

General Specifications

Models FGT, FGJ
Orifice Flanges
Model FGC
Flanges

GS 06E01F01-00E

These flanges include both the slip-on type and welding neck type used with orifice plates or orifice plates with rings.

They are available in the following three types:

Model FGT:

Used with Model FOP orifice plate for flange taps. Pressure tap holes are located in the position specified in JIS Z 8762-1995 (ISO 5167-1-1991). Available only in welding neck type.

Model FGJ:

Used with Model FOJ orifice with holding ring for flange taps. Available only in welding neck type. Flange faces are ring-joint types. Available only in welding neck type.

Model FGC:

Basically used as general flange. Can also be used with Model FOR orifice plates with rings and Model FOP orifice plates for vena contracta taps or 1D•1/2D taps.



STANDARD SPECIFICATIONS

Mounting method:

FGT, FGJ; Pipe butt welding
FGC ; Pipe butt welding or Pipe socket welding

Nominal Pipe Sizes:

FGT; 25 mm (1 inch)*1 to 500 mm (20 inches)
FGJ ; 40 mm(1.5 inch) to 350mm(14 inch) (See Note1)
FGC; 15 mm (0.5 inch) to 500 mm (20 inches).

Flange Materials:

S25C Carbon Steel
SUS 304 or SUS 316 Stainless Steel
ASTM Symbol F1(0.5 Mo steel)
ASTM Symbol F11(1.25 Cr -1/2 Mo steel)
ASTM Symbol F12 (1 Cr -1/2 Mo steel)
ASTM Symbol F22(2.25 Cr -1 Mo steel)

Flange Rating:

FGT; JIS10K, 16K, 20K,
ANSI Class 150, 300, 600*2, 900*2
JPI Class 150, 300, 600, 900
FGJ; ANSI Class*3 150, 300, 600, 900, 1500
JPI Class*3 150, 300, 600, 900, 1500
FGC; JIS 5K*4, 10K, 16K, 20K, 30K*5, 40K*6, 63K*7
ANSI Class 150, 300, 600*6, 900*7
JPI Class 150, 300, 600*6, 900*7

*1: Size 25mm becomes possible when combining with Concentric quadrant orifice.

*2: Less than Size 200mm only.

*3: Size 250mm or more is possible by ANSI/JPI Class 300.

*4: Size 25mm to 500mm only. Pipe slip on weld only.

*5: Less than Size 350mm only.

*6: Less than Size 300mm only. Pipe butt weld only.

*7: Less than Size 200mm only. Pipe butt weld only.

Flange Facing:

FGT ; Raised face type
FGJ ; Ring joint Type
FGC; Raised face type

For pipe dlip on weld and flange standard of JIS 5K, 10K, flange facing PF (plain face).

Tap Connections: (FGT, FGJ)

Tapped for Rc1/2 female. And 4 pcs.
In total of taps are provided on diagonal line.

Bolts and Nuts Material :

FGT, FGJ ; SNB7/S45C or ASTM A193 B16/A194 Gr4
FGC ; See Table 1

Jackscrews Material: (FGT, FGJ)

Square head bolt 2 pcs. in total are provided at position of 90° against material SS400.

Antirust treatment Flange:

Pre pin oil is applied in addition to Stainless steel.

Gaskets*8: (FGT, FGC)

See Table 2. All thickness is 1.5mm.
Tombo No. 1993 ; Non-asbestos Joint Sheet.
Valqua No. 7020 ; Valqualon Sheet
Valqua No. N7030 ; Fluorocarbon package Sheet

*8: Recommend a semi metallic Tokucyu gasket for high temperature or high pressure use.

Please use Valqua No.8596(Tokucyu), when Flange Rating is ANSI/JPI Class 600, 900.

Table 1. Bolts and Nuts Material (FGC)

Flange Rating	Bolt Material		Nut Material		Kind of Bolt
	Code	Material	Code	Material	
JIS5, 10, 16, 20K	-SS	SS400	-SS	SS400	Machine bolt
JIS30, 40, 63K ANSI•JPI Class 150, 300, 600, 900	-B7	SNB7	-45	S45C	Stud bolt
	-16	ASTM A193 B16	-G4	ASTM A194 Gr4	

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Table 2. Gaskets Applications

Gasket No.	The range of application		Applications
	Heat resistance	Pressure tightness	
Tombo No.1993	-100 to180°C	See right	Saturated Steam and Boiling water of 0.98MPa or less. Water, Oil, Air and Nitrogen Gas of 2.94MPa or less. Gerald Gas 0.98MPa or less. (Cannot be used for Virulence Gas and Dangerous Gas.)
Valqua NO. N7030	150°C or less	1.47MPa or less	Nitrec acid, Sulfuric acid, Hydrochloric acid, Hydrofluoric acid and Ammonia.
Valqua NO. 7020	-200 to 200°C	See right	Chemotherapeutants and Gasseals of 2.94MPa or less. Can not be used for high conecentration alkalis and Hydrofluoric acid. Steam of 1.96MPa or less.

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■ OPTIONS

Degrease Cleaning Treatment:

Cleaned with trichloroethylene. For oxygen service, use SUS 304 or SUS 316 stainless steel flanges.
Optional codes: /S.

Special Tap Connection: (FGT)

1/2 NPT female connection. Optional codes; /NN
PT 1/2 male connection. Optional codes; /TP
1/2 NPT male connection. Optional codes; /TN
15mm (1/2 inch) socket weld. Optional codes; /TS
15mm (1/2 inch) butt weld. Optional codes; /TB
15mm (1/2 inch) with Flange. Optional codes; /TF

Material Certificate:

FGT, FGJ and FGC ;

Reproduced material certificate for Orifice Flange from material manufacture. Optional codes; /M01

FGT;

Reproduced material certificate for Orifice Flange and Tap connection from material manufacture.

Optional codes; /M02 (Selected /TP, /TN, /TS, /TB).

FGT;

Reproduced material certificate for Orifice Flange, Tap connection and Tap connection with flange from material manufacture.

Optional codes; /M03 (Select /TF).

■ ORDERING INSTRUCTIONS

When ordering or giving quotations, specify;

1. Model, Suffix codes and optional codes.
2. Orifice specification sheet.

■ RELATED DEVICES

Model FOP Orifice Plate. . .Refer to GS 06E01B01-00E

Model FOR Orifice Plate with Ring

. . .Refer to GS 06E01C01-00E

Model FOK Orifice Plate with Integral Ring

. . .Refer to GS 06E01D01-00E

Model FOJ Orifice Plate with Holding Ring

. . .Refer to GS 06E01E01-00E

MODEL AND SUFFIX CODES

● **FGT**

Model	Suffix code	Description
FGT	Orifice Flanges
Nominal Pipe Size <input type="checkbox"/>	Size in mm ; <input type="checkbox"/> mm
Combine with Orifice Plate Model	-P	For model FOP flange tap orifice
Mounting	WN	welding neck
Flange Material	-CS -27 -32 -01 -11 -12 -22	S25C (Including forging) SUS304 SUS316 F1 (0.5Mo steel) F11 (1/4Cr-0.5Mo steel) F12 (1Cr-0.5Mo steel) F22 (2 1/4 Cr-1Mo steel)
Flange Rating	-10K -16K -20K -150 -300 -600 -900 -151 -301 -601 -901	JIS 10K JIS 16K JIS 20K ANSI Class 150 ANSI Class 300 ANSI Class 600 (Less than size 200 only) ANSI Class 900 (Less than size 200 only) JPI Class 150 JPI Class 300 JPI Class 600 (Less than size 200 only) JPI Class 900 (Less than size 200 only)
Gasket Material	-1993 .. -N703 .. -7020 ..	Tombo No.1993 Valqua No.N7030 Valqua No.7020
Bolt Material	-B7 .. -16 ..	SNB7 ASTM A193 B16
Nut Material	45 .. G4 ..	S45C ASTM A194 Gr4
Optional Codes	/ <input type="checkbox"/>	

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● **FGJ**

Model	Suffix codes	Description
FGJ	Orifice Flange
Nominal pipe size <input type="checkbox"/>	Size in mm ; <input type="checkbox"/> mm
Aprication	-J	For model FOJ flange tap orifice
Mounting	WN	welding neck
Flange Material	-CS -27 -32 -01 -11 -12 -22	S25C (Including forging) SUS304 SUS316 F1 (1/2 Mo Steel) F11 (1/4Cr-1/2Mo Steel) F12 (1Cr - 1/2 Mo Steel) F22 (2 1/4 Cr -1Mo Steel)
Flange Rating	-0300 ... -0600 ... -0900 ... -1500 ... -0301 ... -0601 ... -0901 ... -1501 ...	ANSI Class 300 ANSI Class 600 (Less than size 200mm) ANSI Class 900 (Less than size 200mm) ANSI Class 1500 (Less than size 200mm) JPI Class 300 JPI Class 600 (Less than size 200mm) JPI Class 900 (Less than size 200mm) JPI Class 1500 (Less than size 200mm)
Bolt Material	-B7 .. -16 ..	SNB7 ASTM A193 B16
Nut Material	45 .. G4 ..	S45C ASTM A194 Gr4
Optional Codes	/ <input type="checkbox"/>	

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● **FGC**

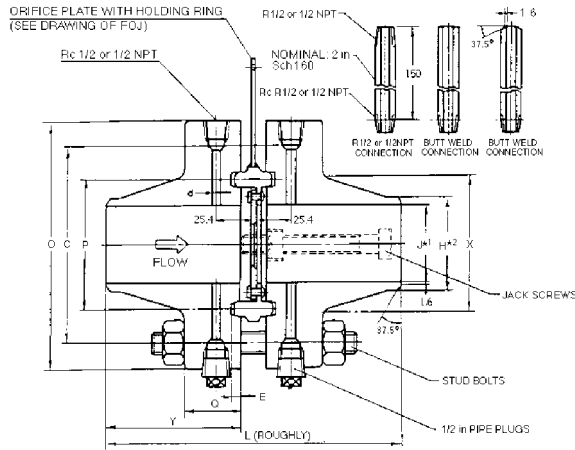
Model	Suffix Codes	Description
FGC	Orifice Flange
Nominal Pipe Size <input type="checkbox"/>	Size in mm ; <input type="checkbox"/> mm
Apprications	-P	For model FOP contracted tap orifice
	-R	For model FOR orifice with ring
Mounting	SO	Slip-on
	WN	Welding neck
Flange Material	-CS -27 -32 -01 -11 -12 -22	S25C (Carbon steel) SUS304 SUS316 F1 (1/2Mo steel) F11 (1/4Cr-1/2 Mo steel) F12 (1Cr-0.5Mo steel) F22 (2 1/4 Cr-1Mo steel)
Flange Rating	-05K -10K -16K -20K -30K -40K -63K -150 -300 -600 -900 -151 -301 -601 -901	JIS 5K (25mm to 500mm)*9 JIS 10K JIS 16K JIS 20K JIS 30K (15mm to 350mm) JIS 40K (15mm to 300mm) JIS 63K (15mm to 200mm) ANSI Class 150 ANSI Class 300 ANSI Class 600 (15mm to 300mm) ANSI Class 900 (15mm to 200mm)*10 JPI Class 150 JPI Class 300 JPI Class 600 (15mm to 300mm) JPI Class 900 (15mm to 200mm)*10
Gasket Material	-1993 ... -N703 ... -7020 ...	Tombo No.1993 Valqua No.N7030 Valqua No.7020
Bolt Material	-SS... -B7... -16...	SS400 SNB7 ASTM A193 B16
Nut Material	SS .. 45 .. G4 ..	SS400 S45C ASTM A194 Gr4
Optional codes	/ <input type="checkbox"/>	

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*9: Pipe slip on weld only.

*10: Pipe butt weld only.

• FGJ TYPE



FGJ_E.PS

ANSI Class 300, JPI Class 300 (RJ)

NOMINAL SIZE	DIAMETER OF FLANGE O	THICKNESS OF FLANGE Q	D OF HUB AT POINT OF WELD G H ²	DIAMETER OF HUB X	LENGTH THROUGH HUB Y	PICH DIAMETER OF GROOVE P	DEPTH OF GROOVE E	DIAMETER OF TAP HOLE d	DIAMETER OF BOLT CIRCLE C	NUMBER OF BOLTS	BOLT SIZE	TOTAL LENGTH L
1 1/2	156	38	49	70	86	68	6.4	4	114	4	3/4	186
2	165	40	61	84	87	83	7.9	4	127	8	5/8	189
2 1/2	191	40	76	100	91	102	7.9	4	149	8	3/4	197
3	210	40	89	118	91	124	7.9	6	168	8	3/4	197
4	254	40	114	146	94	149	7.9	6	200	8	3/4	203
5	279	43	140	178	106	181	7.9	8	235	8	3/4	228
6	318	45	165	206	106	211	7.9	8	270	12	3/4	228
8	381	49	216	260	119	270	7.9	12	330	12	7/8	255
10	445	56	267	321	125	324	7.9	12	387	16	1	268
12	521	59	319	375	138	381	7.9	12	451	16	1 1/8	293
14	584	62	356	426	151	419	7.9	12	514	20	1 1/8	318

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ANSI Class 600, JPI Class 600 (RJ)

NOMINAL SIZE	DIAMETER OF FLANGE O	THICKNESS OF FLANGE Q	D OF HUB AT POINT OF WELD G H ²	DIAMETER OF HUB X	LENGTH THROUGH HUB Y	PICH DIAMETER OF GROOVE P	DEPTH OF GROOVE E	DIAMETER OF TAP HOLE d	DIAMETER OF BOLT CIRCLE C	NUMBER OF BOLTS	BOLT SIZE	TOTAL LENGTH L
1 1/2	156	38	49	70	86	68	6.4	4	114	4	3/4	186
2	165	40	61	84	87	83	7.9	4	127	8	5/8	189
2 1/2	191	40	76	100	91	102	7.9	4	149	8	3/4	197
3	210	40	89	118	91	124	7.9	6	168	8	3/4	197
4	273	46	114	152	110	149	7.9	6	216	8	7/8	235
5	330	52	140	189	122	181	7.9	8	267	8	1	260
6	356	56	165	222	125	211	7.9	8	292	12	1	267
8	419	64	216	273	141	270	7.9	12	349	12	1 1/8	299

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ANSI Class 900, JPI Class 900 (RJ)

NOMINAL SIZE	DIAMETER OF FLANGE O	THICKNESS OF FLANGE Q	D OF HUB AT POINT OF WELD G H ²	DIAMETER OF HUB X	LENGTH THROUGH HUB Y	PICH DIAMETER OF GROOVE P	DEPTH OF GROOVE E	DIAMETER OF TAP HOLE d	DIAMETER OF BOLT CIRCLE C	NUMBER OF BOLTS	BOLT SIZE	TOTAL LENGTH L
1 1/2	178	38	49	70	89	68	6.4	4	124	4	1	193
2	216	46	61	105	110	95	7.9	4	165	8	7/8	234
2 1/2	245	49	76	124	113	108	7.9	4	191	8	1	241
3	241	46	89	127	110	124	7.9	6	191	8	7/8	235
4	292	52	114	159	122	149	7.9	6	235	8	1 1/8	260
5	349	59	140	191	135	181	7.9	8	279	8	1 1/4	286
6	381	64	165	235	148	211	7.9	8	318	12	1 1/8	311
8	470	72	216	299	170	270	7.9	12	394	12	1 3/8	356

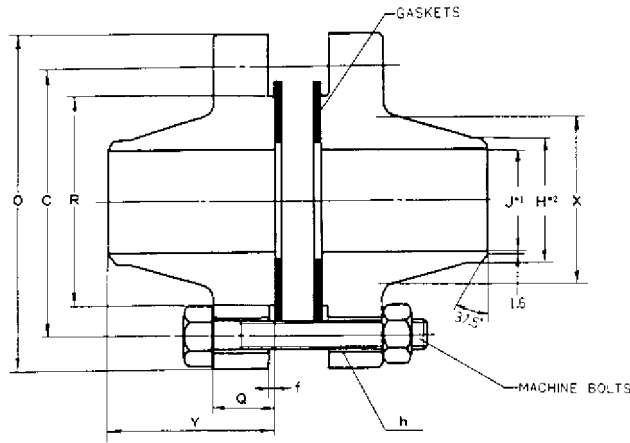
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ANSI Class 1500, JPI Class 1500 (RJ)

NOMINAL SIZE	DIAMETER OF FLANGE O	THICKNESS OF FLANGE Q	D OF HUB AT POINT OF WELD G H ²	DIAMETER OF HUB X	LENGTH THROUGH HUB Y	PICH DIAMETER OF GROOVE P	DEPTH OF GROOVE E	DIAMETER OF TAP HOLE d	DIAMETER OF BOLT CIRCLE C	NUMBER OF BOLTS	BOLT SIZE	TOTAL LENGTH L
1 1/2	178	38	49	70	89	68	6.4	4	124	4	1	193
2	216	46	61	105	110	95	7.9	4	165	8	7/8	234
2 1/2	245	49	76	124	113	108	7.9	4	191	8	1	241
3	267	56	89	133	125	137	7.9	6	203	8	1 1/8	267
4	311	62	114	162	132	162	7.9	6	241	8	1 1/4	279
5	375	81	140	197	164	194	7.9	8	292	8	1 1/2	343
6	394	92	165	229	181	211	9.5	8	318	12	1 3/8	378
8	483	103	216	292	224	270	11.1	12	394	12	1 5/8	464

T11_E.EPS

• FGC- □WN TYPE (Butt weld type)



FD3_EEP6

JIS 10K (RF)

NOMINAL SIZE	THICKNESS OF FLANGE O	THICKNESS OF FLANGE Q	D OF HUB AT POINT OF WELD G H ²	DIAMETER OF HUB X	LENGTH THROUGH HUB Y	DIAMETER OF RAISED FACE R	HIGHT OF RAISED FACE f	DIAMETER OF BOLT CIRCLE C	DIAMETER OF BOLT HOLES h	NUMBER OF BOLTS	BOLT SIZE
15	95	12	22	36	35	51	1	70	14	4	M12
20	100	14	27	42	39	56	1	75	14	4	M12
25	125	14	34	50	40	67	1	90	18	4	M16
40	140	16	49	66	44	81	2	105	18	4	M16
50	155	16	61	78	44	96	2	120	18	4	M16
65	175	18	76	96	51	116	2	140	18	4	M16
80	185	18	89	106	51	126	2	150	18	8	M16
100	210	18	114	132	51	151	2	175	18	8	M16
125	250	20	140	158	53	182	2	210	23	8	M20
150	280	22	165	186	61	212	2	240	23	8	M20
200	330	22	216	236	61	262	2	290	23	12	M20
250	400	24	267	290	68	324	2	355	25	12	M22
300	445	24	319	340	68	368	3	400	25	16	M22
350	490	26	356	378	73	413	3	445	25	16	M22

T12_EEP5

JIS 16K (RF)

NOMINAL SIZE	DIAMETER OF FLANGE O	THICKNESS OF FLANGE Q	D OF HUB AT POINT OF WELD G H ²	DIAMETER OF HUB X	LENGTH THROUGH HUB Y	DIAMETER OF RAISED FACE R	HIGHT OF RAISED FACE f	DIAMETER OF BOLT CIRCLE C	DIAMETER OF BOLT HOLES h	NUMBER OF BOLTS	BOLT SIZE
15	95	12	22	36	34	51	1	70	14	4	M12
20	100	14	28	42	37	56	1	75	14	4	M12
25	125	14	34	50	40	67	1	90	18	4	M16
40	140	16	49	66	44	81	2	105	18	4	M16
50	155	16	61	80	47	96	2	120	18	8	M16
65	175	18	77	98	53	116	2	140	18	8	M16
80	200	20	90	112	58	132	2	160	22	8	M20
100	225	22	115	138	61	160	2	185	22	8	M20
125	270	22	141	170	70	195	2	225	25	8	M22
150	305	24	166	202	80	230	2	260	25	12	M22
200	350	26	218	252	83	275	2	305	25	12	M22
250	430	28	269	312	98	345	2	380	27	12	M24
300	480	30	320	364	103	395	3	430	27	16	M24
350	540	34	357	408	116	440	3	480	33	16	M30

T13_EEP5

JIS 20K (RF)

NOMINAL SIZE	DIAMETER OF FLANGE O	THICKNESS OF FLANGE Q	D OF HUB AT POINT OF WELD G H ²	DIAMETER OF HUB X	LENGTH THROUGH HUB Y	DIAMETER OF RAISED FACE R	HIGHT OF RAISED FACE f	DIAMETER OF BOLT CIRCLE C	DIAMETER OF BOLT HOLES h	NUMBER OF BOLTS	BOLT SIZE
15	95	14	22	36	36	51	1	70	14	4	M12
20	100	16	28	42	39	56	1	75	14	4	M12
25	125	16	34	50	42	67	1	90	18	4	M16
40	140	18	49	66	46	81	2	105	18	4	M16
50	155	18	61	80	49	96	2	120	18	8	M16
65	175	20	77	98	55	116	2	140	18	8	M16
80	200	22	90	112	60	132	2	160	22	8	M20
100	225	24	115	138	63	160	2	185	22	8	M20
125	270	26	141	170	74	195	2	225	25	8	M22
150	305	28	166	202	84	230	2	260	25	12	M22
200	350	30	218	252	87	275	2	305	25	12	M22
250	430	34	269	312	104	345	2	380	27	12	M24
300	480	36	320	364	109	395	3	430	27	16	M24
350	540	40	357	408	122	440	3	480	33	16	M30

T14_EEP5

