

334A

Valve nominal size

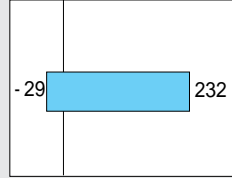
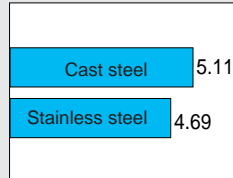
80 to 600mm

Max. working pressure MPa

Working temperature range °C

0

0



FS Fire safe certification to API607 4th Ed.



Butterfly Valves

TRITEC

TT2

334A

302A/303Q

304A/304Q

302Y/304Y

304M(HLV)

507V/508V

846T/847T/847Q

841T/842T

773Z(NAV-Z)

700G/704G/705G

731P/732P
732X/731X

700E/700K

704G/722F/720F

LRV

227P

MKT

903C/904C

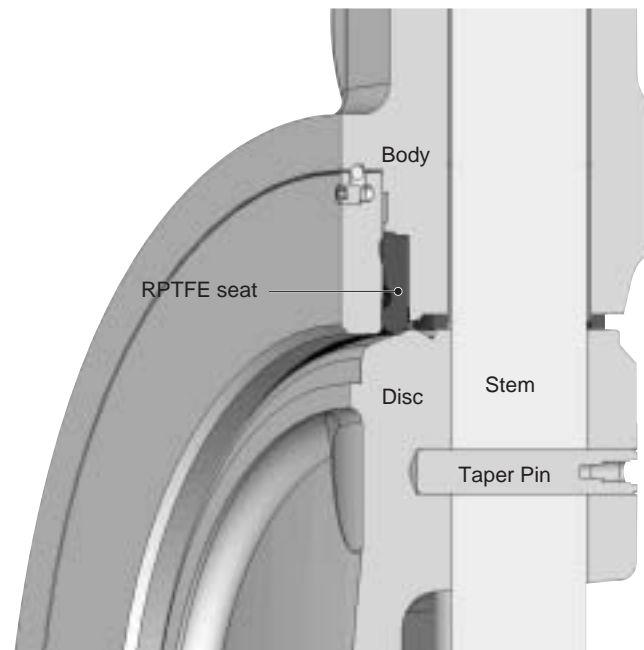
Double offset geometry

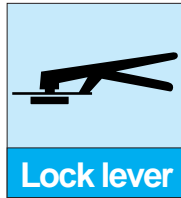
The axis of disc rotation is double offset to the seat ring. When the disc rotates, it unseats at a small turning angle by its cam effect. This prevents seat wear and provides reliable sealing performance over long periods.

Applications

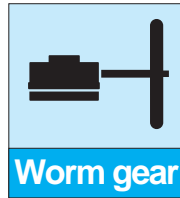
General hydrocarbon, chemical process, steam, and gas applications.

RPTFE as standard

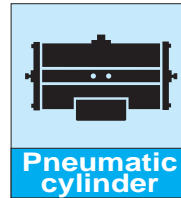




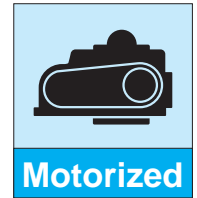
Lock lever



Worm gear



Pneumatic cylinder



Motorized

Butterfly Valves

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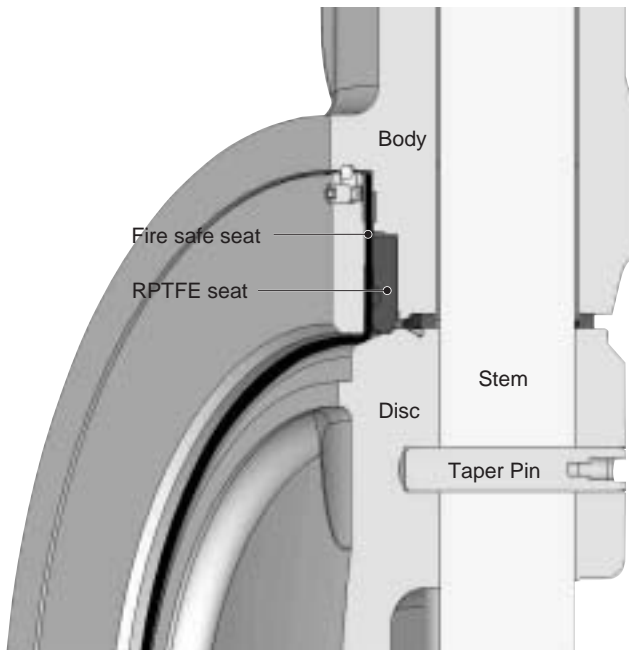
903C/904C

334A Standard specifications

Body Style	Wafer, Lugged, Double flanged		
Valve nominal size	80, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600mm		
Applicable flange standard	ASME B16.5 Class300(API300), JPI300, JIS30K, BS4504 PN25/40, DIN NP25/40		
Face-to-face dimensions	API609 Category B, Class 300		
Seat leakage	ISO 5208 RATE A (Zero leakage), API598, JPI 7S-39		
Flow direction	i-direction (Recommended flow direction : Pressrue to shaft side)		
Test pressure	Body Hydrostatic test	1.5 times of rating pressure	
	Seat leakag	7 bar (Air) or 110% of rating pressure (Hydrostatic)	
temperature range	-29 to 232 degrees C		
Standard materials	Body	A216 WCB	A351 CF8M
	Disc	A351 CF8M	
	Stem	SUS420J2	630SS + H1150
	Seat ring	RPTFE	
	Gland packing	Exfoliated graphite	

* A double-flange type can also be ordered.

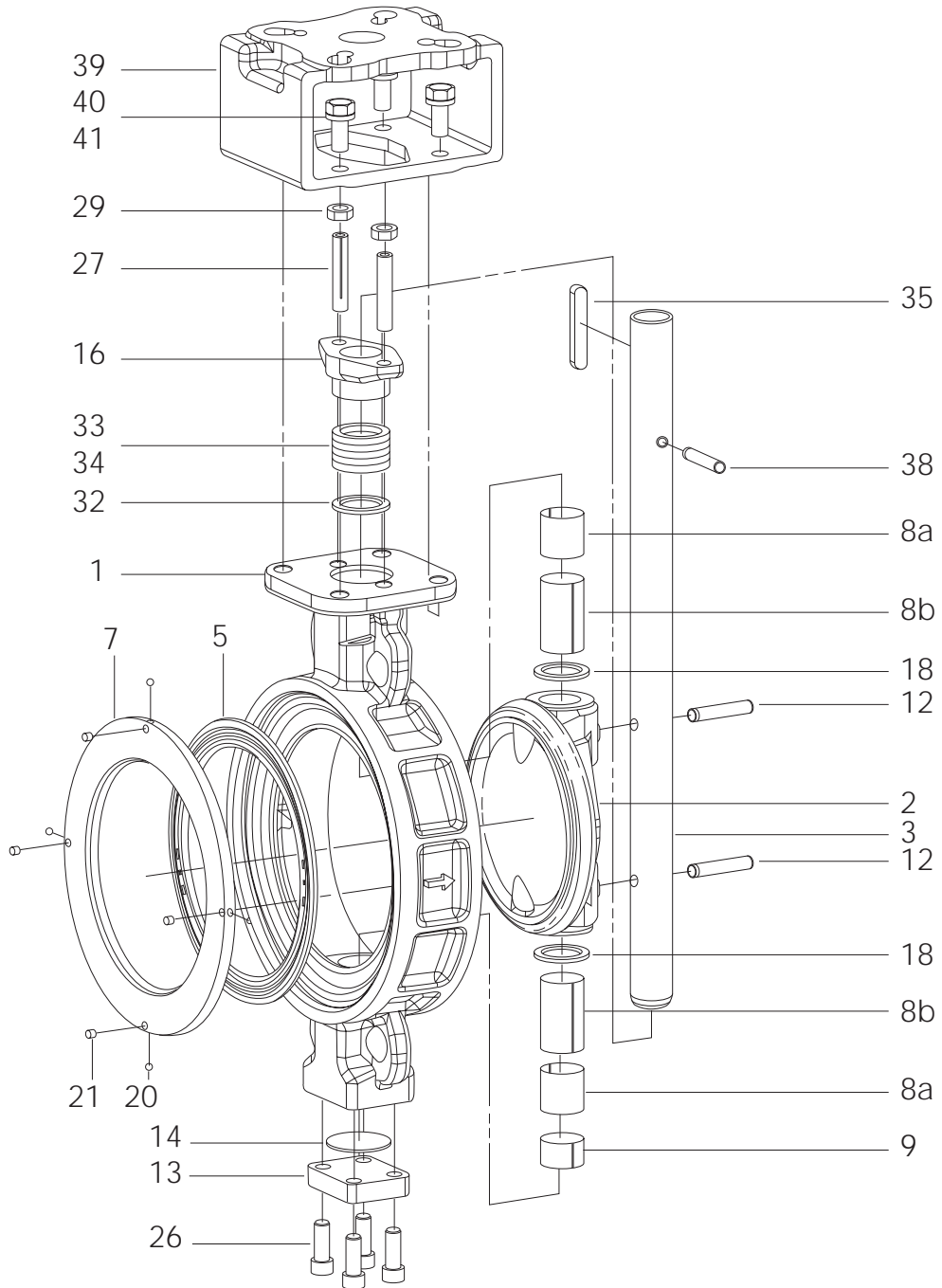
334A Fire safe seat (Option)



334A

334A Expanded view of components

Butterfly Valves
TRITEC
TT2
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MKT
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334A Parts list

334A Parts list

No.	Description	Q'ty	Remarks
1	Body	1	
2	Disc	1	
3	Stem	1	
5	Seat ring	1	
7	Seat ring retainer	1	
8a	Bearing a	2	
8b	Bearing b	1	80mm to 150mm
		2	200mm to 600mm
9	Bearing spacer	1	
12	Taper pin	2	80mm to 200mm
		3	250mm to 600mm
13	Bottom cover	1	
14	Bottom gasket	1	
16	Gland plate spigot	1	
18	Space ring	2	
20	Ball	2	80mm, 100mm
		4	150mm to 600mm
21	Set screw	2	80mm, 100mm
		4	150mm to 600mm
26	Hexagon hole bolt	4	
27	Gland bolt	2	
29	Hexagon nut	2	
32	Packing retainer	1	
33	Gland packing a	3	
34	Gland packing b	2	
35	Key	0	80mm to 150mm
		1	200mm to 600mm
38	Spring pin	1	
39	Column	1	
40	Hexagon bolt	4	
41	Spring washer	4	

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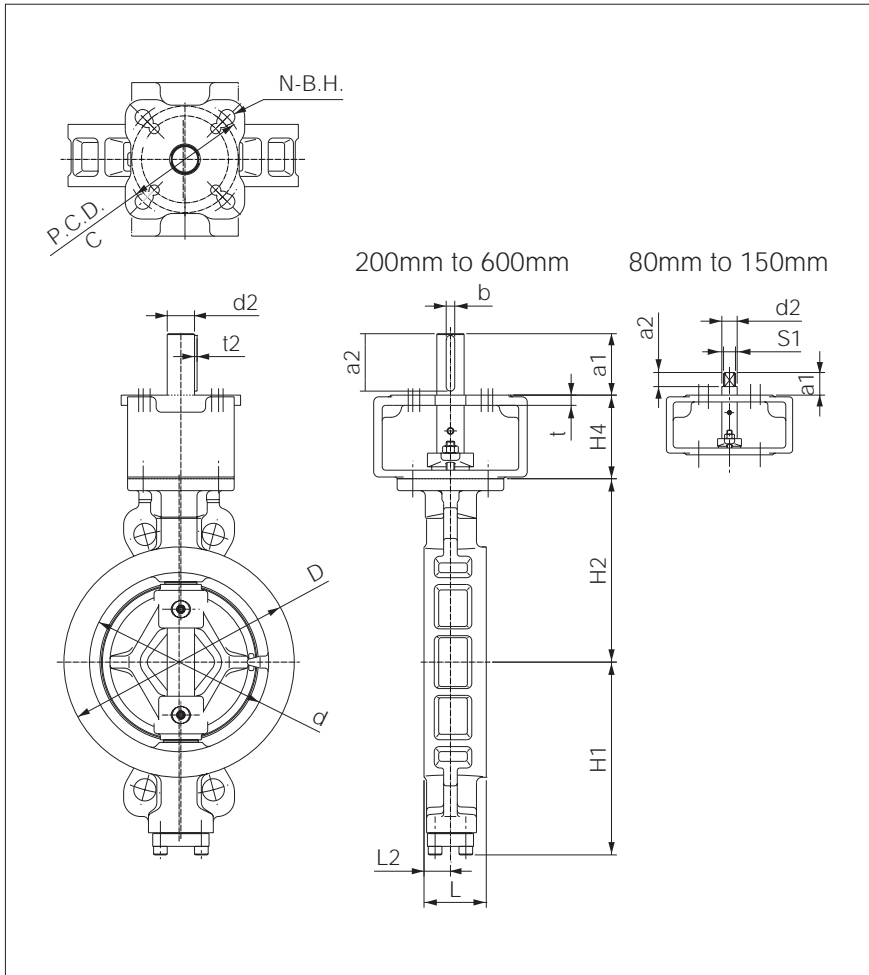
903C/904C

334A Bare shaft (01 : 80mm to 150mm, 02 : 200mm to 600mm)

Stem design	Nominal size		Dimension (mm)														Approx. weight (kg)	
	mm	inch	d	D	L	L ₂	H ₁	H ₂	a ₁	a ₂	S ₁	d ₂	b	t ₂	H ₄	t		Flange type
01	80	3	86.5	128	48	20	118	127	26.5	16.5	14	18	-	-	70	8	F07,F10	8
	100	4	112	158	54	22	147	149	26.5	20	16	20	-	-	70	8	F07,F10	10.7
	150	6	160	216	59	24	192	187	37	30	22	26	-	-	98	12	F07,F12,F14	21.4
02	200	8	210	270	73	31	226	215	72	67	-	32	10	3	98	12	F07,F12,F14	32
	250	10	260	326	83	36	260	253	72	67	-	37	10	3	125	16	F14,F16	60
	300	12	310	385	92	42	292	294.5	86	81	-	42	12	3	125	16	F14,F16	83
	350	14	347	420	117	52	338	326	86	81	-	45	14	3.5	125	16	F14,F16	113
	400	16	402	476	133	61.5	376	364	86	81	-	52	16	4	125	16	F14,F16	157
	450	18	446	536	149	70	402	394.5	116	111	-	60	18	4	150	20	F25, Special A	231
	500	20	497	590	159	75	431	426.5	116	111	-	65	18	4	150	20	F25, Special A	283
	600	24	600	701	181	84	504	496	136	131	-	70	20	4.5	150	20	Special A, Special B	433

Stem design	01 : Square
	02 : Round with key

334A 80mm to 600mm



Top flange

Flange type	P.C.D. C	N	B.H.
F07	70	4	10
F10	102	4	12
F12	125	4	14
F14	140	4	18
F16	165	4	22
F25	254	8	18
Special A	220	4	22
Special B	254	8	22

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903C/904C

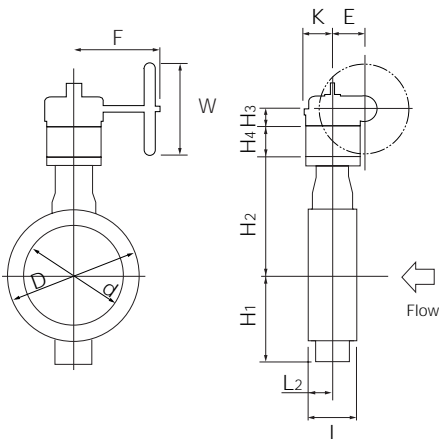
334A

Worm gear type 334A-2U(80mm to 200mm) / 334A-2K(250mm to 600mm)

Butterfly Valves
TRITEC
TT2
334A
302A/303Q
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LRV
227P
MKT
903C/904C

Nominal size	Dimension (mm)														Gear type	Approx. weight (kg)
	mm	inch	d	D	L	L ₂	H ₁	H ₂	H ₃	H ₄	E	K	F	W		
80	3	86.5	128	48	20	118	127	34.5	70	44	74	173.5	160	2U-2	12.5	
100	4	112	158	54	22	147	149	34.5	70	44	74	173.5	160	2U-2	15	
150	6	160	216	59	24	192	187	41.5	98	67	90	198	200	2U-3	29	
200	8	210	270	73	31	226	215	48	98	87.5	90	222.5	280	2U-4	48	
250	10	260	326	83	36	260	253	52	125	75	113	252	370	SBWG-01	72	
300	12	310	385	92	42	292	294.5	63	125	91.5	113	310	450	SBWG-02	104	
350	14	347	420	117	52	338	326	63	125	113	113	343	550	SBWG-03	141	
400	16	402	476	133	61.5	376	364	63	125	31.5	113	363	550	SBWG-03-1S	190	
450	18	446	536	149	70	402	394.5	85	150	32.7	200	422	710	SBWG-04-1S	306	
500	20	497	590	159	75	431	426.5	85	150	32.7	200	422	710	SBWG-04-1S	358	
600	24	600	701	181	84	504	496	87	150	72.7	200	476	710	SBWG-05-1S	531	

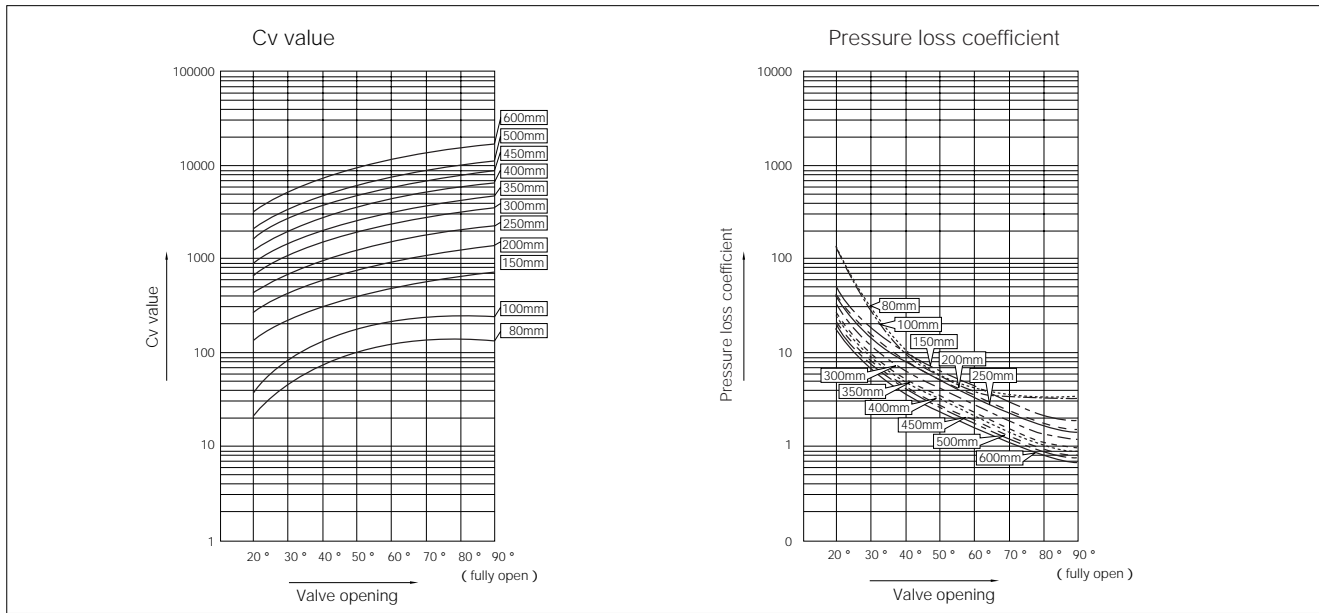
334A-2U/2K



2U/2K Installation direction

<p>Retainer side</p> <p>Stem side</p> <p>2UA/2KA</p>	<p>Retainer side</p> <p>Stem side</p> <p>2UB/2KB</p>	<p>Retainer side</p> <p>Stem side</p> <p>2UC/2KC</p>	<p>Retainer side</p> <p>Stem side</p> <p>2UD/2KD</p>
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334A Cv value/pressure loss coefficient



334A Cv value

Nominal size		Valve opening							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
80	3	22	47	77	104	124	134	135	136
100	4	38	83	135	184	219	236	238	240
150	6	139	230	309	384	470	572	675	727
200	8	270	446	599	744	909	1106	1306	1407
250	10	436	720	967	1202	1469	1787	2111	2273
300	12	677	1120	1503	1868	2283	2778	3281	3533
350	14	909	1503	2018	2508	3065	3730	4405	4744
400	16	1249	2065	2773	3445	4210	5125	6052	6518
450	18	1664	2751	3694	4590	5609	6828	8062	8683
500	20	2122	3510	4712	5855	7155	8710	10285	11077
600	24	3245	5366	7205	8953	10941	13317	15725	16937

334A Pressure loss coefficient

Nominal size		Valve opening							
mm	inch	20°	30°	40°	50°	60°	70°	80°	90°
80	3	136.34	28.81	10.73	5.78	4.08	3.52	3.46	3.41
100	4	132.53	28.00	10.43	5.62	3.97	3.43	3.36	3.31
150	6	50.60	18.50	10.27	6.65	4.45	3.00	2.15	1.86
200	8	41.42	15.14	8.40	5.44	3.64	2.46	1.76	1.52
250	10	39.20	14.33	7.95	5.15	3.45	2.33	1.67	1.44
300	12	32.47	11.87	6.59	4.27	2.86	1.93	1.38	1.19
350	14	26.30	9.62	5.33	3.45	2.31	1.56	1.12	0.97
400	16	23.93	8.75	4.86	3.14	2.11	1.42	1.02	0.88
450	18	21.72	7.94	4.41	2.85	1.91	1.29	0.92	0.80
500	20	20.45	7.48	4.15	2.69	1.80	1.21	0.87	0.75
600	24	18.27	6.68	3.71	2.40	1.61	1.08	0.78	0.67

Butterfly Valves

TRITEC

TT2

334A

302A/303Q

304A/304Q

302Y/304Y

304M(HLV)

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846T/847T/847Q

841T/842T

773Z(NAV-Z)

700G/704G/705G

731P/732P
732X/731X

700E/700K

704G/722F/720F

LRV

227P

MKT

903C/904C

334A Applicable flange standard

Butterfly Valves
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TT2
334A
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300Lb Wafer type

Nominal size		ASME/JPI 300Lb	JIS20K	JIS30K	BS4504(DIN) PN25	BS4504(DIN) PN40
mm	inch					
80	3	D ¹	D ¹	D ¹	D ¹	D ¹
100	4	D ¹	D ¹	D ¹	D ¹	D ¹
150	6	D ¹	D ¹	D ¹	D ¹	D ¹
200	8	D ¹	D ¹	D ¹	D ¹	D ¹
250	10	T	D ¹ /T	D ¹ /T	D ¹ /T	D ¹ (T)
300	12	T	T	T	T	T
350	14	T	T	T	T	T
400	16	T	T	T	T	T
450	18	T	T	X	T	T
500	20	T	T		T	T
600	24	T	T		T	T

1: There are 2 upper drilling holes for 80 mm and 100 mm types, and a total of 4 drilling holes, 2 upper and 2 lower, for 150 mm, 200 mm and 250 mm types.

T/D: With drill hole or tapping.

D : With flange drilling

T : With flange tapping

300Lb Lugged type

Nominal size		ASME/JPI 300Lb	JIS20K	JIS30K	BS4504(DIN) PN25	BS4504(DIN) PN40
mm	inch					
80	3	T	T	T	T	T
100	4	T	T	T	T	T
150	6	T	T	T	x	x
200	8	T	T	T	T	T
250	10	T	x	x	x	x
300	12	T	T	T	T	T
350	14	T	x	x	x	x
400	16	T	x	x	x	x
450	18	T	x	x	x	x
500	20	T	x	x	x	x
600	24	T	T	x	x	x

Please consult with us regarding drilling holes for the lugged type.

T : With flange tapping

x : A special wooden form is required.

334A Applicable pipe list in case

Nominal size		JIS(STPG)			ANSI B36.1		
mm	inch	Sch#40	Sch#60	Sch#80	Sch#40	Sch#60	Sch#80
80	3						
100	4						
150	6						
200	8						
250	10						
300	12						
350	14						
400	16						
450	18						
500	20						
600	24						

Determine the appropriateness of using other pipes according to the minimum internal pipe diameter indicated in the following table.

334A Minimum internal diameters of piping

Nominal size		Minimum internal diameters of piping
mm	inch	
80	3	73
100	4	93
150	6	138
200	8	185
250	10	225
300	12	267
350	14	306
400	16	347
450	18	394
500	20	438
600	24	533

The gap between the disc edge and the pipe is smallest at the stem side flange face when all nominal sizes are fully open. Because the above gap is calculated with the pipe considered as extending up to the flange end, the value will differ depending on the way the pipe and flange are welded.

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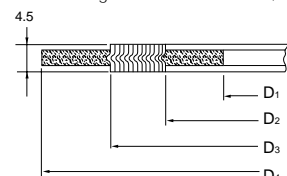
334A Piping gasket

- * In case of sheet gasket Any standard can be used.
- * In case of spiral gasket
 - For API, JPI, ANSI flange Any standard gaskets with inner/outer ring can be used.
 - For JIS flange Use special spiral gasket shown below.

Special spiral gasket flange size

Nominal size		D ₁	D ₂	D ₃	D ₄				
					ASME JPI	JIS		BS4504	
					Class 300	20K	30K	PN25	PN40
mm	inch								
80	3	89	97	120	149	140	150	144	144
100	4	115	124	146	181	165	172	170	170
150	6	166	178	207	250	237	249	226	226
200	8	217	227	257	308	282	294	286	293
250	10	268	282	318	362	354	360	343	355
300	12	319	339	370	422	404	418	403	420
350	14	256	369	403	485	450	463	460	477
400	16	406	420	457	539	508	524	517	549
450	18	458	472	517	596	573	-	567	574
500	20	508	523	567	654	628	-	627	631
600	24	610	626	672	774	734	-	734	750

Except for 300A and 350A sizes, the dimensions of the gasket designed for the TomDisco (TOMOE300 Series) and D₁, D₂ and D₃ are the same. If the flange standard is the same, D₄ is also identical and the same gasket may be used.



Special spiral gasket flange size

Nominal size	ASME/JPI		JIS		BS4504		
	mm	inch	300Lb	20K	30K	PN25	PN40
80	3						
100	4						
150	6						
200	8						
250	10						
300	12						
350	14						
400	16						
450	18			-			
500	20			-			
600	24			-			

When plumbing to a JIS flange, is it only possible to use TOMOE300 Series products.

Commercially available spiral gaskets (with inner and outer ring)

Nominal size		ASME/JPI	JIS		BS4504	
mm	inch	300Lb	20K	30K	PN25	PN40
80	3			x		
100	4			x		
150	6		x	x	x	x
200	8		x	x	x	x
250	10		x	x		x
300	12			x	x	x
350	14		x	x		
400	16		x			
450	18		x	-		
500	20		x	-		
600	24		x	-		

334A Piping gasket

334A Applicable standard for standard piping gasket

Nominal size		Joint sheet or PTFE solid gasket (t 2mm)					PTFE mold type gasket VALQUA or NICHIASU	
		ASME/JPI	JIS		BS4504		ASME/JPI	JIS
mm	inch	300Lb	20K	30K	PN25	PN40	class 300	20K
80	3							
100	4							
125	5							
150	6							
200	8							
250	10							
300	12							
350	14							
400	16							
450	18			-				
500	20			-				
600	24			-				

*All standard joint seats and Teflon® cut gaskets can be used.

*Only VALQUA flawless gaskets (Part No.: 7030/7031/7035) and NICHIASU PTFE cushion gaskets (Part No.: 9010/9011) can be used as Teflon® mold gaskets. (Products from other manufacturers cannot be used due to their dimensions.)

334A Piping bolts and nuts sizes

300Lb Wafer

Nominal size		ASME/JPI class300			JIS20K		
mm	inch	Setting bolts	Long bolts	Nuts	Setting bolts	Long bolts	Nuts
80	3	–	8- 3/4-10UNC×175	16	–	8-M20 ×160	16
100	4	–	8- 3/4-10UNC×185	16	–	8-M20 ×170	16
150	6	–	12- 3/4-10UNC×200	24	–	12-M22 ×190	24
200	8	–	12- 7/8-9UNC×235	24	–	12-M22 ×200	24
250	10	8-1-8UNC×125(21×14)	12- 1-8UNC×260	32	8(0)-M24 ×110(21×14)	8(12)-M24 ×230	24
300	12	8-1 1/8-8UN×135(24×16)	12-1 1/8-8UN ×285	32	8-M24 ×120(21×14)	12-M24 ×240	32
350	14	8-1 1/8-8UN×145(24×16)	16-1 1/8-8UN ×315	40	8-M30(P3)×140(24×16)	12-M30(P3)×285	32
400	16	8-1 1/4-8UN×155(24×16)	16-1 1/4-8UN ×345	40	8-M30(P3)×140(24×16)	12-M30(P3)×315	32
450	18	8-1 1/4-8UN×155(24×16)	20-1 1/4-8UN ×365	48	8-M30(P3)×145(24×16)	16-M30(P3)×335	40
500	20	8-1 1/4-8UN×160(24×16)	20-1 1/4-8UN ×380	48	8-M30(P3)×150(24×16)	16-M30(P3)×350	40
600	24	8-1 1/2-8UN×190(30×20)	20-1 1/2-8UN ×430	48	8-M36(P3)×175(30×20)	20-M36(P3)×385	48

Nominal size		JIS30K		
mm	inch	Setting bolts	Long bolts	Nuts
80	3	–	8-M20 ×170	16
100	4	–	8-M22 ×190	16
150	6	–	12-M24 ×210	24
200	8	–	12-M24 ×240	24
250	10	8(0)-M30(P3)×135(24×16)	8(12)-M30(P3)×275	24
300	12	8-M30(P3)×145(24×16)	12-M30(P3)×285	32
350	14	8-M30(P3)×155(24×16)	12-M30(P3)×315	32
400	16	8-M36(P3)×170(30×20)	12-M36(P3)×355	32

Nominal size		BS4504(DIN)NP25			BS4504(DIN)NP40		
mm	inch	Setting bolts	Long bolts	Nuts	Setting bolts	Long bolts	Nuts
80	3	–	8-M16×155	16	–	8-M16 ×155	16
100	4	–	8-M20×170	16	–	8-M20 ×170	16
150	6	–	8-M24×190	16	–	8- M24×190	16
200	8	–	12-M24×210	24	–	12-M27×230	24
250	10	8(0)-M27×115(22×14)	8(12)-M27×230	24	8(0)-M30×125(24×16)	8(12)-M30×250	24
300	12	8-M27×115(22×14)	12-M27×250	32	8-M30×125(24×16)	12-M30×270	32
350	14	8-M30×135(24×16)	12-M30×285	32	8-M33×150(27×18)	12-M33×310	32
400	16	8-M33×145(27×18)	12-M33×310	32	8-M36×160(30×20)	12-M36×340	32
450	18	8-M33×145(27×18)	16-M33×330	40	8-M36×160(30×20)	16-M36×355	40
500	20	8-M33×150(27×18)	16-M33×350	40	8-M39×170(32×21)	16-M39×375	40
600	24	8-M36×170(30×20)	16-M36×380	40	8-M45×200(36×24)	16-M45×430	40

Butterfly Valves

TRITEC

TT2

334A

302A/303Q

304A/304Q

302Y/304Y

304M^(HLV)

507V/508V

846T/847T/847Q

841T/842T

773Z^(NAV-Z)

700G/704G/705G

731P/732P

732X/731X

700E/700K

704G/722F/720F

LRV

227P

MKT

903C/904C

334A Piping bolts and nuts sizes

Butterfly Valves	
TRITEC	
TT2	
334A	
302A/303Q	
304A/304Q	
302Y/304Y	
304M(HLV)	
507V/508V	
846T/847T/847Q	
841T/842T	
773Z (NAV-Z)	
700G/704G/705G	
731P/732P 732X/731X	
700E/700K	
704G/722F/720F	
LRV	
227P	
MKT	
903C/904C	

300 Lb Lugged (fully-tapped)

Nominal size		ASME/JPI class300		JIS20K		JIS30K	
mm	inch	Setting bolts	Nuts	Setting bolts	Nuts	Setting bolts	Nuts
80	3	16-3/4-10UNC×90(17×11)	16	16-M20× 85(17×11)	16	16-M20× 85(17×11)	16
100	4	16-3/4-10UNC×90(17×11)	16	16-M20× 85(17×11)	16	16-M22×100(19×12)	16
150	6	24-3/4-10UNC×95(17×11)	24	24-M22×100(19×12)	24	24-M24×110(21×14)	24
200	8	24-7/8-9UNC×110(19×12)	24	24-M22×100(19×12)	24	24-M24×115(21×14)	24
250	10	32- 1-8UNC×125(21×14)	32	-	-	-	-
300	12	32-1 1/8-8UN×135(24×16)	32	32-M24×110(21×14)	32	32-M30(P3)×140(24×16)	32
350	14	40-1 1/8-8UN×145(24×16)	40	-	-	-	-
400	16	40-1 1/4-8UN×160(24×16)	40	-	-	-	-
450	18	48-1 1/4-8UN×160(24×16)	48	-	-	-	-
500	20	48-1 1/4-8UN×160(24×16)	48	-	-	-	-
600	24	48-1 1/2-8UN×190(30×20)	48	48-M36(P3)×170(30×20)	48	-	-

Nominal size		BS4504(DIN)NP25		BS4504(DIN)NP40	
mm	inch	Setting bolts	Nuts	Setting bolts	Nuts
80	3	16-M16× 75(13× 8)	16	16-M16× 75(13× 8)	16
100	4	16-M20× 85(17×11)	16	16-M20× 85(17×11)	16
150	6	-	-	-	-
200	8	24-M24×110(21×14)	24	24-M27×115(22×14)	24
250	10	-	-	-	-
300	12	32-M27×115(24×14)	32	32-M30×115(24×16)	32
350	14	-	-	-	-
400	16	-	-	-	-
450	18	-	-	-	-
500	20	-	-	-	-
600	24	-	-	-	-

Note: Bolt/Nut material: SNB7/S45C

Please use a nut with a height that is 100% of the screw diameter.

The bold length calculation is based on use of a 4.5 mm thick spiral gasket.

The flange thickness calculation is based on the standard steel flange thickness.

Quantities shown are for one valve.

250 mm bolt quantities are indicated as follows: The quantity outside the brackets applies when the setting bolt holes are tapped and the values inside the brackets apply when the setting bolt holes are drilled.

Examples

Setting bolts: 8 - M16 × 75 (13 × 8)

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N
M
L
b
L1

Long bolts: 4 - M16 × 145

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|
|

N
M
L

