

ICS 23.140
CCS J72



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

GB/T 25359-2023

**Petroleum and natural gas industries - Packaged reciprocating
gas compressors**

石油及天然气工业 集成撬装往复压缩机

Issued on: May 23, 2023

Implemented on: December 1, 2023

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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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 replaces GB/T 25359-2010 "Integrated Skid-Mounted Reciprocating Compressors for the Oil and Gas Industry", and GB/T 25359- Compared with:2010, except for structural adjustment and editorial changes, the main technical changes are as follows:

- Changed the scope, deleted "compressed hydrocarbons" and added "oil-lubricated cylinders" (see Chapter 1, Chapter 1 of the:2010 edition chapter);
- Changed some terms and definitions (see 3:1, 3:2, 3:4, 3:5 and 3:12, 3:1, 3:2, 3:4, 3:5 and 3:12 of the:2010 edition);
- Deleted some terms and definitions (see 3:2:2, 3:3, 3:6, 3:8, 3:9, 3:14 and 3:15 of the:2010 edition);
- Changed the "pattern" requirements (see 5:3, 5:3 of the:2010 edition);
- Added the unit installation condition "with or without foundation" (see 5:6);

- Changed the "torsional vibration analysis" requirements (see 5:7, 5:7 of the:2010 edition);
- Increased "vibration" requirements (see 5:8);
- Added "safety" requirements (see 5:9);
- Increased the "compressor operating power deviation" requirements (see 6:1:5);
- Changed the "allowable speed" requirements (see 6:2, 6:2 of the:2010 edition);
- Added the requirement of "oil-free lubrication of cylinder" (see 6:2, 6:7:3 and 9:3:3);
- Increased "low temperature environment" requirements (see 6:13:4);
- Changed "This standard does not apply to shell-and-tube and plate coolers" to "This document does not include shell-and-tube and plate heat exchangers", and added Added requirements for shell-and-tube and plate heat exchangers (see 9:1, 9:1 of the:2010 edition);

1 Scope

GB/T 25359-2023 specifies packaged reciprocating gas compressors for the petroleum and natural gas industries. A packaged unit is bought as a single skid - compressor, driver, cooler, vessels, piping, controls and structure - and delivered to a wellhead or gathering station where there is no engineering staff to correct what was assembled wrongly, so the specification has to cover the integration and not only the machine. The standard sets the requirements for the compressor itself, the capacity control, the driver, the cooling system, the pressure vessels, the piping and auxiliary equipment, the electrical system, the instrumentation and controls, the shutdown, alarm and annunciation devices, the skid, and the painting and finishing, followed by the inspection and testing, the marking and the preparation for shipment. It replaces GB/T 25359-2010 and took effect on 1 December 2023.

This document specifies the integrated skid-mounted, oil-free or oil-free cylinder, split or integral reciprocating with drive machine for the oil and gas industry: Requirements for compressor design, materials, manufacturing, inspection and shipment preparation, as well as compliance with procurement specifications, on-site construction and equipment procurement minimum requirements: This document applies to integrated skid-mounted reciprocating compressors and all necessary auxiliary equipment for the oil and gas industry:

Note 1: Necessary auxiliary equipment includes: water and gas coolers, mufflers, exhaust emission control equipment, filters, separators, control panels and pipelines, etc:

Note 2: These devices are assembled into an operable unit according to the procurement specifications and the requirements for on-site construction and minimum installation

equipment: This document does not cover the following equipment:

- Oil-lubricated or oil-free reciprocating compressors (hereinafter referred to as compressors) for oil and gas industry cylinders included in GB/T 20322;
- Compressors installed directly on the foundation;
- Single-acting piston compressor with integrated crosshead and piston (automotive type);
- Air compressors for power or instrumentation with discharge pressure not greater than 0.9MPa;
- Compressors driven by diesel engines, gas turbines and steam turbines;

2 Normative references

The contents of the following documents constitute the essential provisions of this document through normative references in the text: Among them, dated references For documents, only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to this document:

GB/T 150 (all parts) pressure vessels GB/T 151 heat exchanger

GB/T 193 Common thread diameter and pitch series (GB/T 193-2003, ISO 261:1998, MOD)

GB/T 755 Rating and performance of rotating electrical machines (GB/T 755-2019, IEC 60034-1:2017, IDT)

GB/T 1348 Ductile Iron Castings (GB/T 1348-2019, ISO 1083:2018, MOD) GB/T 3098:

1 Mechanical properties of fasteners Bolts, screws and studs (GB/T 3098:1-2010, ISO 898-1:2009, MOD) GB/T 3098:

2 Mechanical properties of fastener nuts (GB/T 3098:2-2015, ISO 898-2:2012, MOD) GB/T 3098:

15 Mechanical properties of fasteners Stainless steel nuts (GB/T 3098:15-2014, ISO 3506-2:2009, MOD) GB/T 3098:

25 Mechanical properties of fasteners Selection guide for stainless steel and nickel alloy fasteners

GB/T 3836 (all parts) Explosive atmospheres [IEC 60079 (all parts)]

Note: See Table B:2 for the degree of consistency between each part of

GB/T 3836 (all parts) and IEC 60079 (all parts):

GB/T 4208 Enclosure protection level (IP code) (GB/T 4208-2017, IEC 60529:2013, IDT)

GB/T 5677 Radiographic testing of castings (GB/T 5677-2018, IEC 4993:2015, MOD)

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