

General-purpose, Extruder, and Epicyclic Gear Units for 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 applicable where there is innovative or developing technology. Where an alternative is offered, the vendor 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 the purchaser is required to provide further information. It is necessary that this information be indicated on data sheets or stated in the enquiry or purchase order (see examples in Annex A).

This standard requires the purchaser to specify certain details and features. Although it is recognized that the purchaser may desire to modify, delete, or amplify sections of this standard, it is strongly recommended that such modifications, deletions, and amplifications be made by supplementing this standard, rather than by rewriting or incorporating sections thereof into another standard.

For effective use of this standard and ease of reference to the text, the use of the data sheets in Annex A is recommended.

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General-purpose, Extruder, and Epicyclic Gear Units for Petroleum, Chemical, and Gas Industry Services

1 Scope

This standard covers the minimum requirements for general-purpose, enclosed single and multistage gear units incorporating parallel shaft spur, and helical gears for use in the petroleum, chemical, and gas industry services. General-purpose and extruder gears manufactured according to this standard are limited to pitch line velocities that do not exceed 60 m/s (12,000 ft/min).

The requirements for parallel shaft helical gears applied to extruder services are included in Section 9 of this standard.

The requirements for epicyclic gears driving equipment, such as electrical generators, centrifugal compressors, and pumps, are included in Section 10 of this standard.

This standard does not apply to gears in special-purpose service, which are covered in API 613, to gears integral with other equipment, or gears with noninvolute tooth forms.

NOTE General-purpose gears are applied in equipment trains that are usually spared for use in noncritical service. Typical applications for which this standard is intended are cooling tower water pump systems, forced and induced draft fan systems, and other general-purpose equipment trains.

2 Normative References

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 Specification 5L, *Line Pipe*

API Standard 670, *Machinery Protection Systems*

API Standard 671, *Special-purpose Couplings for Petroleum, Chemical, and Gas Industry Services*

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

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

API Manual of Petroleum Measurement Standards (MPMS) Chapter 15, *Guidelines for the Use of Petroleum Industry-specific International System (SI) Units*

AGMA 925-A03¹, *Effect of Lubrication on Gear Surface Distress*

ANSI/API Standard 618², *Lubrication, Shaft-sealing and Oil-control Systems and Auxiliaries*, Fifth Edition, April 2008

ANSI/ABMA Standard 7³, *Shaft and Housing Fits for Metric Radial Ball and Roller Bearings (Except Tapered Roller Bearings) Conforming to Basic Boundary Plan*

¹ American Gear Manufacturers Association, 1001 N. Fairfax Street, Suite 500, Alexandria, Virginia 22314, www.agma.org.

American National Standards Institute, 1899 L. Street, NW, 11th Floor, Washington, DC 20036, www.ansi.org.

³ American Bearing Manufacturers Association, 1001 N. Fairfax Street, Suite 500, Alexandria, Virginia 22314, www.americanbearings.org.