

### SLOVENSKI STANDARD SIST ISO 9981:2012

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Nadomešča: SIST ISO 9981:1997

Jermenski pogoni - Jermenice in klinasti jermeni za avtomobilsko industrijo -Profili PK: Mere

Belt drives - Pulleys and V-ribbed belts for the automotive industry - PK profile: Dimensions

# iTeh STANDARD PREVIEW

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Transmissions par courroies - Poulies et courroies striées pour la construction automobile - Profil PK: Dimensions <u>SIST ISO 9981:2012</u> https://standards.iteh.ai/catalog/standards/sist/8cb971d5-4694-4eeb-abfc-

79f76de69bed/sist-iso-9981-2012

Ta slovenski standard je istoveten z: ISO 9981:1998

#### ICS:

21.220.10	Jermenski pogoni in njihovi deli	Belt drives and their components
43.060.10	Blok motorja in notranji deli motorja	Engine block and internal components

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## INTERNATIONAL STANDARD

ISO 9981

Second edition 1998-11-01

### Belt drives — Pulleys and V-ribbed belts for the automotive industry — PK profile: Dimensions

Transmissions par courroies — Poulies et courroies striées pour la construction automobile — Profil PK: Dimensions

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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.

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 9981 was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts)*, Subcommittee SC 1, *Veebelts and grooved pulleys*.

This second edition cancels and replaces the first edition (ISO 9981:1990), which has been technically revised. In particular, a subclause on the tolerances on the diameters over balls (3.3.4) has been added.

Annex A of this International Standard is for information only.

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International Organization for Standardization Case postale 56 • CH-1211 Genève 20 • Switzerland Internet iso@iso.ch

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#### Introduction

A V-ribbed belt drive is composed of an endless belt with a longitudinally ribbed traction surface which engages and grips, by friction, pulley grooves of similar shape. The belt ribbed surface fits the pulley grooves to make nearly total contact.

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# Belt drives — Pulleys and V-ribbed belts for the automotive industry — PK profile: Dimensions

#### 1 Scope

This International Standard specifies the principal dimensional characteristics of V-ribbed pulley groove profiles, together with the corresponding endless V-ribbed belts of PK profile which are used predominantly for automotive accessory drive applications.

The complete array of V-ribbed belts and pulleys of PH, PJ, PK, PL and PM profile for industrial and other nonautomotive applications is the subject of ISO 9982. PK belt profile dimensions and tolerances are the same in both International Standards.

### 2 Normative references reh STANDARD PREVIEW

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of the publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on the 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 254:1998, Belt drives — Pulleys — Quality, finish and balance.

ISO 4287:1997, Geometrical product specification (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters.

#### 3 Pulleys

#### 3.1 Groove dimensions and tolerances

The groove dimensions of PK pulleys are shown in figures 1 and 2, and given in table 1.





 $d_{e}$  = effective diameter

- $d_{o}$  = outer diameter
- K = diameter over balls or rods
- $d_{\mathsf{B}}$  = checking ball or rod diameter



	Dimensio	ons in millimetres
Groove pitch, e	± 0,05 <sup>1) 2)</sup>	3,56
Groove angle, $lpha^{3)}$ , for measuring	± 0° 15'	40°
Groove angle, $lpha^{3)}$ , for testing and actual use	± 1°	40°
r <sub>t</sub>	min.	0,25
r <sub>b</sub>	max.	0,5
Checking ball or rod diameter, $d_{\rm B}$	± 0,01	2,5
2 <i>x</i>	nom.	0,99
2 <i>N</i> <sup>4)</sup>	max.	1,68
f	min.	2,5

#### Table 1 — Dimensions of PK pulley grooves

1) The tolerance on e applies to the distance between the axes of two consecutive grooves.

2) The sum of all deviations from the nominal value e for all grooves in any one pulley shall not exceed  $\pm 0.3$ .

- 3) The centreline of the groove shall make an angle of  $90^{\circ} \pm 0.5^{\circ}$  with the axis of the pulley.
- 4) *N* is not related to the nominal diameter of the pulley but is measured from the actual ride position of the ball or rod in the pulley.

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#### 3.2 Minimum effective diameter

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The minimum recommended effective diameter,  $a_{e}^{o}$  for PK pulleys is 45 mm  $^{4-4ecb-abfc-}$ 

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#### 3.3 Tolerances on finished pulley

#### 3.3.1 Checking conditions

Profile, diameter and run-out tolerances shall be checked on the finished pulley without surface coating.

#### 3.3.2 Groove-to-groove diameter tolerances

The variation in diameters between the grooves in any one pulley shall not exceed 0,15 mm. This variation is obtained by comparing the diameters over balls or rods.

#### 3.3.3 Radial and axial circular run-out

Radial and axial circular run-outs shall not exceed 0,25 mm full indicator movement (FIM). Run-out in the two directions is measured separately with a ball mounted under spring pressure to ensure contact with the groove as the pulley is rotated.

#### 3.3.4 Diameter over balls

The tolerances on the diameters over balls (K) shall not exceed  $\pm$  0,6 mm.

#### 3.3.5 Groove finish

The pulley grooves shall have a surface roughness  $Ra \le 3,2 \mu m$ . See ISO 254 and ISO 4287 for definitions and the method of measurement.