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Passenger vehicle wheels — Clip balance weight and rim flange nomenclature, test procedures and performance requirements

Roues pour véhicules particuliers — Nomenclature des masselottes d'équilibrage clippées et des rebords de jantes, méthodes d'essai et exigences de performance

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Contents

Page

Foreword

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC22/SC33/WG5.

This WD13988 adds adhesive balance weights to the existing standard which covers clip on weights only. Nomenclature for the balance weight and test procedures and performance requirements for the adhesive weights are included.

Introduction

This International Standard addresses clip and adhesive balance weights used on passenger car wheels. It provides general features and configurations of the clip balance weights, general features of the adhesive balance weights and general features and configurations for rim dimensions relavant to clip on weights and defines terms used to describe these features.

This International Standard provides test procedures to evaluate weight retention on the wheel.

Passenger vehicle wheels — Clip balance weight and rim flange nomenclature, test procedures and performance requirements

1 Scope

This International Standard specifies procedures and minimum performance requirements for testing without tyres the retention of balance weights for use on wheels for passenger vehicles. It also specifies general features for configurations of clip balance weights, rim flanges for light alloy and steel wheels intended for use on passenger cars and adhesive balance weights. Alternative materials and geometries can be considered in the future.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3911, *Wheels and rims for pneumatic tyres — Vocabulary, designation and marking*

ISO 4000-1, *Passenger car tyres and rims — Part 1: Tyres (metric series)*

ISO 4000-2, *Passenger car tyres and rims — Part 2: Rims*

ISO 4223-1, *Definitions of some terms used in the tyre industry — Part 1: Pneumatic tyres*

3 Terms and definitions

For the purposes of this document, the definitions given in ISO 4223-1, ISO 4000-1, ISO 4000-2, ISO 3911 and the following apply.

3.1
Clip Balance weight assembly
Assembly of the weight and the clip, which is intended for mounting on the rim flange to balance the tyre/wheel assembly about its axis of rotation and thus minimize vibrations due to the rotation of the tyre/wheel assembly

Note 1 to entry: Figure 1 gives the terminology and nomenclature of balance weight assembly

3.1.1
Weight
Material of a specified mass with contours to conform to the surface of the rim flange. The material is recommended to be free of lead.

3.1.2
Clip
Specially formed metal affixed to the weight to mount the balance weight on the rim flange

3.1.3
Spur
Optional part of a clip that protrudes from its surface interfacing with the rim flange

3.1.4
Balance weight coating
Non-corrosive material coating to avoid corrosion

EXAMPLE Polyester, nylon.

3.1.5
Balance weight key dimensions
Dimensions that are essential for fitting the balance weight on the rim flange

3.1.6
Balance weight size
Size determined by the magnitude of the balance weight mass, expressed in grams

3.1.7
Balance weight retention force
Static force required to remove the balance weight from the rim flange, expressed in newtons

3.1.8
Balance weight retention
Ability of the balance weight to maintain its secure position on the rim flange in various service conditions

3.1.9
Interference
Measure of balance weight press fit computed as the difference between the flange thickness and the weight gap

3.2
Adhesive balance weight assembly
Assembly of the weight portion and the adhesive portion, which is intended for mounting on the rim to balance the tyre/wheel assembly about its axis of rotation and thus minimize vibrations due to the rotation of the tyre/wheel assembly

Note 1 to entry: Figure 1A gives the terminology and nomenclature of the adhesive balance weight assembly

3.2.1
Weight portion
Portion of the weight that provide mass for balancing the wheel. The material is recommended to be free of lead.

3.2.2
Tape portion
A double sided adhesive tape with 3 layers: 1) adhesive for the weight portion, 2) a backing material, and 3) adhesive for attachment to the wheel surface

3.3
Rim flange
Part of the rim where the clip balance weight is mounted

Note 1 to entry: Figure 2 gives the terminology and nomenclature of rim flange features for light alloy wheels.

Note 2 to entry: Figure 3 gives the terminology and nomenclature of rim flange features for wheels with roll formed rim.

Note 3 to entry: Figure 4 gives the terminology and nomenclature of rim flange features for fullface wheels.

Note 4 to entry: Figure 5 gives the terminology and nomenclature of rim flange features for clad wheels.

3.3.1
Rim flange key dimensions
Dimensions that are essential for fitting clip balance weight on the rim flange

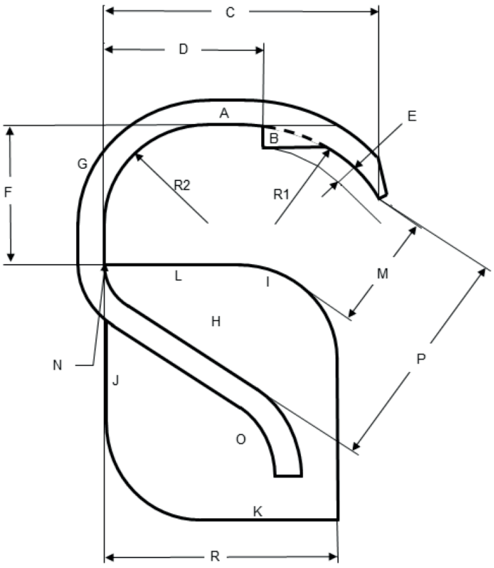

Fig 1 Key

A: Clip
B: Spur
C: Clip Depth
D: Spur Location
E: Spur Depth
F: Clip Height
G: Outer Surface of Clip
H: Balance Weight
I: Contact Radius
J: Front Surface
K: Bottom Surface
L: Top Surface
M: Weight Gap
N: Clip Insertion Point
O: Back Leg of Clip
P: Clip Gap
R: Weight Depth
R1: Compound Radius R1
R2: Compound Radius R2

Figure 1 — Clip balance weight assembly terminology

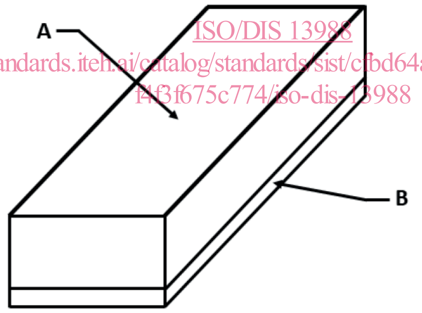

Fig 1A Key

A: Weight
B: Adhesive

Figure 1 — A - Adhesive balance weight assembly terminology