TOTAL ENGINEERING CO.,LTD

TOTAL ENGINEERING

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www.totalvalves.co.kr

KOREA MANUFACTURER OF INDUSTRIAL **SPECIAL VALVES**

TOTAL ENGINEERING

TOTAL Engineering rushes in the world

Global Growth Company with the Leading Technology and Innovation

TOTAL ENGINEERING CO.,LTD

TOTAL ENGINEERING

TOTAL Engineering rushes in the world

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CEO Message

Total Engineering was established in 1992 with the following management principles : Creativity, Respect, Trust and Best Quality.

There were various valve manufacturers in Korea. However, most of them were producing general valves and importing high quality special valves from overseas. In this respect, we, Total Engineering, saw opportunities to domestically design, develop and produce them for industrial applications and established manufacturing facilities.

We were primarily interested in manufacturing valves for petrochemical industry and have supplied our products to a number of customers at several petrochemical industrial sites. Since the end of 1994, we have been operating our own manufacturing plant located at Jangyu-myeon, Gimhae-si, Gyeongsangnam-do, Korea.

We have successfully designed and produced diverter valves, slide gate valves and ram type piston valves and supplied them to many companies which have favorably assessed the high quality and benefits of our products. Especially, the knife gate valves with no leakage function, whose design has been improved since 1997 for the ash handling at steam (thermoelectric) power plant, have been successfully installed at steam power plants.

We built the second plant in Juchon- myeon, Gimhae-si, Gyeongsangnam-do, Korea in the year of 2013 to satisfy customers' needs and requirements and deliver products just in time. We strive to be the one of the best companies in terms of customer satisfaction and are working hard to improve and develop our products for customer satisfaction. Our goal is to produce the best quality valves.

Hae Jin, Sung
President & CEO of Total Engineering

PHILOSOPHY Introducing the management philosophy of **Total Engineering Co., Ltd.**

CREATIVITY

01. **K**eep Innovation and Change!
02. **C**hange myself first!
03. **P**repare your ability as Engineer!

TRUST

04. **E**ndure and Overcome hardship and difficulties
05. **D**o not be afraid of change, just ACT!

BEST QUALITY

06. **L**ove all, save and endure with mother's mind!
07. **D**o your best in the field

CERTIFICATES

TOTAL ENGINEERING CO.,LTD

KOREA MANUFACTURER OF INDUSTRIAL

SPECIAL VALVES

The Best Creativity & Quality Valves

HISTORY

2022'
Certificate of Designation "Small Giant Company of Kore" by Ministry of SMES and Start-ups
Petrobras P-78 FPSO by Hyundai Heavy Industries
Petrobras P-79 FPSO by Daewoo Shipbuilding & Marine Engineering Co., Ltd.

2021'
Certificate of Designation "Small Giant Company of Kore" by Gimhae City
HMC Project in Thailand

2020'
"CE" Certificate by TUV in Germany
"SIL" Certificate by SGS in Germany

2019'
MOSK Project in Russia

TOTAL Engineering
rushes in the world

2018'
Registered Blind Valve in POSCO

2017'
Chosen as a KEPCO Trusted Partner
Vendor Registration in EIL(Engineers India Limited)

2016'
President Haejin Sung was elected as chairman of Gyeongnam Innobiz

2015'
Supplied Special Valve to TECNICAS REUNIDAS.
Awarded with OHSAS 18001 by CreBIZQM.
Awarded with a presidential commendation award.

2014'
Supplied 44″ Knife Gate Valve for Saudi Elastomer project.

2013'
Developed Self-lapping Valve.
Succeeded in domestically producing Change-over Valve (supplied to Russia).

2012'
Registered in Hitachi (Japan) and POSCO (India).

2011'
Incorporated of business.

2010'
Opened 3rd Factory Cleaning Assembly Job.

2008'
Obtained Patent for Bonnet Type Long Plate Knife Gate Valve.
Opened Seoul Branch Office.

2007'
Opened 2nd Factory.

2005'
Supplied Knife Gate Valve to OMAN POLYPROPYLENE LLD.
Awarded with ISO 14001 by BVQI.

2003'
Supplied Knife Gate Valve to Young Heung Power Plant for Ash Process Equipment.
Supplied Knife Gate Valve to Samcheonpo Power Plant.

2002'
Supplied Knife Gate Valve to KEPCO. (Taean#5, 6 Ash Handling Equipment).

2001'
Exported Diverter Valve to PT. POLYTAMA PROFINDO, in Indonesia.
Exported Slide Gate Valve to REIMELT (GERMANY) for ABS project in Iran.
Supplied Ram Piston Valve to S.K. Corp, for resin processing plant.
Supplied Ram Piston Valve to SAMSUNG ENGINEERING CO., LTD. for 3P.P pilot plant.
Supplied Ram Piston Valve to LG-CALTEX CO., LTD. for P.P pilot plant.
Up-grading the ISO 9002 to ISO 9001 by BVQI.

2000'
Got a Utility Model Patent for Knife Gate Valve.
Supplied Knife Gate Valve to Korea KOREA HEAVY INDUSTRY CO., LTD..
Obtained Utility Model Patent for Knife Gate Valve.

1999'
Awarded with ISO 9002 by BVQI.

1998'
Supplied Ram Piston Valve for P.P. and HDPE for Haldia project in India
Exported Knife Gate Valve to EL-BARD CO., LTD. in Saudi Arabia.
Exported Strainer to J.S.W ENGINEERING CO., LTD. (Japan) for Sakaka project in Singapore.

1996'
Supplied Strainer to DAELIM CO., LTD. for Inchon LNG plant project.

1995'
Obtained order from DAELIM for Isobutane plant project.
Localization of Ram Piston Valve in DAELIM INDUSTRIAL CO., LTD. (Yeo-su plant).
Opened branch office in Yeo-su to cover customers within Yochon Petrochemical complex.
Supplied Strainers to LG CHEMICAL CO., LTD. for Oxo-Alcohol and 3AA project.
Supplied localized Diverter valve for project from HANWHA CHEMICAL CORPORATION.

1994'
Got approval from LG PETROCHEMICAL CO., LTD. for quality of our valve.
Supplied special slide gate valve to SAMSUNG ENGINEERING CO., LTD. for a project of plant by POSCO.
Transferred the company to current location and tripling the production capacity.

1993'
Registered as an authorized vendor for DAELIM INDUSTRIAL CO., LTD.

1992'
Established "Total Engineering" for manufacture, sale and development of special valve.
Registered in DAELIM INDUSTRIAL CO., LTD. (Yeo-su), as a company for localizing special valves

The Best Creativity & Quality Valves

RAM PISTON VALVE

RAM PISTON VALVE

Ram Piston Valve can be used in almost any industry, including petrochemical, petroleum and gas industries, for sampling, drain and fluid injection purposes. Flanges are essential to connect valves to pipes or tanks, which create a dead space.

If the fluid stays in this space for a long time, it will reduce the accuracy of sampling from the tank or pipe.

Ram Piston Valve is designed and constructed with the dimension of the flange to which the valve is to be engaged and with a tolerance of 0.5mm and is fastened without a dead space.

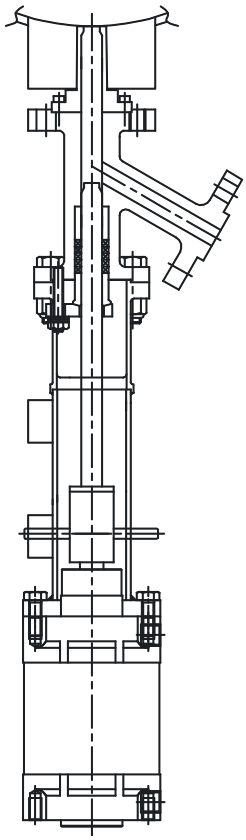
In the global valve market, it is mainly produced in Italy or Germany, and its headquarters is the only manufacturer capable of supplying it in Korea.

APPLICATION

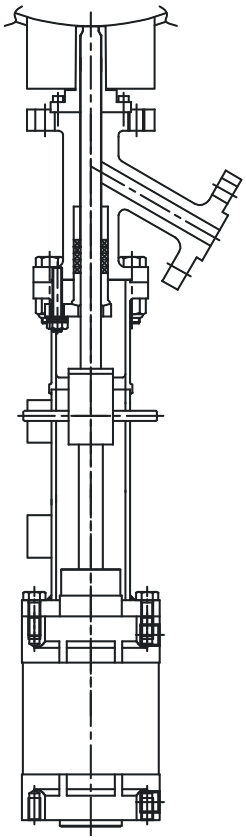
Polymer process (PP, PE, LDPE, PC, LLDPE, HDPE, etc.) Loop Rector, Vessel, Catalytic Injection for Reactor

END CONNECTION DETAIL DRAWING

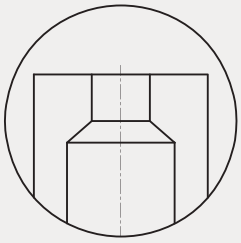
OPEN



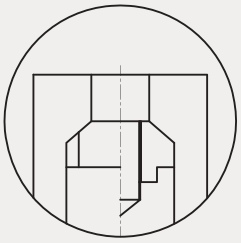
CLOSE



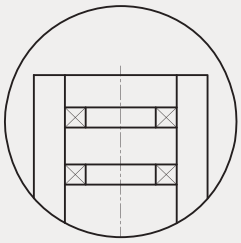
SEAT TYPE OR ETC.



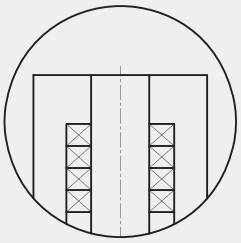
METAL TO METAL SEAL



METAL TO PEEK (PTFE) SEAL

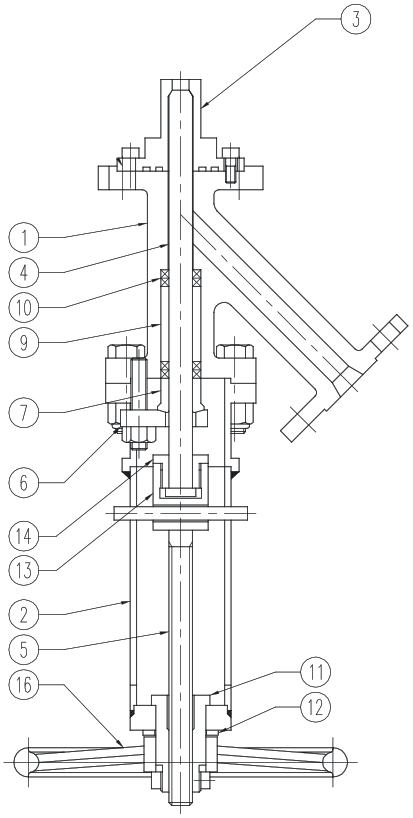


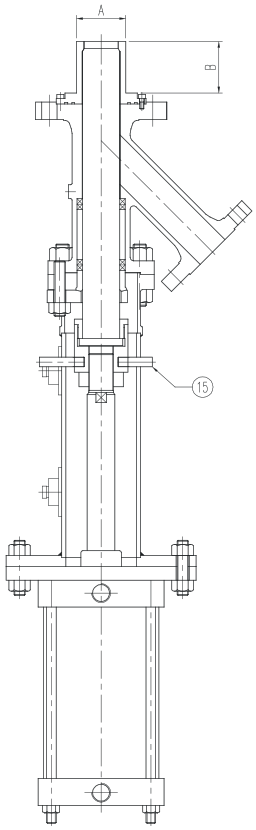
METAL TO O-RING SEAL



METAL TO PACKING SEAL

CASTING TYPE RAM PISTON VALVE



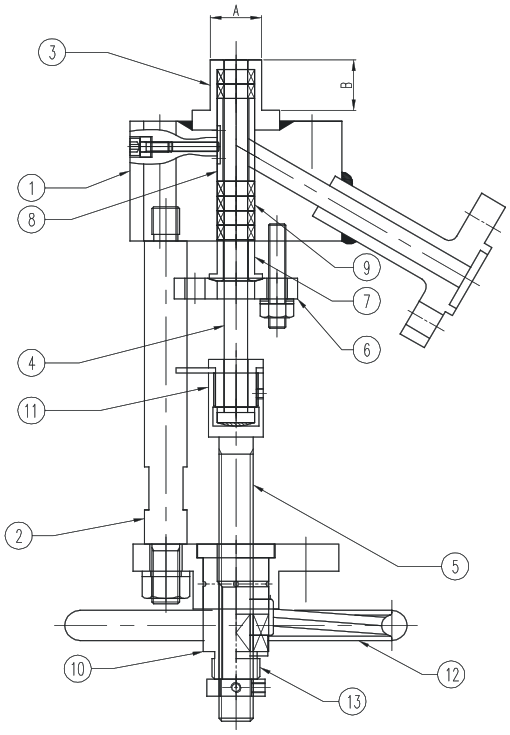


REFERENCE STANDARD

- FLANGE DIMENSIONS : ANSI B 16.5
- PRESSURE RATING : 150LB, 300LB, 600LB, 900LB, 1500LB
- ANGLE : 45°, 60°, 30°
- A.B DIMENSION : Varied by customer's requisition.

NO	DESCRIPTION	VARIED BY CUSTOMER REQUISITIONS	
		MANUAL TYPE	ON-OFF TYPE
01	BODY	ASTM A351-CF8, CF8M, CF3M, ETC	
02	YOKE	304SS	
03	ADAPTOR	304SS/316SS + STELLITE	
04	PISTON	304SS/316SS + CHROMEPLATED	
05	STEM	304SS	
06	GLAND FLANGE	304SS	
07	PACKING GLAND	304SS	
08	CAGE	304SS/316SS	
09	BUSH	304SS/316SS	
10	PACKING	P.T.F.E GRAPHITE	
11	YOKE SLEEVE	BRASS	-
12	THRUST WASHER	BRASS	-
13	JOINT	-	304SS
14	PISTON GLAND	304SS/316SS	
15	INDICATOR	304SS	
16	HANDWHEEL	ASTM A536	-

WELDING TYPE RAM PISTON VALVE



REFERENCE STANDARD & OTHER INFORMATION

- FLANGE DIMENSION : ANSI B 16.5
- ANGLE : 45°, 60°
- PRESSURE RATING : 150LB, 300LB, 600LB, 900LB, 1500LB
- A.B DIMENSION : Varied by customer's requisition.

NO	DESCRIPTION	MATERIAL	
		HAND WHEEL TYPE	CYLINDER TYPE
01	BODY	ASTM A351-CF8, CF8M, CF3M, ETC	
02	YOKE	304SS	
03	ADAPTOR	304SS OR 316SS	
04	PISTON	304SS OR 316SS + CHROMEPLATED	
05	STEM	304SS	
06	GLAND FLANGE	304SS	
07	PACKING GLAND	304SS	
08	CAGE	304SS/316SS	
09	PACKING	P.T.F.E GRAPHITE (VARIED BY DESIGN FACTOR)	
10	YOKE SLEEVE	BRASS	
11	PISTON GLAND	304 / 316	
12	HANDWHEEL	ASTM A536	
13	HANDWHEEL NUT	ASTM A194-8	

The Best Creativity & Quality Valves

TANK BOTTOM FLUSH VALVE

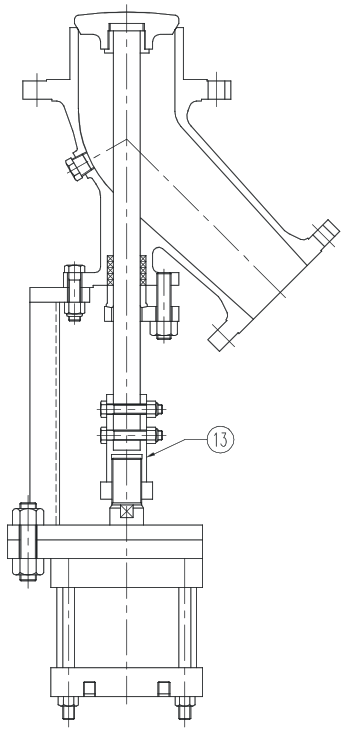
TANK BOTTOM FLUSH VALVE

The Tank bottom flush valve has a function similar to that of the Ram piston valve and is used for cleaning the tank.

However, unlike the Ram Piston Valve, the piston is not in the form of blocking the inner valve, but rather a combination of a stem thinner than the flow path and a disk completely blocking the flow path.

It is shorter than the Ram Piston Valve and lighter weight can reduce the load on the piping. And even if you use an actuator, it is designed so that you don't need more force than the Ram piston valve.

TANK BOTTOM FLUSH VALVE (DOWN SEAT)

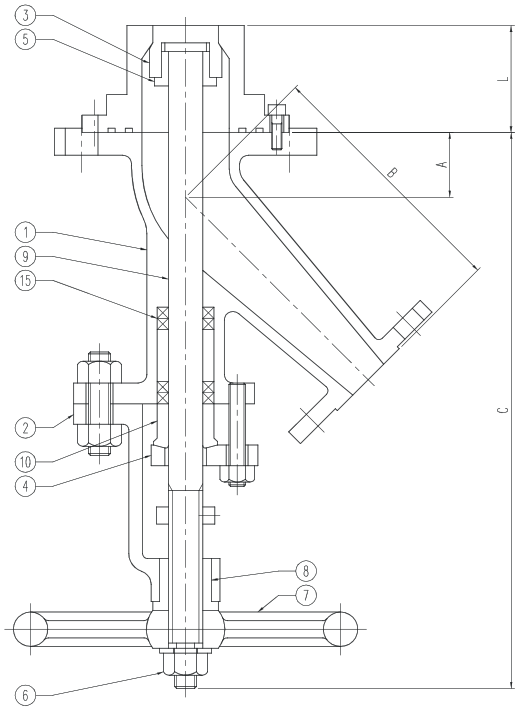


REFERENCE STANDARD

- FLANGE DIMENSIONS : ANSI B 16.5
- ANGLE : 45°, 60°
- PRESSURE RATING : 150LB, 300LB, 600LB, 900LB, 1500LB
- A.B DIMENSION : Varied by customer's requisition.

NO	DESCRIPTION	MATERIAL	
		HAND WHEEL TYPE	CYLINDER TYPE
01	BODY	ASTM A351-CF8, CF8M, CF3M, ETC	
02	YOKE	CARBON STEEL / STAINLESS STEEL	
03	ADAPTOR	304SS/316SS + STELLITE	
04	PISTON	304SS/316SS + CHROME PLATED WITH STELLITE	
05	STEM	304SS	-
06	GLAND FLANGE	304SS	
07	PACKING GLAND	304SS	
08	BUSH	304SS/316SS	
09	PACKING	P.T.F.E / GRAPHITE	
10	YOKE SLEEVE	BRASS	-
11	THRUST WASHER	BRASS	-
12	DISC	304SS OR 316SS + STELLITE	
13	JOINT	304SS	
14	DISC GLAND	304SS/316SS	
15	INDICATOR	304SS	
16	HANDWHEEL	ASTM A536	-
17	HANDWHEEL NUT	BRASS	-

TANK BOTTOM FLUSH VALVE (UPPER SEAT)



REFERENCE STANDARD

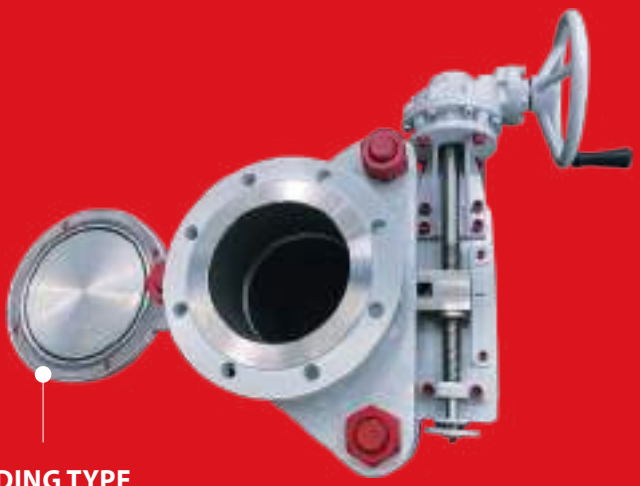
- FLANGE DIMENSION : ANSI B 16.5
- ANGLE : 45°, 60°, 90°
- PRESSURE RATING : 150LB, 300LB, 600LB, 900LB, 1500LB
- A.B DIMENSION : Varied by customer's requisition.

NO	DESCRIPTION	MATERIAL	
		HAND WHEEL TYPE	CYLINDER TYPE
01	BODY	ASTM A351-CF8, CF8M, CF3M, ETC	
02	YOKE	304SS	
03	DISC	304SS / 316SS	
04	GLAND FLANGE	304SS	
05	DISC GLAND	304SS/316SS	-
06	HANDWHEEL NUT	BRASS	
07	HANDWHEEL	ASTM A536	
08	YOKE SLEEVE	BRASS	
09	STEM	304SS/316SS	
10	PACKING GLAND	304SS	
11	CYLINDER	-	MANUFACTURER STANDARD
12	CONNECTOR	-	304SS
13	INDICATOR	304SS	
14	GASKET	P.T.F.E	
15	PACKING	P.T.F.E	

The Best Creativity & Quality Valves

LINE BLIND VALVE

SWING TYPE



SLIDING TYPE

JACK BOLT TYPE

LINE BLIND VALVE

The blind valve is normally open and can completely seal the pipe in a short time without blind flanges during maintenance.

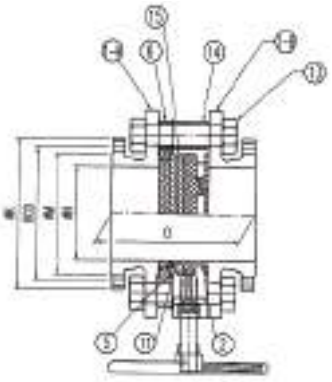
Handle operation moves the seat toward the disc for complete sealing and features applicable to all maintenance-required operations.

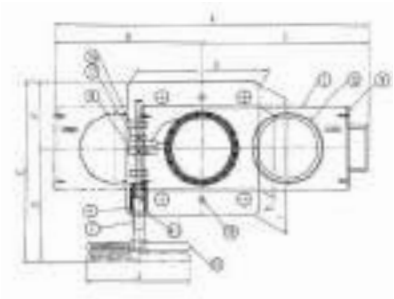
APPLICATION

Petrochemicals, power plants, shipbuilding/ offshore plants, etc. are exposed to safety and fire, all industrial and industrial sectors

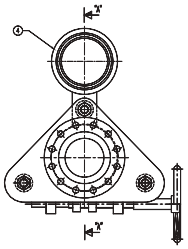
- Leakage perfect confidentiality
- The valve can be turned on/off depending on the location of the pipe or process conditions
- 3(three) persons are required for line maintenance, but 1(one) person is possible
- Maintenance is possible during operation
- Work without special tools
- It can be used instead of existing blind flange
- Jack bolt type is using to high temperature (over 450C°)

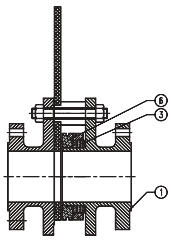
LINE BLIND VALVE

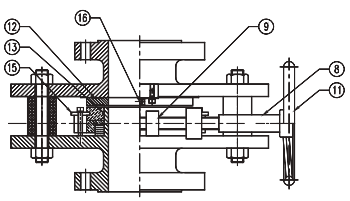




SLIDING TYPE







SWING TYPE

REFERENCE STANDARD

- FLANGE DIMENSIONS : ANSI B 16.5
- PRESSURE RATING : 150LB, 300LB, 600LB

NO	DESCRIPTION	MATERIAL	
		SQUARE TYPE	TRYANGLE TYPE
01	BODY A	*316LSS	*A351-CF8
02	BODY B	*316LSS	-
03	GEAR SET	316LSS	A240-304
04	BLIND PLATE	*316LSS	*A240-304
05	PIPE	316LSS	-
06	SEAT	316LSS	A240-304
07	BLIND PLATE GUIDE	POLY ACETAL	-
08	SCREW SHAFT	304SS	A479-304
09	TRAVELING NUT	304SS	A240-304
10	END PLATE	304SS	-
11	HAND WHEEL	A536	A126-B
12	PROXIMITY SEMSOR	-	-
13	O-RING	*NBR	*VITON
14	O-RING	*NBR	*VITON
15	O-RING	*NBR	-
16	SEAT GUIDE	-	A479-304
17	FIXING PIN	-	A479-304

* Trim Material to be applied as customer's requisition with various option.

The Best Creativity & Quality Valves

SLIDE GATE VALVE

SLIDE GATE VALVE

The slide gate valve is installed horizontally in the lower part of the silo (free fall line) and is designed to improve the performance of pipes carrying powder.

When this valve is used in a petrochemical plant, the space inside the valve is removed to prevent mixing of different fluids.

There is no dead space, and to eliminate this dead space, the body is separately processed up and down and fastened using bolts, and most of the fluid is not only freely dropped by gravity, but is also designed to fall off when opening and closing

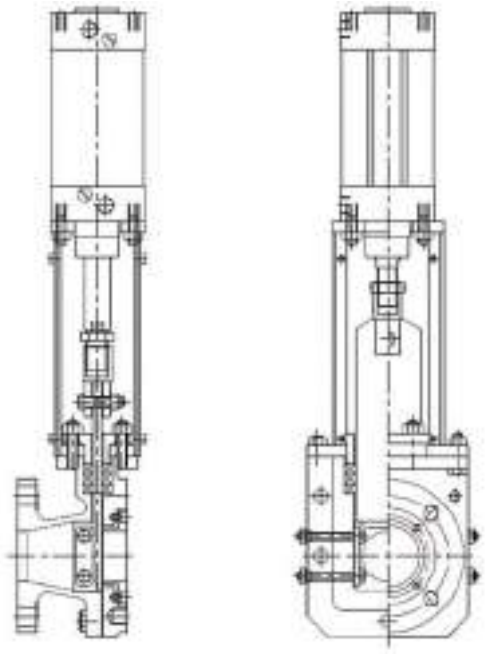
This is a powder transfer line suitable valve that solves all problems (operation problems, mixing problems) that occur when applying Knife Gate Valve to powder transfer lines.

The Knife Gate Valve uses a circular seat to build-up fluid, while the Slide Gate Valve uses a square blade square seat to prevent fluid from entering the body.

This valve is used in petrochemical finished product lines and is installed in the lower part of the tank in particular to allow transport without damaging the product.

The Sluice gate valve is a square shape and is used to block fluids or gases without buffing inside.

SLIDE GATE VALVE



REFERENCE STANDARD

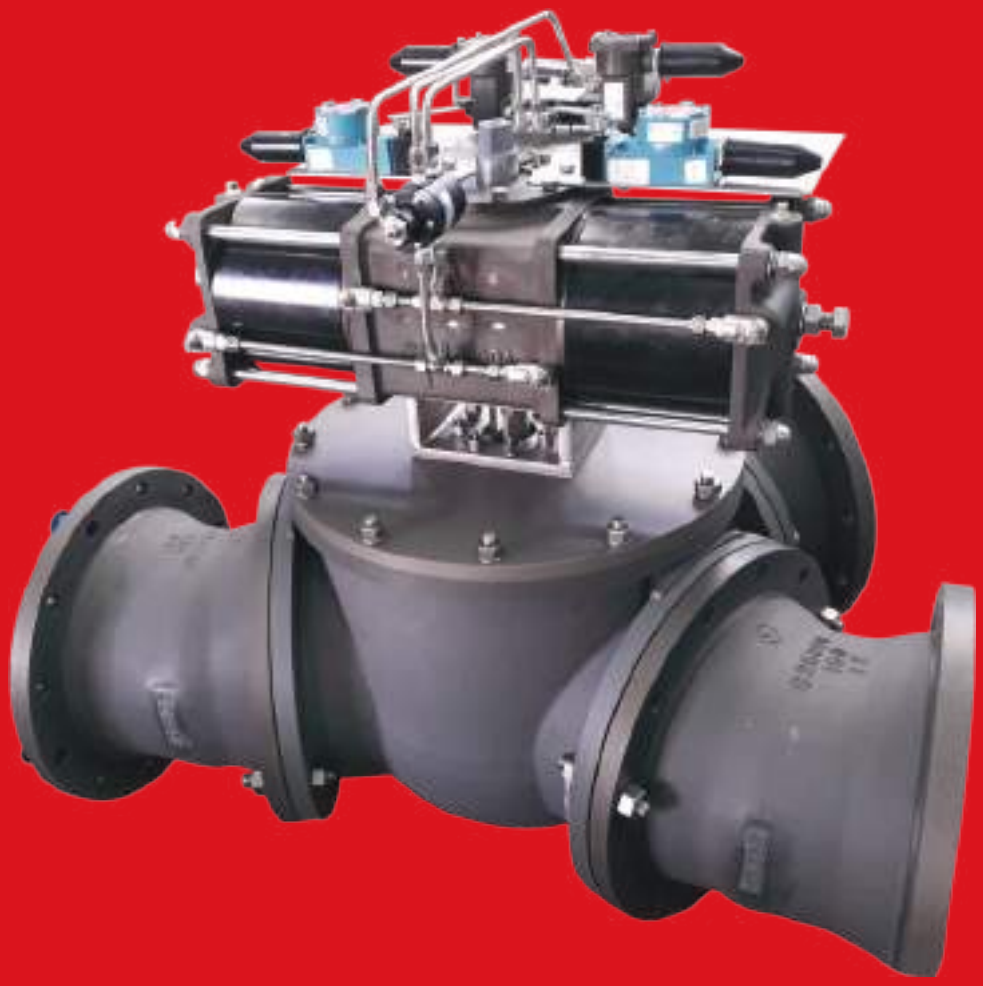
- BOLT CIRCLE DIAMETER : ANSI B 16.5
- PRESSURE RATING : 150LB
- VALVE FACE TO FACE DIMENSION : Manufacturer Standard

NO	DESCRIPTION	MATERIAL	
		HAND WHEEL TYPE	CYLINDER TYPE
01	BODY	ASTM B26-356 OR CF8, CF8M, CF3M	
02	COVER	304SS/316SS	
03	YOKE/YOKE COVER	304SS	
04	BLADE	304SS	
05	GLAND FLANGE	304SS	
06	HAND WHEEL NUT	BRASS	-
07	HAND WHEEL	ASTM A536	-
08	YOKE SLEEVE	BRASS	-
09	STEM	304SS	-
10	SEAT	P.T.F.E	
11	INSERT	304SS/316SS	
12	GUIDE BAR	MC NYLON	
13	GASKET	P.T.F.E	
14	PACKING	MANUFACTURER STANDARD	
15	THRUST WASHER	BRASS	-
16	CYLINDER	-	MANUFACTURER STANDARD
17	KNUCKLE	-	304SS

VALVE SIZE	I.D	BCD	O.D	D	F.F	F	N-H
6″	150.0	241.3	279.4	16.0	140	300	8-7/8″
8″	203.0	298.5	342.9	20.0	160.0	300	8-7/8″
10″	250.0	362.0	406.4	20.0	160.0	350	12-1″
12″	300.0	431.8	482.6	20.0	180.0	450	12-1″
14″	336.0	478.3	533.4	22.0	180.0	550	12-1″

The Best Creativity & Quality Valves

3-WAY BALL VALVE



3-WAY BALL VALVE

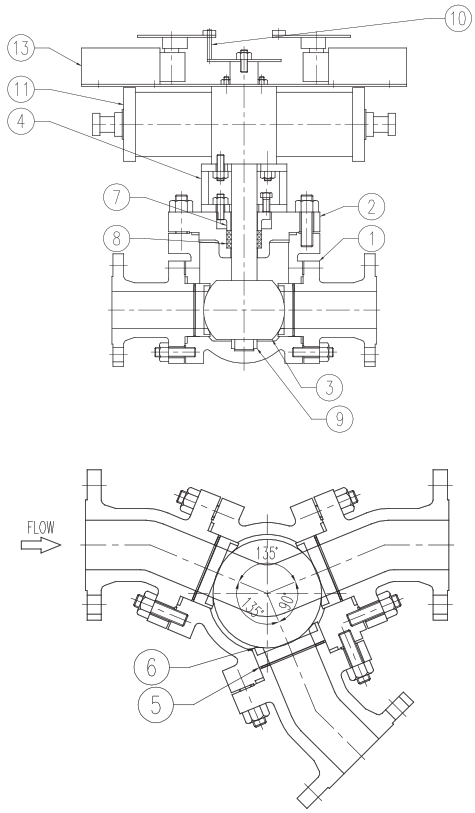
The 3(three) Way Ball Valve is a valve that switches the direction (angle) of the fluid in three directions.

This valve is used to change direction in the high pressure transfer piping of fluids and gases, and it is possible to combine branch pipes to form piping at various angles.

Due to the dead space, it has the disadvantage of having to be decomposed and cleaned, but it can be used in oil and P.P. lines.

Piping process that requires confidentiality because there is no leakage.

3-WAY BALL VALVE



REFERENCE STANDARD

- FLANGE DIMENSION : ANSI B 16.5
- PRESSURE RATING : 150LB, 300LB

NO	DESCRIPTION	MATERIAL	
		HAND WHEEL TYPE	CYLINDER TYPE
01	*BODY	A351-CF8	A351-CF8
02	*COVER	A351-CF8	A351-CF8
03	*BALL	A351-CF8	A351-CF8
04	YOKE	A240-304	A240-304
05	SPRING	304SS	
06	SEATRING	PTFE	PTFE
07	PACKING GLAND	304SS	304SS
08	PACKING	PTFE	PTFE
09	BUSH	BRASS	
10	INDICATOR	304SS	304SS
11	*INNER RING	A240-304	A240-304
12	CYLINER	-	-
13	LIMIT SWITCH	-	-

* Trim Material to be applied as customer's requisition with various option.

The Best Creativity & Quality Valves

DIVERTER VALVE

BALL TYPE

PLUG TYPE

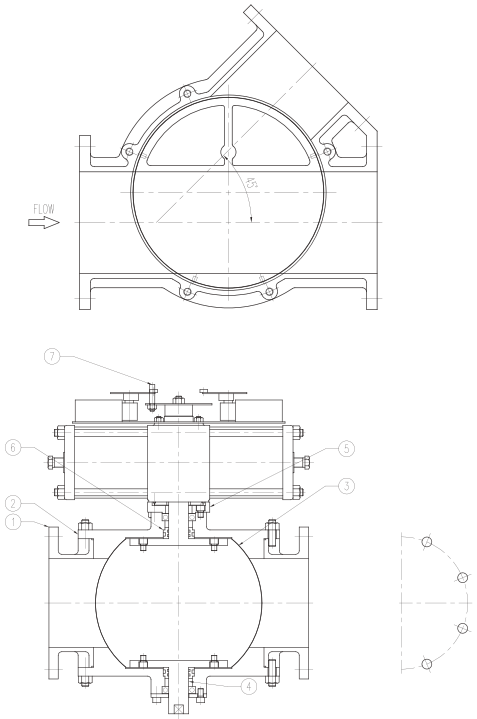
VEE TYPE

DIVERTER VALVE

Diverter valves have similar functionality as 3(three)-way ball valves but are mainly used in Powder and Polymer processes with low pressure such as PP and PE lines, not liquid or gas lines.

This valve is used to change the orientation of the fluid and is used in branch piping with certain angles (30, 45, 60, 90 degrees).

FULL BORE BALL TYPE



REFERENCE STANDARD

- BASIC DESIGN : Manufacturer's standard
- FLANGE B.C.D DIMENSIONS : ANSI B 16.5
- PRESSURE RATING : 150LB
- FACE TO FACE DIMENSIONS : Manufacturer's standard
- MATERIAL : Aluminum
- ANGLE : 22.5°, 30°, 45°, 60°, 90°, etc.

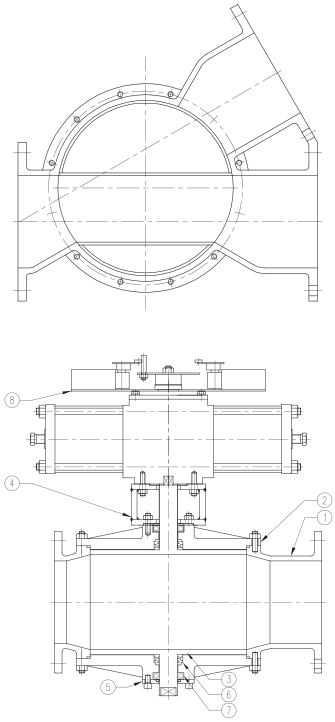
FEATURE

- The weight of entire valve is minimized by adoption of aluminum material, except trim part.
- Adoption of "Full bore type (rotation angle : 135°)" gives an edge over "Reduced type" providing more efficient opening ratio.
- Indicator installed on the valve provides immediate confirmation of flow direction.
- The products with special angle not listed herein are also available upon request.
- Uniform mechanism of sealing minimizes possible leakage.

NO	DESCRIPTION	MATERIAL
01	BODY	ASTM B23-356 OR CF8, CF8M,CF3M
02	COVER	ASTM B23-356 OR CF8, CF8M,CF3M
03	BALL	A351-CF8, CF8M, CF3, CF3M OR B26-356
04	SHAFT	304SS
05	CAP	304SS
06	BUSH	BRASS
07	INDICATOR	304S

ACCESSORY PART	
ACTUATOR	AS PER PROJECT REQUIREMENT
TERMINAL BOX	AS PER PROJECT REQUIREMENT
LIMIT SWITCH	AS PER PROJECT REQUIREMENT
SPEED CONTROLLER	AS PER PROJECT REQUIREMENT
SILENCER	AS PER PROJECT REQUIREMENT
SOLENOID VALVE	AS PER PROJECT REQUIREMENT
AIR SET	AS PER PROJECT REQUIREMENT
CYLINDER	AS PER PROJECT REQUIREMENT

FULL BORE SQUARE PLUG TYPE



REFERENCE STANDARD

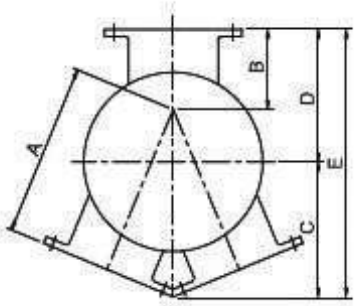
- BASIC DESIGN : Manufacturer's standard
- FLANGE B.C.D DIMENSIONS : ANSI B 16.5
- PRESSURE RATING : 150LB
- FACE TO FACE DIMENSIONS : Manufacturer's standard
- MATERIAL : Aluminum
- ANGLE : 22.5°, 30°, 45°, 60°, 90°, etc.

FEATURE

- The weight of entire valve is minimized by adoption of aluminum material, except trim part.
- Adoption of "Full bore type (rotation angle : 135°)" gives an edge over "Reduced type" providing more efficient opening ratio.
- Indicator installed on the valve provides immediate confirmation of flow direction.
- The products with special angle not listed herein are also available upon request.

NO	DESCRIPTION	MATERIAL	ACCESSORY PART	
01	BODY	ASTM B23-356 OR CF8, CF8M,CF3M	ACTUATOR	AS PER PROJECT REQUIREMENT
02	COVER	ASTM B23-356 OR CF8, CF8M,CF3M	TERMINAL BOX	AS PER PROJECT REQUIREMENT
03	PLUG	304SS	LIMIT SWITCH	AS PER PROJECT REQUIREMENT
04	YOKE	304SS	SPEED CONTROLLER	AS PER PROJECT REQUIREMENT
05	CAP	304SS	SILENCER	AS PER PROJECT REQUIREMENT
06	BUSH	BRASS	SOLENOID VALVE	AS PER PROJECT REQUIREMENT
07	BEARING	-	AIR SET	AS PER PROJECT REQUIREMENT
08	PLATE	304S	CYLINDER	AS PER PROJECT REQUIREMENT

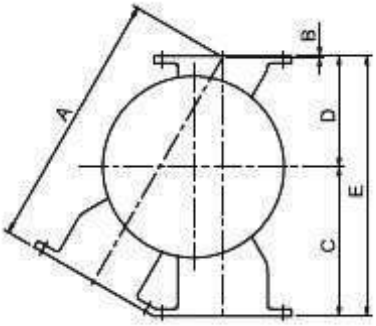
DIVERTER VALVE



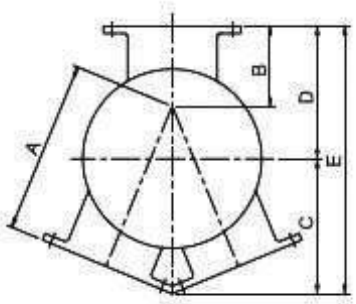
- Table bellows are commonly applied to plug, ball and blade type. Each table shows dimension at the point of each angle as indicated.

DIMENSIONS DATA

VALVE SIZE	22.5°x2 GENERAL DIMENSION (MM)				
	A	B	C	D	E
2″	203.0	66.4	151.7	132.7	384.4
3″	253.8	69.2	173.5	168.8	342.3
4″	299.0	121.7	226.8	217.0	443.8
6″	353.0	122.0	262.0	242.0	504.0
8″	432.0	148.0	313.5	301.7	615.2
10″	512.6	167.4	368.0	354.2	722.2
12″	617.0	109.2	394.0	380.6	774.6



VALVE SIZE	30°x2 GENERAL DIMENSION (MM)				
	A	B	C	D	E
2″	303.5	113.9	208.7	208.7	417.4
3″	356.0	86.0	251.0	191.0	442.0
4″	432.0	51.0	267.0	216.0	483.0
6″	523.5	9.5	292.0	241.0	533.0
8″	645.0	3.0	343.0	305.0	648.0
10″	760.0	97.0	425.0	432.0	857.0
12″	906.0	27.0	527.0	406.0	933.0



VALVE SIZE	45°x2 GENERAL DIMENSION (MM)				
	A	B	C	D	E
2″	203.0	196.9	141.7	141.7	283.4
3″	253.9	80.0	178.8	187.8	375.7
4″	291.4	191.6	211.5	271.5	483.0
6″	354.0	126.0	240.0	240.0	483.0
8″	431.6	216.4	310.9	337.1	648.0
10″	512.4	247.6	380.0	380.0	760.0
12″	614.3	112.9	405.3	363.6	727.2

- FLANGE DIMENSION DATA : Reference Standard ANSI B 16.5
- REFERENCE PRESSURE : 150LB

The Best Creativity & Quality Valves

STRAINER

STRAINER

Strainer, which is installed to prevent foreign substances from entering a device by removing foreign substances contained in a fluid, applies various types of Strainer depending on the pipe line shape, size, flow path direction, cleaning cycle, etc., and the typical types are as follows.

Y-Strainer : Strainer most commonly applied to small pipes

T-Strainer : A strainer generally applied to medium and large-sized pipes. There are T-1, T-2, and T-3 types depending on the resistance of fluid, so it is applied to horizontal and vertical pipes.

B-Strainer : Periodic cleaning is required if the screen inside the strainer is blocked by foreign substances, but it is applied to ensure continuity of the process by lengthening the replacement cycle, and the open ratio is twice as large as other types, and the replacement cycle is more than 3 times longer.

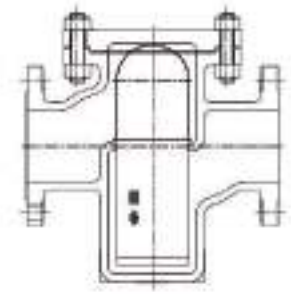
C-Strainer : Temporary Strainer, also known as Strainer, installed inside pipes without body to filter foreign substances temporarily generated in new lines such as factory construction.

APPLICATION

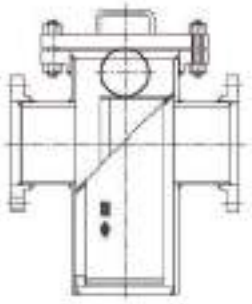
Petrochemical, power plant, LNG, shipbuilding, marine, food, paper, water treatment, environment, etc. used throughout industrial plants.

To protect expensive and important equipment such as Compressor, Pumps, Flow Meters, Steam Traps, Control Valves, etc.,

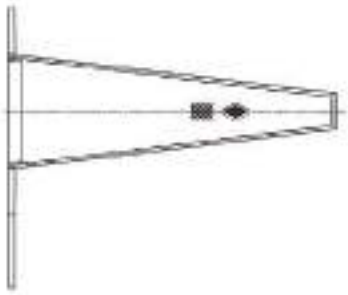
STRAINER & ENGINEERING DATA



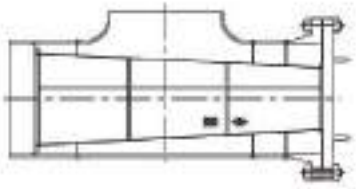
BUCKET TYPE (CASTING)



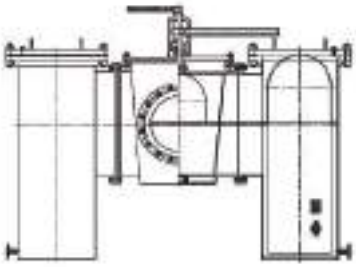
BUCKET TYPE (FABRICATION)



C-TYPE

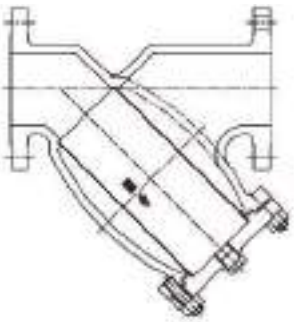


T1-TYPE

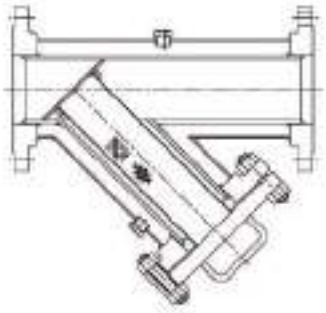


DUPLEX

T2-TYPE



Y-TYPE (CASTING)



Y-TYPE (FABRICATION, JACKET TYPE)

GENERAL CLASSIFICATION	CASTINGS			FORGINGS		
	ASTM	JIS	BS	ASTM	JIS	BS
Cast iron	Class A	G5501-FC20	1452-14	-	-	-
	A126-Class B	G5501-FC25	1452-17	-	-	-
	A126-Class C	G5501-FC30	1452-20	-	-	-
Malleable iron	A197	G5702-FCMB28	310-B18/6	-	-	-
	A47-32510	G5702-FCMB35	310-B22/14	-	-	-
	A47-35018	G5702-FCMB37	-	-	-	-
Cast iron	A395	G5502-FCD40	-	-	-	-
	-	G5502-FCD45	-	-	-	-
	A536	G5502-FCD55	-	-	-	-
Carbon steel	A216-WCA	G5151-SCPH1	-	A105	G3201-SF45	1503-161B
	-	G5101-SC46	1504-161	-	-	-
	A216-WCB	G5151-SCPH2	1504-B	A105	G3201-SF50	1503-161C
	WCC	-	-	-	-	-
	-	G5101-SC55	1504-C	-	-	-
Carbon-1/2Mo	A217-WC1	G5111-SCA41	1504-240	A182-F1	-	1503-240B
1/2Cr-1/2Mo-1/2Ni	A217-WC4	-	-	-	-	-
1Cr-1/2Mo-1/2Ni	A217-WC5	-	-	A182-F12	-	1503-620
1 1/4Cr-1/2Mo	A217-WC6	G5111-SCA51	1504-621	A182-F11	-	-
2 1/4Cr-1/2Mo	A217-WC9	-	1504-622	A182-F22	-	1503-622
3Cr-1Mo	-	-	-	A182-F21	-	-
5Cr-1/2Mo(C 0.15)	-	-	-	A182-F5	-	-
5Cr-1/2Mo(C 0.25)	A217-C5	G5111-SCA52	1504-625	A182-F5a	-	1503-625
7Cr-1/2Mo	-	-	-	A182-F7	-	-
9Cr-1Mo	A217-C12	-	1504-629	A182-F9	-	-
Carbon steel for Low Temp	A352-LCB	-	4242-GRA	A182-LF1	-	-
Carbon-Si	-	-	-	A182-LF2	-	-
Carbon-1Mo for Low Temp	A352-LC1	-	-	-	-	-
2 1/2Ni	A352-LC2	-	-	-	-	-
3 1/2Ni	A352-LC3	-	-	A350-LF3	-	-
Cr-Ni-Cu-A1	-	-	-	A350-LF4	-	-
13Cr	A217-CA15	G5121-SCS1	-	A350-F6	G4303-SUS51B	1503-713
18Cr-8Ni(C 0.03)	A351-CF3	-	-	A182-F304L	G4303-SUS28B	-
18Cr-8Ni(C 0.08)	CF8	G5121-SCS13	-	A182-F304	G4303-SUS27B	1503-801
18Cr-8Ni(C 0.10)	-	-	1504-801	A182-F304H	-	-
18Cr-8Ni-2Mo(C 0.03)	A351-CF3M	G5121-SCS16	-	A182-F316L	G4303-SUS32B	-
18Cr-8Ni-2Mo(C 0.08)	A351-CF8M	G5121-SCS14	1631-GRC	A182-F316	G4303-SUS32B	1503-845B
18Cr-8Ni-2Mo(C 0.10)	-	-	-	A182-F316H	-	-
18Cr-8Ni-Ti(C 0.08)	-	-	-	A182-F321	G4303-SUS29B	-
18Cr-8Ni-Ti(C 0.10)	-	-	1504-821Ti	-	G4303-F321H	1503-82Ti
18Cr-8Ni-Cb(C 0.08)	A351-CF8C	-	-	A182-F347	G4303-SUS43B	1503-821Nb
18Cr-8Ni-Cb(C 0.10)	-	-	1504-821Nb	A182-F347H	-	-
18Cr-8Ni-Ta-Cb(C 0.08)	-	-	-	A182-F348	-	-
18Cr-8Ni-Ta-Cb(C 0.10)	-	-	-	A182-F348H	-	-
25Cr-20Ni(C 0.15)	-	-	-	A182-F310	-	-
22Cr-12Ni(C 0.08)	A351-CH18	-	-	-	-	-
22Cr-12Ni(C 0.10)	A351-CH10	-	-	-	-	-
22Cr-12Ni(C 0.20)	A351-CH20	-	-	-	-	-
23Cr-19Ni(C 0.20)	A351-CK20	-	-	-	-	-
23Cr-19Ni(C 0.35)	A351-HK30	-	-	-	-	-
23Cr-19Ni(C 0.45)	A351-HK40	-	-	-	-	-
13Cr-33Ni-Mo(C 0.35)	A351-HT30	-	-	-	-	-
15Cr-13Ni-2Mo-Cb(C 0.10)	CF 10MC	-	-	-	-	-
19Cr-27Ni-2Mo-3Cu(C 0.07)	CF CN7M	-	-	A-20	-	-
8Cr-20Ni-Mo(C 0.20)	-	-	-	A182-F10	-	-
HASTELLOY. B	A494-N-12M-1	-	-	-	-	-
HASTELLOY. C	A494CW-12M-1	-	-	-	-	-
NICKEL	A494/A296-C2-100	-	-	-	-	-
NICONEL	A494-Cy-40	-	-	-	-	-
MONEL	A296/A494 M-35	-	-	-	-	-

STEEL PIPE SCHDDULE / ANSI B36.10

NOMINAL	NOMINAL	SCH10		SCH20		SCH30		STD		SCH40		SCH50	
SIZE	O.D.(inch)	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH
1/8	0.405	-	-	-	-	-	-	1.73	0.058	1.73	0.068	-	-
1/4	0.540	-	-	-	-	-	-	2.24	0.065	2.24	0.068	-	-
3/8	0.675	-	-	-	-	-	-	2.31	0.091	2.31	0.091	-	-
1/2	0.840	-	-	-	-	-	-	2.77	0.109	2.77	0.109	-	-
3/4	1.050	-	-	-	-	-	-	2.87	0.113	2.87	0.113	-	-
1	1.315	-	-	-	-	-	-	3.38	0.133	3.38	0.113	-	-
11/4	1.660	-	-	-	-	-	-	3.56	0.140	3.56	0.140	-	-
11/2	1.900	-	-	-	-	-	-	3.68	0.145	3.68	0.145	-	-
2	2.375	-	-	-	-	-	-	3.91	0.154	3.91	0.154	-	-
21/2	2.875	-	-	-	-	-	-	5.16	0.203	5.16	0.203	-	-
3	3.500	-	-	-	-	-	-	5.49	0.216	5.49	0.210	-	-
31/2	4.000	-	-	-	-	-	-	5.74	0.226	5.74	0.226	-	-
4	4.500	-	-	-	-	-	-	6.02	0.237	6.02	0.237	-	-
5	5.563	-	-	-	-	-	-	6.55	0.258	6.55	0.258	-	-
6	6.625	-	-	-	-	-	-	7.11	0.280	7.11	0.280	-	-
8	8.625	-	-	6.35	0.250	7.04	0.277	8.18	0.322	8.18	0.322	10.31	0.406
10	10.750	-	-	6.35	0.250	7.80	0.307	9.27	0.385	9.27	0.365	12.70	0.500
12	12.750	-	-	6.35	0.250	8.38	0.330	9.53	0.375	10.31	0.406	14.27	0.562
14	14.000	6.35	0.250	7.92	0.312	9.53	0.375	9.53	0.375	11.13	0.438	15.09	0.594
16	16.000	6.35	0.250	7.92	0.312	9.53	0.375	9.53	0.375	12.70	0.500	16.66	0.656
18	18.000	6.35	0.250	7.92	0.312	11.13	0.438	9.53	0.375	14.27	0.562	19.05	0.750
20	20.000	6.35	0.250	9.53	0.375	12.70	0.500	9.53	0.375	15.06	0.594	20.52	0.812
22	22.000	6.35	0.250	9.53	0.375	12.70	0.500	9.53	0.375	15.85	-	22.22	0.875
24	24.000	6.35	0.250	9.53	0.375	14.17	0.562	9.53	0.375	17.45	0.687	24.61	0.969
26	26.000	7.92	0.312	12.70	0.500	-	-	9.53	0.375	-	-	-	-
28	28.000	7.92	0.312	12.70	0.500	15.88	0.625	9.53	0.375	-	-	-	-
30	30.000	7.92	0.312	12.70	0.500	15.88	0.625	9.53	0.375	-	-	-	-
32	32.000	7.92	0.312	12.70	0.500	15.88	0.625	9.53	0.375	17.45	0.688	-	-
34	34.000	7.92	0.312	12.70	0.500	15.88	0.625	9.53	0.375	17.45	0.688	-	-
36	36.000	7.92	0.312	12.70	0.500	15.88	0.625	9.53	0.375	19.05	0.750	-	-

XH		SCH80		SCH100		SCH120		SCH140		SCH150		XXH	
MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH
2.41	0.095	2.41	0.095	-	-	-	-	-	-	-	-	-	-
3.02	0.119	3.02	0.119	-	-	-	-	-	-	-	-	-	-
3.20	0.126	3.20	0.126	-	-	-	-	-	-	-	-	-	-
3.73	0.147	3.73	0.147	-	-	-	-	-	-	4.78	0.188	7.74	0.294
3.91	0.154	3.91	0.154	-	-	-	-	-	-	5.56	0.219	7.82	0.308
4.55	0.179	4.55	0.179	-	-	-	-	-	-	6.35	0.250	9.09	0.358
4.85	0.191	4.85	0.191	-	-	-	-	-	-	6.35	0.250	9.70	0.382
5.08	0.200	5.08	0.200	-	-	-	-	-	-	7.14	0.281	10.15	0.400
5.54	0.218	5.54	0.218	-	-	-	-	-	-	8.74	0.344	11.07	0.406
7.01	0.276	7.01	0.276	-	-	-	-	-	-	9.53	0.375	14.02	0.552
7.62	0.300	7.02	0.300	-	-	-	-	-	-	11.13	-0.438	-15.24	-0.600
8.06	0.318	8.08	0.318	-	-	-	-	-	-	-	-	-	-
5.56	0.337	8.56	0.337	-	-	11.13	0.438	-	-	13.49	0.531	17.12	0.674
9.53	0.375	9.53	0.375	-	-	12.70	0.500	-	-	15.88	0.625	19.05	0.750
10.97	0.432	10.97	0.432	-	-	14.27	0.562	-	-	18.26	0.719	21.95	0.884
12.70	0.500	12.70	0.500	0.594	0.594	18.26	0.719	20.62	0.812	23.01	0.906	22.23	0.875
12.70	0.500	15.09	0.594	0.719	0.719	21.44	0.844	25.40	1.000	28.58	1.125	25.40	1.000
12.70	0.500	17.48	0.688	0.844	0.844	15.40	1.000	28.58	1.125	33.32	1.312	25.40	1.000
12.70	0.500	19.05	0.750	0.938	0.938	27.79	1.094	37.75	1.125	35.71	1.406	-	-
12.70	0.500	21.44	0.844	1.031	1.031	30.96	1.219	36.53	1.438	40.49	1.594	-	-
12.70	0.500	23.83	0.938	1.156	1.156	34.93	1.357	39.67	1.562	45.24	1.781	-	-
12.70	0.500	26.19	1.031	1.281	1.281	38.10	1.500	44.45	1.750	50.01	1.969	-	-
12.70	0.500	28.58	1.125	1.375	1.375	41.28	1.625	47.63	1.875	53.98	2.125	-	-
12.70	0.500	30.96	0.129	1.531	1.531	48.02	1.812	52.37	2.062	59.54	2.344	-	-
12.70	0.500	-	-	-	-	-	-	-	-	-	-	-	-
12.70	0.500	-	-	-	-	-	-	-	-	-	-	-	-
12.70	0.500	-	-	-	-	-	-	-	-	-	-	-	-
12.70	0.500	-	-	-	-	-	-	-	-	-	-	-	-
12.70	0.500	-	-	-	-	-	-	-	-	-	-	-	-
12.70	0.500	-	-	-	-	-	-	-	-	-	-	-	-

The Best Creativity & Quality Valves

SELF LAPPING VALVE

SELF LAPPING VALVE

Lapping of seat & disc according to the linear and rotary operation.

- Removing dirt inside of the valve body through circulation using space of the inner part of valve body.
- Inner circulation is available according that body is 5 times bigger than port size with the open-close movement of the Disc.

This valve is normally used for rigid fluids (Mineral in soil, Calcine, Polysilicon, Coal) that may damage the seat.

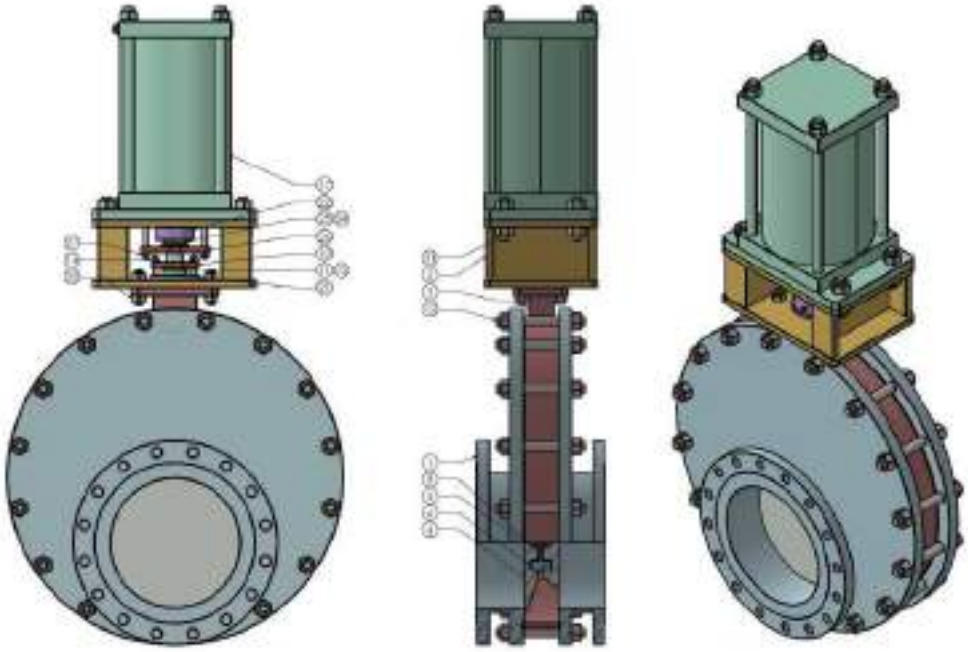
- The principle of operation is that when this valve is opened and closed, the disk rotates and straightens at the same time, which automatically grinds the seat.

In the United States, this valve is called the Everlasting Valve in that it can be used for a long time.

APPLICATION

Piping process requiring lapping of Cement plant, Steel factory plant, etc.

SELF LAPPING VALVE



CODE & STANDARD

- ANSI, ASME, API, MSS, JIS, BS, DIN, KS

MATERIAL

- AS PER CUSTOMER REQUIREMENT

OPERATION TYPE

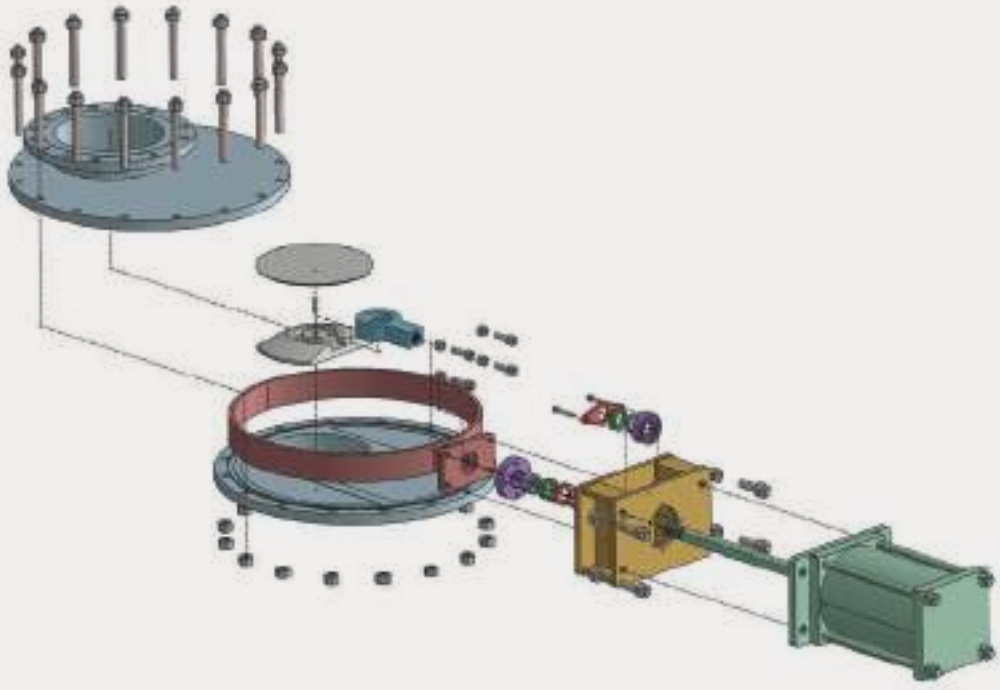
- HAND WHEEL, CHAIN WHEEL, GEAR, LEVER, PNEUMATIC DOUBLE ACTING, PNEUMATIC SINGLE ACTING, ELECTRIC MOTOR, AIR MOTOR

NO	DESCRIPTION	MATERIAL
01	BODY	CF8, CF8M, CF3, WBC
02	SEAT	AS PER CUSTOMER'S REQUIREMENT
03	DISC	AS PER CUSTOMER'S REQUIREMENT
04	DISC DRIVE	304SS
05	DISC SPRING	316SS
06	GASKET	PTFE
07	AIR CYLINDER	ALUMINUM

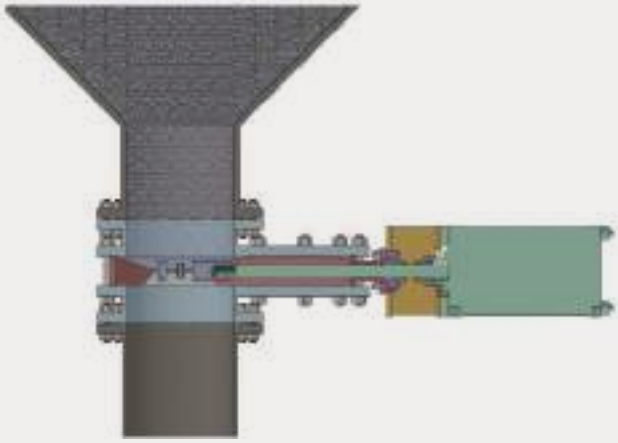
VALVE SIZE	A	B	C	D	E
2″	179	91.9	120.7	76	442.1
3″	210	127.0	152.4	95.5	518.7
4″	248	157.2	190.5	114.5	612.6
5″	267	185.7	215.9	127	659.5
6″	267	215.9	241.3	139.5	722
8″	343	269.7	298.5	171.5	847.2
10″	381	323.9	362.0	203	941.1
12″	381	381.0	431.8	241.5	941.1
14″	381	412.8	476.3	266.5	941.1
16″	420	469.9	539.8	298.5	1037.4
18″	420	533.4	577.9	317.5	1037.4
20″	500	584.2	635.0	349.5	1235
24″	500	692.2	749.3	406.5	1235

SELF LAPPING VALVE 3D DRAWING

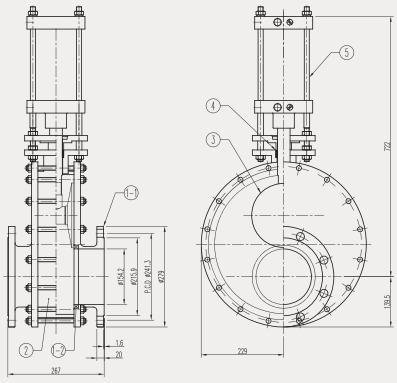
01



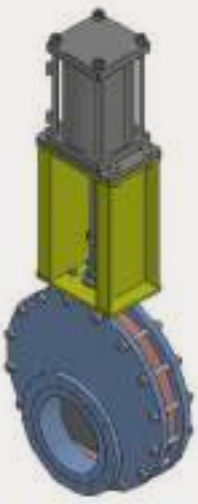
02



03



04



05

The Best Creativity & Quality Valves

KNIFE GATE VALVE

KNIFE GATE VALVE

Knife gate valves are designed mainly for on-off and isolation services in systems with high content of suspended solids.

Knife gate valves are especially beneficial for handling slurry in addition to viscous, corrosive and abrasive media.

The blade is brought into contact with the seat by the pressure of the fluid to prevent the flow of the fluid.

Mainly used in coal-fired power plants, petrochemical industry, paper industry, and cement industry.

Metal Seat type, it is the general type and can be used at high temperatures that the Rubber & PTFE Seat cannot withstand.

Rubber Seat type damages the seat surface in case of ash, cemen t, and pulp, and not only wear of seat, but also piles up dregs. Therefore, when dregs are piled up, the blade does not close properly and leaks. To solve this problem, we developed a durable rubber cushion valve.

Rubber Cushion Seat type, it was developed to block gaps using rubber with high elasticity, it is designed to prevent leakage by essentially eliminating dead space.

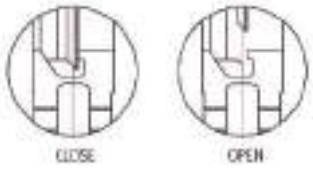
Application to Ash treatment facilities, Desulfurization facilities, and Denitrification facilities of power plants.

PTFE Seat Type, More resistant to seal ability and resistance than Metal Seat Type (~325°C).
It is not suitable for use in Ash line because it is vulnerable to wear caused by Ash handing system.

FEATURE

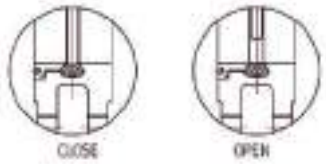
METAL TO METAL SEAT	• **USING DIRECTION** Inlet and outlet are respectively separated and sealing action is made only at unidirection. (The flow of fluid is only one direction) • **USE SCOPE** Its use is for pulp and paper plant, especially suitable for fluid line of high viscosity • **SEALING** It has some leakage even when disc (blade) is closed, as it is structured as "Metal to Metal". • **EXPLANATION** This type represents knife gate valve, thus having the lowest price and highest demand. However, this type is not suitable for fluid with dreg such as ash fluid, because it may occasionally bring about abrasion of seat surface and formation of sedimentation, due to the existence of "dead zone".
METAL TO RUBBER CUSHION SEAT	• **USING DIRECTION** The sealing effect in this type occurs in the edge of the blade, so allowing use of bidirection • **USE SCOPE** This type is of possible use for any kind of fluid line. But suitable selection of rubber is important in accordance with the kind of fluid. • **SEALING** This type guarantees almost perfect sealing effect. • **EXPLANATION** Being covered by elasticity and cushion of rubber, this type protect seat face, there by ensuring almost free abrasion of seat and deposition of fluid.
METAL TO PTFE SEAT	• **USING DIRECTION** Inlet and outlet are respectively separated and sealing action is made only by unidirection. • **USE SCOPE** This type is recommended for application under such condition of low pressure line, as in petrochemical plant • **SEALING** This type provides better sealing effect under the condition of low pressure line (0.5kg/cm2) while having tendency of comparatively faster abrasion of seat • **EXPLANATION** This type is of proper use under low pressure condition such as fluid line, while not being proper for ash line due to the properties of P.T.F.E.

SEAT DESIGN



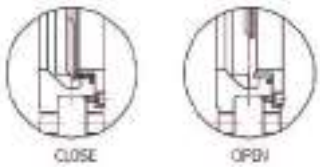
METAL
OF METAL SEAT DESIGN

- Integral stainless seat
- Uni-directional flow
- Higher fluid pressure enhances sealing effect
- Conforming to MSS SP-81
- Full flow port area



RUBBER
RESILENT SEAT DESIGN

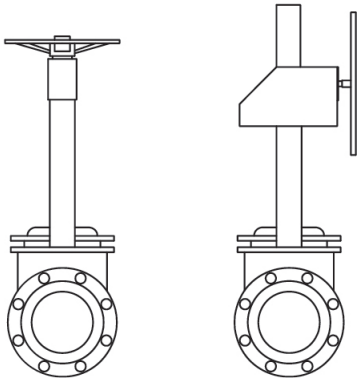
- Bi-directional bubble-tight shutoff
- Rubber-encapsulated-seal with stainless wire inserted to prevent seat from being distorted and pulled out. Material of "EPDM" rubber is our standard.
- Other seat materials available upon customer's requirement.



PTFE
P.T.F.E SEAT DESIGN FOR REPLACEMENT

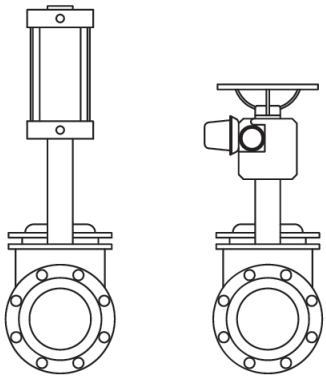
- O-Ring energized P.T.F.E seat ring
- Easily replaceable
- Other material options available such as urethane and polyethylene or nylon.

VALVE OPERATION



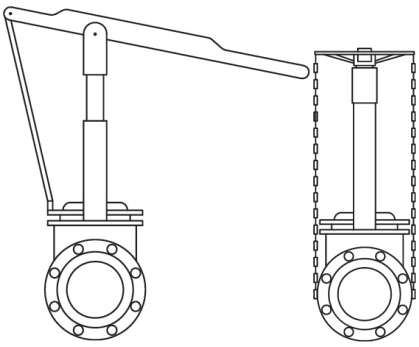
HAND WHEEL
Valves are equipped with handwheels as basic for manual operation

BEVEL GEAR
Bevel gear operation is designed to minimize the effort to operate larger sized manual-operated valves which is out of reach



CYLINDER
Valves can be available with air or hydraulic cylinder operator if remote operation is required.

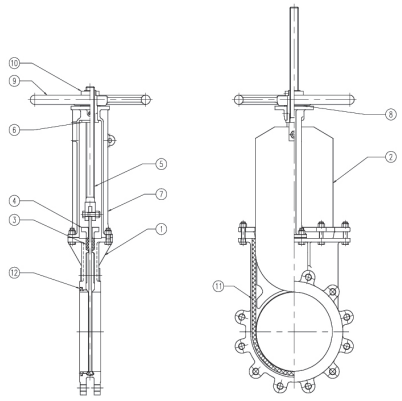
ELECTRIC & AIR MOTOR
Valves can be furnished with electric, pneumatic or hydraulic motor drives for remote, automatic or frequent operation.



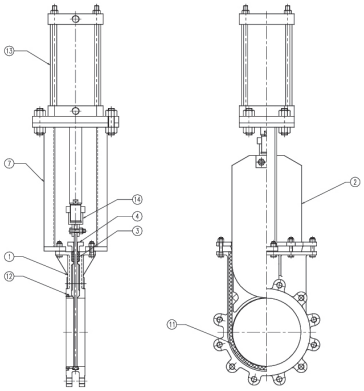
LEVER
Where rapid valve operation is required, quick opening lever operators can be provided instead of handwheel.

CHAIN WHEEL
Chain wheel is an efficient means of operating the valves overhead and out of reach

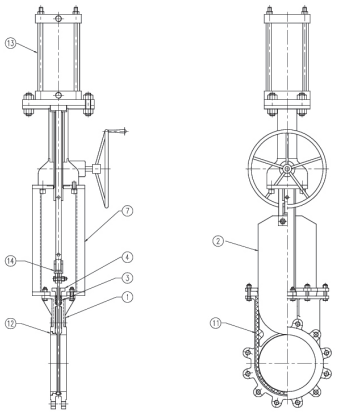
KNIFE GATE VALVE GENERAL DRAWING



HAND WHEEL TYPE



CYLINDER TYPE



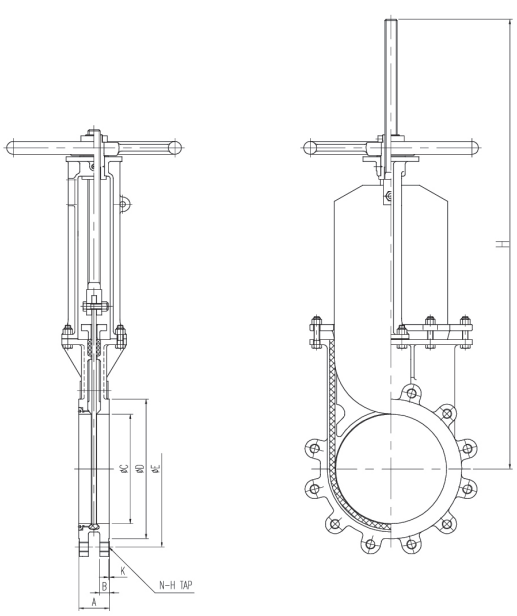
CYLINDER WITH GEAR TYPE

REFERENCE STANDARD

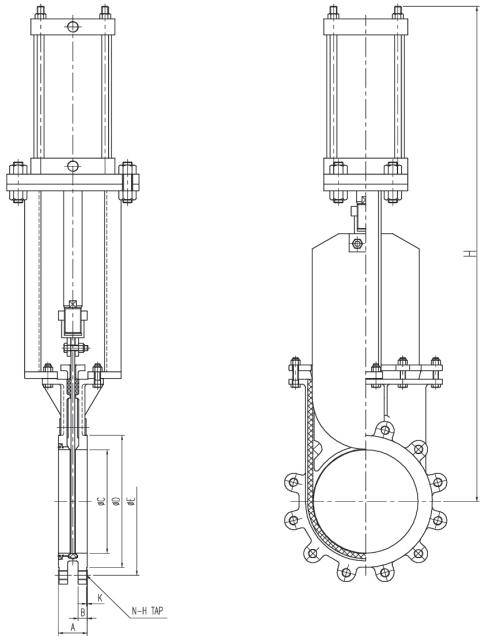
- BASIC DESIGN : MSS SP-81
- FACE TO FACE DIMENSIONS : MSS SP-81
- FLANGE DIMENSIONS : MSS SP-81 (AMSI B 16.5)
- MATERIAL: AS PER CUSTOMER REQUIREMENT
- SIZES OVER 700MM : According to manufacturer's standard

NO	DESCRIPTION	MATERIAL	
		HAND WHEEL TYPE	CYLINDER TYPE
01	BODY	ASTM A351-CF8, CF8M, CF3M, CD4MCUN, ETC	
02	BLADE	304SS/316SS, HASTELLOY C-276, ETC	
03	PACKING	MANUFACTURE STANDARD	
04	GLAND FLANGE	304SS/316SS ETC	
05	STEM	304SS	
06	YOKE SLEEVE	BRASS	-
07	YOKE	304SS	CARBON STEEL, 304SS
08	THRUST WASHER	BRASS	-
09	HAND WHEEL	ASTM A536	-
10	HAND WHEEL NUT	BRASS	-
11	SEAT	EPDM, VITON, NEOPRENE, PTFE	
12	INSERT	304SS/316SS	
13	CYLINDER	-	MANUFACTURE STANDARD
14	KNUCKLE	-	304SS

KNIFE GATE VALVE DIMENSION DATA



HAND WHEEL TYPE



CYLINDER TYPE

REFERENCE STANDARD

VALVE SIZE	F.F	Lug	I.D	R.F	BCD	H (Hand Wheel Type)	H (Cylinder Type)	N-H	K
2″	47.8	12.7	50.8	91.9	120.7	347.0	490.0	4-5/8″	1.6
3″	50.8	12.7	76.2	127.0	152.4	455.0	570.0	4-5/8″	1.6
4″	50.8	12.7	101.6	157.2	190.5	526.0	686.0	8-3/4″	1.6
5″	57.2	16.0	127.0	185.7	215.9	600.0	761.0	8-5/8″	1.6
6″	57.2	16.0	152.4	215.9	241.3	670.0	830.0	8-3/4″	1.6
8″	69.9	16.0	203.2	269.7	298.5	824.0	1014	8-3/4″	1.6
10″	69.9	19.1	254.0	323.9	362.0	1030.0	1216	12-7/8″	1.6
12″	76.2	19.1	304.8	381.0	431.8	1174.0	1354.0	12-7/8″	1.6
14″	76.2	20.6	336.6	412.8	476.3	1333.0	1533	12-1″	1.6
16″	88.9	22.4	387.4	469.9	539.8	1537.0	1701	16-1″	1.6
18″	88.9	23.9	438.0	533.4	577.9	1722.9	1890.0	16-1 1/8	1.6
20″	114.3	25.4	489.0	584.2	635.0	1860.0	2150.0	20-11/8	1.6
24″	114.3	25.4	591.0	692.2	749.9	2557	2590.0	20-11/4″	1.6
20″	140	35.0	692.2	800.1	863.6	-	2904.0	28-11/4″	1.6

The Best Creativity & Quality Valves

LONG PLATE KNIFE GATE VALVE

LONG PLATE KNIFE GATE VALVE

The long plate knife gate valve is a valve that solves the problem of powder accumulation inside the body caused by the normal knife gate valve, and there is no dead space in the body port and blade port.

Sludge does not form or accumulate because there is no dead space.

In particular, Bonnet type long plate knife valve solves not only leak through seat but also external leak through packing normally generated by normal night gate valves.

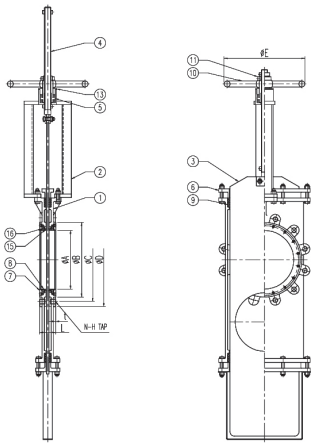
Bonnet is equipped with a plug for air flow, which removes the accumulating fluid, reducing the additional cost of frequent repairs.

When applied to steel mills, the repair and repair period can be dramatically extended by integrating the purge line.

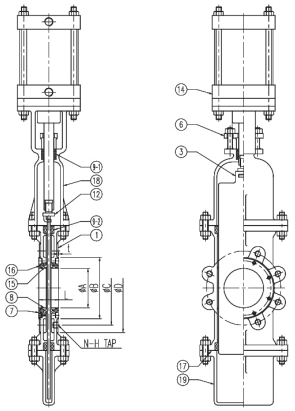
Total Engineering has a patent for this product.

This valve applied Coal Handling System, Powder/ Polymer Process

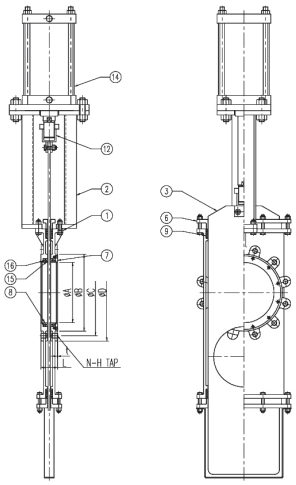
LONG PLATE KNIFE GATE VALVE



HAND WHEEL TYPE



BONNET TYPE



CYLINDER TYPE

REFERENCE STANDARD

- FLANGE : MSS SP-81
- VALVE FACE TO FACE DIMENSION : MSS SP-81
- PRESSURE RATING : 150LB

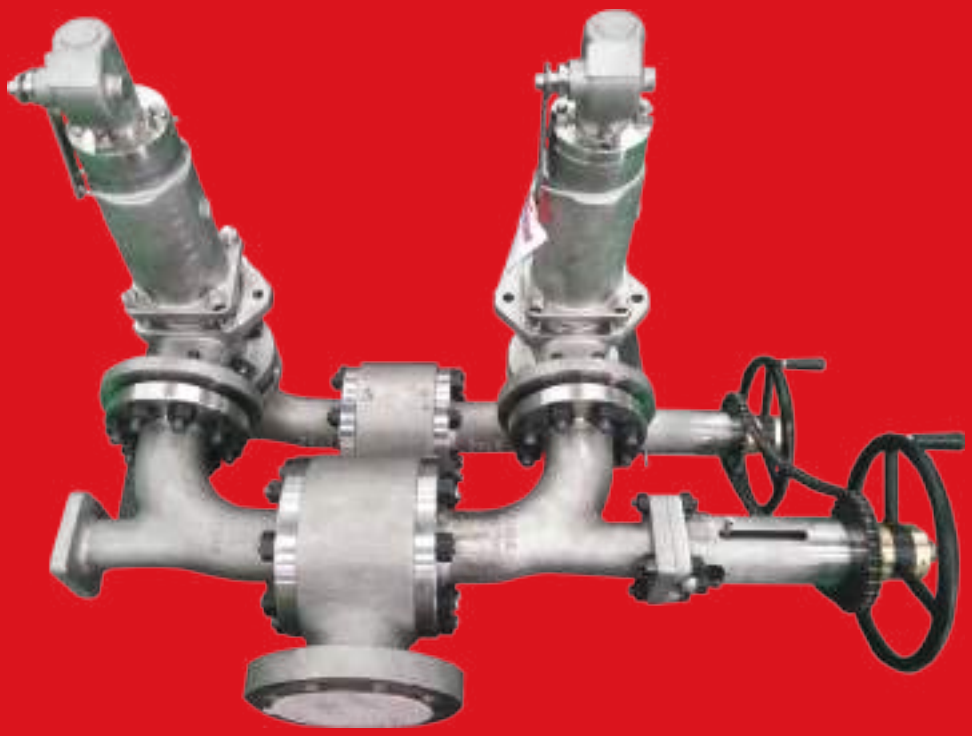
NO	DESCRIPTION	MATERIAL	
		HAND WHEEL TYPE	CYLINDER TYPE
01	BODY	ASTM A351-CF8, CF8M, CF3M, ETC	
02	YOKE	CARBON STEEL OR STAINLESS STEEL	
03	BLADE	304SS/316SS	
04	STEM	304SS	-
05	YOKE SLEEVE	BRASS	-
06	GLAND FLANGE	304SS	
07	INSERT	304SS/316SS	
08	INNER RING	316SS	
09	PACKING	MANUFACTURE STANDARD	
10	HAND WHEEL	ASRM A536	-
11	HAND WHEEL NUT	BRASS	-
12	KNUCKLE	304SS	
13	SLEEVE GLAND	304SS	-
14	CYLINDER	-	MANUFACTURE STANDARD
15	SEAT RING	P.T.F.E OR RTFE	
16	SPRING	304SS/316SS	
17	GASKET	GRAFHITE SEAT	-
18	BONNET	ASTM A351-CF8, CF8M, CF3M, ETC	
19	COVER	ASTM A351-CF8, CF8M, CF3M, ETC	

DIMENSIONS DATA

SIZE	FACE TO FACE	A	B	C	D	E	L	T	N-H
6″	57.0	152.4	215.9	241.3	279.4	300	57.2	1.6	8-3/4″
8″	70.0	203.2	269.8	298.5	342.9	350	69.9	1.6	8-3/4″
10″	70.0	254.0	323.9	362.0	406.4	400	69.9	1.6	7/8″
12″	76.0	304.8	381.0	431.8	482.6	450	76.2	1.6	7/8″
14″	76.0	338.8	412.8	478.3	533.4	550	76.2	1.6	12-1″
16″	89.0	387.4	469.9	539.8	596.9	550	88.9	1.6	16-1″
18″	89.0	438.2	533.4	577.9	635.0	550	88.9	1.6	18-1 1/8″
20″	114.0	489.0	584.2	635.0	698.5	600	114.3	1.6	20-1 1/8″
24″	114.0	590.8	692.2	749.3	812.8	650	114.3	1.6	20-1 1/4″

The Best Creativity & Quality Valves

CHANGE-OVER VALVE



CHANGE-OVER VALVE

The Change-over valve is designed with one inlet and two outlets. The flow of fluid can be changed by internal disk inside.

Two change-over valves and two safety valves can be applied where stable operation is required via a single package of duplex pipes.

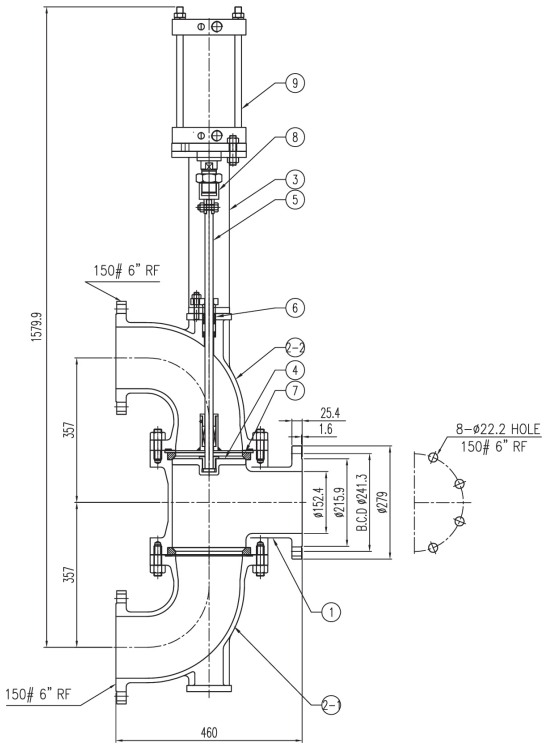
This valve is suitable for areas with extremely low temperatures (Cryogenic), such as Russia.

This valve is characterized by a dual flow system, which usually uses one flow system, but other systems may be used if a problem occurs. Therefore, there is no need to stop the process.

APPLICATION

- Continuously Functioning Plant
- Oil Fields
- Non-Drainable Systems
- Large storage facilities
- Bitumen refineries
- Ethylene plants
- Natural Gas Caverns
- Storage tanks for technical gases (e.g. ethylene reservoirs)

CHANGE-OVER VALVE



CHANGE-OVER VAVLES

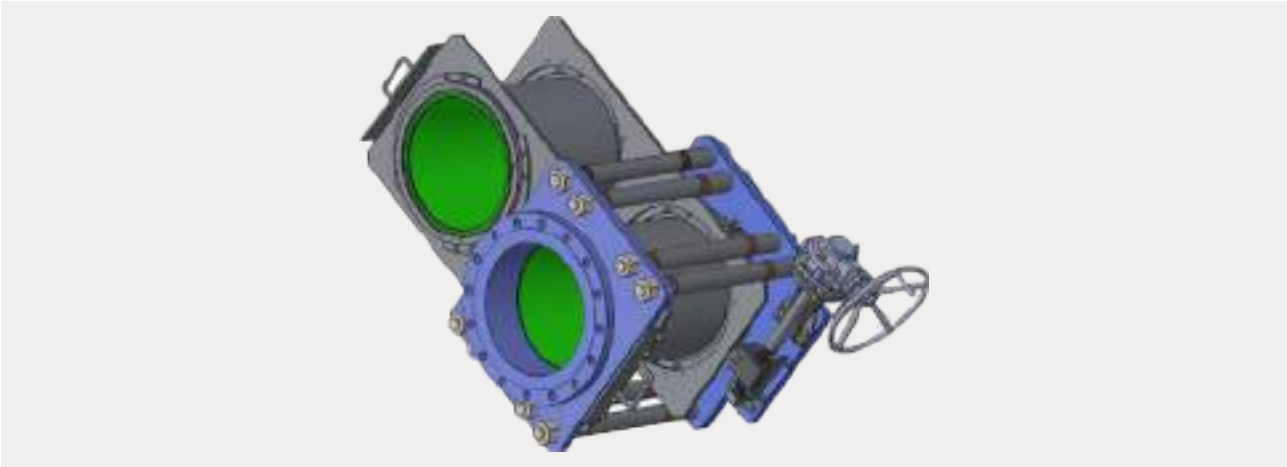
Change-over Valves are used when a plant shutdown is impossible or undesirable for process engineering or commercial reasons. With change-over valves, it is possible to switch over between parallel safety valves without interrupting operation, so as, for example, to perform maintenance work. The design of the change-over valves ensures low pressure losses on discharge flow (3% criterion) adequate open passage in any position during the change-over process stable operation of the downstream safety valves. The combination of TOTAL change-over and safety valves has been comprehensively tested on full flow test labs.

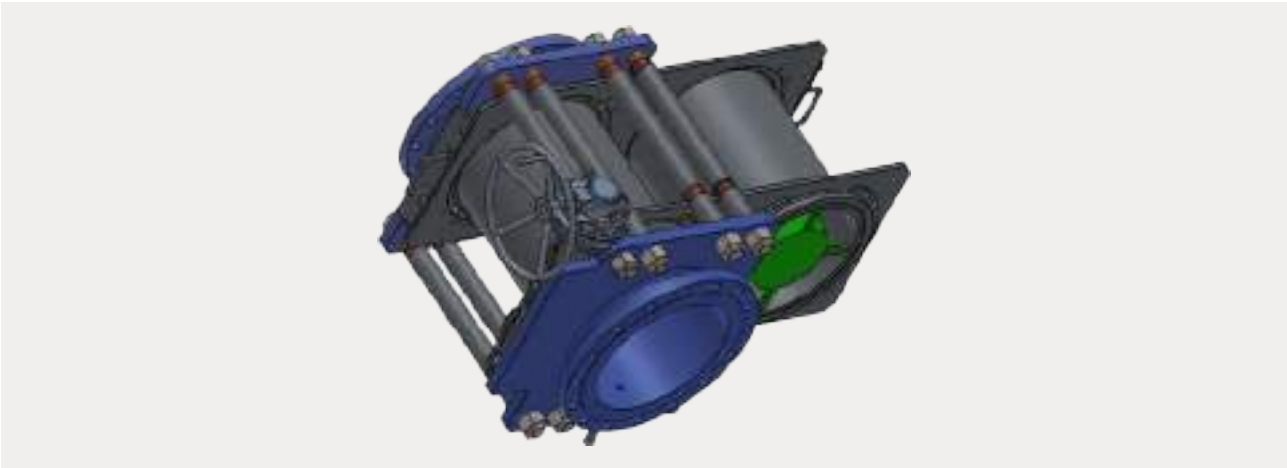
REFERENCE STANDARD & INFORMATION

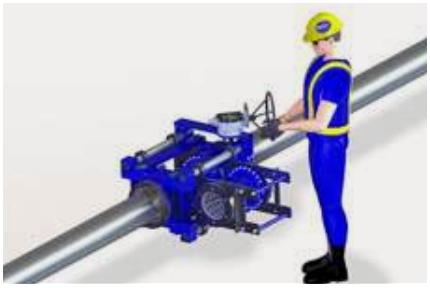
- BASIC DESIGN : Manufacturer's standard
- FLANGE DIMENSIONS : ANSI B 16.5
- FACE TO FACE DIMENSIONS : Manufacturer's standard

NO	PART	MATERIAL
1	BODY1	A351-CF8/CF8M/CF3M
2-1	BODY2-1	A351-CF8/CF8M/CF3M
2-2	BODY2-2	A351-CF8/CF8M/CF3M
3	YOKE	CARBON STEEL
4	DISC	304SS/316SS/STELLITE
5	STEM	304SS/316SS
6	PACKING	PTFE
7	SEAT RING	PTFE
8	KNUCKLE	304SS
9	CYLINDER	-

BLIND VALVE & STRAINER (FILTER CHANGER)







REFERENCE STANDARD

- Piping cones or flat strainers are used to protect downstream equipment. The purpose of these temporary filters is to avoid damage and clogging of pumps, compressors, boosters, or regulation valves in different applications such as oil, petrochemicals, chemical, steel, power, water, or food industries etc.
- The main cost of perforated cone filters is not their cost themselves, but the shutdown time to disassemble the pipe to extract the dirty cone/flat strainer and to insert a new strainer into the pipe spool piece and tight all the bolts and nuts.
- Depending on the size of the pipe and the weight of the strainer, the production time lost and the safety risks can be significant.
- The Filter Changer can be equipped with two strainers to proceed to a very quick change or one strainer and one blinding disc to permit the operator to do safe positive isolation of the downstream equipment for maintenance. the time opening of the pipe is drastically reduced and limits exposure of operators and environmental risks.

TOTAL ENGINEERING CO.,LTD

KOREA MANUFACTURER OF INDUSTRIAL

SPECIAL VALVES