



Das Auto.

# Technical Bulletin

Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To
Touareg	2011-2015	All	All	All	All

## Condition

48 15 01 January 13, 2015 2038140 Supersedes Technical Bulletin V481406 dated November 19, 2014 to include model year 2015 applicability.

### Vibrations in Steering Wheel

The customer may state:

1. Shimmy/rotational vibration in the steering wheel at constant speed.  
Shimmy/rotational vibrations in the steering wheel at various speeds.
2. Shimmy/rotational vibrations in the steering wheel when braking.
3. Vibration felt in the entire vehicle:  
The vibration can be felt in the seat surfaces, in the underbody, in the foot well, or in the pedal.  
The vibration is more prevalent when braking/accelerating.

## Technical Background

### Flatspots:

After a short stationary period (sometimes as little as a few hours) flat spots can develop after the warm tire has cooled down. The effect the flat spotted tire has on the vehicles performance depends on the type, dimension, make, and pressure of the tire.

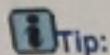
Flat spots alter the radial force variation and must be driven out before balancing the wheel.

### Effects of increased radial forces on the vehicle:

Increased radial forces on the front or rear tires cause vibrations in the vehicle.

Increased radial forces on the front tires amplified by braking can also lead to vibrations in the vehicle.

5. Balance the wheels on a stationary balancing machine.

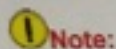


Tip:

The manufacturer recommends to balance / road force the wheels on the -VAS 6230 A/B- Hunter machine.

Measure, balance and (if necessary) match the wheel according to the instructions of the equipment.

When tightening the wheel on the balancing machine make sure the contact surfaces of flange and wheel are clean, the wheel is correctly centered and a suitable cone and/or flange are used. We recommend the use of a five-finger flange.



Note:

The fluctuation of the radial force does not depend on the turning direction and is measured as the difference between maximum and minimum radial force (road force).

If the radial force cannot be reduced below the specified value of 26 lbs. by matching, replace the tire.

The wheels must be installed on the vehicle according to the instructions of the manufacturer and the repair manual.

### Securing the wheel on the vehicle



Note: This is the most sensitive and critical portion of the repair!

- Check whether the contact surfaces on the brake disc and wheel are free of corrosion and dirt, clean if necessary.
- Check whether the centering hole of the wheel and the centering of the hub are free of corrosion and dirt, clean if necessary.
- The wheels holes and the wheel bolts must be free of dirt and corrosion. It must be possible to lightly turn the wheel bolts by hand without using a tool.



Note:

Severely corroded or damaged bolts must be replaced according to the repair manual/ETKA.

- Make sure that the wheel bolts are the correct version and length.






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## Warm balancing / matching of wheels

1. Check all tires for the following points:

- Tread and side wall damage (for example: broken tread, impact damage/bubbles and so on).
- Tread depth.

 **WARNING:**


The manufacturer recommends:

Replace tires damaged by external influences (for example impact damage/bubbles and so on).  
Damaged tires are an increased safety risk.

Replace tires with a tread depth of under 4 mm, otherwise this procedure will not be totally effective.

2. Check and correct the tire pressure of every wheel to at least 36 PSI or the permitted maximum specified value.

3. Perform a test drive of at least 18 miles, if possible on a highway, traffic and road conditions permitting over different speed ranges (up to 60 mph).

 **Note:**

Make sure that you do not endanger yourself or others during the test drive.

During the test drive observe all traffic laws.

4. After the road test, raise the vehicle immediately and begin removing the wheels for balancing.

 **Tip:**

New flat spots can develop during a short stationary period while the tires cool down so it is important to put the vehicle on the lift immediately following the test drive.

## Explanations and definitions:

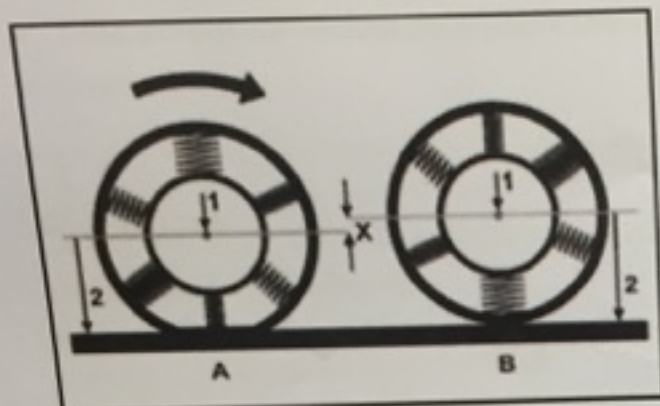


Figure 1

## Radial force variation (RFV)

The radial force or wheel load is the force with which a tire is compressed (Figure 1). Tires have softer and stiffer areas along their circumference, which is illustrated using springs (Figure 1, A and B). Figure 1 shows the same tire at different points of rotation (A and B), as it rolls on level road with constant load (radial force).

### Tip:

If this wheel rolls, the center of the wheel rises and falls X distance with a constant wheel load (illustration 1, arrow 1). This change in arrow 1 by X distance can be felt in the vehicle as vibration or shaking of the steering wheel.

### Note:

The attached questionnaires must be filled out and submitted to the chassis team email box [VWGoA.Chassis@vw.com](mailto:VWGoA.Chassis@vw.com) and kept on file for warranty purposes.

## Production Solution

No production change required.

## Service

### Procedure:

- Complete the following steps to eliminate vibrations (flat spots) and radial force fluctuations.



Figure 2

Each wheel bolt hole is assigned a number from 1 to 5. These numbers will be referenced below. (Star pattern)

- Align the position of the brake disc holes/hub threads as shown in Figure 3 below.



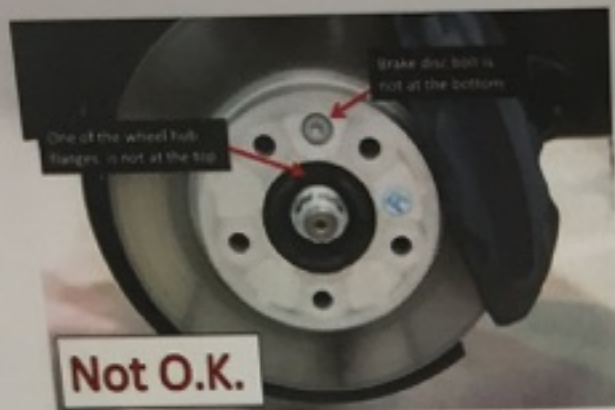
Figure 3

**Example of proper brake disc hole/hub thread positioning.**

- The brake disc bolt should be in the 6 o'clock position as seen in the picture.
- Wheel bolt hole number 1 should be in the 12 o'clock position. See Figure 2 above for wheel bolt hole numbering.
- One of the three hub flanges should also be in the 12 o'clock position.

- The reason this position is important is the weight of the wheel must be supported in order for proper centering to occur. When there is one of the hub flanges on top the weight of the wheel is supported while the wheel is secured in wheel bolt hole number 1.





Example of improper positioning.

Figure 4



Example of improper positioning.

Figure 5

- Insert the wheel on the hub and secure it loosely by hand it starting with wheel bolts number 1 and 2 (See figure 2 above 4).
- Screw in the remaining wheel bolts by hand in the star pattern specified in Figure 5. This will ensure precise centering of the wheel. Initially tighten the wheel bolts to 30 Nm.



Tighten all the wheel bolts in the star pattern specified in the picture.

Tighten the wheel bolts to the specified tightening torque with a torque wrench by hand.

**Note:**

Do not use a pneumatic impact gun to install the wheel bolts.

Figure 6

- Lower the vehicle until the tires just begin to touch the floor. Torque the bolts by hand to the specified value in ElsaPro using a torque wrench.
- Lower the vehicle to the floor.
- Ensure the correct vehicle-related tire pressure.
- Test drive the vehicle.
- Assess the vehicle again in the affected speed range.

**Tip:**

If the vibrations persist, call the helpline for further assistance. Before calling the helpline all steps in this bulletin must be completed and documented. Please be as specific as possible regarding the steps used and customer complaint when calling the helpline.