EUWA STANDARDS   April 1993

DEFINITION OF STATIC UNBALANCE
OF COMMERCIAL VEHICLE WHEELS
MADE OF STEEL OR LIGHT ALLOY

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3.05

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*DEFINITION DE L'EQUILIBRAGE STATIQUE DES ROUES DE VEHICULES COMMERCIAUX
  EN ACIER OU EN ALLIAGE LEGER.*
BESTIMMUNG DER STATISCHEN UNWUCHT VON NUTZFAHRZEUGRÄDERN
  AUS STAHL- UND LEICHTMETALL

1 - SCOPE AND FIELD OF APPLICATION

This specification covers the static unbalance of steel and aluminium wheels for
commercial vehicles (trucks, buses and their trailers).
Wheel unbalance is not a process capable feature. A statement can only be
made by a large random test.

2 - DEFINITION

The axis of the centre of gravity is displaced parallel to the axis of rotation by an
unequal distribution of mass to the axis of rotation.

By this displacement a moment arises radial to the axis of rotation, which
causes an unbalance. In order to compensate this unbalance, a mass is placed
opposite to the unbalance on a fixed radius. The product of this mass and this
radius shall be equal to the moment of unbalance.

3 - PROCEDURE

In the trade usual measuring equipment.
Centring: by the centre hole using an expanding mandrel.

With this equipment the balancing moment is ascertained in value and angle
position. If the part shall be balanced, a balancing mass has to be fixed in the
indicated angle position. The size of this mass results from the moment of
unbalance divided by the radius of the point where the balancing mass is fixed.
For the measuring of commercial vehicle wheels the mass of the according
valve (valves) has to be regarded. For that purpose for instance a magnetic
weight is fixed at the place of the valve hole, which (if only one valve for this
wheel design is used) has the mass of the valve or (if different valves for this
wheel are used) the mass in accordance with the mean value of the referred
valve masses.

4 - MEASURING RESULTS

Unit: kgmm (gmm is allowed too; 1 kgmm = 1000 gmm)

5 - VALUES OF THE ADMISSIBLE STATIC UNBALANCE

The value of static unbalance refer to the mean values + 3 standard deviations
with dependence of wheel weight (see figure on page 2).
Pay attention of the graduation on 0.5 kgmm.

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Main changes compared to the last issue:

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6 - VALVE MASS FOR 15° D.C. WHEELS - APPROXIMATE VALUES

valve designation according to ETRTO	mass g	application for wheel with diameter code
V3.20.4	41.3	17.5, 19.5, 22.5, 24.5
V3.20.5	34.4	17.5 (rim width 5.25)
V3.20.6	49.4	22.5 (rim width 9.00)