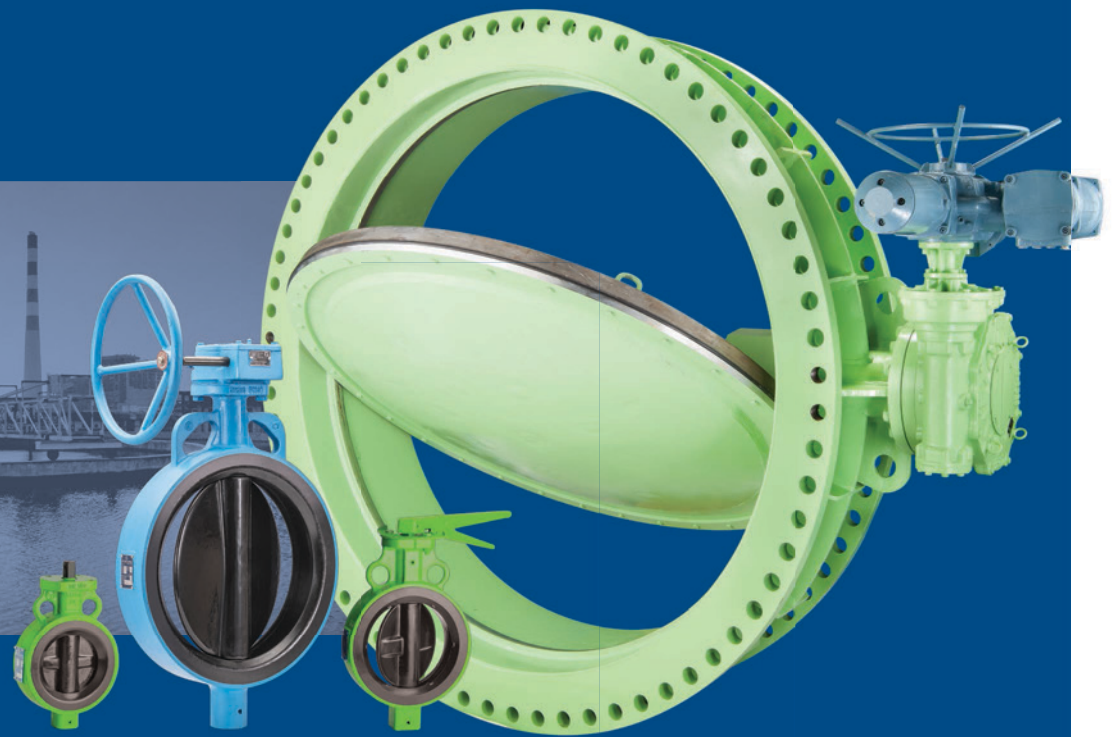


# Aquaseal Butterfly & Check Valves



L&T Valves Limited is a wholly-owned subsidiary of L&T and one of the largest valve manufacturers in the world.

The company has three modern manufacturing facilities, in Chennai, Coimbatore and Kancheepuram, in Tamil Nadu, India. The company leverages its world-class capabilities in design, quality assurance and manufacturing to ensure that their products consistently meet customer expectations.

**Product Range:**

- Gate, Globe & Check Valves
- Valves for Power
- Pipeline & Process Ball Valves
- Triple-offset Butterfly Valves
- Flanged and Wafer-type Butterfly & Check Valves
- Double Block and Bleed Plug Valves
- Control Valves
- Customised Solutions

The quality management system is certified to comply with ISO 9001 and API Spec Q1. The company is licensed to offer products monogrammed API 600, API 6D, API 609 as well as valves with CE Marking (Pressure Equipment Directive 97/23/EC) and ATEX certification (Council Directive 94/9/EC). L&T Valves meets the requirements of ISO 14001 and OHSAS 18001, and every phase of manufacture is governed by an institutionalised environment, health and safety policy.

L&T Valves distribution network spans the globe, partnering some of the largest valve distribution companies in the world. In India, L&T Valves has a presence in every industrial centre through a network of offices, stockists, automation centres and service franchisees.



## Aquaseal Butterfly & Check Valves

L&T Valves manufactures a comprehensive range of Butterfly & Check Valves. The range addresses water treatment and distribution systems, power plants, utility lines, fire water lines and HVAC.

- **Aquaseal 10** Integrally-moulded Butterfly Valve in PN 10
- **Aquaseal 16** Integrally-moulded Butterfly Valve in PN 16
- **Aquaseal Plus** Integrally-moulded Butterfly Valve in Class 150
- **Aquaseal 25** Integrally-moulded Butterfly Valve in PN 25
- **Aquaseal Chek** Dual-plate Check Valve
- **Aquaseal Max** Large-size Fabricated Steel Butterfly Valve
- **Aquaseal FabChek** Fabricated Steel Check Valve

The versatile range is available in various body styles, materials, and actuation options to suit customer requirements.

### Aquaseal 10 Integrally-moulded Butterfly Valve - PN 10

Body Style	Pressure Rating	2	2½	3	4	5	6	8	10	12	14	16	18	20	24
		50	65	80	100	125	150	200	250	300	350	400	450	500	600
Wafer	PN 10	•	•	•	•	•	•	•	•	•	•	•	•	•	•

### Aquaseal 16 Integrally-moulded Butterfly Valve - PN 16

Body Style	Pressure Rating	2	2½	3	4	5	6	8	10	12	14	16	18	20	24	26	28	30	32	36
		50	65	80	100	125	150	200	250	300	350	400	450	500	600	650	700	750	800	900
Wafer	PN 16	•	•	•	•	•	•	•	•	•	•	•	•	•	•					
Lugged		•	•	•	•	•	•	•	•	•	•	•	•	•	•					
Flanged							•	•	•	•	•	•	•	•	•	•	•	•	•	•

### Aquaseal Plus Integrally-moulded Butterfly Valve - Class 150

Body Style	Pressure Rating	2	2½	3	4	5	6	8	10	12	14	16	18	20	24	26	28	30	32	36
		50	65	80	100	125	150	200	250	300	350	400	450	500	600	650	700	750	800	900
Wafer	Class 150	•	•	•	•	•	•	•	•	•	•	•	•	•	•					
Lugged		•	•	•	•	•	•	•	•	•	•	•	•	•	•					
Flanged							•	•	•	•	•	•	•	•	•	•	•	•	•	•

### Aquaseal 25 Integrally-moulded Butterfly Valve - PN 25

Body Style	Pressure Rating	2	2½	3	4	5	6	8
		50	65	80	100	125	150	200
Wafer	PN 25	•	•	•	•	•	•	•

### Aquaseal Chek Dual-plate Check Valve

Body Style	Pressure Rating	2	2½	3	4	5	6	8
		50	65	80	100	125	150	200
Wafer	PN 10	•	•	•	•	•	•	•
	PN 16	•	•	•	•	•	•	•
	Class 125	•	•	•	•	•	•	•

### Aquaseal Max Large-size Fabricated Steel Butterfly Valve

### Aquaseal FabChek Fabricated Steel Check Valve

Body Style	Pressure Rating	Size
Flanged, Fabricated	PN 6	Available in sizes up to 120" (3000 mm)
	PN 10	
	PN 16	

## Aquaseal 10 Integrally-moulded Butterfly Valve - PN 10



Aquaseal10 Integrally-moulded Wafer-type Butterfly Valve is available in sizes from 50 mm (2") to 600 mm (24"), in PN 10 pressure rating. The valve was developed to provide reliable sealing in water and air lines, and is today the industry benchmark.

The most striking feature of Aquaseal10 Butterfly Valve is its integrally-moulded body liner. Aquaseal's elastomer body seat is vulcanised insitu onto the body using high temperature and pressure, and this provides longer life and superior performance when compared to valves with loose liners.

Aquaseal 10 requires no maintenance, and is truly a fit-and-forget valve.

### Compliance Standards

Parameter	Standard
Valve Design	EN 593 (BS 5155), API 609, MSS SP 67, ISO 5752
Pressure Testing	EN 12266/ API 598
End Connection	To suit BS 10 Table D & E, ASME B 16.1 Class 125, B 16.5 Class 150, EN 1092-2 PN 10, BS 4504 PN 10, IS 6392 Table 11

### Materials of Construction

Components	Materials
Body	Cast Iron EN 1561 (BS 1452) Gr. 200, Gr. 250
Body Liner	Nitrile, EPDM
Disc	Cast Iron EN 1561 (BS 1452) Gr. 250, CF8M
Shaft	BS 970 - 080M40

Other material available on request

### Pressure Rating

Rated Working Pressure (bar)	10
Shell Test Pressure (bar)	15
Seat Test Pressure (bar)	11

**Longer Life**

The strength of the vulcanised liner as well as its strong bonding with the body ensure that it doesn't get deformed and torn by the disc during valve operations. Further, friction during operations is minimised owing to the smooth liner surface. The strong seat and reduced friction greatly enhance service life of the valve

**Tight Sealing, and Consistent Low Torque**

Bubble-tight sealing is obtained by the tight interference fit between liner and disc. The insitu moulded seat does not deform with age, and hence the operating torque stays low and consistent during the entire life cycle of the valve. Aquaseal is the valve of choice for actuated systems because of high reliability and consistent torque.

**Assured Shaft Sealing**

The flat profiles on the top and bottom of Aquaseal disc engage with matching profiles on the body liner, and the large area of contact prevents leakage to atmosphere. Integrally moulded O-Rings that compresses around the top shaft provide a secondary seal. Weather seal is provided to prevent the ingress of foreign particles on valves with flow control lever.

**Actuator Mounting Platform**

The integral ISO 5211 platform facilitates direct mounting of actuators and gear units, thereby improving system reliability and efficiency.

**Lower Resistance to Flow**

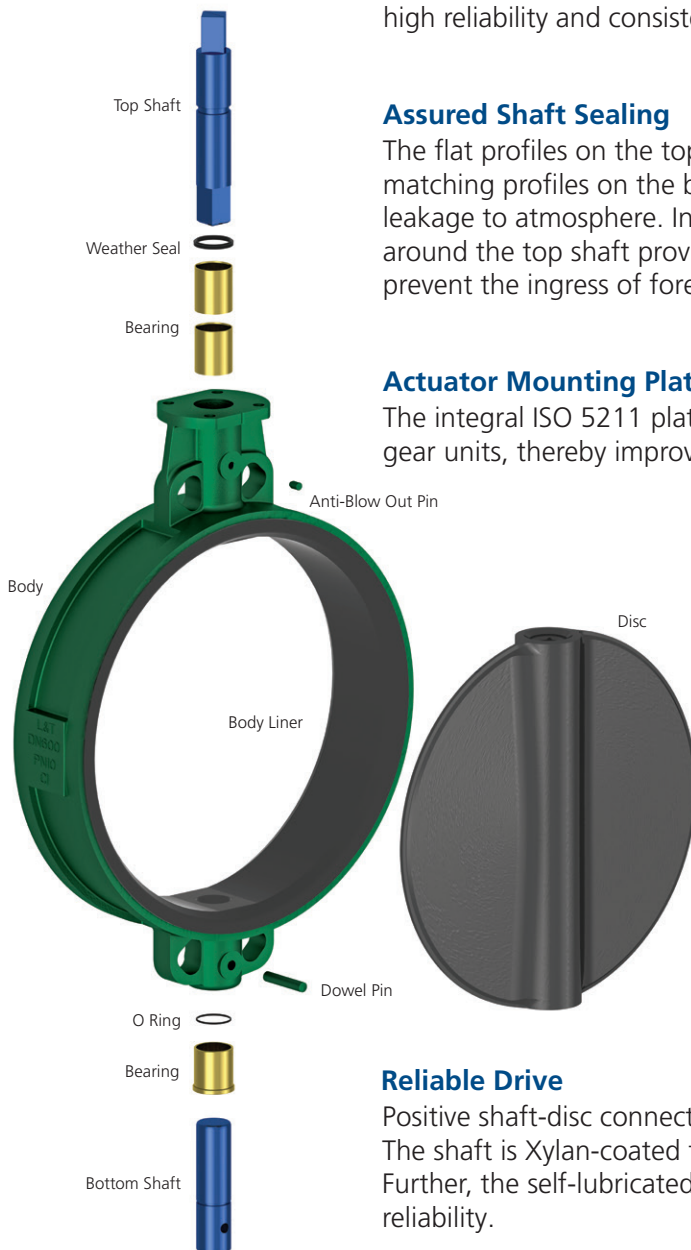
The discs are hydrodynamically designed to provide minimum resistance to flow and improved flow coefficients.

**Ease of Installation**

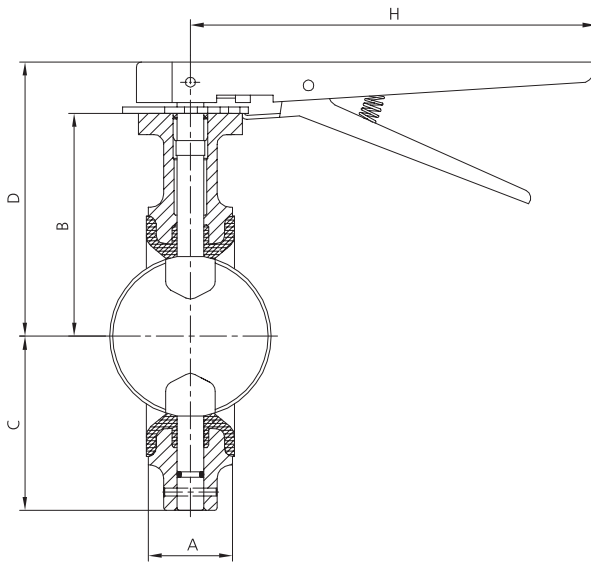
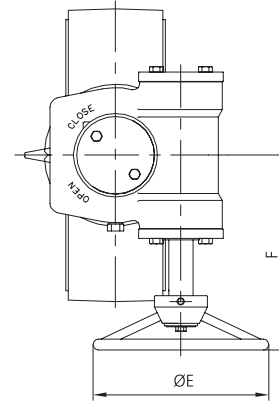
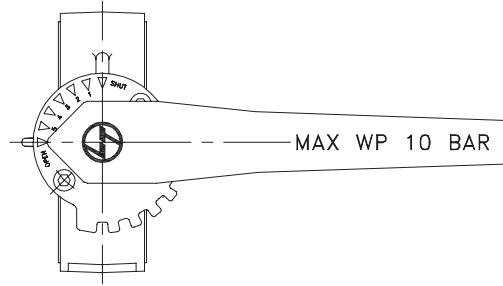
The integral liner of the valve acts as a gasket between the valve and companion flange. The liner being bonded to the body doesn't get stretched or damaged during installation unlike loose liners.

**Reliable Drive**

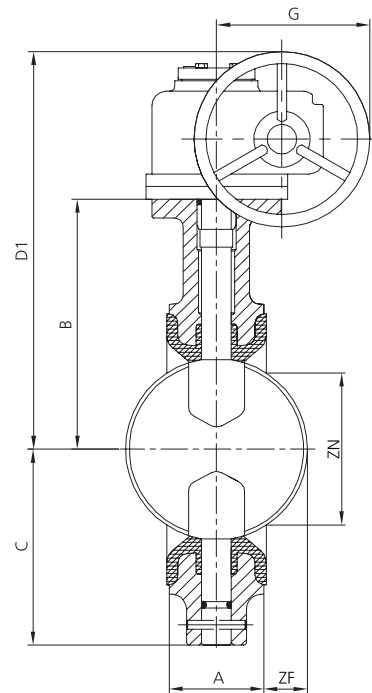
Positive shaft-disc connection with anti-blow out is a key Aquaseal feature. The shaft is Xylan-coated to reduce friction and improve wear resistance. Further, the self-lubricated bearings reduce the torque and increase valve reliability.



## Aquaseal 10 Integrally-moulded Butterfly Valve - PN 10



DN 50 to DN 300

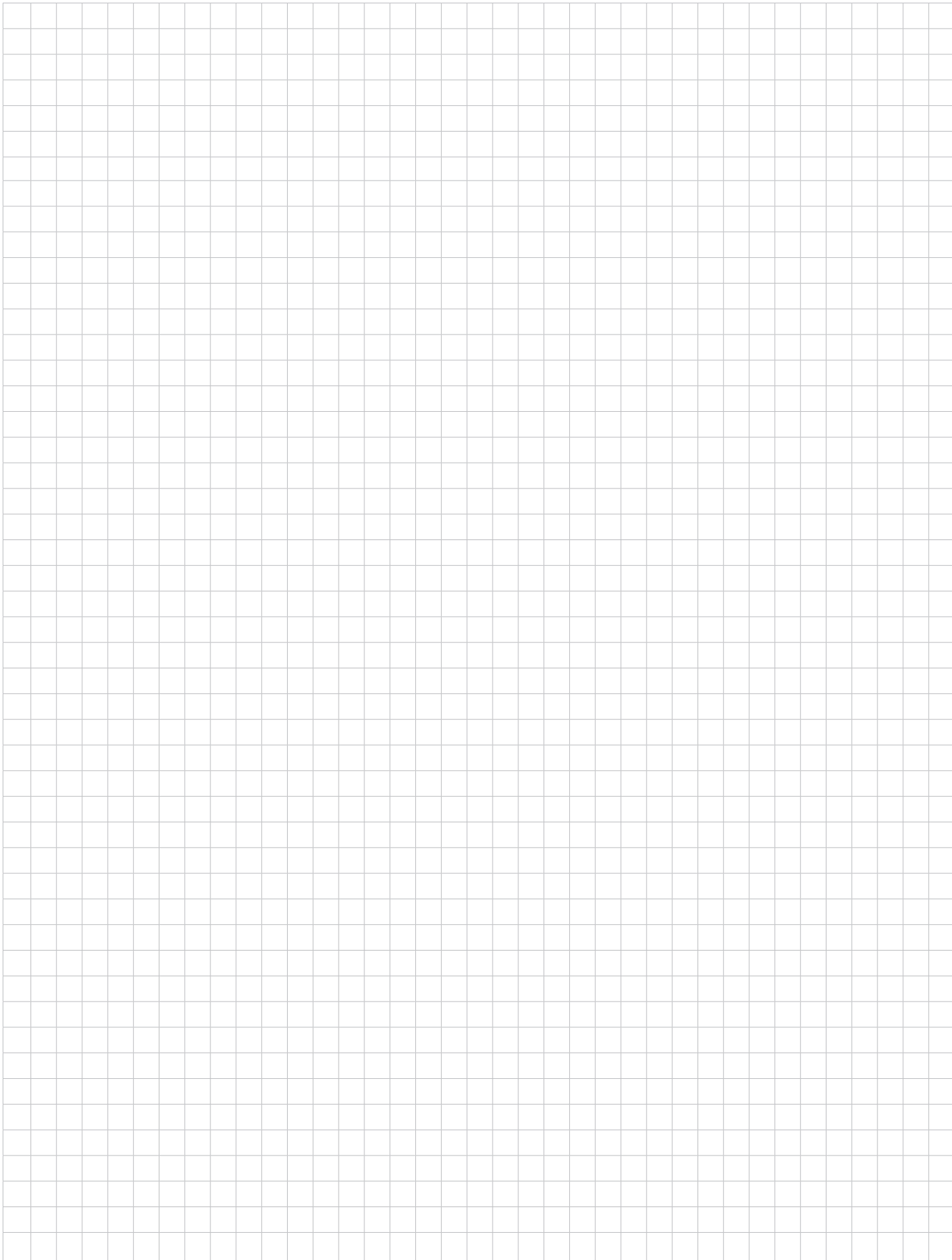


DN 50 to DN 600

### Dimensions - PN 10

Valve Size		A	B	C	D	D1	E	F	G	H	ZN	ZF	Weight	
NPS	DN												FC Lever	Gear Unit
2	50	43	99	65	129	228	152	163	132	176	27	4	2.5	11
2½	65	46	110	78	140	239	152	163	132	176	47	10	3	11
3	80	46	116	85	146	245	152	163	132	176	63	16	3	12
4	100	52	134	105	164	263	152	163	132	268	83	23	5	14
5	125	56	164	118	194	293	152	163	132	268	107	32	7	15
6	150	56	177	144	207	306	152	163	132	268	136	45	9	17
8	200	60	235	169	300	365	152	163	132	405	185	67	16	23
10	250	68	259	214	332	438	250	197	181	513	234	88	27	32
12	300	78	284	249	357	463	250	197	181	516	280	106	36	40
14	350	92	318	275		512	300	218	217		324	123		57
16	400	102	370	310		564	300	218	217		374	144		70
18	450	114	410	336		604	300	218	217		423	166		89
20	500	127	448	362		642	300	218	217		475	183		129
24	600	154	510	430		704	300	218	217		573	220		170

All dimensions in mm and weights in kg



## Aquaseal 16 Integrally-moulded Butterfly Valve - PN 16



Aquaseal 16 Integrally-moulded Butterfly Valve sets a new benchmark in performance for butterfly valves. The versatile valve is offered in a variety of elastomer-disc combinations to address myriad process requirements. The highly reliable butterfly valve has successfully completed over 10,000 cycles at its rated pressure.

Available in sizes from 50 mm (2") to 900 mm (36"), the valve is available in Cast Iron, SG Iron and carbon steel, in a variety of body styles, materials and actuation options. The body seat of Aquaseal16 Butterfly Valve is vulcanised insitu onto the body, which provides longer life and superior performance when compared to valves with loose liners.

### Compliance Standards

Parameter	Standard
Valve Design	EN 593 (BS 5155), API 609, MSS SP-67
Pressure Testing	EN 12266 Part 1&2, API 598, ISO 5208
End Connection	Wafer Flangeless, Lugged (EN 1092), ASME B16.42 & ASME B16.5 Class150/ BS 4504 PN 16
Face-to-Face	EN 558 Series 20 (For 350mm - EN 558 series 25)/ API 609 Cat A, MSS SP-67 (Narrow Body), ISO 5752 (Short)

### Materials of Construction

Components	Materials
Body	Cast Iron IS 1561 EN GJL-250, SG Iron to EN 1563-400/ 18, CS to A 216 Gr. WCB
Seat/ Liner	Nitrile Rubber, EPDM, Viton
Disc	SG Iron to EN 1563-400/ 18 with Nylon-coating, CF8, CF8M to A 351, AB2 to IS EN 1982, CF3M
Stem	ASTM A479 Type 410 with Xylan® Coating, 17-4 Ph
Bearing	Acetal, PTFE, Phosphor Bronze

### Pressure Rating

Rated Working Pressure (bar)	16
Shell Test Pressure (bar)	24
Seat Test Pressure (bar)	17.6

Valves in other materials available on demand



**Longer Life**

The strength of the vulcanised liner as well as its strong bonding with the body ensure that it doesn't get deformed and torn by the disc during valve operations. Further, friction during operations is minimised owing to the smooth liner surface. The strong seat and reduced friction greatly enhance service life of the valve.

**Tight Sealing, and Consistent Low Torque**

Bubble-tight sealing is obtained by the tight interference fit between liner and disc. The insitu moulded seat does not deform with age, and hence the operating torque stays low and consistent during the entire life cycle of the valve. High reliability and consistent torque make Aquaseal 16 the ideal valve for actuated systems.

**Assured Shaft Sealing**

The flat profiles on the top and bottom of Aquaseal Plus disc engage with matching profiles on the body liner, and the large area of contact prevents leakage to atmosphere. Integrally moulded O-Ring that compresses around the blowout-proof shaft provide a secondary seal.

**Actuator Mounting Platform**

The integral ISO 5211 platform facilitates direct mounting of actuators and gear units, thereby improving system reliability and efficiency.

**Enhanced Reliability**

The rugged body is designed to withstand pipeline stresses and vibrations. Further, enhanced liner thickness assures reliable performance over an extended service. Reinforcements are provided on Aquaseal 16 disc also.

**Lower Torque, Longer Life**

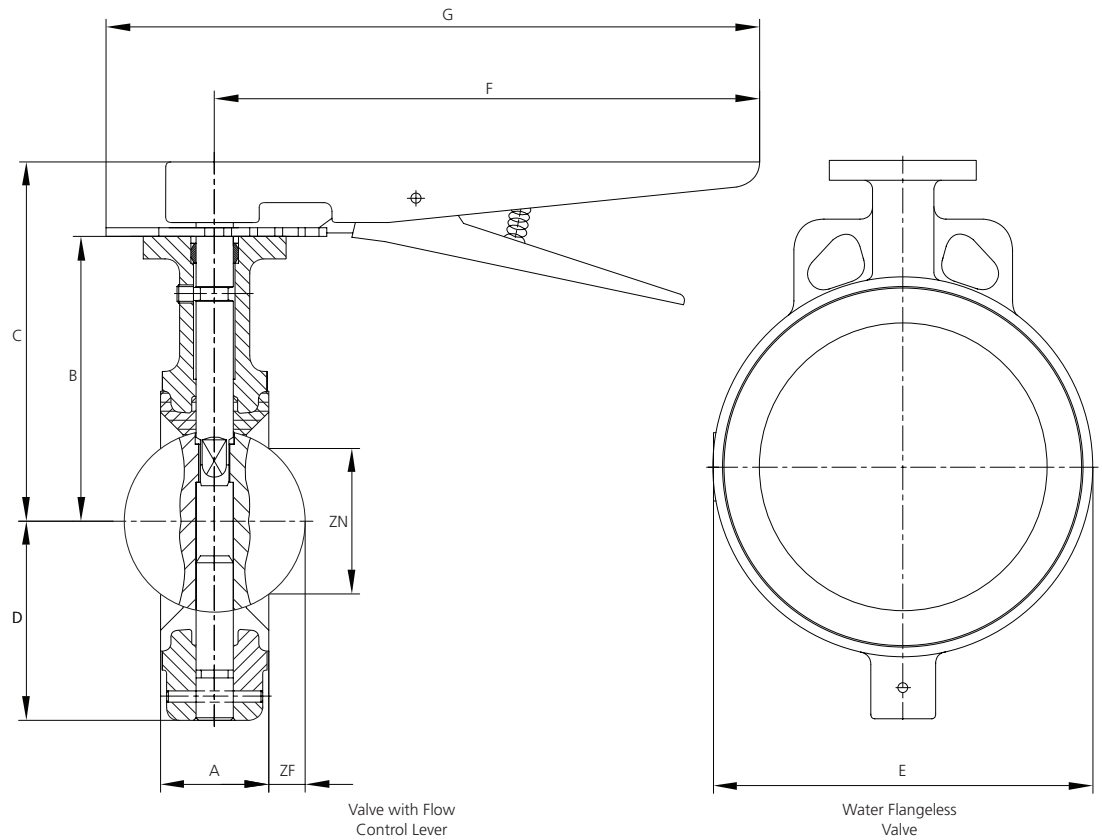
The Aquaseal 16 disc is profiled for smoother flow. Further the coating/ encapsulation of Nylon and EPDM on the disc helps to reduce torque and prevent disc damage.

**Reliable Drive**

In Aquaseal 16 a two-piece shaft is employed for closer control and smooth operation. The shaft is Xylan-coated to reduce friction and improve wear resistance. While the square shaft provides positive drive, the bottom shaft acts as a pivot for operational ease.

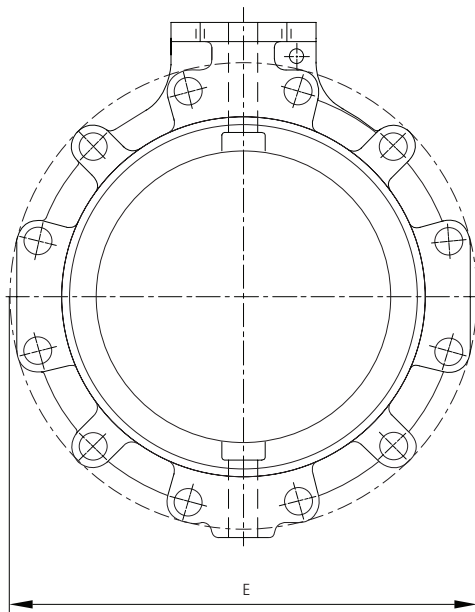


## Aquaseal 16 Integrally-moulded Butterfly Valve - PN 16 (Wafer & Lugged)

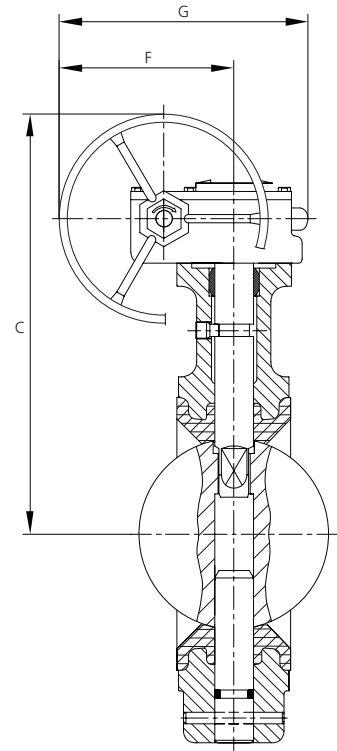


Valve Size		A	B	C			D	E	
				Flow Control Lever	Standard Gear Unit	Heavy Duty Gear Unit		Wafer Flangeless	Wafer Lugged
NPS	DN								
2	50	43	99	129	277	-	65	96	158
2½	65	46	110	140	288	-	78	105	180
3	80	46	116	146	294	-	85	123	190
4	100	52	134	164	312	-	105	157	216
5	125	56	164	194	342	-	118	180	255
6	150	56	177	207	355	-	144	212	280
8	200	60	235	300	428	450	169	262	345
10	250	68	259	332	452	476	214	322	405
12	300	78	284	357	477	501	249	373	485
14	350	92	318	-	510	535	304	430	530
16	400	102	370	-	-	587	340	481	600
18	450	114	409	-	-	790	408	524	650
20	500	127	441	-	-	828	430	583	710
24	600	154	501	-	-	889	500	685	820

All dimensions in mm and weights in kg



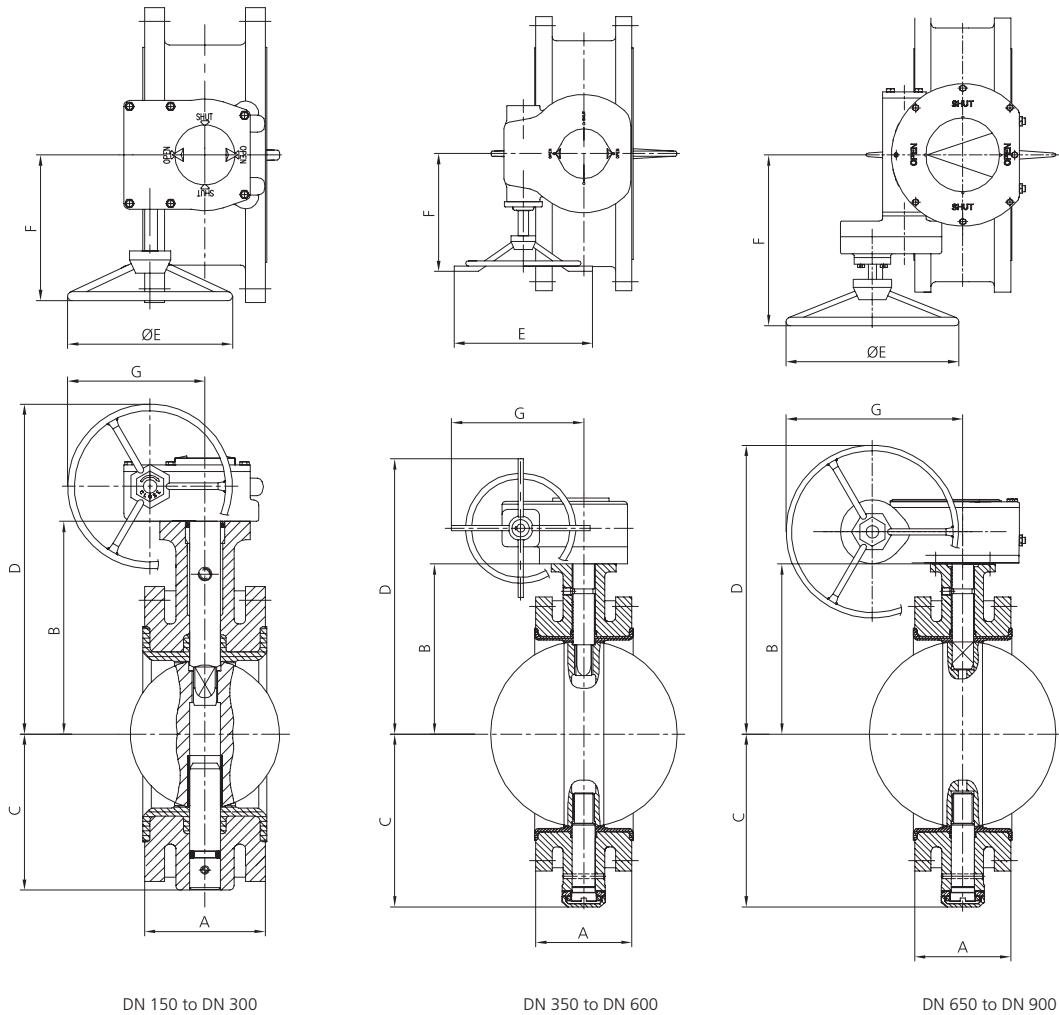
Water  
Lugged Valve



Valve with  
Gear Unit

Flow Control Lever	F		Flow Control Lever	G		ZN	ZF	Weight				
	Standard Gear Unit	Heavy Duty Gear Unit		Standard Gear Unit	Heavy Duty Gear Unit			FC Lever	Standard Gear Unit		Lugged	Lugged
									Wafer	Wafer		
176	181	-	216	242	-	24	4	3	4	11	12.5	
176	181	-	216	242	-	46	10	3.5	5	11.5	13	
176	181	-	216	242	-	62	16	4	8	12	16	
268	181	-	308	242	-	82	23	6	10.5	14	18.5	
268	181	-	308	242	-	107	32	7	11.5	15	20	
268	181	-	308	242	-	135	45	9.5	14.5	17.5	22.5	
405	217	255	470	290	375	184	67	18	29.5	25	36	
513	217	255	610	290	375	234	88	30	44	35	48.5	
516	217	255	612	290	375	279	106	41	61	45	66	
-	217	255	-	290	375	324	123	-	-	72	106	
-	-	255	-	-	375	374	144	-	-	113	156	
-	-	437	-	-	552	423	163	-	-	162	206	
-	-	437	-	-	552	475	183	-	-	189	264	
-	-	437	-	-	552	573	220	-	-	270	362	

## Aquaseal 16 Integrally-moulded Butterfly Valve - PN 16 (Flanged)



DN 150 to DN 300

DN 350 to DN 600

DN 650 to DN 900



### Dimensions (ASME B16.5)

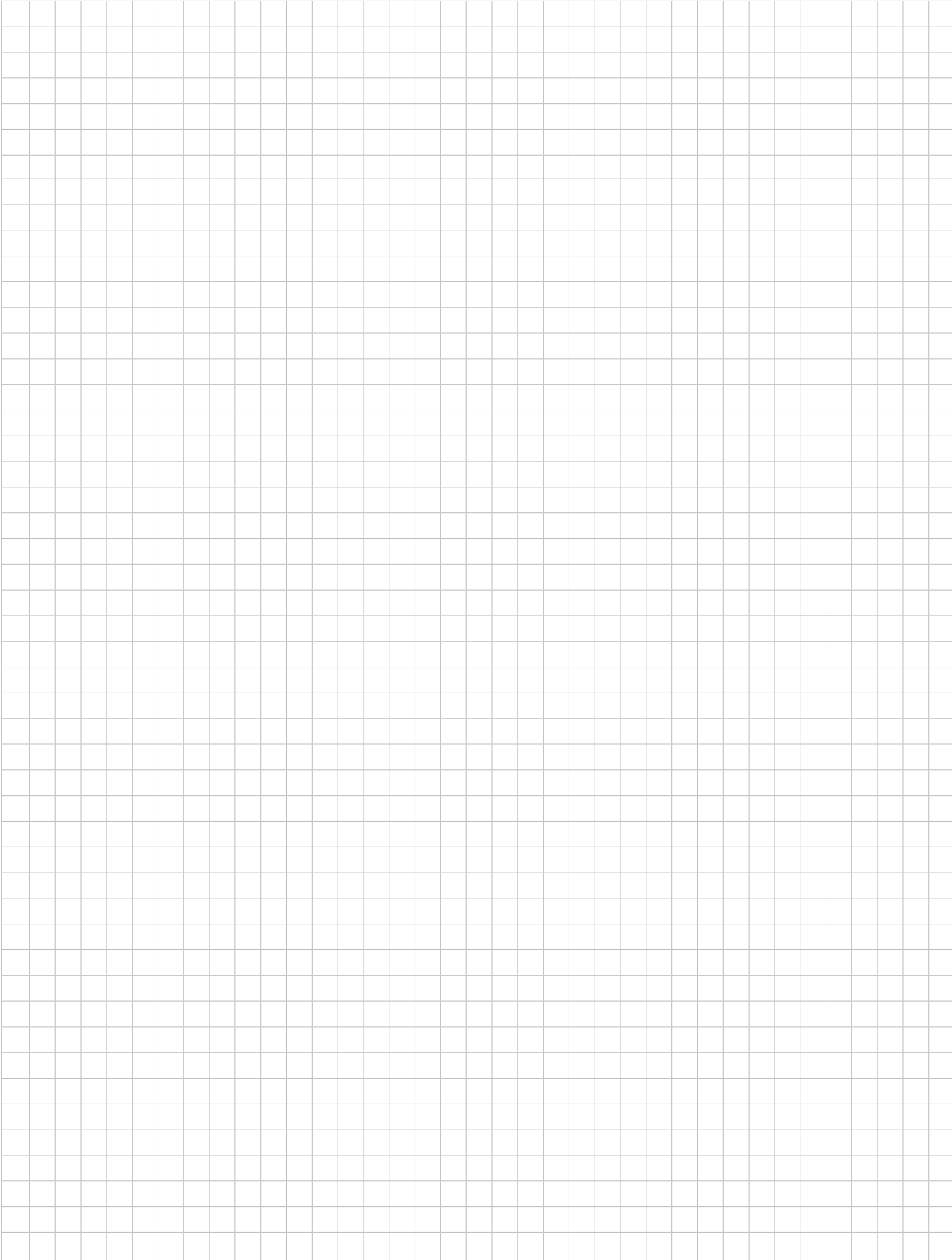
Valve Size		A	B	C	D	E	F	G	Weight
NPS	DN								
6	150	140	177	144	306	175	163	132	35
8	200	152	235	169	429	300	218	217	52
10	250	165	259	214	453	300	218	217	66
12	300	178	284	249	478	300	218	217	106
14	350	190	318	342	512	300	218	217	150
16	400	216	370	377	587	300	271	255	215
18	450	222	410	445	788	578	338	437	225
20	500	229	440	477	820	578	338	437	278
24	600	267	500	547	880	578	338	437	370

### Dimensions (B16.47 Series A & B or AWWA C207 Class E)

Valve Size		A	B	C	D	E	F	G	Weight <sup>1</sup>	Weight <sup>2</sup>
NPS	DN									
26	650	292	540	587	890	500	510	513	550	450
28	700	292	600	661	950	500	510	513	680	660
30	750	318	625	686	975	500	510	513	840	720
32	800	318	670	750	1120	700	510	613	965	800
36	900	330	720	785	1170	700	510	613	1180	1075

<sup>1</sup>ASME B16.47 Series 'A' & AWWA C207 Class E, <sup>2</sup>ASME B16.47 Series 'B'

All dimensions in mm and weights in kg



## Aquaseal Plus Integrally-moulded Butterfly Valve - Class 150



Aquaseal Plus Class 150 Integrally-moulded Butterfly Valve is a second generation valve developed to address requirements of modern process, utility and HVAC systems that demand high performance at higher pressures. The highly reliable butterfly valve has successfully completed over 10,000 cycles at its rated pressure.

Available in sizes from 50 mm (2") to 900 mm (36"), the valve is offered in SG Iron and carbon steel, in a variety of body styles, materials and actuation options. The body seat of Aquaseal Plus Butterfly Valve is vulcanised insitu onto the body, which provides longer life and superior performance when compared to valves with loose liners.

### Compliance Standards

Parameter	Standard
Valve Design	EN 593 (BS 5155), API 609 Cat A, MSS SP-67
Pressure Testing	EN 12266 Part 1&2, API 598, ISO 5208
End Connection	Wafer Flangeless, Lugged (EN 1092), ASME B16.42 & ASME B16.5 Class150, BS 4504 PN 10/16, ASME B 16.47 Series A & B, AWWA C 207 Class E
Face-to-Face	EN 558 Series 20 (For 350mm - EN 558 series 25), API 609 Cat A, MSS SP-67 (Narrow Body), ISO 5752 (Short)

### Materials of Construction

Components	Materials
Body	SG Iron EN 1563-400/ 18, Carbon Steel A 216 Gr. WCB
Seat/ Liner	Nitrile Rubber, EPDM
Disc	SG Iron EN 1563-400/ 18 with Nylon-coating, Stainless Steel A351 CF8, CF8M to A 351, CF3M, AB2
Shaft	ASTM A479 Type 410 with Xylan® Coating, 17-4 Ph
Bearing	Acetal, PTFE, Phosphor Bronze

### Pressure Rating

Rated Working Pressure (bar)	20
Shell Test Pressure (bar)	30
Seat Test Pressure (bar)	22

Valves in other materials available on demand.

**Longer Life**

The strength of the vulcanised liner as well as its strong bonding with the body ensure that it doesn't get deformed and torn by the disc during valve operations. Further, friction during operations is minimised owing to the smooth liner surface. The strong seat and reduced friction greatly enhance service life of the valve.

**Tight Sealing, and Consistent Low Torque**

Bubble-tight sealing is obtained by the tight interference fit between liner and disc. The insitu moulded seat does not deform with age, and hence the operating torque stays low and consistent during the entire life cycle of the valve. High reliability and consistent torque make Aquaseal Plus the ideal valve for actuated systems.

**Assured Shaft Sealing**

The flat profiles on the top and bottom of Aquaseal Plus disc engage with matching profiles on the body liner, and the large area of contact prevents leakage to atmosphere. Integrally moulded O-Ring that compresses around the blowout-proof shaft provide a secondary seal. An additional O-Ring which provides tertiary sealing is an Aquaseal Plus hallmark.

**Actuator Mounting Platform**

The integral ISO 5211 platform facilitates direct mounting of actuators and gear units, thereby improving system reliability and efficiency.

**Enhanced Reliability**

The rugged body is designed to withstand pipeline stresses and vibrations. Further, enhanced liner thickness assures reliable performance over an extended service. Reinforcements are provided on Aquaseal Plus disc also.

**Lower Torque, Longer Life**

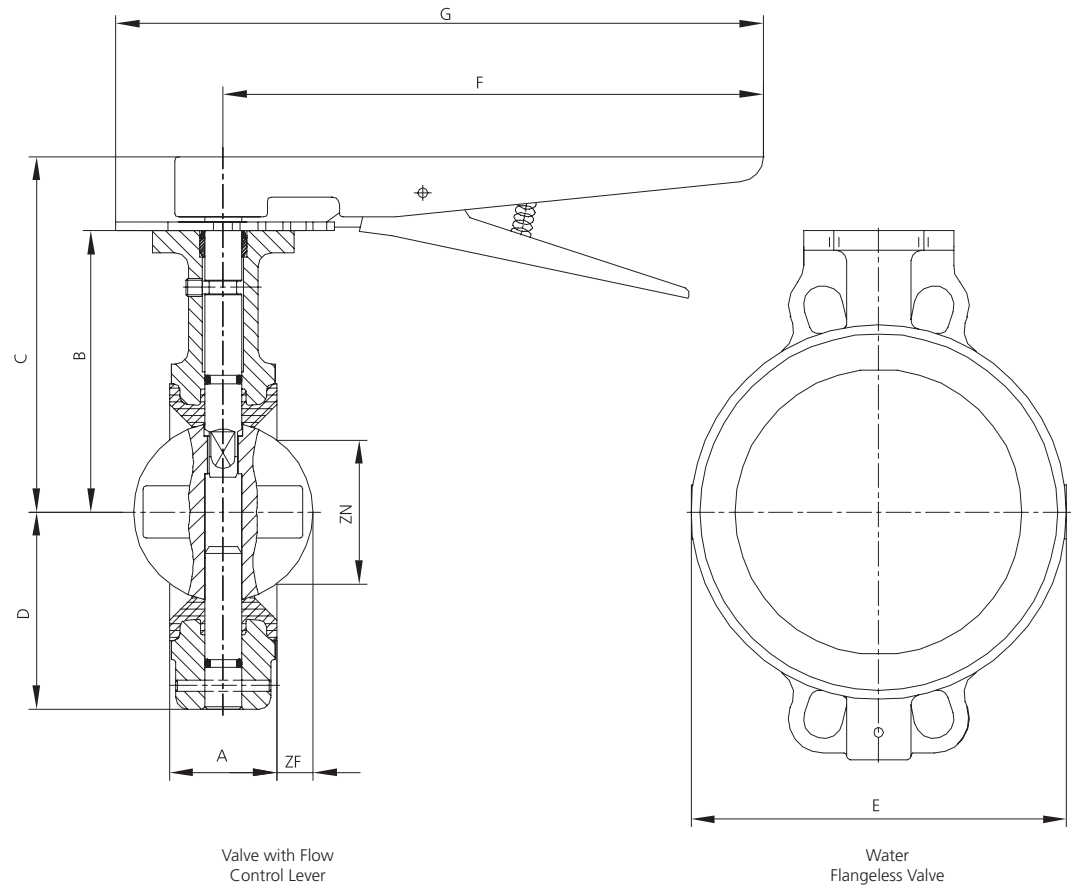
The Aquaseal Plus disc is profiled for smoother flow. Further the coating/ encapsulation of Nylon and EPDM on the disc helps to reduce torque and prevent disc damage.

**Reliable Drive**

In Aquaseal Plus a two-piece shaft is employed for closer control and smooth operation. The shaft is Xylan-coated to reduce friction and improve wear resistance. While the square shaft provides positive drive, the bottom shaft acts as a pivot for operational ease.



## Aquaseal Plus Integrally-moulded Butterfly Valve - Class 150 (Wafer & Lugged)

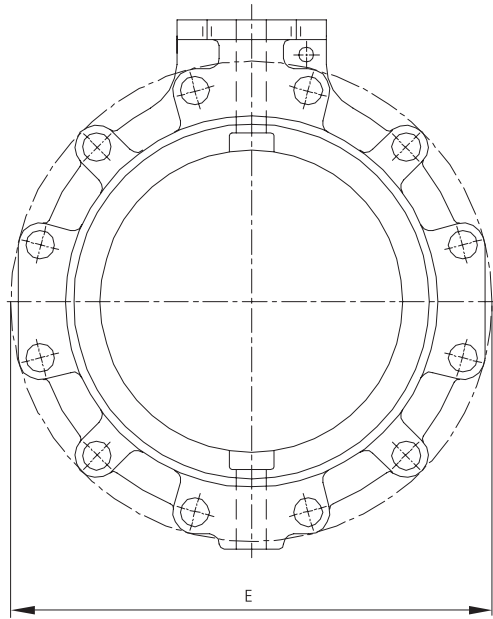


### Dimensions

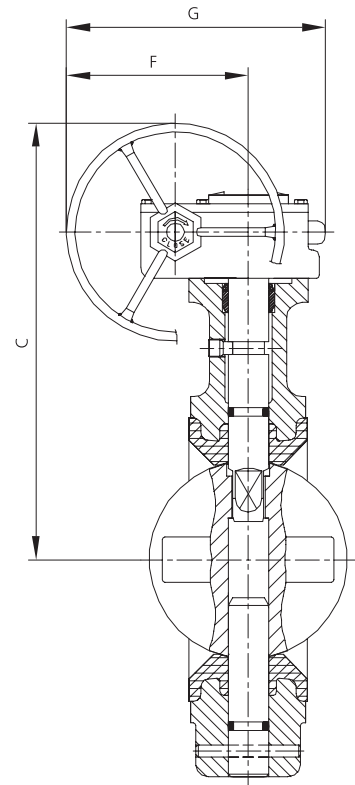
Valve Size		A	B	C			D	E	
				Flow Control Lever	Standard Gear Unit	Heavy Duty Gear Unit		Wafer Flangeless	Wafer Lugged
NPS	DN								
2	50	43	99	129	277		65	102	158
2½	65	46	110	140	288		78	112	180
3	80	46	117	147	294		85	127	190
4	100	52	135	165	312		105	162	216
5	125	56	164	194	342		118	192	255
6	150	56	177	207	355		144	212	280
8	200	60	235	302	428	450	169	272	345
10	250	68	259	326	452	476	214	322	405
12	300	78	284	351	477	501	249	377	485
14	350	92	318		510	535	304	432	530
16	400	102	370			587	340	483	600
18	450	114	409			790	408	526	650
20	500	127	441			828	430	585	710
24	600	154	501			889	500	687	820

All dimensions in mm and weights in kg





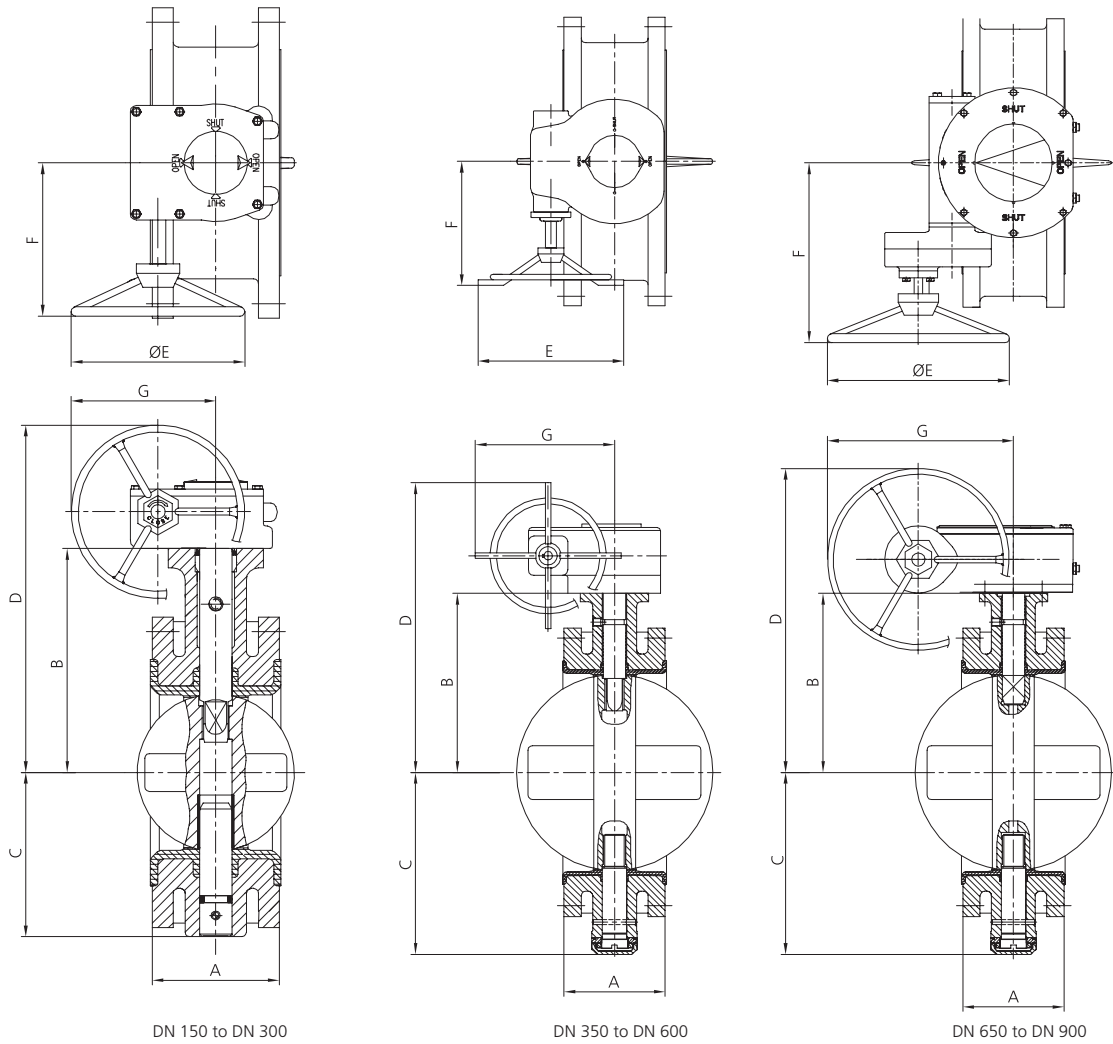
Water  
Lugged Valve



Valve with  
Gear Unit

Flow Control Lever	F		Flow Control Lever	G		ZN	ZF	Weight			
	Standard Gear Unit	Heavy Duty Gear Unit		Standard Gear Unit	Heavy Duty Gear Unit			Flow Control Lever		Standard Gear Unit	
								Wafer	Lugged	Wafer	Lugged
268	181		320	242		24	4	4	5	12	13
268	181		320	242		46	10	5	7	13	15
268	181		320	242		62	16	6	9	14	17
268	181		320	242		82	23	8	11	16	19
268	181		320	242		107	32	11	15	19	23
268	181		320	242		135	45	13	19	21	27
508	217	255	620	290	375	184	67	27	37	29	38
508	217	255	620	290	375	234	88	36	49	38	50
508	217	255	620	290	375	279	106	49	68	50	70
	217	255		290	375	324	123			95	120
		255			375	374	144			125	168
		437			552	423	163			160	215
		437			552	475	183			215	300
		437			552	573	220			320	410

## Aquaseal Plus Integrally-moulded Butterfly Valve - Class 150 (Flanged)



### Dimensions (ASME B16.5)

Valve Size		A	B	C	D	E	F	G	Weight
NPS	DN								
6	150	140	177	144	306	175	163	132	35
8	200	152	235	169	429	300	218	217	52
10	250	165	259	214	453	300	218	217	66
12	300	178	284	249	478	300	218	217	106
14	350	190	318	342	512	300	218	217	150
16	400	216	370	377	587	300	271	255	215
18	450	222	410	445	788	578	338	437	225
20	500	229	440	477	820	578	338	437	278
24	600	267	500	547	880	578	338	437	370



### Dimensions (B16.47 Series A & B or AWWA C207 Class E)

Valve Size		A	B	C	D	E	F	G	Weight <sup>1</sup>	Weight <sup>2</sup>
NPS	DN									
26	650	292	540	587	890	500	510	513	550	450
28	700	292	600	661	950	500	510	513	680	660
30	750	318	625	686	975	500	510	513	840	720
32	800	318	670	750	1120	700	510	613	965	800
36	900	330	720	785	1170	700	510	613	1180	1075

<sup>1</sup>ASME B16.47 Series 'A' & AWWA C207 Class E, <sup>2</sup>ASME B16.47 Series 'B'

All dimensions in mm and weights in kg

## Aquaseal 25 Integrally-moulded Butterfly Valve - PN 25



Aquaseal 25 Integrally-moulded Butterfly Valve is a customised second generation valve that addresses requirements of higher pressures systems.

The wafer-type valve is available in sizes from 50 mm (2") to 200 mm (8") - in SG Iron and carbon steel, with nitrile rubber and EPDM elastomer options. The liners of Aquaseal 25 Butterfly Valve is vulcanised insitu onto the body, which provides longer life and superior performance when compared to valves with loose liners.

### Compliance Standards

Parameter	Standard
Valve Design	EN 593 (BS 5155), API 609 Cat A, MSS SP-67
Pressure Testing	EN 12266 Part 1&2, API 598, ISO 5208
End Connection	Wafer Flangeless, Lugged (EN 1092), ASME B16.42 & ASME B16.5 Class150, BS 4504 PN 10/16, ASME B 16.47 Series A & B, AWWA C 207 Class E
Face-to-Face	EN 558 Series 20, API 609 Cat A, MSS SP-67 (Narrow Body), ISO 5752 (Short)

### Materials of Construction

Components	Materials
Body	SG Iron EN 1563-400/ 18, Carbon Steel A 216 Gr. WCB
Seat/ Liner	Nitrile Rubber
Disc	SG Iron EN 1563-400/ 18 with Nylon-coating, Stainless Steel A351 CF8, CF8M to A 351
Shaft	ASTM A479 Type 410
Bearing	Acetal, PTFE, Phosphor Bronze

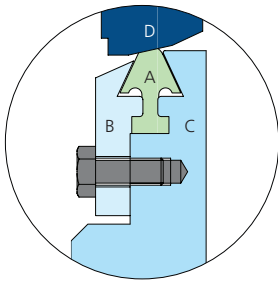
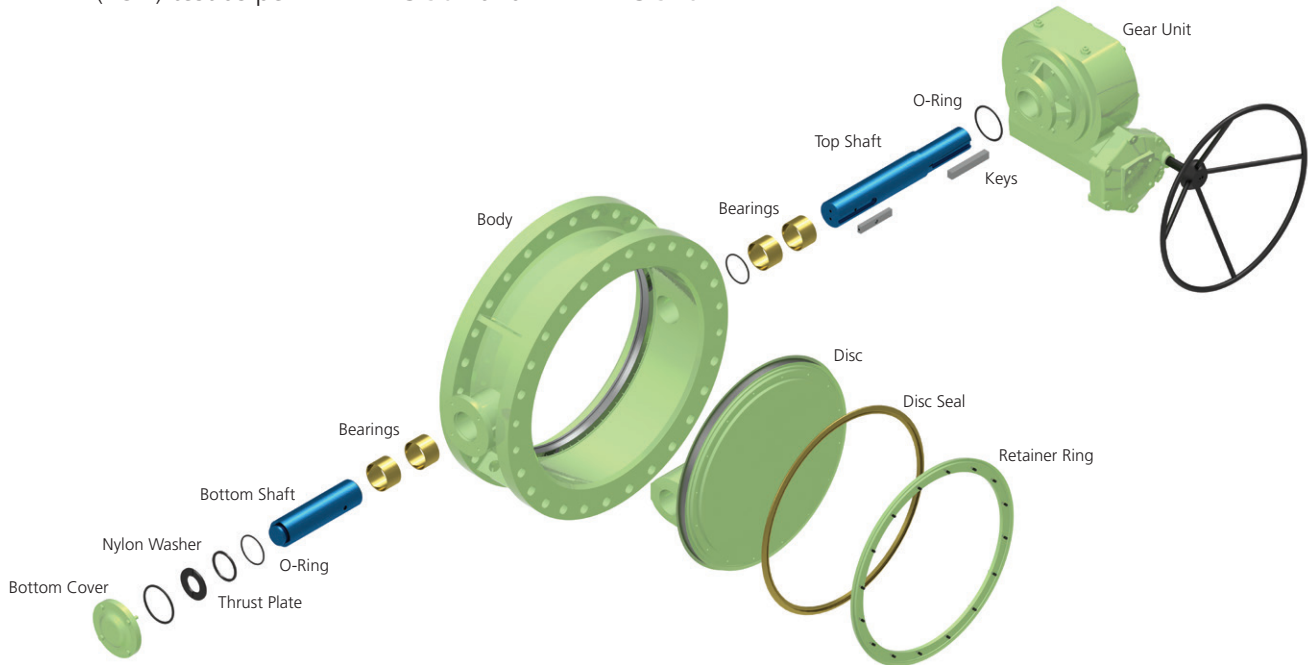
### Pressure Rating

Rated Working Pressure (bar)	25
Shell Test Pressure (bar)	37.5
Seat Test Pressure (bar)	27.5

Valves in other materials available on demand.

## Aquaseal Max Large-size Fabricated Steel Butterfly Valve

Aquaseal Max is a fabricated steel butterfly valve developed as an ideal alternate for cast iron butterfly and sluice valves in water distribution systems. The highly reliable valve also finds application in power plants, utility and fire water lines, and HVAC systems. Customised Aquaseal Max can be used to handle air, gases and vacuum services. The valve has successfully undergone Proof of Design (POD) test as per AWWA C 504 and AWWA C 516.



### Self-energising Disc Seal

The most unique feature of Aquaseal Max is Autoseal (A), a self-energising disc seal that performs consistently over a wide range of pressures without any adjustment. A retainers ring (B) bolted directly to the disc (C) holds the resilient Autoseal in place. In closed position, line pressure forces Autoseal against the body seat (D) to obtain bi-directional bubble-tight sealing.

### Benefits of Autoseal

- High integrity sealing, Aquaseal Max is suited for vacuum services
- Lower break torque - Saving in valve automation costs
- Easy to replace at site

### Lighter and Stronger Construction

Aquaseal Max body, fabricated from carbon steel plates, has better mechanical and structural properties compared to a cast iron body of the same size and pressure rating. The body also handles piping stresses and misalignments better. Being lighter, the valve is easier to handle, and requires less piping supports, and thus reduces valve installation cost considerably.

### Assured Sealing to Atmosphere

Double O-Rings on the shaft provide reliable sealing to atmosphere. Unlike gland packing, this arrangement does not require any maintenance.

### Lower Torque, Longer Life

The shaft is offset from the seat plane to provide uninterrupted seating surface through 360 degrees. The offset also ensures that disc loses contact with the seat at crack open, and thereby reduces friction and operating torque.

### Maintenance-free Bearings

Self-Lubricated bearings are provided on the shafts.

## Compliance Standards

Parameter	Standard
Valve Design	AWWA C 504, AWWA C 516, EN 593, ISO 5752
Pressure Testing	EN 12266 Part 1&2, AWWA C 504, AWWA C 516, ISO 5208
Flange Drilling	AWWA C 207, BS 4504 EN 1092-1, ASME B 16.5 & 16.47 Class 150, IS 6392
Face-to-Face	AWWA C 504, AWWA C 516, EN 558

## Materials of Construction

Components	Materials
Body	Carbon Steel IS 2062 Gr. B, A 36, A 516 Gr. 60/70
Disc	Carbon Steel IS 2062 Gr. B, A 36, A 516 Gr. 60/70
Retainer	Carbon Steel IS 2062 Gr. B, A 36, A 516 Gr. 60/70
Top & Bottom Shafts	Stainless Steel A 276 Type 410/ 316/ 304
Body Seat	Stainless Steel A 240/182 Type 304/ 304L/ 316
Disc Seal	Nitrile Rubber, EPDM, Viton
Bearings	Steel Backed PTFE, SS Backed PTFE, Phosphor Bronze
Thrust Plate	Cast Iron IS 210 Gr. FG260
Bottom Cover	Cast Iron, Carbon Steel

Valves in other materials available on demand.

## Specials:

- EPDM/ Ebonite-lined valves for sea water applications
- Dry shaft for nuclear applications
- Special sealing systems for vacuum services
- Butt-weld ends



## Ordering Information

Type	Operator	Body Material	Disc Material	Shaft Material	Seal Material	Options
TB	G - Gear Operated	2 - IS 2062	2 - IS 2062	4 - SS 410	N - Nitrile Rubber	Eb - Ebonite Lining
	E - Electric	4 - SS 304	4 - SS 304	5 - SS 304	E - EPDM	LA - Locking Arrangement
	A - Pneumatic Double Acting	6 - SS 316	6 - SS 316	6 - SS 316	V - Viton	FS&ES - Floor Stand & Extn. Spindle
	H - Pneumatic Spring Return	7 - A 516 Gr. 70	7 - A 516 Gr. 70			CW - Chain Wheel for GU
	Y - Hydraulic					

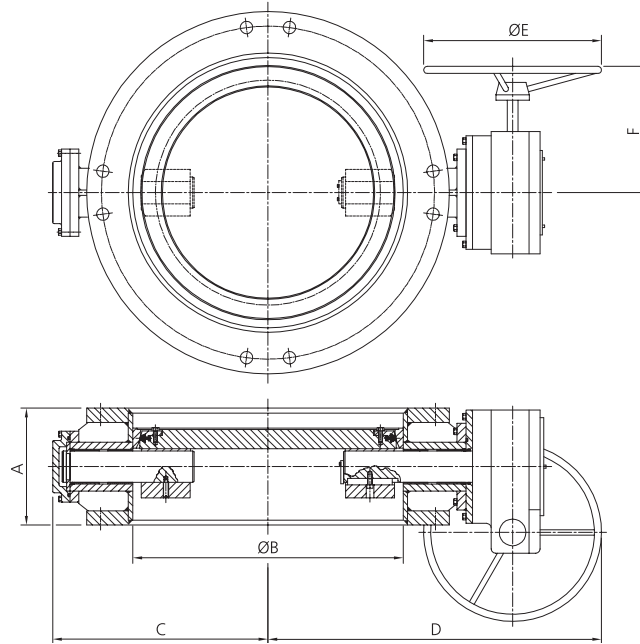
## Aquaseal Max Large-size Fabricated Steel Butterfly Valve

Aquaseal Max is available in sizes up to 120" (3000 mm) in PN 6, PN 10 and PN 16 pressure ratings. Since the valves are of welded construction, the valves can be offered in intermediate sizes to suit customer requirements. Aquaseal Max welding procedures meet ASME Section IX requirements, and welding is carried out by experienced and qualified welders. All longitudinal welds in the valve are butt-welded and subjected to 100% radiography. The acceptance criteria for radiographs are as per ASME Section VIII, Division I.

### Dimensions - PN 6

Valve Size		A	B	C	D	E	F	Weight
NPS	DN							
6	150	127	154	175	240	300	270	72
8	200	152	210	225	420	300	270	76
10	250	203	258	245	445	300	270	100
12	300	203	308	270	460	300	270	105
14	350	203	358	315	505	300	270	130
16	400	203	408	340	530	300	270	150
18	450	203	458	365	555	300	270	170
20	500	203	508	390	630	400	315	200
24	600	203	608	440	735	400	290	270
26	650	305	658	465	750	400	290	360
28	700	305	708	490	770	400	290	410
30	750	305	758	585	995	650	415	450
32	800	305	808	615	1020	650	415	530
36	900	305	915	680	1025	600	500	860
40	1000	305	1010	750	1150	600	500	1035
42	1050	305	1060	780	1125	600	500	1110
44	1100	381	1110	790	1360	650	620	1290
48	1200	381	1210	850	1470	650	620	1550
50	1250	381	1260	890	1505	650	620	1700
52	1300	381	1310	910	1530	650	620	1850
54	1350	381	1360	955	1575	650	620	2200
56	1400	381	1410	950	1570	650	620	2480
60	1500	381	1510	1035	1655	650	620	2745
64	1600	457	1610	1090	1665	800	610	3250
72	1800	457	1810	1200	1765	800	610	4000
78	1950	610	1960	1260	1825	900	650	4600
80	2000	610	2010	1325	2050	900	650	5000
84	2100	610	2110	1385	2150	900	650	5400
88	2200	610	2210	1400	2190	900	650	6100
92	2300	610	2310	1590	2325	900	650	6400
94	2350	610	2360	1615	2350	900	650	6730
96	2400	711	2410	1620	2405	1000	820	8950
100	2500	762	2510	1625	2410	1000	820	9300
102	2550	762	2560	1625	2410	1000	820	9600
104	2600	762	2610	1625	2410	1000	820	9750
106	2650	762	2660	1775	2560	1000	820	9900
108	2700	762	2710	1715	2500	1000	820	13200
110	2750	762	2760	1730	2515	1000	820	13520
112	2800	762	2810	1870	2655	1000	820	14840
116	2900	762	2910	2000	2820	1000	1020	16340
120	3000	813	3010	2125	2950	1000	1020	17840

All dimensions in mm and weights in kg. Please contact us for dimension details of valves in other sizes.



### Dimensions - PN 10

Valve Size		A	B	C	D	E	F	Weight
NPS	DN							
6	150	127	154	175	370	300	270	72
8	200	152	210	225	420	300	270	76
10	250	203	258	245	445	300	270	100
12	300	203	308	270	460	300	270	125
14	350	203	358	315	505	300	270	150
16	400	203	408	340	530	300	270	180
18	450	203	458	365	555	300	270	185
20	500	203	508	390	630	400	315	230
24	600	203	608	510	795	400	290	385
26	650	305	658	525	825	400	290	460
28	700	305	708	535	865	400	290	540
30	750	305	758	570	975	650	415	580
32	800	305	808	595	950	600	450	750
36	900	305	915	680	1075	700	515	1070
40	1000	305	1010	750	1205	700	515	1250
42	1050	305	1060	775	1240	700	515	1400
44	1100	381	1110	800	1420	650	620	1700
48	1200	381	1210	880	1500	650	620	1950
50	1250	381	1260	890	1810	650	620	2200
52	1300	381	1310	940	1560	650	620	2500
54	1350	381	1360	955	1575	650	620	2900
56	1400	381	1410	985	1605	650	620	3200
60	1500	381	1510	1040	1660	650	620	3600
64	1600	457	1610	1100	1670	800	610	3950
72	1800	457	1810	1190	1765	800	630	4300
78	1950	610	1960	1325	1985	900	650	4865
80	2000	610	2010	1350	2090	900	650	5200
84	2100	610	2110	1400	2110	900	650	5600
88	2200	610	2210	1500	2220	900	650	6400

### Dimensions - PN 16

Valve Size		A	B	C	D	E	F	Weight
NPS	DN							
6	150	140	154	202	395	300	270	76
8	200	152	210	235	430	300	270	80
10	250	203	258	265	460	300	270	110
12	300	203	308	290	470	300	270	140
14	350	203	358	315	505	300	270	185
16	400	216	408	370	560	300	270	200
18	450	222	458	385	665	400	270	250
20	500	229	508	390	670	400	270	300
24	600	267	608	510	795	400	290	430
26	650	280	658	530	835	650	415	500
28	700	292	708	545	1080	650	620	600
30	750	305	758	625	1150	650	620	700
32	800	318	808	650	1175	650	620	820
36	900	330	915	735	1355	650	620	1300
40	1000	410	1010	770	1305	650	620	1500
42	1050	425	1060	805	1335	650	620	1750
44	1100	440	1110	835	1360	650	620	1900
48	1200	470	1210	890	1430	650	620	2350
52	1300	500	1310	950	1485	650	620	2700
56	1400	530	1410	995	1405	650	620	3450
60	1500	560	1510	1040	1555	800	610	4400
64	1600	600	1610	1100	1605	800	610	5000
72	1800	670	1810	1200	1780	800	610	5500
80	2000	930	2010	1350	2090	900	650	6100

Face-to-face dimensions meet AWWA C504 for sizes DN 350 to DN 350, and DN 750. Valves in other sizes meet EN 558 Series 13.

All dimensions in mm and weights in kg. Please contact us for dimension details of valves in other sizes.

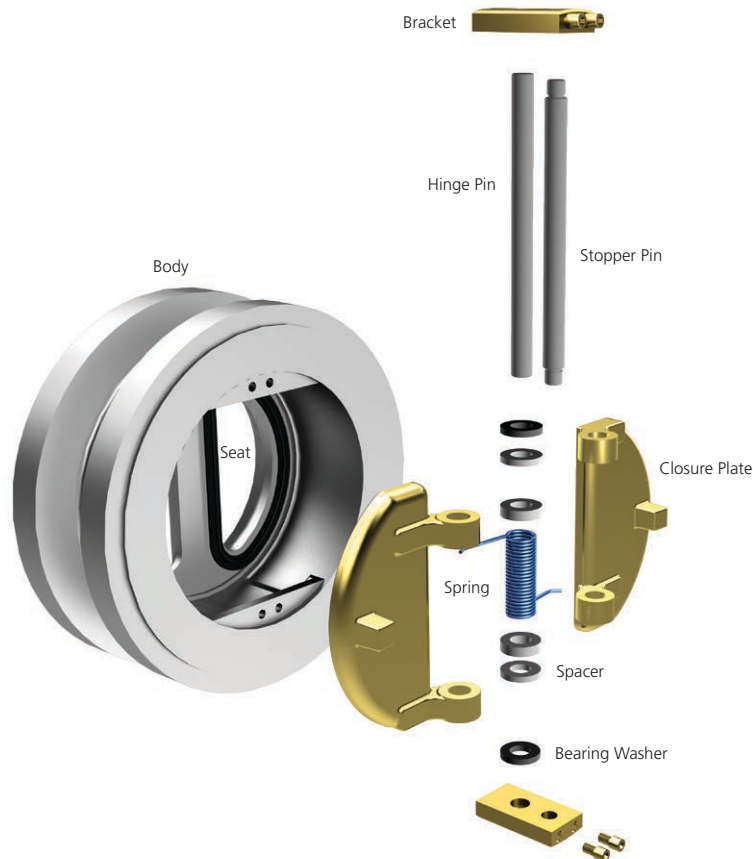
## Aquaseal Chek Dual-plate Check Valve

Aquaseal Chek Valve is a soft-seated dual-plate check valve that conforms to API 594. The valve with cast iron body is available in sizes 2" (50 mm) to 8" (200 mm), in PN 10, PN 16 and ASME Class 125 pressure ratings.



### Features & Benefits

- Patented retainer-less design - High integrity sealing, facilitates quick disassembly at site.
- Two independent seats - Consistent sealing even in uneven flow.
- Raised profile of the soft seat enhances sealing.
- Integrally moulded liner.
- Stopper pin prevents the discs from coming into contact with each other and thus prevents disc damage. The stopper pin also prevents spring failure by ensuring that the discs don't travel beyond the full-open position.
- For sizes 6" and above, lifting eyebolt option is provided.
- Drain connections provided on demand.



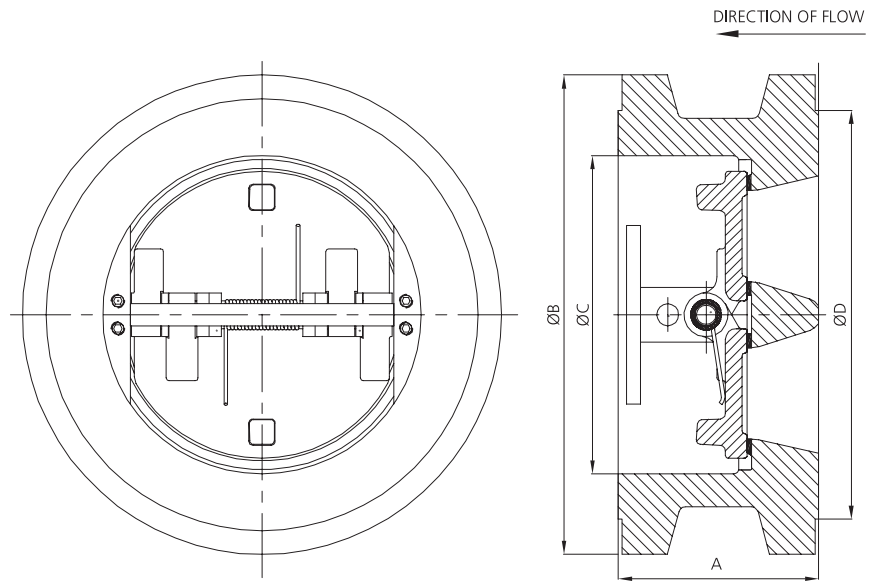


### Compliance Standards

Parameter		Standard
Valve Design		API 594
Pressure Testing	PN 10 & PN 16	EN 12266 Part 1
	Class 125	API 598
End Connection	PN 10 & PN 16	EN 1092
	Class 125	ASME B16.1
Face-to-Face	PN 10, PN 16 & Class 125	API 594

### Materials of Construction

Components	Materials
Body	Cast Iron EN1561 (BS 1452) Gr. 200
Seat	EPDM
Closure Plate	Stainless Steel A 217 Gr. CA15
Bracket	Stainless Steel A 240 Type 410
Hinge Pin	Stainless Steel A 276 Type 410
Stopper Pin	Stainless Steel A 276 Type 410
Bearing Washer	Stainless Steel A 276 Type 410
Spring	Stainless Steel 316
Spring Spacer	Stainless Steel A 276 Type 410
Set Screw	Stainless Steel A 276 Type 316
Identification Plate	Steel



### Dimensions

Valve Size		A	B	C	D	Weight
NPS	DN					
2	50	54	109	64	99	4
3	80	67	144	92	132	7
4	100	67	164	116	156	10
6	150	95	220	172	211	16
8	200	127	275	221	266	27

All dimensions in mm and weights in kg.  
Please contact us for dimension details of valves in other sizes.

## Aquaseal FabChek Fabricated Steel Check Valve

Aquaseal Fab Chek Fabricated Steel Check Valve compliments Aquaseal Max Large-size Fabricated Steel Butterfly in water distribution systems and power plants. The valve is fabricated from carbon steel plates, and body and disc seats are hard-faced using 13% Cr steel.

Smooth closure of the valve is ensured by using a counter weight. The valve can be supplied with hydraulic dash pot to prevent disc slamming and water hammer. Automated Fab Chek can also be used as combined shut-off and non-return valve on pump discharge lines.

The valve is available in PN 6, PN 10 and PN 16 pressure ratings, with flanged ends.



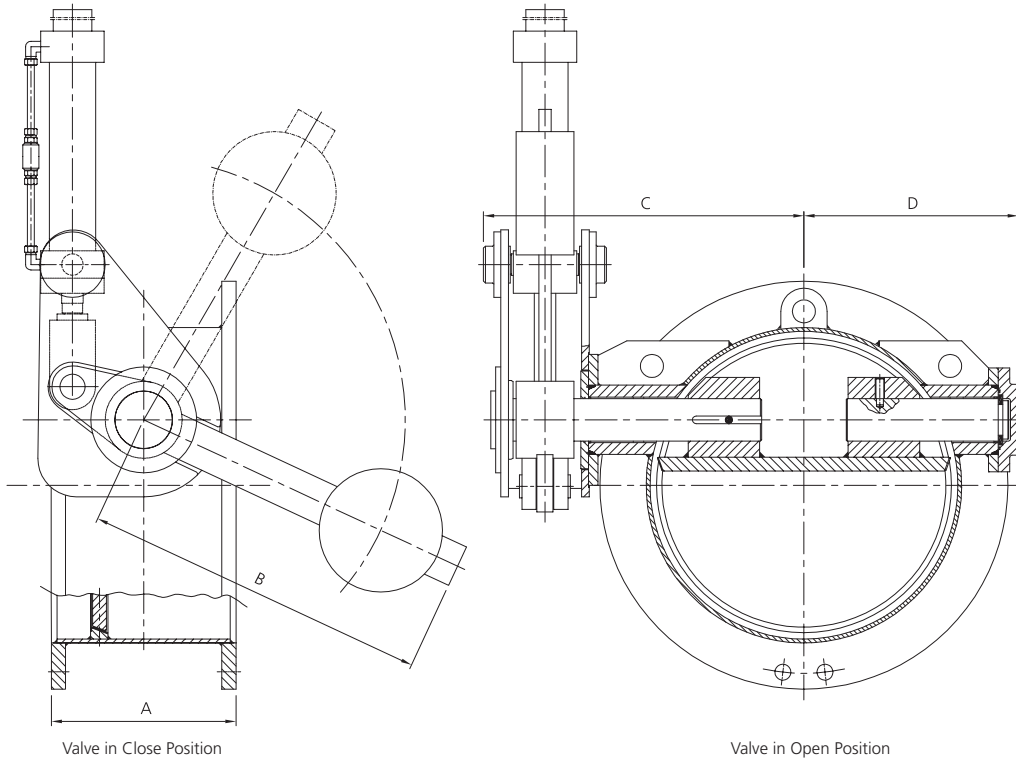
### Compliance Standards

Parameter	Standard
Valve Design	Manufacturer's Standard
Leakage Rate	EN 12266 Leakage Rate E
Face-to-Face	EN 558 Series 14
Flange Drilling	AWWA C 207, BS 4504 EN 1092-1, ASME B 16.5 & 16.47 Class 150, IS 6392

### Materials of Construction

Components	Materials
Body	Carbon Steel IS 2062 Gr. B with 13% Chromium Steel on Seating Surface
Disc	Carbon Steel IS 2062 Gr. B with 13% Chromium Steel on Seating Surface
Top Shaft	Stainless Steel A 276 Type 410
Bottom Shaft	Stainless Steel A 276 Type 410
Bearings	Phosphor Bronze
Bottom Cover	Cast Iron IS 210 Gr. FG 260 or Carbon Steel IS 2062 Gr. B

Valves in other materials available on demand.



### Dimensions - PN 10

Valve Size		A	B	C	D	Weight
NPS	DN					
12	300	270	400	375	240	210
14	350	290	510	480	275	300
16	400	310	540	510	305	380
18	450	330	540	550	355	420
20	500	350	610	580	355	450
24	600	390	660	665	430	730
26	650	410	660	715	460	760
28	700	430	725	740	500	795
30	750	450	900	805	300	860
32	800	470	900	835	560	900
36	900	510	1050	850	615	960
40	1000	550	1220	970	650	1070

### Dimensions - PN 16

Valve Size		A	B	C	D	Weight
NPS	DN					
12	300	270	450	425	240	240
14	350	290	540	490	310	310
16	400	310	610	560	315	325
18	450	330	610	560	360	385
20	500	350	660	650	425	450
24	600	390	725	700	440	585
26	650	410	900	775	520	690
28	700	430	1050	805	535	760
30	750	450	1050	825	555	835
32	800	470	1050	835	560	900
36	900	510	1050	850	650	1150
40	1000	550	1220	970	705	1300

All dimensions in mm and weights in kg. Please contact us for dimension details of valves in other sizes and pressure rating.

## Ordering Information

### Aquaseal Integrally-moulded Butterfly Valves

Pressure Rating	Body Material	Body Style	Liner	Disc	Shaft	Operator	Special
1 - PN 10	I - Cast Iron	W - Wafer	N - Black Nitrile	I - Cast Iron	C - Carbon Steel (EN 8)	L - Lever	Long Neck
2 - PN 16	G - SG Iron	L - Lugged	E - EPDM	G - SG Iron	S - SS 410	G - Gear Unit	Extended Stem
3 - Cl. 150	C - Carbon Steel	F - Flanged	V - Viton	4 - SS 304 (CF8)	4 - SS 304	M - Motorised	Locking Arrangement
4 - PN 25	4 - SS 304 (CF8) 6 - SS 316 (CF8M)	F - Flanged	H - Hypalon	6 - SS 316 (CF8M)	5 - 17-4 Ph	D - Double Acting Pn. Act.	Limit Switch
			S - Silicon	A - Al Bronze	6 - SS 316	S - Spring Return Pn. Act.	Chain-wheel Operator
			W - White Nitrile	C - Carbon Steel	M - Monel	B - Bare Shaft	

Pn. Act. -  
Pneumatic Actuator



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