NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB/T 12241-2021

Safety valves - General requirements

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Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard replaces GB/T 12241-2005 "Safety valves - General requirements".

Compared with GB/T 12241-2005, in addition to the editorial modifications, the main technical changes are as follows.

a) Changed applicable flow diameter range (see Chapter 1 of this Edition, Chapter 1 of Edition 2005);

b) Deleted the terms and definitions for "pilot-operated safety valve, equivalent discharge capacity, mechanical characteristics"; Added the terms and definitions for "maximum allowable pressure, back pressure, balanced bellows, coefficient of discharge" (see Chapter 3 of this Edition, Chapter 3 of Edition 2005);

c) Added symbols and unit descriptions (see Chapter 4 of this Edition);

d) Added the requirements for lift limit mechanism (see 5.1.3 of this Edition);

e) Added the requirements for "sliding mating surfaces, valve seats and discs, sealing elements, and lifting mechanisms" (see 5.1.8~5.1.11 of this Edition);

f) Deleted the requirements for nominal diameter and nominal pressure (see 4.1.2 of Edition 2005);

g) Changed the end connection involving requirements (see 5.2.2 of this Edition, **4.1.3.2 of Edition 2005);**

h) Changed the minimum requirements for springs and divided into "minimum requirements for helical compression springs" and "minimum requirements for disc springs" (see 5.3 of this Edition, 4.1.4 of Edition 2005);

i) Deleted the safety valve material requirements (see 4.1.5 of Edition 2005);

j) Changed the general requirements of exit-factory test (see 6.2 of this Edition, 5.1.2 of Edition 2005);

k) Changed the adjustment requirements for cold differential test pressure (see 6.5 of this Edition, 5.1.5 of Edition 2005);

l) Changed the requirements for operating performance and discharge capacity test (see Chapter 7 of this Edition, 5.2 of Edition 2005);

m) Deleted the requirements of "quality assurance system, installation of safety valves, adjustment, maintenance and repair of safety valves" (see Chapter 9~11 of Edition 2005).

This Standard uses redrafting method to modify and adopt ISO 4126-1.2013 (including Amendment in 2016) "Safety devices for protection against excessive pressure - Part 1. Safety valves".

Compared with ISO 4126-1.2013 (including Amendment in 2016), there are some structural adjustments in this Standard. The specific chapter numbers are as follows.

a) The content of 7.2.4 in ISO4126-1.2013 is 7.2.3 in this Standard.

b) The note in Figure 1 of ISO 4126-1.2013 is adjusted to 5.2.2 of this Standard.

There are technical differences between this Standard and ISO 4126-1.2013 (including Amendment in 2016). These differences and their reasons are as follows.

a) Regarding normative references, this Standard has made adjustments with technical differences to adapt to China's technical conditions and meet the needs of China's application. The adjustment is concentrated in Chapter 2 "Normative references". The specific adjustments are as follows.

- Use GB/T 36588 that is modified by adopting the international standard to replace ISO 4126-7;
- Added GB/T 1239.2, GB/T 7306 (all parts), GB/T 9124 (all parts), GB/T 12224, GB/T 12716, GB/T 15530.1, GB/T 15530.8, GB/T 17241.6, GB/T 17241.7, GB/T 23934, JB/T 2768, JB/T 2769 appear in the text.

b) Deleted the terms and definitions of "safety valve with power assist" and "safety valve with supplementary load" not used in the text.

c) Added the requirements of 5.2.1 end connection type to meet the needs of China in practical applications.

d) Added specific requirements for pressure-temperature ratings in 5.4 to meet the needs of China in practical applications.

e) Deleted the test equipment requirements in 7.2.3 of ISO 4126-1.2013, because the

corresponding provisions have been made in GB/T 12242.

This Standard made the following editorial modifications.

a) Changed the standard name from "Safety devices for protection against excessive pressure - Part 1.Safety valves" to "Safety valves - General requirements" that is unified with GB/T 12241-2005.

b) Added bibliography to facilitate China's needs in practical applications.

This Standard was proposed by China Machinery Industry Federation.

This Standard shall be under the jurisdiction of National Technical Committee on Safety Pressure Relief Device of Standardization Administration of China (SAC/TC 503).

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Versions of standard substituted by this Standard are.

- GB/T 12241-1989, GB/T 12241-2005.

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