
Forced draught oil burners

Brûleurs à air soufflé pour combustibles liquides



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Published in Switzerland

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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 22968 was prepared by Technical Committee ISO/TC 109, *Oil and gas burners*.

Introduction

This International Standard is primarily intended for application to automatic forced draught oil burners having a combustion air fan, operated with liquid fuels and intended to be marketed as a complete assembly.

Many burners are designed to operate using a wide range of fuel oils with little or no modification other than adjustment of the air supply.

When applying the requirements specific to a country or region, which are given in the various annexes, it is essential that a level of safety be ensured that is at least equivalent to that provided for by the requirements of the main body of this International Standard.

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Forced draught oil burners

1 Scope

This International Standard specifies the terminology, test procedures and general requirements for the construction and operation of automatic forced draught oil burners supplied with a fuel having a viscosity at the burner inlet of 1,6 mm²/s (cSt) to 6 mm²/s (cSt) at 20 °C or higher, boiling petroleum in accordance with ISO 8217-based first raffinate, and the provision of related control and safety devices.

It is applicable to the following:

- a) automatic oil burners (hereinafter called “burners”) fitted with a combustion air fan and equipped as described in Clause 5, intended for use in appliances of different types and operated with fuel oils;
- b) single burners with a single combustion chamber, for which, where such burners are fitted to a single appliance, the requirements of the relevant appliance standard also apply;
- c) single-fuel and dual-fuel burners when operating only on oil;
- d) the oil function of dual-fuel burners designed to operate simultaneously on gaseous and liquid fuels, which, for the former, the requirements of ISO 22967 also apply.

It is not applicable to burners used in direct fired processes either with defined combustion chamber applications or where the combustion chamber wall surface temperature is greater than 750 °C or the heat-transfer medium temperature is greater than 500 °C.

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 designation*

ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 1129, *Steel tubes for boilers, superheaters and heat exchangers — Dimensions, tolerances and conventional masses per unit length*

ISO 3183, *Petroleum and natural gas industries — Steel pipe for pipeline transportation systems*

ISO 6806, *Rubber hoses and hose assemblies for use in oil burners — Specification*

ISO 7005 (all parts), *Pipe flanges*

ISO 8217, *Petroleum products — Fuels (class F) — Specifications of marine fuels*

ISO 9329-1, *Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 1: Unalloyed steels with specified room temperature properties*

ISO 9330-1, *Welded steel tubes for pressure purposes — Technical delivery conditions — Part 1: Unalloyed steel tubes with specified room temperature properties*

ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories*

ISO 22967, *Forced draught gas burners*

ISO 23550, *Safety and control devices for gas burners and gas-burning appliances — General requirements*

ISO 23552-1, *Safety and control devices for gas and/or oil burners and gas and/or oil appliances — Particular requirements — Part 1: Fuel/air ratio controls, electronic type*

ISO 23553-1, *Safety and control devices for oil burners and oil-burning appliances — Particular requirements — Part 1: Shut-off devices for oil burners*

IEC 60204-1, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 60335-1:2001, *Household and similar electrical appliances — Safety — Part 1: General requirements, as amended 2004 and 2006*

IEC 60335-2-102:2004, *Household and similar electrical appliances — Safety — Part 2-102: Particular requirements for gas, oil and solid-fuel burning appliances having electrical connections*

IEC 60529, *Degrees of protection provided by enclosures (IP code)*

IEC 60730-2-5:2004, *Automatic electrical controls for household and similar use — Part 2-5: Particular requirements for automatic electrical burner control systems*

IEC 60747-5-2, *Discrete semiconductor devices and integrated circuits — Part 5-2: Optoelectronic devices — Essential ratings and characteristics*

IEC 60947-5-1, *Low-voltage switchgear and controlgear — Part 5-1: Control circuit devices and switching elements — Electromechanical control circuit devices*

IEC 61810-1, *Electromechanical elementary relays — Part 1: General requirements*

3 Terms and definitions

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

3.1 General

3.1.1

forced draught burner

burner in which the total air for combustion is supplied by means of a fan

3.1.2

automatic forced draught burner

burner that is fitted with an automatic ignition, flame monitoring and burner control devices where the ignition, flame monitoring and the on/off switching of the burner occur automatically

NOTE The heat input of the burner can be adjusted during operation either automatically or manually.