INTERNATIONAL STANDARD

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Third edition
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Belt drives — Narrow V-belts for the automotive industry and corresponding pulleys — Dimensions

Transmissions par courroies — Courroies trapézoïdales étroites pour la construction automobile et poulies correspondantes — Dimensions

Reference number
ISO 2790 : 1989 (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 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 2790 was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts).*

This third edition cancels and replaces the second edition (ISO 2790 : 1982), of which it constitutes a technical revision.

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Belt drives — Narrow V-belts for the automotive industry and corresponding pulleys — Dimensions

1 Scope

This International Standard specifies the requirements for belts and pulleys for V-belt drives used for driving auxiliaries of internal combustion engines for the automotive industry.

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 listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

ISO 8370 : 1987, *V- and ribbed V-belts — Dynamic test to determine pitch zone location.*

ISO 9608 : 1988, *V-belts — Uniformity of belts — Centre distance variation — Specifications and test method.*

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 Belts

A belt is defined by its cross-section (groove profile AV 10 or AV 13) and by its effective length, in millimetres, measured under specified conditions.

4.1 Cross-section and pitch zone

A cross-section of a belt is defined by the nominal top width, w (see figure 1 and table 1).

The position of the belt pitch zone in the pulley groove is defined by the effective line differential, b_e (see figure 4 and table 1).

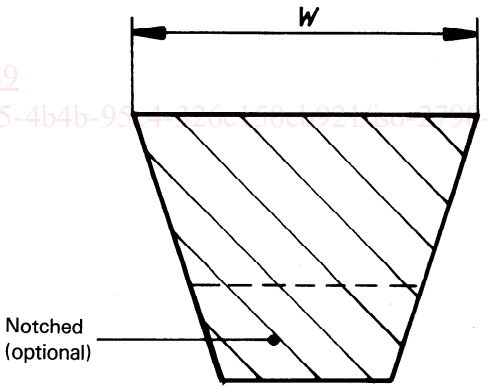

Figure 1 — Profile of the belt

Table 1 — Dimensions of belt cross-sections

Dimensions in millimetres

Parameter	Symbol	Groove profiles			
		AV 10		AV 13	
		Wrapped belt	Raw-edged belt	Wrapped belt	Raw-edged belt
Nominal top width	w	10	10	13	13
Effective line differential	b_e	1)	1)	1)	1)

1) Values of b_e for the different types of belt are not standardized. They can be determined in accordance with ISO 8370 : 1987, 5.2.

4.2 Measurement of the effective length of a belt and its ride-out

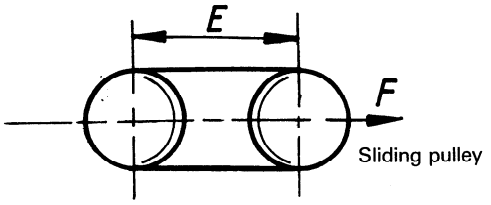

Figure 2 — Measuring device

Set the belt up on two identical pulleys, having the dimensions shown in table 2 and mounted on a horizontal bench, and apply to the sliding pulley the measurement tension F.

Rotate the belt at least twice to seat it properly.

The effective length of the belt, L_e, is given by the formula:

$$L_e = 2E + C_e$$

where

E is the centre distance of the pulleys;

C_e is the effective circumference of one pulley:

$$C_e = \pi d_e = 300 \text{ mm}$$

The ride-out, f, of the belt shall be such that

$$0 < f < 2{,}4 \text{ mm}$$

for each type of belt.

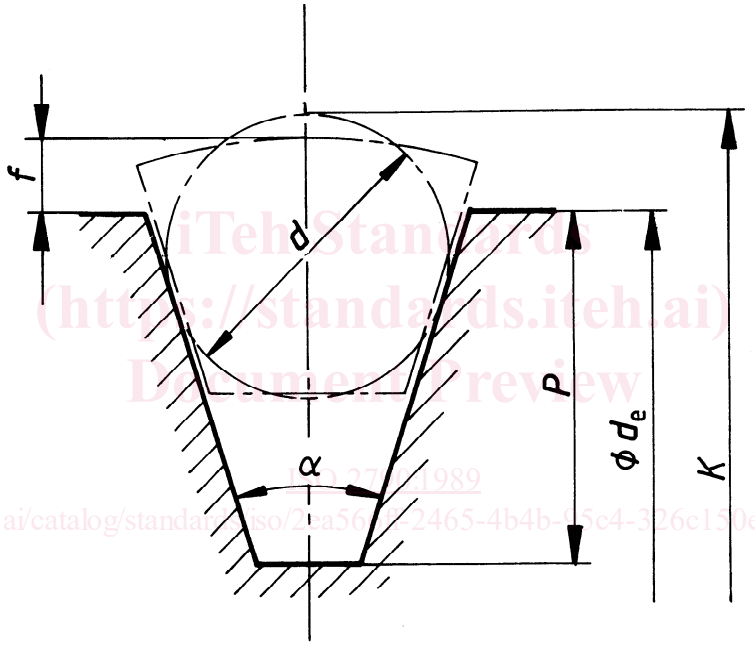

Figure 3 — Groove for measuring V-belts

Table 2 — Dimensions of checking pulley and measuring force

Parameter	Symbol	Unit	Groove profiles AV 10	Groove profiles AV 13
Groove angle	α	degrees	36° ± 10′	36° ± 10′
Effective diameter	d_e	mm	95,49	95,49
Outside diameter	d_o	mm	95,5 ± 0,2	95,5 ± 0,2
Diameter of balls or rods for checking the pulley grooves	d	mm	$7{,}95\ ^{0}_{-0{,}025}$	$11{,}124\ ^{0}_{-0{,}025}$
Distance from external tangent planes to balls or rods	K	mm	99,31 ± 0,05	103,53 ± 0,05
Minimum depth of groove	P	mm	11	13,75
Tension[1)]	F	N	267	267

1) The tension on each strand of the belt shall be equal to one half of the values shown.