

Liquid Ring Compressors and Vacuum Pumps in Petroleum, Chemical, and Gas Industry Services

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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 vendor 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 vendor should identify any variations from this standard and provide details.

- Annex A contains data sheets which purchasers are encouraged to use.
- Annex B contains guidelines for submittal of contract documents and engineering design data including typical forms which may be used to indicate vendor drawing and data requirements.
- Annex C contains nomenclature for the various equipment components.
- Annex D specifies requirements and gives guidance on materials selection.
- Annex E contains schematic drawings of ring liquid systems.
- Annex F contains system considerations, operating variables, and test performance guidance.
- Annex G contains guidance on packaging.

This standard requires the purchaser to specify certain details and features. A bullet [•] in the margin indicates that either a decision by, or further information from, the purchaser is required. Further information should be shown on the data sheets (see example in Annex A) or stated in the quotation request and purchase order.

In this standard, U.S. customary units are included in brackets for information.

Liquid Ring Compressors and Vacuum Pumps in Petroleum, Chemical, and Gas Industry Services

1 Scope

1.1 This standard covers the minimum requirements for liquid ring compressor and vacuum pump (LRC/VP) systems for service in the petroleum, chemical, and gas industries. The requirements include basic equipment design, materials, fabrication, inspection, testing, and preparation for shipment.

1.2 This standard requires the purchaser to specify certain details and features. A bullet [•] in the margin indicates that a decision by, or further information from, the purchaser is required. Further information should be stated in the quotation request and purchase order.

1.3 The purchaser and the vendor shall mutually determine the measure that shall be taken to comply with governmental codes, regulations, ordinances, or rules that are applicable to the equipment.

2 Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any addenda) applies.

API Recommended Practice 500, *Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division 1 and Division 2*

API Recommended Practice 686, *Machinery Installation, and Installation Design*

API Recommended Practice 691, *Risk-based Machinery Management*

API Standard 520, *Sizing, Selection, and Installation of Pressure-Relieving Devices in Refineries; Part I— Sizing and Selection*

API Standard 520, *Sizing, Selection, and Installation of Pressure- relieving Devices in Refineries; Part II— Installation*

API Standard 526, *Flanged Steel Pressure Relief Valves*

API Standard 541, *Form-wound Squirrel- cage Induction Motors—500 Horsepower and Larger*

API Standard 547, *General-purpose Form- wound Squirrel-cage Induction Motors—250 Horsepower and Larger*

API Standard 614, *Lubrication, Shaft-sealing, and Control-oil Systems and Auxiliaries*

API Standard 670: *Machinery Protection Systems*

API Standard 677, *General-Purpose Gear Units for Petroleum, Chemical and Gas Industry Services*

API Standard 682, *Pumps—Shaft Sealing Systems for Centrifugal and Rotary Pumps*

ABMA Standard 7, ¹ *Shaft, Housing Fits for Metric Radial Ball and Roller Bearings (Except Tapered Roller Bearings) Conforming to Basic Boundary Plans*

ABMA 19.1, *Tapered Roller Bearings—Radial Metric Design*

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