SLOVENSKI STANDARD
SIST ISO 8419:1997

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Jermenski pogoni - Spojeni ozki klinasti jermeni - Dolžine v osnovnem sistemu

Belt drives -- Narrow joined V-belts -- Lengths in effective system

Transmissions par courroies -- Courroies trapézoïdales jumelées étroites -- Longueurs dans le système effectif

Ta slovenski standard je istoveten z: **ISO 8419:1994**

ICS:

21.220.10	Jermenski pogoni in njihovi deli	Belt drives and their components

SIST ISO 8419:1997 **en**

INTERNATIONAL STANDARD

ISO 8419

Second edition
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Belt drives — Narrow joined V-belts — Lengths in effective system

Transmissions par courroies — Courroies trapézoïdales jumelées étroites — Longueurs dans le système effectif

Reference number
ISO 8419:1994(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 8419 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 8419:1987), which has been technically revised.

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Belt drives — Narrow joined V-belts — Lengths in effective system

1 Scope

This International Standard specifies, for narrow joined V-belts of cross-sections

9J (for pulley grooves of effective width 8,9 mm);

15J (for pulley grooves of effective width 15,2 mm);

20J (for pulley grooves of effective width 20,9 mm);

25J (for pulley grooves of effective width 25,4 mm):

— the recommended effective lengths,

— the tolerances on effective lengths,

— the centre distance variations,

— the conditions for measuring the effective length and the centre distance variation.

NOTE 1 The narrow joined V-belt cross-section is defined by a number (9, 15, 20 or 25) followed by the letter J.

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

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

ISO 5290:1993, *Belt drives — Grooved pulleys for joined narrow V-belts — Groove sections 9J, 15J, 20J, and 25J (effective system).*

ISO 9608:—[1], *V-belts — Uniformity of belts — Test method for determination of centre distance variation.*

3 Definitions

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 Effective length, L_e

4.1 The standard effective lengths are the effective lengths under tension measured under the conditions specified in 7.1.

4.2 The nominal values of the standard effective lengths, expressed in millimetres, have been selected from the R 40 series of preferred numbers, in accordance with ISO 3.

Standard effective lengths are given in table 1.

1) To be published. (Revision of ISO 9608:1988)

Table 1 — Standard effective lengths

Dimensions in millimetres

Cross-section			
9J	15J	20J	25J
L_e			
630	1 270	1 700	2 540
670	1 345	1 800	2 690
710	1 420	1 900	2 840
760	1 525	2 000	3 000
800	1 600	2 120	3 180
850	1 700	2 240	3 350
900	1 800	2 360	3 550
950	1 900	2 500	3 810
1 015	2 030	2 650	4 060
1 080	2 160	2 800	4 320
1 145	2 290	3 000	4 570
1 205	2 410	3 150	4 830
1 270	2 540	3 350	5 080
1 345	2 690	3 550	5 380
1 420	2 840	3 750	5 690
1 525	3 000	4 000	6 000
1 600	3 180	4 250	6 350
1 700	3 350	4 500	6 730
1 800	3 550	4 750	7 100
1 900	3 810	5 000	7 620
2 030	4 060	5 300	8 000
2 160	4 320	5 600	8 500
2 290	4 570	6 000	9 000
2 410	4 830	6 300	9 500
2 540	5 080	6 700	10 160
2 690	5 380	7 100	10 800
2 840	5 690	7 500	11 430
3 000	6 000	8 000	12 060
3 180	6 350	8 500	12 700
3 350	6 730	9 000	
3 550	7 100	9 500	
	7 620	10 000	
	8 000	10 600	
	8 500		
	9 000		

5 Tolerances on effective lengths

5.1 Manufacturing tolerances

The permissible manufacturing tolerances for effective lengths of narrow joined V-belts are given in table 2.

Table 2 — Manufacturing tolerances for narrow joined V-belts

Dimensions and tolerances in millimetres

Nominal effective length L_e	Permissible deviation for sections 9J, 15J, 20J and 25J
$L_e \leqslant 800$	± 8
$800 < L_e \leqslant 1\,000$	± 10
$1\,000 < L_e \leqslant 1\,250$	± 13
$1\,250 < L_e \leqslant 1\,600$	± 16
$1\,600 < L_e \leqslant 2\,000$	± 20
$2\,000 < L_e \leqslant 2\,500$	± 25
$2\,500 < L_e \leqslant 3\,150$	± 32
$3\,150 < L_e \leqslant 4\,000$	± 40
$4\,000 < L_e \leqslant 5\,000$	± 50
$5\,000 < L_e \leqslant 6\,300$	± 63
$6\,300 < L_e \leqslant 8\,000$	± 80
$8\,000 < L_e \leqslant 10\,000$	± 100
$10\,000 < L_e$	± 125

5.2 Belt matching tolerances for narrow joined V-belts in same set

Values for the tolerances on the lengths of narrow joined V-belts of the same set in multiple joined V-belt drives are given in table 3.

Table 3 — Belt matching tolerances

Dimensions and tolerances in millimetres

Nominal effective length L_e	Maximum permissible deviation between the lengths of belts of the same set for sections 9J, 15J, 20J and 25J
$L_e \leqslant 1\,345$	4
$1\,345 < L_e \leqslant 2\,690$	6
$2\,690 < L_e \leqslant 6\,000$	10
$6\,000 < L_e \leqslant 11\,430$	16
$11\,430 < L_e$	24

6 Centre distance variations

Permissible centre distance variations of any belt are given in table 4.

Table 4 — Centre distance variations

Dimensions in millimetres

Nominal effective length		Cross-section	
over	up to (inclusive)	9J, 15J, 20J	25J
		ΔE	
—	1 000	1,2	1,8
1 000	2 000	1,6	2,2
2 000	5 000	2	3,4
5 000	—	2,5	3,4

7 Measuring and checking

7.1 Checking belt length

For the measurement of the effective length, set the belt up on two identical pulleys with an effective circumference in accordance with that given in table 5 and having functional dimensions, in accordance with ISO 5290. The pulleys shall be mounted on parallel horizontal axes on a testing bench. Apply to the sliding pulley the measuring force indicated in table 5. Rotate the pulleys in order that the belt effects one to three rotations and thus seats properly in the pulley grooves. Measure the distance between the axes of the pulleys.

The effective length L_e of any belts is given by the formula

$$L_e = E_{max} + E_{min} + C_e$$

where

E is the distance between the axes of the measuring pulleys, in millimetres;

C_e is the measuring pulley effective circumference, in millimetres.

Table 5 — Measurement characteristics

Belt section	Effective circumference of the measuring pulleys mm	Measuring force N
9J	300	445
15J	600	1 000
20J	800	1 500
25J	1 000	2 225

7.2 Checking centre distance variation

Check the centre distance variations in accordance with ISO 9608.

8 Designation and marking

8.1 Designation

The physical dimensions of narrow joined V-belts shall be designated by

— the section (see clause 1);

— the appropriate effective length (see table 1).

EXAMPLE

A belt of section 9J and effective length 1 600 mm is designated as follows:

9J 1 600

8.2 Marking

All narrow joined V-belts manufactured in accordance with this International Standard shall be marked legibly and durably on the outer non-working face with the appropriate designation.