HPX Series

Triple Offset Low Emission Butterfly Valves

Assured Automation's HPX Triple Offset Low Emission Butterfly Valves are an ideal solution for positive shut-off or modulating control applications in erosive, corrosive and critical applications under ambient conditions, high heat, and cryogenic temperatures. The HPX is dependable in severe service and comes with field maintainable bolt-in seats and seals, which help increase a plants efficiency as well as reduce the overall cost of ownership.

Rather than the concentric bore design of standard valves, the HPX sealing geometry is an ellipse, which provides a friction-free design with low-torque seating. Since the valve's bore and disc are not a perfect circle, the sealing mechanism is allowed to unseat itself with less torque, resulting in a lower dynamic torque. The sealing components are inherently fire-safe with metal-to-metal seating while maintaining a bidirectional, zero-leakage, bubble-tight shut-off.

FEATURES

- High-temperature graphite stem packing to prevent fugitive emissions and fire hazards
- Easily field-repairable body and disc seats without special tooling
- Internal keyed and pinned connection to align disc seal to body seat
- One-piece shaft for resistance to full bi-directional pressure/vacuum service
- API-certified fire-safe design for zero leakage before/during/after a fire
- Tight shut off: ISO 5208 Rating - A
- Low Torque and Seat Friction
- Lightweight compared to ball, plug, globe, and gate valves of the same size
- Good for throttling which makes them a good alternative to globe and gate valves
- Bidirectional flow with positive shut-off in both directions for gasses and liquids

END CONNECTIONS

ANSI 150# Lugged and Wafer: 3" to 48"
ANSI 300# Lugged and Wafer: 3" to 48"
ANSI 600# Lugged and Wafer: 4" to 24"
Long Pattern Flanged and Buttweld also available

MAX. PRESSURE

ANSI 150#: 285 PSI
ANSI 300#: 740 PSI
ANSI 600#: 1400 PSI

MAX. TEMPERATURE

800˚F

TYPICAL APPLICATIONS

- Oil and gas processing
- Refineries
- High and low temperature service
- Oxygen service
- Hydrogen
- Saturated steam
- Chemical plants
- Power generation plants
- Pulp and paper

CERTIFICATIONS & APPROVALS

- Compliant to ANSI 150/300/600 standards
- Compliant to API 598/607/609 standards
- Compliance to API 641, ISO 15848-1 & ISO 15848-2 available upon request

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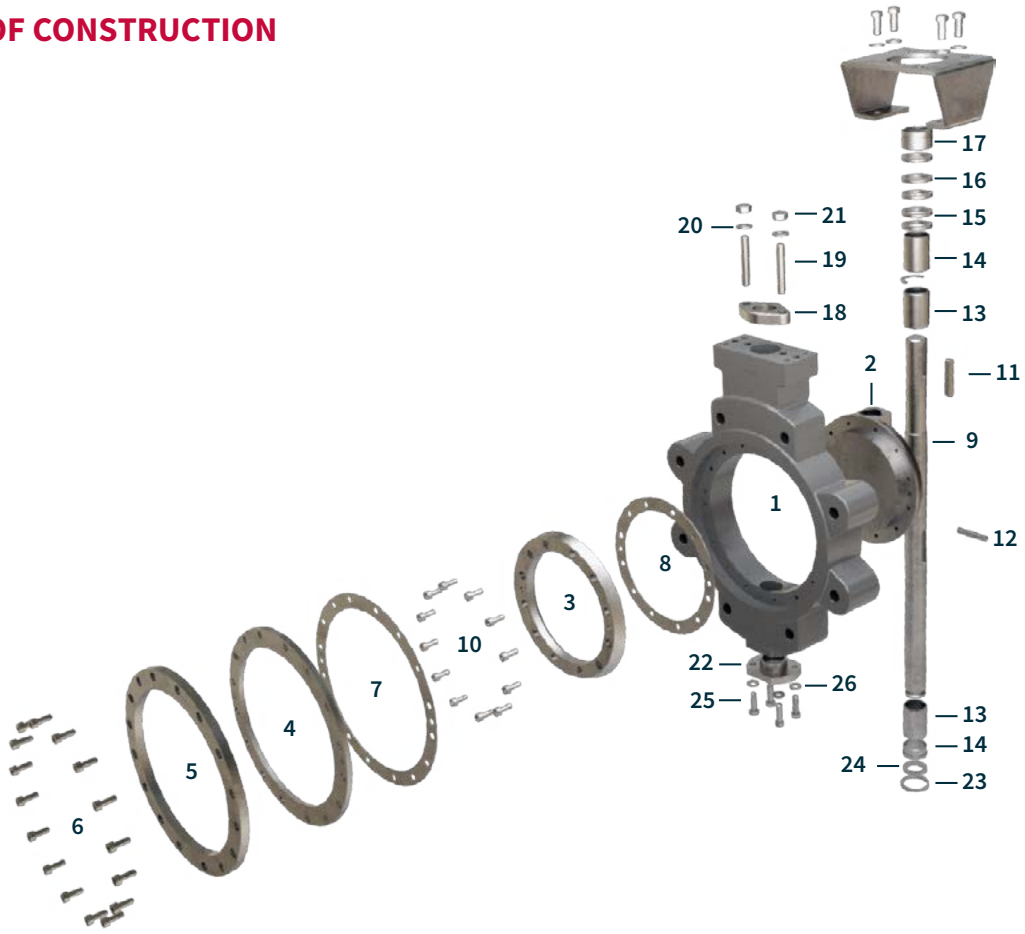
MATERIALS OF CONSTRUCTION



Item	Part (Qty.)	Material (CS)	Material (SS)
1	Body	A216-WCB	A351-CF8M
2	Disc	A216-WCB	A351-CF8M
3	Disc Seal	SS 316	SS 316
4	Body Seat	Laminated SS 316/Graphite	Laminated SS 316/Graphite
5	Seat Retainer	SS 304	SS 316
6	Seat Retainer Screw	SS 304	SS 316
7	Body Seat Gasket	Graphite	Graphite
8	Disc Seal Gasket	Graphite	Graphite
9	Shaft	A564-630 H1100	A564-630 H1100
10	Disc Seal Screw	SS 304	SS 316
11	Key	SS 630	630 SS
12	Disc Pin	SS 316	SS 316
13	Shaft Bearing	SS 316 + ENP	SS 316 + ENP

Item	Part (Qty.)	Material (CS)	Material (SS)
14	Collar	SS 304	SS 316
15	Packing Retainer	SS 316	SS 316
16	Packing	Graphite	Graphite
17	Packing Gland	SS 304	SS 316
18	Gland Flange	SS 304	SS 316
19	Stud Bolt	SS 304	SS 316
20	Spring Washer	SS 304	SS 316
21	Nut	SS 304	SS 316
22	End Cap	SS 304	SS 316
23	End Gasket	Graphite	Graphite
24	Shaft Retainer	SS 304	S 316
25	End Cap Screw	SS 304	SS 316
26	Spring Washer	SS 304	SS 316

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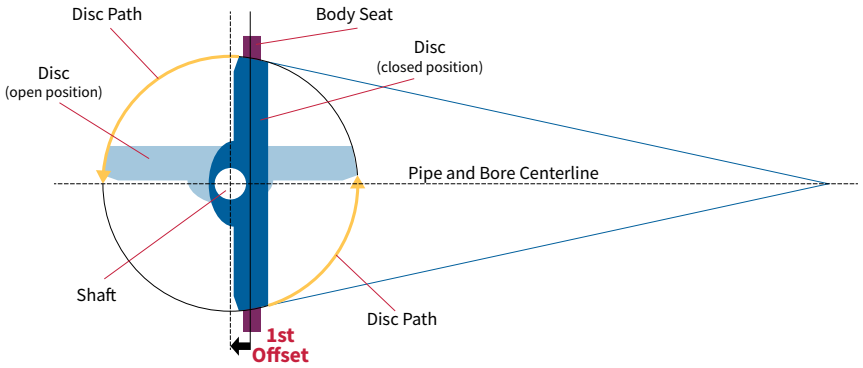
TRIPLE OFFSET DESIGN PRINCIPLE

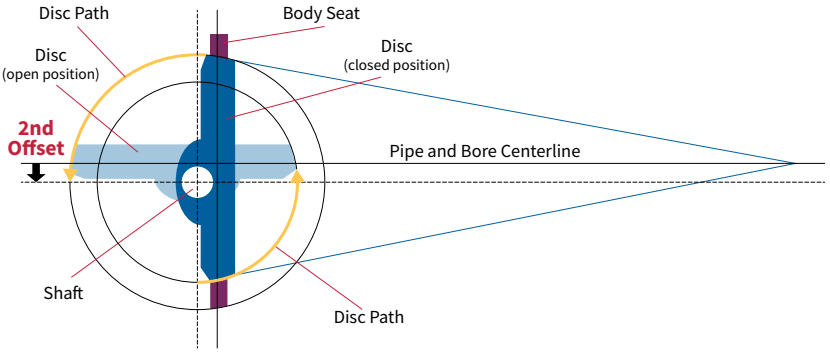
1st Offset

The axis upon which the stem shaft rotates is pushed back behind the centerline of the sealing points. This provides positive sealing and increased sealing capacity.



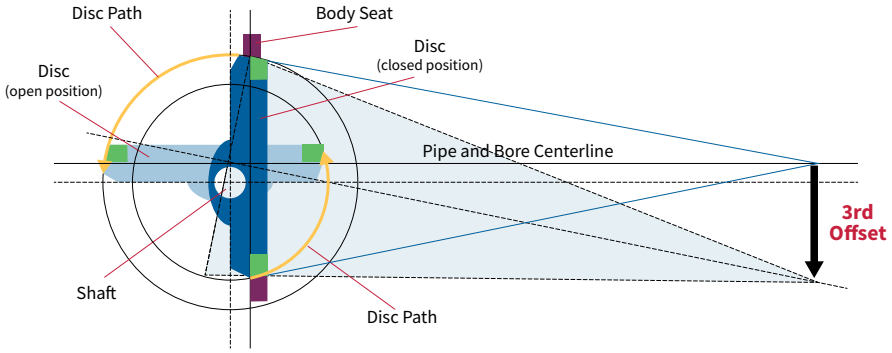
2nd Offset

The axis upon which the stem shaft rotates is pushed down below the centerline of the pipe. This reduces friction between the seat and disc which in turn reduces running torque.



3rd Offset

The vertex of the seat and seal cone is moved sideways to approximately the wall of the pipe. This creates elliptical sealing surfaces which completely eliminates seat and seal friction and creates a zero-leakage seal in high pressure and temperature ranges. The uniform compression of the seat and seal make it inherently fire-safe.



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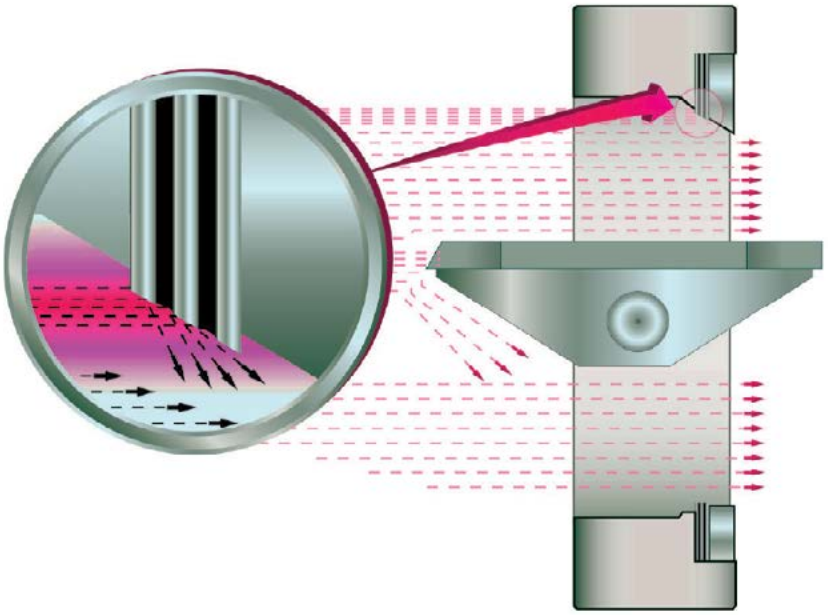
SUPERIOR SEAL DESIGN

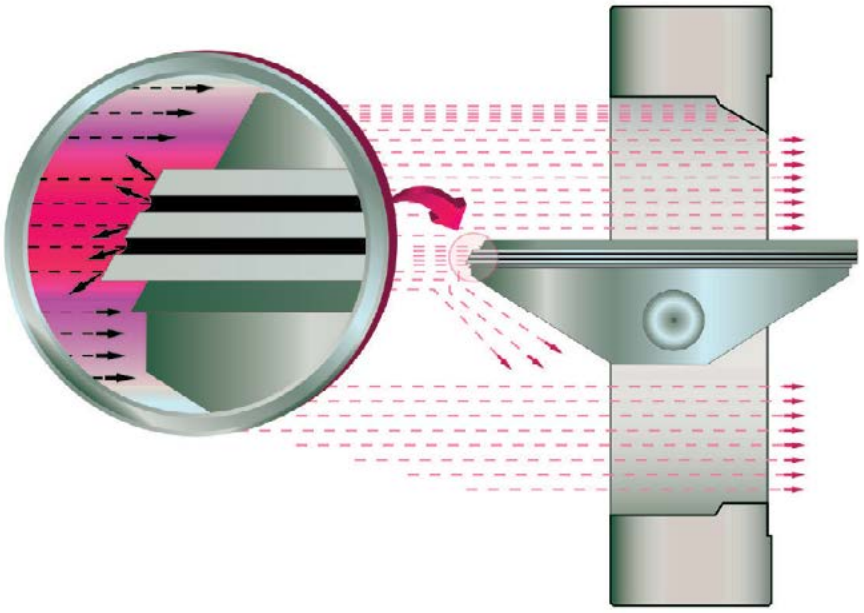
HPX

The laminated seat is on the valve body placing it out of the direct flow path of the media. This reduces wear and the possibility of delamination and suceptibility to errosion. The solid disc seal is field replaceable without special tools.



Typical Competitor

The laminated seat is on the disc placing it directly in the fastest moving part of the flow path of the media. This increases wear and the possibility of delamination and suceptibility to errosion. The solid seal is integral to the valve body and is not field replaceable - it will require machining.



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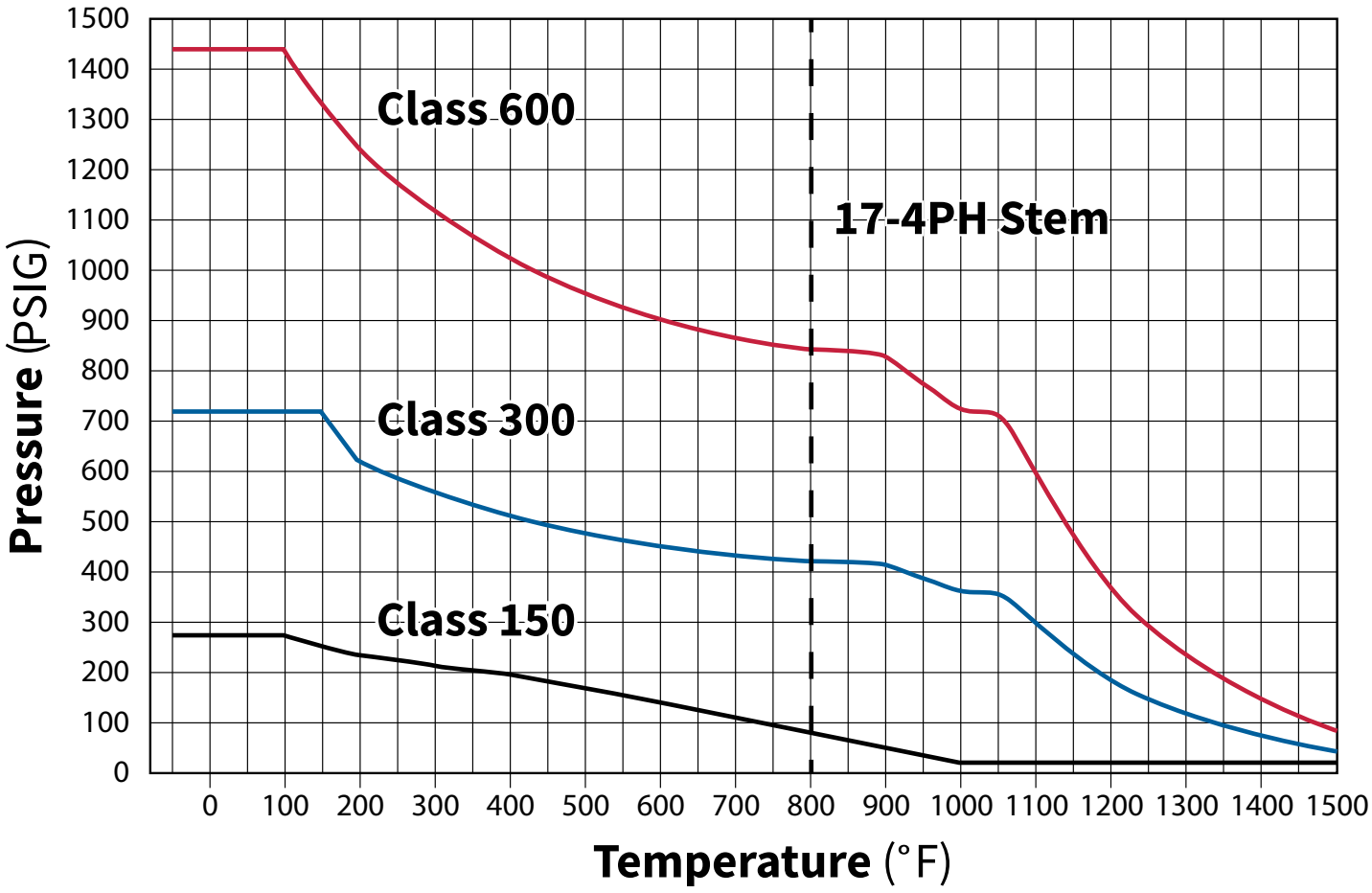
PRESSURE / TEMPERATURE CURVES



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TRIPLE OFFSET BUTTERFLY VALVE ORDERING

H	HPX	L	1	LFE	1	F8SC...
Size	Series	Conn.	Body	Packing	Class	Actuator

VALVE BODY

Size:

H	= 2”	**L**	= 5”	**P**	= 12”	**T**	= 20”
I	= 2 1/2”	**M**	= 6”	**Q**	= 14”	**U**	= 24”
J	= 3”	**N**	= 8”	**R**	= 16”	*Larger Sizes Available*	
K	= 4”	**O**	= 10”	**S**	= 18”		

Series:

HPX = Triple Offset Low Emission Butterfly Valve

End Connection Type:

L = Lugged
W = Wafer

Body Material:

1 = Carbon Steel (A216-WCB)
6 = Stainless Steel (A351-CF8M)

Stem Packing

STD = Standard (Die-formed Graphite with braided Graphite top & bottom)
LFE = Low Fugitive Emissions (API 622 certified packing)

End Connection ANSI Class:

1 = 150#
3 = 300#
6 = 600#

***Note:** only one actuator may be chosen*

Code continues to specify additional accessories and options

F	8	S	C
Series	Air psi	Function	Fail Position

ACTUATOR

Pneumatic Actuators

Series:

F = F series Dual Rack & Pinion

Supply Air Pressure:

6 = 60psi **8** = 80psi

Function:

S = spring return **D** = double acting

Fail Safe Position:

C = fail to CLOSED **O** = fail to OPEN
omit for direct acting

K4	A
Series	Voltage

Electric Actuators

Series:

K4 = weatherproof; worm gear
B7 = Heavy duty explosion proof

Voltage:

A = 120VAC **B =** 24VDC **F =** 12VDC *(omit for S4UV)*

M
Type

Manual Lever

M = 13-position spring-loaded locking handle