INTERNATIONAL STANDARD

ISO 22

Second edition
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Belt drives — Flat transmission belts and corresponding pulleys — Dimensions and tolerances

Transmissions par courroies — Courroies plates de transmission et poulies correspondantes — Dimensions et tolérances

Reference number
ISO 22:1991(E)

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.

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 22 was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts)*, Sub-Committee SC 1, *Veebelts and grooved pulleys*.

This second edition cancels and replaces the first edition (ISO 22:1975), together with ISO 63:1975, ISO 99:1975 and ISO 100:1984, of which it constitutes a technical revision.

Annexes A and B of this International Standard are for information only.

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Belt drives — Flat transmission belts and corresponding pulleys — Dimensions and tolerances

1 Scope

This International Standard specifies the principal dimensions of flat transmission belts and of the corresponding pulleys.

Annexes A and B give, respectively, recommended crowns of the pulleys and the ordinary recommended correspondance between the widths of belts and the widths of the pulleys used.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was 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 edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3:1973, *Preferred numbers — Series of preferred numbers.*

3 Belts

3.1 Length

The lengths specified are the inside lengths under normal fitting tension.

The manufacturer shall take account of the difference between the length under normal fitting tension and the length without tension. This difference depends on the nature of the belt and its method of manufacture.

The belt lengths particularly recommended (preferential series) are given in table 1 and are selected from the R 20 series of preferred numbers in accordance with ISO 3. The other values are chosen from the R 40 series.

Table 1 — Lengths of belts

Dimensions in millimetres

Preferential series[1)]	Secondary series
500	530
560	600
630	670
710	750
800	850
900	950
1 000	1 060
1 120	1 180
1 250	1 320
1 400	1 500
1 600	1 700
1 800	1 900
2 000	
2 240	
2 500	
2 800	
3 150	
3 550	
4 000	
4 500	
5 000	

1) Should the range of lengths given in table 1 be considered insufficient, it may be completed:

— outside the limits, with other terms from the R 20 series of preferred numbers;

— exceptionally, between two consecutive lengths with terms from the R 40 series (from 2 000 mm).

NOTE 1 If required for any technical reason, it is permissible to cut a length of belting and braid it together at the ends to form a belt of any length suitable for a particular application.

3.2 Width

The belt widths and their tolerances are given in table 2. The widths are selected from the R 10 series of numbers in accordance with ISO 3 for values less than or equal to 63 mm and from the R 20 series for higher values.

Table 2 — Widths of belts

Dimensions in millimetres

Width	
nom.	tol.
16 20 25 32 40 50 63	± 2
71 80 90 100 112 125	± 3
140 160 180 200 224 250	± 4
280 315 355 400 450 500	± 5

4 Pulleys

4.1 Width

The widths, b, of pulleys and their tolerances are given in table 3. The widths are selected from the R 10 series of preferred numbers in accordance with ISO 3 for values less than or equal to 63 mm, and from the R 20 series for higher values.

Table 3 — Widths of pulleys

Dimensions in millimetres

b	
nom.	tol.
20 25 32 40 50 63 71	± 1
80 90 100 112 125 140	± 1,5
160 180 200 224 250 280	± 2
315 355 400 450 500 560	± 3

4.2 Diameter

The diameter of a pulley for a flat transmission belt is the diameter, D, measured in the plane of symmetry of its rim (see figure A.1).

The diameters, D, of pulleys and their tolerances are given in table 4. The diameters are selected from the R 20 series of preferred numbers in accordance with ISO 3.

Table 4 — Diameters of pulleys

Dimensions in millimetres

D	
nom.	tol.
40	± 0,5
45 50	± 0,6
56 63	± 0,8
71 80	± 1
90 100 112	± 1,2
125 140	± 1,6
160 180 200	± 2
224 250	± 2,5
280 315 355	± 3,2
400 450 500	± 4
560 630 710	± 5
800 900 1 000	± 6,3
1 120 1 250 1 400	± 8
1 600 1 800 2 000	± 10

Annex A
(informative)

Crown

A.1 Shape of crown

It is recommended that the shape of the profile should be a regular, symmetrical curve.

A symmetrical profile with a flat central part is acceptable provided that:

a) the flat part is tangential to the curve;

b) its width is not more than 40 % of the width of the pulley.

A.2 Crown height values

The height, h, of the crown of a pulley for a flat transmission belt is given for information in either table A.1 or table A.2 and varies with the diameter D of the pulley (and, for the larger diameters, with the width b of the rim). The crown height may vary according to the materials used for belt construction (the belt manufacturer should be consulted).

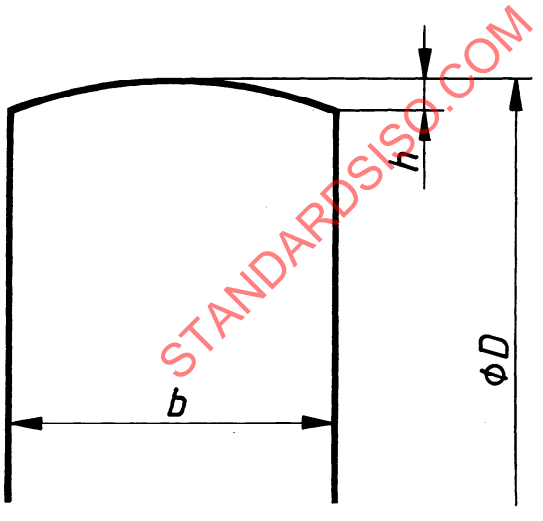

Figure A.1 — Crown of pulleys for flat transmission belts

A.2.1 Pulley diameters 40 mm ⩽ D ⩽ 710 mm

For this series of pulley diameters, the crown height varies only with the diameter of the pulley and is unrelated to the width of the rim.

Table A.1 — Crown height values

Dimensions in millimetres

Pulley diameter D	Crown h nom.
40 ⩽ D ⩽ 112	0,3
125 ⩽ D ⩽ 140	0,4
160 ⩽ D ⩽ 180	0,5
200 ⩽ D ⩽ 224	0,6
250 ⩽ D ⩽ 280	0,8
315 ⩽ D ⩽ 355	1
400 ⩽ D ⩽ 500	1
560 ⩽ D ⩽ 710	1,2

A.2.2 Pulley diameters 800 mm ⩽ D ⩽ 2 000 mm

For this series of pulley diameters, the crown height varies with both the diameter of the pulley and the width.

Table A.2 — Crown height values

Dimensions in millimetres

Pulley diameter D	Width	
	b ⩽ 250	b ⩾ 280
	Crown h nom.	
800 ⩽ D ⩽ 1 000	1,2	1,5
1 120 ⩽ D ⩽ 1 400	1,5	2
1 600 ⩽ D ⩽ 2 000	1,8	2,5