



TOA
GENERAL CATALOG

TOA INDUSTRIAL COMPANY LIMITED

CONTENTS

Title	ValveType	Class	FIG.	Body Material	End Connection
Brass & Bronze Valves	Gate valve	PN20	JX-111	Bronze	Threaded Ends
	Gate valve	PN20	JX-110	Brass	Threaded Ends
	Globe valve	PN20	QH-7002	Bronze	Threaded Ends
	Globe valve	PN20	QH-7004	Brass	Threaded Ends
	Check valve	PN20	QH-8007	Bronze	Threaded Ends
	Check valve	PN20	QH-8005	Brass	Threaded Ends
	Strainer valve	PN20	QH-3303	Bronze	Threaded Ends
	Strainer valve	PN20	QH-3302	Brass	Threaded Ends
	Ball valve	PN20	QH-5018B	Bronze	Threaded Ends
	Ball valve	PN20	QH-5018	Brass	Threaded Ends
Cast Iron Valves	Check valve	PN16	H4486	Cast Iron	Flanged Ends
	Check valve	PN16	H4486	Cast Iron	Flanged Ends
	Wafer check valve	PN16	C10	Cast Iron	Wafer Ends
	Check valve	PN16	C41	Cast Iron	Flanged Ends
	Globe valve	PN16	J4116	Cast Iron	Flanged Ends
	Butterfly valve	PN16	B16W	Cast Iron (Lever Operation)	Wafer Ends
	Butterfly valve	PN16	G-B16W	Cast Iron (Gear Operation)	Wafer Ends
	Butterfly valve	PN10	G-B16W	Cast Iron (Gear Operation)	Wafer Ends
	Butterfly valve	PN16	B16L	Cast Iron	Flanged ends
	Butterfly valve	PN16	G-B16L	Cast Iron	Flanged ends
	Butterfly valve	PN16	G-B16L	Cast Iron	Flanged ends
Strainer valve	PN16	S420	Cast Iron GG25	Flanged Ends	
Ductile Iron Valves	Gate valve	PN16	Z4714R	Ductile Iron GGG50	Flanged Ends
	Gate valve	PN16	Z4714E	Ductile Iron	Flanged Ends
	Gate valve	PN16	Z4714C	Ductile Iron GGG50	Flanged Ends
	Gate valve	PN16	Z4724B	Ductile Iron	Flanged Ends
	Gate valve	PN16	Z4124B	Ductile Iron	Flanged Ends
	Butterfly valve	PN16	B16W-YX	Ductile Iron	Wafer Ends
	Butterfly valve	PN16	G- B16W-YX	Ductile Iron	Wafer Ends
	Butterfly valve	PN10	G-B16W-YX	Ductile Iron	Wafer Ends
	Strainer valve	PN16	S420	Ductile Iron	Flanged Ends
	Ball valve	PN16	Q410	Ductile Iron/ Cast Iron	Flanged Ends

Title	ValveType	Class	FIG.	Body Material	End Connection
Stainless Steel Valves	Gate valve	10K	UL / FUL • ULN / FULN	Stainless Steel	Threaded Ends / Flanged Ends
	Globe valve	10K	UG / FUG • UGN / FUGN	Stainless Steel	Threaded Ends / Flanged Ends
	Check valve	10K	US / FUS • USN / FUSN	Stainless Steel	Threaded Ends / Flanged Ends
	Strainer valve	10K	UY / FUY • UYN / FUYN	Stainless Steel	Threaded Ends / Flanged Ends
	Ball valve	800	UK,UB	Stainless Steel	Threaded Ends
	Ball valve	1000	UF	Stainless Steel	Threaded Ends
	Ball valve	10K/150	FUF / FUFN FUFNA	Stainless Steel	Flanged Ends
	Ball valve	10K	FUFJ	Stainless Steel	Flanged Ends
	Gate valve	10K	Z4103H-150LB	Stainless Steel	Flanged Ends
	Gate valve	10K	Z4103H-150LB	Stainless Steel	Flanged Ends
	Gate valve	10K	Z4103H-300LB	Stainless Steel	Flanged Ends
	Gate valve	10K	Z4103H-300LB	Stainless Steel	Flanged Ends
	Gate valve	PN16	S420-S1	Stainless Steel	Flanged Ends
	Butterfly valve	PN16	B16WS	Stainless Steel	Flanged Ends
	Butterfly valve	PN16	G-B16WS	Stainless Steel	Flanged Ends
	Check valve	PN16	C10S	Stainless Steel	Flanged Ends

Notes

- 1) Refer to individual specification sheet or the drawing for details of a product.
- 2) Main units on this catalog are shown in SI unit (Mpa, °C, millimeter)
- 3) Refer to the attached P—T rating about applicable pressure and temperature.
- 4) Brass or bronze strainers have the perforated metal screen. (Estimated to 14—16 meshes)

Nominal A	8	10	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	Page	
Size B	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24		
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Nominal A	8	10	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	Page	
Size B	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24		
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■ Bronze and Brass Materials to JIS Standards

JIS H5120 (Copper & Copper Alloy Castings)

Designation	Chemical composition(%)										Mechanical properties	
	Cu	Sn	Zn	Pb	Ni	Fe	P	Sb	Al	Si		
CAC406(BC6)	83.0-87.0	4.0-6.0	4.0-6.0	4.0-6.0	1.0 Max.	0.3 Max.	0.05 Max.	0.2 Max.	0.01 Max.	0.01 Max.	Tensile strength 195 Min.(N/mm ²)	Elongation (%) 15Min.

JIS H3250 (Copper & Copper Alloy Rod and Bars)

Designation		Chemical composition(%)				Mechanical properties	
Extruded	Drawn	Cu	Pb	Fe+Sn	Zn		
C3771BE	C3771BD	57.0-61.0	1.0-2.5	1.0 Max.	Remainder	Tensile strength 315 Min.(N/mm ²)	Elongation (%) 15Min.

JIS H3250 (Copper & Copper Alloy Rod and Bars)

Designation		Chemical composition(%)				Mechanical properties	
Extruded	Drawn	Cu	Pb	Fe+Sn	Zn		
C3604BE	C3604BD	57.0-61.0	1.8-3.7	1.0 Max.	Remainder	Tensile strength 335 Min.(N/mm ²)	Elongation (%) —

■ Pressure-Temperature Ratings (P-T ratings)

See page 23 for Pressure - Temperature Ratings

(Note)

- It is necessary to change packing for high temperatures to apply to a maximum temperature condition.
- Applies than ball valves.
The maximum allowable working pressure 20 bar non-shock W.O.G at 70°C
- Testing Pressure (Air test)
Shell test: 6 bar
Seat test: 6 bar
- Working Medium: Water, Air

Brass & Bronze Valves

TOA Fig.JX-111/JX-110/QH-7002/QH-7004

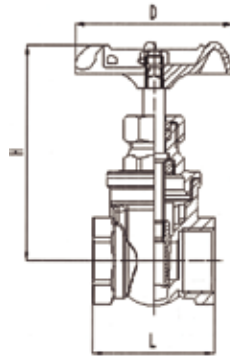
PN20 GATE VALVE & GLOBE VALVE

PN20

BRONZE/BRASS GATE VALVE

20 bar at 100°C

Screwed Bonnet, Non-Rising Stem
Threaded ends to BS21 (JIS B0203)



Materials

Parts	JX-111	JX-110
Body	CAC406	C3771BE
Bonnet	CAC406	C3771BE
Stem	C3604BD	C3604BD
Disc	C3771BE	C3771BE
Gland	C3771BE	C3771BE
Gland packing	PTFE	PTFE
Gasket	PTFE	PTFE
Handwheel	ADC12	ADC12

Dimensions

Nominal Size	inch mm	unit:mm					
		1/2	3/4	1	1 1/4	1 1/2	2
L		41	47	50	59	62.5	69
D		55	55	62	75	75	85
H		72	85	98	120	130	155

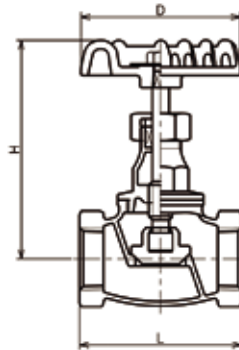
JX-111/JX-110

PN20

BRONZE/BRASS GLOBE VALVE

20 bar at 100°C

Screwed Bonnet, Rising Stem
Threaded ends to BS21 (JIS B0203)



Materials

Parts	QH-7002	QH-7004
Body	CAC406	C3771BE
Bonnet	CAC406	C3771BE
Stem	C3604BD	C3604BD
Disc	C3771BE	C3771BE
Gland	C3771BE	C3771BE
Gland packing	PTFE	PTFE
Gasket	PTFE	PTFE
Handwheel	ADC12	ADC12

Dimensions

Nominal Size	inch mm	unit:mm					
		1/2	3/4	1	1 1/4	1 1/2	2
L		44	50	62	71	77	90
D		53	53	64	80	80	98
H		51	79	79	91	104	115

FIG. QH-7002 / 7004

Fig.QH-8007/QH-8005/QH-3303/QH-3302 TOA

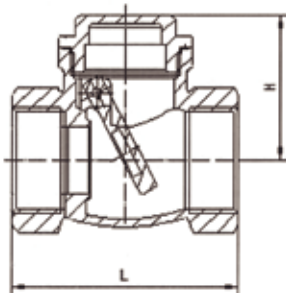
PN20 CHECK VALVE & Y-PATTERN STRAINER VALVE

PN20

BRONZE/BRASS SWING CHECK VALVE

20 bar at 100°C

Screwed Cap, Swing type disc
Threaded ends to BS21 (JIS B0203)



Materials

Parts	QH-8007	QH-8005
Body	CAC406	C3771BE
Cap	CAC406	C3771BE
Plug	SUS304	SUS304
Disc	CAC406	C3771BE
Hang pin	SUS304	SUS304
Plug gasket	PTFE	PTFE
Gasket	PTFE	PTFE

Dimensions

Nominal Size	unit:mm						
	inch	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L		47	56	62	70	77	92
H		33	36	42	50	55	64

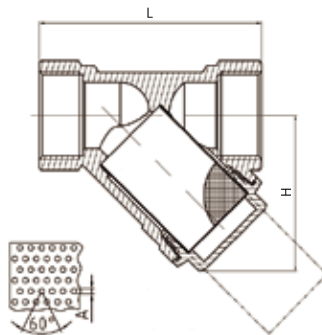
FIG. QH-8007 / 8005

PN20

BRONZE/BRASS Y-PATTERN STRAINER VALVE

20 bar at 100°C

Y-Pattern Body, Screwed Cap, 304 stainless screen
Threaded ends to BS21 (JIS B0203)



Materials

Parts	QH-3303	QH-3302
Body	CAC406	C3771BE
Cap	CAC406	C3771BE
Screen	SUS304	SUS304
Gasket	PTFE	PTFE

Dimensions

Nominal Size	unit:mm								
	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L		50	50	57	66	74	96	104	125
H		35	35	40	46	52	65	72	91
A		0.5	0.5	0.5	0.5	0.5	0.8	0.8	0.8

FIG. QH-3303 / 3302

TOA Fig.QH-5018B/QH-5018

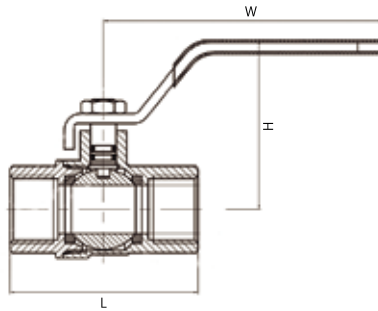
PN20 BRONZE & BRASS BALL VALVE

PN20

BRONZE BALL VALVE

20 bar at 70°C

Screwed Body cap, Double O-ring stem seals
Threaded ends to BS21 (JIS B0203)



Materials

Parts	QH-5018B
Body	CAC406
Insert	CAC406
Stem	C3604BD Nickel-chrome plated
Ball	C3771BE
Ball seat	C3771BE / PTFE
O-ring	NBR
Handle	Plastic covered Stainless steel

Dimensions

Nominal Size	inch		mm							unit:mm
	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2		
	8	10	15	20	25	32	40	50		
L	45	45	59	66	82	93	99	111		
D	57	57	87	103	115	128	141	141		
H	42	42	53	56	67	77	84	91		

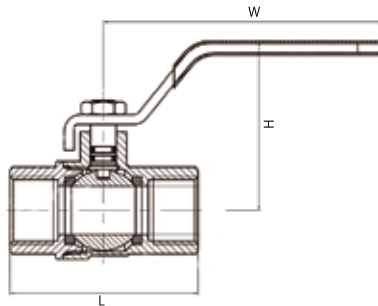
FIG. QH-5018B

PN20

BRASS BALL VALVE

20 bar at 70°C

Screwed Body cap, Double O-ring stem seals
Threaded ends to BS21 (JIS B0203)



Materials

Parts	QH-5018
Body	C3771BE
Insert	C3771BE
Stem	C3604BD Nickel-chrome plated
Ball	C3771BE
Ball seat	C3771BE / PTFE
O-ring	NBR
Handle	Plastic covered Stainless steel

Dimensions

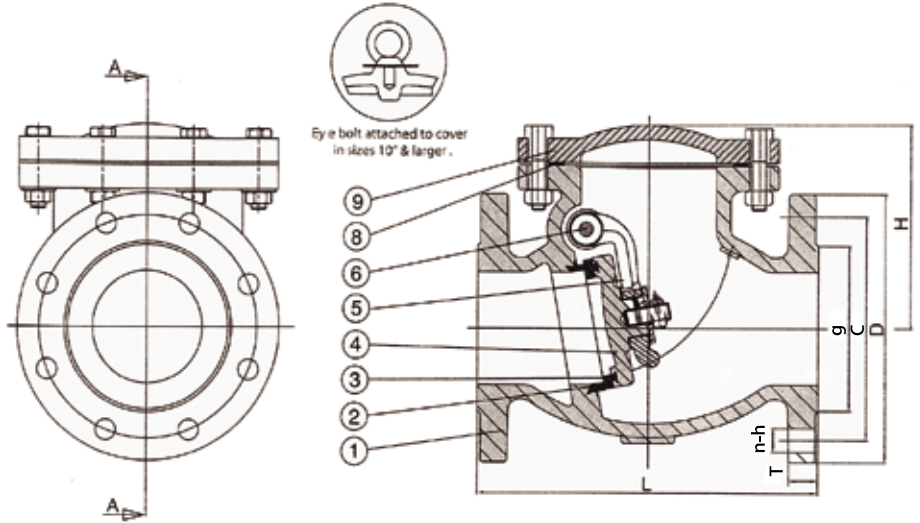
Nominal Size	inch		mm										unit:mm
	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4		
	8	10	15	20	25	32	40	50	65	80	100		
L	45	45	59	66	82	93	99	111	120	137	157		
D	57	57	87	103	115	128	141	141	157	195	195		
H	42	42	53	56	67	77	84	91	99	125	150		

QH-5018

Cast Iron Valves

TOA Fig.H4486

DIN3202 F6 Swing Check Valve



Features

- Bolted cover
- Suitable for both horizontal and vertical installation
- Product color
Epoxy: Gray
(Blue is optional)

Options

- External lever arm and weight
- FBE coated Inside and outside

Technical Specification

- Face to face: DIN3202 F6
- Flanged: EN 1092-2 PN16
- Hydraulic test to ISO 5208
Seat Test Pressure: 1.76 Mpa
Shell Test Pressure: 2.4 Mpa
- Working Temperature: -10-120°C
(Non shock)

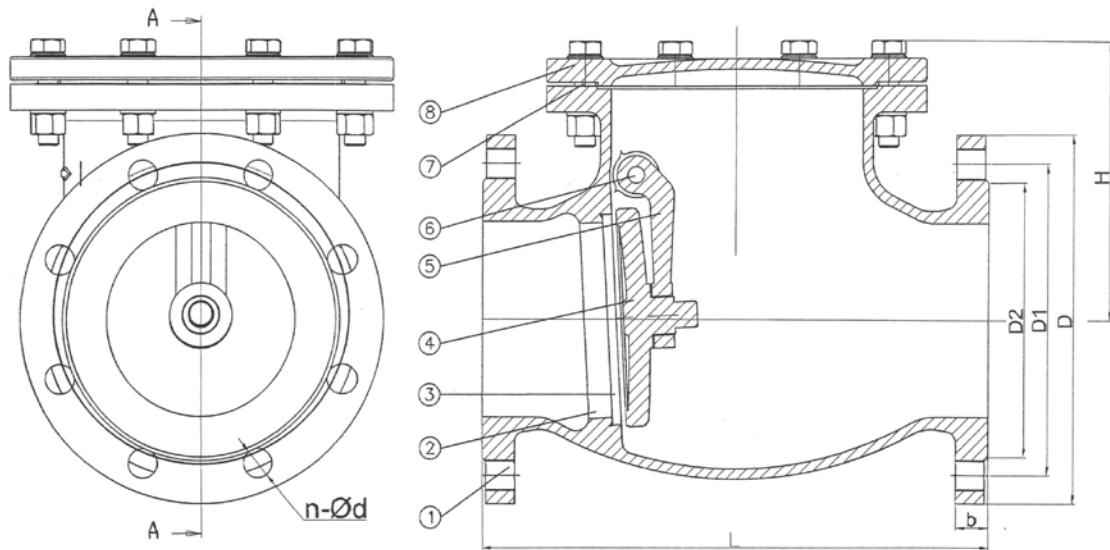
MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Cast iron EN-GJL 250	6	Hanger Pin	Stainless steel SS 304
2	Seat Ring	Brass	8	Gasket	Graphite
3	Disc Ring	Brass	9	Bonnet	Cast iron EN-GJL 250
4	Disc	Cast iron EN-GJL 250			
5	Hanger	Ductile iron EN-GJS-400-15			

DIMENSIONS (mm)

Size	L	D	C	g	T	n-h	H		
40	180	150	110	84	18	4-19	110		
50	200	165	125	99	20	4-19	130		
65	240	185	145	118	20	4-19	140		
80	260	200	160	132	22	8-19	150		
100	300	220	180	156	24	8-19	160		
125	350	250	210	184	26	8-19	190		
150	400	285	240	211	26	8-23	210		
200	500	340	295	266	30	12-23	250		
250	600	405	355	319	32	12-28	310		
300	700	460	410	370	32	12-28	340		

Cast Iron Flanged Ends Swing Check Valve



■ MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Cast Iron	5	Hinge	GG25
2	Seat Ring	SS304	6	Hinge Pin	SS410
3	Dics Ring	SS304	7	Caver Gasker	Graphite
4	Dics	Cast Iron	8	Caver	Cast Iron

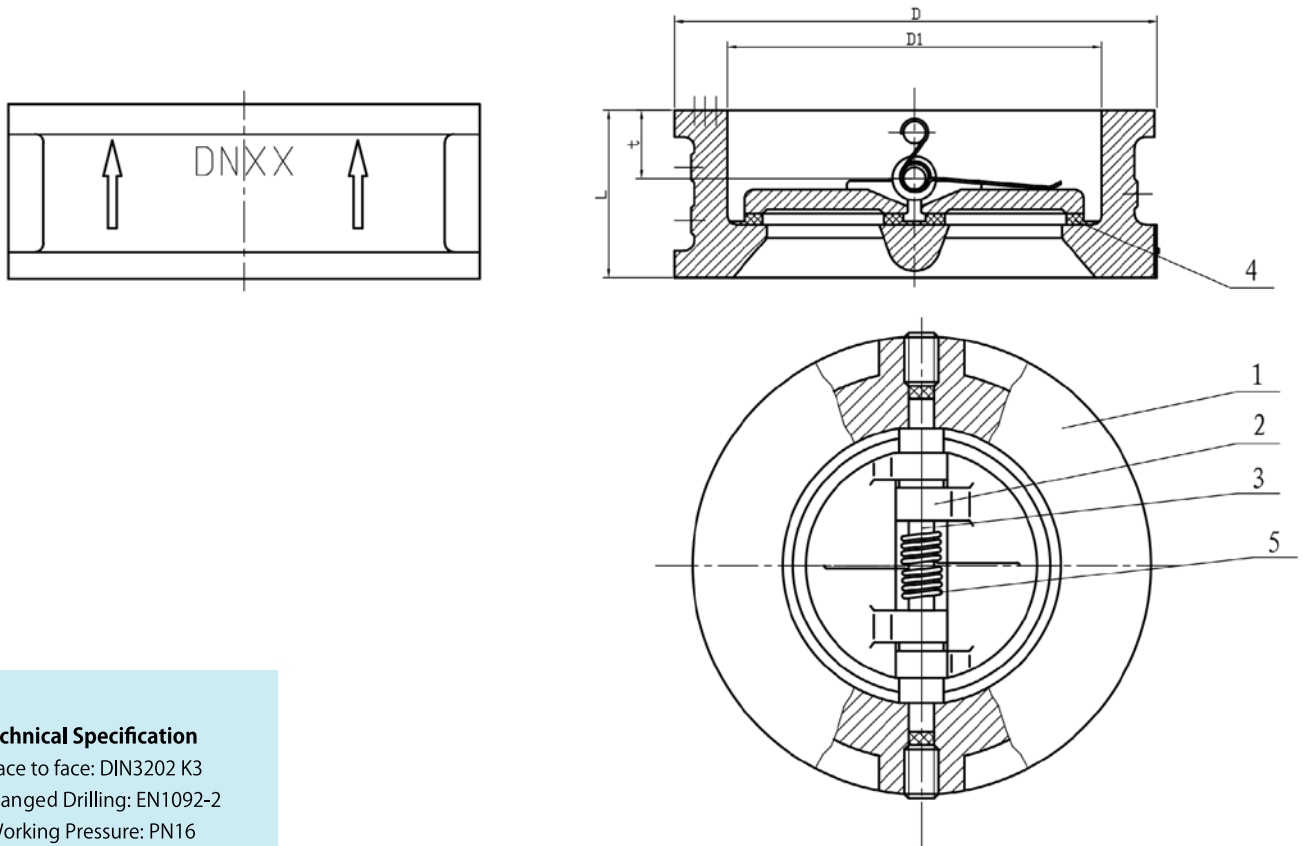
■ DIMENSIONS (mm)

Size	L	D	D1	D2	b	n-d	H
350	800	520	470	429	36	16-28	
400	900	580	525	480	38	16-31	

Specification

- Design Standard: DIN3352
- Face to face: DIN3202-F6
- End connection: EN 1092 PN16
- Test standard: ISO5208
- Hydraulic test Pressure
Seat test: 1.76 MPa
Shell test: 2.4 MP
- Product color
Epoxy: Gray
- Working Temperature: -10-120°C
(Non shock)

DIN3202 K3 Dual Plate Check Valve



Technical Specification

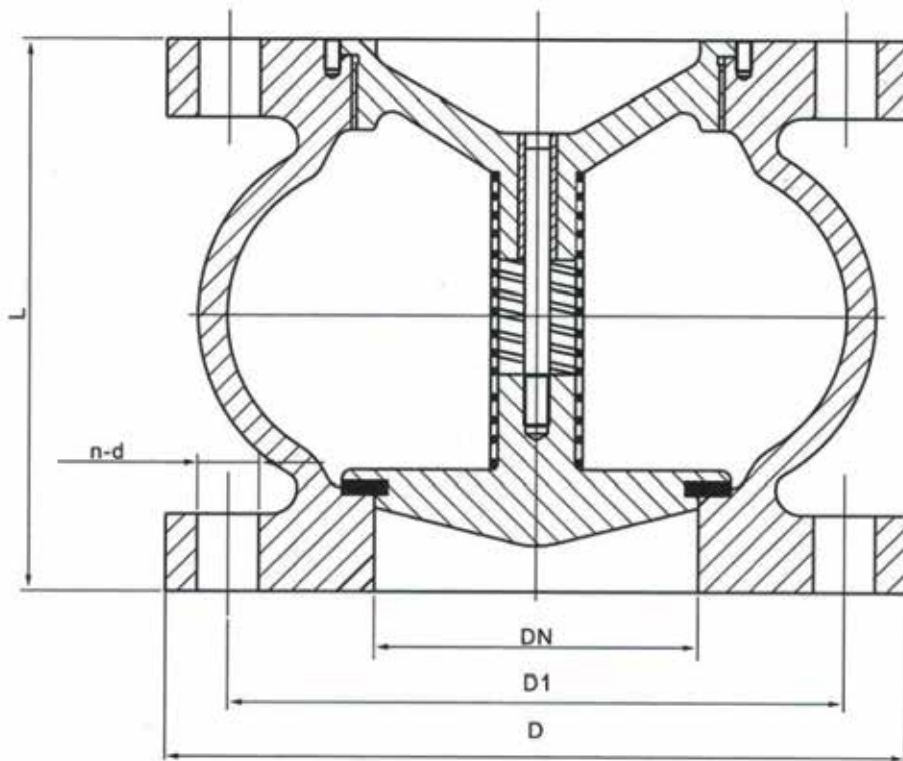
- Face to face: DIN3202 K3
- Flanged Drilling: EN1092-2
- Working Pressure: PN16
- Hydraulic test Pressure
Seat test: 1.76 MPa
Shell test: 2.4 MPa
- Product color
Epoxy: Gray
- Working Temperature: -10-90°C

MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Cast iron	4	Seat	EPDM
2	Disc	CF8	5	Spring	SS304
3	Stem	SS420			

DIMENSIONS (mm)

Size	D	D1	L	t
50	107	65	43	19
65	127	80	46	20
80	142	94	64	28
100	162	117	64	27
125	192	145	70	30
150	218	170	76	31
200	273	224	89	33
250	328	265	114	50
300	378	310	114	43
350	438	360	127	45
400	489	410	140	52
450	555	450	152	58
500	618	505	152	58
600	733	624	178	74



MATERIAL SPECIFICATION

Item	Part Name	Material
1	Body	Cast Iron, Ductile Iron
2	Dics	Ductile Iron, SS304, SS316
3	Seat	EPDM, NBR, VITON

DIMENSIONS (mm)

Size	L	D	D1	Z-d
50	100	152	120.5	4-19
65	120	178	139.5	4-19
80	140	191	152.5	4-19
100	170	229	190.5	8-19
125	200	254	216	8-22
150	230	279	241.5	8-22
200	288	343	298.5	8-22
250	354	406	362	12-25
300	410	483	432	12-25

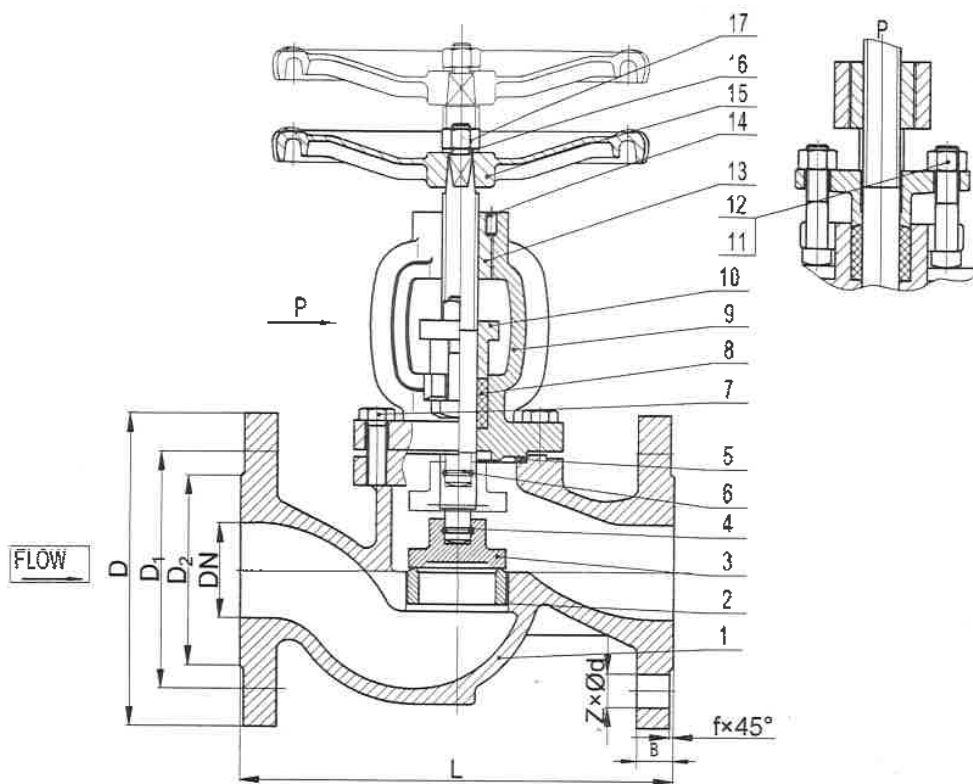
Features

- Silent closing
- Globe style
- Iron body
- PN16 pressure
- Flange type
- Minimizes water hammer
- Long service life
- Suitable for horizontal or vertical

Specification

- Working pressure: PN10, PN16, Class 125, 10K
- Flange Drilling: ISO 7005, BS EN 1092, ASME Class 125/ Class 150
- Hydraulic test Pressure
Seat test: 1.8 MPa
Shell test: 2.4 MP
- Working Temperature: -10-90° C

Cast Iron Flanged Ends Globe Valve Bolted Bonner, Outside Screw & Yoke



Features

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators
- Product color
Epoxy: Gray

Specification

- Face to face: BS EN558-1
- End connection: BS EN 1092-2
- Pressure test: BS EN 12266
- Hydraulic test Pressure
Seat test: 1.8 MPa
Shell test: 2.4 MP
- Technical Requirement
- Design according to BS EN 13789
- Suitable Temp ≤ 200 °C

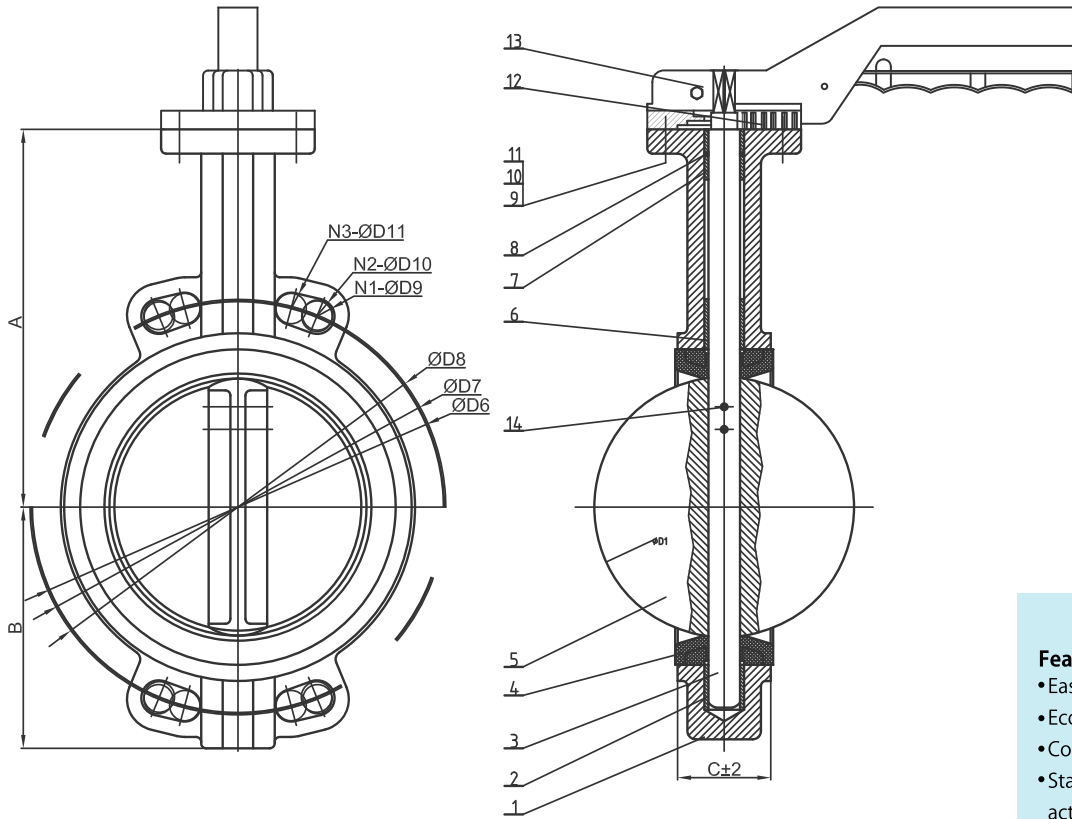
MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Cast Iron	10	Glabd	Cast Iron/ Ductile Iron
2	Seat Ring	SS304	11	Glabd Bolt	Carbon Steel
3	Disc	2CR13	12	Glabd Bolt Nut	Carbon Steel
4	Stainless Wire	SS304	13	Stem Nut	Brass
5	Gasket	Graphite	14	Set Screw	Carbon Steel
6	Stem	SS420	15	Hand Wheel	Ductile Iron
7	Bolt	Carbon Steel	16	Flat Washer	Carbon Steel
8	Packing	Graphite	17	Nut	Carbon Steel
9	Bonnet	Cast Iron/ Ductile Iron			

DIMENSIONS (mm)

Size	L	D	D1	D2	Z-d	B	f
50	230	165	125	99	4-19	20	2
65	290	185	145	118	4-19	20	2
80	310	200	160	132	8-19	22	2
100	350	220	180	156	8-19	24	2
125	400	250	210	184	8-19	26	2
150	480	285	240	211	8-23	26	2
200	600	340	295	266	12-23	30	2
250	730	405	355	319	12-28	32	3
300	850	460	410	375	12-28	32	3

EN558-1 20 series Wafer Type Center Line Butterfly Valve "Lever Operation"



MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Cast iron	4	Seat	EPDM
2	Bushing	PTFE	5	Dics	Ductile Iron
3	Shaft	SS410			

DIMENSIONS (mm)

Size	A	B	C	PN16		
				D7	N2	D10
DN50(2")	161	80	43	125	4	19
DN65(2.5")	175	89	46	145	4	19
DN80(3")	181	95	46	160	8	19
DN100(4")	200	114	52	180	8	19
DN125(5")	213	127	56	210	8	19
DN150(6")	226	139	56	240	8	23
DN200(8")	260	175	60	295	12	23
DN250(10")	292	203	68	295	12	28
DN300(12")	337	242	78	410	12	28

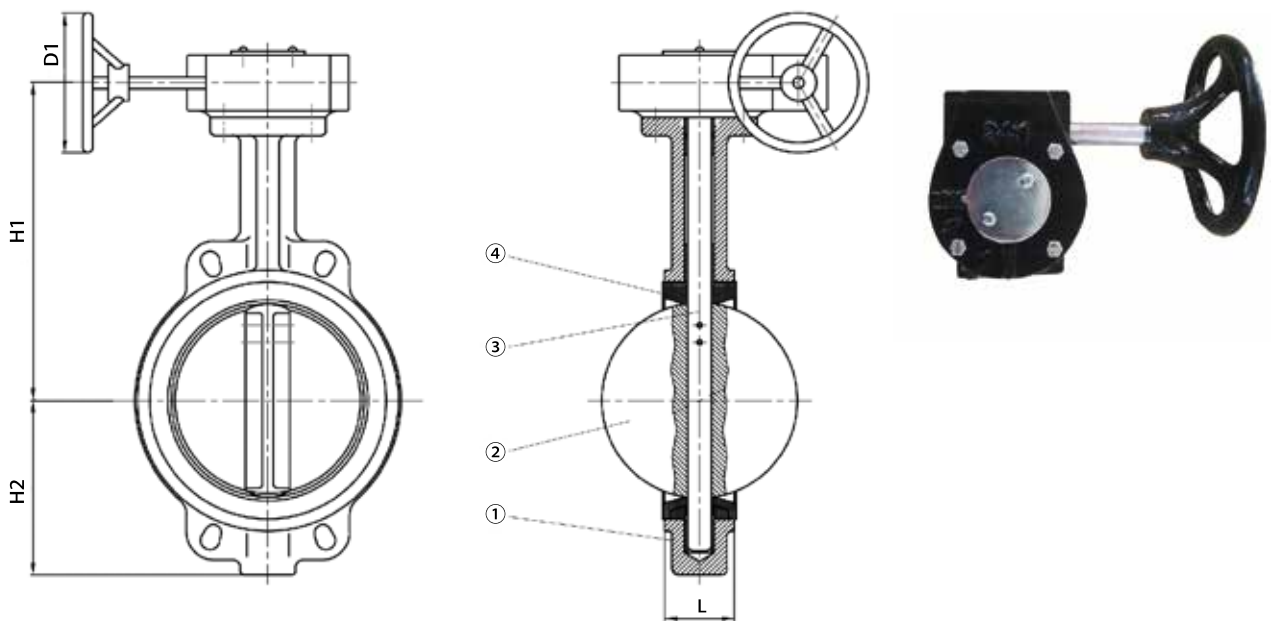
Features

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators
- Product color Epoxy: Gray

Specification

- Body Type: Wafer Type
- General: EN558 20series
- Face to face: ISO 5752
- Inspection and test: API 598
- Top Flanged: ISO 5211
- Flanged drilling: EN1092-2PN16
- Working pressure: PN16
- Hydraulic test Pressure
 - Seat test: 1.76MPa
 - Shell test: 2.4 MPa
- Working Temperature (°C):
 - 20~+120
 - Max 120°C: EPDM Seat
 - Max 80°C: NBR Seat

EN558 1 20 series Wafer-Type Center Line Butterfly Valve "Gear Operation"



Features

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators
- Product color Epoxy: Gray

Specification

- Body Type: Wafer Type
- General: EN558 20series
- Face to face: ISO 5752
- Inspection and test: API 598
- Top Flanged: ISO 5211
- Flanged drilling: EN1092-2PN16
- Working pressure: PN16
- Hydraulic test Pressrue
 - Seat test : 1.76MPa
 - Shell test : 2.4 MPa
- Working Temperature(°C):
 - 20~+120
 - Max 120°C: EPDM Seat
 - Max 80°C: NBR Seat

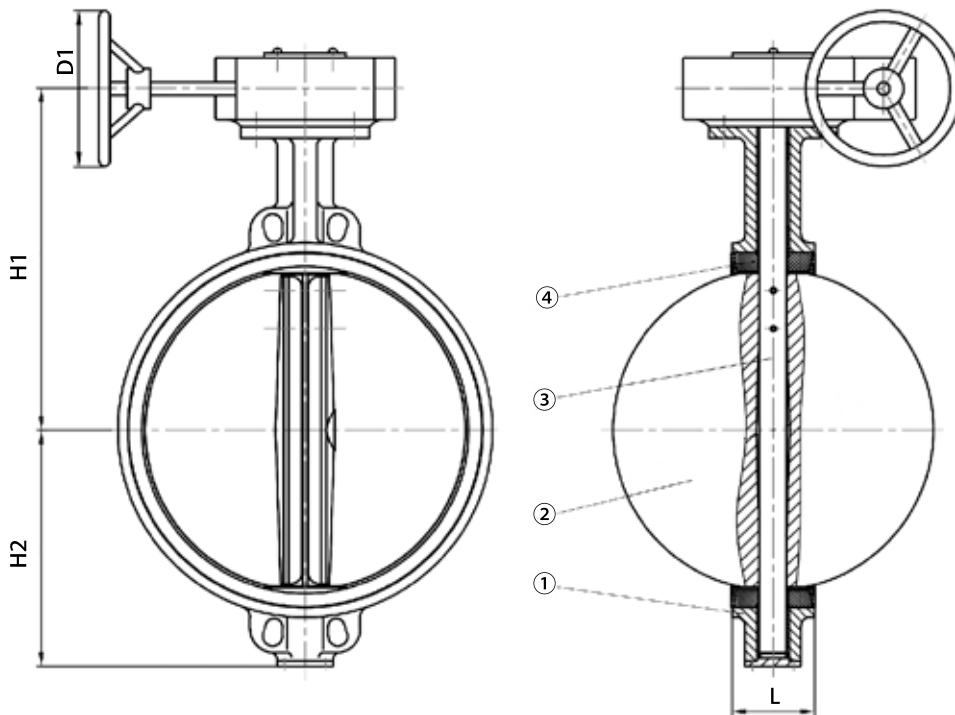
MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Cast iron	4	Seat	EPDM/ NBR
2	Dics	Ductile Iron Ni Plated	5	Spring	SS304
3	Stem	Stainless Steel AISI 420			

DIMENSIONS (mm)

Size	L	H1	H2	D1	Top Flange
50	43	155	80	150	F05
65	46	165	89	150	F05
80	46	172	95	150	F05
100	52	187	114	150	F07
125	56	199	127	150	F07
150	56	215	139	150	F07
200	60	250	175	300	F10
250	68	281	203	300	F10
300	78	322	242	300	F10
350	78	407	267	300	F10

EN558-1 20 series Wafer Type Center Line Butterfly Valve "Gear Operation"



MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Cast iron	4	Seat	EPDM/ NBR
2	Dics	Ductile Iron Ni Plated			
3	Stem	Stainless Steel AISI 420			

DIMENSIONS (mm)

Size	L	H1	H2	D1	Top Flage
400	102	516	309	270	F14
450	114	538	328	270	F14
500	127	603	361	270	F14
600	154	685	459	390	F16

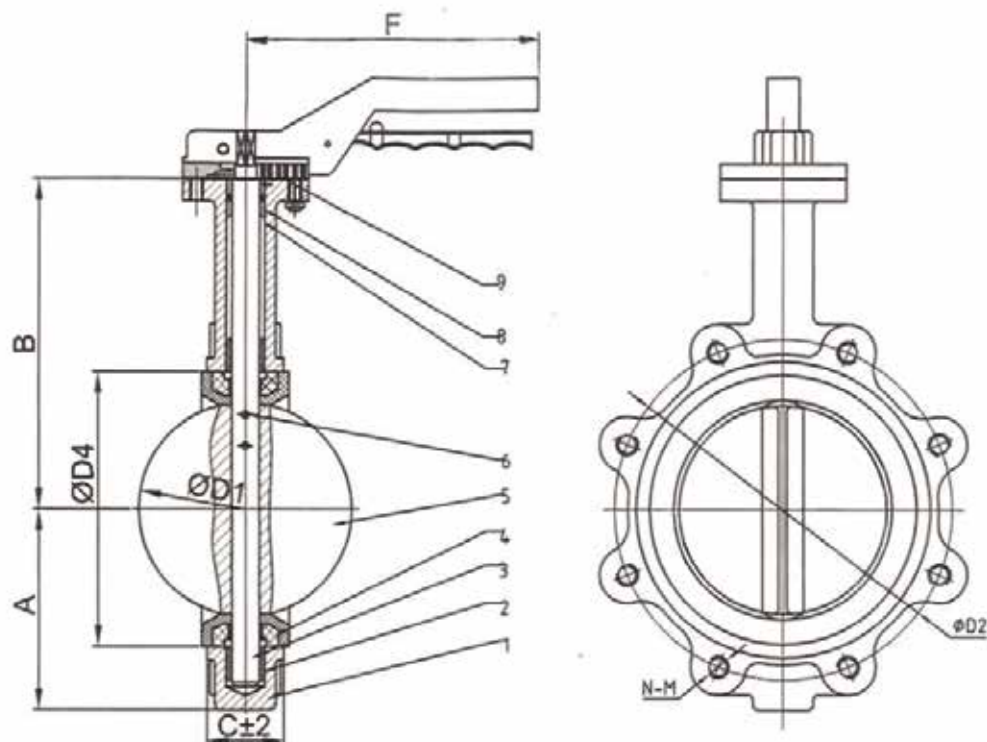
Features

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators
- Product color
Epoxy: Gray

Specification

- Body Type: Wafer Type
- General: ISO 5752
- Face to face: EN558 20series
- Inspection and test: API 598
- Top Flanged: ISO 5211
- Flanged drilling: EN1092-2 PN10
- Working pressure: PN10
- Hydraulic test Pressure
Seat test : 1.1MPa
Shell test : 1.5MPa
- Working Temperature (°C):
-20~+120
Max 120°C: EPDM Seat
Max 80°C: NBR Seat

Cast Iron Butterfly Valve Lug - Type Gear Oper - Type Long Neck - Type



Features

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators
- Product color
Epoxy: Gray

Specification

- Face to face: EN 558-1
- End connection: EN 1092 PN16
- Test: AP1598
- Working pressure: 1.6 MPa
- Hydraulic test Pressure
Seat test: 1.76 MPa
Shell test: 2.4 MPa
- Working temp: -20° C to 110° C
- Mounting Flange: IS05211

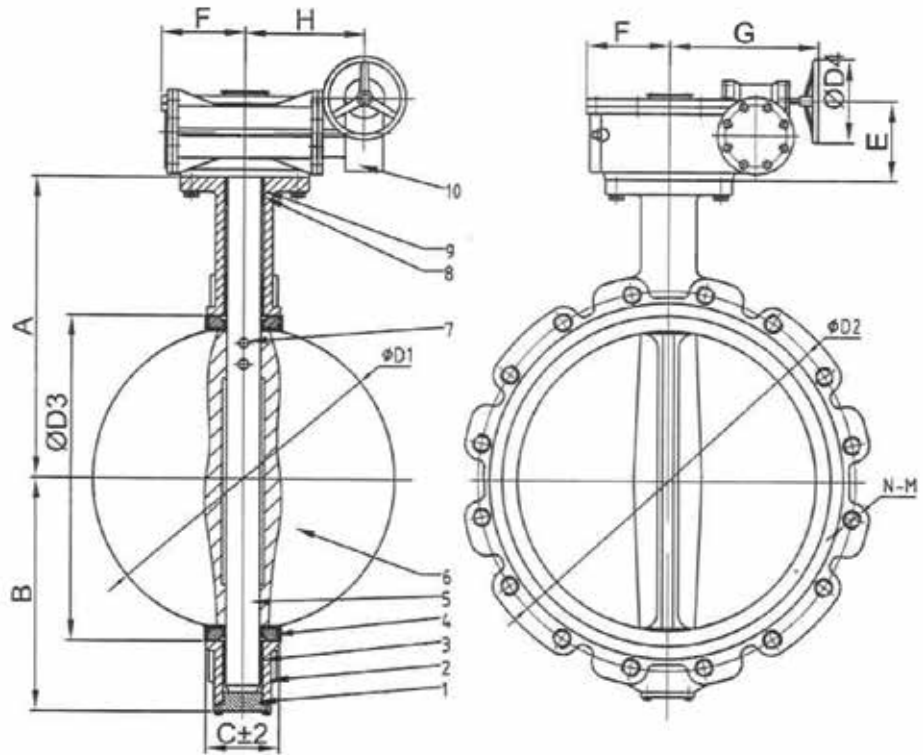
MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Cast iron	4	Seat	EPDM/ NBR
2	Long Bushing	PTFE	5	Dics	Ductile Iron + Niken
3	Shaft	SS420			

DIMENSIONS (mm)

Size	A	B	C	F	
50	80	161	43	267	
65	89	175	46	267	
80	95	181	46	267	
100	114	200	52	267	
125	127	213	56	267	
150	139	226	56	267	
200	175	260	60	360	

Cast Iron Butterfly Valve Lug - Type Gear Oper - Type Long Neck - Type



Features

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators
- Product color
Epoxy: Gray

Specification

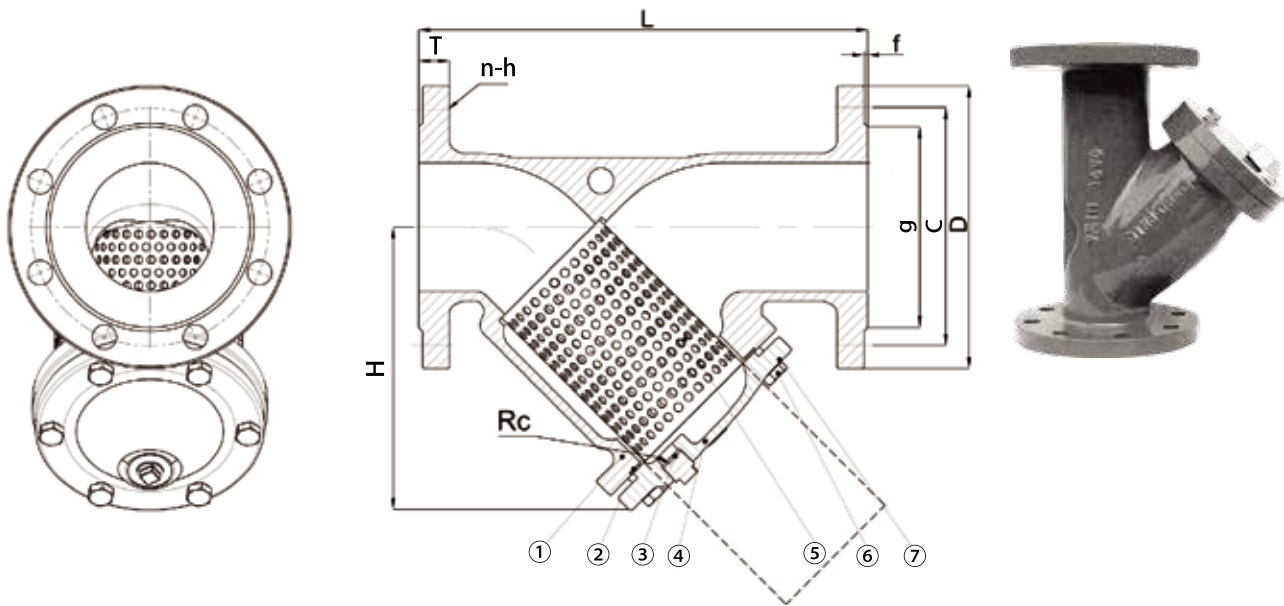
- Face to face: EN 558-1
- End connection: EN 1092 PN16
- Test: AP1598
- Working pressure: 1.6 MPa
- Hydraulic test Pressure
Seat test: 1.76 MPa
Shell test: 2.4 MPa
- Working temp: -20° C to 110° C
- Mounting Flange: IS05211

MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	End cover	Cast iron	5	Shaft	SS420
2	Body	Cast iron	6	Dics	Ductile Iron + Niken
3	Long bushing	PTFE			
4	Seat	EPDM/ NBR			

DIMENSIONS (mm)

Size	A	B	C	E	F	H	G	
350	368	267	78	43	78	80	213	
400	400	309	102	105	105	170	200	
450	422	328	144	105	105	170	200	



MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Cast iron GG25	6	Bolt	Galvanized steel
2	Gasket	SS304+Graphite	7	Washer	Galvanized steel
3	Plug	Galvanized steel			
4	Bonnet	Cast Iron GG25			
5	Screen	SS304			

DIMENSIONS (mm)

Size	L	D	C	g	T	f	n-h	Rc	H
15	130	95	65	46	14	2	4-14	-	63.3
20	150	105	75	56	16	2	4-14	-	68.3
25	160	115	85	65	16	3	4-14	-	78.5
32	180	140	100	76	18	3	4-19	-	90.7
40	200	150	110	84	18	3	4-19	-	111
50	230	165	125	99	20	3	4-19	3/8"	137.2
65	290	185	145	118	20	3	4-19	1/2"	154.6
80	310	200	160	132	22	3	8-19	1/2"	190
100	350	220	180	156	24	3	8-19	1/2	222.9
125	400	250	210	184	26	3	8-19	3/4	261.3
150	480	285	240	211	26	3	8-23	3/4	308.9
200	600	340	295	266	30	3	12-23	3/4	377.9
250	730	405	355	319	32	3	12-28	1	438.2
300	850	460	410	370	32	4	12-28	1	510.9

Features

- Y-Pattern
- Stainless Steel Screen
- Bolted Cover
- Flanged Ends
- FBE Coated
- Product color Epoxy: Gray

Specification

- Face to face according to DIN3202 F1.
- Flanged drilling according to EN1092-2 PN16
- Pressure test according to ISO 5208
- Shell test Pressure: 2.4MPa
- Working pressure: PN16
- Working Temperature: -10-120° C (Non shock)

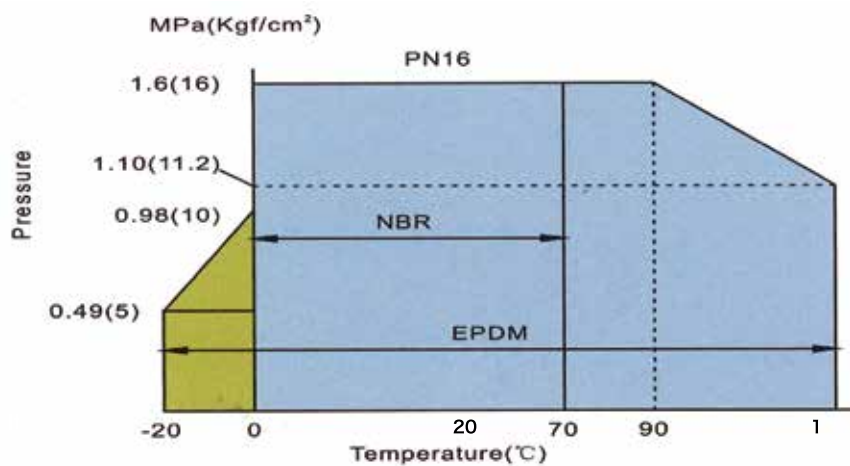
Pressure-Temperature Ratings (P-T ratings)

Maximum permissible working pressure (bar)

Service temperature (°C)	Bronze & Brass valves	Cast Iron valves	
	PN20	PN16	
-10 to 66	20.0	16.0	
100			
120	17.2		
150	13.0	14.4	
170	10.3	13.7	
180	9.0	13.4	
186	-	13.2	
198	-	12.9	
200	-	12.8	

■ BUTTERFLY VALVE

Maximum permissible working pressure (bar)



Notes 1: There are some fluid type restrictions for the service at 120°C.
Notes 2: P-T rating for sub-zero application is optionally available.

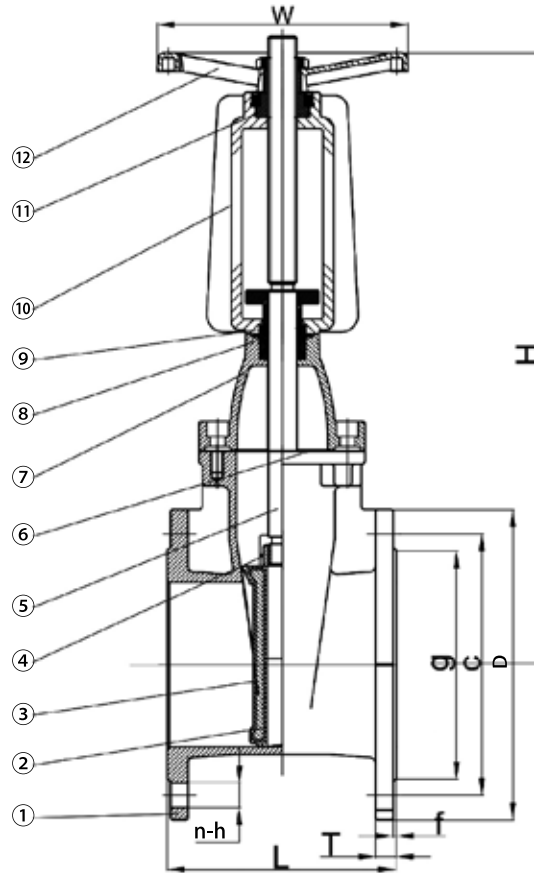
■ DUAL PLATE CHECK VALVE

16 bar at 100°C, Non-shock water (EPDM seat)

Ductile Iron Valves

TOA Fig.Z4714R

DIN 3202F4 Rising Stem Resilient Seated Gate Valve



Technical Specification

- Design: DIN 3352
- Face to Face : DIN3202 F4
- Flanged: EN 1092-2 PN16
- Hydraulic test to ISO 5208
Seat Test Pressure : 1.76MPa
Shell Test Pressure : 2.4 MPa
- Product color
Epoxy: Gray (Blue is optional)
- Option: PN25
- Maximun Temperature: 80° C

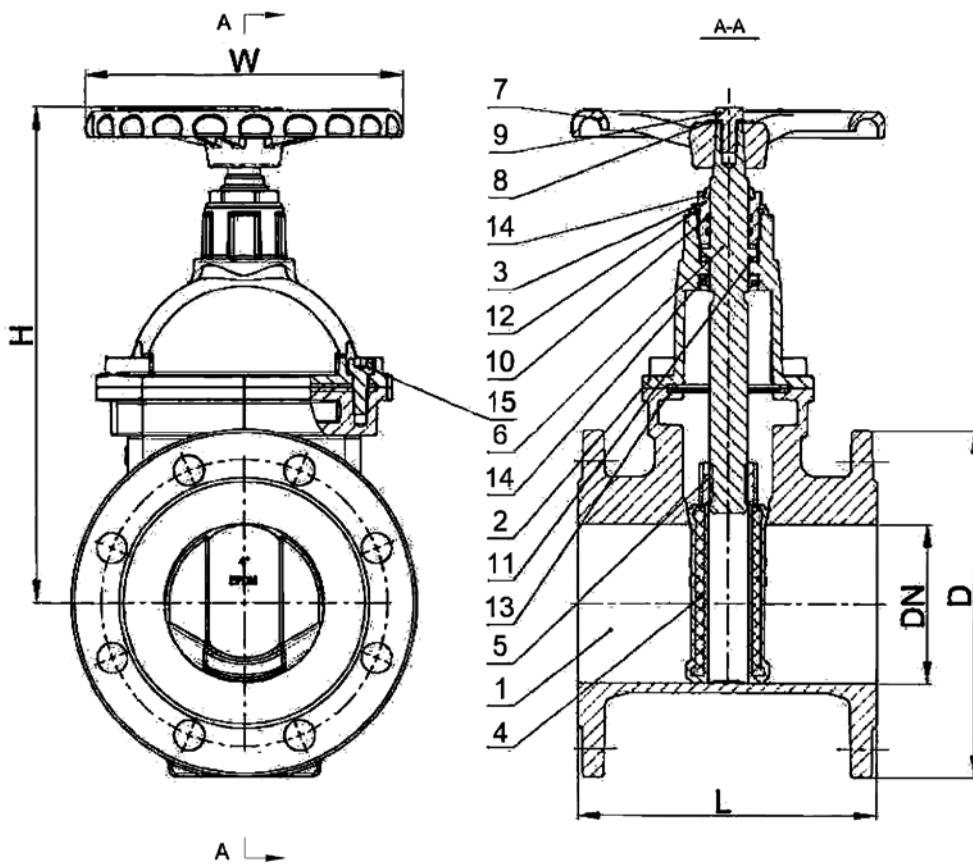
MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Ductile iron GGG50	8	O-Ring	EPDM
3	Wedge	Ductile Iron + EPDM	9	O-Ring	EPDM
4	Wedge Nut	Brass	10	Yoke	Ductile Iron
5	Stem	SS420	11	Stem Nut	Brass
6	Bonnet Gasket	EPDM	12	Handwheel	Ductile Iron
7	Bonnet	Ductile iron GGG50			

DIMENSIONS (mm)

Size	L	D	C	g	f	T	n-h
40	140	150	110	84	3	18	4-19
50	150	165	125	99	3	19	4-19
65	170	185	145	119	3	19	4-19
80	180	200	160	133	3	19	8-19
100	190	220	180	154	3	19	8-19
125	200	250	210	184	3	19	8-19
150	210	285	240	210	3	19	8-23
200	230	340	295	265	3	20	12-23
250	250	405	355	319	3	22	12-28
300	270	460	410	370	4	24.5	12-28
350	290	520	470	429	4	26.5	16-28
400	310	580	525	480	4	28	16-31

EN558-1 14 series Non-Rising Stem Resilient Seated Gate Valve



Characteristic

- Full bore and clear way.
- High flow coefficient Kv.
- Low torque.
- Long life.
- High sensory.
- Additional features:
Indicator.extension bar ect.

Optional Extras

- Stem Cap
- Position Indicator
- ISO Top Flanged
- Extension Spindle / T Key

Technical Specification

- Face to Face: EN558-1 14 series
- Flanged drilling: EN1092-2 PN16
Working pressure: PN16
- Maximum Temperature: 80°C
- Painting: FBE EPOXY
- Test: EN12266-1
- Option: PN25

MATERIAL SPECIFICATION

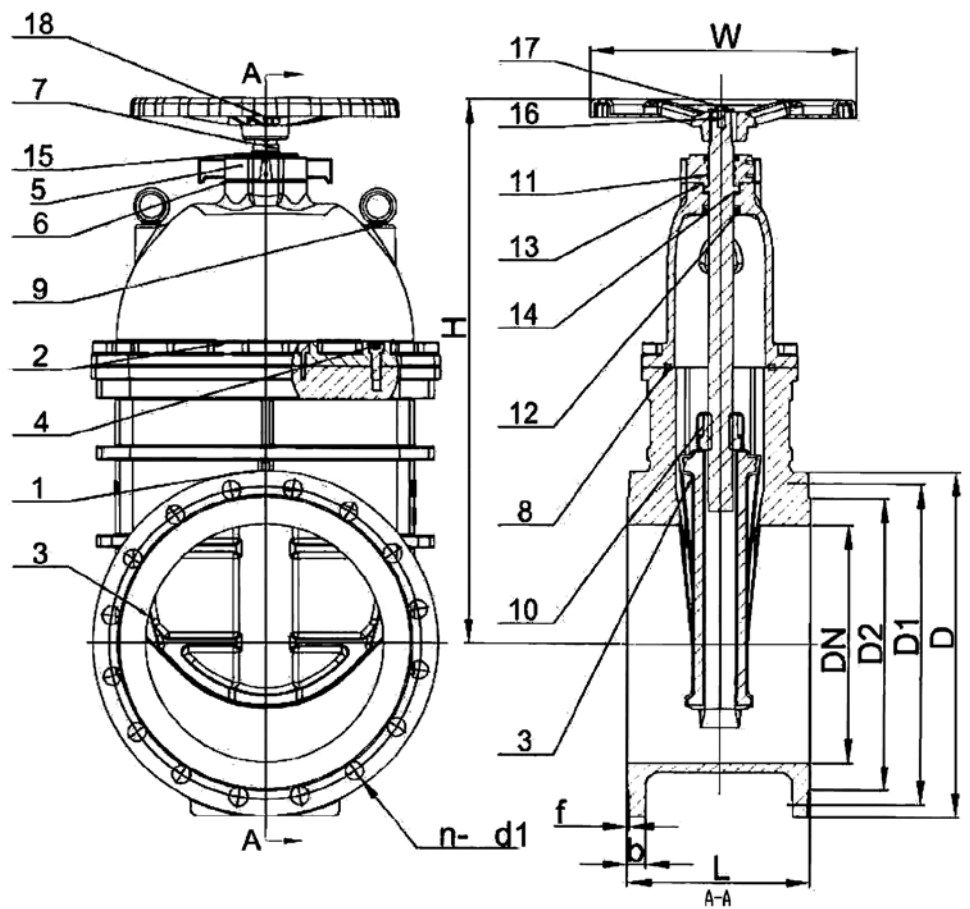
Item	Part Name	Material	Item	Part Name	Material
1	Body	Ductile Iron	9	Bolt	Stainless Steel
2	Bonnet	Ductile Iron	10	O ring	EPDM/NBR
3	Bushing Nut	Brass / Bronze	11	Washer	Nylon
4	Wedge	Ductile Iron + EPDM/NBR	12	O ring	EPDM/NBR
5	Stem Nut	Brass / Bronze	13	Bonnet Gasket	EPDM/NBR
6	Stem	AISI420	14	V ring	EPDM/NBR
7	Handwheel	Ductile Iron	15	Bolt	Stainless Steel
8	Washer	Stainless Steel			

DIMENSIONS (mm)

Size	L	D	H	W
50	150	165	248	160
65	170	185	252	160
80	180	200	270	180
100	190	220	310	200
125	200	250	356	200
150	210	285	405	280
200	230	340	495	280
250	250	400	585	320
300	270	455	670	360

TOA Fig.Z4714C

DIN3202 F4 Big Size Non-Rising Stem Resilient Seated Gate Valve



Features

- Replaceable O-ring
- Low torque operation
- Rubber encapsulated wedge
- Clockwise closing direction
- Fusion bonded epoxy coated Inside and outside
- Product color Epoxy: Gray (Blue is optional)

Optional Extras

- Stem Cap
- Position Indicator
- ISO Top Flanged
- Extension Spindle / T Key
- Gear Box
- By-Pass Valve

Technical Specification

- Design: DIN3352
- Face to Face: EN558-1 14series
- Flanged Drilling: EN1092-2 PN16
- Hydraulic test to ISO 5208
Seat Test Pressure: 1.76MPa
Shell Test Pressure: 2.4 MPa
Operating torque test
- Option: PN25
- Maximum temperature 80°C

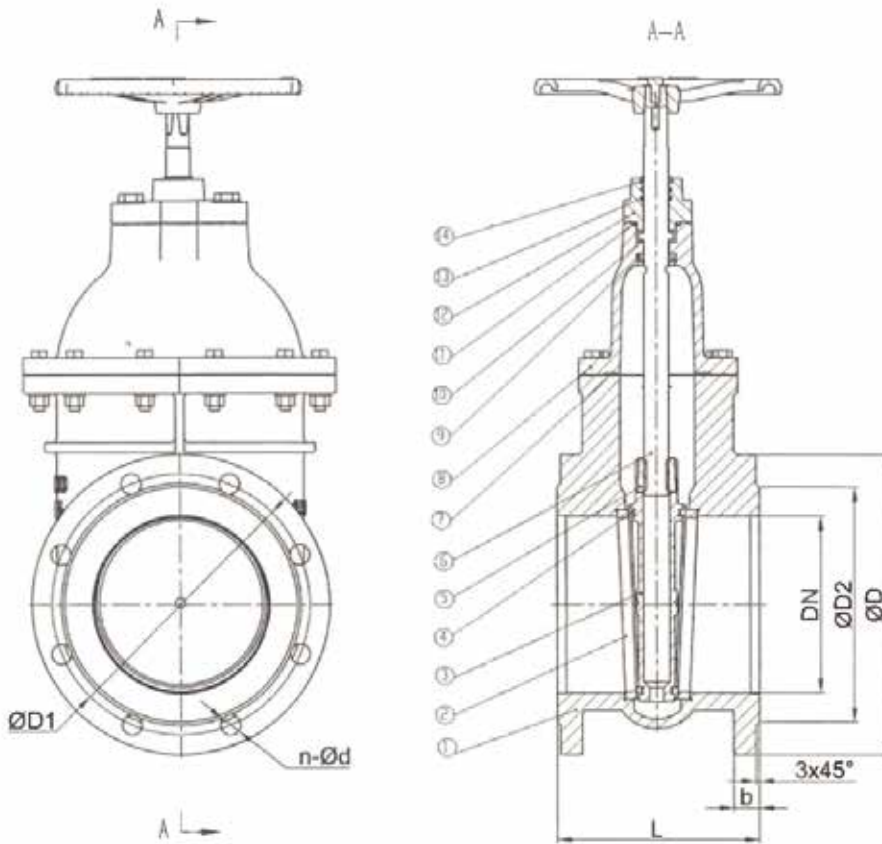
MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Ductile iron GGG50	10	Stem Nut	Brass
2	Bonnet	Ductile iron GGG50	11	O Ring	EPDM
3	Wedge	Ductile iron+EPDM	12	V Ring	EPDM
4	Bolt	Galvanized steel	13	O Ring	EPDM
5	Bolt	Galvanized steel	14	Stem Washer	Nylon
6	Gland Flange	Ductile iron GGG50	15	Dust Guard	EPDM
7	Stem	13Cr	16	Bolt	Galvanized steel
8	Bonnet Gasket	EPDM	17	Washer	Galvanized steel
9	Eye Bolt	Galvanized steel	18	Handwheel	Ductile iron GGG50

DIMENSIONS (mm)

Size	L	D	C	g	n-h	f	T	H	W
350	290	520	470	429	16-28	4	26.5	812	600
400	310	580	525	480	16-31	4	28	923	600
450	330	640	585	548	20-31	4	30	974	600
500	350	715	650	609	20-34	4	31.5	1073	730
600	390	840	770	720	20-37	5	36	1254	730

Metal Seat Ductile Iron Flanged Gate Valve Non-Rising Stem



MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Ductile iron	8	Bonnet	Ductile Iron
2	Seat Ring	Brass	9	V Seal	EPDM
3	Wedge	Ductile iron	10	Washer	Nylon
4	Wedge ring	Brass	11	"O" ring	EPDM
5	Stem nut	Brass	12	Gland	Ductile Iron
6	Stem	SS420	13	"O" ring	EPDM
7	Bonnet Gasket	EPDM	14	Dusr Guard	EPDM

DIMENSIONS (mm)

Size	L	D	EN 1092-2 PN16			b
			D1	D2	n-d	
50	150	165	125	99	4-19	20
65	170	185	145	118	4-19	20
80	180	200	160	132	8-19	22
100	190	220	180	156	8-19	24
125	200	250	210	184	8-19	26
150	210	285	240	211	8-23	26
200	230	340	295	266	12-23	30
250	250	405	355	319	12-28	32
300	270	460	410	370	12-28	32

Features

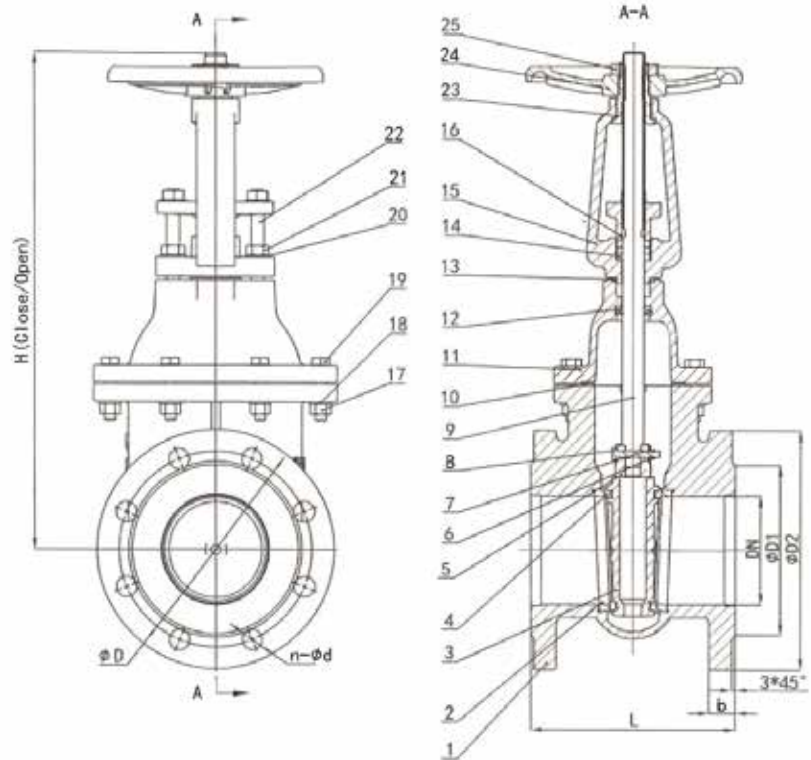
- Replaceable O-ring
- Low torque operation
- Rubber encapsulated wedge
- Clockwise closing direction
- Fusion bonded epoxy coated Inside and outside
- Product color Epoxy: Gray (Blue is optional)

Specification

- Face to face: DIN3352 F4
- End connection: EN 1092 PN16
- Design: DIN3352
- Hydraulic test Pressure
Seat test: 1.8 MPa
Shell test: 2.4 MP
- Maximum temperature 80°C

TOA Fig. Z4124B

Metal Seat Ductile Iron Flanged Gate Valve Rising Stem



Specification

- Face to face: DIN3202 F4
- End connection: EN 1092 PN16
- Test: ISO 5208
- Hydraulic test Pressure
Seat test: 1.8 MPa
Shell test: 2.4 MP
- Maximum Temperature: 80° C

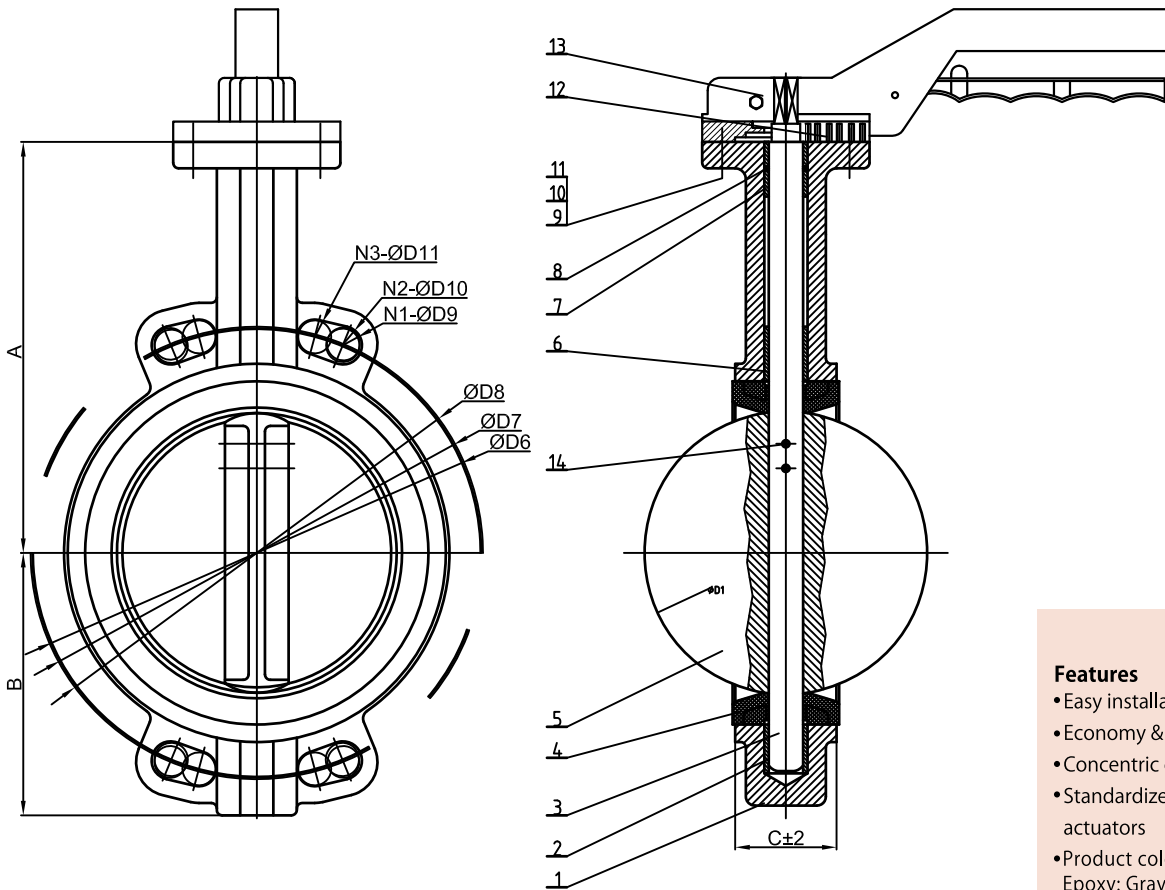
MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Ductile iron	14	Packing	Graphite
2	Seat Ring	Brass	15	Bracket	Ductile Iron
3	Wedge	Ductile iron	16	Gland	Ductile Iron
4	Wedge Ring	Brass	17	Nut	Carbon Steel
5	Stem nut	Brass	18	Washer	Carbon Steel
6	Nut	Carbon Steel	19	Bolt	Carbon Steel
7	Spring Washer	Carbon Steel	20	Washer	Carbon Steel
8	Bolt	Carbon Steel	21	Nut	Carbon Steel
9	Stem	SS420	22	Stud	Carbon Steel
10	Bonnet Gasket	Graphite	23	Yoke Nut	Brass
11	Bonnet	Ductile Iron	24	Handwheel	Ductile Iron
12	V Seal	NBR	25	Thin nut	Carbon Steel
13	"O" Ring	NBR			

DIMENSIONS (mm)

Size	L	D	EN 1092-2 PN16			b	H		
			D1	D2	n-d		CLOSE	CLOSE	
40	140	150	110	84	4-19	18	-	-	
50	150	165	125	99	4-19	20	320	380	
65	170	185	145	118	4-19	20	338	413	
80	180	200	160	132	8-19	22	400	490	
100	190	220	180	156	8-19	24	455	565	
125	200	250	210	184	8-19	26	560	695	
150	210	285	240	211	8-23	26	618	783	
200	230	340	295	266	12-23	30	758	978	
250	250	405	355	319	12-28	32	880	1155	
300	270	460	410	370	12-28	32	1020	1350	

EN558-1 20 series Wafer Type Center Line Butterfly Valve "Lever Operation"



MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Ductile Iron	4	Seat	EPDM/ NBR
2	Bushing	PTFE	5	Disc	CF8
3	Stem	SS410			

DIMENSIONS (mm)

Size	L	H1	H2	H3	Top Flange	F
50	43	124	80	28	F05	267
65	46	134	89	28	F05	267
80	46	141	95	28	F05	267
100	52	156	114	28	F07	267
125	56	168	127	28	F07	267
150	56	184	139	28	F07	267
200	60	213	175	38	F10	360
250	68	244	203	40	F10	499
300	78	283	242	40	F10	499

Features

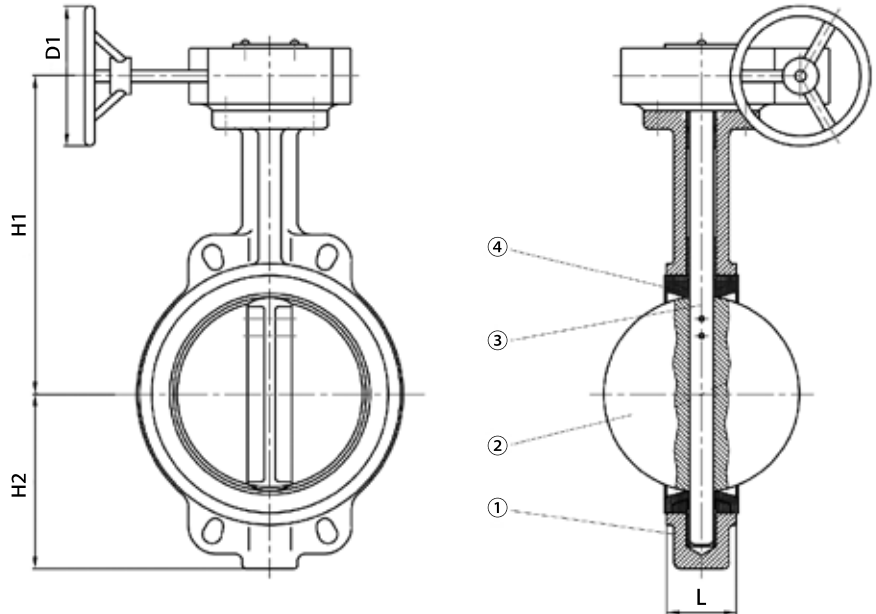
- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators
- Product color
Epoxy: Gray
(Blue is optional)

Specification

- Body Type: Wafer Type
- General: EN558 20series
- Face to face: ISO 5752
- Inspection and test: API 598
- Top Flanged: ISO 5211
- Flanged Drilling: EN1092-2PN1
- Working pressure: PN16
- Hydraulic test Pressure
Seat test: 1.76MPa
Shell test: 2.4 MPa
- Working Temperature (°C):
-20~+120
Max 120°C: EPDM Seat
Max 80°C: NBR Seat

TOA Fig.G-B16W-YX

EN558-1 20 series Wafer Type Center Line Butterfly Valve "Gear Operation"



Features

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators

Specification

- Body Type: Wafer Type
- General: EN558 20series
- Face to face: ISO 5752
- Inspection and test: API 598
- Top Flanged Drilling: ISO 5211
- Flanged Drilling: EN1092-2PN16
- Working pressure: PN16
- Hydraulic test Pressue
Seat test : 1.76MPa
Shell test : 2.4 MPa
- Working Temperature (°C):
-20~+120
Max 120°C: EPDM Seat
Max 80°C: NBR Seat
- Product color
Epoxy: Gray
(Blue is optional)

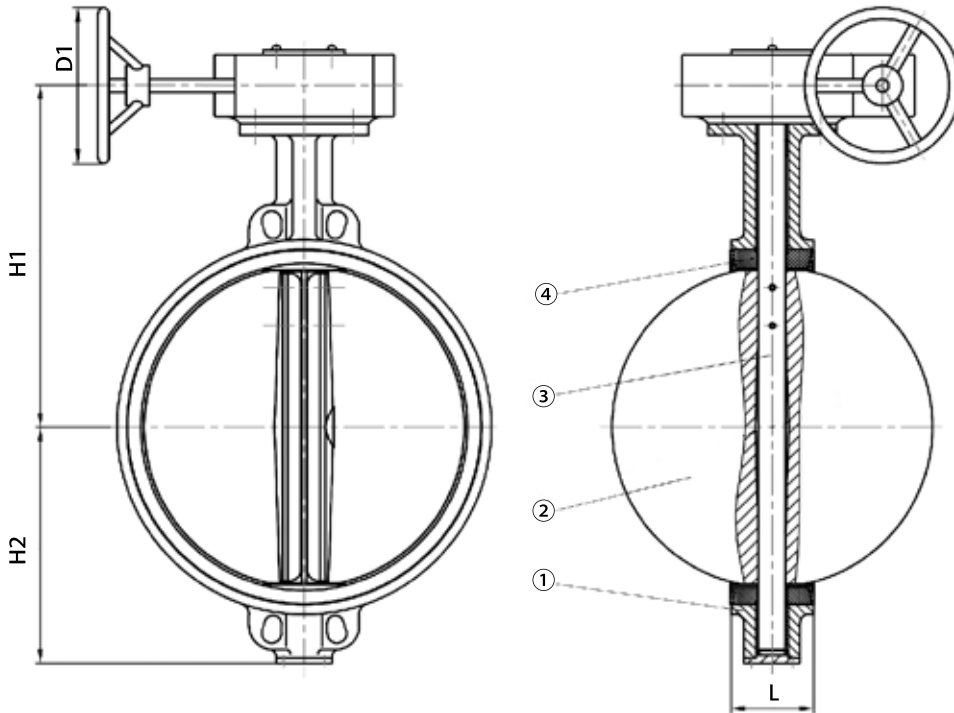
MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Ductile Iron			
2	Disc	CF8			
3	Stem	Stainless Steel AISI 420			
4	Seat	EPDM/ NBR			

DIMENSIONS (mm)

Size	L	H1	H2	D1	Top Flange	
50	43	155	80	150	F05	
65	46	165	89	150	F05	
80	46	172	95	150	F05	
100	52	187	114	150	F07	
125	56	199	127	150	F07	
150	56	215	139	150	F07	
200	60	250	175	300	F10	
250	68	281	203	300	F10	
300	78	322	242	300	F10	
350	78	407	267	300	F10	

EN558-1 20 series Wafer Type Center Line Butterfly Valve "Gear Operation"



Features

- Easy installation
- Economy & high performance
- Concentric design
- Standardized top flanged for actuators

Specification

- Body Type: Wafer Type
- General: ISO 5752
- Face to face: EN558 20series
- Inspection and test: API 598
- Top Flanged Drilling: ISO 5211
- Flanged Drilling: EN1092-2 PN1
- Working pressure: PN10
- Hydraulic test Pressure
 - Seat test : 1.1MPa
 - Shell test : 1.5MPa
- Working Temperature (°C):
 - 20~+120
 - Max 120°C: EPDM Seat
 - Max 80°C: NBR Seat
- Product color
 - Epoxy: Gray
 - (Blue is optional)

MATERIAL SPECIFICATION

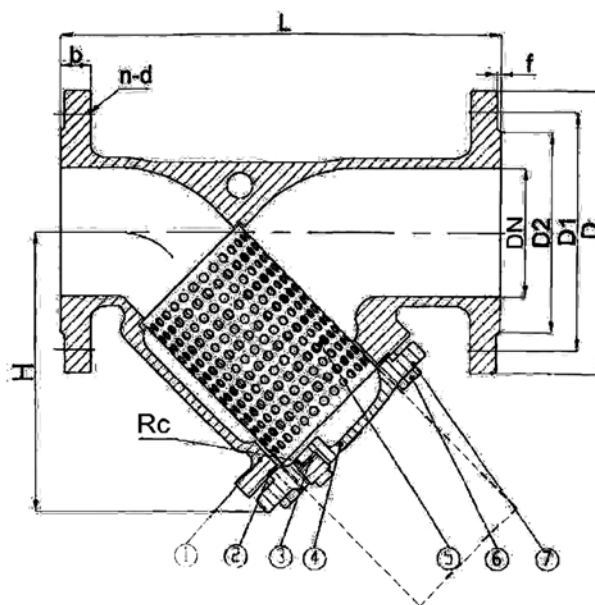
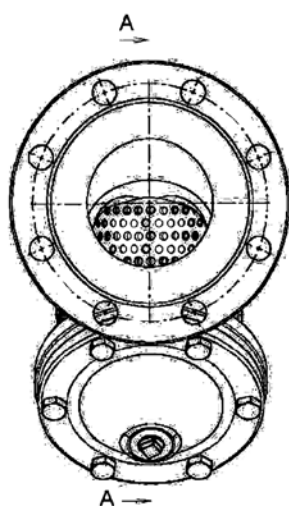
Item	Part Name	Material	Item	Part Name	Material
1	Body	Ductile Iron			
2	Disc	CF8			
3	Stem	Stainless Steel AISI 420			
4	Seat	EPDM/ NBR			

DIMENSIONS (mm)

Size	L	H1	H2	D1	Top Flange
400	102	516	309	270	F14
450	114	538	328	270	F14
500	127	603	361	270	F14
600	154	685	459	390	F16

TOA Fig.S420

DIN3202 F1 Y - Strainer Valve



Features

- Y-Pattern
- Stainless Steel Screen
- Bolted Cover
- Flanged Ends
- FBE Coated
- Product color
Epoxy: Gray
(Blue is optional)

Technical Specification

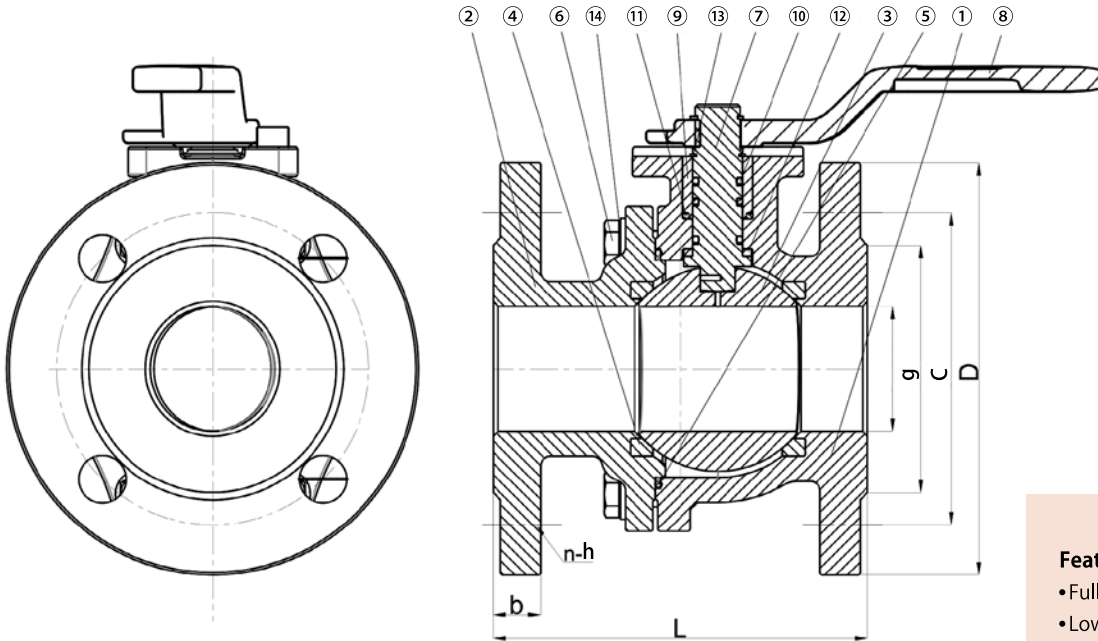
- Face to face: DIN 3202-F1
- Flanged Drilling: EN1092-2 PN16
- Pressure test: ISO5208
- Working Temperature: -10-120° C
(Non shock)

MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Ductile Iron GGG50	5	Screen	SS304
2	Gasket	SS+Graphite	6	Bolt	Galvanized steel
3	Plug	Galvanized steel	7	Washer	Galvanized steel
4	Bonnet	Ductile Iron GGG50			

DIMENSIONS (mm)

Size		L	D	C	g	T	f	n-h	Rc	H
NPS	DN									
14	350	980	520	470	429	26.5	4	16-28	2"	606
16	400	1100	580	525	480	28	4	16-31	2"	692.3
18	450	1200	640	585	548	30	4	20-31	2"	756.6
20	500	1250	715	650	609	32	4	20-34	2"	873.3
24	600	1450	840	770	720	36	5	20-37	2"	1027.1



Features

- Full Port
- Low torque operation
- Product color
Epoxy: Gray
(Blue is optional)
- Maximum Temperature 150°C

Options

- ISO Top Flanged
- FBE Coated Inside and outside

Technical Specification

- Design: DIN 3357
- Face to face:
DN50-DN100 DIN3202 F4
DN125-DN200 DIN3202 F5
- Flanged: EN 1092-2 PN16
- Hydraulic test to ISO 5208
Seat Test Pressure : 1.76MPa
Shell Test Pressure : 2.4 MPa

MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	Ductile iron/Cast iron	8	Lever handle	Carbon Steel (option)
2	Cap	Ductile iron/Cast iron	9	Bushing	Nylon
3	Ball	ASTM A276-304	10	O-ring	EPDM
4	Seat	PTFE	11	O-ring	EPDM
5	O-ring	EPDM	12	Thrust washer	PTFE
6	Bolt	ASTM A276-201	13	Retaining ring	ASTM A276-201
7	Stem	ASTM A276-410	14	Washer	ASTM A276-201

DIMENSIONS (mm)

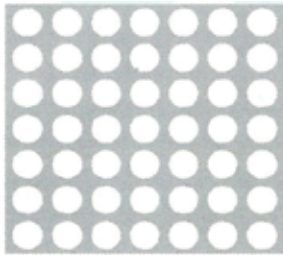
Size	L	D	C	g	T	n-h	Top Flange
50	150	165	125	99	19	4-19	F07
65	170	185	145	118	19	4-19	F07
80	180	200	160	132	19	8-19	F07
100	190	220	180	156	19	8-19	F07
125	325	250	210	184	19	8-19	F10
150	350	285	240	211	19	8-23	F10
200	400	340	295	266	20	12-23	F10

About the optional specifications of the strainer.

■ Screen Options :

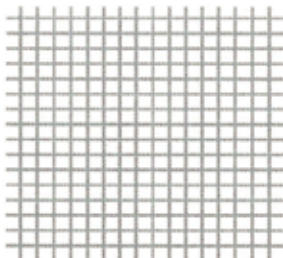
An extremely important consideration in the selection of strainer is the size of the perforation or mesh used in the making of the screen, And strainers should provide maximum size of solids that can be passed. The following selection guide charts will help in the selection of the appropriate screen. Screen opening should be approximately 2/3 to 1/2 of maximum allowable solids size. Standard perforated 304 stainless steel are spot welded along the seam for maximum strength. Different size perforations and meshes are available in stainless steel to meet specific media requirements. If the media is not indicated, screens for water will be supplied.

■ Perforated Sheet Metal Size



Perf.Hole		Open	Perf.Hole		Open
mm	In	%	mm	In	%
1.55	0.062(1/16)	37	1,14	0.045(3/64)	36
3	0.125(1/8)	40	0.80	0.031(1/32)	28

■ Wire Mesh Size



Mesh	Dia.of Wire	Width of Open	Open
	mm	mm	%
21	0.4	0.8	46
12	0.87	1,2	42
10	1	1.6	40

■ Screen Options :

A Y-strainer screen can be cleaned by removing the plug in the bushing , cap or bolted cover allowing the strainer to drain the loose material inside the screen.If a blow-off valve is connected to the strainer it can be opened to achieve the same result as the above .The Y-strainer screen can also be cleaned by removing the bushing,cap or cover to access the screen element. Care should be taken in cleaning screens. After removing a screen , it should be soaked in a cleaning solution or cleaned by using a brush. Do not allow trapped material in the screen to harden, as it will be difficult to remove. A regular cleaning schedule is recommended to avoid screens from becoming clogged.

Stainless Steel Valves

TOA Fig.UL / FUL • ULN / FULN

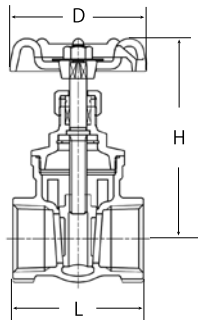
10K GATE VALVE

10K

GATE VALVE

Screwed Bonnet, Non-rising Stem
Threaded ends to BS21 (JIS B0203)

1.4MPa WOG non-shock and 1.1 MPa WOG non-shock at 150°C



Materials

Parts	UL	ULN
Body	SCS13A	SCS14A
Bonnet	SCS13A	SCS14A
Stem	SUS304	SUS316
Disc	SUS304	SUS316
Gland	SUS304	SUS316
Gland packing	Graphite	Graphite
Gasket	R-PTFE	R-PTFE
Handwheel	ADC12	

Note : Fig.ULN is supplied upon request.

Dimensions

Nominal Size	unit:mm						
	inch	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L		54	58	66	75	78	87
H		85	95	103	122	136	158
D		55	63	70	80	80	90

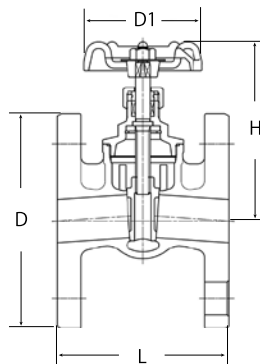
Fig.UL Fig.ULN

10K

FLANGED GATE VALVE

Screwed Bonnet, Non-rising Stem
Flanged ends to JISB2220 10K

See Page 33 Pressure-Temperature Rating



Materials

Parts	FUL	FULN
Body	SCS13A	SCS14A
Bonnet	SCS13A	SCS14A
Stem	SUS304	SUS316
Disc	SUS304	SUS316
Gland	SUS304	SUS316
Gland packing	Graphite	Graphite
Gasket	R-PTFE	R-PTFE
Handwheel	ADC12	

Note : Fig.FULN is supplied upon request.

Dimensions

Nominal Size	unit:mm						
	inch	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
D		95	100	125	135	140	155
L		80	90	100	110	125	140
H		87	98	106	125	139	163
D1		56	63	70	80	80	90

Fig.FUL Fig.FULN

Fig.UG / FUG • UGN / FUGN TOA

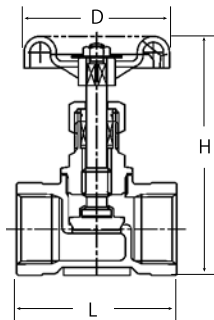
10K GLOBE VALVE

10K

GLOBE VALVE

Screwed Bonnet, Rising Stem
Threaded ends to BS21 (JIS B0203)

1.4MPa WOG non-shock and 1.1 MPa WOG non-shock at 150°C



Materials

Parts	UG	UGN
Body	SCS13A	SCS14A
Bonnet	SCS13A	SCS14 A
Stem	SUS304	SUS316
Disc	SUS304	SUS316
Gland	SUS304	SUS316
Gland packing	Graphite	Graphite
Gasket	R-PTFE	R-PTFE
Handwheel	ADC12	

Note : Fig,UGN is supplied upon request.

Dimensions

unit:mm

Nominal Size	inch	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	8	10	15	20	25	32	40	50
L		44	48	52	60	72	80	90	100
H		80	80	80	86	93	105	124	138
D		55	55	55	63	70	80	90	100

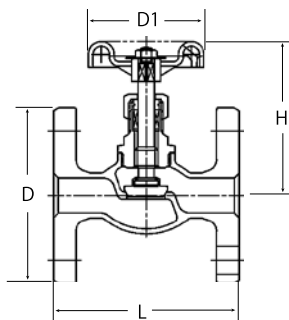
Fig.UG Fig.UGN

10K

FLANGED GLOBE VALVE

Screwed Bonnet, Rising Stem
Flanged ends to JISB2220 10K

See Page 33 Pressure-Temperature Rating



Materials

Parts	FUG	FUGN
Body	SCS13A	SCS14A
Bonnet	SCS13A	SCS14A
Stem	SUS304	SUS316
Disc	SUS304	SUS316
Gland	SUS304	SUS316
Gland packing	Graphite	Graphite
Gasket	R-PTFE	R-PTFE
Handwheel	ADC12	

Note : Fig,FUGN is supplied upon request.

Dimensions

unit:mm

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
D		95	100	125	135	140	155
L		85	95	110	130	150	180
H		84	92	103	122	135	158
D1		55	63	70	80	90	100

Fig.FUG Fig.FUGN

TOA Fig.US / FUS • USN / FUSN

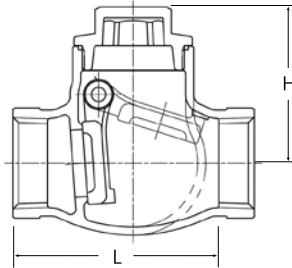
10K SWING CHECK VALVE

10K

SWING CHECK VALVE

Screwed Cap, Swing type disc
Threaded ends to BS21 (JIS B0203)

1.4MPa WOG non-shock and 1.1 MPa WOG non-shock at 150°C



Materials

Parts	US	USN
Body	SCS13A	SCS14A
Cap	SCS13A	SCS14 A
Hinge pin	SUS304	SUS316
Disc	SUS304	SUS316
Plug	SUS304	SUS316
Gasket	R-PTFE	R-PTFE
Plug gasket	R-PTFE	R-PTFE

Note : Fig.USN is supplied upon request.

Dimensions

unit:mm

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L		65	80	90	105	120	140
H		43.5	49	58	64.5	73.5	86

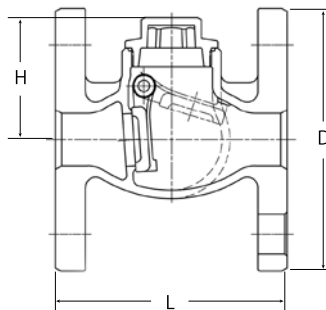
Fig.US Fig.USN

10K

FLANGED SWING CHECK VALVE

Screwed Cap, Swing type disc
Flanged ends to JISB2220 10K

See Page 33 Pressure-Temperature Rating



Materials

Parts	FUS	FUSN
Body	SCS13A	SCS14A
Bonnet	SCS13A	SCS14A
Hinge pin	SUS304	SUS316
Disc	SUS304	SUS316
Plug	SUS304	SUS316
Gasket	R-PTFE	R-PTFE
Plug gasket	R-PTFE	R-PTFE

Note : Fig.FUSN is supplied upon request.

Dimensions

unit:mm

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L		85	95	110	130	150	180
H		44	49	58	65	74	86
D		95	100	125	135	140	155

Fig.FUS Fig.FUSN

Fig.UY / FUY • UYN / FUYN TOA

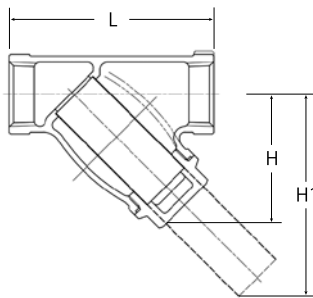
10K Y-PATTERN STRAINER & FLANGED STRAINER

10K

Y-PATTERN STRAINER VALVE

Screwed Cap, Stainless screen
Threaded ends to BS21 (JIS B0203)

1.4MPa WOG non-shock and 1.1 MPa WOG non-shock at 150°C



Materials

Parts	UY	UYN
Body	SCS13A	SCS14A
Cap	SCS13A	SCS14A
Gasket	R-PTFE	R-PTFE
Screen	SUS304	SUS316

Note : Fig.UYN is supplied upon request.

Screen is a 40-mesh stainless wire net reinforced with a punched stainless steel plate.

Dimensions

Nominal Size	unit:mm							
	inch	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	mm	10	15	20	25	32	40	50
L		70	80	93	108	128	143	173
H		43	50.5	60.5	70	82	93	119
H1		61	73.5	89.5	107	126	143.5	190

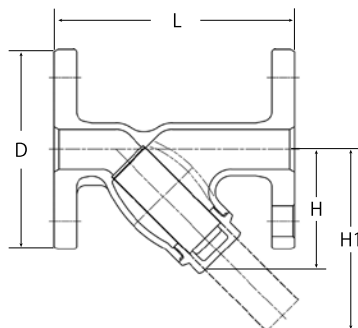
Fig.UY Fig.UYN

10K

FLANGED Y-PATTERN STRAINER VALVE

Screwed Cap, Stainless screen
Flanged ends to JISB2220 10K

See Page 33 Pressure-Temperature Rating



Materials

Parts	FUY	FUYN
Body	SCS13A	SCS14A
Cap	SCS13A	SCS14A
Gasket	R-PTFE	R-PTFE
Screen	SUS304	SUS316

Note : Fig.FUYN is supplied upon request.

Screen is a 40-mesh stainless wire net reinforced with a punched stainless steel plate.

Dimensions

Nominal Size	unit:mm						
	inch	1/2	3/4	1	1 1/4	1 1/2	2
	mm	15	20	25	32	40	50
L		120	130	150	170	190	220
H		54	66	78	90.5	104	133.5
D		95	100	125	135	140	155
H1		77	95	114	134.5	154.5	204.5

Fig.FUY Fig.FUYN

TYPE 800 REDUCED BORE BALL VALVE & TYPE 1000 FULL BORE BALL VALVE

TYPE 800

REDUCED BORE BALL VALVE

One-piece body, Blowout-proof Stem, Threaded ends to BS21 (JIS B0203)

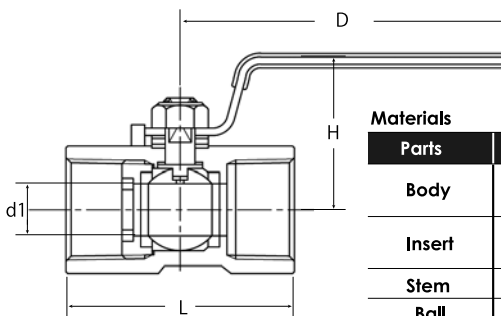
See Page 33 Pressure-Temperature Ratings



Fig.UK



Fig.UB



Materials

Parts	UK	UB
Body	SCS13A	SCS14A
Insert	SUS316	SUS316
Stem	SUS316	SUS316
Ball	SUS316	SUS316
Ball seat	R-PTFE	R-PTFE
Packing	R-PTFE	R-PTFE
Gasket	R-PTFE	R-PTFE
Handle	Plastic covered Stainless steel	

Dimensions

Nominal Size	inch mm	unit:mm							
		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
d1		4.6	6.8	9	12.5	16	20	25	32
L		39	44	56.5	58.5	71	78	83	100
H		32	35.5	40.5	44	54	58	63	69.5
D		64	63	101	101	106	106	139	139

※As for the T handle specifications,an estimate is possible separately.

TYPE 1000

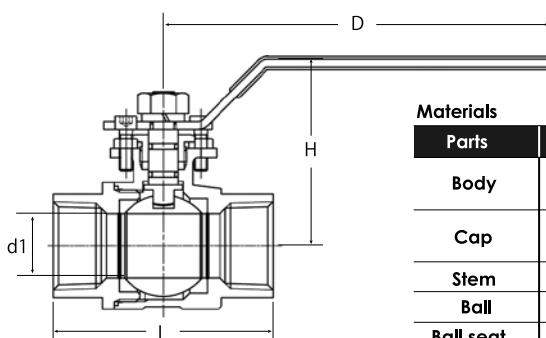
FULL BORE BALL VALVE

Two-piece body, Blowout-proof Stem, Threaded ends to BS21 (JIS B0203)

See Page 33 Pressure-Temperature Ratings



Fig.UF



Materials

Parts	UF
Body	SCS14A
Cap	SCS14A
Stem	SUS316
Ball	SUS316
Ball seat	R-PTFE
Packing	R-PTFE
Handle	Plastic covered Stainless steel

Dimensions

Nominal Size	inch mm	unit:mm							
		1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
d1		10.6	12.5	15	20	25	32	38	50
L		58	58	61	72	85	97	116	133
H		53	53	56	61	72	79	86	94
D		100	100	100	130	150	150	180	180

Fig.FUF / FUFN, FUFA / FUFNA TOA

10K & CLASS 150 FLANGED FULL BORE BALL VALVE

10K

FLANGED FULL BORE BALL VALVE

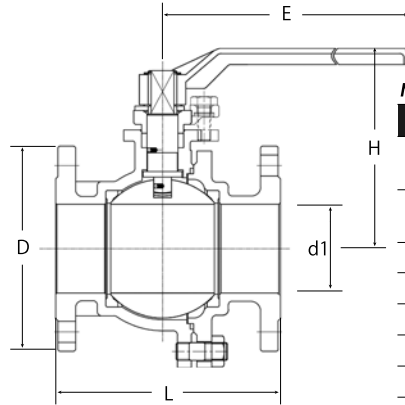
Antistatic device, Blowout-proof Stem,
Flanged ends to 10K (JIS B2220)

See Page 34 Pressure-Temperature Ratings

FACE TO FACE ASME B16.10 CLASS 150, BUT 100A OVER TOA STANDARD



Fig.FUF Fig.FUFN



Materials

Parts	FUF	FUFN
Body	SCS13A	SCS14A
Cap	SCS14A	SCS14A
Stem	SUS316	SUS316
Ball	SUS316	SUS316
Ball seat	R-PTFE	R-PTFE
Packing	R-PTFE	R-PTFE
Handle	Stainless steel casting	

Dimensions

unit:mm

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
	mm	15	20	25	32	40	50	65	80	100	125	150
d1		15	20	25	32	40	50	65	80	100	125	150
D		95	100	125	135	140	155	175	185	210	250	280
L		108	117	127	140	165	178	190	203	230	300	340
H		70	73	90	94	122	130	148	174	190	243	259
E		130	130	160	160	250	250	250	400	400	650	650

CLASS 150

FLANGED FULL BORE BALL VALVE

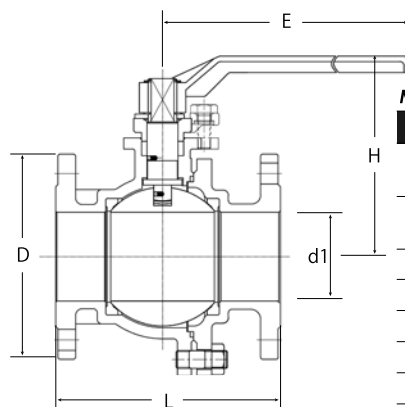
Antistatic device, Blowout-proof Stem,
Flanged ends to ASME B16.10 (class150)

See Page 34 Pressure-Temperature Ratings

FACE TO FACE ASME B16.10 CLASS150



Fig.FUFA Fig.FUFNA



Materials

Parts	FUFA	FUFNA
Body	SCS13A	SCS14A
Cap	SCS13A	SCS14A
Stem	SUS304	SUS316
Ball	SUS304	SUS316
Ball seat	R-PTFE	R-PTFE
Packing	R-PTFE	R-PTFE
Handle	Stainless steel casting	

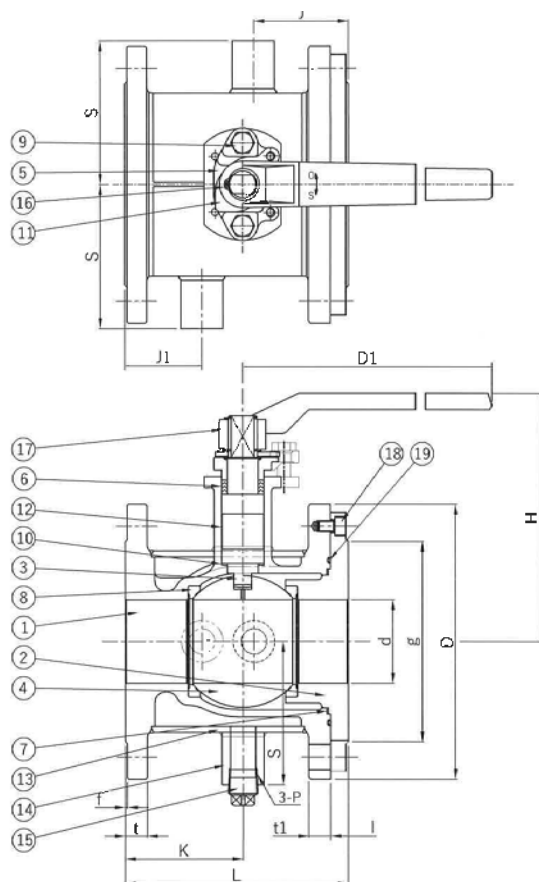
Dimensions

unit:mm

Nominal Size	inch	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6
	mm	15	20	25	32	40	50	65	80	100	125	150
d1		15	20	25	32	40	50	65	80	100	125	150
D		89	98	108	117	127	152	178	190	229	254	279
L		108	117	127	140	165	178	190	203	229	366	394
H		71	73	90	94	122	130	148	174	190	243	259
E		130	130	180	160	250	250	250	400	400	650	650

TOA Fig. FUFJ

10K FUFJ Cast Stainless Steel Flanged Ends Ball Valves Anti - Static Device, Full Bore, Jacket Type



Specification

- Face to face: TOA Standard
- End connection: JIS B2220 10K
- Wall Thickness: ASME B16.34 CLASS 150
- Hydraulic test Pressure
Seat test: 1.8 MPa
Shell test: 2.4 MP

MATERIAL SPECIFICATION

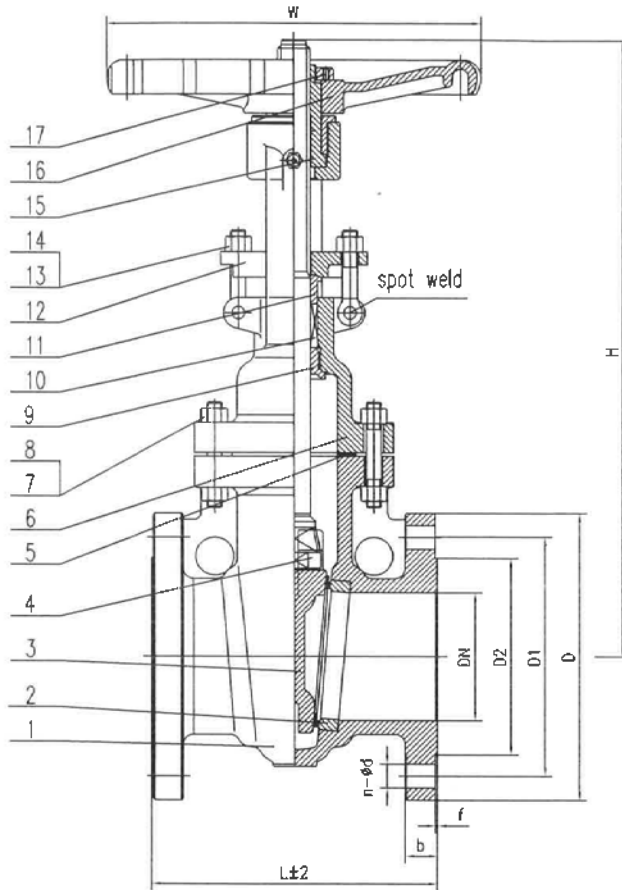
Item	Part Name	Material	Item	Part Name	Material
1	Body	SCS13A	11	Stopper	SUS304
2	Body Cap	SCS13A	12	Stem Bearing	PTFE
3	Stem	SUS316	13	Jacket	SUS304TP
4	Ball	SCS14A	14	Socket	SUS304
5	Gland	SCS13A	15	Plug	SUS304
6	Packing	R-PTFE	16	Snap Ring	SUS304
7	Gasket	R-PTFE	17	Handle	SCS13A
8	Ball Seat	R-PTFE	18	Cap Bolt	SUS304
9	Gland Bolt	SUS304	19	O-Ring	FKM
10	Thrust Washer	R-PTFE			

DIMENSIONS (mm)

Size	d	H	D1	L	S	J	J1	I	K
50	50	165	250	178	97	70	60	10	84
65	65	185	250	190	110	75	62	13	90
80	76	226	400	203	130	86	70	16	107
100	100	246	400	229	148	92	76	16	119

Fig. Z4103H- 150LB TOA

Class 150 Cast Stainless Steel Flanged Ends Gate Valve Bolted Bonnet Outside Screw & Yoke Rising Stem



Specification

- Face to face: ASME B16.10
- End connection: ASME B16.5
- Wall Thickness: AP1600
- Hydraulic test Pressure
Seat test: 1.8 MPa
Shell test: 2.4 MP

MATERIAL SPECIFICATION

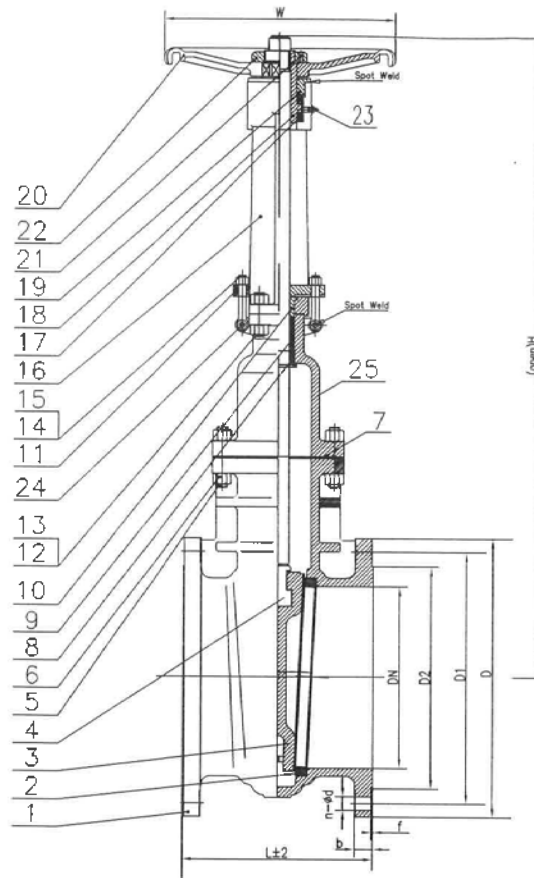
Item	Part Name	Material	Item	Part Name	Material
1	Body	A351CF8	10	Stem Packing	Flexible Graphite
2	Seat Ring	SS304	11	Gland	A276 410
3	Wedge	SS304	12	Gland Flange	A351 CF8
4	Stem	SS304	13	Gland Eyebolt	A193 B8
5	Gasket	Graphite + SS304	14	Gland Nut	A194 8
6	Bonnet	A351 CF8	15	Stem Nut	C95200
7	Bonnet Bolt	A193 B8	16	Hand Wheel	A47 32510
8	Bonnet Bolt Nut	A194 B	17	Wheel Nut	AISI 1035
9	Backseat Bushing	A182 F6A			

DIMENSIONS (mm)

Size	H	W	L	END FLANGE					
				D	D1	D2	n-d	b	f
50	361	250	178	178	120.7	92	4-19	16	1.6
65	396	250	191	191	139.7	105	4-19	18	1.6
80	435	280	203	203	152.4	127	4-19	19.1	1.6
100	522	300	229	229	190.5	157	8-19	23.9	1.6
150	610	350	267	267	241.5	216	8-22	26	1.6
200	750	400	292	343	298.5	270	8-22	29	1.6

TOA Fig. Z4103H- 150LB

Class 150 Cast Stainless Steel Flanged Ends Gate Valve Bolted Bonnerm Outside Screw & Yoke Rising Stem



Specification

- Face to face: ASME B16.10
- End connection: ASME B16.5
- Wall Thickness: AP1600
- Hydraulic test Pressure
Seat test: 1.8 MPa
Shell test: 2.4 MP

MATERIAL SPECIFICATION

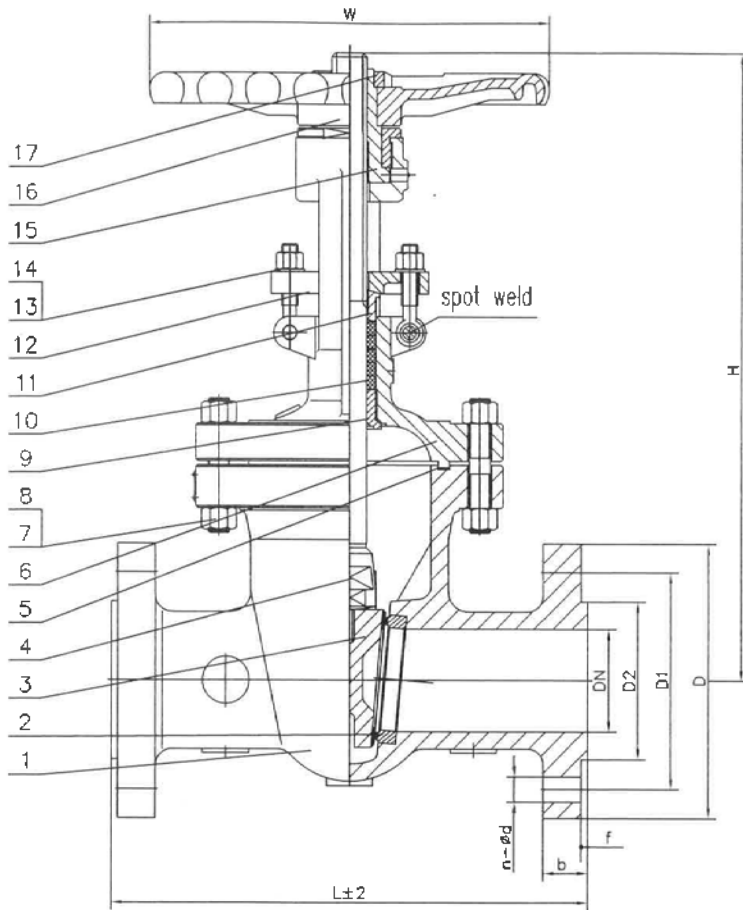
Item	Part Name	Material	Item	Part Name	Material
1	Body	A351 CF8	14	Gland Nut	A194 8
2	Seat Ring	SS304	15	Gland Bolt	A193 B8
3	Wedge	SS304	16	Yoke	A351 CF8
4	Stem	SS304	17	Ball Bearing	GCR15
5	Bonnet Bolt	A193 B8	18	Stem Nut	C95200
6	Bonnet Bolt Nut	A194 8	19	Bearing Gland	AISI 1035
7	Gasket	GRAPHITE +SS304	20	Hand Wheel	A47 32510
8	Backseat Bushing	A182 F6A	21	Set Screw	33H
9	Stem Packing	FLEXIBLE GRAPHITE	22	Wheel Nut	AISI 1035
10	Gland	A276 410	23	Grease Nipple	CU
11	Gland Flange	A351 CF8	24	Pin Shaft	35 #
12	Yoke Nut	A194 8	25	Bonnet	A351 CF8
13	Yoke Bolt	A193 B8			

DIMENSIONS (mm)

Size	H	W	L	END FLANGE					
				D	D1	D2	n-d	b	f
250	935	400	330	406	362	324	12-25	31	1.6
300	1065	500	356	483	432	381	12-25	32	1.6

Fig. Z4103H- 300LB **TOA**

Class 300 Cast Stainless Steel Flanged Ends Gate Valve Bolted Bonnet Outside Screw & Yoke Rising Stem



Specification

- Face to face: ASME B16.10
- End connection: ASME B16.5
- Wall Thickness: AP1600
- Hydraulic test Pressure
 - Seat test: 1.8 MPa
 - Shell test: 2.4 MP

MATERIAL SPECIFICATION

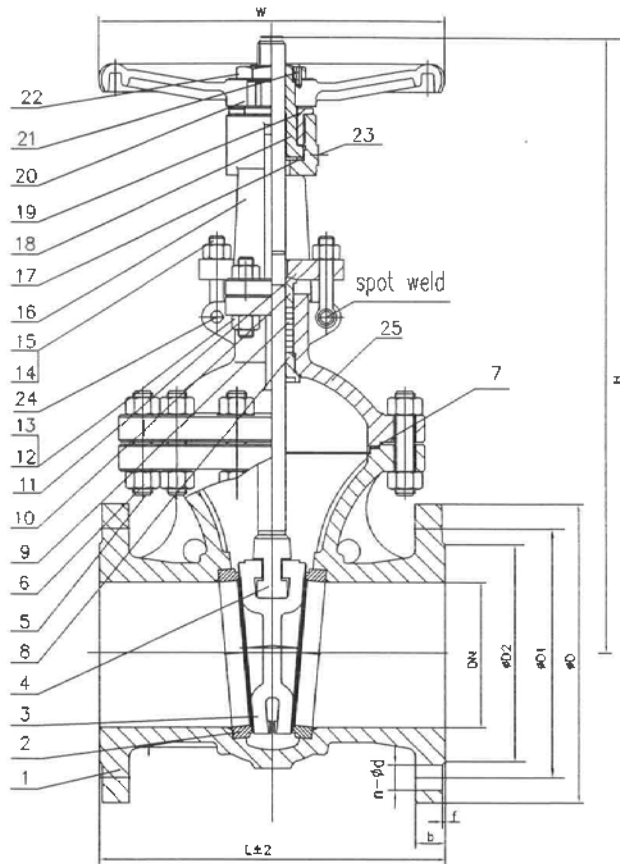
Item	Part Name	Material	Item	Part Name	Material
1	Body	A351 CF8	10	Glabd	FLEXIBLE GRAPHITE
2	Seat Ring	SS304	11	Gland Flange	A276 410
3	Wedge	SS304	12	Glabd Eyebolt	A351 CF8
4	Stem	SS304	13	Glabd Nut	A193 B8
5	Gasket	GRAPHITE + SS304	14	Stem Nut	A194 B
6	Bonnet	A351 CF8	15	Hnd	C95200
7	Bonnet Bolt Nut	A193 B8	16	Wheel	A47 32510
8	Backseat Bushing	A194 8	17	Wheel Nut	AISI 1035
9	Stem Packing	A182 F6A			

DIMENSIONS (mm)

Size	H	W	L	END FLANGE					
				D	D1	D2	n-d	b	f
50	352	250	216	165	127	92	8-19	23	1.6
65	390	250	241	190	149.4	105	8-22	26	1.6
80	420	250	282	210	168.5	127	8-22	29	1.6
100	496	300	305	254	200	157	8-22	32	1.6
150	635	400	403	318	270	216	12-22	37	1.6
200	772	450	419	381	330	270	12-25	42	1.6

TOA Fig. Z4103H- 300LB

Class 300 Cast Stainless Steel Flanged Ends Gate Valve Bolted Bonnet Outside Screw & Yoke Rising Stem



Specification

- Face to face: ASME B16.10
- End connection: ASME B16.5
- Wall Thickness: AP1600
- Hydraulic test Pressure
Seat test: 1.8 MPa
Shell test: 2.4 MPa

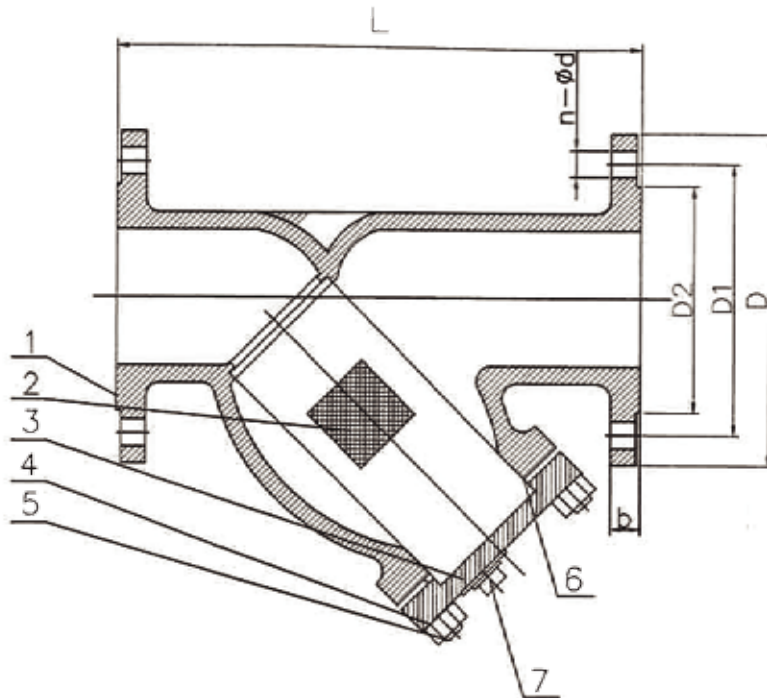
MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	A351 CF8	14	Gland Nut	A194 8
2	Seat Ring	SS304	15	Gland Bolt	A193 B8
3	Wedge	SS304	16	Yoke	A351 CF8
4	Stem	SS304	17	Ball Bearing	GCR15
5	Bonnet Bolt	A193 B8	18	Stem Nut	C95200
6	Bonnet Bolt Nut	A194 8	19	Bearing Gland	AISI 1035
7	Gasket	GRAPHITE + SS304	20	Hand Wheel	A47 32510
8	Backseat Bushing	A182 F6A	21	Set Screw	33H
9	Stem Packing	FLEXIBLE GRAPHITE	22	Wheel Nut	AISI 1035
10	Gland	A276 410	23	Grease Nipple	CU
11	Gland Flange	A351 CF8	24	Pin Shaft	35 #
12	Yoke Nut	A194 8	25	Bonnet	A351 CF8
13	Yoke Bolt	A193 B8			

DIMENSIONS (mm)

Size	H	W	L	END FLANGE					
				D	D1	D2	n-d	b	f
250	995	450	457	445	387.5	324	16-29	48	1.6
300	1080	500	502	521	451	381	16-32	51	1.6

PN16 Cast Stainless Steel Flanged Ends Strainer Y-Pattern



■ MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	A351 CF8			
2	Screen	SS304			
3	Bonnet	A351 CF8			
4	Body Bolt	SS304			
5	Bonnet Nut	SS304			
6	Gasket	SS304+GRAPHITE			
7	Plug	SS304			

■ DIMENSIONS (mm)

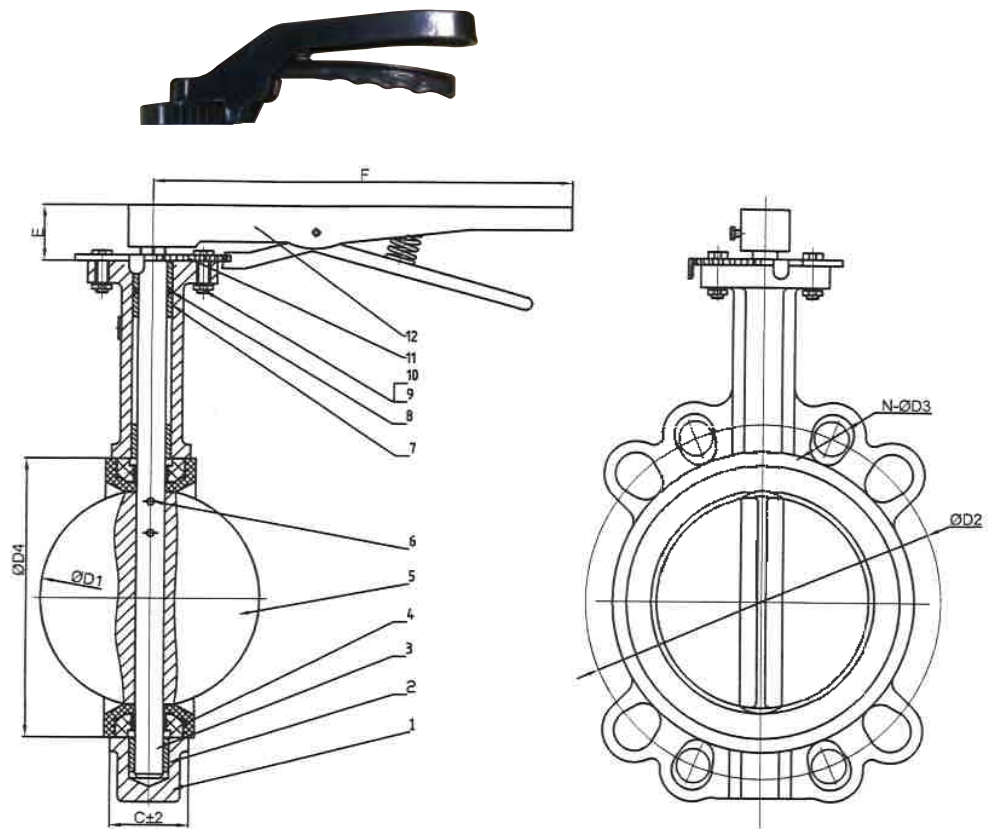
Size	L	D	D1	D2	b	n-d
50	230	165	125	102	18	4-18
65	290	185	145	122	18	4-18
80	310	200	160	138	20	8-18
100	350	220	180	188	20	8-18
125	400	250	210	158	22	8-18
150	480	285	240	212	22	8-22
200	600	340	295	268	24	12-22
250	730	405	355	320	26	12-26
300	850	460	410	378	28	12-26
350	980	520	470	428	30	16-26
400	1100	580	525	490	32	16-30

Specification

- Face to face: EN 558
- End connection: EN 1092
- Wall Thickness: Maker Standard
- Hydraulic test Pressure
 Seat test: 1.8 MPa
 Shell test: 2.4 MP

TOA Fig. B16WS

PN16 Cast Stainless Steel Butterfly Valve Wafer-Type



Specification

- Face to face: EN 558 -1
- End connection: EN 1092 PN16
- Test: API598
- Working pressure: 1.6MPa
- Hydraulic test Pressure
Seat test: 1.76 MPa
Shell test: 2.4 MP
- Working temp (°C): +10~+150
- Mounting pad: ISO5211

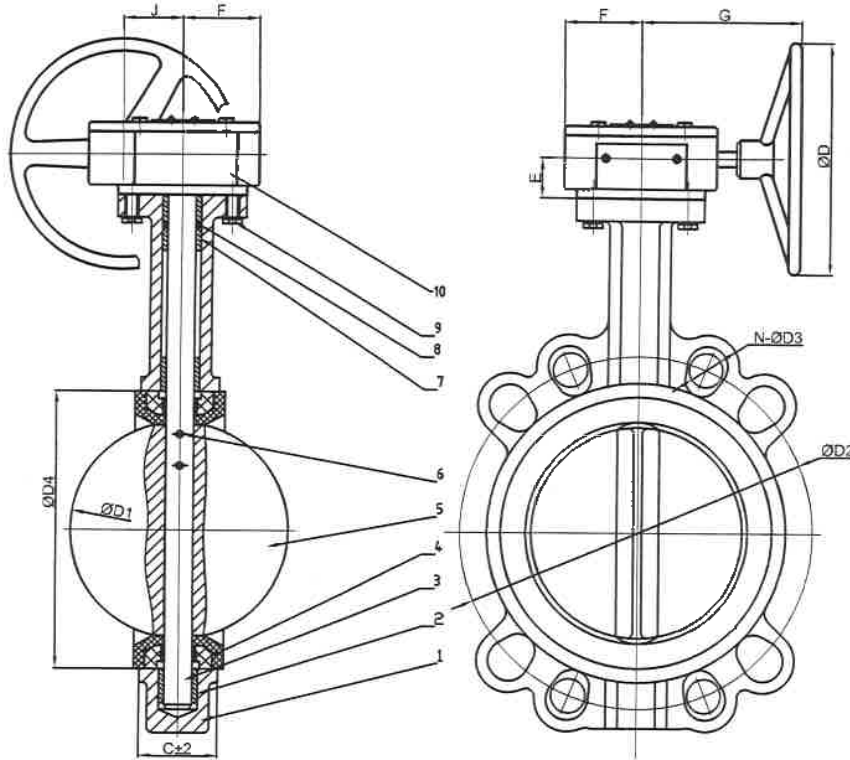
MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	A351 CF8	4	Seat	PTFE
2	Long bushing	PTFE	5	Discs	A351 CF8
3	Shaft	SS420			

DIMENSIONS (mm)

Size	C	D1	D2	N	D3	D4	E	F
50	43	52.9	125	4	19	76	28	267
65	46	64.5	145	4	19	89	28	267
80	46	78.8	160	8	19	104	28	267
100	52	104.0	180	8	19	135	28	267
125	56	123.3	210	8	19	159	28	267
150	56	155.6	240	8	23	188	28	267
200	60	202.5	295	12	23	238	38	360

PN16 Cast Stainless Steel Butterfly Valve Gear Oper-Type



MATERIAL SPECIFICATION

Item	Part Name	Material	Item	Part Name	Material
1	Body	A351 CF8	4	Seat	PTFE
2	Long bushing	PTFE	5	Dics	A351 CF8
3	Shaft	SS420			

DIMENSIONS (mm)

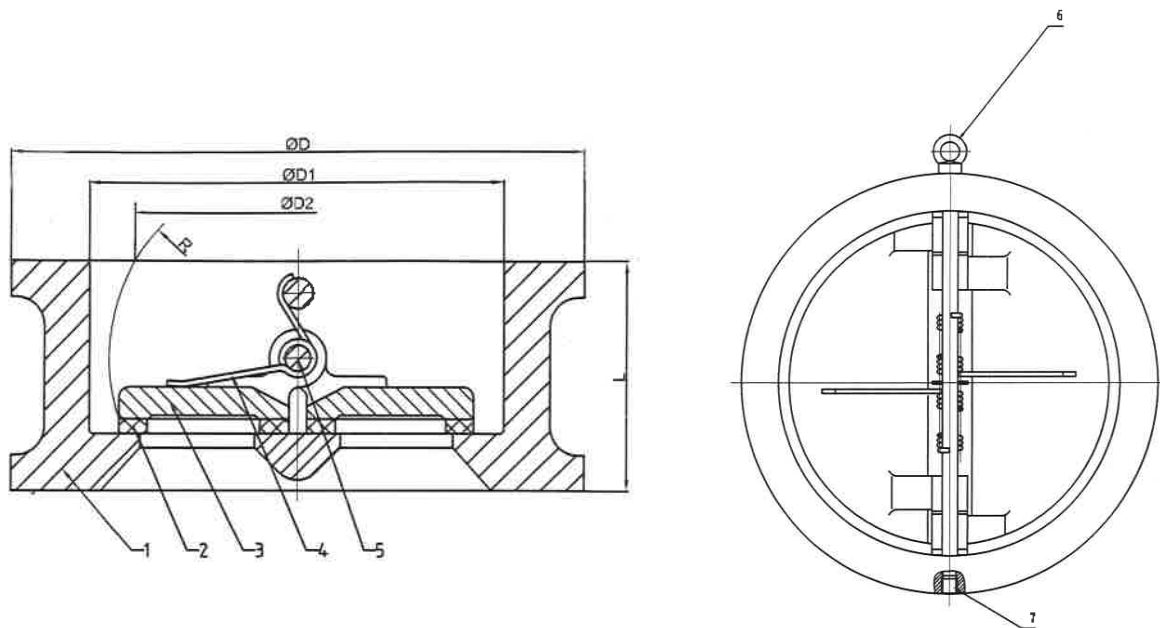
Size	C	D1	D2	N	D3	D4	D	E	F	J	G
50	43	52.9	125	4	19	76	145	35	47	45	155
65	46	64.5	145	4	19	89	145	35	47	28	155
80	46	78.8	160	8	19	104	145	35	47	28	155
100	52	104.0	180	8	19	135	145	35	47	28	155
125	56	123.3	210	8	19	159	145	35	47	28	155
150	56	155.6	240	8	23	188	145	35	47	28	155
200	60	202.5	295	12	2	238	285	38	70	66	222
250	68	150.5	355	12	27	292	285	38	70	66	222
300	78	301.6	410	12	27	344	285	40	78	77	213

Specification

- Face to face: EN 558 -1
- End connection: EN 1092 PN16
- Test: API598
- Working pressure: 1.6MPa
- Hydraulic test Pressure
Seat test: 1.76 MPa
Shell test: 2.4 MP
- Working temp (°C): +10~+150
- Mounting pad: ISO5211

TOA Fig. C10S

PN16 Cast Stainless Steel Dual Plate Check Valve Wafer-Type



Specification

- Face to face: EN 558 -1
- End connection: EN 1092 PN16
- Test: API598
- Working pressure: 1.6MPa
- Hydraulic test Pressure
Seat test: 1.76 MPa
Shell test: 2.4 MP
- Working temp (°C): -20~+110

MATERIAL SPECIFICATION

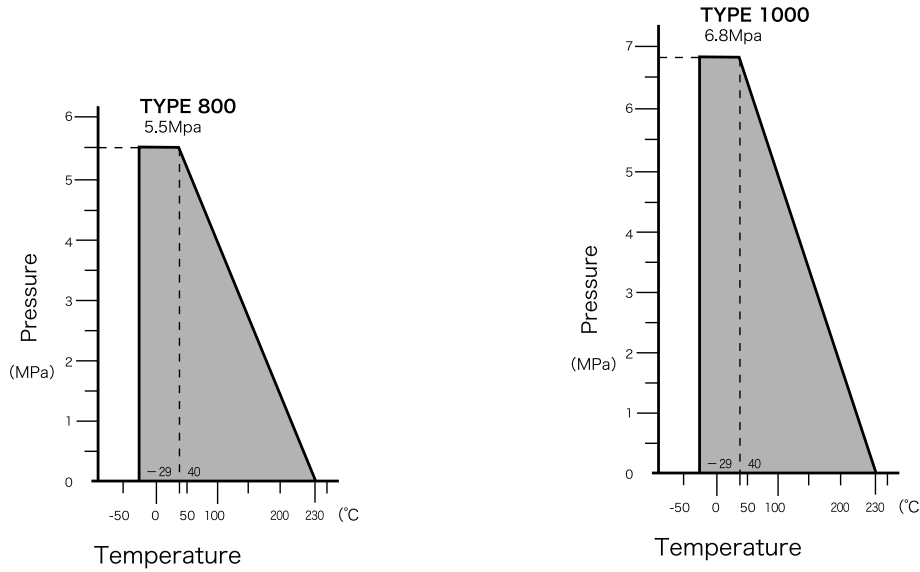
Item	Part Name	Material	Item	Part Name	Material
1	Body	A351 CF8	5	Stem	SS420
2	Seat	EPDM/ PTFE	6	Eye bolt	SS304
3	Discs	A351 CF8	7	Crew	SS304
4	Spring	SS304			

DIMENSIONS (mm)

Size	L	D	D1	D2	R
50	43	107	65	43.3	28.8
65	46	127	80	60.2	36.1
80	64	142	94	66.4	43.4
100	64	162	117	90.8	52.8
125	70	192	145	116.8	65.7
150	76	218	170	144.6	78.6
200	89	273	224	198.2	104.4
250	114	328	265	233.7	127.0
300	114	378	310	283.9	148.3

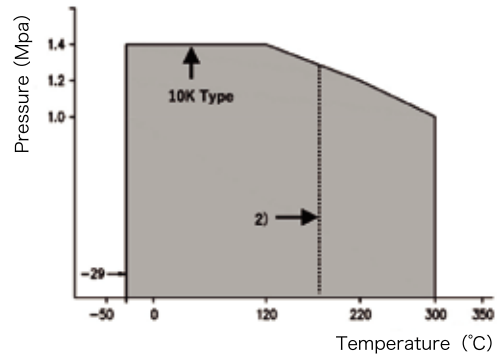
Pressure-Temperature Ratings

Threaded or socket welding end ball valves



JIS Flanged Valve

Nominal pressure	10K
Body material	SCS13A , SCS14A
Below 120°C	1.4
220°C	1.2
300°C	1.0
350°C	-
400°C	-
425°C	-



Notes

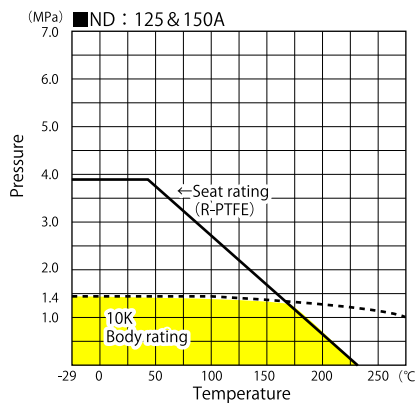
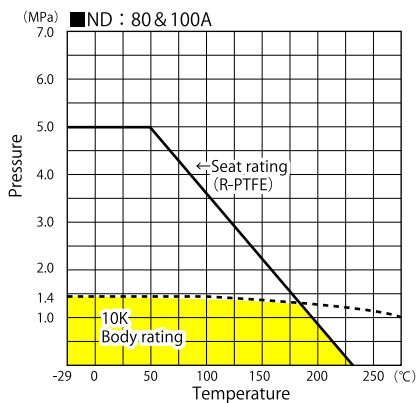
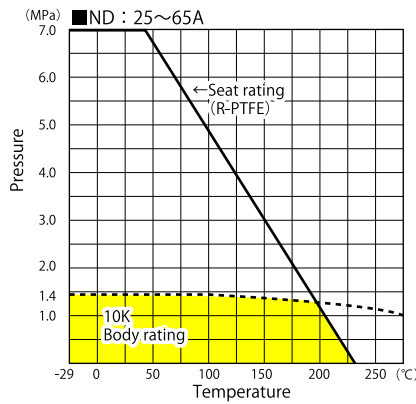
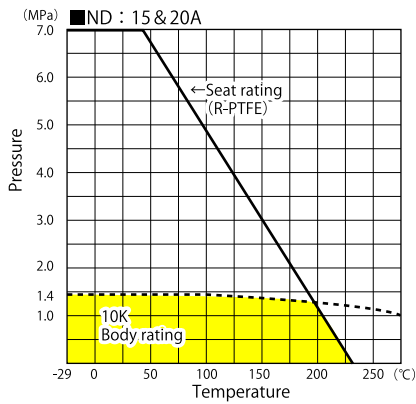
- 1) JIS Flanged Valve Pressure-Temperature Rating to JIS B2220
- 2) In case of use at 220°C and above, applicable selection for gland packing & gasket is required.
- 3) Do not use our products in flammable or toxic gas service.

ASME B16.34 Table 2-2.1A & 2-2.2A

Service temperature		Class 150	
		A351 Gr.CF8(SCS13A)	A351 Gr.CF8M(SCS14A)
(°C)	(°F)	MPa	MPa
-29 to 38	-20 to 100	1.90	1.90
93	200	1.62	1.65
149	300	1.41	1.48
204	400	1.24	1.34
260	500	1.17	1.17
316	600	0.965	0.965
343	650	0.862	0.862
371	700	0.758	0.758
399	750	0.655	0.655
427	800	0.552	0.552

Pressure-Temperature Ratings

Stainless ball valves 10K FUF/FUFN



Usage of pressure-temperature ratings for flanged end ball valves

- A) Indication of ratings
 (1) The solid line indicates a seat rating.
 (2) The broken line indicates a body rating.

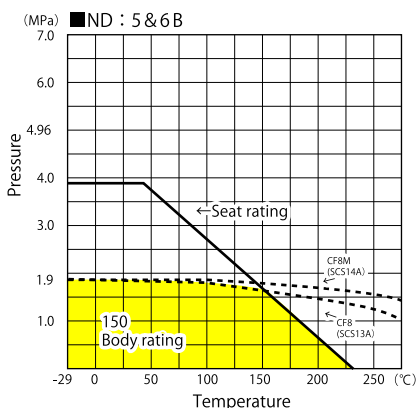
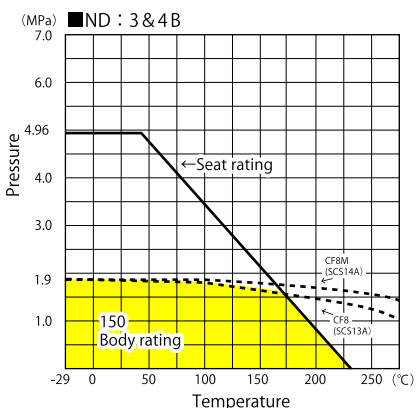
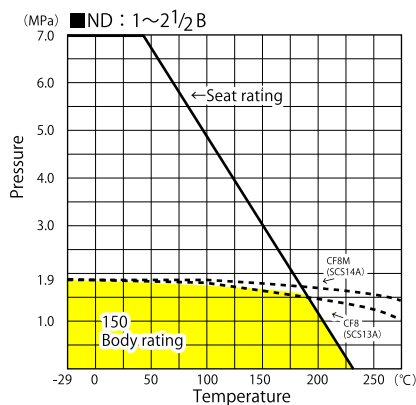
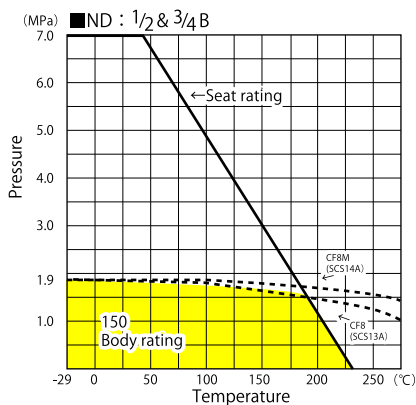
B) It is noted that this pressure-temperature rating is determined under the piping conditions that the ball valve shall be installed without excessive external piping stresses and applicable to the non-Shock fluid.

Therefore, it is actually necessary to allow for the proper safety factor, as is the case with general valves.

This safety factor is taken in the consideration of piping design conditions, but general safety factors are as follows,

- (1) Small-sized valves : 10 up to 15 %
- (2) Large-sized valves : 20 up to 25 %
- (3) In case of pulsating fluid and steam, the safety factor of 10 up to 20 % shall be added to those shown in (1) and (2) above.

Stainless valve 150 FUFA/FUFNA





CAUTION

Products guarantee

Term of a guarantee: within one year after the date of delivery from our factory to the original customer.

Contents of a guarantee: If the installations and the service conditions (such as pressure, temperature, Fluid, etc.) are proper, necessary replacement and repair of our product will be carried out without charge.

Guarantee exceptions: Please keep in mind that the above articles of guarantee will not apply to the case

Owing to the following reasons: Non-compliance of the customer with the technical instruction furnished by our catalog and specificationsheet.

Natural disaster incidents, such as a fire, flood damage, an earthquake, and falling stone Reconstruction or repair by any third party other than TOA Valve Industry Co., Ltd.

Deterioration (such as shot rust, degradation, chemical changes, etc.)

Any other matter resulting from the damage not being regarded as manufacturer's responsibility

In addition, you will be required necessary charge for repair or exchange of parts on failure or damage by the Guarantee exceptions. Please contact our sales staff or agency for details.

The specification and the performance term of our product indicated in this catalog are based on the inter-Nationally governed standards and specifications, our products experience or the design calculation and our in-house examination.

When using the product beyond the service conditions mentioned in this catalog, users are requested to consult TOA Valve for further advice in advance, or to conduct the verification or evaluation for the performance under users' responsibility. We shall not be liable for any damages resulting from lack of aforementioned procedure by the customer.

Items mentioned in this catalog are subject to change without prior notice to the customers.

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