

INTERNATIONAL
STANDARD

ISO
6697

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**Cycles — Hubs and freewheels —
Assembly dimensions**

Cycles — Moyeux et roues libres — Dimensions d'assemblage

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Reference number
ISO 6697:1994(E)

Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 6697 was prepared by Technical Committee ISO/TC 149, *Cycles*, Subcommittee SC 2, *Sub-assemblies and components*.

Annex A of this International Standard is for information only.

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Cycles — Hubs and freewheels — Assembly dimensions

1 Scope

This International Standard specifies the main dimensions for hubs and freewheels, including single-speed coaster brake hubs and multispeed gear hubs, to ensure assembly and interchangeability.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6698:1989, *Cycles — Screw threads used to assemble freewheels on bicycle hubs*.

ISO 8090:1990, *Cycles — Terminology*.

ISO 9633:1992, *Cycle chains — Characteristics and test methods*.

3 Dimensions

NOTE 1 The figures are given as an indication only, and do not imply any design requirements.

3.1 Front hub

Front hub dimensions are shown in figure 1 and given in table 1.

3.2 Rear hub

Rear hub dimensions are shown in figure 2 and given in table 2.

3.3 Freewheels

Freewheel dimensions are shown in figure 3 and given in table 3.

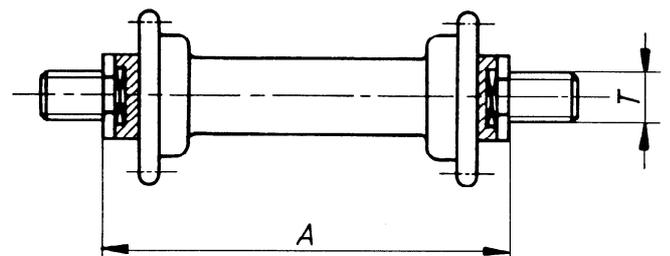


Figure 1

Table 1 — Front hub dimensions

Dimensions in millimetres

Width A ± 1	Axle thread T
100	M8 × 1 or
91	M9 × 1

Dimensions in millimetres

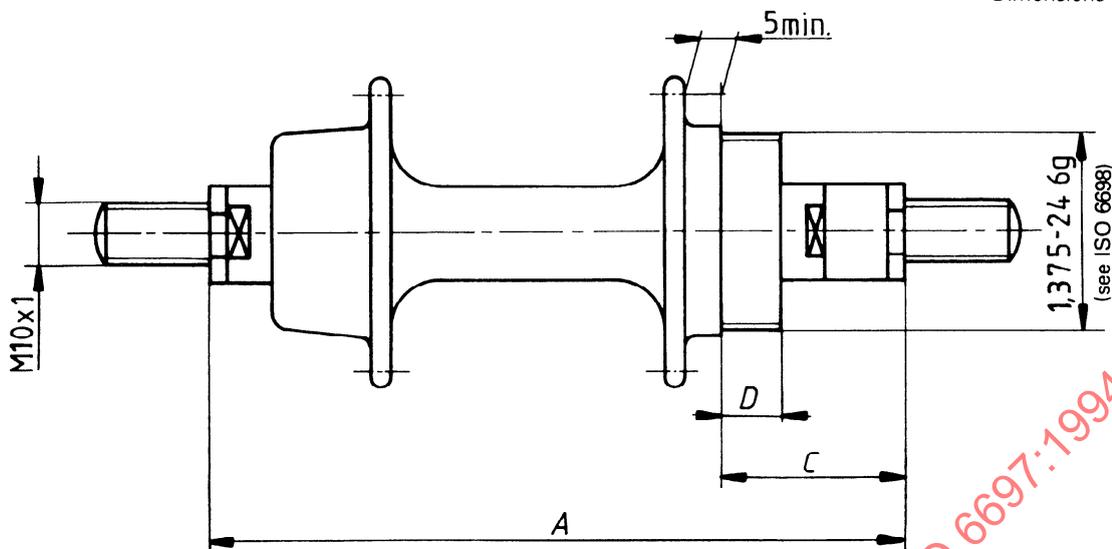


Figure 2

Table 2 — Rear hub dimensions

Dimensions in millimetres

A	C	D	Application	ISO chain number ¹⁾	Rear sprocket chain line distance ²⁾ b ³⁾	
					Wheel with spoke protector	Wheel without spoke protector
± 1	⁺¹ ₀	max.				
110	21 —	10 —	Single speed freewheel Single speed coaster brake hub ⁴⁾⁵⁾	081 C 082 C	— —	41 41
117	28	10	3 speed freewheel	081 C or 082 C	42	41
	28	10	4 speed freewheel	082 C	42	41
	—	—	Single speed coaster brake hub ⁴⁾⁵⁾	081 C	—	41
	—	—	Multispeed gear hub ⁴⁾	081 C	42	41
122	33	10	4 speed freewheel	082 C	40	38,5
			5 speed freewheel	082 C	42	41
			Multispeed gear hub ⁴⁾	081 C	—	41
126	36	10	5 speed freewheel	082 C	41	40
			6 speed freewheel	082 C	43	42

1) Chain number according to ISO 9633. These designations correspond to the following inch designations:

No. 081 C: 1/2 x 1/8
No. 082 C: 1/2 x 3/32

2) Rear chain line values are approximate, but may be calculated from the formula

$$\frac{A}{2} - C + M - \frac{S}{2}$$

taking into account the exact dimensions *M* and *S* of the freewheel (see table 3).

3) See ISO 8090:1990, clause 11.

4) Tolerance for *A* : ± 1,5

5) For single speed coaster brake hubs, the preferred value for dimension *A* is 117 mm.

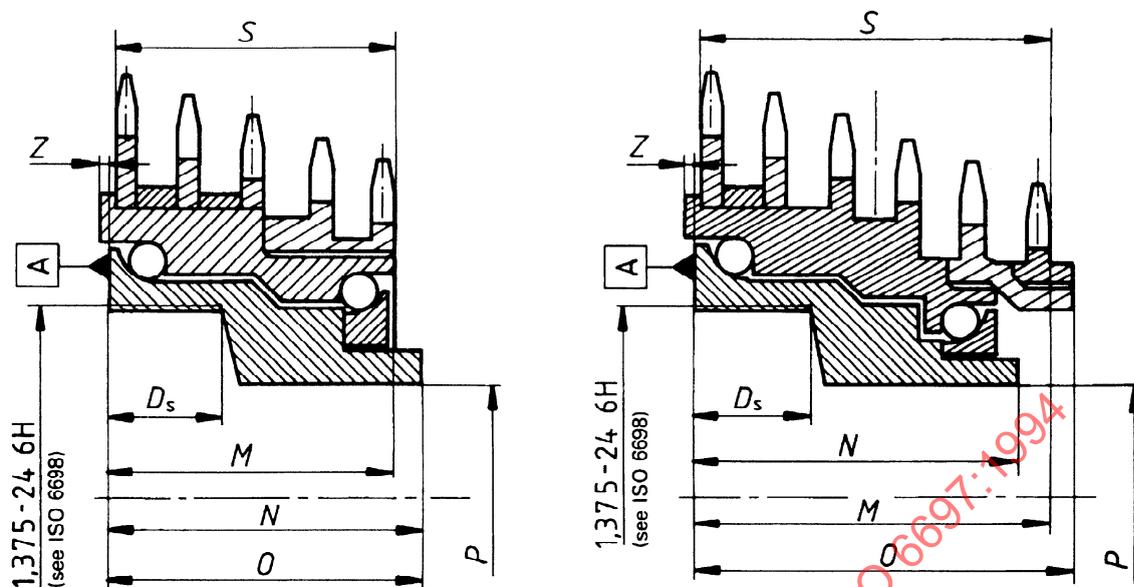


Figure 3

Table 3 — Freewheel dimensions

Dimensions in millimetres

Number of sprockets	Wheel for use with chain number ¹⁾	D_s	M	N ²⁾	O ³⁾	P	Z	S
		min.	max.	max.	max.	min.	max.	max.
1	081 C	10,2	—	18	18	20	2	—
3	081 C or 082 C		21	24	24			18
4	082 C		21	27	27			20
5	082 C		27	30	30			25
6	082 C		33	33	33			31

1) Chain number according to ISO 9633. These designations correspond to the following inch designations:

- No. 081 C: 1/2 × 1/8
- No. 082 C: 1/2 × 3/32

2) Overall width of inner body.

3) Overall width from reference face A to the extreme outside face of the freewheel assembly. It may be equal to N , or equal to or greater than M (see figure 3).

Annex A
(informative)

Bibliography

- [1] ISO 261:1973, *ISO general purpose metric screw threads — General plan.*
- [2] ISO 4210:1989, *Cycles — Safety requirements of bicycles.*

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