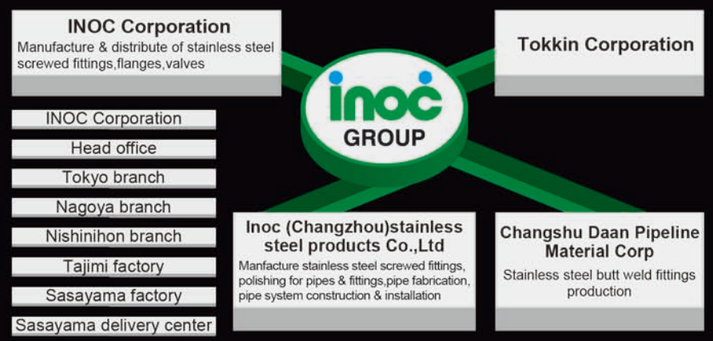
# STAINLESS STEEL PIPING COMPONENTS

We,inoc group supply eco-friendly products - Flanges & Fittings - made from stainless steel which constitute LIFE-LINE and INFRASTRUCTURE.

“Social Development” through our activity...

This is the contribution we wish to make...




## OUTLINE

## INOC Corporation

| | |
|---|---|
| ■Established: | March, 1959 |
| ■CEO: | NARIYOSHI ITO |
| ■Registered capital: | 60 Million JPY |
| ■Employee: | 100 |
| ■Main business: | manufacture & distribute of stainless steel screwed fittings,flanges,valves |

### ☐Comprehensive quality management (100% quality parts & product diverisity)

From beginning, we got more achievements including developing products used in special machine & new products & good systems upon advanced design, machining & assembling technology.

Our goal is to submit Inoc goods, meet customer's request with more high quality & more competitive price.

### ☐Categories of Inoc products supporting

Petrochemistry, chemical products machine, prevent pollutioin machine, muclear power, power equipment, food, shipbuilding, medicine, vehicle, house, sewer etc.

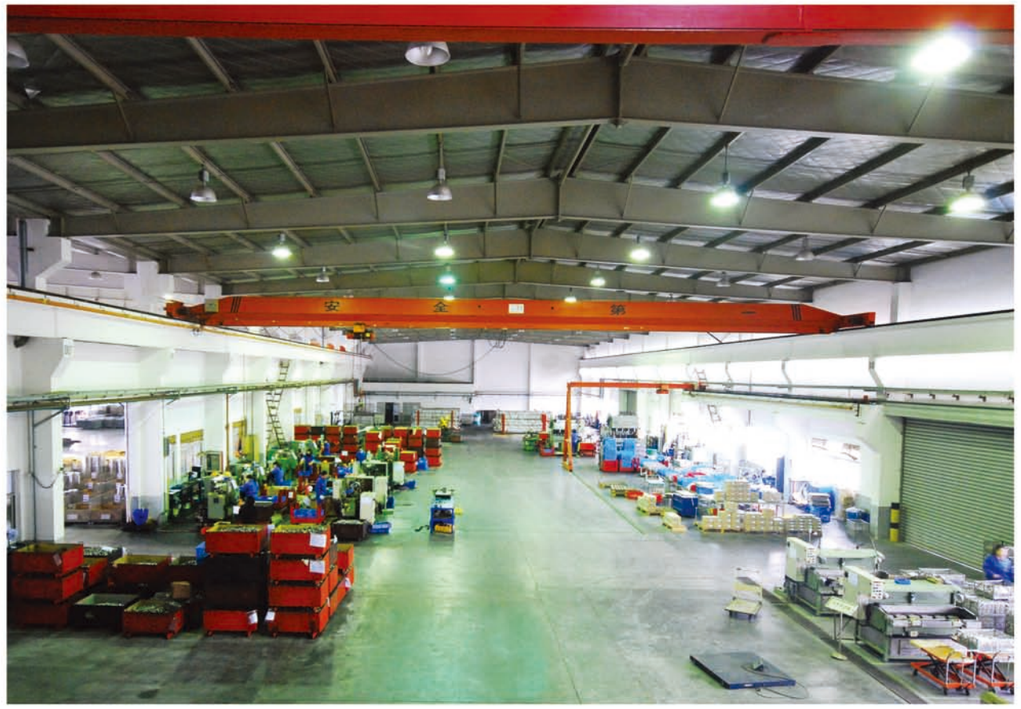
inoc グループ

## History

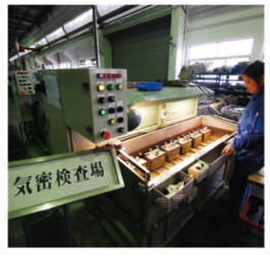
| | | |
|---|---|---|
| **1939** | April | Former President KANEYOSHI ITO started his business |
| **1959** | March | Set up Asahi Stainless Casting Co.,Ltd. |
| **1963** | April | Change the company name to Asahi Stainless Steel Engineering Co.,Ltd. |
| **1964** | Feb | Set up sales office in Osaka |
| **1965** | May | Set up sales office in Tokyo |
| **1967** | Jan | Set up the plant in Tajimi |
| **1968** | May | Set up sales office in Nagoya |
| **1981** | Dec | Completed a factory production only for fittings inTajimishi |
| **1987** | April | Completed a flange manufacturing factory in Sasayama. |
| **1991** | July | Completed an office building “Aste 21”in Tokyo |
| **1999** | March | Completed an automated high-rise warehouse in Sasayama |
| | Nov | Open the branch in west Japan(inoc co.,ltd) |
| **2001** | Sep | Set the delivery center in Sasayama(inoc co.,ltd) |
| **2004** | Jan | Completed a second automated high-rise warehouse in Sasayama |
| | Feb | Set up inoc(changzhou)stainless steel products co.,ltd |
| **2005** | Sep | Take over Tokkin co.,ltd completely |
| **2006** | Mar | Starting business of distribution stock products in China |
| **2007** | Jan | ISO 9001:2008 |
| **2010** | April | Unify the inoc manufacturing co.,ltd, inoc co.,ltd and inoc engineering co.,ltd ,as inoc co.,ltd |
| **2011** | July | Changsu Daan pipeline corp become the subsidiary of Inoc group |
| **2013** | Oct | Inoc (changzhou) stainless steel products co.,ltd got the TS certificate |

inoc

Inoc(Changzhou)Stainless Steel Products Co .,Ltd.



F9831NH
304
FF10K 80A


気密検査場

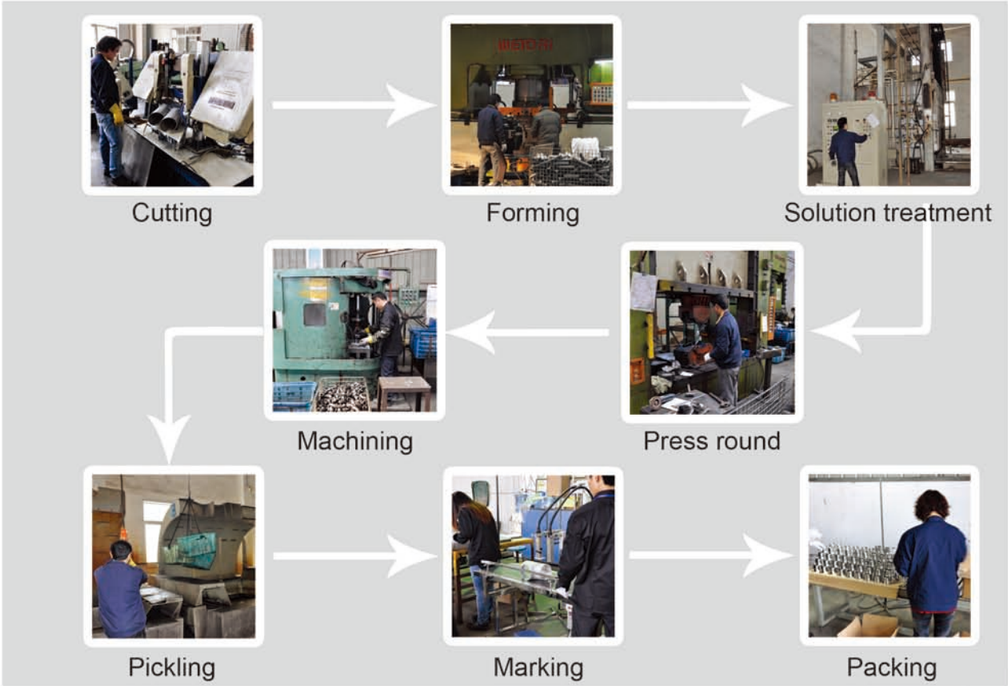
## Inoc summary

| | |
|---|---|
| Company name | Inoc(Changzhou) Stainless Steel Products Co.,Ltd. |
| Company address | Kohler Road,Xinbei District,Changzhou, Jiangsu, China |
| Foundation | February .6, 2004 |
| President | NARIYOSHI ITO |
| General Manager | TAKASHI KUWAJIMA |
| Capital | US$6000,000 |
| Employee | 100 ( Feb,2014) |
| Main products | Stainless Pipe |
| | Stainless Flange |
| | Stainless Butt-Welding Fittings |
| | Stainless Screwed Fittings |
| | Stainless Valve |
| | Stainless Sanitary Pipe and Fittings |
| | Mechanical polishing & electrolytic polishing,pure water clearing |
| Certificate: | ISO 9001:2008 |
| | TS: GC3 |

Changshu Daan Pipeline Material CORP.

## Workshop of butt welding fittings

## Manufacturing Process



## Company Outdoor Scene

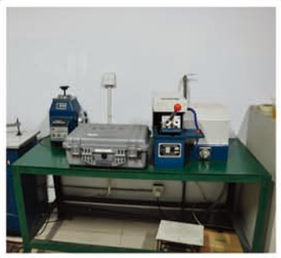
Company Outdoor

Office Buildin

Workshop Outdoo

Warehouse Raw Material

## Lab Equipment



- **COMPANY :** CHANGSHU DAAN PIPELINE MATERIAL CORP.
- Cregistered Capital : USD 8,000,000
- **Factory Area :** 20000 ㎡
- **Material Resources :**
  1.Seamless stainless steel pipe : Japan、Europe 、China
  2.Welded stainless steel pipe : Taiwan、Mainland of China
- **USE :** Shipbuilding,petrochemical,foods,sugar making,paper manufacturing, chemical engineering, agriculture,chemical, dyeing, synthetic fibers,liquid chemical etc. Industrial piping and construction drainage pipe fittings.

- **Main Products:** ELBOWS、TEES、REDUCERS、LAP-JOINT STUB ENDS etc
- **Specification:** JIS、ASME、GB 1/2″ -48″ , 5S-160S
- **Exportation :** Japan、USA、SOUtheast、 Europe etc
- **Production Equipments :** 1.Cutting Machines
  2.Advanced Hydraulic Forming Machines
  3.Sizing Machine
  4.Beveling Machines
  5.Heat Treatment Furnaces
- **Inspection Equipments :** Various large& small precision gages, spec tro analysis tester, hardness tester,tension tester, metallurgical microscope tester and other general inspection equipments and non-destructive testing machine.

CERTIFICATE OF APPROVAL
CHANGSHU DAAN PIPELINE MATERIAL CORP.
No. 36, Taiguang Road, Tonggang Industry Park,
Meili, Changshu, Jiangshu Province,
People's Republic of China
ISO 9001:2008
Manufacture of stainless steel pipe fittings and ultra high purity pipes.

CERTIFICATE SCHEDULE
Changshu Daan Pipeline Material Co., Ltd.
No. 36, Taiguang Road, Tonggang Industrial Park,
Meili Town, Changshu City, Jiangsu Province,
People's Republic of China
PED 97/23/EC Annex I paragraph 4.3 compliance.
Products: Stainless steel pipe fittings with the range of NPS ½-NPS 8 (DN15-DN200), Sch5S-Sch40S.
Material Grades and Standards

CERTIFICATE OF APPROVAL
Changshu Daan Pipeline Material Co., Ltd.
No. 36, Taiguang Road, Tonggang Industrial Park,
Meili Town, Changshu City, Jiangsu Province,
People's Republic of China
ISO 9001:2008
Manufacture of stainless steel pipe fittings with the range of NPS ½-NPS 8 (DN15-DN200), Sch5S-Sch40S.
In compliance with Annex I Paragraph 4.3 of the Pressure Equipment Directive 97/23/EC
(As listed on the attached schedule).

认证证书
常熟大安管道材料有限公司
中华人民共和国，江苏省常熟市
梅李镇通港工业园泰光路 36 号
ISO 9001:2008
GB/T 19001-2008
不锈钢管件和超洁净管的生产。

中华人民共和国
特种设备制造许可证
Manufacture License of Special Equipment
People's Republic of China
（压力管道）

中国石油天然气集团公司
CHINA NATIONAL PETROLEUM CORPORATION
一级供应网络
证 书

# CONTENTS


1 STAINLESS STEEL FLANGES

## STAINLESS STEEL FLANGES

With stable quality and supply channel management, flanges are widely used in many industries, for example, shipping building, nuclear power, petrochemical industry, paper making, pipeline, pharmacy, electric power etc equipments.

2 STAINLESS STEEL SCREWED FITTINGS

## STAINLESS STEEL SCREWED FITTINGS

Inoc, traditional & trusted brand, they are widely used in valves, petrochemical industry, general machinery, shipping building, electronics, Vehicles , house, water treatment etc equipments.

3 STAINLESS STEEL BUTT-WELDING FITTINGS

## STAINLESS STEEL BUTT-WELDING FITTINGS

Abundant goods series are widely used in many industries, power station, valves, water supply and drainage equipments, petrochemical projects, shipping building etc.

4 STAINLESS STEEL VALVES

## STAINLESS STEEL VALVES

With good corrosion resistance character, it is widely used in water treatment ,pharmacy, building, industry equipments etc. It is strategic goods under high technology.

5 STAINLESS STEEL SANITARY FITTINGS

## STAINLESS STEEL SANITARY FITTINGS

Providing systems solutions, including polishing pipes, polishing fittings, welding services, and general used fittings.

# 1

# STAINLESS STEEL FLANGES

With stable quality and supply channel management, flanges are widely used in many industries, for example, shipping building, nuclear power, petrochemical industry, paper making, pipeline, pharmacy, electric power etc equipments.

● Shape,size & materials will be according to the following specifications.

| Kind | Standard | Material standard | Marking |
|---|---|---|---|
| JIS | JIS B 2220、JIS G 3443-2、イノック標準 | JIS G 3214 JIS G 4304 | SUS F304 F316 F316L<br>SUS 304 316 316L |
| JPI | JPI-7S-15 | | |

● The marking of products will be according the following items.
(1) brand (2) material (3) pressure (4) size (5) manufacturing no (6) heat no





## ■ Flange Material Specifications



### ● Stainless Steel Forging (JIS 3214)

Chemical Composition

Unit:%

| Grade | C | Si | Mn | P | S | Ni | Cr | Mo |
|---|---|---|---|---|---|---|---|---|
| SUS F304 | >0.08 | >1.00 | >2.00 | >0.040 | >0.030 | 8.00～11.00 | 18.00～20.00 | — |
| SUS F304L | >0.030 | >1.00 | >2.00 | >0.040 | >0.030 | 9.00～13.00 | 18.00～20.00 | — |
| SUS F316 | >0.08 | >1.00 | >2.00 | >0.040 | >0.030 | 10.00～14.00 | 16.00～18.00 | 2.00～3.00 |
| SUS F316L | >0.030 | >1.00 | >2.00 | >0.040 | >0.030 | 12.00～15.00 | 16.00～18.00 | 2.00～3.00 |

Mechanical Characters

| Grade | Diameter & thickness when heated mm | Y.S N/mm² | T.S N/mm² | EL % 14A testing sample | Red of Area % | HB |
|---|---|---|---|---|---|---|
| SUS F304 | <130<br>130 <D<200 | <205<br><205 | <520<br><480 | <43<br><29 | <50<br><45 | >187<br>>187 |
| SUS F304L | <130<br>130 <D<200 | <175<br><175 | <480<br><450 | <29<br><29 | <50<br><45 | >187<br>>187 |
| SUS F316 | <130<br>130 <D<200 | <205<br><205 | <520<br><480 | <43<br><29 | <50<br><45 | >187<br>>187 |
| SUS F316L | <130<br>130 <D<200 | <175<br><175 | <480<br><450 | <29<br><29 | <50<br><45 | >187<br>>187 |

### ● Stainless Steel Plate (JIS G4304)

Chemical Composition

Unit:%

| Grade | C | Si | Mn | P | S | Ni | Cr | Mo |
|---|---|---|---|---|---|---|---|---|
| SUS 304 | >0.08 | >1.00 | >2.00 | >0.045 | >0.030 | 8.00～10.50 | 18.00～20.00 | — |
| SUS 304L | >0.030 | >1.00 | >2.00 | >0.045 | >0.030 | 9.00～13.00 | 18.00～20.00 | — |
| SUS 316 | >0.08 | >1.00 | >2.00 | >0.045 | >0.030 | 10.00～14.00 | 16.00～18.00 | 2.00～3.00 |
| SUS 316L | >0.030 | >1.00 | >2.00 | >0.045 | >0.030 | 12.00～15.00 | 16.00～18.00 | 2.00～3.00 |

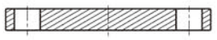
Mechanical Characters

| Grade | Y.S N/mm² | T.S N/mm² | EL % | Hardness | | |
|---|---|---|---|---|---|---|
| | | | | HB | HRB | HV |
| SUS 304 | <205 | <520 | <40 | >187 | >90 | >200 |
| SUS 304L | <175 | <480 | <40 | >187 | >90 | >200 |
| SUS 316 | <205 | <520 | <40 | >187 | >90 | >200 |
| SUS 316L | <175 | <480 | <40 | >187 | >90 | >200 |

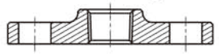
## Standard Flange in Stock

**FF**
Flat Face Flange

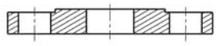
**BF**
Blind Flange



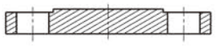
**STF**
Thread Flange



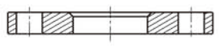
**RF**
Socket Welding Flange



**BDRF**
Blind Flange RF



**FFC**
Lap Joint Flange



| Material | | SUS F304 | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Description | | Flat face flange | | | Blind flange | | | Socket welding flange | | Blind flange RF | | BDRF | Slip on flange | Thread lange | | Water supply line flange | | | Slip on flange | | Blind flange | |
| Marking | | FF | | | BF | | | RF | | BDRF | | FFC | SORF | STF | | WF | WBF | WRF | SORF | | BDRF | |
| Specification | | JIS B 2220 | | | | | | | | | | | | | | JIS G 3443-2 | | | JPI-7S-15 | | | |
| Size \ Pressure | | 5K | 10K | 20K | 5K | 10K | 20K | 10K | 20K | 10K | 20K | 10K | 20K (A type) | 5K | 10K | F12 | | | 150 | 300 | 150 | 300 |
| 10A | 3/8B | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | – | – | – | – | – | – | – | – | – | – | – |
| 15 | 1/2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | – | – | – | ● | ● | ● | ● |
| 20 | 3/4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | – | – | – | ● | ● | ● | ● |
| 25 | 1 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | – | – | – | ● | ● | ● | ● |
| 32 | 1 1/4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | – | ● | ● | – | – | – | – | – | – | – |
| 40 | 1 1/2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | – | – | – | ● | ● | ● | ● |
| 50 | 2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | – | – | – | ● | ● | ● | ● |
| 65 | 2 1/2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | – | – | – | ● | ● | ● | ● |
| 80 | 3 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 90 | 3 1/2 | ● | ● | – | ● | ● | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 100 | 4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 125 | 5 | ● | ● | ● | ● | ● | – | ● | ● | ● | – | ● | – | – | – | ● | ● | ● | ● | – | ● | – |
| 150 | 6 | ● | ● | ● | ● | ● | – | ● | ● | ● | – | ● | – | – | – | ● | ● | ● | ● | – | ● | – |
| 200 | 8 | ● | ● | ● | ● | ● | – | ● | ● | ● | – | ● | – | – | – | ● | ● | ● | ● | – | ● | – |
| 250 | 10 | ● | ● | ● | ● | ● | – | ● | ● | ● | – | – | – | – | – | ● | ● | ● | ● | – | ● | – |
| 300 | 12 | ● | ● | ● | ● | ● | – | ● | ● | ● | – | – | – | – | – | ● | ● | ● | ● | – | ● | – |
| 350 | 14 | ● | ● | – | ● | ● | – | ● | – | – | – | – | – | – | – | ● | – | ● | – | – | – | – |
| 400 | 16 | ● | ● | – | ● | ● | – | ● | – | – | – | – | – | – | – | ● | – | ● | – | – | – | – |
| 450 | 18 | ● | ● | – | ● | ● | – | – | – | – | – | – | – | – | – | ● | – | – | – | – | – | – |
| 500 | 20 | ● | ● | – | ● | ● | – | – | – | – | – | – | – | – | – | ● | – | – | – | – | – | – |
| 550 | 22 | ● | ● | – | ● | ● | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 600 | 24 | ● | ● | – | ● | ● | – | – | – | – | – | – | – | – | – | ● | – | – | – | – | – | – |

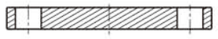




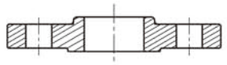


**SORF (A type)**
Slip On Flange ( A type)

**WBF**
Blind Flange

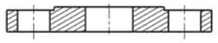


**SORF**
Slip On Flange

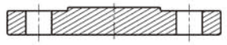


**WF**

**WRF**



**BDRF**
Blind Flange RF

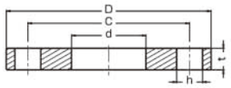


| Material | | SUS F316 | | | | | | SUS F316L | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Description | | Flat face flange | | Blind flange | | Socket welding flange | Blind flange RF | Flat Face Flange | | Blind flange | | Socket welding flange | Blind flange RF |
| Marking | | FF | | BF | | RF | BDRF | FF | | BF | | RF | BDRF |
| Specification | | JIS B 2220 | | | | | | | | | | | |
| Size \ Pressure | | 5K | 10K | 5K | 10K | 10K | 10K | 5K | 10K | 5K | 10K | 10K | 10K |
| 10A | 3/8B | ● | ● | ● | ● | ● | ● | – | ● | – | ● | ● | ● |
| 15 | 1/2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 20 | 3/4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 25 | 1 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 32 | 1 1/4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 40 | 1 1/2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 50 | 2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 65 | 2 1/2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 80 | 3 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 90 | 3 1/2 | – | – | – | – | – | – | – | – | – | – | – | – |
| 100 | 4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 125 | 5 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 150 | 6 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 200 | 8 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 250 | 10 | ● | ● | ● | ● | ● | ● | – | ● | – | ● | ● | ● |
| 300 | 12 | ● | ● | ● | ● | ● | ● | – | ● | – | ● | ● | ● |
| 350 | 14 | ● | ● | – | – | ● | – | – | ● | – | – | – | – |
| 400 | 16 | ● | ● | – | – | – | – | – | ● | – | – | – | – |

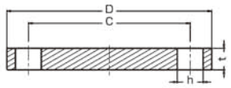
## JIS Standard Flange Dimensions Sheet

### 5k Flange

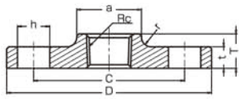
Flat face Flange




Blind Flange




Theraded Flange




Unit:mm

| Nominal bore | | Outside diam | Inside diam | Thickness | Rc | a | T | r | Connection | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | D | d | t | | | | | C | h | No of bolt holes | Bolt size |
| 10 | 3/8 | 75 | 17.8 | 9 | – | – | – | – | 55 | 12 | 4 | M10 |
| 15 | 1/2 | 80 | 22.2 | 9 | Rc 1/2 | 27 | 13 | 4 | 60 | 12 | 4 | M10 |
| 20 | 3/4 | 85 | 27.7 | 10 | Rc 3/4 | 33 | 15 | 4 | 65 | 12 | 4 | M10 |
| 25 | 1 | 95 | 34.5 | 10 | Rc1 | 41 | 17 | 4 | 75 | 12 | 4 | M10 |
| 32 | 1 1/4 | 115 | 43.2 | 12 | Rc1 1/4 | 50 | 19 | 4 | 90 | 15 | 4 | M12 |
| 40 | 1 1/2 | 120 | 49.1 | 12 | Rc1 1/2 | 56 | 20 | 4 | 95 | 15 | 4 | M12 |
| 50 | 2 | 130 | 61.1 | 14 | Rc2 | 69 | 24 | 4 | 105 | 15 | 4 | M12 |
| 65 | 2 1/2 | 155 | 77.1 | 14 | Rc2 1/2 | 86 | 27 | 4 | 130 | 15 | 4 | M12 |
| 80 | 3 | 180 | 90.0 | 14 | Rc3 | 99 | 30 | 4 | 145 | 19 | 4 | M16 |
| 90 | 3 1/2 | 190 | 102.6 | 14 | – | – | – | – | 155 | 19 | 4 | M16 |
| 100 | 4 | 200 | 115.4 | 16 | Rc4 | 127 | 36 | 4 | 165 | 19 | 8 | M16 |
| 125 | 5 | 235 | 141.2 | 16 | – | – | – | – | 200 | 19 | 8 | M16 |
| 150 | 6 | 265 | 166.6 | 18 | – | – | – | – | 230 | 19 | 8 | M16 |
| 200 | 8 | 320 | 218.0 | 20 | – | – | – | – | 280 | 23 | 8 | M20 |
| 250 | 10 | 385 | 269.5 | 22 | – | – | – | – | 345 | 23 | 12 | M20 |
| 300 | 12 | 430 | 321.0 | 22 | – | – | – | – | 390 | 23 | 12 | M20 |
| 350 | 14 | 480 | 358.1 | 24 | – | – | – | – | 435 | 25 | 12 | M22 |
| 400 | 16 | 540 | 409.0 | 24 | – | – | – | – | 495 | 25 | 16 | M22 |
| 450 | 18 | 605 | 460.0 | 24 | – | – | – | – | 555 | 25 | 16 | M22 |
| 500 | 20 | 655 | 511.0 | 24 | – | – | – | – | 605 | 25 | 20 | M22 |
| 550 | 22 | 720 | 562.0 | 26 | – | – | – | – | 665 | 27 | 20 | M24 |
| 600 | 24 | 770 | 613.0 | 26 | – | – | – | – | 715 | 27 | 20 | M24 |



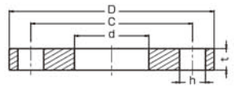


## JIS Standard Flange Dimensions Sheet

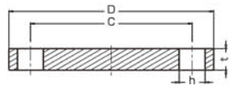


### 10k Flange

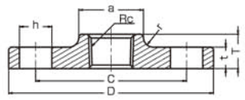
**FF**
Flat Face Flange



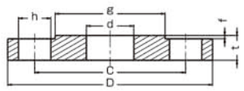

**BF**
Blind Flange



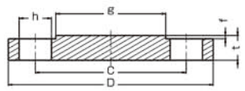

**STF**
Thread Flange



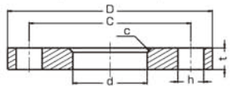

**RF**
Socket Welding Flange




**BDRF**
Blind Flange RF




**FFC**
Lap Joint Flange




Remark: d&c are Inoc's standard dimensions.

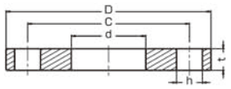
Unit:mm

| Nominal bore | | Outside diam | Inside diam | Thickness | | Flat seat | | Rc | a | T | r | c | Connection | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | D | d | t Besides BF | t BF | g | f | | | | | | C | h | No of bolt holes | Bolt size |
| 10 | 3/8 | 90 | 17.8 | 12 | 12 | 46 | 1 | – | – | – | – | – | 65 | 15 | 4 | M12 |
| 15 | 1/2 | 95 | 22.2 | 12 | 12 | 51 | 1 | Rc 1/2 | 27 | 16 | 4 | 3 | 70 | 15 | 4 | M12 |
| 20 | 3/4 | 100 | 27.7 | 14 | 14 | 56 | 1 | Rc 3/4 | 33 | 20 | 4 | 4 | 75 | 15 | 4 | M12 |
| 25 | 1 | 125 | 34.5 | 14 | 14 | 67 | 1 | Rc1 | 41 | 20 | 4 | 4 | 90 | 19 | 4 | M16 |
| 32 | 1 1/4 | 135 | 43.2 | 16 | 16 | 76 | 2 | Rc1 1/4 | 50 | 22 | 4 | 5 | 100 | 19 | 4 | M16 |
| 40 | 1 1/2 | 140 | 49.1 | 16 | 16 | 81 | 2 | Rc1 1/2 | 56 | 24 | 4 | 5 | 105 | 19 | 4 | M16 |
| 50 | 2 | 155 | 61.1 | 16 | 16 | 96 | 2 | Rc2 | 69 | 24 | 4 | 5 | 120 | 19 | 4 | M16 |
| 65 | 2 1/2 | 175 | 77.1 | 18 | 18 | 116 | 2 | Rc2 1/2 | 86 | 27 | 4 | 6 | 140 | 19 | 4 | M16 |
| 80 | 3 | 185 | 90.0 | 18 | 18 | 126 | 2 | Rc3 | 99 | 30 | 4 | 6 | 150 | 19 | 8 | M16 |
| 90 | 3 1/2 | 195 | 102.6 | 18 | 18 | 136 | 2 | – | – | – | – | – | 160 | 19 | 8 | M16 |
| 100 | 4 | 210 | 115.4 | 18 | 18 | 151 | 2 | Rc4 | 127 | 36 | 4 | 6 | 175 | 19 | 8 | M16 |
| 125 | 5 | 250 | 141.2 | 20 | 20 | 182 | 2 | – | – | – | – | 6 | 210 | 23 | 8 | M20 |
| 150 | 6 | 280 | 166.6 | 22 | 22 | 212 | 2 | – | – | – | – | 6 | 240 | 23 | 8 | M20 |
| 200 | 8 | 330 | 218.0 | 22 | 22 | 262 | 2 | – | – | – | – | 6 | 290 | 23 | 12 | M20 |
| 250 | 10 | 400 | 269.5 | 24 | 24 | 324 | 2 | – | – | – | – | – | 355 | 25 | 12 | M22 |
| 300 | 12 | 445 | 321.0 | 24 | 24 | 368 | 3 | – | – | – | – | – | 400 | 25 | 16 | M22 |
| 350 | 14 | 490 | 358.1 | 26 | 26 | 413 | 3 | – | – | – | – | – | 445 | 25 | 16 | M22 |
| 400 | 16 | 560 | 409.0 | 28 | 28 | 475 | 3 | – | – | – | – | – | 510 | 27 | 16 | M24 |
| 450 | 18 | 620 | 460.0 | 30 | 30 | 530 | 3 | – | – | – | – | – | 565 | 27 | 20 | M24 |
| 500 | 20 | 675 | 511.0 | 30 | 30 | 585 | 3 | – | – | – | – | – | 620 | 27 | 20 | M24 |
| 550 | 22 | 745 | 562.0 | 32 | 34 | 640 | 3 | – | – | – | – | – | 680 | 33 | 20 | M30 |
| 600 | 24 | 795 | 613.0 | 32 | 36 | 690 | 3 | – | – | – | – | – | 730 | 33 | 24 | M30 |

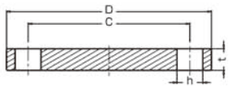
## JIS Standard Flange Dimensions Sheet

### 20k Flange

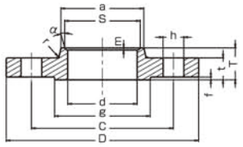
**FF**
Flat Face Flange



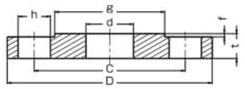

**BF**
Blind Flange



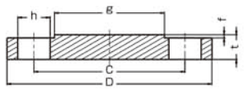

**SORF (A type)**
Slip on Flange RF




**RF**
Socket Welding Flange




**BDRF**
Blind Flange RF




Unit:mm

| Nominal bore | | Outside diam | Inside diam | Thickness | Flat seat | | a | T | r | Welding parts in detail | | | Connection | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | D | d | t | g | f | | | | S | m | α | C | h | No of bolt holes | Bolt size |
| 10 | 3/8 | 90 | 17.8 | 14 | 46 | 1 | – | – | – | – | – | – | 65 | 15 | 4 | M12 |
| 15 | 1/2 | 95 | 22.2 | 14 | 51 | 1 | 34 | 20 | 4 | 31 | 4 | – | 70 | 15 | 4 | M12 |
| 20 | 3/4 | 100 | 27.7 | 16 | 56 | 1 | 40 | 22 | 4 | 37 | 4 | – | 75 | 15 | 4 | M12 |
| 25 | 1 | 125 | 34.5 | 16 | 67 | 1 | 48 | 24 | 4 | 44 | 4 | – | 90 | 19 | 4 | M16 |
| 32 | 1 1/4 | 135 | 43.2 | 18 | 76 | 2 | 56 | 26 | 5 | 52 | 4 | – | 100 | 19 | 4 | M16 |
| 40 | 1 1/2 | 140 | 49.1 | 18 | 81 | 2 | 62 | 26 | 5 | 58 | 4 | – | 105 | 19 | 4 | M16 |
| 50 | 2 | 155 | 61.1 | 18 | 96 | 2 | 76 | 26 | 5 | 70 | 4 | – | 120 | 19 | 8 | M16 |
| 65 | 2 1/2 | 175 | 77.1 | 20 | 116 | 2 | 100 | 30 | 5 | 94 | 6 | 20° | 140 | 19 | 8 | M16 |
| 80 | 3 | 200 | 90.0 | 22 | 132 | 2 | 113 | 34 | 6 | 107 | 6 | 20° | 160 | 23 | 8 | M20 |
| 100 | 4 | 225 | 115.4 | 24 | 160 | 2 | 138 | 36 | 6 | 132 | 6 | 20° | 185 | 23 | 8 | M20 |
| 125 | 5 | 270 | 141.2 | 26 | 195 | 2 | – | – | – | – | – | – | 225 | 25 | 8 | M22 |
| 150 | 6 | 305 | 166.6 | 28 | 230 | 2 | – | – | – | – | – | – | 260 | 25 | 12 | M22 |
| 200 | 8 | 350 | 218.0 | 30 | 275 | 2 | – | – | – | – | – | – | 305 | 25 | 12 | M22 |
| 250 | 10 | 430 | 269.5 | 34 | 345 | 2 | – | – | – | – | – | – | 380 | 27 | 12 | M24 |
| 300 | 12 | 480 | 321.0 | 36 | 395 | 3 | – | – | – | – | – | – | 430 | 27 | 16 | M24 |



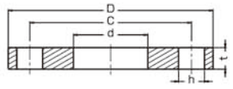


## JIS Standard Flange Dimensions Sheet

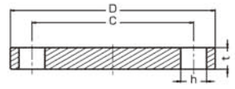


### 2k Flange

**FF**
Flat Face Flange




**BF**
Blind Flange

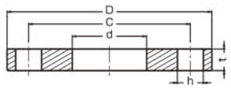



Unit:mm

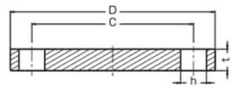
| Nominal bore | | Outside diam | Inside diam | Thickness | Connection | | | |
|---|---|---|---|---|---|---|---|---|
| A | B | D | d | t | C | h | No of bolt holes | Bolt size |
| 450 | 18 | 605 | 460 | 22 | 555 | 23 | 16 | M20 |
| 500 | 20 | 655 | 511 | 22 | 605 | 23 | 20 | M20 |
| 550 | 22 | 720 | 562 | 24 | 665 | 25 | 20 | M22 |
| 600 | 24 | 770 | 613 | 24 | 715 | 25 | 20 | M22 |

### Water Delivery Flange

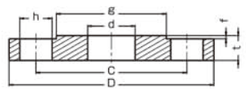
**WF**




**WBF**




**WRF**

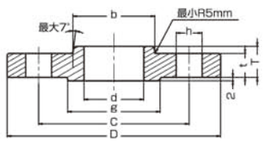



Unit:mm

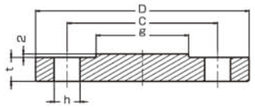
| Nominal bore | Outside diam | Inside diam | Thickness | Flat seat | | Connection | | | |
|---|---|---|---|---|---|---|---|---|---|
| A | D | d | t | g | f | C | h | No of bolt holes | Bolt size |
| 80 | 211 | 90.0 | 18 | 125 | 2 | 168 | 19 | 4 | M16 |
| 100 | 238 | 115.4 | 18 | 152 | 2 | 195 | 19 | 4 | M16 |
| 125 | 263 | 141.2 | 20 | 177 | 2 | 220 | 19 | 6 | M16 |
| 150 | 290 | 166.6 | 22 | 204 | 2 | 247 | 19 | 6 | M16 |
| 200 | 342 | 218.0 | 22 | 256 | 2 | 299 | 19 | 8 | M16 |
| 250 | 410 | 269.5 | 24 | 308 | 2 | 360 | 23 | 8 | M20 |
| 300 | 464 | 321.0 | 24 | 362 | 3 | 414 | 23 | 10 | M20 |
| 350 | 530 | 358.1 | 26 | 414 | 3 | 472 | 25 | 10 | M22 |
| 400 | 582 | 409.0 | 26 | 466 | 3 | 524 | 25 | 12 | M22 |
| 450 | 652 | 460.0 | 28 | 518 | 3 | 585 | 27 | 12 | M24 |
| 500 | 706 | 511.0 | 28 | 572 | 3 | 639 | 27 | 12 | M24 |
| 600 | 810 | 613.0 | 30 | 676 | 3 | 743 | 27 | 16 | M24 |

## JPI Flange Dimensions Sheet

**SORF**
Slip On Flange RF




**BDRF**
Blind Flange RF




### 150

Unit:mm

| Nominal bore A | Nominal bore B | Outside diam D | Inside diam d | b | g | Thickness t | T | Connection C | Connection h | Connection No of bolt holes | Connection Bolt size |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | ½ | 90 | 22.2 | 30 | 34.9 | 9.6 | 14 | 60.3 | 16 | 4 | M14 |
| 20 | ¾ | 100 | 27.7 | 38 | 42.9 | 11.2 | 14 | 69.9 | 16 | 4 | M14 |
| 25 | 1 | 110 | 34.5 | 49 | 50.8 | 12.7 | 16 | 79.4 | 16 | 4 | M14 |
| 32 | 1¼ | 115 | 43.2 | 59 | 63.5 | 14.3 | 19 | 88.9 | 16 | 4 | M14 |
| 40 | 1½ | 125 | 49.1 | 65 | 73.0 | 15.9 | 21 | 98.4 | 16 | 4 | M14 |
| 50 | 2 | 150 | 61.1 | 78 | 92.1 | 17.5 | 24 | 120.7 | 19 | 4 | M16 |
| 65 | 2½ | 180 | 77.1 | 90 | 104.8 | 20.7 | 27 | 139.7 | 19 | 4 | M16 |
| 80 | 3 | 190 | 90.0 | 108 | 127.0 | 22.3 | 29 | 152.4 | 19 | 4 | M16 |
| 100 | 4 | 230 | 115.4 | 135 | 157.2 | 22.3 | 32 | 190.5 | 19 | 8 | M16 |
| 125 | 5 | 255 | 141.2 | 164 | 185.7 | 22.3 | 35 | 215.9 | 22 | 8 | M20 |
| 150 | 6 | 280 | 166.6 | 192 | 215.9 | 23.9 | 38 | 241.3 | 22 | 8 | M20 |
| 200 | 8 | 345 | 218.0 | 246 | 269.9 | 27.0 | 43 | 298.5 | 22 | 8 | M20 |
| 250 | 10 | 405 | 269.5 | 305 | 323.8 | 28.6 | 48 | 362.0 | 26 | 12 | M24 |
| 300 | 12 | 485 | 321.0 | 365 | 381.0 | 30.2 | 54 | 431.8 | 26 | 12 | M24 |

### 300

Unit:mm

| Nominal bore A | Nominal bore B | Outside diam D | Inside diam d | b | g | Thickness t | T | Connection C | Connection h | Connection No of bolt holes | Connection Bolt size |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 15 | ½ | 95 | 22.2 | 38 | 34.9 | 12.7 | 21 | 66.7 | 16 | 4 | M14 |
| 20 | ¾ | 115 | 27.7 | 48 | 42.9 | 14.3 | 24 | 82.6 | 19 | 4 | M16 |
| 25 | 1 | 125 | 34.5 | 54 | 50.8 | 15.9 | 25 | 88.9 | 19 | 4 | M16 |
| 32 | 1¼ | 135 | 43.2 | 64 | 63.5 | 17.5 | 25 | 98.4 | 19 | 4 | M16 |
| 40 | 1½ | 155 | 49.1 | 70 | 73.0 | 19.1 | 29 | 114.3 | 22 | 4 | M20 |
| 50 | 2 | 165 | 61.1 | 84 | 92.1 | 20.7 | 32 | 127.0 | 19 | 8 | M16 |
| 65 | 2½ | 190 | 77.1 | 100 | 104.8 | 23.9 | 37 | 149.2 | 22 | 8 | M20 |
| 80 | 3 | 210 | 90.0 | 117 | 127.0 | 27.0 | 41 | 168.3 | 22 | 8 | M20 |
| 100 | 4 | 255 | 115.4 | 146 | 157.2 | 30.2 | 46 | 200.0 | 22 | 8 | M20 |
| 125 | 5 | 280 | 141.2 | 178 | 185.7 | 33.4 | 49 | 235.0 | 22 | 8 | M20 |
| 150 | 6 | 320 | 166.6 | 206 | 215.9 | 35.0 | 51 | 269.9 | 22 | 12 | M20 |
| 200 | 8 | 380 | 218.0 | 260 | 269.9 | 39.7 | 60 | 330.2 | 26 | 12 | M24 |
| 250 | 10 | 445 | 269.5 | 321 | 323.8 | 46.1 | 65 | 387.4 | 29 | 16 | M27 |
| 300 | 12 | 520 | 321.0 | 375 | 381.0 | 49.3 | 71 | 450.8 | 32 | 16 | M30 |





## Tolerance of Flange Dimensions



### JIS B 2220

Unit:mm

| Specification | Kinds | Size | Tolerance |
|---|---|---|---|
| Outside diam D | ALL | D<600 | ±1.5 |
| | | D>600 | ±3 |
| Diameter of circle of holes C | ALL | D<950 | ±0.8 |
| | | D>950 | ±1.5 |
| Bolt hole distance | ALL | – | ±0.8 |
| Inside diam d | ALL | D<100 | +0.5 0 |
| | | 100<D<400 | +1 0 |
| | | 400 < D<600 | +1.5 0 |
| | | 600<D<800 | +2 0 |
| | | 800<D<1000 | +2.5 0 |
| | | D>1000 | +3 0 |
| Qqskee distance g | RF SORF BDRF | D<700 | ±0.8 |
| | | D>700 | ±1.5 |
| Thickness t-f | FF BF STF FFC | t<20 | +1.5 0 |
| | | 20 <t<50 | +2 0 |
| | | t>50 | +3 0 |
| Thickness t-f | RF SORF BDRF | t<20 | +1.5 0 |
| | | 20 <t<50 | +2 0 |
| | | t>50 | +3 0 |
| Hub diam a | SORF STF | D<220 | +2 0 |
| | | 220<D<650 | +4 0 |
| | | D>650 | +8 0 |
| Overall diam T | SORF STF | – | ±2 |
| Seat parallelism | ALL | – | <1° |

### JIS G 3443-2

Unit:mm

| Specification | Kinds | Size | Tolerance |
|---|---|---|---|
| Outside diam D | ALL | D<300 | ±1 |
| | | 300< D<600 | ±1.5 |
| | | 600 <D<1000 | ±2 |
| | | 1000<D<1500 | ±2.5 |
| | | D>1500 | ±3 |
| Diameter of circle of holes C | ALL | D<250 | ±0.5 |
| | | 250<D<550 | ±0.6 |
| | | 550 <D<950 | ±0.8 |
| | | 950 <D<1350 | ±1 |
| | | D>1350 | ±1.5 |
| Bolt hole distance | ALL | – | ±0.5 |
| Bolt diameter Bolt hole distance | ALL | – | +1.5 0 |
| Thickness t | ALL | t<20 | +1.5 0 |
| | | 20<t<50 | +2 0 |
| | | T>50 | +3 0 |

### JPI-7S-15

Unit:mm

| Specification | Kinds | Size | Tolerance |
|---|---|---|---|
| Outside diam D | ALL | D<610 | ±1.5 |
| | | D>610 | ±3.0 |
| Intside diam d | ALL | D<250A | +1.0 0 |
| | | D>250A | +1.5 0 |
| b | SORF | D<300A | +1.5 −1.0 |
| | | D>350A | +3.0 −1.5 |
| t | ALL | D<450A | +3.0 0 |
| | | D>500A | +5.0 0 |
| T | SORF | D<450A | +3.0 −1.0 |
| | | D>500A | +5.0 −1.5 |
| Diameter of circle of holes C | ALL | すべての呼び径に対して | ±1.5 |
| Bolt hole distance | ALL | すべての呼び径に対して | ±0.8 |
| Bolt size h | ALL | すべての呼び径に対して | ±0.5 |
| g | ALL | 座の高さ 2mm すべての呼び径に対して | ±1.0 |

# 2

## STAINLESS STEEL SCREWED FITTINGS

Inoc, traditional & trusted brand, they are widely used in valves, petrochemical industry, general machinery, shipping building, electronics, Vehicles , house, water treatment etc equipments .

■ Specifications

| Kinds | Marking | Standard |
|---|---|---|
| 90 Elbow | LL | JIS B 2308 |
| Tee | TL | |
| 45 Elbow | 45L | |
| Reducing elbow | RL | |
| Reducing tee | RT | |
| Street elbow | SL | |
| Cross | X | |
| Square plug | P | |
| Hexagon plug | STP | |
| Cap | C | |
| Bushing | B | |
| Union | U | |
| Union( flat seat) | UF | Inoc standard |
| Union elbow | UL | |
| Straight socket | S | JIS B 2308 |
| Short straight socket | HS | |

| Kinds | Marking | Standard |
|---|---|---|
| Full thread socket | PTS | Inoc standard |
| Half thread socket | HPTS | |
| Thick walled straight socket | SJ | |
| Reducing socket | RS | JIS B 2308 |
| Hexagonal straight socket | STS | Inoc standard |
| Nipple | N | |
| Half Nipple | NS | |
| Hexagon full nipple | STN | JIS B 2308 |
| Hexagon half nipple | HSTN | Inoc standard |
| Hexagon reducing nipple | STNR | JIS B 2308 |
| Quick join | HN | Inoc standard |
| Hexagon quick join | STHN | |
| Long nipple | NL | |
| Half thread long nipple | NSL | |
| O type bend pipe | MO | |
| U type bend pipe | MU | |

●Shape,size & materials will be according to the following specifications.

| Kinds | Standard | Grade |
|---|---|---|
| Casting | JIS G 5121 | SCS 13A SCS 14A |
| Forging | JIS G 3214 | SUS F304 SUS F316 |
| Pipe | JIS G 3459 | SUS 304 TP SUS 316 TP |
| Bar | JIS G 4303 | SUS 304 SUS 316 |







90 Elbow

Tee

45 Elbow

Reducing elbow

Reducing tee

Street elbow

Cross

Square plug

Hexagon plug

Cap

Bushing

Union

Union( flat seat)

Union elbow

Straight socket

Short straight socket

Full thread socket

Half thread socket

Thick walled straight socket

Reducing socket

Hexagonal straight socket

Nipple

Half Nipple

Hexagon full nipple

Hexagon half nipple

Hexagon reducing nipple

Quick join

Hexagon quick join

Long nipple

Half thread long nipple

O type bend pipe

U type bend pipe

# 3

## STAINLESS STEEL BUTT-WELDING FITTINGS

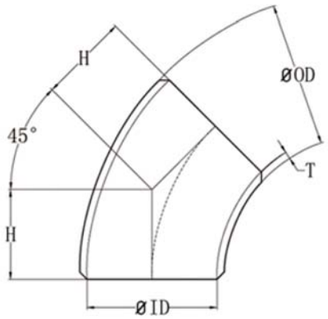
Abundant goods series are widely used in many industries, power station, valves, water supply and drainage equipments, petrochemical projects, shipping building etc.

● Products information

| | |
|---|---|
| Material | WP304,WP304L, WP316,WP316L, WP304/304L,WP 316/316L etc |
| Product types | 90Elbow, 45 Elbow, Tee, Con reducer, Ecc reducer, Reducing tee, Cap,Stub end |
| Size | 1/2" to 48" |
| Standard | JIS, ASTM, GB etc |

## ■ 45° LONG RADIUS ELBOWS

### 45E(L) OR 45LR




**GB** Unit:mm

| NPS | | Outside diam | | SCH 5S | | | SCH 10S | | | SCH 40S | | | Center to end H |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | OD Ⅰ | OD Ⅱ | Thickness T | ID Ⅰ | ID Ⅱ | Thickness T | ID Ⅰ | ID Ⅱ | Thickness T | ID Ⅰ | ID Ⅱ | |
| 15A | 1/2” | 21.3 | 18.00 | 1.65 | 18.03 | 14.70 | 2.11 | 16.43 | 17.08 | 2.77 | 15.80 | 12.46 | 16 |
| 20A | 3/4” | 26.9 | 25.00 | 1.65 | 23.37 | 21.70 | 2.11 | 22.45 | 22.68 | 2.87 | 20.93 | 19.28 | 19 |
| 25A | 1” | 33.7 | 32.00 | 1.65 | 30.10 | 28.70 | 2.77 | 27.86 | 28.16 | 3.38 | 26.64 | 25.24 | 22 |
| 32A | 1.1/4” | 42.4 | 38.00 | 1.65 | 38.86 | 34.70 | 2.77 | 36.63 | 36.86 | 3.56 | 35.05 | 30.88 | 25 |
| 40A | 1.1/2” | 48.3 | 45.00 | 1.65 | 44.96 | 41.70 | 2.77 | 42.72 | 42.76 | 3.68 | 40.89 | 37.64 | 29 |
| 50A | 2” | 60.3 | 57.00 | 1.65 | 57.02 | 53.70 | 2.77 | 54.79 | 54.76 | 3.91 | 52.50 | 49.18 | 35 |
| 65A | 2.1/2” | 73.0 | 76.00 | 2.11 | 68.81 | 71.78 | 3.05 | 66.93 | 66.90 | 5.16 | 62.71 | 65.68 | 44 |
| 80A | 3” | 88.9 | 89.00 | 2.11 | 84.68 | 84.78 | 3.05 | 82.80 | 82.80 | 5.49 | 77.93 | 78.02 | 51 |
| 90A | 3.1/2” | 101.6 | ----- | 2.11 | 97.38 | ----- | 3.05 | 95.50 | 95.50 | 5.74 | 90.12 | ----- | 57 |
| 100A | 4” | 114.3 | 108.00 | 2.11 | 112.19 | 103.78 | 3.05 | 108.20 | 108.20 | 6.02 | 102.26 | 95.96 | 64 |
| 125A | 5” | 141.3 | 133.00 | 2.77 | 135.76 | 127.46 | 3.40 | 134.49 | 134.50 | 6.55 | 128.19 | 119.90 | 79 |
| 150A | 6” | 168.3 | 159.00 | 2.77 | 162.74 | 153.46 | 3.40 | 161.47 | 161.50 | 7.11 | 154.05 | 144.78 | 95 |
| 200A | 8” | 219.1 | 219.00 | 2.77 | 213.54 | 213.46 | 3.76 | 211.56 | 211.58 | 8.18 | 202.72 | 202.64 | 127 |
| 250A | 10” | 273.0 | 273.00 | 3.40 | 266.24 | 266.20 | 4.19 | 264.67 | 264.62 | 9.27 | 254.51 | 254.46 | 159 |
| 300A | 12” | 323.9 | 325.00 | 3.96 | 315.93 | 317.08 | 4.57 | 314.71 | 314.76 | 9.53 | 304.80 | 305.94 | 190 |
| 350A | 14” | 355.6 | 377.00 | 3.96 | 347.68 | 369.09 | 4.78 | 346.05 | 346.04 | ----- | ----- | ----- | 222 |
| 400A | 16’ | 406.4 | 426.00 | 4.19 | 398.02 | 417.62 | 4.78 | 396.85 | 396.84 | ----- | ----- | ----- | 254 |
| 450A | 18” | 457.0 | 480.00 | 4.19 | 448.82 | 471.62 | 4.78 | 447.65 | 447.44 | ----- | ----- | ----- | 286 |
| 500A | 20” | 508.0 | 530.00 | 4.78 | 498.45 | 520.44 | 5.54 | 496.93 | 496.92 | ----- | ----- | ----- | 318 |
| 550A | 22” | 559.0 | ----- | 4.78 | 549.25 | ----- | 5.54 | 547.73 | 547.92 | ----- | ----- | ----- | 343 |
| 600A | 24” | 610.0 | 630.00 | 5.54 | 598.53 | 618.92 | 6.35 | 596.90 | 597.30 | ----- | ----- | ----- | 381 |
| 650A | 26” | 660.0 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 406 |
| 700A | 28” | 711.0 | 720.00 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 438 |
| 750A | 30” | 762.0 | ----- | 6.35 | 749.30 | ----- | 7.92 | 746.15 | 746.16 | ----- | ----- | ----- | 470 |
| 800A | 32” | 813.0 | 820.00 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | 502 |

**ASME** Unit:mm

| NPS | | Outside diam OD | SCH 5S | | SCH 10S | | SCH 40S | | Center to end H |
|---|---|---|---|---|---|---|---|---|---|
| A | B | | Thickness T | ID | Thickness T | ID | Thickness T | ID | |
| 15A | 1/2” | 21.3 | 1.65 | 18.03 | 2.11 | 16.43 | 2.77 | 15.80 | 16 |
| 20A | 3/4” | 26.7 | 1.65 | 23.37 | 2.11 | 22.45 | 2.87 | 20.93 | 19 |
| 25A | 1” | 33.4 | 1.65 | 30.10 | 2.77 | 27.86 | 3.38 | 26.64 | 22 |
| 32A | 1.1/4” | 42.2 | 1.65 | 38.86 | 2.77 | 36.63 | 3.56 | 35.05 | 25 |
| 40A | 1.1/2” | 48.3 | 1.65 | 44.96 | 2.77 | 42.72 | 3.68 | 40.89 | 29 |
| 50A | 2” | 60.3 | 1.65 | 57.02 | 2.77 | 54.79 | 3.91 | 52.50 | 35 |
| 65A | 2.1/2” | 73.0 | 2.11 | 68.81 | 3.05 | 66.93 | 5.16 | 62.71 | 44 |
| 80A | 3” | 88.9 | 2.11 | 84.68 | 3.05 | 82.80 | 5.49 | 77.93 | 51 |
| 90A | 3.1/2” | 101.6 | 2.11 | 97.38 | 3.05 | 95.50 | 5.74 | 90.12 | 57 |
| 100A | 4” | 114.3 | 2.11 | 112.19 | 3.05 | 108.20 | 6.02 | 102.26 | 64 |
| 125A | 5” | 141.3 | 2.77 | 135.76 | 3.40 | 134.49 | 6.55 | 128.19 | 79 |
| 150A | 6” | 168.3 | 2.77 | 162.74 | 3.40 | 161.47 | 7.11 | 154.05 | 95 |
| 200A | 8” | 219.1 | 2.77 | 213.54 | 3.76 | 211.56 | 8.18 | 202.72 | 127 |
| 250A | 10” | 273.0 | 3.40 | 266.24 | 4.19 | 264.67 | 9.27 | 254.51 | 159 |
| 300A | 12” | 323.8 | 3.96 | 315.93 | 4.57 | 314.71 | 9.52 | 304.80 | 190 |
| 350A | 14” | 355.6 | 3.96 | 347.68 | 4.78 | 346.05 | ----- | ----- | 222 |
| 400A | 16’ | 406.4 | 4.19 | 398.02 | 4.78 | 396.85 | ----- | ----- | 254 |
| 450A | 18” | 457.0 | 4.19 | 448.82 | 4.78 | 447.65 | ----- | ----- | 286 |
| 500A | 20” | 508.0 | 4.78 | 498.45 | 5.54 | 496.93 | ----- | ----- | 318 |
| 550A | 22” | 559.0 | 4.78 | 549.25 | 5.54 | 547.73 | ----- | ----- | 343 |
| 600A | 24” | 610.0 | 5.54 | 598.53 | 6.35 | 596.90 | ----- | ----- | 381 |
| 650A | 26” | 660.0 | ----- | ----- | ----- | ----- | ----- | ----- | 406 |
| 700A | 28” | 711.0 | ----- | ----- | ----- | ----- | ----- | ----- | 438 |
| 750A | 30” | 762.0 | 6.35 | 749.30 | 7.92 | 746.15 | ----- | ----- | 470 |
| 800A | 32” | 813.0 | ----- | ----- | ----- | ----- | ----- | ----- | 502 |

**JIS** Unit:mm

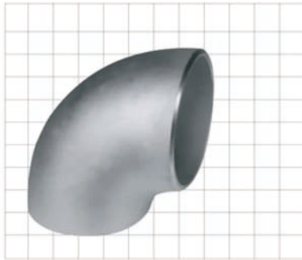
| NPS | | Outside diam OD | SCH 5S | | SCH 10S | | SCH 40S | | Center to end H |
|---|---|---|---|---|---|---|---|---|---|
| A | B | | Thickness T | ID | Thickness T | ID | Thickness T | ID | |
| 15A | 1/2” | 21.7 | 1.65 | 18.4 | 2.1 | 17.5 | 2.8 | 16.1 | 15.8 |
| 20A | 3/4” | 27.2 | 1.65 | 23.9 | 2.1 | 23.0 | 2.9 | 21.4 | 15.8 |
| 25A | 1” | 34.0 | 1.65 | 30.7 | 2.8 | 28.4 | 3.4 | 27.2 | 15.8 |
| 32A | 1.1/4” | 42.7 | 1.65 | 39.4 | 2.8 | 37.1 | 3.6 | 35.5 | 19.7 |
| 40A | 1.1/2” | 48.6 | 1.65 | 45.3 | 2.8 | 43.0 | 3.7 | 41.2 | 23.7 |
| 50A | 2” | 60.5 | 1.65 | 57.2 | 2.8 | 54.9 | 3.9 | 52.7 | 31.6 |
| 65A | 2.1/2” | 76.3 | 2.1 | 72.1 | 3.0 | 70.3 | 5.2 | 65.9 | 39.5 |
| 80A | 3” | 89.1 | 2.1 | 84.9 | 3.0 | 83.1 | 5.5 | 78.1 | 47.3 |
| 90A | 3.1/2” | 101.6 | 2.1 | 97.4 | 3.0 | 95.6 | 5.7 | 90.2 | 55.3 |
| 100A | 4” | 114.3 | 2.1 | 110.1 | 3.0 | 108.3 | 6.0 | 102.3 | 63.1 |
| 125A | 5” | 139.8 | 2.8 | 134.2 | 3.4 | 133.0 | 6.6 | 126.6 | 78.9 |
| 150A | 6” | 165.2 | 2.8 | 159.6 | 3.4 | 158.4 | 7.1 | 151 | 94.7 |
| 200A | 8” | 216.3 | 2.8 | 210.7 | 4.0 | 208.3 | 8.2 | 199.9 | 126.3 |
| 250A | 10” | 267.4 | 3.4 | 260.6 | 4.0 | 259.4 | 9.3 | 248.8 | 157.8 |
| 300A | 12” | 318.5 | 4.0 | 310.5 | 4.5 | 309.5 | 10.3 | 297.9 | 189.4 |
| 350A | 14” | 355.6 | 4.0 | 347.6 | 5.0 | 345.6 | 11.1 | 333.4 | 220.9 |
| 400A | 16’ | 406.4 | 4.5 | 397.4 | 5.0 | 396.4 | 12.7 | 381 | 252.5 |
| 450A | 18” | 457.2 | 4.5 | 448.2 | 5.0 | 447.2 | 14.3 | 428.6 | 284.1 |
| 500A | 20” | 508.0 | 5.0 | 498.0 | 5.5 | 497.0 | 15.1 | 477.8 | 315.6 |
| 550A | 22” | 558.8 | 5.0 | 548.8 | 5.5 | 547.8 | 15.9 | 527 | 347.2 |
| 600A | 24” | 609.6 | 5.5 | 598.6 | 6.5 | 596.6 | 17.5 | 574.6 | 378.7 |
| 650A | 26” | 660.4 | 5.5 | 649.4 | 8.0 | 644.4 | 18.9 | 622.6 | 410.3 |
| 700A | 28” | 711.2 | 5.5 | 700.2 | 8.0 | 695.2 | ----- | ----- | 441.9 |
| 750A | 30” | 762.0 | 6.5 | 749.0 | 8.0 | 746.0 | ----- | ----- | 473.4 |
| 800A | 32” | 812.8 | ----- | ----- | 8.0 | 796.8 | ----- | ----- | 505 |

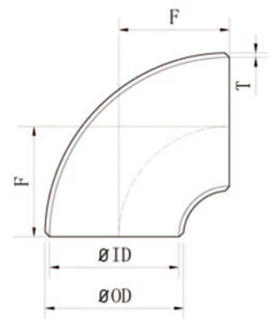




## ■ 90° SHORT RADIUS ELBOWS

### 90E(S) OR 90SR






**GB** Unit:mm

| NPS | | Outside diam | | SCH 5S | | | SCH 10S | | | SCH 40S | | | Center to end H |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | OD Ⅰ | OD Ⅱ | Thickness T | ID Ⅰ | ID Ⅱ | Thickness T | ID Ⅰ | ID Ⅱ | Thickness T | ID Ⅰ | ID Ⅱ | |
| 15A | 1/2” | 21.3 | 18.00 | 1.65 | 18.03 | 14.70 | 2.11 | 16.43 | 17.08 | 2.77 | 15.80 | 12.46 | ----- |
| 20A | 3/4” | 26.9 | 25.00 | 1.65 | 23.37 | 21.70 | 2.11 | 22.45 | 22.68 | 2.87 | 20.93 | 19.26 | ----- |
| 25A | 1” | 33.7 | 32.00 | 1.65 | 30.10 | 28.70 | 2.77 | 27.86 | 28.16 | 3.38 | 26.64 | 25.24 | 25 |
| 32A | 1.1/4” | 42.4 | 38.00 | 1.65 | 38.86 | 34.70 | 2.77 | 36.63 | 36.86 | 3.56 | 35.05 | 30.88 | 32 |
| 40A | 1.1/2” | 48.3 | 45.00 | 1.65 | 44.96 | 41.70 | 2.77 | 42.72 | 42.76 | 3.68 | 40.89 | 37.64 | 38 |
| 50A | 2” | 60.3 | 57.00 | 1.65 | 57.02 | 53.70 | 2.77 | 54.79 | 54.76 | 3.91 | 52.50 | 49.18 | 51 |
| 65A | 2.1/2” | 73.0 | 76.00 | 2.11 | 68.81 | 71.78 | 3.05 | 66.93 | 66.90 | 5.16 | 62.71 | 65.68 | 64 |
| 80A | 3” | 88.9 | 89.00 | 2.11 | 84.68 | 84.78 | 3.05 | 82.80 | 82.80 | 5.49 | 77.93 | 78.02 | 76 |
| 90A | 3.1/2” | 101.6 | ----- | 2.11 | 97.38 | ----- | 3.05 | 95.50 | 95.50 | 5.74 | 90.12 | ----- | 89 |
| 100A | 4” | 114.3 | 108.00 | 2.11 | 112.19 | 103.78 | 3.05 | 108.20 | 108.20 | 6.02 | 102.26 | 95.96 | 102 |
| 125A | 5” | 141.3 | 133.00 | 2.77 | 135.76 | 127.46 | 3.40 | 134.49 | 134.50 | 6.55 | 128.19 | 119.90 | 127 |
| 150A | 6” | 168.3 | 159.00 | 2.77 | 162.74 | 153.46 | 3.40 | 161.47 | 161.50 | 7.11 | 154.05 | 144.78 | 152 |
| 200A | 8” | 219.1 | 219.00 | 2.77 | 213.54 | 213.46 | 3.76 | 211.56 | 211.58 | 8.18 | 202.72 | 202.64 | 203 |
| 250A | 10” | 273.0 | 273.00 | 3.40 | 266.24 | 266.20 | 4.19 | 264.67 | 264.62 | 9.27 | 254.51 | 254.46 | 254 |
| 300A | 12” | 323.9 | 325.00 | 3.96 | 315.93 | 317.08 | 4.57 | 314.71 | 314.76 | 9.53 | 304.80 | 305.96 | 305 |
| 350A | 14” | 355.6 | 377.00 | 3.96 | 347.68 | 369.09 | 4.78 | 346.05 | 346.04 | ----- | ----- | ----- | 356 |
| 400A | 16’ | 406.4 | 426.00 | 4.19 | 398.02 | 417.62 | 4.78 | 396.85 | 396.84 | ----- | ----- | ----- | 406 |
| 450A | 18” | 457.0 | 480.00 | 4.19 | 448.82 | 471.62 | 4.78 | 447.65 | 447.44 | ----- | ----- | ----- | 457 |
| 500A | 20” | 508.0 | 530.00 | 4.78 | 498.45 | 520.44 | 5.54 | 496.93 | 496.92 | ----- | ----- | ----- | 508 |
| 550A | 22” | 559.0 | ----- | 4.78 | 549.25 | ----- | 5.54 | 547.73 | 547.92 | ----- | ----- | ----- | 559 |
| 600A | 24” | 610.0 | 630.00 | 5.54 | 598.53 | 618.92 | 6.35 | 596.90 | 597.30 | ----- | ----- | ----- | 610 |

**ASME** Unit:mm

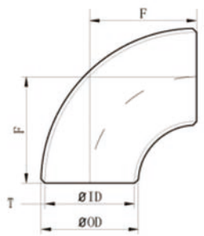
| NPS | | Outside diam OD | SCH 5S | | SCH 10S | | SCH 40S | | Center to end H |
|---|---|---|---|---|---|---|---|---|---|
| A | B | | Thickness T | ID | Thickness T | ID | Thickness T | ID | |
| 15A | 1/2” | 21.3 | 1.65 | 18.03 | 2.11 | 16.43 | 2.77 | 15.80 | ----- |
| 20A | 3/4” | 26.7 | 1.65 | 23.37 | 2.11 | 22.45 | 2.87 | 20.93 | ----- |
| 25A | 1” | 33.4 | 1.65 | 30.10 | 2.77 | 27.86 | 3.38 | 26.64 | 25 |
| 32A | 1.1/4” | 42.2 | 1.65 | 38.86 | 2.77 | 36.63 | 3.56 | 35.05 | 32 |
| 40A | 1.1/2” | 48.3 | 1.65 | 44.96 | 2.77 | 42.72 | 3.68 | 40.89 | 38 |
| 50A | 2” | 60.3 | 1.65 | 57.02 | 2.77 | 54.79 | 3.91 | 52.50 | 51 |
| 65A | 2.1/2” | 73.0 | 2.11 | 68.81 | 3.05 | 66.93 | 5.16 | 62.71 | 64 |
| 80A | 3” | 88.9 | 2.11 | 84.68 | 3.05 | 82.80 | 5.49 | 77.93 | 76 |
| 90A | 3.1/2” | 101.6 | 2.11 | 97.38 | 3.05 | 95.50 | 5.74 | 90.12 | 89 |
| 100A | 4” | 114.3 | 2.11 | 112.19 | 3.05 | 108.20 | 6.02 | 102.26 | 102 |
| 125A | 5” | 141.3 | 2.77 | 135.76 | 3.40 | 134.49 | 6.55 | 128.19 | 127 |
| 150A | 6” | 168.3 | 2.77 | 162.74 | 3.40 | 161.47 | 7.11 | 154.05 | 152 |
| 200A | 8” | 219.1 | 2.77 | 213.54 | 3.76 | 211.56 | 8.18 | 202.72 | 203 |
| 250A | 10” | 273.0 | 3.40 | 266.24 | 4.19 | 264.67 | 9.27 | 254.51 | 254 |
| 300A | 12” | 323.8 | 3.96 | 315.93 | 4.57 | 314.71 | 9.52 | 304.80 | 35 |
| 350A | 14” | 355.6 | 3.96 | 347.68 | 4.78 | 346.05 | ----- | ----- | 356 |
| 400A | 16’ | 406.4 | 4.19 | 398.02 | 4.78 | 396.85 | ----- | ----- | 406 |
| 450A | 18” | 457.0 | 4.19 | 448.82 | 4.78 | 447.65 | ----- | ----- | 457 |
| 500A | 20” | 508.0 | 4.78 | 498.45 | 5.54 | 496.93 | ----- | ----- | 508 |
| 550A | 22” | 559.0 | 4.78 | 549.25 | 5.54 | 547.73 | ----- | ----- | 559 |
| 600A | 24” | 610.0 | 5.54 | 598.53 | 6.35 | 596.90 | ----- | ----- | 610 |

**JIS** Unit:mm

| NPS | | Outside diam OD | SCH 5S | | SCH 10S | | SCH 40S | | Center to end H |
|---|---|---|---|---|---|---|---|---|---|
| A | B | | Thickness T | ID | Thickness T | ID | Thickness T | ID | |
| 15A | 1/2” | 21.7 | 1.65 | 18.4 | 2.1 | 17.5 | 2.8 | 16.1 | ----- |
| 20A | 3/4” | 27.2 | 1.65 | 23.9 | 2.1 | 23.0 | 2.9 | 21.4 | ----- |
| 25A | 1” | 34.0 | 1.65 | 30.7 | 2.8 | 28.4 | 3.4 | 27.2 | 25.4 |
| 32A | 1.1/4” | 42.7 | 1.65 | 39.4 | 2.8 | 37.1 | 3.6 | 35.5 | 31.8 |
| 40A | 1.1/2” | 48.6 | 1.65 | 45.3 | 2.8 | 43.0 | 3.7 | 41.2 | 38.1 |
| 50A | 2” | 60.5 | 1.65 | 57.2 | 2.8 | 54.9 | 3.9 | 52.7 | 50.8 |
| 65A | 2.1/2” | 76.3 | 2.1 | 72.1 | 3.0 | 70.3 | 5.2 | 65.9 | 63.5 |
| 80A | 3” | 89.1 | 2.1 | 84.9 | 3.0 | 83.1 | 5.5 | 78.1 | 76.2 |
| 90A | 3.1/2” | 101.6 | 2.1 | 97.4 | 3.0 | 95.6 | 5.7 | 90.2 | 88.9 |
| 100A | 4” | 114.3 | 2.1 | 110.1 | 3.0 | 108.3 | 6.0 | 102.3 | 101.6 |
| 125A | 5” | 139.8 | 2.8 | 134.2 | 3.4 | 133.0 | 6.6 | 126.6 | 127 |
| 150A | 6” | 165.2 | 2.8 | 159.6 | 3.4 | 158.4 | 7.1 | 151 | 152.4 |
| 200A | 8” | 216.3 | 2.8 | 210.7 | 4.0 | 208.3 | 8.2 | 199.9 | 203.2 |
| 250A | 10” | 267.4 | 3.4 | 260.6 | 4.0 | 259.4 | 9.3 | 248.8 | 254 |
| 300A | 12” | 318.5 | 4.0 | 310.5 | 4.5 | 309.5 | 10.3 | 297.9 | 34.8 |
| 350A | 14” | 355.6 | 4.0 | 347.6 | 5.0 | 345.6 | 11.1 | 333.4 | 355.6 |
| 400A | 16’ | 406.4 | 4.5 | 397.4 | 5.0 | 396.4 | 12.7 | 381 | 406.4 |
| 450A | 18” | 457.2 | 4.5 | 448.2 | 5.0 | 447.2 | 14.3 | 428.6 | 457.2 |
| 500A | 20” | 508.0 | 5.0 | 498.0 | 5.5 | 497.0 | 15.1 | 477.8 | 508 |
| 550A | 22” | 558.8 | 5.0 | 548.8 | 5.5 | 547.8 | 15.9 | 527 | 558.8 |
| 600A | 24” | 609.6 | 5.5 | 598.6 | 6.5 | 596.6 | 17.5 | 574.6 | 609.6 |

## ■ 90° LONG RADIUS ELBOWS

### 90E(L) OR 90LR




**GB** Unit:mm

| NPS | | Outside diam | | SCH 5S | | | SCH 10S | | | SCH 40S | | | Center to end H |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | OD Ⅰ | OD Ⅱ | Thickness T | ID Ⅰ | ID Ⅱ | Thickness T | ID Ⅰ | ID Ⅱ | Thickness T | ID Ⅰ | ID Ⅱ | |
| 15A | 1/2” | 21.3 | 18.00 | 1.65 | 18.03 | 14.70 | 2.11 | 16.43 | 17.08 | 2.77 | 15.80 | 12.46 | 38 |
| 20A | 3/4” | 26.9 | 25.00 | 1.65 | 23.37 | 21.70 | 2.11 | 22.45 | 22.68 | 2.87 | 20.93 | 19.26 | 38 |
| 25A | 1” | 33.7 | 32.00 | 1.65 | 30.10 | 28.70 | 2.77 | 27.86 | 28.16 | 3.38 | 26.64 | 25.24 | 38 |
| 32A | 1.1/4” | 42.4 | 38.00 | 1.65 | 38.86 | 34.70 | 2.77 | 36.63 | 36.86 | 3.56 | 35.05 | 30.88 | 48 |
| 40A | 1.1/2” | 48.3 | 45.00 | 1.65 | 44.96 | 41.70 | 2.77 | 42.72 | 42.76 | 3.68 | 40.89 | 37.64 | 57 |
| 50A | 2” | 60.3 | 57.00 | 1.65 | 57.02 | 53.70 | 2.77 | 54.79 | 54.76 | 3.91 | 52.50 | 49.18 | 76 |
| 65A | 2.1/2” | 73.0 | 76.00 | 2.11 | 68.81 | 71.78 | 3.05 | 66.93 | 66.90 | 5.16 | 62.71 | 65.68 | 95 |
| 80A | 3” | 88.9 | 89.00 | 2.11 | 84.68 | 84.78 | 3.05 | 82.80 | 82.80 | 5.49 | 77.93 | 78.02 | 114 |
| 90A | 3.1/2” | 101.6 | ----- | 2.11 | 97.38 | ----- | 3.05 | 95.50 | 95.50 | 5.74 | 90.12 | ----- | 133 |
| 100A | 4” | 114.3 | 108.00 | 2.11 | 112.19 | 103.78 | 3.05 | 108.20 | 108.20 | 6.02 | 102.26 | 95.96 | 152 |
| 125A | 5” | 141.3 | 133.00 | 2.77 | 135.76 | 127.46 | 3.40 | 134.49 | 134.50 | 6.55 | 128.19 | 119.90 | 190 |
| 150A | 6” | 168.3 | 159.00 | 2.77 | 162.74 | 153.46 | 3.40 | 161.47 | 161.50 | 7.11 | 154.05 | 144.78 | 229 |
| 200A | 8” | 219.1 | 219.00 | 2.77 | 213.54 | 213.46 | 3.76 | 211.56 | 211.58 | 8.18 | 202.72 | 202.64 | 305 |
| 250A | 10” | 273.0 | 273.00 | 3.40 | 266.24 | 266.20 | 4.19 | 264.67 | 264.62 | 9.27 | 254.51 | 254.46 | 381 |
| 300A | 12” | 323.9 | 325.00 | 3.96 | 315.93 | 317.08 | 4.57 | 314.71 | 314.76 | 9.53 | 304.80 | 305.96 | 457 |
| 350A | 14” | 355.6 | 377.00 | 3.96 | 347.68 | 369.09 | 4.78 | 346.05 | 346.04 | ----- | ----- | ----- | 533 |
| 400A | 16’ | 406.4 | 426.00 | 4.19 | 398.02 | 417.62 | 4.78 | 396.85 | 396.84 | ----- | ----- | ----- | 610 |
| 450A | 18” | 457.0 | 480.00 | 4.19 | 448.82 | 471.62 | 4.78 | 447.65 | 447.44 | ----- | ----- | ----- | 686 |
| 500A | 20” | 508.0 | 530.00 | 4.78 | 498.45 | 520.44 | 5.54 | 496.93 | 496.92 | ----- | ----- | ----- | 762 |
| 550A | 22” | 559.0 | ----- | 4.78 | 549.25 | ----- | 5.54 | 547.73 | 547.92 | ----- | ----- | ----- | 838 |
| 600A | 24” | 610.0 | 630.00 | 5.54 | 598.53 | 618.92 | 6.35 | 596.90 | 597.30 | ----- | ----- | ----- | 914 |

**ASME** Unit:mm

| NPS | | Outside diam OD | SCH 5S | | SCH 10S | | SCH 40S | | Center to end H |
|---|---|---|---|---|---|---|---|---|---|
| A | B | | Thickness T | ID | Thickness T | ID | Thickness T | ID | |
| 15A | 1/2” | 21.3 | 1.65 | 18.03 | 2.11 | 16.43 | 2.77 | 15.80 | 38 |
| 20A | 3/4” | 26.7 | 1.65 | 23.37 | 2.11 | 22.45 | 2.87 | 20.93 | 38 |
| 25A | 1” | 33.4 | 1.65 | 30.10 | 2.77 | 27.86 | 3.38 | 26.64 | 38 |
| 32A | 1.1/4” | 42.2 | 1.65 | 38.86 | 2.77 | 36.63 | 3.56 | 35.05 | 48 |
| 40A | 1.1/2” | 48.3 | 1.65 | 44.96 | 2.77 | 42.72 | 3.68 | 40.89 | 57 |
| 50A | 2” | 60.3 | 1.65 | 57.02 | 2.77 | 54.79 | 3.91 | 52.50 | 76 |
| 65A | 2.1/2” | 73.0 | 2.11 | 68.81 | 3.05 | 66.93 | 5.16 | 62.71 | 95 |
| 80A | 3” | 88.9 | 2.11 | 84.68 | 3.05 | 82.80 | 5.49 | 77.93 | 114 |
| 90A | 3.1/2” | 101.6 | 2.11 | 97.38 | 3.05 | 95.50 | 5.74 | 90.12 | 133 |
| 100A | 4” | 114.3 | 2.11 | 112.19 | 3.05 | 108.20 | 6.02 | 102.26 | 152 |
| 125A | 5” | 141.3 | 2.77 | 135.76 | 3.40 | 134.49 | 6.55 | 128.19 | 190 |
| 150A | 6” | 168.3 | 2.77 | 162.74 | 3.40 | 161.47 | 7.11 | 154.05 | 229 |
| 200A | 8” | 219.1 | 2.77 | 213.54 | 3.76 | 211.56 | 8.18 | 202.72 | 305 |
| 250A | 10” | 273.0 | 3.40 | 266.24 | 4.19 | 264.67 | 9.27 | 254.51 | 381 |
| 300A | 12” | 323.8 | 3.96 | 315.93 | 4.57 | 314.71 | 9.52 | 304.80 | 457 |
| 350A | 14” | 355.6 | 3.96 | 347.68 | 4.78 | 346.05 | ----- | ----- | 533 |
| 400A | 16’ | 406.4 | 4.19 | 398.02 | 4.78 | 396.85 | ----- | ----- | 610 |
| 450A | 18” | 457.0 | 4.19 | 448.82 | 4.78 | 447.65 | ----- | ----- | 686 |
| 500A | 20” | 508.0 | 4.78 | 498.45 | 5.54 | 496.93 | ----- | ----- | 762 |
| 550A | 22” | 559.0 | 4.78 | 549.25 | 5.54 | 547.73 | ----- | ----- | 838 |
| 600A | 24” | 610.0 | 5.54 | 598.53 | 6.35 | 596.90 | ----- | ----- | 914 |

**JIS** Unit:mm

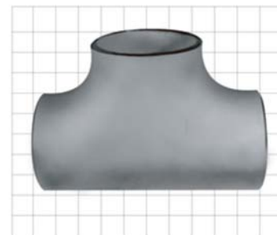
| NPS | | Outside diam OD | SCH 5S | | SCH 10S | | SCH 40S | | Center to end H |
|---|---|---|---|---|---|---|---|---|---|
| A | B | | Thickness T | ID | Thickness T | ID | Thickness T | ID | |
| 15A | 1/2” | 21.7 | 1.65 | 18.4 | 2.1 | 17.5 | 2.8 | 16.1 | 38.1 |
| 20A | 3/4” | 27.2 | 1.65 | 23.9 | 2.1 | 23.0 | 2.9 | 21.4 | 38.1 |
| 25A | 1” | 34.0 | 1.65 | 30.7 | 2.8 | 28.4 | 3.4 | 27.2 | 38.1 |
| 32A | 1.1/4” | 42.7 | 1.65 | 39.4 | 2.8 | 37.1 | 3.6 | 35.5 | 47.6 |
| 40A | 1.1/2” | 48.6 | 1.65 | 45.3 | 2.8 | 43.0 | 3.7 | 41.2 | 57.2 |
| 50A | 2” | 60.5 | 1.65 | 57.2 | 2.8 | 54.9 | 3.9 | 52.7 | 76.2 |
| 65A | 2.1/2” | 76.3 | 2.1 | 72.1 | 3.0 | 70.3 | 5.2 | 65.9 | 95.3 |
| 80A | 3” | 89.1 | 2.1 | 84.9 | 3.0 | 83.1 | 5.5 | 78.1 | 114.3 |
| 90A | 3.1/2” | 101.6 | 2.1 | 97.4 | 3.0 | 95.6 | 5.7 | 90.2 | 133.4 |
| 100A | 4” | 114.3 | 2.1 | 110.1 | 3.0 | 108.3 | 6.0 | 102.3 | 152.4 |
| 125A | 5” | 139.8 | 2.8 | 134.2 | 3.4 | 133.0 | 6.6 | 126.6 | 190.5 |
| 150A | 6” | 165.2 | 2.8 | 159.6 | 3.4 | 158.4 | 7.1 | 151 | 228.6 |
| 200A | 8” | 216.3 | 2.8 | 210.7 | 4.0 | 208.3 | 8.2 | 199.9 | 304.8 |
| 250A | 10” | 267.4 | 3.4 | 260.6 | 4.0 | 259.4 | 9.3 | 248.8 | 381 |
| 300A | 12” | 318.5 | 4.0 | 310.5 | 4.5 | 309.5 | 10.3 | 297.9 | 457.2 |
| 350A | 14” | 355.6 | 4.0 | 347.6 | 5.0 | 345.6 | 11.1 | 333.4 | 533.4 |
| 400A | 16’ | 406.4 | 4.5 | 397.4 | 5.0 | 396.4 | 12.7 | 381 | 609.6 |
| 450A | 18” | 457.2 | 4.5 | 448.2 | 5.0 | 447.2 | 14.3 | 428.6 | 685.8 |
| 500A | 20” | 508.0 | 5.0 | 498.0 | 5.5 | 497.0 | 15.1 | 477.8 | 762 |
| 550A | 22” | 558.8 | 5.0 | 548.8 | 5.5 | 547.8 | 15.9 | 527 | 838.2 |
| 600A | 24” | 609.6 | 5.5 | 598.6 | 6.5 | 596.6 | 17.5 | 574.6 | 914.4 |

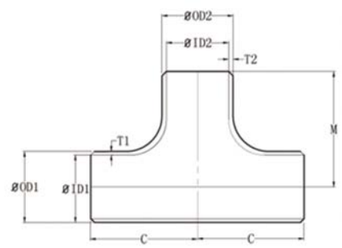




## ■ STRAIGHT TEES

### TEE OR T(S)






**GB** Unit:mm

| NPS | | Outside diam | | SCH 5S | | | SCH 10S | | | SCH 40S | | | H | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | OD Ⅰ | OD Ⅱ | Thickness T | ID Ⅰ | ID Ⅱ | Thickness T | ID Ⅰ | ID Ⅱ | Thickness T | ID Ⅰ | ID Ⅱ | C | M |
| 15A | 1/2” | 21.3 | 18.00 | 1.65 | 18.03 | 14.70 | 2.11 | 16.43 | 17.08 | 2.77 | 15.80 | 12.46 | 25 | 25 |
| 20A | 3/4” | 26.9 | 25.00 | 1.65 | 23.37 | 21.70 | 2.11 | 22.45 | 22.68 | 2.87 | 20.93 | 19.26 | 29 | 29 |
| 25A | 1” | 33.7 | 32.00 | 1.65 | 30.10 | 28.70 | 2.77 | 27.86 | 28.16 | 3.38 | 26.64 | 25.24 | 38 | 38 |
| 32A | 1.1/4” | 42.4 | 38.00 | 1.65 | 38.86 | 34.70 | 2.77 | 36.63 | 36.86 | 3.56 | 35.05 | 30.88 | 48 | 48 |
| 40A | 1.1/2” | 48.3 | 45.00 | 1.65 | 44.96 | 41.70 | 2.77 | 42.72 | 42.76 | 3.68 | 40.89 | 37.64 | 57 | 57 |
| 50A | 2” | 60.3 | 57.00 | 1.65 | 57.02 | 53.70 | 2.77 | 54.79 | 54.76 | 3.91 | 52.50 | 49.18 | 64 | 64 |
| 65A | 2.1/2” | 73.0 | 76.00 | 2.11 | 68.81 | 71.78 | 3.05 | 66.93 | 66.90 | 5.16 | 62.71 | 65.68 | 76 | 76 |
| 80A | 3” | 88.9 | 89.00 | 2.11 | 84.68 | 84.78 | 3.05 | 82.80 | 82.80 | 5.49 | 77.93 | 78.02 | 86 | 86 |
| 90A | 3.1/2” | 101.6 | ----- | 2.11 | 97.38 | ----- | 3.05 | 95.50 | 95.50 | 5.74 | 90.12 | ----- | 95 | 95 |
| 100A | 4” | 114.3 | 108.00 | 2.11 | 112.19 | 103.78 | 3.05 | 108.20 | 108.20 | 6.02 | 102.26 | 95.96 | 105 | 105 |
| 125A | 5” | 141.3 | 133.00 | 2.77 | 135.76 | 127.46 | 3.40 | 134.49 | 134.50 | 6.55 | 128.19 | 119.90 | 124 | 124 |
| 150A | 6” | 168.3 | 159.00 | 2.77 | 162.74 | 153.46 | 3.40 | 161.47 | 161.50 | 7.11 | 154.05 | 144.78 | 143 | 143 |
| 200A | 8” | 219.1 | 219.00 | 2.77 | 213.54 | 213.46 | 3.76 | 211.56 | 211.58 | 8.18 | 202.72 | 202.64 | 178 | 178 |
| 250A | 10” | 273.0 | 273.00 | 3.40 | 266.24 | 266.20 | 4.19 | 264.67 | 264.62 | 9.27 | 254.51 | 254.46 | 216 | 216 |
| 300A | 12” | 323.9 | 325.00 | 3.96 | 315.93 | 317.08 | 4.57 | 314.71 | 314.76 | 9.53 | 304.80 | 305.96 | 254 | 254 |
| 350A | 14” | 355.6 | 377.00 | 3.96 | 347.68 | 369.09 | 4.78 | 346.05 | 346.04 | ----- | ----- | ----- | 279 | 279 |
| 400A | 16’ | 406.4 | 426.00 | 4.19 | 398.02 | 417.62 | 4.78 | 396.85 | 396.84 | ----- | ----- | ----- | 305 | 305 |
| 450A | 18” | 457.0 | 480.00 | 4.19 | 448.82 | 471.62 | 4.78 | 447.65 | 447.44 | ----- | ----- | ----- | 343 | 343 |
| 500A | 20” | 508.0 | 530.00 | 4.78 | 498.45 | 520.44 | 5.54 | 496.93 | 496.92 | ----- | ----- | ----- | 381 | 381 |
| 550A | 22” | 559.0 | ----- | 4.78 | 549.25 | ----- | 5.54 | 547.73 | 547.92 | ----- | ----- | ----- | 419 | 419 |
| 600A | 24” | 610.0 | 630.00 | 5.54 | 598.53 | 618.92 | 6.35 | 596.90 | 597.30 | ----- | ----- | ----- | 432 | 432 |

**ASME** Unit:mm

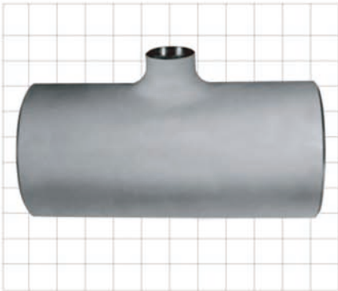
| NPS | | Outside diam OD | SCH 5S | | SCH 10S | | SCH 40S | | H | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | B | | Thickness T | ID | Thickness T | ID | Thickness T | ID | C | M |
| 15A | 1/2” | 21.3 | 1.65 | 18.03 | 2.11 | 16.43 | 2.77 | 15.80 | 25 | 25 |
| 20A | 3/4” | 26.7 | 1.65 | 23.37 | 2.11 | 22.45 | 2.87 | 20.93 | 29 | 29 |
| 25A | 1” | 33.4 | 1.65 | 30.10 | 2.77 | 27.86 | 3.38 | 26.64 | 38 | 38 |
| 32A | 1.1/4” | 42.2 | 1.65 | 38.86 | 2.77 | 36.63 | 3.56 | 35.05 | 48 | 48 |
| 40A | 1.1/2” | 48.3 | 1.65 | 44.96 | 2.77 | 42.72 | 3.68 | 40.89 | 57 | 57 |
| 50A | 2” | 60.3 | 1.65 | 57.02 | 2.77 | 54.79 | 3.91 | 52.50 | 64 | 64 |
| 65A | 2.1/2” | 73.0 | 2.11 | 68.81 | 3.05 | 66.93 | 5.16 | 62.71 | 76 | 76 |
| 80A | 3” | 88.9 | 2.11 | 84.68 | 3.05 | 82.80 | 5.49 | 77.93 | 86 | 86 |
| 90A | 3.1/2” | 101.6 | 2.11 | 97.38 | 3.05 | 95.50 | 5.74 | 90.12 | 95 | 95 |
| 100A | 4” | 114.3 | 2.11 | 112.19 | 3.05 | 108.20 | 6.02 | 102.26 | 105 | 105 |
| 125A | 5” | 141.3 | 2.77 | 135.76 | 3.40 | 134.49 | 6.55 | 128.19 | 124 | 124 |
| 150A | 6” | 168.3 | 2.77 | 162.74 | 3.40 | 161.47 | 7.11 | 154.05 | 143 | 143 |
| 200A | 8” | 219.1 | 2.77 | 213.54 | 3.76 | 211.56 | 8.18 | 202.72 | 178 | 178 |
| 250A | 10” | 273.0 | 3.40 | 266.24 | 4.19 | 264.67 | 9.27 | 254.51 | 216 | 216 |
| 300A | 12” | 323.8 | 3.96 | 315.93 | 4.57 | 314.71 | 9.52 | 304.80 | 254 | 254 |
| 350A | 14” | 355.6 | 3.96 | 347.68 | 4.78 | 346.05 | ----- | ----- | 279 | 279 |
| 400A | 16’ | 406.4 | 4.19 | 398.02 | 4.78 | 396.85 | ----- | ----- | 305 | 305 |
| 450A | 18” | 457.0 | 4.19 | 448.82 | 4.78 | 447.65 | ----- | ----- | 343 | 343 |
| 500A | 20” | 508.0 | 4.78 | 498.45 | 5.54 | 496.93 | ----- | ----- | 381 | 381 |
| 550A | 22” | 559.0 | 4.78 | 549.25 | 5.54 | 547.73 | ----- | ----- | 419 | 419 |
| 600A | 24” | 610.0 | 5.54 | 598.53 | 6.35 | 596.90 | ----- | ----- | 432 | 432 |

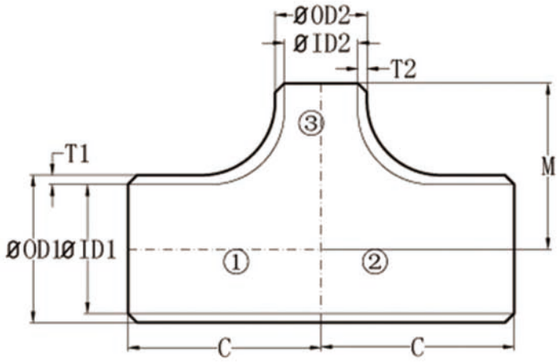
**JIS** Unit:mm

| NPS | | Outside diam OD | SCH 5S | | SCH 10S | | SCH 40S | | H | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | B | | Thickness T | ID | Thickness T | ID | Thickness T | ID | C | M |
| 15A | 1/2” | 21.7 | 1.65 | 18.4 | 2.1 | 17.5 | 2.8 | 16.1 | 25.4 | 25.4 |
| 20A | 3/4” | 27.2 | 1.65 | 23.9 | 2.1 | 23.0 | 2.9 | 21.4 | 28.6 | 28.6 |
| 25A | 1” | 34.0 | 1.65 | 30.7 | 2.8 | 28.4 | 3.4 | 27.2 | 38.1 | 38.1 |
| 32A | 1.1/4” | 42.7 | 1.65 | 39.4 | 2.8 | 37.1 | 3.6 | 35.5 | 47.6 | 47.6 |
| 40A | 1.1/2” | 48.6 | 1.65 | 45.3 | 2.8 | 43.0 | 3.7 | 41.2 | 57.2 | 57.2 |
| 50A | 2” | 60.5 | 1.65 | 57.2 | 2.8 | 54.9 | 3.9 | 52.7 | 63.5 | 63.5 |
| 65A | 2.1/2” | 76.3 | 2.1 | 72.1 | 3.0 | 70.3 | 5.2 | 65.9 | 76.2 | 76.2 |
| 80A | 3” | 89.1 | 2.1 | 84.9 | 3.0 | 83.1 | 5.5 | 78.1 | 85.7 | 85.7 |
| 90A | 3.1/2” | 101.6 | 2.1 | 97.4 | 3.0 | 95.6 | 5.7 | 90.2 | 95.3 | 95.3 |
| 100A | 4” | 114.3 | 2.1 | 110.1 | 3.0 | 108.3 | 6.0 | 102.3 | 104.8 | 104.8 |
| 125A | 5” | 139.8 | 2.8 | 134.2 | 3.4 | 133.0 | 6.6 | 126.6 | 123.8 | 123.8 |
| 150A | 6” | 165.2 | 2.8 | 159.6 | 3.4 | 158.4 | 7.1 | 151 | 142.9 | 142.9 |
| 200A | 8” | 216.3 | 2.8 | 210.7 | 4.0 | 208.3 | 8.2 | 199.9 | 177.8 | 177.8 |
| 250A | 10” | 267.4 | 3.4 | 260.6 | 4.0 | 259.4 | 9.3 | 248.8 | 215.9 | 215.9 |
| 300A | 12” | 318.5 | 4.0 | 310.5 | 4.5 | 309.5 | 10.3 | 297.9 | 254 | 254 |
| 350A | 14” | 355.6 | 4.0 | 347.6 | 5.0 | 345.6 | 11.1 | 333.4 | 279.4 | 279.4 |
| 400A | 16’ | 406.4 | 4.5 | 397.4 | 5.0 | 396.4 | 12.7 | 381 | 304.8 | 304.8 |
| 450A | 18” | 457.2 | 4.5 | 448.2 | 5.0 | 447.2 | 14.3 | 428.6 | 342.9 | 342.9 |
| 500A | 20” | 508.0 | 5.0 | 498.0 | 5.5 | 497.0 | 15.1 | 477.8 | 381 | 381 |
| 550A | 22” | 558.8 | 5.0 | 548.8 | 5.5 | 547.8 | 15.9 | 527 | 419.1 | 419.1 |
| 600A | 24” | 609.6 | 5.5 | 598.6 | 6.5 | 596.6 | 17.5 | 574.6 | 431.8 | 431.8 |

## REDUCING OUTLET TEES

### TR OR R-TEE






**GB** Unit:mm

| Size | | OD1 | | OD2 | | TR | |
|---|---|---|---|---|---|---|---|
| Size A | Size B | I | II | I | II | C | M |
| 20Ax10A | 3/4x3/8 | 26.9 | 25 | 17.3 | 14 | 29 | 29 |
| 20Ax15A | 3/4x1/2 | 26.9 | 25 | 21.3 | 18 | 29 | 29 |
| 15Ax8A | 1/2x1/4 | 21.3 | 18 | 13.7 | 10 | 25 | 25 |
| 15Ax10A | 1/2x3/8 | 21.3 | 18 | 17.3 | 14 | 25 | 25 |
| 25Ax15A | 1x1/2 | 33.7 | 32 | 21.3 | 18 | 38 | 38 |
| 25Ax20A | 1x3/4 | 33.7 | 32 | 26.7 | 25 | 38 | 38 |
| 32Ax15A | 1.1/4x1/2 | 42.4 | 38 | 21.3 | 18 | 48 | 48 |
| 32Ax20A | 1.1/4x3/4 | 42.4 | 38 | 26.9 | 25 | 48 | 48 |
| 32Ax25A | 1.1/4x1 | 42.4 | 38 | 33.7 | 32 | 48 | 48 |
| 40Ax15A | 1.1/2x1/2 | 48.3 | 45 | 21.3 | 18 | 57 | 57 |
| 40Ax20A | 1.1/2x3/4 | 48.3 | 45 | 26.9 | 25 | 57 | 57 |
| 40Ax25A | 1.1/2x1 | 48.3 | 45 | 33.7 | 32 | 57 | 57 |
| 40Ax32A | 1.1/2x1.1/4 | 48.3 | 45 | 42.4 | 38 | 57 | 57 |
| 50Ax20A | 2x3/4 | 60.3 | 57 | 26.9 | 25 | 64 | 44 |
| 50Ax25A | 2x1 | 60.3 | 57 | 33.7 | 32 | 64 | 51 |
| 50Ax32A | 2x1.1/4 | 60.3 | 57 | 42.4 | 38 | 64 | 57 |
| 50Ax40A | 2x1.1/2 | 60.3 | 57 | 48.3 | 45 | 64 | 60 |
| 65Ax25A | 2.1/2x1 | 73.0 | 76 | 33.7 | 32 | 76 | 57 |
| 65Ax32A | 2.1/2x1.1/4 | 73.0 | 76 | 42.4 | 38 | 76 | 64 |
| 65Ax40A | 2.1/2x1.1/2 | 73.0 | 76 | 48.3 | 45 | 76 | 67 |
| 65Ax50A | 2.1/2x2 | 73.0 | 76 | 60.3 | 57 | 76 | 70 |
| 80Ax32A | 3x1.1/4 | 88.9 | 89 | 42.4 | 38 | 86 | 70 |
| 80Ax40A | 3x1.1/2 | 88.9 | 89 | 48.3 | 45 | 86 | 73 |
| 80Ax50A | 3x2 | 88.9 | 89 | 60.3 | 57 | 86 | 76 |
| 80Ax65A | 3x2.1/2 | 88.9 | 89 | 73.0 | 76 | 86 | 83 |
| 90Ax40A | 3.1/2x1.1/2 | 101.6 | - | 48.3 | - | 95 | 79 |
| 90Ax50A | 3.2/2x2 | 101.6 | - | 60.3 | - | 95 | 83 |
| 90Ax65A | 3.1/2x2.1/2 | 101.6 | - | 73.0 | - | 95 | 89 |
| 90Ax80A | 3.1/2x3 | 101.6 | - | 88.9 | - | 95 | 92 |
| 100Ax40A | 4x1.1/2 | 114.3 | 108 | 48.3 | 45 | 105 | 86 |
| 100Ax50A | 4x2 | 114.3 | 108 | 60.3 | 57 | 105 | 89 |
| 100Ax65A | 4x2.1/2 | 114.3 | 108 | 73.0 | 76 | 105 | 95 |
| 100Ax80A | 4x3 | 114.3 | 108 | 88.9 | 89 | 105 | 98 |
| 100Ax90A | 4x3.1/2 | 114.3 | - | 101.6 | - | 105 | 102 |
| 125Ax50A | 5x2 | 141.3 | 133 | 60.3 | 57 | 124 | 105 |
| 125Ax65A | 5x2.1/2 | 141.3 | 133 | 73.0 | 76 | 124 | 108 |
| 125Ax80A | 5x3 | 141.3 | 133 | 88.9 | 89 | 124 | 111 |
| 125Ax90A | 5x3.1/2 | 141.3 | - | 101.6 | - | 124 | 114 |
| 125Ax100A | 5x4 | 141.3 | 133 | 114.3 | 133 | 124 | 117 |
| 150Ax65A | 6x2.1/2 | 168.3 | 159.0 | 73.0 | 76.0 | 143 | 121 |
| 150Ax80A | 6x3 | 168.3 | 159.0 | 88.9 | 89.0 | 143 | 124 |
| 150Ax90A | 6x3.1/2 | 168.3 | - | 101.6 | - | 143 | 127 |
| 150Ax100A | 6x4 | 168.3 | 159.0 | 114.3 | 108.0 | 143 | 130 |
| 150Ax125A | 6x5 | 168.3 | 159.0 | 141.3 | 133.0 | 143 | 137 |

**JIS** Unit:mm

| Size | | OD1 | OD2 | TR | |
|---|---|---|---|---|---|
| Size A | Size B | m/m | m/m | C | M |
| 20Ax15A | 3/4x1/2 | 27.2 | 21.7 | 28.6 | 28.6 |
| 25Ax15A | 1x1/2 | 34.0 | 21.7 | 381 | 381 |
| 25Ax20A | 1x3/4 | 34.0 | 27.2 | 38.1 | 38.1 |
| 32Ax15A | 1.1/4x1/2 | 42.7 | 21.7 | 47.6 | 47.6 |
| 32Ax20A | 1.1/4x3/4 | 42.7 | 27.2 | 47.6 | 47.6 |
| 32Ax25A | 1.1/4x1 | 42.7 | 34.0 | 47.6 | 47.6 |
| 40Ax15A | 1.1/2x1/2 | 48.6 | 21.7 | 57.2 | 57.2 |
| 40Ax20A | 1.1/2x3/4 | 48.6 | 27.2 | 57.2 | 57.2 |
| 40Ax25A | 1.1/2x1 | 48.6 | 34.0 | 57.2 | 57.2 |
| 40Ax32A | 1.1/2x1.1/4 | 48.6 | 42.7 | 57.2 | 57.2 |
| 50Ax20A | 2x3/4 | 60.5 | 27.2 | 63.5 | 44.5 |
| 50Ax25A | 2x1 | 60.5 | 34.0 | 63.5 | 50.8 |
| 50Ax32A | 2x1.1/4 | 60.5 | 42.7 | 63.5 | 57.2 |
| 50Ax40A | 2x1.1/2 | 60.5 | 48.6 | 63.5 | 60.3 |
| 65Ax25A | 2.1/2x1 | 76.3 | 34.0 | 76.2 | 57.2 |
| 65Ax32A | 2.1/2x1.1/4 | 76.3 | 42.7 | 76.2 | 63.5 |
| 65Ax40A | 2.1/2x1.1/2 | 76.3 | 48.6 | 76.2 | 66.8 |
| 65Ax50A | 2.1/2x2 | 76.3 | 60.5 | 76.2 | 69.9 |
| 80Ax32A | 3x1.1/4 | 89.1 | 42.7 | 85.7 | 69.9 |
| 80Ax40A | 3x1.1/2 | 89.1 | 48.6 | 85.7 | 73.0 |
| 80Ax50A | 3x2 | 89.1 | 60.5 | 8.57 | 76.2 |
| 80Ax65A | 3x2.1/2 | 89.1 | 76.3 | 8.57 | 82.6 |
| 90Ax32A | 3.1/2x1.1/4 | 101.6 | 42.7 | - | - |
| 90Ax40A | 3.1/2x1.1/2 | 101.6 | 48.6 | 95.3 | 79.4 |
| 90Ax50A | 3.1/2x2 | 101.6 | 60.5 | 95.3 | 82.6 |
| 90Ax65A | 3.1/2x2.1/2 | 101.6 | 76.3 | 95.3 | 88.9 |
| 90Ax80A | 3.1/2x3 | 101.6 | 89.1 | 95.3 | 92.1 |
| 100Ax40A | 4x1.1/2 | 114.3 | 48.6 | 104.8 | 85.7 |
| 100Ax50A | 4x2 | 114.3 | 60.5 | 104.8 | 88.9 |
| 100Ax65A | 4x2.1/2 | 114.3 | 76.3 | 104.8 | 95.3 |
| 100Ax80A | 4x3 | 114.3 | 89.1 | 104.8 | 98.4 |
| 100Ax90A | 4x3.1/2 | 114.3 | 101.6 | 104.8 | 101.6 |
| 125Ax50A | 5x2 | 139.8 | 60.5 | 123.8 | 104.8 |
| 125Ax65A | 5x2.1/2 | 139.8 | 76.3 | 123.8 | 108.0 |
| 125Ax80A | 5x3 | 139.8 | 89.1 | 123.8 | 111.1 |
| 125Ax90A | 5x3.1/2 | 139.8 | 101.6 | 123.8 | 114.3 |
| 125Ax100A | 5x4 | 139.8 | 114.3 | 123.8 | 117.5 |
| 150Ax65A | 6x2.1/2 | 165.2 | 76.3 | 142.9 | 120.7 |
| 150Ax80A | 6x3 | 165.2 | 89.1 | 142.9 | 123.8 |
| 150Ax90A | 6x3.1/2 | 165.2 | 101.6 | 142.9 | 127.0 |
| 150Ax100A | 6x4 | 165.2 | 114.3 | 142.9 | 130.2 |
| 150Ax125A | 6x5 | 165.2 | 139.8 | 142.9 | 136.5 |

**ASME** Unit:mm

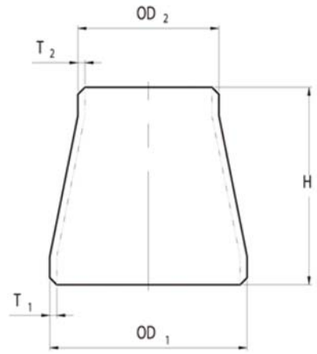
| Size | | Outside Diam | | Center to end (H) | |
|---|---|---|---|---|---|
| Size A | Size B | OD1 | OD2 | C | M |
| 20Ax10A | 3/4x3/8 | 26.7 | 17.3 | 29 | 29 |
| 20Ax15A | 3/4x1/2 | 26.7 | 21.3 | 29 | 29 |
| 15Ax8A | 1/2x1/4 | 21.3 | 13.7 | 25 | 25 |
| 15Ax10A | 1/2x3/8 | 21.3 | 17.3 | 25 | 25 |
| 25Ax15A | 1x1/2 | 33.4 | 21.3 | 38 | 38 |
| 25Ax20A | 1x3/4 | 33.4 | 26.7 | 38 | 38 |
| 32Ax15A | 1.1/4x1/2 | 42.2 | 21.3 | 48 | 48 |
| 32Ax20A | 1.1/4x3/4 | 42.2 | 26.7 | 48 | 48 |
| 32Ax25A | 1.1/4x1 | 42.2 | 33.4 | 48 | 48 |
| 40Ax15A | 1.1/2x1/2 | 48.3 | 21.3 | 57 | 57 |
| 40Ax20A | 1.1/2x3/4 | 48.3 | 26.7 | 57 | 57 |
| 40Ax25A | 1.1/2x1 | 48.3 | 33.4 | 57 | 57 |
| 40Ax32A | 1.1/2x1.1/4 | 48.3 | 42.2 | 57 | 57 |
| 50Ax20A | 2x3/4 | 60.3 | 26.7 | 64 | 44 |
| 50Ax25A | 2x1 | 60.3 | 33.4 | 64 | 51 |
| 50Ax32A | 2x1.1/4 | 60.3 | 42.2 | 64 | 57 |
| 50Ax40A | 2x1.1/2 | 60.3 | 48.3 | 64 | 60 |
| 65Ax25A | 2.1/2x1 | 73.0 | 33.4 | 76 | 57 |
| 65Ax32A | 2.1/2x1.1/4 | 73.0 | 42.2 | 76 | 64 |
| 65Ax40A | 2.1/2x1.1/2 | 73.0 | 48.3 | 76 | 67 |
| 65Ax50A | 2.1/2x2 | 73.0 | 60.3 | 76 | 70 |
| 80Ax32A | 3x1.1/4 | 88.9 | 422 | 86 | 70 |
| 80Ax40A | 3x1.1/2 | 88.9 | 48.3 | 86 | 73 |
| 80Ax50A | 3x2 | 88.9 | 60.3 | 86 | 76 |
| 80Ax65A | 3x2.1/2 | 88.9 | 73.0 | 86 | 83 |
| 90Ax40A | 3.1/2x1.1/2 | 101.6 | 48.3 | 95 | 79 |
| 90Ax50A | 3.2/2x2 | 101.6 | 60.3 | 95 | 83 |
| 90Ax65A | 3.1/2x2.1/2 | 101.6 | 73.0 | 95 | 89 |
| 90Ax80A | 3.1/2x3 | 101.6 | 88.9 | 95 | 92 |
| 100Ax40A | 4x1.1/2 | 114.3 | 48.3 | 105 | 86 |
| 100Ax50A | 4x2 | 114.3 | 60.3 | 105 | 89 |
| 100Ax65A | 4x2.1/2 | 114.3 | 73.0 | 105 | 95 |
| 100Ax80A | 4x3 | 114.3 | 88.9 | 105 | 98 |
| 100Ax90A | 4x3.1/2 | 114.3 | 101.6 | 105 | 102 |
| 125Ax50A | 5x2 | 141.3 | 60.3 | 124 | 105 |
| 125Ax65A | 5x2.1/2 | 141.3 | 73.0 | 124 | 108 |
| 125Ax80A | 5x3 | 141.3 | 88.9 | 124 | 111 |
| 125Ax90A | 5x3.1/2 | 141.3 | 101.6 | 124 | 114 |
| 125Ax100A | 5x4 | 141.3 | 114.3 | 124 | 117 |
| 150Ax65A | 6x2.1/2 | 168.3 | 73.0 | 143 | 121 |
| 150Ax80A | 6x3 | 168.3 | 88.9 | 143 | 124 |
| 150Ax90A | 6x3.1/2 | 168.3 | 101.6 | 143 | 127 |
| 150Ax100A | 6x4 | 168.3 | 114.3 | 143 | 130 |
| 150Ax125A | 6x5 | 168.3 | 141.3 | 143 | 137 |





## CON.REDUCERS

### R(C) OR CR




**GB** Unit:mm

| Size | | OD1 | | OD2 | | Center to end |
|---|---|---|---|---|---|---|
| Size A | Size B | I | II | I | II | H |
| 20Ax10A | 3/4x3/8 | 26.9 | 25 | 17.3 | 14 | 38.0 |
| 20Ax15A | 3/4x1/2 | 26.9 | 25 | 21.3 | 18 | 38.0 |
| 15Ax8A | 1/2x1/4 | 21.3 | 18 | 13.7 | 10 | - |
| 15Ax10A | 1/2x3/8 | 21.3 | 18 | 17.3 | 14 | - |
| 25Ax15A | 1x1/2 | 33.7 | 32 | 21.3 | 18 | 51.0 |
| 25Ax20A | 1x3/4 | 33.7 | 32 | 26.7 | 25 | 51.0 |
| 32Ax15A | 1.1/4x1/2 | 42.4 | 38 | 21.3 | 18 | 51.0 |
| 32Ax20A | 1.1/4x3/4 | 42.4 | 38 | 26.9 | 25 | 51.0 |
| 32Ax25A | 1.1/4x1 | 42.4 | 38 | 33.7 | 32 | 51.0 |
| 40Ax15A | 1.1/2x1/2 | 48.3 | 45 | 21.3 | 18 | 64.0 |
| 40Ax20A | 1.1/2x3/4 | 48.3 | 45 | 26.9 | 25 | 64.0 |
| 40Ax25A | 1.1/2x1 | 48.3 | 45 | 33.7 | 32 | 64.0 |
| 40Ax32A | 1.1/2x1.1/4 | 48.3 | 45 | 42.4 | 38 | 64.0 |
| 50Ax20A | 2x3/4 | 60.3 | 57 | 26.9 | 25 | 76.0 |
| 50Ax25A | 2x1 | 60.3 | 57 | 33.7 | 32 | 76.0 |
| 50Ax32A | 2x1.1/4 | 60.3 | 57 | 42.4 | 38 | 76.0 |
| 50Ax40A | 2x1.1/2 | 60.3 | 57 | 48.3 | 45 | 76.0 |
| 65Ax25A | 2.1/2x1 | 73.0 | 76 | 33.7 | 32 | 89.0 |
| 65Ax32A | 2.1/2x1.1/4 | 73.0 | 76 | 42.4 | 38 | 89.0 |
| 65Ax40A | 2.1/2x1.1/2 | 73.0 | 76 | 48.3 | 45 | 89.0 |
| 65Ax50A | 2.1/2x2 | 73.0 | 76 | 60.3 | 57 | 89.0 |
| 80Ax32A | 3x1.1/4 | 88.9 | 89 | 42.4 | 38 | 89.0 |
| 80Ax40A | 3x1.1/2 | 88.9 | 89 | 48.3 | 45 | 89.0 |
| 80Ax50A | 3x2 | 88.9 | 89 | 60.3 | 57 | 89.0 |
| 80Ax65A | 3x2.1/2 | 88.9 | 89 | 73.0 | 76 | 89.0 |
| 90Ax40A | 3.1/2x1.1/2 | 101.6 | - | 48.3 | - | 102.0 |
| 90Ax50A | 3.2/2x2 | 101.6 | - | 60.3 | - | 102.0 |
| 90Ax65A | 3.1/2x2.1/2 | 101.6 | - | 73.0 | - | 102.0 |
| 90Ax80A | 3.1/2x3 | 101.6 | - | 88.9 | - | 102.0 |
| 100Ax40A | 4x1.1/2 | 114.3 | 108 | 48.3 | 45 | 102.0 |
| 100Ax50A | 4x2 | 114.3 | 108 | 60.3 | 57 | 102.0 |
| 100Ax65A | 4x2.1/2 | 114.3 | 108 | 73.0 | 76 | 102.0 |
| 100Ax80A | 4x3 | 114.3 | 108 | 88.9 | 89 | 102.0 |
| 100Ax90A | 4x3.1/2 | 114.3 | - | 101.6 | - | 102.0 |
| 125Ax50A | 5x2 | 141.3 | 133 | 60.3 | 57 | 127.0 |
| 125Ax65A | 5x2.1/2 | 141.3 | 133 | 73.0 | 76 | 127.0 |
| 125Ax80A | 5x3 | 141.3 | 133 | 88.9 | 89 | 127.0 |
| 125Ax90A | 5x3.1/2 | 141.3 | - | 101.6 | - | 127.0 |
| 125Ax100A | 5x4 | 141.3 | 133 | 114.3 | 133 | 127.0 |
| 150Ax65A | 6x2.1/2 | 168.3 | 159.0 | 73.0 | 76.0 | 140.0 |
| 150Ax80A | 6x3 | 168.3 | 159.0 | 88.9 | 89.0 | 140.0 |
| 150Ax90A | 6x3.1/2 | 168.3 | - | 101.6 | - | 140.0 |
| 150Ax100A | 6x4 | 168.3 | 159.0 | 114.3 | 108.0 | 140.0 |
| 150Ax125A | 6x5 | 168.3 | 159.0 | 141.3 | 133.0 | 140.0 |

**JIS** Unit:mm

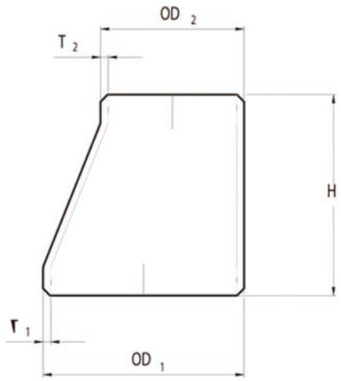
| Size | | OD1 | OD2 | Center to end |
|---|---|---|---|---|
| Size A | Size B | m/m | m/m | H |
| 20Ax15A | 3/4x1/2 | 27.2 | 21.7 | 38.1 |
| 25Ax15A | 1x1/2 | 34.0 | 21.7 | 50.8 |
| 25Ax20A | 1x3/4 | 34.0 | 27.2 | 50.8 |
| 32Ax15A | 1.1/4x1/2 | 42.7 | 21.7 | 50.8 |
| 32Ax20A | 1.1/4x3/4 | 42.7 | 27.2 | 50.8 |
| 32Ax25A | 1.1/4x1 | 42.7 | 34.0 | 50.8 |
| 40Ax15A | 1.1/2x1/2 | 48.6 | 21.7 | 63.5 |
| 40Ax20A | 1.1/2x3/4 | 48.6 | 27.2 | 63.5 |
| 40Ax25A | 1.1/2x1 | 48.6 | 34.0 | 63.5 |
| 40Ax32A | 1.1/2x1.1/4 | 48.6 | 42.7 | 63.5 |
| 50Ax20A | 2x3/4 | 60.5 | 27.2 | 76.2 |
| 50Ax25A | 2x1 | 60.5 | 34.0 | 76.2 |
| 50Ax32A | 2x1.1/4 | 60.5 | 42.7 | 76.2 |
| 50Ax40A | 2x1.1/2 | 60.5 | 48.6 | 76.2 |
| 65Ax25A | 2.1/2x1 | 76.3 | 34.0 | 88.9 |
| 65Ax32A | 2.1/2x1.1/4 | 76.3 | 42.7 | 88.9 |
| 65Ax40A | 2.1/2x1.1/2 | 76.3 | 48.6 | 88.9 |
| 65Ax50A | 2.1/2x2 | 76.3 | 60.5 | 88.9 |
| 80Ax32A | 3x1.1/4 | 89.1 | 42.7 | 88.9 |
| 80Ax40A | 3x1.1/2 | 89.1 | 48.6 | 88.9 |
| 80Ax50A | 3x2 | 89.1 | 60.5 | 88.9 |
| 80Ax65A | 3x2.1/2 | 89.1 | 76.3 | 88.9 |
| 90Ax32A | 3.1/2x1.1/4 | 101.6 | 42.7 | 101.6 |
| 90Ax40A | 3.1/2x1.1/2 | 101.6 | 48.6 | 101.6 |
| 90Ax50A | 3.1/2x2 | 101.6 | 60.5 | 101.6 |
| 90Ax65A | 3.1/2x2.1/2 | 101.6 | 76.3 | 101.6 |
| 90Ax80A | 3.1/2x3 | 101.6 | 89.1 | 101.6 |
| 100Ax40A | 4x1.1/2 | 114.3 | 48.6 | 101.6 |
| 100Ax50A | 4x2 | 114.3 | 60.5 | 101.6 |
| 100Ax65A | 4x2.1/2 | 114.3 | 76.3 | 101.6 |
| 100Ax80A | 4x3 | 114.3 | 89.1 | 101.6 |
| 100Ax90A | 4x3.1/2 | 114.3 | 101.6 | 101.6 |
| 125Ax50A | 5x2 | 139.8 | 60.5 | 127.0 |
| 125Ax65A | 5x2.1/2 | 139.8 | 76.3 | 127.0 |
| 125Ax80A | 5x3 | 139.8 | 89.1 | 127.0 |
| 125Ax90A | 5x3.1/2 | 139.8 | 101.6 | 127.0 |
| 125Ax100A | 5x4 | 139.8 | 114.3 | 127.0 |
| 150Ax65A | 6x2.1/2 | 165.2 | 76.3 | 139.7 |
| 150Ax80A | 6x3 | 165.2 | 89.1 | 139.7 |
| 150Ax90A | 6x3.1/2 | 165.2 | 101.6 | 139.7 |
| 150Ax100A | 6x4 | 165.2 | 114.3 | 139.7 |
| 150Ax125A | 6x5 | 165.2 | 139.8 | 139.7 |

**ASME** Unit:mm

| Size | | Outside Diam | | Center to end |
|---|---|---|---|---|
| Size A | Size B | OD1 | OD2 | H |
| 20Ax10A | 3/4x3/8 | 26.7 | 17.3 | 38.0 |
| 20Ax15A | 3/4x1/2 | 26.7 | 21.3 | 38.0 |
| 15Ax8A | 1/2x1/4 | 21.3 | 13.7 | - |
| 15Ax10A | 1/2x3/8 | 21.3 | 17.3 | - |
| 25Ax15A | 1x1/2 | 33.4 | 21.3 | 51.0 |
| 25Ax20A | 1x3/4 | 33.4 | 26.7 | 51.0 |
| 32Ax15A | 1.1/4x1/2 | 42.2 | 21.3 | 51.0 |
| 32Ax20A | 1.1/4x3/4 | 42.2 | 26.7 | 51.0 |
| 32Ax25A | 1.1/4x1 | 42.2 | 33.4 | 51.0 |
| 40Ax15A | 1.1/2x1/2 | 48.3 | 21.3 | 64.0 |
| 40Ax20A | 1.1/2x3/4 | 48.3 | 26.7 | 64.0 |
| 40Ax25A | 1.1/2x1 | 48.3 | 33.4 | 64.0 |
| 40Ax32A | 1.1/2x1.1/4 | 48.3 | 42.2 | 64.0 |
| 50Ax20A | 2x3/4 | 60.3 | 26.7 | 76.0 |
| 50Ax25A | 2x1 | 60.3 | 33.4 | 76.0 |
| 50Ax32A | 2x1.1/4 | 60.3 | 42.2 | 76.0 |
| 50Ax40A | 2x1.1/2 | 60.3 | 48.3 | 76.0 |
| 65Ax25A | 2.1/2x1 | 73.0 | 33.4 | 89.0 |
| 65Ax32A | 2.1/2x1.1/4 | 73.0 | 42.2 | 89.0 |
| 65Ax40A | 2.1/2x1.1/2 | 73.0 | 48.3 | 89.0 |
| 65Ax50A | 2.1/2x2 | 73.0 | 60.3 | 89.0 |
| 80Ax32A | 3x1.1/4 | 88.9 | 422 | 89.0 |
| 80Ax40A | 3x1.1/2 | 88.9 | 48.3 | 89.0 |
| 80Ax50A | 3x2 | 88.9 | 60.3 | 89.0 |
| 80Ax65A | 3x2.1/2 | 88.9 | 73.0 | 89.0 |
| 90Ax40A | 3.1/2x1.1/2 | 101.6 | 48.3 | 102.0 |
| 90Ax50A | 3.2/2x2 | 101.6 | 60.3 | 102.0 |
| 90Ax65A | 3.1/2x2.1/2 | 101.6 | 73.0 | 102.0 |
| 90Ax80A | 3.1/2x3 | 101.6 | 88.9 | 102.0 |
| 100Ax40A | 4x1.1/2 | 114.3 | 48.3 | 102.0 |
| 100Ax50A | 4x2 | 114.3 | 60.3 | 102.0 |
| 100Ax65A | 4x2.1/2 | 114.3 | 73.0 | 102.0 |
| 100Ax80A | 4x3 | 114.3 | 88.9 | 102.0 |
| 100Ax90A | 4x3.1/2 | 114.3 | 101.6 | 102.0 |
| 125Ax50A | 5x2 | 141.3 | 60.3 | 127.0 |
| 125Ax65A | 5x2.1/2 | 141.3 | 73.0 | 127.0 |
| 125Ax80A | 5x3 | 141.3 | 88.9 | 127.0 |
| 125Ax90A | 5x3.1/2 | 141.3 | 101.6 | 127.0 |
| 125Ax100A | 5x4 | 141.3 | 114.3 | 127.0 |
| 150Ax65A | 6x2.1/2 | 168.3 | 73.0 | 140.0 |
| 150Ax80A | 6x3 | 168.3 | 88.9 | 140.0 |
| 150Ax90A | 6x3.1/2 | 168.3 | 101.6 | 140.0 |
| 150Ax100A | 6x4 | 168.3 | 114.3 | 140.0 |
| 150Ax125A | 6x5 | 168.3 | 141.3 | 140.0 |

## ECC.REDUCERS

### R(E) OR ER




**GB** Unit:mm

| Size | | OD1 | | OD2 | | Center to end |
|---|---|---|---|---|---|---|
| Size A | Size B | I | II | I | II | H |
| 20Ax10A | 3/4x3/8 | 26.9 | 25 | 17.3 | 14 | 38.0 |
| 20Ax15A | 3/4x1/2 | 26.9 | 25 | 21.3 | 18 | 38.0 |
| 15Ax8A | 1/2x1/4 | 21.3 | 18 | 13.7 | 10 | - |
| 15Ax10A | 1/2x3/8 | 21.3 | 18 | 17.3 | 14 | - |
| 25Ax15A | 1x1/2 | 33.7 | 32 | 21.3 | 18 | 51.0 |
| 25Ax20A | 1x3/4 | 33.7 | 32 | 26.7 | 25 | 51.0 |
| 32Ax15A | 1.1/4x1/2 | 42.4 | 38 | 21.3 | 18 | 51.0 |
| 32Ax20A | 1.1/4x3/4 | 42.4 | 38 | 26.9 | 25 | 51.0 |
| 32Ax25A | 1.1/4x1 | 42.4 | 38 | 33.7 | 32 | 51.0 |
| 40Ax15A | 1.1/2x1/2 | 48.3 | 45 | 21.3 | 18 | 64.0 |
| 40Ax20A | 1.1/2x3/4 | 48.3 | 45 | 26.9 | 25 | 64.0 |
| 40Ax25A | 1.1/2x1 | 48.3 | 45 | 33.7 | 32 | 64.0 |
| 40Ax32A | 1.1/2x1.1/4 | 48.3 | 45 | 42.4 | 38 | 64.0 |
| 50Ax20A | 2x3/4 | 60.3 | 57 | 26.9 | 25 | 76.0 |
| 50Ax25A | 2x1 | 60.3 | 57 | 33.7 | 32 | 76.0 |
| 50Ax32A | 2x1.1/4 | 60.3 | 57 | 42.4 | 38 | 76.0 |
| 50Ax40A | 2x1.1/2 | 60.3 | 57 | 48.3 | 45 | 76.0 |
| 65Ax25A | 2.1/2x1 | 73.0 | 76 | 33.7 | 32 | 89.0 |
| 65Ax32A | 2.1/2x1.1/4 | 73.0 | 76 | 42.4 | 38 | 89.0 |
| 65Ax40A | 2.1/2x1.1/2 | 73.0 | 76 | 48.3 | 45 | 89.0 |
| 65Ax50A | 2.1/2x2 | 73.0 | 76 | 60.3 | 57 | 89.0 |
| 80Ax32A | 3x1.1/4 | 88.9 | 89 | 42.4 | 38 | 89.0 |
| 80Ax40A | 3x1.1/2 | 88.9 | 89 | 48.3 | 45 | 89.0 |
| 80Ax50A | 3x2 | 88.9 | 89 | 60.3 | 57 | 89.0 |
| 80Ax65A | 3x2.1/2 | 88.9 | 89 | 73.0 | 76 | 89.0 |
| 90Ax40A | 3.1/2x1.1/2 | 101.6 | - | 48.3 | - | 102.0 |
| 90Ax50A | 3.2/2x2 | 101.6 | - | 60.3 | - | 102.0 |
| 90Ax65A | 3.1/2x2.1/2 | 101.6 | - | 73.0 | - | 102.0 |
| 90Ax80A | 3.1/2x3 | 101.6 | - | 88.9 | - | 102.0 |
| 100Ax40A | 4x1.1/2 | 114.3 | 108 | 48.3 | 45 | 102.0 |
| 100Ax50A | 4x2 | 114.3 | 108 | 60.3 | 57 | 102.0 |
| 100Ax65A | 4x2.1/2 | 114.3 | 108 | 73.0 | 76 | 102.0 |
| 100Ax80A | 4x3 | 114.3 | 108 | 88.9 | 89 | 102.0 |
| 100Ax90A | 4x3.1/2 | 114.3 | - | 101.6 | - | 102.0 |
| 125Ax50A | 5x2 | 141.3 | 133 | 60.3 | 57 | 127.0 |
| 125Ax65A | 5x2.1/2 | 141.3 | 133 | 73.0 | 76 | 127.0 |
| 125Ax80A | 5x3 | 141.3 | 133 | 88.9 | 89 | 127.0 |
| 125Ax90A | 5x3.1/2 | 141.3 | - | 101.6 | - | 127.0 |
| 125Ax100A | 5x4 | 141.3 | 133 | 114.3 | 133 | 127.0 |
| 150Ax65A | 6x2.1/2 | 168.3 | 159.0 | 73.0 | 76.0 | 140.0 |
| 150Ax80A | 6x3 | 168.3 | 159.0 | 88.9 | 89.0 | 140.0 |
| 150Ax90A | 6x3.1/2 | 168.3 | - | 101.6 | - | 140.0 |
| 150Ax100A | 6x4 | 168.3 | 159.0 | 114.3 | 108.0 | 140.0 |
| 150Ax125A | 6x5 | 168.3 | 159.0 | 141.3 | 133.0 | 140.0 |

**JIS** Unit:mm

| Size | | OD1 | OD2 | Center to end |
|---|---|---|---|---|
| Size A | Size B | m/m | m/m | H |
| 20Ax15A | 3/4x1/2 | 27.2 | 21.7 | 38.1 |
| 25Ax15A | 1x1/2 | 34.0 | 21.7 | 50.8 |
| 25Ax20A | 1x3/4 | 34.0 | 27.2 | 50.8 |
| 32Ax15A | 1.1/4x1/2 | 42.7 | 21.7 | 50.8 |
| 32Ax20A | 1.1/4x3/4 | 42.7 | 27.2 | 50.8 |
| 32Ax25A | 1.1/4x1 | 42.7 | 34.0 | 50.8 |
| 40Ax15A | 1.1/2x1/2 | 48.6 | 21.7 | 63.5 |
| 40Ax20A | 1.1/2x3/4 | 48.6 | 27.2 | 63.5 |
| 40Ax25A | 1.1/2x1 | 48.6 | 34.0 | 63.5 |
| 40Ax32A | 1.1/2x1.1/4 | 48.6 | 42.7 | 63.5 |
| 50Ax20A | 2x3/4 | 60.5 | 27.2 | 76.2 |
| 50Ax25A | 2x1 | 60.5 | 34.0 | 76.2 |
| 50Ax32A | 2x1.1/4 | 60.5 | 42.7 | 76.2 |
| 50Ax40A | 2x1.1/2 | 60.5 | 48.6 | 76.2 |
| 65Ax25A | 2.1/2x1 | 76.3 | 34.0 | 88.9 |
| 65Ax32A | 2.1/2x1.1/4 | 76.3 | 42.7 | 88.9 |
| 65Ax40A | 2.1/2x1.1/2 | 76.3 | 48.6 | 88.9 |
| 65Ax50A | 2.1/2x2 | 76.3 | 60.5 | 88.9 |
| 80Ax32A | 3x1.1/4 | 89.1 | 42.7 | 88.9 |
| 80Ax40A | 3x1.1/2 | 89.1 | 48.6 | 88.9 |
| 80Ax50A | 3x2 | 89.1 | 60.5 | 88.9 |
| 80Ax65A | 3x2.1/2 | 89.1 | 76.3 | 88.9 |
| 90Ax32A | 3.1/2x1.1/4 | 101.6 | 42.7 | 101.6 |
| 90Ax40A | 3.1/2x1.1/2 | 101.6 | 48.6 | 101.6 |
| 90Ax50A | 3.1/2x2 | 101.6 | 60.5 | 101.6 |
| 90Ax65A | 3.1/2x2.1/2 | 101.6 | 76.3 | 101.6 |
| 90Ax80A | 3.1/2x3 | 101.6 | 89.1 | 101.6 |
| 100Ax40A | 4x1.1/2 | 114.3 | 48.6 | 101.6 |
| 100Ax50A | 4x2 | 114.3 | 60.5 | 101.6 |
| 100Ax65A | 4x2.1/2 | 114.3 | 76.3 | 101.6 |
| 100Ax80A | 4x3 | 114.3 | 89.1 | 101.6 |
| 100Ax90A | 4x3.1/2 | 114.3 | 101.6 | 101.6 |
| 125Ax50A | 5x2 | 139.8 | 60.5 | 127.0 |
| 125Ax65A | 5x2.1/2 | 139.8 | 76.3 | 127.0 |
| 125Ax80A | 5x3 | 139.8 | 89.1 | 127.0 |
| 125Ax90A | 5x3.1/2 | 139.8 | 101.6 | 127.0 |
| 125Ax100A | 5x4 | 139.8 | 114.3 | 127.0 |
| 150Ax65A | 6x2.1/2 | 165.2 | 76.3 | 139.7 |
| 150Ax80A | 6x3 | 165.2 | 89.1 | 139.7 |
| 150Ax90A | 6x3.1/2 | 165.2 | 101.6 | 139.7 |
| 150Ax100A | 6x4 | 165.2 | 114.3 | 139.7 |
| 150Ax125A | 6x5 | 165.2 | 139.8 | 139.7 |

**ASME** Unit:mm

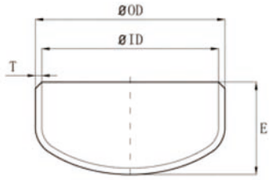
| Size | | Outside Diam | | Center to end |
|---|---|---|---|---|
| Size A | Size B | OD1 | OD2 | H |
| 20Ax10A | 3/4x3/8 | 26.7 | 17.3 | 38.0 |
| 20Ax15A | 3/4x1/2 | 26.7 | 21.3 | 38.0 |
| 15Ax8A | 1/2x1/4 | 21.3 | 13.7 | - |
| 15Ax10A | 1/2x3/8 | 21.3 | 17.3 | - |
| 25Ax15A | 1x1/2 | 33.4 | 21.3 | 51.0 |
| 25Ax20A | 1x3/4 | 33.4 | 26.7 | 51.0 |
| 32Ax15A | 1.1/4x1/2 | 42.2 | 21.3 | 51.0 |
| 32Ax20A | 1.1/4x3/4 | 42.2 | 26.7 | 51.0 |
| 32Ax25A | 1.1/4x1 | 42.2 | 33.4 | 51.0 |
| 40Ax15A | 1.1/2x1/2 | 48.3 | 21.3 | 64.0 |
| 40Ax20A | 1.1/2x3/4 | 48.3 | 26.7 | 64.0 |
| 40Ax25A | 1.1/2x1 | 48.3 | 33.4 | 64.0 |
| 40Ax32A | 1.1/2x1.1/4 | 48.3 | 42.2 | 64.0 |
| 50Ax20A | 2x3/4 | 60.3 | 26.7 | 76.0 |
| 50Ax25A | 2x1 | 60.3 | 33.4 | 76.0 |
| 50Ax32A | 2x1.1/4 | 60.3 | 42.2 | 76.0 |
| 50Ax40A | 2x1.1/2 | 60.3 | 48.3 | 76.0 |
| 65Ax25A | 2.1/2x1 | 73.0 | 33.4 | 89.0 |
| 65Ax32A | 2.1/2x1.1/4 | 73.0 | 42.2 | 89.0 |
| 65Ax40A | 2.1/2x1.1/2 | 73.0 | 48.3 | 89.0 |
| 65Ax50A | 2.1/2x2 | 73.0 | 60.3 | 89.0 |
| 80Ax32A | 3x1.1/4 | 88.9 | 422 | 89.0 |
| 80Ax40A | 3x1.1/2 | 88.9 | 48.3 | 89.0 |
| 80Ax50A | 3x2 | 88.9 | 60.3 | 89.0 |
| 80Ax65A | 3x2.1/2 | 88.9 | 73.0 | 89.0 |
| 90Ax40A | 3.1/2x1.1/2 | 101.6 | 48.3 | 102.0 |
| 90Ax50A | 3.2/2x2 | 101.6 | 60.3 | 102.0 |
| 90Ax65A | 3.1/2x2.1/2 | 101.6 | 73.0 | 102.0 |
| 90Ax80A | 3.1/2x3 | 101.6 | 88.9 | 102.0 |
| 100Ax40A | 4x1.1/2 | 114.3 | 48.3 | 102.0 |
| 100Ax50A | 4x2 | 114.3 | 60.3 | 102.0 |
| 100Ax65A | 4x2.1/2 | 114.3 | 73.0 | 102.0 |
| 100Ax80A | 4x3 | 114.3 | 88.9 | 102.0 |
| 100Ax90A | 4x3.1/2 | 114.3 | 101.6 | 102.0 |
| 125Ax50A | 5x2 | 141.3 | 60.3 | 127.0 |
| 125Ax65A | 5x2.1/2 | 141.3 | 73.0 | 127.0 |
| 125Ax80A | 5x3 | 141.3 | 88.9 | 127.0 |
| 125Ax90A | 5x3.1/2 | 141.3 | 101.6 | 127.0 |
| 125Ax100A | 5x4 | 141.3 | 114.3 | 127.0 |
| 150Ax65A | 6x2.1/2 | 168.3 | 73.0 | 140.0 |
| 150Ax80A | 6x3 | 168.3 | 88.9 | 140.0 |
| 150Ax90A | 6x3.1/2 | 168.3 | 101.6 | 140.0 |
| 150Ax100A | 6x4 | 168.3 | 114.3 | 140.0 |
| 150Ax125A | 6x5 | 168.3 | 141.3 | 140.0 |





## CAP

### CAP




**GB** Unit:mm

| NPS | | Outside diam | | SCH 5S | | | SCH 10S | | | SCH 40S | | | Center to end (H) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | OD I | OD II | Thickness T | ID I | ID II | Thickness T | ID I | ID II | Thickness T | ID I | ID II | E | E1 |
| 15A | 1/2" | 21.3 | 18.00 | 1.65 | 18.03 | 14.70 | 2.11 | 16.43 | 17.08 | 2.77 | 15.80 | 12.46 | 25 | 25 |
| 20A | 3/4" | 26.9 | 25.00 | 1.65 | 23.37 | 21.70 | 2.11 | 22.45 | 22.68 | 2.87 | 20.93 | 19.26 | 25 | 25 |
| 25A | 1" | 33.7 | 32.00 | 1.65 | 30.10 | 28.70 | 2.77 | 27.86 | 28.16 | 3.38 | 26.64 | 25.24 | 38.00 | 38 |
| 32A | 1.1/4" | 42.4 | 38.00 | 1.65 | 38.86 | 34.70 | 2.77 | 36.63 | 36.86 | 3.56 | 35.05 | 30.88 | 38.00 | 38 |
| 40A | 1.1/2" | 48.3 | 45.00 | 1.65 | 44.96 | 41.70 | 2.77 | 42.72 | 42.76 | 3.68 | 40.89 | 37.64 | 38.00 | 38 |
| 50A | 2" | 60.3 | 57.00 | 1.65 | 57.02 | 53.70 | 2.77 | 54.79 | 54.76 | 3.91 | 52.50 | 49.18 | 38.00 | 41 |
| 65A | 2.1/2" | 73.0 | 76.00 | 2.11 | 68.81 | 71.78 | 3.05 | 66.93 | 66.90 | 5.16 | 62.71 | 65.68 | 38.00 | 51 |
| 80A | 3" | 88.9 | 89.00 | 2.11 | 84.68 | 84.78 | 3.05 | 82.80 | 82.80 | 5.49 | 77.93 | 78.02 | 51.00 | 64 |
| 90A | 3.1/2" | 101.6 | ----- | 2.11 | 97.38 | ----- | 3.05 | 95.50 | 95.50 | 5.74 | 90.12 | ----- | 64.00 | 76 |
| 100A | 4" | 114.3 | 108.00 | 2.11 | 112.19 | 103.78 | 3.05 | 108.20 | 108.20 | 6.02 | 102.26 | 95.96 | 64.00 | 76 |
| 125A | 5" | 141.3 | 133.00 | 2.77 | 135.76 | 127.46 | 3.40 | 134.49 | 134.50 | 6.55 | 128.19 | 119.90 | 76.00 | 89 |
| 150A | 6" | 168.3 | 159.00 | 2.77 | 162.74 | 153.46 | 3.40 | 161.47 | 161.50 | 7.11 | 154.05 | 144.78 | 89.00 | 102 |
| 200A | 8" | 219.1 | 219.00 | 2.77 | 213.54 | 213.46 | 3.76 | 211.56 | 211.58 | 8.18 | 202.72 | 202.64 | 102.00 | 127 |
| 250A | 10" | 273.0 | 273.00 | 3.40 | 266.24 | 266.20 | 4.19 | 264.67 | 264.62 | 9.27 | 254.51 | 254.46 | 127.00 | 152 |
| 300A | 12" | 323.9 | 325.00 | 3.96 | 315.93 | 317.08 | 4.57 | 314.71 | 314.76 | 9.52 | 304.80 | 305.96 | 152.00 | 178 |
| 350A | 14" | 355.6 | 377.00 | 3.96 | 347.68 | 369.09 | 4.78 | 346.05 | 346.04 | ----- | ----- | ----- | 165.00 | 191 |
| 400A | 16' | 406.4 | 426.00 | 4.19 | 398.02 | 417.62 | 4.78 | 396.85 | 396.84 | ----- | ----- | ----- | 178.00 | 203 |
| 450A | 18" | 457.0 | 480.00 | 4.19 | 448.82 | 471.62 | 4.78 | 447.65 | 447.44 | ----- | ----- | ----- | 203.00 | 229 |
| 500A | 20" | 508.0 | 530.00 | 4.78 | 498.45 | 520.44 | 5.54 | 496.93 | 496.92 | ----- | ----- | ----- | 229.00 | 254 |
| 550A | 22" | 559.0 | ----- | 4.78 | 549.25 | ----- | 5.54 | 547.73 | 547.92 | ----- | ----- | ----- | 254.00 | 254 |
| 600A | 24" | 610.0 | 630.00 | 5.54 | 598.53 | 618.92 | 6.35 | 596.90 | 597.30 | ----- | ----- | ----- | 267.00 | 305 |

**ASME** Unit:mm

| NPS | | Outside diam OD | SCH 5S | | SCH 10S | | SCH 40S | | Center to end (H) | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | B | | Thickness T | ID | Thickness T | ID | Thickness T | ID | E1 | E2 |
| 15A | 1/2" | 21.3 | 1.65 | 18.03 | 2.11 | 16.43 | 2.77 | 15.80 | 25 | 25 |
| 20A | 3/4" | 26.7 | 1.65 | 23.37 | 2.11 | 22.45 | 2.87 | 20.93 | 25 | 25 |
| 25A | 1" | 33.4 | 1.65 | 30.10 | 2.77 | 27.86 | 3.38 | 26.64 | 38 | 38 |
| 32A | 1.1/4" | 42.2 | 1.65 | 38.86 | 2.77 | 36.63 | 3.56 | 35.05 | 38 | 38 |
| 40A | 1.1/2" | 48.3 | 1.65 | 44.96 | 2.77 | 42.72 | 3.68 | 40.89 | 38 | 38 |
| 50A | 2" | 60.3 | 1.65 | 57.02 | 2.77 | 54.79 | 3.91 | 52.50 | 38 | 44 |
| 65A | 2.1/2" | 73.0 | 2.11 | 68.81 | 3.05 | 66.93 | 5.16 | 62.71 | 38 | 51 |
| 80A | 3" | 88.9 | 2.11 | 84.68 | 3.05 | 82.80 | 5.49 | 77.93 | 51 | 64 |
| 90A | 3.1/2" | 101.6 | 2.11 | 97.38 | 3.05 | 95.50 | 5.74 | 90.12 | 64 | 76 |
| 100A | 4" | 114.3 | 2.11 | 112.19 | 3.05 | 108.20 | 6.02 | 102.26 | 64 | 76 |
| 125A | 5" | 141.3 | 2.77 | 135.76 | 3.40 | 134.49 | 6.55 | 128.19 | 76 | 89 |
| 150A | 6" | 168.3 | 2.77 | 162.74 | 3.40 | 161.47 | 7.11 | 154.05 | 89 | 102 |
| 200A | 8" | 219.1 | 2.77 | 213.54 | 3.76 | 211.56 | 8.18 | 202.72 | 102 | 127 |
| 250A | 10" | 273.0 | 3.40 | 266.24 | 4.19 | 264.67 | 9.27 | 254.51 | 127 | 152 |
| 300A | 12" | 323.8 | 3.96 | 315.93 | 4.57 | 314.71 | 9.52 | 304.80 | 152 | 178 |
| 350A | 14" | 355.6 | 3.96 | 347.68 | 4.78 | 346.05 | ----- | ----- | 165 | 191 |
| 400A | 16' | 406.4 | 4.19 | 398.02 | 4.78 | 396.85 | ----- | ----- | 178 | 203 |
| 450A | 18" | 457.0 | 4.19 | 448.82 | 4.78 | 447.65 | ----- | ----- | 203 | 229 |
| 500A | 20" | 508.0 | 4.78 | 498.45 | 5.54 | 496.93 | ----- | ----- | 229 | 254 |
| 550A | 22" | 559.0 | 4.78 | 549.25 | 5.54 | 547.73 | ----- | ----- | 254 | 254 |
| 600A | 24" | 610.0 | 5.54 | 598.53 | 6.35 | 596.90 | ----- | ----- | 267 | 305 |

**JIS** Unit:mm

| NPS | | Outside diam OD | SCH 5S | | SCH 10S | | SCH 40S | | Center to end (H) | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | B | | Thickness T | ID | Thickness T | ID | Thickness T | ID | E1 | E2 |
| 15A | 1/2" | 21.7 | 2.1 | 17.5 | 2.5 | 16.7 | 28 | 16.10 | 25.40 | - |
| 20A | 3/4" | 27.2 | 2.1 | 23.0 | 2.5 | 22.2 | 2.9 | 21.40 | 25.40 | - |
| 25A | 1" | 34.0 | 2.8 | 28.4 | 3.0 | 28.0 | 3.4 | 27.20 | 38.10 | - |
| 32A | 1.1/4" | 42.7 | 2.8 | 37.1 | 3.0 | 36.7 | 3.6 | 35.50 | 38.10 | - |
| 40A | 1.1/2" | 48.6 | 2.8 | 43.0 | 3.0 | 42.6 | 3.7 | 41.20 | 38.10 | - |
| 50A | 2" | 60.5 | 2.8 | 54.9 | 3.5 | 53.5 | 3.9 | 52.70 | 38.10 | 44.5 |
| 65A | 2.1/2" | 76.3 | 3.0 | 70.3 | 3.5 | 69.3 | 5.2 | 65.90 | 38.10 | 50.8 |
| 80A | 3" | 89.1 | 3.0 | 83.1 | 4.0 | 81.1 | 5.5 | 78.10 | 50.80 | 63.5 |
| 90A | 3.1/2" | 101.6 | 3.0 | 95.6 | 4.0 | 93.6 | 5.7 | 90.20 | 63.50 | 76.2 |
| 100A | 4" | 114.3 | 3.0 | 108.3 | 4.0 | 106.3 | 6.0 | 102.30 | 63.50 | 76.2 |
| 125A | 5" | 139.8 | 3.4 | 133.0 | 5.0 | 129.8 | 6.6 | 126.60 | 76.20 | 88.9 |
| 150A | 6" | 165.2 | 3.4 | 158.4 | 5.0 | 155.2 | 7.1 | 151.00 | 88.90 | 101.6 |
| 200A | 8" | 216.3 | 4.0 | 208.3 | 6.5 | 203.3 | 8.2 | 199.90 | 101.60 | 127.0 |
| 250A | 10" | 267.4 | 4.0 | 259.4 | 6.5 | 254.4 | 9.3 | 248.80 | 127.00 | 152.4 |
| 300A | 12" | 318.5 | 4.5 | 309.5 | 6.5 | 305.5 | 10.3 | 297.90 | 152.40 | 177.8 |
| 350A | 14" | 355.6 | 5.0 | 345.6 | 8.0 | 339.6 | 11.1 | 333.40 | 165.10 | 190.5 |
| 400A | 16' | 406.4 | 5.0 | 396.4 | 8.0 | 390.4 | 12.7 | 381.00 | 177.80 | 203.2 |
| 450A | 18" | 457.2 | 5.0 | 447.2 | 8.0 | 441.2 | 14.3 | 428.60 | 203.20 | 228.6 |
| 500A | 20" | 508.0 | 5.5 | 497.0 | 9.5 | 489.0 | 15.1 | 477.80 | 228.60 | 254.0 |
| 550A | 22" | 558.8 | 5.5 | 547.8 | 9.5 | 539.8 | 15.9 | 527.00 | 254.00 | 254.0 |
| 600A | 24" | 609.6 | 6.5 | 596.6 | 9.5 | 590.6 | 17.5 | 574.60 | 266.70 | 304.8 |

# 4

## STAINLESS STEEL VALVES

With good corrosion resistance character, it is widely used in water treatment ,pharmacy, building, industry equipments etc. It is strategic goods under high technology.

● Design requirements of stainless steel valves

| Valve kinds | Pressure | Marking | Connection way | Body material | Shape |
|---|---|---|---|---|---|
| Ball valve | 800 | SRV | Thread | SCS 13A | 1pc |
| | | SRVM | | SCS 14A | 1pc |
| | | SRVMB | | SCS 14A | Butterfly handle |
| | | SFVM | | SCS 14A | 2pc |
| | 10K | 10SFV | JIS 10K RF flange | SCS 13 | Antistatic design |
| Gate valve | 10K | SGAV | Thread(JIS B0203) | SCS 13A | Female thread |
| Globe valve | 10K | SGLV | Thread(JIS B0203) | SCS 13A | Female thread |
| Check valve | 10K | SWCV | Thread(JIS B0203) | SCS 13A | Female thread |



# 5

## STAINLESS STEEL SANITARY FITTINGS

Providing systems solutions, including polishing pipes, polishing fittings, welding services, and general purpose of using fittings.

Local factory in China: Inoc (changzhou) stainless steel products co.,ltd has polishing equipments for sanitary pipes, the main mechanical polishing services are for SS304 pipes 400# grit polishing.We also provide electrolytic polishing for Inoc's products including SS316 material.

We built trusted quality management system under raw material strict selection and all production procedure control, then we meet the goals of lower cost and high quality on the same time.

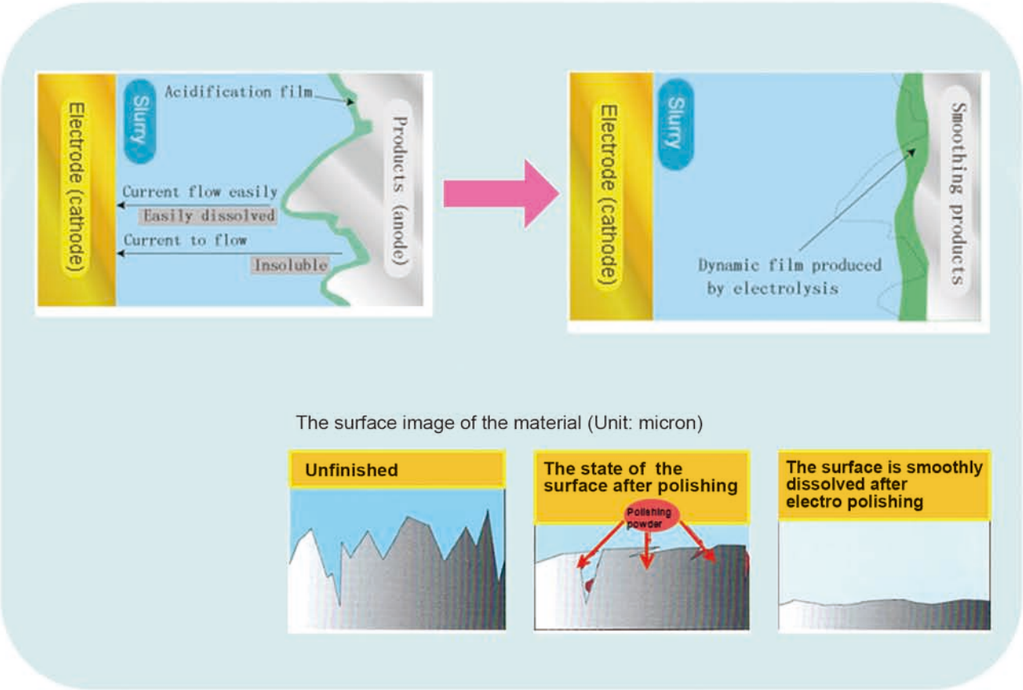
Besides providing raw material certificates of sanitary pipes and fittings, polishing certificates etc kinds of certificate documents, we are also continuous improving sourcing ability for each products in the beverage,dairy products, food machinery and semiconductor industries under cost reduction for general purpose pipes.

Welcome to consult and discuss the business of electrolytic polishing, mechanical polishing, pickling etc machining services of products surface.

And we can accept the business of pipe fittings fabrication and fabrication jobs from projects.

**Inoc can do the electropolishing and pure water washing for the medical equipment and the semiconductor device in our own factory.**

## Principle




## Features

- There is no affected layer
- Not affected by heat
- Excellent smoothness
- Outstanding corrosion-resistance
- Remarkable washing 、non-adhesive property





## ■ Electropolishing and Pure Water Washing

(CHEMICAL COMPOSITION TABLE FOR COMMON STAINLESS STEEL)

| | | Chemical composition (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | C | Si | Mn | P | S | Ni | Cr | Mo |
| ASTM | TP304 | ≤0.08 | ≤1.00 | ≤2.00 | ≤0.045 | ≤0.03 | 8.00~11.00 | 18.00~20.00 | |
| | TP304L | ≤0.035 | ≤1.00 | ≤2.00 | ≤0.045 | ≤0.03 | 8.00~13.00 | 18.00~20.00 | |
| | TP316 | ≤0.08 | ≤1.00 | ≤2.00 | ≤0.045 | ≤0.03 | 10.00~14.00 | 16.00~18.00 | 2.00~3.00 |
| | TP316L | ≤0.035 | ≤1.00 | ≤2.00 | ≤0.045 | ≤0.03 | 10.00~14.00 | 16.00~18.00 | 2.00~3.00 |
| JIS | SUS304 | ≤0.08 | ≤1.00 | ≤2.00 | ≤0.040 | ≤0.03 | 8.00~11.00 | 18.00~20.00 | |
| | SUS304L | ≤0.03 | ≤1.00 | ≤2.00 | ≤0.040 | ≤0.03 | 8.00~13.00 | 18.00~20.00 | |
| | SUS316 | ≤0.08 | ≤1.00 | ≤2.00 | ≤0.040 | ≤0.03 | 10.00~14.00 | 16.00~18.00 | 2.00~3.00 |
| | SUS316L | ≤0.03 | ≤1.00 | ≤2.00 | ≤0.040 | ≤0.03 | 12.00~16.00 | 16.00~18.00 | 2.00~3.00 |
| GB | 0Cr18Ni9 | ≤0.07 | ≤1.00 | ≤2.00 | ≤0.035 | ≤0.03 | 8.00~11.00 | 17.00~19.00 | |
| | 00Cr19Ni10 | ≤0.03 | ≤1.00 | ≤2.00 | ≤0.035 | ≤0.03 | 8.00~12.00 | 18.00~20.00 | |
| | 0Cr17Ni12Mo2 | ≤0.07 | ≤1.00 | ≤2.00 | ≤0.035 | ≤0.03 | 10.00~14.00 | 16.00~18.00 | 2.00~3.00 |
| | 00Cr17Ni14Mo2 | ≤0.03 | ≤1.00 | ≤2.00 | ≤0.035 | ≤0.03 | 12.00~15.00 | 16.00~18.00 | 2.00~3.00 |
| GB | 06Cr19Ni10 | ≤0.08 | ≤0.75 | ≤2.00 | ≤0.040 | ≤0.030 | 8.00~11.00 | 18.00~20.00 | |
| | 022Cr19Ni10 | ≤0.030 | ≤0.75 | ≤2.00 | ≤0.040 | ≤0.030 | 8.00~12.00 | 18.00~20.00 | |
| | 06Cr17Ni12Mo2 | ≤0.08 | ≤0.75 | ≤2.00 | ≤0.040 | ≤0.030 | 10.00~14.00 | 16.00~18.00 | 2.00~3.00 |
| | 022Cr17Ni12Mo2 | ≤0.030 | ≤0.75 | ≤2.00 | ≤0.040 | ≤0.030 | 10.00~14.00 | 16.00~18.00 | 2.00~3.00 |
| EN10217-7 | 1.4301 | ≤0.07 | ≤1.00 | ≤2.00 | ≤0.045 | ≤0.015 | 8.00~10.50 | 17.00~19.50 | |
| | 1.4307 | ≤0.03 | ≤1.00 | ≤2.00 | ≤0.045 | ≤0.015 | 8.00~10.00 | 17.50~19.50 | |
| | 1.4401 | ≤0.07 | ≤1.00 | ≤2.00 | ≤0.045 | ≤0.015 | 10.00~13.00 | 16.50~18.50 | 2.00~2.50 |
| | 1.4404 | ≤0.03 | ≤1.00 | ≤2.00 | ≤0.045 | ≤0.015 | 10.00~13.00 | 16.50~18.50 | 2.00~2.50 |

(MECHANICAL PROPERTY FOR COMMON STAINLESS STEEL)

| Grade | | Mechanical propcrites | | | |
|---|---|---|---|---|---|
| | | Tensile strength | Yied strength | Elongation | Hardness |
| | | KSi(MPa) | KSi(MPa) | % | HRB |
| ASTM | TP304 | ≥75(515) | ≥30(205) | ≥35 | ≤90 |
| | TP304L | ≥70(483) | ≥25(170) | ≥35 | ≤90 |
| | TP316 | ≥75(515) | ≥30(205) | ≥35 | ≤90 |
| | TP316L | ≥70(483) | ≥25(170) | ≥35 | ≤90 |
| JIS | SUS304 | ≥75(520) | ≥30(206) | ≥35 | ≤90 |
| | SUS304L | ≥70(481) | ≥25(177) | ≥35 | ≤90 |
| | SUS316 | ≥75(520) | ≥30(206) | ≥35 | ≤90 |
| | SUS316L | ≥70(481) | ≥25(177) | ≥35 | ≤90 |
| GB | 0Cr18Ni9 | ≥75(520) | ≥30(210) | ≥35 | ≤90 |
| | 00Cr19Ni10 | ≥70(480) | ≥25(180) | ≥35 | ≤90 |
| | 0Cr17Ni12Mo2 | ≥75(520) | ≥30(210) | ≥35 | ≤90 |
| | 00Cr17Ni14Mo2 | ≥70(480) | ≥25(180) | ≥35 | ≤90 |
| EN10217-7 | 1.4301 | (500~700) | ≥(195) | ≥40b | ≤90 |
| | 1.4307 | (470~670) | ≥(180) | ≥40b | ≤90 |
| | 1.4401 | (510~710) | ≥(205) | ≥40b | ≤90 |
| | 1.4404 | (490~690) | ≥(190) | ≥40b | ≤90 |

**The index of material chemical composition and mechanical properties shall change as to some defined condition, and please refer to the original standard.**



**GB/T 12459、GB/T13401**

OUTSIDE DIAMETER AND WALL THICKNESS

| Nominal Diameter | Qutside Diaeter D | | Mominal Wall Thickness T | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DN | A | B | Sch5S | Sch10S | Sch20S | LG | Sch20 | Sch30 | Std | Sch40 | Sch60 | XS | Sch80 | Sch100 | Sch120 | Sch140 | Sch160 |
| 15 | 21.3 | 18 | 1.6 | 2.1 | 2.6 | — | — | — | — | 2.9 | — | — | 3.6 | — | — | — | 4.5 |
| 20 | 26.9 | 25 | 1.6 | 2.1 | 2.6 | — | — | — | — | 2.9 | — | — | 4.0 | — | — | — | 5.6 |
| 25 | 33.7 | 32 | 1.6 | 2.8 | 3.2 | — | — | — | — | 3.2 | — | — | 4.5 | — | — | — | 6.3 |
| 32 | 42.4 | 38 | 1.6 | 2.8 | 3.2 | — | — | — | — | 3.6 | — | — | 5.0 | — | — | — | 6.3 |
| 40 | 48.3 | 45 | 1.6 | 2.8 | 3.2 | — | — | — | — | 3.6 | — | — | 5.0 | — | — | — | 7.1 |
| 50 | 60.3 | 57 | 1.6 | 2.8 | 3.6 | — | 3.2 | — | — | 4.0 | — | — | 5.6 | — | — | — | 8.8 |
| 65 | 76.1 | 73 | 2.0 | 3.0 | 3.6 | — | 4.5 | — | — | 5.0 | — | — | 7.1 | — | — | — | 10.0 |
| 80 | 88.9 | 89 | 2.0 | 3.0 | 4.0 | — | 4.5 | — | — | 5.6 | — | — | 8.0 | — | — | — | 11.0 |
| 90 | 101.6 | — | 2.0 | 3.0 | 4.0 | — | 4.5 | — | — | 5.6 | — | — | 8.0 | — | — | — | 12.5 |
| 100 | 114.3 | 108 | 2.0 | 3.0 | 4.0 | — | 5.0 | — | — | 5.9 | — | — | 8.8 | — | 11.0 | — | 14.2 |
| 125 | 139.7 | 133 | 2.9 | 3.4 | 5.0 | — | 5.0 | — | — | 6.3 | — | — | 10.0 | — | 12.5 | — | 16.0 |
| 150 | 168.3 | 159 | 2.9 | 3.4 | 5.0 | — | 5.6 | — | — | 7.1 | — | — | 11.0 | — | 14.2 | — | 17.5 |
| 200 | 219.1 | 219 | 2.9 | 4.0 | 6.3 | — | 6.3 | 7.1 | — | 8.0 | 10.0 | — | 12.5 | 16.0 | 17.5 | 20.0 | 22.2 |
| 250 | 273.0 | 273 | 3.6 | 4.0 | 6.3 | — | 6.3 | 8.0 | — | 8.8 | 12.5 | — | 16.0 | 17.5 | 22.2 | 25.0 | 28.0 |
| 300 | 323.9 | 325 | 4.0 | 4.5 | 6.3 | — | 6.3 | 8.8 | — | 10.0 | 14.2 | — | 17.5 | 22.2 | 25.0 | 28.0 | 32.0 |
| 350 | 355.6 | 377 | 4.0 | 5.0 | — | 8.0 | 8.0 | 10.0 | 10.0 | 11.0 | 16.0 | 13.0 | 20.0 | 25.8 | 28.0 | 32.0 | 36.0 |
| 400 | 406.4 | 426 | 4.0 | 5.0 | — | 8.0 | 8.0 | 10.0 | 10.0 | 12.5 | 17.5 | 13.0 | 22.2 | 28.0 | 30.0 | 36.0 | 40.0 |
| 450 | 457.2 | 478 | 4.0 | 5.0 | — | 8.0 | 8.0 | 11.0 | 10.0 | 14.2 | 20.00 | 13.0 | 25.0 | 30.0 | 36.0 | 40.0 | 45.0 |
| 500 | 508.0 | 529 | 5.0 | 5.6 | — | 8.0 | 10.0 | 12.5 | 10.0 | 16.0 | 20.00 | 13.0 | 28.0 | 32.0 | 40.0 | 45.0 | 50.0 |
| 550 | 559 | — | 5.0 | 5.6 | — | 8.0 | — | — | 10.0 | — | — | 13.0 | 30.0 | — | — | — | — |
| 600 | 610 | 630 | 5.6 | 6.3 | — | 8.0 | — | — | 10.0 | 17.5 | — | 13.0 | 32.0 | — | — | — | — |
| 650 | 660 | — | — | — | — | 8.0 | — | — | 10.0 | — | — | 13.0 | — | — | — | — | — |
| 700 | 711 | 720 | — | — | — | 8.0 | — | — | 10.0 | — | — | 13.0 | — | — | — | — | — |
| 750 | 762 | — | — | — | — | 8.0 | — | — | 10.0 | — | — | 13.0 | — | — | — | — | — |
| 800 | 813 | 820 | — | — | — | 8.0 | — | — | 10.0 | — | — | 13.0 | — | — | — | — | — |
| 850 | 864 | — | — | — | — | 8.0 | — | — | 10.0 | — | — | 13.0 | — | — | — | — | — |
| 900 | 914 | 920 | — | — | — | 8.0 | — | — | 10.0 | — | — | 13.0 | — | — | — | — | — |
| 950 | 965 | — | — | — | — | 8.0 | — | — | 10.0 | — | — | 13.0 | — | — | — | — | — |
| 1000 | 1016 | 1020 | — | — | — | 8.0 | — | — | 10.0 | — | — | 13.0 | — | — | — | — | — |
| 1050 | 1067 | — | — | — | — | 8.0 | — | — | 10.0 | — | — | 13.0 | — | — | — | — | — |
| 1100 | 1118 | 1120 | — | — | — | 8.0 | — | — | 10.0 | — | — | 13.0 | — | — | — | — | — |
| 1150 | 1168 | — | — | — | — | 8.0 | — | — | 10.0 | — | — | 13.0 | — | — | — | — | — |
| 1200 | 1220 | 1220 | — | — | — | 8.0 | — | — | 10.0 | — | — | 13.0 | — | — | — | — | — |

**Sch5S、10S、20S Applies for stainless steel fittings。**

**JIS B2311、B2312、B2313**

OUTSIDE DIAMETER AND WALL THICKNESS

| Nominal Diameter | | Qutside Diaeter | Mominal Wall Thickness T | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DN | NPS | D | SGP | Sch5S | Sch10S | Sch10 | Sch20S | Sch30 | Sch40S | Std | Sch40 | Sch60 | Sch80S | XS | Sch80 | Sch100 | Sch120 | Sch140 | Sch160 | XXS |
| 15 | 1/2 | 21.7 | 2.8 | 1.7 | 2.1 | — | 2.5 | — | 2.8 | 2.8 | 2.8 | — | 3.7 | 3.7 | 3.7 | — | — | — | 4.8 | 7.5 |
| 20 | 3/4 | 27.2 | 2.8 | 1.7 | 2.1 | — | 2.5 | — | 2.9 | 2.9 | 2.9 | — | 3.9 | 3.9 | 3.9 | — | — | — | 5.6 | 7.8 |
| 25 | 1 | 34.0 | 3.2 | 1.7 | 2.8 | — | 3.0 | — | 3.4 | 3.4 | 3.4 | — | 4.5 | 4.5 | 4.5 | — | — | — | 6.4 | 9.1 |
| 32 | 11/4 | 42.7 | 3.5 | 1.7 | 2.8 | — | 3.0 | — | 3.6 | 3.6 | 3.6 | — | 4.9 | 4.9 | 4.9 | — | — | — | 6.4 | 9.7 |
| 40 | 11/2 | 48.6 | 3.5 | 1.7 | 2.8 | — | 3.0 | — | 3.7 | 3.7 | 3.7 | — | 5.1 | 5.1 | 5.1 | — | — | — | 7.1 | 10.2 |
| 50 | 2 | 60.5 | 3.8 | 1.7 | 2.8 | — | 3.5 | — | 3.9 | 3.9 | 3.9 | — | 5.5 | 5.5 | 5.5 | — | — | — | 8.7 | 11.1 |
| 65 | 21/2 | 76.3 | 4.2 | 2.1 | 3.0 | — | 3.5 | — | 5.2 | 5.2 | 5.2 | — | 7.0 | 7.0 | 7.0 | — | — | — | 9.5 | 14.0 |
| 80 | 3 | 89.1 | 4.2 | 2.1 | 3.0 | — | 4.0 | — | 5.5 | 5.5 | 5.5 | — | 7.6 | 7.6 | 7.6 | — | — | — | 11.1 | 15.2 |
| 90 | 31/2 | 101.6 | 4.2 | 2.1 | 3.0 | — | 4.0 | — | 5.7 | 5.7 | 5.7 | — | 8.1 | 8.1 | 8.1 | — | — | — | — | — |
| 100 | 4 | 114.3 | 4.5 | 2.1 | 3.0 | — | 4.0 | — | 6.0 | 6.0 | 6.0 | — | 8.6 | 8.6 | 8.6 | — | 11.1 | — | 13.5 | 17.1 |
| 125 | 5 | 139.8 | 4.5 | 2.8 | 3.4 | — | 5.0 | — | 6.6 | 6.6 | 6.6 | — | 9.5 | 9.5 | 9.5 | — | 12.7 | — | 15.9 | 19.0 |
| 150 | 6 | 165.2 | 5.0 | 2.8 | 3.4 | — | 5.0 | — | 7.1 | 7.1 | 7.1 | — | 11.0 | 11.0 | 11.0 | — | 14.3 | — | 18.2 | 21.9 |
| 200 | 8 | 216.3 | 5.8 | 2.8 | 4.0 | — | 6.5 | 7.0 | 8.2 | 8.2 | 8.2 | 10.3 | 12.7 | 12.7 | 12.7 | 15.1 | 18.2 | 20.6 | 23.0 | 22.2 |
| 250 | 10 | 267.4 | 6.6 | 3.4 | 4.0 | — | 6.5 | 7.8 | 9.3 | 9.3 | 9.3 | 12.7 | 12.7 | 12.7 | 15.1 | 18.3 | 21.4 | 25.4 | 28.6 | 25.4 |
| 300 | 12 | 318.5 | 6.9 | 4.0 | 4.5 | — | 6.5 | 8.4 | 9.5 | 9.5 | 10.3 | 14.3 | 12.7 | 12.7 | 17.4 | 21.4 | 25.4 | 28.6 | 33.3 | 25.4 |
| 350 | 14 | 355.6 | 7.9 | 4.0 | 5.0 | 6.4 | 8.0 | 9.5 | 9.5 | 9.5 | 11.1 | 15.1 | — | 12.7 | 19.0 | 23.8 | 27.8 | 31.8 | 35.7 | — |
| 400 | 16 | 406.4 | 7.9 | 4.5 | 5.0 | 6.4 | 8.0 | 9.5 | 9.5 | 9.5 | 12.1 | 16.7 | — | 12.7 | 21.4 | 26.2 | 30.9 | 36.5 | 40.5 | — |
| 450 | 18 | 457.2 | 7.9 | 4.5 | 5.0 | 6.4 | 8.0 | 11.1 | 9.5 | 9.5 | 14.3 | 19.0 | — | 12.7 | 23.8 | 29.4 | 34.9 | 39.7 | 45.2 | — |
| 500 | 20 | 508.0 | 7.9 | 5.0 | 5.5 | 6.4 | 9.5 | 12.7 | 9.5 | 9.5 | 15.1 | 20.6 | — | 12.7 | 26.2 | 32.5 | 38.1 | 44.4 | 50.0 | — |
| 550 | 22 | 558.6 | — | 5.0 | 5.5 | 6.4 | 9.5 | 12.7 | 9.5 | 9.5 | 15.9 | 22.2 | — | 12.7 | 28.6 | 34.9 | 41.3 | 47.6 | 54.0 | — |
| 600 | 24 | 609.6 | — | 5.5 | 6.5 | 6.4 | 9.5 | 14.3 | 9.5 | 9.5 | 17.5 | 24.6 | — | 12.7 | 31.0 | 38.9 | 46.0 | 52.4 | 59.5 | — |
| 650 | 26 | 660.4 | — | 5.5 | 8.0 | 7.9 | 12.7 | — | — | 9.5 | — | — | — | 12.7 | 34.0 | — | — | — | — | — |
| 700 | 28 | 711.2 | — | 5.5 | 8.0 | 7.9 | 12.7 | 15.9 | — | 9.5 | 17.5 | — | | 12.7 | — | — | — | — | — | — |
| 750 | 30 | 762.0 | — | 6.5 | 8.0 | 7.9 | 12.7 | 15.9 | 9.5 | 9.5 | 17.5 | — | | 12.7 | — | — | — | — | — | — |
| 800 | 32 | 812.8 | — | — | 8.0 | 7.9 | 12.7 | 15.9 | — | 9.5 | 17.5 | — | | 12.7 | — | — | — | — | — | — |
| 850 | 34 | 863.6 | — | — | 8.0 | 7.9 | 12.7 | 15.9 | — | 9.5 | 17.5 | — | | 12.7 | — | — | — | — | — | — |
| 900 | 36 | 914.4 | — | — | 8.0 | 7.9 | 12.7 | 15.9 | — | 9.5 | 19.1 | — | | 12.7 | — | — | — | — | — | — |
| 950 | 38 | 965.2 | — | — | — | — | — | — | — | 9.5 | — | — | | 12.7 | — | — | — | — | — | — |
| 1000 | 40 | 1016.0 | — | — | 9.5 | — | 14.3 | — | — | 9.5 | 26.2 | — | | 12.7 | — | — | — | — | — | — |
| 1050 | 42 | 1066.8 | — | — | — | — | — | — | — | 9.5 | — | — | | 12.7 | — | — | — | — | — | — |
| 1100 | 44 | 1117.6 | — | — | — | — | — | — | — | 9.5 | — | — | | 12.7 | — | — | — | — | — | — |
| 1150 | 46 | 1168.4 | — | — | — | — | — | — | — | 9.5 | — | — | | 12.7 | — | — | — | — | — | — |
| 1200 | 48 | 1219.2 | — | — | — | — | — | — | — | 9.5 | — | — | | 12.7 | — | — | — | — | — | — |

**Schedule with the suffix "S" only applies for Austenitic stainless steel fittings.This is applies for the nominal schedule of seamless steel fittings for SH3408 standard;the schedule of wrought steel fittings for SH3408 standard uses the millimeter system.**



**ASME/ANSI B36.10M、B36.19M**

OUTSIDE DIAMETER AND WALL THICKNESS

| Nominal Diameter | | Qutside Diaeter | Mominal Wall Thickness T | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DN | NPS | D | Sch5S | Sch10S | Sch10 | Sch20 | Sch30 | Sch40S | Std | Sch40 | Sch60 | Sch80S | XS | Sch80 | Sch100 | Sch120 | Sch140 | Sch160 | XXS |
| 6 | 1/8 | 10.3 | — | 1.24 | — | — | — | 1.73 | 1.73 | 1.73 | — | 2.41 | 2.41 | 2.41 | — | — | — | — | — |
| 8 | 1/4 | 13.7 | — | 1.65 | — | — | — | 2.24 | 2.24 | 2.24 | — | 3.02 | 3.02 | 3.02 | — | — | — | — | — |
| 10 | 3/8 | 17.1 | — | 1.65 | — | — | — | 2.31 | 2.31 | 2.31 | — | 3.20 | 3.20 | 3.20 | — | — | — | — | — |
| 15 | 1/2 | 21.3 | 1.65 | 2.11 | — | — | — | 2.77 | 2.77 | 2.77 | — | 3.73 | 3.73 | 3.73 | — | — | — | 4.78 | 7.47 |
| 20 | 3/4 | 26.7 | 1.65 | 2.11 | — | — | — | 2.87 | 2.87 | 2.87 | — | 3.91 | 3.91 | 3.91 | — | — | — | 5.56 | 7.82 |
| 25 | 1 | 33.4 | 1.65 | 2.77 | — | — | — | 3.38 | 3.38 | 3.38 | — | 4.55 | 4.55 | 4.55 | — | — | — | 6.35 | 9.09 |
| 32 | 11/4 | 42.2 | 1.65 | 2.77 | — | — | — | 3.56 | 3.56 | 3.56 | — | 4.85 | 4.85 | 4.85 | — | — | — | 6.35 | 9.70 |
| 40 | 11/2 | 48.3 | 1.65 | 2.77 | — | — | — | 3.68 | 3.68 | 3.68 | — | 5.08 | 5.08 | 5.08 | — | — | — | 7.14 | 10.15 |
| 50 | 2 | 60.3 | 1.65 | 2.77 | — | — | — | 3.91 | 3.91 | 3.91 | — | 5.54 | 5.54 | 5.54 | — | — | — | 8.74 | 11.07 |
| 65 | 21/2 | 73.0 | 2.11 | 3.05 | — | — | — | 5.16 | 5.16 | 5.16 | — | 7.01 | 7.01 | 7.01 | — | — | — | 9.53 | 14.02 |
| 80 | 3 | 88.9 | 2.11 | 3.05 | — | — | — | 5.49 | 5.49 | 5.49 | — | 7.62 | 7.62 | 7.62 | — | — | — | 11.13 | 15.24 |
| 90 | 31/2 | 101.6 | 2.11 | 3.05 | — | — | — | 5.74 | 5.74 | 5.74 | — | 8.08 | 8.08 | 8.08 | — | — | — | — | — |
| 100 | 4 | 114.3 | 2.11 | 3.05 | — | — | — | 6.02 | 6.02 | 6.02 | — | 8.56 | 8.56 | 8.56 | — | 11.13 | — | 13.49 | 17.12 |
| 125 | 5 | 141.3 | 2.77 | 3.40 | — | — | — | 6.55 | 6.55 | 6.55 | — | 9.53 | 9.53 | 9.53 | — | 12.70 | — | 15.88 | 19.05 |
| 150 | 6 | 168.3 | 2.77 | 3.40 | — | — | — | 7.11 | 7.11 | 7.11 | — | 10.97 | 10.97 | 10.97 | — | 14.27 | — | 18.26 | 21.95 |
| 200 | 8 | 219.1 | 2.77 | 3.76 | — | 6.35 | 7.04 | 8.18 | 8.18 | 8.18 | 10.31 | 12.70 | 12.70 | 12.70 | 15.59 | 18.26 | 20.62 | 23.01 | 22.23 |
| 250 | 10 | 273.1 | 3.40 | 4.19 | — | 6.35 | 7.80 | 9.27 | 9.27 | 9.27 | 12.70 | 12.70 | 12.70 | 15.09 | 18.26 | 21.44 | 25.40 | 28.58 | 25.40 |
| 300 | 12 | 323.9 | 3.96 | 4.57 | — | 6.35 | 8.38 | 9.53 | 9.53 | 10.31 | 14.27 | 12.70 | 12.70 | 17.48 | 21.44 | 25.40 | 28.58 | 33.32 | 25.40 |
| 350 | 14 | 355.6 | 3.96 | 4.78 | 6.35 | 7.92 | 9.53 | — | 9.53 | 11.13 | 15.09 | — | 12.70 | 19.05 | 23.83 | 27.79 | 31.75 | 35.71 | — |
| 400 | 16 | 406.4 | 4.19 | 4.78 | 6.35 | 7.92 | 9.53 | — | 9.53 | 12.70 | 16.66 | — | 12.70 | 21.44 | 26.19 | 30.96 | 36.53 | 40.29 | — |
| 450 | 18 | 457.2 | 4.19 | 4.78 | 6.35 | 7.92 | 11.13 | — | 9.53 | 14.27 | 19.05 | — | 12.70 | 23.83 | 29.36 | 34.93 | 39.67 | 45.24 | — |
| 500 | 20 | 508 | 4.78 | 5.54 | 6.35 | 9.53 | 12.70 | — | 9.53 | 15.09 | 20.62 | — | 12.70 | 26.19 | 32.54 | 38.10 | 44.45 | 50.01 | — |
| 550 | 22 | 559 | 4.78 | 5.54 | 6.35 | 9.53 | 12.70 | — | 9.53 | — | 22.23 | — | 12.70 | 28.58 | 34.93 | 41.28 | 47.63 | 53.98 | — |
| 600 | 24 | 610 | 5.54 | 6.35 | 6.35 | 9.53 | 14.27 | — | 9.53 | 17.48 | 24.61 | — | 12.70 | 30.96 | 38.89 | 46.02 | 52.37 | 59.54 | — |
| 650 | 26 | 660 | — | — | 7.92 | 12.70 | — | — | 9.53 | — | — | — | 12.70 | — | — | — | — | — | — |
| 700 | 28 | 711 | — | — | 7.92 | 12.70 | 15.88 | — | 9.53 | — | — | — | 12.70 | — | — | — | — | — | — |
| 750 | 30 | 762 | 6.35 | 7.92 | 7.92 | 12.70 | 15.88 | — | 9.53 | — | — | — | 12.70 | — | — | — | — | — | — |
| 800 | 32 | 813 | — | — | 7.92 | 12.70 | 15.88 | — | 9.53 | 17.48 | — | — | 12.70 | — | — | — | — | — | — |
| 850 | 34 | 864 | — | — | 7.92 | 12.70 | 15.88 | — | 9.53 | 17.48 | — | — | 12.70 | — | — | — | — | — | — |
| 900 | 36 | 914 | — | — | 7.92 | 12.70 | 15.88 | — | 9.53 | 19.05 | — | — | 12.70 | — | — | — | — | — | — |
| 950 | 38 | 965 | — | — | — | — | — | — | 9.53 | — | — | — | 12.70 | — | — | — | — | — | — |
| 1000 | 40 | 1016 | — | — | — | — | — | — | 9.53 | — | — | — | 12.70 | — | — | — | — | — | — |
| 1050 | 42 | 1067 | — | — | — | — | — | — | 9.53 | — | — | — | 12.70 | — | — | — | — | — | — |
| 1100 | 44 | 1118 | — | — | — | — | — | — | 9.53 | — | — | — | 12.70 | — | — | — | — | — | — |
| 1150 | 46 | 1168 | — | — | — | — | — | — | 9.53 | — | — | — | 12.70 | — | — | — | — | — | — |
| 1200 | 48 | 1219 | — | — | — | — | — | — | 9.53 | — | — | — | 12.70 | — | — | — | — | — | — |

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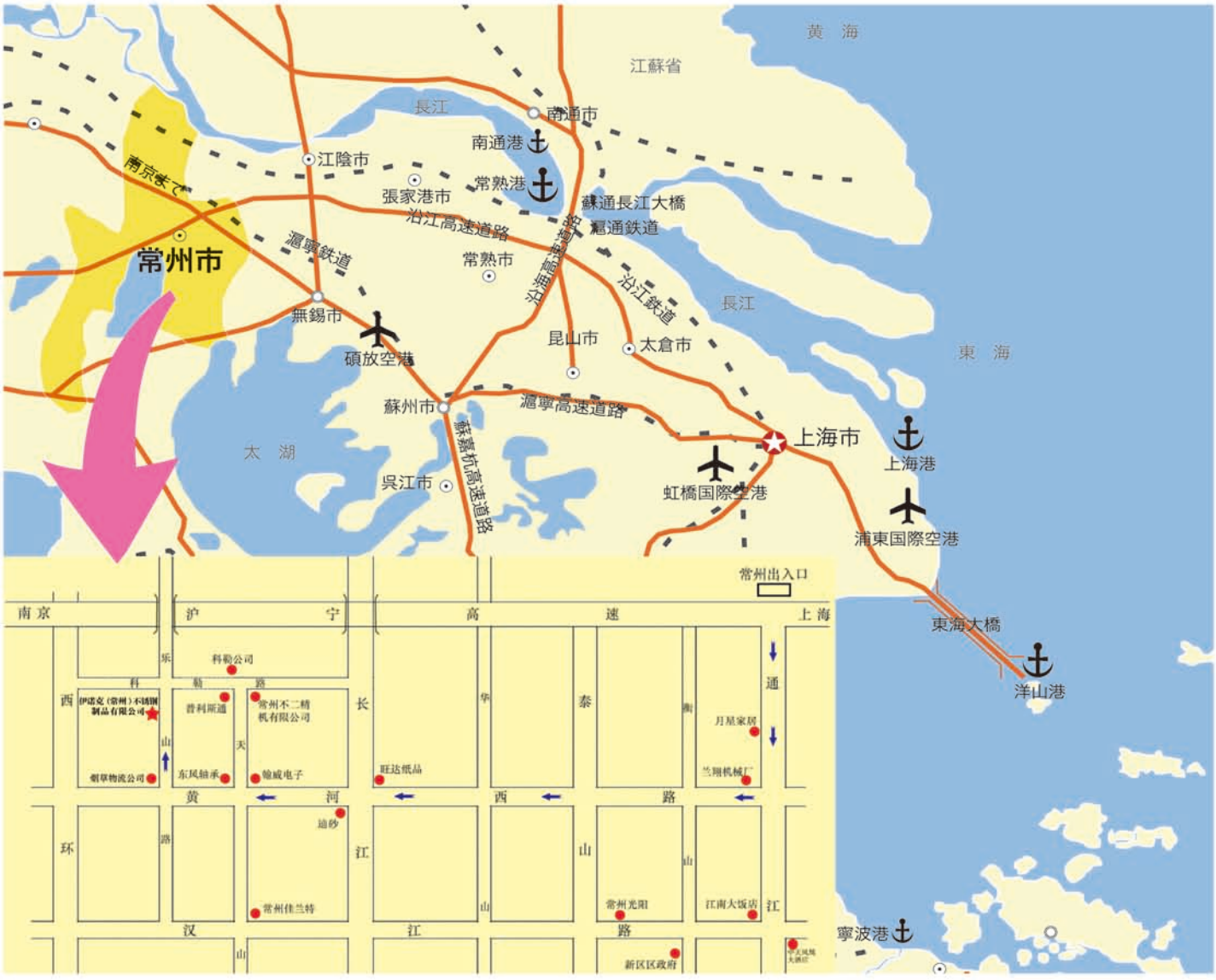



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