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INTERNATIONAL STANDARD



1604

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

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**Endless wide V-belts for industrial speed-changers and groove profiles for corresponding pulleys**

*Courroies trapézoïdales larges sans fin pour variateurs de vitesse industriels et profil de gorge des poulies correspondantes*

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**Descriptors** : power transmission belts, V-belts, grooved pulleys, profiles, dimensions.

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## FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 41 has reviewed ISO Recommendation R 1604 and found it technically suitable for transformation. International Standard ISO 1604 therefore replaces ISO Recommendation R 1604-1970 to which it is technically identical.

ISO Recommendation R 1604 was approved by the Member Bodies of the following countries :

Austria	India	Spain
Belgium	Israel	Sweden
Brazil	Italy	Switzerland
Czechoslovakia	Netherlands	Thailand
Denmark	New Zealand	Turkey
Egypt, Arab Rep. of	Peru	United Kingdom
Finland	Portugal	U.S.S.R.
France	South Africa, Rep. of	Yugoslavia

The Member Body of the following country expressed disapproval of the Recommendation on technical grounds :

Norway

The Member Body of the following country disapproved the transformation of ISO/R 1604 into an International Standard :

Belgium

# Endless wide V-belts for industrial speed-changers and groove profiles for corresponding pulleys

## 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the principal dimensions of endless wide V-belts for industrial speed-changers<sup>1)</sup> as well as the groove profile of corresponding fixed or variable diameter pulleys.

It does not concern speed-changer belts used either for the propulsion of self-propelled vehicles (motor-cycles, scooters, cars) or as parts of farm-machines (chiefly harvesters).

The wide V-belts are characterized by a "relative height" (ratio of the nominal height of the theoretical profile to its pitch width) of about 0,32.

## 2 DIMENSIONS AND TOLERANCES

### 2.1 Belt dimensions

The dimensions and the tolerances of the belts are given in millimetres in table 3.

#### 2.1.1 Designation

The proposed nine cross-sections are designated as follows :

W 16 – W 20 – W 25 – W 31,5 – W 40 –  
W 50 – W 63 – W 80 – W 100

#### 2.1.2 Profile

The profile of the cross-section of the free stand of the belt

under tension is not imposed; in particular, the angle of the sidewalls and their profile are left to the initiative of the manufacturers.

#### 2.1.3 Width

Values for the pitch width  $l_p$  (expressed in millimetres) are nine consecutive terms from the R 10 series of preferred numbers.

Should this series of values be considered insufficient, it may be completed, outside the limits, with other terms from the R 10 series of preferred numbers.

#### 2.1.4 Belt height

The nominal belt height  $T$ , equal to  $0,32 l_p$ , is divided as follows on both sides of the pitch line :

- above ( $B$ ) =  $0,08 l_p$
- below ( $H$ ) =  $0,24 l_p$

#### TOLERANCES

a) Belt ride-out, in the conditions specified in clause 3, should not exceed the value shown in table 1 (round value of the expression  $0,36 \sqrt{l_p}$ , where  $l_p$  is expressed in millimetres).

b) Height  $H$  should not exceed the value shown in table 2 (round value of the expression  $0,24 l_p + 0,06 \sqrt{l_p}$  where  $l_p$  is expressed in millimetres).

TABLE 1 – Ride-out

Designation of the sections	W 16	W 20	W 25	W 31,5	W 40	W 50	W 63	W 80	W 100
Ride-out mm	1,2	1,8	1,8	1,8	2,4	2,4	3,0	3,0	3,6

TABLE 2 – Maximum height  $H$

Designation of the sections	W 16	W 20	W 25	W 31,5	W 40	W 50	W 63	W 80	W 100
$H$ max. mm	4,0	5,1	6,3	7,8	10,0	12,4	15,5	19,7	24,6

1) Owing to the need for compactness of such types of speed-changers, it is necessary to minimize pitch diameters. At the present level of techniques, the values given for the minimum pitch diameter should be used on the notched V-belts.