Test values for rims and tires

Rim version	Permissible vertical runout (mm)	Permissible lateral runout (mm)
Steel	0.8 (1.0) [1]	0.8 (1.0) [1]
Light alloy	0.6	0.6 (1.0) [1]
Road wheel (tire mounted)	1.0 (1.2) [1]	1.5 (2.0) [1]

[1] up to approx. 12/86.

Commercially available tools

Stationary true running measuring device for wheels and tires for attachment to wheel balancing machine	e.g.	Hofmann, D-6100 Darmstadt Order no. 331/85
Portable true running measuring device for rims and tires	e.g.	Beissbarth, D-8000 München Order no. P 2

Note

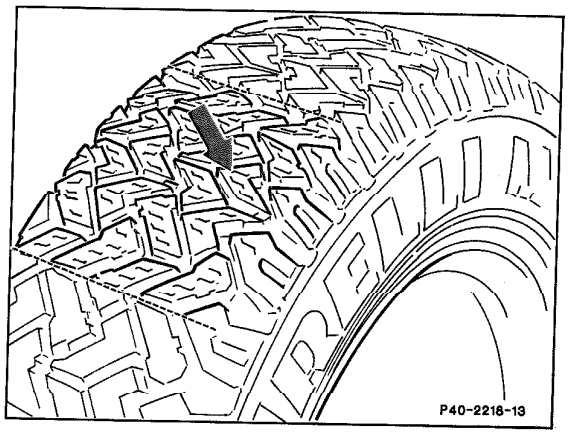
Measuring vertical/lateral runout on used tires is only practical if flat spots and braking flats on the tires can be safely ruled out.

Flat spots can form on the tire running surface over a length of 200 mm. These can be removed by filling the tire with 3.5 – 4 bar inflating pressure and placing the road wheel for approx. 4 hours in a paint drying box heated to approx. 80 °C.

⚠ **CAUTION!**

Do not stand road wheels upright.

Tires with braking flats have hand-size flats on the tire running surface and are severely roughened-up with a saw-tooth pattern (arrow). Braking flats are noticed while driving by knocking tire rolling noises. This concerns mainly the front wheels. Tires with braking flats must be renewed.



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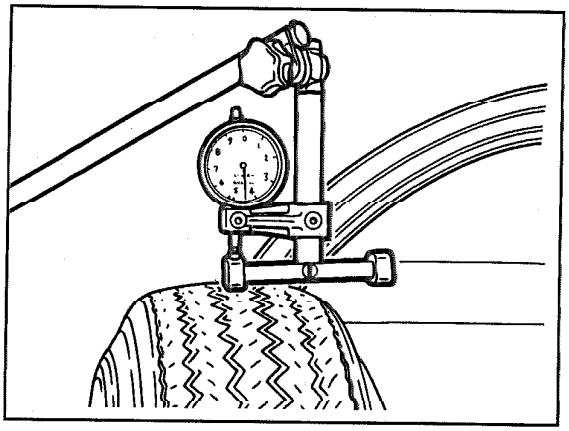
If the true running value of the road wheel is on the upper tolerance limit, the tires must be turned into the most favorable position relative to the rim (matching the wheels 40–120).
If a tire equalization machine is available, rework out-of-true tires or tires with minor braking flats.

For measuring the vertical and lateral runout on the road wheel and the rim, use a stationary measuring device attached to the wheel balancing machine or a portable device which can also be used for measuring on the vehicle itself.

Stationary true running measuring device



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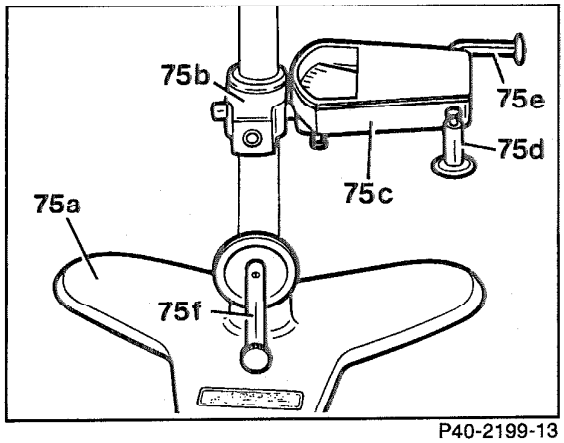
Portable true running measuring device

75a	Base
75b	Dial gauge holder
75c	Dial gauge
75d	Roller holder with convex roller of 30 mm dia. for measurements on the rim
75e	Angled roller holder with convex roller of 20 mm dia. for measurements on the rim
75f	Roller holder with flat roller of 60 mm dia. for measurements on the tire



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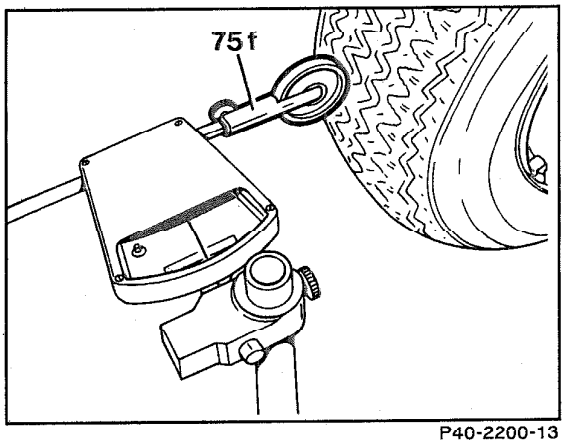
Testing the road wheel

1 Measure vertical runout with roller holder – flat roller 60 mm dia. (75f) in the center of the tire running surface.



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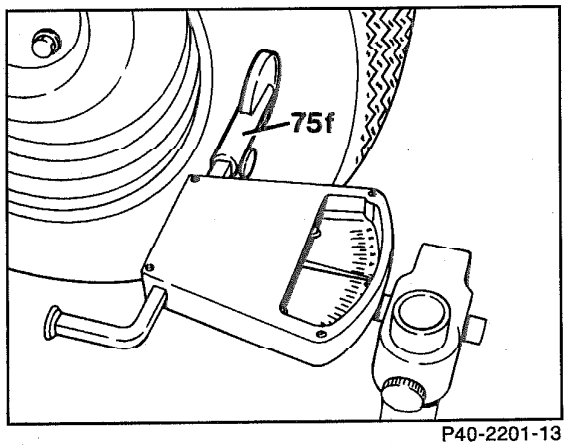
2 Measure lateral runout with roller holder – flat roller of 60 mm dia. (75f) roughly at the middle level of the side wall.



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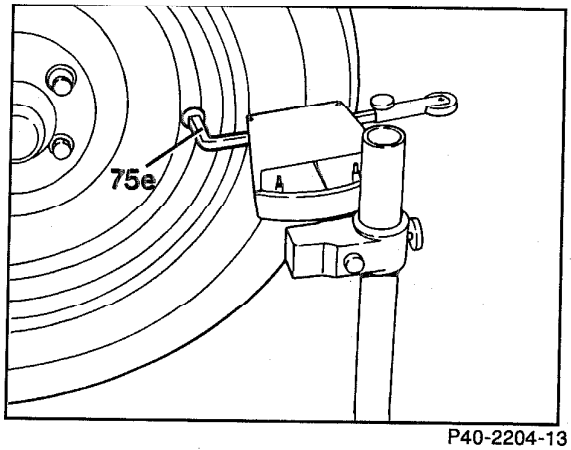
3 Checking the vertical and lateral runout on the outer side of the rim with tire mounted serves merely for rough assessment.

a) Measure vertical runout with angled roller holders – convex roller of 20 mm dia. (75e) on the wheel disk.



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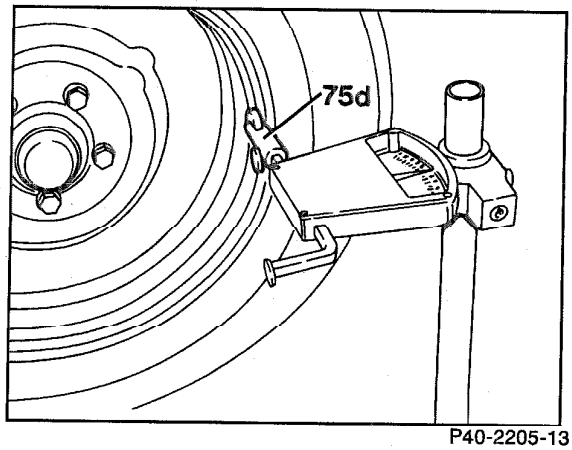
b) Measure lateral runout with roller holder – convex roller of 30 mm dia. (75d) on the wheel disk.



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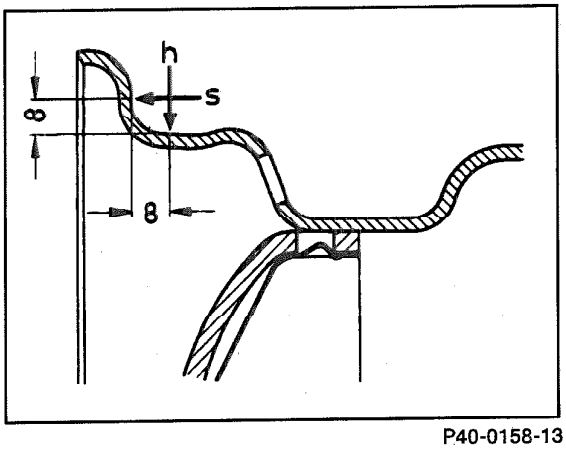
Testing the rims

Note

Light-alloy rims can only be tested for vertical and lateral runout with the tires removed, they are machined only on the wheel inside.

1 Measuring points on rim inside at seat of tire bead:



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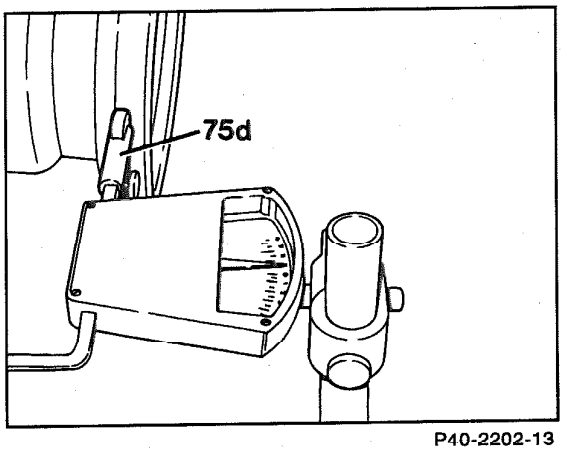
h Vertical runout measuring point
s Lateral runout measuring point

2 Measure vertical runout with roller holder – convex roller of 30 mm dia. (75d) on outside and inside of rim.



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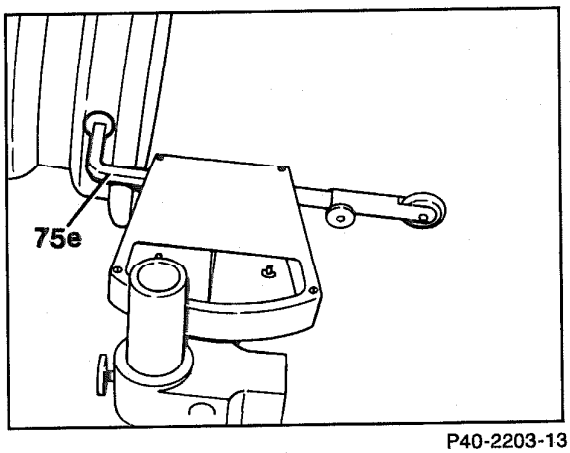
3 Measure lateral runout with angled roller holders – convex roller of 20 mm dia. (75e) on outside and inside of rim.



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