
**Agricultural machinery — Endless
hexagonal belts and groove sections of
corresponding pulleys**

*Machines agricoles — Courroies hexagonales sans fin et profils de
gorges des poulies correspondantes*

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Contents

	Page
Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols and abbreviated terms	1
5 Dimensions and tolerances	2
5.1 Belts	2
5.1.1 General	2
5.1.2 Cross-sections	2
5.1.3 Lengths	3
5.2 Grooved pulleys	4
5.2.1 Pulleys having parallel axes of rotation	4
5.2.2 Pulleys having axes of rotation which are not parallel	4
6 Measurement of lengths of belts	4
6.1 Measuring device	4
6.2 Procedure	5
6.3 Groove section of measuring pulleys	5
7 Calculation of speed ratio, R	6
7.1 General	6
7.2 Correction factor for the datum diameter, d_d , for pulley grooves according to ISO 4183 (datum system)	6
7.3 Correction factor for the effective diameter, d_e , for pulley grooves according to ISO 5291 (effective system)	7
Bibliography	8

[ISO 5289:2018](https://standards.iteh.ai/catalog/standards/iso/2c220812-7240-4d02-8146-301b4989453a/iso-5289-2018)

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 41, *Pulleys and belts (including veebelts)*, Subcommittee SC 1, *Friction*.

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.

This third edition cancels and replaces the second edition (ISO 5289:1992), which has been technically revised. The main changes compared to the previous edition are as follows:

- in [5.1.3](#), the length tolerance and range of belts have been changed based on ISO 24035;
- in [Table 1](#), the dimensions of measuring pulleys and measuring forces have been changed based on ISO 24035;
- in [6.2](#), the length measuring procedure and formula has been changed.

Agricultural machinery — Endless hexagonal belts and groove sections of corresponding pulleys

1 Scope

This document specifies the main dimensions of endless hexagonal belts intended for use on agricultural machinery (and, in particular, harvester-thresher machines), together with the groove section of the corresponding fixed-diameter pulleys.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1081, *Belt drives — V-belts and V-ribbed belts, and corresponding grooved pulleys — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1081 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/>

ISO 5289:2018

<http://www.iso.org/standard/7240-4d02-8146-301b4989453a/iso-5289-2018>

4 Symbols and abbreviated terms

For the purpose of this document, the symbols and abbreviated terms given in ISO 1081 and the following apply. (see [Table 1](#))

Table 1 — Symbols and abbreviated terms

Symbol	Designation	Unit
b_d	Correction factor	—
b_e	Effective line differential	—
C_e	Effective circumference of the measuring pulleys	mm
d_e	Effective diameter	mm
d_d	Datum diameter	mm
d_p	Pitch diameter	mm
E_{\min}	Minimum centre distance measured during the measuring cycle	mm
E_{\max}	Maximum centre distance measured during the measuring cycle	mm
F	Measuring force	N
h	Minimum groove depth	mm
L_e	Nominal effective length	mm
R	Speed ratio	—
T	Height	mm
w	Width	mm

Table 1 (continued)

Symbol	Designation	Unit
w_d	Datum width of the pulley groove	mm
w_e	Effective width	mm
w_p	Pitch width of the belt	mm
α	Groove angle	degree
HAA	Profile of the belt as defined in Table 2	—
HBB	Profile of the belt as defined in Table 2	—
HCC	Profile of the belt as defined in Table 2	—
HDD	Profile of the belt as defined in Table 2	—

5 Dimensions and tolerances

5.1 Belts

5.1.1 General

An endless hexagonal belt on agricultural machinery transmits a high degree of force per unit of section; when it approaches a groove pulley, its cross-section undergoes appreciable deformations. For this reason, the various dimensions specified in this document are to be taken as being those of the belt placed on the device used for the measurement of its length, and subjected to the force, F . The dimensions, w and T , are those relating to the parts of the belt when in contact with the measuring pulleys.

5.1.2 Cross-sections

The theoretical profile of these belts is a hexagon consisting of two equal isosceles trapezia joined at their wider base; the neutral axis, coinciding in practice with the transverse diagonal of this hexagon, is therefore located at half the height of the section (see Figure 1).

The dimensions of these cross-sections depending on profile are given in Table 2.

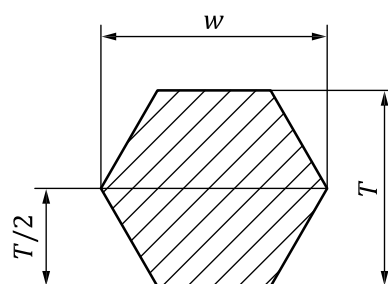


Figure 1 — Cross-section of a belt

Table 2 — Cross-section nominal dimensions depending on profile

Dimensions in millimetres

Parameter	Symbol	Cross-section nominal dimension depending on profile			
		HAA	HBB	HCC	HDD
Width	w	13	17	22	32
Height	T	10	13	17	25