
**Belt drive — V-ribbed belts for the
automotive industry — Fatigue test**

*Transmissions par courroies — Courroies striées pour la construction
automobile — Essai de fatigue*



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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 41, *Pulleys and belts (including veebelts)*, Subcommittee SC 1, *Friction*.

This second edition cancels and replaces the first edition (ISO 11749:1995), which has been technically revised. It also incorporates Amendment ISO 11749:1995/Amd.1:2003.

Belt drive — V-ribbed belts for the automotive industry — Fatigue test

1 Scope

This International Standard specifies a dynamic test method for the quality control of V-ribbed belts (PK profile) which are used predominantly for accessory drive applications in the automotive industry.

The dimensional characteristics of the belts and of corresponding pulleys are the subject of ISO 9981.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 683-1, *Heat-treatable steels, alloy steels and free-cutting steels — Part 1: Non-alloy steels for quenching and tempering*

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method (scales A, B, C, D, E, F, G, H, K, N, T)*

ISO 9981:1998, *Belt drives — Pulleys and V-ribbed belts for the automotive industry — PK profile: Dimensions*

3 Principle

Determination of the performance of a belt under specified conditions on a two-, three-, or four-pulley test machine as described in [Clause 4](#).

The shortest V-ribbed belt which can be tested on the four-pulley test machine (see [Figure 1](#)) is approximately 1 000 mm. Belts with lengths between 800 mm and 1 000 mm inclusive can be tested on the three-pulley test machine (see [Figure 2](#)). Shorter belts should be tested on the two-pulley test machine (see [Figure 3](#)) as described in [6.2.1.2](#).

A number of conditions shall be agreed between the manufacturer and user, including the power to be transmitted, the minimum acceptable life, in hours, and the number of times the belt can be retensioned.

Belt failure occurs when the belt no longer satisfies the agreed conditions.

4 Apparatus

4.1 Dynamic test machine, of robust design so that all components withstand, with virtually no deflection, the stress to which they are subjected.

The test machine shall consist of the following (see [Figures 1, 2, and 3](#)).

4.1.1 Driving pulley, and suitable mechanism for driving it.

4.1.2 Driven pulley, to which a suitable power-absorption unit is connected ([4.1.3](#)).

4.1.3 Power-absorption unit, accurate and capable of calibration.