

Specification for

Pressure operated relay valves for domestic, commercial and catering gas appliances

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Gas Standards Policy Committee (GSE/-) to Technical Committee GSE/22, upon which the following bodies were represented:

- Association of Control Manufacturers — TACMA (BEAMA Ltd.)
- British Combustion Equipment Manufacturers' Association
- British Gas plc
- British Non-ferrous Metals Federation
- Chief and Assistant Chief Fire Officers' Association
- Department of Trade and Industry (Consumer Safety Unit, C A Division)
- Liquefied Petroleum Gas Industry Technical Association (UK)
- Society of British Gas Industries

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- British Compressed Gases Association

This British Standard, having been prepared under the direction of the Gas Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 31 August 1990

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Foreword

This British Standard has been prepared under the direction of the Gas Standards Policy Committee and is a revision of BS 1963:1969 which is withdrawn. As in earlier editions, minimum requirements for construction and performance are specified and methods of test are given. Only metric sizes are now given.

Products complying with this standard will not necessarily be satisfactory in service as correct application is also important. Guidance may be obtained from appropriate appliance standards and codes of practice for gas installations.

It has been assumed in the drafting of this standard that the execution of its provisions is entrusted to appropriately qualified and experienced people.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies requirements for the design and performance of pressure operated general purpose relay valves as follows:

- a) for use on plant and appliances burning 1st, 2nd and 3rd family gases;
- b) up to and including DN 50 connection size;
- c) for declared operating pressures up to 30 mbar¹⁾ for 1st and 2nd family gases and up to 45 mbar for 3rd family gases.

Where a manufacturer declares that a valve is suitable for only one gas family, only the relevant tests apply.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this British Standard, the definitions given in BS 1179 apply together with the following.

closing time

the time interval from the sudden shut-off of the weep flow to the closure of the relay valve

3 Design and construction

3.1 General

Access to functional parts or means of adjustment shall require the use of tools.

Parts of the valve which require dismantling for servicing, as declared in the manufacturer's instructions, shall not render the valve unsafe if reassembled incorrectly.

3.2 Pressure test points

Where provision is made for pressure test points on a valve body, then they shall be in either of the following forms:

- a) a boss which shall be threaded in accordance with BS 21 (internal) and be either plugged or fitted with a test nipple;
- b) an integrally cast test nipple.

The test nipple shall have an external diameter of $9^{+0}_{-0.5}$ mm and a useful length of at least 10 mm for connection to the tubing. The equivalent diameter of the hole in the test nipple shall not exceed 1 mm.

3.3 Materials for gas-carrying parts

Parts of the body other than "O" rings and gasket seals which directly or indirectly separate a gas-carrying chamber from the atmosphere shall be made of either of the following:

- a) metallic material; or
- b) non-metallic material provided that upon removal or fracture of this non-metallic part, when the valve is tested with air at the declared maximum operating pressure, not more than 30 dm³/h of air can escape.

Solder that has a melting point below 450 °C after application shall not be used for gas-carrying parts.

3.4 Zinc alloys

Zinc alloys shall only be used if they comply with BS 1004, the castings being made in accordance with BS 5338, and if the parts will not be exposed to a temperature higher than 80 °C. For gas-carrying parts and parts which could affect the safe operation of the valve, only alloy A (see BS 1004) is permitted.

3.5 Corrosion resistance

3.5.1 General

All parts of the valve shall have adequate resistance to corrosion, either by the use of corrosion-resistant materials or by means of suitable, protective coating, e.g. paint.

Compliance shall be checked in accordance with 3.5.2 and 3.5.3.

3.5.2 Scratch test

3.5.2.1 Requirement

Parts of the valve, coated for protection and not just for decoration, shall be subjected to a scratch test as described in 3.5.2.2 both before and after the humidity test specified in 3.5.3. There shall be no penetration of the protective coating by the ball.

3.5.2.2 Test method

Draw a 1 mm diameter fixed steel ball across the surface of the valve at a speed of 30 mm/s to 40 mm/s with a contact force of 10 N. An example of a suitable test instrument is shown in Figure 1.

¹⁾ 1 mbar = 100 N/m² = 100 Pa