SLOVENSKI STANDARD
SIST ISO 5291:1997

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Jermenski pogoni - Profil ǵleba jermenice za obiļ ajne klinaste jermene - Sekcije ǵlebov vrste AJ, BJ, CJ in DJ

Belt drives -- Grooved pulleys for joined classical V-belts -- Groove sections AJ, BJ, CJ and DJ (effective system)

Transmissions par courroies -- Poulies à gorges pour courroies trapézoïdales jumelées classiques -- Sections de gorge AJ, BJ, CJ et DJ (système effectif)

Ta slovenski standard je istoveten z: **ISO 5291:1993**

ICS:

21.220.10	Jermenski pogoni in njihovi deli	Belt drives and their components

SIST ISO 5291:1997 **en**

INTERNATIONAL STANDARD

ISO 5291

Second edition
1993-05-15

Belt drives — Grooved pulleys for joined classical V-belts — Groove sections AJ, BJ, CJ and DJ (effective system)

Transmissions par courroies — Poulies à gorges pour courroies trapézoïdales jumelées classiques — Sections de gorge AJ, BJ, CJ et DJ (système effectif)

Reference number
ISO 5291:1993(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 5291 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 5291:1987), which has been technically revised. In particular, clauses 5 and 6 have been added.

Annex A of this International Standard is for information only.

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Belt drives — Grooved pulleys for joined classical V-belts — Groove sections AJ, BJ, CJ and DJ (effective system)

1 Scope

This International Standard specifies the principal characteristics of grooved pulleys (for groove sections AJ, BJ, CJ and DJ), intended to take joined classical V-belts for industrial power transmission drives.

NOTES

1 The effective width of a groove is regarded as the basic dimension of standardization for grooves and for the corresponding joined V-belts considered as a whole.

2 The pitch line position can only be given approximately. The approximate pitch diameter of a pulley can be calculated by the formula

$$d_p = d_e - 2b_e$$

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 254:1990, *Belt drives — Pulleys — Quality, finish and balance.*

ISO 1081:1980, *Drives using V-belts and grooved pulleys — Terminology.*

ISO 9980:1990, *Belt drives — Grooved pulleys for V-belts (system based on effective width) — Geometrical inspection of grooves.*

3 Definitions and symbols

For the purposes of this International Standard, the terms and symbols relating to drives using V-belts (i.e. belts and grooved pulleys) defined in ISO 1081 apply.

4 Specifications

4.1 Groove profiles

4.1.1 Groove angle, α

The groove angle (see figure 1) shall have one of the following values:

$\alpha = 34°$ (for groove sections AJ, BJ and CJ only)
$\alpha = 36°$ (for groove section DJ only)
$\alpha = 38°$

The relationship between the groove angle and the range of effective diameters which should be used is given in table 2.

4.1.2 Profile dimensions

The dimensions shown in figures 1 and 2 shall have the values specified in table 1.

NOTES

3 The actual diameter should not be greater than $d_e + 2\delta h_1$.

4 The straight sides of the groove should be at least as high as $d_e - 2\delta h_2$.

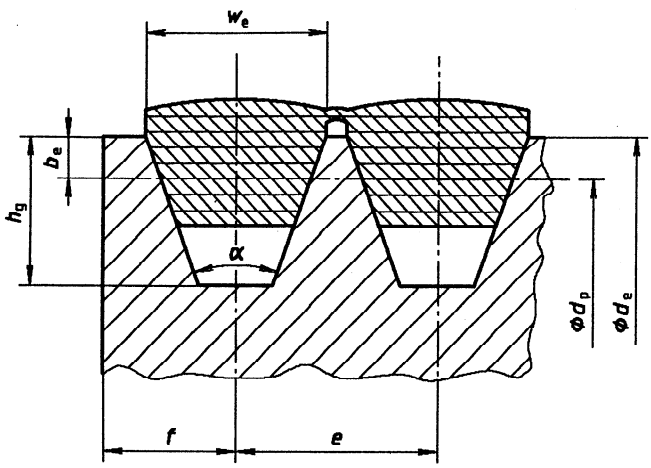

Figure 1

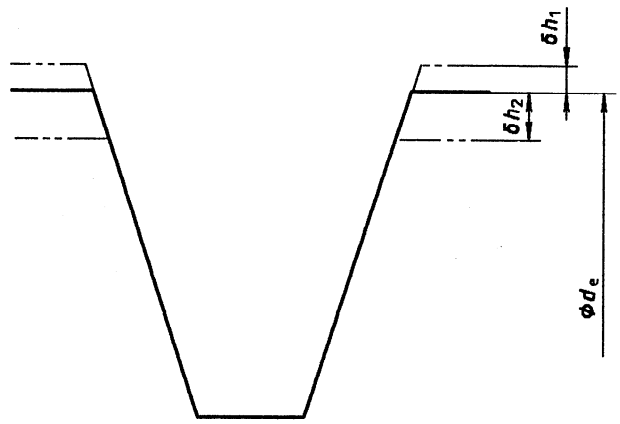

Figure 2

Table 1 — Profile dimensions

Dimensions and tolerances in millimetres

Groove section	w_e	δh_1	δh_2	b_e	h_g min.	e	Tolerance on e [1]	Sum of deviations of e [2]	f [3] min.
AJ	13	0,2	0,35	1,5	12	15,88	± 0,3	± 0,6	9
BJ	16,5	0,25	0,4	2	14	19,05	± 0,4	± 0,8	11,5
CJ	22,4	0,3	0,45	3	19	25,4	± 0,5	± 1	16
DJ	32,8	0,3	0,55	4,5	26	36,53	± 0,6	± 1,2	23

1) This tolerance applies to the distance between the axes of two consecutive groove profiles.

2) The sum of all deviations from the nominal value e for all grooves in any one pulley shall not exceed the value stated in this table.

3) Variations of f shall be taken into consideration in the alignment of the pulleys.

4.2 Effective diameter, d_e

4.2.1 Series of effective diameters

(Under study.)

4.2.2 Groove angles in relation to given effective diameters

See table 2.

4.2.3 Smallest effective diameters in relation to given groove sections

See table 3.

Table 2 — Groove angles

Dimensions in millimetres

Groove section	Groove angles, α		
	34°	36°	38°
	Effective diameters, d_e		
AJ	$d_e \leqslant 125$		$d_e > 125$
BJ	$d_e \leqslant 195$		$d_e > 195$
CJ	$d_e \leqslant 325$		$d_e > 325$
DJ		$d_e \leqslant 490$	$d_e > 490$

Table 3 — Smallest effective diameters

Groove section	Smallest effective diameter
	mm
AJ	80
BJ	130
CJ	210
DJ	370

5 Geometrical inspection of grooves

5.1 Groove profile

The corresponding limit gauges in accordance with 3.2.3 of ISO 9980:1990 shall be used.

5.2 Groove spacing

A groove spacing locator incorporating sets of interchangeable balls as indicated in 5.3 and in accordance with clause 4 of ISO 9980:1990 shall be used.

5.3 Effective diameter

Cylindrical checking balls shall be used with the values of the correction term given in table 4, in accordance with clause 5 of ISO 9980:1990.

5.4 Run-out tolerances

In accordance with clause 6 of ISO 9980:1990, the tolerances on radial and axial run-outs shall be checked using the values given in table 5.

6 Quality, surface finish and balancing of pulleys

The quality, surface finish and balancing of pulleys are specified in ISO 254.

Table 4 — Checking balls or rods and correction terms

Dimensions in millimetres

Groove section	Groove angle α	Diameter of balls or rods d		Rounded correction term $2h_s$
		nom.	tol.[1]	
AJ	34° and 38°	11,6	$^{0}_{-0,043}$	9
BJ	34° 38°	14,7	$^{0}_{-0,043}$	11 12
CJ	34° 38°	20	$^{0}_{-0,052}$	15 16
DJ	36° 38°	28,5	$^{0}_{-0,052}$	20 21

1) Tolerances are in accordance with ISO 286-2:1988, tolerance grade h9.

Table 5 — Tolerances on radial and axial run-outs

Dimensions and tolerances in millimetres

Effective diameter d_e nom.	Tolerances on radial and axial run-outs	
	radial t_1	axial at level a [1] t_2
$d_e \leqslant 125$	0,2	0,3
$125 < d_e \leqslant 315$	0,3	0,4
$315 < d_e \leqslant 710$	0,4	0,6
$710 < d_e \leqslant 1\,000$	0,6	0,8
$1\,000 < d_e \leqslant 1\,250$	0,8	1
$1\,250 < d_e \leqslant 1\,600$	1	1,2
$1\,600 < d_e \leqslant 2\,500$	1,2	1,2

1) $a = b_e$, where b_e is the effective line differential.