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

GB/T 46564-2025

**Guidelines for energy saving use of air-consuming equipment
in compressed air systems**

压缩空气系统用气设备节能使用指南

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Energy Infrastructure and Management (SAC/TC20). This document was drafted by: China National Institute of Standardization, SMC Automation Co., Ltd., Shandong Hongqiao New Material Co., Ltd., and Shandong Hao Mai Machinery Manufacturing Co., Ltd., Zhejiang Xiangrui Electromechanical Equipment Co., Ltd., Beijing Ant Factory Intelligent Manufacturing Technology Co., Ltd., Shanghai Sivante Trading Co., Ltd. Limited Liability Company, Beijing Benz Automotive Co., Ltd., Guangdong Lingyu Energy Equipment Co., Ltd., Datang Heilongjiang Power Generation Co., Ltd. Harbin First Thermal power plant, Beijing University of Aeronautics and Astronautics, Beijing Foton Cummins Engine Co.,

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1 Scope

GB/T 46564-2025 is the Chinese national standard covering the demand side of compressed air - the leaks that account for much of what a plant produces, the tools and processes using air where they should not, the pressure each application actually needs against the single pressure the system runs at, and the measurement that finds all of it. Compressed air is the most expensive utility in a factory and the least measured. First edition, in force from 1 May 2026. Issued on 31 October 2025, it has been in force since 1 May 2026.

This document provides guidance and suggestions for energy-saving use of compressed air system equipment, and outlines the procedures for compressed air system air source and delivery. Information related to key points to consider for energy conservation in aspects such as gas usage, operation management, and evaluation. This document applies to compressed air system operators conducting energy conservation management. This document does not apply to energy storage compressed air systems.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 13277.1 Compressed air - Part

3 Terms and Definitions

The terms and definitions defined in GB/T 30833 and GB/T 38182, as well as the following terms and definitions, apply to this document.

3.1 Compressed air systems An energy system that compresses air into high-pressure gas and delivers it to gas-consuming equipment includes air compressors, air tanks, purification equipment, and drying equipment. Equipment, control devices, piping and valve systems, and equipment and processes that use compressed air.

3.2 pneumatic power The mechanical work done by compressed air in converting all of its pneumatic energy per unit time.

Note. Pneumatic effective energy refers to the maximum mechanical energy that compressed air can theoretically output under atmospheric conditions. It is a concept that takes into account atmospheric temperature and pressure. A relative quantity based on a benchmark. [Source: GB/T 30833-2014, 3.4, with modifications]

4 General Principles

4.1 The management of compressed air systems should adhere to the principles of safety, reliability, energy conservation, and environmental protection, covering the air source, transportation, and air consumption stages. The process encompasses the entire series of design, selection, installation, operation, and maintenance, aiming to achieve a comprehensive improvement in energy efficiency.

4.2 The selection of equipment for compressed air systems should comprehensively consider their technical performance, structural form and materials, installation and replacement methods, and maintenance requirements.