**ICS 23.040.60**

**J 15**

# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

# 中华人民共和国国家标准

GB/T 9112–2010

Replace GB/T 9112-2000, GB/T 10754-1989

# Types and parameters for steel pipe flanges

# 钢制管法兰　类型与参数

**Issued on January 10, 2011** **Implemented on October 01, 2011**

**Issued by** **General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China**

**Standardization Administration of the People's Republic of China**

# Contents

# 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 standards comprehensively adopt the above two standards, including relevant technical content about Class designated flanges and PN designated flanges. This series of standards consist 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 $3^{1}/_{2}$, while this standard includes no flanges data of NPS $3\ ^{1}/_{2}$;

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

——According to the operating requirements of Chinese users, the nominal dimension range of PN designated flanges in this standard is properly expanded on the basis of EN 1092-1:2007 standard, including adding DN 20 and DN 32 with nominal dimension  in the nominal pressure range of PN 160-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 standard add DN 175 and DN 225 that are only used for marine flanges for PN designated flanges.

This standard replaces GB/T 9112 —2000 *Types and Parameters for Steel Pipe Flanges* and GB/T 10745 —1989 *Marine Pipe Flanges-Types (Quaternary)*, compared with original standards, the main changes are as follows:

——GB/T 9112 —2000 and GB/T 10745 —1989 are integrated into one standard;

——According to EN 1092-1:2007 standard, the nominal dimension range of PN designated flanges is expanded to DN 10～DN 4000 from DN 10～DN 3000;

——According to EN 1092-1:2007 standard, the nominal pressure range of PN designated flanges is expanded to DN 2.5～DN 400 from DN 2.5～DN 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 China, ring joint face type is added to PN designated flanges;

——According to EN 1092-1:2007 standard, flange types are increased;

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

——Normative references are added;

——According to EN 1092-1:2007 and ASME B16.5 —2009 standards, the outside diameter dimensions of steel pipes are supplemented and revised;

——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: China Productivity Center for Machinery (CPCFM), Zhejiang Chaoda Valve Co., Ltd., CNPC Huadong Engineering Corporation, Northeast Electric Power Design Institute of China Power Engineering Consulting Group Corporation, SINOPEC Engineering Incorporation (SEI), China Huanqiu Contracting & Engineering Corporation, Comprehensive Technical and Economic Research Institute of China Shipping Industry, Jiangsu Haida Pipe Fittings Group Company Ltd., Baoyi Group, Hebei Shengtian Group Baoyin High-Pressure Flange Pipe Fittings Co., Ltd.

Main drafters of the Standard: Li Junying, Qiu Xiaolai, Liu Jian, Huang Tao, Chen Yongliang, Ma Xueya, Luo Fayuan, Li Jian, Zhang Xiaozhong, Li Baoyin and Feng Feng.

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

——GB/T 9112—1988, GB/T 9112—2000;

——GB/T 10745—1989.

# Introduction

Since it was promulgated and implemented in 1988, GB/T 9112～9124 *Steel Pipe Flanges* has been continuously modified and improved to play an important role in guiding the design, manufacturing, installation and running of pipeline projects of China. With the continuous improvement of technology and revision and improvement of foreign standards, and requirements for integration and revision of marine and general flanges, it is necessary to revise the GB/T 9112～9124—2000 *Steel Pipe Flanges* series standards and GB/T 2504—1989, GB/T 2506—2005, GB/T 2508—1989, GB/T 10745—1989 and GB/T 10746—1989 *Marine Steel Pipe Flanges* series standards.

The modification to this series standards 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*, including following 13 standards:

| | |
|---|---|
| GB/T 9112—2010 | Types and parameters for steel pipe flanges (replace GB/T 9112 —2000;GB/T 10745 —1989) |
| GB/T 9113—2010 | Integral steel pipe flanges (replace GB/T 9113 —2000;GB/T 2504 —1989) |
| GB/T 9114—2010 | Hubbed screwed steel pipe flanges (replace GB/T 9114-2000 ) |
| GB/T 9115—2010 | Butt-welding steel pipe flanges (replace GB/T 9115 —2000;GB/T 10746 —1989) |
| GB/T 9116—2010 | Slip on welding steel pipe flanges (replace GB/T 9116-2000 ) |
| GB/T 9117—2010 | Hubbed socket welding steel pipe flanges (replace GB/T 9117-2000 ) |
| GB/T 9118—2010 | Butt-welding ring collar steel pipe loose flanges (replace GB/T 9118-2000 ) |
| GB/T 9119—2010 | Slip-on welding plate steel pipe flanges (replace GB/T 9119 —2000; GB/T 2506 —2005) |
| GB/T 9120—2010 | Loosen plate steel pipe flanges with weld-neck collar and with weld ring neck (replace GB/T 9120 —2000, GB/T 10747 —1989) |
| GB/T 9121—2010 | Loosen plate steel pipe flanges with weld-on collar (replace GB/T 9121 —2000; GB/T 2508—1989) |
| GB/T 9122—2010 | Loosen plate steel pipe flanges with lapped pipe end and pressed collar with long neck(replace GB/T 9122-2000) |
| GB/T 9123—2010 | Steel pipe blind flanges (replace GB/T 9123-2000) |
| GB/T 9124—2010 | Specification for steel pipe flanges (replace GB/T 9124 —2000) |

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

——The format of this series standards 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 series of standards include no flanges data of Class 400;

——ASME B16.5 —2009 standard includes flanges data with nominal dimension of NPS $3^1/_2$, while this series of standards include no flanges data of NPS $3^1/_2$;

——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 standards adopt metric bolts, the hole diameter of which also adopts metric size;

——ASME B16.5 —2009 standard gives no reference mass of flanges, while this series of standards give out reference mass of flanges as informative annex;

——ASME B16.5 —2009 standard and EN 1092-1:2007 standard give no data of order contract of flanges, while this series standards give out data of order contract of flanges as informative annex;

——ASME B16.5 —2009 standard and EN 1092-1:2007 give no schedule number and corresponding thickness of steel pipes, while this series standards give out schedule number and corresponding thickness of steel pipes as informative annex;

——According to the operating requirements of Chinese users, the nominal dimension range of PN designated flanges in this series standards is properly expanded on the basis of EN 1092-1:2007 standard, adding DN 20 and DN 32 with nominal dimension in the nominal pressure range of PN 160-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 series standards use standard flange materials of China, determine pressure-temperature ratings in accordance with ASME B16.5 —2009 and EN 1092-1:2007 standards, and use the flange materials and pressure-temperature ratings concerned in ASME B16.5 —2009 standard as informative annex for users to refer to.

Compared with original standards, the main changes in the newly revised series standards for steel pipe flanges are as follows:

——The national standard GB/T 9112~9124—2000 for marine steel flanges is integrated into a series of flange standards;

——According to EN 1092-1:2007 standard, flange thickness and other dimension data are comprehensively modified;

——According to EN 1092-1:2007 standard, the nominal dimension range of PN designated flanges is expanded to DN 10～DN 4000 from DN 10～DN 3000:

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

——According to EN 1092-1.2007 standard, O-ring sealing face type is added to PN designated flanges;

——According to EN 1092-1:2007 standard, flange types are increased, for example: Add loose plate flanges with stub ends, etc;

——According to EN 1092-1:2007 standard and ASME B16.5 —2009 standard, the dimensional tolerance of flanges is comprehensively modified;

——According to the actual operating requirements of China, ring joint face type is added to PN designated flanges;

——According to EN 1092-1:2007 standard and relevant materials standards of China, materials selection and pressure-temperature ratings of PN designated flanges are comprehensively modified;

——According to ASME B16.5-2009 standard and relevant materials standards of China, materials selection and pressure-temperature ratings of Class designated flanges are comprehensively modified;

——According to EN 1092-1:2007 standard, reference mass of PN designated flanges is added; according to the calculation, reference mass of Class designated flanges is added;

——According to ASME B16.5 —2009, the nominal pressure designation of flanges of American system in the original standard is modified, namely, 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.

# Types and parameters for steel pipe flanges

## 1 Scope

This standard specifies the nominal pressure and dimension of steel pipe flanges and blind flanges, outside diameter of steel pipes, flange types and codes, sealing face type and code and the applicable range of various types of flanges.

This standard is applicable to the steel pipe flanges and blind flanges stipulated in GB/T 9113～9123.

## 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 9113 Integral steel pipe flanges

GB/T 9114 Hubbed screwed steel pipe flanges

GB/T 9115 Steel pipe welding neck flanges

GB/T 9116 Hubbed slip-on-welding steel pipe flanges

GB/T 9117 Hubbed socket welding steel pipe flanges

GB/T 9118 Loose hubbed steel pipe flanges with welding neck color

GB/T 9119 Slip-on-welding plate steel pipe flanges

GB/T 9120 Loose plate steel pipe flanges with weld-neck collar and with weld ring neck

GB/T 9121 Loose plate steel pipe flanges with weld-on collar

GB/T 9122 Loose plate steel pipe flanges with lapped pipe end and pressed collar with long neck

GB/T 9123 Steel pipe blank flanges

**完整版本请在线下单**

或咨询：

TEL: 400-678-1309

QQ: 19315219

Email：info@lancarver.com

http://www.lancarver.com

**线下付款方式：**

**1. 对公账户：**

**单位名称**：北京文心雕语翻译有限公司

**开 户 行**：中国工商银行北京清河镇支行

**账　　号**：0200 1486 0900 0006 131

**2. 支付宝账户：info@lancarver.com**

注: 付款成功后，请预留电邮，完整版本将在一个工作日内通过电子 PDF 或 Word 形式发送至您的预留邮箱，如需索取发票，下单成功后的三个工作日内安排开具并寄出，预祝合作愉快！