



Technical Journal

TITLE:

Test schedule for vehicle speed dependent vibrations at highway speeds

REF NO: TJ 20803.21.0	ISSUING DEPARTMENT: Technical Service	CAR MARKET: United States and Canada	
PARTNER: 3 US 7510 Volvo Car USA		ISSUE DATE: 2020-01-02	STATUS DATE: 2020-01-06
FUNC GROUP: 4650	FUNC DESC: Final drive	Page 1 of 8	

“Right first time in Time”

Attachment

File Name	File Size
T9379EN01.docx	0.0435 MB
TJ20803 instruction_EN.pptx	0.7309 MB

Vehicle Type

Type	Eng	Eng Desc	Sales	Body	Gear	Steer	Model Year	Plant	Chassis range	Struc Week Range
224							2019-9999		0000001-9999999	201835-999952
225							2019-9999		0000001-9999999	201817-999952
227							2019-9999		0000001-9999999	201846-999952
234							2017-2017		0000001-9999999	201617-999952
235							2017-9999		0000001-9999999	201624-999952
236							2017-9999		0000001-9999999	201646-999952
238							2018-9999		0000001-9999999	201646-999952
246							2018-9999		0000001-9999999	201717-999952
256							2015-9999		0000001-0999999	201505-999952
536							2019-2099		0000001-9999999	201746-209952



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
F2	Driving/Unusual noise/During acceleration
D2	Front/rear axle/Unusual noise
X1	Suspension/Unusual noise
E7	Suspension/Unusual noise
V6	Complete vehicle/Vibration/When driving below 45 MPH
V7	Complete vehicle/Vibration/When driving above 45 MPH
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

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:

* Start by following the fault tracing according to Technical Journal 32161.

If problem still occurs follow the step below.

This TJ is for vehicles with all wheel drive (AWD) and vibrations at 80-135 km/h.

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

1. Question form to fill in and attach along with a vehicle report for faster support. When writing a report, attach force variation measurement so this can be excluded.
2. Guideline attached to help you to sort out NVH related problems on AWD system.

SERVICE:

N/A



VEHICLE REPORT:

Yes, please submit a Vehicle Report if this TJ has no effect. Use concern area "Vehicle Report" and sub concern area "Support needed", use function group 4650.

Together with a complete filled in attachment (included in this journal) and force variation measurement. The attachment **MUST** be in English when sending in it to CMQ.

To view TJ attachment continue to next page. This TJ has two attachments.



Title	Fault-tracing schedule NVH	Page:	1 (3)
Action	Test protocol	Operation number:	

Issue	Date	Cause
1	2015-02	First issue

Affected vehicles

Year	Model	Engine	Transmission	Steering	Chassis number
All	All				

Special tools

Description	Tool number
CHASSIS-EAR	9814108

Relevant vehicle

VIN	Model	Year	Engine	Transmission	Steering

1.

Note! ALWAYS start by inflating the tyres to **comfort** pressure.
Note! ALWAYS test drive with the customer and allow the customer to describe the interference.
Note! ALWAYS record the noise and include in the report.

2.

Questions to be filled in with the customer

1: When was the interference noticed for the first time?

Odometer: _____ KM

Odometer: _____ Miles

2: What type of interference?

- Noise
- Vibration

2:2 Experienced in?

- The steering wheel
- Floor
- Seats: Front
- Seats: Rear
- Seats: Third row (XC90)

3: When does the interference occur?

- Stationary vehicle during "revving engine"
- uphill
- Downhill
- Whilst driving
- Rolling vehicle
- Acceleration
- Deceleration

Speed: _____ km/h

Speed: _____ mph

Engine speed: _____ Rpm

Which gear(s)? _____

- Recurring
- Sporadic

4: Weather conditions when the interference occurs?

Outdoor temperature: _____ °C

- Dry road
- Wet road

5: What type of road surface?

6: Vehicle status?

- Cold
- Hot

Further questions

7: Engine temperature? _____ °C

8: If there is a sound file, where is it recorded?

- In the passenger compartment, front seat
- In the passenger compartment, rear seat
- Under the vehicle
- In the engine compartment

Describe at what second the noise is heard. _____ Sec?

9: Has Chassis-ear, 9814108, been used for fault tracing?

- Yes
- No

10: What type of recording equipment has been used? _____

11: Space for further comments.

VIBRATIONS IN SPA CARS AT CONSTANT SPEED AND MODERATE ACCELERATION (MAINLY 80 - 135 KM/H)

ALL VEHICLES



Tyres equipped with cavity reducing foam

If the vehicle has foam filled tyres, start with swapping wheels from a known good car. If vibration is gone, start refitting original wheels one by one until vibration returns. Remove the wheel/s which are causing the vibration and remove the tyre, from the wheel for inspection.

Before the test

Check the status of the wheels regarding wear, damage, dirt and tyre pressure. (Comfort pressure)

Drive the car at least 15 minutes at Smooth, straight and dry road to get rid of the flat spot.

Lift the car directly after the 15 minutes' drive or demount the tires and store them lying, if you don't continue working with the car directly.

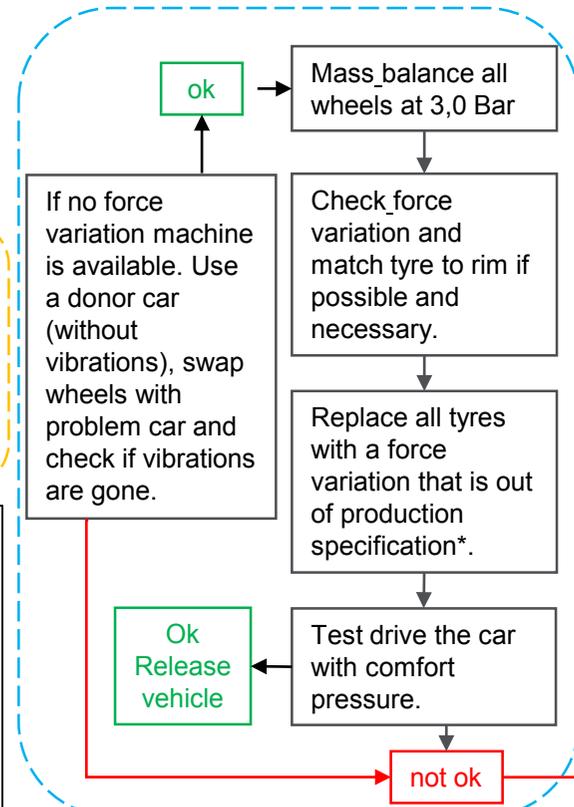
More info about vibration due to wheel/tyre, see TJ32161

*The production requirement regarding force variation is set for a tyre pressure of **3.0 bar**.

- S60/V60 105N (23 lb.)**
- XC60 120N (26 lb.)**
- S90/V90 105N (23 lb.)**
- V90CC 90N (20 lb.)**
- XC90 120N (26 lb.)**

If the force variation value is higher than that, the tire is not up to specification and has to be replaced. Claim tyres which are out of production specification to the supplier.

Wheels



Analyse and report

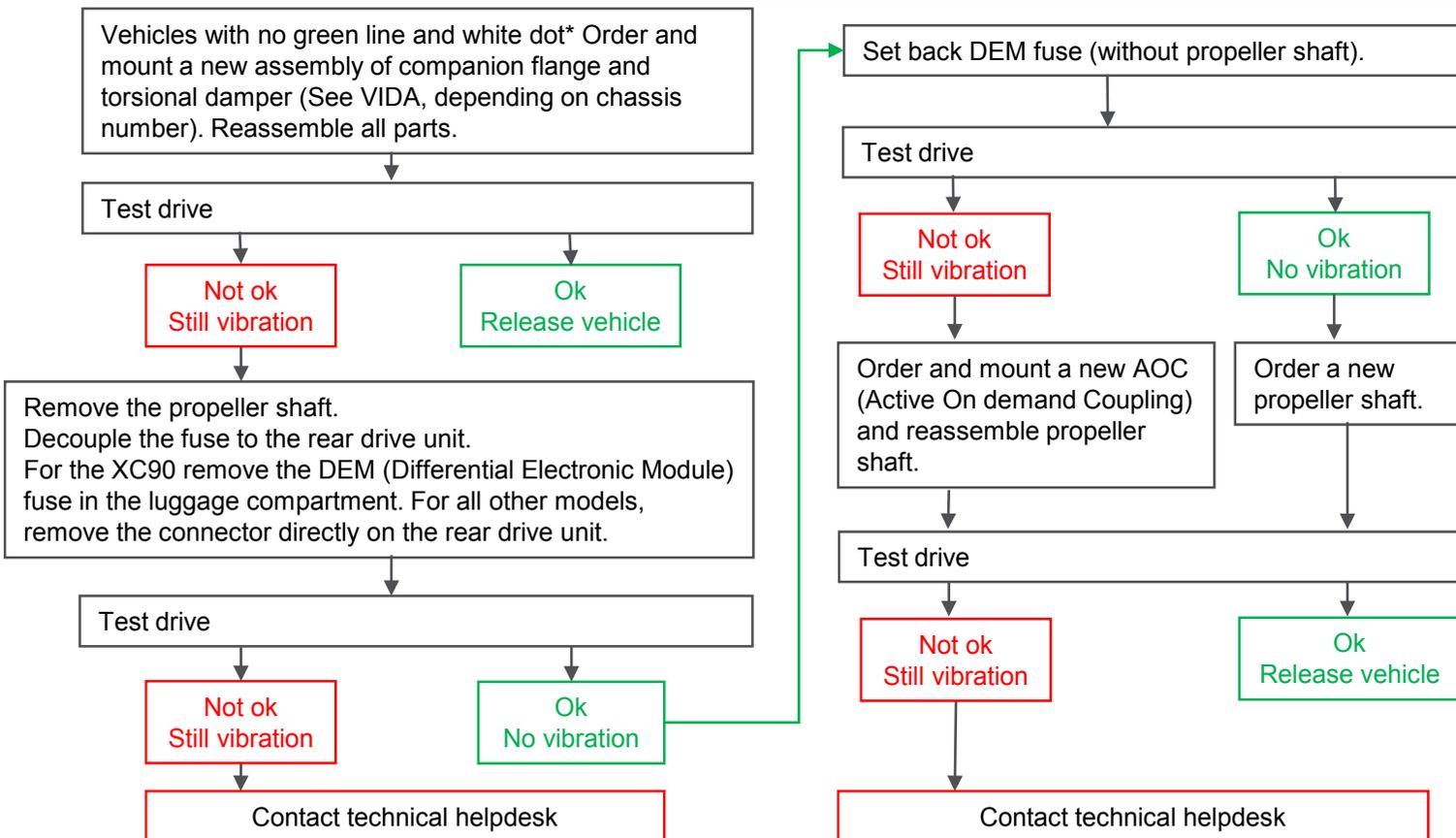
Most customers will accept minor vibrations up to 120 N(26lb) at Comfort tyre pressure, however in some cases to be able to satisfy a critical customer it may be needed to lower the requirement to 65 N(14lb) by following the service procedures mentioned in TJ 32161.

Measure force variation again and save the measurement values:
 1. with comfort pressure
 2. with a tyre pressure of 3.0 bar

Send force variation and pressure values to technical helpdesk

AWD see next page

ALL WHEEL DRIVEN CAR *(MAKE SURE THAT TYRES ARE OKAY, SEE PAGE 1)*



*White dot against blue line (+/-30 degrees)
(Green line is just for supplier, clamp correctly mounted)
If not match blue line against white dot.