

Introduction of the valve



Check valves also known as Dual plate check Valves are mechanical valves that permit gases and liquids to flow in only one direction, preventing process flow from reversing. They are classified as one-way directional valves.

Fluid flow in the desired direction opens the valve, while back flow forces the valve closed. The mechanics of check valve operation are not complicated.

A check valve allows fluid to flow through it in only one direction. Check valves are two-port valves, meaning they have two openings in the body, one for fluid to enter and the other for fluid to leave. There are various types of check valves used in a wide variety of applications. Check valves work automatically and most don't need control by people or any external control; accordingly, most do not have an actuator or stem.

Applications:

Water supply systems (distribution, treatment etc.),
irrigation, heating systems, ship building,
industrial processes (liquids and gases).

Approvals and certifications:

CE/PED Certification,
ANSI 61- 2008 (Potable Water) Certification,
SIL, ABS, Bureau Veritas, DNV, ISO9001, API,



Max working pressure

DN50-DN600 PN16
Flange PN10 PN16 150LB JIS10K AS"D"E"

Design

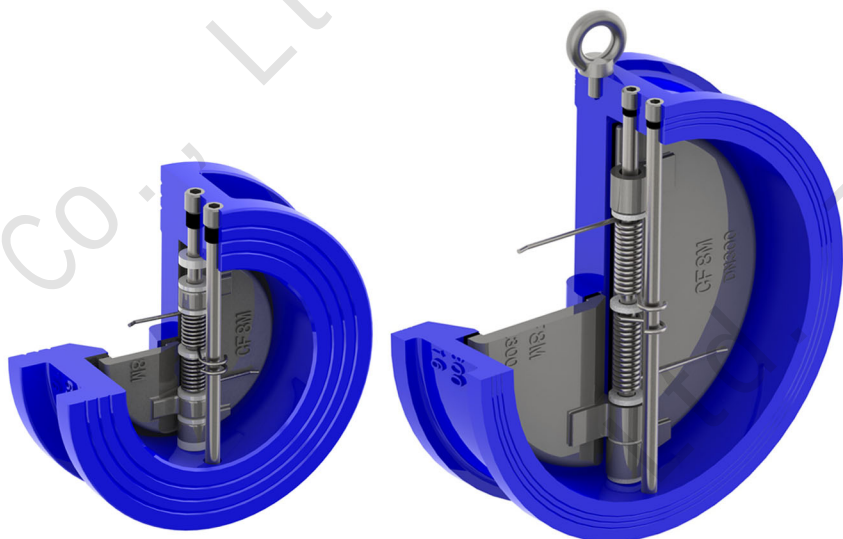
API 594 API6D

Face to Face

API 594 125LB

Testing

API 598



Body

Material	Referencesstandard	Coating
Cast iron	GG20 GG25 A126	Epoxy Ral 5005
Ductile iron	GGG40 GGG45 GGG50 A536 A395	Epoxy Ral 5005
Carbon steel	WCB	Epoxy Ral 7011
Stainless steel	CF8 CF8M CF3 CF3M	

Disc

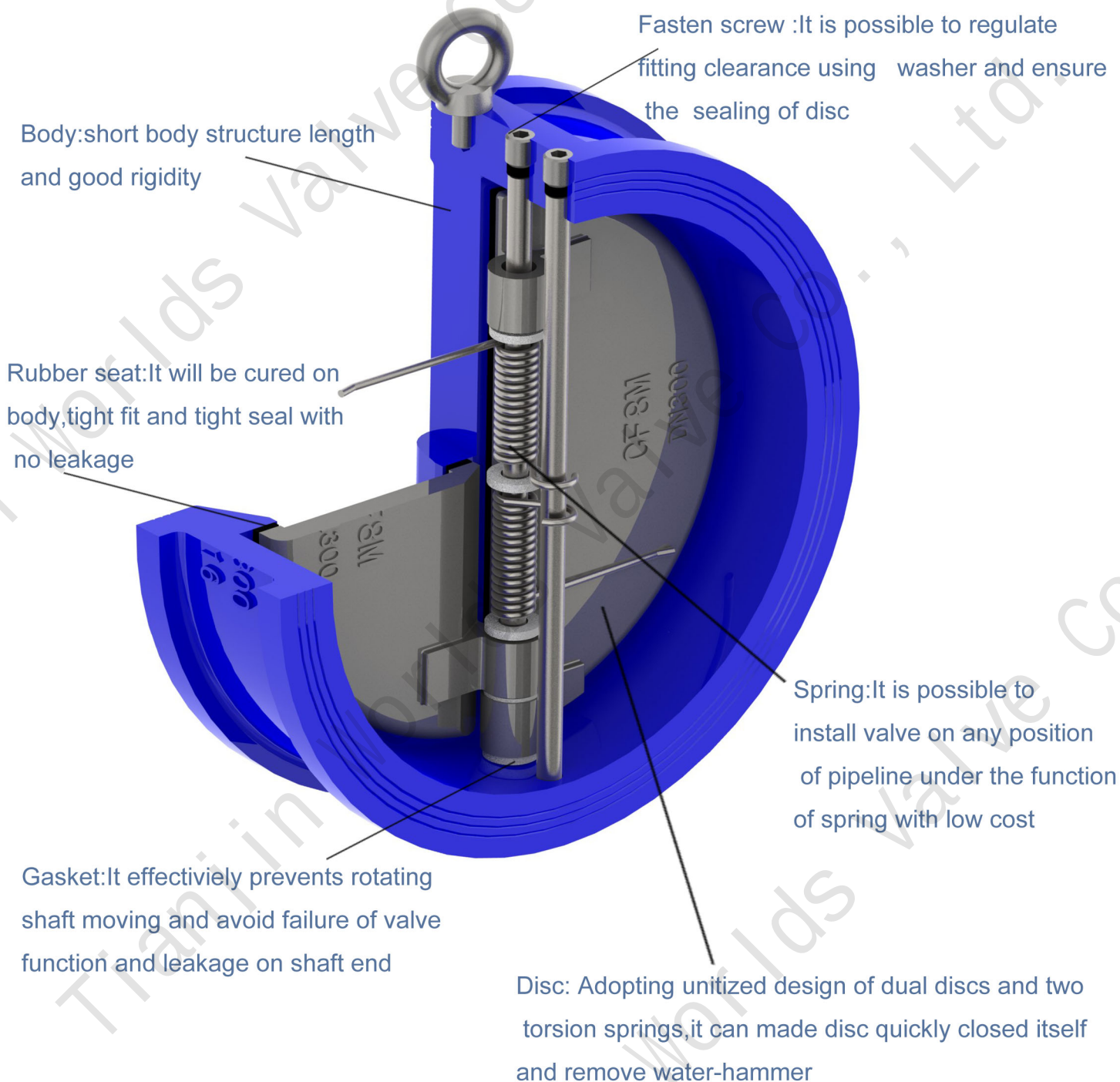
Material	References	Standard coating
Ductile iron	GGG40 GGG45 GGG50 A536	Nickel Brass-Nikle
Carbon steel	WCB	
Stainless steel	CF8 CF8M CF3 CF3M SAF2507 SAF2205	

Body Rubber Seat

References	Desigation	Trade Name	Working temp	Applications
NBR	Nitrile Rubber	BUNA-N	-25/+100	Oils ,Hydrocarbons ,Gas, Air ,Water
EPDM	Copolymer	EPDM	-35/+130	Water ,Sea Water,Steam,Diluted Acids
FKM	Fluoroelastomer	VITON	-20/+200	Oils, Hydrocarbons, Acids
CR	Polychloroprene	NEOPRENE	-20/+100	Alkail, Bases,Water
NR	Natural Rubber	NR	-40/+80	Glycols,Abrasive media
CSM	Chlorosulfonate	HYPALON	-20/+125	Acids,mineral

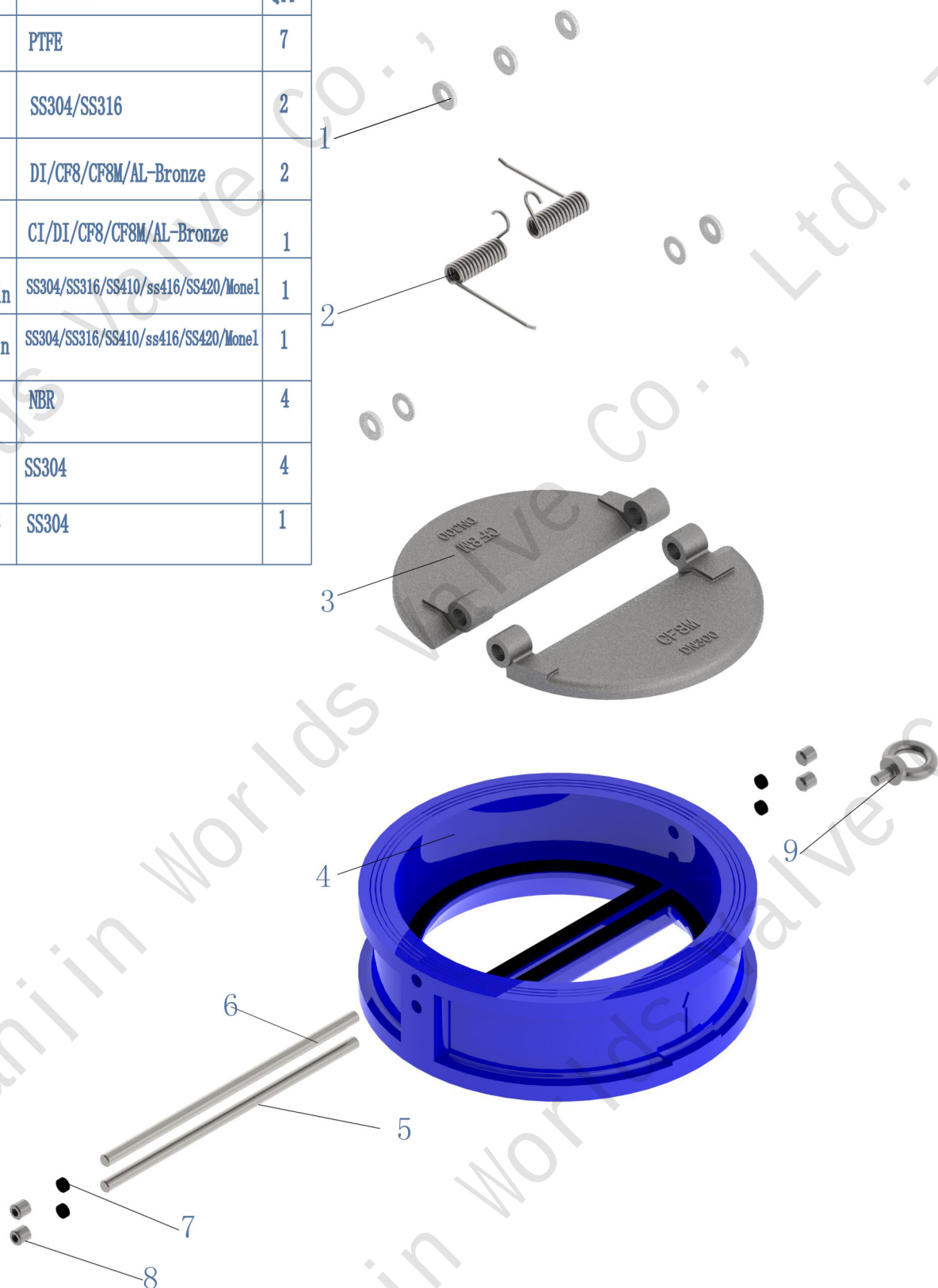
Main Spare Part Material Quality

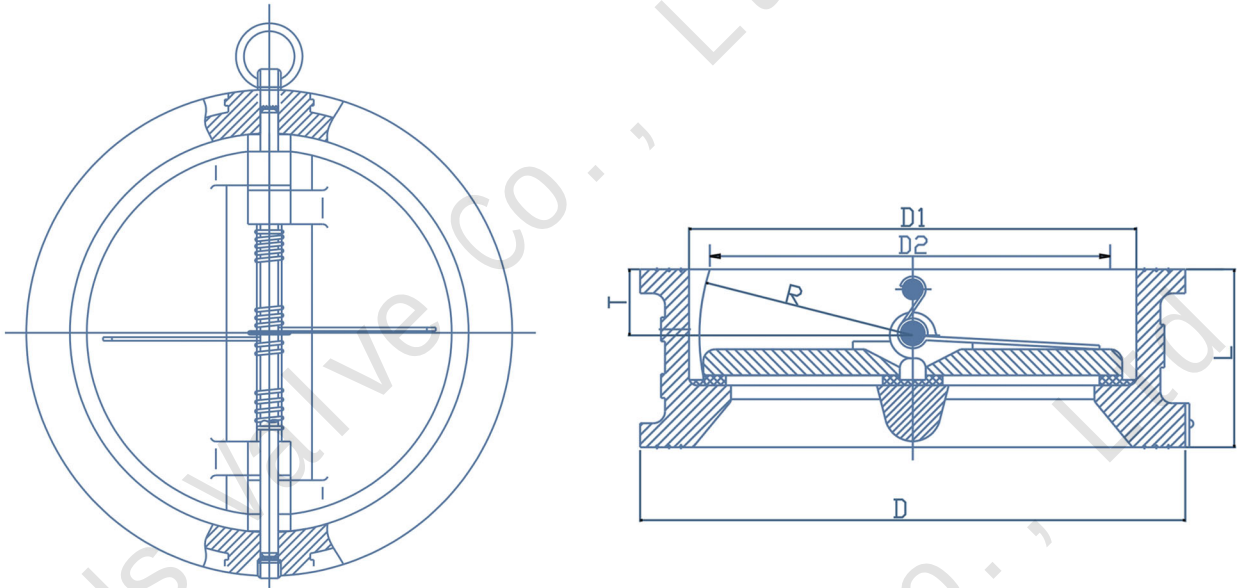
Through precise manufacturing, the main parts of check butterfly valve ensure valve is operating in a long stable and reliable condition



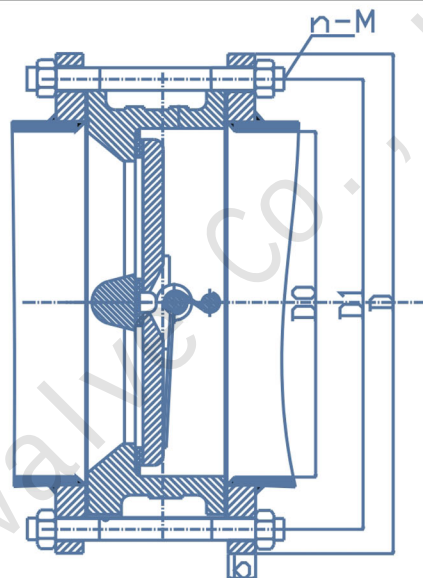
Main Spare Part Material Quality (DN50-DN600)

Item Number	NAME	MATERIAL	QTY
1	Washer	PTFE	7
2	Spring	SS304/SS316	2
3	Plate	DI/CF8/CF8M/AL-Bronze	2
4	Body	CI/DI/CF8/CF8M/AL-Bronze	1
5	Hang Pin	SS304/SS316/SS410/ss416/SS420/Monel	1
6	Stop Pin	SS304/SS316/SS410/ss416/SS420/Monel	1
7	Gasket	NBR	4
8	Plug	SS304	4
9	Eyebolt	SS304	1



Drawing(50-600)Outline Dimensions

ASME B16.1/AWWA C207

DN	D	D1	D2	L	R	T
2"	102	65	32	54	29	25
2.5"	121	78	42.1	60	36	29.3
3"	134	94	82	67	43.4	27.7
4"	171	117	97.5	67	55.6	26.7
5"	193	145	111.8	83	67.6	38
6"	219	171	127	95	78.6	46.3
8"	276	222	161.7	127	104.4	66
10"	336	276	213.4	140	128	70.7
12"	406	327	237.9	181	156.7	102
14"	448	375	312.2	184	179.8	89.2
16"	511	416	351	191	198.4	92.5
18"	546	467	409	203	226.2	96.2
20"	603	514	451.9	213	248.2	102.7
24"	714	616	554.7	222	297.4	107.3

Necessary Flange for Pipelines

Connections Dimensions When Using Flange & Stud Bolts

Size		O.D. of Pipe	Dia. of Circle of Hole	O.D. of Flange	Thickness of Flange	Qty of flange holes	Dia of Bolts
mm	Inch	D0	D1	D	b	n	M
50	2"	60.3	120.7	152	15.7	4	5/8"
65	2.5"	73	139.7	177.8	17.5	4	5/8"
80	3"	88.9	152.4	190.5	19	4	5/8"
100	4"	114.3	190.5	228.6	23.8	8	5/8"
125	5"	141.3	215.9	254	23.8	8	3/4"
150	6"	168.3	241.3	279.4	25.4	8	3/4"
200	8"	219.1	298.5	342.9	28.4	8	3/4"
250	10"	273	362.0	406.4	30.2	12	7/8"
300	12"	323.8	431.8	482.6	31.7	12	7/8"
350	14"	355.6	476.3	533.4	35	12	1"
400	16"	406.4	539.8	596.9	36.5	16	1"
450	18"	457	577.9	635	39.6	16	1 1/8"
500	20"	508	635.0	698.5	42.9	20	1 1/8"
600	24"	610	749.3	812.8	47.75	20	1 1/4"

Loss in Pressure and CV

Loss in pressure and CV of CHECK VALVE				
DN	inch	Loss in pressure (bar)	CV	KV
50	2	0.32	63	54
65	2.5	0.27	81	70
80	3	0.21	185	160
100	4	0.17	363	314
125	5	0.14	576	498
150	6	0.11	968	837
200	8	0.09	2019	1747
250	10	0.07	3497	3025
300	12	0.06	5333	4613
350	14	0.05	6576	5689
400	16	0.043	9045	7824
450	18	0.04	11768	10180
500	20	0.037	16245	14053
600	24	0.03	24177	20914
700	28	0.028	27531	23816
750	30	0.027	32126	27791
800	32	0.026	38025	32894
900	36	0.024	48483	41940
1000	40	0.02	62966	54469
1050	42	0.019	66712	57709
1200	48	0.018	85969	74368
note: 1.Loss in pressure: When medium is water and flow speed is 3m/s at normal temperature. 2.CV is the flow volume of flowing through the valve When the valve fully opened.				

Applications



A wide variety of body designs, materials, and trim make Wafer Check valves exceptionally versatile and suitable for a multitude of liquid and gas fluid applications. Some of the major markets and typical applications are depicted here.



Oil and Gas Production

- Centrifugal Compressor Discharge
- Fire Water Lines
- Oil/Steam Separation
- Steam and CO₂ Injection
- Gas/Oil Gathering Systems
- Flowlines
- Wellheads
- Regasification
- Liquidfaction

Power Generation

- Steam
- Condensate
- Boiler Feed Pumps
- Cooling Towers
- Service Water Recirculators
- River Water Intake

Petroleum Refining

- Hydrogen
- Cracking
- Steam
- Crude Oil
- Gasoline
- Visbreakers
- Naphtha
- Sulfur

Petrochemicals

- Ethylene
- Propylene
- Steam
- Reboilers
- Gases

Chemicals

- Chlorine
- Phosgene
- Aromatics
- Polymers
- Acids
- Air Separation
- Caustics

Water and Wastewater

- Distribution Lines
- Pumping Stations
- Sewage Plant Blower Discharge
- Chemical Treatment
- Fire Protection Systems
- HVAC Systems
- Desalination

Steel/Primary Metals

- Quench Lines
- De-Scaling
- Continuous Casters
- Steam
- Condensate
- Strippers
- Electro-Galvanizing

Pulp and Paper

- Bleaching Lines
- Black Liquor
- Green Liquor
- White Water
- Steam

Chemical Recovery

- Marine
- Oil Tankers
- Tanker Loading Terminals
- Offshore Platforms
- Sub-Sea Manifolds
- Terminal Transfer Lines
- Barge Unloading Lines
- Shipboard Services

Work principle

The valve must not be installed in pipelines with pulsating flow or near to reciprocating pumps.

Installation in a horizontal pipeling

The disc shaft must be in the vertical position.

Features

As a check valve is permanently open in normal service, the flow resistance is a very important feature of a check valve with regard to the energy loss per year which can mount up to many times the initial cost of the valve. We have reduced the pressure loss of our design to very low levels.

- The self acting pivoting check valve of the double disc.
- The superior closing response prior to flow reveal.
- The corrosion resistant springs are designed to quickly close the valve at zero flow to prevent undesirable pressure surges.
- In the closed position the valve is tight shut off.
- It opens automatically when the flow starts again.
- The elastomer seat is vulcanized and bonded to the body casting.
- It is out of the flow path thus ensuring extended seal life. Spherical profiling of the seat ensures positive shut-off even at low pressures and the area adjacent to the seat is also protected by the same elastomer material.
- The use of these design features together with careful material selection makes a product with a high reliability and a low operating costs.

Description for Order

In order to ensure your requirement for usage, please explain in detail in your order: Type, specification, material, nominal pressure, working pressure and temperature used, maximum flow rate, pressure difference, medium composition of valve, driving type of valve and standard for connection of valve with pipes etc,

For the convenience usage of consumers, our company can provide flange and bolts completed with valve, and will provide wearing parts according to the requirement of consumers. In selection of product types, consumer can present his requirement for product material, connection standard and technical data and give clear declaration in your contract.

Our company also can carry out study and development on new product according to requirement of consumer.