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Ring groove rivet assemblies - Specifications

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard was proposed by the China Machinery Industry Federation. This standard is under the jurisdiction of the National Fastener Standardization Technical Committee (SAC/TC85). This standard is drafted by: China Machine Productivity Promotion Center. Participated in the drafting of this standard. Meishan Zhongke Fastener Technology Co., Ltd., Shanghai Shenguang High Strength Bolt Co., Ltd., Machinery Industry Parts and Components Quality Supervision and Inspection Center, Hangzhou Dongtie Machinery Manufacturing Co., Ltd., Wuxi Anshida Hardware Co., Ltd., Zhoushan 7412 Factory, Zhuzhou Chunhua Industrial Co., Ltd., Dongfeng Commercial Vehicle Co., Ltd. Dongfeng Commercial Vehicle Technology Center, Yuhuan Tianhao Machinery Co., Ltd. This standard is interpreted by the National Fastener Standardization Technical Committee.

Ring groove rivets were invented in the United States in the 1940s and have been widely used worldwide due to their excellent performance.

19 In the 1980s, it began to be used in the domestic aviation field. In the 1890s, the former Ministry of Railways began to use a large number of ring grooves in rail transit equipment. Rivets and localization. After decades of development, ring groove rivets have been successfully applied to railway vehicles, mining machinery, automobiles, heavy trucks, ships. In the fields of ship, aerospace, steel structure, etc., it has the characteristics of convenient installation, quickness, excellent anti-loose performance, excellent fatigue life and maintenance-free. Head Front, ring groove rivets and installation tools are generally used in the British series design, and a large number of use, and China's national fastener standards are all metric Series, in order to adapt to the actual situation of production and use, in this standard, 5.8R, 8.8R class I ring groove rivet connection pair and type II ring groove rivet connection The nominal diameter of the joint is converted from the inch series to the metric series; the 10.9R high-strength ring groove rivet connection pair independently developed by China Use the metric series. See Table 1 for the comparison of nominal diameter, inch diameter and metric diameter of 5.8R and 8.8R type I ring groove rivets and type II ring groove rivets. Table 1 5.8R, 8.8R type I ring groove rivet and type II ring groove rivet nominal diameter, inch diameter and metric diameter size comparison Nominal

diameter/mm Actual diameter Metric diameter/mm inch diameter/in 5 4.75 3/16 6 6.35 1/4 8 7.92 5/16 10 9.53 3/8 12 12.70 1/2 16 15.88 5/8 20 19.05 3/4 22 22.23 7/8 25 25.40 1 28 28.58 11 35 34.93 1 Ring groove rivet connection accessory technical conditions

1 Scope

China's national specification for ring groove rivet assemblies in carbon and alloy steel, tested at ambient temperatures of 10 to 35 degrees C. It specifies the mechanical properties, the technical requirements and the test methods. A ring groove rivet - the lockbolt - is a two-piece fastener that behaves like a rivet and holds like a bolt. The pin has annular grooves instead of a thread and a breakneck at its tail; a tool pulls on the tail while swaging a collar into the grooves, and when the preload reaches the design value the tail snaps off. That sequence is what makes it valuable: the installed tension is set by the tool and the fastener rather than by an operator's torque wrench, and the swaged collar cannot vibrate loose because there is no helix for it to run down. Railway vehicles, truck chassis, containers and bridges use them for exactly that reason, and the specification's mechanical properties are what let a designer treat the joint as a known quantity.

This standard specifies ring groove rivets, which are made of carbon steel or alloy steel and tested at ambient temperature of 10 ° C ~ 35 ° C. Mechanical properties, technical requirements, test methods, marking methods and acceptance and packaging after the collar and riveting.

Note. The applicable temperature for ring groove rivets produced according to this standard is -50 ° C ~ 150 ° C. When the temperature exceeds -50 ° C ~ 150 ° C, use Those who need to consult the relevant parties. This standard is applicable to the ring groove rivet connection pair of the rivet fastening connection. Ring groove rivet connection pair applicable to this standard.

--- Type I made of carbon steel or alloy steel, performance grade 5.8R, nominal diameter 5mm~10mm; performance grade 8.8R, nominal straight The diameter is 12mm~35mm;

--- Type I made of alloy steel, performance grade 10.9R, nominal diameter 12mm~36mm;

--- Type II made of carbon steel or alloy steel, nominal diameter 5mm~20mm.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document. GB/T

90.1 fastener acceptance inspection GB/T

90.2 Fastener Marking and Packaging

GB/T 230.1 Rockwell hardness test for metallic materials - Part 1. Test methods

GB/T 231.1 Brinell hardness test for metallic materials - Part 1. Test methods

GB/T 3098.1-2010 Fastener mechanical properties bolts, screws and studs

GB/T 4340.1 Metallic materials - Vickers hardness test - Part 1. Test method

GB/T 5267.1 fastener plating

GB/T 5267.2 fastener non-electrolytic zinc sheet coating

GB/T 5267.3 fastener hot dip galvanized layer

GB/T 5779.1 fastener surface defects bolts, screws and studs are generally required

GB/T 5779.2 fastener surface defect nut

GB/T 11376 metal phosphate conversion film

GB/T 15519 chemical conversion film steel black oxide film specification and test method

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Pull force pulingforce The axial tension when the rivet and the collar are separated after riveting.