INTERNATIONAL STANDARD

ISO 12619-3

First edition
2014-06-15

Road vehicles — Compressed gaseous hydrogen (CGH2) and hydrogen/ natural gas blend fuel system components —

Part 3: Pressure regulator

Véhicules routiers — Composants des circuits d'alimentation pour hydrogène gazeux comprimé (CGH2) et mélanges de gaz naturel et hydrogène —

Partie 3: Regulateur de pression

Reference number
ISO 12619-3:2014(E)

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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.

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 documents 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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 22, *Road vehicles*, Subcommittee SC 25, *Vehicles using gaseous fuels*.

ISO 12619 consists of the following parts, under the general title *Road vehicles — Compressed gaseous hydrogen (CGH2) and hydrogen/natural gas blends fuel system components*:

— *Part 1: General requirements and definitions*

— *Part 2: Performance and general test methods*

— *Part 3: Pressure regulator*

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Road vehicles — Compressed gaseous hydrogen (CGH2) and hydrogen/natural gas blend fuel system components —

Part 3: Pressure regulator

1 Scope

This part of ISO 12619 specifies tests and requirements for the pressure regulator, a compressed gaseous hydrogen (CGH2) and hydrogen/natural gas blends fuel system component intended for use on the types of motor vehicles defined in ISO 3833.

This part of ISO 12619 is applicable to vehicles using CGH2 in accordance with ISO 14687-1 or ISO 14687-2 and hydrogen/natural gas blends using natural gas in accordance with ISO 15403-1 and ISO/TR 15403-2. It is not applicable to the following:

— liquefied hydrogen (LH2) fuel system components;

— fuel containers;

— stationary gas engines;

— container mounting hardware;

— electronic fuel management;

— refuelling receptacles.

NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 12619 and tested according to the appropriate functional tests.

NOTE 2 All references to pressure in this part of ISO 12619 are to be considered gauge pressures unless otherwise specified.

NOTE 3 This part of ISO 12619 may not apply to fuel cell vehicles in compliance with international regulations.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 11114-2, *Gas cylinders — Compatibility of cylinder and valve materials with gas contents — Part 2: Non-metallic materials*

ISO 12619-1, *Road vehicles — Compressed gaseous hydrogen (CGH2) and hydrogen/natural gas blend fuel system components — Part 1: General requirements and definitions*

ISO 12619-2, *Road vehicles — Compressed gaseous hydrogen (CGH2) and hydrogen/natural gas blend fuel system components — Part 2: Performance and general test methods*

ISO 14687-1, *Hydrogen fuel — Product specification — Part 1: All applications except proton exchange membrane (PEM) fuel cell for road vehicles*

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ISO 14687-2, *Hydrogen fuel — Product specification — Part 2: Proton exchange membrane (PEM) fuel cell applications for road vehicles*

ISO 15403-1, *Natural gas — Natural gas for use as a compressed fuel for vehicles — Part 1: Designation of the quality*

ISO/TR 15403-2, *Natural gas — Natural gas for use as a compressed fuel for vehicles — Part 2: Specification of the quality*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12619-1 and the following apply.

3.1
lock-up pressure
stabilized outlet pressure of the regulator at 0 (zero) flow

4 Marking and labelling

Marking of the component shall provide sufficient information to allow the following to be traced:

a) the manufacturer's or agent's name, trademark or symbol;

b) the model designation (part number);

c) the working pressure or working pressure and temperature range;

d) the maximum outlet pressure;

e) the type of fuel.

The following additional markings are recommended:

— the direction of flow (when necessary for correct installation);

— electrical ratings (if applicable);

— the symbol of the certification agency (if applicable);

— the type approval number;

— the serial number or date code;

— reference to this part of ISO 12619, i.e. ISO 12619-3:2014.

NOTE This information can be provided by a suitable identification code on at least one part of the component when it consists of more than one part.

5 Qualifications for construction and assembly

5.1 The pressure regulator shall comply with the applicable provisions of ISO 12619-1 and ISO 12619-2, and with the tests specified in Clause 6 of this part of ISO 12619.

5.2 A pressure relief valve shall be of a type that resets after relieving; it is intended that downstream components are protected from exposure to cylinder pressure.

5.3 A pressure relief valve may be integral to the pressure regulator, or not.

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