
International Standard



6544

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Hand-held pneumatic assembly tools for installing threaded fasteners — Reaction torque and torque impulse measurements

Outils pneumatiques à main pour l'assemblage d'éléments de fixation filetés — Mesurages du couple de réaction et de l'impulsion de couple

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 6544 was developed by Technical Committee ISO/TC 118, *Compressors, pneumatic tools and pneumatic machines*, and was circulated to the member bodies in September 1980.

It has been approved by the member bodies of the following countries :

Austria	France	Romania
Belgium	Germany, F. R.	Sweden
Czechoslovakia	United Kingdom	United Kingdom
Egypt, Arab Rep. of	Netherlands	USA
Finland	Poland	

No member body expressed disapproval of the document.

Hand-held pneumatic assembly tools for installing threaded fasteners — Reaction torque and torque impulse measurements

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.