Petroleum, petrochemical and natural gas industries - Axial and centrifugal compressors and expander-compressors - Part 3: Integrally geared centrifugal compressors (ISO 10439-3:2015)

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 10439-3:2015 sisaldab Euroopa standardi EN ISO 10439-3:2015 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 10439-3:2015 consists of the English text of the European standard EN ISO 10439-3:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.02.2015.	Date of Availability of the European standard is 18.02.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 71.120.99, 75.180.20

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 10439-3

February 2015

ICS 75.180.20; 71.120.99

Supersedes EN ISO 10439:2002

English Version

Petroleum, petrochemical and natural gas industries - Axial and centrifugal compressors and expander-compressors - Part 3: Integrally geared centrifugal compressors (ISO 10439-3:2015)

Industries du pétrole, de la pétrochimie et du gaz naturel - Compresseurs axiaux et centrifuges et compresseurs-détenteurs - Partie 3: Compresseurs centrifuges et axiaux à multiplicateur intégré (ISO 10439-3:2015)

Erdöl-, petrochemische und Erdgasindustrie - Axial- und Radialkompressoren und Expanderkompressoren für Sonderanwendungen zur Handhabung von Gas oder Prozessluft - Teil 3: Radialkompressoren mit integrierter Getriebeeinheit (ISO 10439-3:2015)

This European Standard was approved by CEN on 8 November 2014.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Foreword

This document (EN ISO 10439-3:2015) 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.

This document supersedes EN ISO 10439:2002.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 10439-3:2015 has been approved by CEN as EN ISO 10439-3:2015 without any modification.

Contents

Page

Introduction

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

Users of this International Standard should be aware that 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.

A 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 should be indicated on data sheets or stated in the enquiry or purchase order (see examples in Annex A, ISO 10439-2:2015, Annex A, and ISO 10439-4:2015, 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 for integrally geared compressors

— Annex E: Inspector's checklist

— Annex F: External forces and moments

— Annex G: Rating formulae for integral gearing

Annex A and Annex G form a normative part of this part of ISO 10439. Annexes B to F 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 3: Integrally geared centrifugal 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 integrally geared centrifugal compressors in conjunction with ISO 10439-1.

NOTE 1 See API 672 for packaged plant instrument air compressors.

NOTE 2 Expander stages are sometimes provided on these machines.

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 5389, *Turbocompressors — Performance test code*

ISO 8068, *Lubricants, industrial oils and related products (class L) — Family T (Turbines) — Specification for lubricating oils for turbines*

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

API 670, *Machinery protection systems*

AGMA 2015-1-A01, *Accuracy classification system — Tangential measurements for cylindrical gears*

AGMA 2101-D04, *Fundamental rating factors and calculation methods for involute spur and helical gear teeth*

ASME PTC 10-1997, *Performance test code on compressors and exhausters*

3 Terms, abbreviated terms, and definitions

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

NOTE A cross-section showing nomenclature of an integrally geared centrifugal compressor is included in Annex C.