

ICS 43.020



**NATIONAL STANDARD OF THE  
PEOPLE'S REPUBLIC OF CHINA**

**GB/T 44851.3-2024**

---

**Road vehicles - Liquefied natural gas(LNG)fuel system  
components - Part 3: Check valve**

道路车辆 液化天然气（LNG）燃气系统部件 第3部分：止回阀

**(English Translation)**

**Issued on: October 26, 2024**

**Implemented on: May 1, 2025**

---

**Issued by: State Administration for Market Regulation**

## Table of Contents

|                             |    |
|-----------------------------|----|
| Foreword...                 | 3  |
| Introduction...             | 5  |
| 1 Scope...                  | 7  |
| 2 Normative references...   | 7  |
| 3 Terms and definitions...  | 8  |
| 4 Technical requirements... | 8  |
| 5 Test methods...           | 8  |
| 6 Marking...                | 9  |
| References...               | 11 |

### Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020

Directives for standardization - Part 1.Rules for the structure and drafting of standardizing documents.

This document is Part 3 of GB/T 44851 Road vehicles - Liquefied natural gas (LNG) fuel system components. GB/T 44851 has been published in the following parts.

-- Part 3.Check valves.

This document is modified in relation to ISO 12614-3.2021 Road vehicles - Liquefied natural gas (LNG) fuel system components - Part 3.Check valve.

Compared with ISO 12614-3.2021, this document has the following structural adjustments.

-- 3.1 has been added;

-- Chapter 4 "Marking" in ISO 12614-3.2021 has been adjusted to Chapter 6 of this document, and Chapter 5 and Chapter 6 in ISO 12614-3.2021 have been adjusted to Chapter 4 and Chapter 5 of this document;

-- 5.4.1, 5.4.2, 6.1 and 6.2 have been added.

The technical differences between this document and ISO 12614-3.2021 and their

reasons are as follows.

- The term "check valve" and its definition are added (see 3.1);
- The marking content is changed (see Chapter 6).

## 1 Scope

This document specifies the technical requirements for check valves in liquefied natural gas (LNG) fuel systems for road vehicles and describes the test methods.

This document applies to the vehicle types defined in GB/T 3730.1.

This document does not apply to the following.

- a) gas cylinders;
- b) stationary gas engines;
- c) container fixing parts;
- d) electronic fuel control system;
- e) filling port.

For components not covered by this document, it can be implemented as a reference, and corresponding functional tests shall be performed.

Unless otherwise specified, all pressures mentioned in this document are considered gauge pressures.

The operating pressure of natural gas used as fuel in this document is assumed to be 1.6 MPa. The pressure can be adjusted by the appropriate factor (ratio) to accommodate other operating pressures. For example, a system with an operating pressure of 2 MPa requires the pressure to be multiplied by 1.25.

## 2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in this text. Among which, for dated references, only the versions corresponding to those dates apply to this document; for undated references, the latest versions (including all amendments) apply to this document.

ISO 12614-1 Road vehicles - Liquefied natural gas (LNG) fuel system components

- Part 1. General requirements and definitions

ISO 12614-2 Road vehicles - Liquefied natural gas (LNG) fuel system components  
- Part 2. Performance and general test methods

### **3 Terms and definitions**

The following terms and definitions apply to this document.

#### **3.1 check valve**

An automatic valve that only allows the medium to flow in one direction.

### **4 Technical requirements**

Check valves shall comply with ISO 12614-1 and ISO 12614-2 and shall meet the test requirements of Chapter 5.

#### **5.1 Test items**

The test items are shown in Table 1.

#### **5.2 Hydrostatic strength test**

The check valve shall be tested according to the hydrostatic strength test method specified in ISO 12614-2. The test pressure shall be 2.5 times the working pressure.

#### **5.3 Leakage test**

The check valves are tested for internal and external leakage at the temperatures and pressures given in Table 2.

**5.4.1 The check valve shall be able to withstand 7000 working cycles when tested** according to the following test method.

- a) Fix the check valve on the test fixture, apply 1.25 times the working pressure to the check valve inlet, and then discharge the pressure from its outlet. Before the next cycle, reduce the pressure on the check valve outlet side to 0~0.5 times the test pressure;
- b) During the test, any failure shall be deemed to be a test failure;

**6.1 The product shall be marked with the following content in a conspicuous location.**

- a) The name, trademark or symbol of the manufacturer or agent;
- b) Product model (part number);
- c) Operating pressure and temperature range;

.....