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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 9117-2010** 

Replace GB/T 9117.1~9117.4-2000

## **Hubbed Socket Welding Steel Pipe Flanges**

带颈承插焊钢制管法兰

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#### Foreword

The series of standards (GB/T 9112~9124-2010) of "Steel Pipe Flanges" are modified in relation to "Pipe Flanges and Flanged Fittings (NPS  $\frac{1}{2}$  ~NPS 24)" (ASME B16.5-2009) and

"Flanges and Their Joints - Circular Flanges for Pipes, Valves, Fittings and Accessories, PN Designated - Part 1: Steel Flanges" (EN 1092-1: 2007). ASME B16.5-2009 is a complete standard for Class-designated flanges while EN 1092-1: 2007 a complete standard for PN-designated flanges. By reference to the aforesaid two standards, this series of standards cover the technical requirements for Class-designated and PN-designated flanges respectively. This series consist of 13 standards and this standard is one of them.

Compared with ASME B16.5-2009 and EN 1092-1: 2007, the main changes in this standard are as follows:

- the layout of this standard is different from that of ASME B16.5-2009 and EN 1092-1: 2007;

- ASME B16.5-2009 covers the information on Class 400 (nominal pressure) flanges, but this standard not;

- ASME B16.5-2009 covers the information on NPS  $3\frac{1}{2}$  (nominal pressure) flanges, but

this standard not;

- the imperial unit is adopted for bolt and diameter of bolt hole in ASME B16.5-2009, but metric unit in this standard;

- EN 1092-1: 2007 doesn't cover ring joint face flange, but PN-designated was added in this standard to satisfy the needs of Chinese users.

- EN 1092-1: 2007 doesn't specify hubbed socket welding steel pipe flanges, but PN series hubbed socket welding steel pipe flanges were added in this standard according to the actual needs of domestic users.

This standard replaces "Hubbed Socket Welding Steel Pipe Flanges with Raised Face" (GB/T 9117.1-2000), "Hubbed Socket Welding Steel Pipe Flanges with Male and Female Face" (GB/T 9117.2-2000), "Hubbed Socket Welding Steel Pipe Flanges with Tongue and Groove Face" (GB/T 9117.3-2000) and "Hubbed Socket Welding Steel Pipe Flanges with Ring-joint Face" (GB/T 9117.4-2000). Compared with the former standards, the main changes in this standard are as follows:

- the former four standards for hubbed socket welding steel pipe flanges were incorporated into one standard;

- according to the actual needs of domestic users, PN series hubbed socket welding steel pipe flanges were added, with a nominal pressure of PN 10~PN 160 and a nominal dimension of DN 10~DN 50;

- according to ASME B16.5-2009, all the dimensional data of Class-designated flanges was modified;

- the tables for the application scope of different sealing face types were added;

- the designations were modified;

- according to ASME B16.5-2009, the nominal pressure designations of flanges within

the American System were modified; for example, PN 20, PN 50, PN 110, PN 150 and PN 260 were changed into Class 150, Class 300, Class 600, Class 900 and Class 1500 respectively.

This standard was proposed by China Machinery Industry Federation.

This standard is under the jurisdiction of the National Technical Committee on Pipe Fittings of Standardization Administration of China.

Drafting organizations of this standard: China Productivity Center for Machinery, Zhejiang Chaoda Valve Co., Ltd., Jiangsu Haida Pipe Fittings Co., Ltd., Hebei Shengtian Group Baoyin High-pressure Flanged Pipe Fittings Co., Ltd. and Baoyi Group Co., Ltd.

Chief drafting staffs of this standard: Li Junying, Qiu Xiaolai, Li Jian, Feng Feng, Li Baoyin, Zhang Xiaozhong and Lin Jie.

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

- GB/T 9117.1~9117.8-1988 and GB/T 9117.1~9117.4-2000.

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# Hubbed Socket Welding Steel Pipe Flanges 带颈承插焊钢制管法兰

#### 1 Scope

This standard specifies the types, dimensions, technical requirements and designations of PN-designated and Class-designated hubbed socket welding steel pipe flanges.

This standard is applicable to hubbed socket welding steel pipe flanges with a nominal pressure of PN 10~PN 100 and Class 150~Class 1500.

#### 2 Normative References

The following normative documents contain provisions which, through reference in this text, constitute provisions of this standard. For dated references, subsequent amendments to (excluding amending errors in the text), or revisions of, any of these publications do not apply. However, all parties coming to an agreement according to this standard are encouraged to study whether the latest edition of the normative document is applicable. For undated references, the latest edition of the normative document applies.

GB/T 9112 Types and Parameters for Steel Pipe Flanges

GB/T 9124 Specification for Steel Pipe Flanges

#### **3** Types and Dimensions

3.1 Types and dimensions of PN-designated hubbed socket welding steel pipe flanges

**3.1.1** The sealing face type as well as the applicable nominal pressure and nominal dimension of PN-designated hubbed socket welding steel pipe flanges shall be in accordance with those specified in Table 1.

 

 Table 1
 Sealing Face Type as Well as Applicable Nominal Pressure and Nominal Dimension of PN-designated Hubbed Socket Welding Steel Pipe Flanges

Cashing face time	Nominal pressure						
Sealing face type	PN10	PN16	PN 25	PN40	PN 63	PN 100	
Flat face (FF)	DN 10~DN 50				—		
Raised face (RF)	DN 10~DN 50						
Male and female face (MF)	DN 10~DN 50						
Tongue and groove face (TG)	DN 10~DN 50						
O-ring face (OSG)	DN 10~DN 50				—		
Ring-joint face (RJ)	—			DN 15~DN 50			

**3.1.2** The types of PN-designated hubbed socket welding steel pipe flanges shall meet the requirements of Figures  $1\sim6$ ; the dimension of flange sealing face shall be in accordance with



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