



ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 1604

ENDLESS WIDE V-BELTS FOR INDUSTRIAL SPEED-CHANGERS
AND GROOVE PROFILES FOR CORRESPONDING PULLEYS

1st EDITION

October 1970

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Printed in Switzerland

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BRIEF HISTORY

The ISO Recommendation R 1604, *Endless wide V-belts for industrial speed-changers and groove profiles for corresponding pulleys*, was drawn up by Technical Committee ISO/TC 41, *Pulleys and belts (including vee-belts)*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question led to the adoption of Draft ISO Recommendation No. 1604 which was circulated to all the ISO Member Bodies for enquiry in May 1968. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

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

The following Member Body opposed the approval of the Draft :

Norway

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

ENDLESS WIDE V-BELTS FOR INDUSTRIAL SPEED-CHANGERS AND GROOVE PROFILES FOR CORRESPONDING PULLEYS

1. SCOPE

This ISO Recommendation specifies the principal dimensions of endless wide V-belts for *industrial speed-changers**, 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 1 and in inches in Table 2.

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 *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.

* Due 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.

2.1.3 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 section 3, should not exceed the value shown in the following table (round value of the expression $0.36 \sqrt{l_p}$, where l_p is expressed in millimetres).

Designation of the sections	W 16	W 20	W 25	W 31.5	W 40	W 50	W 63	W 80	W 100
mm	1.2	1.8	1.8	1.8	2.4	2.4	3.0	3.0	3.6
Ride out — in	0.047	0.071	0.071	0.071	0.094	0.094	0.118	0.118	0.142

- (b) Height H should not exceed the value shown in the following table (round value of the expression $0.24 l_p + 0.06 \sqrt{l_p}$, where l_p is expressed in millimetres).

Designation of the sections	W 16	W 20	W 25	W 31.5	W 40	W 50	W 63	W 80	W 100
mm	4.0	5.1	6.3	7.8	10.0	12.4	15.5	19.7	24.6
H max. — in	0.157	0.201	0.248	0.307	0.394	0.488	0.610	0.776	0.969

NOTE. — The profile of the cross section of the free strand 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.

2.1.4 Length. Values for the *pitch length* l_p are multiples of the pitch width figures, the multiplier coefficients being eight consecutive terms (28 to 63 inclusive) from the R 20 series of preferred numbers.

Should the above range of lengths be considered insufficient, it may be completed

- upwards or downwards, with other terms from the R 20 series of preferred numbers;
- exceptionally, between two consecutive lengths from the table, with terms from the R 40 series of preferred numbers (especially for box-type speed-changers).