



Technical Journal

TITLE:

Vibration, Noise and Harshness related complaints (NVH)

REF NO:
TJ 20803

ISSUING DEPARTMENT:
Technical Service

CAR MARKET:
United States and Canada

PARTNER:
3 US 7510 Volvo Car USA

ISSUE DATE:
2016-03-18

STATUS DATE:
2016-03-24

FUNC GROUP:
2185

FUNC DESC:
Engine undershield

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“Right first time in Time”

Attachment

File Name	File Size
Attachment Form TJ 20803.pdf	0.0699 MB
Attachment TJ 20803.pdf	0.0678 MB

Vehicle Type

Type	Eng	Eng Desc	Sales	Body	Gear	Steer	Model Year	Plant	Chassis range	Struc Week Range
124							2007-9999		0000850-9999999	200620-999999
134							2011-9999		0000194-9999999	201020-999999
13X							2008-9999		0000395-9999999	200720-999999
155							2011-9999		0000100-9999999	201035-999999
157							2015-9999		0000001-0999999	201450-999952
256							2015-9999		0000001-0999999	201505-999952
275							2007-9999		0328000-9999999	200620-999999
285							2007-9999		0617000-9999999	200620-999999
295							2007-9999		0254000-9999999	200620-999999
384							2007-9999		0600000-9999999	200620-999999
5XX							2007-9999		0010000-9999999	200620-999999



CSC Customer Symptom Codes

Code	Description
C4	Complete vehicle/Unusual noise/While driving
F3	Complete vehicle/Unusual noise/During acceleration
F6	Complete vehicle/Unusual noise/During deceleration
8N	Driving/Unusual noise/Unsure when/at all times
F1	Driving/Unusual noise/At engine shut off
F2	Driving/Unusual noise/During acceleration
ZE	Idling/Unusual noise
XB	Exhaust system/Rattle/rumble
WX	Engine cooling fan (FC)/Unusual noise
WT	Accelerator pedal/Squeak
F4	Clutch/Unusual noise/Noise from engine compartment
C3	Automatic transmission/Unusual noise
F5	Gear selector/Unusual noise
C6	Manual transmission/Unusual noise
D2	Front/rear axle/Unusual noise
WV	Suspension/Clicking/clonking noise/At start/stop
WY	Suspension/Clicking/clonking noise/Unsure when/at all times
X1	Suspension/Unusual noise
H3	Steering wheel/Squeak/rattle/Steering column/wheel
H4	Steering/Unusual noise/Unsure when/at all times
X8	Steering/Unusual noise/At full turn
E7	Suspension/Unusual noise
WZ	Suspension/Clicking/clonking noise
8J	Shock absorption/Unusual noise
1M	Wheels, tires, hubs/Unusual noise/Front
1N	Wheels, tires, hubs/Unusual noise/Rear
V6	Complete vehicle/Vibration/When driving below 45 MPH
V7	Complete vehicle/Vibration/When driving above 45 MPH
NY	Automatic transmission/Vibration
V9	Gear selector/Vibration
8A	Manual transmission/Vibration
W2	Front/rear axle/Vibration/shake
V2	Steering wheel/Vibration/shimmy/When driving above 45 mph
W3	Steering wheel/Vibration/shimmy/When driving below 45 mph
X7	Steering wheel/Vibration/shimmy/At idle
V1	Tires/Vibration/out of round

VST Operation Number



DTC Diagnostic Trouble Codes

Rows beginning with * are modified

Note! If using a printed copy of this Technical Journal, first check for the latest online version.

Text

DESCRIPTION:

*** UPDATED VEHICLE PROFILE**

In case of complain of Noise, Vibration or Harshness, NVH, and you need help from CMQ, some “tools” have been created to help you to do a better and more precise fault tracing.

In the attachment you can find a guideline to help you to sort out NVH related problems.

SERVICE:

N/A

VEHICLE REPORT:

Yes, together with a complete filled in attachment, included in this journal.

The attachment **MUST** be in English when sending in it to CMQ.

Use always function group 2185.

To view TJ attachments continue to net page. This TJ has two atachments.



Volvo Car Customer Service

TJ Instruction 20803

Title	Fault tracing schedule vibrations/noise	Page:	1 (4)
Action	Fault tracing	Operation number:	

Issue	Date	Cause
1	2015-03	First issue

Affected vehicles

Year	Model	Engine	Transmission	Steering	Chassis number
All	2010-				

Test schedule for vehicle vibrations

1.

If none of the below tests help, submit a report according to TJ: 20803

2.

To verify whether the vibrations are speed dependent or engine speed related, follow the fault tracing below.

3.

Start by checking in which gear and at what engine speed the customer experiences the problem.

Then test in another gear at the same engine speed.

If the fault recurs at the same engine speed but in another gear, it is engine speed related.

If the fault occurs at the same speed, but at another engine speed, it is speed related.

Speed dependent.

4.

Vibrations also remain when free-wheeling within the vibration range.
This eliminates engine vibrations.

Engine related.

5.

Occurs at the same engine speed, regardless of gear.
This eliminates the wheels as a fault source.

Wheel related.

6.

Note! Always test drive with summer tyres and genuine Volvo rims.

- Check the status of the wheel on the outside and inside (for wear, damage and dirt etc.).
- Balance the wheels.
- Fill to 3.5 bar and check that the centre line of the tyre is straight.
- Test drive another vehicle of the same specification.

If the vehicle does not vibrate, transfer the wheels from that vehicle.

Important! Install the wheels in the same positions as on the problem vehicle. Test drive the vehicle in the same driving conditions where the vibrations occurred.

It is best if the test wheels are of another size/brand, and another type of rim.

- Measure the wheel hub according to VIDA.
- Wheel alignment.

Vehicles with AWD

7.

Exclude faults in the AWD system.

Remove the propshaft.

If the vibrations stop, fault-trace the AWD system.

If vibrations still occur, the AWD system can be excluded.

8.

Check the propshaft's CV joints.

- Booming/vibrations whilst parking (0-28 km/h) and under full acceleration.
Replace the oil pump and download software according to TJ: 27713.

- Vibration under full acceleration or near full acceleration.

Propshaft vibrations are worst around 120 km/h at constant speed

If there are no vibrations at this speed without the propshaft installed the fault is most likely the propshaft.

Engine/Gearbox

9.

Loosen the bolts to the subframe slightly.
Rock the engine and gearbox. Check that all mounting points are centred.
Then tighten to the correct torque (see VIDA). Test drive. If vibration/noise remains, record the noise and submit a report according to TJ: 20803

Drive shafts

10.

Vibrations caused by the drive shafts, occur at 30-50% throttle in third gear.
Does not happen when coasting.
If you suspect that it is a drive shaft problem, replace both sides at the same time.



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