

ICS 11.040.10
CCS C 46



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

GB/T 45898.1-2025

**Terminal units for medical gas pipeline systems - Part 1:
Terminal units for use with compressed medical gases and
vacuum**

医用气体管道系统终端 第1部分：用于压缩医用气体和真空的终端

(English Translation)

Issued on: August 1, 2025

Implemented on: August 1, 2026

**Issued by: State Administration for Market Regulation, Standardization
Administration of China**

Table of Contents

Preface
Introduction
1 Scope
2 Normative references
3 Terms and Definitions
4 General Requirements
4.1 Security
4.2 Alternative structures
4.3 Materials
5 Design Requirements
5.1 Medical Gas Supply
5.2 Terminals for different pressures
5.3 Maintaining gas specificity
5.4 Dedicated gas connection port
5.5 Terminal self-locking valve
5.6 Terminal maintenance valve
5.7 Connection of terminals and pipelines
5.8 Socket
5.9 Conformity
5.10 Durability (connection/release)
5.11 Pressure Drop
5.12 Connection forces and torques
5.13 Breakaway force and torque
5.14 Mechanical strength
5.15 Leakage
5.16 Gas Specificity
5.17 Effective connection of inserts
5.18 Electrical Requirements
6 Structural Requirements
6.1 Cleaning
6.2 Lubricants
7 Test methods

- 7.1 General requirements
- 7.2 Durability test
- 7.3 Pressure drop test
- 7.4 Connection force and torque test
- 7.5 Breaking force and torque test
- 7.6 Mechanical strength test
- 7.7 Leakage test
- 7.8 Gas specificity test
- 7.9 Insertion effective connection test
- 7.10 Durability test of marking and color identification
- 8 Marking, color coding and packaging
 - 8.1 Mark
 - 8.2 Color identification
 - 8.3 Packaging
- 9 Information provided by the manufacturer
 - 9.1 Technical Notes
 - 9.2 Instructions
- Appendix A (Informative) Basic Principles
 - A.1 Overview
 - A.2 Reference
- Appendix B (Informative) Environmental Aspects
- Appendix C (Informative) Electrical installation conditions and color coding for specific countries/regions
- Reference

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 1 of GB/T 45898 "Terminals for medical gas pipeline systems". GB/T 45898 has been published in the following parts.

--- Part 1: Terminals for compressed medical gases and vacuum.

This document is modified to adopt ISO 9170-1:2017 "Medical gas pipeline system terminals Part 1: Terminals for compressed medical gases and vacuum Terminal".

This document has the following structural adjustments compared to ISO 9170-1:2017.

- The description of the contents of Table 1 in 5.1.1 corresponds to the contents of 5.1 in ISO 9170-1:2017;
- A.2.4 and A.2.7 correspond to the contents of A.2.5 and A.2.4 in ISO 9170-1:2017;
- A.2.6 corresponds to the principle description of the terminal maintenance valve in 5.6 of ISO 9170-1:2017.

The technical differences between this document and ISO 9170-1:2017 and their reasons are as follows.

- Replaced ISO 7396-1:2016 (see Chapter 1, 5.7.1, 9.2.1) with the normative reference GB/T 44059.1 to adapt to my country Technical conditions;
- Added normative references GB/T 45897.1, GB/T 45897.3, YY/T 0801.2 (see Chapter 1) to adapt to my country's Technical conditions;
- "93% oxygen" is changed to "93% oxygen (oxygen-enriched air)" (see Chapter 1, 8.2);
- ISO 14971 (see 4.1) is replaced by the normative reference GB/T 42062 to adapt to my country's technical conditions;
- Changed the time for bearing the test pressure in 5.1.1 (see 5.1.1) to be consistent with GB/T 44059.1;
- Replaced ISO 5359:2014 (see 5.7.2) with the normative reference GB/T 46042 to adapt to my country's technical conditions;
- Replaced ISO 15001:2010 (see 6.1) with the normative reference GB/T 45899 to adapt to my country's technical conditions;
- Replaced ISO 6506-1 (see 7.2.1) with the normative reference GB/T 231.1 to adapt to my country's technical conditions;
- ISO 32 (see 8.2.2) is replaced by the normative reference GB 50751 to adapt to my country's technical conditions;
- Deleted the terms and requirements of DISS and SIS connectors to adapt to my country's technical conditions;
- Deleted the unreferenced terms "low-pressure hose assembly" and "medical device gas" to adapt to my country's technical conditions;
- Deleted the color identification requirements of other regional or national standards to adapt to my country's technical conditions.

The following editorial changes have been made to this document.

- Deleted some notes in the text;

- Replaced ISO 15001 with the informative reference GB/T 45899 (see 4.3.1);
- Replaced ISO 15001:2010 with the informative reference GB/T 45899-2025 (see 4.3.4);
- Replaced ISO 7396-1:2016 with the informative reference GB/T 44059.1-2024 (see 5.11);
- Changed the "Note" under Table 2 (see 5.11);
- Changed the error in the reference table in 7.2, changing "Table 1" to "Table 2" (see 7.2.1, 7.2.2);
- Replaced ISO 7396-1 with the informative reference GB/T 44059.1 (see A.2.5, A.2.6);
- Added the titles A.2.1 to A.2.7 (see A.2);
- Added the electrical installation conditions requirements for China in Table C.1 (see Appendix C).

Introduction

GB/T 45898 "Medical Gas Pipeline System Terminals" is intended to consist of the following two parts.

--- Part 1: Terminals for compressed medical gases and vacuum. The purpose is to specify the terminals for compressed medical gases and vacuum Requirements for its inserts and test methods are given.

--- Part 2: Terminals for use in anesthetic gas purification systems. The purpose is to specify the terminal intended for use in accordance with ISO 7396-2 Requirements, dimensions and test methods for terminals and their inserts in anesthetic gas purification systems.

The terminal is a connection point on the medical gas pipeline system, used by the operator to connect and disconnect the anesthesia machine, ventilator or other medical equipment.

For medical gas supply. Terminals are also used for vacuum piping systems. A wrong connection may be harmful to the patient or operator. Therefore, it is important that the terminal and its components be designed, manufactured, installed, and maintained in accordance with the requirements specified in this document.

Special attention should be paid to this document.

- Material suitability;
- Gas specificity;
- clean;
- test;