

MILIM CO.,LTD

(주)미림





BUREAU
VERITAS

Bureau Veritas Certification

MI LIM CO., Ltd.

34-23 Gangbyeon-daero 456beon-gil, Sasang-gu, Busan, Republic of Korea, 47033

Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 9001:2015

Scope of certification

Manufacturing of Flange, Fitting products

Original cycle start date:	04-03-2016
Expiry date of previous cycle:	NA
Certification / Recertification Audit date:	NA
Certification / Recertification cycle start date:	04-03-2025
Subject to the continued satisfactory operation of the organisation's Management System, this certificate expires on:	03-03-2028

Certificate No.: **KR004558**

Version: 1

Issue date: 04-03-2025



0008

Signed on behalf of BVCH SAS UK Branch

Certification Body Address: 5thFloor, 100 LowerThames Street, London, EC3R 6DL, United Kingdom

Local Office: 5th Floor, 457 Bongeunsa-ro, Gangnam-gu, Seoul, Republic of Korea, 06096

Further clarifications regarding the scope and validity of this certificate, and the applicability of the management system requirements, please call: +82 2 555 8910



MILIM

Company Information

대표 인사말

BEST SERVICE SPIRIT FOR CUSTOMER



We are improving quality of product with the continuous research and development to fulfill leading duty in the rapidly growing future.

C E O

MI LIM CO.,LTD Company was established in 2014, has been a lot of continuous development by customer's support. Our company is always standing on the place and at the time that forged flanges in the field of heavy industry such as chemical and petro-chemical plant, shipbuilding, power plant, heavy equipment and industrial machine are needed and doing the best to give full satisfaction to our customer.

MI LIM CO.,LTD established suitable total equipment and control system for supplying various kinds of products with the highest quality and all the employees seek after creation of value for improvement of human life through the industrial development.

We are improving quality of product with the continuous research and development to fulfill leading duty in the rapidly growing future.

It is to be possible to supply products at competitive price with the best service spirit for customer and to be formed confidence firmly with customer and to meet customer's requirements.

Sincerely yours,



(주)미림은 건설, 기계 설비, 조선, 플랜트 등 다양한 산업 분야에 중요하게 사용되는 스테인리스 플랜지(STS304, STS316, SSC13, SSC14)를 전문적으로 생산하는 기업입니다. "지속적인 품질관리와 안정적 시장 구축"이라는 품질 방침으로 더 나은 제품을 생산하기 위해 힘쓰고 있으며 고객 만족 실현의 노력으로 고객님들께 감동으로 보답하겠습니다.

감사합니다.

MILIM

Company Information

사업 기반 시설 및 조직



MILIM

Location

#651-58, Eomgung-Dong, Sasang-Gu, Busan, Korea

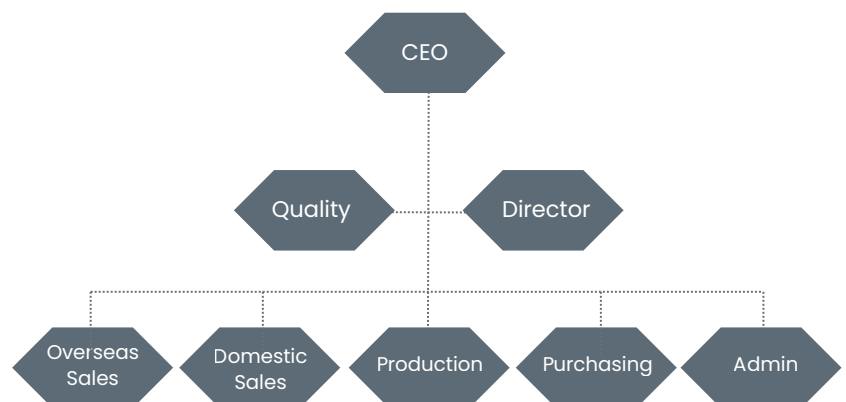
Factory Area

Total Area : 1,650 m²,
Building and Auxiliary Area : 1,320 m²

Main products

Flange - ASME(ANSI), API, MSS, AWWA, DIN, NF, API590 FIG.8, KS, JIS, JPI, etc.

ORGANIZATION



MILIM

Company Information

FACILITY

FACILITY

Item	Capacity	Q'ty
Turning Machine	OD 1,000 ~ 3,600mm	3ea
Lather Machine	OD 580 ~ 720mm	4ea
Drilling machine	OD 580 ~ 2,800mm	3ea
Hoist Crane	2.8 ~ 5.0Ton	4ea
Packing Machine	OD 2,200mm	1ea
Marking Machine	OD 500mm	1ea
Auto Marking Machine		1ea
Air compressor	10Kg/cm2	1ea
Crane Scales	5Ton	1ea
Plate Scale	1Ton	1ea
Folk Lift	2.5Ton	1ea

MILIM

Company Information

INSPECTION

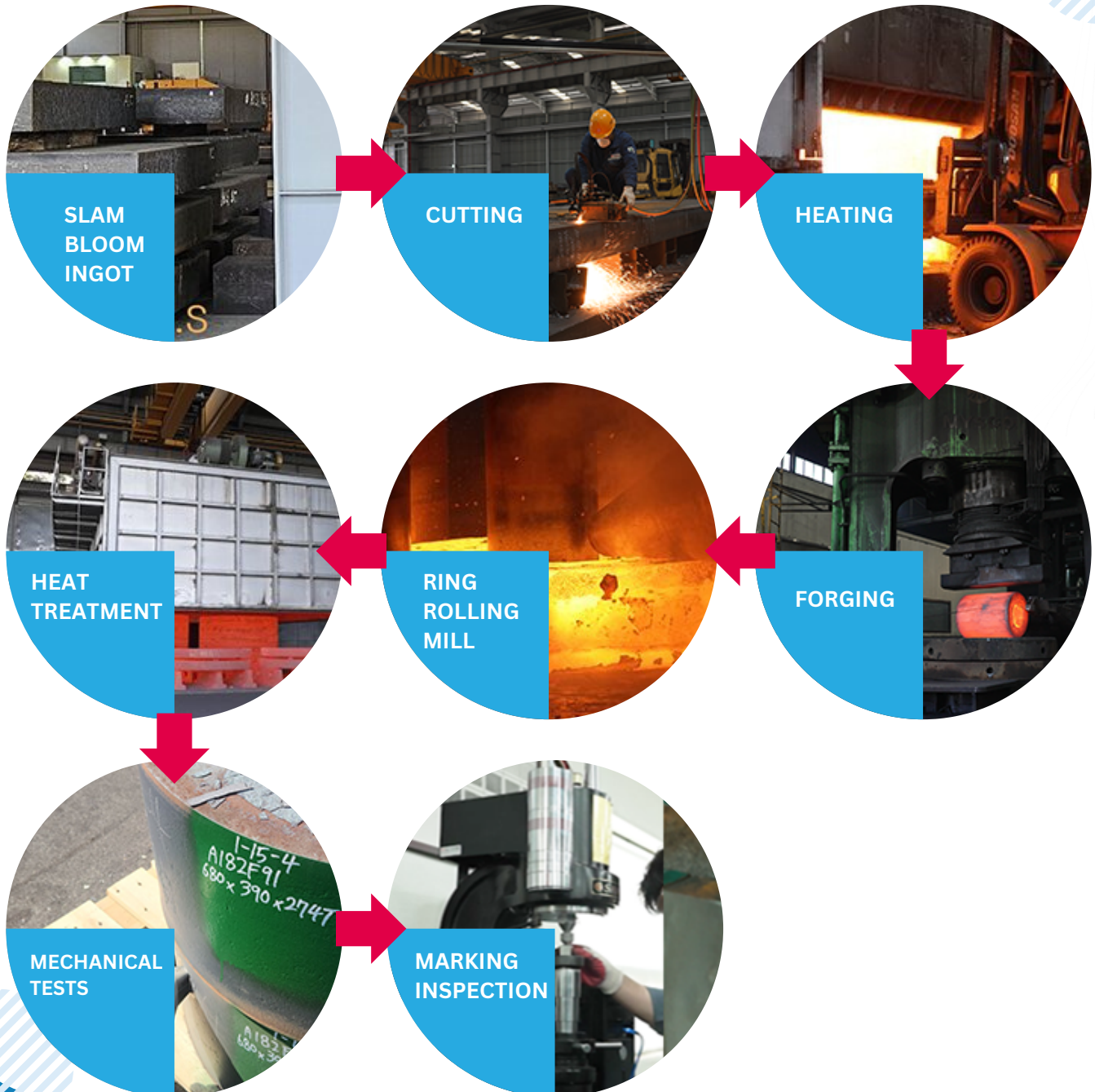
INSPECTION

FACILITYNAME	RANGE	Q'ty
Digital Vernier Calipers	600 mm	1EA
Digital Vernier Calipers	300 mm	1EA
Digital Vernier Calipers	150 mm	1EA
Aualogue Vernier Calipers	2000 mm	1EA
Aualogue Vernier Calipers	1000 mm	3EA
Aualogue Vernier Calipers	600 mm	2EA
Aualogue Vernier Calipers	300 mm	4EA
Aualogue Vernier Calipers	200 mm	2EA
Digital Surface Profile Gauge	580 ~ 2,500 mm	1EA

HISTORY

2014.06	미림테크 설립
2014.08	터닝 2000 Ø 1대 설치 터닝 3000 Ø 1대 설치 드릴 2000 Ø 1대 설치
2016.04	BV ISO 인증 취득 패킹 머신 OD 2200mm 1대 설치
2018.02	마킹머신 OD 500mm 1대 설치
2022.07	(주)미림 법인 변환
2023.04	마킹머신 Gun으로 변경
2023.10	선반 OD 900mm 1대 설치

PROCESS



승인 문서





사업자등록증

(법인사업자)

등록번호 : 707-81-02812

법인명(단체명) : 주식회사 미림

대표자 : 김근태

개업연월일 : 2022년 07월 07일 법인등록번호 : 180111-1454006

사업장소재지 : 부산광역시 사상구 강변대로456번길 34-23(엄궁동)

본점소재지 : 부산광역시 사상구 강변대로456번길 34-23(엄궁동)

사업의종류 : ☒업태 제조업

☒종목 배관자재부품, 후렌지

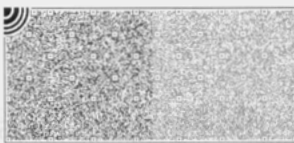
발급사유 : 신규

사업자단위과세적용사업자여부 : 여() 부(✓)

전자세금계산서전용전자우편주소 :

2022년 07월 22일

북부산세무서장



금속시편조직 확대도

➔ [STS 304](#)

KTR

Sample Description

Report No : TAB-1146

Test Date : 2017-6-16,

Specimen Name : 금속시편 (STS304 강판재)

Test Method

ASTM E407-07 Micro-Structure of Metals & Alloys

Micro-Structure

Equipment

Microscope : Olympus BX51M

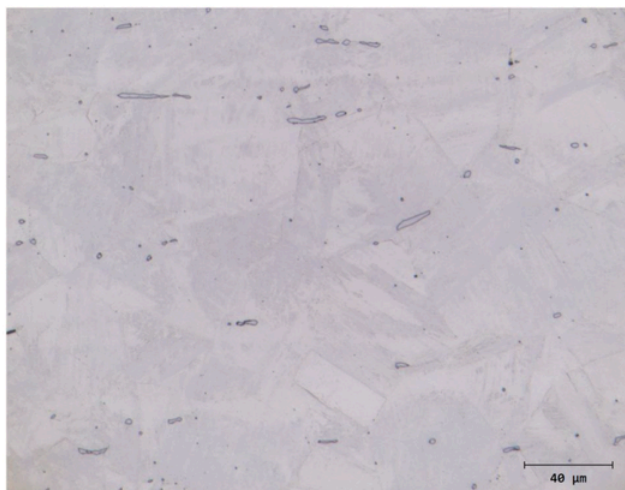
Image Analysis System : Clemex Vision PE

Etchant Name

Electrolytic : Oxalic acid



100X



500X

금속시편조직 확대도

➡ SSC13 주강

KTR

Sample Description

Report No : TAB-1144

Test Date : 2017-6-16,

Specimen Name : 금속시편 (SSC13 주강품)

Test Method

ASTM E407-07 Micro-Structure of Metals & Alloys

Micro-Structure

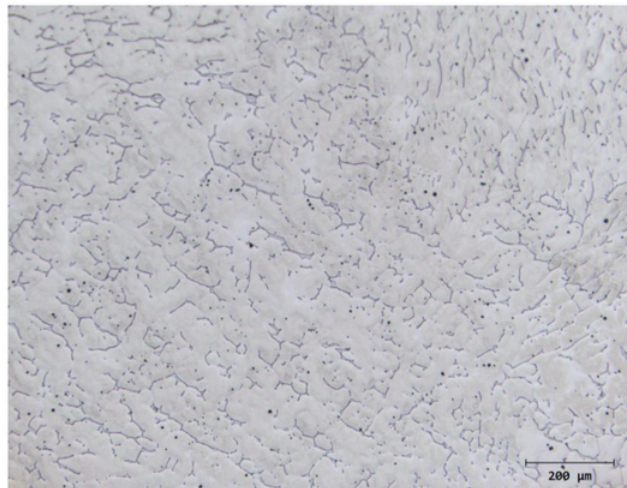
Equipment

Microscope : Olympus BX51M

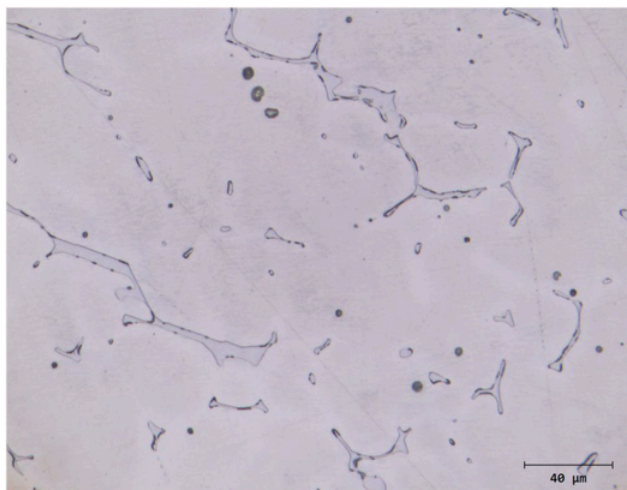
Image Analysis System : Clemex Vision PE

Etchant Name

Electrolytic : Oxalic acid



100X



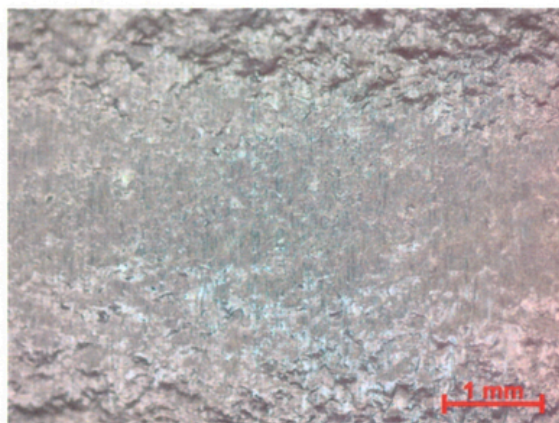
500X

Sample Name : Metallic Specimen
 Sample Number : Heat No.:SG30014
 Material & Specification : A182F321
 Date of Receipt : 2018.02.02
 Date of Test : 2018.02.07 - 2018.02.08
 Test Method Used : ASTM A262-15 Practice E
 Client Name : SAMBU FORGING CO., LTD.
 Client Address : 17, Hwajeonsandan 5-ro 14beon-gil, Gangseo-gu, Busan, Korea

Test Results

Corrosion test

Test item	Test period	Result
IGC Test (Intergranular corrosion test)	15 h	No sign of fissures or cracks



Bent area at 20x magnification

- End of test results -

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report can be checked through the <http://e-checking.kr.sgs.com>. This test report is not related to Korea Laboratory Accreditation Scheme.

Tested by / Jinwoo Park

Approved by Technical Manager / Kyeseob Lee

February 9, 2018

SGS Korea Co., Ltd. Material Laboratory

Tel. (051) 630-7001 Fax. (051) 630-7096

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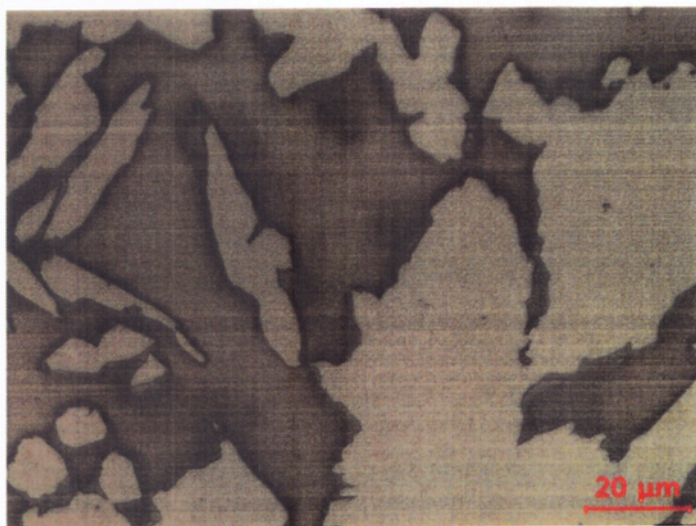


Sample Name : Metallic Specimen
Sample Number : Heat No. SD35345
Material & Specification : A182F51
Date of Receipt : 2019.04.05
Date of Test : 2019.04.09
Test Method Used : ASTM E562-11
Client Name : SAMBU FORGING CO., LTD.
Client Address : 17, Hwajeonsandan 5-ro 14beon-gil, Gangseo-gu, Busan, Korea

Test Results

o Ferrite Content

Test Item	Unit	Result	Remarks
Ferrite Content	%	50.4	• 30 fields and 25 points per field • 95 % CI : 8.67, %R.A : 17.20



[Metallograph at 500x magnification, NaOH electrolytic etched]

- End of test results -

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report can be checked through the <http://e-checking.kr.sgs.com>. This test report is not related to Korea Laboratory Accreditation Scheme.

Tested by / Sukhwan Kim

Approved by Technical Manager / Changsu Jeong

April 11, 2019

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Sample Name : Metallic Specimen
Sample Number : Heat No.E81937
Material & Specification : A182F53
Date of Receipt : 2019.04.05
Date of Test : 2019.04.09
Test Method Used : ASTM E562-11
Client Name : SAMBU STAINLESS FORGING CO., LTD.
Client Address : 17, Hwajeonsandan 5-ro 14beon-gil, Gangseo-gu, Busan, Korea

Test Results

○ Ferrite Content

Test Item	Unit	Result	Remarks
Ferrite Content	%	52.8	• 30 fields and 25 points per field • 95 % CI : 3.99, %R.A : 7.55



[Metallograph at 500x magnification, NaOH electrolytic etched]

- End of test results -

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This test report can be checked through the <http://e-checking.kr.sgs.com>. This test report is not related to Korea Laboratory Accreditation Scheme.

Tested by / Sukhwan Kim

Approved by Technical Manager / Changsu Jeong

April 11, 2019

SGS Korea Co., Ltd. Material Laboratory

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TEST REPORT

15, Jongga-ro, Jung-gu, Ulsan, 44412, Korea

TEL 82-51-464-0771

FAX 82-51-462-2115

Report No : TAK-2018-175529

Receipt Date : 2018.11.16.

Representative : KYUNG MAN KIM

Test Completion Date : 2018.11.22.

Company name : SAMBU STAINLESS FORGING.Co., Ltd.

Address : # 17, Hwajeonsandan 5-ro 14beon-gil, Gangseo-gu, Busan, Korea

Sample name : Metallic Specimen(A182F51/SD35345)

Test Results

TEST ITEM	UNIT	SAMPLE	RESULT	TEST METHOD
Ferric Chloride Pitting Test - Weight Loss	g/m ²	-	0.0	ASTM G48-11(2015)(Method A)
Ferric Chloride Pitting Test - Visible Pitting(20×)	-	-	No Defects	ASTM G48-11(2015)(Method A)

** Total Attachment Page(s) : 1 Page(s)

※ Remarks : Test Time(h) : 24, Test Temp.(°C) : 25 ± 1

- Usage of Report : QUALITY CONTROL

- Note :
1. The test results of this test report are only limited in to the samples and sample names provided by the client and do not guarantee the quality of all products of the client. You Can check website (www.ktr.or.kr) or QR code to verify the authenticity of the certificate.
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Prepared by Lim Kyoungmin

Tel : 052-279-0436

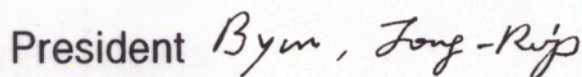


Reviewed by Choi Jinseok

Tel : 1577-0091(ARS ①→④)

2018.11.22

Korea Testing & Research Institute



President Byun, Jong-Rip



QR Code for forgery

Page : 1 of 1

ATTACHMENT REPORT

Report NO. : TAK-2018-175529

Test Completion Date : 2018. 11. 27.

Test Item : Ferric Chloride Pitting Test

Test Method : ASTM G48-11(Method A)

Sample : Metallic Specimen(A182F51/SD35345)

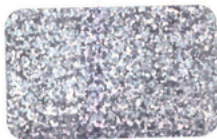


No defects

Remark : Test solution : about 6 % FeCl_3
Test condition : 25 °C $\pm$ 1 °C, 24 h

1 of Total 1 Page(s)

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TEST REPORT

15, Jongga-ro, Jung-gu, Ulsan, 44412, Korea

TEL 82-51-464-0771

FAX 82-51-462-2115

Report No : TAK-2018-175532

Receipt Date : 2018.11.16.

Representative : KYUNG MAN KIM

Test Completion Date : 2018.11.22.

Company name : SAMBU STAINLESS FORGING.Co., Ltd.

Address : # 17, Hwajeonsandan 5-ro 14beon-gil, Gangseo-gu, Busan, Korea

Sample name : Metallic Specimen(A182F53/E81937)

Test Results

TEST ITEM	UNIT	SAMPLE	RESULT	TEST METHOD
Ferric Chloride Pitting Test - Weight Loss	g/m ²	-	0.0	ASTM G48-11(2015)(Method A)
Ferric Chloride Pitting Test - Visible Pitting(20×)	-	-	No Defects	ASTM G48-11(2015)(Method A)

** Total Attachment Page(s) : 1 Page(s)

* Remarks : Test Time(h) : 24, Test Temp.(°C) : 40 ± 1

- Usage of Report : QUALITY CONTROL

- Note :
1. The test results of this test report are only limited in to the samples and sample names provided by the client and do not guarantee the quality of all products of the client. You Can check website (www.ktr.or.kr) or QR code to verify the authenticity of the certificate.
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Lim Kyoungmin

Prepared by Lim Kyoungmin

Tel : 052-279-0436

Choi Jinseok

Reviewed by Choi Jinseok

Tel : 1577-0091(ARS ①→④)

2018.11.22

Korea Testing & Research Institute

President *Byun, Jong-Rip*



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Page : 1 of 1

ATTACHMENT REPORT

Report NO. : TAK-2018-175532

Test Completion Date : 2018. 11. 27.

Test Item : Ferric Chloride Pitting Test

Test Method : ASTM G48-11(Method A)

Sample : Metallic Specimen(A182F53/E81937)



No defects

Remark : Test solution : about 6 % FeCl_3
Test condition : 40 °C $\pm$ 1 °C, 24 h

1 of Total 1 Page(s)

KTR





TEST REPORT

15, Jongga-ro, Jung-gu, Ulsan, 44412, Korea

TEL 82-51-464-0771

FAX 82-51-462-2115

Report No : TAK-2018-175533

Receipt Date : 2018.11.16.

Representative : KYUNG MAN KIM

Test Completion Date : 2018.11.21.

Company name : SAMBU STAINLESS FORGING.Co., Ltd.

Address : # 17, Hwajeonsandan 5-ro 14beon-gil, Gangseo-gu, Busan, Korea

Sample name : Metallic Specimen(A182F53/E81937)

Test Results

TEST ITEM	UNIT	SAMPLE	RESULT	TEST METHOD
Sodium Hydroxide Etch Test(500×)	-	-	See Attachment	ASTM A923-14(Method A)

** Total Attachment Page(s) : 1 Page(s)

- Usage of Report : QUALITY CONTROL

- Note :
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Lim Kyoungmin

Prepared by Lim Kyoungmin

Tel : 052-279-0436

Choi Jinseok

Reviewed by Choi Jinseok

Tel : 1577-0091(ARS ①→④)

2018.11.21

Korea Testing & Research Institute

President *Byun, Jong-Rip*



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Page : 1 of 1

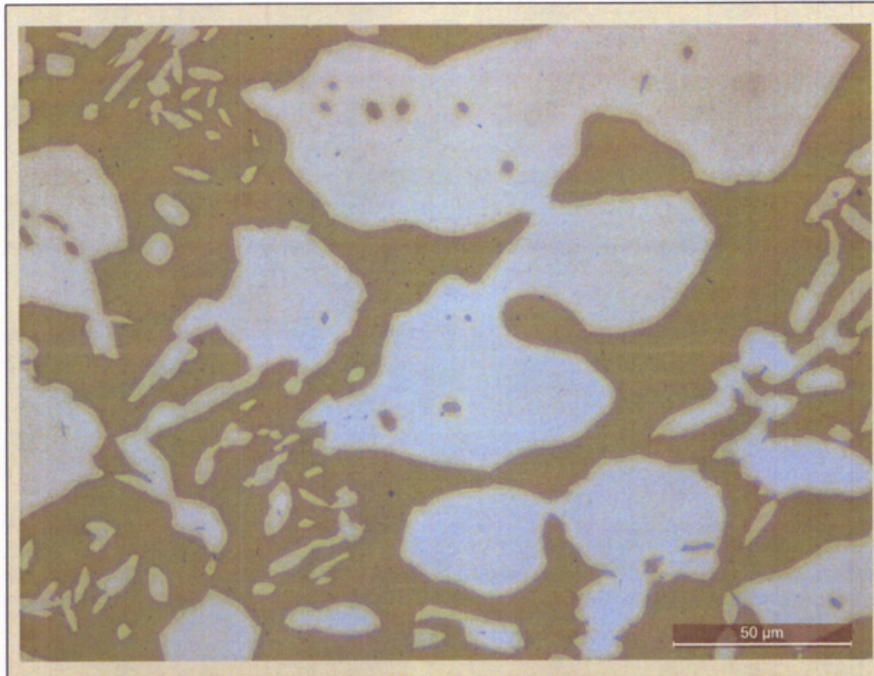
ATTACHMENT REPORT

Report NO. : TAK-2018-175533

Test Completion Date : 2015. 11. 21.

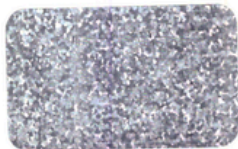
Test Item : Sodium Hydroxide Etch Test, (500×) Test Method : ASTM A923-14(Method A)

Sample : Metallic Specimen (A182F53/E81937)



This is duplex stainless steel microstructure, ferrite matrix and austenite. And this microstructure are classified unaffected structure type, compared with ASTM A 923 method A etch structures, which interface boundaries between austenite and ferrite have no detrimental phases, such as intermetallic phases or precipitate.

Specimen preparation : ASTM E3



TEST REPORT

15, Jongga-ro, Jung-gu, Ulsan, 44412, Korea

TEL 82-51-464-0771

FAX 82-51-462-2115

Report No : TAK-2018-175530

Receipt Date : 2018.11.16.

Representative : KYUNG MAN KIM

Test Completion Date : 2018.11.21.

Company name : SAMBU STAINLESS FORGING.Co., Ltd.

Address : # 17, Hwajeonsandan 5-ro 14beon-gil, Gangseo-gu, Busan, Korea

Sample name : Metallic Specimen(A182F51/SD35345)

Test Results

TEST ITEM	UNIT	SAMPLE	RESULT	TEST METHOD
Sodium Hydroxide Etch Test(500×)	-	-	See Attachment	ASTM A923-14(Method A)

** Total Attachment Page(s) : 1 Page(s)

- Usage of Report : QUALITY CONTROL

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Lim Kyoungmin

Prepared by Lim Kyoungmin

Tel : 052-279-0436

Choi Jinseok

Reviewed by Choi Jinseok

Tel : 1577-0091(ARS ①→④)

2018.11.21

Korea Testing & Research Institute

President *Byun, Jong-Rip*



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Page : 1 of 1

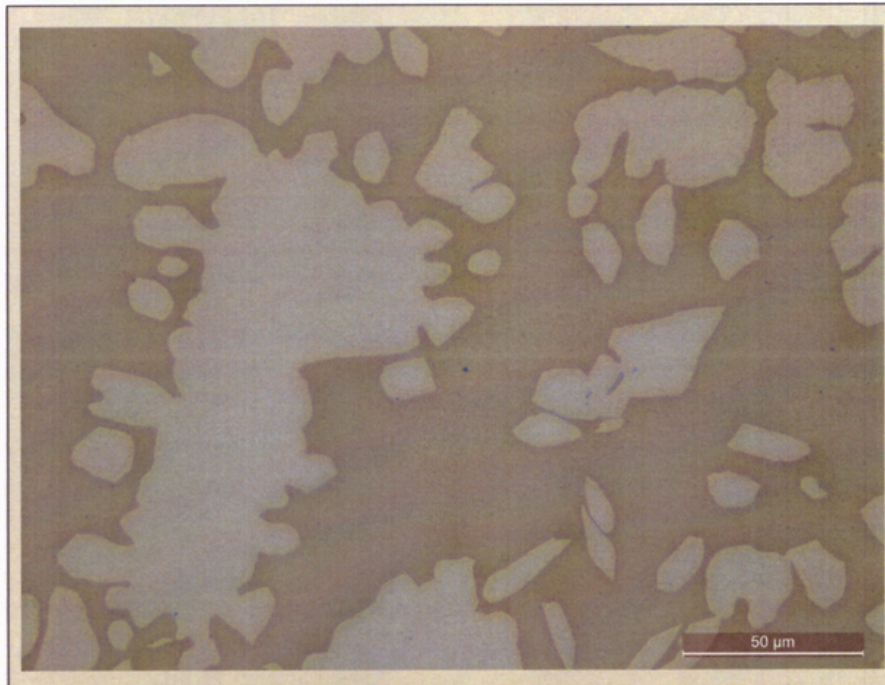
ATTACHMENT REPORT

Report NO. : TAK-2018-175530

Test Completion Date : 2015. 11. 21.

Test Item : Sodium Hydroxide Etch Test, (500×) Test Method : ASTM A923-14(Method A)

Sample : Metallic Specimen (A182F51/SD35345)

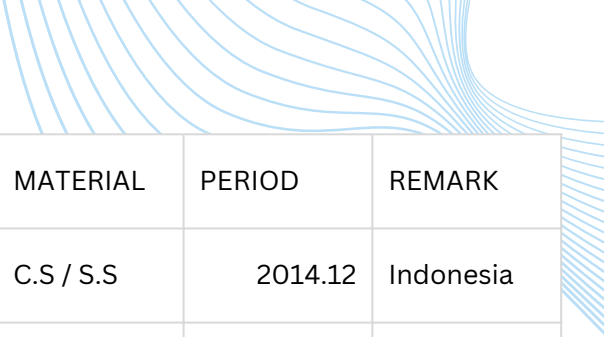


This is duplex stainless steel microstructure, ferrite matrix and austenite. And this microstructure are classified unaffected structure type, compared with ASTM A 923 method A etch structures, which interface boundaries between austenite and ferrite have no detrimental phases, such as intermetallic phases or precipitate.

Specimen preparation : ASTM E3



납품 실적



No	CLIENT	PO No. / LOCATION	PROJECT	MATERIAL	PERIOD	REMARK
1	PT.DAEKYUNG INDAH	PO-PROC-14-1270- 2	D1412	C.S / S.S	2014.12	Indonesia
2	PT.DAEKYUNG INDAH	PO-PROC-14-1178- 4	D1415	C.S	2015.01	Indonesia
3	PT.DAEKYUNG INDAH	PO-PROC-15- 0024-1	M1450,M1452	C.S	2015.01	Indonesia
4	PT.DAEKYUNG INDAH	PO-PROC-14-1404- 2	D1409,D1410	C.S	2015.01	Indonesia
5	PT.DAEKYUNG INDAH	PO-PROC-14-1371- 1	D1410	C.S	2015.01	Indonesia
6	PT.DAEKYUNG INDAH	PO-PROC-14-1449	D1406,D1407	C.S	2014.12	Indonesia
7	PT.DAEKYUNG INDAH	PO-PROC-14-1279- 4	D1408,D1414,D141 6	C.S / S.S	2014.12	Indonesia
8	PT.DAEKYUNG INDAH	PO-PROC-14-1305- 2	D1415	C.S	2015.01	Indonesia
9	PT.DAEKYUNG INDAH	PO-PROC-15-0228- 1	D1418	C.S	2015.03	Indonesia
10	PT.DAEKYUNG INDAH	PO-PROC-15-0328	D1419,D1420,M15 07	C.S / S.S	2015.03	Indonesia
11	PT.DAEKYUNG INDAH	PO-PROC-14-1394- 1	D1411	C.S	2015.03	Indonesia
12	PT.DAEKYUNG INDAH	PO-PROC-15-0277	D1411,M1503,M15 12	C.S	2015.03	Indonesia
13	PT.DAEKYUNG INDAH	PO-PROC-15-0183- 1	M1506	C.S	2015.03	Indonesia
14	PT.DAEKYUNG INDAH	PO-PROC-15-0284	D1412,D1414,D141 0	C.S	2015.03	Indonesia
15	PT.DAEKYUNG INDAH	PO-PROC-15-0269	D1412	C.S	2015.03	Indonesia
16	PT.DAEKYUNG INDAH	PO-PROC-15-0113- 1	M1503	C.S	2015.02	Indonesia
17	PT.DAEKYUNG INDAH	PO-PROC-15-0060	M1501	C.S	2015.01	Indonesia
18	PT.DAEKYUNG INDAH	PO-PROC-15- 0013-2	D1406 etc.	C.S	2015.04	Indonesia
19	PT.DAEKYUNG INDAH	PO-PROC-15-0079	D1406	C.S	2015.01	Indonesia
20	PT.DAEKYUNG INDAH	PO-PROC-15-0377	M1506	C.S	2015.04	Indonesia

No	CLIENT	PO No. / LOCATION	PROJECT	MATERIAL	PERIOD	REMARK
21	PT.DAEKYUNG INDAH	PO-PROC-14-1254-1	D1413	C.S	2015.04	Indonesia
22	PT.DAEKYUNG INDAH	PO-PROC-15-0270- 2	D1412	C.S	2015.04	Indonesia
23	PT.DAEKYUNG INDAH	PO-PROC-15-0228- 2	D1418	C.S	2015.04	Indonesia
24	PT.DAEKYUNG INDAH	PO-PROC-15-0356- 1	D1413,M1515,D14 18	C.S	2015.04	Indonesia
25	PT.DAEKYUNG INDAH	PO-PROC-15-0437- 1	D1502,D1413	C.S	2015.04	Indonesia
26	PT.DAEKYUNG INDAH	PO-PROC-15-0291- 2	D1420	C.S	2015.05	Indonesia
27	PT.DAEKYUNG INDAH	PO-PROC-15-0480- 2	D1504,M1510	C.S	2015.05	Indonesia
28	PT.DAEKYUNG INDAH	PO-PROC-14-1274-4	D1413	C.S	2015.06	Indonesia
29	PT.DAEKYUNG INDAH	PO-PROC-15-0587	M1531	C.S	2015.05	Indonesia
30	PT.DAEKYUNG INDAH	PO-PROC-15-0547	D1420	C.S	2015.05	Indonesia
31	PT.DAEKYUNG INDAH	PO-PROC-15-0532	D1420	S.S	2015.05	Indonesia
32	PT.DAEKYUNG INDAH	PO-PROC-15-0358- 3	D1503	C.S	2015.06	Indonesia
33	PT.DAEKYUNG INDAH	PO-PROC-15-0498- 1	D1503,D1412	C.S	2015.05	Indonesia
34	PT.DAEKYUNG INDAH	PO-PROC-15-0671	D1507,D1412,D14 11	C.S, S.S	2015.06	Indonesia
35	PT.DAEKYUNG INDAH	PO-PROC-15-0649- 1	D1503,D1412	C.S	2015.06	Indonesia
36	PT.DAEKYUNG INDAH	PO-PROC-15-0708	M1527	C.S	2015.06	Indonesia
37	PT.DAEKYUNG INDAH	PO-PROC-15-0633- 1	D1412,D1413,D15 02	C.S	2015.06	Indonesia
38	PT.DAEKYUNG INDAH	PO-PROC-15-0778-1	D1512,D1412	C.S, S.S	2015.07	Indonesia
39	PT.DAEKYUNG INDAH	PO-PROC-15-0861	D1412	C.S	2015.07	Indonesia
40	PT.DAEKYUNG INDAH	PO-PROC-15-0677- 2	D1512	C.S	2015.07	Indonesia
41	PT.DAEKYUNG INDAH	PO-PROC-15-0820	D1501,D1504	C.S	2015.07	Indonesia
42	PT.DAEKYUNG INDAH	PO-PROC-15-0824- 1	D1515	C.S	2015.08	Indonesia
43	PT.DAEKYUNG INDAH	PO-PROC-15-0922	D1501	C.S	2015.08	Indonesia
44	PT.DAEKYUNG INDAH	PO-PROC-15-0916	D1505,D1413	C.S	2015.08	Indonesia
45	PT.DAEKYUNG INDAH	PO-PROC-15-0588- 4	D1509,D1501,D1 415	C.S, S.S	2015.08	Indonesia

No	CLIENT	PO No. / LOCATION	PROJECT	MATERIAL	PERIOD	REMARK
46	PT.DAEKYUNG INDAH	PO-PROC-15-0826-2	D1508	C.S	2015.9	Indonesia
47	PT.DAEKYUNG INDAH	PO-PROC-15-0825-3	D1508	C.S	2015.1	Indonesia
48	PT.DAEKYUNG INDAH	PO-PROC-15-1267	D1514	C.S	2015.11	Indonesia
49	PT.DAEKYUNG INDAH	PO-PROC-15-1417	D1515,D1516	C.S	2015.12	Indonesia
50	PT.DAEKYUNG INDAH	PO-PROC-15-1381-2	D1517,D1508 etc	C.S	2015.12	Indonesia
51	PT.DAEKYUNG INDAH	PO-PROC-15-1380-1	D1514	C.S	2015.12	Indonesia
52	PT.DAEKYUNG INDAH	PO-PROC-15-1435	D1516	C.S	2015.12	Indonesia
53	PT.DAEKYUNG INDAH	PO-PROC-15-1293-2	D1514	C.S	2015.12	Indonesia
54	PT.DAEKYUNG INDAH	PO-PROC-16-0090	M1567	C.S	2016.01	Indonesia
55	PT.DAEKYUNG INDAH	PO-PROC-16-0011	M1567	C.S	2016.01	Indonesia
56	PT.DAEKYUNG INDAH	PO-PROC-15-1475-1	D1516	C.S	2016.01	Indonesia
57	DHACHANG HRSG	SAMSUNG C&T CO.	대산 저가원료 PJT	C.S	2014.05	Korea
58	DUKWON VALVES CO.,LTD.	세창상사	HITACHI 태안화 력소 10호기	S.S	2014.05	Korea
59	DUKWON VALVES CO.,LTD.	엔투비	포스코 Riser slide gate 250A	S.S	2014.06	Korea
60	WONIL T&I CO.,LTD.	DHACHANG HRSG	SAMSUNG C&T CO./KNBC	S.S/316L OVERLAY	2013.11	Korea
61	WONIL T&I CO.,LTD.	DHACHANG HRSG	SAMSUNG C&T CO./KNBC	C.S / S.S	2014.01	Korea
62	DUKWON VALVES CO.,LTD.	DUK VALVES	RISER GUIDE LEG	S.S	2014.04	Korea
63	ALPEC CO.,LTD.	ALPEC	ICHTHYS PJT	C.S	2014.03	Korea
64	DUKWON VALVES CO.,LTD.	POSCO	POSCO 3FINEX Slide gate valve	S.S	2014.02	Korea
65	WONIL T&I CO.,LTD.	KOGAS	신한울 1,2 M220A	C.S / S.S	2013.09	Korea
66	WONIL T&I CO.,LTD.	KOGAS	안산관리소 열교환 기	C.S	2013.12	Korea
67	WONIL T&I CO.,LTD.	KOGAS	AN SAN GAS HEATER	C.S	2013.12	Korea
68	WONIL T&I CO.,LTD.	KOGAS	TRIPOLI WEST	C.S	2013.12	Korea
69	WONIL T&I CO.,LTD.	YULCHON	YULCHON PLANT #1,2	C.S+304S.S	2013.12	Korea
70	WONIL T&I CO.,LTD.	KOGAS	안산 G/S 건설공사	C.S	2013.12	Korea

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71	WONIL T&I CO.,LTD.	PR-13020-03	GAS FILTER 2기(동두천 2기)	S.S	2014.01	Korea
72	WONIL T&I CO.,LTD.	김포	PR-14015-01	C.S	2014.01	Korea
73	WONIL T&I CO.,LTD.	KOGAS	TRIPOLI WEST	C.S	2014.02	Korea
74	WONIL T&I CO.,LTD.	KOGAS	DAE GOT GAS HEATER	C.S	2014.03	Korea
75	WONIL T&I CO.,LTD.	수도산업/동안산기	인천 SCV(V-341 I/J)	S.S	2014.04	Korea
76	WONIL T&I CO.,LTD.	KOGAS	GOE JE GAS HEATER	S.S	2014.04	Korea
77	WONIL T&I CO.,LTD.	KOGAS	삼성중공업(DNV선급)	S.S	2014.04	Korea
78	WONIL T&I CO.,LTD.	PR-14001-06	GOE JE GAS HEATER	C.S	2014.06	Korea
79	WONIL T&I CO.,LTD.	PR-14003-1-04	한화건설 BISKRA	S.S	2014.06	Korea
80	WONIL T&I CO.,LTD.	KOGAS	PR-11058-24,25(R1)	S.S	2014.07	Korea
81	WONIL T&I CO.,LTD.	KOGAS	PR-13035-47,48,50	S.S	2014.07	Korea
82	WONIL T&I CO.,LTD.	KOGAS	PR-13035-36,37,39	C.S	2014.07	Korea
83	WONIL T&I CO.,LTD.	KOGAS	초평 G/S 건설공사	S.S	2014.08	Korea
84	WONIL T&I CO.,LTD.	KOGAS	PR-11023-05,08(R1)	S.S	2014.08	Korea
85	WONIL T&I CO.,LTD.	KOGAS	PR-11023-16	S.S	2014.09	Korea
86	WONIL T&I CO.,LTD.	KOGAS	PR-13035	C.S	2014.09	Korea
87	WONIL T&I CO.,LTD.	KOGAS	KOGAS FILTER 25 SETS	S.S	2014.12	Korea
88	WONIL T&I CO.,LTD.	PO-14-006	PR-14006-31	S.S	2014.12	Korea
89	WONIL T&I CO.,LTD.	SAMSUNG HEAVY INDUSTRIES	BW FSRU PJT / DNV	S.S	2014.12	Korea
90	WONIL T&I CO.,LTD.	PO-11-102	PR-11102-27	S.S	2015.01	Korea
91	WONIL T&I CO.,LTD.	PO-14-006	PR-14006-37	S.S	2015.01	Korea
92	WONIL T&I CO.,LTD.	PO-14-018	JIN HAE GAS HEATER	C.S	2015.01	Korea
93	WONIL T&I CO.,LTD.	PO-14-018	PR-14018-04	C.S	2015.02	Korea
94	WONIL T&I CO.,LTD.	PO-14-015	KOGAS FILTER 25 SETS	S.S	2015.02	Korea
95	WONIL T&I CO.,LTD.	PO-14-016	PR-14016-01,02 / BV	S.S	2015.03	Korea

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96	WONIL T&I CO.,LTD.	PO-11-058	UAE BARAKAH 1,2 ESW DEBRIS	S.S	2015.04	Korea
97	WONIL T&I CO.,LTD.	PO-15-004-12	QIU YU LING SCV PJT SMV 1SET(E-2201)	C.S, S.S	2015.06	Korea
98	WONIL T&I CO.,LTD.	PO-15-002	SINOPEC SCV PJT SMV 3	C.S, S.S	2015.06	Korea
99	WONIL T&I CO.,LTD.	PO-15-007	SENDOUT GAS FILTER	C.S	2015.07	Korea
100	WONIL T&I CO.,LTD.	PO-15-008	KOGAS FILTER 12 SETS (15008-101-000-01)	C.S	2015.09	Korea
101	WONIL T&I CO.,LTD.	PO-15-008	KOGAS FILTER 12 SETS (15008-MA-000-01)	C.S	2015.11	Korea
102	PMS CO.,LTD.	PMS-PO-0611	HM CO	C.S	2015.06	Korea
103	PMS CO.,LTD.	PMS-PO-0614	KSM.CO.LTD	S.S	2015.06	Korea
104	PMS CO.,LTD.	PMS-PO-0705	SEKWANG ENG	S.S	2015.07	Korea
105	PMS CO.,LTD.	PMS-PO-0720	SEKWANG ENG	C.S, S.S	2015.07	Korea
106	PMS CO.,LTD.	PMS-PO-0717	GSM	S.S	2015.07	Korea
107	PMS CO.,LTD.	PMS-PO-0719	GSM	C.S, S.S	2015.07	Korea
108	PMS CO.,LTD.	PMS-PO-0802	SEKWANG ENG	S.S	2015.08	Korea
109	PMS CO.,LTD.	PMS-PO-0909	SEKWANG ENG	S.S	2015.09	Korea
110	PMS CO.,LTD.	PMS-PO-1001	SEKWANG ENG	S.S	2015.1	Korea
111	PMS CO.,LTD.	PMS-PO-1004	SEKWANG ENG	S.S	2015.1	Korea
112	PMS CO.,LTD.	PMS-PO-1049	SEKWANG ENG	S.S	2015.1	Korea
113	PMS CO.,LTD.	PMS-PO-0118	SEKWANG ENG	S.S	2015.11	Korea
114	PMS CO.,LTD.	PMS-PO-1126	SEKWANG ENG	S.S	2015.11	Korea
115	PMS CO.,LTD.	PMS-PO-1207-1	HM CO	C.S	2015.12	Korea
116	PMS CO.,LTD.	PMS-PO-1126	SEKWANG ENG	C.S, S.S	2015.12	Korea
117	PMS CO.,LTD.	PMS-PO-1222	GSM	S.S	2015.12	Korea
118	PMS CO.,LTD.	PMS-PO-1223	SEKWANG ENG	S.S	2015.12	Korea
119	PMS CO.,LTD.	PMS-PO-1227	SEKWANG ENG	S.S	2015.12	Korea
120	PMS CO.,LTD.	PMS-PO-0105	SEKWANG ENG	S.S	2016.01	Korea

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121	PMS CO.,LTD.	PMS-PO-0106	SEKWANG ENG	S.S	2016.01	Korea
122	PMS CO.,LTD.	PMS-PO-0114	SEKWANG ENG	S.S	2016.01	Korea
123	PMS CO.,LTD.	PMS-PO-0123	SEKWANG ENG	S.S	2016.01	Korea
124	IPEG ENG Ltd.	IAD1432-PO-50995	STAR PROJECT	C.S, S.S	2015.05	Korea
125	IPEG ENG Ltd.	ISC1506-PO-51100	CLEAN FUELS PJT	C.S	2015.06	Korea
126	IPEG ENG Ltd.	IAD1432-PO-51338	STAR PROJECT	C.S	2015.09	Korea
127	IPEG ENG Ltd.	ISK1508-PO-51429	KARBALA REFINERY	S.S	2015.1	Korea
128	IPEG ENG Ltd.	IAD1432-PO-51448	STAR PROJECT	C.S, S.S	2015.1	Korea
129	IPEG ENG Ltd.	ISC1450-PO-51468	ZUBAIR OIL FIELD DEVELOPMENT	C.S	2015.11	Korea
130	IPEG ENG Ltd.	IAD1432-PO-51495	STAR PROJECT	C.S, S.S	2015.11	Korea
131	IPEG ENG Ltd.	ISK1508-PO-51431	KARBALA REFINERY	C.S	2015.1	Korea
132	IPEG ENG Ltd.	ISC1506-PO-51547	CLEAN FUELS PJT	C.S	2015.12	Korea
133	IPEG ENG Ltd.	ISC1506-PO-51530	CLEAN FUELS PJT	C.S	2015.12	Korea
134	IPEG ENG Ltd.	IAD1544-PO-51605	SAMAC MMA- PMMA PJT	C.S, S.S	2015.12	Korea
135	IPEG ENG Ltd.	IAD1544-PO-51549	SAMAC MMA- PMMA PJT	C.S, S.S	2015.12	Korea
136	IPEG ENG Ltd.	IAD1434-PO-51632	STAR PROJECT	C.S	2016.01	Korea
137	IPEG ENG Ltd.	ISC1506-PO-51666	CLEAN FUELS PJT	C.S	2016.01	Korea
138	JUAN TECH	2015-072	Increased Metallocene/TTCL	S.S	2015.01	Korea
139	JUAN TECH	2015-306	RPCL PJT	C.S, S.S	2015.04	Korea
140	JUAN TECH	2015-448	ATLAS COPCO DAELIM SOHAR	C.S	2015.08	Korea
141	JUAN TECH	2015-461	고리 3,4호기 냉각기	C.S	2015.08	Korea
142	JUAN TECH	2015-615	RMS(77-No.2 KD HDS)	C.S	2015.09	Korea
143	JUAN TECH	2015-624	HANYANG Ind.	C.S	2015.09	Korea
144	JUAN TECH	2015-646	Punta Catalina_HP Feedwater Heaters	C.S	2015.1	Korea
145	JUAN TECH	2015-742	KALA	C.S	2015.1	Korea

No	CLIENT	PO No. / LOCATION	PROJECT	MATERIAL	PERIOD	REMARK
146	JUAN TECH	2015-674	Theddingworth_DTR&Storage TK	C.S	2015.1	Korea
147	JUAN TECH	2015-612	Theddingworth_DTR&Storage TK	C.S	2015.09	Korea
148	JUAN TECH	2015-563	South Helwan in Egypt_Sur face Condenser	C.S	2015.09	Korea
149	JUAN TECH	2015-600	South Helwan in Egypt_Sur face Condenser	S.S	2015.09	Korea
150	JUAN TECH	2015-653	MV-29/Modec PJT	C.S	2015.1	Korea
151	JUAN TECH	2015-706	MV-29/Modec PJT	C.S, S.S	2015.1	Korea
152	JUAN TECH	2015-731	KNPC CFP PJT	C.S	2015.1	Korea
153	JUAN TECH	2015-743	MV-29/Modec PJT	C.S, S.S	2015.1	Korea
154	JUAN TECH	2015-778	MV-29/Modec PJT	S.S	2015.11	Korea
155	JUAN TECH	2015-786	MV-29/Modec PJT	S.S	2015.11	Korea
156	JUAN TECH	2015-794	UKAN PJT	C.S	2015.11	Korea
157	JUAN TECH	2015-804	MV-29/Modec PJT	C.S	2015.11	Korea
158	JUAN TECH	2015-821	CPC PJT	C.S	2015.11	Korea
159	JUAN TECH	2015-825	Nishi Nagoya_Condenser	C.S	2015.11	Korea
160	JUAN TECH	2015-826	Nishi Nagoya_Condenser	C.S	2015.11	Korea
161	JUAN TECH	2015-832	소음기 BO-2151-C 나주	C.S	2015.12	Korea
162	JUAN TECH	2015-833	MVR PJT	C.S	2015.12	Korea
163	JUAN TECH	2015-839	UOP Libra FPSO PJT	S.S	2015.12	Korea
164	JUAN TECH	2015-843	국방과학연구소	C.S	2015.12	Korea
165	JUAN TECH	2015-849	KNPC CFP PJT	C.S	2015.12	Korea
166	JUAN TECH	2015-854	소음기 BO-2151-C 나주	S.S	2015.12	Korea
167	JUAN TECH	2015-859	Mong Duong 1 Thermal Power Plant	C.S	2015.12	Korea
168	JUAN TECH	2015-860	Mong Duong 1 Thermal Power Plant	C.S	2015.12	Korea
169	JUAN TECH	2015-879	Nishi Nagoya_Condenser	C.S	2015.12	Korea
170	JUAN TECH	2015-890	UKAN PJT	C.S	2015.12	Korea

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171	JUAN TECH	2015-903	HANYANG F&E	C.S	2015.12	Korea
172	JUAN TECH	2015-911	춘천집단에너지 _Condenser	C.S, S.S	2015.12	Korea
173	JUAN TECH	2016-017	SOHAR(1800U NIT) PJT	C.S	2016.01	Korea
174	JUAN TECH	2016-024	Nishi Nagoya_Conde nser	C.S	2016.01	Korea
175	JUAN TECH	2016-007	MV-29/Modec PJT	S.S	2016.01	Korea
176	JUAN TECH	2016-010	MV-29/Modec PJT	C.S, S.S	2016.01	Korea
177	JUAN TECH	2016-046	TGPC PJT	C.S, S.S	2016.01	Korea
178	JUAN TECH	2016-056	SOHAR(1800U NIT) PJT	C.S	2016.01	Korea
179	JUAN TECH	2016-057	산소 압축기 VENT구	S.S	2016.01	Korea
180	JUAN TECH	2016-061	HANYANG F&E	C.S	2015.12	Korea
181	JUAN TECH	2016-068	MV-29/Modec PJT	S.S	2016.01	Korea
182	H.C. PLANT	20150727-01	JUNGBONG	S.S	2015.07	Korea
183	H.C. PLANT	20151104-01	JUNGBONG	S.S	2015.11	Korea
184	H.C. PLANT	20151211-01	JUNGBONG	C.S, S.S	2015.12	Korea
185	H.C. PLANT	20151218-01	JUNGBONG	S.S	2015.12	Korea
186	H.C. PLANT	20151223-01	JUNGBONG	C.S, S.S	2015.12	Korea
187	H.C. PLANT	20151228-01	JUNGBONG	S.S	2015.12	Korea
188	H.C. PLANT	20160113-01	JUNGBONG	S.S	2016.01	Korea
189	H.C. PLANT	20160115-01	JUNGBONG	S.S	2016.01	Korea

No	CLIENT	LOCATION	PROJECT	MATERIAL	PERIOD	REMARK
190	PT.DAEKYUNG INDAH	PO-PROC-16-1158-5	D1615	C.S, S.S	2017.01	Indonesia
191	PT.DAEKYUNG INDAH	PO-PROC-16-1208-1	D1613	C.S, S.S	2017.01	Indonesia
192	PT.DAEKYUNG INDAH	PO-PROC-16-1211	D1613	C.S, S.S	2017.01	Indonesia
193	PT.DAEKYUNG INDAH	PO-PROC-16-1077-4	D1612	C.S, S.S	2017.01	Indonesia
194	PT.DAEKYUNG INDAH	PO-PROC-16-1206	D1613	C.S, S.S	2017.01	Indonesia
195	PT.DAEKYUNG INDAH	PO-PROC-16-1258	D1615,D1613	C.S, S.S	2017.01	Indonesia
196	PT.DAEKYUNG INDAH	PO-PROC-16-1255	M1643	C.S, S.S	2017.02	Indonesia
197	PT.DAEKYUNG INDAH	PO-PROC-17-0075	M1701	C.S, S.S	2017.02	Indonesia
198	PT.DAEKYUNG INDAH	PO-PROC-17-0011	D1612	C.S, S.S	2017.02	Indonesia
199	PT.DAEKYUNG INDAH	PO-PROC-17-0007-1	M1701	C.S, S.S	2017.02	Indonesia
200	PT.DAEKYUNG INDAH	PO-PROC-16-1272	D1612	C.S, S.S	2017.02	Indonesia
201	PT.DAEKYUNG INDAH	PO-PROC-16-1234-1	D1613	C.S, S.S	2017.02	Indonesia
202	PT.DAEKYUNG INDAH	PO-PROC-17-0097	D1613	C.S, S.S	2017.02	Indonesia
203	PT.DAEKYUNG INDAH	PO-PROC-16-1190	D1613	C.S, S.S	2017.03	Indonesia
204	PT.DAEKYUNG INDAH	PO-PROC-16-1163	D1613	C.S, S.S	2017.03	Indonesia
205	PT.DAEKYUNG INDAH	PO-PROC-17-0053	M1701	C.S, S.S	2017.03	Indonesia
206	PT.DAEKYUNG INDAH	PO-PROC-16-1168-4	D1613	C.S, S.S	2017.03	Indonesia
207	PT.DAEKYUNG INDAH	PO-PROC-16-1153-2	D1612	C.S, S.S	2017.03	Indonesia
208	PT.DAEKYUNG INDAH	PO-PROC-16-1234-1	D1613	C.S, S.S	2017.03	Indonesia
209	PT.DAEKYUNG INDAH	PO-PROC-17-0176-1	M1712	C.S, S.S	2017.04	Indonesia
210	PT.DAEKYUNG INDAH	PO-PROC-17-0177	M1712	C.S, S.S	2017.04	Indonesia
211	PT.DAEKYUNG INDAH	PO-PROC-17-0196-1	M1715,M1716, M1717	C.S, S.S	2017.04	Indonesia
212	PT.DAEKYUNG INDAH	PO-PROC-17-0202	D1701	C.S, S.S	2017.04	Indonesia
213	PT.DAEKYUNG INDAH	PO-PROC-17-0299	D1605, M1704	C.S, S.S	2017.04	Indonesia
214	PT.DAEKYUNG INDAH	PO-PROC-17-0220-1	M1707,M1710, M1704	C.S, S.S	2017.04	Indonesia

No	CLIENT	LOCATION	PROJECT	MATERIAL	PERIOD	REMARK
215	PT.DAEKYUNG INDAH	PO-PROC-17-0335	M1704	C.S, S.S	2017.06	Indonesia
216	PT.DAEKYUNG INDAH	PO-PROC-17-0366	M1726	C.S, S.S	2017.06	Indonesia
217	PT.DAEKYUNG INDAH	PO-PROC-17-0512	D1709	C.S, S.S	2017.07	Indonesia
218	PT.DAEKYUNG INDAH	PO-PROC-17-0504	D1704, D1702, D1707	C.S, S.S	2017.07	Indonesia
219	PT.DAEKYUNG INDAH	PO-PROC-17-0480-1	D1709	C.S, S.S	2017.07	Indonesia
220	PT.DAEKYUNG INDAH	PO-PROC-17-0299	D1605, M1704	C.S, S.S	2017.07	Indonesia
221	PT.DAEKYUNG INDAH	PO-PROC-17-0472	D1704	C.S, S.S	2017.07	Indonesia
222	PT.DAEKYUNG INDAH	PO-PROC-17-0523	D1702,D1703, D1704.D1707	C.S, S.S	2017.08	Indonesia
223	PT.DAEKYUNG INDAH	PO-PROC-17-0462	D1703	C.S, S.S	2017.08	Indonesia
224	PT.DAEKYUNG INDAH	PO-PROC-17-0524	D1703	C.S, S.S	2017.08	Indonesia
225	PT.DAEKYUNG INDAH	PO-PROC-17-0504	D1704, D1702, D1707	C.S, S.S	2017.08	Indonesia
226	PT.DAEKYUNG INDAH	PO-PROC-17-0615	M1744, M1748, M1733	C.S, S.S	2017.08	Indonesia
227	PT.DAEKYUNG INDAH	PO-PROC-17-0572	M1725	C.S, S.S	2017.08	Indonesia
228	PT.DAEKYUNG INDAH	PO-PROC-17-0604-3	D1705	C.S, S.S	2017.09	Indonesia
229	PT.DAEKYUNG INDAH	PO-PROC-17-0686	D1716,M1758	C.S, S.S	2017.09	Indonesia
230	PT.DAEKYUNG INDAH	PO-PROC-17-0607	M1758	C.S, S.S	2017.09	Indonesia
231	PT.DAEKYUNG INDAH	PO-PROC-17-0707-2	D1716, D1703, D1705. M1753	C.S, S.S	2017.1	Indonesia
232	PT.DAEKYUNG INDAH	PO-PROC-17-0746	M1761	C.S, S.S	2017.1	Indonesia
233	PT.DAEKYUNG INDAH	PO-PROC-17-0770	M1752	C.S, S.S	2017.1	Indonesia
234	PT.DAEKYUNG INDAH	PO-PROC-17-0785-4	D1708	C.S, S.S	2017.11	Indonesia
235	PT.DAEKYUNG INDAH	PO-PROC-17-0882	M1725	C.S, S.S	2017.11	Indonesia
236	PT.DAEKYUNG INDAH	PO-PROC-17-1005	D1702	C.S, S.S	2017.11	Indonesia
237	PT.DAEKYUNG INDAH	PO-PROC-17-0992	M1761	C.S, S.S	2017.11	Indonesia
238	PT.DAEKYUNG INDAH	PO-PROC-17-0909	D1710	C.S, S.S	2017.11	Indonesia
239	PT.DAEKYUNG INDAH	PO-PROC-17-0769-3	D1711	C.S, S.S	2017.12	Indonesia
240	PT.DAEKYUNG INDAH	PO-PROC-17-0801-4	D1712	C.S, S.S	2017.12	Indonesia

No	CLIENT	LOCATION	PROJECT	MATERIAL	PERIOD	REMARK
241	PT.DAEKYUNG INDAH	PO-PROC-17-0837-2	D1708	C.S, S.S	2017.12	Indonesia
242	PT.DAEKYUNG INDAH	PO-PROC-17-0942	D1714	C.S, S.S	2017.12	Indonesia
243	PT.DAEKYUNG INDAH	PO-PROC-17-0930	D1714	C.S, S.S	2017.12	Indonesia
244	PT.DAEKYUNG INDAH	PO-PROC-17-1039	D1713,D1711	C.S, S.S	2017.12	Indonesia
245	PT.DAEKYUNG INDAH	PO-PROC-17-0943-1	D1713,D1711	C.S, S.S	2017.12	Indonesia
246	PT.DAEKYUNG INDAH	PO-PROC-17-0909	D1710	C.S, S.S	2017.12	Indonesia
247	PT.DAEKYUNG INDAH	PO-PROC-17-0852-5	D1710	C.S, S.S	2017.12	Indonesia
248	PT.DAEKYUNG INDAH	PO-PROC-17-0888- 2	D1710, D1713	C.S, S.S	2017.12	Indonesia
249	PT.DAEKYUNG INDAH	PO-PROC-17-0942	D1714	C.S, S.S	2017.12	Indonesia
250	PT.DAEKYUNG INDAH	PO-PROC-17-0948- 1	D1715	C.S, S.S	2017.12	Indonesia
251	PT.DAEKYUNG INDAH	PO-PROC-17-0801- 4	D1712	C.S, S.S	2017.12	Indonesia
252	PT.DAEKYUNG INDAH	PO-PROC-17-0929- 2	D1713	C.S, S.S	2017.12	Indonesia
253	PT.DAEKYUNG INDAH	PO-PROC-17-1109	D1710,D1715	C.S, S.S	2017.12	Indonesia
254	PT.DAEKYUNG INDAH	PO-PROC-17-1229	M1778	C.S, S.S	2017.12	Indonesia
255	PT.DAEKYUNG INDAH	PO-PROC-17-1091-1	D1710	C.S, S.S	2017.12	Indonesia
256	IPEC	IDC1635&1636	KNPC	C.S, S.S	2017.01~08	KOREA
257	IPEC	IDD1524	KOC / DODSAL / FWTID	C.S, S.S OVERLAY	2017.01~08	KOREA
258	IPEC	IHW1640&IHW1651- PO-52306	한화건설	C.S, S.S	2017.01~02	KOREA
259	IPEC	ILC1725	LG건설	C.S, S.S	2017.01~09	KOREA
260	PSC	PSC-PO-17-001	FADHILI PJT	C.S, S.S	2017.04~09	KOREA
261	PSC	PSC-PO-17-004	FADHILI PJT	C.S, S.S	2017.04~09	KOREA
262	PSC	PSC-PO-17-005	FADHILI PJT	C.S, S.S	2017.08	KOREA
263	PSC	PSC-PO-17-017-03	GS Caltex	C.S, S.S	2017.08	KOREA
264	PSC	P17-06-009-PO- 016	Pars Oil & Gas Company	C.S, S.S	2017.09	KOREA
265	PSC	P17-06-012-PO-013	Pars Oil & Gas Company	C.S, S.S	2017.09	KOREA

No	CLIENT	LOCATION	PROJECT	MATERIAL	PERIOD	REMARK
266	PSC	P17-06-012-PO-012	Pars Oil & Gas Company	C.S, S.S	2017.1	KOREA
267	PSC	P17-06-012-PO-006	Pars Oil & Gas Company	C.S, S.S	2017.1	KOREA
268	PSC	P17-06-012-PO-008	Pars Oil & Gas Company	C.S, S.S	2017.1	KOREA
269	PSC	P17-06-012-PO-007	Pars Oil & Gas Company	C.S, S.S	2017.1	KOREA
270	PSC	P17-06-012-PO-006	Pars Oil & Gas Company	C.S, S.S	2017.1	KOREA
271	PSC	P17-06-019-PO-006	Pars Oil & Gas Company	C.S, S.S	2017.1	KOREA
272	PSC	P17-06-012-PO-006	Pars Oil & Gas Company	C.S, S.S	2017.11	KOREA
273	PSC	P17-06-012-PO-026	Pars Oil & Gas Company	C.S, S.S	2017.12	KOREA
274	PMS	PO-204	Sekwang(GS E&C)	C.S, S.S	2017.02	KOREA
275	PMS	PO-0302	Sekwang(GS E&C)	C.S, S.S	2017.03	KOREA
276	PMS	PO-0417	Sekwang(GS E&C)	C.S, S.S	2017.04	KOREA
277	PMS	PO-0605	Sekwang(GS E&C)	C.S, S.S	2017.06	KOREA
278	PMS	PO-0512	Sekwang(GS E&C)	C.S, S.S	2017.06	KOREA
279	PSC	PO-0606	Sekwang(GS E&C)	C.S, S.S	2017.06	KOREA
280	KPP	KP16-16-012-1551	KALSEL-1(HYUNDAI E&C)	C.C	2017.04	KOREA
281	KPP	KP17-15-017-0375	포천 CHIP PJT(GS E&C)	C.C	2017.04	KOREA
282	PTK	juan-2018-024	IMC/SKC P-SF PITCH FEEDING	C.S, S.S	2018	KOREA
283	한양인더스트리	juan-2018-155	LG MMA M3 REVAMPING	C.S, S.S	2018	KOREA
284	PTK	juan-2018-181	OCI 말레이시아 필터 하우스	C.S, S.S	2018	KOREA
285	PTK	juan-2018-180	OCI 말레이시아 필터 하우스	C.S, S.S	2018	KOREA
286	PTK	juan-2018-182	OCI 말레이시아 필터 하우스	C.S, S.S	2018	KOREA
287	PTK	juan-2018-186	OCI 말레이시아 필터 하우스	C.S, S.S	2018	KOREA
288	한양인더스트리	juan-2018-188	HDO PJT	C.S, S.S	2018	KOREA
289	한양인더스트리	juan-2018-213	LG MMA M3 REVAMPING 2차부	C.S, S.S	2018	KOREA
290	PTK	juan-2018-333	LG화학 P.I 증설 FILTER HSG	C.S, S.S	2018	KOREA

No	CLIENT	LOCATION	PROJECT	MATERIAL	PERIOD	REMARK
291	CORE Plant Co.,LTD	Lebe Industrial Co.,Ltd	Petrobras FPSO Carioca MV30	C.S/S.S	2018	KOREA
292	JEON JIN entech		HPC PJT	C.S	2018	KOREA
293	WINTECH		WT20019	C.S/S.S	2019	KOREA
294	CORE Plant Co.,LTD	Lebe Industrial Co.,Ltd	Petrobras FPSO Carioca MV31	C.S/S.S	2019	KOREA
295	BYUCK GANG	AMORE		C.S/S.S	2019	KOREA
296	HAN SHIN METAL	PSC CORP.	M2 MTBE PJT	C.S/S.S	2020	KOREA
297	YOUNG HAE Ltd.	HSD	HSD-SCR PJT	C.S/S.S	2020	KOREA
298	BMS	MITSUBISHI POWER LTD	MARLIM AZUL I P IT	C.S, S.S/A6061	2020	KOREA
299	KYUNG NAM	HYOSUNG		S.S	2021	KOREA
300	CORE Plant Co.,LTD		WEL/Scarborough FPU	C.S/S.S	2021	KOREA
301	CORE Plant Co.,LTD	Lebe Industrial Co.,Ltd	MODEC PA14 Bacalhau FPSO	C.S/S.S	2021	KOREA
302	HAN SHIN METAL	PSC CORP.	M2 MTBE PJT	C.S/S.S	2021	KOREA
303	YOUNG HAE Ltd.		HSD-SCR PJT	C.S	2021	KOREA
304	JUAN Co.,Ltd		이천 CCPP PJT	C.S	2021	KOREA
305	HAN SHIN METAL	PSC CORP.	OCI 광양 GYHP PJT	C.S/S.S	2021	KOREA
306	WINTECH	한국석유공업	WT21002	S.S	2021	KOREA
307	SKF CO.,LTD	MAXICO	DESARROLLO DEL PJT	C.S/S.S	2021	KOREA
308	SKF CO.,LTD	MAXICO	DESARROLLO DEL PJT	SB564/A6061	2021	KOREA
309	CORE Plant Co.,LTD	Lebe Industrial Co., Ltd	MODEC PA08 sangomarFPSO	S.S	2021	KOREA
310	CORE Plant Co.,LTD		SCAR FPU	S.S/F51	2022	KOREA
311	HAN SHIN METAL	INDONASIA		C.S/S.S	2022	KOREA
312	KYUNG NAM	효성		S.S	2022	KOREA
313	CORE Plant Co.,LTD		ISS JERUN	S.S	2022	KOREA
314	HAN SHIN METAL	PSC	LG CHEM	C.S/S.S	2022	KOREA
315	HAN SHIN METAL	P.T DAE KYUNG		S.S	2022	KOREA
316	CORE Plant Co.,LTD	Labe Industrial Co.,Ltd	MODEC PA08 sangomarFPSO	S.S/A694F65	2022	KOREA
317	CORE Plant Co.,LTD	Labe Industrial Co.,Ltd	MODEC PA14 sangomarFPSO	C.S/S.S	2022	KOREA

No	CLIENT	LOCATION	PROJECT	MATERIAL	PERIOD	REMARK
318	CORE Plant Co.,LTD	SINGAPORE	MODEC / EM-Uaru EPSO	C.S/S.S	2023	KOREA
319	CORE Plant Co.,LTD		Hu-Chema 5 Nitric Acid Plant	S.S	2023	KOREA
320	CORE Plant Co.,LTD		MODEC / PA14 Bacalban	F51	2023	KOREA
321	CORE Plant Co.,LTD	DL Chemical	EPO Planr	C.S/S.S	2023	KOREA
322	HAN SHIN METAL	고려플랜트		C.S/S.S	2023	KOREA
323	HAN SHIN METAL	PSC CORP.	M2 MTBE PJT	C.S/S.S	2023	KOREA
324	YOUNG HAE Ltd.		HSD-SCR PJT	C.S/S.S	2023	KOREA
325	KYUNG NAM	HYOSUNG		C.S	2023	KOREA
326	KYUNG NAM	HYOSUNG		S.S	2023	KOREA
327	SKF CO.,LTD	MAXICO		C.S	2023	KOREA
328	CORE Plant Co.,LTD	Lebe Industrial Co.,Ltd	MODEC PA14 Bacalban EPSO	C.S/S.S	2023	KOREA
329	HAN SHIN METAL	INDONASIA		C.S/S.S	2023	KOREA
330	HAN SHIN METAL	PSC	LG CHEM PJT	S.S	2023	KOREA
331	HAN SHIN METAL	PSC	C3 IPA EXPANSION P.IT	C.S/S.S	2023	KOREA
332	HAN SHIN METAL	PT DAEKYUNG		SB151-C70600	2024	KOREA
333	HAN SHIN METAL	PSC	GS CALTEX	C.S/S.S	2024	KOREA
334	HAN SHIN METAL	PSC	GS 바이오 NO.2 P.IT	C.S/S.S	2024	KOREA
335	CORE Plant Co.,LTD		MODEC/Equinor RAIA EPSO	F51/F53	2024	KOREA
336	CORE Plant Co.,LTD		SHELL Merox 3 P.IT	S.S	2024	KOREA
337	CORE Plant Co.,LTD		MODEC/EM-Uaru EPSO	A694F65	2024	KOREA
338	CORE Plant Co.,LTD		MODEC/EM-Uaru EPSO	TEE외 S.S	2024	KOREA
339	CORE Plant Co.,LTD		MODEC/Equinor RAIA EPSO	A694F70	2024	KOREA
340	CORE Plant Co.,LTD		MODEC/EM-Uaru EPSO	S.S	2024	KOREA
341	ENSOL INC.	에코프로	RMP3	S.S	2024	KOREA
342	SELIM SP CO.,LTD		나주 3M TANK제작	S.S	2024	KOREA
343	BUK KANG		LGES SLURRY 저장탱크	S.S	2025	KOREA
344	(주)경남산기		효성중공업 창원공장	C.S/S.S	2025	KOREA

No	CLIENT	LOCATION	PROJECT	MATERIAL	PERIOD	REMARK
355	CORE Plant Co.,LTD	SINGAPORE	MODEC / EM-Uaru FPSO	C.S/S.S	2025	KOREA
319	CORE Plant Co.,LTD	SINGAPORE	Hu-Chema 5 Nitric Acid Plant #2	S.S	2025	KOREA
320	CORE Plant Co.,LTD	SINGAPORE	MODEC / PA14 Bacalhan	F51/A694F65	2025	KOREA
321	신우산업개발(주)	POSCO	4배수 종말처리시설	C.S/S.S	2025	KOREA
322	HAN SHIN METAL	PT DAEKYUNG	인도네시아	C.S/S.S	2025	KOREA
323	HAN SHIN METAL	PT DAEKYUNG	인도네시아	F310S	2025	KOREA
324	KYUNG NAM	HYOSUNG		A6061-BE	2025	KOREA
325	KYUNG NAM	HYOSUNG		C.S	2025	KOREA
326	KYUNG NAM	HYOSUNG		S.S	2025	KOREA
327	SKF CO.,LTD	MAXICO		C.S	2025	KOREA
328	CORE Plant Co.,LTD	Lebe Industrial Co.,Ltd	MODEC/EM-Uaru FPSO	A694F65	2025	KOREA
329	CORE Plant Co.,LTD	Lebe Industrial Co.,Ltd	MODEC/EM-Uaru FPSO	TEE외 S.S	2025	KOREA
330	HAN SHIN METAL	PSC	LG CHEM PJT	S.S/C.S	2025	KOREA
331	HAN SHIN METAL	PSC	C3 IPA EXPANSION PJT	C.S/S.S/ALLOY	2025	KOREA
332	CORE Plant Co.,LTD		MODEC/Equinor RAIA FPSO	A694F70	2025	KOREA
333	KYUNG NAM	HYOSUNG		C.S/S.S	2025	KOREA
334	KYUNG NAM	HYOSUNG		C.S/S.S	2025	KOREA
335	DAE JIN	한양인더스트리	S-OIL SHN PJT	C.S/S.S	2025	KOREA
336	DAE JIN	한양인더스트리	SKM 20CELL	MONEL400	2025	KOREA
337	DAE JIN	한양인더스트리	HDO #6 선석 DDS SKID제작	C.S/S.S	2025	KOREA

DATA SHEET





Estimated Budget

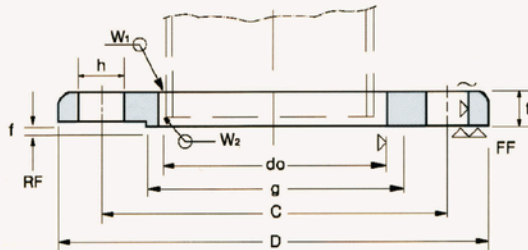
Category	Cost	Description
Personnel	\$18,000	Program director, project manager, engagement officer
Facilitation & Events	\$12,000	Venue hire, workshop materials, refreshments
Communication & Outreach	\$8,000	Newsletters, digital tools, publicity materials
Monitoring & Evaluation	\$5,000	Data collection, surveys, analysis, reporting
Logistics & Administration	\$7,000	Travel, office supplies, coordination support
Total Estimated Budget	\$50,000	

Stainless Steel Flanges

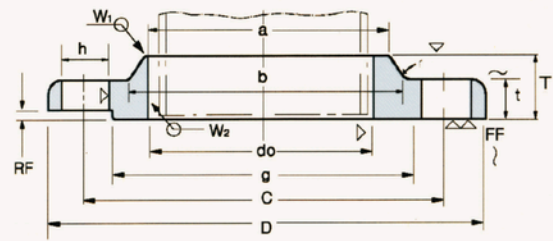
5kg/cm²

JIS B2220-1984 (KSB 1506-2000)
SLIP-ON WELDING STAINLESS STEEL PIPE FLANGES

SOP TYPE
NOMINAL SIZE 10-1000mm



SOH TYPE
NOMINAL SIZE 450-1000mm



Unit : mm

Nominal Bore of Flange	Outside Diam.of Appli- Cable Pipe	Inside Diam.of Flange do	Outside Diam.of Flange D	Sectional Dimensions of Flange							Dia. of Bolt			Nominal Bolt Size	Weight(kg)		
				t	T	Diam. of Hub		Rad -ius	Raised Face	Diam. of Raised Face g	Diam. of Bolt Circle c	Number of Bolt Holes	Hole Diam. h		SOP	BL	SOH
						a	b										
(10)A	17.3	17.8	75	9	-	-	-	-	1	39	55	4	12	M10	0.27	0.3	-
15A	21.7	22.2	80	9	-	-	-	-	1	44	60	4	12	M10	0.30	0.4	-
(20)A	27.2	27.7	85	10	-	-	-	-	1	49	65	4	12	M10	0.37	0.5	-
25A	34.0	34.5	95	10	-	-	-	-	1	59	75	4	12	M10	0.45	0.6	-
(32)A	42.7	43.2	115	12	-	-	-	-	2	70	90	4	15	M12	0.78	0.9	-
40A	48.6	49.1	120	12	-	-	-	-	2	75	95	4	15	M12	0.83	1.0	-
50A	60.5	61.1	130	14	-	-	-	-	2	85	105	4	15	M12	1.07	1.4	-
65A	76.3	77.1	155	14	-	-	-	-	2	110	130	4	15	M12	1.49	2.0	-
80A	89.1	90.0	180	14	-	-	-	-	2	121	145	4	19	M16	1.99	2.7	-
(90)A	101.6	102.6	190	14	-	-	-	-	2	131	155	4	19	M16	2.09	3.0	-
100A	114.3	115.4	200	16	-	-	-	-	2	141	165	8	19	M16	2.39	3.7	-
125A	139.8	141.2	235	16	-	-	-	-	2	176	200	8	19	M16	3.23	5.2	-
150A	165.2	166.6	265	18	-	-	-	-	2	206	230	8	19	M16	4.41	7.5	-
(175)A	190.7	192.1	300	18	-	-	-	-	2	232	260	8	23	M20	5.51	9.5	-
200A	216.3	218.0	320	20	-	-	-	-	2	252	280	8	23	M20	6.33	12.2	-
(225)A	241.8	243.7	345	20	-	-	-	-	2	277	305	12	23	M20	6.64	14.0	-
250A	267.4	269.5	385	22	-	-	-	-	2	317	345	12	23	M20	9.45	19.3	-
300A	318.5	321.0	430	22	-	-	-	-	3	360	390	12	23	M20	10.3	24.3	-
350A	355.6	358.1	480	24	-	-	-	-	3	403	435	12	25	M22	14.0	33.2	-
400A	406.4	409.0	540	24	-	-	-	-	3	463	495	16	25	M22	16.9	41.9	-
450A	457.2	460.0	605	24	40	495	500	5	3	523	555	16	25	M22	21.6	53.0	24.8
500A	508.0	511.0	655	24	40	546	552	5	3	573	605	20	25	M22	23.1	61.9	26.69
(550)A	558.8	562.0	720	26	42	597	603	5	3	630	665	20	27	M24	30.3	81.2	34.1
600A	609.6	613.0	770	26	44	648	654	5	3	680	715	20	27	M24	32.7	93.2	37.5
(650)A	660.4	664.0	825	26	48	702	708	5	3	735	770	24	27	M24	35.9	106.9	42.8
700A	711.2	715.0	875	26	48	751	758	5	3	785	820	24	27	M24	38.2	120.6	45.4
(750)A	762.0	766.0	945	28	52	802	810	5	3	840	880	24	33	M30	48.7	150.5	57.4
800A	812.8	817.0	995	28	52	854	862	5	3	890	930	24	33	M30	51.2	167.4	60.8
(850)A	863.6	868.0	1045	28	54	904	912	5	3	940	980	24	33	M30	54.4	185.1	63.5
900A	914.4	919.0	1095	30	56	956	964	5	3	990	1030	24	33	M30	61.1	218.1	75.3
1000A	1016.0	1021.0	1195	32	60	1058	1066	5	3	1090	1130	28	33	M30	70.5	277.3	88.5
*(1100)A	1117.6	1123.0	1305	32	-	-	-	-	3	1200	1240	28	33	M30	81.7	331.9	-
*1200A	1219.2	1225.0	1420	34	-	-	-	-	3	1305	1350	32	33	M30	102.0	417.8	-
*1350A	1371.6	1377.0	1575	34	-	-	-	-	3	1460	1505	32	33	M30	115.9	515.6	-
*1500A	1524.0	1529.0	1730	36	-	-	-	-	3	1615	1660	36	33	M30	157.4	659.2	-

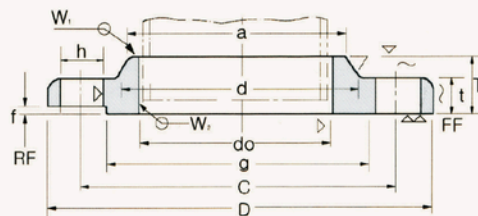
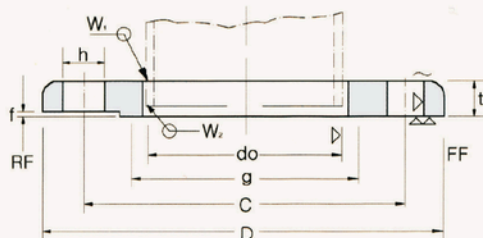
1. ()를 붙인 호칭 지름은 가능한 한 사용하지 않는다.
2. 플랜지의 개스킷 자리는 KS B 1519에 따른다.
3. 볼트 및 너트의 재료와 모양에 대해서는 KS B 1511의 참고2를 참조.
4. 무게 계산은 KS D 3695에 따른다.

10kg/cm²

JIS B2220-1984 (KSB 1506-2000)
SLIP-ON WELDING STAINLESS STEEL PIPE FLANGES

SOP TYPE
NOMINAL SIZE 10-800mm

SOH TYPE
NOMINAL SIZE 250-1000mm



Unit : mm

Nominal Bore of Flange	Outside Diam.of Appli- Cable Pipe	Inside Diam.of Flange do	Outside Diam.of Flange D	Sectional Dimensions of Flange							Dia. of Bolt			Nominal Bolt Size	Weight(kg)		
				t	T	Diam. of Hub		Rad -ius r	Raised Face f	Diam. of Raised Face g	Diam. of Bolt Circle c	Number of Bolt Holes	Hole Diam. h		SOP	BL	SOH
						a	b										
10A	17.3	17.8	90	12	—	—	—	—	1	46	65	4	15	M12	0.52	0.54	—
15A	21.7	22.2	95	12	—	—	—	—	1	51	70	4	15	M12	0.57	0.61	—
20A	27.2	27.7	100	14	—	—	—	—	1	56	75	4	15	M12	0.73	0.79	—
25A	34.0	34.5	125	14	—	—	—	—	1	67	90	4	19	M16	1.13	1.24	—
32A	42.7	43.2	135	16	—	—	—	—	2	76	100	4	19	M16	1.48	1.66	—
40A	48.6	49.1	140	16	—	—	—	—	2	81	105	4	19	M16	1.56	1.81	—
50A	60.5	61.1	155	16	—	—	—	—	2	96	120	4	19	M16	1.88	2.23	—
65A	76.3	77.1	175	18	—	—	—	—	2	116	140	4	19	M16	2.60	3.3	—
80A	89.1	90.0	185	18	—	—	—	—	2	126	150	8	19	M16	2.61	3.5	—
(90)A	101.6	102.6	195	18	—	—	—	—	2	136	160	8	19	M16	2.76	4.0	—
100A	114.3	115.4	210	18	—	—	—	—	2	151	175	8	19	M16	3.14	4.6	—
125A	139.8	141.2	250	20	—	—	—	—	2	182	210	8	23	M20	4.77	7.3	—
150A	165.2	166.6	280	22	—	—	—	—	2	212	240	8	23	M20	6.34	10.1	—
(175)A	190.7	192.1	305	22	—	—	—	—	2	237	265	12	23	M20	6.82	11.8	—
200A	216.3	218.0	330	22	—	—	—	—	2	262	290	12	23	M20	7.53	14.0	—
(225)A	241.8	243.7	350	22	—	—	—	—	2	282	310	12	23	M20	7.74	15.8	—
250A	267.4	269.5	400	24	36	288	292	6	2	324	355	12	25	M22	11.8	22.7	12.7
300A	318.5	321.0	445	24	38	340	346	6	3	368	400	16	25	M22	12.7	27.8	13.8
350A	355.6	358.1	490	26	42	380	386	6	3	413	445	16	25	M22	16.4	37.1	18.2
400A	406.4	409.0	560	28	44	436	442	6	3	475	510	16	27	M24	23.0	52.5	25.2
450A	457.2	460.0	620	30	48	496	502	6	3	530	565	20	27	M24	29.5	68.8	33.0
500A	508.0	511.0	675	30	48	548	554	6	3	585	620	20	27	M24	33.5	82.1	37.6
(550)A	558.8	562.0	745	32	52	604	610	6	3	640	680	20	33	M30	43.1	105.8	49.7
600A	609.6	613.0	795	32	52	656	662	6	3	690	730	24	33	M30	45.7	120.2	52.6
(650)A	660.4	664.0	845	34	56	706	712	6	3	740	780	24	33	M30	52.1	145.0	60.6
700A	711.2	715.0	905	34	58	762	770	6	3	800	840	24	33	M30	59.5	167.2	70.6
(750)A	762.0	766.0	970	36	62	816	824	6	3	855	900	24	33	M30	73.2	204.2	85.8
800A	812.8	817.0	1020	36	64	868	876	6	3	905	950	28	33	M30	76.4	225.4	91.2
(850)A	863.6	868.0	1070	36	66	920	928	6	3	955	1000	28	33	M30	80.7	248.8	98.6
900A	914.4	919.0	1120	38	70	971	979	6	3	1005	1050	28	33	M30	89.4	288.4	109.0
1000A	1016.0	1021.0	1235	40	74	1073	1081	6	3	1110	1160	28	39	M36	109.2	367.7	133.0
*(1100)A	1117.6	1123.0	1345	42	76	—	—	—	3	1220	1270	28	39	M36	131.6	460.0	—
*1200A	1219.2	1225.0	1465	44	78	—	—	—	3	1325	1380	32	39	M36	163.5	572.2	—
*1350A	1371.6	1337.0	1630	48	82	—	—	—	3	1480	1540	36	45	M42	204.7	769.0	—
*1500A	1524.0	1529.0	1795	50	90	—	—	—	3	1635	1700	40	45	M42	250.2	974.9	—

1. ()를 붙인 호칭 지름은 가능한 한 사용하지 않는다.
2. 플랜지의 개스킷 자리는 KS B 1519에 따른다.
3. 볼트 및 너트의 재료와 모양에 대해서는 KS B 1511의 참고2를 참조.
4. 무게 계산은 KS D 3695에 따른다.

Stainless Steel Flanges

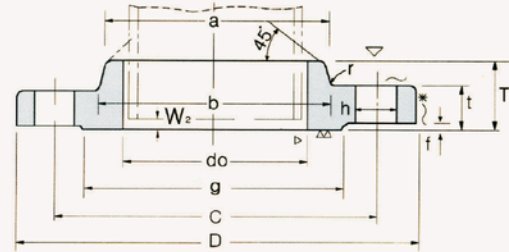
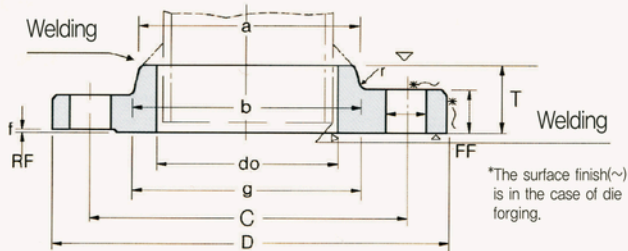
16kg/cm²

JIS B2220-1984 (KSB 1506-2000)

SLIP-ON WELDING STAINLESS STEEL PIPE FLANGES

NOMINAL SIZE 10-600mm

NOMINAL SIZE 650-1200mm



Unit : mm

Nominal Bore of Flange	Outside Diam.of Appli- Cable Pipe	Inside Diam.of Flange do	Outside Diam.of Flange D	Sectional Dimensions of Flange							Dia. of Bolt			Nominal Bolt Size	Weight(kg)		
				t	T	Diam. of Hub		Rad- ius r	Raised Face f	Diam. of Raised Face g	Diam. of Bolt Circle c	Number of Bolt Holes	Hole Diam. h		SOP	BL	SOH
						a	b										
10A	17.3	17.8	90	12	16	26	28	4	1	46	65	4	15	M12	0.52	0.54	0.52
15A	21.7	22.2	95	12	16	30	32	4	1	51	70	4	15	M12	0.57	0.61	0.58
20A	27.2	27.7	100	14	20	38	42	4	1	56	75	4	15	M12	0.73	0.79	0.75
25A	34.0	34.5	125	14	20	46	50	4	1	67	90	4	19	M16	1.13	1.24	1.16
32A	42.7	43.2	135	16	22	56	60	5	2	76	100	4	19	M16	1.48	1.66	1.53
40A	48.6	49.1	140	16	24	62	66	5	2	81	105	4	19	M16	1.56	1.81	1.64
50A	60.5	61.1	155	16	24	76	80	5	2	96	120	8	19	M16	1.8	2.3	1.83
65A	76.3	77.1	175	18	26	94	98	5	2	116	140	8	19	M16	2.5	3.1	2.58
80A	89.1	90.0	200	20	28	108	112	6	2	132	160	8	23	M20	3.5	4.5	3.66
90A	101.6	102.6	210	20	30	120	124	6	2	145	170	8	23	M20	3.7	5.0	3.95
100A	114.3	115.4	225	22	34	134	138	6	2	160	185	8	23	M20	4.5	6.3	4.94
125A	139.8	141.2	270	22	34	164	170	6	2	195	225	8	25	M22	6.5	9.2	7.0
150A	165.2	166.6	305	24	38	196	202	6	2	230	260	12	25	M22	8.7	12.8	9.62
200A	216.3	218.0	350	26	40	244	252	6	2	275	305	12	25	M22	10.9	18.6	12.1
250A	267.4	269.5	430	28	44	304	312	6	2	345	380	12	27	M24	18.0	30.6	20.0
300A	318.5	321.0	480	30	48	354	364	8	3	395	430	16	27	M24	21.5	40.7	24.4
350A	355.6	358.1	540	34	52	398	408	8	3	440	480	16	33	M30×3	30.8	57.8	35.0
400A	406.4	409.0	605	38	60	446	456	10	3	495	540	16	33	M30×3	42.8	82.2	46.2
450A	457.2	460.0	675	40	64	504	514	10	3	560	605	20	33	M30×3	55.1	107.6	61.9
500A	508.0	511.0	730	42	68	558	568	10	3	615	660	20	33	M30×3	65.1	133.1	73.25
(550)A	558.8	562.0	795	44	70	612	622	10	3	670	720	20	39	M36×3	77.9	164.1	88.1
600A	609.6	613.0	845	46	74	666	676	10	3	720	770	24	39	M36×3	86.0	193.2	98.8
(650)A	660.4	664	895	48	77	704	726	10	5	770	820	24	39	M36×3	96.3	227.5	101.0
700A	711.2	715	960	50	80	754	776	10	5	820	875	24	42	M39×3	114.1	272.6	120.0
(750)A	762.0	766	1020	52	83	806	832	10	5	880	935	24	42	M39×3	132.7	321.9	141.0
800A	812.8	817	1085	54	86	865	885	10	5	930	990	24	48	M45×3	152.1	375.6	161.0
(850)A	863.6	868	1135	56	89	916	936	10	5	980	1040	24	48	M45×3	166.5	428.1	177.0
900A	914.4	919	1185	58	93	968	986	10	5	1030	1090	28	48	M45×3	178.1	481.8	191.0
1000A	1016.0	1021	1320	62	99	1070	1098	12	5	1140	1210	28	56	M52×3	235.3	636.0	230.0
1100A	1117.6	1123	1420	66	105	1108	1200	12	5	1240	1310	32	56	M52×3	267.9	784.0	289.0
1200A	1219.2	1225	1530	70	112	1282	1302	12	5	1350	1420	32	56	M52×3	321.1	972.4	348.0
1300A	1320.8	1326	1645	74	-	-	-	-	5	1450	1530	32	62		378.6	1185.2	-
1350A	1371.6	1377	1700	76	-	-	-	-	5	1510	1590	32	62		410.0	1303.8	-
1400A	1422.4	1428	1755	78	-	-	-	-	5	1560	1640	36	62		436.0	1422.5	-
1500A	1524.0	1529	1865	80	-	-	-	-	5	1670	1750	36	62		496.4	1656.6	-

1. ()를 붙인 호칭 지름은 가능한 한 사용하지 않는다.

2. 플랜지의 개스킷 자리는 KS B 1519에 따른다.

3. 볼트 및 너트의 재료와 모양에 대해서는 KS B 1511의 참고2를 참조.

4. 무게 계산은 KS D 3695에 따른다.

20kg/cm²

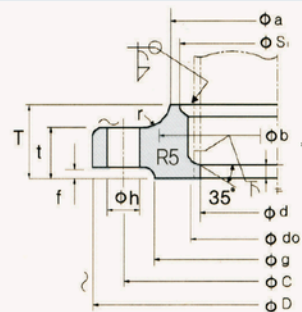
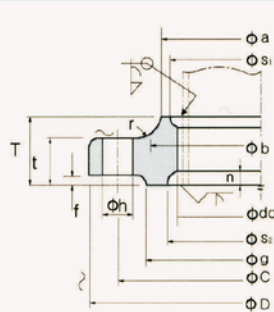
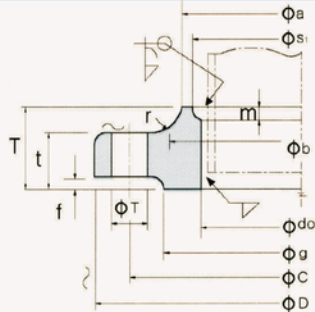
JIS B2220-1984 (KSB 1506-2000)

SLIP-ON WELDING STAINLESS STEEL PIPE FLANGES

A-TYPE
NOMINAL SIZE 10-600mm

B-TYPE
NOMINAL SIZE 10-50mm

C-TYPE
NOMINAL SIZE 65-600mm



*The surface finish(∼) is in the case of die forging.

Unit : mm

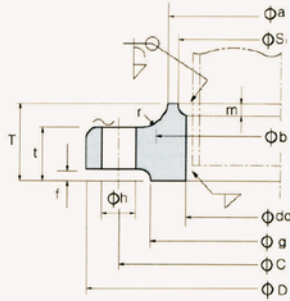
Nominal Diameter of Flange	Outside Diameter of Steel Pipe	Inside Diameter of Flange do	Outside Diameter of Flange D	Sectional Dimensions of Flange								Dia. of Bolt				Reference					Weight(kg)		
				t	T	Diam. of Hub		Rad -ius r	f	g	d	Bolt Circle Diameter C	Number of Bolt Holes	Hole Diam. h	Number Bolt Size	S ₁	m	S ₂	n	1	SOP	BL	SOH
						a	b																
10A	17.3	17.8	90	14	20	30	32	4	1	46	-	65	4	15	M12	27	4	27	4	-	0.6	0.6	0.59
15A	21.7	22.2	95	14	20	34	36	4	1	51	-	70	4	15	M12	31	4	31	4	-	0.7	0.7	0.65
20A	27.2	27.7	100	16	22	40	42	4	1	56	-	75	4	15	M12	37	4	37	4	-	0.8	0.9	0.81
25A	34.0	34.5	125	16	24	48	50	4	1	67	-	90	4	19	M16	44	4	44	4.5	-	1.3	1.5	1.29
32A	42.7	43.2	135	18	26	56	60	5	2	76	-	100	4	19	M16	53	4	53	5	-	1.6	1.8	1.60
40A	48.6	49.1	140	18	26	62	66	5	2	81	-	105	4	19	M16	58	4	59	5.5	-	1.7	2.0	1.69
50A	60.5	61.1	155	18	26	76	80	5	2	96	-	120	8	19	M16	70	4	72	5.5	-	1.9	2.4	1.89
65A	76.3	77.1	175	20	30	100	104	5	2	116	65.9	140	8	19	M16	94	6	85	6	6	2.6	3.4	2.60
80A	89.1	90.0	200	22	34	113	117	6	2	132	78.1	160	8	23	M20	107	6	-	-	6	3.8	4.9	3.93
(90)A	101.6	102.6	210	24	36	126	130	6	2	145	90.2	170	8	23	M20	120	6	-	-	6	4.4	6.0	4.56
100A	114.3	115.4	225	24	36	138	142	6	2	160	102.3	185	8	23	M20	132	6	-	-	6	4.9	6.9	5.13
125A	139.8	141.2	270	26	40	166	172	6	2	195	126.6	225	8	25	M22	160	7	-	-	6	7.8	11.0	8.30
150A	165.2	166.6	305	28	42	196	202	6	2	230	151.0	260	12	25	M22	186	8	-	-	6	10.1	14.9	10.6
200A	216.3	218.0	350	30	46	244	252	6	2	275	199.9	305	12	25	M22	237	9	-	-	6	12.6	21.4	13.3
250A	267.4	269.5	430	34	52	304	312	6	2	345	248.8	380	12	27	M24	290	10	-	-	6	21.9	37.2	23.4
300A	457.2	321.0	480	36	56	354	364	8	3	395	297.9	430	16	27	M24	345	11	-	-	6	25.8	48.8	27.7
350A	508.8	358.1	540	40	62	398	408	8	3	440	333.4	480	16	33	M30×3	384	12	-	-	6	36.2	68.0	39.2
400A	558.8	409.0	605	46	70	446	456	10	3	495	381.0	540	16	33	M30×3	437	13	-	-	7	51.7	99.4	54.2
450A	609.6	460.0	675	48	78	504	514	10	3	560	431.8	605	20	33	M30×3	490	15	-	-	7	66.1	129.1	71.7
500A	660.4	511.0	730	50	84	558	568	10	3	615	482.6	660	20	33	M30×3	544	16	-	-	7	77.4	158.4	86.2
(550)A	711.2	562.0	795	52	90	612	622	10	3	670	533.4	720	20	39	M36×3	595	16	-	-	7	92.2	194.0	105.0
600A	762.0	613.0	845	54	96	666	676	10	3	720	584.2	790	24	39	M36×3	646	18	-	-	7	101.1	226.9	119.0
(650)A	812.8	664.0	945	60	-	-	-	-	5	790	-	850	24	48	M45×3	-	-	-	-	-	147.6	311.6	-
700A	863.6	715.0	995	64	-	-	-	-	5	840	-	-	-	-	-	-	-	-	-	-	168.0	370.9	-
(750)A	762.0	766.0	1080	68	-	-	-	-	5	900	-	970	24	56	M52×3	-	-	-	-	-	212.7	460.1	-
800A	812.8	817.0	1140	72	-	-	-	-	5	960	-	1030	24	56	M52×3	-	-	-	-	-	248.5	546.5	-
(850)A	863.6	868.0	1200	74	-	-	-	-	5	1020	-	1090	24	56	M52×3	-	-	-	-	-	280.5	626.2	-
900A	914.4	919.0	1250	76	-	-	-	-	5	1070	-	1070	28	56	M52×3	-	-	-	-	-	296.9	694.9	-

- ()를 붙인 호칭 지름은 가능한 한 사용하지 않는다.
- 플랜지의 개스킷 자리는 KS B 1519에 따른다.
- d치수는 KS D 3562, KS D 3564 및 KS D 3570 의 스케줄 40인 경우를 참조로 해서 표시한 것이다.
다만, 호칭 지름 450 이상인 것은 관의 안지름 두께를 12.7mm로 했다.
- 볼트 및 너트의 재료와 모양에 대해서는 KS B 1511의 참고2를 참조.
- 무게 계산은 KS D 3695에 따른다.

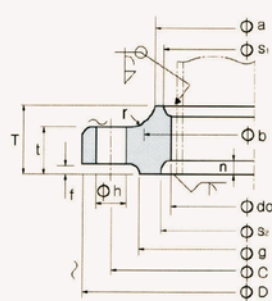
Stainless Steel Flanges

30kg/cm² JIS B2220-1984 (KSB 1506-2000)
SLIP-ON WELDING STAINLESS STEEL PIPE FLANGES

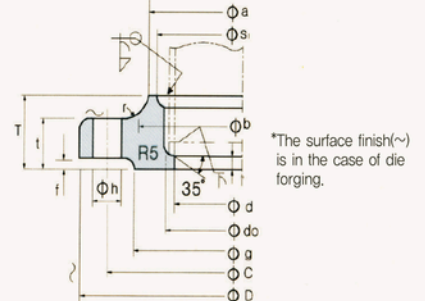
A-TYPE
NOMINAL SIZE 10-400mm



B-TYPE
NOMINAL SIZE 10-50mm



C-TYPE
NOMINAL SIZE 65-400mm



Unit : mm

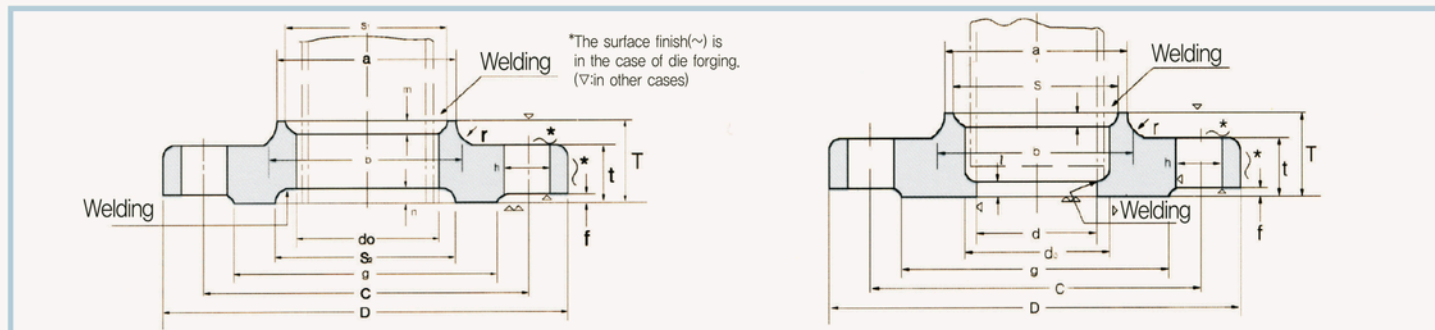
Nominal Diameter of Flange	Outside Diameter of Steel Pipe	Inside Diameter of Flange do	Outside Diameter of Flange D	Sectional Dimensions of Flange								Dia. of Bolt				Reference					Approx Weight(kg)	
				t	T	Diameter of Hub		Radius r	f	g	d	Bolt Circle Diameter C	Number of Bolt Holes	Hole Diameter h	Number Bolt Size	S ₁	m	S ₂	n	1	SOH	BL
						a	b															
10A	17.3	17.8	110	16	24	30	34	4	1	52	-	75	4	19	M16	-	-	-	-	-	0.99	1.00
15A	21.7	22.2	115	18	26	36	40	5	1	55	-	80	4	19	M16	31	4	40	5	-	1.23	1.25
20A	27.2	27.7	120	18	28	42	46	5	1	60	-	85	4	19	M16	37	5	44	5	-	1.34	1.38
25A	34.0	34.5	130	20	30	50	54	5	1	70	-	95	4	19	M16	44	6	52	5	-	1.76	1.84
32A	42.7	43.2	140	22	32	60	64	6	2	80	-	105	4	19	M16	52	6	60	5	-	2.15	2.32
40A	48.6	49.1	160	22	34	66	70	6	2	90	-	120	4	23	M20	58	6	66	5	-	2.82	3.00
50A	60.5	61.1	165	22	36	82	86	6	2	105	-	130	8	19	M16	70	6.5	78	5	-	2.89	3.14
65A	76.3	77.1	200	26	40	102	106	8	2	130	65.9	160	8	23	M20	96	9.5	94	5	6	4.70	5.50
80A	89.1	90.0	210	28	44	115	121	8	2	140	78.1	170	8	23	M20	109	9.5	-	-	6	5.36	6.63
(90)A	101.6	102.6	230	30	46	128	134	8	2	150	90.2	185	8	25	M22	122	9.5	-	-	6	6.85	8.55
100A	114.3	115.4	240	32	48	141	147	8	2	160	102.3	195	8	25	M22	135	9.5	-	-	6	7.89	10.0
125A	139.8	141.2	275	36	54	166	172	8	2	195	126.6	230	8	25	M22	160	9.5	-	-	6	11.4	15.3
150A	165.2	166.6	325	38	58	196	204	8	2	235	151.0	275	12	27	M24	186	9.5	-	-	6	16.7	22.2
200A	216.3	218.0	370	42	64	248	256	8	2	280	199.9	320	12	27	M24	237	9.5	-	-	6	20.6	32.6
250A	267.4	269.5	450	48	72	306	314	10	2	345	248.8	390	12	33	M30×3	290	10	-	-	6	36.1	55.2
300A	318.5	321.0	515	52	78	360	370	10	3	405	297.9	450	16	33	M30×3	345	12	-	-	6	49.9	77.9
350A	355.6	358.1	560	54	84	402	412	12	3	450	333.4	495	16	33	M30×3	383	13	-	-	6	61.2	96.9
400A	406.4	409.0	630	60	92	456	468	15	3	510	381.0	560	16	39	M36	435	14	-	-	7	85.2	136

- ()를 붙인 호칭 지름은 가능한 한 사용하지 않는다.
- 프랜지의 개스킷 자리는 KS B 1519에 따른다.
- d치수는 KS D 3562, KS D 3564 및 KS D 3570의 스케줄 40인 경우를 참조로해서 표시한 것이다.
다만, 호칭 지름 450 이상인 것은 관의 안지름 두께를 12.7mm로 했다.
- 볼트 및 너트의 재료와 모양에 대해서는 KS B 1511의 참고2를 참조.
- 무게 계산은 KS D 3695에 따른다.

40kg/cm² JIS B2216 SLIP-ON WELDING STAINLESS STEEL PIPE FLANGES

NOMINAL SIZE 60-65mm

NOMINAL SIZE 65-400mm



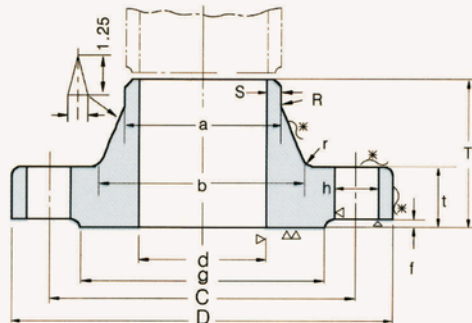
Unit : mm

Nominal Diameter of Flange	Outside Diameter of Steel Pipe	Inside Diameter of Flange do	Outside Diameter of Flange D	Sectional Dimensions of Flange								Dia. of Bolt				Reference					Approx Weight (kg)
				t	T	Diameter of hub		Rad -ius	f	g	d	Bolt Circle Diameter C	Number of Bolt Holes	Hole Diameter h	Number Bolt Size	S ₁	m	S ₂	n	1	
						a	b														
10A	17.3	17.8	110	18	26	34	38	5	1	52	—	75	4	19	M16	28.0	6	28	5		1.11
15A	21.7	22.2	115	20	30	39	43	5	1	55	—	80	4	19	M16	32.5	6	32.5	5		1.39
20A	27.2	27.7	120	20	30	45	49	5	1	60	—	85	4	19	M16	38.0	6	38.0	5		1.51
25A	34.0	34.5	130	22	32	55	59	5	1	70	—	95	4	19	M16	47.8	6	47.8	5		1.97
32A	42.7	43.2	140	24	35	64	68	6	2	80	—	105	4	19	M16	56.5	6	56.5	5		2.50
40A	48.6	49.1	160	24	35	70	74	6	2	90	—	120	4	23	M20	62.5	6	62.5	5		3.26
50A	60.5	61.1	165	26	38	86	90	6	2	105	—	130	8	19	M16	74.5	6	74.5	5.5		3.47
65A	76.3	77.1	200	30	44	106	110	8	2	130	62.3	160	8	23	M20	91.5	7	91.5	7		5.97
80A	89.1	90.3	210	32	46	118	124	8	2	140	73.9	170	8	23	M20	105.5	7.5	105.5	7		6.76
100A	114.3	115.4	250	36	52	145	151	8	2	165	97.1	205	8	25	M22	133.0	8.5	133.0	7		10.78
125A	139.8	141.4	300	40	58	182	188	8	2	200	120.8	250	8	27	M24	160.5	9.5	160.5	7		16.97
150A	165.2	167.0	355	44	64	200	208	8	2	240	143.2	295	12	33	M30	188.0	11	188.0	7		22.6
200A	216.3	218.2	405	50	72	255	263	8	2	290	190.9	345	12	33	M30	243.0	13	243.0	7		34.9
250A	267.4	269.5	475	56	80	310	318	10	2	355	237.2	410	12	33	M30	298.0	15	298.0	7		41.1

1. ()를 붙인 호칭 지름은 가능한 한 사용하지 않는다.
2. 플랜지의 개스킷 자리는 KS B 1519에 따른다.
3. d치수는 KS D 3562, KS D 3564 및 KS D 3570의 스케줄 80인 경우를 참조로해서 표시한 것이다.
다만, 호칭 지름 450 이상인 것은 관의 안지름 두께를 12.7mm로 했다.
4. 볼트 및 너트의 재료와 모양에 대해서는 KS B 1511의 참고2를 참조.
5. 무게 계산은 KS D 3695에 따른다.

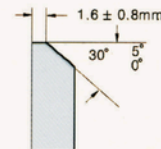
Stainless Steel Flanges

10kg/cm² WELDING STAINLESS STEEL PIPE FLANGES



*The surface finish shown above is in the case of forging (▽ marks: In other cases)

Reference: Beveling



When particularly necessary customers can order another beveling from above.

Unit : mm

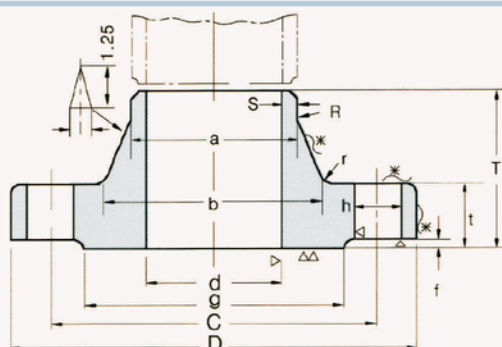
Nominal Bore of Flange	Outside Diam of steel Pipe	Inside Diam of Flange d	Outside Diam of Flange D	Sectional Dimensions of Flange						Dia of Bolt				Nominal Bolt Size	Length of wecr Depat P *4	Approx Weight (kg)
				t	T *1	Diam of Hub		Radius r *3	Raised Face f	Diam of Raised Face g	Bolt Circle Bolt Holes	Number of Bolt Holes	Hole Dia h			
						a	b									
10A	17.3	To be specified by purchaser	90	12	28.9	17.3	25	4	1	46	65	4	15	M12	3.5	
15A	21.7		95	12	30.6	21.7	33	4	1	51	70	4	15	M12	4.5	
20A	27.2		100	14	33.9	27.2	38	4	1	56	75	4	15	M12	6.4	
25A	34		125	14	36.3	34.0	47	4	1	67	90	4	19	M16	6.0	
32A	42.7		135	16	40.3	42.7	57	5	2	76	100	4	19	M16	6.4	
40A	48.6		140	16	41.2	48.6	64	5	2	81	105	4	19	M16	5.9	
50A	60.5		155	16	42.9	60.5	77	5	2	96	120	4	19	M16	6.3	
65A	76.3		175	18	53.0	76.3	97	5	2	116	140	4	19	M16	9.1	
80A	89.1		185	18	53.0	89.1	109	6	2	126	150	8	19	M16	9.6	
(90)A	101.6		195	18	50.6	101.6	120	6	2	136	160	8	19	M16	9.6	
100A	114.3		210	18	54.3	114.3	135	6	2	151	175	8	19	M16	10.4	
125A	139.8		250	20	56.2	139.8	160	6	2	182	210	8	23	M20	10.9	
150A	165.2		280	22	65.3	165.2	190	6	2	212	240	8	23	M20	12.3	
(175)A	190.7		305	22	66.1	190.7	215	6	2	237	265	12	23	M20	13.7	
200A	216.3		330	22	66.1	216.3	240	6	2	262	290	12	23	M20	14.4	
(225)A	241.8		350	22	62.3	241.8	262	6	2	282	310	12	23	M20	15.0	
250A	267.4		400	24	70.7	267.4	292	6	2	324	355	12	25	M22	15.9	
300A	318.5		445	24	75.9	318.5	346	6	3	268	400	16	25	M22	17.5	
350A	355.6		490	26	83.0	355.6	386	8	3	413	445	16	25	M22	19.0	
400A	406.4		560	28	94.4	406.4	442	8	3	475	510	16	27	M24	21.9	
450A	457.2		620	30	107.9	457.2	502	10	3	530	565	20	27	M24	21.9	
500A	508		675	30	110.2	508.0	554	10	3	585	620	20	27	M24	22.7	
550A	558.8		745	32	119.9	558.8	610	10	3	640	680	20	33	M30	23.9	
600A	609.6		795	32	123.6	609.6	662	10	3	690	730	24	33	M30	26.1	

1. *1 *2 *4 DIMENSIONS OF "T" "r" "S" "P" ARE MAKER, KWANG SIN'S STANDARD.

2. *2 UNDER NOMINAL SIZE 225mm & UNDER DIMENSION OF "b" IS MAKER, KWANG JIN'S STANDARD.

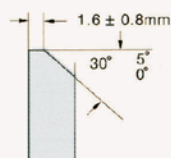
3. ALL DIMENSIONS OF FLANGE WERE DESIGNED ON JIS B2220 & KS B1506 BASE

20kg/cm² WELDING STAINLESS STEEL PIPE FLANGES



*The surface finish shown above is in the case of forging (▽ marks: in other cases)

Reference: Beveling



When particularly necessary customers can order another beveling from above.

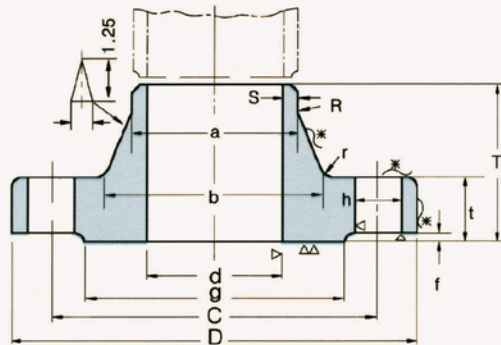
Unit : mm

Nominal Diameter of Flange	Outside Diameter of Steel Pipe	Outside Diameter of Flange D	Sectional Dimensions of Flange										Dia of Bolt			Nominal Bolt Size	Approx Weight (kg)
			t	d	a	b	S	T	P	Radius	f	g	Bolt Diameter Circle C	Number of Bolt Holes	Diameter of Hole h		
10A	17.3	90	14	To be specified by purchaser	17.3	32	To be specified by purchaser	35.9	3.5	4	1	46	65	4	15	M12	
15A	21.7	95	14		21.7	36		36.4	4.5	4	1	51	70	4	15	M12	
20A	27.2	100	16		27.2	42		40.9	6.4	4	1	56	75	4	15	M12	
25A	34.0	125	16		34.0	50		42.0	6.0	4	1	67	90	4	19	M16	
32A	42.7	135	18		42.7	60		46.0	6.4	5	2	76	100	4	19	M16	
40A	48.6	140	18		48.6	66		45.7	5.9	5	2	81	105	4	19	M16	
50A	60.5	155	18		60.5	80		48.7	6.3	5	2	96	120	8	19	M16	
65A	76.3	175	20		76.3	104		63.7	9.1	5	2	116	140	8	19	M16	
80A	89.1	200	22		89.1	117		66.5	9.6	6	2	132	160	8	23	M20	
90A	101.6	210	24		101.6	130		68.9	9.6	6	2	145	170	8	23	M20	
100A	114.3	225	24		114.3	142		69.0	10.4	6	2	160	185	8	23	M20	
125A	139.8	270	26		139.8	172		77.2	10.9	6	2	195	225	8	25	M22	
150A	165.2	305	28	To be specified by purchaser	165.2	202	To be specified by purchaser	86.3	12.3	6	2	230	260	12	25	M22	
200A	216.3	350	30		216.3	252		89.0	14.4	6	2	275	305	12	25	M22	
250A	267.4	430	34		267.4	312		105.7	15.9	6	2	345	380	12	27	M24	
300A	318.5	480	36		318.5	364		110.4	17.5	8	3	395	430	16	27	M24	
350A	355.6	540	40		355.6	408		124.5	19.0	8	3	440	480	16	33	M30×3	
400A	406.4	605	46		406.4	456		129.9	21.9	10	3	495	540	16	33	M30×3	
450A	457.2	675	48		457.2	514		140.9	21.9	10	3	560	605	20	33	M30×3	
500A	508.0	730	50		508.0	568		147.7	22.7	10	3	615	660	20	33	M30×3	
550A	558.8	795	52		558.8	622		154.9	23.9	10	3	670	720	20	39	M36×3	
600A	609.6	845	54		609.6	676		163.1	26.1	10	3	720	770	24	39	M36×3	

NOTE : DIMENSIONS ARE MAKER KWANG JIN STANDARD AND DESIGN BASE IS JIS B2220-1984 & KS B1506 BASE

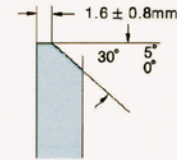
Stainless Steel Flanges

30kg/cm² JIS B2220-1984 (KSB 1506-2000)
WELDING STAINLESS STEEL PIPE FLANGES



*The surface finish shown above is in the case of forging (▽ marks in other cases)

Reference: Beveling



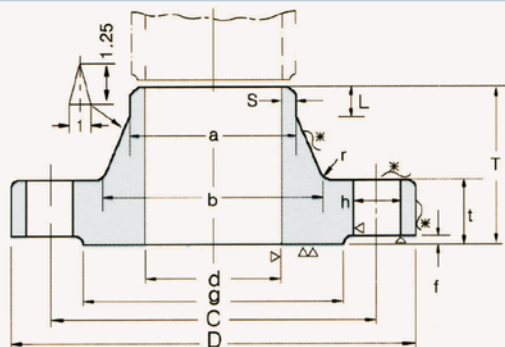
When particularly necessary customers can order another beveling from above.

Unit : mm

Nominal Diameter of Flange	Outside Diameter of Steel Pipe	Outside Diameter of Flange D	Sectional Dimensions of Flange										Dia of Bolt			Nominal Bolt Size	Approx Weight (kg)
			t	d	a	b	S	T	R	Radius r	f	g	Bolt Diameter Circle C	Number of Bolt Holes	Hole Diameter r h		
15A	21.7	115	18	15.8	22.0	40	3.1	45	20	6	1	55	80	4	19	M16	1.33
20A	27.2	120	18	21.1	27.5	44	3.2	45	20	6	1	60	85	4	19	M16	1.47
25A	34.0	130	20	26.8	34.4	52	3.8	48	20	6	1	70	95	4	19	M16	1.95
32A	42.7	140	22	35.1	43.1	62	4.0	52	30	6	2	80	105	4	19	M16	2.43
40A	48.6	160	22	40.7	49.1	70	4.2	54	30	6	2	90	120	4	23	M20	3.16
50A	60.5	165	22	52.2	61.0	84	4.4	57	30	8	2	105	130	8	19	M16	3.33
65A	76.3	200	26	65.3	76.9	104	5.8	69	30	8	2	130	160	8	23	M20	5.91
80A	89.1	210	28	77.5	89.7	118	6.1	73	30	8	2	140	170	8	23	M20	7.05
(90)A	101.6	230	30	89.5	102.3	130	6.4	74	30	8	2	150	185	8	25	M22	8.54
100A	114.3	240	32	101.5	115.1	142	6.8	76	30	8	2	160	195	8	25	M22	9.72
125A	139.8	275	36	125.7	140.7	172	7.5	86	50	10	2	195	230	8	25	M22	14.4
150A	165.2	325	38	150.0	166.2	202	8.1	95	50	10	2	235	275	12	27	M24	20.6
200A	216.3	370	42	198.7	217.5	254	9.4	102	50	10	2	280	320	12	27	M24	28.7
250A	267.4	450	48	247.5	268.7	312	10.6	118	50	12	2	345	390	12	33	M30×3	47.3
300A	318.5	515	52	296.4	320.0	366	11.8	127	50	15	3	405	450	16	33	M30×3	62.8
350A	355.6	560	54	331.8	357.2	406	12.7	134	80	15	3	450	495	16	33	M30×3	77.0
400A	406.4	630	60	379.1	408.3	462	14.6	149	80	20	3	510	560	16	39	M36×3	108.0

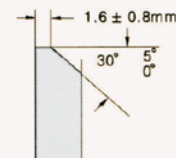
- REMARKS
- ()를 붙인 호칭 지름은 가능한 한 사용하지 않는다.
 - 플랜지의 개스킷 자리는 KS B 1519에 따른다.
 - d 및 S치수는 관의 두께가 KS D 3562, KS D 3564 및 KS D 3570의 ANSI스케줄 40인 경우를 참고로 해서 표시한 것으로서, 이 외의 치수가 필요한 경우에는 인수인도 당사자 사이의 협정에 따른다.
 - 볼트 및 너트의 재료와 모양에 대해서는 KS B 1511의 참고 2를 참조.
 - 무게 계산은 KS D 3695에 따른다.

40kg/cm² JIS B2219-1984 WELDING STAINLESS STEEL PIPE FLANGES



*The surface finish shown above is in the case of forging (▽ marks: in other cases)

Reference: Beveling



When particularly necessary customers can order another beveling from above.

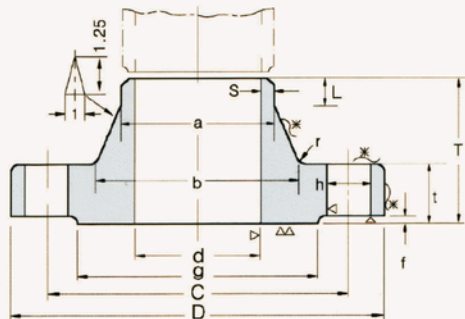
Unit : mm

Nominal Diameter of Flange	Outside Diameter of Steel Pipe	Outside Diameter of Flange D	Sectional Dimensions of Flange										Dia of Bolt			Nominal Bolt Size	Approx Weight(kg)	
			t	d	a	b	S	T	L	Radius r	f	g	Bolt Diameter Circle C	Number of Bolt Holes	Diameter of Hole h		#40	#80
15A	21.7	115	20	15.8	21.7	40	3.1	50	10	6	1	55	80	4	19	M16	1.53	1.55
20A	27.2	120	20	21.1	27.2	44	3.2	50	10	6	1	60	85	4	19	M16	1.72	1.74
25A	34.0	130	22	26.8	34.0	52	3.8	52	12	6	1	70	95	4	19	M16	2.24	2.28
32A	42.7	140	24	35.1	42.7	62	4.0	56	14	6	2	80	105	4	19	M16	2.24	2.86
40A	48.6	160	24	40.7	48.6	70	4.2	60	14	6	2	90	120	4	23	M20	2.93	3.01
50A	60.5	165	26	52.2	60.5	84	4.4	64	16	8	2	105	130	8	19	M16	4.2	4.41
65A	76.3	200	30	65.3	76.3	104	5.8	75	18	8	2	130	160	8	23	M20	7.32	7.52
80A	89.1	210	32	77.5	89.1	118	6.1	80	18	8	2	140	170	8	23	M20	8.47	8.80
(90)A	104.6	230	34	89.5	104.6	130	6.4	88	18	8	2	150	185	8	25	M22	9.4	-
100A	114.3	250	36	101.5	114.3	148	6.8	90	24	8	2	165	205	8	25	M22	13.25	13.82
125A	139.8	300	40	125.7	139.8	186	7.5	108	26	10	2	200	250	8	27	M24	21.64	22.5
150A	165.2	355	44	150.0	165.2	218	8.1	122	30	10	2	240	295	12	33	M30	32.45	35.1
200A	216.3	405	50	198.7	216.3	272	9.4	132	38	10	2	290	345	12	33	M30	45.5	47.2
250A	267.4	475	56	247.5	267.4	338	10.6	138	44	12	2	355	410	12	33	M30	69.6	-
300A	318.5	540	60	296.4	318.5	400	11.8	159	48	15	2	410	470	16	39	M36	96.0	-
350A	355.6	585	64	331.8	355.6	432	12.7	168	50	15	3	455	515	16	39	M36	115.0	-
400A	406.4	645	70	379.1	406.4	466	14.6	181	50	20	3	515	570	16	39	M36	143.0	-

- REMARKS 1. ()를 붙인 호칭 지름은 가능한 한 사용하지 않는다.
 2. 플랜지의 개스킷 자리는 KS B 1519에 따른다.
 3. d 및 S치수는 관의 두께가 KS D 3562, KS D 3564 및 KS D 3570의 ANSI스케줄 40인 경우를 참고로 해서 표시한 것으로서, 이 외의 치수가 필요한 경우에는 인수인도 당사자 사이의 협정에 따른다.
 4. 볼트 및 너트의 재료와 모양에 대해서는 KS B 1511의 참고 2를 참조.

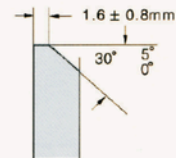
Stainless Steel Flanges

63kg/cm² JIS B2220-1984 (KSB 1506-2000)
WELDING STAINLESS STEEL PIPE FLANGES



*The surface finish shown above is in the case of forging (▽ marks: in other cases)

Reference: Beveling

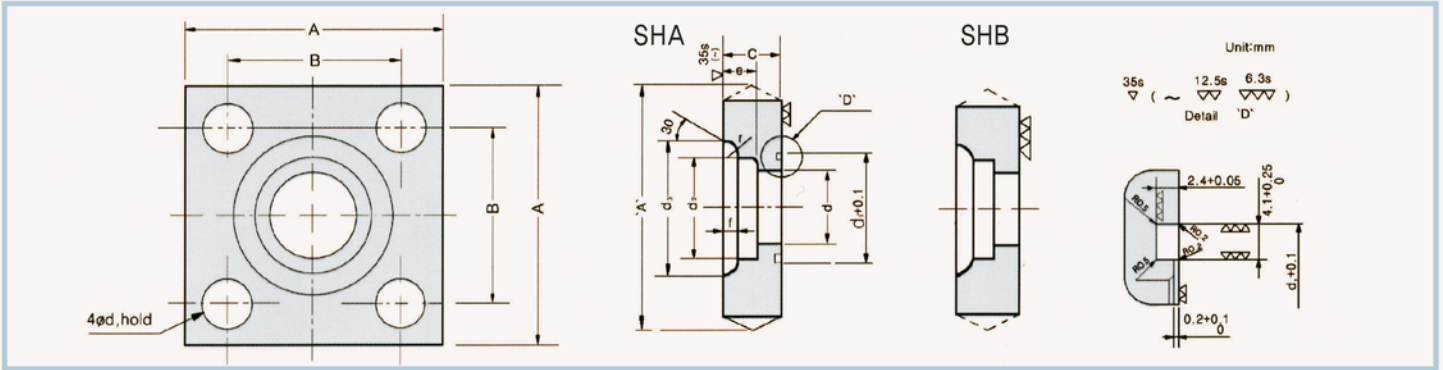


When particularly necessary customers can either another beveling from above.

Unit : mm

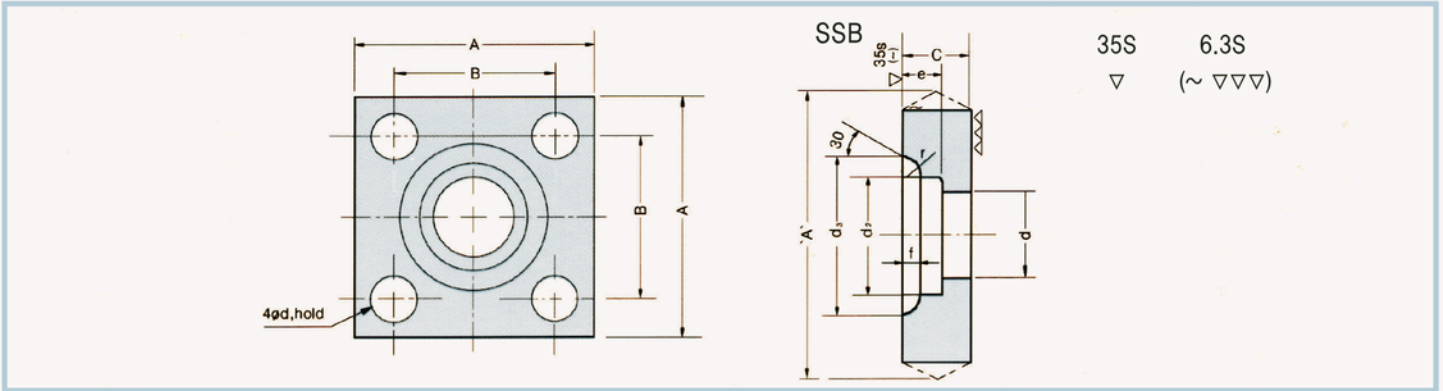
Nominal Diameter of Flange	Outside Diameter of Steel Pipe	Outside Diameter of Flange D	Sectional Dimensions of Flange										Dia of Bolt			Nominal Bolt Size	Approx Weight(kg)	
			t	d	a	b	S	T	L	Radius r	f	g	Bolt Diameter Circle C	Number of Bolt Holes	Diameter of Hole h		#80	#160
15A	21.7	120	23	To be specified by purchaser.	21.7	45	3.1	60	10	6	1	55	85	4	19	M16	2.07	2.09
20A	27.2	135	25		27.2	50	3.2	62	12	6	1	60	95	4	23	M20	2.80	2.85
25A	34.0	140	27		34.0	54	3.8	62	13	6	1	70	100	4	23	M20	3.29	3.33
32A	42.7	150	31		42.7	64	4.0	66	13	6	2	80	110	4	23	M20	4.12	4.2
40A	48.6	175	33		48.6	78	4.2	78	14	6	2	90	130	4	25	M22	6.17	6.31
50A	60.5	185	35		60.5	84	4.4	84	16	8	2	105	145	8	23	M20	7.35	7.85
65A	76.3	220	39		76.3	96	5.8	96	18	10	2	130	175	8	25	M22	11.85	12.22
80A	89.1	230	41		89.1	98	6.1	98	18	10	2	140	185	8	25	M22	13.23	13.82
(90)A	101.6	255	42		104.6	126	6.4	126	18	10	2	150	205	8	27	M24	15.2	15.8
100A	114.3	270	45		114.3	107	6.8	107	20	10	2	165	220	8	27	M24	19.45	20.65
125A	139.8	325	51		(139.8)	(128)	7.5	(128)	24	12	2	200	265	8	33	M30	31.40	34.0
150A	165.2	365	55		165.2	224	8.1	142	26	15	2	240	305	12	33	M30	45.0	48.5
200A	216.3	425	61		216.3	274	9.4	151	30	15	2	290	360	12	33	M30	63.60	70.7
250A	267.4	500	69		267.4	340	10.6	175	38	20	2	355	430	12	39	M36	144.0	—
300A	318.5	560	78		318.5	402	11.8	286	44	23	2	410	485	16	39	M36	154.0	—
350A	355.6	615	82		355.6	438	12.7	301	48	25	3	455	530	16	46	M43	191	—
400A	406.4	680	81		406.4	490	14.6	314	48	25	3	515	590	16	46	M43	247	—

210kgf/cm² (JIS B2291-1970)
FLANGE FOR OIL PRESSURE



Unit : mm

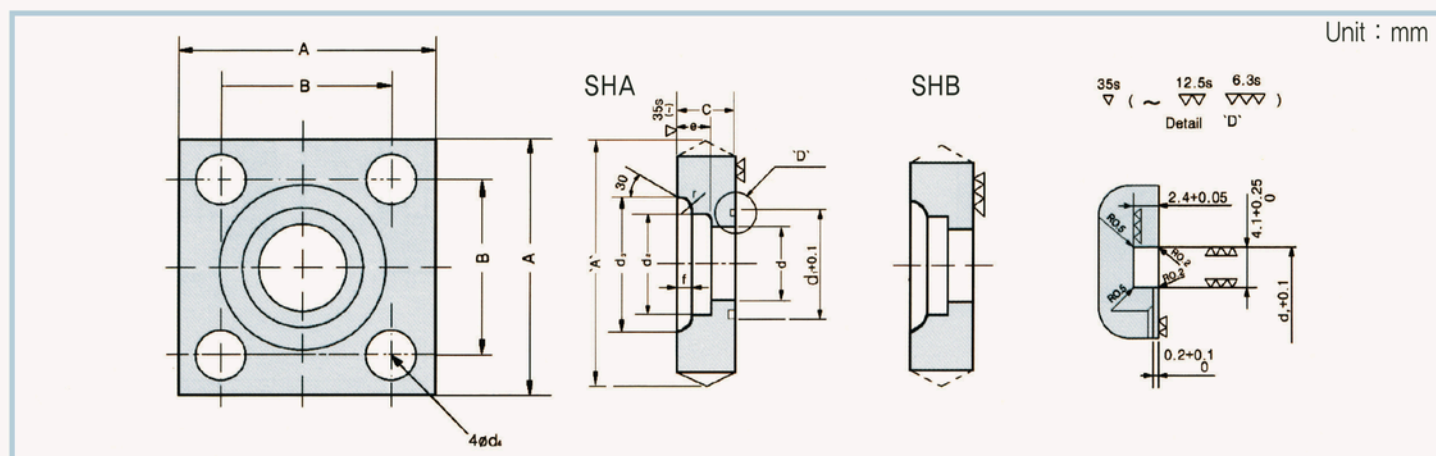
Nominal Boree	A		A' (MAX)	B		C		d	d ₁	d ₂		e	d ₃	d ₄	f	r	Weight (kg)	REMARK	
																		O-ring	BOLT
15	54	±1	58	36	±0.2	22	0	16	30	22.2	±0.2	11	32	11	3.5	5	0.5	G25	M10
20	58		62	40		22	-1	20	35	27.7	0	12	38	11	4.0	5	0.6	G30	M10
25	68		73	48		28	0	25	40	34.5	±0.3	14	45	13	4.0	5	0.8	G35	M12
32	76	±1.2	81	56	±0.4	28	-1.5	31.5	45	43.2		16	56	13	6.0	5	1.0	G40	M12
40	92		98	65		36	0	37.5	55	49.1		18	63	18	7.0	5	1.9	G50	M16
50	100	±1.5	106	73		36		47.5	65	61.1	±0.4	20	75	18	7.0	5	2.0	G60	M16
65	128		136	92		45		60	80	77.1		22	95	22	9.5	6	4.1	G75	M20
80	140	±2	148	103		45		71	90	90.0	0	25	108	24	11.0	6	4.7	G85	M22



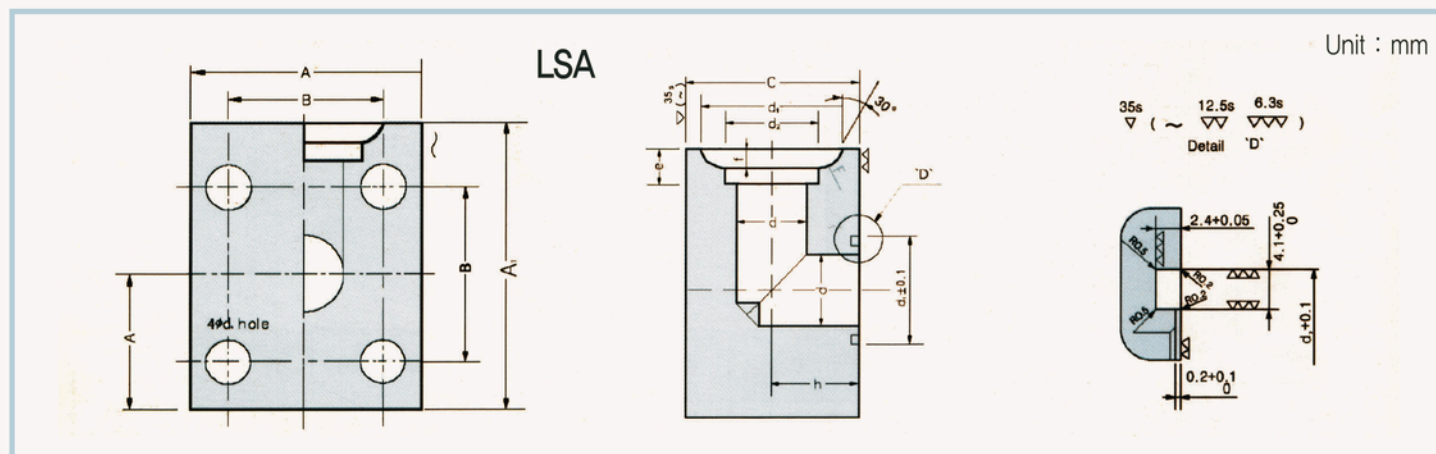
Nominal Boree	A		A' (MAX)	B		C		d	d ₂		e	d ₃	d ₄	f	r	Weight (kg)
15	54	±1	58	36	±0.2	22	0	16	22.2	±0.2	11	32	M10	3.5	5	0.5
20	58		62	40		22	-1	20	27.7	0	12	38	M10	4.0	5	0.6
25	68		73	48		28	0	25	34.5	±0.3	14	45	M12	4.0	5	0.8
32	76	±1.2	81	56	±0.4	28	-1.5	31.5	43.2		16	56	M12	6.0	5	1.0
40	92		98	65		36	0	37.5	49.1		18	63	M16	7.0	5	1.9
50	100	±1.5	106	73		36		47.5	61.1	±0.4	20	75	M16	7.0	5	2.0
65	128		136	92		45		60	77.1		22	95	M20	9.5	6	4.1
80	140	±2	148	103		45	0	71	90.0	0	25	108	M22	11.0	6	4.7

Stainless Steel Flanges

210kgf/cm² (JIS B2291-1970)
FLANGE FOR OIL PRESSURE

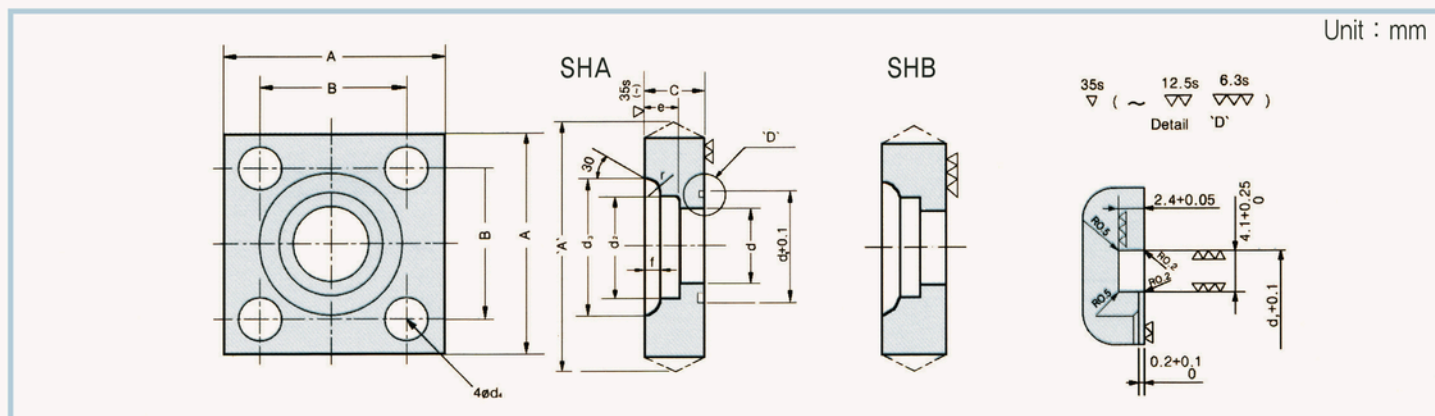


Nominal Bore	A		A' (MAX)	B		C		d	d ₁	d ₂		e	d ₃	d ₄	f	r	Weight (kg)	REMARK	
																		O-ring	BOLT
15	63	±1	67	40	±0.2	22	0	16	30	22.2	±0.2	11	32	11	3.5	5	0.6	G25	M10
20	68		72	45		22	-1	20	35	27.7	0	12	38	11	4.0	5	0.7	G30	M10
25	80		85	53		28	0	25	40	34.5	±0.3	14	45	13	4.0	5	1.2	G35	M12
32	90	±1.2	95	63	±0.4	28	-1.5	31.5	45	43.2		16	56	13	6.0	5	1.5	G40	M12
40	100		106	70		36	0	37.5	55	49.1		18	63	18	7.0	5	2.4	G50	M16
50	112	±1.5	118	80		36	0	47.5	65	61.1	±0.4	20	75	18	7.0	5	2.8	G60	M16
65	140		148	100		45	-2	60	80	77.1		22	95	22	9.5	6	5.3	G75	M20
80	155	±2	163	112		45		71	90	90.0		25	108	24	11.0	6	6.2	G85	M22



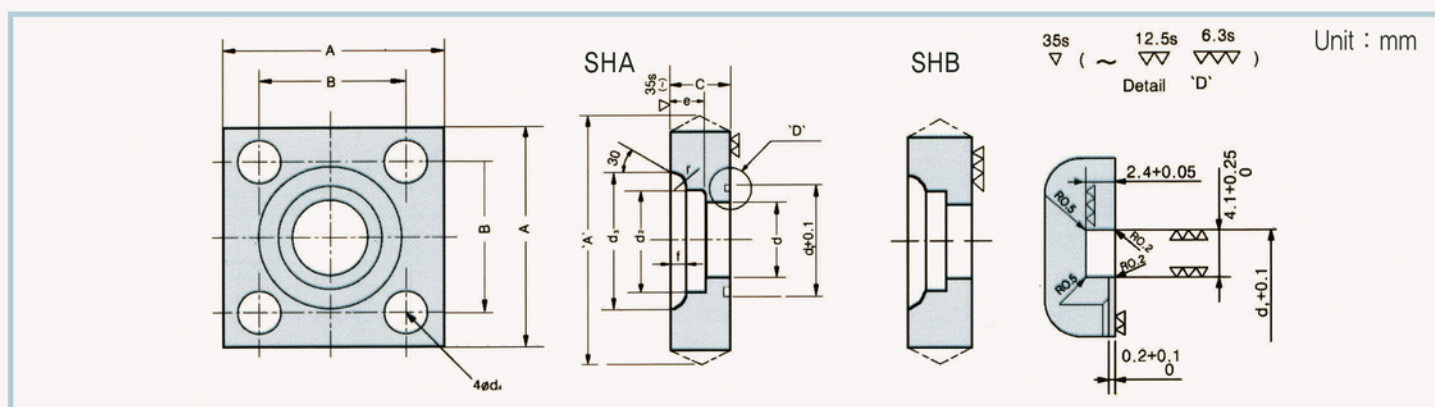
Nominal Bore	A		A' (MAX)	B		C		h	d	d ₁	d ₂		e	d ₃	d ₄	f	r	Weight (kg)	REMARK	
																			BOLT	O-ring
15	63	±1	67	40	±0.2	22		20	16	30	22.2	±0.2	11	32	11	3.5	5	1.0	M10	G25
20	68		72	45		22		22.5	20	35	27.7	0	12	38	11	4.0	5	1.3	M10	G30
25	80		85	53		28		25	25	40	34.5	±0.3	14	45	13	4.0	5	1.9	M12	G35
32	90	±1.2	95	63	±0.4	28	0	31.5	31.5	45	43.2		16	56	13	6.0	5	2.9	M12	G40
40	100		106	70		36	-2	35.5	37.5	55	49.1		18	63	18	7.0	5	4.7	M16	G50
50	112	±1.5	118	80		36		42.5	47.5	65	61.1	±0.4	20	75	18	7.0	5	6.8	M16	G60
65	140		148	100		45	0	53	60	80	77.1		22	95	22	9.5	6	12.8	M20	G75
80	155	±2	163	112		45		59	71	90	90.0		25	108	24	11.0	6	17.0	M22	G85

280kgf/cm² FLANGE FOR OIL PRESSURE



Nominal Bore	A		A' (MAX)	B		C		d	d ₁	d ₂		e	d ₃	d ₄	f	r	Weight (kg)
15	66	±1	70	43	±0.2	22	0	12.3	24	22.2	±0.2	12	34	11	4.0	5	0.63
20	75		76	48		25	-1	16.2	30			12	40	11	4.5	5	0.85
25	85	±1.2	91	58	±0.2	35	0	21.2	35	34.5	±0.3	14	48	13.5	5.0	5	1.64
32	98		104	68		35	-1.5	29.9	45			18	60	17.5	6.5	5	2.03
40	105	±1.5	112	74	±0.4	40	0	34.4	50	43.2	0	20	66	17.5	7.5	5	2.66
50	130		139	90		50	0	43.1	60			20	79	22	8.0	5	5.14
65	150	±2	161	108	±0.4	60	-2	57.3	75	77.1	±0.4	25	100	24	10.0	6	7.95
80	170		181	120		65		66.9	85			25	114	26	12.0	6	11.0

350kgf/cm² FLANGE FOR OIL PRESSURE

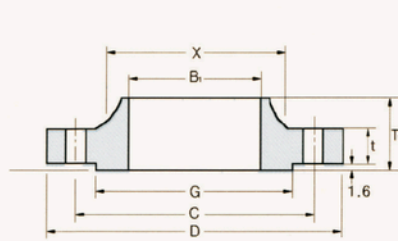


Nominal Bore	A		A' (MAX)	B		C		d	d ₁	d ₂		e	d ₃	d ₄	f	r	Weight (kg)
15	66	±1	73	45	±0.2	28	0	12.3	24	22.2	±0.2	12	37.5	11	4	5	0.88
20	82		87	55		30	0	16.2	30			12	43.5	13.5	5	5	1.34
25	95	±1.2	101	65	±0.2	35	-1.5	21.2	35	34.5	±0.3	14	53	17.5	5.5	6	2.02
32	100		106	70		35		23.3	40			18	63	17.5	7	6	2.16
40	105	±1.5	112	75	±0.4	42	0	28.2	45	43.2	0	20	70	17.5	8	6	2.84
50	132		140	92		50	0	38.3	55			25	84	22	9	6	5.30
65	160	±2	170	112	±0.4	60	-2	48.3	65	77.1	±0.4	30	105	26	12	7	9.92
80	190		202	130		68		58.7	75			30	120	33	13.5	7	14.8

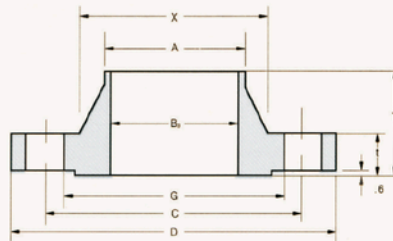
Stainless Steel Flanges

CLASS 150-300 FLANGES

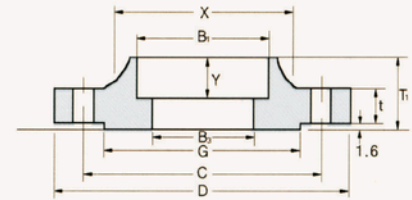
JPI 7S-15-84 & ANSI B16.5



SLIP-ON



WELDING NECK



SOCKET WELDING

Class 150

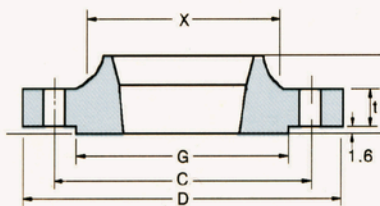
Unit : mm

Nominal Pipe Size		Outside Dia, of Flanges	Dia of Bore										Dia of Hub at Bevel A		Dia, of hub at Base	Dia, of hub at Face	Thick of Flanges	Radius of Fillet
			Slip-on Socket, B ₁		Lab-Joint B ₂		Welding-Neck, Scket B											
							JPI			ANSI								
A	B	D	JPI	ANSI	JPI	ANSI	SCH40	SCH80	SCH160	SCH40	SCH80	SCH160	JPI	ANSI	X	G	t	R
15	½	89	22.2	22.4	23.4	22.9	16.1	14.3	12.3	15.8	13.9	11.8	21.7	21.3	30.2	35.1	11.2	3
20	¾	98	27.7	27.7	28.9	28.2	21.4	19.4	16.2	20.9	18.8	15.6	27.2	26.7	38.1	42.9	12.7	3
25	1	108	34.5	34.6	35.6	35.1	27.2	25.0	21.2	26.6	24.3	20.7	34.0	33.5	49.3	50.8	14.3	3
(32)	(1¼)	117	43.2	43.2	44.3	43.7	35.5	32.9	29.9	35.1	32.5	29.5	42.7	42.2	58.7	63.5	15.9	5
40	1½	127	49.1	49.6	50.4	50.0	41.2	38.4	34.4	40.9	38.1	34.0	48.6	48.3	65.0	73.2	17.5	6
50	2	152	61.1	62.0	62.7	62.5	52.7	49.5	43.1	52.5	49.3	42.9	60.5	60.5	77.8	91.9	19.1	8
65	2½	178	77.1	74.7	78.7	75.5	65.9	62.3	57.3	62.7	59.0	54.0	76.3	73.2	90.4	104.6	22.3	8
80	3	191	90.0	90.7	91.6	91.4	78.1	73.9	66.9	77.9	73.7	66.7	89.1	88.9	108.0	127.0	23.9	10
(90)	(3½)	216	102.6	103.4	104.1	104.2	90.2	85.4	76.2	90.1	85.5	—	101.6	101.6	122.2	139.7	23.9	10
100	4	229	115.4	116.1	116.9	116.9	102.3	97.1	87.3	102.3	97.2	87.3	114.3	114.3	134.9	157.2	23.9	11
(125)	(5)	254	141.2	143.8	143.0	144.6	126.6	120.8	108.0	128.2	122.3	109.6	139.8	141.2	163.6	185.7	23.9	11
150	6	279	166.6	170.7	168.4	171.5	151.0	143.2	128.8	154.1	146.3	131.8	165.2	168.4	192.1	215.9	25.4	13
200	8	343	218.0	221.5	219.5	222.3	199.9	190.9	170.3	202.7	193.7	173.1	216.3	219.2	246.1	269.7	28.6	13
250	10	406	269.5	276.4	271.7	277.4	248.8	237.2	210.2	254.4	242.9	215.9	267.4	273.1	304.8	323.9	30.2	13
300	12	483	321.0	327.2	322.8	328.2	297.9	283.7	251.9	303.2	288.9	257.2	318.5	323.9	365.1	381.0	31.8	13
350	14	533	358.1	359.2	—	360.2	333.4	317.6	284.2	333.3	317.5	284.2	355.6	355.6	400.1	412.8	35.0	13
400	16	597	409.0	410.5	—	411.3	381.0	363.6	325.4	381.0	363.6	325.2	406.4	406.4	457.2	469.9	36.6	13
450	18	635	460.0	461.8	—	462.4	428.6	409.6	366.8	428.7	409.6	366.7	457.2	457.2	504.8	533.4	39.7	13
500	20	699	511.0	513.1	—	514.4	477.8	455.6	408.0	477.8	455.6	408.0	508.0	508.0	558.8	584.2	42.9	13
600	24	815	613.0	616.0	—	616.0	574.6	547.8	490.6	574.7	547.7	490.6	609.6	609.6	663.6	692.2	47.7	13

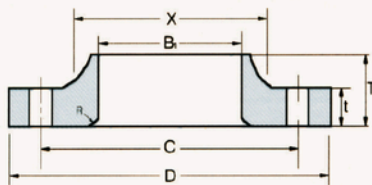
Class 300

Unit : mm

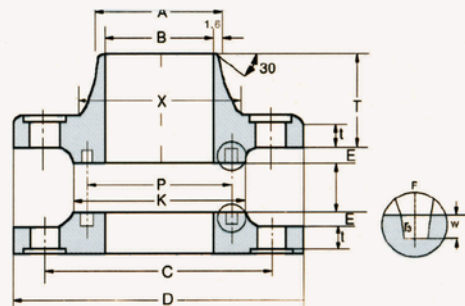
Nominal Pipe Size		Outside Dia, of Flanges	Dia of Bore										Dia of Hub at Bevel A		Dia, of hub at Base	Dia, of hub at Face	Thick of Flanges	Radius of Fillet
			Slip-on Socket, B ₁		Lab-Joint B ₂		Welding-Neck, Scket B											
							JPI			ANSI								
A	B	D	JPI	ANSI	JPI	ANSI	SCH40	SCH80	SCH160	SCH40	SCH80	SCH160	JPI	ANSI	X	G	t	R
15	½	95	22.2	22.4	23.4	22.9	16.1	14.3	12.3	15.8	13.9	11.8	21.7	21.3	38.1	35.1	14.3	3
20	¾	117	27.7	27.7	28.9	28.2	21.4	19.4	16.2	20.9	18.8	15.6	27.2	26.7	47.6	42.9	15.9	3
25	1	124	34.5	34.6	35.6	35.1	27.2	25.0	21.2	26.6	24.3	20.7	34.0	33.5	54.0	50.8	17.5	3
(32)	(1¼)	133	43.2	43.2	44.3	43.7	35.5	32.9	29.9	35.1	32.5	29.5	42.7	42.2	63.5	63.5	19.1	5
40	1½	156	49.1	49.6	50.4	50.0	41.2	38.4	34.4	40.9	38.1	34.0	48.6	48.3	69.9	73.2	20.6	6
50	2	165	61.1	62.0	62.7	62.5	52.7	49.5	43.1	52.5	49.3	42.9	60.5	60.5	84.1	91.9	22.4	8
65	2½	319	77.1	74.7	78.7	75.5	65.9	62.3	57.3	62.7	59.0	54.0	76.3	73.2	100.0	104.6	25.4	8
80	3	210	90.0	90.7	91.6	91.4	78.1	73.9	66.9	77.9	73.7	66.7	89.1	88.9	117.5	127.0	28.6	10
(90)	(3½)	229	102.6	103.4	104.1	104.2	90.2	85.4	76.2	90.1	85.5	—	101.6	101.6	133.4	139.7	30.2	10
100	4	254	115.4	116.1	116.9	116.9	102.3	97.1	87.3	102.3	97.2	87.3	114.3	114.3	146.1	157.2	31.8	11
(125)	(5)	279	141.2	143.8	143.0	144.6	126.6	120.8	108.0	128.2	122.3	109.6	139.8	141.2	177.8	185.7	35.1	11
150	6	318	166.6	170.7	168.4	171.5	151.0	143.2	128.8	154.1	146.3	131.8	165.2	168.4	206.4	215.9	36.6	13
200	8	381	218.0	221.5	219.5	222.3	199.9	190.9	170.3	202.7	193.7	173.1	216.3	219.2	260.4	269.7	41.3	13
250	10	445	269.5	276.4	271.7	277.4	248.8	237.2	210.2	254.4	242.9	215.9	267.4	273.1	320.7	323.9	47.8	13
300	12	521	321.0	327.2	322.8	328.2	297.9	283.7	251.9	303.2	288.9	257.2	318.5	323.9	374.7	381.0	50.8	13
350	14	584	358.1	359.2	—	360.2	333.4	317.6	284.2	333.3	317.5	284.2	355.6	355.6	425.5	412.8	54.0	13
400	16	650	409.0	410.5	—	411.3	381.0	363.6	325.4	381.0	363.6	325.2	406.4	406.4	482.6	469.9	57.2	13
450	18	710	460.0	461.8	—	462.4	428.6	409.6	366.8	428.7	409.6	366.7	457.2	457.2	533.4	533.4	60.4	13
500	20	775	511.0	513.1	—	514.4	477.8	455.6	408.0	477.8	455.6	408.0	508.0	508.0	587.4	584.2	63.5	13
600	24	914	613.0	616.9	—	616.0	574.6	547.8	490.6	574.7	547.7	490.6	609.6	609.6	701.7	692.2	69.9	13



THREADED



LAP JOINT



RING JOINT

Class 150

Unit : mm

Length thru Hub			Depth of Socket	Drilling			Dia. of Raised Face for Ring Joint	Pitch Dia. of Ring & Groove	Ring No.	RTJ Type			Approx. Weight(kg)				Nominal Pipe Size	
Slip-on Socket Thread	Lap Joint	Welding Neck		Dia. of Bolt Circle	Number of Bolt	Dia. of Bolt Hole				Depth of Groove	Width of Groove	Radius of Groove	W.N	S.O	S.W	B.L		
T ₁	T ₂	T	Y	C	N	h	K(min)	P		E	F	r ₁					A	B
15.9 15.9 17.5	15.9 15.9 17.5	47.6 52.4 55.6	9.5 11.1 12.7	60.5 70.0 79.5	4 4 4	16 16 16	— — 63.5	— — 47.62	— — R15	— — 63.5	— — 8.74	— — 0.8	0.50 0.75 1.02	0.41 0.57 0.78	0.42 0.58 0.80	0.43 0.62 0.87	15 20 25	1/2 3/4 1
20.6 22.2 25.4	20.6 22.2 25.4	57.1 61.9 63.5	14.3 15.9 17.5	89.0 98.5 120.5	4 4 4	16 16 19	73.0 82.5 102	57.15 69.07 82.55	R17 R19 R22	6.35 6.35 6.35	8.74 8.74 8.74	0.8 0.8 0.8	1.33 1.72 2.59	1.03 1.32 2.09	1.06 1.35 2.13	1.16 1.54 2.46	(32) 40 50	(1 1/4) 1 1/2 2
28.6 30.2 31.8	28.6 30.2 31.8	69.8 69.8 71.4	19.0 20.6 22.2	139.5 152.5 178.0	4 4 8	19 19 19	121 133 154	101.60 114.30 131.78	R25 R29 R33	6.35 6.35 6.35	8.74 8.74 8.74	0.8 0.8 0.8	4.06 4.95 6.08	3.25 3.91 4.86	3.35 4.02 4.99	3.99 4.98 6.20	65 80 (90)	2 1/2 3 (3 1/2)
33.3 36.5 39.7	33.3 36.5 39.7	76.2 88.9 88.9	23.8 23.8 27.0	190.5 216.0 241.5	8 8 8	19 22 22	171 194 219	149.22 171.45 193.68	R36 R40 R43	6.35 6.35 6.35	8.74 8.74 8.74	0.8 0.8 0.8	6.91 8.75 10.8	5.35 6.22 7.76	5.99 6.68 7.99	7.05 8.67 11.3	100 (125) 150	4 (5) 6
44.5 49.2 55.6	44.5 49.2 55.6	101.6 101.6 114.3	31.8 33.3 39.7	298.5 362.0 432.0	8 12 12	22 25 25	273 330 406	247.65 304.80 381.00	R48 R52 R56	6.35 6.35 6.35	8.74 8.74 8.74	0.8 0.8 0.8	18.0 24.9 38.6	12.6 17.6 27.8	13.29 19.50 29.03	19.9 29.0 43.7	200 250 300	8 10 12
57.2 63.5 68.3	*79.3 *87.4 *95.8	127.0 127.0 139.7	41.3 44.5 49.2	476.0 539.5 578.0	12 16 16	29 29 32	425 483 546	396.88 454.02 517.52	R59 R64 R68	6.35 6.35 6.35	8.74 8.74 8.74	0.8 0.8 0.8	50.6 63.9 74.9	35.2 45.3 49.7	38.56 44.49 54.43	58.6 76.6 94.5	350 400 450	14 16 18
73.0 82.6	*103.1 *111.3	144.5 152.4	54.0 63.5	635.0 749.5	20 20	32 35	597 711	558.80 673.10	R72 R76	6.35 6.35	8.74 8.74	0.8 0.8	93.5 133	63.5 90.5	70.31 95.25	123 188	500 600	20 24

Class 300

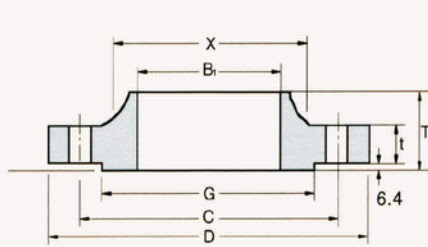
Unit : mm

Length thru Hub			Depth of Socket	Drilling			Dia. of Raised Face for Ring Joint	Pitch Dia. of Ring & Groove	Ring No.	RTJ Type			Approx. Weight(kg)				Nominal Pipe Size	
Slip-on Socket Thread	Lap Joint	Welding Neck		Dia. of Bolt Circle	Number of Bolt	Dia. of Bolt Hole				Depth of Groove	Width of Groove	Radius of Groove	W.N	S.O	S.W	B.L		
T ₁	T ₂	T	Y	C	N	h	K(min)	P		E	F	r ₁					A	B
22.2 25.4 27.0	22.2 25.4 27.0	52.4 57.2 61.9	9.7 11.2 12.7	66.5 82.6 88.9	4 4 4	16 19 19	51.0 63.5 70.0	34.14 42.88 50.80	R11 R13 R16	5.56 6.35 6.35	7.14 8.74 8.74	0.8 0.8 0.8	0.80 1.25 1.58	0.65 1.10 1.35	0.67 1.12 1.39	0.65 10.9 1.38	15 20 25	1/2 3/4 1
27.0 30.2 33.3	27.0 30.2 33.3	65.1 68.3 69.8	14.2 15.8 17.5	98.6 114.3 127.0	4 4 8	19 19 19	79.5 90.5 108	60.32 68.28 82.55	R18 R20 R23	6.35 6.35 7.92	8.74 8.74 11.91	0.8 0.8 0.8	2.05 2.93 3.40	1.69 2.54 2.92	1.74 2.60 3.02	1.82 2.70 3.18	(32) 40 50	(1 1/4) 1 1/2 2
38.1 42.9 44.5	38.1 42.9 44.5	76.2 79.4 81.0	19.1 20.6 22.4	149.4 168.1 184.2	8 8 8	22 22 22	127 146 159	101.60 123.82 131.78	R26 R31 R34	7.92 7.92 7.92	11.91 11.91 11.91	0.8 0.8 0.8	5.10 7.01 8.71	4.24 5.94 7.90	4.43 6.21 —	4.86 6.90 8.79	65 80 (90)	2 1/2 3 (3 1/2)
47.6 50.8 52.4	47.6 50.8 52.4	85.7 98.4 98.4	23.9 23.9 26.9	200.2 235.0 269.7	8 8 12	22 22 22	175 210 241	149.22 180.98 211.12	R37 R41 R45	7.92 7.92 7.92	11.91 11.91 11.91	0.8 0.8 0.8	11.3 15.1 19.6	9.71 12.4 16.2	— — —	11.6 15.5 21.2	100 (125) 150	4 (5) 6
61.9 66.7 73.0	61.9 65.3 101.6	111.1 117.5 130.2	31.8 33.3 39.6	330.2 387.3 450.9	12 16 16	26 29 32	302 356 413	269.88 323.85 381.004	R49 R53 R57	7.92 7.92 7.92	11.91 11.91 11.91	0.8 0.8 0.8	30.3 44.3 64.1	24.8 35.9 51	— — —	34.5 53.9 78.9	200 250 300	8 10 12
76.2 82.6 89.9	*111.3 *120.7 *130.0	142.9 146.0 158.5	41.4 44.5 49.3	514.4 571.5 628.7	20 20 24	32 35 35	457 508 575	419.10 469.90 533.40	R61 R65 R69	7.92 7.92 7.92	11.91 11.91 11.91	0.8 0.8 0.8	88.3 113 138	70.1 90.4 109	— — —	106 136 175	350 400 450	14 16 18
95.2 106.4	*139.7 *152.4	161.9 168.3	54.1 63.5	635.8 812.8	24 24	35 42	635 749	584.20 692.15	R73 R77	9.52 11.13	13.49 16.66	1.5 1.5	169 248	136 204	— —	222 340	500 600	20 24

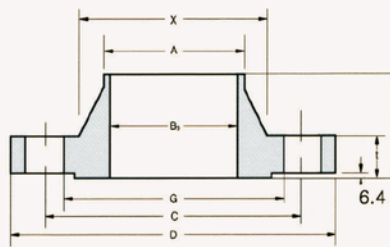
Stainless Steel Flanges

CLASS 400-600 FLANGES

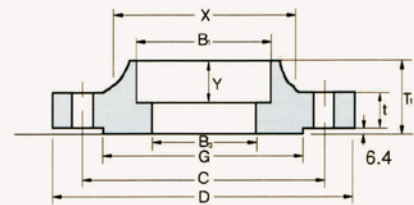
JPI 7S-15-84 & ANSI B16.5



SLIP-ON



WELDING NECK



SOCKET WELDING

Class 400

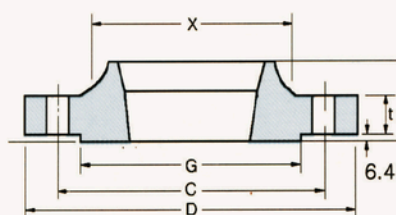
Unit : mm

Nominal Pipe Size		Outside Dia. of Flanges	Dia of Bore										Dia of Hub at Bevel A		Dia. of hub at Base	Dia. of hub at Face	Thick of Flanges	Radius of Fillet
			Slip-on Socket, B ₁		Lab-Joint B ₂		Welding-Neck, Scket B											
							JPI			ANSI								
A	B	D	JPI	ANSI	JPI	ANSI	SCH40	SCH80	SCH160	SCH40	SCH80	SCH160	JPI	ANSI	X	G	t	R
15	½	95	22.2	22.4	23.4	22.9	16.1	14.3	12.3	15.8	13.9	11.8	21.7	21.3	38.1	34.9	14.3	3
20	¾	117	27.8	27.7	28.9	28.2	21.4	19.4	16.2	20.9	18.8	15.6	27.2	26.7	47.8	42.9	15.9	3
25	1	124	34.5	34.6	35.6	35.1	27.2	25.0	21.2	26.6	24.3	20.7	34.0	33.5	53.8	50.8	17.5	3
(32)	(1¼)	133	43.2	43.2	44.3	43.7	35.5	32.9	29.9	35.1	32.5	29.5	42.7	42.2	63.5	63.5	20.7	5
40	1½	155	49.1	49.6	50.4	50.0	41.2	38.4	34.4	40.9	38.1	34.0	48.6	48.3	69.9	73.0	22.3	6
50	2	165	61.1	62.0	62.7	62.5	52.7	49.5	43.1	52.5	49.3	42.9	60.5	60.5	84.1	92.1	25.4	8
65	2½	191	77.1	74.7	78.7	75.5	65.9	62.3	57.3	62.7	59.0	54.0	76.3	73.2	100.1	104.8	28.6	8
80	3	210	90.0	90.7	91.6	91.4	78.1	73.9	66.9	77.9	73.7	66.7	89.1	88.9	117.3	127.0	31.8	10
(90)	(3½)	229	102.6	103.4	104.1	104.2	90.2	85.4	76.2	90.1	85.5	—	101.6	101.6	133.4	139.7	35.0	10
100	4	254	115.4	116.1	116.9	116.9	102.3	97.1	87.3	102.3	97.2	87.3	114.3	114.3	146.1	157.2	35.0	11
(125)	(5)	279	141.2	143.8	143.0	144.6	126.6	120.8	108.0	128.2	122.3	109.6	139.8	141.2	177.8	185.7	38.1	11
150	6	318	166.6	170.7	168.4	171.5	151.0	143.2	128.8	154.1	146.3	131.8	165.2	168.4	206.2	215.9	41.1	13
200	8	381	218.0	221.5	219.5	222.3	199.9	190.9	170.3	202.7	193.7	173.1	216.3	219.2	260.3	269.9	47.7	13
250	10	445	269.5	276.4	271.7	277.4	248.8	237.2	210.2	254.4	242.9	215.9	267.4	273.1	320.5	323.8	54.0	13
300	12	521	321.0	327.2	322.8	328.2	297.9	283.7	251.9	303.2	288.9	257.2	318.5	323.9	374.7	381.0	57.2	13
350	14	584	358.1	359.2	—	360.2	333.4	317.6	284.2	333.3	317.5	284.2	355.6	355.6	425.5	412.8	60.4	13
400	16	648	409.0	410.5	—	411.3	381.0	363.6	325.4	381.0	363.6	325.5	406.4	406.4	482.6	469.9	63.5	13
450	18	710	460.0	461.8	—	462.4	428.6	409.6	366.8	428.7	409.6	366.7	457.2	457.2	533.4	533.4	66.7	13
500	20	775	511.0	513.1	—	514.4	477.8	455.6	408.0	477.8	455.6	408.0	508.0	508.0	587.4	584.2	69.9	13
600	24	914	613.0	616.0	—	616.0	574.6	547.8	490.6	574.7	547.7	490.6	609.6	609.6	701.5	692.2	76.2	13

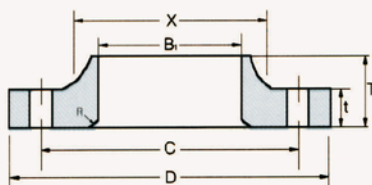
Class 600

Unit : mm

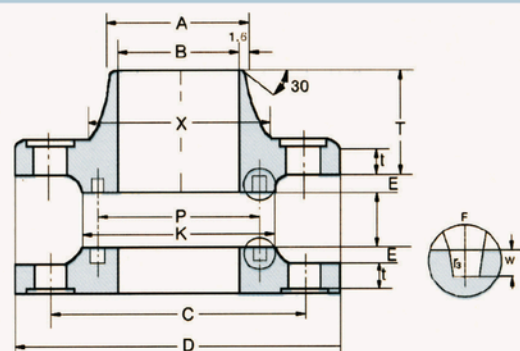
Nominal Pipe Size		Outside Dia. of Flanges	Dia of Bore										Dia of Hub at Bevel A		Dia. of hub at Base	Dia. of hub at Face	Thick of Flanges	Radius of Fillet
			Slip-on Socket, B ₁		Lab-Joint B ₂		Welding-Neck, Scket B											
							JPI			ANSI								
A	B	D	JPI	ANSI	JPI	ANSI	SCH40	SCH80	SCH160	SCH40	SCH80	SCH160	JPI	ANSI	X	G	t	R
15	½	95	22.2	22.4	23.4	22.9	16.1	14.3	12.3	15.8	13.9	11.8	21.7	21.3	38.1	34.9	14.3	3
20	¾	117	27.7	27.7	28.9	28.2	21.4	19.4	16.2	20.9	18.8	15.6	27.2	26.7	47.8	42.9	15.9	3
25	1	124	34.5	34.6	35.6	35.1	27.2	25.0	21.2	26.6	24.3	20.7	34.0	33.5	53.8	50.8	17.5	3
(32)	(1¼)	133	43.2	43.2	44.3	43.7	35.5	32.9	29.9	35.1	32.5	29.5	42.7	42.2	63.5	63.5	20.7	5
40	1½	155	49.1	49.6	50.4	50.0	41.2	38.4	34.4	40.9	38.1	34.0	48.6	48.3	69.9	73.0	22.3	6
50	2	165	61.1	62.0	62.7	62.5	52.7	49.5	43.1	52.5	49.3	42.9	60.5	60.5	84.1	92.1	25.4	8
65	2½	191	77.1	74.7	78.7	75.5	65.9	62.3	57.3	62.7	59.0	54.0	76.3	73.2	100.1	104.8	28.6	8
80	3	210	90.0	90.7	91.6	91.4	78.1	73.9	66.9	77.9	73.7	66.7	89.1	88.9	117.3	127.0	31.8	10
(90)	(3½)	229	102.6	103.4	104.1	104.2	90.2	85.4	76.2	90.1	85.5	—	101.6	101.6	133.4	139.7	35.0	10
100	4	273	115.4	116.1	116.9	116.9	102.3	97.1	87.3	102.3	97.2	87.3	114.3	114.3	152.4	157.2	38.1	11
(125)	(5)	330	141.2	143.8	143.0	144.6	126.6	120.8	108.0	128.2	122.3	109.6	139.8	141.2	189.0	185.7	44.5	11
150	6	356	166.6	170.7	168.4	171.5	151.0	143.2	128.8	154.1	146.3	131.8	165.2	168.4	222.3	215.9	47.7	13
200	8	419	218.0	221.5	219.5	222.3	199.9	190.9	170.3	202.7	193.7	173.1	216.3	219.2	273.1	269.9	55.5	13
250	10	508	269.5	276.4	271.7	277.4	248.8	237.2	210.2	254.4	242.9	215.9	267.4	273.1	342.9	323.8	63.5	13
300	12	559	321.0	327.2	322.8	328.2	297.9	283.7	251.9	303.2	288.9	257.2	318.5	323.9	400.1	381.0	66.7	13
350	14	603	358.1	359.2	—	360.2	333.4	317.6	284.2	333.3	317.5	284.2	355.6	355.6	431.8	412.8	69.9	13
400	16	686	409.0	410.5	—	411.3	381.0	363.6	325.4	381.0	363.6	325.5	406.4	406.4	495.3	469.9	76.2	13
450	18	743	460.0	461.8	—	462.4	428.6	409.6	366.8	428.7	409.6	366.7	457.2	457.2	546.1	533.4	82.6	13
500	20	813	511.0	513.1	—	514.4	477.8	455.6	408.0	477.8	455.6	408.0	508.0	508.0	609.6	584.2	88.9	13
600	24	940	613.0	616.0	—	616.0	574.6	547.8	490.6	574.7	547.7	490.6	609.6	609.6	717.6	692.2	101.6	13



THREADED



LAP JOINT



RING JOINT

Class 400

Unit : mm

Length thru Hub			Depth of Socket	Drilling			Dia. of Raised Face for Ring Joint	Pitch Dia. of Ring & Groove	Ring No.	RTJ Type			Approx. Weight(kg)				Nominal Pipe Size	
Slip-on Socket Thread	Lap Joint	Welding Neck		Dia. of Bolt Circle	Number of Bolt	Dia. of Bolt Hole				Depth of Groove	Width of Groove	Radius of Groove	W.N	S.O	S.W	B.L		
T ₁	T ₂	T	Y	C	N	h	K(min)	P		E	F	r ₁					A	B
22.4 25.4 26.9	22 25 27	52.3 57.2 62.0	9.5 11.1 12.7	66.5 82.6 88.9	4 4 4	16 19 19	51.0 63.5 70.0	34.14 42.88 50.80	R11 R13 R16	5.56 6.35 6.35	7.14 8.74 8.74	0.8 0.8 0.8	0.86 1.40 1.76	0.74 1.24 1.51	0.77 1.28 1.57	0.76 1.27 1.59	15 20 25	1/2 3/4 1
28.4 31.8 36.6	29 32 37	66.5 69.9 73.2	14.3 15.9 17.5	98.6 114.3 127.0	4 4 8	19 19 19	79.5 90.5 108	60.32 68.28 82.55	R18 R20 R23	6.35 6.35 7.92	8.74 8.74 11.91	0.8 0.8 0.8	2.41 3.44 4.18	2.03 3.01 3.62	2.11 3.11 3.77	2.24 3.30 4.11	(32) 40 50	(1/4) 1 1/2 2
41.1 46.0 49.3	41 46 49	79.2 82.6 85.9	19.0 20.6 22.2	149.4 168.1 184.2	8 8 8	22 22 25	127 146 159	101.60 123.82 131.78	R26 R31 R34	7.92 7.92 7.92	11.91 11.91 11.91	0.8 0.8 0.8	6.11 8.27 10.3	5.20 7.08 8.86	5.58 7.47 —	6.20 8.51 10.9	65 80 (90)	2 1/2 3 (3 1/2)
50.8 53.8 57.2	51 54 57	88.9 101.6 103.1	23.8 23.8 27.0	200.2 235.0 269.7	8 8 12	25 25 25	175 210 241	149.22 180.98 211.12	R37 R41 R45	7.92 7.92 7.92	11.91 11.91 11.91	0.8 0.8 0.8	12.9 17.1 22.6	11.1 14.2 18.9	— — —	13.7 18.6 25.7	100 (125) 150	4 (5) 6
68.3 73.2 79.2	68 101.6 108.0	117.3 124.0 136.7	31.8 33.3 39.7	330.2 387.4 450.9	12 16 16	29 32 35	302 356 413	269.88 323.85 381.00	R49 R53 R57	7.92 7.92 7.92	11.91 11.91 11.91	0.8 0.8 0.8	35.5 50.4 73.8	29.4 41.1 59.2	— — —	42.9 64.6 95.7	200 250 300	8 10 12
84.1 93.7 98	117.3 127 136.7	149.4 152.4 165.1	44.3 44.5 49.2	514.4 571.5 628.7	20 20 24	35 39 39	457 508 575	419.10 469.90 533.40	R61 R65 R69	7.92 7.92 7.92	11.91 11.91 11.91	0.8 0.8 0.8	99.0 125 153	80.0 103 123	— — —	125 162 205	350 400 450	14 16 18
101.6 114.3	*146.1 158.8	168.1 174.8	54.0 63.5	685.8 812.8	24 24	42 48	635 749	584.20 692.15	R73 R77	9.52 11.13	13.49 16.66	1.5 1.5	184 270	148 223	— —	255 388	500 600	20 24

Class 600

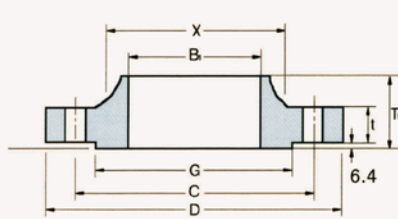
Unit : mm

Length thru Hub			Depth of Socket	Drilling			Dia. of Raised Face for Ring Joint	Pitch Dia. of Ring & Groove	Ring No.	RTJ Type			Approx. Weight(kg)				Nominal Pipe Size	
Slip-on Socket Thread	Lap Joint	Welding Neck		Dia. of Bolt Circle	Number of Bolt	Dia. of Bolt Hole				Depth of Groove	Width of Groove	Radius of Groove	W.N	S.O	S.W	B.L		
T ₁	T ₂	T	Y	C	N	h	K(min)	P		E	F	r ₁					A	B
22.4 25.4 26.9	22 25 27	52.3 57.2 62.0	9.5 11.1 12.7	66.5 82.6 88.9	4 4 4	16 19 19	51.0 63.5 70.0	34.14 42.88 50.80	R11 R13 R16	5.56 6.35 6.35	7.14 8.74 8.74	0.8 0.8 0.8	0.88 1.44 1.81	0.74 1.24 1.51	0.78 1.29 1.58	0.76 1.27 1.59	15 20 25	1/2 3/4 1
28.4 31.8 36.6	29 32 37	66.5 69.9 73.2	14.3 15.9 17.5	98.6 114.3 127.0	4 4 8	19 19 19	79.5 90.5 108	60.32 68.28 82.55	R18 R20 R23	6.35 6.35 7.92	8.74 8.74 11.91	0.8 0.8 0.8	2.49 3.55 4.34	2.03 3.01 3.62	2.14 3.14 3.82	2.24 3.30 4.11	(32) 40 50	(1/4) 1 1/2 2
41.1 46.0 49.3	41 46 49	79.2 82.6 85.9	19.0 20.6 22.2	149.4 168.1 184.2	8 8 8	22 22 26	127 146 159	101.60 123.82 131.78	R26 R31 R34	7.92 7.92 7.92	11.91 11.91 11.91	0.8 0.8 0.8	6.41 8.62 10.8	5.20 7.08 8.86	5.57 7.59 —	6.20 8.51 10.9	65 80 (90)	2 1/2 3 (3 1/2)
53.8 60.5 66.5	54 60 67	101.6 114.3 117.3	23.8 23.8 27.0	215.9 266.9 292.1	8 8 12	26 29 29	175 210 241	149.22 180.98 211.12	R37 R41 R45	7.92 7.92 7.92	11.91 11.91 11.91	0.8 0.8 0.8	17.6 29.4 35.7	14.6 24.6 29.6	— — —	17.4 29.4 36.4	100 (125) 150	4 (5) 6
76.2 85.9 91.9	76 111.3 117.3	133.4 152.4 155.4	31.8 33.3 39.7	349.3 431.8 489.0	12 16 20	32 35 35	302 356 413	269.88 323.85 381.004	R49 R53 R57	7.92 7.92 7.92	11.91 11.91 11.91	0.8 0.8 0.8	54.6 90.7 110	44.0 73.3 87.0	— — —	58.8 98.4 124	200 250 300	8 10 12
93.7 106.4 117.3	127.0 139.7 152.4	165.1 177.8 184.2	44.3 44.5 49.2	527.1 603.3 654.1	20 20 20	39 42 45	457 508 575	419.10 469.90 533.40	R61 R65 R69	7.92 7.92 7.92	11.91 11.91 11.91	0.8 0.8 0.8	130 183 225	99.8 142 176	— — —	152 214 275	350 400 450	14 16 18
127.0 139.7	165.1 184.2	190.5 203.2	54.0 63.5	723.9 838.2	24 24	45 51	635 749	584.20 692.15	R73 R77	9.52 11.13	13.49 16.66	1.5 1.5	284 408	224 317	— —	352 536	500 600	20 24

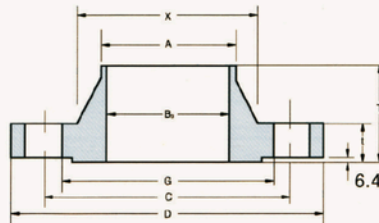
Stainless Steel Flanges

CLASS 900 FLANGES

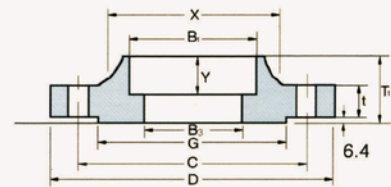
JPI 7S-15-84 & ANSI B16.5



SLIP-ON



WELDING NECK

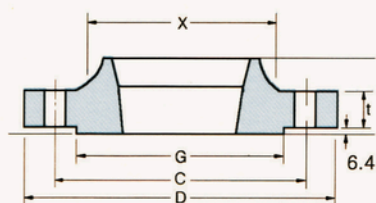


SOCKET WELDING

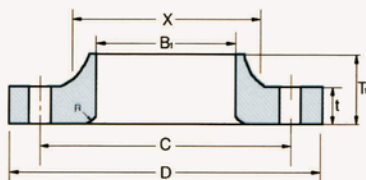
Class 900

Unit : mm

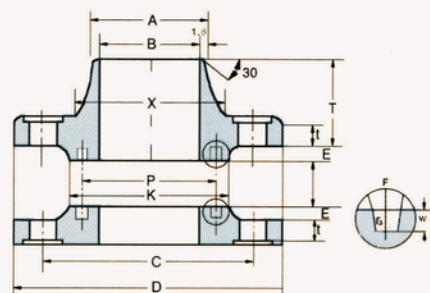
Nominal Pipe Size		Outside Dia, of Flanges	Dia of Bore										Dia of Hub at Bevel A		Dia, of hub at Base	Dia, of hub at Face	Thick of Flanges	Radius of Fillet
			Slip-on Socket, B ₁		Lab-Joint B ₂		Welding-Neck, Scket B											
							JPI			ANSI								
A	B	D	JPI	ANSI	JPI	ANSI	SCH40	SCH80	SCH160	SCH40	SCH80	SCH160	JPI	ANSI	X	G	t	R
15	½	121	22.2	22.4	–	22.9	16.1	14.3	12.3	15.8	13.9	11.8	21.7	21.3	38.1	34.9	22.4	3
20	¾	130	27.7	27.7	–	28.2	21.4	19.4	16.2	20.9	18.8	15.6	27.2	26.7	44.5	42.9	25.4	3
25	1	149	34.5	34.5	–	35.1	27.2	25.0	21.2	26.6	24.3	20.7	34.0	33.5	52.3	50.8	28.4	3
(32)	(1¼)	159	43.2	43.2	–	43.7	35.5	32.9	29.9	35.1	32.5	29.5	42.7	42.2	63.5	63.5	28.4	5
40	1½	178	49.1	49.5	–	50.0	41.2	38.4	34.4	40.9	38.1	34.0	48.6	48.3	69.9	73.0	31.8	6
50	2	216	61.1	62.0	–	62.5	52.7	49.5	43.1	52.5	49.3	42.9	60.5	60.5	104.6	92.1	38.1	8
65	2½	244	77.1	74.7	–	75.4	56.9	62.3	57.3	62.7	59.0	54.0	76.3	73.2	124.0	104.8	41.1	8
80	3	241	90.0	90.7	–	91.4	78.1	73.9	66.9	77.9	73.7	66.9	89.1	88.9	127.0	127.0	38.1	10
(90)	(3½)	–	–	–	–	–	90.2	85.4	76.2	90.1	85.5	–	–	–	–	–	–	–
100	4	292	115.4	116.1	–	116.9	102.3	97.1	87.3	102.3	97.2	87.3	114.3	114.3	158.8	157.2	44.5	11
(125)	(5)	349	141.2	143.8	–	144.5	126.6	120.8	108.0	128.2	122.3	109.6	141.2	141.2	190.5	185.7	50.8	11
150	6	381	166.6	170.7	–	171.5	151.0	143.2	128.8	154.1	146.3	131.8	165.2	168.4	235.0	215.9	55.6	13
200	8	470	218.0	221.5	–	222.3	199.9	190.9	170.3	202.7	193.7	173.1	216.3	219.2	298.5	269.9	63.5	13
250	10	546	269.5	276.4	–	277.4	248.8	237.2	210.2	254.5	242.9	215.9	267.4	273.1	368.3	323.8	69.9	13
300	12	610	321.0	327.2	–	328.2	297.9	283.7	251.9	303.2	288.9	257.2	318.5	323.9	419.1	381.0	79.2	13
350	14	641	358.1	359.2	–	360.2	333.4	317.6	284.2	333.3	317.5	284.2	355.6	355.6	450.9	412.8	85.9	13
400	16	705	409.0	410.5	–	411.2	381.0	363.6	325.4	381.0	363.6	325.5	406.4	406.4	508.0	469.9	88.9	13
450	18	787	460.0	461.8	–	462.3	428.6	409.6	366.8	428.7	409.6	366.7	457.2	457.2	565.2	533.4	101.6	13
500	20	857	511.0	513.1	–	514.4	477.8	455.6	408.0	477.8	455.6	408.0	508.0	508.0	622.3	584.2	108.0	13
600	24	1041	613.0	616.0	–	616.0	574.6	547.8	490.6	574.6	547.6	490.6	609.6	609.6	749.3	692.2	139.7	13



THREADED



LAP JOINT



RING JOINT

Class 900

Unit : mm

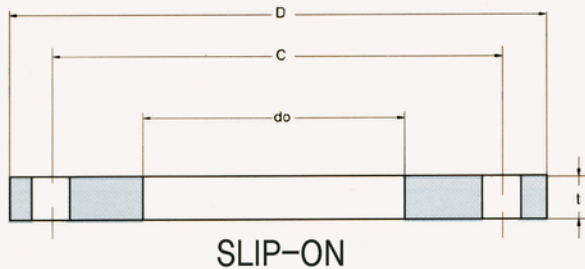
Length thru Hub			Depth of Socket	Drilling			Dia, of Raised Face for Ring Joint	Pitch Dia. of Ring & Groove	Ring No.	RTJ Type			Approx. Weight(kg)				Nominal Pipe Size	
Slip-on Socket Thread	Lap Joint	Welding Neck		Dia, of Bolt Circle	Number of Bolt	Dia, of Bolt Hole				Depth of Groove	Width of Groove	Radius of Groove	W.N	S.O	S.W	B.L		
T ₁	T ₂	T		Y	C	N				h	K(min)	P					E	F
31.8	32	60.5	9.5	82.6	4	23	60.5	39.67	R12	6.35	8.74	0.8	1.98	1.76	1.81	1.88	15	½
35.1	35	69.9	11.1	88.9	4	23	66.5	44.45	R14	6.35	8.74	0.8	2.64	2.32	2.39	2.50	20	¾
41.1	41	73.2	12.7	101.6	4	26	71.5	50.80	R16	6.35	8.74	0.8	3.84	3.44	3.56	3.68	25	1
41.1	41	73.2	14.3	111.3	4	29	81.0	60.32	R18	6.35	8.74	0.8	4.47	3.95	4.11	4.19	(32)	(1¼)
44.5	44	82.6	15.9	124.0	4	26	92.0	68.28	R20	6.35	8.74	0.8	6.13	5.41	5.61	5.92	40	1½
57.2	57	101.6	17.5	165.1	8	29	124	95.25	R24	7.92	11.91	0.8	11.3	9.92	10.3	10.5	50	2
63.5	64	104.6	19.0	190.5	8	29	137	107.95	R27	7.92	11.91	0.8	15.3	13.5	14.2	14.2	65	2½
53.8	54	101.6	20.6	190.5	8	26	156	123.82	R31	7.92	11.91	0.8	14.2	11.6	—	13.7	80	3
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(90)	(3½)
69.9	70	114.3	23.8	235.0	8	32	181	149.2	R37	7.92	11.91	0.8	23.1	19.8	—	22.7	100	4
79.2	79	127.0	23.8	279.4	8	35	216	180.98	R41	7.92	11.91	0.8	37.4	32.4	—	37.5	(125)	(5)
85.9	86	139.7	27.0	317.5	12	32	241	211.12	R45	7.92	11.91	0.8	49.3	42.1	—	48.7	150	6
101.6	114.3	162.1	31.8	393.7	12	39	308	269.88	R49	7.92	11.91	0.8	83.7	71.6	—	84.0	200	8
108.0	127.0	184.2	33.3	469.9	16	39	362	323.85	R53	7.92	11.91	0.8	124	102	—	124	250	10
117.3	142.7	200.2	39.7	533.4	20	39	419	381.00	R57	7.92	11.91	0.8	168	136	—	176	300	12
130.0	155.4	212.9	44.3	558.8	20	42	467	419.10	R61	11.13	16.66	1.5	194	153	—	213	350	14
133.4	165.1	215.9	44.5	616.0	20	45	524	469.90	R66	11.13	16.66	1.5	239	186	—	269	400	16
152.4	190.5	228.6	49.2	685.8	20	51	594	533.40	R70	12.70	19.84	1.5	326	258	—	382	450	18
158.8	209.6	247.7	54.0	749.3	20	54	648	584.20	R74	12.70	19.84	1.5	410	317	—	481	500	20
203.2	203.2	292.1	63.5	901.7	20	67	772	692.15	R78	15.58	26.97	2.4	758	607	—	914	600	24

Stainless Steel Flanges

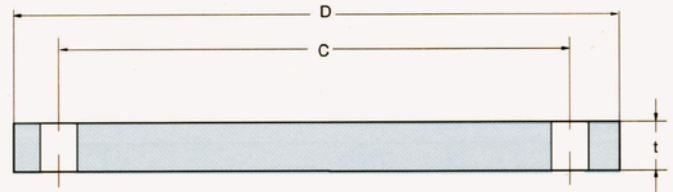
CLASS B & D FLANGES

TABLE 1

AWWA Standard Steel Ring Flanges,
Class B(86 psi) and Class D(175–150 psi)



SLIP-ON



BLIND

AWWA C207

Dimensions in inches

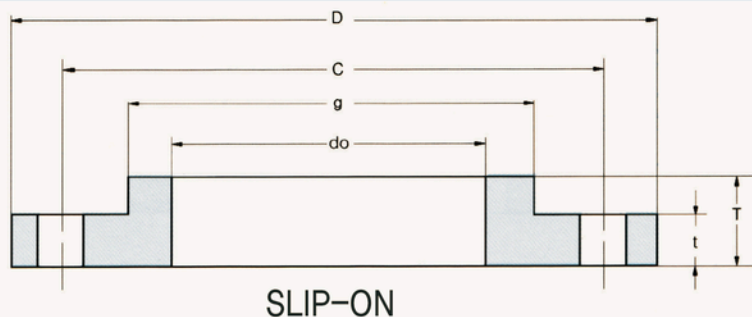
Nominal Pipe Size	Outside Diam.	Bore	Thickness		DRILLING			
					Bolt Circle Diam. C	Number of Holes	Diam. of Holes	
	D	do	Class B(t)	Class D(t)			Class B	Class D
4	9	4.57	5/8	5/8	7 1/2	8	3/4	3/4
5	10	5.66	5/8	5/8	8 1/2	8	3/4	7/8
6	11	6.72	11/16	11/16	9 1/2	8	3/4	7/8
8	13 1/2	8.72	11/16	11/16	11 3/4	8	3/4	7/8
10	16	10.88	11/16	11/16	14 1/4	12	3/4	1
12	19	12.88	11/16	13/16	17	12	3/4	1
14	21	14.19	11/16	15/16	18 3/4	12	7/8	1 1/8
16	23 1/2	16.19	11/16	1	21 1/4	16	7/8	1 1/8
18	25	18.19	11/16	1 1/16	22 3/4	16	7/8	1 1/4
20	27 1/2	20.19	11/16	1 1/8	25	20	7/8	1 1/4
22	29 1/2	22.19	3/4	1 3/16	27 1/4	20	7/8	1 3/8
24	32 1/2	24.19	3/4	1 1/4	29 1/2	20	7/8	1 3/8
26	34 1/4	26.19	13/16	1 5/16	31 3/4	24	7/8	1 3/8
28	36 1/2	28.19	7/8	1 5/16	34	28	7/8	1 3/8
30	38 3/4	30.19	7/8	1 3/8	36	28	1	1 3/8
32	41 3/4	32.19	15/16	1 1/2	38 1/2	28	1	1 5/8
34	43 3/4	34.19	15/16	1 1/2	40 1/2	32	1	1 5/8
36	46	36.19	1	1 5/8	42 3/4	32	1	1 5/8
38	48 3/4	38.19	1	1 5/8	45 1/4	32	1	1 5/8
40	50 3/4	40.19	1	1 5/8	47 1/4	36	1	1 5/8
42	53	42.19	1 1/8	1 3/4	49 1/2	36	1 1/8	1 5/8
44	55 1/4	44.19	1 1/8	1 3/4	51 3/4	40	1 1/8	1 5/8
46	57 1/4	46.19	1 1/8	1 3/4	53 3/4	40	1 1/8	1 5/8
48	59 1/2	48.19	1 1/4	1 3/4	56	44	1 1/8	1 5/8
50	61 3/4	50.19	1 1/4	2	58 1/4	44	1 1/4	1 7/8
52	64	52.19	1 1/4	2	60 1/2	44	1 1/4	1 7/8
54	66 1/4	54.19	1 3/8	2 1/8	62 3/4	44	1 3/8	1 7/8
60	73	60.19	1 1/2	2 1/4	69 1/4	52	1 3/8	1 7/8
66	80	66.19	1 5/8	2 1/2	76	52	1 3/8	1 7/8
72	86 1/2	72.19	1 3/4	2 5/8	82 1/2	60	1 3/8	1 7/8
78	93	78.19	2	2 3/4	89	64	1 5/8	2 1/8
84	99 3/4	84.19	2	2 3/4	95 1/2	64	1 5/8	2 1/8
90	106 1/2	90.19	2 1/4	3	102	68	1 7/8	2 3/8
96	113 1/4	96.19	2 1/4	3	108 1/2	68	1 7/8	2 3/8
102	120	102.19	2 1/2	3 1/4	114 1/2	72	2 1/8	2 5/8
108	126 3/4	108.19	2 1/2	3 1/4	120 3/4	72	2 1/8	2 5/8
114	133 1/2	114.19	2 3/4	3 1/2	126 3/4	76	2 3/8	2 7/8
120	140 1/4	120.19	2 3/4	3 1/2	132 3/4	76	2 5/8	2 7/8

Notes : (1) The 'Bore' (B) shall be 3/16" in. larger than the nominal outside diameter of the pipe, unless otherwise specified

CLASS B & D FLANGES

TABLE 2

AWWA Standard Steel Hub Flanges,
Class B(86 psi) and Class D(175–150 psi)



AWWA C207

Dimensions in inches

Nominal Pipe Size	Outside Diam. D	Bore do	Thickness t	Length Through Hub T	Diam of Hub at Base g	DRILLING			
						Bolt Circle Diam. C	Number of Holes	Diam. of Holes	
								Class B	Class D
4	9	4.57	1/2	7/8	5 1/2	7 1/2	8	3/4	3/4
5	10	5.66	9/16	1 1/4	6 1/2	8 1/2	8	3/4	7/8
6	11	6.72	9/16	1 1/4	7 1/2	9 1/2	8	3/4	7/8
8	13 1/2	8.72	9/16	1 1/4	9 3/4	11 3/4	8	3/4	7/8
10	16	10.88	11/16	1 1/4	12	14 1/4	12	3/4	1
12	19	12.88	11/16	1 1/4	14 3/8	17	12	3/4	1
14	21	14.19	3/4	1 1/4	15 3/4	18 3/4	12	7/8	1 1/8
16	23 1/2	16.19	3/4	1 1/4	18	21 1/4	16	7/8	1 1/8
18	25	18.19	3/4	1 1/4	19 7/8	22 3/4	16	7/8	1 1/4
20	27 1/2	20.19	3/4	1 1/4	22	25	20	7/8	1 1/4
22	29 1/2	22.19	1	1 3/4	24 1/4	27 1/4	20	7/8	1 3/8
24	32	24.19	1	1 3/4	26 1/8	29 1/2	20	7/8	1 3/8
26	34 1/4	26.19	1	1 3/4	28 1/2	31 3/4	24	7/8	1 3/8
28	36 1/2	28.19	1	1 3/4	30 1/2	34	28	7/8	1 3/8
30	38 3/4	30.19	1	1 3/4	32 1/2	36	28	1	1 3/8
32	41 3/4	32.19	1 1/8	1 3/4	34 3/4	38 1/2	28	1	1 5/8
34	43 3/4	34.19	1 1/8	1 3/4	36 3/4	40 1/2	32	1	1 5/8
36	46	36.19	1 1/8	1 3/4	38 3/4	42 3/4	32	1	1 5/8
38	48 3/4	38.19	1 1/8	1 3/4	40 3/4	45 1/4	32	1	1 5/8
40	50 3/4	40.19	1 1/8	1 3/4	43	47 1/4	36	1	1 5/8
42	53	42.19	1 1/4	1 3/4	45	49 1/2	36	1 1/8	1 5/8
44	55 1/4	44.19	1 1/4	2 1/4	47	51 3/4	40	1 1/8	1 5/8
46	57 1/4	46.19	1 1/4	2 1/4	49	53 3/4	40	1 1/8	1 5/8
48	59 1/2	48.19	1 3/8	2 1/2	51	56	44	1 1/8	1 5/8
50	61 3/4	50.19	1 3/8	2 1/2	53	58 1/4	44	1 1/4	1 7/8
52	64	52.19	1 3/8	2 1/2	55	60 1/2	44	1 1/4	1 7/8
54	66 1/4	54.19	1 3/8	2 1/2	57	62 3/4	44	1 3/8	1 7/8
60	73	60.19	1 1/2	2 3/4	63	69 1/4	52	1 3/8	1 7/8
66	80	66.19	1 1/2	2 3/4	69	76	52	1 3/8	1 7/8
72	86 1/2	72.19	1 1/2	2 3/4	75	82 1/2	60	1 3/8	1 7/8
78	93	78.19	1 3/4	3	81 1/4	89	64	1 5/8	2 1/8
84	99 3/4	84.19	1 3/4	3	87 1/2	95 1/2	64	1 5/8	2 1/8
90	106 1/2	90.18	2	3 1/4	93 3/4	102	68	1 7/8	2 3/8
96	113 1/4	96.19	2	3 1/4	100	108 1/2	68	1 7/8	2 3/8
102	120	102.19	2 1/4	3 1/2	105 3/4	114 1/2	72	2 1/8	2 5/8
108	126 3/4	108.19	2 1/4	3 1/2	111 1/2	120 3/4	72	2 1/8	2 5/8
114	133 1/2	114.19	2 1/2	3 3/4	105 3/4	126 3/4	76	2 3/8	2 7/8
120	140 1/4	120.19	2 1/2	3 3/4	111	132 3/4	76	2 5/8	2 7/8

Notes : (1) For standard finishes for contact face, refer to page 94.

(2) For Slip-on Flanges, (HubType Flange), the hubs can be shaped either vertical from base to top or tapered within the limits of 7 degrees.

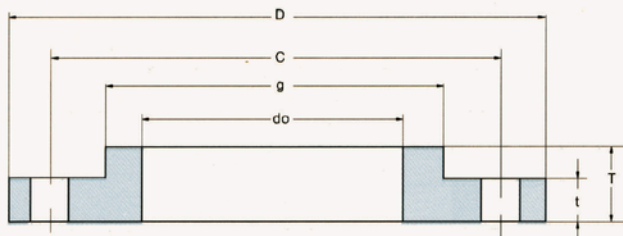
(3) The 'Bore' (B) shall be 3/16 in. larger than the nominal outside diameter of the pipe, unless otherwise specified.

Stainless Steel Flanges

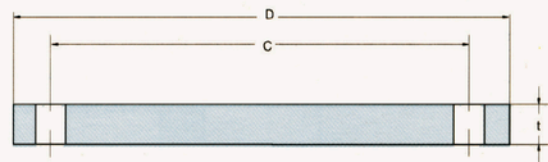
CLASS B & D FLANGES

TABLE 3

AWWA Standard Steel Hub Flanges,
Class E(275 psi)



SLIP-ON



BLIND

AWWA C20

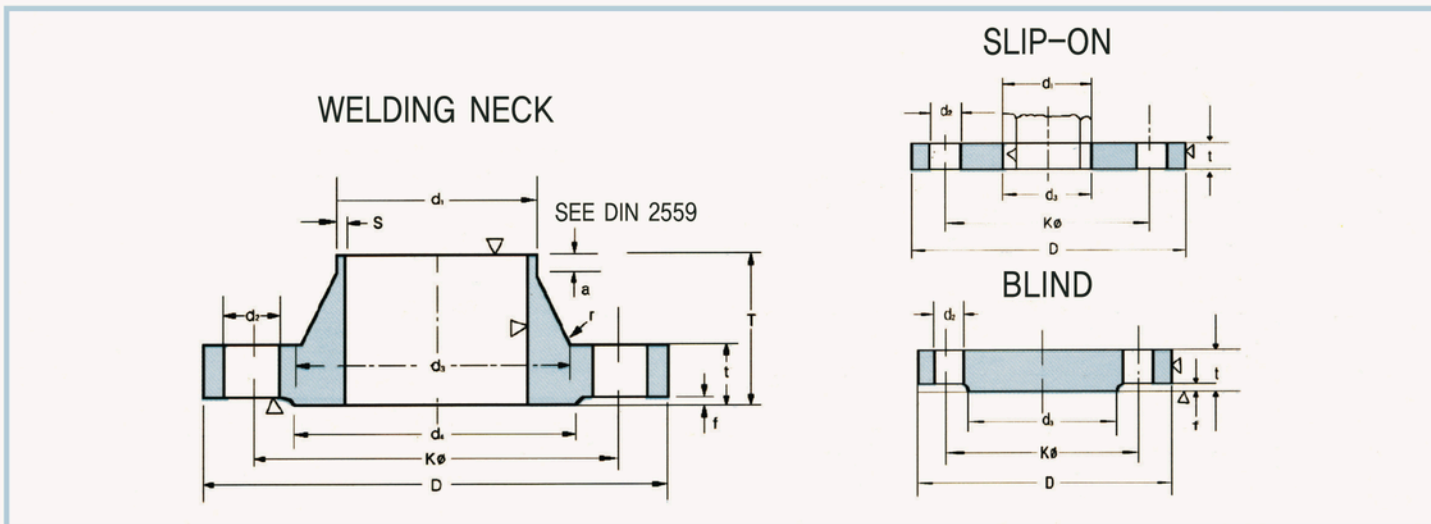
Dimensions in inches

Nominal Pipe Size	Outside Diam. D	Bore do	Thickness t	Length Through Hub T	Diam of Hub at Base g	DRILLING		
						Bolt Circle Diam. C	Number of Holes	Diam. of Holes
4	9	4.57	15/16	1 5/16	5 5/16	7 1/2	8	3/4
5	10	5.66	15/16	1 7/16	6 7/16	8 1/2	8	7/8
6	11	6.72	1	1 9/16	7 9/16	9 1/2	8	7/8
8	13 1/2	8.72	1 1/8	1 3/4	9 11/16	11 3/4	8	7/8
10	16	10.88	1 3/16	1 15/16	12	14 1/4	12	1
12	19	12.88	1 1/4	2 3/16	14 3/8	17	12	1
14	21	14.19	1 3/8	2 1/4	15 3/4	18 3/4	12	1 1/8
16	23 1/2	16.19	1 7/16	2 1/2	18	21 1/4	16	1 1/8
18	25	18.19	1 9/16	2 11/16	19 7/8	22 3/4	16	1 1/4
20	27 1/2	20.19	1 11/16	2 7/8	22	25	20	1 1/4
22	29 1/2	22.19	1 13/16	3 1/8	24	27 1/4	20	1 3/8
24	32	24.19	1 7/8	3 1/4	26 1/8	29 1/2	20	1 3/8
26	34 1/4	26.19	2	3 3/8	28 1/2	31 3/4	24	1 3/8
28	36 1/2	28.19	2 1/16	3 7/16	30 3/4	34	28	1 3/8
30	38 3/4	30.19	2 1/8	3 1/2	32 3/4	36	28	1 3/8
32	41 3/4	32.19	2 1/4	3 5/8	35	38 1/2	28	1 5/8
34	43 3/4	34.19	2 5/16	3 11/16	37	40 1/2	32	1 5/8
36	46	36.19	2 3/8	3 3/4	39 1/4	42 3/4	32	1 5/8
38	48 3/4	38.19	2 3/8	3 3/4	41 3/4	45 1/4	32	1 5/8
40	50 3/4	40.19	2 1/2	3 7/8	43 3/4	47 1/4	36	1 5/8
42	53	42.19	2 5/8	4	46	49 1/2	36	1 5/8
44	55 1/4	44.19	2 5/8	4	48	51 3/4	40	1 5/8
46	57 1/4	46.19	2 11/16	4 1/16	50	53 3/4	40	1 5/8
48	59 1/2	48.19	2 3/4	4 1/8	52 1/4	56	44	1 5/8
50	61 3/4	50.19	2 3/4	4 1/8	56 1/4	58 1/4	44	1 7/8
52	64	52.19	2 7/8	4 1/4	56 1/2	60 1/2	44	1 7/8
54	66 1/4	54.19	3	4 3/8	58 3/4	62 3/4	44	1 7/8
60	73	60.19	3 1/8	4 1/2	65 1/4	69 1/4	52	1 7/8
66	80	66.19	3 3/8	4 7/8	71 1/2	76	52	1 7/8
72	86 1/2	72.19	3 1/2	5	78 1/2	82 1/2	60	1 7/8
78	93	78.19	3 7/8	5 3/8	84 1/2	89	64	2 1/8
84	99 3/4	84.19	3 7/8	5 3/8	90 1/2	95 1/2	64	2 1/8
90	106 1/2	90.18	4 1/4	5 3/4	96 3/4	68	68	2 3/8
96	113 1/4	96.19	4 1/4	5 3/4	102 3/4	68	68	2 3/8
102	120	102.19	4 5/8	6 1/8	108 3/4	72	72	2 5/8
108	126 3/4	108.19	4 5/8	6 1/8	114 1/2	72	72	2 5/8
114	133 1/2	114.19	5	6 1/2	121 1/4	126 3/4	76	2 7/8
120	140 1/4	120.19	5	6 1/2	128	132 3/4	76	2 7/8

Notes : (1) The 'Bore' (B) shall be 3/16" in. larger than the nominal outside diameter of the pipe, unless otherwise specified

6BAR

DIN 2573 SLIP-ON FLANGES
DIN 2527 BLIND FLANGES
DIN 2631 WELDING NECK FLANGES



Unit : mm

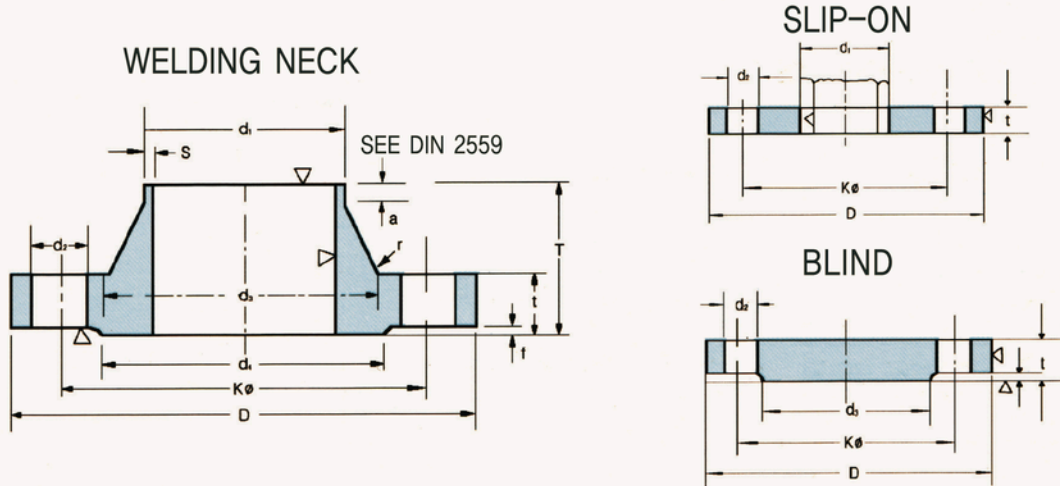
Bore		Common Dimention						Welding Neck				Raised Face		Driling			Approx Weight(kg)		
Nominal Bore	d ₁	D	t			k	T	d ₃	s	r	a ~ ~	d ₄	f	Number of Bolt	Dia. of Bolt		d ₂	DIN 2573	DIN 2631
			Welding Neck	Slip-on	Blind														
10A	14 17.2") 20	75	12	12	12	50	28	22 26 28	1.8	4	6	35	2	4	M10	—	11.5	0.360	0.335
15A	21.3") 25	80	12	12	12	55	30	30 35 38	2.0	4	6	40	2	4	M10	—	11.5	0.410	0.392
20A	26.9")	90	14	14	14	65	32		2.3	4	6	50	2	4	M10	—	11.5	0.600	0.592
25A	30 33.7") 38	100	14	14	14	75	35	40 42	2.6	4	6	60	2	4	M10	—	11.5	0.740	0.747
32A	42.4") 44.5	120	14	16	14	90	35	50 55	2.6	6	6	70	2	4	M12	(1/2")	14	1.19	1.05
40A	48.3")	130	14	16	14	100	38	58 62	2.6	6	7	80	3	4	M12	(1/2")	14	1.39	1.18
50A	57 60.3")	140	14	16	14	110	38	70 74	2.9	6	8	90	3	4	M12	(1/2")	14	1.35	1.34
65A	76.1")	160	14	16	14	130	38	88	2.9	6	9	110	3	4	M12	(1/2")	14	1.89	1.67
80A	88.9")	190	16	18	16	150	42	102	3.2	8	10	128	3	4	M16	(5/8")	18	2.98	2.71
100A	108 114.3")	210	16	18	16	170	45	122 130	3.6	8	10	148	3	4	M16	(5/8")	18	3.46	3.24
125A	133 139.7")	240	18	20	18	200	48	148 155	4.0	8	10	178	3	8	M16	(5/8")	18	4.60	4.49
150A	159 168.3")	265	18	20	18	225	48	172 184	4.5	10	12	202	3	8	M16	(5/8")	18	5.22	5.15
200A	216 219.1")	320	20	22	20	280	55	230 236	5.9	10	15	258	3	8	M16	(5/8")	18	7.15	7.78
250A	267 273")	375	22	24	22	335	60	282 290	6.2	12	15	312	3	12	M16	(5/8")	18	9.61	10.8
300A	318 323.9")	440	22	24	22	395	62	335 342	7.1	12	15	365	4	12	M20	(3/4")	23	12.6	14.0
350A	355.6") 368	490	22	26	22	445	62	385	7.1	12	15	415	4	12	M20	(3/4")	23	15.6	16.1
400A	406.4") 419	540	22	28	22	495	65	438	7.1	12	15	455	4	16	M20	(3/4")	23	18.4	18.3
500A	508") 521	645	24	30	24	600	68	538	7.1	12	15	570	4	20	M20	(3/4")	23	24.5	24.6
600A	609.6") 622	755	24			705	70	640	7.1	12	16	670	5	20	M24	(7/8")	27		
700A	711.2") 720	860	24			810	70	740	7.1	12	16	775	5	24	M24	(7/8")	27		
800A	812.8") 820	975	24			920	70	842	7.1	12	16	880	5	24	M27	(1")	30		
900A	914.4") 920	1075	26			1020	70	642	7.1	12	16	980	5	24	M27	(1")	30		
1000A	1016") 1020	1175	26			1120	70	1045	7.1	16	16	1080	5	28	M27	(1")	30		

NOTE *Out side diameter of pipe complied with ISO recommendation R64

Stainless Steel Flanges

10BAR

DIN 2576 SLIP-ON FLANGES
DIN 2527 BLIND FLANGES
DIN 2632 WELDING NECK FLANGES



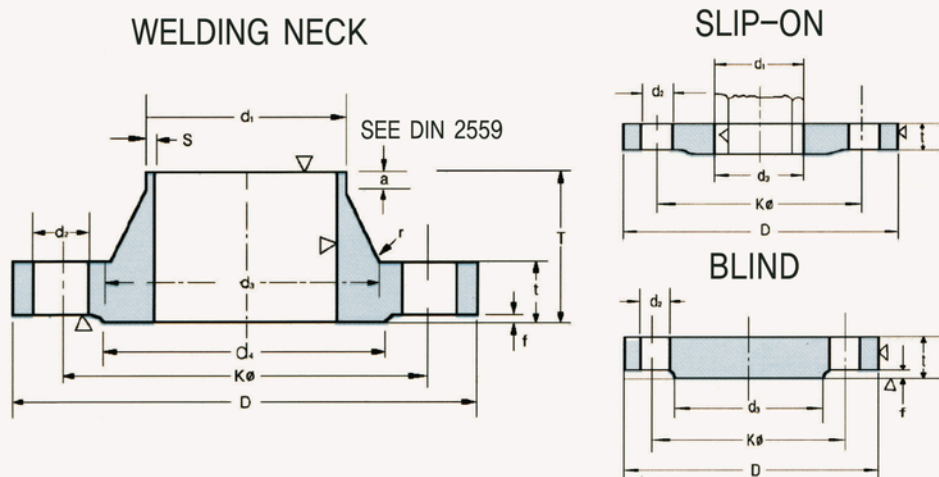
Unit : mm

Bore		Common Dimention					Welding Neck					Raised Face		Driling			Approx Weight(kg)	
Nominal Bore	d ₁	D	t			k	T	d ₃	s	r	a ~ ~	d ₄	f	Number of Bolt	Dia. of Bolt	d ₂	DIN 2576	DIN 2632
10A	14 (17.2")	90	14	14	14	60	35	25 28	1.8	4	6	40	2	4	M12	(1/2")	0.163	0.580
15A	20 (21.3")	95	14	14	14	65	35	30 32	2.0	4	6	45	2	4	M12	(1/2")	0.675	0.648
20A	25 (26.9")	105	16	16	16	75	38	38 40	2.3	4	6	58	2	4	M12	(1/2")	0.947	0.952
25A	30 (33.7")	115	16	16	16	85	38	42 45	2.6	4	6	68	2	4	M12	(1/2")	1.14	1.14
32A	38 (42.4")	140	16	16	16	100	40	52 56	2.6	6	6	78	2	4	M16	(5/8")	1.66	1.69
40A	44.5 (48.3")	150	16	16	16	110	42	60 64	2.6	6	7	88	3	4	M16	(5/8")	1.89	1.86
50A	57 (60.3")	165	18	18	18	125	45	72 75	2.9	6	8	102	3	4	M16	(5/8")	2.51	2.53
65A	76.1 (76.1")	185	18	18	18	145	45	90	2.9	6	10	122	3	4	M16	(5/8")	3.00	3.06
80A	88.9 (88.9")	200	20	20	20	160	50	105	3.2	8	10	138	3	4	M16	(5/8")	3.79	3.70
100A	108 (114.3")	220	20	20	20	180	52	125 131	3.6	8	12	158	3	8	M16	(5/8")	4.20	4.62
125A	133 (139.7")	250	22	22	22	210	55	150 156	4.0	8	12	188	3	8	M16	(5/8")	5.71	6.30
150A	159 (168.3")	285	22	22	22	240	55	175 184	4.5	10	12	212	3	8	M20	(3/4")	6.72	7.75
200A	216 (219.1")	340	24	24	24	295	62	232 235	5.9	10	16	268	3	8	M20	(3/4")	9.50	11.3
250A	267 (273")	395	26	26	26	350	68	285 292	6.3	12	16	320	3	12	M20	(3/4")	12.5	14.7
300A	318 (323.9")	445	26	26	28	400	68	335 344	7.1	12	16	370	4	12	M20	(3/4")	14.4	17.6
350A	355.6 (368)	505	26	28	30	460	68	385	7.1	12	16	430	4	16	M20	(3/4")	20.6	21.4
400A	406.4 (419)	565	26	32	32	515	72	440	7.1	12	16	482	4	16	M24	(7/8")	27.9	26.1
500A	508 (521)	670	28	38	34	620	75	542	7.1	12	16	585	4	20	M24	(7/8")	41.1	34.7
600A	609.6 (622)	780	28			725	80	642	7.1	12	18	685	5	20	M27	(1")		
700A	711.2 (720)	895	30			840	80	745	8.0	12	18	800	5	24	M27	(1")		
800A	812.8 (820)	1015	32			950	90	850	8.0	12	18	905	5	24	M30	(1 1/8")		
900A	914.4 (920)	1115	34			1050	95	950	10.0	12	20	1005	5	28	M30	(1 1/8")		
1000A	1016 (1020)	1230	34			1160	95	1052	10.0	16	20	1110	5	28	M33	(1 1/4")		

NOTE *Out side diameter of pipe complied with ISO recommendation R64

16BAR

DIN 2543 SLIP-ON FLANGES
DIN 2527 BLIND FLANGES
DIN 2633 WELDING NECK FLANGES



Unit : mm

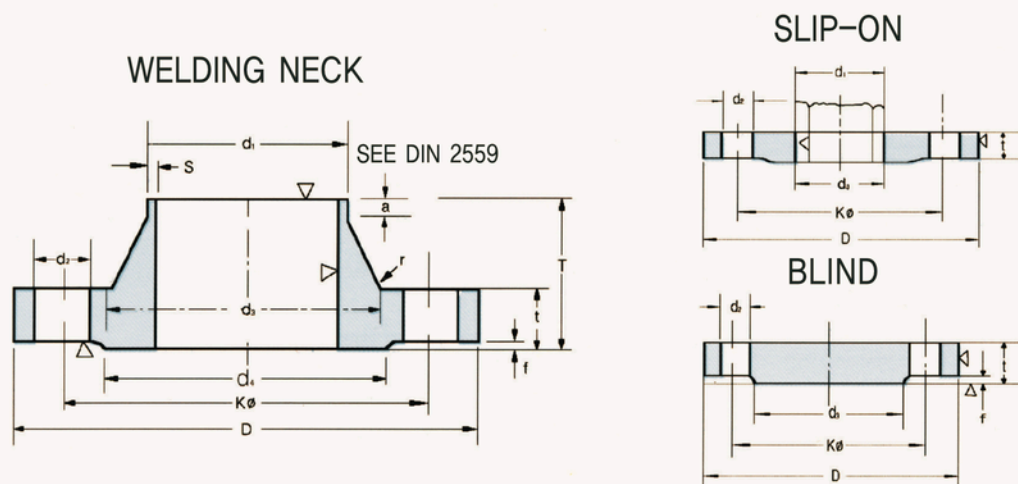
Bore		Common Dimention					Welding Neck				Raised Face		Drilling				Approx Weight(kg)		
Nominal Bore	d ₁	D	t			k	T	d ₃	s	r	a ~ ~	d ₄	f	Number of Bolt	Dia. of Bolt		d ₂	DIN 2543	DIN 2633
			Welding Neck	Slip-on	Blind														
10A	14 17.2")	90	14		14	60	35	25 28	1.8	4	6	40	2	4	M12	(1/2")	14	0.63	0.580
15A	20 21.3")	95	14	14	14	65	35	30 32	2.0	4	6	45	2	4	M12	(1/2")	14	0.72	0.648
20A	25 26.9")	105	16	16	16	75	38	38 40	2.3	4	6	58	2	4	M12	(1/2")	14	1.01	0.952
25A	30 33.7")	115	16	16	16	85	38	42 45	2.6	4	6	68	2	4	M12	(1/2")	14	1.23	1.14
32A	38 42.4")	140	16	16	16	100	40	52 56	2.6	6	6	78	2	4	M16	(5/8")	18	1.80	1.69
40A	44.5 48.3")	150	16	16	16	110	42	60 64	2.6	6	7	88	3	4	M16	(5/8")	18	2.09	1.86
50A	57 60.3")	165	18	18	18	125	45	72 75	2.9	6	8	102	3	4	M16	(5/8")	18	2.88	2.53
65A	76.1")	185	18	18	18	145	45	90	2.9	6	10	122	3	4	M16	(5/8")	18	3.66	3.06
80A	88.9")	200	20	20	20	160	50	105	3.2	8	10	138	3	8	M16	(5/8")	18	4.77	3.70
100A	108 114.3")	220	20	20	20	180	52	125 131	3.6	8	12	158	3	8	M16	(5/8")	18	5.65	4.62
125A	13.3 139.7")	250	22	22	22	210	55	150 156	4.0	8	12	188	3	8	M16	(5/8")	18	8.42	6.30
150A	159 168.3")	285	22	22	22	240	55	175 184	4.5	10	12	212	3	8	M20	(3/4")	23	10.4	7.75
200A	216 219.1")	340	24	24	24	295	62	232 235	5.9	10	16	268	3	12	M20	(3/4")	23	16.1	11.0
250A	267 273")	405	26	26	26	355	70	285 292	6.3	12	16	320	3	12	M24	(7/8")	27	24.9	15.6
300A	318 323.9")	460	28	28	28	410	78	338 344	7.1	12	16	378	4	12	M24	(7/8")	27	35.1	22.0
350A	355.6") 368	520	30	30	30	470	82	390	8.0	12	16	438	4	16	M24	(7/8")	27	47.8	28.7
400A	406.4") 419	580	32	32	32	525	85	445	8.0	12	16	490	4	16	M27	(1")	30	63.5	36.3
500A	508") 521	715	34	36	34	650	90	548	8.0	12	16	610	4	20	M30	(1 1/8")	33	102.0	59.3
600A	609.6") 622	840	36	40		770	95	652	8.8	12	18	725	5	20	M33	(1 1/4")	36		
700A	711.2") 720	910	36			840	100	755	8.8	12	18	795	5	24	M33	(1 1/4")	36		
800A	812.8") 820	1025	38			950	105	855	10.0	12	20	900	5	24	M36	(1 3/8")	39		
900A	914.4") 920	1125	40			1050	110	955	10.0	12	20	1000	5	28	M36	(1 3/8")	39		
1000A	1016") 1020	1255	42			1170	120	1058	10.0	16	20	1115	5	28	M39	(1 1/2")	42		

NOTE *Out side diameter of pipe complied with ISO recommendation R64

Stainless Steel Flanges

25BAR

DIN 2544 SLIP-ON FLANGES
DIN 2527 BLIND FLANGES
DIN 2634 WELDING NECK FLANGES



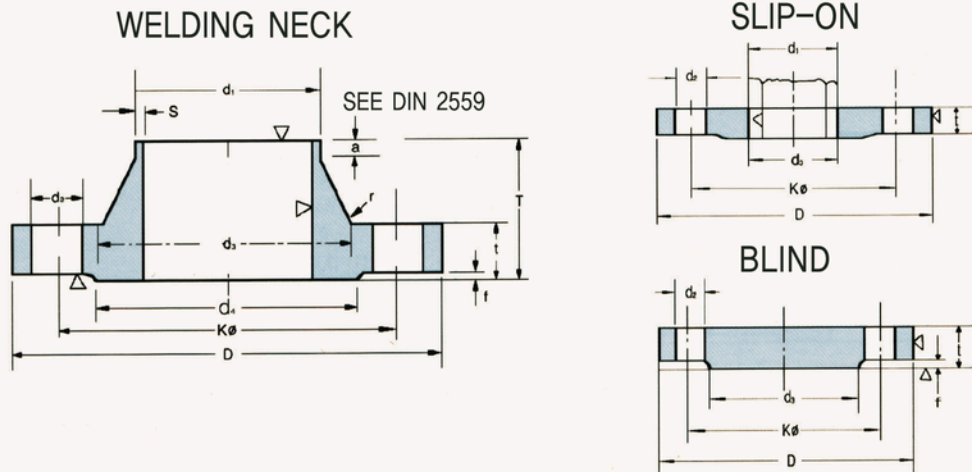
Unit : mm

Bore		Common Dimention					Welding Neck				Raised Face		Driling				Approx Weight(kg)		
Nominal Bore	d ₁	D	t			k	T	d ₃	s	r	a ~ ~	d ₄	f	Number of Bolt	Dia. of Bolt		d ₂	DIN 2544	DIN 2634
			Welding Neck	Slip-on	Blind														
10A	14 17.2")	90	16		16	60	35	25 28	1.8	4	6	40	2	4	M12	(1/2")	14	0.72	0.661
15A	20 21.3")	95	16	16	16	65	35	30 32	2.0	4	6	45	2	4	M12	(1/2")	14	0.81	0.746
20A	25 26.9")	105	18	18	18	75	38	38 40	2.3	4	6	58	2	4	M12	(1/2")	14	1.24	1.06
25A	30 33.7")	115	18	18	18	85	40	42 46	2.6	4	6	68	2	4	M12	(1/2")	14	1.38	1.29
32A	38 42.4")	140	18	18	18	100	45	52 56	2.6	6	6	78	2	4	M16	(5/8")	18	2.03	1.88
40A	44.5 48.3")	150	18	18	18	110	45	60 64	2.6	6	7	88	3	4	M16	(5/8")	18	2.35	2.34
50A	57 60.3")	165	20	20	20	125	48	72 75	2.9	6	8	102	3	4	M16	(5/8")	18	3.20	2.82
65A	76.1")	185	22	22	22	145	52	90	2.9	6	10	122	3	8	M16	(5/8")	18	4.29	3.74
80A	88.9")	200	24	24	24	160	58	105	3.2	8	12	138	3	8	M16	(5/8")	18	5.88	4.75
100A	108 114.3")	235	24	24	24	190	65	128 134	3.6	8	12	162	3	8	M20	(3/4")	23	7.54	6.52
125A	133 139.7")	270	26	26	26	220	68	155 162	4.0	8	12	188	3	8	M24	(7/8")	27	10.8	9.07
150A	159 168.3")	300	28	28	28	250	75	182 192	4.5	10	12	218	3	8	M24	(7/8")	27	14.5	11.8
200A	216 219.1")	360	30	30	30	310	80	240 244	6.3	10	16	278	3	12	M24	(7/8")	27	22.3	17.0
250A	267 273")	425	32	32	32	370	88	292 298	7.1	12	18	335	3	12	M27	(1")	30	33.5	24.4
300A	318 323.9")	485	34	34	34	430	92	345 352	8.0	12	18	395	4	16	M27	(1")	30	46.3	31.2
350A	355.6") 368	555	38	38	38	490	100	398	8.0	12	20	450	4	16	M30	(1 1/8")	33	68.0	45.0
400A	406.4") 419	620	40	40	40	550	110	452	8.8	12	20	505	4	16	M33	(1 1/4")	36	89.7	58.7
500A	508") 521	730	44	44	44	660	125	558	10.0	12	20	615	4	20	M33	(1 1/4")	36	138.0	86.1
600A	609.6") 622	845	46			770	125	660	11.0	12	20	720	5	20	M36	(1 3/8")	39		101.0
700A	711.2") 720	960	46			875	125	760	12.5	12	20	820	5	24	M39	(1 1/2")	42		134.0
800A	812.8") 820	1085	50			990	135	865	14.2	12	22	930	5	24	M45	(1 3/4")	48		183.0
900A	914.4") 920	1185	54			1090	145	968	16.0	12	24	1030	5	28	M45	(1 3/4")	48		232.0
1000A	1016") 1020	1320	58			1210	155	1070	17.5	16	24	1140	5	28	M52	(2")	56		302.0

NOTE *Out side diameter of pipe complied with ISO recommendation R64

40BAR

DIN 2545 SLIP-ON FLANGES
DIN 2527 BLIND FLANGES
DIN 2635 WELDING NECK FLANGES



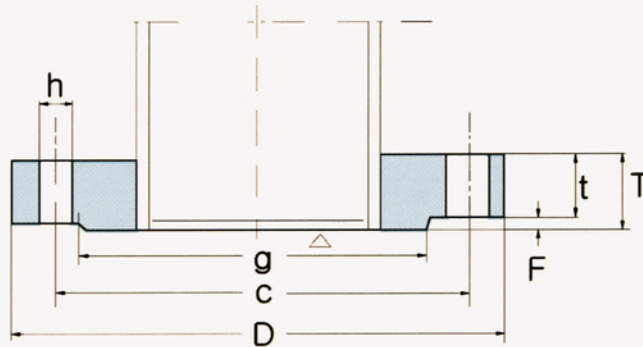
Unit : mm

Bore		Common Dimention						Welding Neck				Raised Face		Driling			Approx Weight(kg)		
Nominal Bore	d ₁	D	t			k	T	d ₃	s	r	a ~ ~	d ₄	f	Number of Bolt	Dia. of Bolt		d ₂	DIN 2543	DIN 2633
			Welding Neck	Slip-on	Blind														
10A	14 17.2 ^{*)}	90	16		16	60	35	25 28	1.8	4	6	40	2	4	M12	(1/2 ^{*)})	14	0.72	0.661
15A	20 21.3 ^{*)}	95	16	16	16	65	38	30 32	2.0	4	6	45	2	4	M12	(1/2 ^{*)})	14	0.81	0.746
20A	25 26.9 ^{*)}	105	18	18	18	75	40	38 40	2.3	4	6	58	2	4	M12	(1/2 ^{*)})	14	1.24	1.06
25A	30 33.7 ^{*)}	115	18	18	18	85	40	42 46	2.6	4	6	68	2	4	M12	(1/2 ^{*)})	14	1.38	1.29
32A	38 42.4 ^{*)}	140	18	18	18	100	45	52 56	2.6	6	6	78	2	4	M16	(5/8 ^{*)})	18	2.03	1.88
40A	44.5 48.3 ^{*)}	150	18	18	18	110	45	60 64	2.6	6	7	88	3	4	M16	(5/8 ^{*)})	18	2.35	2.33
50A	57 60.3 ^{*)}	165	20	20	20	125	48	72 75	2.9	6	8	102	3	4	M16	(5/8 ^{*)})	18	3.20	2.82
65A	76.1 ^{*)}	185	22	22	22	145	52	90	2.9	6	10	122	3	8	M16	(5/8 ^{*)})	18	4.29	3.74
80A	88.9 ^{*)}	200	24	24	24	160	58	105	3.2	8	12	138	3	8	M16	(5/8 ^{*)})	18	5.88	4.75
100A	108 114.3 ^{*)}	235	24	24	24	190	65	128 134	3.6	8	12	162	3	8	M20	(3/4 ^{*)})	23	7.54	6.52
125A	133 139.7 ^{*)}	270	26	26	26	220	68	155 162	4.0	8	12	188	3	8	M24	(7/8 ^{*)})	27	10.8	9.07
150A	159 168.3 ^{*)}	300	28	28	28	250	75	182 192	4.5	10	12	218	3	8	M24	(7/8 ^{*)})	27	14.5	11.80
(175)A	191 193.7 ^{*)}	350	32	32	32	295	82	215 218	5.6	10	15	260	3	12	M27	(1 ^{*)})	30	22.1	18.2
200A	216 219.1 ^{*)}	375	34	34	34	320	88	240 244	6.3	10	16	285	3	12	M27	(1 ^{*)})	30	27.2	21.5
250A	267 273 ^{*)}	450	38	38	38	385	105	298 306	7.1	12	18	345	3	12	M30	(1 1/8 ^{*)})	33	43.8	34.9
300A	318 323.9 ^{*)}	515	42	42	42	450	115	352 362	8.0	12	18	410	4	16	M30	(1 1/8 ^{*)})	33	63.3	49.7
350A	355.6 ^{*)}	580	46	46	46	510	125	408	8.8	12	20	465	4	16	M33	(1 1/4 ^{*)})	36	89.5	68.1
400A	368 406.4 ^{*)}	660	50	50	50	585	135	462	11.0	12	20	535	4	16	M36	(1 3/8 ^{*)})	39	127.0	96.5
500A	508 ^{*)} 521	755	52	52	52	670	140	562	14.2	12	20	615	4	20	M39	(1 1/2 ^{*)})	42	172.0	117.0

NOTE *Out side diameter of pipe complied with ISO recommendation R64

Stainless Steel Flanges

제수변 KSD 4308



무 게 : kg
Unit : mm

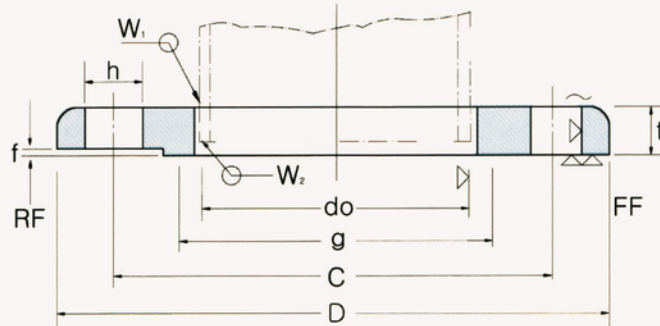
Nominal Bore of Flange	D	g	T	t	F	C	N	h	Bolt Size	Weight(kg)
80A	200	133	19.0	16.0	3	160	4	19	M16	3.0
100A	220	153	19.0	16.0	3	180	8	19	M16	3.3
125A	250	183	19.0	16.0	3	210	8	19	M16	4.0
150A	285	209	19.0	16.0	3	240	8	23	M20	4.9
200A	340	264	20.0	17.0	3	295	8	23	M20	6.8
250A	400	319	22.0	19.0	3	350	12	23	M20	9.6
300A	455	367	24.5	20.5	4	400	12	23	M20	12.8
350A	505	427	24.5	20.5	4	460	16	23	M20	14.1
400A	565	477	24.5	20.5	4	515	16	28	M24	16.3
450A	615	527	25.5	21.5	4	565	20	28	M24	18.1
500A	670	582	26.5	22.5	4	620	20	28	M24	21.8
600A	780	682	30.0	25.0	5	725	20	31	M27	30.8
700A	895	797	32.5	27.5	5	840	24	31	M27	40.5
800A	1015	904	35.0	30.0	5	950	24	34	M30	54.8
900A	1115	1004	37.5	32.5	5	1050	28	34	M30	64.3
1000A	1230	1111	40.0	35.0	5	1160	28	37	M33	81.4
1100A	1340	1218	42.5	37.5	5	1270	32	37	M33	105.0
1200A	1455	1328	45.0	40.0	5	1380	32	40	M36	120.9

KS B 2332-1994

수도용 제수밸브용 플랜지
Sluice valves for water works flange

KS B 2333-1994

수도용 버터플라이 밸브용 플랜지
Butterfly valves for water works flange



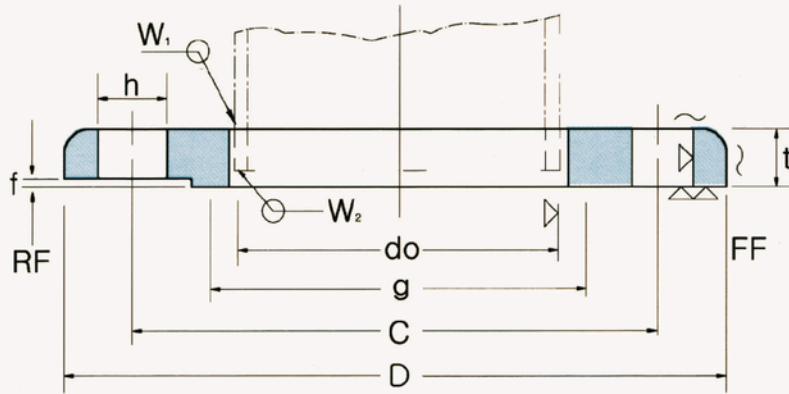
Unit : mm

Nominal Bore of Flange	Inside Diam, of Flange do	KS B 2332-1994 수도용 제수밸브용 플랜지 Sluice valves for water works flange Sectional Dimensions of Flange							KS B 2333-1994 수도용 버터플라이 밸브용 플랜지 Butterfly valves for water works flange Sectional Dimensions of Flange						
		T	D	C	g	f	Dia, of Bolt		T	D	C	g	f	Dia, of Bolt	
							h	N						h	N
50A	61.1	20	155	120	100	2	19	4							
80A	90.0	24	200	160	133	3	19	4							
100A	115.4	25	220	180	153	3	19	8							
125A	141.2	25	250	210	183	3	19	8							
150A	166.6	26	285	240	209	3	23	8							
200A	218.0	27	340	295	264	3	23	8	24	340	295	264	3	23	8
250A	269.5	29	395	350	319	3	23	12	25	395	350	319	3	23	12
300A	321.0	31	445	400	367	4	23	12	27	445	400	367	4	23	12
350A	358.1	32	505	460	427	4	23	16	28	505	460	427	4	23	16
400A	409.0	34	565	515	477	4	28	16	29	565	515	477	4	28	16
450A	460.0	35	615	565	527	4	28	20	30	615	565	527	4	28	20
500A	511.0	36	670	620	582	4	28	20	31	670	620	582	4	28	20
600A	613.0	40	780	725	692	4	31	20	32	780	725	692	4	31	20
700A	715.0	46	895	840	797	4	31	24	34	895	840	797	4	31	24
800A	817.0	49	1015	950	904	5	34	24	36	1015	950	904	5	34	24
900A	919.0	51	1115	1050	1004	5	34	28	38	1115	1050	1004	5	34	28
1000A	1021.0	55	1230	1160	1111	5	37	28	40	1230	1160	1111	5	37	28
1100A	1122.0	61	1366	1270	1200	5	37	32	42	1366	1270	1200	5	37	32
1200A	1224.0	63	1470	1387	1304	5	37	32	44	1470	1387	1304	5	37	32
1350A	1376.0	68	1642	1552	1462	6	38	36	48	1642	1552	1462	6	38	36
1500A	1529.0	74	1800	1710	1620	6	38	36	50	1800	1710	1620	6	38	36
1600A	1617.0								50	1915	1820	1760	6	40	40
1650A	1682.0								50	1950	1860	1770	6	40	40
1800A	1817.0								50	2115	2020	1960	6	48	44
2000A	2017.0								54	2325	2230	2170	6	48	48

Stainless Steel Flanges

수도용 도복장 강관 이형관용(KS D 3578-1997)플랜지

Fittings of Coated Steel Pipes for Water Service

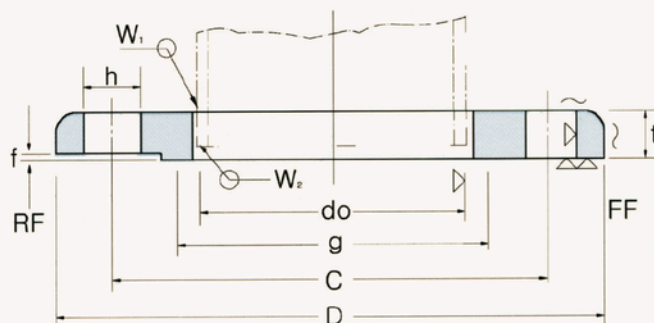


Unit : mm

Nominal Bore of Flange	Inside Diam, of Flange do	F12 KS 3578 10kg/cm ² Sectional Dimensions of RF Flange								F15 KS 3578 16kg/cm ² Sectional Dimensions of RF Flange							
		T	D	C	g	f	Bolt Hole		Weight (kg)	T	D	C	g	f	Bolt Hole		Weight (kg)
							h	N							h	N	
80A	90.0	18	211	160	133	2	19	4	3.59	18	211	160	133	2	19	4	3.59
100A	115.4	18	238	180	153	2	19	8	4.14	18	238	180	153	2	19	8	4.14
125A	141.2	20	263	210	183	2	19	8	5.36	20	263	210	183	2	19	8	5.36
150A	166.6	22	290	240	209	2	23	8	6.69	22	290	240	209	2	23	8	6.69
200A	218.0	22	342	295	264	2	23	8	8.41	22	342	295	264	2	23	8	8.41
250A	269.5	24	410	350	319	3	23	12	12.2	24	410	350	319	3	23	12	12.2
300A	321.0	24	464	400	367	3	23	12	14.5	24	464	400	367	3	23	12	17.81
350A	358.1	26	530	460	427	3	23	16	21.7	26	530	460	427	3	23	16	21.7
400A	409.0	26	582	515	477	3	27	16	24.1	28	582	515	477	3	27	16	26.1
450A	460.0	28	652	565	518	3	27	20	32.2	30	652	565	518	3	27	20	34.6
500A	511.0	28	706	620	582	3	27	20	36.3	30	706	620	582	3	27	20	39.1
600A	613.0	30	810	725	682	3	30	20	46.1	34	810	725	682	3	30	20	52.7
700A	715.0	32	928	840	797	3	30	24	62.1	34	928	840	797	3	30	24	66.2
800A	817.0	34	1034	950	904	3	33	24	76.0	36	1034	950	904	3	33	24	80.7
900A	919.0	36	1156	1050	1004	3	33	28	98.8	38	1156	1050	1004	3	33	28	105
1000A	1021.0	38	1262	1160	1111	3	36	28	117	42	1262	1160	1111	3	36	28	130
1100A	1122.0	41	1366	1270	1200	3	36	32	138	43	1366	1270	1200	3	36	32	145
1200A	1224.0	43	1470	1387	1304	3	36	32	160	45	1470	1387	1304	3	36	32	168
1350A	1376.0	45	1642	1552	1462	3	40	36	201	51	1642	1552	1462	3	40	36	229
1500A	1529.0	48	1800	1710	1620	3	40	36	244	53	1800	1710	1620	3	40	36	271
1600A	1617.0	53	1915	1820	1760	3	40	40	305	58	1915	1820	1760	3	40	40	334
1650A	1682.0	53	1965	1870	1770	3	40	40	292	58	1965	1870	1770	3	40	40	321
1800A	1817.0	55	2115	2020	1960	3	49	44	337	59	2115	2020	1960	3	49	44	362
1900A	1912.0	55	2220	2126	2066	4	49	44	378	59	2220	2126	2066	3	49	44	389
2000A	2017.0	58	2325	2230	2170	4	49	49	401	62	2325	2230	2170	4	49	48	430
2100A	2121.0	59	2440	2340	2240	4	49	49	448	64	2440	2340	2240	4	49	48	487
2200A	2221.0	61	2655	2440	2370	4	56	56	487	68	2550	2440	2370	4	56	52	545
2300A	2321.0	62	2640	2540	2440	4	56	52	522	69	2650	2230	2440	4	56	52	583
2400A	2121.0	64	2760	2650	2570	4	56	570	570	70	2760	2340	2570	4	56	56	625
2500A	2521.0	68	2860	2750	2670	5	56	624	624	72	2860	2440	2670	5	56	56	662
2600A	2621.0	68	2960	2850	2780	5	56	60	643	72	2960	2850	2780	5	56	60	682
2700A	2721.0	71	3080	2960	2850	5	56	60	740								
2800A	2821.0	72	3180	3070	3000	5	56	64	779								
2900A	2946.0	74	3292	3180	3104	5	56	64	861								
3000A	3021.0	76	3405	3290	3210	5	56	64	952								

수도용 도복장 강관 이형관용(KS D 3578-1997)플랜지

Fittings of Coated Steel Pipes for Water Service



Unit : mm

Nominal Bore of Flange	Inside Diam, of Flange do	F20 KS D 3578 20kgf/cm ² Sectional Dimensions of RF Flange								F20 KS D 3578 20kgf/cm ² Sectional Dimensions of Blind Flange							
		T	D	C	g	f	Bolt Hole		Weight (kg)	T	D	C	g	f	Bolt Hole		Weight (kg)
							h	N							h	N	
80A	90.0	22	200	160	135	2	23	8	3.56	12	211	160	60	2	19	4	2.80
100A	115.4	22	225	185	160	2	23	8	4.26	12	238	180	85	2	19	8	3.50
125A	141.2	23	270	225	195	2	23	8	6.49	12	263	210	110	2	19	8	4.33
150A	166.6	27	305	260	230	2	25	12	9.27	12	290	240	135	2	23	8	5.25
200A	218.0	27	350	305	275	2	25	12	10.9	14	342	295	185	2	23	8	9.00
250A	269.5	28	430	380	345	2	27	12	17.7	16	410	350	235	2	23	12	15.0
300A	321.0	30	480	430	395	3	27	16	20.5	19	464	400	285	3	23	12	22.8
350A	358.1	34	540	480	440	3	33	16	29.5	21	530	460	325	3	23	16	32.9
400A	409.0	38	605	540	495	3	33	16	41.1	23	582	515	375	3	27	16	43.8
450A	460.0	40	675	605	560	3	33	20	53.2	26	652	565	425	3	27	20	62.8
500A	511.0	42	730	660	615	3	33	20	63.1	28	706	620	475	3	27	20	80.0
600A	613.0	46	845	770	720	3	39	24	83.8	33	810	725	580	3	30	20	126
700A	715.0	50	960	875	820	5	42	24	109	37	928	840	680	3	30	24	186
800A	817.0	54	1085	990	930	5	48	24	146	42	1034	950	780	3	33	24	264
900A	919.0	58	1185	1090	1030	5	48	28	171	47	1156	1050	880	3	33	28	370
1000A	1021.0	64	1320	1210	1140	5	56	28	235	51	1262	1160	980	3	36	28	480
1100A	1122.0	67	1420	1310	1240	5	56	32	264								
1200A	1224.0	70	1530	1420	1350	5	56	32	313								
1350A	1376.0	76	1700	1590	1510	5	62	32	400								
1500A	1529.0	80	1865	1750	1670	5	62	36	485								

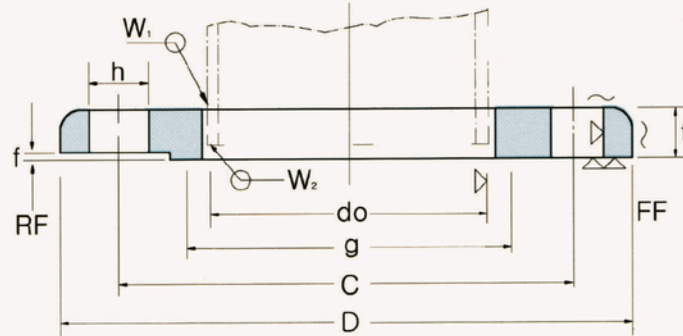
Nominal Bore of Flange	Inside Diam, of Flange do	F20 KS D 3578 20kgf/cm ² Sectional Dimensions of RF Flange								F20 KS D 3578 20kgf/cm ² Sectional Dimensions of Blind Flange							
		T	D	C	g	f	Bolt Hole		Weight (kg)	T	D	C	g	f	Bolt Hole		Weight (kg)
							h	N							h	N	
80A	90.0	13	185	160	60	2	19	4	2.51	18	200	160	60	2	23	8	3.81
100A	115.4	13	210	180	85	2	19	8	3.12	18	225	185	85	2	23	8	4.77
125A	141.2	14	250	210	110	2	19	8	4.80	18	270	225	110	2	25	8	6.95
150A	166.6	14	280	240	135	2	23	8	5.95	22	305	260	135	2	25	12	10.9
200A	218.0	16	330	295	185	2	23	8	9.75	22	350	305	185	2	25	12	14.8
250A	269.5	17	400	350	235	2	23	12	15.2	23	430	380	235	2	27	12	23.8
300A	321.0	19	45	400	285	3	23	12	21.3	26	480	430	285	3	27	16	33.4
350A	358.1	22	490	460	325	3	23	16	30.0	28	540	480	325	3	33	16	45.1
400A	409.0	25	560	515	375	3	27	16	44.5	32	605	540	375	3	33	16	65.8
450A	460.0	27	620	565	425	3	27	20	59.4	36	675	605	425	3	33	20	92.9
500A	511.0	30	675	620	475	3	27	20	78.9	39	730	660	475	3	33	20	119
600A	613.0	35	795	725	580	3	30	20	129	45	845	770	580	3	39	24	183
700A	715.0	40	905	840	680	3	30	24	192								
800A	817.0	45	1020	950	780	3	33	24	276								
900A	919.0	50	1120	1032	880	3	33	28	371								
1000A	1021.0	62	1235	1160	980	3	36	28	561								

Stainless Steel Flanges

K S B 6216-1998

JIS B 8210-1978

스프링 안전밸브의 설치 플랜지



Unit : mm

Pressure kgf/cm ²	Nominal Bore of Flange	Inside Diam. of Flange	Sectional Dimensions of Flange				Bolt Hole		
			T	D	g	f	C	h	N
10K	20A	27.7	22	125	70	1	90	19	4
	25A	34.5	22	130	75	1	95	19	4
	32A	43.2	24	140	85	2	105	19	4
	40A	49.1	24	155	100	2	120	19	8
20K	50A	61.1	26	165	110	2	130	19	8
	65A	77.1	28	200	135	2	160	23	8
	80A	90.0	30	210	145	2	170	23	8
	100A	115.4	32	245	180	2	205	23	8
30K	125A	141.2	34	280	205	2	235	25	12
	150A	166.6	36	325	250	2	280	25	12
	200A	218.0	38	385	300	2	335	27	12
	20A	27.7	22	130	70	1	95	19	4
20K	25A	34.5	22	135	75	1	100	19	4
	32A	43.2	24	160	90	2	120	23	4
	40A	49.1	24	165	105	2	130	19	8
	50A	61.1	26	185	115	2	145	23	8
30K	65A	77.1	30	210	140	2	170	23	8
	80A	90.0	32	230	150	2	185	25	8
	100A	115.4	36	265	185	2	220	25	8
	125A	141.2	38	290	210	2	245	25	12
30K	150A	166.6	42	350	260	2	300	27	12
	200A	218.0	46	410	310	2	350	33	12
	20A	27.7	24	130	70	1	95	19	4
	25A	34.5	24	135	75	1	100	19	4
30K	32A	43.2	26	160	90	2	120	23	4
	40A	49.1	28	165	105	2	130	19	8
	50A	61.1	30	185	115	2	145	23	8
	65A	77.12	34	210	140	2	170	23	8
30K	80A	90.0	36	230	150	2	185	25	8
	100A	115.4	40	285	190	2	235	27	8
	125A	141.2	44	315	215	2	265	27	12
	150A	166.6	48	375	265	2	315	33	12
30K	200A	218.0	54	435	315	2	370	36	12

공업단위 환산표

길이 (Length)

m	cm	in	ft	yd	km	mile	Nautical mile
1	100	39.37	3.281	1.094	1	0.6214	0.5400
0.01	1	0.3937	0.03281	0.01094	1.609	1	0.8690
0.0254	2.510	1	0.08333	0.02778	1.852	10151	1
0.3048	30.48	12	1	0.3333			
0.9144	91.44	36	3	1			

면적 (Area)

m²	in²	ft²	yd²	km²	acre	mile²	ha
1	1550	10.76	1.196	1	247.1	0.3861	100
6.452×10 ⁻⁴	1	6.944×10 ⁻²	7.716×10 ⁻⁴	4.407×10 ⁻³	1	1.562×10 ⁻³	0.4047
0.09290	144	1	0.1111	2.590	640	1	259.0
0.8361	1296	9	1	0.01	2.471	3.861×10 ⁻³	1

체적 (Volume)

m³	in³	ft³	yd³	dm³	gal(UK)	gal(US)	in³
1	61024	35.31	1.308	1	0.2200	0.2642	61.02
1.639×10 ⁻⁵	1	5.787×10 ⁻⁴	2.143×10 ⁻⁵	4.546	1	1.201	277.4
0.02832	1728	1	0.03704	3.785	0.8327	1	231
0.7646	46656	27	1	0.01639	3.605×10 ⁻⁴	4.329×10 ⁻³	1

압력 (Pressure)

Mpa	kgf/cm²	lbf/in²	atm	mHg	inHg	mH₂O	ftH₂O
1	10.20	145.0	9.869	7.501	295.3	102.0	334.6
0.09807	1	14.22	0.9678	0.7356	28.96	10	32.81
0.006895	0.07031	1	0.06805	0.05171	2.036	0.7031	2.307
0.1013	1.033	14.70	1.316	0.76	29.92	10.33	33.90
0.1333	1.360	19.34	0.03342	1	39.37	13.60	44.60
0.003386	0.03453	0.9412	0.09678	0.0254	1	0.3453	1.133
0.009506	0.1	1.422	0.2950	0.07355	2.896	1	3.281
0.002989	0.03048	0.4335		0.02242	0.8827	0.3048	1

속도 (Velocity)

m/s	km/h	km	ft/s	mil/h
1	3.6	1.944	3.281	2.237
0.2778	1	0.5400	0.9113	0.6214
0.5144	151	1	1.688	1.151
0.3048	1.097	0.5925	1	0.6818
0.4470	1.609	0.8690	1.467	1

동력 (Power)

KW	PS	HP(UK)	kgf·m/s	ft·lbf/s	Kcal/s	BTU/s(UK)
1	1.360	1.340	102.0	737.6	0.2389	0.9180
0.7355	1	0.9859	75	542.5	0.1757	0.6973
0.746	1.014	1	76.07	550.2	0.1782	0.7072
0.009807	0.01333	0.01315	1	7.233	0.002343	0.009297
0.001356	0.001843	0.001817	0.1383	1	0.003239	0.01285
4.186	5.691	5.611	426.9	3087	1	3.968
1.055	1.434	1.414	107.6	778.0	0.2520	1

유량 (Flow)

ℓ/s	m³/h	m³/s	영국gal/min	미국gal/min	ft³/h	ft³/s
1	3.6	0.001	13.197	15.8514	127.14	0.03532
0.2778	1	0.032778	3.66658	4.4032	35.317	0.092801
1000	3600	1	13197	15851	127150	35.3160
0.075775	0.27279	0.0475775	1	1.2011	9.6342	0.0676
0.06309	0.2271	0.046304	0.8325	1	8.0208	0.03228
0.027865	0.02832	0.057865	0.1038	0.1247	1	0.032778
28.3153	101.935	0.02832	373.672	448.833	3600	1

점도 (Viscosity)

Poise=g/cm·s (CGS단위)	centipose. Cp	kg/m·h	kg/m·s	lb/ft·s
1	100	0.1	360	0.0672
0.01	1	0.001	3.6	0.000672
10	1000	1	3600	0.672
0.00278	0.278	0.03278	1	0.000187
14.88	1488	1.488	5356.8	1

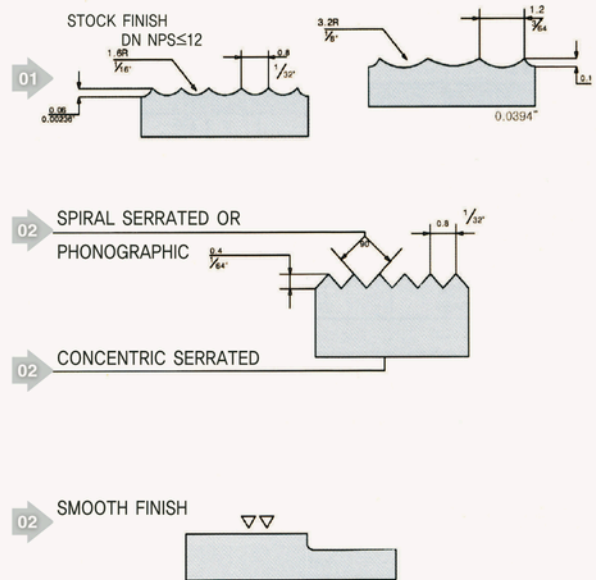
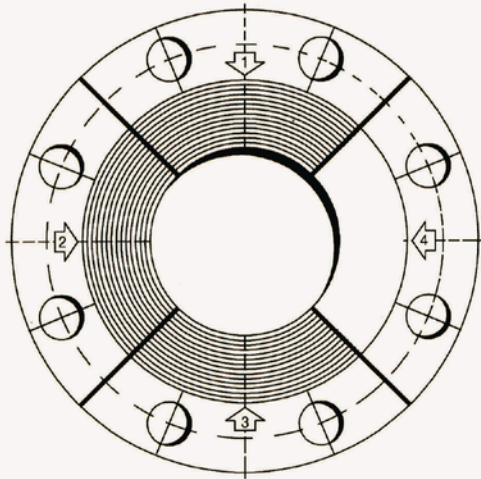
중량 (Weight)

kg	g	t(tonne)프랑스	lb	영국(tonne)	미국(tonne)
0.001	1	0.051	0.002205	0.06984	0.051102
1	1000	0.001	2.2046	0.03984	0.021102
1000	1×10 ⁶	1	2204.6	0.9842	1.1023
0.4536	453.6	0.034536	1	0.03446	0.0351
1016.05	1016.047	1.01605	2240	1	1.12
907.185	907.185	0.90719	2000	0.86289	1

Stainless Steel Flanges

STANDARD FINISH

Flange 표면의 마무리 작업(MSS SP6)



STOCK FINISH

대부분의 시설 조건에 적당하기 때문에 Gasket Finish 중 가장 널리 쓰이는 마무리 작업이다. 이것은 연속적인 나선의 홈으로 되어 있다. 12" 나 그보다 작은 Flange들은 회전 당 1/32"의 간격으로 1/16"의 코가 둥근 도구로 생산된다. 14" 크기의 것들과 더 큰 것들은 회전당 3/46의 간격으로 1/8"의 코가 둥근 마무리 되어진다.

나선톱니나사 혹은 Phonographic형 마무리

이 마무리 작업은 사이각이 90°인 [M]형 공구를 써서 1/32" 간격으로 1/64" 깊이의 나선 홈을 만들며 제작된다.

동심톱니나사

이 마무리는 사이각 90°인 [N]형 공구를 써서 1/64" 깊이의 그리고 1/32" 떨어진 동심 홈을 만들며 제작된다.

SMOOTH FINISH

이 마무리는 육안으로 보아 공구 자국을 남기지 않는 4~5가지 형태의 공구로 제작되어 진다.

1. Raised Face, 그리고 Large Male and Female

인치 당 24~40개의 홈이 있는 동심 또는 나선형 마무리 작업에 쓰여진다.

사용되어지는 절단공구는 약 0.06인치의 또는 그 보다 큰 반경을 갖는다.

그 결과로 제작되는 표면마무리는 500 마이크로인치 (12.5μm)에 가까운 황삭도(roughness)를 갖는다.

2. Tongue, Groove, 그리고 Small Male and Female

게스켓 접촉면은 황삭도에 있어 125 마이크로인치 (3.2μm)를 넘지 않는다.

3. Rang Joint

게스켓 홈의 내벽표면은 63 마이크로인치(1.6μm) 황삭도를 넘지 않는다.

4. Blind

Blind Flange들은 그 직경이 대응하는 Pressure Class의 조립부들의 내부 직경보다 적어도 1인치 이상 작다면 중심부가 돌아나와 있을 때엔 중심에서 대면되어질 필요는 없다. 중심부가 낮추어져 있다면 그것의 직경은 대응하는 Pressure Class의 조립부 내부직경보다 더 크지 않다. Depressed 중심부에 대한 기가공은 필요치 않다.

유체정역학적 실험 압력

Material	150psi		300psi	
	shell	seat	shell	seat
ASTM-216-WCB	450	315	1125	815
ASTM A-351-CF8, CF3	375	260	925	675
ASTM A-351-F8M, CF3M	375	260	925	675

공기실험 : 최대압력 6kgf • cm² (80psi)
적용표준 : ANSI B16-5, JPI-75-39, KSB-2304

요구되는 실험압력의 지속시간

Valve Size (N P S)	TEST DURATION Seconds Minimum		
	shell	Back seat	seat
2 and smaller	15	15	15
2-1/4 to 6	60	15	60
8 to 12	120	15	120
14 and larger	300	15	120

Material Comparison

(ASTM, KS AND JIS)

Material Classification	ASTM		KS		JIS	
	SYMBOL	CODE NO	SYMBOL	CODE NO	SYMBOL	CODE NO
Stainless Steel (Casting)	CF 8	A-351	SSC 13	D 4103	SCS 13	G 5121
	CF 8M		SSC 14		SCS 14	
	CF 3M		SSC 16		SCS 16	
	CF 3		SSC 19		SCS 19	
	CG 3M	A-296	-		-	
Stainless Steel (Bar And Plate)	304	A-276	STS 304	D 3706	SUS 304	G 4303
	316		STS 316		SUS 316	
	316L		STS 316L		SUS 316L	
	-		STS 317L		SUS 317L	
	403		STS 403		SUS 403	
	410		STS 410		SUS 410	
Cast Steel And Cast Iron	WCB	A-216	SCPH 2	D 4107	SCPH 2	G 5151
	CLB	A-126	GC 20	D 4301	FC 20	G 5501
	60-40-8	A-536	GCD 40	D 4302	FCD 40	G 5502
	40-30-5	A-197	BMC 28	D 4303	FCNB 28	G 5702
Copper Alloy	N 865	B-584	HBs C 2	D 6007	HBs C 2	G 5702
	N 360	B-16	MBsBE 2	D 5101	BsBM 2	H 3422
	N 377	B-124	FBsBE 2	D 5101	BsBF 2	H 3423

Stainless Steel Flanges

표2 오스테나이트계의 화학성분

단위 : %

종류의 기호	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	기 타
STS301	0.15 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	6.00~8.00	16.00~18.00	-	-	-	-
STS301L	0.030 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	6.00~8.00	16.00~18.00	-	-	0.20 이하	-
STS301J1	0.08~0.12	1.00 이하	2.00 이하	0.045 이하	0.030 이하	7.00~9.00	16.00~18.00	-	-	-	-
STS302	0.15 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	8.00~10.00	17.00~19.00	-	-	-	-
STS302B	0.15 이하	20.~3.00	2.00 이하	0.045 이하	0.030 이하	8.00~10.00	17.00~19.00	-	-	-	-
STS303	0.15 이하	1.00 이하	2.00 이하	0.20 이하	0.15 이하	8.00~10.00	17.00~19.00	(¹)	-	-	-
STS304	0.08 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	8.00~10.00	18.00~20.00	-	-	-	-
STS304L	0.030 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	9.00~13.00	18.00~20.00	-	-	-	-
STS304N1	0.08 이하	1.00 이하	2.50 이하	0.045 이하	0.030 이하	7.00~10.50	18.00~20.00	-	-	0.10~0.25	-
STS304N2	0.08 이하	1.00 이하	2.50 이하	0.045 이하	0.030 이하	7.50~10.50	18.00~20.00	-	-	0.15~0.30	Nb 0.15 이하
STS304LN	0.300 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	8.50~11.50	17.00~19.00	-	-	0.12~0.22	-
STS304J1	0.08 이하	1.70 이하	3.00 이하	0.045 이하	0.030 이하	6.00~9.00	15.00~18.00	-	1.00~3.00	-	-
STS304J2	0.08 이하	1.70 이하	3.00~5.00	0.045 이하	0.030 이하	6.00~9.00	15.00~18.00	-	1.00~3.00	-	-
STS305	0.12 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	10.50~13.00	17.00~19.00	-	-	-	-
STS309S	0.08 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	12.00~15.00	22.00~24.00	-	-	-	-
STS310S	0.08 이하	1.50 이하	2.00 이하	0.045 이하	0.030 이하	19.00~22.00	24.00~26.00	-	-	-	-
STS316	0.08 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	10.00~14.00	16.00~18.00	2.00~3.00	-	-	-
STS316L	0.030 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	12.00~15.00	16.00~18.00	2.00~3.00	-	-	-
STS316N	0.08 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	10.00~14.00	16.00~18.00	2.00~3.00	-	0.10~0.22	-
STS316LN	0.030 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	10.50~14.50	16.50~18.50	2.00~3.00	-	0.12~0.22	-
STS316Ti	0.08 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	10.00~14.00	16.00~18.00	2.00~3.00	-	-	Ti 5 × C% 이상
STS316J1	0.08 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	10.00~14.00	17.00~19.00	1.20~2.75	1.00~2.50	-	-
STS316J1L	0.030 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	12.00~16.00	17.00~19.00	1.20~2.75	1.00~2.50	-	-
STS317	0.08 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	11.00~15.00	18.00~20.00	3.00~4.00	-	-	-
STS317L	0.030 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	11.00~15.00	18.00~20.00	3.00~4.00	-	-	-
STS317LN	0.030 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	11.00~15.00	18.00~20.00	3.00~4.00	-	0.10~0.22	-
STS317J1	0.040 이하	1.00 이하	2.50 이하	0.045 이하	0.030 이하	15.00~17.00	16.00~19.00	4.00~6.00	-	-	-
STS317J2	0.06 이하	1.50 이하	2.00 이하	0.045 이하	0.030 이하	12.00~16.00	23.00~26.00	0.50~1.20	-	0.25~0.40	-
STS317J3L	0.030 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	11.00~13.00	20.50~22.50	2.00~3.00	-	0.18~0.30	-
STS836L	0.030 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	24.00~26.00	19.00~24.00	5.00~7.00	-	0.25 이하	-
STS890L	0.020 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	23.00~28.00	19.00~23.00	4.00~5.00	1.00~2.00	-	-
STS321	0.08 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	9.00~13.00	17.00~19.00	-	-	-	Ti 5 × C% 이상
STS347	0.08 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	9.00~13.00	17.00~19.00	-	-	-	Nb 5 × C% 이상
STS㉔7	0.08 이하	1.00 이하	2.00 이하	0.045 이하	0.030 이하	8.50~10.50	17.00~19.00	-	3.00~4.00	-	-
STS㉔15J1	0.08 이하	3.00~5.00	2.00 이하	0.045 이하	0.030 이하	11.50~15.00	15.00~20.00	-	-	-	-
STS350	0.030 이하	1.00 이하	1.50 이하	0.35 이하	0.020 이하	20.00~23.00	22.00~24.00	6.00~6.80	0.40 이하	0.21~0.32	-

주 (¹) Mo는 0.06% 이하를 첨가할 수 있다.
비고 STS XM15J1에 대하여는 필요에 따라 표2 이외의 합금 원소를 첨가할 수 있다.



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