VOLVO CAR
SERVICE AND PARTS BUSINESS

Technical Journal

TITLE:

Vibrations due to wheel / tire

REF NO:	ISSUING DEPARTMENT:	CAR MARKET:	
TJ 32161.3.0	Technical Service	United States and Canada	
PARTNER: 3 US 7510 Volvo Car USA		ISSUE DATE: 2017-10-09	STATUS DATE: 2017-10-18
FUNC GROUP: 7726	FUNC DESC: Summer tire, separate	Page 1 of 4	

"Right first time in Time"

Attachment

Vehicle Type

Type	Eng	Eng Desc	Sales	Body	Gear	Steer	Model Year	Plant	Chassis range	Struc Week Range
234							2017-9999		0000001-9999999	201617-999952
235							2017-9999		0000001-9999999	201624-999952
236							2017-9999		0000001-9999999	201646-999952
238							2017-9999		0000001-9999999	201646-999952
246							2018-9999		0000001-9999999	201717-999952
256							2016-9999		0000001-9999999	201505-999952

CSC Customer Symptom Codes

Code	Description
V1	Tires/Vibration/out of round

VST Operation Number

VST Operation Number	Description
Gen.Op.	General Operation

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:
* This journal is re-written in it's entirety.

If vibrations occur in the car while driving high speed / freeway driving, follow advice under Service. Vibrations may occur due to several reasons, usually driveline (especially AWD vehicles), or wheels.

Product modifications regarding complete wheels and tires:

- 2016 week 35: Factory acceptance level for tire uniformity on complete wheel was reduced on S90/ V90 with 20" wheels and for the V90CC, more wheels are rejected and has to be reworked at the wheel supplier before being delivered to Volvo.
- 2017 week 09: A new tire assembly line was introduced at our European wheel supplier, it will automatically match tire/rim positions for less tire uniformity.
- 2017 week 09: A new cavity reducing foam was introduced on Pirelli tires which are glued better, it will not get loose so easily.

SERVICE:
Before carry out this TJ, **always start with TJ 20803** to sort out if the problem is related to driveline or wheels.

If the vibrations are caused by driveline, or unknown cause, send a Vehicle Report.

It is more likely that the vibrations are coming from the wheels/tires, then check the steps below:

1. Unbalanced wheel.
   It may happen that balance weights are missing, perform a normal wheel balancing, in most cases this will be enough.
   A new process and equipment to install wheel balancing weights will be introduced from 2018 Q2, (better accuracy and better adhesiveness).

2. Tire pressure.
   Too high tire pressure will cause harshness and vibrations.
   Check that tire pressure is according to the recommended tire pressure table in the Tire Label attached at the B-pillar.

3. Tire unevenly mounted on rim flanges.
   It may happen occasionally that the tire is unevenly mounted on the rim flanges due to too little lubrication on the tire during assembly to rim.
   Check if tire is installed in the rim correctly all way around rim and correct if needed.

4. R-Design and front spring expanders.
   The spring expanders are only used during factory and transport to dealer and must be removed during PDS.
   Check and if needed remove front spring expanders.

5. Heavy vibrations due to loose cavity reducing foam inside tire.
   Cavity reducing foam are used on some tires, especially bigger wheel sizes.
   Loose foam has primarily been seen only on S90/V90 20” summer tires.
   If heavy vibrations occur, dismantle tire from the rim and check the cavity reducing foam.
   If the foam is loose then contact tire manufacturer for a replacement tire according to their warranty procedure.
   Note: If foam is loose, then also check if the foam has signs of humidity or water. If this is found, send a vehicle report with photos.

6. Tire uniformity (force variations out-of-round tires).
   If vibrations occur and normal wheel balancing does not solve the issue, then the root cause could be tire uniformity and/or poor matching of rim and tire.
   The best way to detect and solve this is to use a special wheel balancing machine that can measure force variations in the tire (such as the Hunter GSP9700 or Road Force Elite).
   Check SPJ 32993 for more details.
   Some Volvo workshops does not have this machine, but it may be possible to contact the tire manufacturer for a better analyse of the tire, or contact external professional tire workshop.
   Note: If measurement is done, please save log files for force variations values and tire pressure in case it will be needed for further analysis.

7. Flat spotted tires (due to long time parking / storage).
   Flat-spotting can be a temporary problem since the tire will round out as driving warms it up. Cold ambient temperatures make rubber compounds stiffer, increasing their tendency to flatspot.
   The longer tires remain stationary, the likely they are going to be flat spotted. Tires on vehicles stored on the ground for many months can be permanently flat-spotted.
   Note that during transport or storage, it is important to keep an higher tire pressure to avoid flat spots.
   Volvo Cars is delivering vehicles from factory using a transport tire pressure at 2.8-3.2 bar.
   During storage it is also important to following the storage program, in order to avoid tires being flat spotted.
   Remember to only lower the tire pressure to correct tire pressure during PDS.
   In most cases it should be possible to cure flat-spotted tires, but it require to drive the car so that tire temperature reach the temperature as when the car was parked.
   Note: If the car was parked at warm temperatures or if the tire temperature was high when parked, then it may not be possible to drive the car enough to reach the same temperature during winter / cold weather conditions. In these cases try to contact a professional tire workshop to check if they have special equipment or procedure which can remove flat spots.

8. Flat spotted tires (due to hard braking / misuse).
   If customer deactivated the ABS system and braked the car with locked wheels, then it can make permanent flat spots which cannot be cured.
   Damaged tires should be replaced.

9. Rim run-out.
   New rims are usually not causing any vibrations. However rims damaged due to pot-hole driving may cause vibrations.
   A damaged rim should be detected in the wheel balancing machine, eventually remove tire from rim before measurement is done to see how severe the damage is.
   Damaged rims should be replaced.

10. Snow / ice / mud etc stored in rim (inner side).
    Clean rims from snow/ice/mud.
    To reduce the risk for having a repeat repair it could be good to apply some rim wax on inner surface of rim.
    Also advice customer to install a mudflap / snow deflector, accessory kit PN 31449094 (use PN 31435991 for XC60), it will reduce the problem for the rear wheels.

VEHICLE REPORT:
Yes, please submit a Vehicle Report if the service solution described in this TJ has no effect and it is believed that the vibrations are caused by something else than wheels/tires.
Use concern area “Vehicle Report” and sub concern area “Support not needed”, use function group 2185.