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**Calibration Specification for Electric and Pneumatic Torque
wrenches
(English Translation)**

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Appendix A Method for determining the uncertainty of the calibration of the electric and pneumatic torque wrench error (6)

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Introduction

This specification is compiled according to JJF 1071-2010 "Rules for the preparation of national metrological calibration standards".

The main reference to this specification GB/T 16823.2 "Thread fasteners fastening general rules", GB/T 16823.3-2010 "Fastener torque clamping force test", GB/T 26547-2011 "threaded fasteners with rotary tool performance test Method "and GB/T 5621-2008" rock drilling machinery and pneumatic tool performance test method "and so on.

This specification is the first release.

Code for calibration of electric and pneumatic torque wrenches

1 Scope

This specification applies to the calibration of electric torque wrenches, pneumatic torque wrenches, bolt tighteners, etc.

This specification does not apply to the impact of the wrench calibration.

2 reference file

This specification refers to the following documents.

Test method for performance of drilling machinery and pneumatic tools GB/T 5621-2008
General rules for fastening of threaded fasteners Torque - clamping force test for fasteners
Test method for performance of rotary tools for threaded fasteners GB/T 26547-2011 for dated references, only the dated edition applies to this specification; references that are not dated , The latest version (including all modifications) applies to this specification.

3 terminology

3.1 bolts and nuts torque connection simulator experimental threaded joint A connector that simulates a different thread connection state and a buffering function (hereinafter referred to as a simulator). Simulator Including high torque rates and low torque rate simulators.

3.2 high torque rate Torque from the test torque level of 10% to 100%, the corresponding angular displacement of not more than 27 °.

3.3 Low torque rate Torque from the test torque level of 10% to 100%, the corresponding angular displacement of not less than 650 °.

3.4 tightening torque to achieve the required tightening force to tighten the bolts or nuts required torque.

4 Overview

Electric, pneumatic torque wrench (hereinafter referred to as torque wrench) is able to output the set torque of the tightening bolt fasteners with the rotary power tool, by the motor, torque control mechanism, torque output mechanism and other components, the use of dynamic energy the source is generally driven by electric energy and air kinetic energy. The output torque control method uses a clutch, current, air pressure, etc.

Several forms. Common types of mechanical - pneumatic twist wrench, clutch type - pneumatic twist wrench, current type Torsion Electric wrench and electric screw tightening machine.

5 measurement characteristics

5.1 High torque rate indication relative error

5.2 High torque rate indication repeatability

5.3 Low torque ratio indication relative error