the mobile index on the timing gear tensioner.	The timing gear tensioner is knocking against its stop.	Replace the timing belt and the timing gear tensioner. Check the correct position of the timing gear tensioner with tool <b>Mot. 1537</b> .  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 007765</b>
Engine whining noise <b>following an operation on the coolant pump</b> .	Check for noise at the coolant pump closure panel.	The coolant pump is not fitted flush with its sealing surface. The coolant pump gear is out of alignment and wearing the adjacent sprockets.	Replace the coolant pump and the worn sprockets.  <b>IMPORTANT:</b> When replacing the coolant pump, remember to: – Grease the seal. – Push down on the coolant pump. – Check that the coolant pump is fitted flush with its sealing surface.

### ENGINE NOISE

CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
Whistling type noise from the turbocharger.	Check the cleanliness, mounting and sealing of the air inlet assembly (air filter and air ducts).	1. Inlet circuit blocked (outside contamination). 2. Faulty turbocharger.	Clean the inlet air circuit and remove the air sockets. If the customer complaint is still present: replace the turbocharger.  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 033000</b>
Noise similar to "burst of machine gun fire" at low speeds.	Check the engine noise when accelerating at low load and low speed.	Injection computer programming (pre-injection system adjustment parameters).	Operational programming conforms to product definition. This programming has no effect on engine reliability.
Engine rattling noise can be heard in the passenger compartment at idle speed.	<b>Affects vehicles fitted with BITRON marque solenoid valves only.</b> Check that the rattling sound can be heard in the passenger compartment with the engine at idle speed.	Turbocharging sensor filtration support.	Replace the filtration support with <b>Part No. 60 25 313 413</b>
Rubbing type noise coming from the engine.	<b>The fault occurs within the first few miles.</b> The rubbing sound is coming from the timing side. Check: – for damage to the timing gearing teeth, – if there is a screw missing from intermediate No.1 gear retaining washer.	The screw is missing from the intermediate No.1 timing gearing.	Replace the gearing Oil change and replacement of oil filter  If there are filings in the oil circuit: replace the engine and turbocharger.  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 080500</b>

# ENGINE & PERIPHERALS

## Engine noise

# 10A

### ENGINE NOISE

CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
Growling noise from the engine timing side. Oil pressure warning light permanently lit.	Check the damage to intermediate timing gear no. 1.	Loosen the mounting bolt from intermediate timing gear no. 1.	Replace the damaged gears, shafts and mounting bolts according to manual <b>Mot. G9T</b> . <b>Note:</b> tighten the bolt of intermediate gear no.1 to a torque of <b>2.5 daNm</b> , then angle tighten to <b>35° ± 6°</b> .  <b>NOTE:</b> intermediate gear no.1 modified, its shaft and tightening torque starting from fabrication number: <b>C 054286</b>
Significant engine noise (engine damage). Large oil leak. Impossible to start.	Check that the oil sump is drilled and that a connecting rod is damaged.	Loosen the connecting rod bolts.	Replace the engine. Clean the air intake circuit. Check the condition of the air intercooler.  <b>NOTE:</b> modification of the connecting rod tightening process from the following engine fabrication number: <b>C 077600</b>

# ENGINE & PERIPHERALS

## Odour and leaks

# 10A

### FUEL ODOUR AND LEAK

CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
Fuel odours. Fuel leaks. Traces of fuel on the ground.	Check that the fuel leak comes from the end of the high-pressure rail or from the high-pressure pipes (between the high pressure rail and injectors).	Sealing of the end of the high-pressure rail and/or high pressure fuel pipes.	Apply Technical Note blue <b>4200A</b> .  <b>NOTE:</b> modification to the high-pressure rail, the tightening torque and the process from engine fabrication number: <b>C 032187</b>
Fuel leaks. Fuel odours. Traces of fuel on the ground.	Check the presence of: – a leak from the fuel return pipe unions on the injector, – fuel in the injector well.	Fuel return pipe ends attached to the injectors cracked or broken.	Replace the fuel return pipe. <b>Note:</b> during replacement, do not apply lateral stress to the fuel return pipe ends.
Fuel leaks. Fuel odours. Traces of fuel on the ground.	Check for the presence of fuel at the high-pressure pump cylinder head.	The high-pressure pump cylinder head sealing.	Replace the high-pressure pump.  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 076000</b>

### ENGINE OIL LEAK

CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
Oil seepage beneath the engine.	Check the oil seepage around the cylinder head cover mounting bolts.	Sealing between the cylinder head cover mounting bolts and the camshaft bearing. Oil is following the thread of the cylinder head cover mounting bolts and appears on the cylinder head cover.	Do not replace the cylinder head cover. Clean the cylinder head cover mounting bolts. Refit them using "loctite freinetanch" <b>Part no.:</b> <b>77 01 394 070</b> .  <b>NOTE:</b> modified cylinder head cover mounting bolts starting from engine fabrication number: <b>C 044676</b>
Traces of oil on the camshaft accessories pulley.	Check that the oil traces (no oil droplets) originate from the pulley shaft via the mounting bolt.	The oil passes through tiny ridges between the crankshaft gear and the accessories belt and comes out through the crankshaft bolt.	Do not replace the parts, the seepage will dry up after a few hundred miles. There is no risk of damage to the accessories belt.

# ENGINE & PERIPHERALS

## Warning light coming on

# 10A

OIL PRESSURE WARNING LIGHT COMES ON WITH ENGINE OIL LEAK			
CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
Oil pressure warning light comes on. Engine oil leak. Traces of oil on the ground.	Check the presence of oil in the timing around the blanking cover of intermediate gear no. 2.	Intermediate timing gear no. 2 blanking cover lost or pulled out.	Replace intermediate gear no. 2, its shaft, its mounting bolt and the blanking cover. Replace the timing belt and accessories belt.  <b>Note:</b> dry force-fit the blanking cover of intermediate gear no. 2.
Oil pressure warning light comes on. Significant engine oil leak. Traces of oil on the ground.	<b>The fault occurs within the first few miles.</b> Check that oil is present on the oil filter unit cover seal.	The oil filter unit cover is cut or damaged.	Replace the oil filter unit cover seal.  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 045058</b>
Oil pressure warning light comes on. Engine oil leak. Traces of oil on the ground.	<b>The fault occurs at very low mileage.</b> Check that the oil is flowing through the clutch housing.	There are ridges on the crankshaft lip seal surface, engine flywheel side.	Replace the lip seal. Carry out a road test. If there is still an oil leak, replace the engine.  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 085005</b>
INJECTION WARNING LIGHT COMES ON IN THE ABSENCE OF A FAULT			
CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
Injection warning light comes on in the absence of a fault.	The diagnostic tool displays the following fault code: – <b>DF070 04.DEF</b> Check the timing of the high-pressure pump gear. <b>Note:</b> the TDC gauge hole is beneath the oil filter support mounting bolt (flywheel side).	The high-pressure pump gear has shifted by one or two teeth.	Adjust the high-pressure pump gear according to the Workshop Repair Manual or Technical Note <b>3444A</b> <b>Note:</b> it is ESSENTIAL to use the Top Dead Centre (TDC) pin.  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 021000</b>

# ENGINE & PERIPHERALS

## Warning light coming on

# 10A

COOLANT TEMPERATURE WARNING LIGHT COMES ON			
CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
Coolant temperature warning light comes on. Engine overheating.	Check that the circulation of coolant in the coolant tank is low. Check that the cooling radiator and hoses are warm.	The coolant pump impeller has become disconnected from its driving shaft.	Replace the coolant pump.  <b>IMPORTANT:</b> When replacing the coolant pump, remember to: – Grease the seal. – Push down on the coolant pump. – Check that it is fitted flush with its sealing surface.  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 032300</b>
Coolant temperature warning light comes on. Engine overheating.	Check that the circulation of coolant in the coolant tank is low. Check that the cooling radiator and hoses are warm.	The coolant pump gear has rotated on its shaft (loose nut).	Replace the coolant pump.  <b>IMPORTANT:</b> when replacing the coolant pump: – Grease the seal. – Push down the coolant pump. – Check that it is fitted flush with its sealing surface. Replace the coolant pump housing if it is damaged.  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 061048</b>
Coolant temperature warning light comes on. Coolant is leaking.	Apply Technical Note <b>4068A</b> .	Coolant tank supply pipe damaged.	Apply Technical Note <b>4068A</b> .
BATTERY CHARGE WARNING LIGHT COMES ON			
CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
Battery charge warning light comes on. No power assisted steering. Smoke coming from underneath the bonnet.	Check that the accessories belt is being driven by the engine. Check that both sections of the filtering pulley are not separated.	Damage to the crankshaft filtering pulley. Rubber mounting is loose.	Replace the filtering pulley and the accessories belt.  <b>IMPORTANT:</b> do not run the engine without the accessories belt. The filtering pulley is damaged by engine acyclisms.  <b>NOTE:</b> process modified starting from engine fabrication number: <b>C 032079</b>



### APPEARANCE WITHOUT FAULT

CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
EGR valve pipe sheath damaged without engine fault.	Check whether the EGR valve pipe braided sheath has become uncrimped.	Uncrimping of the EGR valve pipe braided sheath.  <b>Note:</b> the EGR valve pipe concerned has a silver-coloured sheath.	Replace the EGR valve pipe.  <b>NOTE:</b> EGR valve mounting pipe sheath modified starting from engine fabrication number: <b>C 014091</b>

### SMOKE COMING FROM UNDER BONNET WITHOUT FAULT

CUSTOMER COMPLAINT	FAULT FINDING	POSSIBLE CAUSE	AFTER-SALES SOLUTION
Smoke coming from bonnet and around front wheels in cold weather. Visible when the vehicle is stationary. Smell of diesel fuel.	Check that the smoke is coming from the auxiliary heater.  <b>Note:</b> the heater starts to operate at temperatures below 5°C.	Installation of the auxiliary heater. The smoke is coming from the auxiliary heater pipe, positioned at the rear of the engine and is coming through from under the bonnet.	Inform the customer that the presence of smoke is normal in cold weather. The auxiliary heater enables the engine to reach its optimal operational temperature.