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

GB/T 43619-2023

**Safety devices for protection against excessive pressure -
Controlled safety pressure relief systems**

超压保护安全装置 受控安全泄压系统

(English Translation)

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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:

This document has been modified to adopt ISO 4126-5:2013 "Overpressure Protection Safety Devices Part 5: Controlled Safety Pressure Relief Systems":

Compared with ISO 4126-5:2013, this document has many structural adjustments: Comparison list of structure number changes between two files See Appendix A for the table:

The technical differences between this document and ISO 4126-5:2013 and their reasons are as follows:

a) Changed the scope, changing "This document is applicable to the setting pressure not less than 0.01MPa" in the scope to "This document is applicable to the setting pressure "The pressure is not less than 0.1MPa" (see Chapter 1), because the content of this document is mainly aimed at setting the pressure not less than 0.1MPa, and is not suitable for it is used for controlled safety pressure relief systems with set pressures between 0.01~0.1MPa to adapt to practical applications in my country;

b) Added references to GB/T 12241 and GB/T 1047 (see Chapter 3);

c) To avoid duplication, the terms and definitions 3.12, 3.15~3.21, 3.23~3.33 and 3.35~3.37 in ISO 4126-5:2013 have been deleted:

meaning, because these terms are already specified in GB/T 12241 and GB/T 1047 or are not used in the text;

d) Delete the sentence "If the main valve opening force is not set according to ISO 4126-1 in 5.1.12 of ISO 4126-5:2013, the main valve the forced opening force of the valve should be twice the minimum opening force" to adapt to the actual application in my country;

e) 5.1.16 of ISO 4126-5:2013 has been deleted to adapt to the actual application in my country;

- f) Added "the reliability of the control device should be fully considered" (see 5.1:18);
- g) Replace the clause 5:1:20 of ISO 4126-5:2013 with "There shall be no condensation of gas or steam that affects the function of the control device" Changed to "The impact of medium condensation on the reliability of the control device needs to be considered" (see 5.1:23) to adapt to the actual application in my country;
- h) The requirements of 5:3 in ISO 4126-5:2013 have been changed, and the reference document for the specification spring requirements has been changed from "ISO 4126-7" to "GB/T 12241" (see 5.3) to adapt to the actual application in my country;
- i) 5:4:1 of ISO 4126-5:2013 has been deleted to adapt to the actual application in my country;
- j) Delete "For the valve seat seal test, the test time shall be based on the pressure specified in 6:3:1" in 6:3:2 of ISO 4126-5:2013:
Strength and specifications" (see 6.3:2) to adapt to the actual application in my country;
- k) The judgment standard of 6:3:3 in ISO 4126-5:2013 has been changed from "no visible leakage at the test site" to "no visible leakage at the test site":
Visible leakage and deformation" (see 6.3:3), because deformation is not allowed during the test;
- l) Added "Test Procedure" (see 6.6:2) and "Maximum Leakage of Main Valve" (see 6.6:3) to adapt to the actual application in my country;
- m) The requirements of 6:7 in ISO 4126-5:2013 have been changed to "10% lower than the set pressure or 0:035MPa pressure (whichever is the larger value)" "Carry out test" is changed to "When the set pressure is greater than 0:35MPa, the test pressure is 90% of the set pressure; when the set pressure is not large at 0:35MPa, the test pressure is the set pressure minus 0:035MPa" (see 6.7), which is easier to understand;
- n) The requirements of 7:1:1 in ISO 4126-5:2013 have been changed to adapt to the actual application in my country;
- o) The test purpose of 7:1:3 in ISO 4126-5:2013 has been changed to adapt to the actual application in my country;
- p) Replaced ISO 4126-7 (see 7.1:5, Chapter 8, Chapter 9) with the normatively cited GB/T 36588 to adapt to my country's actual situation International application;
- q) Changed the requirements of 7:2:1 in ISO 4126-5:2013, changing "steam with a superheat of at least 10°C" to "steam with a dryness of not more than 10°C" "Steam less than 98% and with a superheat degree not greater than 10°C" (see 7.2:1) to adapt to the actual application in my country;
- r) Changed the requirement of 7:2:2 in ISO 4126-5:2013, changing "the error of the

pressure measuring instrument does not exceed $\pm 0.5\%$ to "pressure the error of the measuring instrument shall not exceed $\pm 0.5\%$ of the instrument range" (see 7.2:2) to adapt to the actual application in my country;

s) Delete the content about prototypes in paragraphs 9 to 15 of 7.2:3 of ISO 4126-5:2013, because the testing of prototypes and products is the test requirements are consistent;

t) The expression content of 7.3:3:5 in ISO 4126-5:2013 has been changed (see 7.3:3:5) to adapt to the actual application in my country;

u) Changed the expression content of 7.3:3:6 in ISO 4126-5:2013 (see 7.3:3:6) to adapt to the actual application in my country;

v) Delete 7:6 in ISO 4126-5:2013 to adapt to the actual application in my country;

w) Changed the requirements of Chapter 8 of ISO 4126-5:2013 (see Chapter 8) to adapt to the actual application in my country;

x) The requirements of Chapter 9 in ISO 4126-5:2013 have been changed (see Chapter 9), because the calculation of rated displacement and flow channel area it is regarded as the basis of product design, which is more in line with the actual situation of our industry;

y) The content of 10.1:1 in ISO 4126-5:2013 has been changed (see 10.1:1), and the requirement that the inlet and outlet connections have the same size has been deleted: size or the same pressure level to adapt to the actual application in my country;

z) The content of 10.1:2:1 in ISO 4126-5:2013 has been changed (see 10.1:2:1), the standard number sign has been deleted, and the system number has been added:

The manufacturing license number and the manufacturer's name are marked because the manufacturing license number and the manufacturer's name are more in line with the actual application in our country;

aa) The content of 10.1:2:2 in ISO 4126-5:2013 has been changed (see 10.1:2:2), and the standard number mark and setting pressure have been deleted:

and product models to adapt to practical applications in our country:

The following editorial changes have been made to this document:

---Change the standard name to "Overpressure Protection Safety Device Controlled Safety Pressure Relief System";

---Incorporated the contents of the ISO 4126-5:2013/Adm:1:2016 amendments, the outer margins of the involved clauses are marked with vertical Straight double lines (||) are marked;

---The imperial units and calculation formulas used in ISO 4126-5:2013 are converted to metric units and calculation formulas in this document (see Chapter 1, 6:7, 7:2:1):