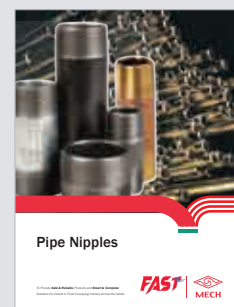
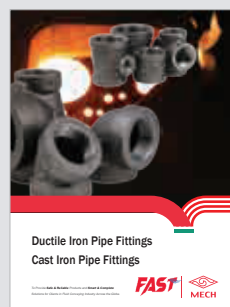
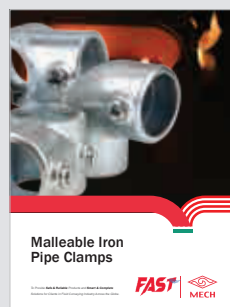
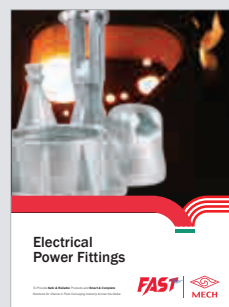
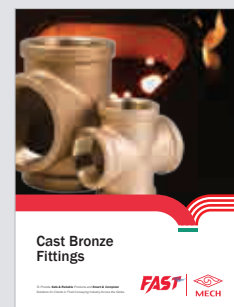
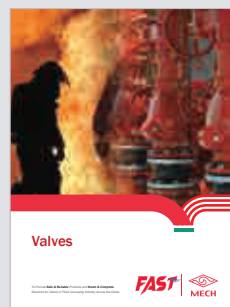
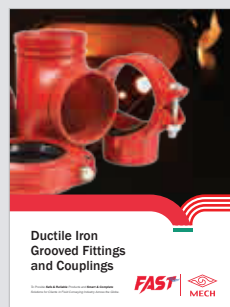
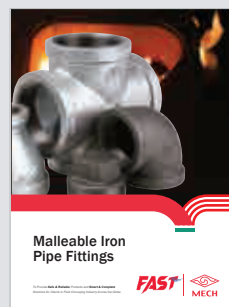


MECH FLOW SUPPLIES



FAST



FAST Cambodia

☎ 010 690 111 / 010 468 111

✉ info@fastcambodia.com

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🌐 www.fastcambodia.com

📍 #59, Street Lom, Phum Somrorn, Sangkat Khmounh, Khan
Sensok, Phnom Penh, Cambodia

Valves

For General Purpose

BS & DIN Standard

To Provide **Safe & Reliable** Products and **Smart & Complete**
Solutions for Clients in Fluid Conveying Industry Across the Globe.



More than 50 years of Foundry Experience

Company Profile

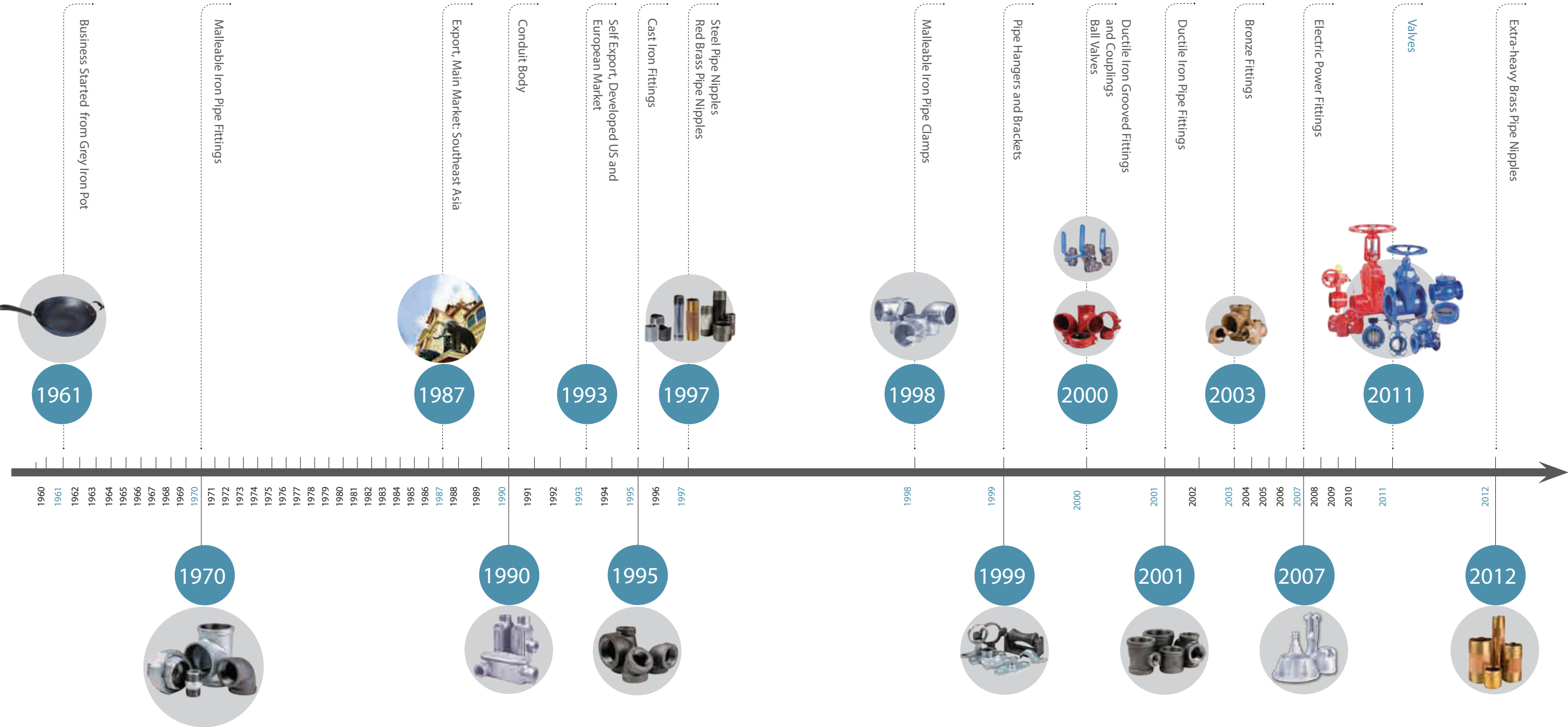
Meide Group is a high-tech enterprise specialized in supplying fittings and valves in fluid industry. The company has won more than 400 great honors, such as Single Champion Demonstration Enterprise, Green Manufacturing Enterprise, China's top 100 Light Industrial Enterprise, China's Leading Enterprise of Malleable Iron Pipe Fitting Production Base, National Enterprise with Good Creditworthiness and China's Famous Brand.

Inheriting the originality, and striving for excellence. "MECH" brand products are widely used in Burj Khalifa, Dubai, New WTC in New York, Shanghai Tower, UHV transmission lines and other landmark buildings and projects such as Beijing-Shanghai high-speed railway. Adhering to the customer-centered product development and innovation concept, to meet and guide the growing needs of users, to provide safe & reliable products and smart & complete solutions for clients in fluid industry across the globe, Meide Group has become the industry leader.

Using development innovation platform such as National Enterprise Technical Center and Post-Doctoral Research Center, Meide Group is promoting the transformation of technology innovation achievements into productive forces, has completed the transformation of production process from mechanization to automation and intelligence, management from experience to institutionalization and process, marketing is from selling products to offering solutions, steadily improve Meide Group's role in the global value chain.

Through the construction of three production bases, including Jinan, Linyi and Bangkok, Meide Group has formed a cross-regional, multi-base international development pattern. Meide Group never forgets the original intention, operates in compliance, keeps growing, insists on sharing development results with customers, employees, shareholders and the community, and strive to be a happy and respectable company.

Company History



State of the Art Equipment

High precision equipment is quality assurance.

Jinan Meide's 8 factories are all equipped with the most advanced facilities and equipment in the industry. The main production facilities include Sinto automatic molding line, Tokyu automatic molding line, Chinese 416 automatic vertical molding line, automatic molding sand mixers, cupola furnaces, electric furnaces, water-cooled longevous cupola furnaces, CNC vertical machining centers, CNC machines, NC vertical lathes, radial drills, Jinan Meide proprietary automatic machines, hot-dipped galvanization line, automatic box sealing line, stereoscopic warehouse and so on.



Pattern



Core Making



Sand Mulling



Tokyu AMF-111055



DISA



Sinto FCMX



Melting



Pouring



Machining



Epoxy Coating



Assembling



Warehouse



Reliable Quality Assurance

Jinan Meide is honored as the National enterprise technical center and is capable and qualified to conduct full series of tests and inspections including chemical checking, etc.

Inspection facilities include: spectrometer, carbon sulfur analyzer, metallurgical microscope, tensile strength testing equipment, pressure testing equipment, adhesive force testing equipment, CMM, hardness tester, etc.

From incoming inspection to finished product, quality is checked and monitored in the whole process. Each step of the manufacturing process is carefully documented, regularly reviewed for revision control and updating standard. Quality procedures are constantly monitored and updated to assure that only the highest and most consistent quality products are supplied to our valued customers.



Metallurgical Microscope



R & D



Spectrometer



CMM



Projector



Pipe line



Valve Pressure Testing Machine (Vertical)



Endurance Test Machine



Valve Pressure Testing Machine (Horizontal)



Certificates





BS 5163 Flanged Resilient NRS Gate Valve (Z45X), PN10/16

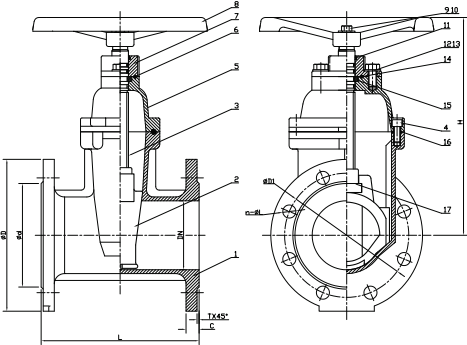


NSF/ANSI 61 NSF/ANSI 372

Z45X



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	Stem	Stainless Steel	SS304, SS316, SS420, SS431
4	Bolt	Carbon Steel Zinc Plated	SS304, SS316,
5	Bonnet	EN-GJS-450-10	
6	O-Ring	NBR	EPDM
7	Gland	EN-GJS-450-10	
8	Handwheel	EN-GJS-450-10	Pressed Steel
9	Bolt	Carbon Steel Zinc Plated	SS304, SS316,
10	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316,
11	Ring Wiper	NBR	EPDM
12	Bolt	Carbon Steel Zinc Plated	SS304, SS316,
13	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316,
14	O-Ring	NBR	EPDM
15	Thrust Washer	Brass HPb59-1(Type A) Not Available (Type B)	
16	Bonnet Gasket	EPDM	NBR
17	Wedge Nut	Brass HPb59-1	Bronze ZQSn5-5-5

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.



Z45X-1



Z45XC

DN		PN	Dimensions(mm)								
Inch	mm		L	H		D	D1	d	C	T	n- φ L
				TypeA	TypeB						
2"	50	10/16	178	218	254	165	125	99	19	3	4-Φ19
2.5"	65	10/16	190	232	275	185	145	118	19	3	4-Φ19
3"	80	10/16	203	281	301	200	160	132	19	3	8-Φ19
4"	100	10/16	229	316	355	220	180	156	19	3	8-Φ19
5"	125	10/16	254	393	393	250	210	184	19	3	8-Φ19
6"	150	10/16	267	420	448	285	240	211	19	3	8-Φ23
8"	200	10	292	490	548	340	295	266	20	3	8-Φ23
		16									12-Φ23
10"	250	10	330	626	626	405	350	319	22	3	12-Φ23
		16					355				12-Φ28
12"	300	10	356	722	722	460	400	370	24.5	4	12-Φ23
		16					410				12-Φ28
14"	350	10	381	800	800	520	460	429	26.5	4	16-Φ23
		16					470				16-Φ28
16"	400	10	406	870	870	580	515	480	28	4	16-Φ28
		16					525				16-Φ31
18"	450	10	432	1108	1108	640	565	530	30	4	20-Φ28
		16					585	548			20-Φ31
20"	500	10	457	1130	1130	715	620	582	31.5	4	20-Φ28
		16					650	609			20-Φ34
24"	600	10	508	1311	1311	840	725	682	36	5	20-Φ31
		16					770	720			20-Φ37
28"	700	10	610	1311	1311	895	840	794	32.5	5	24-Φ31
32"	800	10	660	1750	1750	1015	950	901	35	5	24-Φ34

BS 5163 Flanged Resilient NRS Gate Valve (Z45X), PN25

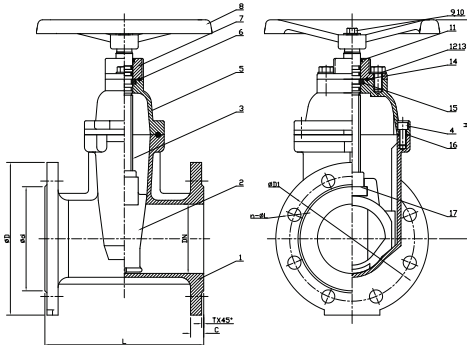


NSF/ANSI 61 NSF/ANSI 372

Z45X



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN25
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge disc	EN-GJS-450-10+EPDM	
3	Stem	Stainless Steel	SS304, SS316, SS420, SS431
4	Bolt	Carbon Steel Zinc Plated	SS304, SS316,
5	Bonnet	EN-GJS-450-10	
6	O-Ring	NBR	EPDM
7	Gland	EN-GJS-450-10	
8	Handwheel	EN-GJS-450-10	Pressed Steel
9	Bolt	Carbon Steel Zinc Plated	SS304, SS316,
10	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316,
11	Ring Wiper	NBR	EPDM
12	Bolt	Carbon Steel Zinc Plated	SS304, SS316,
13	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316,
14	O-Ring	NBR	EPDM
15	Thrust Washer	Brass HPb59-1(Type A) Not Available (Type B)	
16	Bonnet Gasket	EPDM	NBR
17	Wedge Nut	Brass HPb59-1	Bronze ZQSn5-5-5

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)							
Inch	mm		L	H	D	D1	d	C	T	n- Φ L
2"	50	25	178	218	165	125	99	19	3	4-Φ19
2.5"	65	25	190	232	185	145	118	19	3	8-Φ19
3"	80	25	203	281	200	160	132	19	3	8-Φ19
4"	100	25	229	316	235	190	156	19	3	8-Φ23
5"	125	25	254	393	270	220	184	19	3	8-Φ28
6"	150	25	267	420	300	250	211	20	3	8-Φ28
8"	200	25	292	490	360	310	274	20	3	12-Φ28
10"	250	25	330	626	425	370	319	22	3	12-Φ31
12"	300	25	356	722	485	430	370	24.5	4	16-Φ31

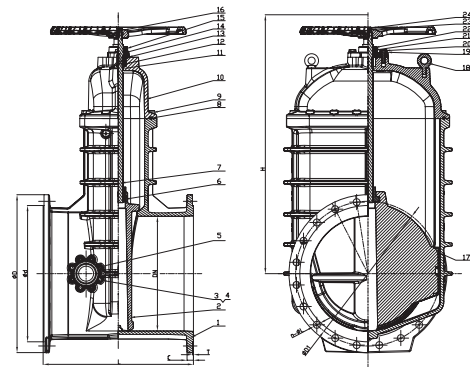
BS 5163 Flanged Resilient NRS
Gate Valve with Bypass Outlet (Z45XL),
PN10/16



Z45XL



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	Bolt	Carbon Steel Zinc Plated	SS304, SS316
4	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
5	By-pass Valve Cover	EN-GJS-450-10	
6	Wedge Nut	Brass HPb59-1	
7	Stem	Stainless Steel	SS304/316/420/431
8	Bonnet Gasket	EPDM	NBR
9	Bolt	Carbon Steel Zinc Plated	SS304, SS316
10	Bonnet	EN-GJS-450-10	
11	O-Ring	NBR	EPDM
12	Thrust Washer	Carbon Steel Zinc Plated	SS304, SS316
13	O-Ring	NBR	EPDM
14	Axis Guide	Brass HPb59-1	
15	Gland	EN-GJS-450-10	
16	Handwheel	EN-GJS-450-10	Pressed Steel
17	Guide Sleeve	EPDM	
18	Eye Bolt	Carbon Steel Zinc Plated	
19	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
20	Bolt	Carbon Steel Zinc Plated	SS304, SS316
21	O-Ring	NBR	EPDM
22	Ring Wiper	EPDM	NBR
23	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
24	Bolt	Carbon Steel Zinc Plated	SS304, SS316

Note: 1. For special material request other than standard specification, please indicate clearly on the inquiry or order list.
Bypass fitting and valve assembly not to be quoted and supplied unless there is specific statement in order or inquiry.
2. If bypass fitting and valve are required, please state it clearly in your purchase order and the costs will be added accordingly."

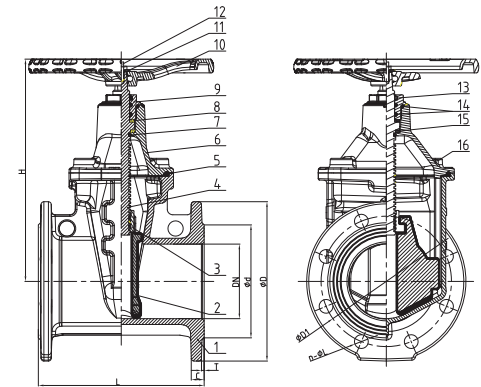
DN		PN	Dimensions(mm)							
Inch	mm		L	H	D	D1	d	C	T	n-φL
18"	450	10	650	1108	640	565	530	30	4	20-Φ28
		16				585	548			20-Φ31
20"	500	10	700	1130	715	620	582	31.5	4	20-Φ28
		16				650	609			20-Φ34
24"	600	10	800	1311	840	725	682	36	5	20-Φ31
		16				770	720			20-Φ37

BS 5163 Flanged Resilient NRS
Gate Valve (Z45X62),
PN10/16



Z45X62

- Connection Ends: Flange to BS EN 1092-2
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	Wedge Nut	Brass HPb59-1	Bronze ZQSn5-5-5
4	Stem	SS420	SS304, SS316, SS431
5	Bonnet Gasket	EPDM	NBR
6	Bonnet	EN-GJS-450-10	
7	O-Ring	NBR	EPDM
8	Washer	PTFE	
9	Locknut	Brass HPb59-1	
10	Handwheel	EN-GJS-450-10	
11	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
12	Bolt	Carbon Steel Zinc Plated	SS304, SS316
13	Ring Wiper	EPDM	NBR
14	O-Ring	NBR	EPDM
15	Washer	Brass HPb59-1	
16	Bolt	Carbon Steel Zinc Plated	SS304, SS316

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)							
Inch	mm		L	H	D	D1	d	C	T	n-ΦL
2"	50	10/16	178	216	165	125	99	19	3	4-Φ19
2.5"	65	10/16	190	254	185	145	118	19	3	4-Φ19
3"	80	10/16	203	282	200	160	132	19	3	8-Φ19
4"	100	10/16	229	307	220	180	156	19	3	8-Φ19
5"	125	10/16	254	365	250	210	190	19	3	8-Φ19
6"	150	10/16	267	409	285	240	211	19	3	8-Φ23
8"	200	10	292	515	340	295	266	20	3	8-Φ23
		16								12-Φ23
10"	250	10	330	625	405	350 355	319	22	3	12-Φ23
		16								12-Φ28
12"	300	10	356	701	460	400 410	370	24.5	4	12-Φ23
		16								12-Φ28

DIN F4 Flanged Resilient NRS
Gate Valve (Z45X),
PN10/16



Z45X

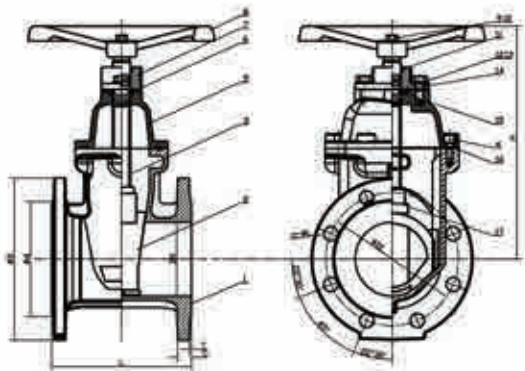


- Connection Ends: Flange to DIN EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



Z45X-1

Z45XC



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	Stem	Stainless Steel	SS304, SS316, SS420, SS431
4	Nut	Carbon Steel Zinc Plated	SS304, SS316
5	Bonnet	EN-GJS-450-10	
6	O-Ring	NBR	EPDM
7	Gland	EN-GJS-450-10	
8	Handwheel	EN-GJS-450-10	Pressed Steel
9	Bolt	Carbon Steel Zinc Plated	SS304, SS316
10	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
11	Ring Wiper	EPDM	NBR
12	Bolt	Carbon Steel Zinc Plated	SS304, SS316
13	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
14	O-Ring	NBR	EPDM
15	Thrust Washer	Brass HPb59-1	
16	Bonnet Gasket	EPDM	NBR
17	Wedge Nut	Brass HPb59-1	Bronze ZQSn5-5-5

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)							
Inch	mm		L	H	D	D1	d	C	T	n-ΦL
1.5"	40	10/16	140	218	150	110	84	19	3	4-Φ19
2"	50	10/16	150	218	165	125	99	19	3	4-Φ19
2.5"	65	10/16	170	232	185	145	118	19	3	4-Φ19
3"	80	10/16	180	281	200	160	132	19	3	8-Φ19
4"	100	10/16	190	316	220	180	156	19	3	8-Φ19
5"	125	10/16	200	377	250	210	184	19	3	8-Φ19
6"	150	10/16	210	420	285	240	211	19	3	8-Φ23
8"	200	10	230	490	340	295	266	20	3	8-Φ23
		16	230	490	340	295	266	20	3	12-Φ23
10"	250	10	250	628	405	350	319	22	3	12-Φ23
		16	250	628	405	355	319	22	3	12-Φ28
12"	300	10	270	723	460	400	370	24.5	4	12-Φ23
		16	270	723	460	410	370	24.5	4	12-Φ28
14"	350	10	290	917	520	460	429	26.5	4	16-Φ23
		16	290	917	520	470	429	26.5	4	16-Φ28
16"	400	10	310	917	580	515	480	28	4	16-Φ28
		16	310	917	580	525	480	28	4	16-Φ31
18"	450	10	330	1108	640	565	530	30	4	20-Φ28
		16				585	548			20-Φ31
20"	500	10	350	1130	715	620	582	31.5	4	20-Φ28
		16				650	609			20-Φ34
24"	600	10	390	1311	840	725	682	36	5	20-Φ31
		16				770	720			20-Φ37

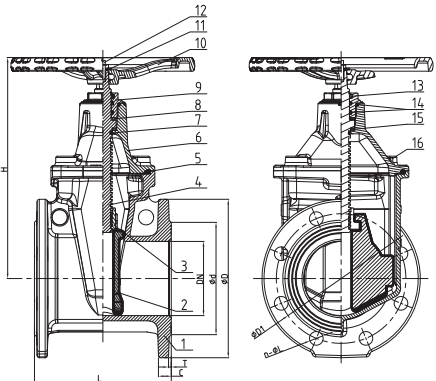
DIN F4 Flanged Resilient NRS
Gate Valve (Z45X62), For Waterworks only,
PN10/16



Z45X62

Special Design!

- Connection Ends: Flange to DIN EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	Wedge Nut	Brass HPb59-1	Bronze ZQSn5-5-5
4	Stem	SS420	SS304, SS316, SS431
5	Bonnet Gasket	EPDM	NBR
6	Bonnet	EN-GJS-450-10	
7	O-Ring	NBR	EPDM
8	Washer	PTFE	
9	Locknut	Brass HPb59-1	
10	Handwheel	EN-GJS-450-10	
11	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
12	Bolt	Carbon Steel Zinc Plated	SS304, SS316
13	Ring Wiper	EPDM	NBR
14	O-Ring	NBR	EPDM
15	Washer	Brass HPb59-1	
16	Bolt	Carbon Steel Zinc Plated	SS304, SS316

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)							
Inch	mm		L	H	D	D1	d	C	T	n-ΦL
1.5"	40	10/16	140	216	150	110	84	19	3	4-Φ19
2"	50	10/16	150	216	165	125	99	19	3	4-Φ19
2.5"	65	10/16	170	254	185	145	118	19	3	4-Φ19
3"	80	10/16	180	282	200	160	132	19	3	8-Φ19
4"	100	10/16	190	307	220	180	156	19	3	8-Φ19
5"	125	10/16	200	365	250	210	190	19	3	8-Φ19
6"	150	10/16	210	409	285	240	211	19	3	8-Φ23
8"	200	10	230	515	340	295	266	20	3	8-Φ23
		16								12-Φ23
10"	250	10	250	625	405	350	319	22	3	12-Φ23
		16				355				12-Φ28
12"	300	10	270	701	460	400	370	24.5	4	12-Φ23
		16				410				12-Φ28

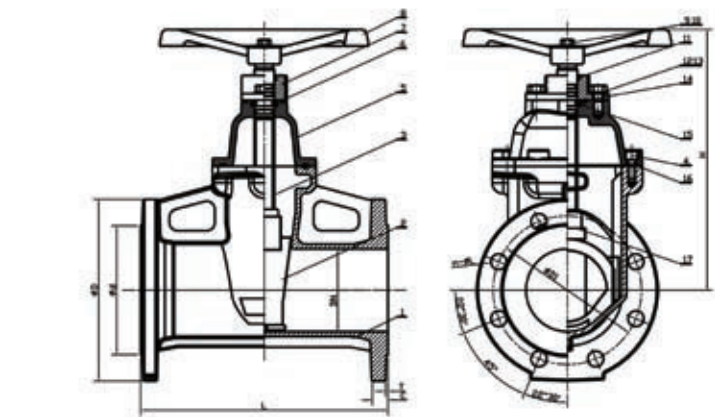
DIN F5 Flanged Resilient NRS Gate Valve (Z45XF5), PN10/16



Z45XF5



- Connection Ends: Flange to DIN EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	Stem	Stainless Steel	SS304, SS316, SS420, SS431
4	Nut	Carbon Steel Zinc Plated	SS304, SS316
5	Bonnet	EN-GJS-450-10	
6	O-Ring	NBR	EPDM
7	Gland	EN-GJS-450-10	
8	Handwheel	EN-GJS-450-10	Pressed Steel
9	Bolt	Carbon Steel Zinc Plated	SS304, SS316
10	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
11	Ring Wiper	EPDM	NBR
12	Bolt	Carbon Steel Zinc Plated	SS304, SS316
13	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
14	O-Ring	NBR	EPDM
15	Thrust Washer	Brass HPb59-1	
16	Bonnet Gasket	EPDM	NBR
17	Wedge Nut	Brass HPb59-1	Bronze ZQSn5-5-5

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)							
Inch	mm		L	H	D	D1	d	C	T	n-ΦL
1.5"	40	10/16	240	218	150	110	84	19	3	4-Φ19
2"	50	10/16	250	218	165	125	99	19	3	4-Φ19
2.5"	65	10/16	270	232	185	145	118	19	3	4-Φ19
3"	80	10/16	280	281	200	160	132	19	3	8-Φ19
4"	100	10/16	300	316	220	180	156	19	3	8-Φ19
5"	125	10/16	325	367	250	210	184	19	3	8-Φ19
6"	150	10/16	350	420	285	240	211	19	3	8-Φ23
8"	200	10	400	490	340	295	266	20	3	8-Φ23
		16	400	490	340	295	266	20	3	12-Φ23
10"	250	10	450	628	405	350	319	22	3	12-Φ23
		16	450	628	405	355	319	22	3	12-Φ28
12"	300	10	500	723	460	400	370	24.5	4	12-Φ23
		16	500	723	460	410	370	24.5	4	12-Φ28
14"	350	10	550	917	520	460	429	26.5	4	16-Φ23
		16	550	917	520	470	429	26.5	4	16-Φ28

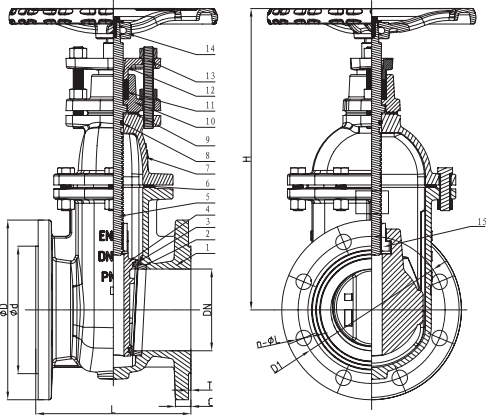
DIN F4 Flanged Metal Seated NRS Gate Valve (Z45T), PN10/16



Z45T



- Connection Ends: Flange to DIN EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 200°C
- Coating: Painting



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Seat Ring	Bronze	
3	Disc Seat Ring	Bronze	
4	Wedge Disc	EN-GJS-450-10	
5	Stem	SS420	SS304/316/431
6	Bonnet Gasket	Graphite+Acanthopore Plate	
7	Bonnet	EN-GJS-450-10	
8	O-Ring	NBR	EPDM
9	Sealing Washer	Graphite+Acanthopore Plate	
10	Stuffing Box	EN-GJS-450-10	
11	Stuffing	Graphite	
12	Gland	EN-GJS-450-10	
13	Stud	Carbon Steel Zinc Plated	SS304/316
14	Handwheel	EN-GJS-450-10	Pressed Steel
15	Stem Nut	Brass HPb59-1	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)							
Inch	mm		L	D	D1	d	n-ØL	H	T	C
1 1/2"	40	10/16	140	150	110	84	4-Ø19	256	3	19
2"	50	10/16	150	165	125	99	4-Ø19	264	3	19
2.5"	65	10/16	170	185	145	118	4-Ø19	280	3	19
3"	80	10/16	180	200	160	132	8-Ø19	305	3	19
4"	100	10/16	190	220	180	156	8-Ø19	369	3	19
5"	125	10/16	200	250	210	184	8-Ø19	443	3	19
6"	150	10/16	210	285	240	211	8-Ø23	467	3	19
8"	200	10	230	340	295	266	8-Ø23	571	3	20
		16	230	340	295	266	12-Ø23	571	3	20
10"	250	10	250	405	350	319	12-Ø23	662	3	22
		16	250	405	355	319	12-Ø28	662	3	22
12"	300	10	270	460	400	370	12-Ø23	766	4	24.5
		16	270	460	410	370	12-Ø28	766	4	24.5

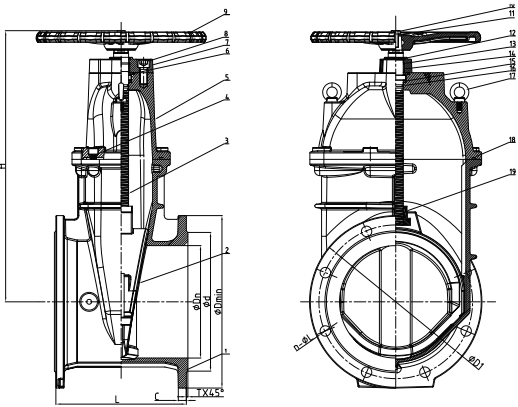
AS 2638.2 Flanged Resilient
NRS Gate Valve (Z45X),
PN16



Z45X



- Connection Ends: Flange to AS4087/AS2129
- Working Pressure: PN16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in according with AS4158



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	Stem	Stainless Steel	SS304, SS316, SS420, SS431
4	Bolt	Carbon Steel Zinc Plated	SS304 , SS316
5	Bonnet	EN-GJS-450-10	
6	O-Ring	NBR	EPDM
7	Gland Flange	EN-GJS-450-10	
8	Bolt	Carbon Steel Zinc Plated	SS304 , SS316
9	Handwheel	EN-GJS-450-10	Pressed Steel
10	Bolt	SS304	SS316
11	Flat Washer	SS304	SS316
12	Ring Wiper	EPDM	NBR
13	O-Ring	NBR	EPDM
14	Axis guide	Brass C22000	
15	Washer	Brass C22000	
16	O-Ring	NBR	EPDM
17	Rings	Carbon Steel Zinc Plated	
18	Bonnet Gasket	EPDM	NBR
19	Wedge Nut	Bronze C95400	Bronze ZQSn5-5-5

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

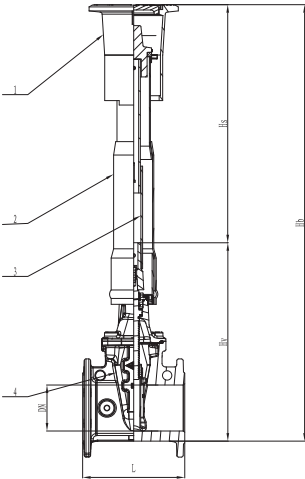
DN		Dimensions(mm)							
Inch	mm	L	H	ΦD	ΦD1	Φd	C	T	n-ΦL
3"	80	203	301	185	146	122	18	3	4-Φ18
4"	100	229	355	215	178	154	20	3	4-Φ18
6"	150	267	448	280	235	211	23	3	8-Φ18
8"	200	292	548	335	292	268	23	3	8-Φ18
10"	250	330	626	405	356	328	24	3	8-Φ22
12"	300	356	722	455	406	378	30	4	12-Φ22

Buried Gate Valve for
Underground Application
(SMZ45X62)



SMZ45X62

- Flange specification: BS EN 1092-2 PN10/PN16
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Box	EN-GJS-450-10
2	Boot Cap	PVC-U
3	Square Tube	35# Steel
4	Gate Valve	Refer to the material specification of Model Z45X62

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)	
Inch	mm	L	Hv
2"	50	178	190
2.5"	65	190	223
3"	80	203	274
4"	100	229	304
5"	125	254	362
6"	150	267	433
8"	200	292	572
10"	250	330	700
12"	300	356	818
14"	350	381	990
16"	400	406	1040

Height Hs (±5mm)	Expansion capacityΔH (±5mm)
400 ~ 500	50
470 ~ 590	120
500 ~ 650	150
600 ~ 850	250
800 ~ 1250	450
1200 ~ 2050	850
1600 ~ 2850	1250
2000 ~ 3650	1650
Fixed height, Hs according to customer demand	

- The sign in the diagram: Hb-the depth of the pipe, that is, the depth of the pipe to the ground, is determined by the customer according to the design or field requirements. Unit mm;
- Hv- valve height, that is, the height of the bottom of the pipe to the bottom of the extension rod, as shown in Table 1, unit mm;
- Hs - rod height, i.e., the height of the bottom of the extended rod to the ground, as shown in Table 2, unit mm
- Height calculation method: Hb = Hv + Hs, Hs > 300mm

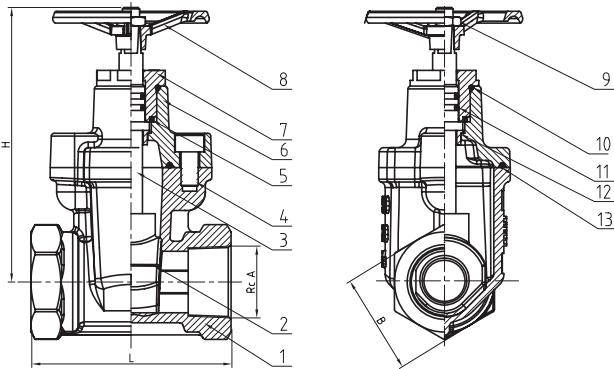
Threaded Resilient NRS
Gate Valve (Z15X),
PN10/16



Z15X



- Connection Ends: Thread to ISO 7-1
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	Stem	Stainless Steel	SS304, SS316, SS420, SS431
4	Bolt	Carbon Steel Zinc Plated	SS304, SS316
5	Sealing Ring	NBR	EPDM
6	Bonnet	EN-GJS-450-10	
7	Gland	Brass HPb59-1	SS304
8	Handwheel	Carbon Steel	
9	Nut	Carbon Steel Zinc Plated	SS304, SS316
10	O-Ring	NBR	EPDM
11	O-Ring	NBR	EPDM
12	Axis Guide	Brass HPb59-1	Bronze ZQSn5-5-5
13	Gasket	NBR	EPDM

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)			
Inch	mm	L	H	A	B
1/2"	15	65	86	1/2	27
3/4"	20	70	96	3/4	35
1"	25	80	116	1	41
1-1/4"	32	90	127	1-1/4	51
1-1/2"	40	100	150	1-1/2	58.5
2"	50	110	170	2	72

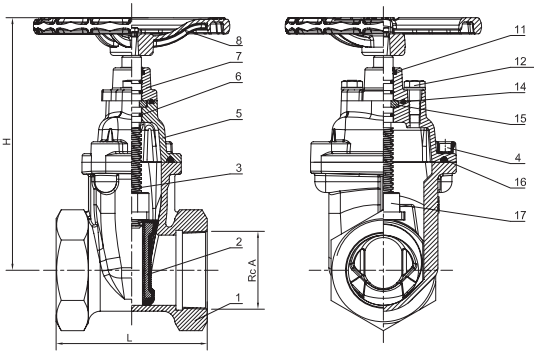
Threaded Joint Resilient NRS
Gate Valve (Z15X),
PN10/16



Z15X



- Connection Ends: ISO 7-1
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	Stem	SS420	SS304, SS316, SS431
4	Bolt	Carbon Steel Zinc Plated	SS304, SS316
5	Bonnet	EN-GJS-450-10	
6	O-Ring	NBR	EPDM
7	Gland	EN-GJS-450-10	
8	Handwheel	EN-GJS-450-10	
9	Ring Wiper	NBR	EPDM
10	Bolt	Carbon Steel Zinc Plated	SS304, SS316
11	O-Ring	NBR	EPDM
12	Thrust Washer	Carbon Steel Zinc Plated	SS304, SS316
13	Bonnet Gasket	NBR	EPDM
14	Wedge Nut	Brass HPb59-1	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

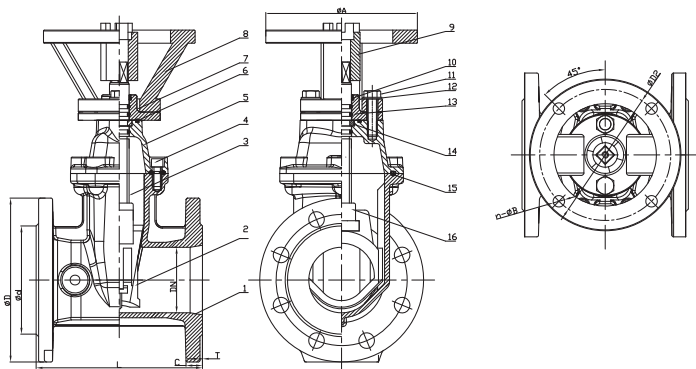
DN		Dimensions(mm)		
Inch	mm	L	H	A
2"	50	127	210	Rc 2
2.5"	65	140	232	Rc 2 1/2
3"	80	150	281	Rc 3
4"	100	190	316	Rc 4
5"	125	210	367	Rc 5
6"	150	230	420	Rc 6

BS 5163 Electric Gate Valve (Z945X), PN16



Z945X

- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge disc	EN-GJS-450-10+EPDM	
3	Stem	Stainless Steel 2Cr13	SS304, SS316, SS420, SS431
4	Bolt	Carbon Steel Zinc Plated	SS304, SS316
5	Bonnet	EN-GJS-450-10	
6	O-Ring	NBR	EPDM
7	Gland flange	Carbon Steel	
8	Yoke	Carbon Steel	
9	Coupling	Carbon Steel	
10	Ring Wiper	EPDM	NBR
11	Bolt	Carbon Steel Zinc Plated	SS304, SS316
12	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
13	O-Ring	NBR	EPDM
14	Thrust Washer	Brass HPb59-1	
15	Bonnet Gasket	EPDM	NBR
16	Wedge Nut	Brass HPb59-1	Bronze ZQSn5-5-5

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

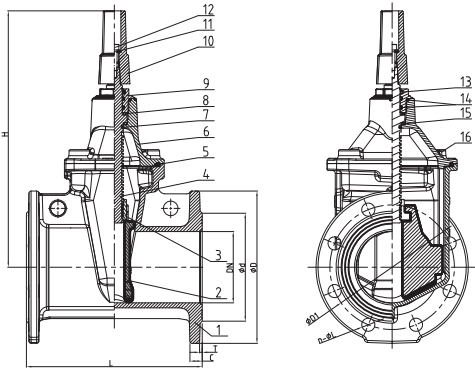
DN		PN	Dimensions(mm)									
Inch	mm		L	D	D1	D2	d	A	C	T	n-ØL	n-ØB
2"	50	16	178	165	125	120	99	145	19	3	4-Φ19	4-Φ12
2.5"	65	16	190	185	145	120	118	145	19	3	4-Φ19	4-Φ12
3"	80	16	203	200	160	160	132	185	19	3	8-Φ19	4-Φ14
4"	100	16	229	220	180	160	156	185	19	3	8-Φ19	4-Φ14
5"	125	16	254	250	210	160	184	185	19	3	8-Φ19	4-Φ14
6"	150	16	267	285	240	160	211	185	19	3	8-Φ23	4-Φ14
8"	200	16	292	340	295	160	266	185	20	3	12-Φ23	4-Φ14
10"	250	16	330	405	355	160	319	185	22	3	12-Φ28	4-Φ14
12"	300	16	356	460	410	160	370	185	24.5	4	12-Φ28	4-Φ14

SANS 664 Flanged Resilient NRS Gate Valve (Z45XC), PN10/16



Z45XC

- Connection Ends: Flange to SANS 1123 PN10/16
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with SANS 664



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	Wedge Nut	DZR BRASS CW614N	Brass HPb59-1, Bronze ZQSn5-5-5
4	Stem	20Cr13	SS304, SS316, SS431
5	Bonnet Gasket	EPDM	NBR
6	Bonnet	EN-GJS-450-10	
7	O-Ring	NBR	EPDM
8	Washer	PTFE	
9	Locknut	DZR BRASS CW614N	Brass HPb59-1
10	Stem Cap	EN-GJS-450-10	
11	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
12	Bolt	SS304	Carbon Steel Zinc Plated, SS316
13	Ring Wiper	EPDM	NBR
14	O-Ring	NBR	EPDM
15	Washer	DZR BRASS CW614N	Brass HPb59-1
16	Bolt	SS304	Carbon Steel Zinc Plated, SS316

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)									
Inch	mm		L	H	D	D1	d	C	T	n-ΦL		
2"	50	10/16	216	280	165	125	99	19	3	4-Φ18		
2.5"	65	10/16	170	254	185	145	118	19	3	4-Φ19		
3"	80	10/16	229	348	200	160	132	19	3	8-Φ18		
4"	100	10/16	254	372	220	180	156	19	3	8-Φ18		
5"	125	10/16	200	365	250	210	190	19	3	8-Φ19		
6"	150	10/16	280	472	285	240	211	19	3	8-Φ22		
8"	200	10	317	576	340	295	266	20	3	8-Φ22		
		16								12-Φ22		
10"	250	10	356	695	405	350	319	22	3	12-Φ22		
		16				355				12-Φ26		
12"	300	10	380	778	460	400	370	24.5	4	12-Φ22		
		16				410				12-Φ26		

SANS 664 Socket NRS Gate Valve (ZA5XC103), PN16



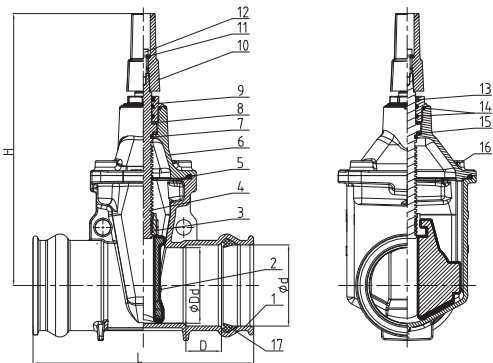
ZA5XC103



- Design Standard: SANS 664 DIN EN 1171
- Working Pressure: PN16
- Temperature Range: 0°C - 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with SANS 664/ANSI/AWWA C550



ZA5X103



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	Wedge Nut	DZR BRASS CW614N	Brass HPb59-1, Bronze ZQSn5-5-5
4	Stem	20Cr13	SS304, SS316, SS431
5	Bonnet Gasket	EPDM	NBR
6	Bonnet	EN-GJS-450-10	
7	O-Ring	NBR	EPDM
8	Washer	PTFE	
9	Locknut	DZR BRASS CW614N	Brass HPb59-1
10	Stem Cap	EN-GJS-450-10	
11	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
12	Bolt	SS304	Carbon Steel Zinc Plated, SS316
13	Ring Wiper	EPDM	NBR
14	O-Ring	NBR	EPDM
15	Washer	DZR BRASS CW614N	Brass HPb59-1
16	Bolt	SS304	Carbon Steel Zinc Plated, SS316
17	Seal Ring	NBR	EPDM

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN	Pipe DN	PN	Dimensions(mm)				
	mm		L	H	d Min	D Min	Dd
50	63	16	250	280	63.4	42	50
65	75	16	270	318	75.4	42	65
80	90	16	280	348	90.4	44	80
100	110	16	300	372	110.5	47	100
150	160	16	350	472	160.6	54	150
200	200	16	400	576	200.7	60	200
250	250	16	450	695	250.9	68	250
300	315	16	500	778	316.1	78	300

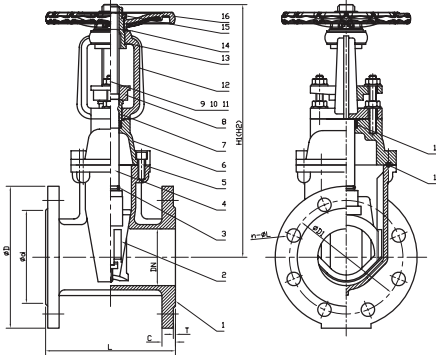
BS 5163 Flanged Resilient OS&Y Gate Valve (XZ41X), PN10/16



XZ41X



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	O-Ring	NBR	EPDM
4	Stem	Stainless Steel	SS304, SS316, SS420, SS431
5	Bolt	Carbon Steel Zinc Plated	SS304, SS316
6	Bonnet	EN-GJS-450-10	
7	Stem Bushing	Brass Hpb59-1	
8	Gland	EN-GJS-450-10	
9	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
10	Stud	Carbon Steel Zinc Plated	SS304, SS316
11	Nut	Carbon Steel Zinc Plated	SS304, SS316
12	Yoke	EN-GJS-450-10	
13	Stem Nut	Brass Hpb59-1	
14	Washer	Brass Hpb59-1	
15	Locknut	Carbon Steel Zinc Plated (Type A) Not available (Type B)	
16	Handwheel	EN-GJS-450-10	Pressed Steel
17	Stem Packing	EPDM	NBR
18	Bonnet Gasket	EPDM	NBR

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)										
Inch	mm		L	TypeA		TypeB		D	D1	d	C	T	n- φ L
				H1(Close)	H2(Open)	H1(Close)	H2(Open)						
2"	50	10/16	178	323	373	348	400	165	125	99	19	3	4-Ø19
2.5"	65	10/16	190	343	408	373	440	185	145	118	19	3	4-Ø19
3"	80	10/16	203	370	450	408	490	200	160	132	19	3	8-Ø19
4"	100	10/16	229	442	542	471	573	220	180	156	19	3	8-Ø19
5"	125	10/16	254	541	665	541	665	250	210	184	19	3	8-Ø19
6"	150	10	267	608	758	593	743	285	240	211	19	3	8-Ø23
8"	200	10	292	720	920	774	975	340	295	266	20	3	8-Ø23
		16											12-Ø23
10"	250	10	330	940	1190	940	1190	405	350	319	22	3	12-Ø23
		16							355				12-Ø28
12"	300	10	356	1065	1370	1065	1370	460	400	370	24.5	4	12-Ø23
		16							410				12-Ø28
14"	350	10	381	1210	1560	1210	1560	520	460	429	26.5	4	16-Ø23
		16							470				16-Ø28
16"	400	10	406	1280	1680	1280	1680	580	515	480	28	4	16-Ø28
		16							525				16-Ø31
18"	450	10	432	1760	2210	1760	2210	640	565	530	30	4	20-Ø28
		16							585	548			20-Ø31
20"	500	10	457	1780	2280	1780	2280	715	620	582	31.5	4	20-Ø28
		16							650	609			20-Ø34
24"	600	10	508	1950	2550	1950	2550	840	725	682	36	5	20-Ø31
		16							770	720			20-Ø37

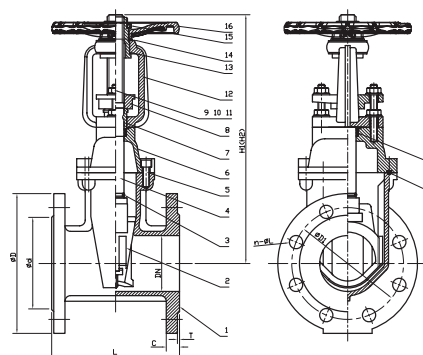
BS 5163 Flanged Resilient OS&Y
Gate Valve (XZ41X),
PN25



XZ41X



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN25
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	O-Ring	NBR	EPDM
4	Stem	Stainless Steel	SS304, SS316, SS420, SS431
5	Bolt	Carbon Steel Zinc Plated	SS304, SS316
6	Bonnet	EN-GJS-450-10	
7	Stem Bushing	Brass Hpb59-1	
8	Gland	EN-GJS-450-10	
9	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
10	stud	Carbon Steel Zinc Plated	SS304, SS316
11	Nut	Carbon Steel Zinc Plated	SS304, SS316
12	Yoke	EN-GJS-450-10	
13	Stem Nut	Brass Hpb59-1	
14	Washer	Brass Hpb59-1	
15	Locknut	Carbon Steel Zinc Plated (Type A) Not available (Type B)	
16	Handwheel	EN-GJS-450-10	Pressed Steel
17	Stem Packing	EPDM	NBR
18	Bonnet Gasket	EPDM	NBR

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)								
Inch	mm		L	H1(Close)	H2(Open)	D	D1	d	C	T	n-ΦL
2"	50	25	178	323	373	165	125	99	19	3	4-Φ19
2.5"	65	25	190	343	408	185	145	118	19	3	8-Φ19
3"	80	25	203	370	450	200	160	132	19	3	8-Φ19
4"	100	25	229	442	542	235	190	156	19	3	8-Φ23
5"	125	25	254	541	665	270	220	184	19	3	8-Φ28
6"	150	25	267	608	758	300	250	211	20	3	8-Φ28
8"	200	25	292	720	920	360	310	274	20	3	12-Φ28
10"	250	25	330	940	1190	425	370	319	22	3	12-Φ31
12"	300	25	356	1065	1370	485	430	370	24.5	4	16-Φ31

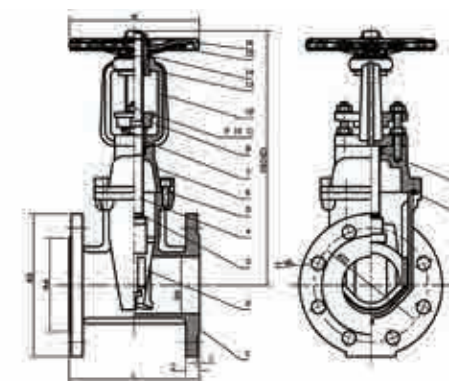
DIN F4 Flanged Resilient OS&Y
Gate Valve (XZ41X),
PN10/16



XZ41X



- Connection Ends: Flange to DIN EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge Disc	EN-GJS-450-10+EPDM	
3	O-Ring	NBR	EPDM
4	Stem	Stainless Steel	SS304, SS316, SS420, SS431
5	Nut	Carbon Steel Zinc Plated	SS304, SS316
6	Bonnet	EN-GJS-450-10	
7	Stem Bushing	Brass HPb59-1	
8	Gland	EN-GJS-450-10	
9	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
10	Stud	Carbon Steel Zinc Plated	SS304, SS316
11	Nut	Carbon Steel Zinc Plated	SS304, SS316
12	Yoke	EN-GJS-450-10	
13	Stem Nut	Brass HPb59-1	
14	Washer	Brass HPb59-1	SS304, SS316
15	Locknut	Carbon Steel Zinc Plated	
16	Handwheel	EN-GJS-450-10	Pressed Steel
17	Stem Packing	EPDM	NBR
18	Bonnet Gasket	EPDM	NBR

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)									
Inch	mm		L	H1(Close)	H2(Open)	D	D1	d	C	T	M	n-ΦL
1.5"	40	10/16	140	323	373	150	110	84	19	3	180	4-Φ19
2"	50	10/16	150	323	373	165	125	99	19	3	180	4-Φ19
2.5"	65	10/16	170	343	408	185	145	118	19	3	180	4-Φ19
3"	80	10/16	180	370	450	200	160	132	19	3	200	8-Φ19
4"	100	10/16	190	442	542	220	180	156	19	3	254	8-Φ19
5"	125	10/16	200	540	665	250	210	184	19	3	280	8-Φ19
6"	150	10/16	210	608	758	285	240	211	19	3	305	8-Φ23
8"	200	10	230	720	920	340	295	266	20	3	350	8-Φ23
		16										12-Φ23
10"	250	10	250	940	1190	405	350	319	22	3	450	12-Φ23
		16					355					12-Φ28
12"	300	10	270	1065	1365	460	400	370	24.5	4	450	12-Φ23
		16					410					12-Φ28
14"	350	10	290	1210	1560	520	460	429	26.5	4	500	16-Φ23
		16					470					16-Φ28
16"	400	10	310	1280	1680	580	515	480	28	4	500	16-Φ28
		16					525					16-Φ31
18"	450	10	330	1760	2210	640	565	530	30	4	650	20-Φ28
		16					585	548				20-Φ31
20"	500	10	350	1780	2280	715	620	582	31.5	4	650	20-Φ28
		16					650	609				20-Φ34
24"	600	10	390	1950	2550	840	725	682	36	5	720	20-Φ31
		16					770	720				20-Φ37

AS 2638.2 Flanged Resilient OS&Y Gate Valve (XZ41X), PN16

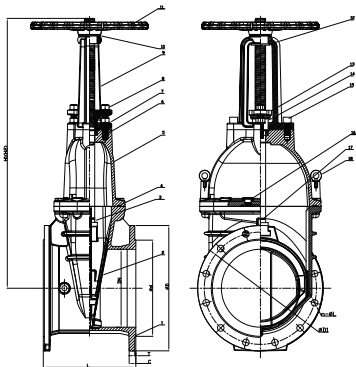


NSF/ANSI 61 NSF/ANSI 372

XZ41X



- Connection Ends: Flange to AS4087/AS2129
- Working Pressure: PN16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in according with AS4158



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Resilient Wedge disc	EN-GJS-450-10+EPDM	
3	Stem	Stainless Steel	SS304, SS316, SS420, SS431
4	Bonnet Gasket	EPDM	NBR
5	Bonnet	EN-GJS-450-10	
6	Stud	SS304	SS316, Carbon Steel Zinc Plated
7	Flat Washer	SS304	SS316, Carbon Steel Zinc Plated
8	Gland Nut	SS304	SS316, Carbon Steel Zinc Plated
9	Yoke	EN-GJS-450-10	
10	Washer	Brass C22000	
11	Handwheel	EN-GJS-450-10	Pressed Steel
12	Stem nut	Bronze C95400	Bronze ZQSn5-5-5
13	Gland flange	EN-GJS-450-10	
14	Stem	Brass C22000	
15	Bolt	SS304	SS316, Carbon Steel Zinc Plated
16	Bolt	Carbon Steel Zinc Plated	SS304, SS316
17	O-Ring	NBR	EPDM
18	Eyebolt	Carbon Steel Zinc Plated	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)								
Inch	mm		L	H1(Close)	H2(Open)	D(min)	D1	d	C	T	n-ΦL
3"	80	16	203	408	490	185	146	122	18	3	4-Φ18
4"	100	16	229	471	573	215	178	154	20	3	4-Φ18
6"	150	16	267	593	743	280	235	211	23	3	8-Φ18
8"	200	16	292	774	975	335	292	268	23	3	8-Φ18
10"	250	16	330	940	1190	405	356	328	24	3	8-Φ22
12"	300	16	356	1065	1370	455	406	378	30	4	12-Φ22

BS EN 593 Universal Wafer Butterfly Valve (D71X4, D371X4), PN10/16

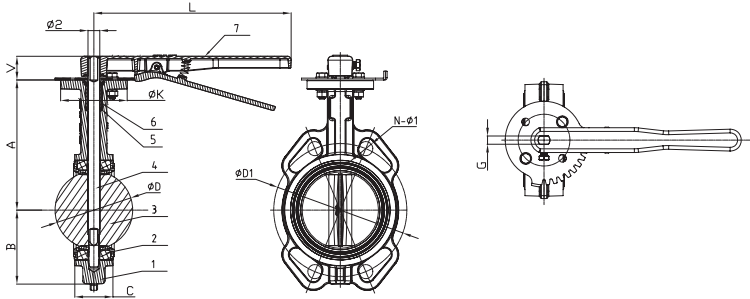


D71X4

Rubber Seat with Backing
Cartridge Style

ACS CE PG NSF/ANSI 61 NSF/ANSI 372

- Design Standard: BS EN 593
- Connection Ends: Universal Flange to BS EN 1092 PN10/PN16, AS 2129 TABLE E, JIS B2212 10K, BS 10 TABLE D/E
- Top Flange Standard: ISO 5211
Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Seat	DN40~400: EPDM & Backing DN450~800: EPDM Vulcanized on Valve Body	NBR/Fluororubber&Backing EPDM/NBR Vulcanized on Valve Body Soft Seat in EPDM/NBR
3	Disc	EN-GJS-450-10	SS304, SS316, AL-Bronze C95400
4	Stem	DN40~350: Stainless Steel, One-Piece Stem Design DN400~800: Stainless Steel, Two-Piece Stem Design	SS304, SS316, SS420, SS431
5	O-Ring	NBR	EPDM
6	Bushing	DN40~350: Nylon 1010 DN400~800: Lubricating Bronze	PTFE
7	Lever	EN-GJS-450-10	Aluminum
8	Shaft Cover (DN400~800)	EN-GJS-450-10	
9	Gear Box	EN-GJS-450-10	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.



D71XV4

Vulcanized Seat
Boot Style

D71XS4

Independent Rubber Seat
Dove-tail Style

D371X4

Rubber Seat with Backing
Cartridge Style

DN		Dimensions(mm)																
Inch	mm	A	B	V	C	ØD	Ø2	ØK	G	L	ØD1	N-Ø1	ISO 5211	Ø3	H	H1	H2	P
												PN16						
1.5"	40	138	64.5	32	33	43.9	14	90	9.45	267	110	4-Ø19	F07	150	206	158	52	43.5
2"	50	140.5	64.5	32	43	53.9	14	90	9.53	267	125	4-Ø19	F07	150	206	158	52	43.5
2.5"	65	153	72	32	46	65.2	14	90	9.53	267	145	4-Ø19	F07	150	206	158	52	43.5
3"	80	157.5	86	32	46	79.7	14	90	9.53	267	160	8-Ø19	F07	150	206	158	52	43.5
4"	100	176	100	32	52	105	16	90	11.14	267	180	8-Ø19	F07	150	206	158	52	43.5
5"	125	191	112	32	56	130	16	90	11.14	267	210	8-Ø19	F07	150	206	158	52	43.5
6"	150	202.5	128	32	56	156	20	90	12.7	267	240	8-Ø23	F07	150	206	158	52	43.5
8"	200	243.5	162	45	60	206.7	26	125	20.6	356	295	12-Ø23	F10	300	310	239	69	62.5
10"	250	273	194	45	68	253.3	26	125	20.6	490	355	12-Ø28	F10	300	310	239	69	62.5
12"	300	311	223	45	78	301.9	28	125	22.1	490	410	12-Ø28	F10	300	307	229	73	77.5
14"	350	340	267	48	78	333.9	31.6	150	22.1	-	470	16-Ø28	F12	300	307	229	73	77.5
16"	400	400	319.5	48	102	389.6	33.2	175	27	-	525	16-Ø31	F14	380	418	288	110	120
18"	450	422	345.4	48	114	441	38.1	175	27	-	585	20-Ø31	F14	380	418	288	110	120
20"	500	480	380	70.2	127	492.4	41.2	210	-	-	650	20-Ø34	F16	380	465	215	123	185
24"	600	562	441	70.2	154	592.8	50.6	210	-	-	770	20-Ø37	F16	380	500	215	129	185
Inch	mm	A	B	V	C	ØD	Ø2	ØK	G	L	ØD1	N-Ø1	ISO 5211	Ø3	H	H1	H2	P
												PN10						
28"	700	575	505	70.2	165	695	63.4	300	-	-	840	24-Ø31	F25	380	543	213	132	218
30"	750	660	550	70.2	165	744	63.4	300	-	-	900	24-Ø34	F25	380	543	213	132	218
32"	800	667	577	70.2	190	795.7	63.4	300	-	-	950	24-Ø34	F25	380	543	213	132	218

Note: Not designed for dead end service

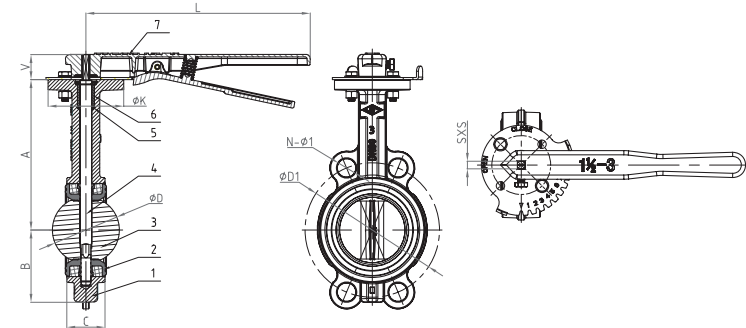
EN 1092 Wafer Butterfly Valve
(D71X15R-A, D371X15R-A),
PN10/16



D71X15R-A

WRAS ACS CE NSF/ANSI 61 NSF/ANSI 372

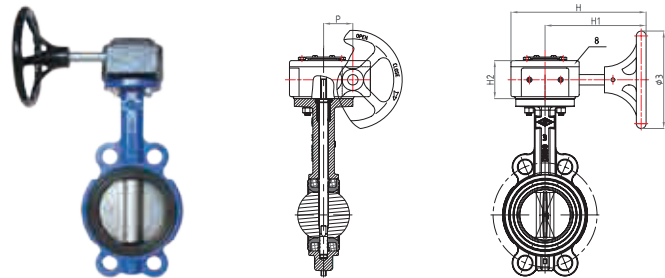
- Design Standard: BS EN 593
- Connection Ends: BS EN 1092 PN10/PN16
- Top Flange Standard: ISO 5211
Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Seat	EPDM & Backing	NBR/Fluororubber&Backing; EPDM/NBR Vulcanized on Valve Body; Soft Seat in EPDM/NBR;
3	Disc	EN-GJS-450-10	SS304, SS316, AL-Bronze 95400
4	Stem	SS420, One-Piece Stem Design	SS304, SS316, SS416, SS431
5	O-Ring	NBR	EPDM
6	Bushing	Nylon 1010	PTFE
7	Lever	EN-GJS-450-10	Aluminum
8	Gear box	EN-GJS-450-10	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.



D371X15R-A

DN		Dimensions(mm)															
Inch	mm	A	B	V	C	ØD	SXS	ØK	L	ØD1	N-Ø1	ISO5211	Ø3	H	H1	H2	P
										PN16							
2"	50	159	64.5	30	43	53.9	9x9	90	267	125	4-Ø19	F07	150	206	158	52	43.5
2.5"	65	173	72	30	46	65.2	9x9	90	267	145	4-Ø19	F07	150	206	158	52	43.5
3"	80	179	86	30	46	79.7	9x9	90	267	160	8-Ø19	F07	150	206	158	52	43.5
4"	100	198	100	30	52	105	11x11	90	267	180	8-Ø19	F07	150	206	158	52	43.5
5"	125	211	112	30	56	130	14x14	90	267	210	8-Ø19	F07	150	206	158	52	43.5
6"	150	224	128	30	56	155.8	14x14	90	267	240	8-Ø23	F07	150	206	158	52	43.5
8"	200	243.5	162	40	60	207	17x17	125	356	295	12-Ø23	F10	300	310	239	69	62.5
10"	250	273	194	40	68	253.3	22x22	125	490	355	12-Ø28	F10	300	310	239	69	62.5
12"	300	311	223	40	78	301.9	22x22	125	490	410	12-Ø28	F10	300	307	229	73	77.5

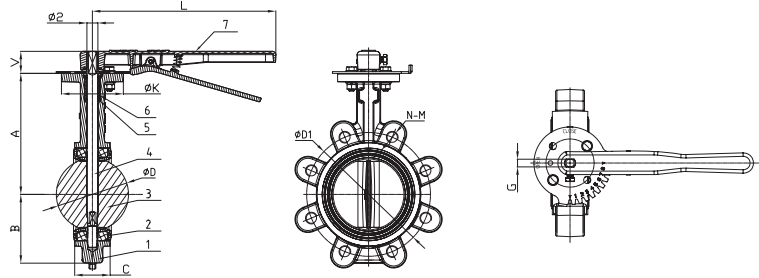
BS EN 593 Lugged Wafer
Butterfly Valve (D71XL4, D371XL4),
PN10/16



D71XL4

WRAS ACS CE NSF/ANSI 61 NSF/ANSI 372

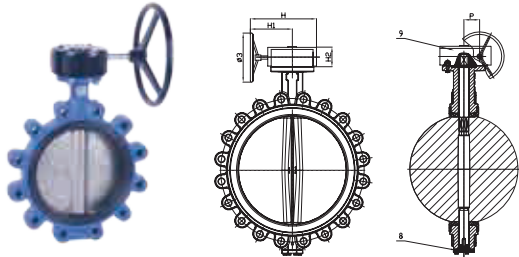
- Design Standard: BS EN 593
- Connection Ends: BS EN 1092 PN10/PN16
- Top Flange Standard: ISO 5211
Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Seat	DN40~150: EPDM & Backing DN200~800: EPDM Vulcanized on Valve Body	NBR/Fluororubber&Backing EPDM/NBR Vulcanized on Valve Body Soft Seat in EPDM/NBR
3	Disc	EN-GJS-450-10	SS304, SS316, AL-Bronze C95400
4	Stem	DN40~350: Stainless Steel, One-Piece Stem Design DN400~800: Stainless Steel, Two-Piece Stem Design	SS304, SS316, SS420, SS431
5	O-Ring	NBR	EPDM
6	Bushing	DN40~350: Nylon 1010 DN400~800: Lubricating Bronze	PTFE
7	Lever	EN-GJS-450-10	Aluminum
8	Shaft Cover (DN400~800)	EN-GJS-450-10	
9	Gear Box	EN-GJS-450-10	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.



D371XL4

DN		Dimensions(mm)																
Inch	mm	A	B	V	C	ØD	Ø2	ØK	G	L	ØD1	N-M	ISO 5211	Ø3	H	H1	H2	P
											PN16							
1.5"	40	138	64.5	32	33	43.9	14	90	9.45	267	110	4-M16	F07	150	206	158	52	43.5
2"	50	140.5	64.5	32	43	53.9	14	90	9.53	267	125	4-M16	F07	150	206	158	52	43.5
2.5"	65	153	72	32	46	65.2	14	90	9.53	267	145	4-M16	F07	150	206	158	52	43.5
3"	80	157.5	86	32	46	79.7	14	90	9.53	267	160	8-M16	F07	150	206	158	52	43.5
4"	100	176	100	32	52	105	16	90	11.14	267	180	8-M16	F07	150	206	158	52	43.5
5"	125	191	112	32	56	130	16	90	11.14	267	210	8-M16	F07	150	206	158	52	43.5
6"	150	202.5	128	32	56	156	20	90	12.7	267	240	8-M20	F07	150	206	158	52	43.5
8"	200	243.5	162	45	60	206.7	26	125	20.6	356	295	12-M20	F10	300	310	239	69	62.5
10"	250	273	194	45	68	253.3	26	125	20.6	490	355	12-M24	F10	300	310	239	69	62.5
12"	300	311	223	45	78	301.9	28	125	22.1	490	410	12-M24	F10	300	307	229	73	77.5
14"	350	340	267	48	78	333.9	31.6	150	22.1	-	470	16-M24	F12	300	307	229	73	77.5
16"	400	400	319.5	48	102	389.6	33.2	175	27	-	525	16-M27	F14	380	418	288	110	120
18"	450	422	345.4	48	114	441	38.1	175	27	-	585	20-M27	F14	380	418	288	110	120
20"	500	480	380	70.2	127	492.4	41.2	210	-	-	650	20-M30	F16	380	465	215	123	185
24"	600	562	441	70.2	154	592.8	50.6	210	-	-	770	20-M33	F16	380	500	215	129	185
Inch	mm	A	B	V	C	ØD	Ø2	ØK	G	L	ØD1	N-M	ISO 5211	Ø3	H	H1	H2	P
											PN10							
28"	700	575	505	70.2	165	695	63.4	300	-	-	840	24-M27	F25	380	543	213	132	218
30"	750	660	550	70.2	165	744	63.4	300	-	-	900	24-M30	F25	380	543	213	132	218
32"	800	667	577	70.2	190	795.7	63.4	300	-	-	950	24-M30	F25	380	543	213	132	218

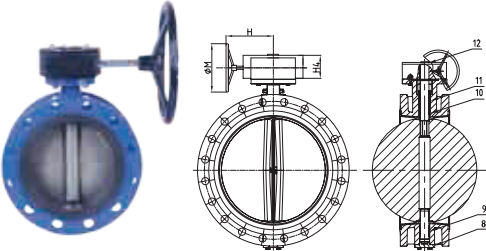
BS EN 593 Flanged Butterfly Valve (D41X4, D341X4), PN10/16



D41X4

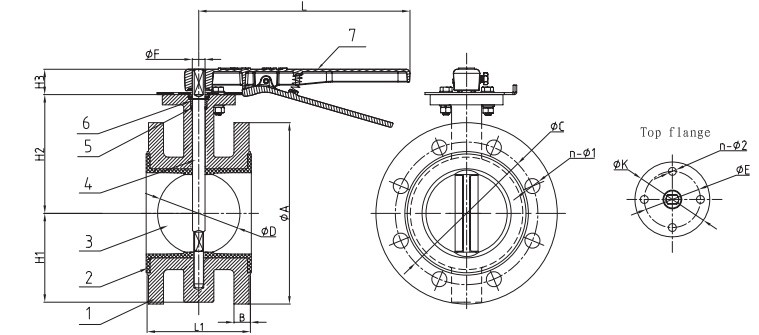
WRAS ACS CE NSF/ANSI 61 NSF/ANSI 372

- Design Standard: BS EN 593
- Face to Face: BS EN 558 Series 13
- Connection Ends: BS EN 1092 PN10/PN16
- Top Flange Standard: ISO 5211
- Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



D341X4

DN		Dimensions(mm)															
Inch	mm	L1	H1	H2	H3	H4	ΦA	B	ΦC	N-Φ1	ΦD	ΦE	ΦK	n-Φ2	ISO 5211	ΦF	L
							PN16										
2"	50	108	63	110	32	52	165	19	125	4-Φ19	53.9	70	90	4-Φ10	F07	14	267
2.5"	65	112	71	135	32	52	185	19	145	4-Φ19	65.2	70	90	4-Φ10	F07	14	267
3"	80	114	80	145	32	52	200	19	160	8-Φ19	79.7	70	90	4-Φ10	F07	14	267
4"	100	127	90	150	32	52	220	19	180	8-Φ19	105	70	90	4-Φ10	F07	16	267
5"	125	140	107	170	32	52	250	19	210	8-Φ19	130	70	90	4-Φ10	F07	16	267
6"	150	140	123	180	32	52	285	19	240	8-Φ23	156	70	90	4-Φ10	F07	20	267
8"	200	152	153	210	45	69	340	20	295	12-Φ23	206.7	102	125	4-Φ12	F10	26	356
10"	250	165	185	245	45	69	400	22	355	12-Φ28	253.3	102	125	4-Φ12	F10	26	356
12"	300	178	213	275	45	73	455	24.5	410	12-Φ28	301.9	102	125	4-Φ12	F10	28	490
14"	350	190	254	310	45	73	520	26.5	470	16-Φ28	333.9	125	150	4-Φ14	F12	31.6	-
16"	400	216	280	340	48	110	580	28	525	16-Φ31	389.6	140	175	4-Φ18	F14	33.2	-
18"	450	222	320	375	48	110	615	30	585	20-Φ31	441	140	175	4-Φ18	F14	38	-
20"	500	229	350	430	70.3	123	715	31.5	650	20-Φ34	492.4	165	210	4-Φ22	F16	41.2	-
Inch	mm	L1	H1	H2	H3	H4	ΦA	B	ΦC	N-Φ1	ΦD	ΦE	ΦK	n-Φ2	ISO 5211	ΦF	L
							PN10										
24"	600	267	418	500	70.3	129	780	30	725	20-Φ31	592.8	165	210	4-Φ22	F16	50.6	-
28"	700	292	450	575	73	132	910	32.5	840	24-Φ31	695	254	300	8-Φ18	F25	63.4	-
32"	800	318	501	620	73	132	1025	35	950	24-Φ34	795.7	254	300	8-Φ18	F25	63.4	-



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Seat	EPDM	NBR
3	Disc	EN-GJS-450-10	SS304, SS316, AL-Bronze C95400
4	Stem	DN50~350: Stainless Steel, One-Piece Stem Design DN400~800: Stainless Steel, Two-Piece Stem Design	SS304, SS316, SS420, SS431
5	O-Ring	NBR	EPDM
6	Bushing	Nylon 1010	PTFE
7	Lever	EN-GJS-450-10	Aluminum
8	Shaft Cover (DN400~800)	EN-GJS-450-10	
9	Bushing (DN400~800)	Lubricating Bronze	
10	Bushing (DN400~800)	Lubricating Bronze	
11	Packing (DN400~800)	PTFE	
12	Gear Box	EN-GJS-450-10	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

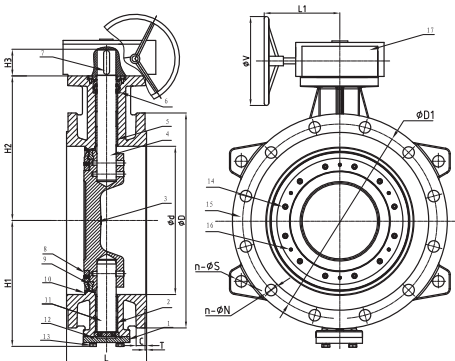
Double Eccentric Flanged Butterfly Valve (D342X), PN10/16



D342X

CE

- Design Standard: BS EN 593
- Face to Face: BS EN 558 Series 13
- Connection Ends: BS EN 1092 PN10/PN16
- Top Flange Standard: ISO 5211
- Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Bottom Cap	EN-GJS-450-10	
2	Bushing	Stainless Steel + PTFE	
3	Disc	EN-GJS-450-10	SS304, SS316
4	Upper Stem	Stainless Steel	SS304, SS316, SS420, SS431
5	Bushing	Stainless steel + PTFE	
6	Packing	2CuSn5Pb5Zn5	
7	Key	Carbon Steel	
8	Compressed Ring	EN-GJS-450-10	
9	Sealing Ring	EPDM	NBR
10	Steel Ring	SS304	
11	Lower Stem	Stainless Steel	SS304, SS316, SS420, SS431
12	O-ring	NBR	
13	Bolt	Carbon Steel Zinc Plated	SS304, SS316
14	Nut	Carbon Steel Zinc Plated	SS304, SS316
15	Valve Body	EN-GJS-450-10	
16	Hex Screw	Carbon Steel Zinc Plated	SS304, SS316
17	Gear Box	EN-GJS-450-10	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)													
Inch	mm	L	ØD	n-Øn	H1	H2	H3	C	ØD1	T	Ød	n-ØS	L1	ØV	
4"	100	127	220	8-Ø19	100.5	155	32	19	180	3	100	-	156	150	
5"	125	140	250	8-Ø19	115	165	32	19	210	3	132	-	156	150	
6"	150	140	285	8-Ø23	145.5	190	32	19	240	3	152	-	156	150	
8"	200	152	340	12-Ø23	187.5	208	50	21	295	3	200	-	240	300	
10"	250	165	400	12-Ø28	259.5	255	50	22	355	3	250	-	229	300	
12"	300	178	455	16-Ø28	285	290	60	24.5	410	4	302	4-Ø28	228	380	
14"	350	190	520	16-Ø28	326.6	325	70	26.5	470	4	352	4-Ø28	228	380	
16"	400	216	580	16-Ø31	340	390	70	28	525	4	400	4-Ø31	325	380	
18"	450	222	640	20-Ø31	355	390	70	30	585	4	460	4-Ø31	325	380	
20"	500	229	715	20-Ø34	390	450	70	31.5	650	4	500	4-Ø34	343	380	
24"	600	267	840	20-Ø37	466	490	103	36	770	5	600	4-Ø37	373	380	

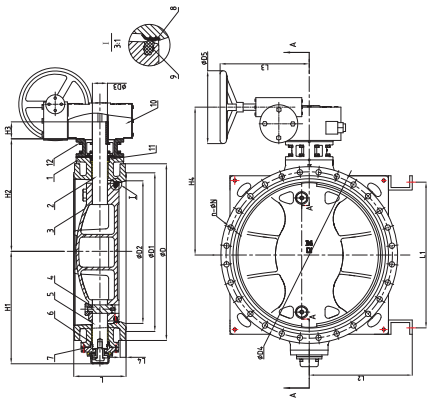
Double Eccentric Flanged Butterfly Valve (D342X4), PN10



D342X4



- Design Standard: BS EN 593
- Face to Face: BS EN 558 Series 13
- Connection Ends: BS EN 1092 PN10/PN16
- Top Flange Standard: ISO 5211
Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: PN10
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Upper Stem	Stainless Steel	SS304, SS316, SS420, SS431
3	Disc	EN-GJS-450-10	
4	Pin	Stainless Steel 431	
5	Lower Stem	Stainless Steel	SS304, SS316, SS420, SS431
6	Bushing	Brass	
7	O-Ring	NBR	EPDM
8	Seat	Stainless Steel	
9	Sealing Ring	NR	
10	Gear Box	EN-GJS-450-10	
11	Packing	NBR	
12	Bolt	Carbon Steel Zinc Plated	SS304, SS316

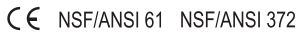
Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)																
Inch	mm	H1	H2	H3	H4	L	L1	L2	L3	L4	ØD	ØD1	ØD2	ØD3	ØD4	ØD5	n-ØN	Top flange ISO5211
16"	400	360	468	70	525	216	325	350	325	24.5	565	480	400	45	515	380	16-Φ28	F14/F16
18"	450	400	505	70	562	222	356	375	325	25.5	615	530	450	50	565	380	20-Φ28	F14/F16
20"	500	450	565	70	628	229	450	410	340	26.5	670	582	500	60	620	380	20-Φ28	F16
24"	600	514	590	90	646	267	450	530	373	30	780	682	600	65	725	380	20-Φ31	F25
28"	700	615	625	82	689	292	782	550	448	32.5	895	794	700	75	840	500	24-Φ31	F25
32"	800	672	680	92	760	318	882	600	480	35	1015	901	800	85	950	500	24-Φ34	F25
36"	900	705	715	107	795		982	650	555	37.5	1115	1001	900	95	1050	600	28-Φ34	F25
40"	1000	819	841	143	922.5	410	1082	700	616	40	1230	1112	1000	105	1160	700	28-Φ37	F25
48"	1200	975	1005	131	1089	470	1282	800	648	45	1455	1328	1200	125	1380	700	32-Φ41	F30
56"	1400	1115	1210	140	1294	530	1432	980	648	46	1675	1530	1400	150	1590	700	36-Φ44	F35
64"	1600	1205	1295	240	1402	600	1622	1075	686	49	1915	1750	1600	160	1820	700	40-Φ50	F35
72"	1800	1405	1470	263.5	1580	670	1822	1175	706	52	2115	1950	1800	170	2020	700	44-Φ50	F40
80"	2000	1595	1660	280	1790	760	1982	1260	821	55	2325	2150	2000	190	2230	1000	48-Φ50	F48
88"	2200	1700	1745	280	-	1000	2105	1365	-	60	2550	2370	2200	220	2440	-	52-Φ56	-
96"	2400	1780	1850	320	-	1100	2405	1525	-	62	2760	2570	2400	240	2650	-	56-Φ56	-
104"	2600	1905	1965	320	-	1200	2650	1605	-	62	2960	2778	2600	240	2850	-	60-Φ56	-

BS EN 593 Grooved Butterfly Valve (D81X4, D381X4), PN10/16

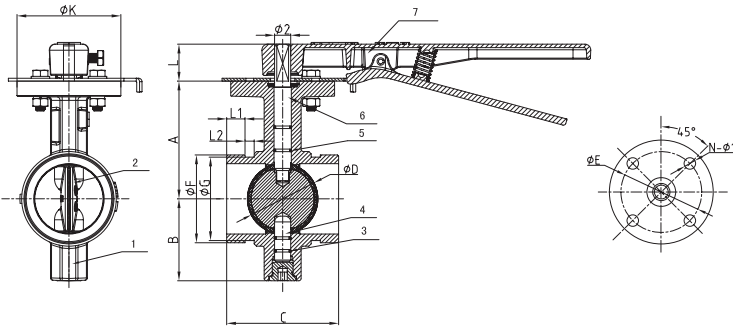


D81X4



NSF/ANSI 61 NSF/ANSI 372

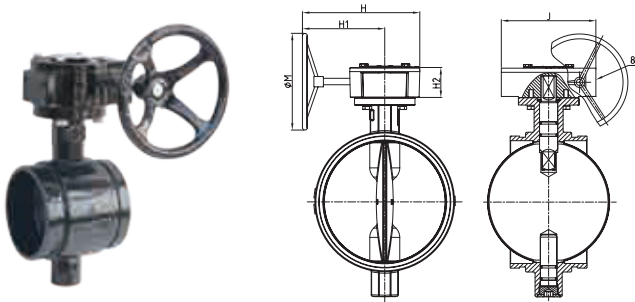
- Design Standard: BS EN 593
- Connection Ends: Groove to ISO 6182
- Top Flange Standard: ISO 5211
Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Disc	EN-GJS-450-10+EPDM	EN-GJS-450-10+NBR
3	O-Ring	NBR	EPDM
4	Stem	Stainless Steel	SS304, SS316, SS420, SS431
5	O-Ring	NBR	EPDM
6	Stem	Stainless Steel	SS304, SS316, SS420, SS431
7	Lever	EN-GJS-450-10	Aluminum
8	Gear Box	EN-GJS-450-10	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.



D381X4

DN		Dimensions(mm)																		
Inch	mm	A	B	C	ΦD	ΦF	ΦG	L1	L2	L	ΦK	H	H1	H2	J	ΦM	Φ2	ISO 5211	ΦE	N-Φ1
2"	50	89	65	81	50.3	60.3	57.15	15.88	7.93	32	90	206	158	52	114	150	14	F07	70	4-Φ10
2.5"	65	102	71	97	60.8	73.0	69.09	15.88	7.93	32	90	206	158	52	114	150	14	F07	70	4-Φ10
2.5"	65	102	71	97	60.8	76.1	72.26	15.88	7.93	32	90	206	158	52	114	150	14	F07	70	4-Φ10
3"	80	109	81	97	76	88.9	84.94	15.88	7.93	32	90	206	158	52	114	150	14	F07	70	4-Φ10
4"	100	128	95	116	98.5	114.3	110.08	15.88	9.53	32	90	206	158	52	114	150	16	F07	70	4-Φ10
5"	125	141	111	148	122.6	139.7	135.48	15.88	9.53	32	90	206	158	52	114	150	16	F07	70	4-Φ10
5"	125	141	111	148	122.6	141.3	137.03	15.88	9.53	32	90	206	158	52	114	150	16	F07	70	4-Φ10
6"	150	153	133	148	148	159.0	154.50	15.88	9.53	32	90	206	158	52	114	150	20	F07	70	4-Φ10
6"	150	153	133	148	148	165.1	160.9	15.88	9.53	32	90	206	158	52	114	150	20	F07	70	4-Φ10
6"	150	153	133	148	148	168.3	163.96	15.88	9.53	32	90	206	158	52	114	150	20	F07	70	4-Φ10
8"	200	184	164	133	199	219.1	214.4	19.05	11.10	45	125	310	239	69	167	300	26	F10	102	4-Φ12
10"	250	216	196	159	252	273.0	268.28	19.05	12.70	45	125	310	239	69	167	300	26	F10	102	4-Φ12
12"	300	254	226	165	300.5	323.9	318.29	19.05	12.70	45	125	307	229	73	190	300	28	F10	102	4-Φ12
14"	377	290	241	178	324	377	371.4	23.8	12.7	45	150	307	229	73	190	300	31.7	F12	125	4-Ø14

Note: Valve must not be installed with disc in full open position. Disc must be partly closed so that no part is protruding beyond end of valve body.

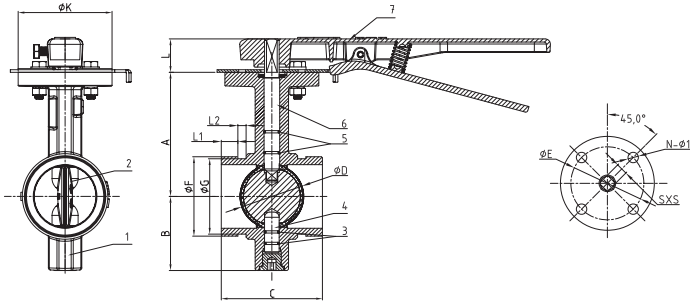
BS EN 593 Grooved Butterfly Valve
with Long Neck (D81X4-BL, D381X4-BL),
PN10/16



D81X4-BL



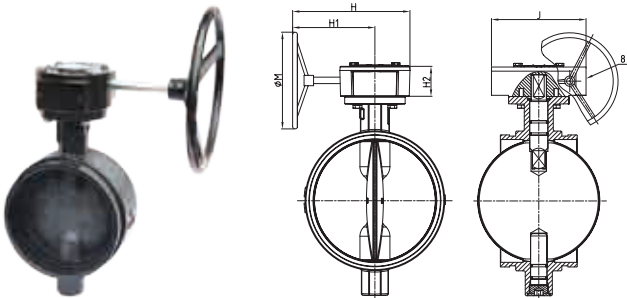
- Design Standard: BS EN 593
- Connection Ends: Groove to ISO 6182
- Top Flange Standard: ISO 5211
Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Disc	EN-GJS-450-10+EPDM	EN-GJS-450-10+NBR
3	O-Ring	NBR	EPDM
4	Stem	Stainless Steel	SS304, SS316, SS420, SS431
5	O-Ring	NBR	EPDM
6	Stem	Stainless Steel	SS304, SS316, SS420, SS431
7	Lever	EN-GJS-450-10	Aluminum
8	Gear Box	EN-GJS-450-10	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.



D381X4-BL

DN		Dimensions(mm)																
Inch	mm	A	B	C	ΦD	ΦF	ΦG	L1	L2	L	ΦK	H	H1	H2	J	ΦM	SXS	ISO 5211
2"	50	100	65	81	50.3	60.3	57.15	15.88	7.93	32	90	206	158	52	114	150	11X11	F07
2.5"	65	115	71	97	60.8	73.0	69.09	15.88	7.93	32	90	206	158	52	114	150	11X11	F07
2.5"	65	115	71	97	60.8	76.1	72.26	15.88	7.93	32	90	206	158	52	114	150	11X11	F07
3"	80	113	81	97	76	88.9	84.94	15.88	7.93	32	90	206	158	52	114	150	11X11	F07
4"	100	145	95	116	98.5	114.3	110.08	15.88	9.53	32	90	206	158	52	114	150	14X14	F07
5"	125	141	111	148	122.6	139.7	135.48	15.88	9.53	32	90	206	158	52	114	150	14X14	F07
5"	125	141	111	148	122.6	141.3	137.03	15.88	9.53	32	90	206	158	52	114	150	14X14	F07
6"	150	177	133	148	148	165.1	160.9	15.88	9.53	32	90	206	158	52	114	150	17X17	F07
6"	150	177	133	148	148	168.3	163.96	15.88	9.53	32	90	206	158	52	114	150	17X17	F07
8"	200	200	164	133	199	219.1	214.4	19.05	11.10	45	125	310	239	69	167	300	17X17	F10
10"	250	280	196	159	252	273.0	268.28	19.05	12.70	45	125	310	239	69	167	300	22X22	F10
12"	300	300	226	165	300.5	323.9	318.29	19.05	12.70	45	125	307	229	73	190	300	22X22	F10

Note: Valve must not be installed with disc in full open position. Disc must be partly closed so that no part is protruding beyond end of valve body.

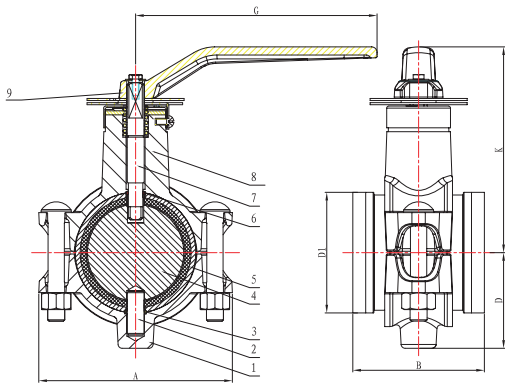
BS EN 593 Grooved
Butterfly Valve (D81X700),
PN10/16



D81X700



- Design Standard: BS EN 593
- Connection Ends: Groove to ISO 6182
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Painting



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Lower Housing	EN-GJS-450-10	
2	Lower Stem	Stainless Steel	SS304, SS316, SS420, SS431
3	O-Ring	NBR	EPDM, PTFE
4	Disc	SS316	DI, SS304, AL-Bronze C95400
5	Valve Body	Carbon Steel+NBR	Carbon Steel+EPDM
6	O-Ring	NBR	EPDM, PTFE
7	Upper Stem	Stainless Steel	SS304, SS316, SS420, SS431
8	Upper Housing	EN-GJS-450-10	
9	Lever	EN-GJS-450-10	Aluminum

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)					
Inch	mm	A	B	D	D1	K	G
2"	50	103.1	81	47.5	60.3	119.6	139.7
3"	80	142.7	96.8	69.9	88.9	151.5	177.8
4"	100	177.8	115.8	88.9	114.3	179.9	228.6
6"	150	241.3	147.6	114.3	165.1	230	304.8
6"	150	241.3	147.6	114.3	168.3	230	304.8

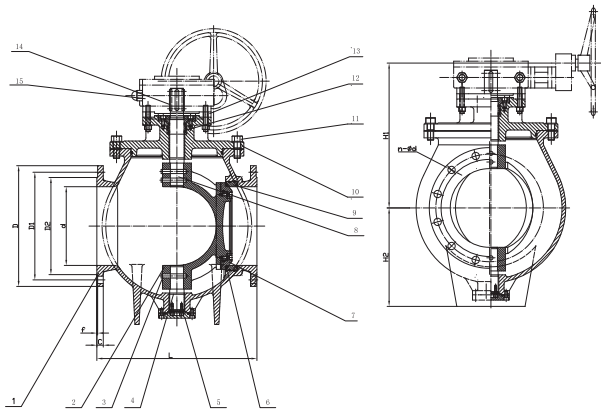
Note: Valve must not be installed with disc in full open position. Disc must be partly closed so that no part is protruding beyond end of valve body.

Eccentric Semi-ball Valve
(PQ340X), PN10/16



PQ340X

- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C - 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550
- Eccentric Semi-ball Valve serves to cut medium flow in the piping system, same as gate valve, butterfly valve, globe valve and ball valve yet with the combined advantages of these four types of valves, featuring efficient medium flow, easy in-line maintenance, good resistance to vibration and high pressure.



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Disc	EN-GJS-450-10	
3	Locating Pin	Carbon Steel Zinc Plated	
4	Lower Stem	Stainless Steel	SS304, SS316, SS420, SS431
5	Bottom Cap	EN-GJS-450-10	
6	Sealing Ring	NBR	EPDM
7	Compressed Ring	EN-GJS-450-10	
8	Upper Stem	Stainless Steel	SS304, SS316, SS420, SS431
9	Bonnet	EN-GJS-450-10	
10	Seat Ring	SS304	SS316
11	Bolt	Q235-A	
12	Packing	2CnZn38Mn2Pb2	
13	Actuator Adaptor	EN-GJS-450-10	
14	Key	45# Steel	
15	Gear Box	EN-GJS-450-10	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)									
Inch	mm		L	D	D1	D2	d	C	f	H1	H2	n-Φd
12"	300	16	610	455	410	370	300	24.5	4	552	375	12-Φ28
14"	350	16	686	520	470	429	350	26.5	4	569	400	16-Φ28
16"	400	16	762	580	525	480	400	28	4	589	425	16-Φ31
18"	450	16	864	615	585	548	450	30	4	610	450	20-Φ31
20"	500	16	914	670	650	609	500	31.5	4	635	480	20-Φ34
24"	600	16	1067	840	770	720	600	36	5	660	510	20-Φ37

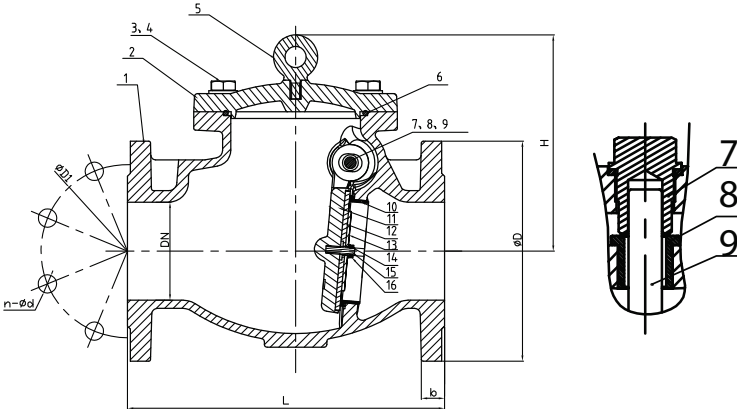
BS EN 12334 Swing Check Valve
(H44X2, H44T2), PN10/16



H44X2



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: Rubber Seal: 0°C- 100°C, Metal Seal: -10°C-200°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Bonnet	EN-GJS-450-10	
3	Bolts	Carbon Steel Zinc Plated	
4	Flat Washer	Carbon Steel Zinc Plated	
5	Eye Bolt	Carbon Steel Zinc Plated	
6	O-Ring	EPDM	NBR
7	Plug	SS304	Bronze ASTM B584
8	Bushing	Brass CW617N	
9	Hinge Pin	SS420	SS304, SS316
10	Seat	Bronze C83600	
11	Disc	EN-GJS-450-10	
12	Disc Sealing Ring	EPDM	
13	Retainer Washer	SS420 (DN50-DN100) EN-GJS-450-10 (DN125-DN300)	
14	Washer	SS304	
15	Stud	SS304	
16	Nut	SS304	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)							
Inch	mm		L	D	D1	b	H	n-Φd		
2"	50	10/16	203	165	125	19	133	4-Φ19		
2.5"	65	10/16	216	185	145	19	150	4-Φ19		
3"	80	10/16	241	200	160	19	150	8-Φ19		
4"	100	10/16	292	220	180	19	218	8-Φ19		
5"	125	10/16	330	250	210	19	245	8-Φ19		
6"	150	10/16	356	285	240	19	290	8-Φ23		
8"	200	10	495	340	285	20	330	8-Φ23		
		16						12-Φ23		
10"	250	10	622	405	350	22	350	12-Φ23		
		16						12-Φ28		
12"	300	10	698	460	400	24.5	376	12-Φ23		
		16						12-Φ28		

DIN F6 Check Valve,
(H44X/H44T), PN10/16

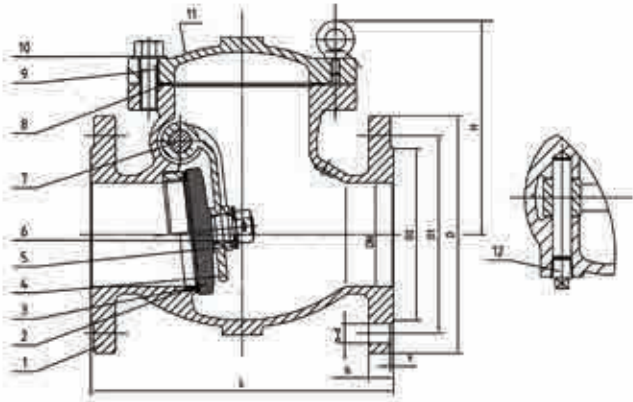


NSF/ANSI 61 NSF/ANSI 372

H44X



- Connection Ends: Flange to DIN EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: Rubber Seal: 0°C- 100°C,
Metal Seal: -10°C- 350°C
- Coating: Fusion Bonded Epoxy Coating in accordance with
ANSI/AWWA C550 or painting upon request



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Seat Ring	Bronze ASTM B62 C83600/ZQSn5-5-5 (Pressed Fit)	SS304, SS316 Pressed Fit or Threaded
3	Disc	EN-GJS-450-10+EPDM	
4	Clapper Arm	EN-GJS-450-10	
5	Washer	SS410	
6	Nut	Carbon Steel Zinc Plated	SS304, SS316
7	Hinge Pin	SS410	
8	Bonnet Gasket	EPDM	Graphite+Steel
9	Bolt	Carbon Steel Zinc Plated	SS304, SS316
10	Washer	Carbon Steel Zinc Plated	SS304, SS316
11	Bonnet	EN-GJS-450-10	
12	Plug	Malleable Iron Galvanized	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)							
Inch	mm		L	D	D1	D2	b	n-φd	f	H
2"	50	10/16	200	165	125	99	19	4-19	3	146
2.5"	65	10/16	240	185	145	118	19	4-19	3	155
3"	80	10/16	260	200	160	132	19	8-19	3	173
4"	100	10/16	300	220	180	156	19	8-19	3	180
5"	125	10/16	350	250	210	184	19	8-19	3	212
6"	150	10/16	400	285	240	211	19	8-23	3	260
8"	200	10	500	340	295	266	20	8-23	3	290
		16	500	340	295	266	20	12-23	3	290
10"	250	10	600	405	350	319	22	12-23	3	339
		16	600	405	355	319	22	12-28	3	339
12"	300	10	700	460	400	370	24.5	12-23	4	376
		16	700	460	410	370	24.5	12-28	4	376

BS EN 12334 Swing Check Valve
with Weight & Lever (H44XW)

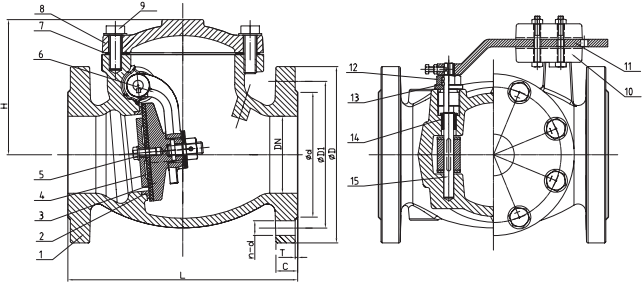


NSF/ANSI 61 NSF/ANSI 372

H44XW



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with
ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	Cast Iron EN-GJL-200	EN-GJS-450-10
2	Seat	Bronze ZQSn5-5-5	SS304, SS316 Pressed Fit or Threaded
3	Disc	EN-GJS-450-10	
4	Disc Seat Ring	EPDM	SS304, SS316, Bronze ZQSn5-5-5
5	Bolt	SS 304	SS316
6	Clapper Arm	EN-GJS-450-10	
7	Bonnet Gasket	EPDM	
8	Bonnet	Cast Iron EN-GJL-200	EN-GJS-450-10
9	Bolt	Carbon Steel Zinc Plated	SS316
10	Weight	Cast Iron EN-GJL-200	EN-GJS-450-10
11	Lever	Carbon Steel Zinc Plated	
12	Seat Nut	Brass CW603N	
13	O-Ring	NBR	EPDM
14	Hinge Bushing	Brass CW603N	
15	Hinge Pin	SS304	SS316

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)							
Inch	mm		L	D	D1	d	C	T	n-d	H
2"	50	10/16	203	165	125	99	19	3	4-Ø19	145
2.5"	65	10/16	216	185	145	118	19	3	4-Ø19	157
3"	80	10/16	241	200	160	132	19	3	8-Ø19	173
4"	100	10/16	292	220	180	156	19	3	8-Ø19	176
6"	150	10/16	356	250	210	184	19	3	8-Ø19	238
8"	200	10	495	340	295	266	20	3	8-Ø23	273
		16							12-Ø23	
10"	250	10	622	405	350	319	22	3	12-Ø23	329
		16			355				12-Ø28	
12"	300	10	698	460	400	370	24.5	4	12-Ø23	358
		16			410				12-Ø28	
14"	350	10	787	520	460	429	26.5	4	16-Ø23	470
		16			470			4	16-Ø28	
16"	400	10	914	580	515	480	28	4	16-Ø28	535
		16			525			4	16-Ø31	

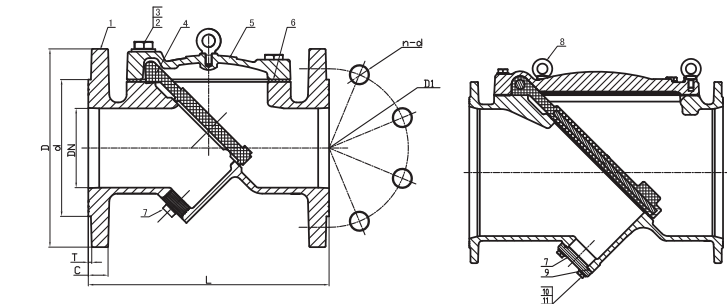
BS EN 12334 Rubber Disc
Swing Check Valve (H44J),
PN10/16



H44J

CE NSF/ANSI 61 NSF/ANSI 372

- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Bolt	Carbon Steel Zinc Plated	SS304, SS316
3	Washer	Carbon Steel Zinc Plated	SS304, SS316
4	Disc	Carbon Steel + EPDM	Carbon Steel+NBR
5	Bonnet	EN-GJS-450-10	
6	Bonnet Gasket	EPDM	NBR
7	≤DN300: Plug ≥DN400: Cover	Plug : Malleable Iron Galvanized Cover : EN-GJS-450-10	
8	Eye Bolt	Carbon Steel Zinc Plated	SS304, SS316
9	O-Ring	NBR	EPDM
10	Bolt	SS304	
11	Washer	SS304	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.



H44JD

DN		PN	Dimensions(mm)						
Inch	mm		L	D	D1	d	C	T	n-φ
2"	50	10/16	203	165	125	99	19	3	4-Φ19
2.5"	65	10/16	216	185	145	118	19	3	4-Φ19
3"	80	10/16	241	200	160	132	19	3	8-Φ19
4"	100	10/16	292	220	180	156	19	3	8-Φ19
5"	125	10/16	330	250	210	184	19	3	8-Φ19
6"	150	10/16	356	285	240	211	19	3	8-Φ23
8"	200	10	495	340	295	266	20	3	8-Φ23
		16	495	340	295	266	20	3	12-Φ23
10"	250	10	622	405	350	319	22	3	12-Φ23
		16	622	405	355	319	22	3	12-Φ28
12"	300	10	698	460	400	370	24.5	4	12-Φ23
		16	698	460	410	370	24.5	4	12-Φ28
14"	350	10	787	520	460	429	26.5	4	16-Φ23
		16	787	520	470	429	26.5	4	16-Φ28
16"	400	10	813	580	515	480	28	4	16-Φ28
		16	813	580	525	480	28	4	16-Φ31
18"	450	10	914	640	565	530	30	4	20-Φ28
		16	914	640	585	548	30	4	20-Φ31
20"	500	10	1016	670	620	582	26.5	4	20-Φ28
24"	600	10	1295	780	725	682	30	5	20-Φ31
28"	700	10	1448	895	840	794	32.5	5	24-Φ31
32"	800	10	1448	1015	950	901	35	5	24-Φ34

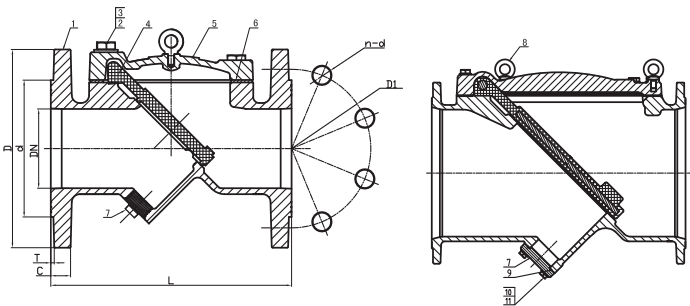
DIN EN 12334 Rubber Disc
Swing Check Valve (H44J),
PN10/16



H44J

CE NSF/ANSI 61 NSF/ANSI 372

- Connection Ends: Flange to DIN EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Bolt	Carbon Steel Zinc Plated	SS304, SS316
3	Washer	Carbon Steel Zinc Plated	SS304, SS316
4	Disc	Carbon Steel + EPDM	Carbon Steel+NBR
5	Bonnet	EN-GJS-450-10	
6	Bonnet Gasket	EPDM	NBR
7	≤DN300: Plug ≥DN400: Cover	Plug : Malleable Iron Galvanized Cover : EN-GJS-450-10	
8	Eye Bolt	Carbon Steel Zinc Plated	SS304, SS316
9	O-Ring	NBR	EPDM
10	Bolt	SS304	
11	Washer	SS304	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.



H44JD

DN		PN	Dimensions(mm)						
Inch	mm		L	D	D1	d	C	T	n-Φ L
2"	50	10/16	200	165	125	99	19	3	4-Φ19
2.5"	65	10/16	240	185	145	118	19	3	4-Φ19
3"	80	10/16	260	200	160	132	19	3	8-Φ19
4"	100	10/16	300	220	180	156	19	3	8-Φ19
6"	150	10/16	400	285	240	211	19	3	8-Φ23
8"	200	10	500	340	295	266	20	3	8-Φ23
		16	500	340	295	266	20	3	12-Φ23
10"	250	10	600	405	350	319	22	3	12-Φ23
		16	600	405	355	319	22	3	12-Φ28
12"	300	10	700	460	400	370	24.5	4	12-Φ23
		16	700	460	410	370	24.5	4	12-Φ28

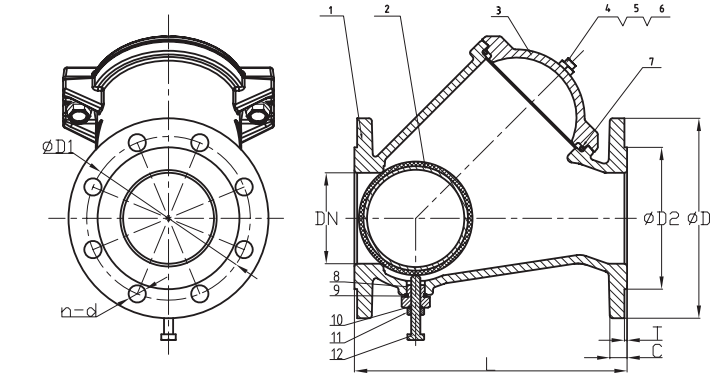
Ball Check Valve
(HQ41XN)



HQ41XN



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Body	EN-GJS-450-10
2	Ball	Aluminum ball +EPDM
3	Cover	EN-GJS-450-10
4	Bolt	Carbon steel Zinc plated
5	Nut	Carbon steel Zinc plated
6	Flat Washer	Carbon steel Zinc plated
7	O Rings	NBR
8	Nut	Brass HPb59-1
9	Washer	EPDM
10	O Rings	NBR
11	Nut	Carbon steel Zinc plated
12	Screw	Brass HPb59-1

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)						
Inch	mm		L	D	D1	d	C	T	n- Φ L
2"	50	10/16	200	165	125	99	19	3	4-Φ19
2.5"	65	10/16	240	185	145	118	19	3	4-Φ19
3"	80	10/16	260	200	160	132	19	3	8-Φ19
4"	100	10/16	300	220	180	156	19	3	8-Φ19
5"	125	10/16	350	250	210	184	19	3	8-Φ19
6"	150	10/16	400	285	240	211	19	3	8-Φ23
8"	200	10	500	340	295	266	20	3	8-Φ23
		16							12-Φ23
10"	250	10	600	405	350	319	22	3	12-Φ23
		16			355				12-Φ28
12"	300	10	700	460	400	370	24.5	4	12-Φ23
		16			410				12-Φ28

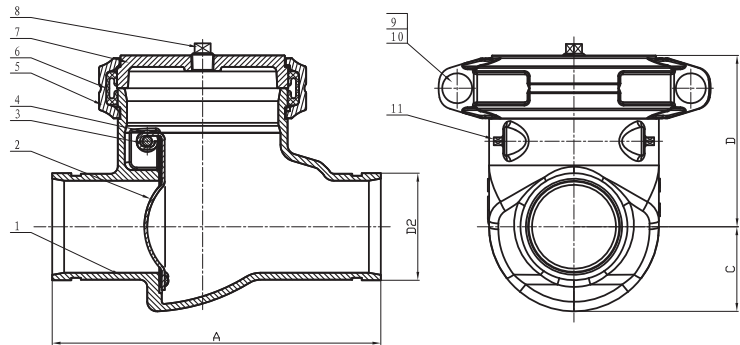
Grooved Check Valve
(H84X712)



H84X712



- Connection Ends: Groove to ISO 6182
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Painting



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	EN-GJS-450-10
2	Disc	SS316+NBR
3	Pin	SS316
4	Gasket	PTFE
5	Rigid Coupling	EN-GJS-450-10
6	Sealing Ring	NBR
7	Cap	EN-GJS-450-10
8	Plug	Malleable Iron Galvanized
9	Bolt	Carbon Steel Zinc Plated
10	Nut	Carbon Steel Zinc Plated
11	Plug	Malleable Iron Galvanized

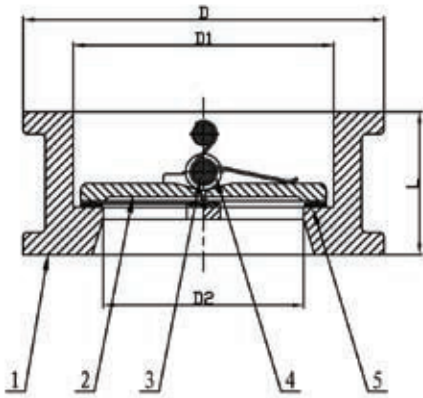
Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)				
Inch	mm	OD	A	C	D	D2
2"	50	60.3	229	47	130	60.3
3"	80	88.9	273	70	145	88.9
4"	100	114.3	305	84	163	114.3

Double Door Wafer Check Valve
(DH77X), PN10/16/25



DH77X



- CE PC NSF/ANSI 61 NSF/ANSI 372
- Connection Ends: BS EN 1092 PN10/PN16/PN25, AS 2129 TABLE E, JIS B2212 10K, BS 10 TABLE D/E
 - Working Pressure: PN10/16/25
 - Temperature Range: 0°C- 100°C
 - Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION			
Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Disc	EN-GJS-450-10	SS304, SS316, AL-Bronze UNC 95400
3	Stem	SS420	SS304, SS316, SS416
4	Spring	SS304	SS316
5	Rubber Seat	EPDM	NBR

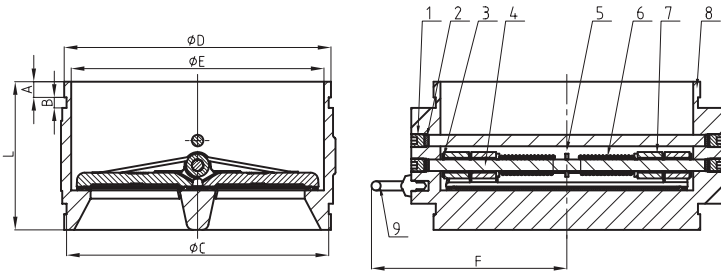
Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)				
Inch	mm	L	D		D1	D2
			PN10/16	PN25		
1.5"	40	54	92	—	58	46
2"	50	54	107	107	64	46
2.5"	65	54	127	127	79	60
3"	80	57	142	142	94	70
4"	100	64	162	168	117	84
5"	125	70	192	192	145	115
6"	150	76	218	224	170	134
8"	200	95	273	283	224	184
10"	250	108	328	340	265	220
12"	300	143	378	390	310	260
14"	350	184	438	457	360	302
16"	400	192	489	—	410	350
18"	450	203	539	—	450	385

Double Door Grooved Check Valve
(DH87X), PN10/16



DH87X



- CE
- Connection Ends: Groove to ISO 6182
 - Working Pressure: PN10/16
 - Temperature Range: 0°C- 100°C
 - Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION			
Part No.	Part	Standard Specification	Options
1	Countersunk Hex Head Screws	Carbon Steel Zinc Plated	
2	Seal Ring	EPDM	
3	Gasket	PTFE	
4	Shaft	SS420	SS304, SS316, SS431
5	Gasket	PTFE	
6	Spring	SS304	
7	Disc	SS304	SS316,QT450-10
8	Body	EN-GJS-450-10	
9	Eye Bolt	Carbon Steel Zinc Plated	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)						
Inch	mm	A	B	C	D	E	F	L
8"	219.1	19.1	11.1	214.4	219	200	165	160
10"	273.0	19.1	12.7	268.28	273	253	203	180
12"	323.9	19.1	12.7	318.29	324	307	228	180
14"	377.0	23.8	12.7	371.1	377	354	258	200

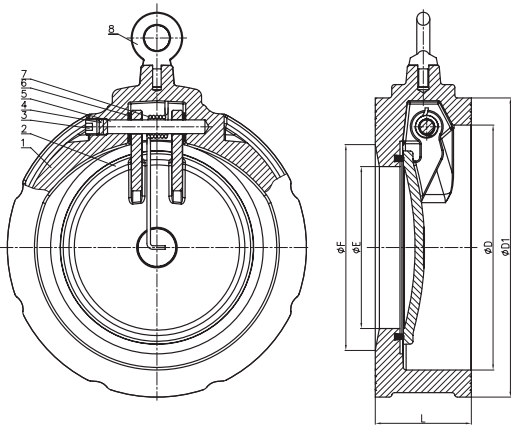
Single Door Wafer Check Valve
(DH74X), PN10/16



DH74X



- Connection Ends: BS EN 1092 PN10/PN16, AS 2129 TABLE E, JIS B2212 10K, BS 10 TABLE D/E
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Disc	SS304	SS316, AL-Bronze UNC 95400
3	Screw	Carbon Steel	SS304, SS316
4	Gasket	EPDM	NBR
5	Stem	SS420	SS304, SS316, SS416
6	Gasket	PTFE	
7	Spring	SS304	SS316
8	Lifting Hook	Carbon Steel Zinc Plated	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)				
Inch	mm	L	D	E	F	D1
2"	50	44.5	64	33	60	107
2.5"	65	48.0	79	42.9	73	127
3"	80	51.0	94	52.4	83.5	142
4"	100	57.0	118	76	106	162
5"	125	63.5	147	95	128	192
6"	150	70.0	178.5	118	150	218
8"	200	73.0	235	163.5	200	273
10"	250	79.0	281	194	238	329
12"	300	86.0	335	241.5	287	384

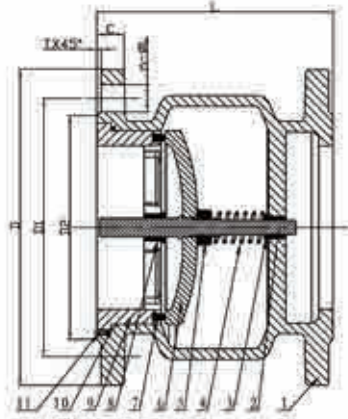
Silent Check Valve
(HC41X), PN10/16/25



HC41X



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16/25
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Stem	SS420	SS304, SS316, SS431
3	Hinge Bushing	Brass Hpb59-1	
4	Spring	SS304	SS316
5	Nut	SS304	SS316
6	Disc	EN-GJS-450-10	
7	O-Ring	EPDM	NBR
8	Hinge Bushing	Brass Hpb59-1	
9	Seat	EN-GJS-450-10	
10	O-Ring	NBR	EPDM
11	Screw	Carbon Steel Zinc Plated	SS304, SS316

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)						
Inch	mm		L	D	D1	d	C	T	n-φL
2"	50	10/16/25	120	165	125	99	19	3	4-Ø19
2.5"	65	10/16/25	135	185	145	118	19	3	4-Ø19
3"	80	10/16/25	155	200	160	132	19	3	8-Ø19
4"	100	10/16	165	220	180	156	19	3	8-Ø19
		25	165	235	190	156	19	3	8-Ø23
5"	125	10/16	190	250	210	184	19	3	8-Ø19
		25	190	270	220	184	19	3	8-Ø23
6"	150	10/16	210	285	240	211	19	3	8-Ø23
		25	210	300	250	211	20	3	8-Ø28
8"	200	10	260	340	295	266	20	3	8-Ø23
		16							12-Ø23
		25							12-Ø28
10"	250	10	285	405	350	319	22	3	12-Ø23
		16							12-Ø31
		25			370				12-Ø28
12"	300	10	315	460	400	370	24.5	4	12-Ø23
		16							12-Ø28
		25			430				16-Ø31

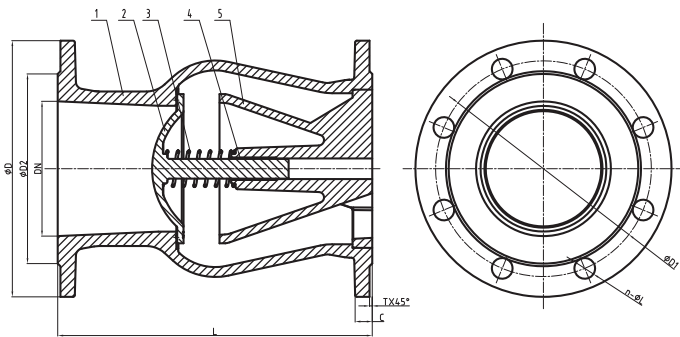
Axial Flow Check Valves
(HC42X), PN10/16



HC42X



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Disc	SS304+EPDM	SS304+NBR
3	Spring	SS304	SS316
4	Bushing	SS304+PTFE	
5	Diversion Body	EN-GJS-450-10	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)							
Inch	mm	L	D	D1	D2	C	T	n-Φd	
2"	50	120	165	125	99	19	3	4-Φ19	
2.5"	65	150	185	145	118	19	3	4-Φ19	
3"	80	180	200	160	132	19	3	8-Φ19	
4"	100	240	220	180	156	19	3	8-Φ19	
5"	125	300	250	210	184	19	3	8-Φ19	
6"	150	350	285	240	211	19	3	8-Φ23	
8"	200	450	340	295	266	20	3	12-Φ23	
10"	250	500	405	355	319	22	3	12-Φ28	
12"	300	550	460	410	370	24.5	4	12-Φ28	

DN		PN	Dimensions(mm)						
Inch	mm		L	D	D1	D2	C	T	n-Φd
2"	50	10/16	120	99	125	165	19	3	4-Φ19
2.5"	65	10/16	150	118	145	185	19	3	4-Φ19
3"	80	10/16	180	132	160	200	19	3	8-Φ19
4"	100	10/16	240	156	180	220	19	3	8-Φ19
5"	125	10/16	300	184	210	250	19	3	8-Φ19
6"	150	10/16	350	211	240	285	19	3	8-Φ23
8"	200	10	450	266	295	340	20	3	8-Φ23
		16							12-Φ23
10"	250	10	500	319	350	400	22	3	12-Φ23
		16			355				12-Φ28
12"	300	10	550	370	400	460	24.5	4	12-Φ23
		16			410				12-Φ28

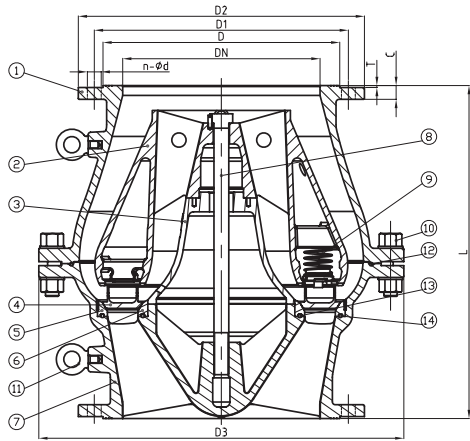
Axial Flow Check Valve
(HC42T), PN10



HC42T



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10
- Temperature Range: 0°C- 100°C
- Coating: Painting



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Upper Valve Body	EN-GJS-450-10	
2	Deversion Body	EN-GJS-450-10	
3	Deversion Body Seat	EN-GJS-450-10	
4	Disc	Bronze C61400	
5	Outside Seat	Bronze C61400	
6	Inside Seat	Bronze C61400	
7	Down Valve Body	EN-GJS-450-10	
8	Hange Pin	35CrMo	
9	Spring	SS304	SS316, SS420
10	Bolt	Carbon Steel Zinc Plated	
11	Eye Bolt	Carbon Steel Zinc Plated	SS304, SS316
12	O-Ring	NBR	EPDM
13	O-Ring	NBR	EPDM
14	O-Ring	NBR	EPDM

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)							
Inch	mm		L	D	D1	D2	D3	C	T	n-Φd
12"	300	10	500	370	400	455	580	24.5	4	12-Φ23
14"	350	10	600	429	460	520	670	26.5	4	16-Φ23
16"	400	10	675	480	515	580	740	28	4	16-Φ28
18"	450	10	750	530	565	640	780	30	4	20-Φ28
20"	500	10	850	582	620	670	895	26.5	4	20-Φ28
24"	600	10	1000	682	725	780	1115	30	5	20-Φ31
28"	700	10	1150	794	840	895	1230	32	5	24-Φ31
32"	800	10	1300	901	950	1015	1340	35	5	24-Φ34
36"	900	10	1450	1001	1050	1115	1505	37.5	5	28-Φ34

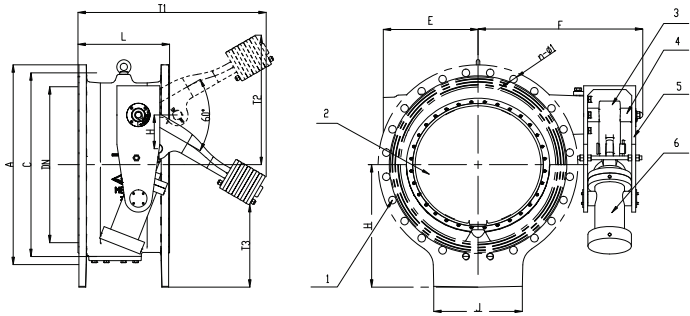
Slow Closure Butterfly Check Valve
(DHB44F), PN10



DHB44F



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION			
Part No.	Part	Standard Specification	
1	Valve Body	EN-GJS-450-10	
2	Disc	EN-GJS-450-10	
3	Jointed Arm	EN-GJS-600-03	
4	Stem	SS420	
5	Cylinder Support	Carbon Steel	
6	Buffer Cylinder	Carbon Steel	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)										
Inch	mm	A	C	L	E	F	H	J	T1	T2	T3	n-Φ1
16"	400	580	515	310	280	503	350	300	695	432	117.8	16-Φ28
20"	500	715	582	350	330	636	442.5	380	672	381	177	23-Φ34
24"	600	840	682	390	390	695.5	540	450	740	495	373	26-Φ37
32"	800	1025	950	470	486	845.5	624	455	961	600	422	24-Φ34
36"	900	1125	1050	510	550	902.5	717.5	500	988.7	724.67	513.67	28-Φ34
40"	1000	1255	1160	550	607.5	1042.5	798.5	568	1081.7	708.3	501.8	28-Φ37
48"	1200	1405	1380	630	907	1147	800	1200	1286	1142	551	32-Φ40
52"	1600	1830	1820	790	1220	1548	1020	1600	1661	1424	627	40-Φ49

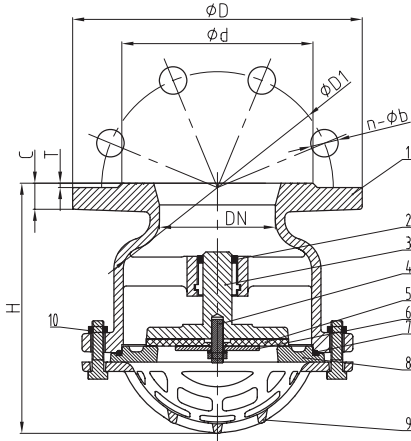
Flanged Bottom Valve
(HD41X), PN10/16



HD41X



- Connection Ends: BS EN 1092-2
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Painting



MATERIAL SPECIFICATION			
Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Bushing	Nylon1010	
3	Disc	EN-GJS-450-10	
4	Stud Bolt	SS304	
5	Seal	EPDM	NBR
6	Plate	≤100:SS420; ≥125:EN-GJS-450-10	
7	O-Ring	NBR	EPDM
8	Seat	EN-GJS-450-10	
9	Bonnet	EN-GJS-450-10	
10	Bolt	Carbon Steel Zinc Plated	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

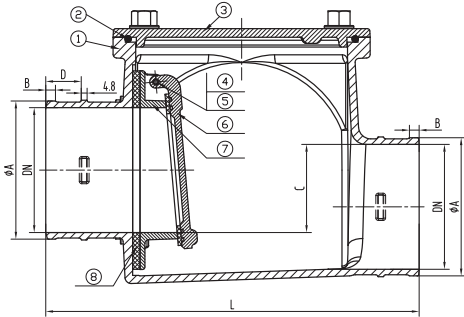
DN		PN	Dimensions(mm)						
Inch	mm		H	D	D1	d	C	T	n-Φb
2"	50	10/16	133	165	125	99	19	3	4-Φ19
2.5"	65	10/16	155	185	145	118	19	3	4-Φ19
3"	80	10/16	173	200	160	132	19	3	4-Φ19
4"	100	10/16	183	220	180	156	19	3	8-Φ19
5"	125	10/16	206	250	210	184	19	3	8-Φ19
6"	150	10/16	239	285	240	211	19	3	8-Φ23
8"	200	10	346	340	295	266	20	3	8-Φ23
		16	346	340	295	266	20	3	12-Φ23
10"	250	10	412	400	350	319	22	3	12-Φ23
		16	412	400	355	319	22	3	12-Φ28
12"	300	10	399	455	400	370	24.5	4	12-Φ23
		16	399	455	410	370	24.5	4	12-Φ28

Backwater Valve
(HSB4X), PN10



HSB4X

- Connection Ends: ASTM A888
- Working Pressure: PN10
- Temperature Range: 0°C - 80°C
- Coating: Painting



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	EN-GJS-450-10
2	O-Ring	NBR
3	Bonnet	EN-GJS-450-10
4	Bolt	SS304
5	Nut	SS304
6	Disc	ASTM B62 C83600
7	Seat	ASTM B62 C83600
8	Disc Seat Ring	EPDM

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)				
Inch	mm		L	A±2.29	B	C (min)	D
2"	50	10	203	61.21	6.35	25	29
3"	80	10	241	86.61	6.35	38	29
4"	100	10	305	112.78	7.87	50	29
6"	125	10	394	161.54	7.87	76	38
8"	150	10	457	214.38	7.87	101	51

Flanged Y-Type Strainer
(V4), PN10/16/25

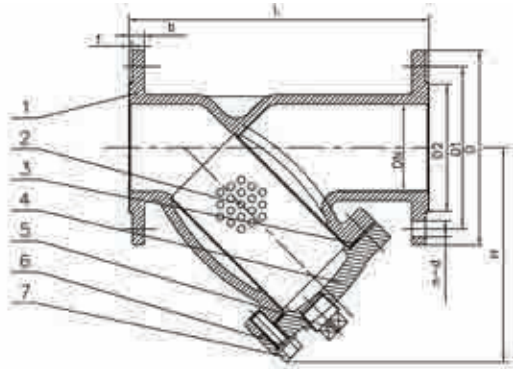


V4



CE NSF/ANSI 61 NSF/ANSI 372

- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16/25
- Temperature Range: -10°C- 200°C graphite gasket
0°C- 100°C rubber gasket
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Screen	SS304 (Perforated)	SS304, SS316 (Perforated, Knitted, Double Screen)
3	Gasket	Graphite+Acanthopore Plate	EPDM
4	Bonnet	EN-GJS-450-10	
5	Plug	Malleable Iron Galvanized	Bronze ASTM B584
6	Bolt	Carbon Steel Zinc Plated	SS304, SS316
7	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316

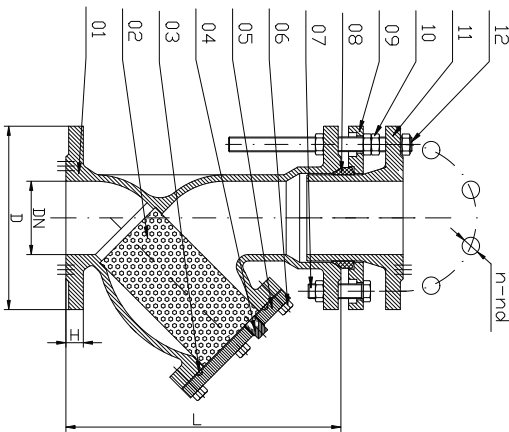
Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)							
Inch	mm		L	D	D1	D2	b	n-Φd	f	H
1/2"	15	10/16/25	130±2	95	65	45	14	4-Φ14	2	59
3/4"	20	10/16/25	150±2	105	75	56	16	4-Φ14	2	68
1"	25	10/16/25	160±2	115	85	65	16	4-Φ14	3	70
1 1/4"	32	10/16/25	180±2	140	100	76	18	4-Φ19	3	86
1.5"	40	10/16/25	200	150	110	90	19	4-Φ19	3	140
2"	50	10/16/25	230	165	125	99	19	4-Φ19	3	140
2.5"	65	10/16/25	290	185	145	118	19	4-Φ19 8-Φ19	3	175
3"	80	10/16/25	310	200	160	132	19	8-Φ19	3	198
4"	100	10/16/25	350	220	180	156	19	8-Φ19 8-Φ23	3	229
5"	125	10/16/25	400	250	210	184	19	8-Φ19	3	287
6"	150	10/16/25	480	285	240	211	19	8-Φ23	3	304
8"	200	10/16/25	600	340	295	266	20	8-Φ23 12-Φ23	3	370.5
10"	250	10/16/25	730	405	350	319	22	12-Φ23 12-Φ28	3	469
12"	300	10/16/25	850	460	400	370	24.5	12-Φ28 16-Φ31	4	540
14"	350	10/16/25	838	520	460	429	26.5	16-Φ23 16-Φ28	4	625
16"	400	10/16/25	864	580	515	480	28	16-Φ28 16-Φ31	4	715
18"	450	10/16/25	1200	640	565	530	30	20-Φ28 20-Φ31	4	862
20"	500	10/16/25	1250	715	620	582	31.5	20-Φ28 20-Φ34	4	926
24"	600	10/16/25	1450	840	725	682	36	20-Φ31 20-Φ37	5	1057

SHORT STYLE

DN		PN	Dimensions(mm)							
Inch	mm		L	D	D1	D2	b	n-Φd	f	H
18"	450	10/16/25	850	640	565	530	30	20-Φ28 20-Φ31	4	693
20"	500	10/16/25	1000	715	620	582	31.5	20-Φ28 20-Φ34	4	774
24"	600	10/16/25	1100	840	725	682	36	20-Φ31 20-Φ37	5	956

Telescopic Y-Type Strainer
(VYS4), PN10/16



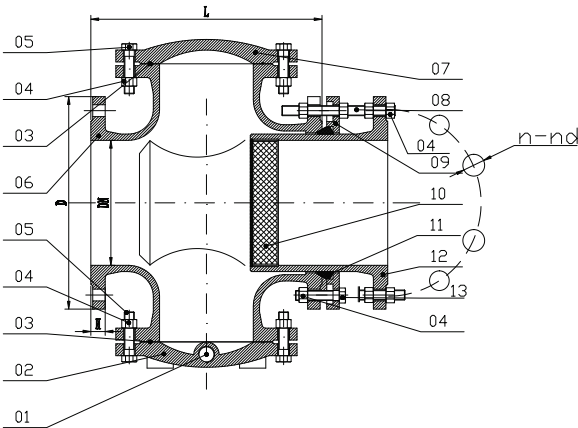
- VYS4
- CE
- Connection Ends: Flange to BS EN 1092-2:1997
 - Working Pressure: PN10/16
 - Temperature Range: 0°C- 100°C
 - Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION			
Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Screen	SS304 (Perforated)	SS304, SS316 (Perforated, Knitted, Double Screen)
3	O-Ring	NBR	EPDM
4	Plug	Carbon Steel Zinc Plated	SS304, SS316
5	Bonnet	EN-GJS-450-10	
6	Bolt	Carbon Steel Zinc Plated	SS304, SS316
7	Bolt1	Carbon Steel Zinc Plated	SS304, SS316
8	Gasket	NBR	EPDM
9	Gland	EN-GJS-450-10	
10	Nut	Carbon Steel Zinc Plated	SS304, SS316
11	Telescopic Flange	EN-GJS-450-10	
12	Screw	Carbon Steel Zinc Plated	SS304, SS316

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)			
Inch	mm		L	D	H	n-Ød
2"	50	10/16	225	165	19	4-Ø19
2.5"	65	10/16	260	185	19	4-Ø19
3"	80	10/16	300	200	19	8-Ø19
4"	100	10/16	340	220	19	8-Ø19
5"	125	10/16	384	250	19	8-Ø19
6"	150	10/16	450	285	19	8-Ø23
8"	200	10	550	340	20	8-Ø23
		16				12-Ø23

Telescopic Cross Type Strainer
(VSS4), PN10/16



- VSS4
- CE
- Connection Ends: Flange to BS EN 1092-2:1997
 - Working Pressure: PN10/16
 - Temperature Range: 0°C- 100°C
 - Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION			
Part No.	Part	Standard Specification	Options
1	Plug	Malleable Iron Galvanized	SS304, 316
2	Bonnet	EN-GJS-450-10	
3	O-Ring	NBR	EPDM
4	Nut	Carbon Steel Zinc Plated	SS304, SS316
5	Bolt	Carbon Steel Zinc Plated	SS304, SS316
6	Valve Body	EN-GJS-450-10	
7	Bonnet	EN-GJS-450-10	
8	Screw	Carbon Steel Zinc Plated	SS304, SS316
9	Gland	EN-GJS-450-10	
10	Screen	SS304 (Perforated)	SS304, SS316 (Perforated, Knitted, Double Screen)
11	Gasket	NBR	EPDM
12	Telescopic Flange	EN-GJS-450-10	
13	Bolt	Carbon Steel Zinc Plated	SS304, SS316

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)			
Inch	mm		L	D	H	n-Ød
2"	50	10/16	150	165	19	4-Ø19
2.5"	65	10/16	175	185	19	4-Ø19
3"	80	10/16	200	200	19	8-Ø19
4"	100	10/16	220	220	19	8-Ø19
5"	125	10/16	260	250	19	8-Ø19
6"	150	10/16	300	285	19	8-Ø23
8"	200	10	370	340	20	8-Ø23
		16	370	340	20	12-Ø23

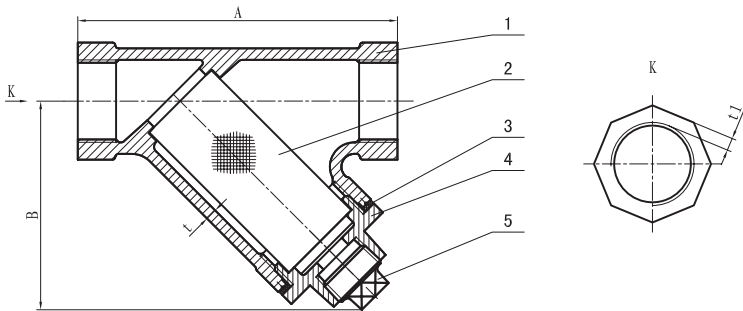
Threaded Y-Type Strainer
(V1), PN10/16



V1

CE NSF/ANSI 61 NSF/ANSI 372

- Connection Ends: Thread to ISO 7-1
- Working Pressure: 2.5Mpa -29°Cto 66°C
1.6Mpa 208°C
- Coating: Painting



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Screen	SS304	SS316
3	Sealing Washer	Graphite + Acanthopore Plate	PTFE
4	Cover	EN-GJS-450-10	
5	Plug	Malleable Iron Galvanized	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)				
Inch	mm	A	B(max)	Plug	t	t1
1/4"	8	81	55	1/4"	2.4	2.4
3/8"	10	81	57	1/4"	2.5	2.5
1/2"	15	81	70	3/8"	2.54	2.54
3/4"	20	95	72	3/8"	3	3
1"	25	102	78	1/2"	4.06	4.06
1 1/4"	32	127	92	1/2"	4.83	4.83
1 1/2"	40	146	118	1/2"	4.83	4.83
2"	50	177	120	1/2"	5.59	5.59
2 1/2"	65	234	136	3/4"	5.59	5.59
3"	80	254	150	3/4"	5.59	5.59

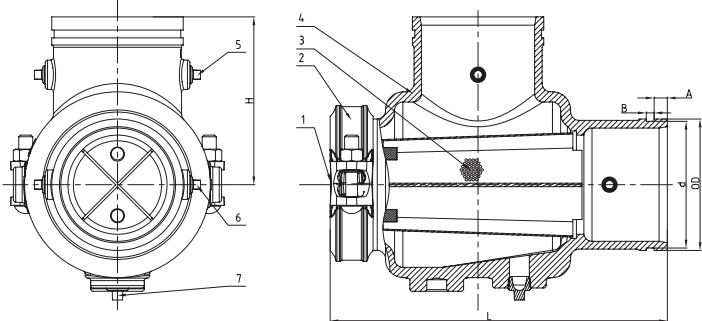
Grooved Diversion Strainer
(V8D), PN10/16



V8D

CE

- Connection Ends: Groove to ISO 6182
- Working Pressure: PN10/16
- Temperature Range: 0°C- 100°C
- Coating: Painting



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Cap	EN-GJS-450-10
2	Coupling	EN-GJS-450-10
3	Screen	SS304
4	Valve Body	EN-GJS-450-10
5	Plug	Malleable Iron Galvanized
6	Plug	Malleable Iron Galvanized
7	Plug	Malleable Iron Galvanized

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)					
Inch	mm	L	H	OD	d	A	B
8"	200	483	229	219	214.4	19.1	12.7
10"	250	584	279	273	268.3	19.1	12.7
12"	300	679	336	324	318.3	19.1	12.7
14"	350	726	365	377	371.1	23.8	12.7

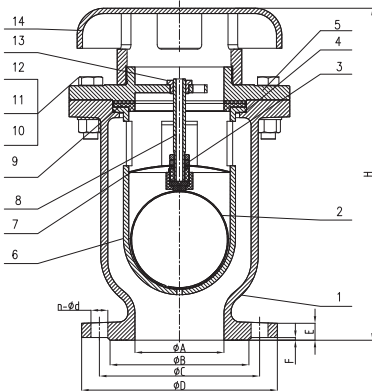
Compound High Speed
Air Bleeding Valve (ZFGP4X),
PN10/16



ZFGP4X



- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: 0°C - 40°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Floating Ball	SS304	
3	Nut	SS304	SS316
4	O-Ring	NBR	EPDM
5	Bonnet	EN-GJS-450-10	
6	Floating Ball Cap	EN-GJS-450-10	
7	Lift Cover	SS304	
8	Stem	SS304	SS316
9	Gasket	EPDM	NBR
10	Hex Nut	Carbon Steel Zinc Plated	SS304, SS316
11	Flat Washer	Carbon Steel Zinc Plated	SS304, SS316
12	Hex Bolt	Carbon Steel Zinc Plated	SS304, SS316
13	Guide Sleeve	H62	
14	Draft Hood	EN-GJS-450-10	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)							
Inch	mm		A	B	C	D	n-Φd	E	F	H
2"	50	10/16	50	99	125	165	4-Φ19	19	3	278
2.5"	65	10/16	56	118	145	185	4-Φ19	19	3	278
3"	80	10/16	80	132	160	200	8-Φ19	19	3	302
4"	100	10/16	100	156	180	220	8-Φ19	19	3	373
6"	150	10/16	150	211	240	285	8-Φ23	19	3	410
8"	200	10	200	266	295	340	8-Φ23	20	3	504
		16					12-Φ23			

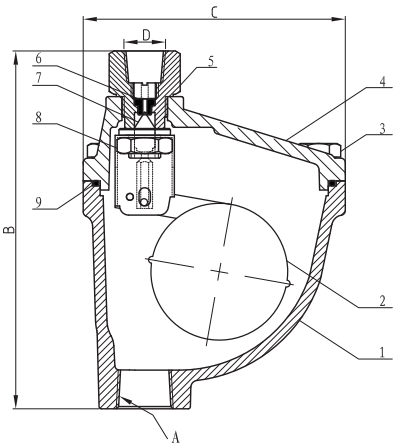
Micro Air Bleeding Valve
(ARVX), PN10/16



ARVX



- Connection Ends: ISO 7-1
- Working Pressure: PN10/16
- Temperature Range: 0°C- 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Ball	SS304	
3	Hex Bolt	Carbon Steel Zinc Plated	SS304, SS316
4	Bonnet	EN-GJS-450-10	
5	Exhaust Joint	HPb59-1	
6	Exhaust Gasket	EPDM	NBR
7	Valve Needle	SS304	
8	Nut	SS304	
9	O-Ring	NBR	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

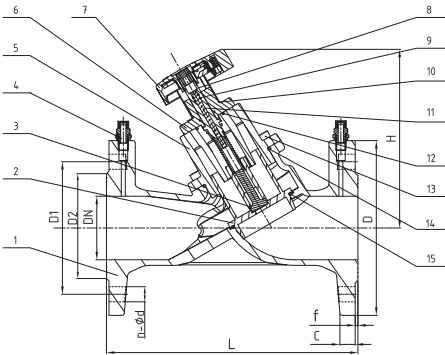
DN		Dimensions(mm)			
Inch	mm	A	B	C	D
1/2"	15	Rc 1/2"	157	115	Rc 3/8"
3/4"	20	Rc 3/4"	157	115	Rc 3/8"
1"	25	Rc 1"	157	115	Rc 3/8"
1 1/4"	32	Rc 1-1/4"	157	115	Rc 3/8"
1 1/2"	40	Rc 1-1/2"	157	115	Rc 3/8"

Flange Static Flow Balancing Valve (PHF), PN10/16



PHF

- Design standard : BS 7350, BS EN 13789
- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: -10°C- 120°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Disc	Brass HPb59-1	
3	Disc Screw	Brass HPb59-1	
4	Pressure Mouth	Brass HPb59-1	
5	Cover	Brass HPb59-1	
6	Gland	Brass H59	
7	Handwheel	PA GF30	
8	Valve Stem	Brass HPb59-1	
9	O-Ring	NBR	EPDM
10	Socket Head Bolts	Stainless Steel	
11	Adjusting Screw	Brass HPb59-1	
12	O-Ring	NBR	EPDM
13	Socket Head Bolts	Stainless Steel	
14	O-Ring	NBR	EPDM
15	O-Ring	NBR	EPDM

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		PN	Dimensions(mm)								Turns to Open
Inch	mm		L	H	D	D1	D2	C	f	n-Φd	
2.5"	65	10/16	290	185	185	145	118	19	3	4-Φ19	8.0
3"	80	10/16	310	225	200	160	132	19	3	8-Φ19	7.0
4"	100	10/16	350	240	220	180	156	19	3	8-Φ19	8.0
5"	125	10/16	400	280	250	210	184	19	3	8-Φ19	8.0
6"	150	10/16	480	300	285	240	211	19	3	8-Φ23	8.0
8"	200	10	600	450	340	295	266	20	3	8-Φ23	11.0
		16								12-Φ23	
10"	250	10	730	500	395	350	319	22	3	12-Φ23	12.0
		16			405	355				12-Φ28	
12"	300	10	850	550	445	400	370	24.5	4	12-Φ23	16.0
		16			460	410				12-Φ28	

Kv Valve

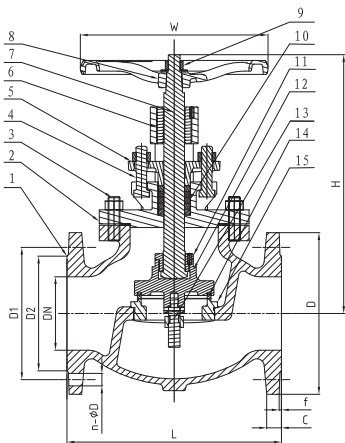
Turns	DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300
0.5	5.25	5.82	6.75	12.53	13.95	16.95	25.56	—
1	6.6	7.1	9.59	18.1	20.92	23.99	38.35	—
1.5	7.27	11.35	13.06	18.65	40.8	26.56	46.39	—
2	7.52	15.9	16.23	22.66	61.63	27.73	70.5	—
2.5	8.74	19.48	21.53	37.93	78.3	64.89	92.96	—
3	10.92	20.85	31.51	49.94	93.27	103.45	118.13	150
3.5	12.52	21.54	43.33	61.56	115.67	142.84	137.86	230
4	16.81	35.64	59.78	98.05	176.22	180.7	140.78	300
4.5	27.99	56.39	88.91	138.35	229.09	235.18	155.16	370
5	41.13	71.26	102.2	157.86	264.37	302.83	218.04	450
5.5	48.27	82.26	118.78	171.53	295.9	349.95	305.13	535
6	53.53	93.14	135.45	201.14	321.68	398.94	367.7	620
6.5	54.21	101.89	150.46	229.62	339.38	451.81	412.42	690
7	59.66	107.92	164.24	246.41	359.75	504.36	470.32	750
7.5	64.8	—	178.1	266.38	379.97	547.39	530.14	815
8	70.65	—	188.06	280.3	407.04	561.53	601.35	890
8.5	—	—	—	—	—	590.88	669.96	930
9	—	—	—	—	—	632.76	725.97	970
9.5	—	—	—	—	—	663.03	795.4	1005
10	—	—	—	—	—	690.38	843.75	1040
10.5	—	—	—	—	—	—	897.44	1080
11	—	—	—	—	—	—	948.39	1120
11.5	—	—	—	—	—	—	1004.88	1160
12	—	—	—	—	—	—	1056.54	1200
13	—	—	—	—	—	—	—	1320
14	—	—	—	—	—	—	—	1370
15	—	—	—	—	—	—	—	1400
16	—	—	—	—	—	—	—	1450

Flanged Metal Seated Globe Valve (J41H), PN10/16



J41H

- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: -10°C- 150°C
- Coating: Painting



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve body	EN-GJS-450-10	
2	Bonnet	EN-GJS-450-10	
3	Stud	Carbon Steel Zinc Plated	SS304
4	Bolt	Carbon Steel Zinc Plated	SS304
5	Gland Follower	EN-GJS-450-10	
6	Stem Nut	Brass HPb59-1	
7	Stem	Stainless Steel	
8	Handwheel	EN-GJS-450-10	
9	Nut	Carbon Steel Zinc Plated	SS304
10	Stem Packing	Graphite	
11	Disc Cover	EN-GJS-450-10	
12	Disc	EN-GJS-450-10	
13	Guide Post	Stainless Steel	
14	Disc Seal Ring	SS304	
15	Seat Ring	SS304	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

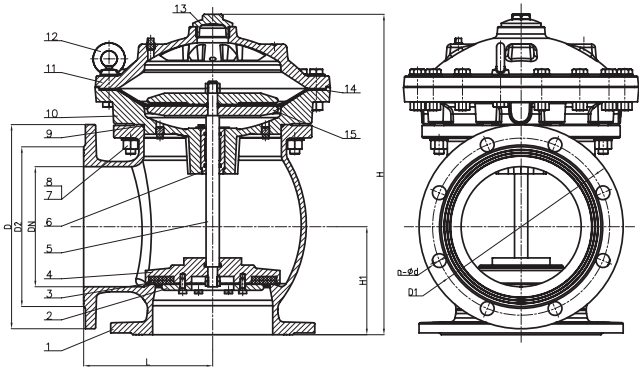
DN		PN	Dimensions(mm)								
Inch	mm		L	H	D	D1	D2	C	f	n-Φd	W
2"	50	10/16	203	284	165	125	99	19	3	4-Ø19	200
2.5"	65	10/16	216	289	185	145	118	19	3	4-Ø19	200
3"	80	10/16	241	330	200	160	132	19	3	8-Ø19	200
4"	100	10/16	292	343	220	180	156	19	3	8-Ø19	250
5"	125	10/16	330	367	250	210	184	19	3	8-Ø19	250
6"	150	10/16	356	444	285	240	211	19	3	8-Ø23	300
8"	200	10	495	485	340	295	266	20	3	8-Ø23	400
		16								12-Ø23	
10"	250	10	622	539	395	350	319	22	3	12-Ø23	500
		16			405	355				12-Ø28	
12"	300	10	698	697	445	400	370	24.5	4	12-Ø23	500
		16			460	410				12-Ø28	

Film Fast Sludge-drainage Valve
(JM744X), PN10



JM744X

- Connection Ends: Flange to BS EN 1092-2:1997
- Working Pressure: PN10
- Temperature Range: 0°C- 100°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550



MATERIAL SPECIFICATION

Part No.	Part	Standard Specification	Options
1	Valve Body	EN-GJS-450-10	
2	Press Plate	EN-GJS-450-10	
3	Sealing Gasket	EPDM	NBR
4	Disc	EN-GJS-450-10	
5	Stem	SS420	SS304, SS316, SS431
6	Bearing Sleeve	Bronze C89833	
7	Screw Bolt	Carbon steel	SS304, SS316
8	Nut	Carbon steel	SS304, SS316
9	O-Ring	NBR	EPDM
10	Bonnet	EN-GJS-450-10	
11	Bonnet	EN-GJS-450-10	
12	Eyenuit	SS304	
13	Plug	Bronze C89833	
14	Membrane	EPDM	
15	Press Plate	EN-GJS-450-10	

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Dimensions(mm)						
Inch	mm	L	D	D1	D2	n-Ød	H	H1
4"	100	160	220	180	156	8-Ø19	346	120
6"	150	190	285	240	211	8-Ø23	450	150
8"	200	215	340	295	266	8-Ø23	535	180
10"	250	275	400	350	319	12-Ø23	645	230
12"	300	280	455	400	370	12-Ø23	765	260

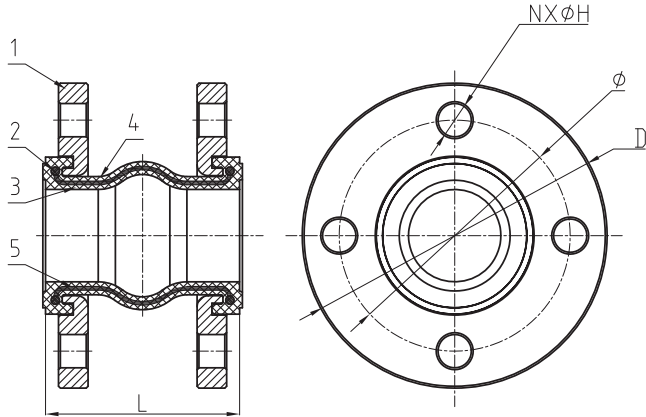
Flexible Rubber Joint Single Sphere
Electroplated Carbon Steel Flange
Connection (XTQ1RF), PN10/16



XTQ1RF



- Connection Ends: Flange Drilling to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: -10°C- 115°C
- Vacuum Capacity: 700MM/HG

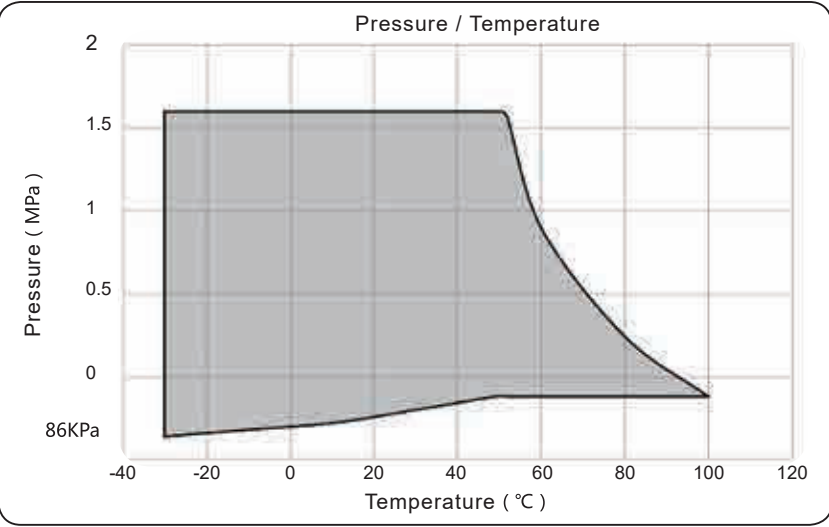


MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Flange	Galvanized Carbon Steel
2	Reinforcing Ring	Carbon Steel
3	Rubber (Inner)	EPDM
4	Rubber (Outer)	EPDM
5	Reinforcing Fabric	Nylon Fabric

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Neutral Length(mm)				Axial(mm)		Transverse Movement(mm)	Angular Deflection Deg.
Inch	mm	L	D	Ø	N-ØH	Elongation	Compression		
1 1/4"	32	95	140	100	4X18	6	10	10	25
1 1/2"	40	95	150	110	4X18	6	10	10	25
2"	50	105	165	125	4X18	6	10	10	25
2 1/2"	65	115	185	145	8X18	8	15	12	25
3"	80	135	200	160	8X18	8	15	12	25
4"	100	150	220	180	8X18	12	20	16	15
5"	125	165	250	210	8X18	12	20	16	15
6"	150	180	285	240	8X22	12	20	16	15
8"	200	210	340	295	12X22	12	20	16	15
10"	250	230	405	355	12X26	14	30	25	8
12"	300	230	460	410	12X26	14	30	25	8
14"	350	265	520	470	12X26	14	30	25	8
16"	400	265	580	525	16X30	14	30	25	8
18"	450	265	640	585	20X30	14	30	25	8
20"	500	265	715	650	20X33	14	30	25	8
24"	600	265	840	770	20X36	14	30	25	8

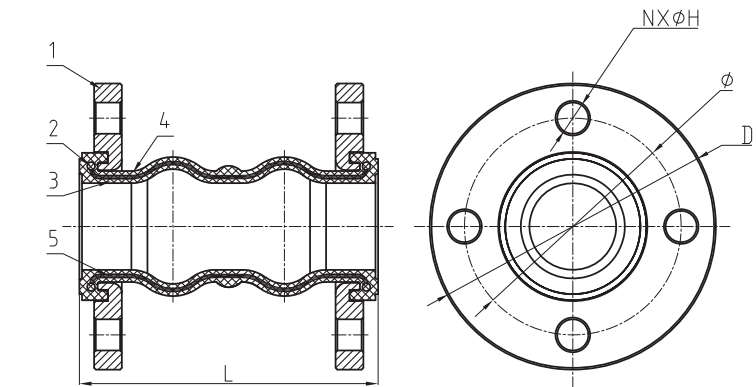


Flexible Rubber Joint Twin Sphere
Electroplated Carbon Steel Flange
Connection (XTQ2RF), PN10/16



XTQ2RF
CE

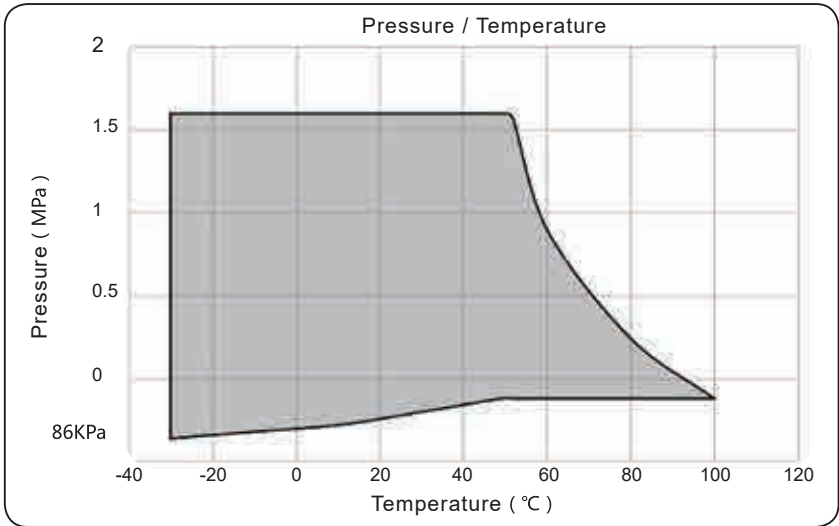
- Connection Ends: Flange Drilling to BS EN 1092-2:1997
- Working Pressure: PN10/16
- Temperature Range: -10°C - 115°C
- Vacuum Capacity: 650MM/HG



MATERIAL SPECIFICATION		
Part No.	Part	Standard Specification
1	Flange	Galvanized Carbon Steel
2	Reinforcing Ring	Carbon Steel
3	Rubber (Inner)	EPDM
4	Rubber (Outer)	EPDM
5	Reinforcing Fabric	Nylon Fabric

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Neutral Length(mm)				Axial(mm)		Transverse Movement(mm)	Angular Deflection Deg.
Inch	mm	L	D	Ø	N-ØH	Elongation	Compression		
1 1/4"	32	175	140	100	4X18	30	45	45	45
1 1/2"	40	175	150	110	4X18	30	45	45	45
2"	50	175	165	125	4X18	30	45	45	45
2 1/2"	65	175	185	145	8X18	30	45	45	45
3"	80	175	200	160	8X18	35	50	40	30
4"	100	225	220	180	8X18	35	50	40	30
5"	125	225	250	210	8X18	35	50	40	30
6"	150	225	285	240	8X22	35	60	35	15
8"	200	325	340	295	12X22	35	60	35	15
10"	250	325	405	355	12X26	35	60	35	15
12"	300	325	460	410	12X26	35	60	35	15
14"	350	350	520	470	12X26	35	60	35	15

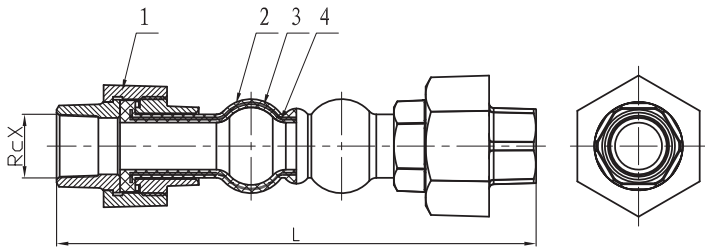


Flexible Rubber Joint Twin Sphere
Union-Screw End Connection(XTQ2L),
PN10/16



XTQ2L
CE

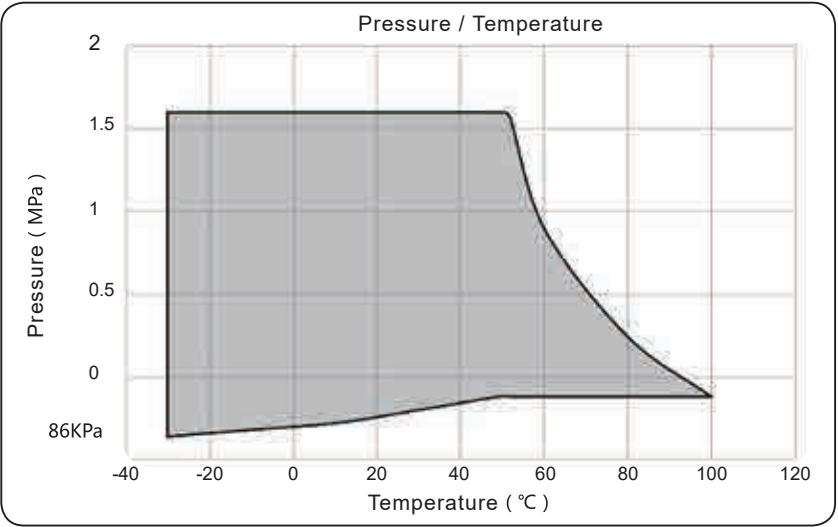
- Thread: ISO 7-1
- Working Pressure: PN10/16
- Temperature Range: -10°C -115°C
- Vacuum Capacity: 500MM/HG



MATERIAL SPECIFICATION		
Part No.	Part	Standard Specification
1	Union	Malleable iron
2	Rubber (Outer)	EPDM
3	Reinforcing Fabric	Nylon Fabric
4	Rubber (Inner)	EPDM

Note: For special material request other than standard specification, please indicate clearly on the inquiry or order list.

DN		Neutral Length(mm)	Thread	Axial(mm)		Transverse Movement(mm)	Angular Deflection Deg.
Inch	mm	L	Rc X	Elongation	Compression		
1/2"	15	200	Rc 1/2	6	22	22	40
3/4"	20	200	Rc 3/4	6	22	22	40
1"	25	200	Rc 1	6	22	22	40
1 1/4"	32	200	Rc 1 1/4	6	22	22	40
1 1/2"	40	200	Rc 1 1/2	6	22	22	40
2"	50	200	Rc 2	6	22	22	40
2 1/2"	65	240	Rc 2 1/2	6	22	22	40
3"	80	240	Rc 3	6	22	22	40



Hydraulic Control Valve, PN10/16/25

• Statement

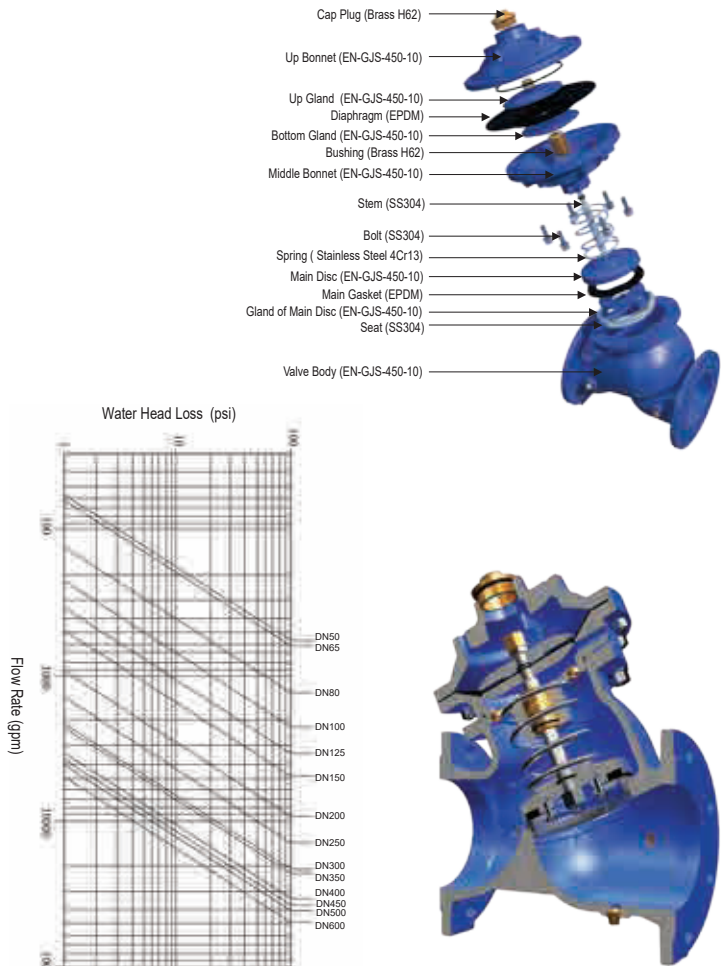
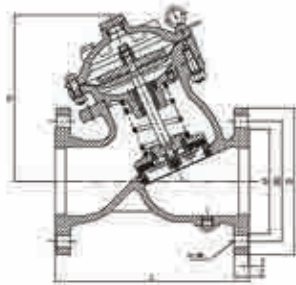
The hydraulic control valve was initially originated in Holand, Israel and Denmark, used for agricultural irrigation. Later the product was introduced into the United Sates, Canada and Asian countries. It was from the 1990s when the product first entered China, and ever since its entrance it gets rapidly developped and widely applied in different industrie aside from irrigation.

The hydraulic control valve produced by Jinan Meide is new style that absorbed the essence of other well-known brands which makes it better in energy saving, consumption reducing and accurate adjusting achieving. The MECH brand hydraulic control valves have been widely used in China, Europe and South East Asian countries in pipe system of irrigation, water supplying, fire protection and air conditioning which has medium of water under 80 °C or other medium with similar physical and chemical property as water.

• Specifications

- Basic Valve: Y-Type Direct-flow
- Connection Ends: Flange to BS EN 1092-2:1997
- Temperature Range: 0°C- 100°C
- Working Pressure: PN10/PN16/PN25
- Testing Standard: API 598

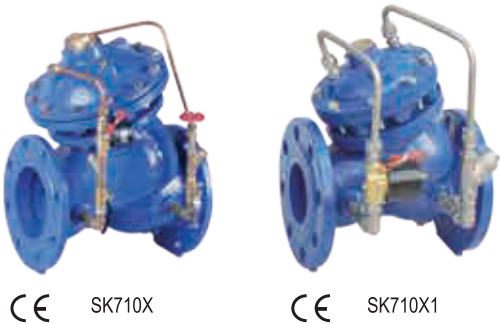
• Flow Diagram of Basic Valve



DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
Kv	41	53	105	175	285	402	730	1160	1400	1770	3010	3225	3395	4272

DN		PN	Dimensions(mm)							
Inch	mm		L	H	D	D1	d	C	T	n-ΦL
2"	50	10/16	203	170	165	125	99	19	3	4-Φ19
2.5"	65	10/16	216	195	185	145	118	19	3	4-Φ19
3"	80	10/16	241	215	200	160	132	19	3	8-Φ19
4"	100	10/16	292	255	220	180	156	19	3	8-Φ19
5"	125	10/16	330	290	250	210	184	19	3	8-Φ19
6"	150	10/16	356	360	285	240	211	19	3	8-Φ23
8"	200	10	495	450	340	295	266	20	3	8-Φ23
		16	495		340	295	266	20	3	12-Φ23
10"	250	10	622	550	405	350	319	22	3	12-Φ23
		16	622		405	355	319	22	3	12-Φ28
12"	300	10	698	645	460	400	370	24.5	4	12-Φ23
		16	698		460	410	370	24.5	4	12-Φ28
14"	350	10	787	700	505	460	429	24.5	4	16-Φ23
		16	787		520	470	429	26.5	4	16-Φ28
16"	400	10	914	790	565	515	480	24.5	4	16-Φ28
		16	914		580	525	480	28	4	16-Φ31
18"	450	10	978	850	615	565	530	25.5	4	20-Φ28
		16	978		640	580	548	30	4	20-Φ31
20"	500	10	978	900	670	620	582	26.5	4	20-Φ28
		16	978		715	625	609	31.5	4	20-Φ34
24"	600	10	1295	1030	780	725	682	30	5	20-Φ31
		16	1295		840	770	720	36	5	20-Φ37

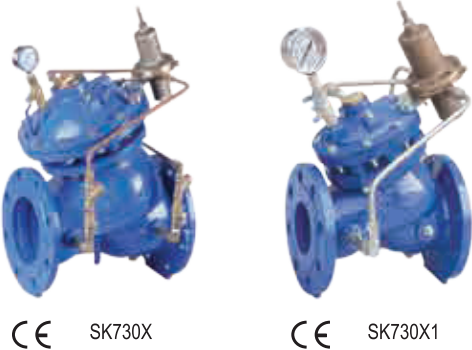
✂ Electromagnetic Control Valve



✂ Pressure Reducing Valve



✂ Pressure Relief & Sustaining Valve



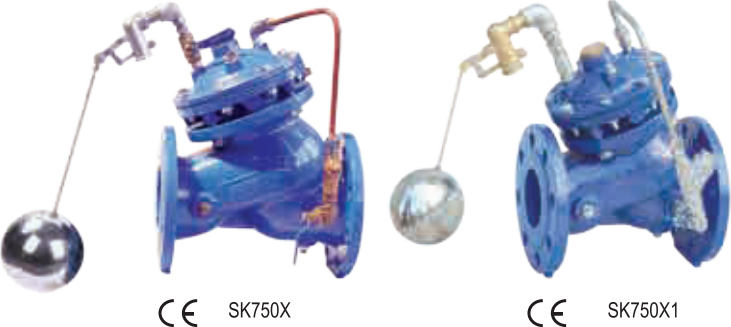
✂ Surge Anticipating Valve



✂ Pump Control Valve / Slow Shut Control Valve



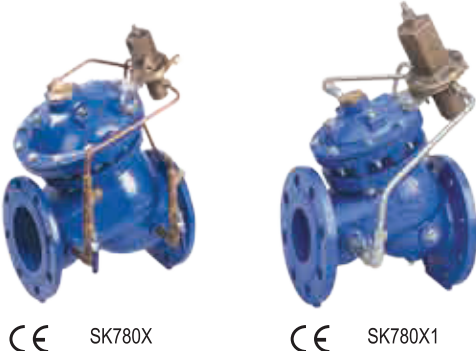
✂ Remote Float Control Valve



✂ Slow Shut Control Valve



✂ Pressure Differential By-pass Balancing Valve



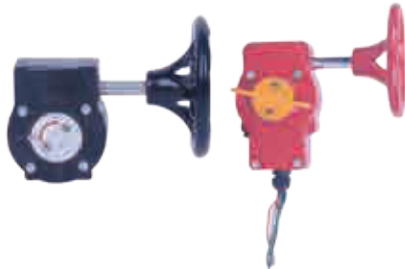
※ T Key



※ Electric Actuator



※ Butterfly Valve Gearbox



※ Butterfly Valve Lever



※ Hand Wheel



※ Operating Nut



※ Gasket For Flange Connection



※ O-Ring



※ Plug



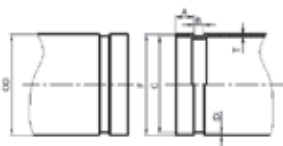
※ Fastener : Bolt, Nut, Washer



Roll Groove Dimensions

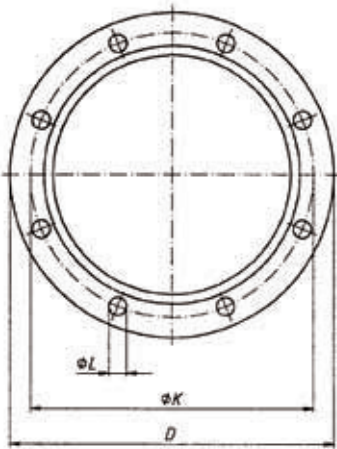


Roll Grooving Machine



Nominal Size mm/in	Pipe OD			Gasket seat A ±0.76/±0.03 mm/in	Groove Width B ±0.76/±0.03 mm/in	Groove Dia C		Groove Depth D(ref) mm/in	Max Allow Flare Dia F mm/in	Min. Allow wall thickness T mm/in
	Basic mm/in	Tolerance mm/in				Basic mm/in	Tolerance mm/in			
25 1	33.7 1.327	+0.41 +0.016	-0.68 -0.026	15.88 0.625	7.14 0.281	30.23 1.190	-0.38 -0.015	1.60 0.063	34.5 1.358	1.8 0.071
32 1¼	42.4 1.669	+0.50 +0.020	-0.60 -0.023	15.88 0.625	7.14 0.281	38.99 1.535	-0.38 -0.015	1.60 0.063	43.3 1.705	1.8 0.071
40 1½	48.3 1.900	+0.44 +0.017	-0.52 -0.020	15.88 0.625	7.14 0.281	45.09 1.779	-0.38 -0.015	1.60 0.063	49.4 1.945	1.8 0.071
50 2	60.3 2.375	+0.61 +0.024	-0.61 -0.024	15.88 0.625	8.74 0.344	57.15 2.250	-0.38 -0.015	1.60 0.063	62.2 2.449	1.8 0.071
65 2½	73.0 2.875	+0.74 +0.029	-0.74 -0.029	15.88 0.625	8.74 0.344	69.09 2.720	-0.46 -0.018	1.98 0.078	75.2 2.961	2.3 0.091
65 2½	76.1 3.000	+0.76 +0.030	-0.76 -0.030	15.88 0.625	8.74 0.344	72.26 2.845	-0.46 -0.018	1.99 0.078	77.7 3.059	2.3 0.091
80 3	88.9 3.500	+0.89 +0.035	-0.79 -0.031	15.88 0.625	8.74 0.344	84.94 3.344	-0.46 -0.018	1.98 0.078	90.6 3.567	2.3 0.091
100 4	108.0 4.250	+1.07 +0.042	-0.79 -0.031	15.88 0.625	8.74 0.344	103.73 4.084	-0.51 -0.020	2.11 0.083	109.7 4.319	2.3 0.091
100 4	114.3 4.500	+1.14 +0.045	-0.79 -0.031	15.88 0.625	8.74 0.344	110.08 4.334	-0.51 -0.020	2.11 0.083	116.2 4.575	2.3 0.091
125 5	133.0 5.250	+1.32 +0.052	-0.79 -0.031	15.88 0.625	8.74 0.344	129.13 5.084	-0.51 -0.020	2.11 0.083	134.9 5.311	2.9 0.114
125 5	139.7 5.500	+1.40 +0.055	-0.79 -0.031	15.88 0.625	8.74 0.344	135.48 5.334	-0.51 -0.020	2.11 0.083	141.7 5.579	2.9 0.114
125 5	141.3 5.563	+1.42 +0.056	-0.79 -0.031	15.88 0.625	8.74 0.344	137.03 5.395	-0.56 -0.022	2.13 0.084	143.5 5.650	2.9 0.114
150 6	159.0 6.250	+1.60 +0.063	-0.79 -0.031	15.88 0.625	8.74 0.344	154.50 6.083	-0.56 -0.022	2.16 0.085	161.0 6.339	2.9 0.114
150 6	165.1 6.500	+1.60 +0.063	-0.79 -0.031	15.88 0.625	8.74 0.344	160.8 6.330	-0.56 -0.022	2.16 0.085	167.1 6.579	2.9 0.114
150 6	168.3 6.625	+1.60 +0.063	-0.79 -0.031	15.88 0.625	8.74 0.344	163.96 6.455	-0.56 -0.022	2.16 0.085	170.7 6.720	2.9 0.114
200A 8	216.3 8.516	+1.60 +0.063	-0.79 -0.031	19.05 0.750	11.91 0.469	211.60 8.331	-0.64 -0.025	2.35 0.093	219.8 8.653	2.9 0.114
200 8	219.1 8.625	+1.60 +0.063	-0.79 -0.031	19.05 0.750	11.91 0.469	214.40 8.441	-0.64 -0.025	2.34 0.092	221.5 8.720	2.9 0.114
250A 10	267.4 10.528	+1.60 +0.063	-0.79 -0.031	19.05 0.750	11.91 0.469	262.60 10.339	-0.69 -0.027	2.40 0.095	270.9 10.665	3.6 0.142
250 10	273.0 10.750	+1.60 +0.063	-0.79 -0.031	19.05 0.750	11.91 0.469	268.28 10.562	-0.69 -0.027	2.39 0.094	275.4 10.842	3.6 0.142
300A 12	318.5 12.539	+1.60 +0.063	-0.79 -0.031	19.05 0.750	11.91 0.469	312.90 12.319	-0.76 -0.030	2.77 0.109	322.0 12.677	4.0 0.158
300 12	323.9 12.750	+1.60 +0.063	-0.79 -0.031	19.05 0.750	11.91 0.469	318.29 12.531	-0.76 -0.030	2.77 0.109	326.2 12.842	4.0 0.158
350 14	377.0 14.842	+1.60 +0.063	-0.79 -0.031	23.83 0.938	11.91 0.469	371.44 14.623	-0.76 -0.030	2.77 0.109	379.5 14.941	4.5 0.177
400 16	426.0 16.772	+1.60 +0.063	-0.79 -0.031	23.83 0.938	11.91 0.469	420.46 16.553	-0.76 -0.030	2.77 0.109	428.5 16.870	4.5 0.177
500 20	529.0 20.827	+1.60 +0.063	-0.79 -0.031	25.40 1.000	11.91 0.469	523.46 20.608	-0.76 -0.030	2.77 0.109	533.0 20.984	5.0 0.197

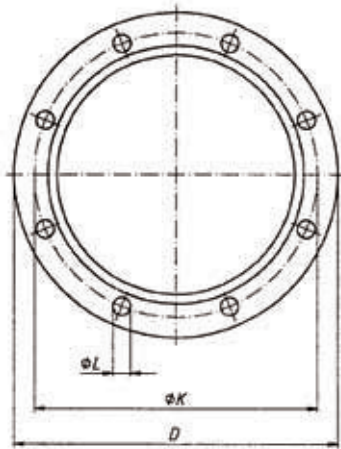
Flange Dimensions



Dimensions of PN10 flanges (BS EN 1092-2:1997) (mm)

DN (mm)	Mating dimensions					Flange thickness		
	Outside diameter of flange D	Diameter of bolt circle K	Diameter of bolt hole L	Bolts		C		
				Number n	Nominal size	Grey Iron	Ductile Iron	Malleable Iron
10	90	60	14	4	M12	14	14	14
15	95	65	14	4	M12	14	14	14
20	105	75	14	4	M12	16	16	16
25	115	85	14	4	M12	16	16	16
32	140	100	19	4	M16	18	18	18
40	150	110	19	4	M16	18	19	18
50	165	125	19	4	M16	20	19	20
65	185	145	19	4	M16	20	19	20
80	200	160	19	8	M16	22	19	20
100	220	180	19	8	M16	24	19	22
125	250	210	19	8	M16	26	19	22
150	285	240	23	8	M20	26	19	24
200	340	295	23	8	M20	26	20	24
250	395	350	23	12	M20	28	22	26
300	445	400	23	12	M20	28	24.5	26
350	505	460	23	16	M20	30	24.5	-
400	565	515	28	16	M24	32	24.5	-
450	615	565	28	20	M24	32	25.5	-
500	670	620	28	20	M24	34	26.5	-
600	780	725	31	20	M27	36	30	-
700	895	840	31	24	M27	40	32.5	-
800	1015	950	34	24	M30	44	35	-
900	1115	1050	34	28	M30	46	37.5	-
1000	1230	1160	37	28	M33	50	40	-
1200	1455	1380	41	32	M36	56	45	-
1400	1675	1590	44	36	M39	62	46	-
1600	1915	1820	50	40	M45	68	49	-
1800	2115	2020	50	44	M45	70	52	-
2000	2325	2230	50	48	M45	74	55	-

Flange Dimensions



Dimensions of PN16 flanges (BS EN 1092-2:1997) (mm)

DN (mm)	Mating dimensions					Flange thickness		
	Outside diameter of flange D	Diameter of bolt circle K	Diameter of bolt hole L	Bolts		C		
				Number n	Nominal size	Grey Iron	Ductile Iron	Malleable Iron
10	90	60	14	4	M12	14	14	14
15	95	65	14	4	M12	14	14	14
20	105	75	14	4	M12	16	16	16
25	115	85	14	4	M12	16	16	16
32	140	100	19	4	M16	18	18	18
40	150	110	19	4	M16	18	19	18
50	165	125	19	4	M16	20	19	20
65	185	145	19	4	M16	20	19	20
80	200	160	19	8	M16	22	19	20
100	220	180	19	8	M16	24	19	22
125	250	210	19	8	M16	26	19	22
150	285	240	23	8	M20	26	19	24
200	340	295	23	12	M20	30	20	24
250	405	355	28	12	M24	32	22	26
300	460	410	28	12	M24	32	24.5	28
350	520	470	28	16	M24	36	26.5	-
400	580	525	31	16	M27	38	28	-
450	640	585	31	20	M27	40	30	-
500	715	650	34	20	M30	42	31.5	-
600	840	770	37	20	M33	48	36	-
700	910	840	37	24	M33	54	39.5	-
800	1025	950	41	24	M36	58	43	-
900	1125	1050	41	28	M36	62	46.5	-
1000	1255	1170	44	28	M39	66	50	-
1200	1485	1390	50	32	M45	-	57	-
1400	1685	1590	50	36	M45	-	60	-
1600	1930	1820	57	40	M52	-	65	-
1800	2130	2020	57	44	M52	-	70	-
2000	2345	2230	62	48	M56	-	75	-