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HUB HUBBUB

Wheel bearings are located in the wheel hub assembly that hold the wheels to your axles and allow the wheels to rotate. Not only are wheel bearings designed to support the weight of the vehicle and allow it to travel over the road with a minimum of rolling friction, the bearings must also withstand the thrust loads generated by high-speed cornering and hard acceleration and braking. In addition, most wheel bearings must operate in a hostile environment ranging from -40 deg C on a cold start-up to more than 200 deg C during heavy braking. Worse still, the exposure to salt and sand spray from our winter roads adds even further stress to the bearings. With the production of front wheel drive vehicles manufacturers have switched to sealed ball bearing/hub assemblies, which are non-serviceable instead of serviceable tapered roller bearings which were utilized in rear wheel drive vehicles.

Worn wheel bearings usually cause growling or knocking noise to occur at road speeds or may have excessive play. One method of determining if a bearing is failing is to steer your vehicle from side to side while driving straight. The noise increases as chassis weight is rolled onto the defective bearing. Worn front wheel bearings can cause the brake rotor to tip changing the rotor to pad angle resulting in a low brake pedal. On a rear wheel drive vehicle, worn wheel bearings with excessive play on the rear axle may also cause the rear axle shaft to run off-center in the oil seal, which causes the axle seal to leak oil onto the brake pads or shoes.

A noisy wheel bearing has been often mistaken for a transmission problem because the noise can transfer through the axle, suspension and vehicle body giving the indication that the noise is originating from another source. Often when bearings are checked with the vehicle raised on a hoist, with no load on the wheels, the noise complaint usually disappears. Occasionally, rough bearings can be detected by carefully rotating the wheel by hand and listening for roughness, but the most accurate method is to listen to the bearings with a stethoscope. In other cases it may require a road test with a set of electronic ears (small microphones) placed on each axle assembly to pinpoint which wheel is making the noise.

On ABS equipped vehicles, it is common for the wheel speed sensor to be incorporated into the wheel bearing assembly, so if the bearing has excessive clearance the wheel speed sensor will fail resulting in the ABS light to illuminate in the dash, which means the ABS function is no longer operational. If your vehicle has traction control then that function will also cease to operate as the wheel speed sensor also provides the input signal for that system.

Failures may be due to our “hostile” environment or is it more the lower product standards the manufacturers are using to keep the cost of vehicles under control. Whatever the reasons, we are definitely seeing a huge increase in hub and bearing assembly failures in the last few years.
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