

# Tips & Technology

For Bosch Partners

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Special subject



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## Tire changes

Every year, drivers have to change tires in the spring. It makes sense to have this done by a workshop. What arguments can you use to convince your customers to have their tires changed in your workshop?

- In the workshop, with the vehicle on a lift, the mechanic is able to inspect the tires and rims from all sides for damage that would not be obvious to the driver.
- The mechanic can then visually assess the remaining tread profile depth quite easily.
- A torque wrench allows the wheel bolts to be tightened properly.
- If new tires are required, mounting them on the rims and balancing them requires a balancing machine.
- If the tires are not balanced, the results can be uneven tire wear, increased tire wear, a higher load on the shock absorbers and reduced adhesion of the tires to the road. The driver has less control over the vehicle and braking is compromised.
- In addition, the workshop that stores tires properly for its customers has committed those customers for a good period of time.

### **Tire mounting and balancing machines**

While wheels and tires are a mainstay of sales in the workshop, tire changes are always performed under the pressure of time constraints, and are possible only with suitable tire service machines. There are numerous machines for tire service on the market.

Bosch offers a wide range of machines to satisfy this need: From entry-level machines for starting a tire business to mounting and balancing machines using the latest laser diagnostic technology for tires. Bosch has machines for tire service on motorcycles, cars and vans as well as tire mounting equipment and balancing machines for heavy commercial vehicles and buses, construction and agricultural machinery in its product line.

The TCE 5335 tire mounting machine can handle jumbo-size tires up to 2 300 millimeters in diameter, 1 300 millimeters in width and weighing 1 400 kilograms.

The TCE 4540 and TCE 4460 machines, for instance, are ideally suited for car tire service. Both machines meet the requirements of the German association of manufacturers of tires and technical elastomer products (WdK).

The WBE 4430 and 4435 balancing machines permit fast, precise work and are easy to use. The exact positions for the balancing weights are determined in a matter of seconds. The operator also saves a great deal of time when entering data, since frequently used programs can be opened by the push of a button thanks to programmable function keys. In addition, many ergonomic details simplify work procedures and operations. The balancing weights are stored directly on the unit in a special storage magazine with room for a sufficient number of weights, enough for even a day's work.



Both the WBE 4200 and 4400 balancing machines offer high precision and ease of use. The software for these units provides a variety of static and dynamic balancing options and assists the operator with 11 programs for automobile wheels and five special modes each for aluminum rims and motorcycle wheels.

The setup time for both models is shortened by a new automatic weight position detection function. The system automatically recognizes the type and position of the weights by means of the inner measuring arm and offers them directly to the operator. An external measuring arm that automatically records the wheel diameter is available as an option. Automatic operation saves the workshop time and contributes to higher productivity.

Both balancing machines are designed for wheels with a rim diameter between 10 and 26 inches and a rim width of up to 20 inches. The wheels can have a diameter up to 1 150 millimeters and a maximum weight of 70 kilograms. The WBE 4200 model is supplied with a digital LED color display, the WBE 4400 version with a 19-inch TFT monitor.

### Tips for the car's driver

After the tire change, you can give your customer the following tips:

#### Cleaning the tires:

Exercise caution when cleaning the tires with a high-pressure device! In particular, a heated jet of water directed at one specific point from a distance of 4 centimeters can cause considerable damage in seconds. The impact of the water jet raises the tire material's temperature – the rubber forms bubbles and loses its strength. When under a high load, e.g. when driving on an expressway, the tire can burst suddenly, which results in serious accidents time and time again.

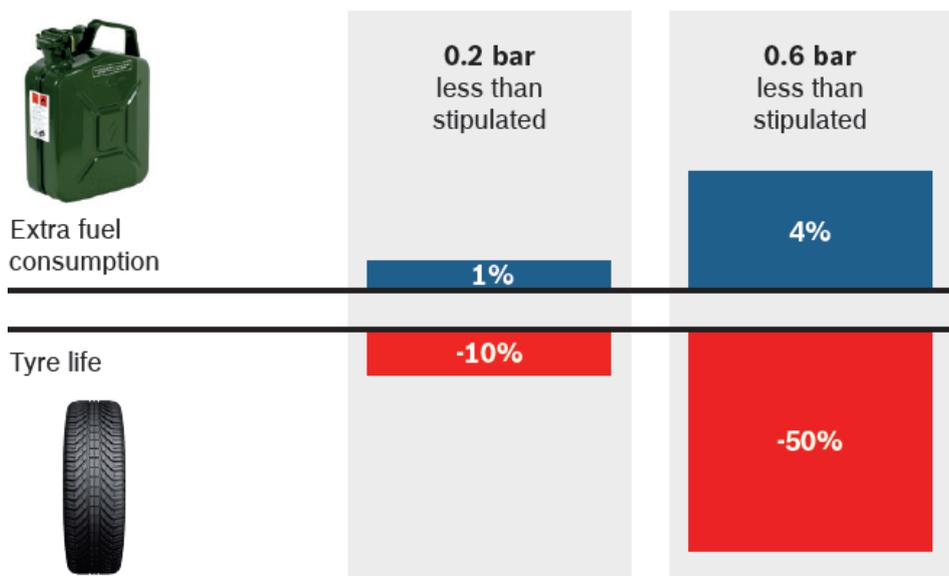
For this reason, you should pay attention to the following points when cleaning tires with a high-pressure device:

- Maintain a minimum distance of 20 cm between the tip of the wand and the tire.
- Work with a wide-angle nozzle whenever possible.
- Did not point the jet at a specific point, even to remove stubborn dirt, but move it continuously.

#### Tire pressure:

The importance of tire pressure becomes clear when you recall that it is not the tire itself, but rather the air entrapped in it that is supporting the vehicle. Low air pressure poses risks:

- An increased safety risk when driving, since the braking distance is lengthened unnecessarily. Long journeys at too low an air pressure can even result in a tire blowout.
- Increased fuel consumption, since the rolling resistance is increased.



It is advisable to check the air pressure at every second fuel stop.

### Tire replacement:

If the tire does not appear to be damaged, two factors are key when it comes to tire replacement:

A minimum tire tread depth of 1.6 mm is required by law. It is recommended, however, that normal tires are replaced as soon as the tire tread depth reaches 3 mm, while winter tires should be replaced when the tire tread depth reaches 4 mm.

Tip when checking: Place a 2 euro coin (1 euro coin for summer tires) against the bottom of the tire tread profile in the tread groove with the least profile depth. If the ring of stars is not visible, your tire tread profile is still OK.



The ring of stars is visible in this case and the tires should be replaced.

Tires should be replaced after a maximum of 10 years (even if the tire tread profile is still adequate). You can recognize the age of your tires by the printed DOT number (four-digit): the last two digits stand for the production year and the first two for the production week (2600 thus means the 26th week in the year 2000).

### Storing tires:

The following basic rules should be observed when storing tires:

- Complete wheels can be stored in a hanging position on rim trees or horizontally.
- On the other hand, tires without rims are always stored in a standing position.

Basic storage conditions: a dry, dark, cool and moderately ventilated environment is best for tire storage, since rubber can deteriorate. Light and heat age rubber faster.