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

**中华人民共和国国家标准**

GB/T 9113-2010

Replace GB/T 9113.1-9113.4-2000, GB/T 2504-1989

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**Integral steel pipe flanges**

**整体钢制管法兰**

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## Contents

Foreword.....	1
1 Scope .....	1
2 Normative References .....	1
3 Type and Dimension .....	1
4 Technical requirements .....	24

## Foreword

The modification to series standards of GB/T 9112~9124—2010 *Steel Pipe Flange* adopts ASME B16.5—2009 *Pipe Flanges and Flanged Fittings (NPS 1/2~NPS 24)* and EN 1092-1:2007 *Flanges and Their Joints-Circular Flanges for Valves, Pipe Fittings and Accessories, PN Designated-Part 1: Steel Flange*. ASME B16.5—2009 is a complete standard about Class designated flanges, EN 1092-1:2007 is a complete standard about PN designated flanges. This series of standards comprehensively adopt the above two standards, including relevant technical content about Class designated flanges and PN designated flanges. This series of standards consists of 13 standards. This standard is one of them.

The main differences between this standard and ASME B16.5 —2009 and EN 1092-1:2007 standards are as follows:

——The format of this standard is different with ASME B16.5 —2009 and EN 1092-1:2007 standards;

——ASME B16.5 —2009 standard includes flanges data with nominal pressure of Class 400, while this standard includes no flanges data of Class 400;

——ASME B16.5 —2009 standard includes flanges data with nominal dimension of NPS 3<sup>1/2</sup>, while this standard includes no flanges data of NPS 3<sup>1/2</sup>;

——ASME B16.5—2009 standard includes flanges and flanged fittings, while this series of standards exclude flanged fittings;

——ASME B16.5—2009 standard adopts inch bolts, the hole diameter of which also adopts inch size, while this series of standards adopt metric bolts, the hole diameter of which also adopts metric size;

——According to the use requirements of Chinese users, the nominal dimension range of the flange designated with PN is appropriately extended on the basis of EN 1092-1:2007, including adding the nominal dimension of DN 20 and DN32 with the nominal pressure range of PN160-PN 400;

——EN 1092-1:2007 standard excludes ring joint face flanges. According to the operating requirements of Chinese users, this series of standards add PN designated ring joint face flanges;

——EN 1092-1:2007 standard excludes two nominal dimensions: DN 175 and DN 225. According to the operating requirements of Chinese users of marine flanges, this series of standards add DN 175 and DN 225 that are only used for marine flanges for PN designated flanges.

This standard replaces the GB/T 9113.1-2000 *Integral Steel Pipe Flanges with Flat Face or Raised Face*, GB/T 9113.2-2000 *Integral Steel Pipe Flanges with Male and Female Face*, GB/T 9113.3-2000 *Integral Steel Pipe Flanges with Tongue and Groove Face*, GB/T 9113.4-2000 *Integral Steel Pipe Flanges with Ring-joint Face*, and GB/T 2504 —1989 *Marine Cast Steel Pipe Flanges (Quaternary)*, and compared with the original standards, the main changes are as follows:

——The original 4 standards of integral steel pipe flanges and the GB/T 2504-1989 are integrated into one standard;

——According to EN 1092-1:2007 standard, the nominal pressure range of PN designated flanges is expanded to PN 2.5~PN 400 from PN 6~PN 160;

——According to EN 1092-1:2007 standard, O-ring sealing face type is added to PN designated flanges;

——According to the actual operating requirements of users, ring joint face type (RJ) is added to PN designated flanges;

——Two nominal dimensions: DN 175 and DN 225 that are only used for marine flanges are added to PN designated flanges;

——According to EN 1092-1:2007 standard, dimension data of PN designated flanges are comprehensively modified;

——According to ASME B16.5—2009 standard, dimension data of Class designated flanges are comprehensively modified;

——Add the applicable range table of various sealing face types;

——According to ASME B16.5—2009, the nominal pressure designation of flanges of American system in the original standard is modified; PN 20 is changed to Class 150, PN 50 to Class 300, PN 110 to Class 600, PN 150 to Class 900, PN 260 to Class 1500, and PN 420 to Class 2500.

This standard was proposed by China Machinery Industry Federation.

The Standard is under the jurisdiction of the National Piping Accessories Standardization Technical Committee.

This standard is drafted by: Zhejiang Chaodao Valve Co., Ltd., Baoyi Group, China Productivity Center for Machinery, China State Shipbuilding Complex Technical Economy Institute.

Main drafters of the Standard: Qiu Xiaolai, Li Junying, Wang Hanzhou, Zhang Xiaozhong, Feng Feng, Chen Youjun, and Luo Fayuan.

The issuances of previous versions of the standard replaced by this standard are as follows:

——GB/T 9113.1~9113.26—1988, GB/T 9113.1~9113.4—2000;

——GB/T 2504—1989

# Integral steel pipe flanges

## 1 Scope

This standard specifies the types, dimension and technical requirements of the integral steel pipe flanges whose nominal pressure is designated with PN and Class.

This standard applies to the integral steel pipe flanges whose nominal pressure is PN 2.5~PN 400 and Class 150-Class 2500.

## 2 Normative References

The articles contained in the following documents have become this standard when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Standard. For the undated documents so quoted, the latest editions shall be applicable to this Standard.

GB/T 9112 Types and parameters for steel pipe flanges

GB/T 9124 Specification for steel pipe flanges

## 3 Type and Dimension

**3.1** Types and dimensions of the integral steel pipe flanges designated with PN.

**3.1.1** The sealing face types of the integral steel pipe flanges designated with PN and the applicable nominal pressure and nominal dimension range are stipulated in Table 1.

**Table 1 The sealing face types of the integral steel pipe flanges designated with PN and the applicable nominal pressure and nominal dimension range**

Sealing face type	Nominal pressure											
	PN 2.5	PN 6	PN 10	PN 16	PN 25	PN 40	PN 63	PN 100	PN 160	PN 250	PN 320	PN 400
Flat face (FF)	DN 10~DN 2000					DN 10 ~ DN 600	—					
Raised face (RF)	DN 10 ~DN 2000					DN 10 ~ DN 600	DN 10 ~ DN 400	DN 10 ~ DN 350	DN 10~DN 300	DN 10~ DN 250	DN 10 ~ DN 200	
Male and female face (MF)	—	DN 10~ DN 2000				DN 10~ DN 600	DN 10 ~ DN 400	DN 10 ~ DN 350	DN 10~DN 300	DN 10 ~ DN 250	DN 10 ~ DN 200	
Tongue and groove face (TG)	—	DN 10~ DN 2000				DN 10 ~ DN 600	DN 10 ~ DN 400	DN 10 ~ DN 350	DN 10~DN 300	DN 10 ~ DN 250	DN 10 ~ DN 200	
O-shaped groove face (OSG)	—	DN 10~DN 2000				DN 10 ~ DN 600	—					
Ring joint face (RJ)	—						DN 15 ~ DN 400	DN 15 ~ DN 350	DN 15 ~ DN 300	DN 15 ~ DN 250	DN 15 ~ DN 200	

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