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High-strength structural bolting assemblies for preloading-Part 11:Load Indicating washer

预载荷高强度栓接结构连接副 第11部分：载荷指示垫圈

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents"

Drafting.

This document is part 11 of GB/T 32076 "Preloaded high-strength bolted structural connections". GB/T 32076 has been published in Lower part.

- Part 1: General requirements;

- Part 2: Preload adaptability;

- Part 3: HR type large hexagon head bolt and nut connection pairs;

- Part 4: HV type large hexagon head bolt and nut connection pairs;

- Part 5: Flat washers;

- Part 6: Chamfered flat washers;

- Part 7: Connection pairs of M39 to M64 large hexagon head bolts and nuts;

- Part 8: Torsion shear type round head bolt and nut connection pairs;

- Part 9: Torsion shear type large hexagon head bolt and nut connection;

- Part 10.Installation technical requirements;

- Part 11.Load indicating washers.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

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Introduction

GB/T 32076 "Preloaded high-strength bolted structural connection pairs" specifies the material selection of preloaded high-strength bolted structural connection pairs in China.

It is widely used in wind power generation equipment, industrial and civil buildings, bridges and tower structures, boilers, etc.

The field of steel structure, lifting machinery and other steel structures consists of 11 parts.

- Part 1: General requirements. The purpose is to standardize the terms and definitions, mechanical properties, test Testing items, quality control and consistency evaluation.

- Part 2: Preload adaptability. The purpose is to standardize the preload high-strength bolted structural connection pairs to meet different installation conditions Adaptability test method to ensure load consistency under load conditions.

- Part 3: HR type large hexagon head bolt and nut connection pairs. The purpose is to standardize the design conditions under different load limits.

HR type preloaded high strength bolted structural connection by-product type dimensions and technical requirements.

- Part 4: HV type large hexagon head bolt and nut connection pair. The purpose is to standardize the design conditions under different load limits.

HV type preloaded high strength bolted structural connection by-product type dimensions and technical requirements.

- Part 5: Flat washers. The purpose is to standardize the types, dimensions and technical specifications of flat washers for preloaded high-strength bolted structural connections Require.

- Part 6: Chamfered flat washers. The purpose is to standardize the types and dimensions of chamfered flat washers for preloaded high-strength bolted structural connections and technical requirements.

- Part 7: M39~M64 large hexagon head bolt and nut connection pairs. The purpose is to standardize M39~M64 large size products The product has been verified through material, molding process and performance tests, and the dimensions and technical requirements are specified.

- Part 8: Torsion shear type round head bolt and nut connection pair. The purpose is to standardize the type of torsion shear type round head bolt connection pair product Dimensions and technical requirements.

- Part 9: Torsion shear type large hexagon head bolt and nut connection pair. The purpose is to standardize the torsion shear type large hexagon head bolt connection pair Product

type, size and technical requirements.

- Part 10.Installation technical conditions. The purpose is to standardize the preloaded high-strength bolted structural connections that meet the reliability requirements of the equipment Installation requirements for the secondary torque method.

- Part 11.Load indicating washers. The purpose is to standardize the type of load indicating washers for preloaded high-strength bolted structural connections.

Dimensions and technical requirements.

The load indicating washers specified in this document are placed under the bolt head or under the nut, and are used in conjunction with the nut face washers (HN) or bolt face washers (HB).

Load indicating device used in combination with preloaded high-strength bolted structural connection pairs in accordance with GB/T 32076.3 and GB/T 32076.4 The load indicating washer has a protrusion on one side that is compressed under load. When tightened (the protrusion is compressed) by using appropriate assembly tightening methods, If the gap between the gasket surfaces is within the specified value range, the preload high-strength bolted structural connection pair can obtain the specified preload.

GB/T 32076.1 and GB/T 32076.2 together specify the load indicating washers, bolts and nuts suitable for preloaded high-strength bolted structural connections.

General dimensions, tolerances, material and functional characteristics and test methods for female face washers (HN) and bolt face washers (HB).

Preloaded high-strength bolted structural connections are very sensitive to differences in manufacturing and lubrication. Therefore, it is important to supply preloaded high-strength bolted structural connections from the same manufacturer.

Similarly, the surface treatment of the preloaded high-strength bolted structural connection pair is carried out by the same A manufacturer controls.

Preloaded high strength bolted structural connection Part 11.Load indicating washers

1 Scope

This document specifies load indicating washers, nut face washers (HN) and bolt face washers suitable for preloaded high strength bolted structural connections.

Type and size, technical requirements, functional characteristics and acceptance rules, quality certification documents and packaging of washers (HB).

This document is applicable to buildings, bridges, tower mast structures, boiler steel structures, lifting machinery, pipelines, machine body blind holes and other steel structures.

Load indicating washers for high strength bolted structural connections and their