



# KLINGER

## DISTRICT ENERGY VALVES KKD-FW

Triple Eccentric Flexible Metal Seal  
Butterfly Valves  
DN 300 - DN 1400





GUMPOLDSKIRCHEN  
AUSTRIA





# THE KLINGER GROUP

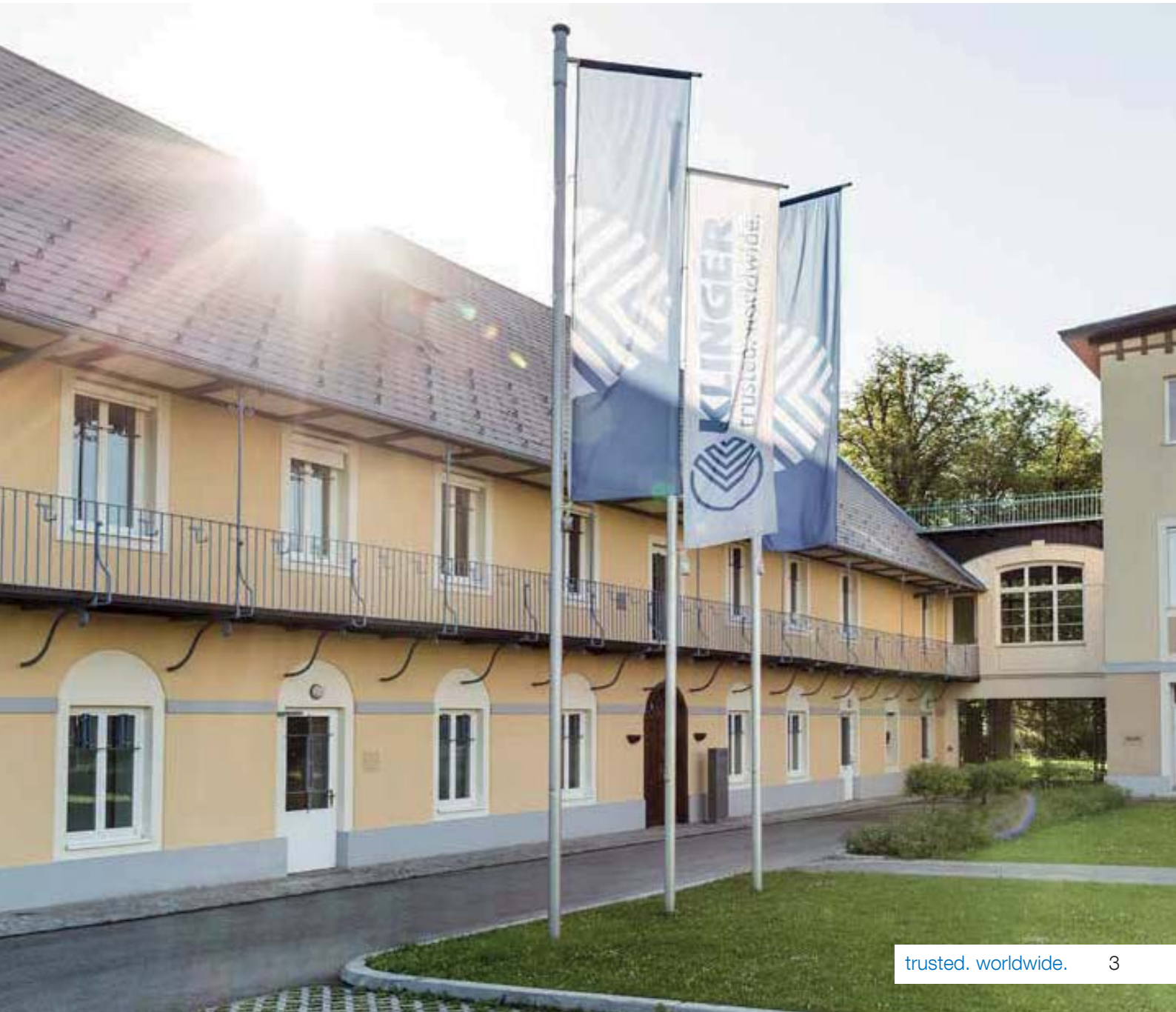
Trust through reliability

KLINGER is an established top leader for sealing, fluid control and fluid monitoring systems. The family business, founded in 1886, presents itself today as a globally active group of companies. Successful collaboration with customers from around the world and business excellence are paramount for the KLINGER Group.

Our global network has production facilities as well as sales and service offices in more than 60 countries.

Characterized by the inherited expertise, our work is guided by high quality requirements and the pioneering spirit of several generations. At the same time, we are constantly expanding our technology and market leadership, always with the objective of increasing customer satisfaction.

We deliver top quality performance combined with passion for excellence – then, now and tomorrow.



# KLINGER WORLDWIDE

Technology leadership with service excellence

KLINGER products can be found in many different markets and sectors worldwide. We develop industry and region specific solutions that help make our customers successful today and in the future. Our leading-edge products, the know-how of our specialists and the proximity to our customers are the connecting elements of our market approach. We provide solutions for the following industries:



**GENERAL  
MANUFACTURING**



**CHEMICAL**



**OIL & GAS**



**INFRASTRUCTURE**



**ENERGY**



**PULP & PAPER**



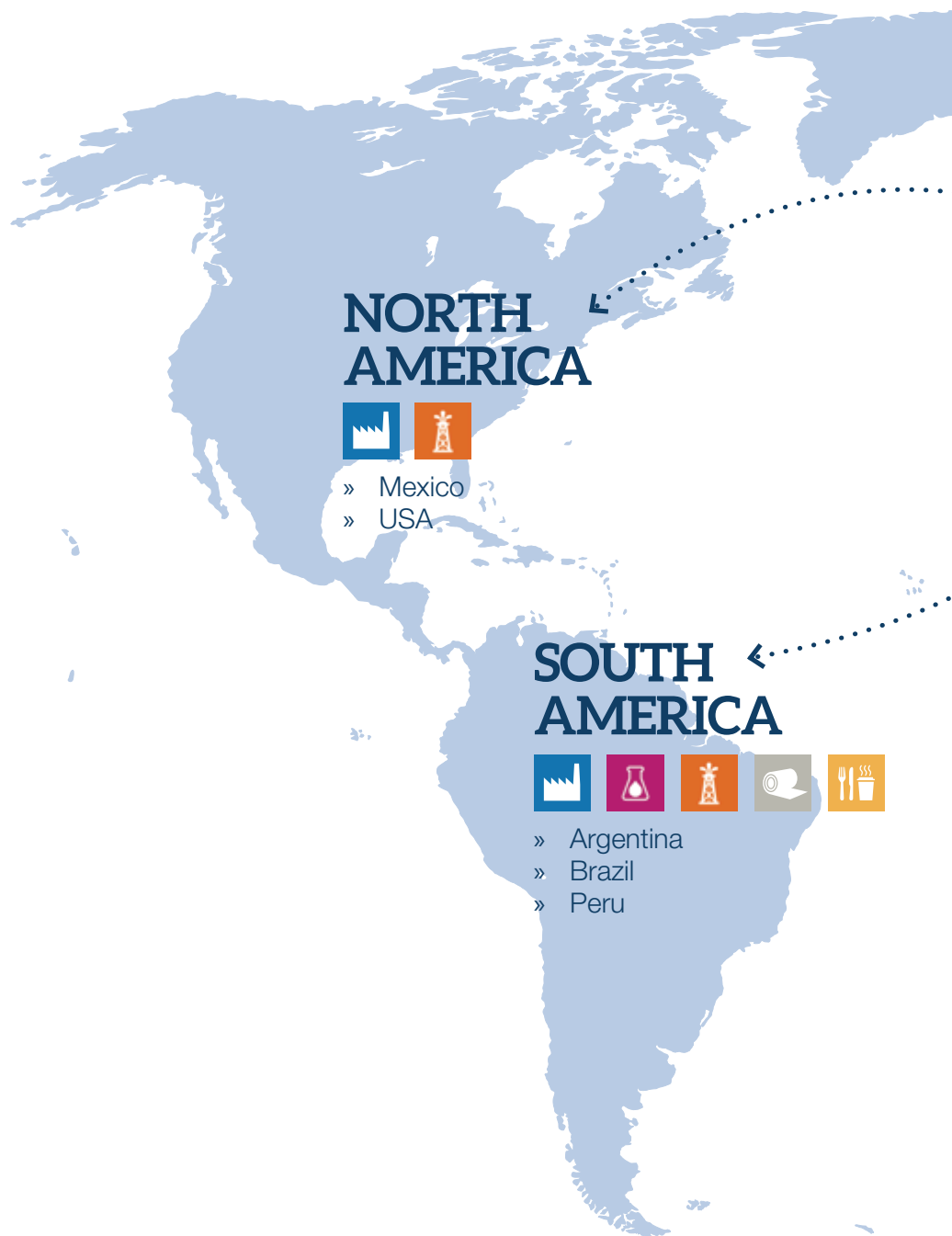
**TRANSPORT**



**PHARMA**



**FOOD & BEVERAGE**



## EUROPE



- » Austria
- » Belgium
- » Denmark
- » Finland
- » Germany
- » Italy
- » Kazakhstan
- » Norway
- » Poland
- » Portugal
- » Spain
- » Sweden
- » Switzerland
- » The Netherlands
- » United Kingdom

## ASIA



- » China
- » India
- » Singapore
- » Thailand

## MIDDLE EAST & AFRICA



- » Abu Dhabi
- » Angola
- » Kuwait
- » Saudi Arabia
- » South Africa
- » Zambia

## OCEANIA



- » Australia
- » New Zealand

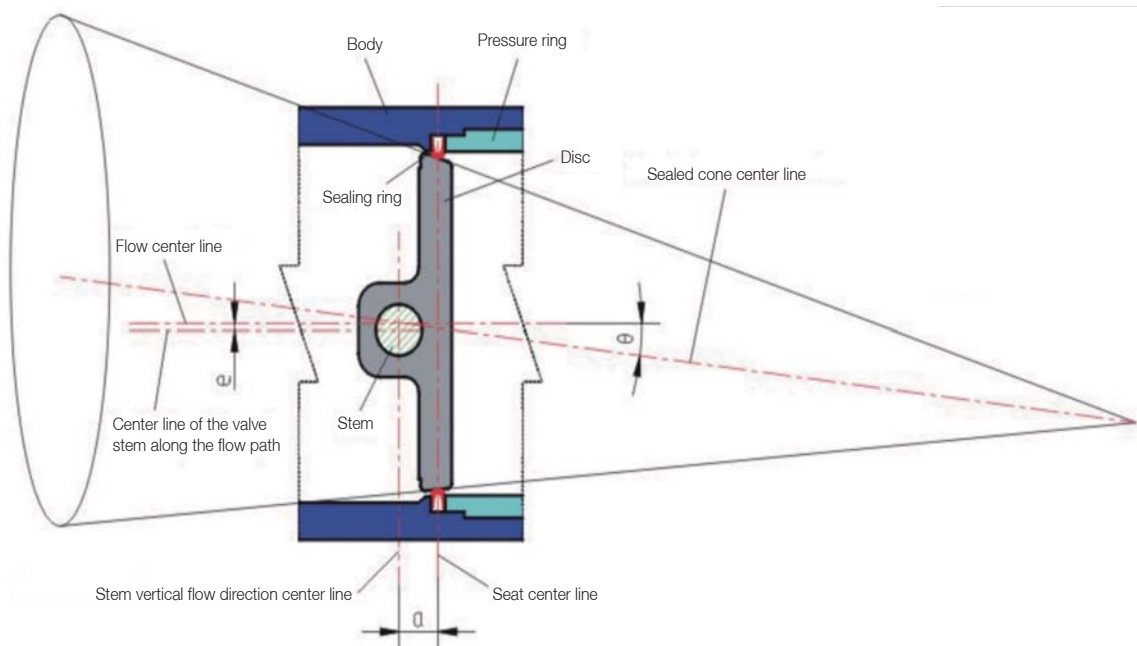
# BUTTERFLY VALVE KKD-FW

## OPTIMAL FLOW FOR DISTRICT HEATING/COOLING LINES

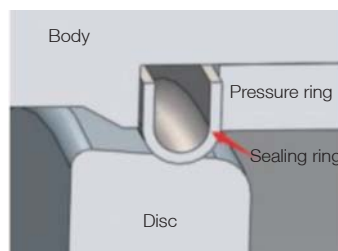
The Triple Eccentric Flexible Metal Seal Butterfly Valve is uniquely developed for the district heating/cooling industry. With special structure, the U-type metal sealing enables the valve to achieve bi-directional and symmetric sealing due to its resilience. This design also avoids the influence of thermal stress on the sealing element.

## TRIPLE ECCENTRIC FOR OPTIMAL TIGHTNESS

The triple eccentric butterfly valve offers optimal bi-directional tightness for the most demanding applications. The unique triple eccentricity structure reduces the friction between the disc and seat ring during opening and closing, preventing wear while prolonging the service life.



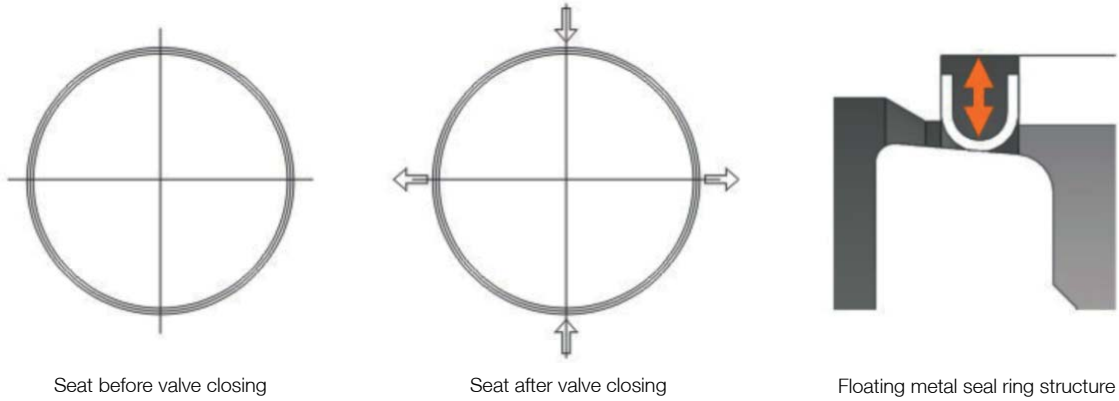
- » First Offset: the valve stem is behind the disc shaft so that the seal can completely close the entire valve seat.
- » Second Offset: the centerline of the valve stem is offset from the pipe and valve centerline to avoid interference from valve opening and closing.
- » Third Offset: the seat cone axis deviates from the centerline of the valve shaft, which eliminates friction and abrasion during closing and opening and achieves a uniform compression seal around the entire seat.



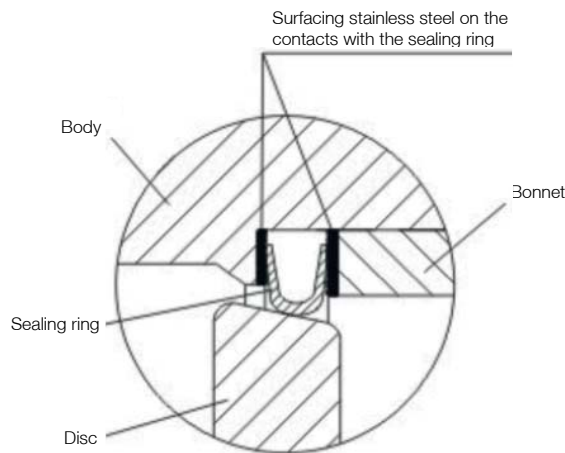
## » UNIQUE METAL SEALING FEATURE

- » Metal disc seals against metal seat, suitable for high temperature and media with impurities.
- » Hardened seat surface offers increased strength together with triple eccentricity offers prolonged life.
- » Flexible U-type metal seal offers increased tightness with resilience. When disc is in open position, the seat ring relaxes and remains in circular shape. When disc moves to closed position, it pushes and presses the sides of the seat ring and the seat ring automatically adapts to optimal sealing with resilience.
- » The seat design overcomes stress caused by large temperature fluctuations.

# BUTTERFLY VALVE KKD-FW



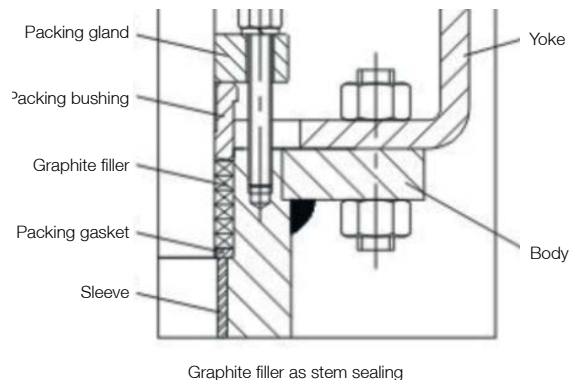
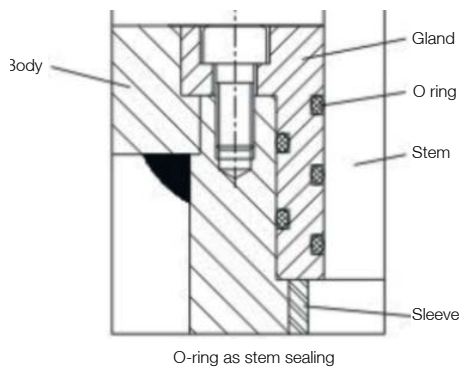
- » Contact to the U-type metal seal is hardened with stainless steel, resulting in strong and durable contact surface and long service life.



## STEM SEALING

Two designs available to satisfy general and high temperature application.

- » VITON O-ring: 5 O-ring seals are carefully placed to provide reliable sealing performance. VITON offers strong resistance and is suitable for temperature up to 200°C.
- » Graphite stem packing: for applications with higher temperature, graphite is used as stem sealing which can stand up to 300°C. This structure requires use of a yoke to create clearance to the driving elements.





# BUTTERFLY VALVE KKD-FW

For District Heating, Cooling, HVAC and more



## PRODUCT ADVANTAGES

- » Fully welded construction eliminates leakage
- » Lightweight and cost-effective
- » Easy to install and insulate
- » Long service life, maintenance free
- » Double shaft design increases flow capacity
- » Triple offset geometry reduces wear
- » U-type flexible metal seal optimizes tightness
- » Metal sealing offers long life and wide applicable temperature range
- » Bi-directional tight to EN12266-1 Rate B
- » Designed to EN 488



## OPTIONS

- » Manual gear, electric or hydraulic actuator
- » Available in welded, flanged connection



## PRODUCT DETAILS

Pressure Rating	PN10, PN16, PN25 Class 150, Class 300
DN	300-1400
Material	Carbon steel, stainless steel
Temperature	-10°C to 200°C Other temperature range on request
Structure Design	Triple Offset
End Type	Welding end, flanges
Bore	Full and reduced bore
Leakage Class	EN 12266-1 Rate B





# BUTTERFLY VALVE KKD-FW83

Triple Eccentric Flexible Metal Seal Butterfly Valve  
PN25, DN300 - DN800, Full Bore, Welding End  
PN25, DN900 - DN1400, Reduced Bore, Welding End

## MATERIAL

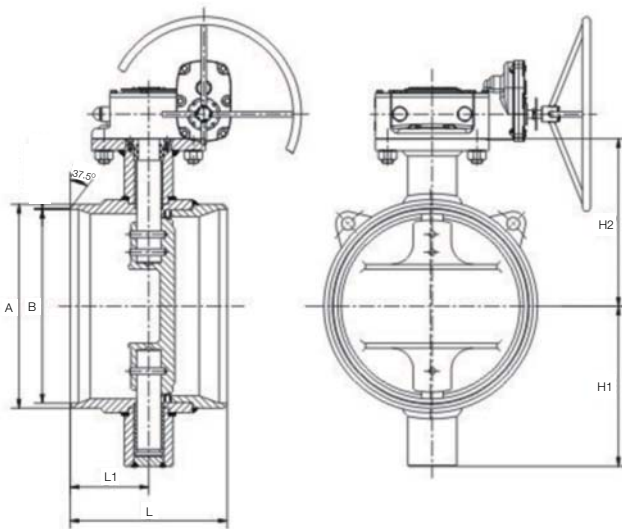
- » Body: Carbon steel
- » Disc: Stainless steel 316 (1.4408)
- » Seal: Alloy steel, Incoloy 825
- » Stem: Stainless steel, 17-4PH
- » Bushing: ASTM B148 C95800 + Graphite
- » Stem seal: Flexible graphite packing

## ACCEPTANCE TESTING

- » EN 12266-1 Rate B

## TEMPERATURE

- » -10°C to 200°C
- » Other temperature range on request



## Dimensions (mm):

DN	NPS	L	L1	A	B	H1	H2	KV
300	12"	270	120	325	309	255	280	6300
350	14"	290	140	377	360	296	310	7400
400	16"	310	150	426	408	333	350	9800
450	18"	330	160	480	462	355	380	12100
500	20"	350	170	530	510	382	410	15600
600	24"	390	195	630	606	476	487	22700
700	28"	430	215	720	692	520	580	31300
800	32"	470	233	820	788	615	635	40700
900	36"	510	255	920	884	670	670	46100
1000	40"	550	275	1020	980	720	730	56900
1200	48"	630	315	1220	1160	770	895	65000
1400	56"	710	355	1420	1376	925	990	101000

\* For other pressure rating or material, please contact us.

\* Dimensions are for reference and are subject to change without notice.

# BUTTERFLY VALVE KKD-FW83Y

Triple Eccentric Flexible Metal Seal Butterfly Valve  
PN25, DN300 - DN800, Full Bore, Welding End, With Yoke  
PN25, DN900 - DN1400, Reduced Bore, Welding End, With Yoke

## MATERIAL

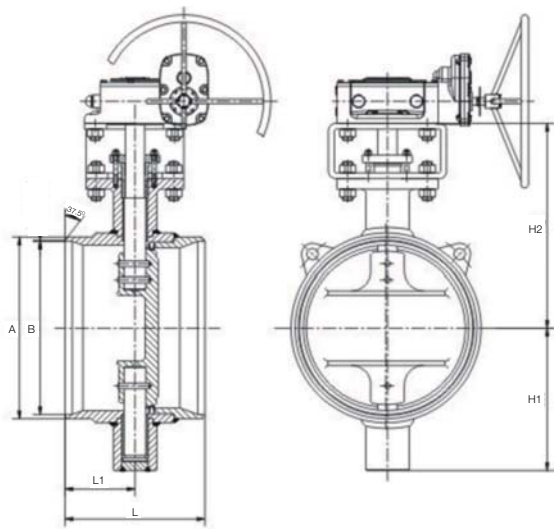
- » Body: Carbon steel
- » Disc: Stainless steel 316 (1.4408)
- » Seal: Alloy steel, Incoloy 825
- » Stem: Stainless steel, 17-4PH
- » Bushing: ASTM B148 C95800 + Graphite
- » Stem seal: Flexible graphite packing

## ACCEPTANCE TESTING

- » EN 12266-1 Rate B

## TEMPERATURE

- » -10°C to 200°C
- Other temperature range on request



## Dimensions (mm):

DN	NPS	L	L1	A	B	H1	H2	KV
300	12"	270	120	325	309	255	380	6300
350	14"	290	140	377	360	296	420	7400
400	16"	310	150	426	408	333	460	9800
450	18"	330	160	480	462	355	490	12100
500	20"	350	170	530	510	382	545	15600
600	24"	390	195	630	606	476	622	22700
700	28"	430	215	720	692	520	730	31300
800	32"	470	233	820	788	615	785	40700
900	36"	510	255	920	884	670	830	46100
1000	40"	550	275	1020	980	720	920	56900
1200	48"	630	315	1220	1160	770	1085	65000
1400	56"	710	355	1420	1376	925	1200	101000

\* For other pressure rating or material, please contact us.

\* Dimensions are for reference and are subject to change without notice.

# BUTTERFLY VALVE KKD-FW83F

Triple Eccentric Flexible Metal Seal Butterfly Valve  
PN25, DN300 - DN800, Full Bore, Flange End  
PN25, DN900 - DN1400, Reduced Bore, Flange End

## MATERIAL

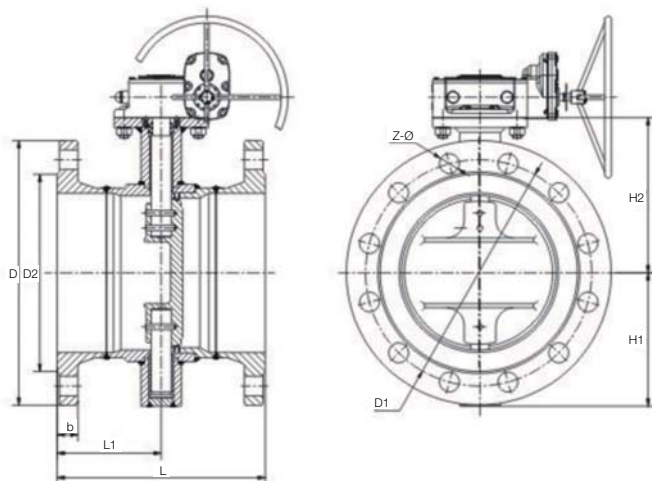
- » Body: Carbon steel
- » Disc: Stainless steel 316 (1.4408)
- » Seal: Alloy steel, Incoloy 825
- » Stem: Stainless steel, 17-4PH
- » Bushing: ASTM B148 C95800 + Graphite
- » Stem seal: FPM (VITON) O-ring

## ACCEPTANCE TESTING

- » EN 12266-1 Rate B

## TEMPERATURE

- » -10°C to 200°C
- Other temperature range on request



## Dimensions (mm):

DN	NPS	L	L1	D	D1	D2	b	Z-φ	H1	H2	KV
300	12"	458	214	485	430	395	34	12-φ30	255	280	6300
350	14"	494	242	555	490	450	38	12-φ33	296	310	7400
400	16"	534	262	620	550	505	40	12-φ36	333	350	9800
450	18"	554	272	670	600	555	46	16-φ36	355	390	12100
500	20"	604	297	730	660	615	48	16-φ36	382	410	15600
600	24"	644	322	845	770	720	58	16-φ39	476	487	22700
700	28"	692	346	960	875	820	50	20-φ42	520	580	31300
800	32"	750	373	1085	990	930	54	20-φ48	615	635	40700
900	36"	814	407	1185	1090	1030	58	24-φ48	670	670	46100
1000	40"	878	439	1320	1210	1140	62	24-φ56	720	730	56900
1200	48"	968	484	1530	1420	1350	70	28-φ56	770	895	65000
1400	56"	1060	530	1755	1640	1560	76	32-φ62	925	990	101000

\* For other pressure rating or material, please contact us.

\* Also available in other flange standard by request.

\* Dimensions are for reference and are subject to change without notice.

# BUTTERFLY VALVE KKD-FW83FY

Triple Eccentric Flexible Metal Seal Butterfly Valve  
PN25, DN300 - DN800, Full Bore, Welding End, With Yoke  
PN25, DN900 - DN1400, Reduced Bore, Welding End, With Yoke

## MATERIAL

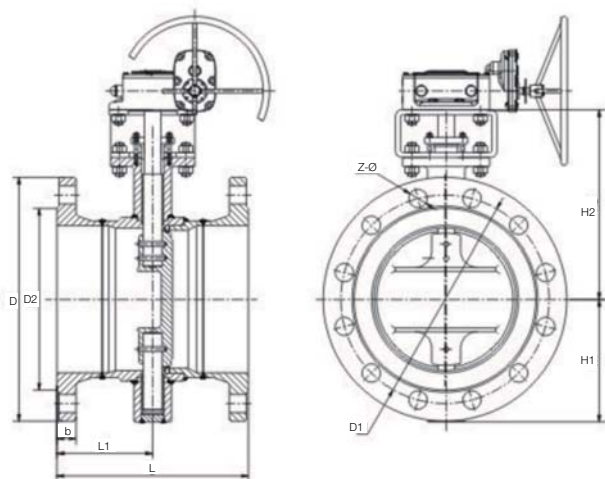
- » Body: Carbon steel
- » Disc: Stainless steel 316 (1.4408)
- » Seal: Alloy steel, Incoloy 825
- » Stem: Stainless steel, 17-4PH
- » Bushing: ASTM B148 C95800 + Graphite
- » Stem seal: Flexible graphite packing

## ACCEPTANCE TESTING

- » EN 12266-1 Rate B

## TEMPERATURE

- » -10°C to 200°C
- Other temperature range on request



## Dimensions (mm):

DN	NPS	L	L1	D	D1	D2	b	Z-φ	H1	H2	KV
300	12"	458	214	485	430	395	34	12-φ30	255	380	6300
350	14"	494	242	555	490	450	38	12-φ33	296	420	7400
400	16"	534	262	620	550	505	40	12-φ36	333	460	9800
450	18"	554	272	670	600	555	46	16-φ36	355	490	12100
500	20"	604	297	730	660	615	48	16-φ36	382	545	15600
600	24"	644	322	845	770	720	58	16-φ39	476	622	22700
700	28"	692	346	960	875	820	50	20-φ42	520	730	31300
800	32"	750	373	1085	990	930	54	20-φ48	615	785	40700
900	36"	814	407	1185	1090	1030	58	24-φ48	670	830	46100
1000	40"	878	439	1320	1210	1140	62	24-φ56	720	920	56900
1200	48"	968	484	1530	1420	1350	70	28-φ56	770	1085	65000
1400	56"	1060	530	1755	1640	1560	76	32-φ62	925	1200	101000

\* For other pressure rating or material, please contact us.

\* Also available in other flange standard by request.

\* Dimensions are for reference and are subject to change without notice.





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KLINGER Die Erste Industry Co., Ltd.  
5F-1, No.936 » Sec.4, Wen-Xin Rd., Taichung City» Taiwan  
Tel: +886 4 2231 0059 » Fax: +886 4 2236 0236  
sales@die-erste.com

[www.klinger-dieerste.com](http://www.klinger-dieerste.com)