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**SUN KOREA CO., LTD.**

| VALVE INFORMATION |



ISO 9001:2008 ABS QE Certified Company



**SUN KOREA**  
(SUN KOREA CO., LTD.)

For the Future with Passion & Creativity & Challenge SUN KOREA CO., LTD.

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SUN KOREA Green Technology realize  
the Harmony of Nature & Humanity.



**SUN KOREA**  
(SUN KOREA CO., LTD.)

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**SUN KOREA**  
(SUN KOREA CO., LTD.)



**SUN KOREA's Green Technology realize the Harmony of Nature & Humanity.**



**COMPANY INTRODUCTION**

We heartily welcome your attention to "SUN KOREA CO.,LTD" catalogue and very honored to have an opportunity of introducing our company. We have accumulated wealth of experience & excellent reputation in items of clean water works, shipbuilding and industrial area with safe environments. On the strength of our challenge and our willingness to achieve a satisfaction of our customer, we will continue to take on our new challenge and find new ways to improve our products and service. We also give our best attention to satisfy customer's demand with full of service and strongly want to develop our long term business relationship on the basis of credit. We look forward to your continued encouragement and support.

Sun Korea Co.,Ltd.

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## EQUIPMENT SYSTEM



Swing ø6,000 Turning Machine



## COMPANY OF HISTORY

- 1996. 08 Company established under name of " Eun Kwang Inotech Co., Ltd."
- 1996. 09 Registered B.M type dual sealing butterfly valve with Japan patent office for utility model
- 1997. 10 Acquired ISO 9001:2008 ABS Quality Evaluations for the first time in this industrial area.
- 1998. 03 KS Quality certified ( KS B 2332, KS B 2333, KS B 2334).
- 1998. 05 Domestic new technology certified by KT (B.M type dual sealing butterfly valve).
- 1999. 05 Registered as qualified supply of items selected by Korea Electric Power Corporation.
- 2001. 02 Selected as a company with outstanding quality control management by Machinery Industry Association.
- 2001. 11 Registered butterfly valve dual sealing metal sheet for utility model.
- 2002. 02 Registered butterfly valve dual sealing structure for utility model.
- 2006. 03 Certified of butterfly valve dual sealing safety device performance.
- 2006. 04 Method of forming sludge preventive sluice valve and sheet part Patent Registered.
- 2006. 07 Registered swing check valve utility model.
- 2007. 03 Registered water supply instruments and equipments supplier for Korea Water Resources Corporation.
- 2007. 07 Water leakage prevention packing insertion valve room Patent Registered.
- 2008. 02 Selected as a leading and promising company by a Korea Industrial Association.
- 2008. 06 Registered as technology innovative company. (Inno Bize )
- 2008. 08 Start business cooperation for overseas marketing with "SUN KOREA CO., LTD"
- 2009. 03 Certified of cylindrical disc type sluice valve new excellent product(NEP) by Ministry of Knowledge Economy of Republic of Korea.
- 2009. 10 Cylindrical disc type sluice valve designated as outstanding product by Public Procurement Service of Republic of Korea.
- 2009. 10 Cylindrical disc type sluice valve designated as performance certified product by small medium business administration.
- 2010. 09 Tilting check valve Patent Registered.
- 2011. 03 The butterfly valve with a double sealing structure Patent Registered.

## APPROVAL CERTIFICATES



# CYLINDRICAL DISC TYPE SLUICE VALVE



*Zero Leakage Clean Tecnology & Natural Human Life*



**N&P** **New Excellent Product**  
The Ministry of Knowledge Economy



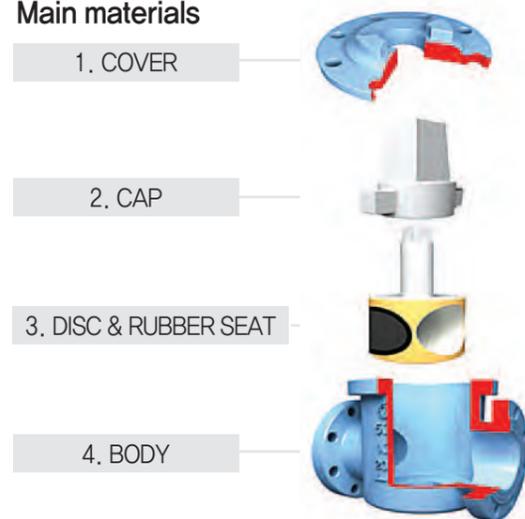
# CYLINDRICAL DISC TYPE SLUICE VALVE

## Feature

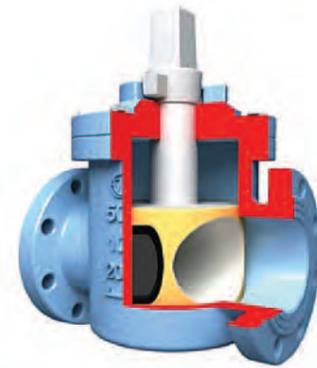
Existing normal valves are types of gate valve. These Styles need strong power along with time loss when you operate valves. Depend on specification it needs minimum 16 turns ~200 turns in order to open and close. To settle these problems in operation of valve, we developed Cylindrical Disc Type Sluice Valve. There are no Valve stem, no female Screw, only it is actuated by one touch system. As same structure of Ball Valve, it turns 90° by one touch way which reduce time and power. Opening and Closing time is exceedingly fast than other product. Caliber of water pipe conforms 100% with Cylindrical Disc type Sluice Valve. This structure enables perfect fluid flows by pressure of fluid. It operates at any case without failure. Easy fluid flow control & saving time while it opens & closes. It is suitable for the Fire Safety valves. Excellent functions for the cleaning water piping without stop of water supply.

## Cross Section View

### Main materials



### Product



## Comparison of Normal sluice valve and Cylindrical disc type sluice valve

### Normal Valve

Screw type. Minimum 14~200 turns for open or close. It needs strong power & time loss

Normal existing Valves have a groove like drawing. Therefore, after close Disc, caused by sediments (foreign matters) on the groove, small leakages occur.

Anti-corrosion & rust stain painting types make a clue of the water pollution.

Impossible fluid flow control.

### Cylindrical disc type Sluice valve

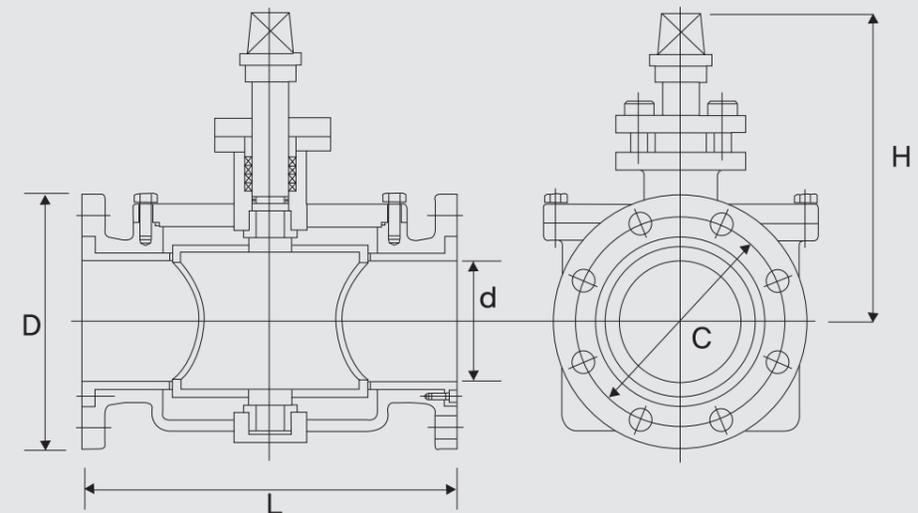
It turns 90° for open & close. Excellent speed for open & close. It is suitable for Emergency case (Fire Safety)

After opening Cylindrical Disc, caused by same caliber O Sludge flows away naturally. Easy fluids control & no leakage. It is very economical system.

Special powder coating prevent corrosion & rust stain. This coating is harmless to human body and economical.

Easy fluid flow control.

## Specification



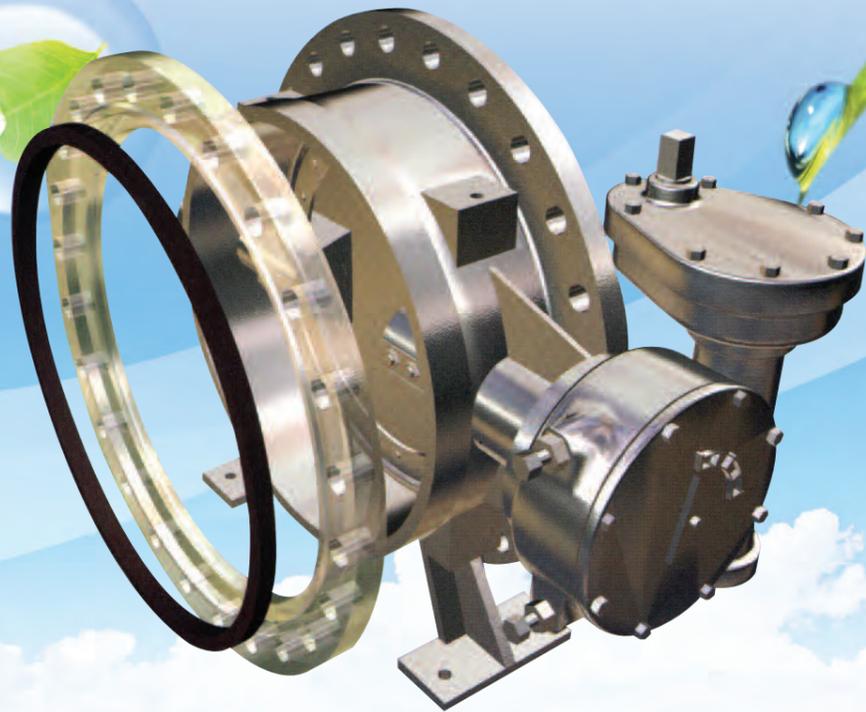
Size (m/m)	L	d	D	BOLT HOLE		H	Cylindrical disc Type sluice valve	Others
				c	n-h			
80	230	80	220	160	4-19	200	1/4 turn	16 turn
100	280	100	220	180	8-19	220	1/4 turn	18 turn
125	310	125	250	210	8-23	285	1/4 turn	20 turn
150	380	150	285	240	8-23	300	1/4 turn	22 turn
200	442	200	340	295	8-23	340	1/4 turn	26 turn
250	549	250	395	350	12-23	390	1/4 turn	26 turn
300	610	300	445	400	12-23	440	1/4 turn	32 turn
350	696	350	505	460	16-23	505	16 turn	36 turn
400	810	400	565	515	16-27	560	16 turn	39 turn
450	905	450	615	565	20-27	615	16 turn	42 turn
500	997	500	670	620	20-27	670	16 turn	42 turn
600	1180	600	780	725	20-31	820	16 turn	87 turn
700	1340	700	895	840	24-31	920	16 turn	101 turn
800	1472	800	1015	950	24-34	1060	18 turn	144 turn
900	1625	900	1115	1050	28-34	1150	18 turn	165 turn
1000	1775	1000	1230	1160	28-37	1200	26 turn	200 turn
1100	1920	1100	1340	1270	32-37	1260	26 turn	220 turn
1200	2060	1200	1470	1387	32-37	1310	32 turn	260 turn
1350	2295	1350	1642	1552	36-42	1400	36 turn	273 turn
1500	2520	1500	1800	1710	36-42	1520	36 turn	307 turn

※ Face to face dimensions is maker's standard. It is subject to change by working pressure and customer's request.

# EXPANSION BUTTERFLY VALVE

## Intention of development

In case of replacement of old valve or broken-down, working process is complicated caused by flange rubber packing. After removal of old valve or broken valve, it is impossible to input the new valve by interferences of rubber packing. Accordingly, the process is very complicated as stated .  
Cut piping, connection flange welding, attach valve, connect expansion joint .  
These process lead stop of water supply long time along with big budget loss.  
In order to improve these matters, we designed.  
This valve has not only expansional structure itself but also same face to face dimension of K,S specification. (AWWA C207, BS 4504, DIN)  
Therefore, with this valve, not necessary cutting piping, welding, flange connection, etc.  
It enables saving additional materials, time loss and budget.



## Features & Strong points of Expansion Butterfly valve

- It is possible to proceed removal, replacement even in case of small leakages.
- No more additional process of cut piping, welding, flange connection, etc make an easy installation.
- Very short installation time ---Suitable for emergency repair or replacement.
- Need minimum space .
- Cutting, Welding, expansion joint, Flange of its additional materials & work are not necessary which lead saving big budget .

## Strong points of maintenance

- With simple valve structure, consist of a few parts lead rare defective points.
- Without any dismantling of installed pipes, it is possible to work out remove and installation.
- Expansion Butterfly valve prevent damages of Valve and piping from the deformation of heat or fluid impact.

# EXPANSION BUTTERFLY VALVE

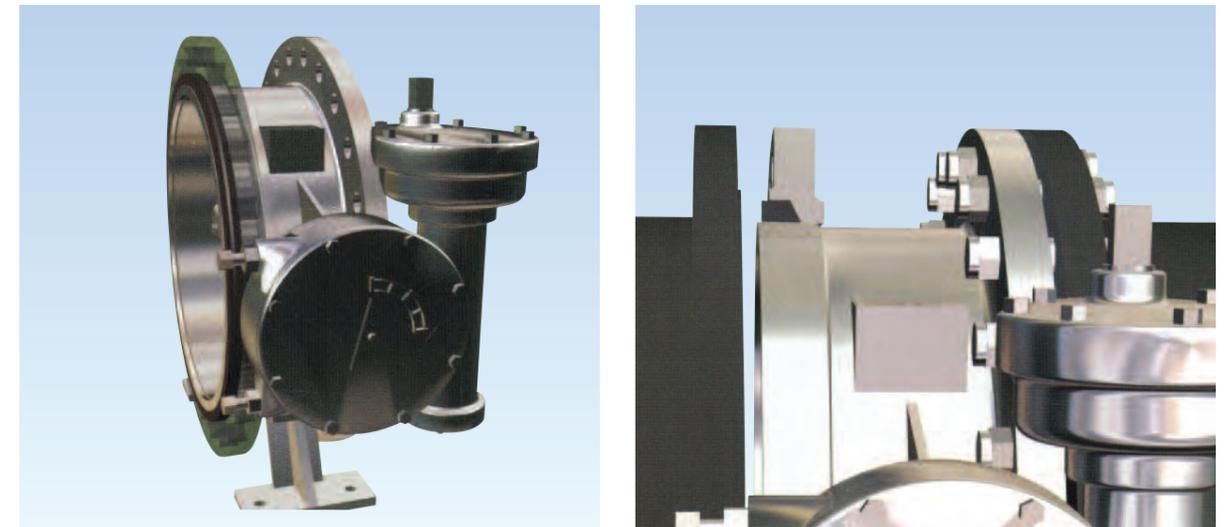
## Composition & Structure

### Composition

It consists of Valve Body 1, Valve Body 2(movable flange, rubber packing, guide ring)

### Structure

Insert rubber packing into the valve flange after separation of one side flange itself.  
Separated flange was made to stand working pressure sufficiently .  
Inserted rubber packing into the flange role as a flange joint packing as well as preventing leakages completely.  
It shuts off the any leakages even for the long time use.

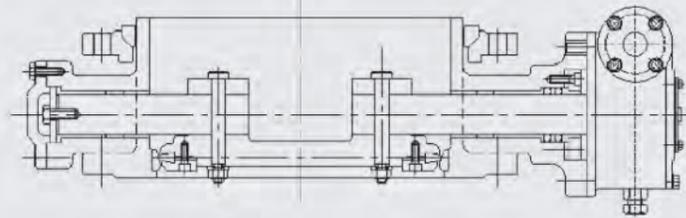


## Specification

- **Nominal Size** : D200mm~D2800mm
- **Working Pressure** : 7.5kgf/cm<sup>2</sup>~20kgf/cm<sup>2</sup>
- **Connection** : Flange rating : AWWA C207, ANSI, DIN, BS, etc
- **Face to Face Dimensions** : AWWA C504 standard, But other standard are available on request
- **Type of Fluid** : Service Water, Sea Water
- **Actuators** : manually, electrically, pneumatic, headstock
- **Materials body and valve disc** :
  - KS D 4302(ductile cast iron) GCD 450
  - KS D 4101(cast Steel) SC 410
  - KS D 4103(Stainless steel Castings) SSC 13
- **Body, Disc coating** :
  - Basic : Liquid Epoxy
  - Special : Lining, ceramic, the other materials are available on request

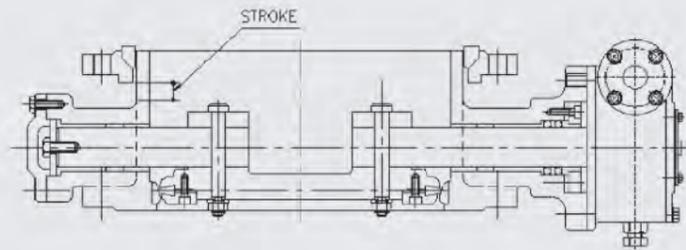
# EXPANSION BUTTERFLY VALVE

## Operation of Expansion butterfly valve



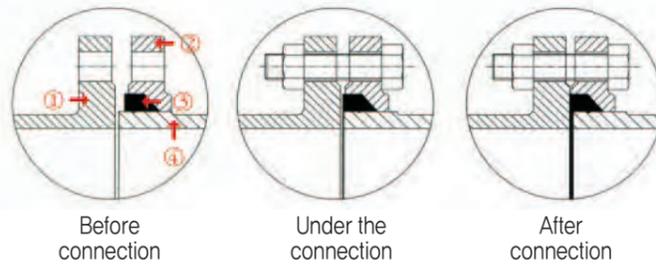
### Assembly finished valve section

Movable flange was moved into the body in order to insert easily to empty space of removed existing valve .



### Move of Movable flange

Movable flange was placed on the outside of valve body in order to connect piping flange .



- No Part Name
- ① Piping flange
  - ② Valve movable flange
  - ③ Rubber packing
  - ④ Valve body

## Expansion Butterfly Valve Installation



Old valve



Remove old valve



Removed(No damages on piping)



Insert new valve



Setting new valve



Tighten bolt

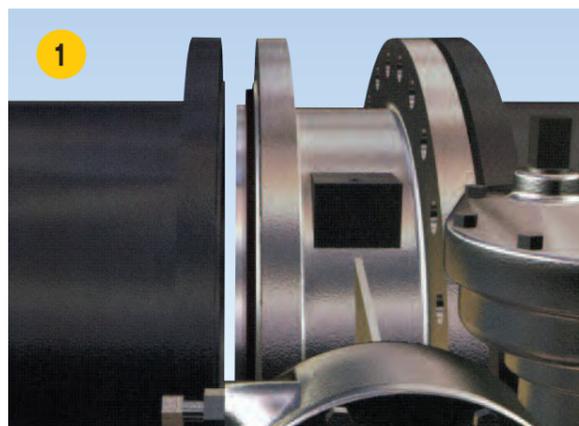


Tighten bolt

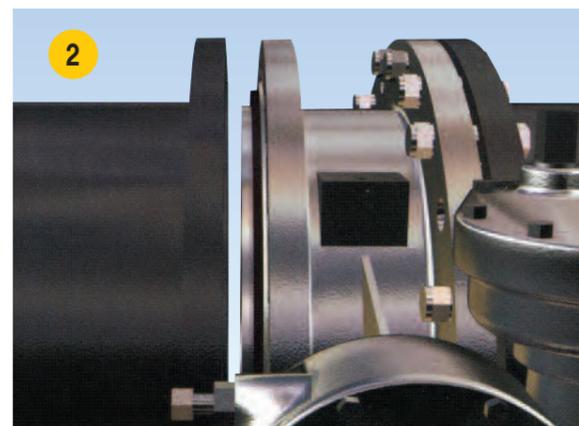


Insertion completed

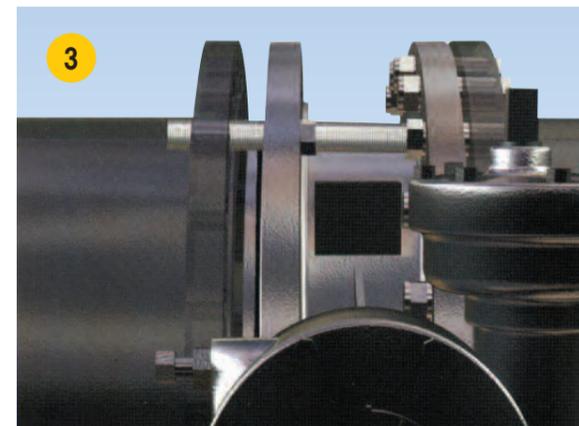
## Expansion Butterfly Valve Replacement Process



▶ Remove old valve and install Expansion Butterfly Valve



▶ Tighten bolt



▶ Tighten bolt

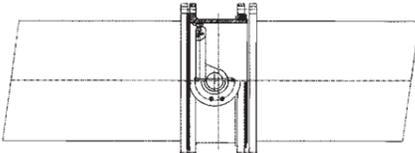
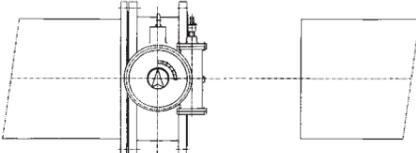
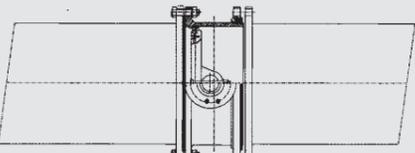
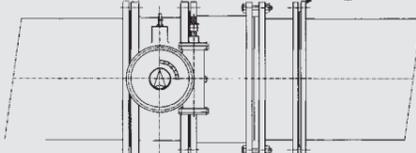
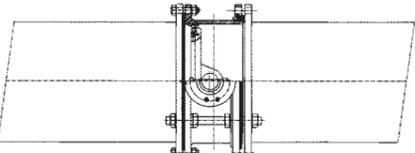
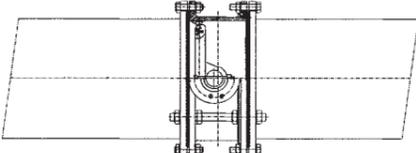
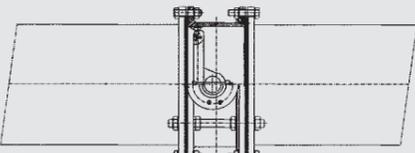
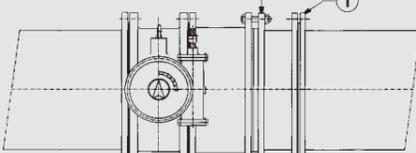


▶ Replacement completed

# EXPANSION BUTTERFLY VALVE

# DOUBLE SEALING BUTTERFLY VALVES

## Comparison of Valve replacement

No.	Expansion Butterfly Valve	Others Butterfly Valve
1	 ▶ Remove valve	 ▶ Remove Valve, Cutting piping
2	 ▶ Insert Expansion Butterfly valve	 ▶ Valve installation
3	 ▶ Tighten Bolt	 ▶ Connect expansion joint and temporary welding on pipe flange
4	 ▶ Tighten Bolt	 ▶ Remove expansion joint and welding piping flange
5	 ▶ Installation completed	 ▶ Connect expansion joint, control the bolt pressure

## Comparison of materials to be used

Example) D800mm

Expansion Butterfly Valve	Others Butterfly Valve
Expansion Butterfly valve, Flange packing 1 sheet, Bolt/Nut 48 sets	New Valve, Expansion Joint, Flange 1sheet, Flange packing 3 sheets, Bolt/Nut 72 sets

## Structure of Double Sealing Butterfly Valve

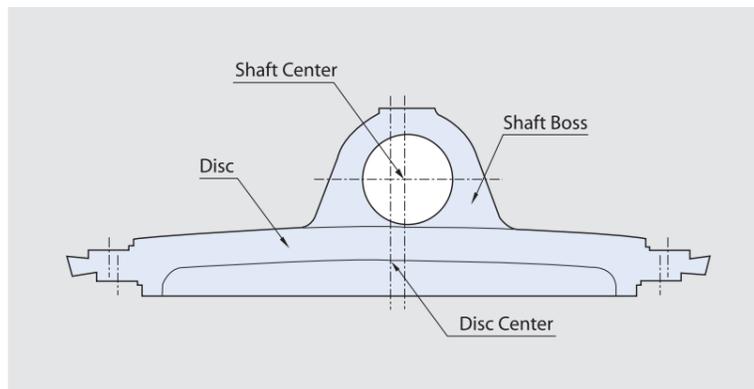


PART NAME	METERIAL	Q'TY	PART NAME	METERIAL	Q'TY
BODY	GCD450, SS400	1	END COVER	SS400, STS304	1
BODY SEAT	BC6, STS304	1	STEM	STS304	1
DISC	GCD450, SS400	1	BUSH	BC6	1
DISC SEAT	EPDM	1	PACKING GLAND	BC6	1
DISC SEAT	EPDM	1	V-PACKING	EPDM	2
SEAT GLAND	STS304, SS400	1	PACKING	ASBESTOS	
SEAT GLAND	STS304, SS400	1	PACKING	BC6	1
GLAND BOLT	STS304, SS400	1	V-PACKING	GCD 450	1
GLAND BOLT	STS304, SS400	1	BODY BOSS	SS400, GCD450	1
COLLAR	STS304, SS400	1	L LENCH BOLT	STS304	
CONTROL BOL	STS304, SS400	1	BRACKET	SS400	

# DOUBLE SEALING BUTTERFLY VALVES

# DOUBLE SEALING METAL SEAT BUTTERFLY VALVES

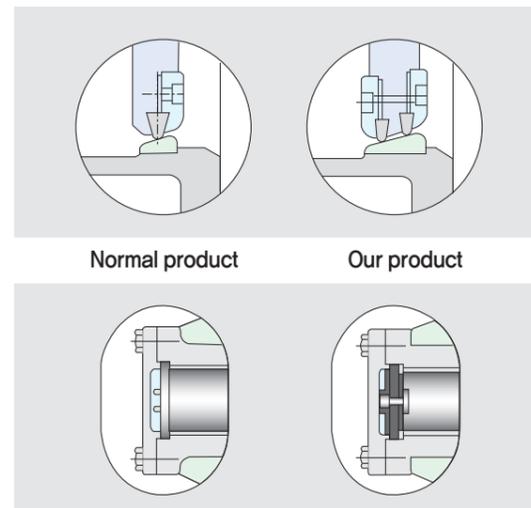
## Structure of Double Sealing Butterfly Valve (Off-set type)



Disc rubber seat replacement is possible without stopping of water supply within a very short working time. It leads saving budget from the any leakages.

### Strong points

- Disc rubber seat guarantee watertight**  
 Double seat structure prevent complete watertight through 1st & 2nd seats. Even leakages on the 1st seat, 2nd seats shut off perfectly.
- Counter pressure watertight**  
 In case of counter pressure, 1st seat reduce pressure and 2nd seats prevent complete counter pressure.
- In case of counter pressure, 1st seat reduce pressure and 2nd seats prevent complete counter pressure.**  
 Double seats structure enable bi-directional replacement of Seats which lead fast replacement without stop of water Supply.



### Change actuator (including worm gear)

- Equipped with safety devices on the End cover and Collar that enable replacement without stopping of water supply while it is needed of changing gear box and worm gear.

### Double offset structure



Double Sealing Butterfly Valve

Designed as main pivot of valve body moved to the up and down eccentrically as well as designed inclined with moved to the both side (left & right) of disc body center which restrain abrasion by seats friction and can be operated by light power.



Normal Existing Butterfly Valve

Disc seat located in the center of Valve. Therefore, Rubber and Metal seats are pushed out on both side under the operation that is the reason of damage and abrasion by friction and need strong power for operation.

## Unique strong points of Double Sealing Metal Seat Butterfly Valve

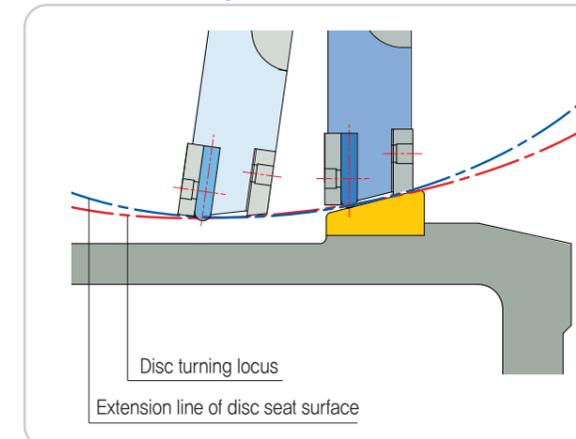
Double Sealing Metal Seat Butterfly Valve consist of 2 seats. This is high quality valve because we tied up with strong points of metal and rubber. Durability, Corrosion resistance, Water resistance' in which we realized Zero Leakage through synergy effect by using advanced technology.



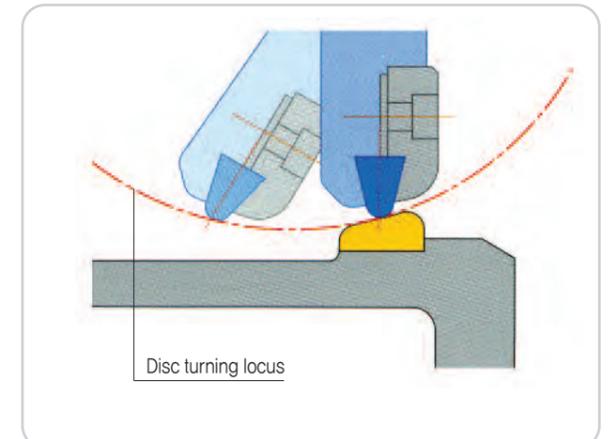
## Structure of Double sealing Metal & Rubber seat

We used strong points of metal & rubber for this valve as stated above which is the most advanced technology. Through double sealing metal & rubber seat, we realized Zero Leakage. Disc seats are separated type which enable easy replacement on the spot when disc seats need replacement by abrasion or damaged.

### Double Sealing Metal & Rubber Seat B.F.V



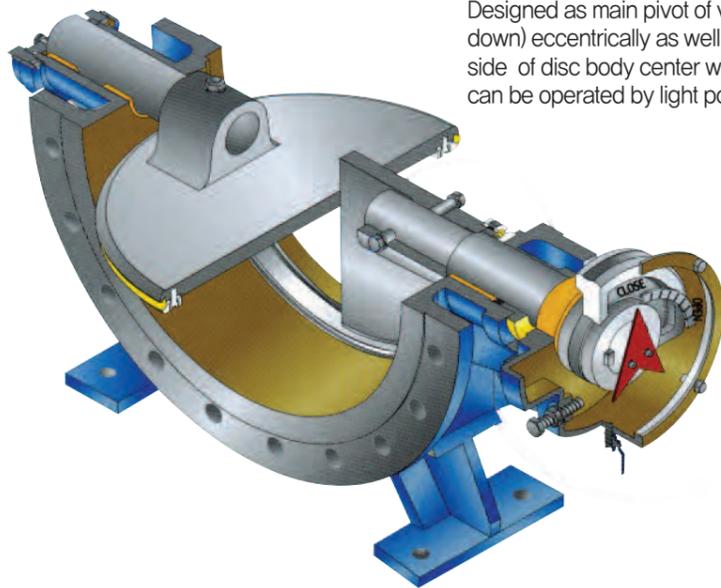
### Normal B.F.V



# DOUBLE SEALING METAL SEAT BUTTERFLY VALVES

## Structure of Double offset

Designed as main pivot of valve body moved to the top and bottom (up & down) eccentrically as well as designed inclined with moved to the both side of disc body center which restrain Abrasion by seat friction and can be operated by light power.



## Epoxy resins coating prevent water pollution and maintain durability

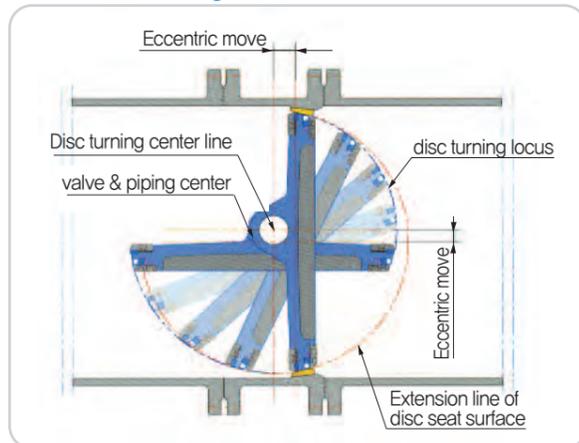
Epoxy resins coating on inside & outside prevent corrosion & water pollution and keep valve safely. Use stainless steel on the touching surface of water which has a strong water resistance. Perfect sealed process on the operation parts increase valve life with preventing dust, leakages and keeping waterproof.

Item	Double Sealing Metal & Rubber Seat Butterfly Valves				Application	waterworks, sewage works, industrial works, agricultural water etc.
Type	Horizontal, Vertical				Maximum temperature	200°C
Flange	KS B 2333 water works B.F.V				Maximum fluids speed	3m/sec
Size(Nominal Diameter)	ø 200mm~ø 3000mm				Operation	Manual, motor, pneumatic, hydraulic
Working pressure	4.5K	7.5K	10K	16K	Direction of opening	left turn : open, Right turn : close
Maximum working pressure	10K	13	14	22	Coating	Epoxy resins for water works
Pressure of water resistance test	5K	10K	12K	18K	Coating color	Grey or customer's request color
Pressure of internal resistance test	7K	12K	15K	24K		

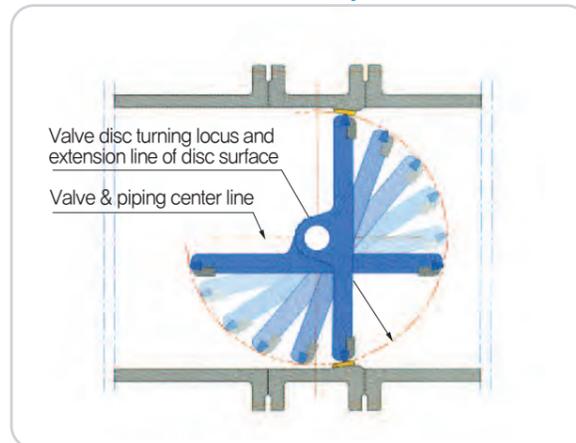
## Materials

Body	GCD 450, SCS 13(Other are available on request)
Valve Disc	GCD 450, SCS 13(Other are available on request)
Valve Stem	KS D 3706(stainless steel) STS 304
Body metal seat	KS D 3706(stainless steel) STS 304
Disc metal seat	KS D 3706(stainless steel) STS 304+EPDM

## Double sealing Metal & rubber seat B.F.V

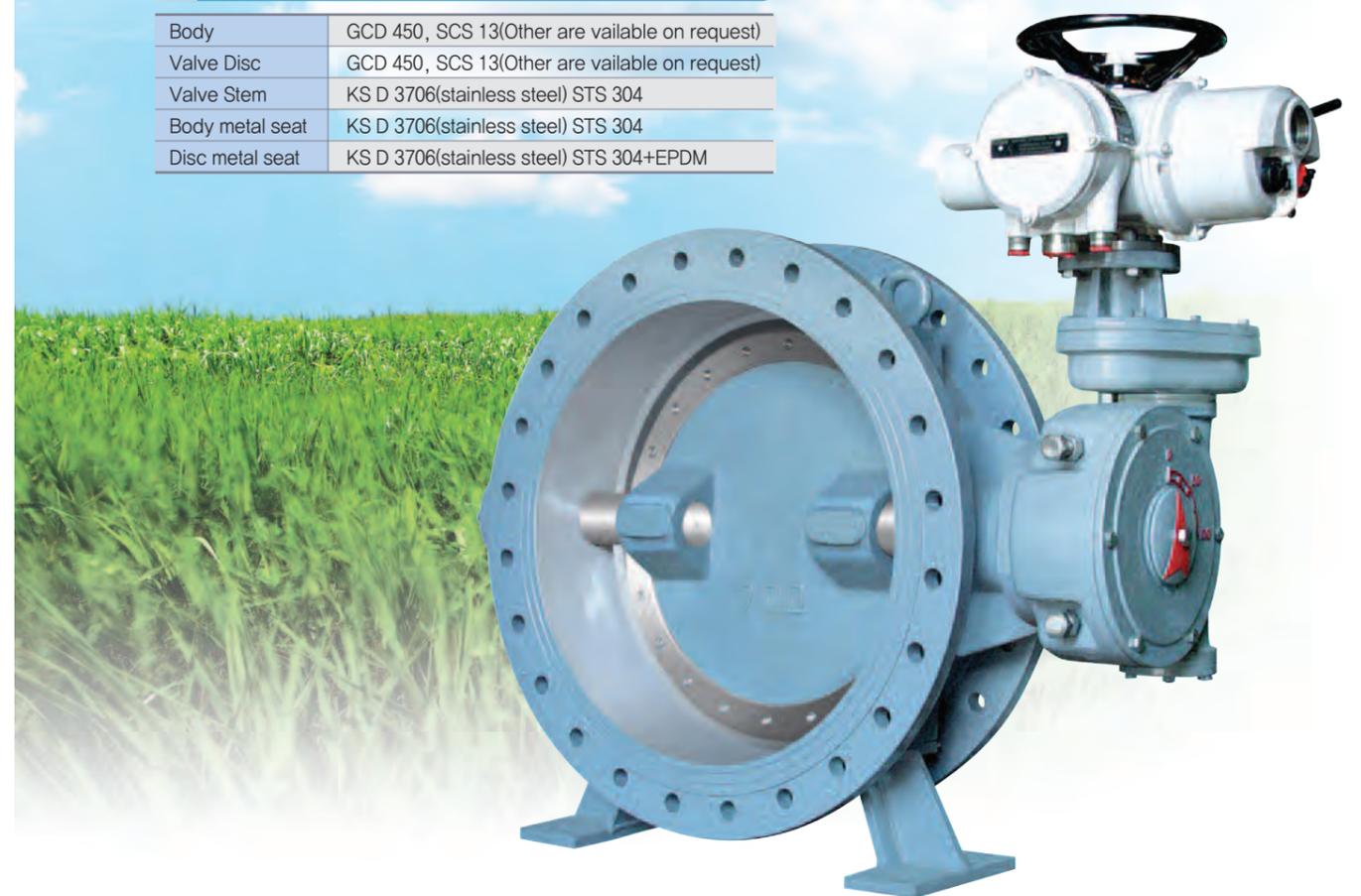
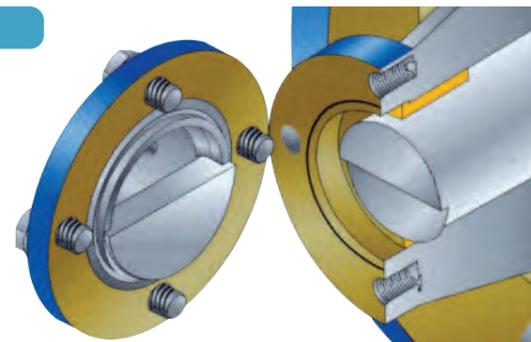


## Normal Butterfly valve

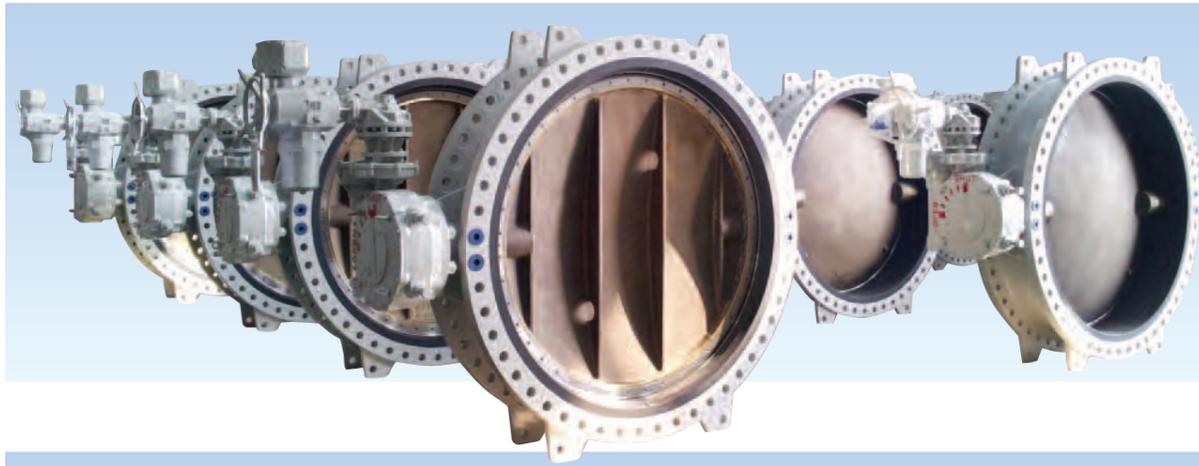


## Structure of Safety equipment

This valve designed and enable working without any stop of water supply at any inevitable case of replacement caused by damaged gear box & worm gear or changing operational system because safety device are attached on the End cover and Collar.



## BUTTERFLY VALVES (Large Size)



## PNEUMATIC DRIVE BUTTERFLY VALVES

### Pneumatic Drive Butterfly Valves Features

- Cylinder Drive Butterfly Valves are available for hydraulic and pneumatic operation.
- Additional parts materials are supplied such as Up and Down limit switch and potentiometer or remote control on request.



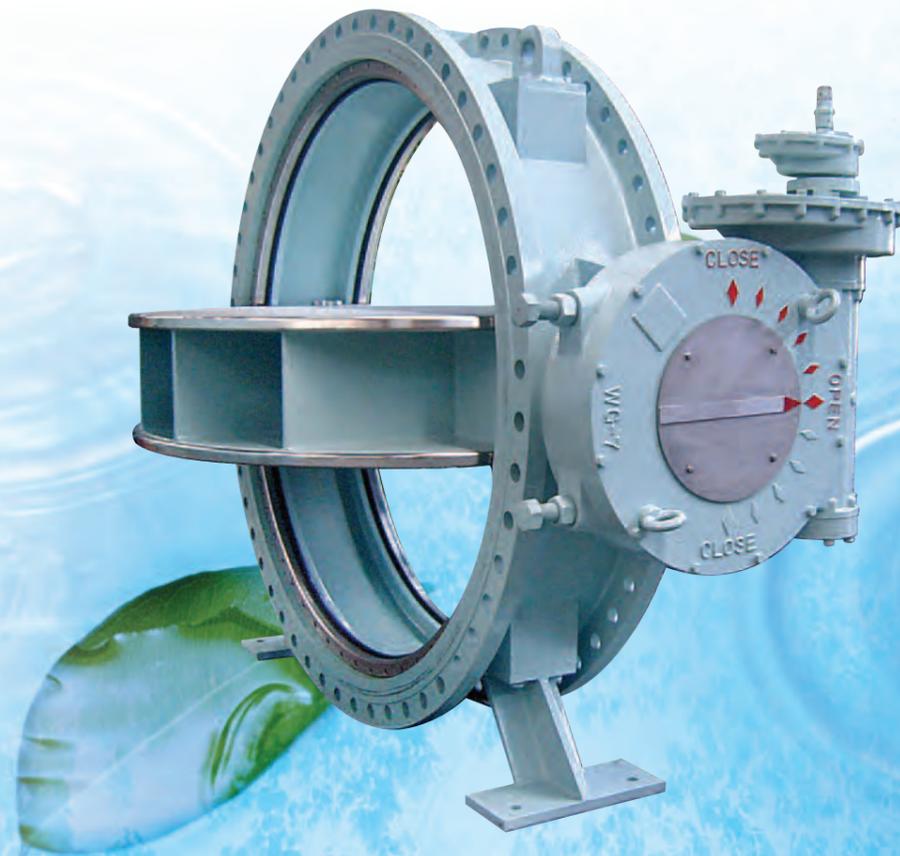
# DOUBLE DISC BUTTERFLY VALVES

# BUTTERFLY VALVES FOR WATER WORKS

## Double Disc Butterfly Valves Feature

- Quarter turn(1/4 turn) system. Simple operation.  
Less torque & narrow space for installation Operation : Manual, electric, pneumatic, hydraulic.
- Double disc Butterfly valves changed basic concept of valve replacement and high pressure valve.
- Double disc Butterfly valve have 2 discs which keep perfect water resistance by double blocking system.
- Even installed long piping line, without drain water inside of pipe, working process is possible .  
Which lead reducing damages occurred by stop water supply as well as shorten time of stopping water supply.
- Sealing structure consist of metal seat(Disc) & rubber seat (Body).
- Installation is possible regardless of direction of fluid flow(Excellent in water resistance on both way)
- Specification : KS, AWWA, JIS, DIN. All international standard are available on request.

Item	Double Disc Butterfly Valves				Application	waterworks, sewage works, industrial works, agricultural water etc.
Type	Horizontal, Vertical				Maximum temperature	200℃
Flange	KS B 2333(AWWA C 504) water works B.F.V				Maximum fluids speed	3m/sec
Size(Nominal Diameter)	ø200mm~ø3000mm				Operation	Manual, motor, pneumatic, hydraulic
Working pressure	4.5K	7.5K	10K	16K	Direction of opening	left turn : open, Right turn : close
Maximum working pressure	10K	13	14	22	Coating	Epoxy resins for water works
Pressure of water resistance test	5K	10K	12K	18K	Coating color	Grey or customer's request color
Pressure of internal resistance test	7K	12K	15K	24K		



## Features

- Butterfly Valve use for the water works, sewage works primarily. This valve satisfy conditions of KS B 2333 (AWWA C 504, BS 5155, JIS B 2064)
- Available operation types depend on request(Manual, Motor, Headstock & Cylinder)
- Designed for easy operation under the overload(heavy) conditions.
- Authorized by permit no.7219 which grant use of K.S(Korea Standardization) mark on the Butterfly valve products.

## Specification

- **Norminal Diameter** : 8"~180"(200~4500mm)
- **Type of Fluid** : Service Water, Sea Water
- **Max. Working Pressure** : Type1 64psi(4.5kgf/cm<sup>2</sup>)  
Type2 106psi(7.5kgf/cm<sup>2</sup>)  
Type3 142psi(10kgf/cm<sup>2</sup>)
- **Flange Dimension** : KS D 4308, ISO 2084, AWWA C 207  
PN 10 bar.
- **Installation** : Vertical or Horizontal type
- **Coating** : Asphalt varnish coating  
The other materials are available on request.
- **Operation** : Manual (Worm gear type)  
Electric (Worm gear, Valve actuator type)  
Cylinder type(Oil, Air or Water)

Other standards are available on request.

## Hydraulic test

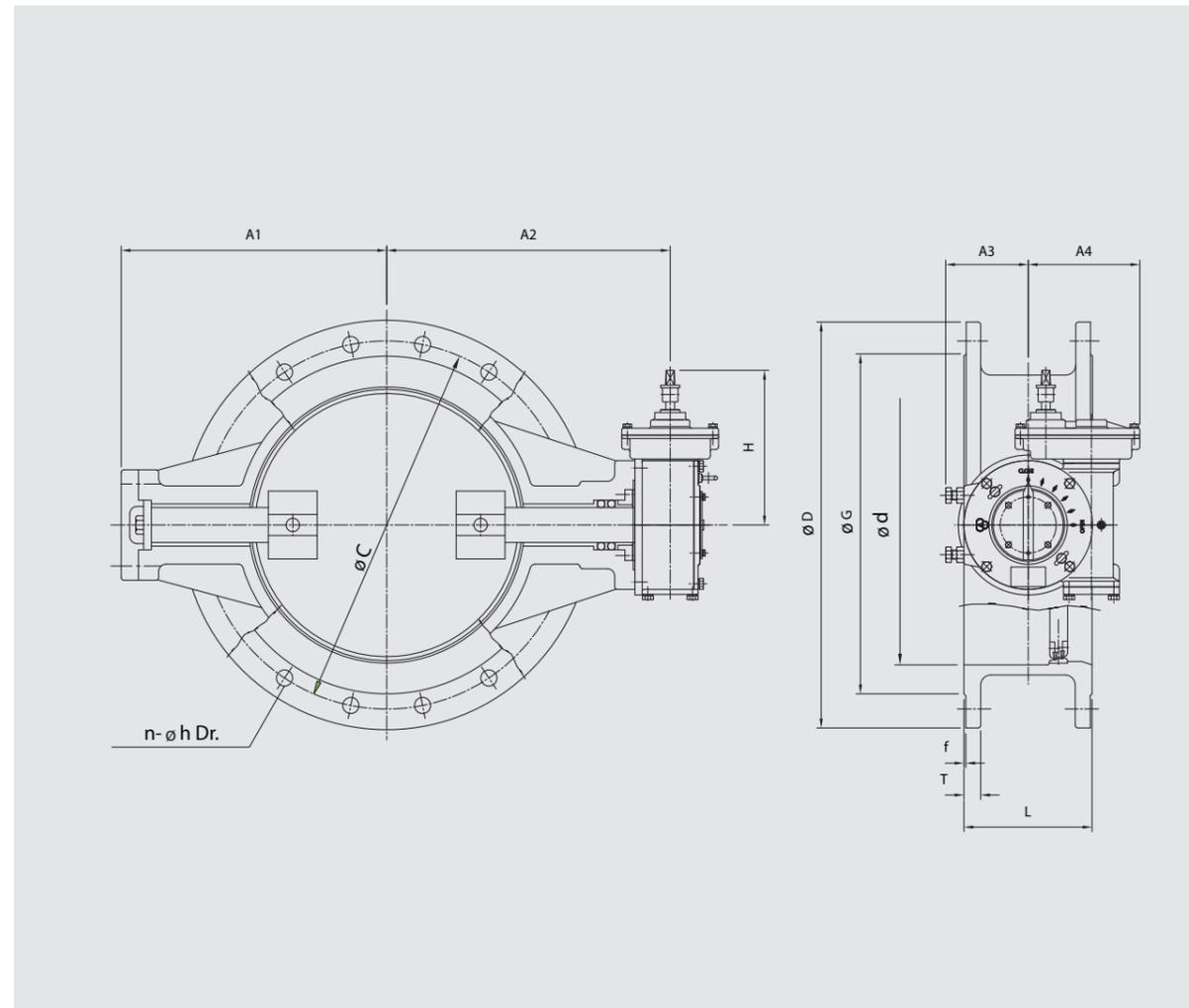
Description	Size	200~350	400~1500	1650mm Over size
1) Body pressure	Type1	14.0kg/cm <sup>2</sup>	10.5kg/cm <sup>2</sup>	1.5 times of working pressure
	Type2	17.5kg/cm <sup>2</sup>	14.0kg/cm <sup>2</sup>	
	Type3	23.0kg/cm <sup>2</sup>	21.0kg/cm <sup>2</sup>	
2) Seat leakage	Type1	4.5kg/cm <sup>2</sup>	4.5kg/cm <sup>2</sup>	The same as the Working pressure.
	Type2	7.5kg/cm <sup>2</sup>	7.5kg/cm <sup>2</sup>	
	Type3	10.0kg/cm <sup>2</sup>	10.0kg/cm <sup>2</sup>	



# BUTTERFLY VALVES(Horizontal type)

# ELECTRO DRIVE BUTTERFLY VALVES(Horizontal type)

DIMENSIONS OF BUTTERFLY VALVES (Horizontal Type)

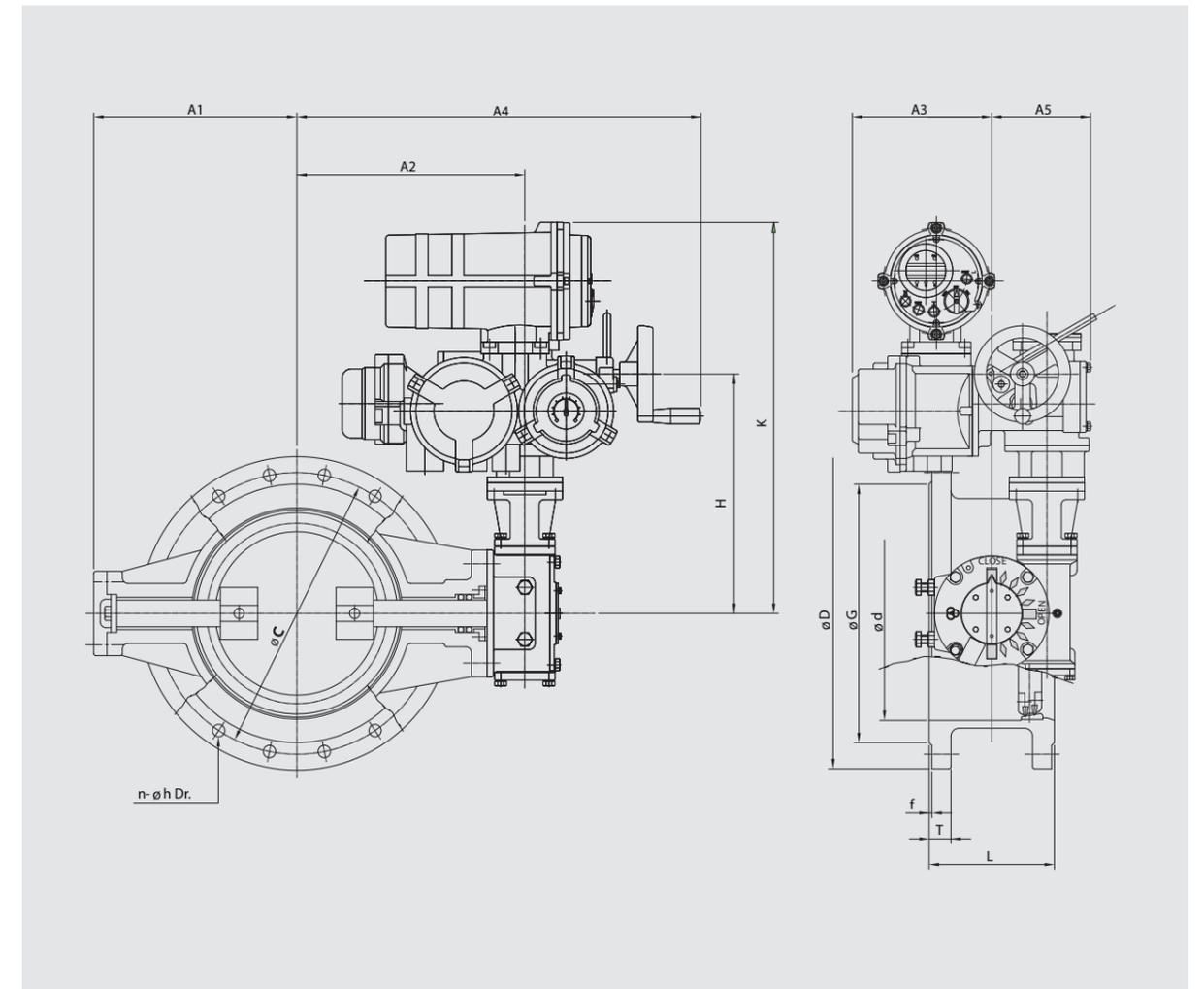


unit : mm

ND	L	Flange					A1	A2	A3	A4	H	Turns of Opening
		D	G	Bolt Hole		T×f						
				C	n-øh							
200	152	342	264	295	8-23	22×2	320	360	80	120	260	10
250	165	410	319	350	12-23	24×3	350	420	105	170	360	10
300	178	464	367	400	12-23	24×3	400	440	105	170	360	10
350	190	530	427	460	16-23	26×3	440	470	105	170	360	10
400	216	582	477	515	16-27	26×3	480	525	150	225	410	12
450	222	652	518	565	20-27	28×3	520	555	150	225	410	12
500	229	706	582	620	20-27	28×3	550	595	150	225	410	12

※ Face to Face Dimensions apply to KS B 2333(AWWA C 504), but Other standards are available on request.

Dimensions of Electro Drive Butterfly Valve(Horizontal)



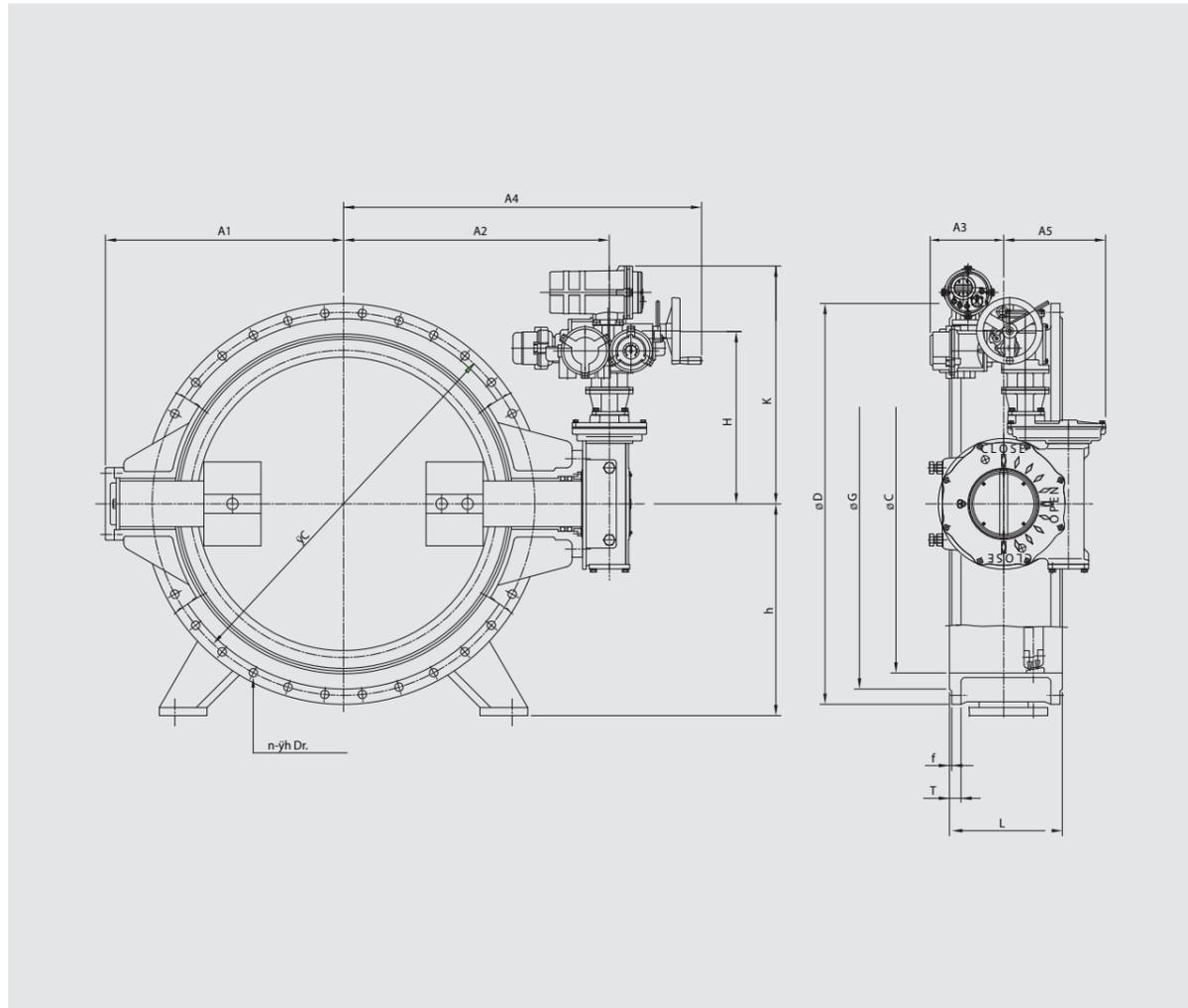
Unit : mm

ND	L	Flange					A1	A2	A3	A4	A5	H	K
		D	G	Bolt Hole		T×f							
				C	n-øh								
200	152	342	264	295	8-23	22×2	320	445	460	705	115	280	590
250	165	410	319	350	12-23	24×3	350	505	485	765	90	340	650
300	178	464	367	400	12-23	24×3	400	525	485	785	90	340	650
350	190	530	427	460	16-23	26×3	440	555	485	815	90	340	650
400	216	582	477	515	16-27	26×3	480	610	530	870	45	340	705
450	222	652	518	565	20-27	28×3	520	675	555	905	45	405	735
500	229	706	582	620	20-27	28×3	550	715	555	945	45	405	735

※ Face to Face Dimensions apply to KS B 2333(AWWA C 504), but Other standards are available on request.

# ELECTRO DRIVE BUTTERFLY VALVES(Horizontal)

Dimensions of Electro Drive Butterfly Valve(Horizontal)

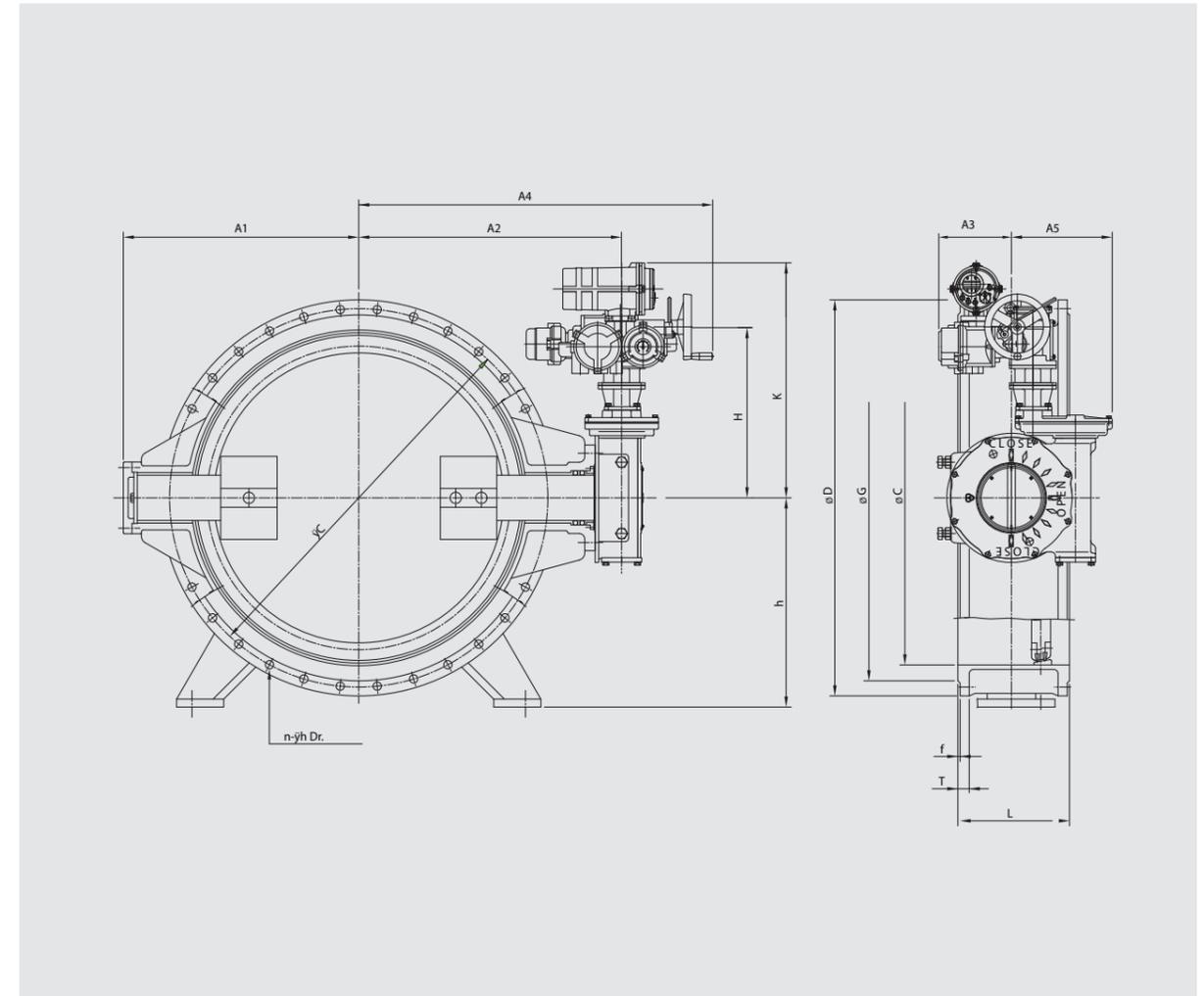


Unit : mm

ND	L	Flange					A1	A2	A3	A4	A5	H	K	h
		D	G	Bolt Hole		T×f								
				C	n-□h									
600	267	810	682	725	20-30	30×3	620	790	485	1,020	135	585	915	450
700	292	928	797	840	24-30	32×3	700	875	485	1,105	135	585	915	500
800	318	1,034	904	950	24-33	34×3	760	935	485	1,165	135	585	915	550
900	330	1,156	1,004	1,050	28-33	36×3	820	1,135	770	1,365	320	710	1,040	600
1,000	410	1,262	1,111	1,160	28-36	38×3	900	1,195	770	1,425	320	710	1,040	650
1,100	450	1,366	1,200	1,270	32-36	41×3	970	1,380	830	1,640	320	790	1,120	700
1,200	470	1,470	1,304	1,387	32-36	43×3	1,050	1,425	865	1,685	350	840	1,170	750
1,350	530	1,642	1,462	1,552	36-40	45×3	1,170	1,530	865	1,790	350	840	1,170	825
1,500	530	1,800	1,620	1,710	36-40	48×3	1,270	1,630	865	1,890	350	840	1,170	900

※ Face to Face Dimensions apply to KS B 2333(AWWA C 504), but Other standards are available on request.

Dimensions of Electro Drive Butterfly Valve(Horizontal)



Unit : mm

ND	L	Flange					A1	A2	A3	A4	A5	H	K	h
		D	G	Bolt Hole		T×f								
				C	n-□h									
1,650	530	1,950	1,770	1,860	40-40	53×3	1,350	1,680	865	1,940	350	840	915	1,050
1,800	550	2,115	1,960	2,020	44-49	55×3	1,450	1,925	1,030	2,185	480	1,080	1,410	1,075
2,000	550	2,325	2,170	2,230	48-49	58×4	1,550	2,025	1,030	2,285	480	1,080	1,410	1,175
2,200	600	2,550	2,370	2,440	52-56	61×4	1,680	2,245	1,225	2,575	480	1,120	1,600	1,350
2,400	650	2,760	2,570	2,650	56-56	64×4	1,840	2,345	1,225	2,675	480	1,120	1,600	1,450
2,500	700	2,860	2,670	2,750	56-56	68×5	1,900	2,395	1,225	2,725	480	1,120	1,600	1,500
2,600	750	2,960	2,780	2,850	60-56	68×5	2,000	2,525	1,225	2,855	480	1,120	1,600	1,550
2,800	800	3,180	3,000	3,070	64-56	72×5	2,100	2,625	1,225	2,955	480	1,120	1,600	1,650
3,000	850	3,405	3,210	3,290	64-56	76×5	2,150	2,675	1,225	3,005	480	1,120	1,600	1,750

※ Face to Face Dimensions apply to KS B 2333(AWWA C 504), but Other standards are available on request.

# GUARD GATE VALVE / JET FLOW GATE

# DUCTILE CAST IRON SLUICE VALVE FOR WATER WORKS



## Features

- Ductile Cast Iron Sluice Valve for Water Works satisfy specification KS B 2334 (provision no. 2, 3, 4, 5)(AWWA C 500).
- Operation : Manual, Motor, Headstock & Cylinder drive.

## Specification

- **Size**
  - 50mm~500mm
  - 50mm~300mm
  - Big size Caliber over 500mm is available on request.
- **Working pressure**
  - 7.7k , 10k, 16k, 20k
  - High pressure over 20kgf/cm<sup>2</sup> is available on request.
- **Valve end**
  - KS D 4308 ISO R 13
  - KS B 1511(16K, 20K)
  - Other standards are available on request.
- **Fluid type**
  - Water , Sewage , Sea water
- **Open direction**
  - Counter-clockwise(Left)

## Test pressure(Leakage test)

Part	L-2(7.5K)	L-3(10K)
Seat	7.5K	10K
Body	14K	21K

Part	L-4(16K)	L-5(20K)
Seat	16K	20K
Body	24K	30K

- **Main materials**
  - **Body** : GCD 450  
SC410
  - **Disc** : GCD 450  
SC410
  - **Stem** : STS304 or STS403

The others materials are available on request.



# STAINLESS SLUICE VALVE, DUCTILE VALVE

# DUCTILE CAST IRON SLUICE VALVE (Vertical type)

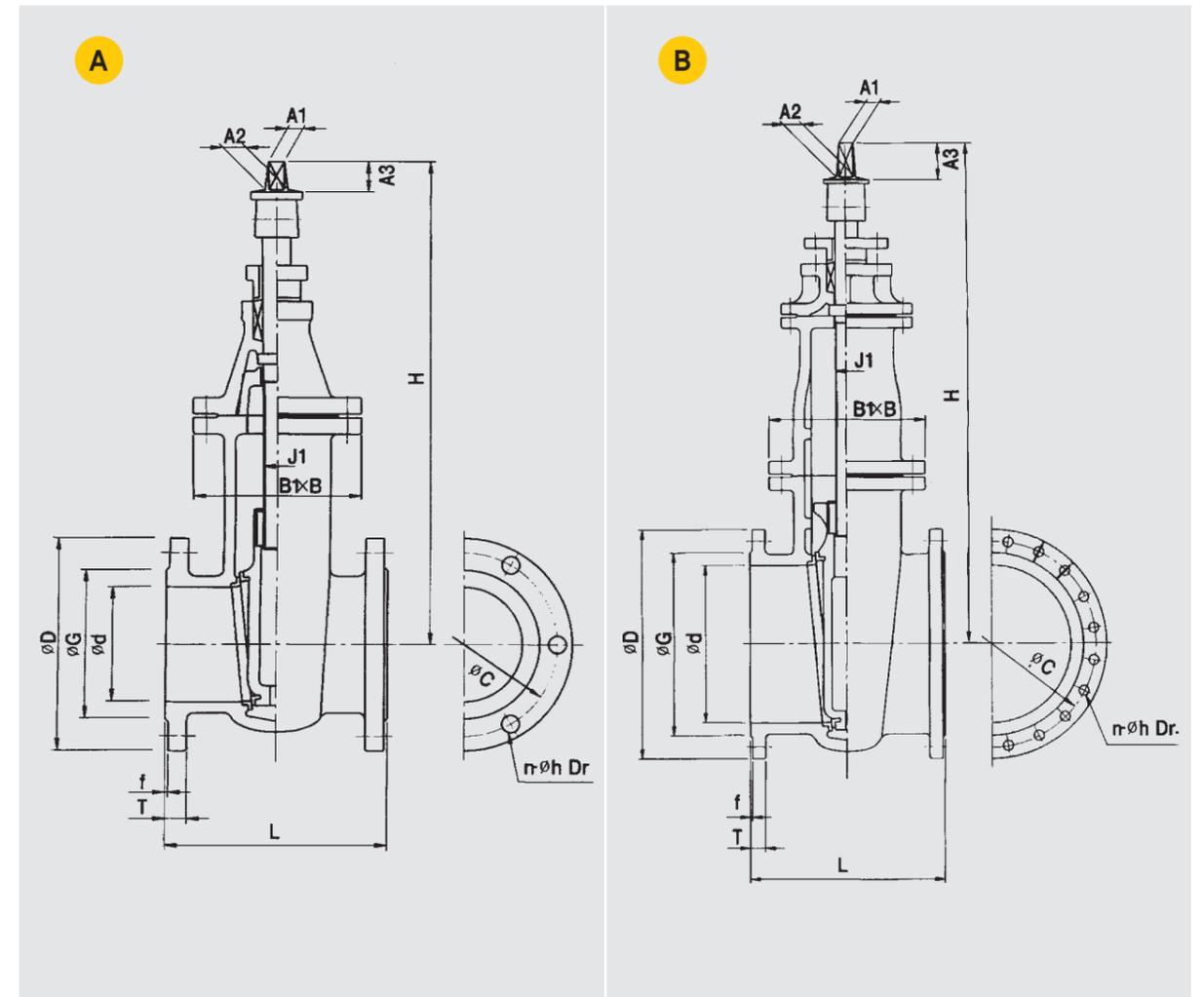
Stainless sluice valve



Ductile sluice valve



Dimensions of Ductile Cast Iron Sluice valves (Vertical type)



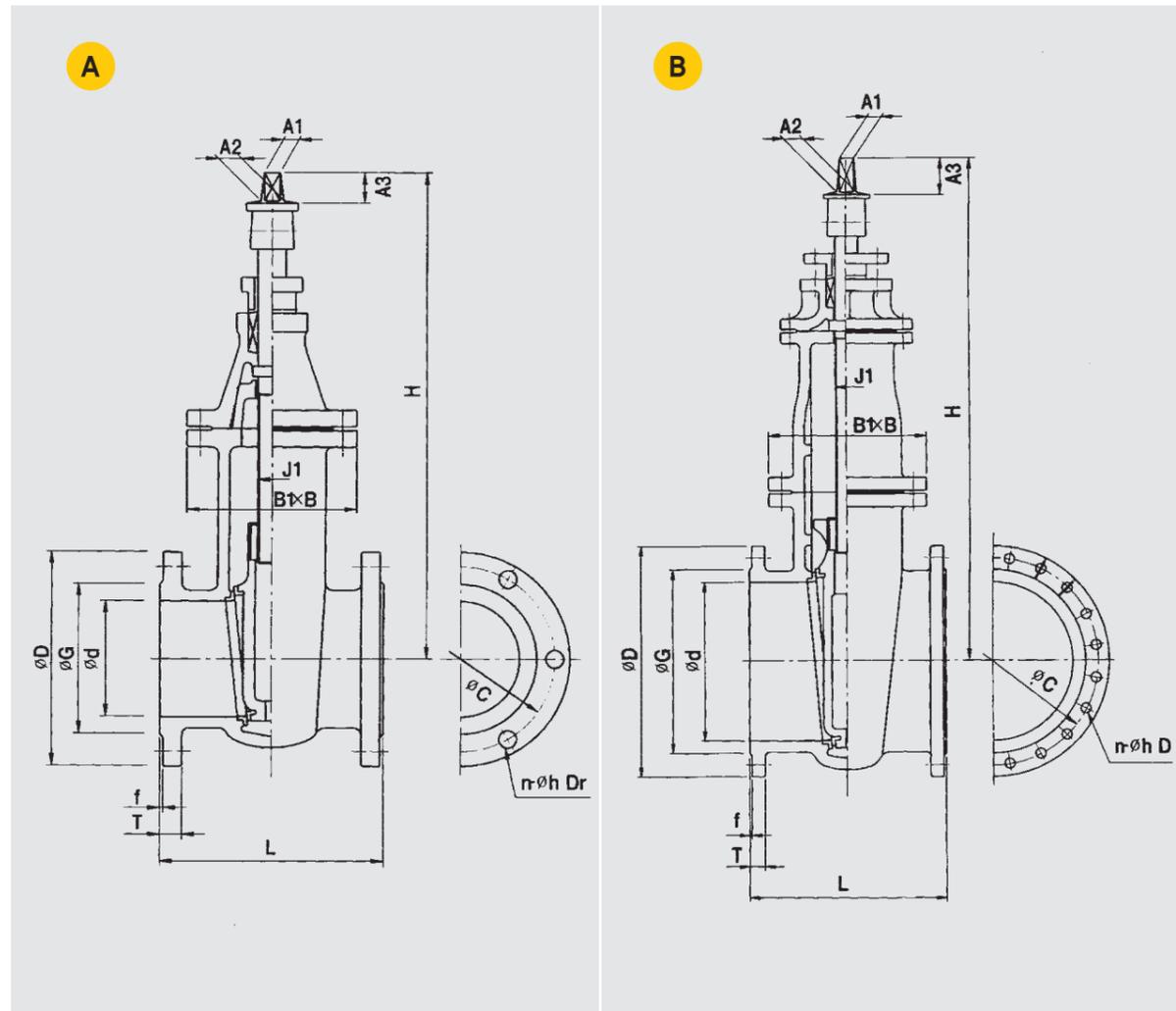
Unit : mm

Bore (d)	Face to Face	Flange					Body	Spindle	Height	Cap			Rev. of Opening	Model	
	L	øD	øG	øC	Txf	n-øh	B1xB	J1	T/IN	H	A1	A2			A3
50	180	155	100	120	16x2	4-18	135x162	20	6.000	340	32	38	70	14	A
80	240	200	133	160	18x2	4-19	181x225	26	4.000	450	32	38	70	14	
100	250	220	153	180	18x2	8-19	198x254	28	3.500	530	32	38	70	18	
125	260	250	183	210	20x2	8-19	212x286	32	3.500	600	32	38	70	22	
150	280	285	209	240	22x2	8-23	220x318	35	3.000	660	32	38	70	20	
200	300	340	264	295	22x2	8-23	264x396	40	3.000	770	32	38	70	26	
250	380	395	319	350	24x2	12-23	276x454	44	2.500	880	32	38	70	26	B
300	400	445	367	400	24x3	12-23	292x516	46	2.500	980	32	38	70	31	
350	430	505	427	460	26x3	16-23	320x582	50	2.500	1090	32	38	70	36	
400	470	565	477	515	28x3	16-27	376x656	52	2.250	1230	32	38	70	34	
450	500	615	527	565	30x3	20-27	392x722	56	2.250	1340	32	38	70	39	
500	530	670	582	620	30x3	20-27	428x800	58	2.000	1440	32	38	70	43	

# DUCTILE CAST IRON SLUICE VALVE (Vertical type)

# STAINLESS SLUICE VALVES FOR WATER WORKS

## Dimensions of Ductile Cast Iron Sluice valves(Vertical type)



Unit : mm

Bore (d)	Face to Face		Flange						Body B1xB	Spindle J1	Height T/IN	Height H	Cap			Rev. of Opening	Model
	L	øD	øG	øC	T			n-øh					A1	A2	A3		
					4중	5중	F										
50	250	155	96	120	16	18	2	8-19	135×162	20	6.00	400	32	38	70	14	A
80	280	200	135	160	20	22	2	8-23	181×225	26	4.00	480	32	38	70	14	
100	300	225	160	185	22	24	2	8-23	198×254	28	3.50	550	32	38	70	18	
125	325	270	195	225	22	26	2	8-25	212×286	32	3.50	620	32	38	70	22	
150	350	305	230	260	24	28	2	12-25	220×318	35	3.00	680	32	38	70	20	
200	400	350	275	305	26	30	2	12-25	264×396	40	3.00	790	32	38	70	25	
250	450	430	345	380	28	34	2	12-27	276×454	44	2.50	920	32	38	70	26	B
300	500	430	395	430	30	36	3	16-27	292×516	46	2.50	1,040	32	38	70	31	

## Sluice Valve Charater

Intended Primarily for use with service water, this valve meets specification of KS B2332(JIS B 2062, BS5163) Available in several models, Operated manually by motor, by headstock, or by cylinder.

## Sluice Valve Specification

- **Size**
  - Vertical type : 50mm~1,200mm
  - Horizontal type : 400mm~1,500mm
- **Working pressure**
  - Max. 7.5kgf/cm<sup>2</sup>
- **Valve end**
  - Flange (KS D 4308, ISO R 13)
  - Other standards are available on request.
- **Fluid type**
  - Water, Sea Water
- **Direction of Opening**
  - Counter-clockwise to open
- **Test Pressure**
  - Leakage test : 7.5kgf/cm<sup>2</sup>
  - shell test : 20kgf/cm<sup>2</sup> (50~350mm)  
16kgf/cm<sup>2</sup> (400~1,500mm)



# STAINLESS SLUICE VALVES FOR WATER WORKS

# SLUICE VALVES (Vertical type)

## Features of Stainless Sluice Valve for Water Works

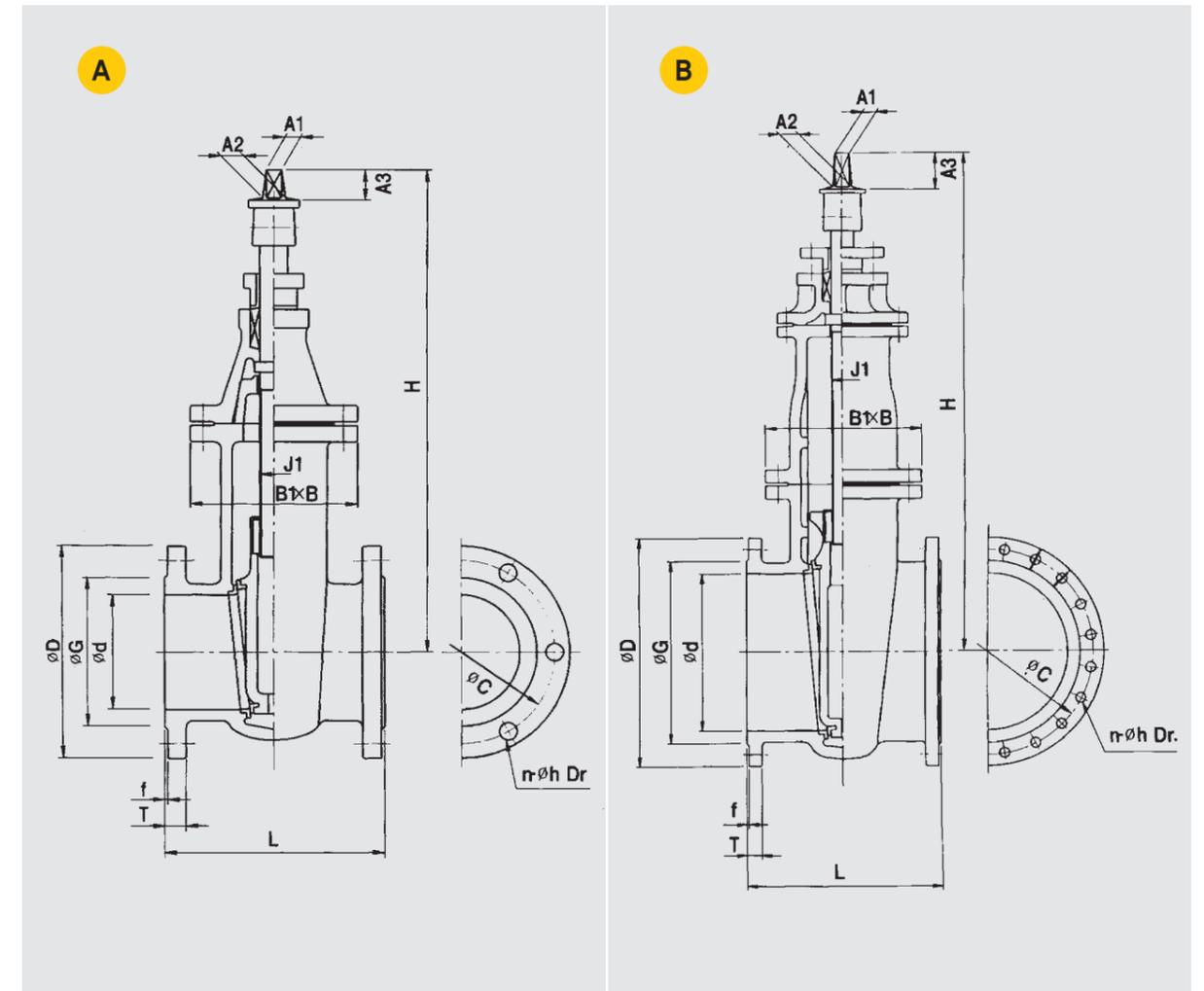
Under the long time corrosive conditions, Stainless Sluice Valve could not shut off the leakages completely because of Sediments of scale, soil, sand & etc.

To prevent above problems, we substituted materials into SSC 13, SSC 14 for the semi-permanent use and in related with anti-corrosion effects which enable supplying of clean water.

- **Specification** : Same as Sluice valve for water works.
- **Main materials**
  - Body, Disc, Cover** : Stainless Steel Casting(SSC13, SSC14)
  - Stem** : Stainless Steel (STS304, STS 410)



## Dimensions of Sluice Valve (Vertical type)



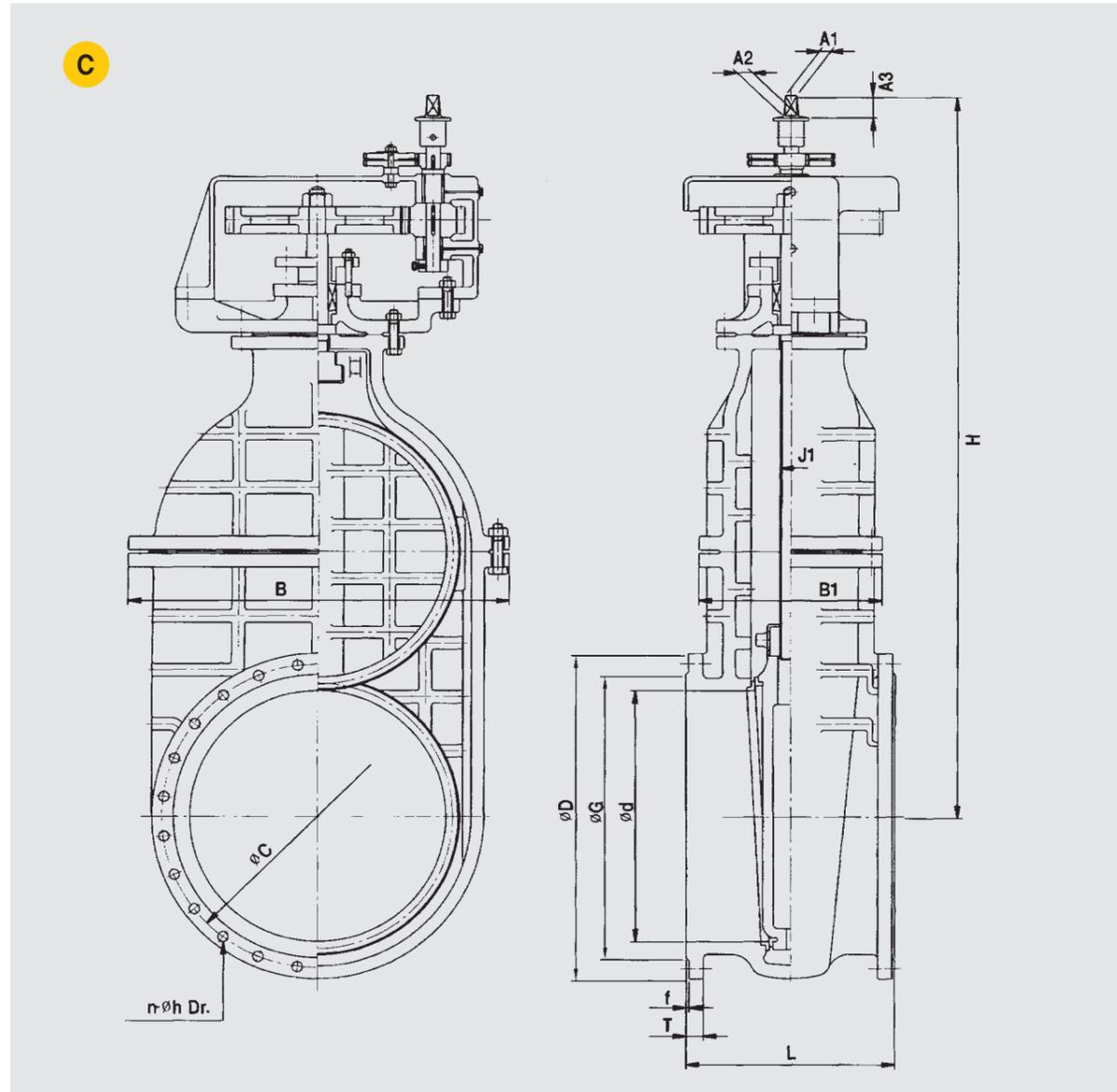
Unit : mm

Bore (d)	Face to Face		Flange				Body B1xB	Spindle		Height H	Cap			Rev. of Opening	Model
	øL	øD	øG	C	Txf	n-øh		J1	T/IN		A1	A2	A3		
50	180	155	100	120	16x2	4-18	135x162	20	6.00	340	32	38	70	14	A
80	240	200	133	160	18x3	4-19	181x225	26	4.00	450	32	38	70	14	
100	250	220	153	180	18x2	8-19	198x254	28	3.50	530	32	38	70	15.5	
125	265	250	183	210	20x2	8-19	212x286	32	3.50	600	32	38	70	19	
150	280	285	209	240	22x2	8-23	220x318	35	3.00	660	32	38	70	19.5	
200	300	340	264	295	22x2	8-23	264x396	40	3.00	770	32	38	70	25.5	B
250	380	395	319	350	24x2	12-23	276x454	44	2.50	880	32	38	70	26.5	
300	400	445	367	400	24x2	12-23	292x516	46	2.50	980	32	38	70	31.5	
350	430	505	427	460	26x3	16-23	320x582	50	2.50	1090	32	38	70	36.5	
400	470	565	477	515	28x3	16-27	376x656	52	2.25	1230	32	38	70	37.5	
450	500	615	527	565	30x3	20-27	392x722	56	2.25	1340	32	38	70	41	
500	530	670	582	620	30x3	20-27	428x800	58	2.00	1440	32	38	70	41.5	

# SLUICE VALVES (Vertical type)

# SLUICE VALVES (Horizontal type)

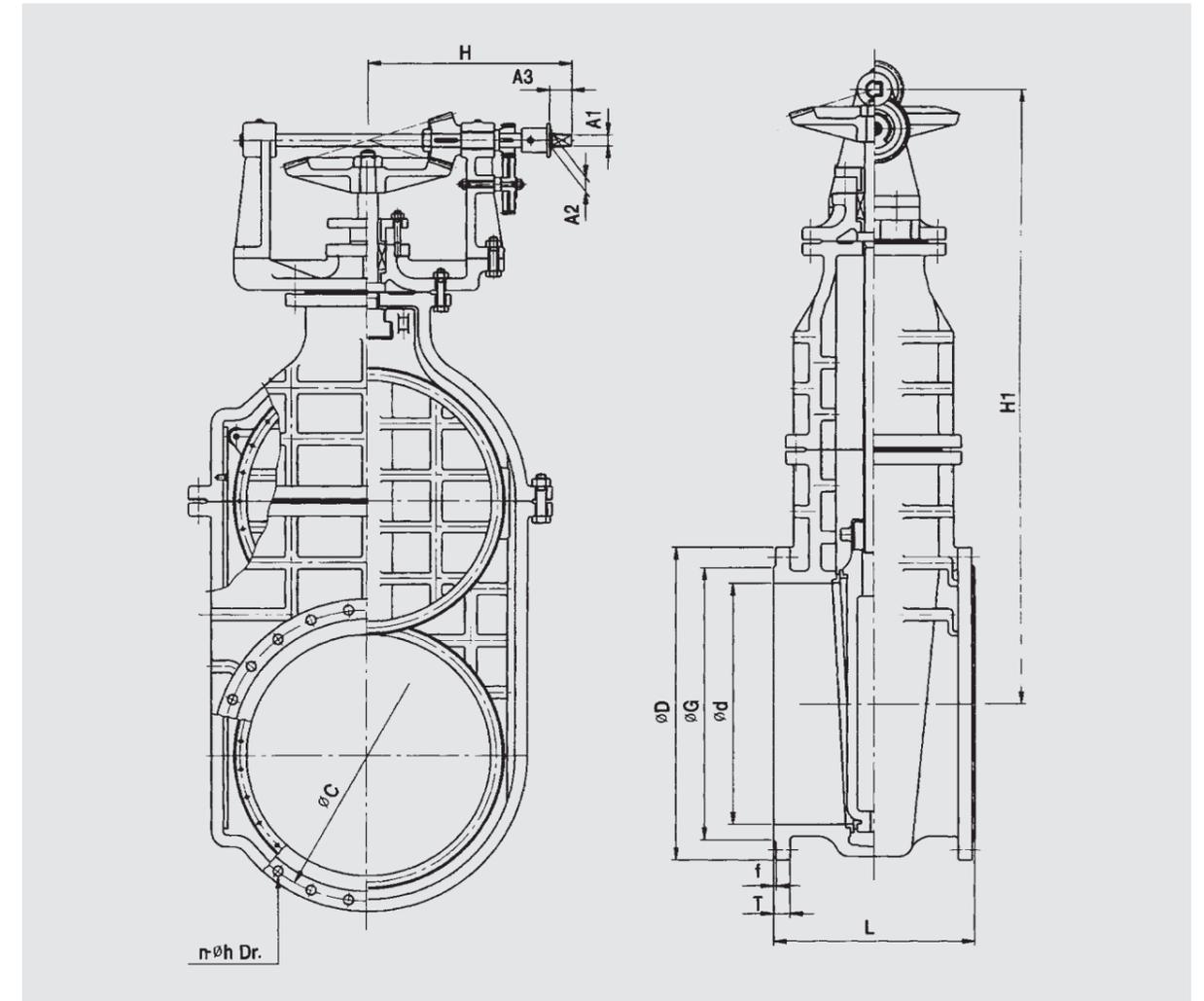
Dimensions of Sluice Valve (Vertical type)



Unit : mm

Bore (d)	Face to Face		Flange				Body		Spindle		Height		Cap			Rev. of Opening	Model
	L	øD	øG	øC	T×f	n-øh	B1×B	J1	T/IN	H	A1	A2	A3				
600	560	780	692	725	40×4	20-31	490×938	64	2,000	1860	32	38	70	87	C		
700	610	895	797	840	46×4	24-31	536×1080	70	1,750	2070	32	38	70	101			
800	690	1015	904	950	49×5	24-34	602×1198	76	1,750	2300	32	38	70	144			
900	740	1115	1004	1050	51×5	28-34	628×1322	82	1,625	2530	32	38	70	165			
1000	770	1230	1111	1160	55×5	28-37	678×1442	88	1,625	2750	32	38	70	200			
1100	800	1366	1200	1270	61×5	32-37	700×1566	94	1,500	3010	32	38	70	220			
1200	820	1470	1304	1387	63×5	32-37	694×1670	100	1,500	3230	32	38	70	258			

Dimensions of Sluice Valve (Horizontal type)



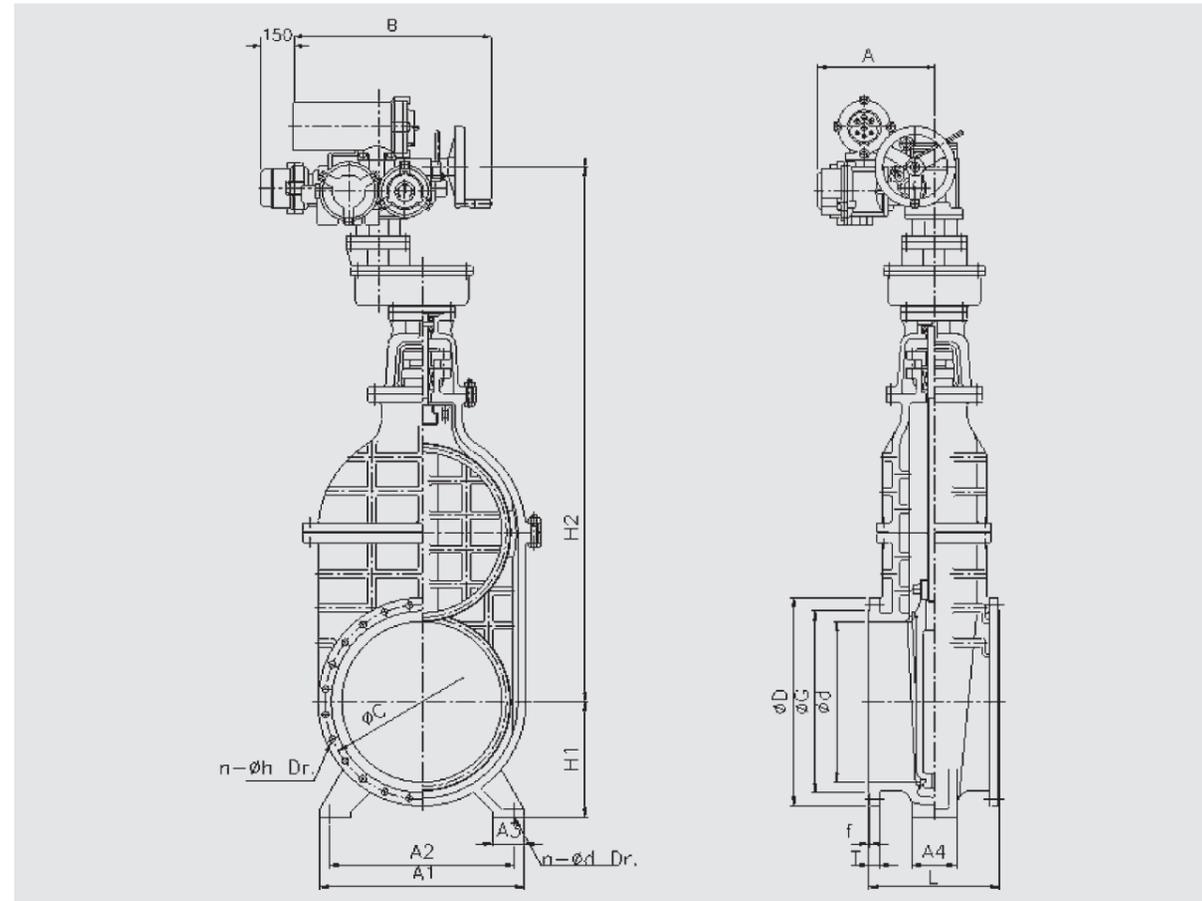
Unit : mm

Bore (d)	Face to Face		Flange				Spindle		Height		Cap			Rev. of Opening
	L	øD	øG	øC	T×f	n-øh	J1	T/IN	H	H1	A1	A2	A3	
400	470	565	477	515	28×3	16-27	52	2,250	452	1185	32	38	70	47
450	500	615	527	565	30×3	16-27	56	2,250	481	1302	32	38	70	63
500	530	670	582	620	30×3	20-27	58	2,000	509	1416	32	38	70	72.5
600	560	780	692	725	40×4	20-31	64	2,000	550	1610	32	38	70	87
700	610	895	797	840	46×4	24-31	70	1,750	650	1841	32	38	70	101
800	690	1015	904	950	49×5	24-34	76	1,750	683	2034	32	38	70	144
900	740	1115	1004	1050	51×5	28-34	82	1,625	732	2238	32	38	70	165
1000	770	1230	1111	1160	55×5	28-37	88	1,625	761	2461	32	39	70	200
1100	800	1366	1200	1270	61×5	32-37	94	1,500	831	2687	32	38	70	220
1200	820	1470	1304	1387	63×5	32-37	100	1,500	879	2911	32	38	70	258
1350	850	1642	1462	1552	68×6	36-38	108	1,375	973	3232	32	38	70	273
1500	900	1800	1620	1710	74×6	36-38	118	1,250	1086	3537	32	38	70	307

# ELECTRO DRIVE SLUICE VALVES

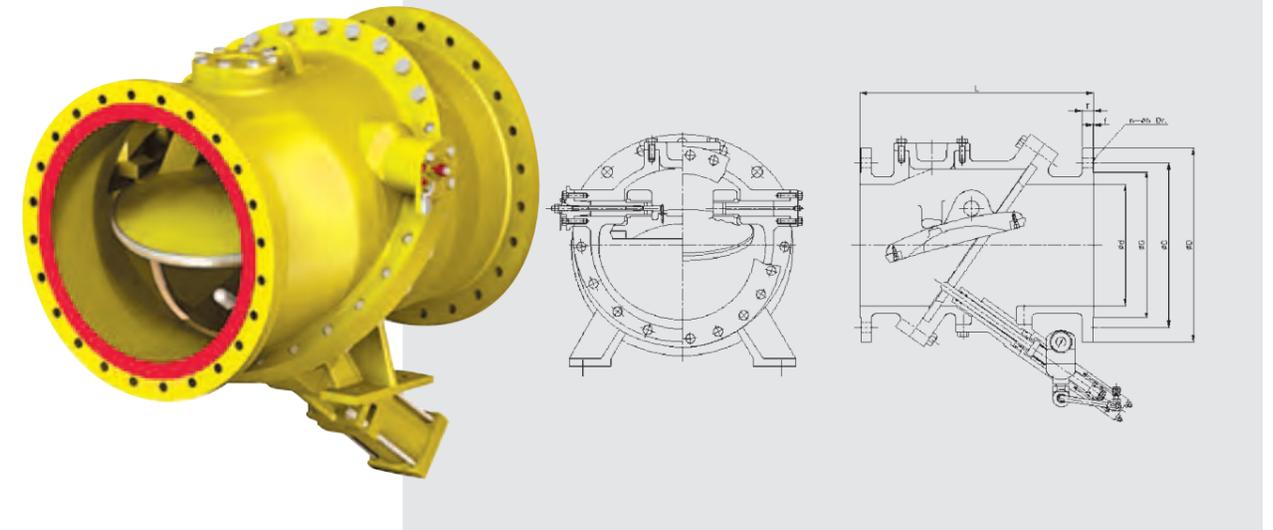
# TILTING CHECK VALVES

Dimensions of Electro Drive Sluice Valve



Unit : mm

Bore (d)	Face to Face	Flange					Height		Foot				Actuator		
	L	øD	øG	øC	T×f	n-øh	H1	H2	A1	A2	A3	A4	n-øh	A	B
200	300	340	264	295	22×2	8-23	210	820	300	250	80	100	2-19	260	640
250	380	395	319	350	24×2	12-23	240	885	400	330	80	100	2-19	260	640
300	400	445	367	400	24×3	12-23	280	1000	420	330	100	125	2-19	350	955
350	430	505	427	460	26×3	16-23	310	1085	480	380	100	150	2-19	350	955
400	470	565	477	515	28×3	16-27	340	1310	540	440	100	180	2-24	350	955
450	500	615	527	565	30×3	20-27	370	1420	600	500	125	200	2-24	350	955
500	530	670	582	620	30×3	20-27	400	1600	650	550	125	250	2-28	397	1195
600	560	780	692	725	40×4	20-31	450	1835	750	650	150	250	2-28	397	1195
700	610	895	797	840	46×4	24-31	500	2010	860	760	150	250	2-32	397	1195
800	690	1015	904	950	49×5	24-34	560	2220	980	880	150	250	2-32	397	1195
900	740	1115	1004	1050	51×5	28-34	620	2425	1100	980	200	300	2-38	397	1195
1000	770	1230	1111	1160	55×5	28-37	680	2650	1220	1100	200	300	2-38	397	1240
1100	800	1366	1200	1270	61×5	32-37	750	2775	1320	1200	200	300	2-42	397	1240
1200	820	1470	1304	1387	63×5	32-37	810	3000	1420	1300	250	350	2-42	397	1240
1350	850	1642	1462	1552	68×6	36-38	900	3315	1600	1480	250	350	2-42	397	1280
1500	900	1800	1620	1710	74×6	36-38	990	3630	1750	1600	300	400	2-42	397	1280



Rating	Face to Face	Flange size(KS D3578 F15)				
		øD	øg	øc	n-øh	t×f
ND	L	øD	øg	øc	n-øh	t×f
200	495	342	264	295	8-23	24*2
250	610	410	319	350	12-23	25*3
300	610	464	367	400	12-23	27*3
350	760	530	427	460	16-23	28*3
400	760	582	477	515	16-27	29*3
450	840	652	518	565	20-27	30*3
500	840	706	582	620	20-27	31*3
600	965	810	682	725	20-30	34*3
700	1200	928	797	840	24-30	34*3
800	1400	1034	904	950	24-33	36*3
900	1510	1156	1004	1050	28-33	38*3
1000	1550	1262	1111	1160	28-36	42*3

\*Specification was made based on maximum outline size . Products are subject to modify without prior notice.  
 \*This specification is made to understand size not restrict the structure of design.  
 \*Diameter based on KS B2305.  
 \*Allowance of flange size based on KS B1052 which flange specification is KS D3578, KS B1511 or follow on request in consultation.

## Specification

- **Product spec**  
200mm~1000mm
- **Operation type**  
Oil(Cylinder)
- **Main materials**  
GCD450, SC410, SSC13
- **Working pressure**  
4.5kg/cm<sup>2</sup>~20kg/cm<sup>2</sup>
- **Installation**  
On-return valve  
(prevent flowing backward)  
Cylinder type  
(water impact alleviation)

## Name of each part

Name	Materials	Code	Remarks
Body, Disc	Initiative graphite cast iron	GCD450	
	Carbon steel cast steel	SC410, SC450	
	Stainless steel casting	SSC13	
Shaft	Stainless steel	STS304, STS420J2	
Body Seat	Copper , copper alloy casting	ALBC	Sealing(metal to metal)
Disc Seat	Hot rolling stainless steel plate	STS304	

# CHECK VALVES

# CHECK VALVES

## Check valves (Cylinder type, Swing type, Non-return valve)

A standard check valve actuated by counter flow. The valve can be used with by-pass valve or counter-weight. On request, dash pots check valves being equipped with dash pots to preclude sudden closure in event of counter flow are available.

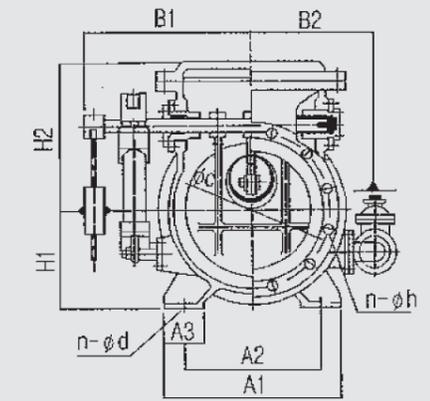
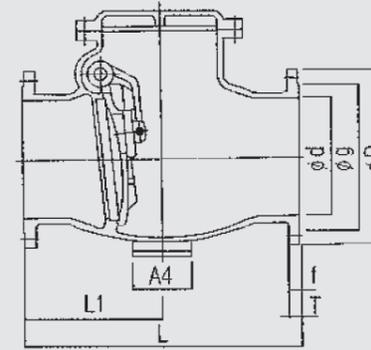
## Check Valve Specification

- Size**  
 Swing check valve 80~1500mm
- Working Pressure**  
 Max. 10kgf/cm<sup>2</sup>
- Valve End**  
 Flange(KSD 3578, 4309)  
 Other standards are available on request.
- Fluid**  
 Service Water
- Test Pressure**  
 Leakage test : Working Pressure  
 Shell test : Twice of working Pressure.
- Main Material**  
**Body** : Ductile Cast Iron(GCD450)  
**Disc** : Ductile Cast Iron(GCD450)  
 Steel Casting(SC410)  
**Stem** : Bronze Casting(BC 6)  
 Stainless Steel(STS 304)  
**Seat** : Bronze Casting(BC6)  
 Stainless Steel(STS304, 403)  
 The Other materials are available on request

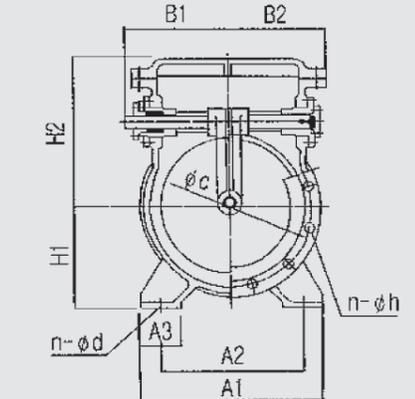
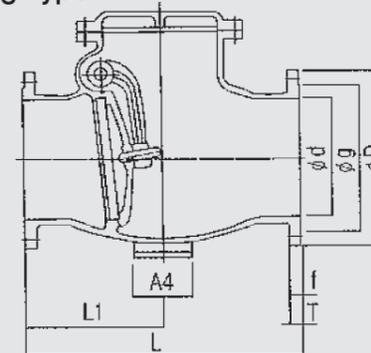


## Dimensions of Check Valves

### A Cylinder Type



### B Swing Type



Unit : mm

DN (d)	Lay Length		Flange				Height		Cover		Foot				Model	
	L	D	G	C	T×f	n-□h	H1	H2	B1	B2	A1	A2	A3	A4		n-d
80	240	185	126	150	24×2	8-19		150	200							B-TYPE
100	290	210	151	175	24×2	8-19		175	240							
150	410	280	212	240	26×2	8-23		260	330							
200	500	330	262	290	26×2	12-23		330	330	270						
250	560	400	324	355	30×3	12-25	240	370	420	290	400	350	80	130	2-25	A, B-TYPE
300	700	445	368	400	32×3	16-25	250	425	470	340	450	350	100	150	2-25	
350	790	490	413	445	34×3	16-25	310	475	520	420	480	400	100	125	2-25	
400	830	560	475	510	36×3	16-27	340	500	580	470	540	440	125	200	2-25	
450	950	620	530	565	38×3	20-27	370	545	700	550	600	500	125	200	2-25	
500	1070	675	585	620	40×3	20-27	400	615	750	600	650	550	125	200	2-28	
600	1200	795	690	730	44×3	24-33	450	755	800	650	750	650	150	250	2-28	
700	1300	905	800	840	48×3	24-33	500	870	900	700	860	760	150	250	2-35	
800	1450	1020	905	950	52×3	28-33	560	910	1000	800	980	880	200	300	2-35	
900	1600	1120	1005	1050	54×3	28-33	640	1040	1100	900	1100	980	200	300	2-38	
1000	1800	1235	1110	1160	58×3	28-39	700	1050	1160	980	1160	1000	250	400	2-42	
1100	2000	1345	1220	1270	62×3	28-39	800	1170	1350	1150	1400	1200	250	400	2-42	
1350	2500	1630	1480	1540	70×3	36-45	900	1300	1550	1350	1600	1350	300	450	2-42	
1500	2800	1795	1635	1700	74×3	40-45	1000	1450	1800	1600	1750	1500	300	450	2-42	

• Flange specification is KS B 1511(10K). Other Standards are available on request.  
 • Face to face dimension based on maker's standard. Other standards are available on request.

# DUAL PLATE CHECK VALVE

# DUAL PLATE CHECK VALVE

## FOR RESILIENT & METAL SEATED GENERAL SERVICE PIPE LINE

**DUO-CHECK VALVE WITH METAL TO METAL**



**SIZE RANGE** DN200~2800  
**PRESSURE RATING** 20kg/cm<sup>2</sup>, 30kg/cm<sup>2</sup>, 300P/600P  
**FACE to FACE** API 594, ANSI B 16.10  
**END CONN.** ANSI#150/300/600, JIS 16K/20K/30K  
**END CONN. TYPE** Flange Type

**DUO-CHECK VALVE WITH METAL TO METAL**



**SIZE RANGE** DN200~2800  
**PRESSURE RATING** 20kg/cm<sup>2</sup>, 30kg/cm<sup>2</sup>, 300P/600P  
**FACE to FACE** API 594, ANSI B 16.10  
**END CONN.** ANSI#150/300/600, JIS 16K/20K/30K  
**END CONN. TYPE** Flange Type

**DUO-CHECK VALVE WITH RUBBER TO METAL**



**SIZE RANGE** DN200~2800  
**PRESSURE RATING** 20kg/cm<sup>2</sup>, 30kg/cm<sup>2</sup>, 300P/600P  
**FACE to FACE** API 594, ANSI B 16.10  
**END CONN.** ANSI#150/300/600, JIS 16K/20K/30K  
**END CONN. TYPE** Flange Type

**DUO-CHECK VALVE WITH RUBBER TO METAL**



**SIZE RANGE** DN200~2800  
**PRESSURE RATING** 20kg/cm<sup>2</sup>, 30kg/cm<sup>2</sup>, 300P/600P  
**FACE to FACE** API 594, ANSI B 16.10  
**END CONN.** ANSI#150/300/600, JIS 16K/20K/30K  
**END CONN. TYPE** Water Type

**DUO-CHECK VALVE WITH RUBBER TO METAL**



**SIZE RANGE** DN200~2800  
**PRESSURE RATING** 20kg/cm<sup>2</sup>, 30kg/cm<sup>2</sup>, 300P/600P  
**FACE to FACE** API 594, ANSI B 16.10  
**END CONN.** ANSI#150/300/600, JIS 16K/20K/30K  
**END CONN. TYPE** Water Type

**DUO-CHECK VALVE WITH METAL TO METAL**



**SIZE RANGE** DN200~2800  
**PRESSURE RATING** 20kg/cm<sup>2</sup>, 30kg/cm<sup>2</sup>, 300P/600P  
**FACE to FACE** API 594, ANSI B 16.10  
**END CONN.** ANSI#150/300/600, JIS 16K/20K/30K  
**END CONN. TYPE** Ring joint Type

**TILTING-CHECK VALVE WITH METAL TO METAL**



**SIZE RANGE** DN200~2800  
**PRESSURE RATING** 20kg/cm<sup>2</sup>, 30kg/cm<sup>2</sup>, 300P/600P  
**FACE to FACE** API 594, ANSI B 16.10  
**END CONN.** ANSI#150/300/600, JIS 16K/20K/30K  
**END CONN. TYPE** Water Type

**SWING-CHECK VALVE WITH RUBBER TO METAL**



**SIZE RANGE** DN200~1200  
**PRESSURE RATING** 10kg/cm<sup>2</sup>  
**FACE to FACE** ANSI B 16.10 ISO 5752  
**END CONN.** ISO PN 6/10, ANSI#150, JIS 5K/10  
**END CONN. TYPE** Flange Type

**BUTTERFLY-CHECK VALVE WITH RUBBER TO METAL**



**SIZE RANGE** DN200~2800  
**PRESSURE RATING** 10kg/cm<sup>2</sup>  
**FACE to FACE** ANSI B 16.10 ISO 5752  
**END CONN.** ISO PN 6/10, ANSI#150, JIS 5K/10  
**END CONN. TYPE** Flange Type

## Quality Cast Carbon, Alloy and Stainless Steel Valves Class : 150, 300, 600

The DUO-CHECK valve is designed for fitting between ANSI flanges up to class 600 and conform to API594 and API6. The valves are manufactured in a wide range of materials and are offered in sizes from 2"(50mm) to 36"(900mm).

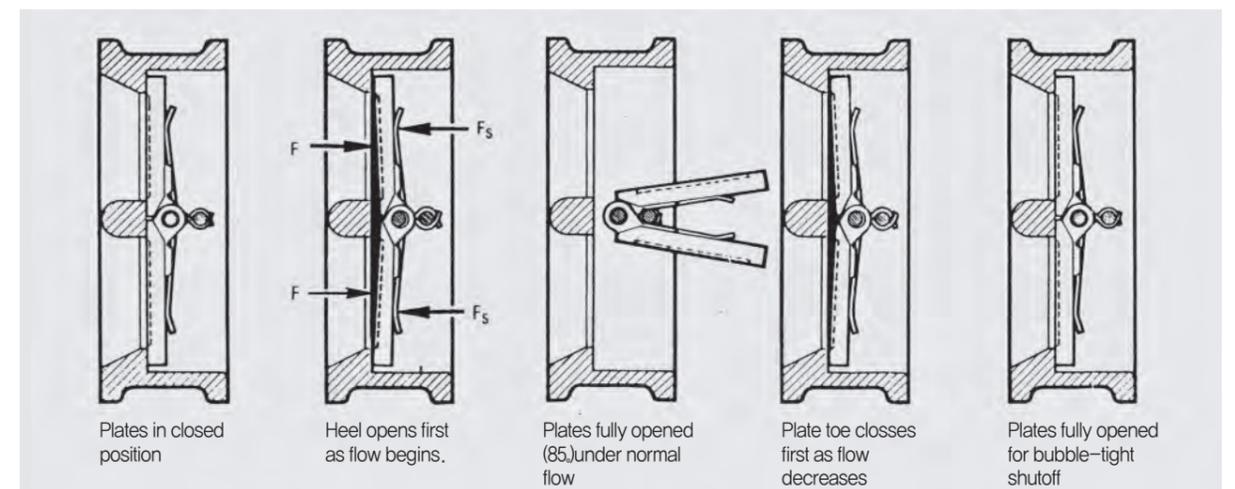


### DUO-CHECK, Flat-Seat Design

The valve employs two spring-loaded plates(half discs) suspended on a central vertical hinge pin. this DUO-CHECK design offers several advantages over one-piece disc designs. When the flow decreases, the plates close rapidly by torsion spring action without requiring reverse flow. After extensive endurance and performance tests, the spring action and hinge design has been perfected so the plate heel from dragging and causing seal wear.

### Independent Spring Action

The valve(6-inch and larger) employs a unique, new spring design for significant improvement in valve response. Each of the DUO-CHECK has its own spring, or springs, which provides independent closign action. This design overcomes the problems of earlier DUO-CHECK valves where both plates



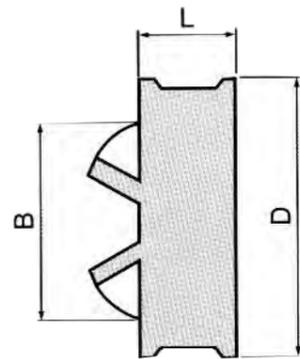
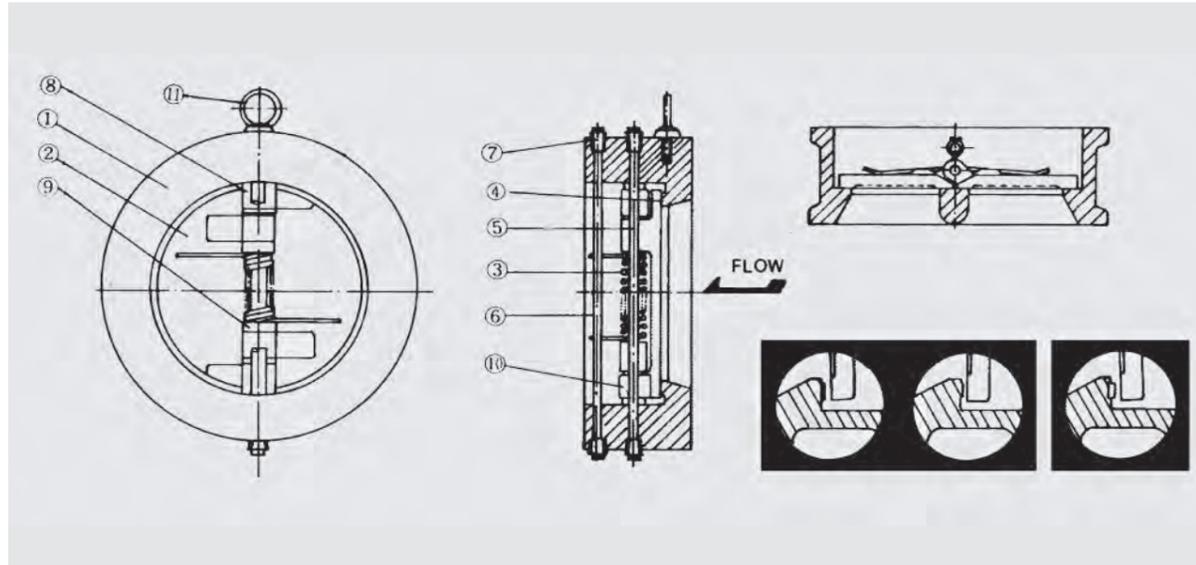
The fluid develops a Resultant Force(F) which acts at the center of the area of sealed surface(0.424 radius). The point of spring force (fs) acts beyond the center of area of each plate(1/2 to 3/4 radius). This fulcrum causes the heel to open first, preventing rubbing of the seal surface prior to normal plate opening. at closing, when the fluid flow decreases, the point of spring force causes the toe of the plate to close first.

# DUO-CHECK VALVE

# CHECK VALVES (Water Type)

## Wafer design chek Valve.

- Face-to-face dimensions are in accordance with API594 & API 6D
- Dimensions shown are for valves designed for fitting between ANSI flanges.



## Materials

No.	PART NAME	MATERIAL					
		KS			ASTM		
		CARBON STEEL	STAINLESS STEEL(304)	STAINLESS STEEL(316)	CARBON STEEL	STAINLESS STEEL(304)	STAINLESS STEEL(316)
1	BODY	SC 480	SSC 13	SSC 14	A 216-WCB	A 351-C F8	A 351-CF 8M
2	PLATE DISC	SSC 13		SSC 14	A 351-CF 8		A 351-CF 8M
3	SPRING	STS 304	STS 316		A 276-304	A 26-316	
4	SEAT	NBR	SSC 13	SSC 14	NBR	A 351-CF 8	A 315-CF 3M
5	HINGE PIN	STS 304		STS 316	A 276-304		A 276-316
6	STOP PIN	STS 304		STS 316	A 276-304		A 276-316
7	PIN RETAINER	STS 25C	STS 304	STS 316	AISI-1025	A 276-304	A 276-316
8	LUG BEARING	PTFE			PTFE		
9	LUG BEARING	PTFE			PTFE		
10	LUG BEARING	PTFE			PTFE		
11	EYE BOLT	SF 25			AISI-1020		

## INSTALLATION DIMENSIONS(1) KS · ANSI



Size	Series	Type Facing	Dimensions			Flange Bolt Circle	Number of Bolt	Bolt Diameter	Bolt Length		Weight (kg)
			D	L	B				FF·RF	RJ	
50 (2")	10k *	FF	101	54	60	120	4	M16	125	-	3
	16K *	FF	101	54	60	120	8	M16	125	-	4
	20K	RF · FF	101	60	60	120	8	M16	140	-	3
	125 *	FF	105	54	60	120.6	4	5/8	145	-	3
	250 *	FF	111	54	60	127.0	8	5/8	170	-	4
	150	RF · R-22	105	60	60	120.6	4	5/8	155	155	3
	300	RF · R-23	111	60	60	127.0	8	5/8	175	175	3
	400-600	RF · R-23	111	60	60	127.0	8	5/8	175	180	3
	900	RF · R-24	143	70	60	165.1	8	7/8	220	225	6
	1500	RF · R-24	143	70	60	165.1	8	7/8	220	225	7
65 (2 1/2")	10K *	FF	121	54	73	140	4	M16	130	-	4
	16K *	FF	121	60	73	140	8	M16	135	-	5
	20K	RF · FF	121	67	73	140	8	M16	150	-	5
	125 *	FF	124	60	73	139.7	4	5/8	150	-	4
	250 *	FF	130	60	73	149.3	8	3/4	180	-	5
	150	RF · R-25	124	67	73	139.7	4	5/8	175	165	4
	300	RF · R-26	130	67	73	149.3	8	3/4	175	195	4
	400-600	RF · R-26	130	67	73	149.3	8	3/4	195	195	4
	900	RF · R-27	165	83	73	190.5	8	1	250	250	7
	1500	RF · R-27	165	83	73	190.5	8	1	250	250	8
80 (3")	10K *	FF	131	57	89	150	8	M16	135	-	5
	16K *	FF	137	67	89	160	8	M20	170	-	7
	20K	RF · FF	137	73	89	160	8	m20	170	-	7
	125 *	FF	137	67	89	152.4	4	5/8	160	-	5
	250 *	FF	149	67	89	168.4	8	3/4	195	-	7
	150	RF · R-29	137	73	89	152.4	4	5/8	160	-	5
	300	RF · R-31	149	73	89	168.4	8	3/4	203	205	7
	400-600	RF · R-31	149	73	89	168.4	8	3/4	203	210	7
	900	RF · R-31	168	83	89	190.5	8	7/8	240	235	13
	1500	RF · R-36	175	83	89	203.2	8	1 1/3	270	270	14
100 (4")	10K *	FF	156	64	114	175	8	M16	145	-	6
	16K *	FF	162	67	114	185	8	M20	160	-	8
	20K	RF · FF	162	73	114	185	8	M20	175	-	8
	125 *	FF	175	67	114	190.5	8	5/8	170	-	6
	250 *	FF	181	67	114	200.1	8	3/4	205	-	8
	150	RF · R-36	175	73	114	190.5	8	5/8	178	180	8
	300	RF · R-37	181	73	114	200.1	8	3/4	203	210	8
	400	RF · R-37	178	79	114	200.1	8	7/8	235	220	11
	600	RF · R-37	194	79	114	215.9	8	7/8	245	245	12
	900	RF · R-37	206	102	114	234.9	8	1 1/3	285	280	18
1500	RF · R-39	210	102	114	241.3	8	1 1/4	310	305	21	
125 (5")	10K *	FF	187	70	141	210	8	M20	165	-	9
	16K *	FF	197	83	141	225	8	M22	185	-	10
	20K	RF · FF	197	86	141	225	8	M22	195	-	14
	125 *	FF	197	83	141	215.9	8	3/4	185	-	9
	250 *	FF	216	83	141	234.9	8	3/4	220	-	14
	150	RF · R-41	197	86	141	215.9	8	3/4	195	195	10
	300	RF · R-41	216	86	141	234.9	8	3/4	215	230	14
	400	RF · R-41	213	105	141	234.9	8	7/8	260	260	19
	600	RF · R-41	241	105	141	266.7	8	1	280	280	23

\* KS DESIGN FACE TO FACE - MAKER STANDARD

# CHECK VALVES (Water Type)

## INSTALLATION DIMENSIONS (2) KS-ANSI

Size	Series	Type Facing	Dimensions					Flange Bolt Circle	Number of Bolts	Bolt Diameter	Bolt Length		Weight (kg)
			ØA	B	ØC	F	R				FF-RF	RJ	
150 (6")	10K *	FF	217	76	168	3S	79	240	8	M20	170	-	10
	16K *	FF	235	95	168	43	79	260	12	M22	200	-	19
	20K	RF	235	98	16S	44	79	260	12	M22	215	-	19
	125 *	FF	222	95	166	35	79	241.3	8	3/4	190	-	10
	250 *	FF	257	95	168	43	79	269.9	12	3/4	240	-	19
	150	RF-R-43	222	98	168	44	79	241.3	8	3/4	210	210	16
	300	RF-R-43	251	98	168	44	79	269.9	12	3/4	235	250	19
	400	RF-R-45	248	136	168	46	82	269.9	12	7/8	300	300	31
	600	RF-R-45	267	136	168	46	82	292.1	12	1	315	320	33
	900	RF-R-45	289	158	168	56	82	317.5	12	1 1/8	370	360	53
1500	RF-R-46	283	159	168	56	82	317.5	12	1 3/8	430	425	59	
200 (8")	10K *	FF	267	95	219	42	105	290	12	M20	195	-	19
	16K *	FF	279	127	219	43	102	305	12	M22	340	-	36
	20K	RF-FF	279	127	219	48	102	305	12	M22	250	-	36
	125 *	FF	279	127	219	42	105	298.4	8	3/4	215	-	19
	250 *	FF	308	127	219	48	102	330.2	12	7/8	280	-	36
	150	RF-R-48	279	127	219	48	102	298.4	8	3/4	245	250	32
	300	RF-R-49	308	127	219	48	102	330.2	12	7/8	280	290	36
	400	RF-R-49	305	166	219	54	105	330.2	12	1	350	345	36
	600	RF-R-49	321	166	219	54	105	349.2	12	1 1/8	375	370	68
	900	RF-R-49	359	206	219	73	107	393.7	12	1 3/8	435	440	89
1500	RF-R-50	352	206	219	73	107	393.7	12	1 5/8	505	510	97	
250 (10")	10K *	FF	330	108	274	42	128	310	12	M22	215	-	31
	16K *	FF	353	140	274	48	126	380	12	M24	260	-	51
	20K	RF-FF	353	146	274	52	126	380	12	M24	280	-	51
	125 *	FF	340	140	274	42	128	361.9	12	7/8	240	-	31
	250 *	FF	362	140	274	48	126	387.5	16	1	315	-	51
	150	RF-R-52	340	146	274	56	126	361.9	12	7/8	280	280	47
	300	RF-R-53	362	146	274	52	126	387.5	16	1	315	325	51
	400	RF-R-53	359	213	274	70	133	387.5	16	1 1/8	410	415	96
	600	RF-R-53	400	213	274	70	133	431.8	16	1 1/4	435	440	104
	900	RF-R-53	435	241	274	87	133	469.9	16	1 1/4	490	485	132
1500	RF-R-54	435	248	274	87	133	482.6	12	1 1/8	605	600	140	
300 (12")	10K *	FF	375	143	324	58	155	400	16	M22	255	-	56
	16K *	FF	403	181	324	70	152	400	16	M24	305	-	90
	20K	RF-FF	403	181	324	70	152	430	16	M24	320	-	88
	125 *	FF	410	181	324	58	155	431.8	12	7/8	280	-	56
	250 *	FF	422	181	324	70	152	450.8	16	1 1/8	370	-	90
	150	RF-R-56	410	181	324	70	152	431.8	12	7/8	310	315	84
	300	RF-R-57	422	181	324	70	152	450.8	16	1 1/8	360	375	88
	400	RF-R-57	419	229	324	67	152	450.8	16	1 1/4	445	440	133
	600	RF-R-57	457	229	324	67	152	488.9	20	1 1/4	465	460	144
	900	RF-R-57	496	292	324	100	159	533.4	20	1 3/8	560	555	169
1500	RF-R-58	521	30S	324	102	159	571.5	16	2	700	700	178	
350 (32")	10K *	FF	420	184	356	94	170	445	16	M22	300	-	71
	16K *	FF	447	222	356	94	170	480	16	M30	365	-	170
	20K	RF-FF	447	222	356	94	170	480	16	M30	370	-	176
	125 *	FF	451	184	356	94	170	476.2	12	1	315	-	71
	250 *	FF	486	222	356	94	170	514.3	20	1 1/8	425	-	176
	150	RF-R-59	451	184	356	90	170	476.2	12	1	315	350	97
	300	RF-R-61	486	222	356	94	170	514.3	20	1 1/8	425	415	176
	400	RF-R-61	483	273	356	103	164	514.3	20	1 1/4	495	485	198
	600	RF-R-61	492	273	356	103	164	527	20	1 3/8	520	510	198
	900	RF-R-62	521	356	356	130	181	558.8	20	1 1/2	645	650	198
1500	RF-R-63	578	356	356	130	181	635	16	2 1/4	785	800	198	
400 (36")	10K *	FF	483	191	406	86	195	510	16	M24	315	-	99
	16K *	FF	507	232	406	97	195	540	16	M30	335	-	227
	20K	RF-FF	507	232	406	95	195	540	16	M30	405	-	227
	125 *	FF	514	191	406	89	195	539.7	16	1	350	-	99
	250 *	FF	540	232	406	97	196	517.5	20	1 1/4	435	-	227
	150	RF-R-64	514	191	406	86	195	539.7	16	1	350	340	159
	300	RF-R-65	540	232	406	95	196	571.5	20	1 1/4	435	425	227
	400	RF-R-65	537	305	406	92	196	571.5	20	1 3/8	550	540	268
	600	RF-R-65	566	305	406	92	198	603.2	20	1 1/2	585	575	288
	900	RF-R-66	575	384	406	137	203	615.9	20	1 5/8	690	695	550
1500	RF-R-67	641	384	406	137	203	704.8	16	2 1/2	855	870	750	
450 (40")	10K *	FF	538	203	457	86	219	566	20	M24	325	-	118
	16K *	FF	572	264	457	102	219	605	20	M30	420	-	301
	20K	RF-FF	572	264	457	127	219	605	20	M30	440	-	301
	125 *	FF	549	203	457	86	219	577.8	16	1 1/8	370	-	118
	250 *	FF	597	264	457	102	219	628.6	24	1 1/4	495	-	301
	150	RF-R-68	549	203	457	86	219	577.8	16	1 1/8	370	390	185
	300	RF-R-69	597	264	457	127	219	626.6	24	1 1/4	495	485	301
	400	RF-R-69	594	362	457	121	228	628.6	24	1 3/8	635	625	401
	600	RF-R-69	613	362	457	121	228	654	20	1 3/8	635	625	401
	900	RF-R-70	638	451	457	167	232	685.8	20	1 7/8	800	800	770
1500	RF-R-71	705	468	457	167	216	774.7	16	2 3/4	985	1005	980	

\* KS DESIGN FACE TO FACE --- MAKER STANDARD

## INSTALLATION DIMENSIONS(1) KS-ANSI

Size	Series	Type Facing	Dimensions			Flange Bolt Circle	Number of Bolt	Bolt Diameter	Bolt Length		Weight (kg)
			D	L	B				FF-RF	RJ	
500 (20")	10k *	FF	593	213	508	620	20	M24	345	-	180
	16K *	FF	627	292	508	660	20	M30	455	-	373
	20K	RF-FF	627	292	508	660	20	M30	475	-	373
	125 *	FF	606	213	508	635	20	1 1/3	375	-	180
	250 *	FF	654	292	508	685.8	24	1 1/4	520	-	373
	150	RF-R-72	606	219	508	635	20	1 1/3	384	395	243
	300	RF-R-73	654	292	508	685.8	24	1 1/4	520	510	373
	400	RF-R-73	648	368	508	685.8	24	1 1/2	670	660	421
	600	RF-R-73	683	368	508	723.9	24	1 5/8	670	660	640
	900	RF-R-74	699	451	508	749.3	20	2	740	745	1055
600 (24")	10K *	FF	697	222	610	730	24	M30	370	-	258
	16K *	FF	731	318	610	770	24	M36	500	-	511
	20K	RF-FF	731	318	610	770	24	M36	525	-	598
	125 *	FF	718	222	610	749.3	20	1 1/4	435	-	258
	250 *	FF	775	318	610	812.8	24	1 1/2	585	-	541
	150	RF-R-72	718	222	610	749.3	20	1 1/4	435	425	394
	300	RF-R-73	775	318	610	812.8	24	1 1/2	582	575	598
	400	RF-R-73	768	394	610	812.8	24	1 3/4	685	675	743
	600	RF-R-73	791	438	610	838.12	24	1 7/8	785	775	981
	900	RF-R-78	838	495	610	901.7	20	2 1/2	950	965	1700
700 (28")	10K *	FF	807	32	711	840	24	M30	490	-	580
	125 *	FF	832	32	711	840	24	1 1/4	620	-	634
	150	RF	832	32	711	840	24	1 1/4	620	-	692
750 (30")	10K	FF	867	305	762	900	24	M30	475	-	450
	125 *	FF	883	305	762	914.4	28	1 1/4	580	-	450
	150	RF	883	305	762	914.4	28	1 1/4	580	-	580
800 (32")	300	RF-RJ95	953	368	762	966.5	28	1 3/4	673	750	928
	10k	FF	917	356	813	950	28	M30	530	-	526
	125	FF	920	356	813	950	28	1 1/2	630	-	533
900 (36")	150	RF	940	356	813	950	28	1 1/2	630	-	635
	10K	FF	1017	365	914	1050	28	M30	535	-	656
	125 *	FF	1048	368	914	1085.8	32	1 1/2	657	-	656
1000 (40")	150	RF	1048	368	914	1085.8	32	1 1/2	657	-	685
	300	RF98	1117	483	914	1168.4	32	2	835	-	1609
	10K *	FF	1121	419	1016	1160	28	M36	610	-	1010
1050 (42")	125 *</										

# DUO-CHECK VALVES

## HYDRAULIC CHARACTERISTICS

### Principle

The purpose of a check valve is to prevent reverse flow. By preventing back flow, check valves protect equipment, processes and piping.

Since check valves are normally either open or closed, calculation work is therefore limited to determine the pressure loss of the check valve when fully open at different rates of flow through the pipe.

## CALCULATION PROCEDURE

### Metric system

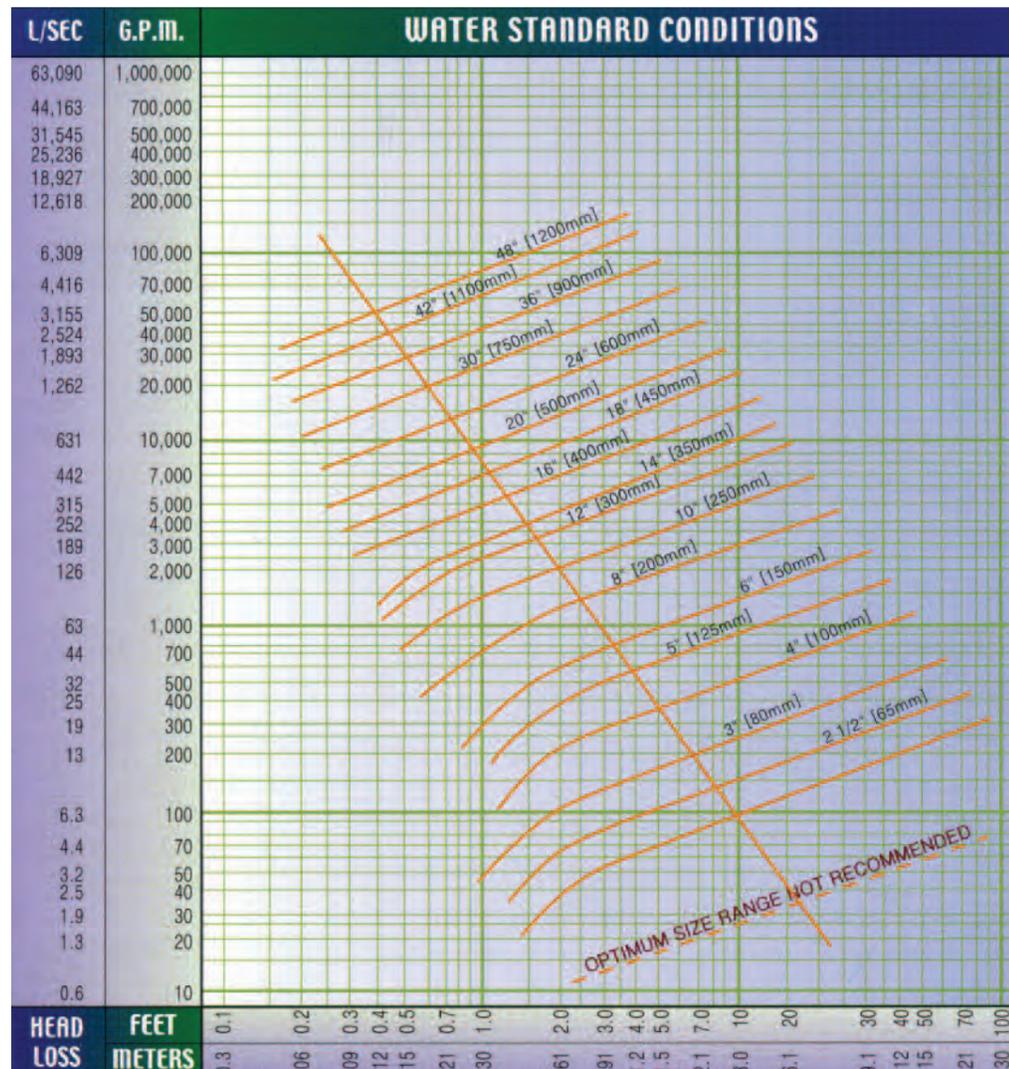
$$\Delta P = d \left( \frac{Q_v}{K_v} \right)^2 + p_d$$

$\Delta P$ =pressure loss in bar  
 $d$ =specific gravity of fluid  
 $Q_v$ =flow in m<sup>3</sup>/h  
 $K_v$ =flow coefficient  
 $p_d$ =cracking pressure in bar

### English units

$$\Delta P = d \left( \frac{Q_v}{C_v} \right)^2 + p_d$$

$\Delta P$ =pressure loss in psi  
 $d$ =specific gravity of fluid  
 $Q_v$ =flow in US Gallon/mm  
 $C_v$ =flow coefficient  
 $p_d$ =cracking pressure in psi

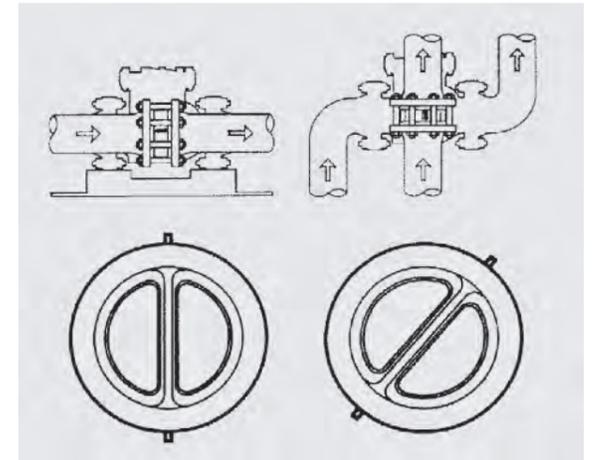


## Installation

The check valve design allow a rapid and easy installation between standardized flanges:

- Reduced weight and overall dimensions,
- No additional pipe supports are required,
- Suitable for horizontal and vertical up flow,
- No special tools are needed for installation,
- Low maintenance.

The check valves, in the standard configuration, is offered with flat faces(ff). on request, raised faces(rt) can be supplied. the flange faces are machined "smooth finish" (ra max. : 3,2μ) or "stock finish"



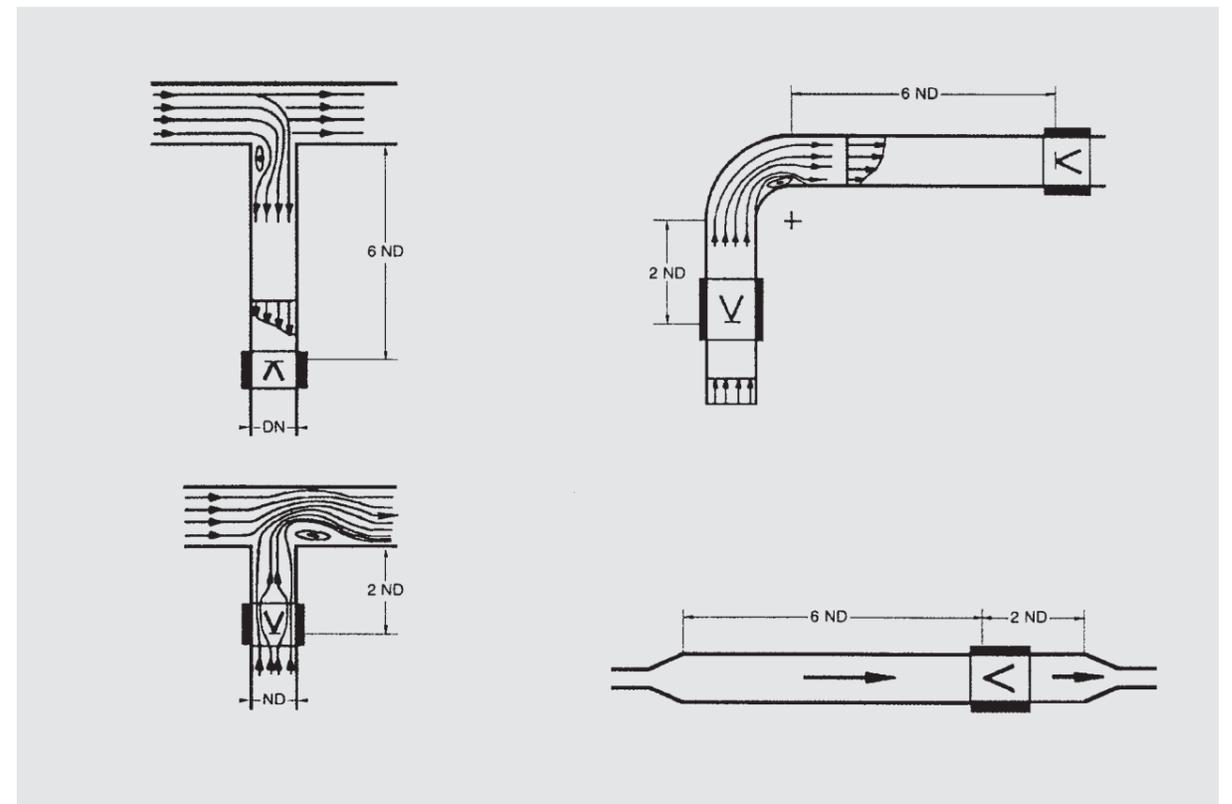
## Optimum installation

In a horizontal pipe, the check valve must always be installed with its hinge pin in the vertical position.

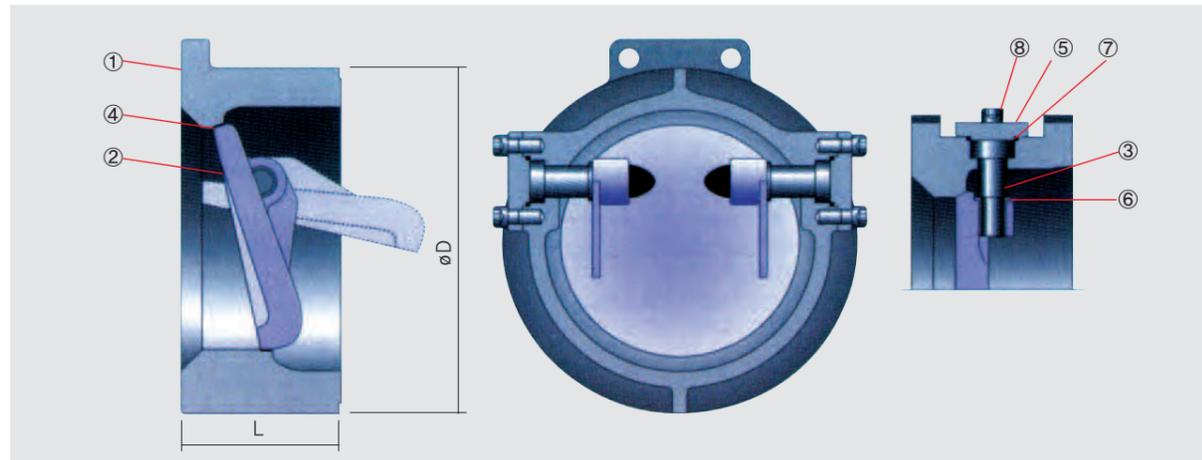
In a piping system, some minimum distances must be respected between the check valve position and a bend or a tee. the following drawings show some horizontal pipe configurations (viewed from above) in which the check valve is installed with its hinge pin in the vertical position,

the minimum recommended distance for a check valve installed downstream from a bend, tee, pump or valve causing flow disturbance is 6 diameters.

when such a unit is downstream of the check valve, it is necessary to respect a distance of at least 2 diameters.



# TILTING DISC CHECK VALVES



- Face-to-face dimensions of valves comply with API 594 & API 6D
- Flanged dimensions of valves comply with ASME/ANSI B16.5
- Valves (in size applicable) and ratings comply with ASME/ANSI B16.34
- Wall thickness dimensions of valves comply with API 600

## Wafer tilting disc check valve standard material specification

No.	Part name	Carbon steel	1 1/4 Chromium-1/2 Molybdenum	2 1/2 Chromium-1 Molybdenum	316 Stainless steel
1	BODY	A216-WCB	A217-WC6	A217-WC9	A351-CF8M
2	DISC	A216-WCB+STL	A217-WC6+STL	A217-WC9+STL	A351-CF8M+STL
3	HINGE PIN	A479-410	A479-410	A479-410	A479-316
4	BODY SEATRING	A216-WCB+STL	A217-WC6+STL	A217-WC9+STL	A351-CF8M+STL
5	CAP	A283-D	A182-F11	A182-F22	A240-316
6	BUSHING	304SS	304SS	304SS	316SS
7	GASKET	GRAPHITE+304SS	GRAPHITE+304SS	GRAPHITE+304SS	GRAPHITE+316SS
8	CAP BOLT	A193-B7	A193-b16	A193-B16	A193-B8

## Class 150

Size	in	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
L	in	2 3/8	2 5/8	2 7/8	2 7/8	3 7/8	5	5 3/4	7 1/8	7 1/4	7 1/2	8	8 5/8	8 3/4
	mm	60	67	73	73	98	127	146	181	184	191	203	219	222
øD	in	4 1/8	4 7/8	5 3/8	6 7/8	8 3/4	11	13 3/8	16 1/8	17 3/4	20 1/4	21 5/8	23 7/8	28 1/4
	mm	105	124	137	175	222	279	340	410	451	514	549	600	718

## Class 300

Size	in	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
L	in	2 3/8	2 5/8	2 7/8	2 7/8	3 7/8	5	5 3/4	7 1/8	8 3/4	9 1/8	10 5/8	11 1/2	12 1/2
	mm	60	67	73	73	98	127	146	181	222	232	263	292	318
øD	in	4 3/8	5 1/8	5 7/8	7 1/8	9 7/8	12 1/8	14 1/4	16 5/8	19 1/8	21 1/4	23 1/2	25 3/4	30 1/2
	mm	111	130	149	181	251	308	362	422	486	540	597	654	775

# VALVE ROOM (Waterproof Type)

## Summary



This product is about manhole installed under-ground. It supports weaknesses of concrete manhole and FRP manhole and revive strong points of steel. It makes excellent waterproof effect through manufacturing manhole and maximize efficiency of installation process.

Generally, manhole were installed under-ground. Agricultural water pipe, water and drainage services pipe are connected with manhole in which Sluice valve, air valve and fluid gauge are installed.

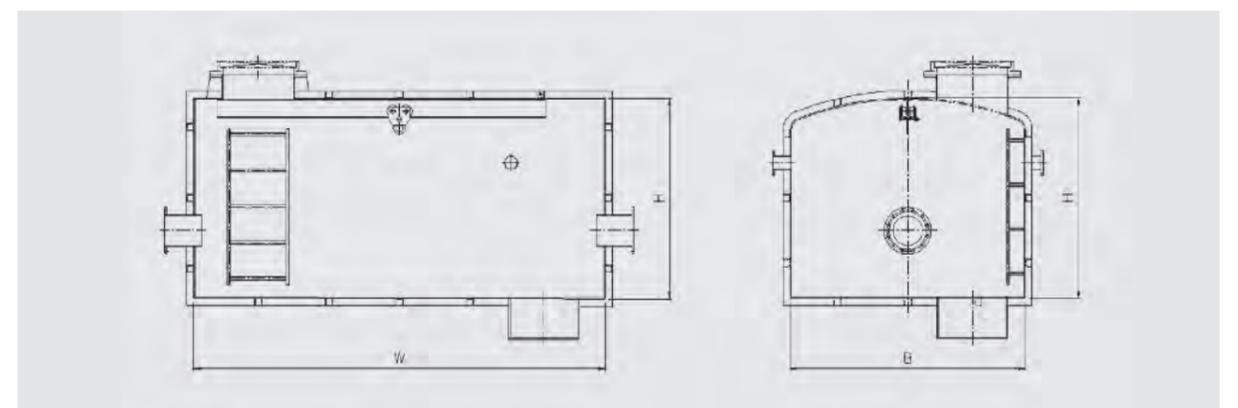
Main materials of normal manhole is concrete cement. Therefore installation process is complicated. Process: On the location of installed water & drainage services pipe path Make concrete form--Cast-in-place concrete--Make manhole--Connect piping--Connect Valve--etc.

These long course of installation for concrete manhole make problems on total piping line works caused by long period of working time.

Manhole are made by concrete cement. Therefore Crevice is inevitable between manhole and piping. Underground water or rain come into the manhole which make corrosion on part of materials as well as the reason of breakdown and malfunction of actuator or fluid gauge.

Specially, under the repair inside part of materials, there are some contained water which enable to work after taken out water by water pump. In case of replace, we have a big material or valve inside that make it impossible to take out through top of manhole. Accordingly, process are ;after destroy the top of manhole, replace the new materials, re-concrete cement to support top of manhole. These series of working system are complicated, increase cost and delayed working periods.

Waterproof Type Valve Room settled these problems stated above.



W × B × H	W × B × H	W × B × H	W × B × H
1600×1500×1500	1700×1500×1600	1800×1500×1600	1900×1500×1600
2100×1500×1600	2200×1500×1600	2400×1600×1600	2800×1600×1600
2800×1700×1600	3000×1800×1600	3200×1800×1700	3500×2000×1700
4000×2100×1800	4500×2100×1800		

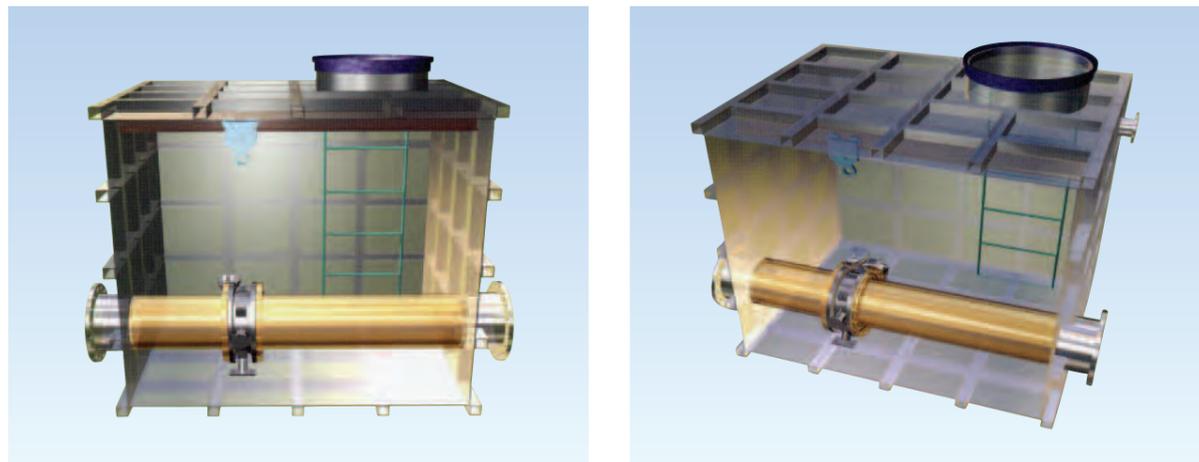
\* In case of replacement of Valve or part materials from the manhole, some of materials are bigger than a hole. In that cases, we take out the things after destroy top of manhole. After then re-concrete for reinforcement work. This makes weakness on the top of manhole.

## VALVE ROOM (Waterproof Type)

### Features

- **Structure of no others inflow**  
There is no crevice between main pipe and manhole that make no other inflow.
- **Simple installation**  
Installation is simple by only connecting piping line
- **Competitive price**  
Separation of manhole piping is possible. Even if big size part of materials than piping path, it enables easy work on repair, check & replacement.
- **Shorten periods of installation work.**  
We deliver products as a whole set that make the very short periods of installation work.
- **Modularized mass production (possible)**  
Mass production is possible through modularized specification after fixing height of ground base & level of low-high for piping and with taking minimum manhole specification and piping path.

### Cross-Section of Valve Room



## FLAP VALVES

### Flap Valves

Designed for preventing reversal of flow at pipe outlet.

### Specification

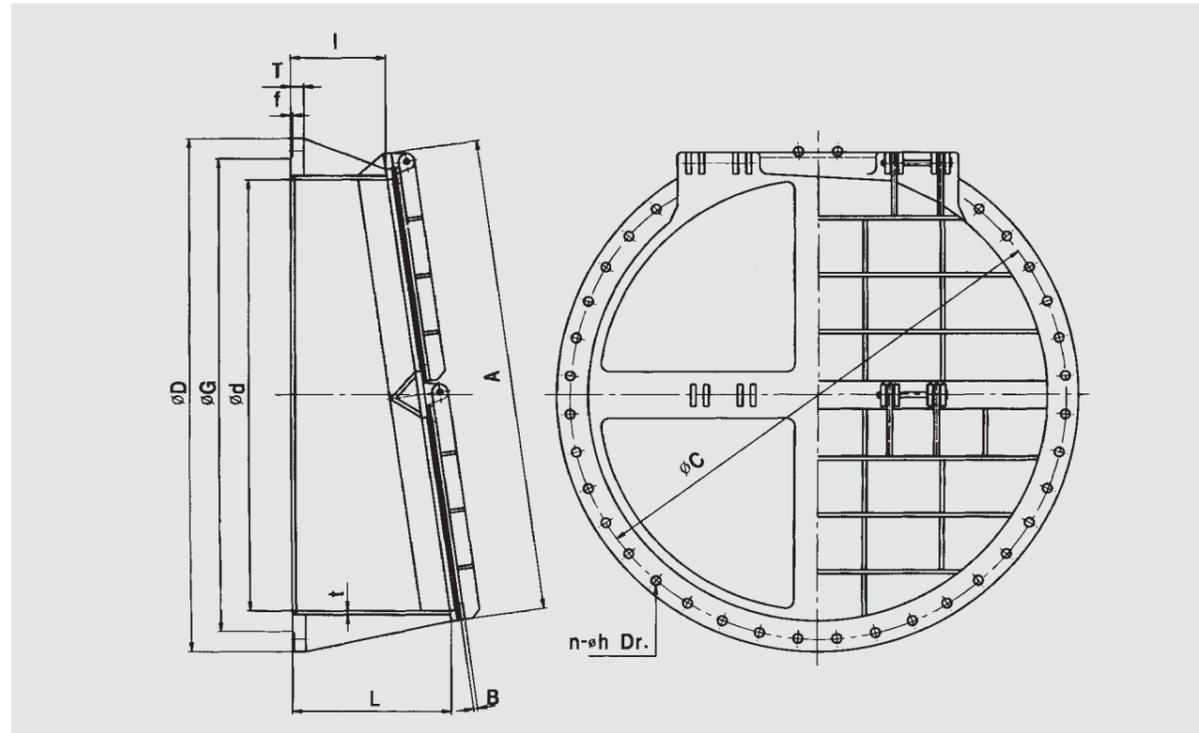
- **Size**  
Nominal dia : 200mm~3,000mm
- **Working Pressure**  
Max. 7.5kgf/cm<sup>2</sup>
- **Valve End**  
Flange (KS D 4308, KS D 3578)  
Other standards are available on request.
- **Fluid**  
Service Water
- **Main Material**  
  - Body** : HDPE  
Steel Casting(SS400)
  - Disc** : HDPE  
Steel Plate(SS400)
  - PIN** : Stainless Steel(STS304, STS403)
  - Seat** : Rubber



# FLAP VALVES

# EXPANSIONS JOINT (Flange Type)

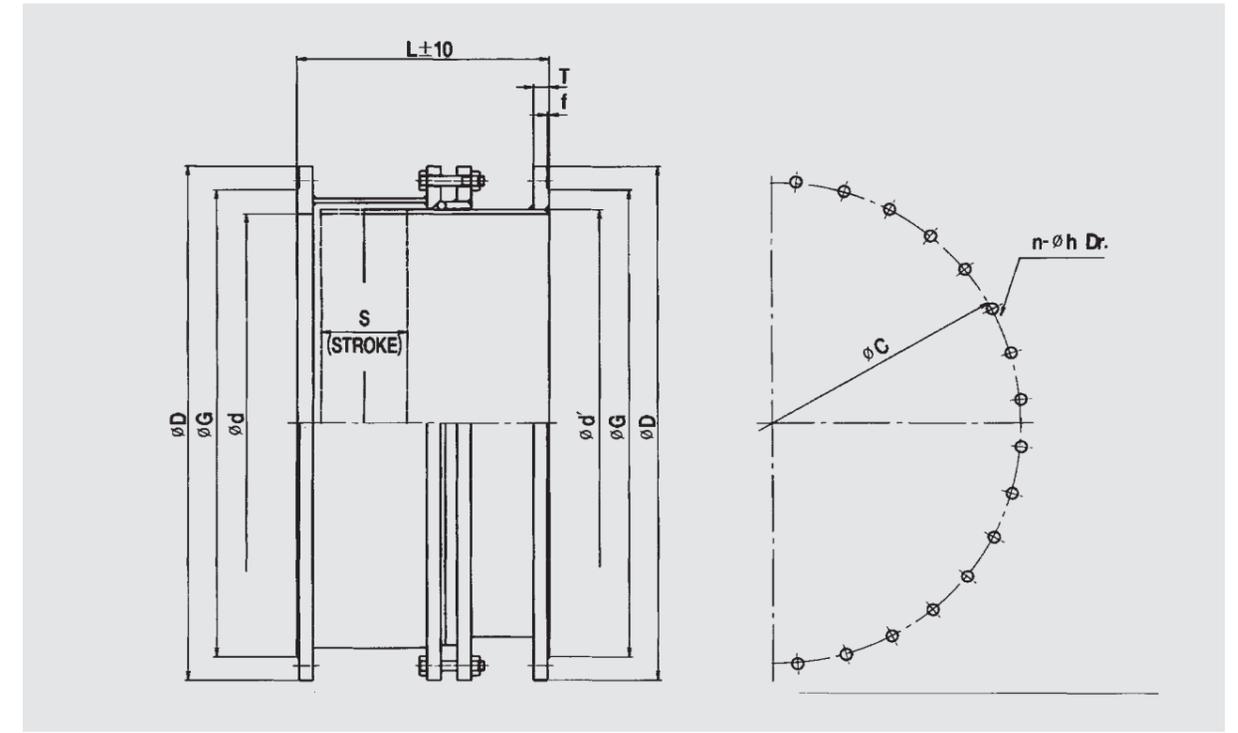
Dimensions of Flap Valves



Unit : mm

Bore (d)	Flange					Body			Disc		Remarks
	D	G	C	T×f	n-øh	L	l	t	A	B	
200	340	264	295	422	8-23	190	150	5.8	240	6	1-DOOR
250	395	319	350	242	12-23	215	170	6.6	290	6	
300	445	367	400	263	12-23	235	180	6.9	340	6	
350	505	427	460	263	16-23	265	200	7.9	400	6	
400	565	477	515	263	16-28	280	210	5	450	6	
450	615	527	565	283	20-28	300	220	5	500	6	
500	670	582	620	303	20-28	320	230	5	560	9	
600	780	682	725	333	20-31	360	250	5	660	9	
700	895	797	840	353	24-31	400	270	5	770	9	
800	1015	904	950	373	24-34	425	280	6	880	9	
900	1115	1004	1050	393	28-34	450	290	6	980	9	
1000	1230	1111	1160	413	28-37	480	300	7	1090	12	2-DOOR
1100	1340	1221	1270	413	32-37	500	305	8	1200	12	
1200	1470	1304	1387	433	32-37	525	310	9	1300	12	
1350	1642	1462	1552	453	36-42	565	325	10	1450	12	
1500	1800	1620	1710	483	36-42	610	340	11	1620	15	
1650	1950	1770	1860	506	40-48	655	360	15	1780	15	4-DOOR
1800	2115	1960	2020	516	44-48	700	380	16	1950	15	
2000	2325	2170	2230	546	48-48	760	400	18	2150	15	
2200	2550	2370	2440	586	52-56	810	420	19	2350	19	
2400	2760	2570	2650	606	56-56	860	440	21	2250	19	
2500	2860	2670	2750	626	56-56	890	450	22	2680	19	

Dimensions of Expansion Joint (Flange type)

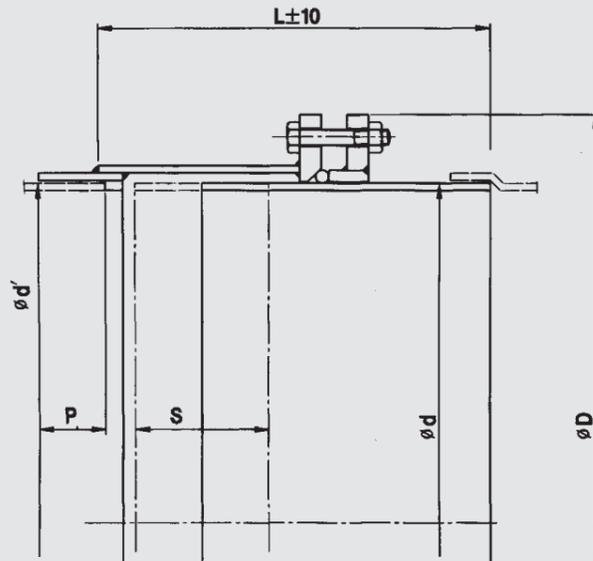


Unit : mm

Bore (d)	Flange					Height d.	Face to Face L	Stroke S
	D	G	C	T×f	n-øh			
80	200	133	160	182	4-19	89.1	310	80
100	220	153	180	182	8-19	114.3	310	80
125	250	183	210	202	8-19	139.8	325	80
150	285	209	240	222	8-23	165.2	330	80
200	340	264	295	242	8-23	216.5	390	120
250	395	319	350	242	12-23	267.4	400	120
300	445	367	400	263	12-23	318.5	480	150
350	505	427	460	263	16-23	355.6	490	150
400	565	477	515	263	16-28	406.4	530	175
450	615	527	565	283	20-28	457.2	540	175
500	670	582	620	303	20-28	508.0	580	200
600	780	682	725	333	20-31	609.6	610	200
700	895	797	840	353	24-35	711.2	665	225
800	1015	904	950	373	24-34	812.8	670	225
900	1115	1004	1050	393	28-34	914.4	710	250
1000	1230	1111	1160	413	28-37	1016.0	730	250
1100	1340	1221	1270	413	32-37	1117.6	770	275
1200	1470	1304	1387	433	32-37	1219.5	775	275
1350	1642	1462	1552	453	36-38	1371.6	805	275
1500	1800	1620	1710	483	36-38	1524.0	810	275
1650	1950	1770	1860	506	40-40	1676.4	860	300
1800	2115	1960	2020	516	44-48	1828.8	960	350
2000	2325	2170	2230	546	48-48	2032.0	975	350

## EXPANSIONS JOINT (Spigot Type)

### Dimensions of Expansion Joint (Spigot type)



Unit : mm

Bore	d	d.	D	L	P	Stroke
80	89.1	95	200	300	70	80
100	114.3	120	220	310	70	80
125	139.8	145	250	320	70	80
150	165.2	170	285	330	70	80
200	216.5	220	340	390	80	120
250	267.4	273	395	400	80	120
300	318.5	325	445	480	80	150
350	355.6	360	505	490	80	150
400	406.4	410	565	530	80	175
450	457.2	465	615	540	80	175
500	508.0	515	670	580	100	200
600	609.6	615	780	600	100	200
700	711.2	720	895	670	100	225
800	812.8	820	1015	670	100	225
900	914.4	924	1115	700	100	250
1000	1016.0	1025	1230	730	100	250
1100	1117.6	1128	1340	770	120	275
1200	1219.2	1230	1470	780	120	275
1350	1371.6	1380	1642	800	120	275
1500	1524.0	1535	1800	855	120	275
1650	1676.4	1687	1950	880	120	300
1800	1828.8	1840	2115	950	120	350
2000	2032	2045	2325	980	120	350

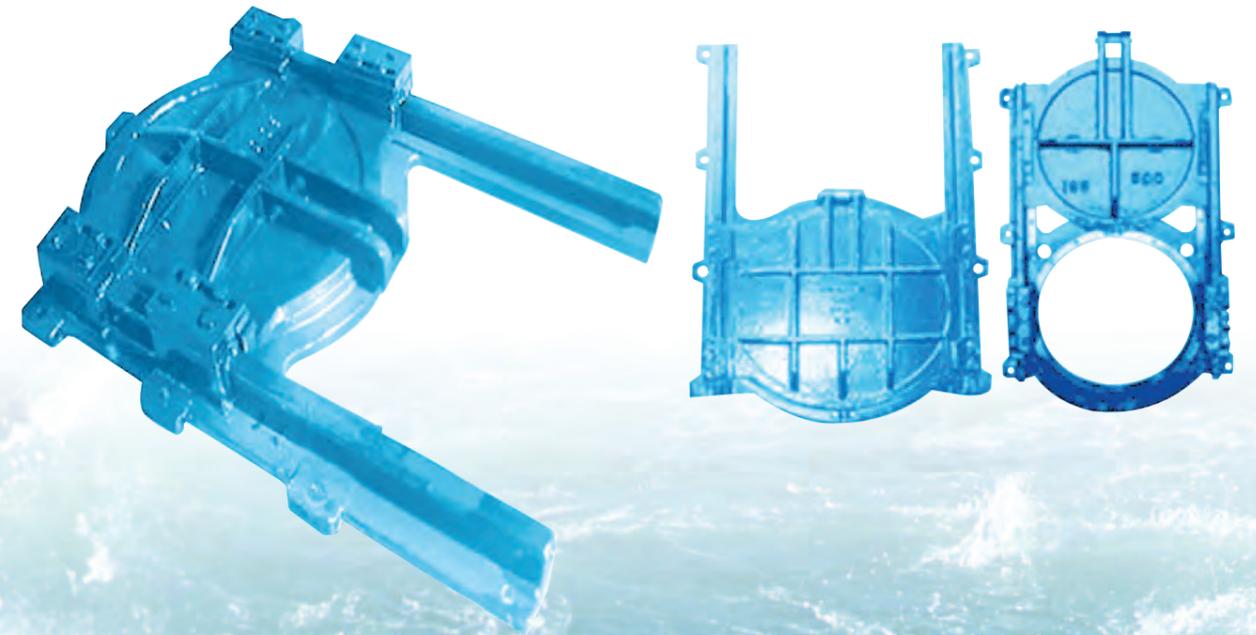
## SLUICE GATES (Circular Type)

### Features

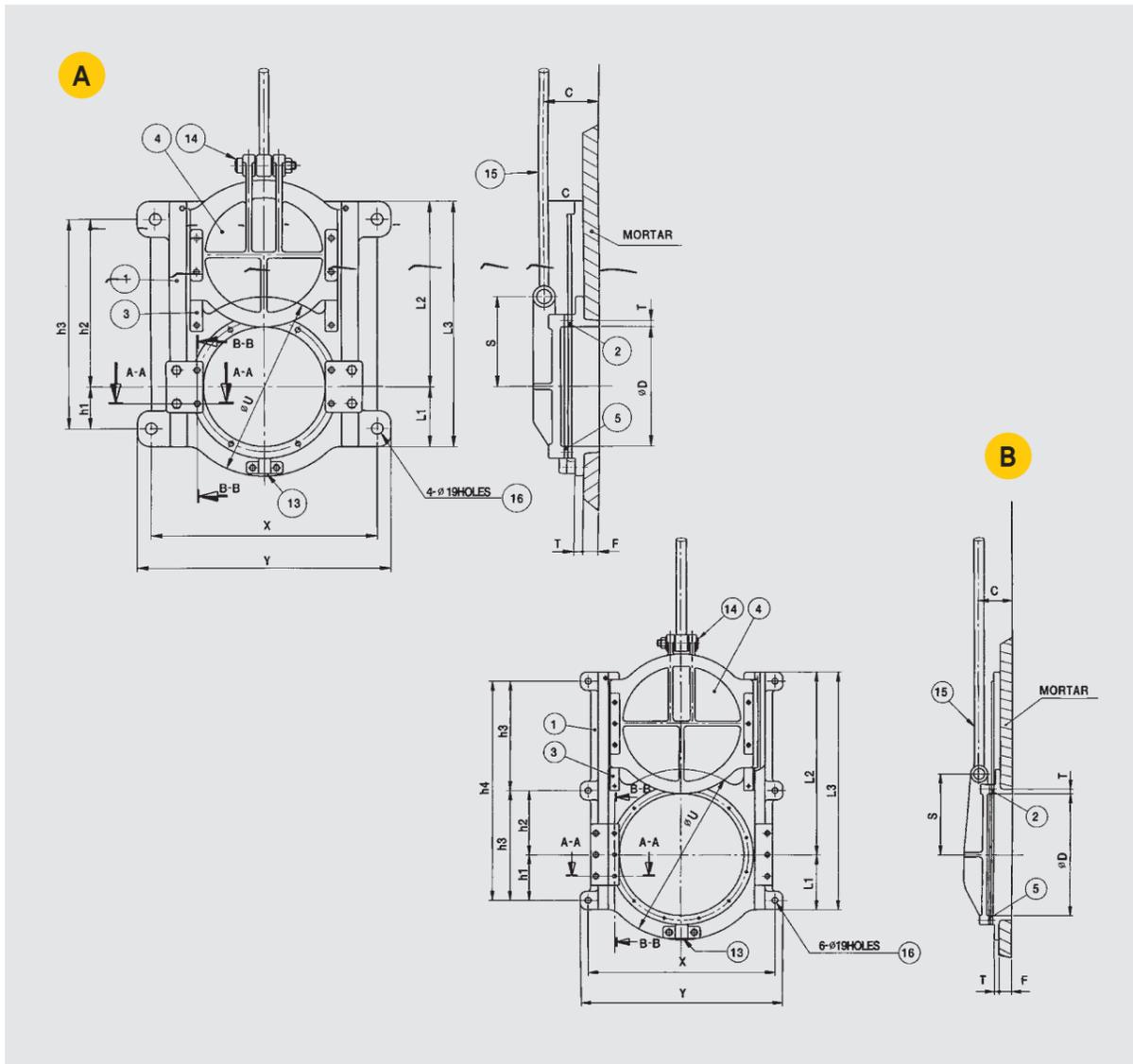
A disc-shaped sluice gate with outside-screw rising or non-rising stem, specially designed and applicable to the same direction of fluid flow on water inlet, outlet.  
It is actuated by Manual, Hydraulic and Oil pressure Cylinder or Electric motor panel.

### Specification

- **Size** : Nominal dia 200mm~3000mm
- **Fluid** : Service water, sewage, sea water etc.
- **Working Pressure** : 14psi(10mAq)
- **Main Material** :
  - Frame** : Ductile Cast Iron(GCD450)
  - Gate** : Ductile Cast Iron(GCD450)
  - Seat** : Bronze Casting(BC6)
  - Stem** : Stainless Steel(STS304, STS403)
 The other materials are available on request.



# SLUICE GATES (Circular Type)

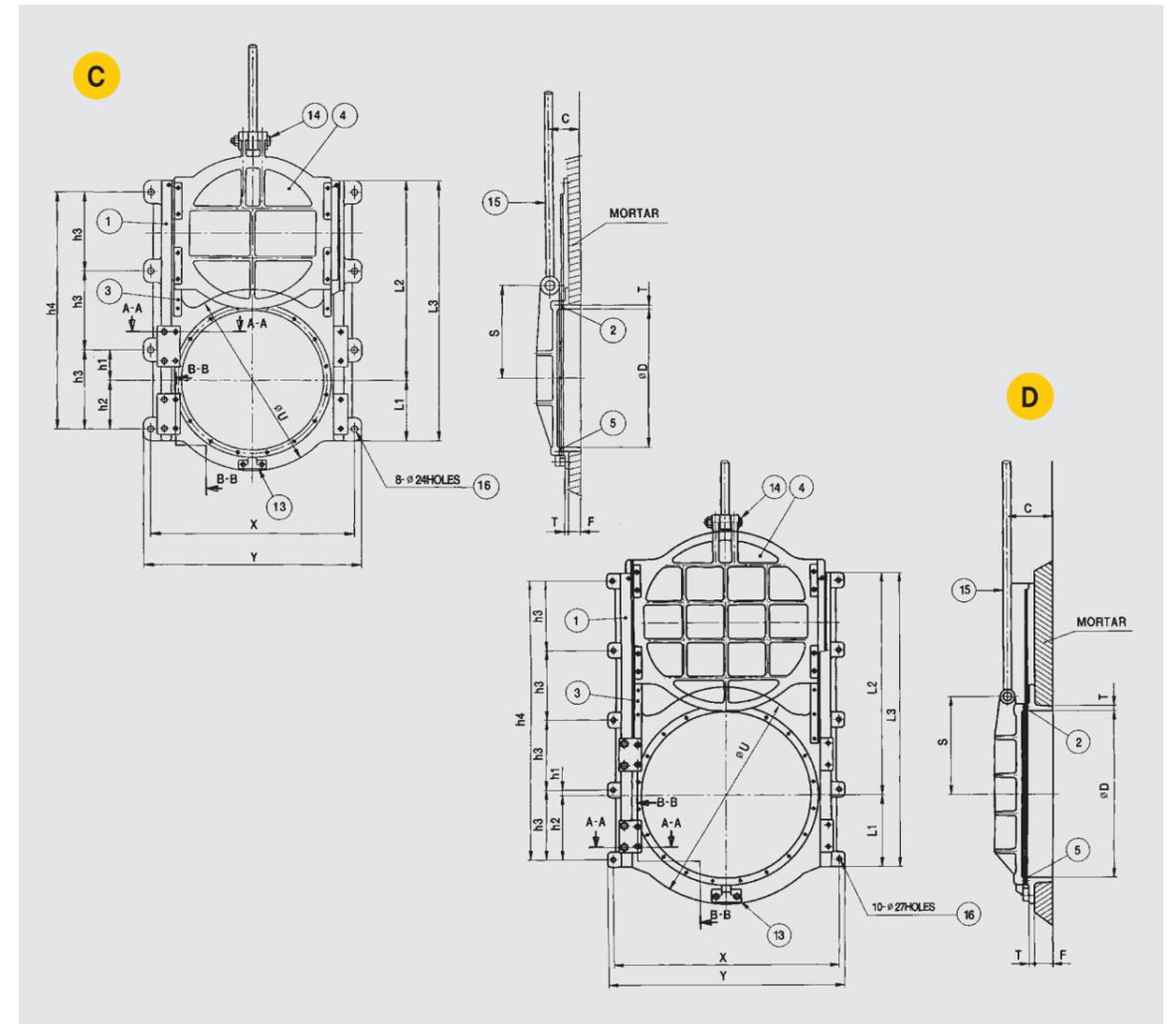


**A** Unit : mm

GATE SIZE øD	h1	h2	h3	X	Y	øU	L1	L2	L3	F	C	S	T
200	70	280	350	370	415	300	100	310	410	25	90	150	14
250	90	350	440	420	465	360	125	375	500	25	90	175	14

**B** Unit : mm

GATE SIZE øD	h1	h2	h3	h4	X	Y	øU	L1	L2	L3	F	C	S	T
300	100	160	260	520	470	515	430	135	455	570	30	100	200	15
350	120	180	300	600	520	565	480	155	515	670	30	100	225	15
400	150	210	360	720	600	650	540	185	605	790	40	110	265	15
450	160	240	400	800	650	700	600	195	675	870	40	110	290	15
500	180	270	450	900	700	750	680	230	770	1000	45	130	320	16
550	200	300	500	1000	750	800	730	250	850	1100	45	130	345	16



**C** Unit : mm

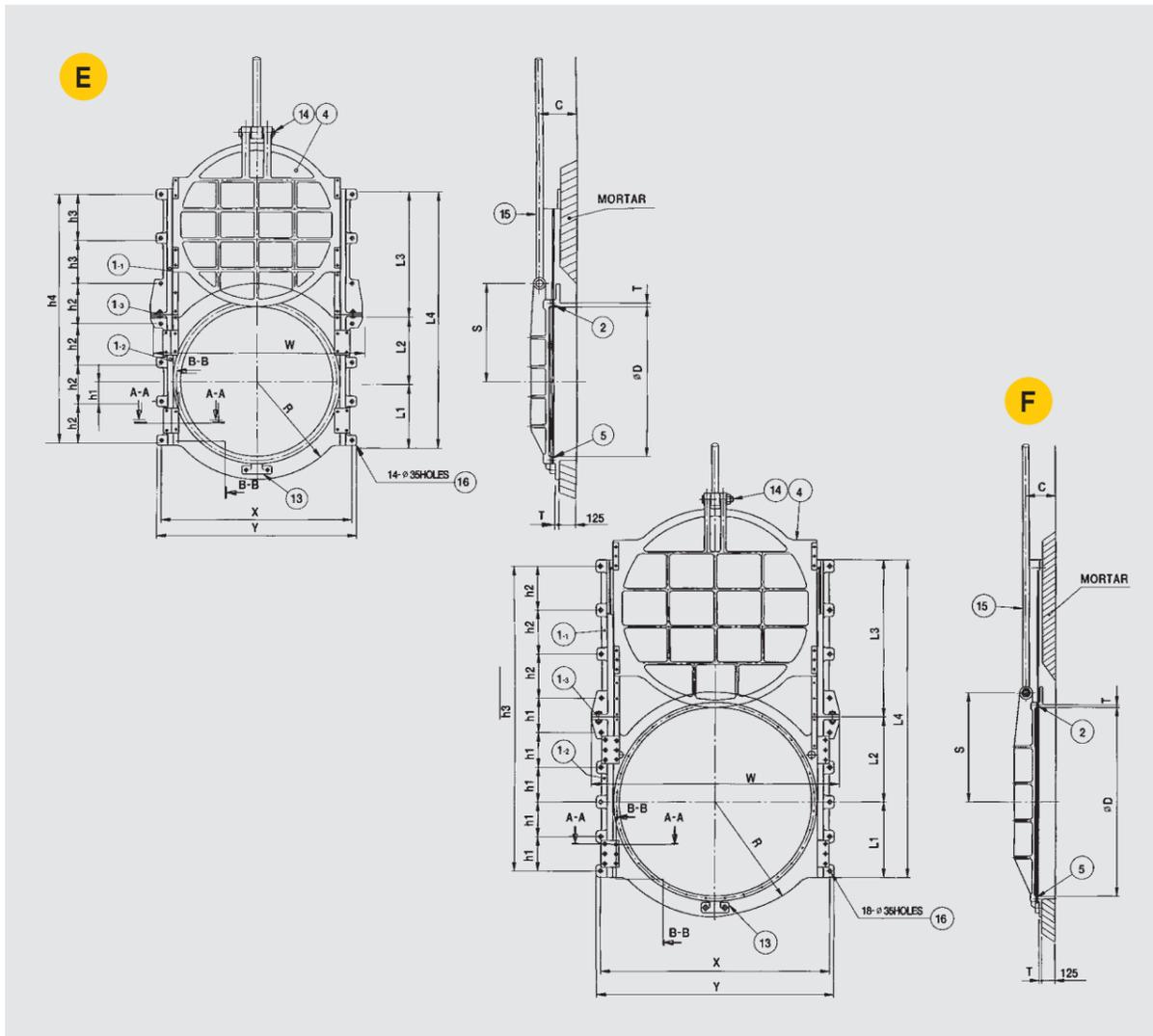
GATE SIZE øD	h1	h2	h3	h4	X	Y	øU	L1	L2	L3	F	C	S	T
600	130	210	340	1020	860	920	780	260	860	1120	50	130	365	16
650	140	230	370	1110	910	970	830	280	930	1210	50	140	390	16
700	150	250	400	1200	960	1020	900	300	1000	1300	55	150	430	18
800	170	280	450	1350	1060	1120	1100	330	1120	1450	60	160	500	18
850	180	300	480	1440	1110	1170	1150	350	1190	1540	60	160	490	18
900	180	320	500	1500	1160	1220	1200	370	1230	1600	75	180	550	18

**D** Unit : mm

GATE SIZE øD	h1	h2	h3	h4	X	Y	øU	L1	L2	L3	F	C	S	T
1000	40	360	400	1600	1300	1370	1300	425	1305	1730	110	220	615	20
1100	50	400	450	1800	1400	1470	1400	465	1465	1930	110	240	665	20

# SLUICE GATES (Circular Type)

# SLUICE GATES (Rectangular Type)



**E** Unit : mm

GATE SIZE øD	h1	h2	h3	h4	X	Y	W	R	L1	L2	L3	F	C	S	T
1300	160	320	400	2080	1630	1710	1780	850	550	580	1090	2220	260	785	25
1350	170	330	420	2160	1680	1760	1840	875	570	590	1140	2300	260	810	25
1400	180	350	420	2240	1730	1810	1900	900	600	620	1160	2380	260	835	25
1500	200	380	440	2400	1830	1910	2000	950	650	680	1210	2540	260	885	25
1600	200	400	480	2560	1940	2020	2100	1000	670	720	1310	2700	280	935	25
1650	220	420	480	2640	2000	2080	2180	1025	710	750	1320	2780	280	960	25

**F** Unit : mm

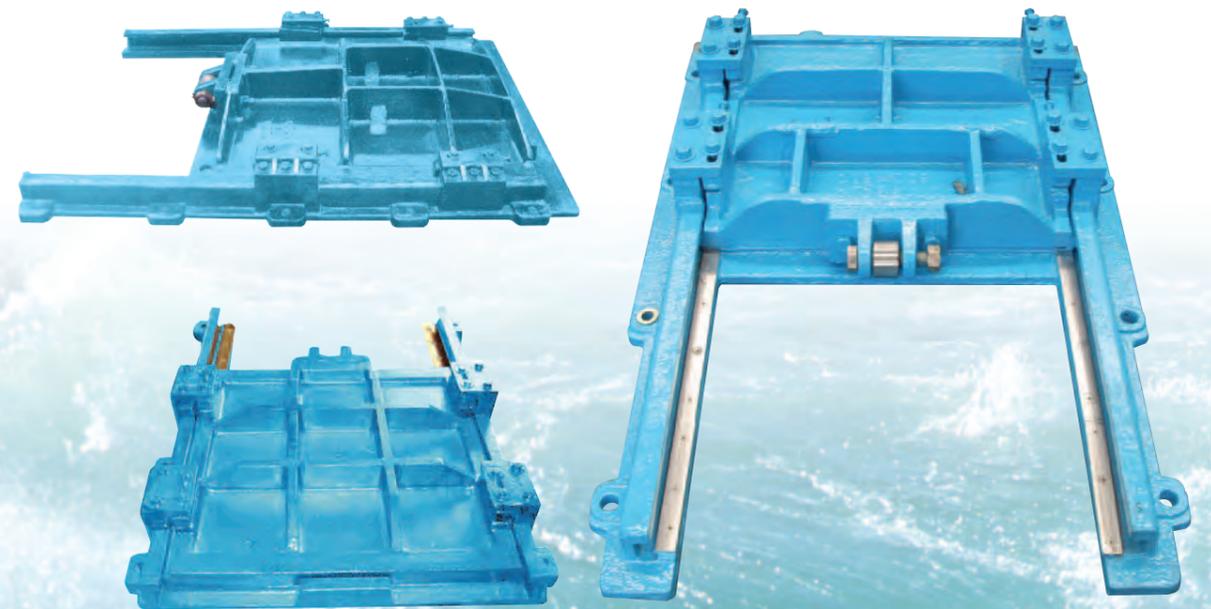
GATE SIZE øD	h1	h2	h3	X	Y	W	R	L1	L2	L3	F	C	S	T
1700	320	380	2740	2040	2120	2220	1050	720	780	1400	2900	280	990	25
1800	330	420	2910	2140	2220	2320	1100	740	810	1520	3070	280	1040	25
1850	340	420	2960	2200	2280	2380	1120	760	830	1530	3120	300	1065	25
1900	350	440	3070	2240	2420	2420	1150	780	850	1600	3230	300	1090	25
2000	370	450	3200	2340	2520	2520	1200	820	900	1640	3360	300	1140	25

## Features

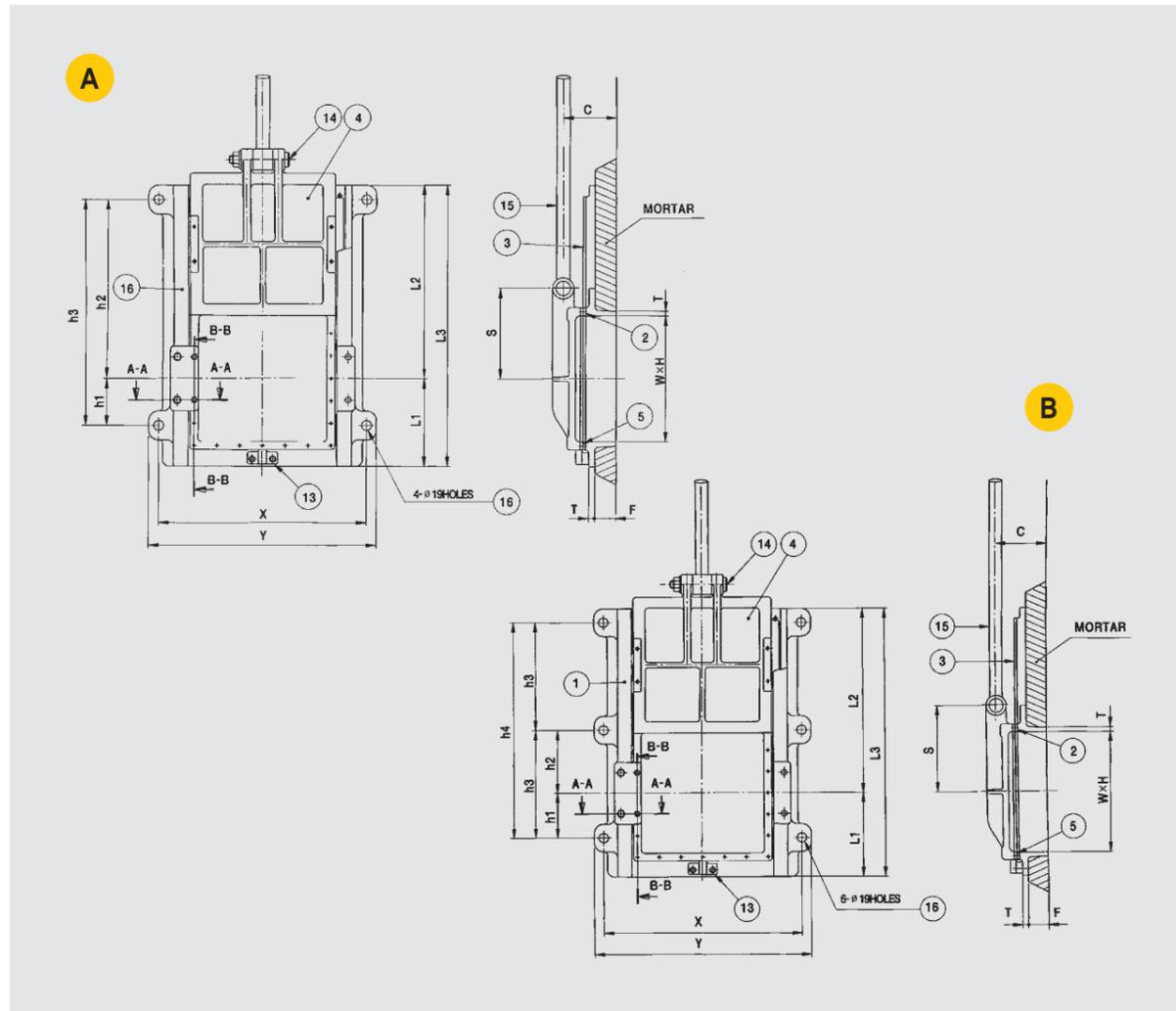
As a Sluice gate with outside-screw rising or non-rising stem, actuated by manual, hydraulic and oil pressure cylinder or electric motor .  
Especially ,Interlock switch gear use for the big size Sluice gate .

## Specification

- **Size** : Nominal dia 200mm~4000mm
- **Fluid** : Service water, sewage, sea water etc.
- **Working Pressure** : 14psi(10mAq)
- **Main Material** :  
 Frame : Ductile Cast Iron(GCD 450)  
 Gate : Ductile Cast Iron(GCD 450)  
 Seat : Bronze Casting(BC6)  
 Stem : Stainless Steel(STS304, STS403)  
 The other materials are available on request.



# SLUICE GATES (Rectangular Type)



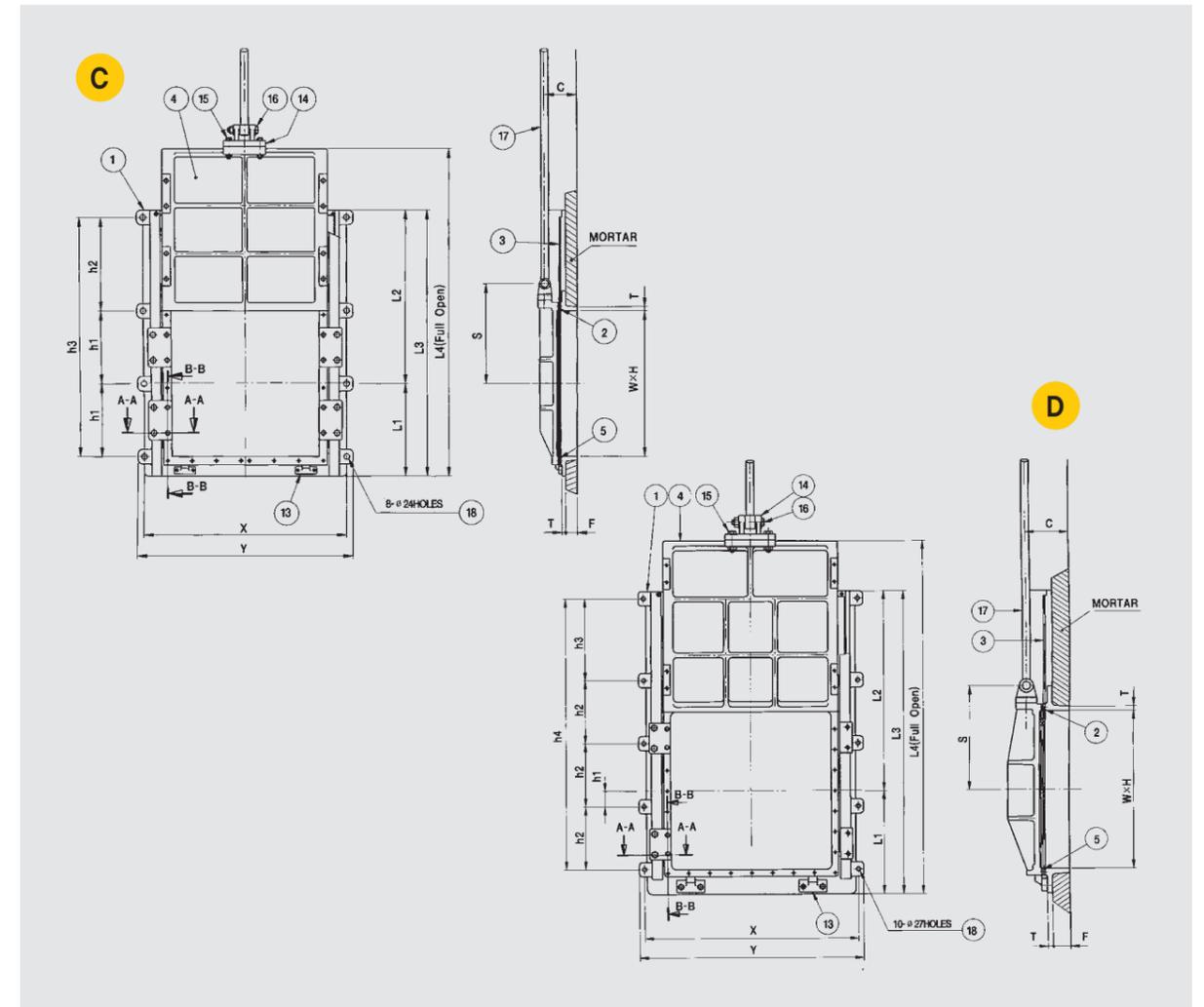
**A** Unit : mm

GATE SIZE W×H	h1	h2	h3	X	Y	L1	L2	L3	F	C	S	T
200×200	80	280	360	370	415	165	375	540	25	90	150	14
250×250	90	370	460	420	465	190	450	640	25	90	175	14

**B** Unit : mm

GATE SIZE W×H	h1	h2	h3	h4	X	Y	L1	L2	L3	F	C	S	T
300×300	110	160	270	540	470	515	215	525	740	30	100	200	15
350×350	120	180	300	600	520	565	235	605	840	30	100	225	15
400×400	130	210	340	680	600	650	265	685	950	40	110	265	15
450×450	150	240	390	780	650	700	295	765	1060	40	110	290	15
500×500	185	265	450	900	700	750	330	845	1175	45	130	320	16
550×550	210	290	500	1000	750	800	360	920	1280	45	130	345	16

※NOTE : GATE SIZE W (WIDTH OF GATE), H (HEIGHT OF GATE)



**C** Unit : mm

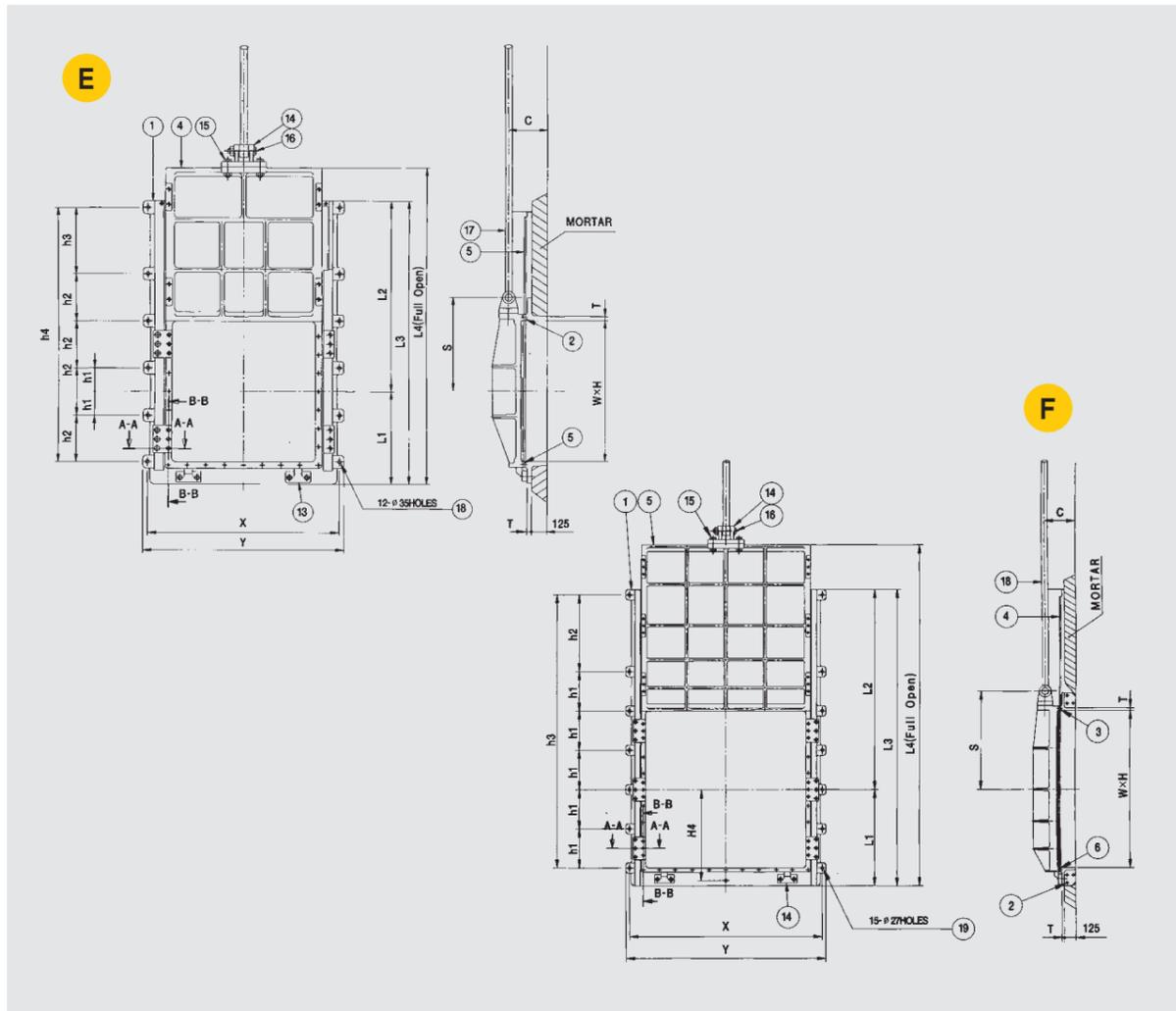
GATE SIZE W×H	h1	h2	h3	X	Y	L1	L2	L3	L4	F	C	S	T
600×600	300	400	1000	860	920	385	745	1130	1345	50	150	400	16
650×650	325	425	1075	910	970	425	795	1220	1460	50	160	430	16
700×700	350	450	1150	960	1020	445	845	1290	1555	55	170	480	18
800×800	400	500	1300	1060	1120	500	960	1460	1780	60	180	540	18
900×900	450	550	1450	1160	1220	560	1060	1620	1990	75	200	590	18

**D** Unit : mm

GATE SIZE W×H	h1	h2	h3	h4	X	Y	L1	L2	L3	L4	F	C	S	T
1000×1000	100	400	450	1650	1300	1370	670	1210	1880	2270	110	250	670	20
1100×1100	100	450	500	1850	1400	1470	720	1360	2080	2470	110	270	710	20
1200×1200	100	500	550	2050	1500	1570	770	1510	2280	2670	110	270	760	20

※NOTE : GATE SIZE W (WIDTH OF GATE), H (HEIGHT OF GATE)

# SLUICE GATES (Rectangular Type)



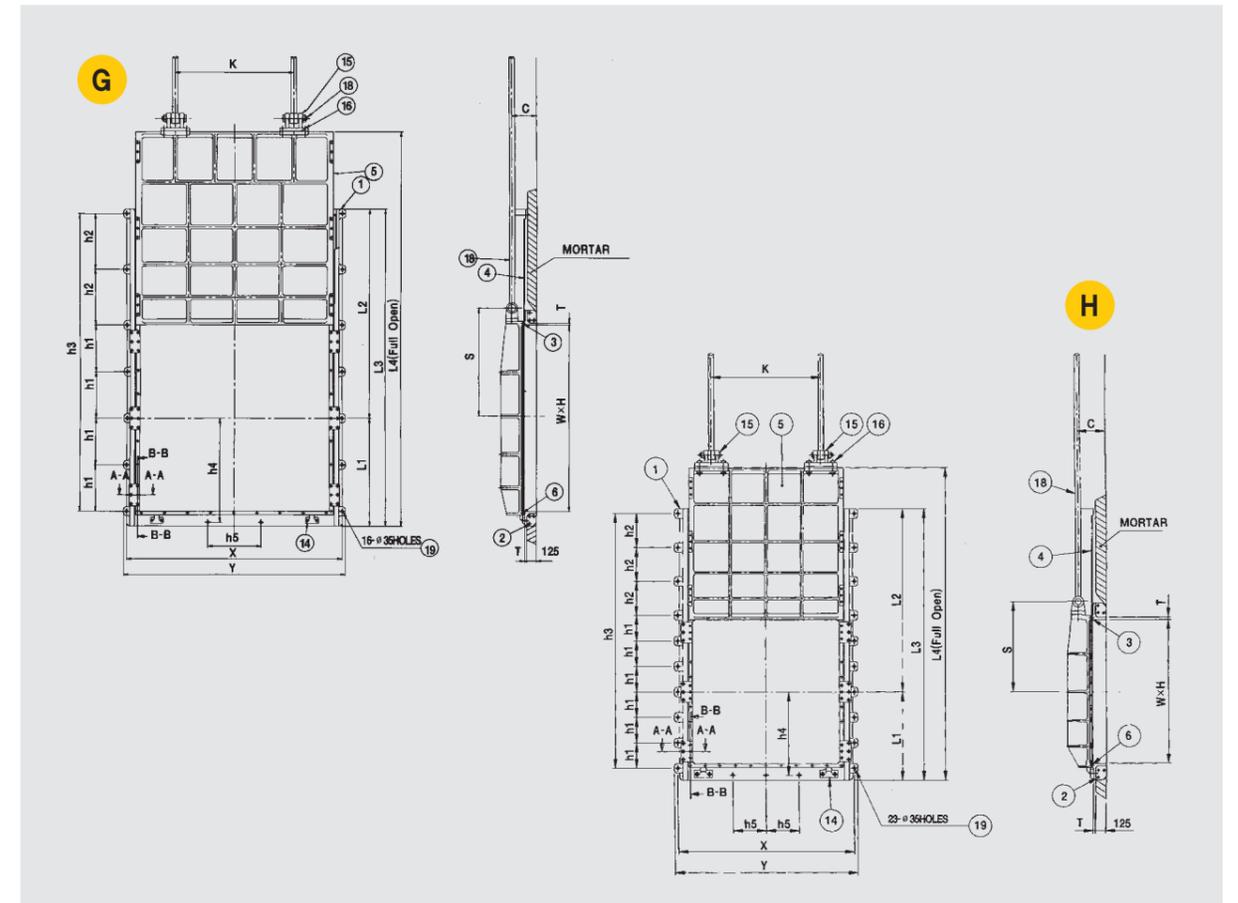
**E** Unit : mm

GATE SIZE W×H	h1	h2	h3	h4	X	Y	L1	L2	L3	L4	C	S	T
1300×1300	215	430	550	2270	1630	1710	820	1690	2510	2870	280	835	25
1400×1400	230	460	600	2440	1730	1810	870	1810	2680	3070	280	880	25
1500×1500	250	500	650	2650	1830	1910	920	1950	2880	3270	280	930	25
1600×1600	265	530	650	2770	1940	2020	970	1975	2945	3470	300	980	25

**F** Unit : mm

GATE SIZE W×H	h1	h2	h3	h4	X	Y	L1	L2	L3	L4	C	S	T
1700×1700	425	650	2775	1000	2040	2120	1050	1980	3030	3700	320	1060	25
1800×1800	450	700	2950	1050	2140	2220	1100	2110	3210	3900	320	1110	25
1900×1900	475	750	3125	1100	2240	2320	1150	2235	3385	4100	340	1160	25
2000×2000	500	750	3250	1150	2340	2420	1200	2310	3510	4300	340	1210	25

※NOTE : GATE SIZE W (WIDTH OF GATE), H (HEIGHT OF GATE)



**G** Unit : mm

GATE SIZE W×H	h1	h2	h3	h4	h5	X	Y	L1	L2	L3	L4	K	C	S	T
2100×2100	525	650	3400	1200	600	2440	2520	1250	2410	3660	4500	1500	300	1240	25
2200×2200	550	675	3550	1250	650	2540	2620	1300	2510	3810	4700	1500	300	1290	25
2300×2300	575	700	3700	1300	650	2640	2720	1350	2610	3960	4900	1650	320	1370	25
2400×2400	600	725	3850	1350	700	2740	2820	1400	2710	4110	5100	1650	320	1420	25
2500×2500	625	750	4000	1400	700	2840	2920	1450	2810	4260	5300	1800	340	1480	25

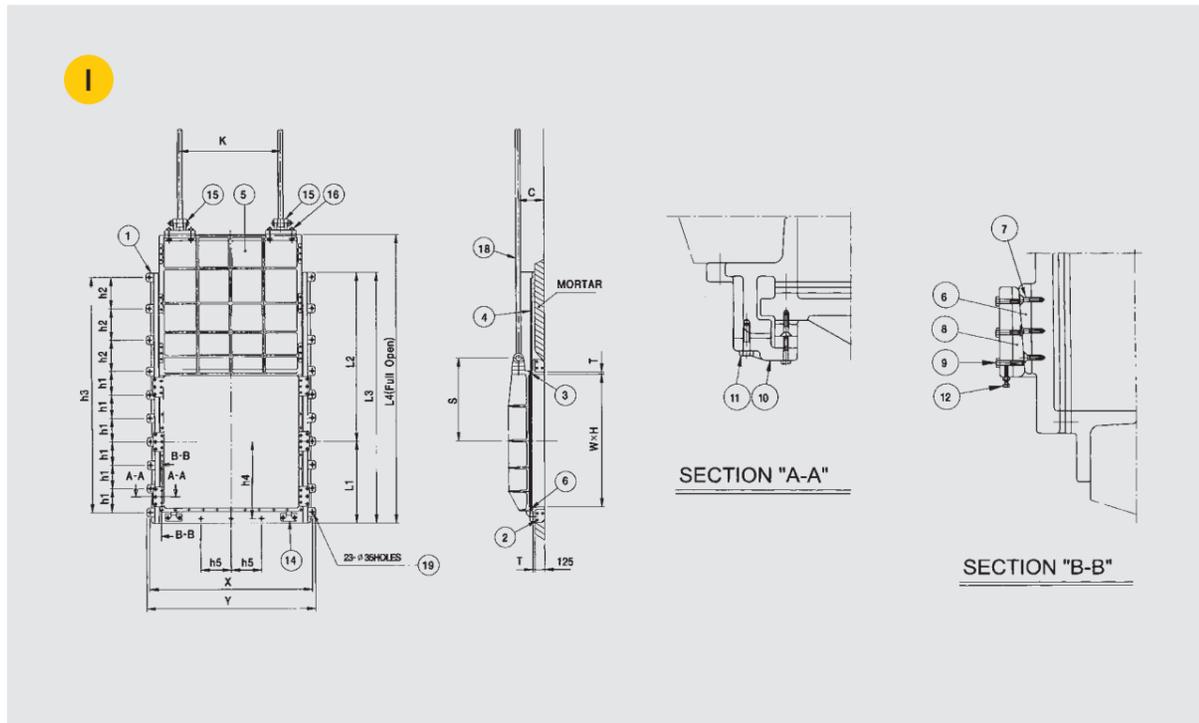
**H** Unit : mm

GATE SIZE W×H	h1	h2	h3	h4	h5	X	Y	L1	L2	L3	L4	K	C	S	T
2600×2600	430	600	4380	1450	850	2940	3020	1500	3150	4650	5500	1750	340	1550	25
2700×2700	450	630	4590	1500	900	3040	3120	1550	3300	4850	5700	1800	350	1600	25
2800×2800	465	655	4755	1550	950	3140	3220	1600	3420	5020	5900	1870	350	1660	25
2900×2900	480	680	4920	1600	1000	3240	3320	1650	3540	5190	6100	1940	360	1710	25
3000×3000	500	700	5100	1650	1050	3340	3420	1700	3660	5360	6300	2000	360	1760	25
3100×3100	515	725	5265	1700	1100	3440	3520	1750	3780	5530	6500	2070	380	1820	25
3200×3200	530	750	5430	1750	1150	3540	3620	1800	3900	5700	6700	2140	380	1870	25

※NOTE : GATE SIZE W (WIDTH OF GATE), H (HEIGHT OF GATE)

# SLUICE GATES (Rectangular Type)

# SELF-DESCENDING ACTUATOR



Unit : mm

GATE SIZE W×H	h1	h2	h3	h4	h5	X	Y	L1	L2	L3	L4	K	C	S	T
3300×3300	550	650	5250	1800	900	3640	3720	1870	3660	5550	6920	2200	400	1930	25
3400×3400	565	650	5340	1850	950	3740	3820	1920	3705	5645	7120	2270	400	1980	25
3500×3500	580	700	5580	1900	950	3840	3920	1970	3900	5890	7320	2340	400	2030	25
3600×3600	600	700	5700	1950	1000	3940	4020	2020	3960	6000	7520	2400	400	2080	25
3700×3700	615	700	5790	2000	1000	4040	4120	2070	4005	6095	7720	2470	420	2150	25
3800×3800	630	750	6030	2050	1050	4140	4220	2120	4200	6340	7920	2540	420	2200	25
3900×3900	650	750	6150	2100	1100	4240	4320	2170	4260	6450	8120	2600	420	2250	25
4000×4000	665	750	6240	2150	1100	4340	4420	2220	4305	6545	8320	2670	420	2300	25

※NOTE : GATE SIZE W (WIDTH OF GATE), H (HEIGHT OF GATE)

## Material & Part Name

NO	PART NAME	METERIAL	NO	PART NAME	METERIAL
1-1	UPPER FRAME	GC200	8	FRAME WEDGE	BC6 or STS304
1-2	LOWER FRAME	GC200	9	BOLT	STS304
1-3	JOINT PIN	STS304	10	WEDGE HOLDER	GCD450
2	FRAME SEAT	BC6 or STS304	11	BOLT	STS304
3	FRAME LINER	BC6 or STS304	12	CONTROL BOLT	STS304
4	GATE	GC200	13	STOPPER	GC200
5	GATE SEAT	BC6 or STS304	14	HANGER PIN	STS304 or 403
6	GATE WEDGE	BC6 or STS304	15	STEM	STS304 or 403
7	FLUSH BOLT	C3604 or STS304	16	ANCHOR BOLT/NUT	STS304 or 403

## Summary

Sun Korea Co., Ltd's Self descending electric actuator should be composed of electric actuator, gear reducer, electromagnetic clutch, impact-absorption-device at the same time being kept as its strong points of normal electric motor operation system.

Generally Sluice Gate is actuated by motor for opening & closing. Emergency case for example, earth quake, typhoon(hurricane), heavy rain, black-out, in order to shut off the gate, it is designed and operated by DC sensor itself by stop supply of electric power and shut off the gate by descending self weights.

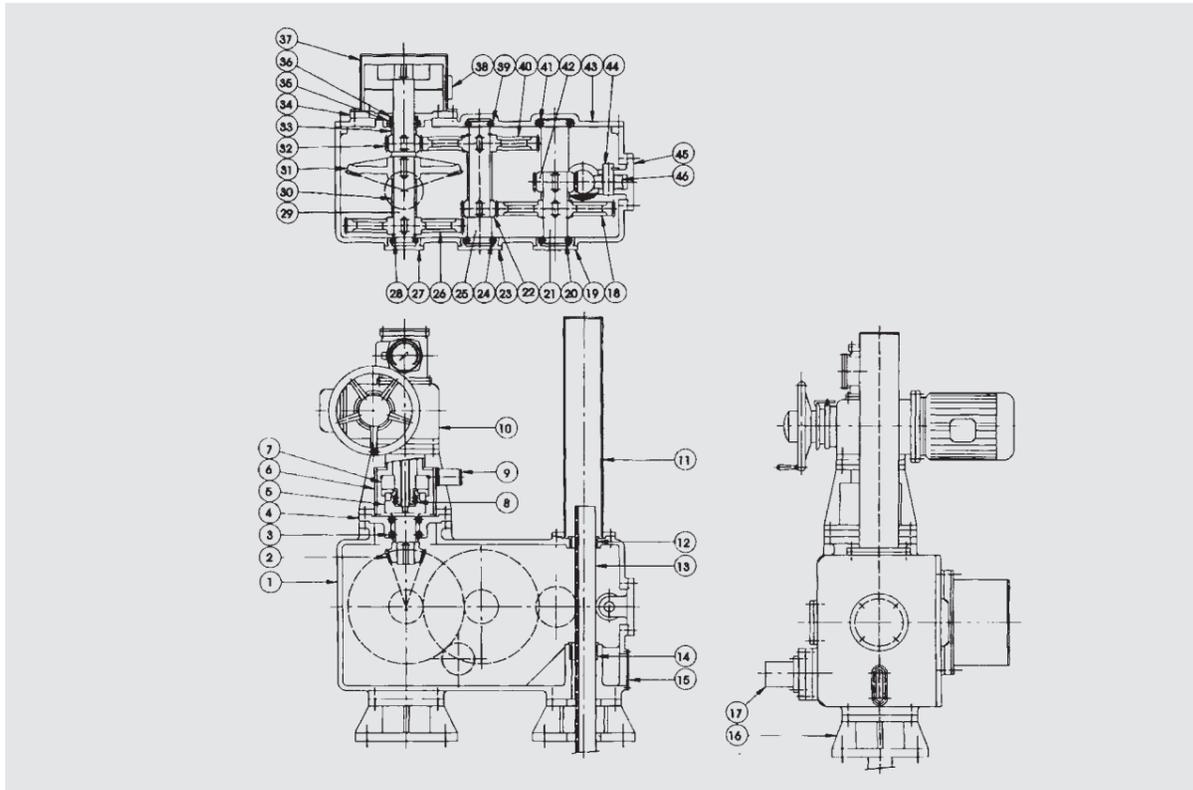
## Features

- The unit of fully enclosed structure of its filled with high grade lubricants are ready for immediate use.
- To use D.C sensor, safety device and impact absorption device ensure its easy operation.
- Dial type spot indicator are attached which enable application of limit switch for the remote control.
- At the emergency case, impact-absorption-device absorbed impacts sufficiently occurred by self weight descending with smooth operation showed excellency in its safety.
- Simplify & Standardization of parts of material lead high quality, high performance at lower cost.
- Operation speed(Standard)  
Normal operation speed : 0.3m/min  
Emergency shut off speed : 0.2m/min
- Specification and capacity depend on actuation condition, specification of gate.
- Operation speed and shape can be modified on request.
- Special type is available on request.

**SUN KOREA**

# SELF-DESCENDING ACTUATOR

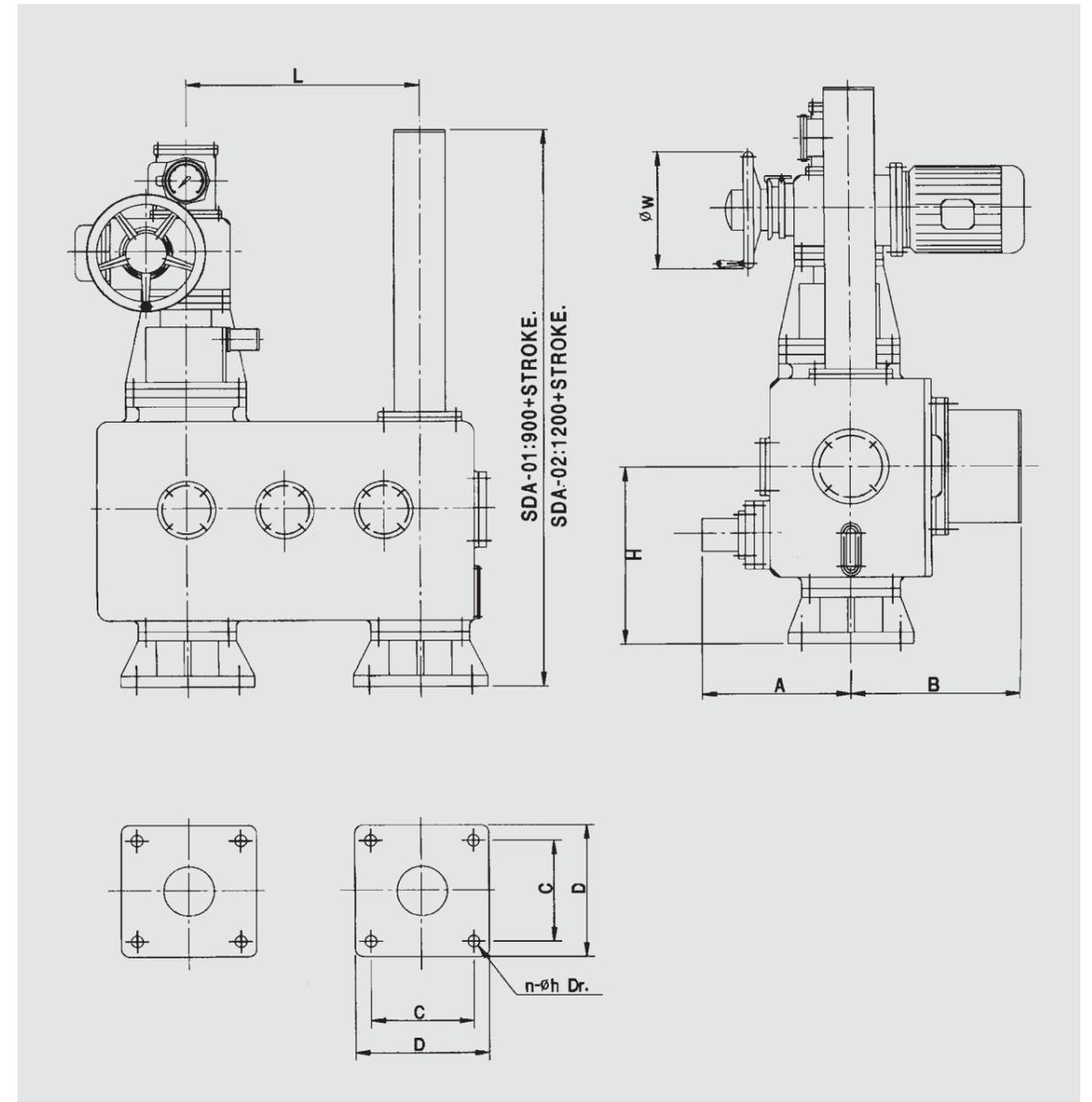
# SINGLE TYPE SELF-DESCENDING ACTUATOR



NO	PART NAME	MATERIAL	QTY	NO	PART NAME	MATERIAL	QTY
1	GEAR BOX	GC200	1	24	BEARING	ASS'Y	1
2	BEVEL PINION	SM45C	1	25	SHAFT(3)	SM45C	1
3	BEARING	ASS'Y	1	26	HELICAL GEAR	SCM435	1
4	BEARING HOUSING	GC200	1	27	BEARING COVER	GC200	1
5	SHAFT(1)	SM45C	1	28	BEARING	ASS'Y	1
6	BRACKET	SS400	1	29	SHAFT(4)	SM45C	1
7	MAGNETIC CLUTCH	ASS'Y	1	30	COLLAR	SS400	1
8	BEARING	ASS'Y	1	31	BEVEL GEAR	SCM435	1
9	BRUSH	ASS'Y	1	32	SPUR PINION	SCM435	1
10	ELECTRIC ACTUATOR	ASS'Y	1	33	COLLAR	SS400	1
11	STEM COVER	SS400	1	34	SUB PLATE	GC200	1
12	BUSHING	BC6	1	35	BEARING	ASS'Y	1
13	STEM(RACK)	SM45C	1	36	OIL SEAL	ASS'Y	1
14	BUSHING	BC4	1	37	COVER	SS400	1
15	OIL GAUGE	ASS'Y	1	38	MAGNETIC BRAKE	ASS'Y	1
16	FOOT	SS400	1	39	BEARING	ASS'Y	1
17	HYDRAULIC MOTOR	ASS'Y	1	40	SPUR GEAR	SCM435	1
18	SPUR GEAR	SCM435	1	41	BEARING	ASS'Y	1
19	BEARING COVER	GC200	1	42	SPUR GEAR	SCM440	1
20	BEARING	ASS'Y	1	43	GEAR BOX COVER	GC200	1
21	SHAFT(2)	SM45C	1	44	ROLLER PIN	SM45C	1
22	SPUR PINION	SCM440	1	45	ROLLER SUPPORT	GCD450	1
23	BEARING COVER	GC200	1	46	ROLLER	SM45C	1

## Out-Line Dimensions

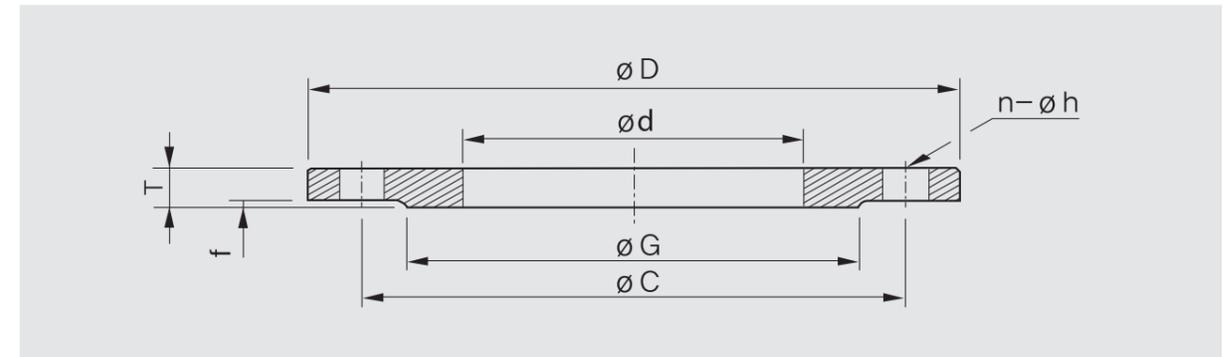
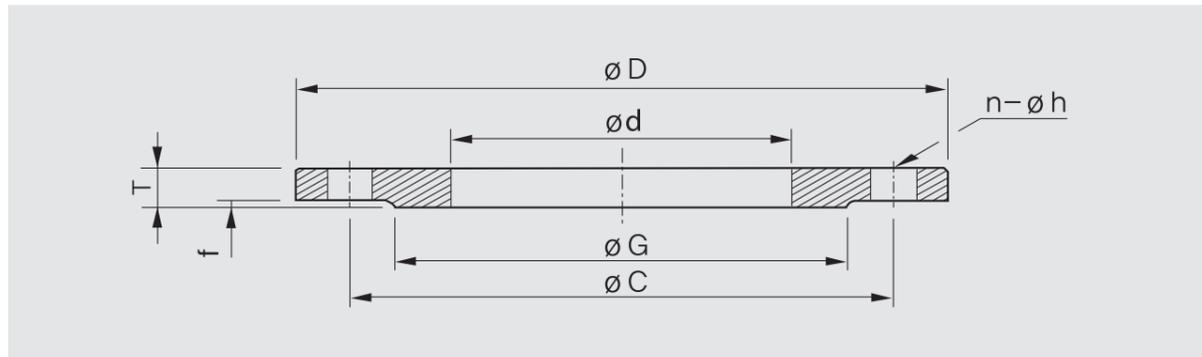
FOR EMERGENCY SHUT-OFF GATE



Unit : mm

Type	Part	A	B	C	D	n-øh	H	L	øW
SDA-01		400	500	240	300	4-ø19	400	520	320
SDA-02		500	650	350	420	4-ø27	480	680	400

# FLANGE DIMENSIONS



Unit : mm

KS B 2332						KS B 2333						KS B4308					
$\phi d$	$\phi D$	$\phi G$	$\phi C$	$n-\phi h$	Txf	$\phi d$	$\phi D$	$\phi G$	$\phi C$	$n-\phi h$	Txf	$\phi d$	$\phi D$	$\phi G$	$\phi C$	$n-\phi h$	Txf
100	220	153	180	8-19	24x3	100	-	-	-	-	-	100	220	153	180	8-19	19x3
125	250	183	210	8-19	25x3	125	-	-	-	-	-	125	250	183	210	8-19	19x3
150	285	209	240	8-23	26x3	150	-	-	-	-	-	150	285	209	240	8-23	19x3
200	340	264	295	8-23	27x3	200	340	264	295	8-23	24x3	200	340	264	295	8-23	20x3
250	395	319	350	12-23	29x3	250	395	319	350	12-23	25x3	250	400	319	350	12-23	22x3
300	445	367	400	12-23	31x4	300	445	367	400	12-23	27x4	300	455	367	400	12-23	25x4
350	505	427	460	16-23	32x4	350	505	427	460	16-23	28x4	350	505	427	460	16-23	25x4
400	565	477	515	16-28	34x4	400	565	477	515	16-28	29x4	400	565	477	515	16-28	25x4
450	615	527	565	20-28	35x4	450	615	527	565	20-28	30x4	450	615	527	565	20-28	26x4
500	670	582	620	20-28	36x4	500	670	582	620	20-28	31x4	500	670	582	620	20-28	27x4
600	780	692	725	20-31	40x4	600	780	682	725	20-31	32x4	600	780	682	725	20-31	30x5
700	895	797	840	24-31	46x4	700	895	797	840	24-31	34x4	700	895	797	840	24-31	33x5
800	1015	904	950	24-34	49x5	800	1015	904	950	24-34	36x5	800	1015	904	950	24-34	35x5
900	1115	1004	1050	28-34	51x5	900	1115	1004	1050	28-34	38x5	900	1115	1004	1050	28-34	38x5
1000	1230	1111	1160	28-37	55x5	1000	1230	1111	1160	28-37	40x5	1000	1230	1111	1160	28-37	40x5
1100	1366	1200	1270	32-37	61x5	1100	1366	1200	1270	32-37	42x5	1100	1340	1218	1270	32-37	43x5
1200	1470	1304	1387	32-37	63x5	1200	1470	1304	1387	32-37	44x5	1200	1455	1328	1380	32-40	45x5
1350	1642	1462	1552	36-38	68x6	1350	1642	1462	1552	36-38	48x6	1350	-	-	-	-	-
1500	1800	1620	1710	36-38	74x6	1500	1800	1620	1710	36-38	50x6	1500	-	-	-	-	-
1600	-	-	-	-	-	1600	1915	1760	1820	40-40	50x6	1600	-	-	-	-	-
1650	-	-	-	-	-	1650	1950	1770	1870	40-40	50x6	1650	-	-	-	-	-
1800	-	-	-	-	-	1800	2115	1960	2020	44-48	50x6	1800	-	-	-	-	-
2000	-	-	-	-	-	2000	2325	2170	2230	48-48	54x6	2000	-	-	-	-	-

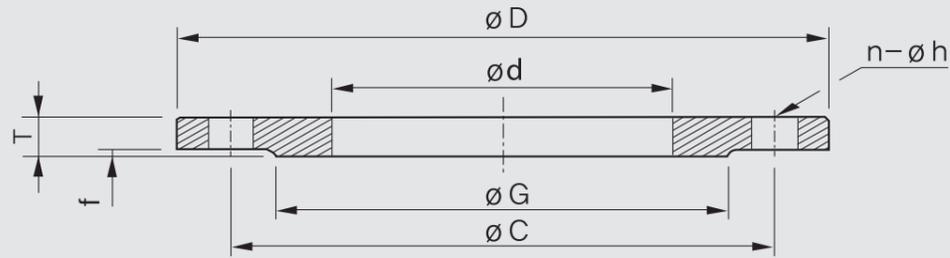
• All international standards are available on request (AWWA, ANSI, BS, DIN, JIS, ETC).

Unit : mm

KS D 3578-F12						KS D 3578-F15						KS D 3578-F20					
$\phi d$	$\phi D$	$\phi G$	$\phi C$	$n-\phi h$	Txf	$\phi d$	$\phi D$	$\phi G$	$\phi C$	$n-\phi h$	Txf	$\phi d$	$\phi D$	$\phi G$	$\phi C$	$n-\phi h$	Txf
100	238	153	180	8-19	18x2	100	238	153	180	8-19	18x2	100	225	160	185	8-23	22x2
125	263	183	210	8-19	20x2	125	263	183	210	8-19	20x2	125	270	195	225	8-25	23x2
150	290	209	240	8-23	22x2	150	290	209	240	8-23	22x2	150	305	230	260	12-25	27x2
200	342	264	295	8-23	22x2	200	342	264	295	8-23	22x2	200	350	275	305	12-25	27x2
250	410	319	350	12-23	24x3	250	410	319	350	12-23	24x3	250	430	345	380	12-27	28x2
300	464	367	400	12-23	24x3	300	464	367	400	12-23	24x3	300	480	395	430	16-27	30x3
350	530	427	460	16-23	26x3	350	530	427	460	16-23	26x3	350	540	440	480	16-33	34x3
400	582	477	515	16-27	26x3	400	582	477	515	16-27	28x3	400	605	540	495	16-33	38x3
450	652	518	565	20-27	28x3	450	652	518	565	20-27	30x3	450	675	560	605	20-33	40x3
500	706	582	620	20-27	28x3	500	706	582	620	20-27	30x3	500	730	615	660	20-33	42x3
600	810	682	725	20-30	30x3	600	810	682	725	20-30	34x3	600	845	720	770	24-39	46x3
700	928	797	840	24-30	32x3	700	928	797	840	24-30	34x3	700	960	820	865	24-42	50x5
800	1034	904	950	24-33	34x3	800	1034	904	950	24-33	36x3	800	1085	930	990	24-48	54x5
900	1156	1004	1050	28-33	36x3	900	1156	1004	1050	28-33	38x3	900	1185	1030	1090	28-48	58x5
1000	1262	1111	1160	28-36	38x3	1000	1262	1111	1160	28-36	42x3	1000	1320	1140	1210	28-56	64x5
1100	1366	1200	1270	32-36	41x3	1100	1366	1200	1270	32-36	43x3	1100	1420	1240	1310	32-56	67x5
1200	1470	1304	1387	32-36	43x3	1200	1470	1304	1387	32-36	45x3	1200	1530	1350	1420	32-56	70x5
1350	1642	1462	1552	36-40	45x3	1350	1642	1462	1552	36-40	51x3	1350	1700	1510	1590	32-62	76x5
1500	1800	1620	1710	36-40	48x3	1500	1800	1620	1710	36-40	53x3	1500	1865	1670	1750	36-62	80x5
1600	1915	1760	1820	40-40	53x3	1600	1915	1760	1820	40-40	58x3	-	-	-	-	-	-
1650	1950	1770	1860	40-40	53x3	1650	1950	1770	1860	40-40	58x3	-	-	-	-	-	-
1800	2115	1960	2020	44-49	55x3	1800	2115	1960	2020	44-49	59x3	-	-	-	-	-	-
1900	2220	2066	2126	44-49	58x4	1900	2220	2066	2126	44-49	59x3	-	-	-	-	-	-
2000	2325	2170	2230	48-49	58x4	2000	2325	2170	2230	48-49	62x4	-	-	-	-	-	-
2100	2440	2240	2340	48-49	59x4	2100	2440	2240	2340	48-49	64x4	-	-	-	-	-	-
2200	2550	2370	2440	52-56	61x4	2200	2550	2370	2440	52-56	68x4	-	-	-	-	-	-
2300	2655	2440	2540	52-56	62x4	2300	2655	2440	2540	52-56	69x4	-	-	-	-	-	-
2400	2760	2570	2650	56-56	64x4	2400	2760	2570	2650	56-56	70x4	-	-	-	-	-	-
2500	2860	2670	2750	56-56	68x5	2500	2860	2670	2750	56-56	72x5	-	-	-	-	-	-
2600	2960	2780	2850	60-56	68x5	2600	2960	2780	2850	60-56	72x5	-	-	-	-	-	-
2700	3080	2850	2960	60-56	71x5	-	-	-	-	-	-	-	-	-	-	-	-
2800	3180	3000	3070	64-56	72x5	-	-	-	-	-	-	-	-	-	-	-	-
2900	3292	3104	3180	64-56	74x5	-	-	-	-	-	-	-	-	-	-	-	-
3000	3405	3210	3290	64-56	76x5	-	-	-	-	-	-	-	-	-	-	-	-

• All international standards are available on request (AWWA, ANSI, BS, DIN, JIS, ETC).

# FLANGE DIMENSIONS



Unit : mm

KS B 1511-5K						KS B 1511-10K						KS B 1511-16K					
ød	øD	øG	øC	n-øh	T×f	ød	øD	øG	øC	n-øh	T×f	ød	øD	øG	øC	n-øh	T×f
100	200	141	165	8-19	16×2	100	210	151	175	8-19	18×2	100	225	160	185	8-23	22×2
125	235	176	200	8-19	16×2	125	250	182	210	8-23	20×2	125	270	195	225	8-25	22×2
150	265	206	230	8-19	18×2	150	280	212	240	8-23	22×2	150	305	230	260	12-25	24×2
200	320	252	280	8-23	20×2	200	330	262	290	12-23	22×2	200	350	275	305	12-25	27×3
250	385	317	345	12-23	22×2	250	400	324	355	12-25	24×2	250	430	345	380	12-27	28×2
300	430	360	390	12-23	22×3	300	445	368	400	16-25	24×3	300	480	395	430	16-27	30×3
350	480	403	435	12-25	24×3	350	490	413	445	16-25	26×3	350	540	440	480	16-33	34×3
400	540	463	495	16-25	24×3	400	560	475	510	16-27	28×4	400	605	495	540	16-33	38×3
450	605	523	555	16-25	24×3	450	620	530	565	20-27	30×3	450	675	560	605	20-33	40×3
500	655	573	605	20-25	24×3	500	675	585	620	20-27	30×3	500	730	615	660	20-33	42×3
600	770	680	715	20-27	26×3	600	795	690	730	24-33	32×3	600	845	720	770	24-39	46×3
700	875	785	820	24-27	26×3	700	905	800	840	24-33	34×3	700	960	820	875	24-42	50×5
800	995	890	930	24-33	28×3	800	1020	905	950	28-33	36×3	800	1085	930	990	24-48	50×5
900	1095	990	1030	24-33	30×3	900	1120	1005	1050	28-33	38×3	900	1185	1030	1090	28-48	58×5
1000	1195	1090	1130	28-33	32×3	1000	1235	1110	1160	28-39	40×3	1000	1320	1140	1210	28-56	62×5
1100	1305	1200	1240	28-33	32×3	1100	1345	1220	1270	28-39	42×3	1100	1420	1240	1310	32-56	66×5
1200	1420	1305	1350	32-33	34×3	1200	1465	1325	1380	32-39	44×3	1200	1530	1350	1420	32-56	70×5
1350	1575	1460	1505	32-33	34×3	1350	1630	1480	1540	36-45	48×3	1350	1700	1510	1590	32-62	76×5
1500	1730	1615	1660	36-33	36×3	1500	1795	1635	1700	40-45	50×3	1500	1865	1670	1750	36-62	80×5

• All international standards are available on request(AWWA, ANSI, BS, DIN, JIS, ETC).

# VALVE WEIGHT FOR REFERENCES

Unit : kg

Spec	Sluice gate valve (kg)			Cylindrical disc type sluice valve (kg)			Spec	Sluice gate(Rectangular) (kg)		
	Valve	Actuator	tfl	Valve	Actuator	tfl		Sluice	Actuator	tfl
80	44	43	87	39	28	66	200 × 200	198	43	241
100	66	43	109	44	28	72	300 × 300	264	43	307
150	110	43	153	94	28	121	400 × 400	347	43	389
200	201	43	244	132	28	160	500 × 500	440	74	514
250	284	74	358	215	40	254	600 × 600	616	74	690
300	377	74	451	330	40	370	700 × 700	660	74	734
350	486	74	560	495	43	538	800 × 800	737	74	811
400	743	74	816	847	43	890	900 × 900	880	74	954
450	920	125	1,045	1,045	74	1,119	1000 × 1000	1,155	74	1,229
500	1,166	125	1,291	1,353	74	1,427	1100 × 1100	1,276	74	1,350
600	1,650	125	1,775				1200 × 1200	1,452	125	1,577
700	2,200	125	2,325				1300 × 1300	1,485	125	1,610
800	3,300	125	3,425				1400 × 1400	1,837	125	1,962
900	5,280	125	5,405				1500 × 1500	2,585	125	2,710
1000	5,720	125	5,845				1600 × 1600	2,860	125	2,985
1100	7,920	125	8,045				1800 × 1800	3,190	125	3,315
1200	8,580	125	8,705				2000 × 2000	3,410	125	3,535
1350	11,000	178	11,178				2200 × 2200	4,400	125	4,525
1500	13,750	178	13,928							

• All international standards are available on request(AWWA, ANSI, BS, DIN, JIS, ETC).

Unit : kg

Spec	Butterfly valve (Kg)			Check valve (Kg)		Expansion joint (Kg)	Sluice gate(Circular) (Kg)		
	Valve	Actuator	tfl	Direct type	Cylinder type		Sluice gate	Actuator	tfl
200	110	43	153	242	286	125	187	43	230
250	140	43	183	275	330	172	209	43	252
300	163	43	206	550	616	218	231	43	274
350	215	43	257	748	814	332	253	43	296
400	276	43	319	836	905	400	286	43	329
450	349	43	392	1,100	1,210	495	352	43	395
500	427	43	470	1,485	1,602	576	440	43	483
600	639	43	682	1,925	2,037	926	462	43	505
700	703	43	746	2,750	2,893	990	550	74	624
800	897	43	939	3,630	3,850	1,100	803	74	877
900	1,122	43	1,165	5,005	5,242	1,155	902	74	976
1000	1,518	74	1,592	5,830	6,050	1,265	1,045	74	1,119
1100	1,815	74	1,889	6,500	6,800	1,339	1,221	74	1,295
1200	2,187	74	2,261	7,500	7,800	1,397	1,441	74	1,515
1350	2,945	74	3,018	9,500	9,870	1,454	1,727	74	1,801
1500	3,610	74	3,684	11,800	12,180	1,940	2,057	125	2,182
1650	4,589	74	4,663			2,697	2,343	125	2,468
1800	6,083	125	6,208			2,860			
2000	6,494	125	6,620			3,683			
2200	9,746	125	9,871			4,474			

• All international standards are available on request(AWWA, ANSI, BS, DIN, JIS, ETC).

