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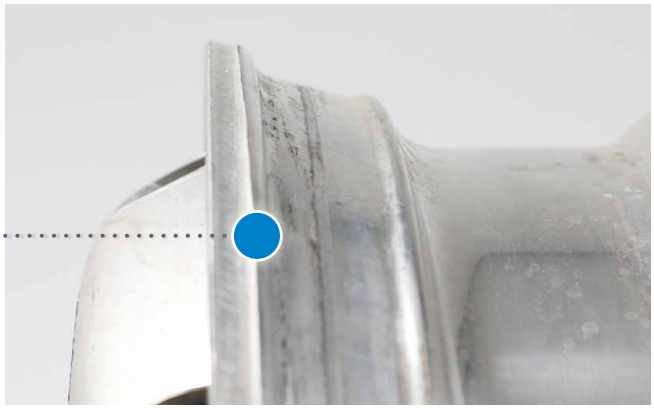
RIM HORN WEAR - Causes, impact and countermeasures

Forged light alloy wheels for commercial vehicles and buses

Rim horn wear is often underestimated

As a driver or operator of large trucks and commercial vehicles, the safety of your vehicles is certainly a top priority for you, too. But when regularly checking your wheels and tires do you also check for wear between the tire bead and the rim horn of each wheel? A certain amount of wear is normal but under certain driving conditions the amount of wear can increase significantly. In addition to premature and irregular wear on the tire bead, it is possible for the tire to burst or even fly off the wheel due to cuts to the bead - and the consequences can be extremely dangerous.

Irregular and premature wear on the rim horn



How rim horn wear occurs

The main factors contributing to increased rim horn wear are permanent overloading, too little tire pressure, shipments with a high centre of gravity or moving loads (e.g. logging, tankers etc.). Environmental factors and certain operating conditions also contribute to increased wear. This is the case when, for example, braking, dust or sand residue and small stones are not removed and start to penetrate the contact surface between the wheel and the tire. That is why you should always clean the area in the tire seat around the rim horn every time you change the tires. This avoids excessive wear and the risk of losing air from the tire.

How to check for rim horn wear

Conduct a visual check of the rim horn every time you change the tire. If you detect excessive wear, check the wheel more closely. Measurement is easy to do with a special wear measuring gauge approved by SPEEDLINE TRUCK and the test steps described below. Please note: This measuring gauge is not suitable for testing other parameters or components.

If you do not have a SPEEDLINE TRUCK measuring gauge on hand (item number 683.8310.001), please contact our partner or SPEEDLINE TRUCK directly using the following email address: **sales.truck@ronalgroup.com**

Light wheels for **heavy weights**

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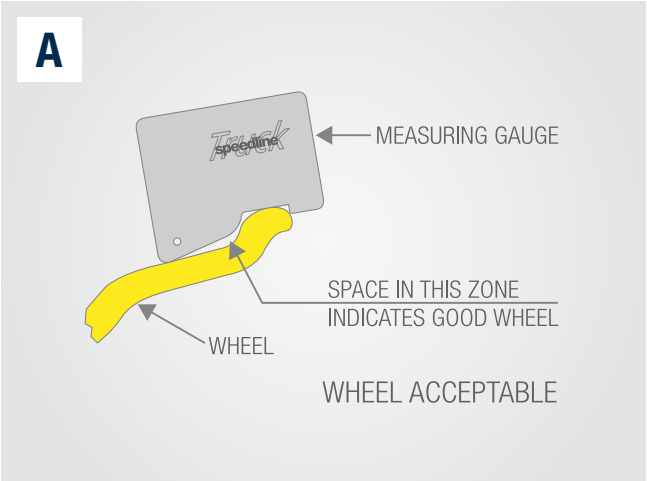
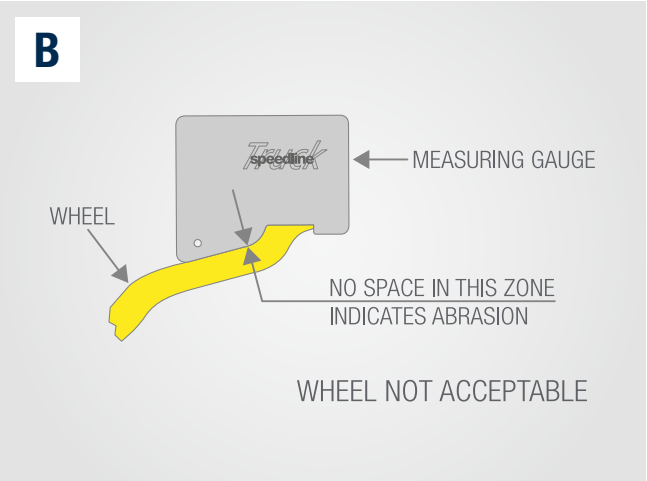
RIM HORN WEAR -
Check

How to check for rim horn wear

Proceed as follows:
First remove tire and wheel from the vehicle. Deflate the tire and demount it from the rim. Then place the measuring gauge - as seen below - on the rim horn. A space between the tire and the measuring gauge (see Fig. A) indicates an acceptable level of wear and the wheel can continue to be used. If there is no space visible (see Fig. B), discontinue to use the wheel.





If the result of the measurement shows that the wheel can continue to be used, also check the sharpness of the rim horn. A damaged tire bead may cause the tire to deflate. An easy way to check this is to run a piece of rubber (e.g. from a hose or the side wall of the tire) along the edge to see whether there are any sharp edges to damage the rubber (see Fig. 1). Please repeat the test to be absolutely sure.

WARNING: Always wear protective gloves as worn aluminum edges can be very sharp.

Fig. 1: Rubber test on sharp edges

If the rubber makes it around the entire circumference of the wheel undamaged do not hesitate to continue using the wheel. Otherwise (see Fig. 2) use the following maintenance and repair advises to remove the sharp edges on the rim horn:

Always check the tire for cuts in the bead area and side wall. If you find any cuts, replace the tire immediately and contact the tire manufacturer for further advise. If the tire is intact you may continue to use it.

Advise:
Check the wheel at every tire change for rim horn wear and sharp edges.

Fig. 2: Damaged rubber

The right tools

An irregular and sharp rim horn profile around the entire wheel circumference can be removed using the following tools. Ensure that the edges are removed evenly and that no roughness remains.

File

Use a file for manual processing. When deburring and rounding make sure to apply even pressure and work at a 45 degree angle.

Grinding head on drill

Depending on availability, a drill with a grinding or sanding bit may be used. Work as evenly as possible.

Sanding bit on drill

A sanding bit is very effective for evening out the rim horn profile.

The result

The sharp edges are removed and the rim horn profile is evened.

Once the sharp edges have been evened using the tools mentioned above, check the edge again by running a piece of rubber along the edge of the rim. Repeat the wear check with the measurement gauge ensuring that there is still enough profile on the entire wheel circumference.

With successful check (as seen in Fig. 4), you can continue to use the wheel. If the measuring gauge shows no space to the rim horn (see previous drawing B in the description of the wear measuring gauge), the wheel shall be replaced immediately.

We recommend to check the tire bead always one more time!

Fig. 3: Evened rim horn profile

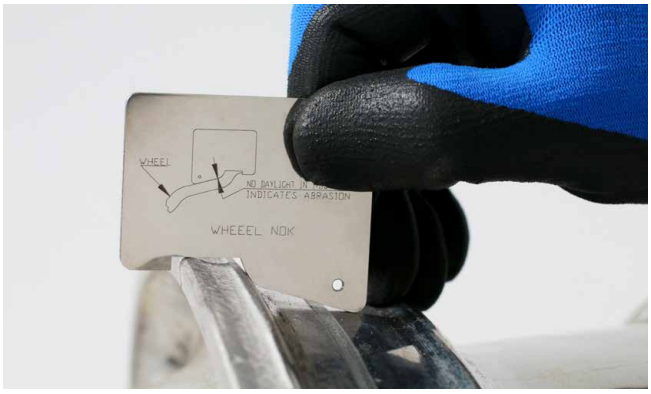


Fig. 4: Check measurement after successful processing