



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 24619-2021

**Synchronous belt drives - Curvilinear profile systems G, H, R
and S belts and pulleys**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 24619-2009 "Curve Tooth Synchronous Belt Drive".

Compared with GB/T 24619-2009, except for editorial changes

The main technical changes are as follows.

---Added G8M and G14M pulley and belt model content (see full text);

--- Deleted the gap between the belt teeth and the gear teeth (see Figure 3, Figure 9, Figure 13 in the.2009 edition);

---Modified H tooth profile, R profile, S profile belt tooth profile dimensions (see Table 9, Table 18, Table 27, Table 1, Table 10,.2009 edition Table 16);

---Modified H tooth profile, R tooth profile, S tooth profile bandwidth and limit deviation (see Table 10, Table 19, Table 28, Table 2 of the.2009 edition);

---Modified the measuring force of H tooth type, R tooth type and S tooth type belt (see Table 12, Table 21, Table 30, Table 4, Table 12, Table 18 of the.2009 edition);

---Modified the dimensions of the rack and pinion tools of the H tooth type, R tooth type and S tooth type belt wheel (see Table 13, Table 22, Table 31, and Table 5 of the.2009 edition) Table 13, Table 19);

---Modified the tooth groove dimensions of H tooth type, R tooth type and S tooth type belt wheels (see Table 14, Table 23, Table 32, Table 6, Table 14, and Table 14 of the.2009 edition).

Table 20);

---Modified the direct dimensions of H tooth type, R tooth type and S tooth type pulley (see Table 15, Table 25, Table 33, Table 7, Table 15, and Table 15 of the.2009 edition).

Table 21);

---Revised the outer diameter and pitch diameter N'value of the H toothed pulley (see Table 16, Table 8 of the.2009 edition);

---Modified the wheel width dimensions of H tooth type, R tooth type and S tooth type (see Table 17, Table 26, Table 28, and Table 9 of the.2009 edition);

---Added S3M, DS3M, S5M, DS5M curved tooth synchronous belts, belt wheels and rack cutters (see Chapter 8);

---Modified the length of the belt section line and the limit deviation (see Table 35, Table 23 of the.2009 edition);

--- Modified the pulley pitch deviation (see Table 36, Table 24 of the.2009 edition);

---Modified the limit deviation of the outer diameter of the pulley (see Table 37, Table 25 of the.2009 edition);

---Modified the round runout of the pulley end face (see Table 38, Table 26 of the.2009 edition);

---Modified the radial runout of the pulley (see Table 39, Table 27 of the.2009 edition);

---The parallelism of the pulleys has been modified (see Table 40, 9.5 in the.2009 edition);

---The cylindricity of the pulley has been modified (see Table 41, 9.6 in the.2009 edition);

---Adjusted the original standard Appendix C other types of timing belts and pulley sizes to the main text (see Chapter 6 and Chapter 7).

This standard uses the redrafting method to modify and adopt ISO 13050.2014

"Synchronous belt drive metric pitch G, H, R, S tooth profile curve tooth

Synchronous belts and pulleys.

Compared with ISO 13050.2014, this standard has many adjustments in structure.

Appendix A lists this standard and ISO 13050.2014.

The chapter number comparison list.

Compared with ISO 13050.2014, there are technical differences between this standard, and the clauses involved in these differences have been passed on the outer margins.

The vertical single line (|) of the setting is marked, and a list of the corresponding technical differences and their reasons is given in Appendix B.

This standard also made the following editorial changes.

---The name of the standard has been changed to harmonize with our country's existing standards.

This standard was proposed by the China Machinery Industry Federation.

This standard is under the jurisdiction of the National Belt Wheels and Belt Standardization Technical Committee (SAC/TC428).

Drafting organizations of this standard. Ningbo Fulong Synchronous Belt Co., Ltd., China National Machinery Productivity Promotion Center, Ningbo Karcher Tape Co., Ltd., Wuxi City

Belt Tape Co., Ltd., Ningbo Jaguar Transmission System Co., Ltd., Zhejiang Fengmao Technology Co., Ltd., Zhejiang Samsung Tape Co., Ltd.

Company, Wuxi Zhonghui Rubber Technology Co., Ltd., Jinjiulong Industrial Co., Ltd., Sichuan Deen Precision Technology Co., Ltd.

1 Scope

This standard specifies the basic characteristics of G, H, R and S tooth type curve tooth synchronous belts and pulleys, mainly including. model and mark, belt tooth ruler

Inch, belt tooth pitch, belt length and bandwidth, belt length measurement method, belt length and center distance relationship, wheel groove size and limit deviation, belt wheel diameter, wheel width ruler

Inch and limit deviation, geometric tolerance of belt wheel, material of belt wheel, surface roughness and balance.

This standard applies to synchronous belt drives for general industrial use.

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 reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 6931.3 Terminology for Belt Transmission Part 3.Synchronous Belt Transmission (GB/T 6931.3-2020, ISO 5288.2017,

MOD)

GB/T 11357 pulley material, surface roughness and balance (GB/T 11357-2020, ISO 254.2011, MOD)

3 Terms, definitions and symbols

The terms, definitions and symbols defined in GB/T 6931.3 apply to this document.

4.1 Model

Curved tooth timing belts and pulleys are divided into four tooth types. G, H, R and S, and there are sixteen models as follows.

---G tooth type. G8M, G14M models;

---H tooth type. H3M, H5M, H8M, H14M, H20M models;

---R tooth type. R3M, R5M, R8M, R14M, R20M models;

---S tooth type. S3M, S5M, S8M, S14M models.

4.2.1 With the mark

The marking of the belt consists of the belt pitch line length, belt model (including tooth type and pitch) and bandwidth (for S tooth type, it is 10 times the actual bandwidth)

Face tooth synchronous belt, add the letter D before the belt model.

Example. A curved tooth timing belt with a pitch of 1400mm, a pitch of 14mm, and a width of 40mm is marked as.

---G tooth type (single side). 1400G14M40;

---H tooth type (single-sided). 1400H14M40, H tooth type (double-sided). 1400DH14M40;