
**Petroleum, petrochemical and natural gas
industries — Lubrication, shaft-sealing
and control-oil systems and auxiliaries —**

**Part 1:
General requirements**

*Industries du pétrole, de la pétrochimie et du gaz naturel — Systèmes
de lubrification, systèmes d'étanchéité, systèmes d'huile de régulation
et leurs auxiliaires —*

Partie 1: Exigences générales



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 10438-1 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures, for the petroleum, petrochemical and natural gas industries*, Subcommittee SC 6, *Processing equipment and systems*.

ISO 10438 consists of the following parts, under the general title *Petroleum, petrochemical and natural gas industries — Lubrication, shaft-sealing and control-oil systems and auxiliaries*:

- *Part 1: General requirements*
- *Part 2: Special-purpose oil systems*
- *Part 3: General-purpose oil systems*
- *Part 4: Self-acting gas seal support systems*

Introduction

ISO 10438 is based on API Std 614, 4th edn., April 1999, divided into four parts as follows:

- *Part 1: General requirements* (this part) is based on Chapter 1 of API Std 614;
- *Part 2: Special-purpose oil systems* is based on Chapter 2 of API Std 614;
- *Part 3: General-purpose oil systems* is based on Chapter 3 of API Std 614;
- *Part 4: Self-acting gas seal support systems* is based on Chapter 4 of API Std 614.

Users of this part of ISO 10438 should be aware that further or differing requirements may be needed for individual applications. This part of ISO 10438 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 part of ISO 10438 and provide details.

This part of ISO 10438 requires the purchaser to specify certain details and features.

A bullet (•) at the beginning of a clause or sub-clause indicates that either a decision is required or further information is to be provided by the purchaser. This information or decision should be indicated on suitable data sheets; otherwise it should be stated in the quotation request (inquiry) or in the order.

Petroleum, petrochemical and natural gas industries — Lubrication, shaft-sealing and control-oil systems and auxiliaries —

Part 1: General requirements

1 Scope

This part of ISO 10438 specifies general requirements for lubrication, shaft-sealing systems and control-oil systems and auxiliaries for use in the petroleum, petrochemical and natural gas industries as well as in other industries by agreement. It is intended to be used in conjunction with ISO 10438-2, ISO 10438-3 and ISO 10438-4, as appropriate. ISO 10438 in its entirety specifies requirements for lubrication systems, oil-type shaft-sealing systems, self-acting gas seal systems, control-oil systems and other auxiliaries for general- and special-purpose applications. These systems can serve equipment such as compressions, gears, pumps and drivers.

None of the parts of ISO 10438 is applicable to internal combustion engines.

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.

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designations*

ISO 7005 (all parts), *Metallic flanges*

ISO 10437, *Petroleum, petrochemical and natural gas industries — Steam turbines — Special-purpose applications*

ISO 13706, *Petroleum and natural gas industries — Air-cooled heat exchangers*

ISO 16812, *Petroleum and natural gas industries — Shell-and-tube heat exchangers*

IEC 60072 (all parts), *Dimensions and output series for rotating electrical machines*

IEC 60079 (all parts), *Electrical apparatus for explosive gas atmospheres*

API RP 520, Parts I and II, *Sizing, selection and installation of pressure-relieving devices in refineries*

API Std 526, *Flanged steel pressure relief valves*

API RP 551, *Process measurement instrumentation*

API Std 611, *General-purpose steam turbines for petroleum, chemical, and gas industry services*

ASME B1.1, *Unified inch screw threads (UN and UNR thread form)*

ASME B16.11, *Forged fittings, socket-welding and threaded*

ASME Y14.2M, *Line conventions and lettering*

ASTM A 193, *Standard specification for alloy-steel and stainless steel bolting materials for high-temperature service*

ASTM A 194, *Standard specification for carbon and alloy steel nuts for bolts for high-pressure or high-temperature service, or both*

ASTM E 94, *Standard guide for radiographic examination*

ASTM E 125, *Standard reference photographs for magnetic particle indications on ferrous castings*

ASTM E 709, *Standard guide for magnetic particle examination*

NFPA 70:2002, *National electrical code*

TEMA, *Standards of the Tubular Exchanger Manufacturers Association*, 8th edn.

3 Terms, definitions and abbreviated terms

For the purposes of this document, the following terms, definitions and abbreviated terms apply.

3.1 Terms and definitions

3.1.1

alarm point

preset value of a parameter at which an alarm warns of a condition requiring corrective action

3.1.2

block-in time

period required after the driver is tripped to isolate a piece of equipment, such as a compressor, from its system and to de-pressurize it

3.1.3

booster pump

oil pump that takes suction from the discharge of another pump to provide oil at a higher pressure

3.1.4

coast-down time

period required after the driver is tripped for the equipment to come to rest

3.1.5

component

machinery and hardware item, such as reservoir, pump, cooler, filter, valve and instrument, that is part of the system

3.1.6

console

total system whose components and controls are packaged as a single unit on a continuous or joined baseplate

NOTE With a console, the purchaser needs only to make external connections.