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AUTOMOTIVE INDUSTRY STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

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Replacing QC/T 619-1999

Clamps with Worm Gear Driver Type B and Type C

B 型和 C 型蜗杆传动式软管环箍

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 *Directives for Standardization – Part 1: Rules for the Structure and Drafting of Standardizing Documents*.

This Document replaced QC/T 619-1999 *Type B and C Worm Drive Type Hose Hoop*. Compared with QC/T 619-1999, the major technical changes of this Document are as follows besides the editorial modifications:

- Add product applicable systems specified in this Document (see Clause 1 of this Edition);
- Modify the groove type of the worm head, changing the slot type into the cross type (see Figures 1 and 2 of this Edition);
- Add stainless-steel materials for worms (see Table 3 of this Edition);
- Modify coating requirements (see Table 3 of this Edition);
- Add corrosion resistance time according to materials and surface treatment (see Table 3 of this Edition);
- Add requirements for prohibited substances for automobiles (see Table 3 of this Edition).

This Document was proposed by and under the jurisdiction of National Technical Committee of Auto Standardization (SAC/TC 114).

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The historical editions replaced by this Document are as follows:

- QC/T 619-1999 was first-time published in 1999;
- It is first-time revised hereby.

Clamps with Worm Gear Driver Type B and Type C

1 Scope

This Document specifies the type, size, technical conditions and test methods of clamps with worm gear driver Type B and Type C (hereinafter referred to as "clamp") for automobiles.

This Document is applicable to the clamps for connecting and sealing hoses and hard pipes in automobile engine cooling systems, power battery cooling systems, air systems, air conditioning systems, etc.

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document.

GB/T 90.1 Fasteners – Acceptance inspection

GB/T 90.2 Fasteners – Marking and packaging

GB/T 944.1 Cross recesses for screws

GB/T 3280 Cold rolled stainless steel plate, sheet and strip

GB/T 5267.4 Passivation of corrosion-resistant stainless-steel fasteners

GB/T 6478 Steels for cold heading and cold extruding

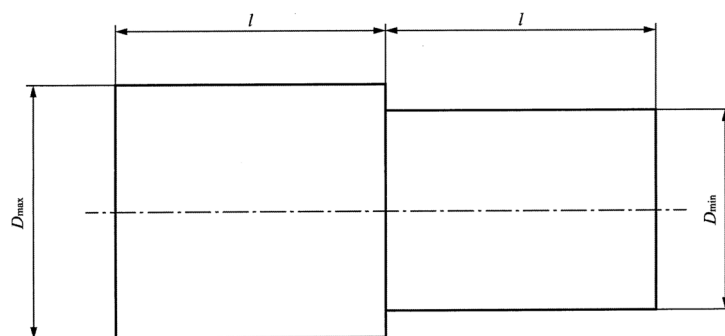
GB/T 10125 Corrosion tests in artificial atmospheres - Salt spray tests

GB/T 20878 Stainless and heat-resisting steels - Designation and chemical composition

GB/T 30512 Requirements for prohibited substances on automobiles

QC/T 326 Coding rules for automotive standardized parts

QC/T 625 Metallic coatings and conversion coatings for automobile



NOTE: $D_{\max}$ and $D_{\min}$ are both the limit values of clamping range; length l shall be selected appropriately.

Figure 3 – Dimensional inspection mandrel

6.2 Materials

The materials shall meet the technical requirements and provide material inspection certificates and be inspected when necessary.

6.3 Strap toughness

The toothed belt is bent 180° around a 4.8 mm steel mandrel and straightened again at the bend of the toothed belt. The toothed belt shall not break, crack or have other failure forms during and after the test.

6.4 Corrosion resistance

The sample state of the test is in bulk.

The clamp is subjected to neutral salt spray test in accordance with the provisions of GB/T 10125; and the corrosion resistance time shall meet the requirements of Table 3.

6.5 Torque

6.5.1 Test conditions

A new clamp shall be used for the test; and the test clamp shall not be trimmed or relubricated.

The maximum error of the torque wrench is $\pm 3\%$.

6.5.2 Free torque

When the clamp is in the supply state, if rotating the worm in any direction, the torque of the Type B clamp shall not exceed the value specified in Table 1, and the torque of the Type C clamp shall not exceed the free torque value specified in Table 2.

6.5.3 Guaranteed torque

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