Service Technicians Society®

Tire and wheel runout

Chrysler Preferred Tire and Wheel Runout Limits		
Vehicle	**Radial runout (in.)**	**Lateral runout (in.)**
Passenger car (except FJ)	**0.030**	**0.030**
FJ car - steel wheel (wheel only)	**0.050**	**0.050**
FJ car - aluminum wheel (wheel only)	**0.040**	**0.040**
Minivan	**0.030**	**0.030**
Jeep and Truck	**0.060**	**0.080**

FJ = Chrysler Sebring, Dodge Avenger, Eagle Talon coupes

Chrysler has published preferred tire runout limits for its vehicles built since model year 1994, as shown in the Table Runout beyond these limits can cause the vehicle to shake excessively even when the tires and wheels have been balanced.

There are two kinds of runout: radial runout, sometimes called out-of-round or egg-shape, is the vertical distance between the high point and low point measured on the centerline of the tread as the tire is rotated; lateral runout, sometimes called wobble, is the side-to-side movement of the tire measured at the shoulder of the tread as the tire is rotated. Tires and wheels can have both types of runout on a single assembly.

Radial and lateral runouts can also be measured on the wheel itself to determine whether the tire or the wheel is at fault. Usually, runout can be reduced to acceptable limits by relocating the wheel and tire assembly on the wheel studs or rotating the tire's mounting position on the wheel to put the high point of the tire at the low point of the wheel. This latter procedure is called match-mounting a tire.

Chrysler 22-01-97, 06/13/97

John Fobian

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Diagnosing tire and wheel balance

Jaguar offers suggestions for resolving vehicle vibration complaints when the problem has been narrowed down to tire and wheel balance.

The first step is a general inspection in which a technician should check:

- that the wheels and tires are the correct ones specified for the vehicle
- for damage to the tires or wheels
- that tire pressures are correct
- that tires do not have any temporary or permanent flat spots
- for excessive runout
- for excessive play in the hub bearings
- wheel and tire balance.

Temporary flat spots were a tire problem many years ago. The problem still exists, according to Jaguar, when the vehicle is parked after a period of high-speed driving, which results in high tire temperatures. Without a period of low-speed driving before parking the vehicle, temporary flat spots can develop.

Temporary flat spots can be removed by driving a distance of at least 15 miles at speeds of at least 55 mph to heat the tires. If the wheels and tires are to be balanced, the driving session should end with slower driving to allow the tires to cool down while still rolling. Remove the wheels immediately for balancing.

Jaguar also lists limits on imbalance. Residual imbalance should be as low as possible: 8 *g* (0.30 oz) per plane-maximum, and static imbalance of less than 10 grams (0.35 oz.). No more than 60 grams (2.1 oz.) of additional weight should be applied to each side of a wheel.

Jaguar 11-08, 04/97

John Fobian

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