

# Sikkerheds- og styreanordninger til gasbrændere og gasforbrugende apparater – Særlige krav – Del 5: Manuelle gasventiler

Safety and control devices for gas burners and  
gas-burning appliances – Particular requirements –  
Part 5: Manual gas valves

**DANSK STANDARD**  
Danish Standards Association

Göteborg Plads 1  
DK-2150 Nordhavn  
Tel: +45 39 96 61 01  
[dansk.standard@ds.dk](mailto:dansk.standard@ds.dk)  
[www.ds.dk](http://www.ds.dk)

This is a preview of DS/ISO 23551-5:2023. [Click here to purchase the full version from the ANSI store.](#)

DS projekt: M327544  
ICS: 27.060.20

**Første del af denne publikations betegnelse er:  
DS/ISO, hvilket betyder, at det er en international standard, der har status som dansk standard.**

**Denne publikations overensstemmelse er:  
IDT med: ISO 23551-5:2023**

**DS-publikationen er på engelsk.**

---

I tilfælde af redaktionelle fejl i DS-publikationen kan der skrives til:  
[editorial-mistakes@ds.dk](mailto:editorial-mistakes@ds.dk)

**ADVARSEL:** DS-publikationer revideres over tid. Derudover kan sådanne publikationer ændres ved rettelserblade og/eller tillæg. Der kan også udgives rettelserblade, der udelukkende angår oversættelsen af en publikation. Det er derfor vigtigt at sikre sig, at man benytter en gældende udgave, medmindre fx lovgivning kræver andet. Den enkelte publikations status fremgår af <https://webshop.ds.dk/>. Her kan man desuden tilmelde sig en gratis notifikationservice og følge en udgivet DS-publikations udvikling ved at klikke på "Følg standarden".

En oversigt over forskellige DS-publikationstyper og -betegnelser findes her:  
<https://www.ds.dk/publikationstyper>.

Second edition  
2023-10

---

---

# **Safety and control devices for gas burners and gas-burning appliances — Particular requirements —**

## **Part 5: Manual gas valves**

*Dispositifs de commande et de sécurité pour brûleurs à gaz et  
appareils à gaz — Exigences particulières —*

*Partie 5: Robinets de gaz manuels*



Reference number  
ISO 23551-5:2023(E)

© ISO 2023



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2023, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Ch. de Blandonnet 8 • CP 401  
CH-1214 Vernier, Geneva, Switzerland  
Tel. +41 22 749 01 11  
Fax +41 22 749 09 47  
[copyright@iso.org](mailto:copyright@iso.org)  
[www.iso.org](http://www.iso.org)

This is a preview of DS/ISO 23551-5:2023. [Click here to purchase the full version from the ANSI store.](#)

# Contents

Page

<b>Foreword</b> .....	<b>v</b>
<b>Introduction</b> .....	<b>vi</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Classification</b> .....	<b>3</b>
4.1 Classes of controls .....	3
4.2 Groups of controls .....	3
4.3 Types of DC supplied controls.....	3
4.4 Classes of controls functions .....	3
<b>5 Test conditions and tolerances</b> .....	<b>3</b>
<b>6 Construction</b> .....	<b>3</b>
6.1 General .....	3
6.2 Construction requirements .....	3
6.2.1 Appearance .....	3
6.2.2 Holes .....	3
6.2.3 Breather holes .....	3
6.2.4 Vent limiter .....	3
6.2.5 Screwed fastenings.....	4
6.2.6 Moving parts .....	4
6.2.7 Sealing caps .....	4
6.2.8 Dismantling and reassembling for servicing and/or adjustment.....	4
6.2.9 Auxiliary channels and orifices .....	4
6.2.10 Pre-setting device .....	4
6.2.11 Operating parts of manual gas valves.....	4
6.2.12 Seating force .....	4
6.2.13 Tapered plug cavity .....	4
6.3 Materials.....	5
6.3.1 General material requirements.....	5
6.3.2 Housing.....	5
6.3.3 Springs providing closing force and sealing force .....	5
6.3.4 Resistance to corrosion and surface protection .....	5
6.3.5 Impregnation .....	5
6.3.6 Seals for glands for moving parts.....	5
6.3.7 Jointing .....	5
6.3.8 Closure members .....	6
6.4 Connections.....	6
6.5 Gas controls employing electrical components in the gas way.....	6
6.6 Component parts .....	6
6.6.1 General.....	6
6.6.2 Turning angles.....	6
6.6.3 Lubrication.....	7
6.6.4 Stops .....	7
6.6.5 Safety lock .....	7
6.6.6 Bearing seal .....	7
6.6.7 Pre-setting devices .....	7
6.6.8 Compensation means for manual gas valves.....	7
6.6.9 Spring effect in manual gas valves.....	8
6.6.10 Manual gas valves with two or more “on” positions.....	8
6.7 Appliance connector valves.....	8
<b>7 Performance</b> .....	<b>9</b>
7.1 General .....	9

This is a preview of DS/ISO 23551-5:2023. [Click here to purchase the full version from the ANSI store.](#)

7.2	Leak-tightness .....	9
7.3	Torsion and bending.....	9
7.4	Rated flow rate.....	9
	7.4.1 General.....	9
	7.4.2 Requirements.....	9
	7.4.3 Test.....	9
7.5	Durability .....	9
	7.5.1 Elastomers in contact with gas .....	9
	7.5.2 Resistance of elastomers to lubricants and gases.....	9
	7.5.3 Marking resistance .....	10
	7.5.4 Resistance to scratching.....	10
	7.5.5 Resistance to humidity .....	10
7.6	Functional requirements.....	10
	7.6.1 Requirements for operating torque .....	10
	7.6.2 Test for operating torque.....	12
	7.6.3 Requirements for operating force.....	12
	7.6.4 Requirements for operating torque for safety lock.....	12
	7.6.5 Adequacy of seating means .....	13
7.7	Endurance.....	13
	7.7.1 Requirement.....	13
	7.7.2 Endurance test.....	13
	7.7.3 Gas burner valves.....	14
	7.7.4 Food service equipment delta C manual gas valves .....	15
<b>8</b>	<b>Electrical equipment.....</b>	<b>15</b>
<b>9</b>	<b>EMC/Electrical requirements.....</b>	<b>15</b>
<b>10</b>	<b>Marking, installation and operating instructions .....</b>	<b>16</b>
10.1	Marking.....	16
	10.1.1 Open and closed position of a manual gas valve.....	16
	10.1.2 Marking of positions.....	16
	10.1.3 Marking for delta C valves .....	16
	10.1.4 Marking for appliance connector valves .....	17
10.2	Installation and operating instructions .....	17
10.3	Warning notice.....	17
	<b>Annex A (informative) Leak-tightness test — Volumetric method .....</b>	<b>18</b>
	<b>Annex B (informative) Leak-tightness test — Pressure-loss method .....</b>	<b>19</b>
	<b>Annex C (normative) Conversion of pressure loss into leakage rate .....</b>	<b>20</b>
	<b>Annex D (normative) Gas quick connector (GQC).....</b>	<b>21</b>
	<b>Annex E (normative) Elastomers/requirements resistance to lubricants and gas.....</b>	<b>22</b>
	<b>Annex F (normative) Specific regional requirements in European countries.....</b>	<b>23</b>
	<b>Annex G (normative) Specific regional requirements in Canada and USA.....</b>	<b>24</b>
	<b>Annex H (normative) Specific regional requirements in Japan.....</b>	<b>26</b>
	<b>Annex I (informative) Examples of manual gas shut-off valves .....</b>	<b>27</b>
	<b>Bibliography.....</b>	<b>33</b>

This is a preview of DS/ISO 23551-5:2023. Click here to purchase the full version from the ANSI store.

## 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 161, *Controls and protective devices for gaseous and liquid fuels*.

This second edition cancels and replaces the first edition ([ISO 23551-5:2014](http://www.iso.org/iso/23551-5:2014)), which has been technically revised.

The main changes are as follows:

- the document has been updated to align technically and with the revised format of [ISO 23550:2018](http://www.iso.org/iso/23550:2018);
- references to the current annex structure have been corrected.

A list of all parts in the [ISO 23551 series](http://www.iso.org/iso/23551-series) can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

This document is designed to be used in combination with [ISO 23550](#). This document, together with [ISO 23550](#), establishes the full requirements as they apply to the product covered by this document.

Where needed, this document adapts [ISO 23550](#) by stating in the corresponding clause:

- “with the following modification”;
- “with the following addition”;
- “is replaced by the following”; or
- “is not applicable”.

In order to identify specific requirements that are particular to this document, that are not already covered by [ISO 23550](#), this document contains certain clauses or subclauses that are additional to the structure of [ISO 23550](#). These subclauses are indicated by the introductory sentence: “Subclause (or Annex) specific to this document”.

To ensure the global relevance of this document, the differing requirements resulting from practical experience and installation practices in various regions of the world have been taken into account. The variations in basic infrastructure associated with gas and/or oil controls and appliances have also been recognized, some of which are addressed in [Annexes F, G](#) and [H](#). This document intends to provide a basic framework of requirements that recognize these differences.

This is a preview of DS/ISO 23551-5:2023. [Click here to purchase the full version from the ANSI store.](#)

# Safety and control devices for gas burners and gas-burning appliances — Particular requirements —

## Part 5: Manual gas valves

### 1 Scope

This document specifies safety, constructional and performance requirements for manual gas valves intended for use with gas burners and gas-burning appliances, hereafter referred to as "valves", unless otherwise specified.

This document applies to the following types of manual gas valves:

- manual gas shut-off valves;
- gas burner valves;
- appliance connector valves;
- delta C valves.

This document applies to valves for gas burners and gas-burning appliances of nominal connection size up to and including DN 100 that can be used and tested independently of these appliances using fuel gases, as natural gas, manufactured gas or liquefied petroleum gas (LPG) at inlet pressures up to and including 500 kPa.

This document is not applicable to corrosive and waste gases.

This document covers type testing only.

### 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 amendments) applies.

[ISO 23550:2018](#), *Safety and control devices for gas and/or oil burners and appliances — General requirements*