ANSI Z21.77-2005 • CSA 6.23-2005
(reaffirmed 2020)

American National Standard/CSA Standard for Manually Operated Piezo-Electric Spark Gas Ignition Systems And Components

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AMERICAN NATIONAL STANDARD
ANSI Z21.77-2005

CSA STANDARD
CSA 6.23-2005

Second Edition - 2005

This Standard is a revised edition
of the former Standard for

MANUALLY OPERATED PIEZO-ELECTRIC SPARK GAS IGNITION SYSTEMS AND COMPONENTS

ANSI Z21.77-1995 • CGA 6.23-M95
and Addenda
Z21.77a-1997 • CGA 6.23a-M97
Z21.77b-2004 • CGA 6.23b-2004

APPROVED

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American National Standards Institute, Inc.

April 1, 2005
Interprovincial Gas Advisory Council
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Preface

This publication represents a basic standard for safe operation, substantial and durable construction, and acceptable performance of manually operated piezo-electric spark gas ignition systems and components for gas appliances. It is the result of years of experience in the manufacture, testing, installation, maintenance, inspection and research on manually operated piezo-electric spark gas ignition systems and components for gas appliances designed for utilization of gas. There are risks of injury to persons inherent in appliances that, if completely eliminated, would defeat the utility of the appliance. The provisions in this standard are intended to help reduce such risks while retaining the normal operation of the appliance.

Nothing in this standard is to be considered in any way as indicating a measure of quality beyond compliance with the provisions it contains. It is designed to allow compliance of manually operated piezo-electric spark gas ignition systems and components for gas appliances, the safety construction and performance of which may exceed the various provisions specified herein. In its preparation, full recognition has been given to possibilities of improvement through ingenuity of design. As progress takes place, revisions may become necessary. When they are believed desirable, recommendations or suggestions should be forwarded to the Chairman of Accredited Standards Committee Z21/83, 8501 East Pleasant Valley Road, Cleveland, Ohio 44131, or the Chairman of the CSA Technical Committee on Gas Appliances and Related Accessories, 5060 Spectrum Way, Mississauga, Ontario, Canada, L4W 5N6.

Safe and satisfactory operation of a pilot gas filter for gas appliances depends to a great extent upon its proper installation, use and maintenance. It should be installed, as applicable, in accordance with the *National Fuel Gas Code, ANSI Z223.1/NFPA 54*; the *Natural Gas and Propane Installation Code, CSA-B149.1.*

Users of this American National Standard/Canadian Standards Association Standard are advised that the devices, products and activities within its scope may be subject to regulation at the Federal, Territorial, Provincial, state or local level. Users are strongly urged to investigate this possibility through appropriate channels. In the event of a conflict with this standard, the Federal, Territorial, Provincial, state or local regulation should be followed.

THIS STANDARD IS INTENDED TO BE USED BY THE MANUFACTURING SECTOR AND BY THOSE APPLYING THE EQUIPMENT AND BY THOSE RESPONSIBLE FOR ITS PROPER INSTALLATION. IT IS THE RESPONSIBILITY OF THESE USERS TO DETERMINE THAT IN EACH CASE THIS STANDARD IS SUITABLE FOR AND APPLICABLE TO THE SPECIFIC USE THEY INTEND.

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EFFECTIVE DATE: An organization using this standard for product evaluation as a part of its certification program will normally establish the date by which all products certified by that organization should comply with this standard. In Canada the Standards Committee and the Interprovincial Gas Advisory Council normally stipulate an effective date for the standard.

History Of The Development Of Standard For Manually Operated Piezo-Electric Spark Gas Ignition Systems And Components

(This History is informative and is not part of the standard.)

With the onset of the Free Trade Agreement between the United States and Canada on January 2, 1988, significant attention was given to the harmonization of the United States and Canadian safety standards addressing gas-fired equipment for residential, commercial and industrial applications. It was believed that the elimination of the differences between the standards would remove potential trade barriers and provide an atmosphere in which North American manufacturers could market more freely in the United States and Canada. The harmonization of these standards was also seen as a step toward harmonization with international standards.

With the formation of joint subcommittees, a Canadian Gas Association Standards Steering Committee on Gas Burning Appliances and Related Accessories was established to parallel Accredited Standards Committees Z21 and Z83, and to support the formation of joint subcommittees. Operating procedures, in accordance with American National Standards Institute procedures, for joint subcommittees were developed and subsequently approved by ANSI on April 1, 1993.

At its September 23-24, 1992 meeting, the Joint Thermostat and Automatic Gas Ignition Systems Subcommittee adopted ANSI Z21.77 for distribution for review and comment as a harmonized standard, in that a comparable Canadian standard did not exist. The first draft harmonized manually operated piezo-electric spark gas ignition systems and components standard was distributed for review and comment during March 1994.

Following reconsideration and modification of the proposed harmonized draft standard for manually operated piezo-electric spark gas ignition systems and components, in light of comments received, the joint thermostat and automatic gas ignition systems subcommittee, at its July 14, 1994 meeting, recommended the proposed standard to the Z21 Committee and the CGA Standards Steering Committee, for approval.

The proposed harmonized standard for manually operated piezo-electric spark gas ignition systems and components was approved by the Z21 Committee by letter ballot dated January 17, 1995. The CGA Standards Steering Committee approved the proposed harmonized standard for manually operated piezo-electric spark gas ignition systems and components by letter ballot dated April 13, 1995.

The first edition of the American National Standard/CSA Standard for Manually Operated Piezo-Electric Spark Gas Ignition Systems and Components was approved by the Interprovincial Gas Advisory Council (IGAC) on October 19, 1995 and by the American National Standards Institute, Inc. (ANSI), on November 19, 1995.

The previous editions of the manually operated piezo-electric spark gas ignition systems standard, and addenda thereto, approved by the IGAC and ANSI are as follows:

ANSI Z21.77-1995 • CGA 6.23-M95
ANSI Z21.77a-1997 • CGA 6.23a-M97
ANSI Z21.77b-2004 • CGA 6.23b-2004

This the second edition of the standard was approved by the IGAC on April 1, 2005, and by ANSI on March 9, 2005.

The following identifies the designation and year of the second edition of the standard:

ANSI Z21.77-2005 • CSA 6.23-2005

Note: *This edition of Z21.77 • CSA 6.23, incorporates changes to the 1995 edition and addenda thereto. Changes, other than editorial, are denoted by a vertical line in the margin.*

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NOTE

This standard contains SI (Metric) equivalents to the yard/pound quantities, the purpose being to allow the standard to be used in SI (Metric) units. (IEEE/ASTM SI-10 or CAN/CSA Z234.1 are used as a guide in making metric conversion from yard/pound quantities.) If a value for a measurement and an equivalent value in other units, the first stated is to be regarded as the requirement. The given equivalent value may be approximate. Except as noted if in Exhibit A, if a value for a measurement and an equivalent value in other units, are both specified as a quoted marking requirement, the first stated unit, or both shall be provided.

Harmonized Standard For Manually-Operated Piezo-Electric Spark Gas Ignition Systems And Components

Part I: Construction

1.1 Scope

1.1.1 This standard applies to newly produced manually-operated piezo-electric spark gas ignition systems (see Part IV, Definitions), hereinafter referred to as piezo ignition systems, and components constructed entirely of new, unused parts and materials, which are intended to form an integral part of a gas appliance. A piezo ignition system shall perform the following functions:

a. Generate piezo-electric energy (spark generator),

b. Transmit the energy (high voltage leads), and

c. Utilize the energy to produce arcs (spark electrode).

Components submitted for examination under this standard shall perform one or more of the above functions; however, a component performing only b is not covered under the scope of this standard.

1.1.2 This standard applies to piezo ignition systems and components for use with one or more of the following gases:

a. Natural;

b. Manufactured;

c. Mixed;

d. Liquefied Petroleum; and

e. LP gas-air mixtures.

1.1.3 Compliance of a piezo ignition system or component with this standard does not imply that either is acceptable for use on gas appliances without supplemental tests with the device(s) applied to the particular appliance design.

1.1.4 Each component of a piezo ignition system shall be capable of operation throughout a temperature range of 32°F to 125°F (0°C to 51.5°C). A higher, lower, or both higher and lower temperature may be specified by the manufacturer.