



LAND ROVER ERRATIC SHIFTING

COMPLAINT: A 2006 Range Rover S equipped with the ZF6HP26 transmission came into the shop with complaints of wrong gear starts and erratic shifting.

After a wide open throttle forced downshift and then coming to a stop, the vehicle would take off in third or fourth gear. A scan tool confirmed that the wrong gear starts were commanded by the TCM. The transmission would upshift from third or fourth gear to fifth and sixth gears.

When the vehicle came to a stop and the Tiptronic feature was used it would take off in first gear and shift up until a forced downshift after which it would return to wrong gear starts. No fault codes were present.

CAUSE: One of the tires on the vehicle had 20 pounds of air in it while the rest of the tires has 50 pounds of air. The Tire Monitor Lamp NEVER CAME ON.

CORRECTION: Inflating the soft tire to match the rest of the tires on the vehicle cured all the wrong gear start and erratic shift complaints.

In retrospect, had a “Stagger Gauge” been used to check the circumference of each tire, a difference would have been seen when the measurement of the soft tire would have been compared with the other tires (figure 1).

A difference in wheel speed RPM data could have also been observed through a scan tool.

Note: As an example, vehicles equipped with the NAG 1 or 722.6 transmissions that use rear wheel speed sensor input to calculate vehicle speed, can have complaints of not up-shifting into higher gears due to different tire circumferences.

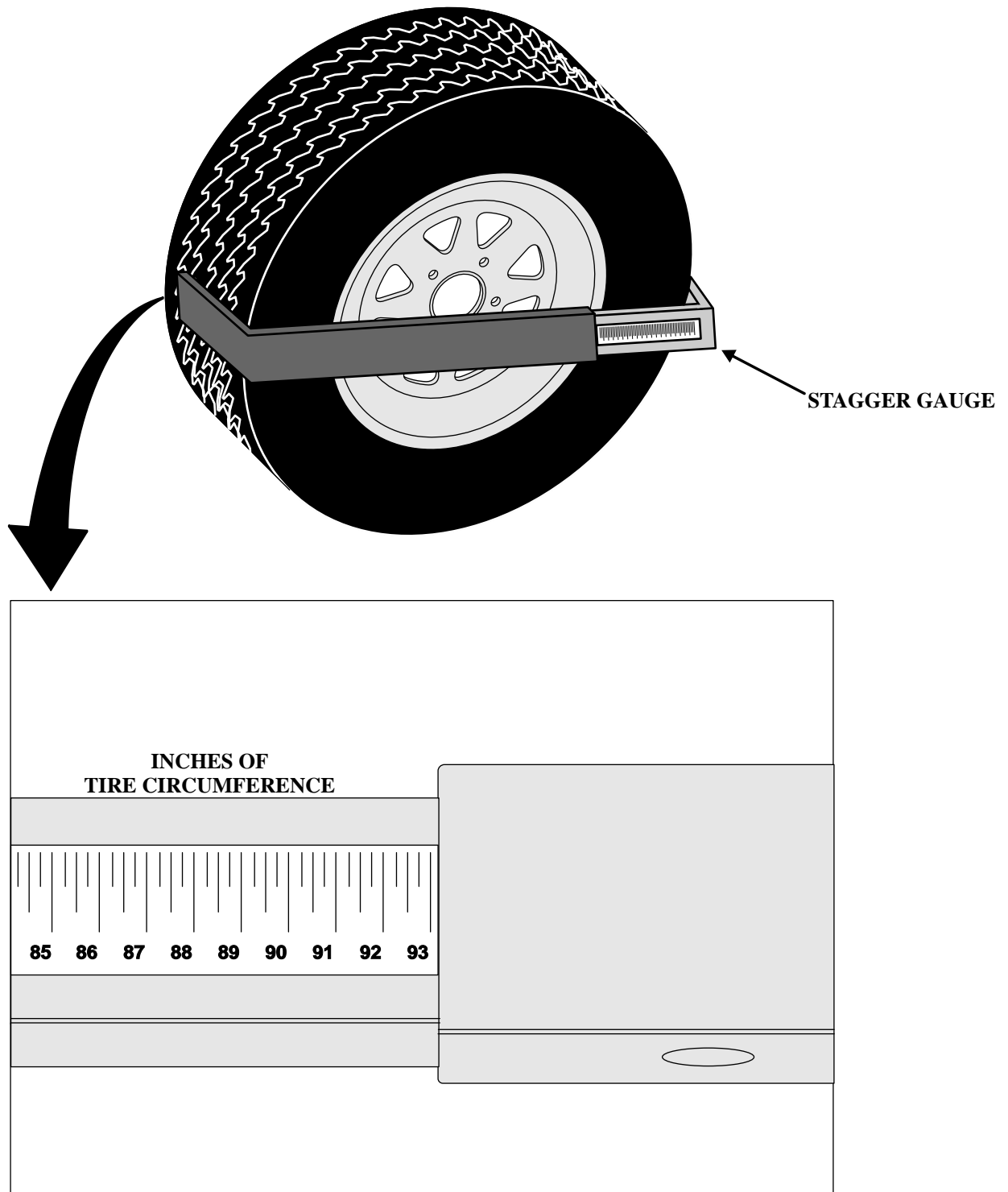
The use of a “Stagger Gauge” quickly checks the circumference of each tire in inches as indicated by the sliding ruler on the stagger gauge.

In odd complaints such as these it is always a good practice to check tire circumference. If a stagger gauge is not available a soft tape measure can be used to measure the diameter at the center of each tire. There should not be more than a quarter of an inch difference between all four tires.

This tire issue is one of the top causes of all wheel drive mechanical failures especially with “Active” transfer case systems.

A special thank you to Dominick of AC Transmissions, Addison, Ill.

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Figure 1