

- ATTENTION:**
- GENERAL MANAGER
 - PARTS MANAGER
 - CLAIMS PERSONNEL
 - SERVICE MANAGER

IMPORTANT - All Service Personnel Should Read and Initial in the boxes provided, right.

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QUALITY DRIVEN® SERVICE

SERVICE INFORMATION BULLETIN

APPLICABILITY: All Models

NUMBER: 05-97-26

SUBJECT: Vibration During High Speeds / Diagnosis

DATE: 04/20/26

This Service Information Bulletin provides the diagnostic procedures to be followed when addressing customer concerns of steering wheel/vehicle body vibration when driving at highway speeds when tire/wheel balance is suspected. The bulk of these concerns can be generally addressed using proper wheel balancing and road force matching. This bulletin outlines additional diagnostic information to provide a precise vibration source identification.

SERVICE INFORMATION:

WHEEL IMBALANCE: Wheel imbalance is caused by uneven mass distribution in the tire and wheel assembly. This condition can generate vibration due to centrifugal force during rotation. Because wheel imbalance is the most common cause of steering wheel or vehicle body vibration, it should be addressed first during diagnosis.

The two most common types of wheel imbalance are static (single-weight plane) and dynamic (dual-weight plane). Static imbalance is best described as a vertical imbalance when the assembly is mounted on the vehicle. Dynamic imbalance is defined as a combination of vertical and inner/outer imbalance when the assembly is mounted on the vehicle.

To achieve the best possible results, a well-maintained dual-weight plane balancer (commonly known as a dynamic balancer) should be used.

RADIAL FORCE VARIATION (RFV): Radial Force Variation (RFV) is the periodic change in load (force) occurring in the radial direction (up and down) as the tire rotates. It is caused by variations in tire roundness and stiffness and is a primary contributor to vibration during vehicle operation.

A dynamic balancer measures these variations and displays them as R1H (radial first harmonic), R2H (radial second harmonic), and R3H (radial third harmonic). In most cases, the first harmonic (R1H) is the primary cause of steering wheel or vehicle body vibrations occurring at highway speeds.

Radial Force Variation can increase if a vehicle has been parked for an extended period, which may create temporary flat spots in the tires. Improper tire inflation can also contribute to increased RFV.

CAUTION: VEHICLE SERVICING PERFORMED BY UNTRAINED PERSONS COULD RESULT IN SERIOUS INJURY TO THOSE PERSONS OR TO OTHERS.

Subaru Service Bulletins are intended for use by professional technicians ONLY. They are written to inform those technicians of conditions that may occur in some vehicles, or to provide information that could assist in the proper servicing of the vehicle. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do the job correctly and safely. If a condition is described, DO NOT assume that this Service Bulletin applies to your vehicle, or that your vehicle will have that condition.

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ISO 14001 is the international standard for excellence in Environmental Management Systems. Please recycle or dispose of automotive products in a manner that is friendly to our environment and in accordance with all local, state and federal laws and regulations.

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SERVICE PROCEDURE / INFORMATION:

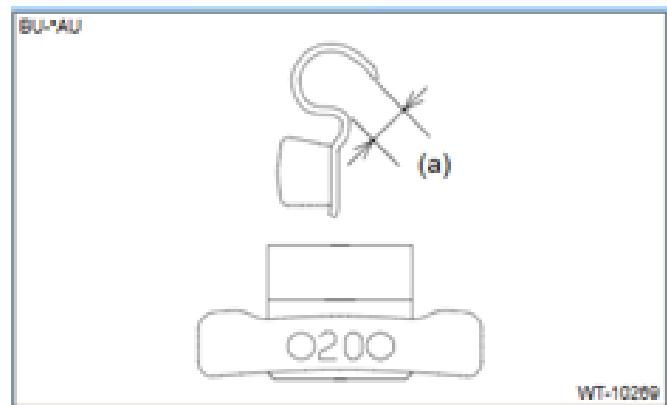
STEP 1: Vehicle Check and Test Drive

- Inspect tires and wheels for any visible damage.
- If any damage is found, resolve these concerns before continuing with diagnosis.
- Adjust tire pressures according to the door label.
- Test drive to confirm the customer's concern. If the vibration is confirmed, go to **Step 2**.

TIRE AND LOADING INFORMATION RENSEIGNEMENTS SUR LES PNEUS ET LE CHARGEMENT			
SEATING CAPACITY NOMBRE DE PLACES		TOTAL 5	FRONT AVANT 2 REAR ARRIERE 3
The combined weight of occupants and cargo should never exceed 408kg or 900lbs. Le poids total des occupants et du chargement ne doit jamais dépasser 408kg ou 900lb.			
TIRE PNEU	SIZE DIMENSIONS	COLD TIRE PRESSURE PRESSION DES PNEUS A FROID	SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION VOIR LE MANUEL DE L'USAGER POUR PLUS DE RENSEIGNEMENTS
FRONT AVANT	225/60R18	240 KPA, 35 PSI	
REAR ARRIERE	225/60R18	230 KPA, 33 PSI	
SPARE DE SECOURS	225/60R18	SEE ABOVE VOIR CI-DESSUS	

STEP 2: Measure Wheel Balancing and Adjustment

- Perform a balance test. Record the results and positioning. If the result is within 5 grams, go to **Step 3**.
- If the result is 5 grams and higher, adjust it within 5 grams. Leave any remaining factory weights in place and remove weights that have been added after production.



CAUTION: Be careful not to damage the wheel when removing weight.

- In cases of the wheel/tire assembly cannot be adjusted within 5g (0.18oz) or less, inspect for the following:

Improperly mounted tire such as an unseated tire bead

Improperly mounted wheel/tire assembly to the balancer

Damage to the wheel or tire

Damage to the tire balancer

Debris located inside the tire

NOTES:

- Tire weights after adjusting the wheel balance should be 5g (0.18oz) or less.
- When using adhesive weights, thoroughly degrease the surface where the weight is to be applied.
- After applying the adhesive weight, apply force to the weight to attain full adhesion.
- When using clip-on weights, check and confirm the correct clip size (5mm (0.2in)).

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STEP 3: Test Drive after Wheel Balance Adjustment

Test drive the vehicle after wheel balance adjustment.

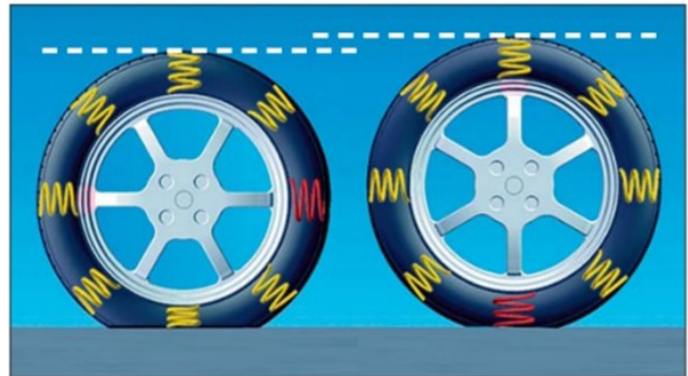
- If the vibration is gone, finish the repair. (The cause of the vibration was improperly adjusted wheel balancing.)
- If the vibration still exists, keep driving at highway speed for 15 miles (24 kilometers). Stop driving if the vibration is gone.
- If the vibration still exists after 15 miles of driving, keep driving the vehicle until the vibration is gone or for a total of 80 miles. (Approximate 80 miles (128 kilometers). Stop driving if the vibration is gone. (The cause of the vibration was the tire flat spot.) Additional information regarding flat spots is listed below.

NOTE: The road is to be completed in one single drive.

- If the vibration still exists, go to **Step 4**.

TIRE FLAT SPOTS:

Tire flat spots are caused by long-term transport or storage. This is a temporary condition. In most cases, the flat spot can be eliminated by driving. To eliminate flat spots, it is effective to continue driving at highway speed whilst the tires are warm. Additionally, repeatedly changing lanes within safe limits is also effective. The tire flat spots may not be eliminated in winter because the tire temperature is very difficult to rise due to the low ambient temperature.



TIP: When possible, lift the vehicle within ten minutes after road testing to cool down the tire surface to ambient room temperature. Flat spots are easily formed during long-term vehicle storage in room temperature areas or after driving with the tires at high temperatures. Keeping the vehicle lifted during tire cool down is recommended.



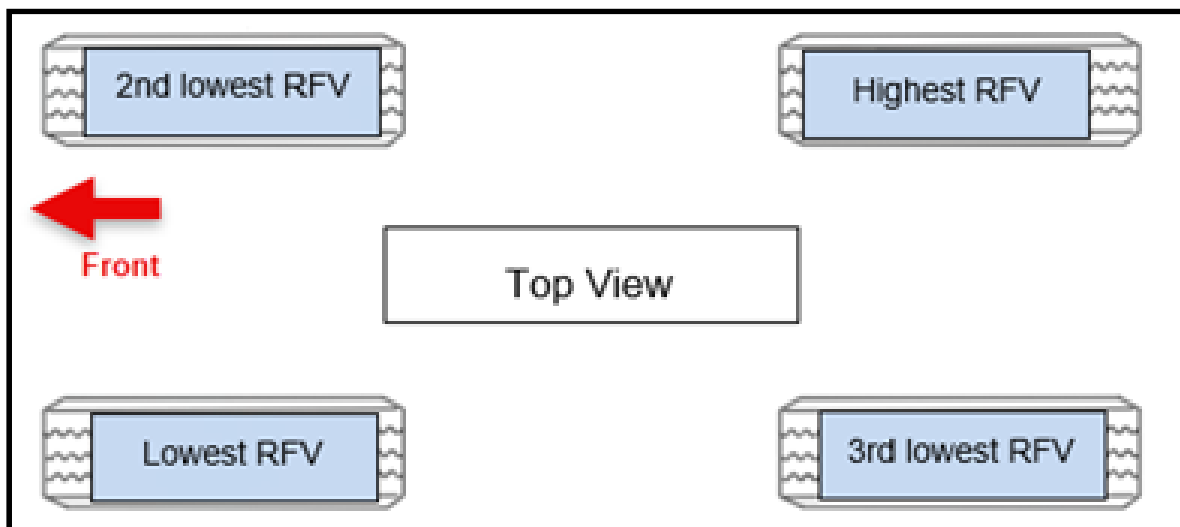
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STEP 4: Radial Force Variation (RFV) Measurement

If vibration can still be felt after the wheels have been properly balanced and 80 miles driving, there is a possibility of excessive radial force variation (RFV) in the tire and wheel assembly. Please perform the following:

NOTE: In this case, tires can be removed from the vehicle right away after driving. Cooling time is not required.

- Measure the RFV of the four tire and wheel assemblies. RFV measurements for passenger tires: 8.0kg (18lbs 80N) or less.
- If higher than normal RFV measurements are found for the assembly, refer to the on-screen instructions or the operating instructions to “match mount” the tire and wheel to minimize the assembly RFV.
- After all RFV measurements are adjusted to the lowest possible level, relocate the tires and wheels as the following.



- After relocating the tires and wheels, perform a road test to verify the concern has been resolved.
- If the concern still exists at an unacceptable level, contact the Subaru Techline with the data sheet located on the next page.

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Tire Vibration Data Sheet

Date: _____
 Retailer Code: _____
 Technician: _____

Mileage: _____ mile
 km
 Rr: _____

Prod Date: _____
 Tire Size: _____
 Ft: _____

Steering wheel vibration
 body vibration (shimmy)
 others

Vibration occurs all the time
 Vibration occurs only at highway speed

Customer Complaint:

Technician Notes:
 Wheel/Tire Condition & Other

		Initial Measurements				Final Measurements			
Wheel Position	Tire Pressure (psi)	Tire DOT Number (All digits)	Weight Present*(g)		RFV (R1H) (kg or lbs or N)	Tire Pressure (psi)	Weight Present*(g)		RFV (R1H) (kg or lbs or N)
			Inner	Outer			Inner	Outer	
Left Front									
Right Front									
Left Rear									
Right Rear									

Tire and Wheel Position on Vehicle

Left Front	Left Rear
Right Front	Right Rear

Mileage after driving: _____ mile
 km

Wheel Balancer Model: _____

*Record the total amount of physical weights on the wheel (inner and outer planes).
 **When performing tire rotation based on the measured RFV values, refer to P4 and install the tire with the lowest RFV value on the driver's front position, and the tire with the highest RFV value on the right-rear (passenger-side rear) position.

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IMPORTANT REMINDERS:

- SOA strongly discourages the printing and/or local storage of service information as previously released information and electronic publications may be updated at any time.
- Always check for any open recalls or campaigns anytime a vehicle is in for servicing.
- Always refer to STIS for the latest service information before performing any repairs.