Identifying Wheel End Problems

Regular inspection and maintenance can reduce bearing damage in conventional wheel ends and decrease long-term costs.

**Visual Wheel Inspection**

**Bearing damage indicators:**

- Hubcap sight glass discolored or burnt
- Low lube level in hubcap sight glass
- Lube leakage on wheel hub or tire, inboard and outboard sides
- Abnormal tire wear
- Smoking or extremely hot hubcap

**Driver Observations**

**Bearing damage indicators:**

- Wheel vibration
- Wheel wobble
- Wheel noise
- Smoke from a wheel end
- Decreased braking power
- Increased fuel consumption
- Abnormal side pull when braking
- Wheel lock-up/skidding

Skill Level: Easy  |  Special Tools: None
Wheel End Disassembly Analysis

**Bearings may need replaced:**
- Worn nut face (adjusting nut and lug nuts)
- Bearing noisy when rotated
- Rust or moisture
- Spindle wear (more wear on bottom half)
- Thread wear
- Hub shoulder wear
- Hub bore wear
- Loss of adjusting nut or jam nut torque
- Bearing dropped
- Worn out or damaged seals

**Bearings must be replaced:**
- Dry, caked lube in hubcaps or other internal cavity
- Metal particles in lube, hubcaps, hubs, or bearings
- Heat discoloration on bearings or any other internal component (heat discoloration is a nonremovable stain)
- Grooves on bearing cone (inner race) backface, bore or spindle
- Wear on any bearing surface
- Dents on bearing assembly cage
- Spalling (flaking away) of bearing material on races or roller bodies (Fig. 1 and 2)
- Any raised metal or dents on races or rollers

**WARNING**

Failure to observe the following warnings could create a risk of death or serious injury.

Never spin a bearing with compressed air. The components may be forcefully expelled. Proper maintenance and handling practices are critical. Always follow installation instructions and maintain proper lubrication. A bearing/component should not be put into service if its shelf life has been exceeded.

**CAUTION**

Failure to follow these cautions may result in property damage.

Use of improper bearing fits may cause damage to equipment. Do not use damaged bearings.

*TechTips is not intended to substitute for the specific recommendations of your equipment suppliers.*

*Every reasonable effort has been made to ensure the accuracy of the information contained in this writing, but no liability is accepted for errors, omissions or for any other reason.*