INTERNATIONAL STANDARD

ISO
8419
First edition
1987-12-15

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
ORGANISATION INTERNATIONALE DE NORMALISATION
МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Narrow joined V-belts — Lengths in effective system

Courroies trapézoïdales jumelées étroites — Longueurs dans le système effectif

Reference number
ISO 8419 : 1987 (E)

Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8419 was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including vee-belts)*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Printed in Switzerland

Narrow joined V-belts — Lengths in effective system

1 Scope and field of application

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

9J (effective width 8,9 mm),

15J (effective width 15,2 mm),

20J (effective width 20,9 mm),

25J (effective width 25,4 mm),

— the recommended effective lengths;

— the tolerances on effective lengths;

— the conditions for measuring the effective length.

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

2 Reference

ISO 5290, *Grooved pulleys for joined narrow V-belts — Groove sections 9J, 15J, 20J and 25J.*

3 Effective length, L_e

3.1 The standard effective lengths are the effective lengths under tension measured under the conditions specified in clause 5.

3.2 The standard effective length values, in millimetres, are for the most part from the R40 series of preferred numbers.

Standard effective lengths are given in table 1.

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		

4 Tolerances on effective lengths

4.1 Manufacturing tolerances

Manufacturing tolerances for narrow joined V-belts are given in table 2.

Table 2 — Manufacturing tolerances for narrow joined V-belts

Dimensions and tolerances in millimetres

L_e	9J, 15J, 20J and 25J cross-sections
	Admissible tolerance
$L_e \leqslant 800$	± 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

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

Table 3 gives ths tolerance values for lengths of narrow joined V-belts of the same set in multiple joined V-belt drives.

Table 3 — Belt matching tolerances

Dimensions and tolerances in millimetres

L_e	9J, 15J, 20J and 25J cross-sections
	Maximum difference between the lengths of belts of the same set
$L_e \leqslant 1\,345$	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

5 Conditions for measuring effective length

For the measurement of the effective length, set the belt up on two identical pulleys with an effective circumference according to table 4 and having functional dimensions according to ISO 5290. The pulleys shall be mounted on parallel axes on a test bench. Apply the measuring force indicated in table 4 to the sliding pulley. Rotate the pulleys at least twice to seat the belt properly in the pulley grooves. Measure the distance between the axes of the pulley.

The effective length L_e is given by the formula

$$L_e = 2E + C_e$$

where

E is the distance between the axes of the pulley, in millimetres;

C_e is the pulley circumference, in millimetres.

Table 4 — Measuring characteristics

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

6 Designation and marking

6.1 Designation

A narrow joined V-belt of length within the effective scale is designated by

— its cross-section;

— the appropriate effective length (see table 1).

For example, a 9J cross-section V-belt of 1 600 mm effective length is designated:

9J 1 600

6.2 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.

UDC 621.85.052.42

Descriptors : belts, power transmission belts, V-belts, dimensions, length, designation, marking.

Price based on 2 pages