

Petroleum, petrochemical and natural gas industries -
Axial and centrifugal compressors and
expander-compressors - Part 4:
Expander-compressors (ISO 10439-4:2015)

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English Version

Petroleum, petrochemical and natural gas industries - Axial and centrifugal compressors and expander-compressors - Part 4: Expander-compressors(ISO 10439-4:2015)

Industries du pétrole, de la pétrochimie et du gaz naturel -
Compresseurs axiaux et centrifuges et compresseurs-
détenteurs - Partie 4: Compresseurs-détenteurs (ISO
10439-4:2015)

Erdöl-, petrochemische und Erdgasindustrie - Axial- und
Radialkompressoren und Expanderkompressoren - Teil 4:
Expanderkompressoren (ISO 10439-4:2015)

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

This document (EN ISO 10439-4:2015) has been prepared by Technical Committee ISO/TC 118 "Compressors and pneumatic tools, machines and equipment" in collaboration with Technical Committee CEN/TC 12 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2015, and conflicting national standards shall be withdrawn at the latest by August 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 10439-4:2015 has been approved by CEN as EN ISO 10439-4:2015 without any modification.

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Introduction

This International Standard is based on the 7th edition of the American Petroleum Institute standard API 617.

Further or differing requirements might be needed for individual applications. This International Standard is not intended to inhibit a supplier from offering, or the purchaser from accepting, alternative equipment or engineering solutions for the individual application. This can be particularly appropriate where there is innovative or developing technology. Where an alternative is offered, the supplier should identify any variations from this International Standard and provide details.

An asterisk (*) at the beginning of the paragraph of a clause or subclause indicates that either a decision is required or further information is to be provided by the purchaser. This information is indicated on data sheets or stated in the enquiry or purchase order (see examples in [Annex A](#), ISO 10439-2:2015, Annex A, ISO 10439-3:2015, Annex A).

This International Standard includes the following annexes:

- [Annex A](#): Datasheets;
- [Annex B](#): Vendor (Supplier) data and drawing requirements (VDDR);
- [Annex C](#): Nomenclature;
- [Annex D](#): Typical materials;
- [Annex E](#): Inspector's checklist;
- [Annex F](#): Nozzle forces and moments;
- [Annex G](#): Lubrication and sealing requirements.

[Annex A](#) forms a normative part of this part of ISO 10439. [Annexes B](#) to [G](#) are for information only.

In this International Standard, where practical, US customary units are included in parentheses for information.

Petroleum, petrochemical and natural gas industries — Axial and centrifugal compressors and expander- compressors —

Part 4: Expander-compressors

1 Scope

This part of ISO 10439 specifies minimum requirements and gives recommendations for axial compressors, single-shaft, and integrally geared process centrifugal compressors and expander-compressors for special purpose applications that handle gas or process air in the petroleum, petrochemical, and natural gas industries. This part of ISO 10439 specifies requirements for expander-compressors, in addition to the general requirements specified in ISO 10439-1:2015.

This scope covers only expanders and compressors on a common shaft (expander-compressor). This scope does not apply to expanders with separate output shafts (e.g. generator drives). Hot gas expanders over 300 °C (570 °F) are not covered in this part of ISO 10439.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 10438 (all parts), *Petroleum, petrochemical and natural gas industries — Lubrication, shaft-sealing and control-oil systems and auxiliaries*

ISO 10439-1:2015, *Petroleum, petrochemical and natural gas industries — Axial and centrifugal compressors and expander-compressors — Part 1: General requirements*

API 670, *Machinery protection systems*

3 Terms, abbreviated terms, and definitions

For the purposes of this document, the terms, abbreviated terms, and definitions given in ISO 10439-1:2015 apply.

4 General

NOTE A cross-section showing nomenclature of an expander-compressor can be found in [Annex C](#).

4.1 Dimensions and units

The dimensional and unit requirements shall be in accordance with ISO 10439-1:2015, 4.1.

4.2 Statutory requirements

The statutory requirements shall be in accordance with ISO 10439-1:2015, 4.2.