

ICS 13.240  
CCS J 74



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

**GB 567.3-2012**

Replacing GB/T 12353-1999

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**Bursting disc safety devices - Part 3: Classification and  
mounting dimensions**

爆破片安全装置 第3部分:分类及安装尺寸

**Issued on: May 11, 2012**

**Implemented on: March 1, 2013**

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

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### 1 Scope

1.1 This part of GB 567 lays down the technical requirements for the categories, the types, the codes, the marking method and the mounting dimensions of bursting disc safety devices.

1.2 It applies to the following bursting disc safety devices: those used on pressure vessels, pressure piping or other closed pressure-bearing equipment, called pressure-bearing equipment in the text, to prevent overpressure or the occurrence of excessive vacuum; and those in which the bursting pressure of the disc is not greater than 500 MPa and not lower than 0.001 MPa.

1.3 It does not apply to the following bursting disc safety devices: those on pressure-bearing equipment where the process may produce a sudden rise of pressure with the reaction speed reaching detonation, and those with special requirements for national defence and military equipment. A note explains detonation as the phenomenon, fundamentally different from ordinary deflagration, produced when the burning speed of a substance is extremely high and reaches 1 000 m/s or more.

### 2 Normative references

The following documents are indispensable for the application of the document. For dated references only the dated edition applies; for undated references the latest edition, all its amendments included, applies.

GB 567.1 Bursting disc safety devices - Part 1: Basic requirements; GB 567.2 Bursting disc safety devices - Part 2: Application, selection and installation; HG/T 20592-2009 Steel pipe

flanges (PN series); HG/T 20615-2009 Steel pipe flanges (class series).

### 3 Terms and definitions

The terms and definitions given in GB 567.1 and GB 567.2 and the following ones apply to the document. The English terms below are those printed in the standard.

3.1 conventional simple domed - a conventional domed bursting disc formed directly from the blank, without other machining.

3.2 conventional domed slotted lined bursting disc - a conventional domed bursting disc made of two or more layers, one of which is a sealing membrane and at least one of which carries holes or slots.

3.3 conventional scored simple domed - a conventional domed bursting disc machined with a weakening groove.

3.4 reverse domed with knife blades - a reverse domed bursting disc that ruptures on contact with a knife edge when it buckles and reverses.

3.5 counter-arch alligator tooth demolition piece - a reverse domed bursting disc that ruptures on contact with an annular alligator tooth when it buckles and reverses.

3.6 reverse domed scored - a reverse domed bursting disc machined with a weakening groove.

3.7 reverse domed slotted lined bursting disc - a reverse domed bursting disc made of two or more layers, one of which is a sealing membrane and at least one of which carries holes or slots.

3.8 reverse domed having slip or tear-away design - a reverse domed bursting disc held in the holder by clamping force which, on overpressure, buckles and reverses rapidly and springs out of the holder.

3.9 counter-arch circlip demolition piece - a reverse domed bursting disc supported by a circlip inside the support ring of the holder and lined with a sealing membrane.

3.10 the counter-arch falls off the demolition piece - the collective name of the reverse domed clamped type and of the reverse domed circlip type bursting discs.

3.11 dull shear pattern demolition piece - a flat bursting disc made of one or more layers of flat sheet.

3.12 flat slotted lined - a flat bursting disc made of a slotted or perforated flat sheet and a sealing membrane.

3.13 flat scored - a flat bursting disc machined on its flat surface with a weakening groove.

3.14 graphite replaceable element graphite bursting discs - a graphite bursting disc

mounted and used together with a holder.

3.15 graphite monoloc graphite bursting discs - a graphite bursting disc that needs no holder and is mounted and used directly with a flange.

## 4 Categories and types

4.1 Categories and types of bursting discs. Bursting discs are divided by mode of failure and by material into the four categories a) to d); each category is divided further into different types according to the features of its structure. The pages available carry the categories a), b) and c); category d) begins beyond them.

a) Conventional domed bursting disc. The disc is domed, its concave face is on the high pressure side of the pressure system and it ruptures in tension when it operates, as shown in Figure 1. According to the features of the structure of the conventional domed disc it is divided into the three types listed in Table A.1 of Annex A: conventional simple domed, conventional domed slotted lined and conventional scored simple domed.

b) Reverse domed bursting disc. The disc is domed, its convex face is on the high pressure side of the pressure system and it ruptures by buckling in compression when it operates, as shown in Figure 2. According to the structure of the disc it is divided into the five types listed in Table A.1: reverse domed with knife blades, reverse domed alligator tooth, reverse domed scored, reverse domed slotted lined and reverse domed falling-off type.

c) Flat bursting disc. The disc is flat and ruptures in tension, in shear or in bending when it operates, as shown in Figure 3. According to the structure of the disc it is divided into the three types listed in Table A.1: flat simple, flat slotted lined and flat scored.

Figures 1, 2 and 3 are line drawings of the three shapes, each with the direction of discharge marked by an arrow.

## Changes from the previous standards

The foreword states that GB 567, Bursting disc safety devices, is divided into four parts: Part 1 Basic requirements, Part 2 Application, selection and installation, Part 3 Classification and mounting dimensions, Part 4 Type test. The present document is Part 3 and was drafted according to the rules of GB/T 1.1-2009.

It replaces GB/T 12353-1999, Classification and mounting dimensions of arched metal rupture disc devices, and GB/T 16181-1996, Holder types and outline dimensions of rupture disc devices. Compared with those two standards the main technical changes are the following.

The name of the standard was changed from Classification and mounting dimensions of

arched metal rupture disc devices and Holder types and outline dimensions of rupture disc devices to Bursting disc safety devices - Part 3: Classification and mounting dimensions.

The range of bursting pressure of the discs covered was widened from 0.01 MPa to 35 MPa up to 0.001 MPa to 500 MPa.

A clause of terms and definitions was added; flat and graphite bursting discs were added; the provisions on the categories, the types and the codes of the holder were revised and supplemented, and the outline dimensions of the holder were changed into the mounting dimensions of the holder; Annex A, categories, types and codes of bursting discs, Annex B, categories, types and codes of holders, and Annex C, mounting dimensions of bursting disc safety devices, were added.

The foreword records that the previous editions of the standards replaced were GB/T 12353-1999 and GB/T 16181-1996, and that the part was proposed by and is under the charge of the National Technical Committee on Boilers and Pressure Vessels of Standardization (SAC/TC 262).

## **Mandatory and recommended provisions Mandatory and recommended provisions**

The foreword states that Annex A, Annex B and Annex C of this part are recommended and that the rest of the part is mandatory.

The table of contents describes the same three annexes as informative annexes.

## **Relationship to previous standards Relationship to previous standards**

The front page carries, under the standard number, the line that names the standards replaced, GB/T 12353-1999 and GB/T 16181-1996: the part replaces two standards, GB/T 12353-1999 Classification and mounting dimensions of arched metal rupture disc devices and GB/T 16181-1996 Holder types and outline dimensions of rupture disc devices.

GB/T 12353-1999 is the code carried in the supersedes field of this record; GB/T 16181-1996 is recorded in this section.