

Method of measurement for

Reaction torque and torque impulse from hand-held pneumatic assembly tools for installing threaded fasteners

[ISO title: Hand-held pneumatic assembly tools for installing threaded fasteners — Reaction torque and torque impulse measurements]

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This British Standard, having been prepared under the direction of the Mechanical Engineering Standards Committee, was published under the authority of the Board of BSI and comes into effect on 30 July 1982

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National foreword

This British Standard, which has been prepared under the direction of the Mechanical Engineering Standards Committee, is identical with ISO 6544:1981 “*Hand-held pneumatic assembly tools for installing threaded fasteners — Reaction torque and torque impulse measurements*” prepared by Technical Committee 118, Compressors, pneumatic tools and pneumatic machines, and published by the International Organization for Standardization (ISO).

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

Wherever the words “International Standard” appear, referring to this standard, they should be read as “British Standard”.

The comma has been used throughout as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Cross-references

International Standard Corresponding British Standard

ISO 31	BS 5775 <i>Specification for quantities, units and symbols</i> (Identical)
ISO 1000:1981	BS 5555:1981 <i>Specification for SI units and recommendations for the use of their multiples and of certain other units</i> (Identical)
ISO 3534:1977	BS 5532:1978 <i>Statistics — Vocabulary and symbols</i> (Identical)

The Technical Committee has reviewed the provisions of ISO 2787, ISO 5393 and ISO 5941, to which reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

0 Introduction

This International Standard covers the test method for measurement of reaction torque and torque impulse from hand-held pneumatic assembly tools for installing threaded fasteners and specifies how such measurements should be evaluated.

Such methods are important for the following purposes

- a) enabling manufacturers to measure reaction torque impulse from assembly tools in accordance with a standardized method and to offer their products under correlated technical specifications;
- b) giving users standardized technical information on reaction torque and torque impulse from pneumatic tools for threaded fasteners.

The values of reaction torque and torque impulse are measured on test joints with standardized torque rates that are in accordance with those specified in the performance test of ISO 5393.

1 Scope and field of application

This International Standard specifies a test method for evaluation of reaction torque and torque impulse from hand-held pneumatic tools for installing threaded fasteners and gives instructions on how measured data should be evaluated and presented.

This International Standard is directly applicable to assembly torque control tools.

In the case of stall type tools, only the reaction torque can be measured. Impacting, pulsing or ratcheting assembly tools are not covered.

2 References

ISO 31, *Quantities, units and symbols*.

ISO 1000, *SI units and recommendations for the use of their multiples and of certain other units*.

ISO 2787, *Rotary and percussive pneumatic tools — Acceptance tests*.

ISO 3534, *Statistics — Vocabulary and symbols*.

ISO 5393, *Rotary pneumatic assembly tools for threaded fasteners — Performance test*.

ISO 5941, *Compressors, pneumatic tools and machines — Preferred pressures*.

3 Definitions and symbols

The following definitions and symbols are specific to this International Standard.

3.1 Definitions¹⁾

3.1.1

installed torque

the peak torque transmitted to the joint when installing a threaded fastener by use of a hand-held pneumatic assembly tool

3.1.2

reaction torque

the peak torque transmitted to the operator when installing a threaded fastener by use of a hand-held pneumatic assembly tool

3.1.3

reaction force

the peak force transmitted to the operator when installing a threaded fastener by use of a hand-held pneumatic assembly tool

¹⁾ Where reference is made to this International Standard, it is to be understood that indicated values of reaction torque, reaction force, reaction torque impulse and reaction force impulse correspond to measurements made at an effective inlet pressure of 6,3 bar and the tool adjusted in such a way that the test torque level equals the rated torque of the tool. If for any reason the test pressure is other than 6,3 bar, the test pressure must be specified each time a torque is cited.