Butterfly Valve

HIGH PERFORMANCE DOUBLE OFFSET BUTTERFLY VALVES

The KINGER range of double-offset high-performance butterfly valves has been specially designed and developed for the water industry.

This heavy-duty product range incorporates proven double-offset butterfly valve technology while overcoming typical weaknesses found in alternative designs. As a standard feature, the valve provides bi-directional sealing. Two sealing configurations are available: seal-in-body or seal-in-disc design.
All valves are fitted with a latticed disc as standard to achieve low head-loss and stable flow performance across all operating conditions.

KINGER delivers robust construction material options matched to each application requirement.
The standard construction is ductile iron body with fusion-bonded epoxy powder coating, together with stainless-steel 316 internal trim.
Upon request, valves can also be manufactured from a wide selection of special alloy materials or supplied with full rubber-lining, where the service conditions demand this corrosion protection solution.

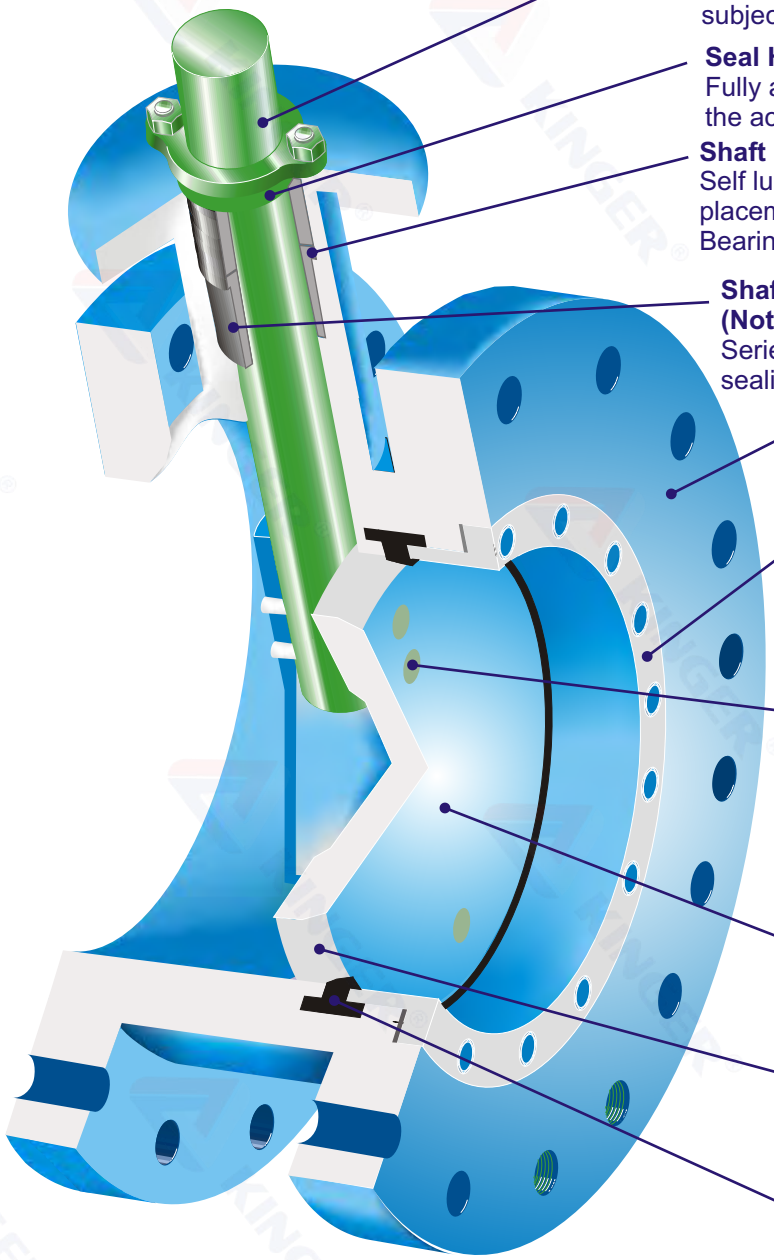
The standard size scope covers DN50 up to DN1200, with pressure ratings PN16 and PN25.
Higher pressure classes and larger nominal sizes are available upon special request.
Every KINGER valve is supported by comprehensive technical support, sales assistance and after-sales service.



MATERIALS OF CONSTRUCTION

KINGER is a range of Double Offset High Performance Butterfly valves designed and developed specifically for the water industry. The heavy duty KINGER product range was developed taking into account the best of double offset butterfly valve technology whilst overcoming the shortcomings inherent in some designs . This results in a product that offers the highest integrity of materials of construction relative to application, provides bi-directional sealing as standard. In addition, the KINGER range is available with either a Seal in Body or Seal in Disc design. Further, all valves are supplied as standard with a Latticed Disc to ensure low headloss and stable flow under all operating conditions.

Note:
Shaft sealing arrangement may vary according to design and/or Customer's specification.



Shaft - S/Steel 316
Two Stub Shafts liberally sized to withstand all working conditions that the valve is subjected to.

Seal Housing - Gunmetal BS EN CC491K
Fully adjustable without the need to remove the actuator

Shaft Bearing - Bronze/ Glacier DU (B)
Self lubricating designed to allow valve placement in the horizontal or vertical. Bearing has very low torque requirements

Shaft Seals - EPDM O-Rings (Not Shown)
Series of O-Ring Seals to ensure driptight sealing under all operating conditions.

Body - Epoxy Coated Ductile Iron
High strength, double flanged body design

Seal Retainer - S/Steel 316
Fully adjustable mechanical Seat Retainer can adjust or retain seat in situ without the need for special tools.

Shaft Pins - S/Steel 316
Liberally sized high quality Tapered Pins to provide a reliable and strong connection

Shaft in addition, is keyed into housing

Disc - Epoxy Coated Ductile Iron
Latticed design for low headloss characteristics and stability under all flow conditions.

Disc Edge - S/Steel 316
Specifically shaped to reduce seating torque and provide reliable service

Seal - EPDM / S/Steel 316
Options of either Metal to Metal or Soft Seal arrangement to suit all applications. Options in addition, include Seal in Disc or Seal in body design.

Lower Bearing - Self Lubricating (not shown)
A two way adjustable bearing accurately set during assembly to centre the disc. The bearing assembly is permanently lubricated to ensure smooth operation.

Information subject to change without prior notice

11th Floor,YongAn Plaza,NO.268,QuanCheng Road,Jinan,Shandong,China 250011
Tel: +86-531-81913333 Fax: +86-531-81913111
Http: www.chinakinger.com E-mail: sales@chinakinger.com

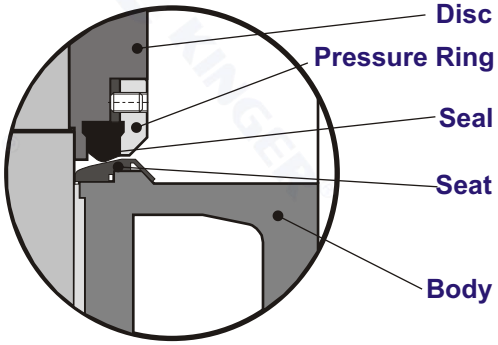
SEAT & SEAL OPTIONS

KINGER High Performance Double Offset Butterfly Valves are designed with a variety of Seating and Sealing options to suit most specifications and application requirements. The valves are manufactured in Ductile with Stainless Steel 316 trim as standard. Options include:

SEAL IN DISC DESIGN

The KINGER Seal in Disc is a Double Offset design to BS 5155 standards where the specially profiled EPDM/Nitrile Seal is keyed and clamped in the disc by an adjustable mechanical Pressure Ring manufactured in stainless steel 316 as standard. The seal seats onto a specially profiled stainless steel 316 **Seat** pressure fitted into the body.

This design is suited for most low to medium pressure potable water applications.

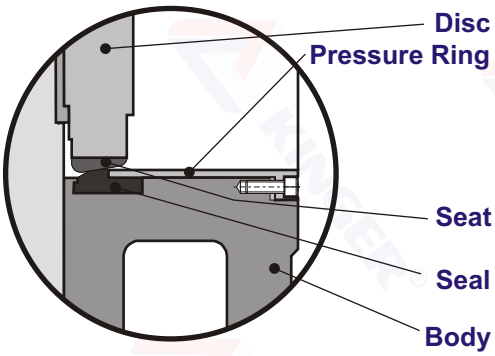


Seal in Disc

SEAL IN BODY DESIGN

The KINGER Seal in Body design is Double Offset design to BS 5155 standards where the profiled EPDM/Nitrile Seal is held in the body by an adjustable mechanical stainless steel 316 Pressure Ring. The Seat is on the disc and is deposit welded stainless steel 316 and specifically machined to reduce opening and closing torque.

This design is preferred by engineers in most potable and raw water applications especially where tubercular growth may be a problem or in high flow applications.

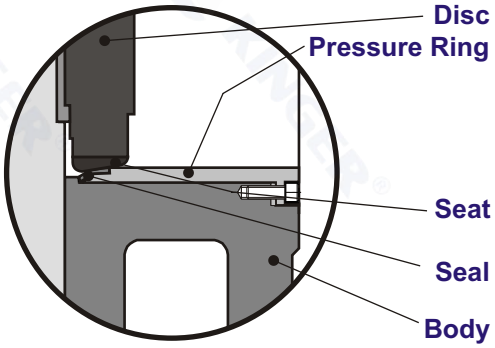


Seal in Body

METAL TO METAL SEAL

KINGER offers a cost effective and reliable Metal to Metal seat arrangement. The Seat in this design is on the Disc in the form of an accurately machined deposit weld Stainless Steel 316 seat. The Seal is a specifically profiled, adjustable Stainless Steel 316 Stainless Seal on the Pressure Ring.

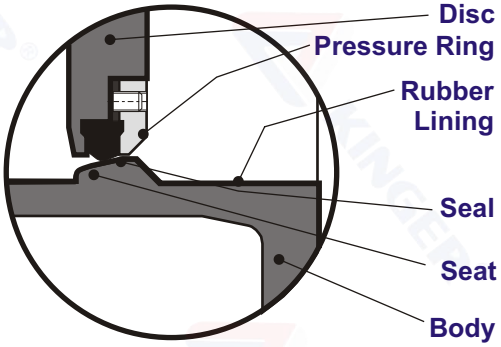
This design is preferred by engineers in most potable and raw water applications especially where tubercular growth may be a problem or in high flow applications.



Metal to Metal

RUBBER LINED BODY AND DISC

KINGER offers a cost effective fully Rubber Lined solution in medium pressure applications where saline or aggressive fluids are being conveyed. The entire valve Body and Disc is rubber lined with special attention paid to the vulcanising process. Any exposed metal parts are supplied in Aluminum Bronze or Duplex.



Rubber Lined

Information subject to change without prior notice

PRINCIPLES OF OPERATION

Many variations of the Disc design have evolved relative to the orientation of the Disc and Shaft in an attempt to improve flow, sealing and/or operating torque. The three most common Disc and Stem orientations utilised in the water industry are:

NO OFFSET

The axis of the valve Shaft passes through the centre of the disc and the axis lies in the plane of the seating edge in valves that have no Disc Offset. Low Pressure designs such as water Rubber Lined each have no offsets.

SINGLE OFFSET (SINGLE ECCENTRIC)

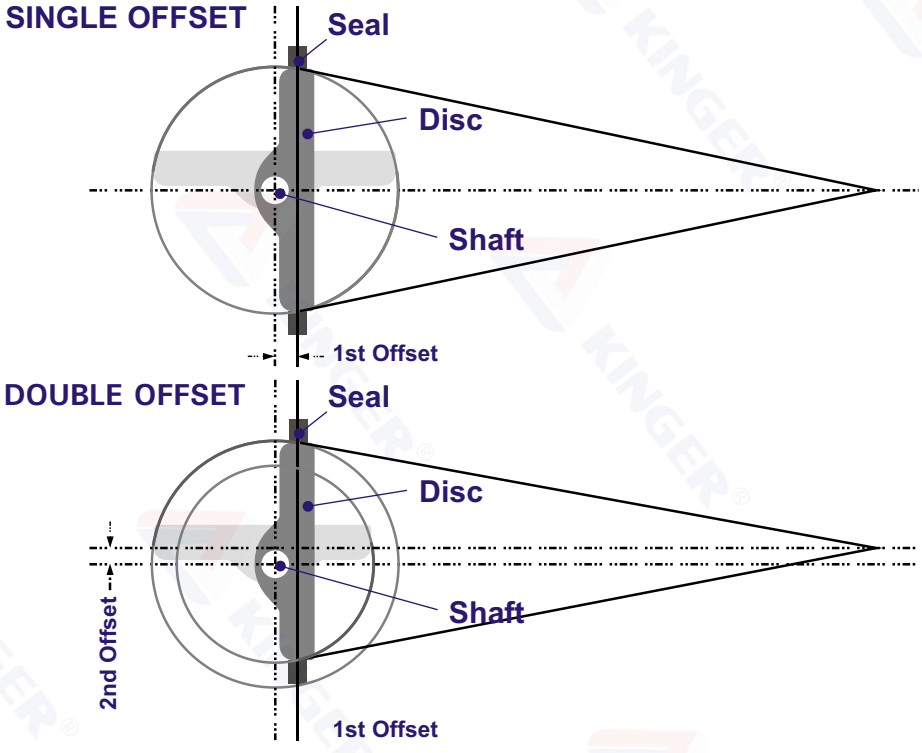
The sealing plane of the Disc is Offset from the axis of rotation. This provides an uninterrupted circular sealing surface on the Disc that makes it possible for a circular sealing element to be placed in the valve. It can be easily removed from the valve without disassembly of the Shaft/Disc closure elements. The Seal, in Single Offset designs where the Seal is retained in the Disc, tends to be pinched when the valve is in the open position. This with time can lead to leakage.

DOUBLE OFFSET (DOUBLE ECCENTRIC)

First, the sealing plane of the Disc is Offset from the axis of rotation. This provides an uninterrupted circular sealing surface on the Disc that makes it possible for a circular sealing element to be placed in the valve.

Second, the axis of rotation of the disc is laterally displaced from the true centre of the Disc so that it will "cam" away from the seat to eliminate jamming or squeezing as the valve is opened and closed. This design eliminates wear points around the Disc at the top and bottom of the Seal. When closing, the Disc cams tightly into its Seat to create a bubble-tight Seal with consistent torque. This Eccentric rotation has a tremendous impact of extending the duration of the valve's leak-free performance.

KINGER is a Double Offset design incorporating the best that Double Offset valve technology has to offer.



Information subject to change without prior notice

11th Floor,YongAn Plaza,NO.268,QuanCheng Road,Jinan,Shandong,China 250011
Tel: +86-531-81913333 Fax: +86-531-81913111
Http: www.chinakinger.com E-mail: sales@chinakinger.com

WHY KINGER BUTTERFLY VALVES?

Shaft Design
The KINGER design utilises a generously sized corrosion resistant two piece stub Shaft design. Shafts are constructed in Stainless Steel 316 for protection against the harmful effects of corrosion. The design allows for operation in both horizontal as well as vertical installations.

Bearings
Sleeve-type Bearings are used in both trunnions of the KINGER valve body. Materials used has special non-metallic backing. This provides electrical insulation between Disc and Shaft to prevent galvanic corrosion. Lower coefficient of friction cuts down operating torque requirements.

Shaft Connections
Disc and Shaft in the KINGER design are connected together by generously sized Stainless Steel Taper Pins designed to transmit torques required and withstand stresses imposed under severe operating conditions.

Lattice Disc Design
The KINGER Lattice Disc design provides the lowest pressure drop of all Disc designs. In addition, the design provides flow stability under all operating conditions.

Sealing/Seating Options
KINGER provides unparalleled sealing and seating options in both Soft Seal and Metal to Metal arrangements to suit most applications. Seating and Sealing arrangements include Seal in Disc, Seal in Body, Metal to Metal and fully Rubber Lined Soft Seating arrangements.

Bi-Directional Sealing
Bi-directional sealing is achieved a standard in all KINGER design configurations.

Double Offset Design
The sealing plane of the Disc is offset from the axis of rotation which in turn is laterally displaced from the true centre of the Disc so that it cams away from the Seal to eliminate jamming or squeezing as the valve is opened and closed.

The KINGER design eliminates wear points around the Disc at the top and bottom of the Seal. When closing, the Disc cams tightly into its Seat to create a bubble-tight seal with consistent torque. This Eccentric rotation of the KINGER design has a tremendous impact of extending the duration of the valve's leak-free performance.

Materials of Construction
KINGER High Performance Butterfly Valves incorporate the highest integrity of materials of construction relative to application. Valves are manufactured in Epoxy Powder Coated Ductile Iron with the valve Shafts and trim in Stainless Steel 316 as standard.

Operators
KINGER valves are supplied as standard with an actuator pillar in accordance to ISO specifications to allow for the installation of a variety of operator types.

Information subject to change without prior notice

GENERAL SPECIFICATIONS

DESIGN TYPE
Double Offset, double flanged, bi-directional High Performance Butterfly Valve

ACCEPTABLE MEDIA
Water and neutral liquids

OPERATING PRESSURE RANGE
PN10, PN16, PN25 & PN40

OPERATING TEMPERATURE RANGE
0° to 70°C

SIZE RANGE
DN100 to DN1600

MATERIALS OF CONSTRUCTION
Refer to Page 1

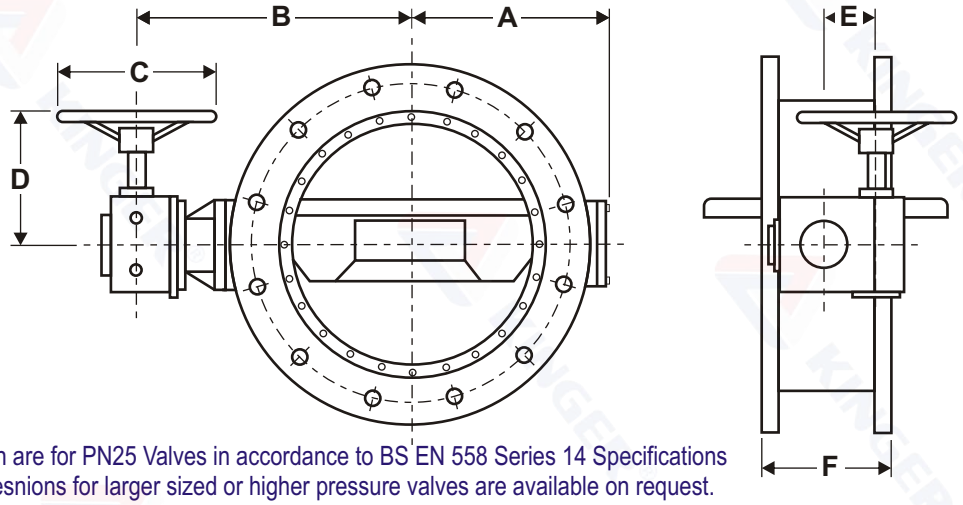
STANDARD FACTORY TESTS
Seat 1.1 x PN Body 1.5 times PN

END CONNECTIONS
SABS 1123, BS4504, ANSI B 16.1 & B16.5

DESIGN AND OPERATING OPTIONS
Electric or hydraulic actuation
Full Rubber Lining of body
Seal in Disc or Seal in Body or Metal to Metal Seat
Alternative materials of construction

APPLICABLE STANDARDS
BS 5155/ BS EN 593
BS EN 558 -1 Series 13 & 14

OVERALL DIMENSIONS



NOTE:
Weight given are for PN25 Valves in accordance to BS EN 558 Series 14 Specifications
Overall dimesnions for larger sized or higher pressure valves are available on request.

DN	A	B	C	D	E	F series 13	F series 14	Weight kg
100	134	250	175	44	180	127	190	25
150	172	315	200	64	240	140	210	53
200	206	380	232	94	320	152	230	85
250	239	420	232	94	320	165	250	110
300	275	495	276	13	400	178	270	155
350	310	535	276	13	400	190	290	195
400	352	610	425	18	500	216	310	290
450	377	640	425	18	500	222	330	325
500	412	715	480	23	500	229	350	555
600	471	775	480	23	600	267	390	705
700	538	885	525	29	600	292	430	900
800	600	955	525	29	600	318	470	1350
900	675	1075	650	40	720	330	510	2040
1000	745	1175	640	40	720	410	550	2530

Information subject to change without prior notice

11th Floor,YongAn Plaza,NO.268,QuanCheng Road,Jinan,Shandong,China 250011
Tel: +86-531-81913333 Fax: +86-531-81913111
Http: www.chinakinger.com E-mail: sales@chinakinger.com

WORM GEAR OPERATORS

GENERAL VALVE DESIGN

KINGER High Performance Double Offset Butterfly valves provide tight shutoff, a long **Life Cycle**, and **Life Cycle Costs** that are lower than most alternatives. Technological innovations combined with its uncomplicated design make the KINGER Butterfly Valve design a dependable, economical and flexible solution to a variety of water and industrial flow shutoff and control needs.

KINGER s Double Offset disc arrangement combined with a wide choice of seating styles and seating materials and the ability to fully rubber line the valve ensure exceptional performance and bubble-tight shutoff over a wide range of operating conditions.

KINGER valves are virtually maintenance free but, in the rare instance, where needed are easy to maintain an the design is such that seat inserts can be replaced on site and the valve can be put back into service immediately.

The KINGER Double Offset design principle with careful focus on component design fit and the reduction of wear surfaces dramatically reduces torque requirements. Therefore, ensuring that the valves can be operated with smaller actuators.

KINGER valves are easily automated. Every valve is drilled and tapped to accept linkage for a broad range of actuators in accordance to ISO 5210 and therefore does not require any modifications to the valve to accept actuation.

WORM GEAR OPERATORS

KINGER offers a rugged, lightweight and efficient Worm Gear Operator design that ensures long maintenance free operation. Features include:

- A highly visible Indicator installed on the Worm Gear output to accurately indicate if the valve is open or closed. This is coupled with a standard worm gear indicator board giving dual display of the disc position at all times.
- The Gearbox is fitted with adjustable Limit Screws as standard for adjustment within ±5° at the open or closed position.
- The KINGER Worm Gear Operator can be operated by Handhweel or Captop or; Electric or Pneumatic Actuation and is supplied with Worm or Worm and Spur Gear Operators to facilitate the design and operating pressure requirements. The gearing design is such that the valve in the case of manual operation, can be operated by one person against Full differential pressure.
- The connecting flange of KINGER Worm Gear Operators are in accordance to ISO 5210 specifications.

WORM GEAR SELECTION TABLE

WORM GEAR MODEL No.	OUTPUT TORQUE (N.m)	APPLICABLE VALVE SIZE & PRESSURE RATING			
		PN10	PN16	PN25	PN40
KGR0#	160	DN100-DN150	DN100-DN150	DN100	DN100
KGR1#	400	DN200-DN250	DN200	DN150	DN150
KGR2#	1000	DN300-DN350	DN250-DN300	DN200-DN250	DN200
KGR3#	2400	DN400-DN500	DN350-DN450	DN300-DN350	DN250-DN300
KGR4#	5000	DN600-DN700	DN500-DN600	DN400-DN450	DN350-DN400
KGR5#	10000	DN800-DN900	DN700-DN800	DN500-DN600	DN450-DN500
KGR6#	20000	DN1000	DN900-DN1000	DN700-DN800	DN600
KGR7#	40000			DN900-DN1000	DN700-DN800

Information subject to change without prior notice

PURCHASE SPECIFICATIONS

GENERAL
All valves shall be of the tight-closing, Double Offset,Bi-Directional Butterfly Valves design.

Valves shall be bubble-tight at the rated pressure in either direction, and shall be suitable for throttling service and/or operation after long periods of inactivity.

Valves shall be of the KINGER High Performance Double Offset design

BODY
All valve bodies shall be double flanged and constructed in Ductile Iron BS EN Gr 500/7 or DIN GGG 40 or 50, coated internally and externally with fusion bonded epoxy powder coating. Flange alignment shall conform to PN10,PN16,PN25 and PN40 for SAB1123 or BS 4504 Standards.

DISC
Valve Discs shall be of the Latticed design to provide a low head loss and stability under low flow conditions and shall be constructed in Ductile Iron BS EN Gr 500/7 or DIN GGG 40 or 50, coated internally and externally with fusion bonded epoxy powder coating Disc Sealing edge shall be in Stainless Steel 316 as standard.

SHAFT
Valves shall be of a Two Stub Shaft design in Stainless Steel 316. Shafts shall be keyed into their housing and shall fasten to the valve disc by means of threaded or smooth Disc Pins that provides a positive leak proof connection. The upper Shaft shall have at least two Pins to secure it to the Disc. Shaft sealing shall be effected by a series of O-Ring Seals housed in a fully adjustable Seal Housing constructed from Gunmetal in accordance to BS EN CC491K.

SEAT
All seats shall be in the valve body or seating shall be of a Metal to Metal Sealing arrangement - with Metal Sealing constructed in Stainless Steel 316. Seats located on the valve Discs unless for low pressure applications are not acceptable - Metal to Metal & EPDM Rubber.

Seals shall be in EPDM rubber, and shall be field adjustable and replaceable without the use of special tools or factory personnel. Valves shall be installed with full Seal adjustment downstream.

BEARINGS
All Shaft bearings shall be of the self-lubricating, corrosion-resistant, sleeve type. Bearings shall be designed for horizontal and/or vertical Shaft loading.

COATINGS AND LININGS
The valve Body and Disc shall be Fusion Bonded Epoxy Coated to a minimum thickness of 250 microns.

The flow path and Disc of valves for saline applications shall be fully Rubber Lined. Exposed metal parts shall be in Duplex or Aluminum Bronze.

TESTING
All valves shall be hydraulic tested in with a Body test to 1.5 times nominal working pressure and a Seat test to 1.1 times nominal working pressure.

Information subject to change without prior notice

11th Floor,YongAn Plaza,NO.268,QuanCheng Road,Jinan,Shandong,China 250011
Tel: +86-531-81913333 Fax: +86-531-81913111
Http: www.chinakinger.com E-mail: sales@chinakinger.com

Butterfly Valve

HIGH PERFORMANCE DOUBLE OFFSET BUTTERFLY VALVES

ORDERING GUIDE

100 KINGER 25 S BF H

Size	DN100
Series	KINGER
Pressure Rating	PN25
Seat Configuration	Seat in Body
Coating	Fusion Bonded Epoxy Coating
Operator	Worm Gearbox
Operator Option	Handwheel

AVAILABLE OPTIONS

SIZE RANGE
DN100 to DN1600

PRESSURE RANGE
PN10 & PN16 - DN100 to DN1600
PN25 - DN100 to DN1600
PN40 - DN100 to DN600

SEAT CONFIGURATION

Seat in Body	**SB**
Seat in Disc	**SD**
Metal to Metal Seat	**MM**
Fully Rubber Lined Flow Path and Disc	**RL**

OPERATOR
Worm Gear Gearbox

OPERATOR OPTIONS

Handwheel	**H**
Captop	**C**
Electric	**E**
Pneumatic	**P**

Information subject to change without prior notice