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Wheels and rims for pneumatic tyres — Vocabulary, designation and marking

*Roues et jantes pour pneumatiques — Vocabulaire, désignation et
marquage*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 33, *Vehicle dynamics and chassis components*.

This fourth edition cancels and replaces the third edition (ISO 3911:2004), which has been technically revised.

The main changes compared to the previous edition are as follows:

- [3.8.1](#), optional bead seat profiles has been added;
- contre-pente (CP) hump in [Figure 10](#) has been omitted;
- definition for five-piece rims have been amended to include 6-, 7-, 8- and 9-piece rims;
- 4,0 and 5,0 wheel designation and marking have been added, and annexes have been deleted;
- manually adjustable wheel graphic in [Figure 8](#) has been made common with power adjustable graphic.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Wheels and rims for pneumatic tyres — Vocabulary, designation and marking

1 Scope

This document presents a vocabulary of terms related to, and systems for the designation and marking of, wheels and rims intended for use with pneumatic tyres. The intention is to define fundamental wheel and rim terms rather than provide a comprehensive tabulation of all wheel design features. Also specified are the content, location and minimum size of the wheel and rim marking, with the purpose of establishing, on a worldwide basis, a uniform identification system for wheels and rims.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <http://www.electropedia.org/>

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3.1

wheel

rotating load-carrying member between the tyre and the axle, usually consisting of two major parts, the rim and the wheel disc, which may be integral, permanently attached or detachable

Note 1 to entry: See [Figures 1](#) to [8](#).

3.2 wheel components

3.2.1

rim

part of the *wheel* ([3.1](#)) on which the tyre is mounted and supported

3.2.2

disc

wheel disc

part of the *wheel* ([3.1](#)) which is the supporting member between the axle and the rim

3.2.3

single wheel

wheel ([3.1](#)) which supports one tyre on one end of an axle

3.2.4

inset wheel

wheel ([3.1](#)) so constructed that the rim centreplane is located inboard of the attachment face of the disc

Note 1 to entry: See [Figure 1](#) a).

Note 2 to entry: Inset is the distance from the attachment face of the disc to the rim centreplane.

**3.2.5
zeroset wheel**

wheel (3.1) so constructed that the rim centreplane is coincident with the attachment face of the disc

Note 1 to entry: See Figure 1 b).

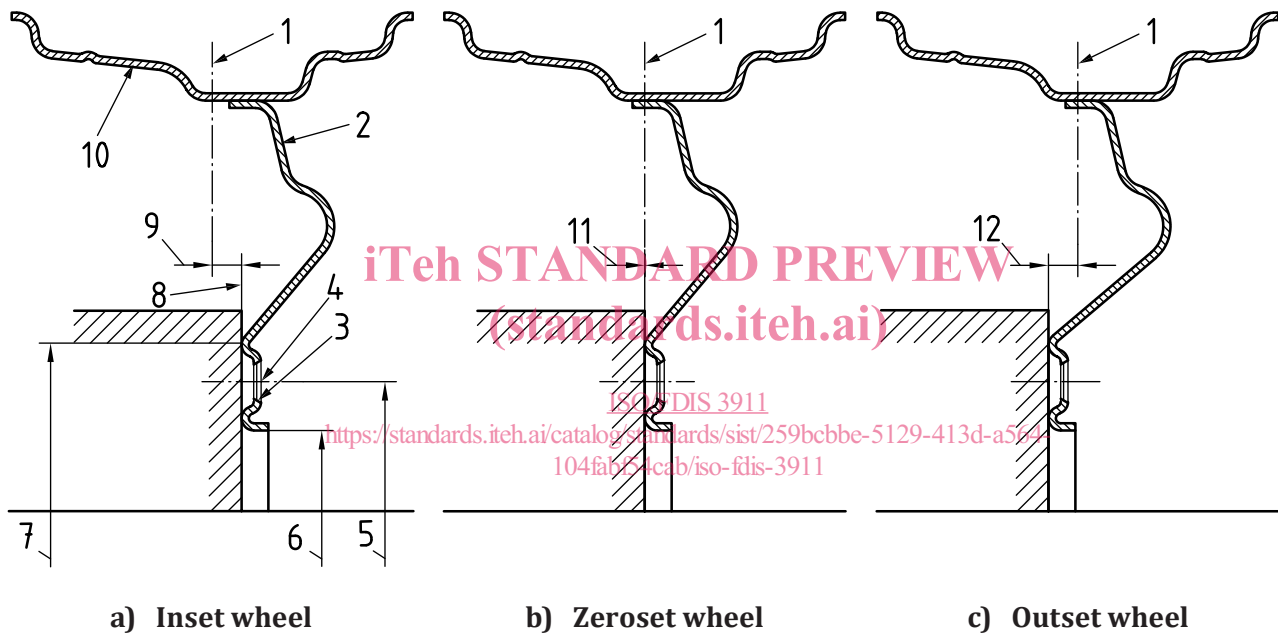
**3.2.6
outset wheel**

wheel (3.1) so constructed that the centreplane of the rim is located outboard of the attachment face of the disc

Note 1 to entry: See Figure 1 c).

Note 2 to entry: Outset is the distance from the attachment face of the disc to the centreplane of the rim.

Note 3 to entry: Track, the distance between the centreplanes of the tyres on an axle, increases as the outset of the wheels is increased.



Key

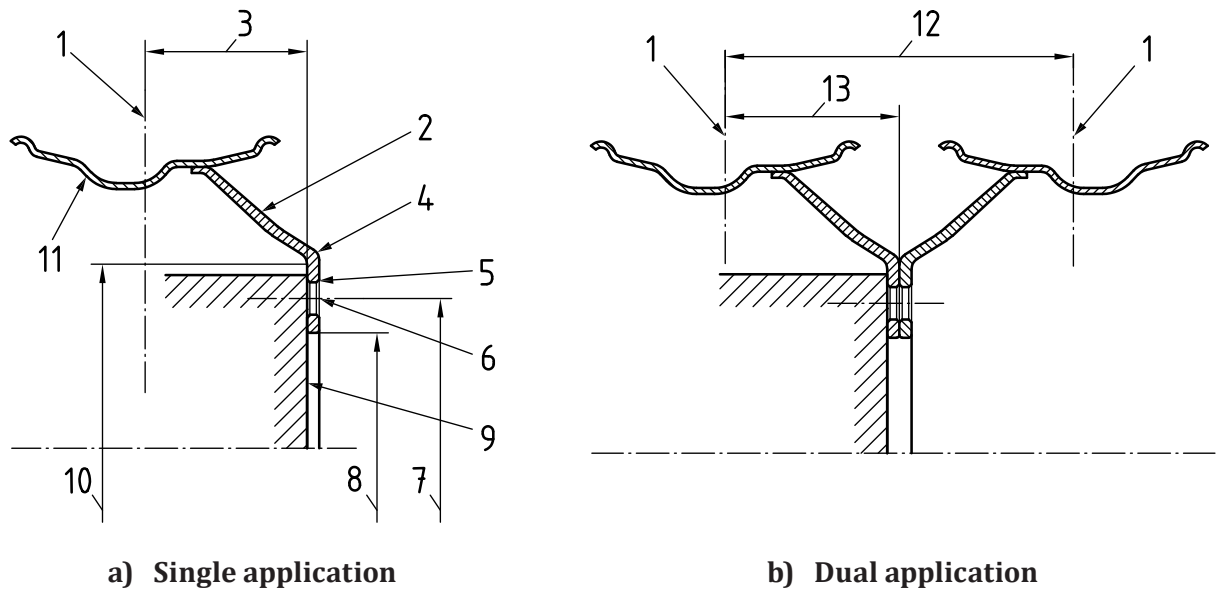
- | | |
|---------------------------------------|-------------------------------------|
| 1 rim centreplane | 7 attachment face diameter of wheel |
| 2 disc | 8 attachment face |
| 3 nut seat | 9 inset |
| 4 bolt hole | 10 rim |
| 5 pitch circle diameter of bolt holes | 11 zeroset |
| 6 centre hole diameter | 12 outset |

Figure 1 — Passenger car and light commercial vehicle disc wheels — Nomenclature

**3.2.7
dual wheel**

wheel (3.1) with sufficient inset and configuration so that two such wheels, when assembled with each other, support two tyres on one end of an axle

Note 1 to entry: See Figure 2.

**Key**

1	rim centreplane	8	centre hole diameter
2	disc	9	attachment face
3	inset	10	attachment face diameter of wheel
4	external face of disc	11	rim
5	nut seat	12	dual spacing
6	bolt hole	13	offset
7	pitch circle diameter of bolt holes		

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Figure 2 — Commercial vehicle disc wheels — Nomenclature

3.2.8 dual spacing

distance between the centreplanes of the rims to provide the required clearance between the tyres

Note 1 to entry: See [Figures 2, 5 and 6](#).

3.3 Wheel types

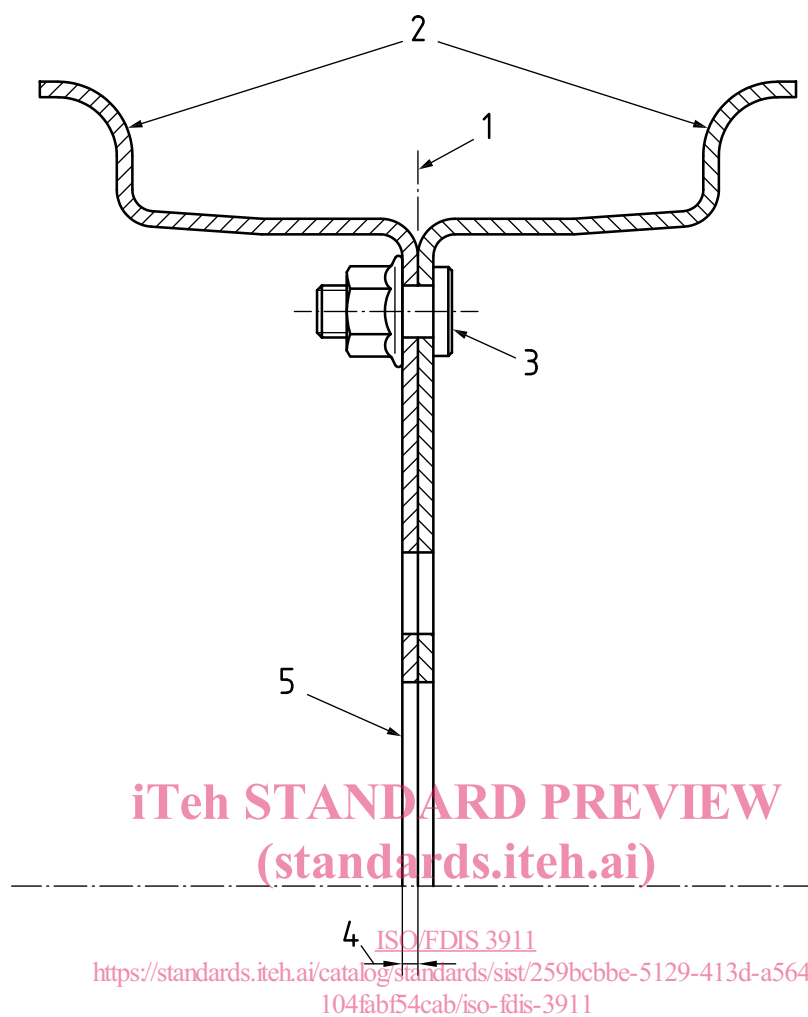
3.3.1 disc wheel

permanent combination of a rim and wheel disc

Note 1 to entry: See [Figures 1 and 2](#).

3.3.2 divided wheel

wheel ([3.1](#)) so constructed that its two main parts, the rim portions of which might or might not be the same in width, when securely fastened together with clamping bolts or equivalent mechanical means, combine to form a rim having two fixed flanges



Key

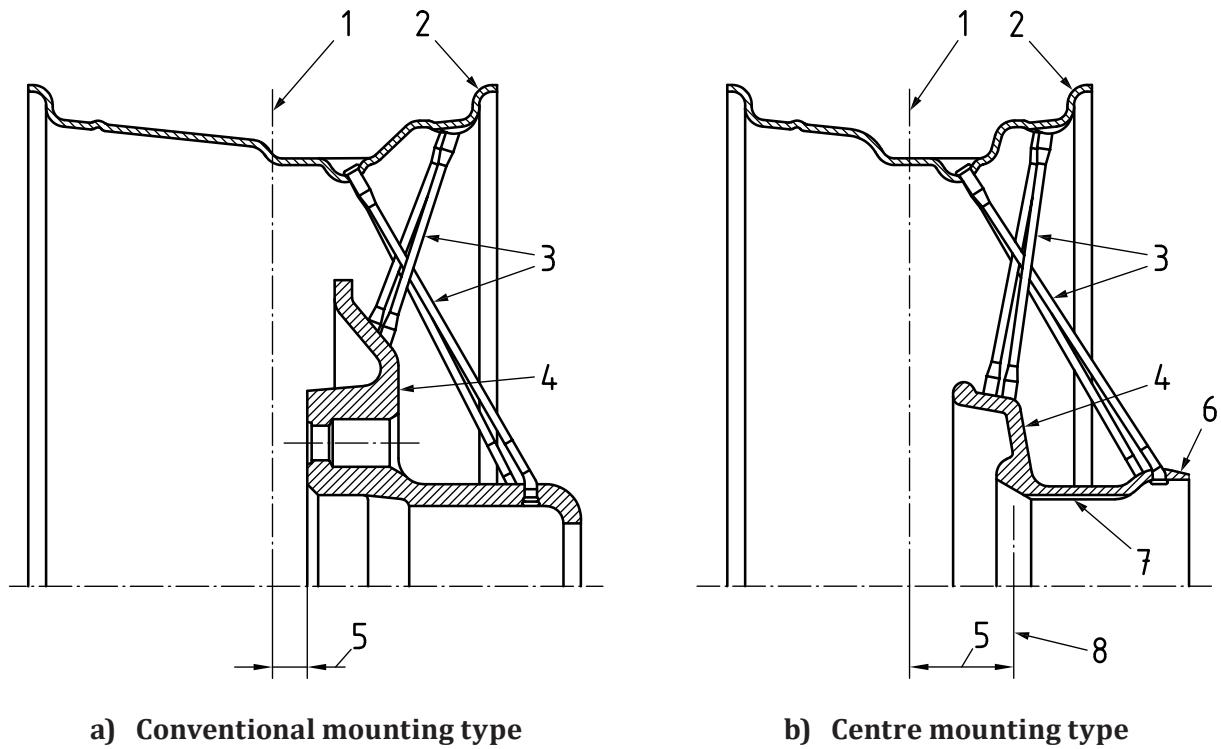
- 1 rim centreplane
- 2 fixed flanges
- 3 clamping bolts or equivalent mechanical means
- 4 outset
- 5 attachment face

Figure 3 — Divided wheel — Nomenclature

3.3.3

wire wheel

wheel (3.1) so constructed that its rim is joined to the centre member (shell) by a series of wire spokes



Key

- | | | | |
|---|-----------------------|---|-----------------------------|
| 1 | rim centreplane | 5 | inset |
| 2 | rim | 6 | cone seat for retaining nut |
| 3 | wire spokes | 7 | spline |
| 4 | centre member (shell) | 8 | hub seat reference plane |

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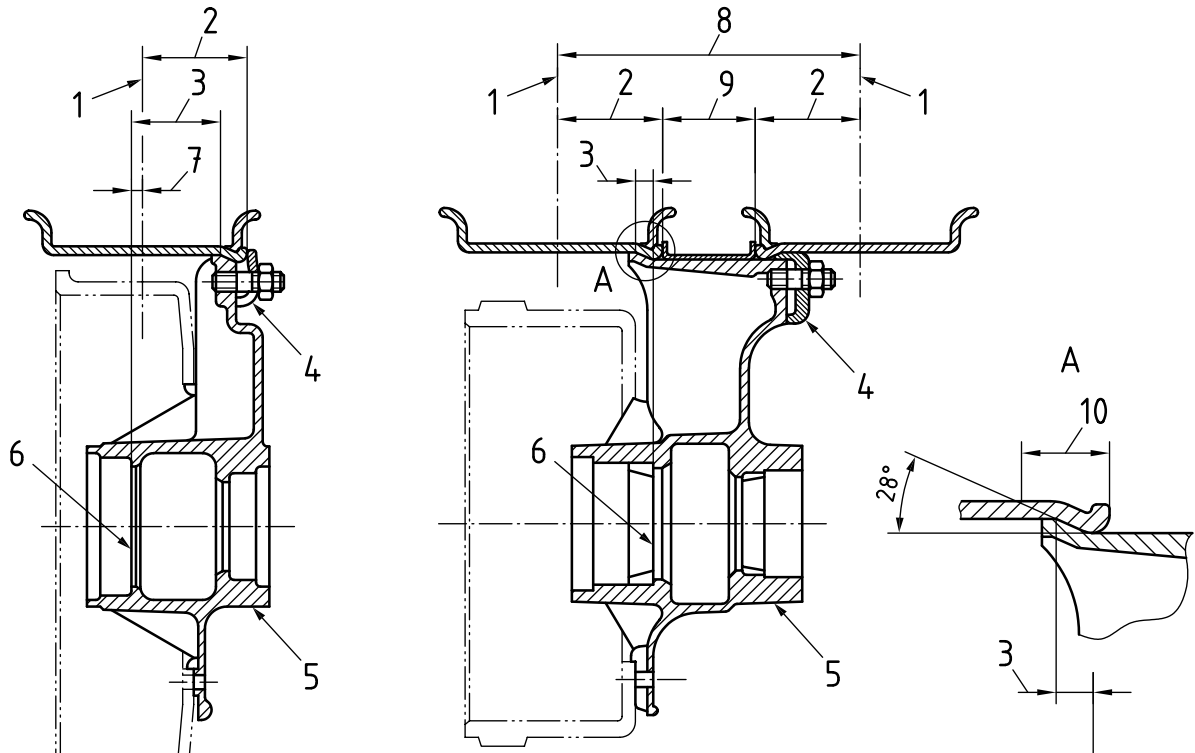
Figure 4 — Wire wheels — Nomenclature

3.4 Wheels with demountable rims

3.4.1 wheel with 28° mounting bevel

wheel (3.1) so constructed that one or two demountable rims are clamped to the cast wheel body, which also serves as the hub support for the brake drum or disc brake rotor

Note 1 to entry: [Figure 5](#).



iTeh STANDARD PREVIEW
(standards.iteh.ai) a) Single b) Dual

Key

- | | |
|----------------------|--|
| 1 rim centreplane | 6 inner bearing cup shoulder (reference plane) |
| 2 rim base offset | 7 outset |
| 3 wheel bevel offset | 8 dual spacing |
| 4 clamp | 9 spacer band width |
| 5 cast wheel body | 10 rim bevel location |

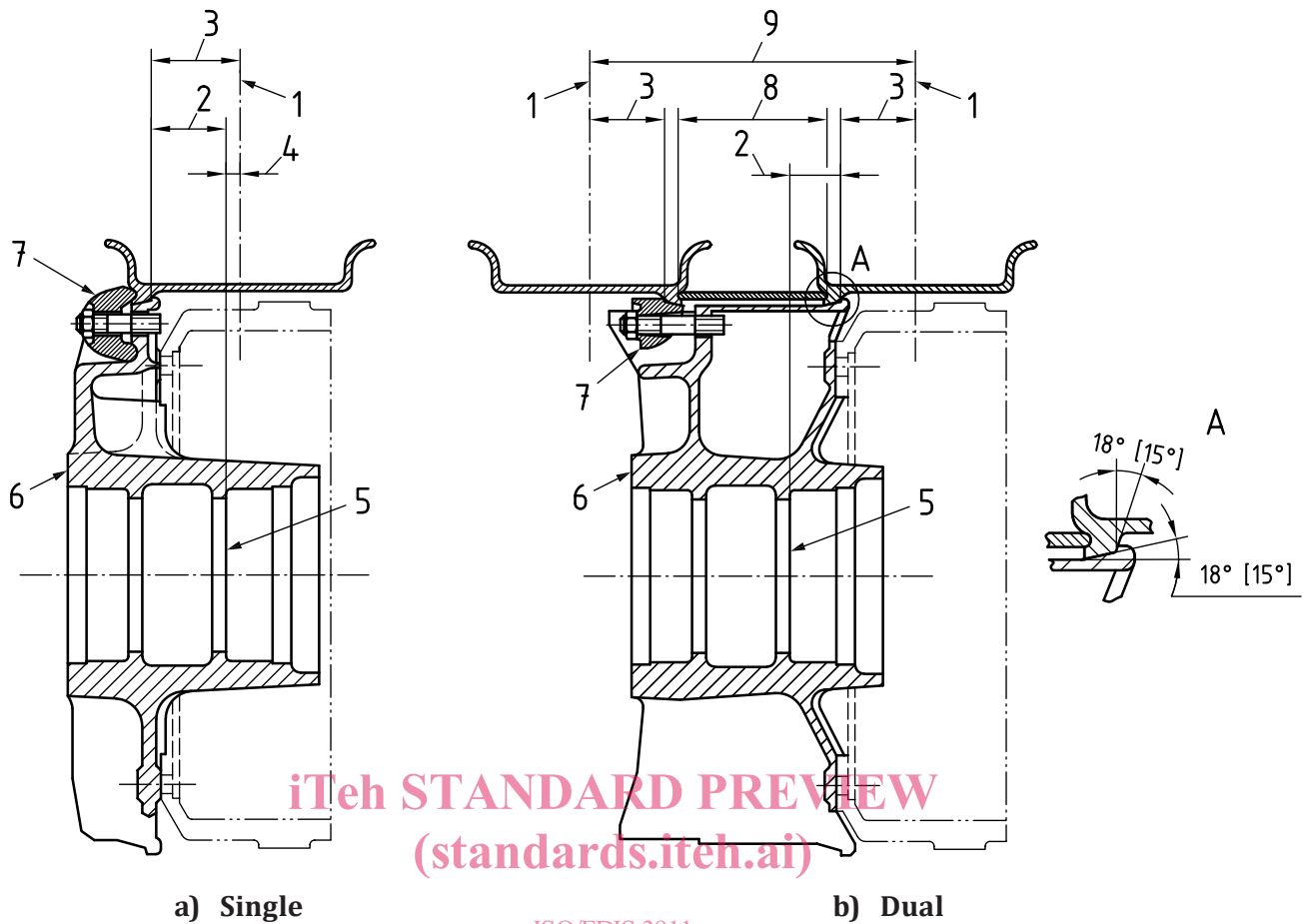
Figure 5 — Wheels with 28° mounting bevel — Nomenclature

3.4.2

wheel with 18° [15°] mounting bevel

wheel (3.1) so constructed that one or two demountable rims are clamped to an 18° [15°] mounting bevel on the cast wheel body

Note 1 to entry: See [Figure 6](#).



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Key

- 1 rim centreplane
- 2 wheel bevel offset
- 3 rim base offset
- 4 inset
- 5 inner bearing cup shoulder (reference plane)

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- 6 cast wheel body
- 7 clamp
- 8 spacer band width
- 9 dual spacing

Figure 6 — Wheels with 18° [15°] mounting bevel — Nomenclature

3.5 Wheels with more than one mounting option

3.5.1

reversible wheel

wheel (3.1) so constructed that its disc can be mounted on either face to provide inset (narrow track) or outset (wide track)

Note 1 to entry: See [Figure 7](#).