ICS 21.220.10
CCS G42

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 12735-2014

Replacing GB/T 12735-1991

Belt drives-V-belts for the agricultural machinery-Fatigue test

带传动 农业机械用V带 疲劳试验

Issued on: May 6, 2014 **Implemented on: December 1, 2014**

Issued by: General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China;
Standardization Administration of China

Table of Contents

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 12735-1991 "V-belt Fatigue Test Method for Agricultural Machinery", compared with GB/T 12735-1991, except The main technical changes besides editorial changes are as follows:

---Modified the test pulley size in Table 1, the outer diameter of HL type V belt 216.47mm was changed to 216.41mm; HA type V belt The distance of measuring ball or rod 90.36mm is modified to 90.63mm; the diameter of measuring ball or rod of HB type V belt is 14.228mm Modified to 14.288mm (see 4.1,

3.2.1 of the.1991 edition);

---Modified the test parameters in Table 2, the total belt tension of HD type V belt 1191N is changed to 1911N; the total belt tension of HK type V belt The tension is modified from 1156N to 1680N (see 6.2,

5.2 of the.1991 edition);

---Modified the test pulley requirements, the surface hardness of the rim part HRC45~48 is modified to (217~255)HBW, the table on both sides of the wheel groove The roughness Ra of the surface structure is less than 0.8μm and modified to not more than 3.2μm (see

3.2.3 of the.1991 edition);

---Added table 1, table 2, table 3 table notes (see 4.1,

6.2 and 6.3). This standard was proposed by the China Petroleum and Chemical Industry Federation. This standard is under the jurisdiction of the Friction Belt Transmission Subcommittee (SAC/TC428/SC3) of the National Belt Wheel and Belt Standardization Technical Committee. Drafting organizations of this standard. Maanshan Ruisheng Industry

and Trade Co., Ltd., Wuxi Zhonghui Rubber Technology Co., Ltd., Jiamusihuier Co., Ltd. Company, Zhejiang Kaiou Transmission Belt Co., Ltd., Zhejiang Zijingang Belt Co., Ltd., Qingdao Product Quality Inspection Technology Research Institute. The main drafters of this standard. Zhu Liusheng, Liu Zhigang, Zhu Shusheng, Wang Honggang, Jie Deli, Pang Changzhi, Wu Guiqing, Wang Ping. The previous versions of the standard replaced by this standard are as follows:

---GB/T 12735-1991. V-belt for belt drive agricultural machinery stress test

1 Scope

GB/T 12735-2014 is the Chinese national standard on belt drives-v-belts for the agricultural machinery-fatigue test, in the field of mechanical systems and components. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 6 May 2014 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 December 2014. Classification: ICS 21.220.10, CCS G42. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the fatigue test method for rapid inspection of V-belts for agricultural machinery (hereinafter referred to as belts) in laboratories. This standard applies to the determination of the fatigue life of belts under specified conditions. This standard applies to ordinary V-belts for agricultural machinery, variable-speed V-belts for agricultural machinery, and hexagonal belts for agricultural machinery.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 10821 V-belt and V-ribbed belt size for agricultural machinery

3 Devices

3.1 The fatigue testing machine (see Figure 1) is a two-wheel testing machine. Including motor, driving wheel, driven wheel and dynamometer driven by the tested belt, Tensioning device and necessary instruments.

3.2 If an internal combustion engine is used instead of an electric motor, a flywheel large enough to eliminate the impact should be installed.

3.3 The driving wheel or driven wheel of the testing machine is installed on the slide and can be moved horizontally to make the belt bear constant tension.

3.4 The size of all fittings should be accurate enough, and the rotating parts should be assembled in suitable bearings to minimize friction.

7 Test procedure

7.1 Install the belt on the pulley, apply the specified tension on the tension pulley, start the testing machine to reach the specified speed, and let the test device Run for 5min±15s under specified conditions (excluding start-up and braking time).

7.2 Turn off the testing machine. When the belt stops rotating, measure the center distance between the two pulleys, and this center distance is used as the initial center distance. Measure the outer circumference as The initial outer circumference.

7.3 Continue the start-up test under the specified conditions.

7.4 Stop the machine for inspection every 24h, and measure the center distance and outer circumference.

7.5 When the test is broken or terminated when the slip rate is greater than 10%, the center distance and outer circumference are measured at the same time. The sliding rate is calculated according to formula (1).

7.6 Record the time from the start of the test to the end of the test (except for downtime).

8.1 Calculation

8.1.1 The effective elongation is calculated according to formula (2).

8.1.3 Calculate the difference between deltaa and deltab. This value reflects the degree of side wear of the belt and the degree of belt sinking into the wheel groove.

8.2 Evaluation The fatigue life of the belt is expressed in terms of the operating time (hours) at the end.

9 Test report

The test report shall at least include the following.

a) The section and specification of the sample;

b) The temperature during the test;

c) Test operation time;

d) Effective elongation and outer circumference change rate;

e) The reason for the termination of the test;

f) Test evaluation;

g) Tester, review and approval;

j) The testing unit or personnel and date.