

# **Axial and Centrifugal Compressors and Expander-compressors**

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## Foreword

API 617 consists of the following parts, under the general topic “axial and centrifugal compressors and expander-compressors for special purpose applications handling gas or process air”:

- *Part 1—General Requirements,*
- *Part 2—Nonintegrally Geared Centrifugal and Axial Compressors,*
- *Part 3—Integrally Geared Centrifugal Compressors,*
- *Part 4—Expander-compressors.*

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## Introduction

Users of this standard should be aware that further or differing requirements may be needed for individual applications. This 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 may be particularly appropriate where there is innovative or developing technology. Where an alternative is offered, the supplier should identify any variations from this standard and provide details.

A bullet (●) at the beginning of a section or subsection indicates that either a decision is required or further information is to be provided by the purchaser. This information should be indicated on datasheets or stated in the enquiry or purchase order (see examples in Annex A of Parts 2, 3, and 4).

In this standard, where practical, U.S. customary (USC) units are included in parentheses for information.

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# Axial and Centrifugal Compressors and Expander-compressors

## Part 1—General Requirements

### 1 Scope

This standard 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, chemical, and gas industries. This part of API 617 specifies general requirements applicable to all such machines.

API 617 does not apply to fans (these are covered by API 673) or blowers that develop less than 34 kPa (5 psi) pressure rise above atmospheric pressure. API 617 also does not apply to packaged, integrally-g geared centrifugal plant and instrument air compressors, which are covered by API 672. Hot gas expanders over 300 °C (570 °F) are not covered by API 617.

This part of API 617 contains information pertinent to all equipment covered by the other parts of this document. It shall be used in conjunction with the following parts, as applicable to the specific equipment covered:

- *Part 2—Nonintegrally Geared Centrifugal and Axial Compressors,*
- *Part 3—Integrally Geared Centrifugal Compressors,*
- *Part 4—Expander-compressors.*

### 2 Normative References

**2.1** The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Standard 612, *Petroleum, Petrochemical and Natural Gas—Steam Turbines—Special Purpose Applications*, Sixth Edition

API Standard 613, *Special Purpose Gear Units for Petroleum, Chemical, and Gas Industry Services*, Fifth Edition

API Standard 614, *Lubrication, Shaft-sealing and Oil-control Systems and Auxiliaries*, Fifth Edition

API Standard 670, *Machinery Protection Systems*, Fourth Edition

API Standard 671, *Special Purpose Couplings for Petroleum, Chemical and Gas Industry Services*, Fourth Edition

AGMA 2015-1-A01 2001<sup>1</sup>, *Accuracy Classification System—Tangential Measurements for Cylindrical Gears*

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<sup>1</sup> American Gear Manufacturers Association, 500 Montgomery Street, Suite 350, Alexandria, Virginia 22314, [www.agma.org](http://www.agma.org).