

Car in curb condition = Car in working order, with oil and water + full fuel tank + spare wheel + tool kit, but without passengers and luggage.

Car normally loaded = Car in curb condition + 6×65 kg load on the seats + 45 kg luggage in the trunk.

Front axle track	:	1430 mm
Rear axle track	:	1470 mm
Smallest turning circle diameter	:	approx. 10.7 m
Smallest track circle diameter	:	approx. 10.0 m

The smallest **turning circle diameter** is understood to be the diameter of a circle described by the circumferential extremities of the turning vehicle with the steering at full lock.

The smallest **track circle diameter** is understood to be the diameter of the circle described by the outside front wheel (center of tire) when turning with the steering at full lock.

Note: When too great a negative camber is present, particularly in the case of vehicles with special bodies produced by other firms, it is advisable to check the permissible axle load after weighing the vehicle in fully loaded condition, with a full fuel tank and all equipment (see Job No. 32 — 0 and Job No. 40 — 0, Section B). This is carried out by weighing the vehicle on a platform scale twice; the first time with only the front axle on the scale, and the second time with only the rear axle on the scale.

As a check the complete vehicle can then be weighed.

D. Tire Wear

Irregular and extreme tire wear occurs if the wheels are incorrectly adjusted. In many cases it is possible to detect incorrect wheel adjustment without the aid of any measuring device, purely by reference to typical tire wear diagrams. The following diagrams show some such tire wear phenomena and give in each case the cause.

a) Tire Wear Diagrams

(The arrow indicates in each case the direction of travel)

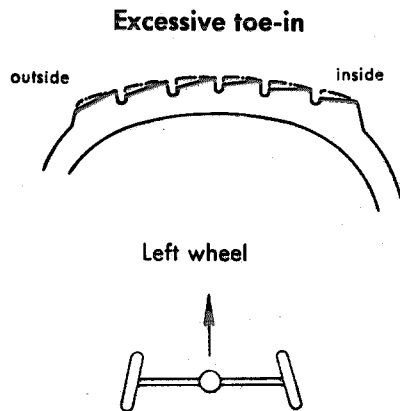


Fig. 40 — 3/14

The fault can occur at both the front and the rear axle.

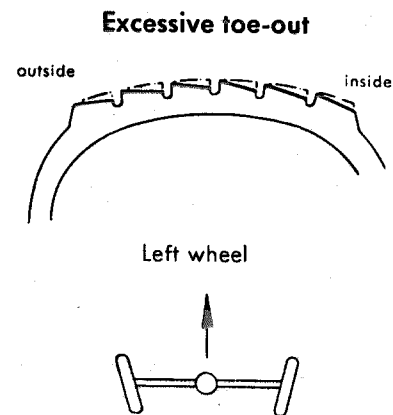
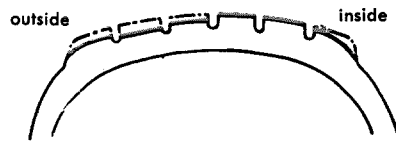


Fig. 40 — 3/15

The fault can occur at both the front and the rear axle.

Rear axle misalignment



Left wheel

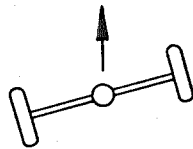


Fig. 40 — 3/16

The rear axle has misalignment but neither toe-in nor toe-out.

Front axle misalignment

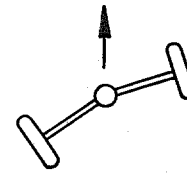
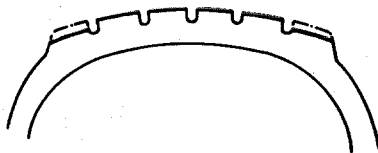


Fig. 40 — 3/17

A tire wear diagram results which is a combination of Fig. 40 — 3/15 and Fig. 40 — 3/16.

Wear at the Shoulder

rear axle



front axle

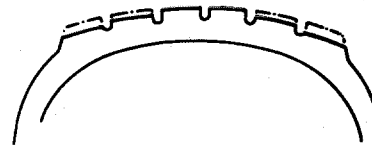


Fig. 40 — 3/18

This tire wear pattern occurs even when driving mainly on freeways or national highways and does not indicate the presence of an adjustment error nor insufficient tire pressure.

The same fault occurs, however, when the vehicle is driven under normal conditions with insufficient tire pressure.

Wear at one shoulder, i.e. the outside shoulder, can occur on the front wheels when camber is excessive. If the tire is not seated firmly on the rim and can thus "wander", wear at the shoulder is especially likely to occur.

Wear at one shoulder occurs less frequently on the rear wheels, since the camber alters constantly when the car is in motion owing to the swinging of the axle tubes.

A certain tendency to wear at the inside shoulder can appear if the vehicle is driven constantly when heavily laden. Here too, perfect seating of the tire on the rim is important. It is therefore important that the interchanging of wheels as recommended is carried out in order to obtain even wear of all tires, including that on the spare wheel.

Flat surfaces

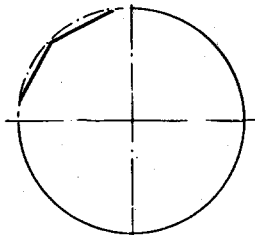


Fig. 40 — 3/19

- Static or dynamic unbalance, or static and dynamic unbalance.
- Excessive out-of-round at the rim.

Saw-tooth wear at the outer ribs

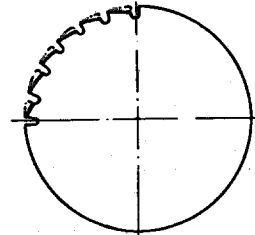


Fig. 40 — 3/20

Saw-tooth wear at the outside ribs is conditioned purely by the type of tread. This type of wear occurs only on front wheels.

In addition to incorrect wheel adjustment, defective shock absorbers can also be partly responsible for uneven tire wear. If the shock absorbers are defective, the wheels tend to bounce on rough roads. This causes increased general wear and under certain circumstances uneven tire wear along the circumference (polygonal wear).

b) Judgement of Tires

If the tread of a tire is no longer clearly distinguishable along the whole of its surface, the tire is no longer safe. Depth of tread must be a minimum of 1 mm at the most worn point on the tread.

E. Preparation for Measurement

a) When measurements are taken, the tire wear on the left and the right wheels should be as nearly identical as possible. It is not permissible to measure with one very worn tire and one new tire. In such cases it is advisable to use special "measuring wheels", i.e. wheels with new tires, which are used only for this measurement work.

b) The tire pressure should be checked and, if necessary, corrected.

Tire pressure front	1.7 atmospheres
rear	1.8 atmospheres

c) The play in the steering units should be checked (see Job No. 46 — 3). Worn parts should be replaced or repaired.

Note: If an optical axle gage is used, the check for excessive play can also be carried out with this gage.

d) If parts of the front or the rear axle assemblies (e.g. springs or axle halves) or complete assemblies are replaced before the measurement is carried out, it is essential to make a road test beforehand. This is necessary because the sudden stresses which occur whilst the vehicle is in motion cause the replaced parts to alter their position again, so that the measurements taken would be inaccurate.

e) The wheels must be able to settle into position freely whilst under load. This is best done by allowing all four wheels to stand on ball-bearing skid plates. For the front wheels, plates are required which are free to move in all directions; for the rear wheels, it is sufficient to use plates which move laterally. If such plates are not available the car can, if necessary, be measured on fixed plates. The plates used should, however, be "neutrally" positioned under the wheels. The car should also be pushed and rocked to and fro sufficiently before measurement is begun.

It is sufficient to have a level surface if measurements are taken with an optical axle gage.

F. Measurement Charts

Always record all measurements on a measurement chart, which should be kept with the car's papers. This serves to establish whether measurements have altered, e.g. as a result of colliding with the curb when parking or because of an accident.

A measurement chart has been drawn up for use throughout all our branches and workshops and is suitable for use with all our models (see Page 40—3/23). The measurement charts can be obtained from the Central Service Department.

On the back of the measurement chart are listed the adjustment values for all our passenger models.