

**Fujikin®**

# WEIRLESS DIAPHRAGM VALVES

U.S. VERSION  
NOW AVAILABLE!

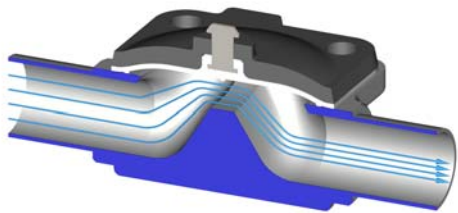
NO RE-TORQUING UP  
TO 100,000 CYCLES!

Can be installed at any angle between  $\pm 55^\circ$  from perpendicular.  
Exceptional for tight piping designs & minimizing installation errors.

Patented in the United States

## Flow Channel

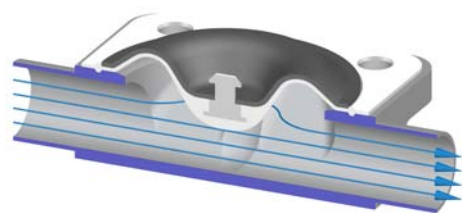
### Conventional Type



- Channel becomes narrow at the weir.
- Unsuitable for high viscosity fluids or slurries.



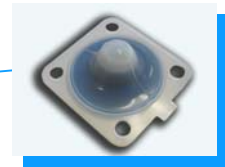
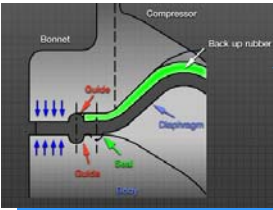
### Weirless Type



- Channel is straight.
- Smooth flow path aids drainability and flow of viscous fluids, slurries etc.

## Product Details

# 2007 Release

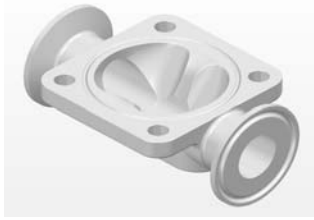


- ASME BPE Fitting Dimensions
- USP Class VI/FDA Compliant Diaphragms
- 3A Compliant Leak Port, Bonnet Material & Food Grade Lubricant
- Markings Aid Traceability of Diaphragm & Body
- Available Torque Limiter Prevents Diaphragm Damage
- No Re-Torquing up to 100,000 cycles of steam service



Available in Manual &  
Pneumatic; Autoclavable  
Stainless Steel & Plastic  
Actuators





## Specification

Material	Body	ASTM A182 F316L - Sulfur Content: 0.005 - 0.017% Wt. (ASME BPE Table DT-3)						
	Bonnet	300 Series Stainless Steel						
	Diaphragm	PTFE Product Contact Surface/EPDM Backing Cushion PTFE ( USP Class VI, FDA 177.1550 ), EPDM ( USP Class VI, FDA 177.2600 )						
	Automatic Actuator	1/4" , 3/8" - 304 Stainless Steel 1/2" - 2" - Plastic (PPS)						
	Manual Handle	304 Stainless Steel						
Max. Service Pressure		150 psig (1.03 MPa) ( ΔP = 100% )						
Service Temperature		-13°F ~ 302°F (-25°C ~ 150°C)						
Roughness		Ra 15µin (0.38µm) ( ASME BPE TABLE SF-6 : SFV4 )						
Installation Angle		- 55° ~ + 55° to the Vertical Axis						
Automatic Valve Spec	Type	Normal Close						
	Air Pressure Req. to Open	87 psig to 101.5 psig (0.6 Mpa to 0.7 MPa)						
Connection		Sanitary Clamp (ASME BPE 2005)						
		Butt Weld (ASME BPE 2005)						
		Butt Weld - Extended Weld Tangent ( ASME BPE Table DT-4 )						
Valve Size		1/4"	3/8"	1/2"	3/4"	1"	1-1/2"	2"
Cv		0.5	1.5	2.5	7	12	30	50

## Risk Analysis Applied to Valve Leaks

1. Leaks from between valve body and diaphragm
2. Leaks through PTFE diaphragm into bonnet



*Fujikin* Weirless Diaphragm Valve  
Leak Ports



### Risk Classification

		Risk Likelihood		
		Low	Medium	High
Severity of impact	High	Level 2	Level 3	Level 3
	Medium	Level 1	Level 2	Level 3
	Low	Level 1	Level 1	Level 2

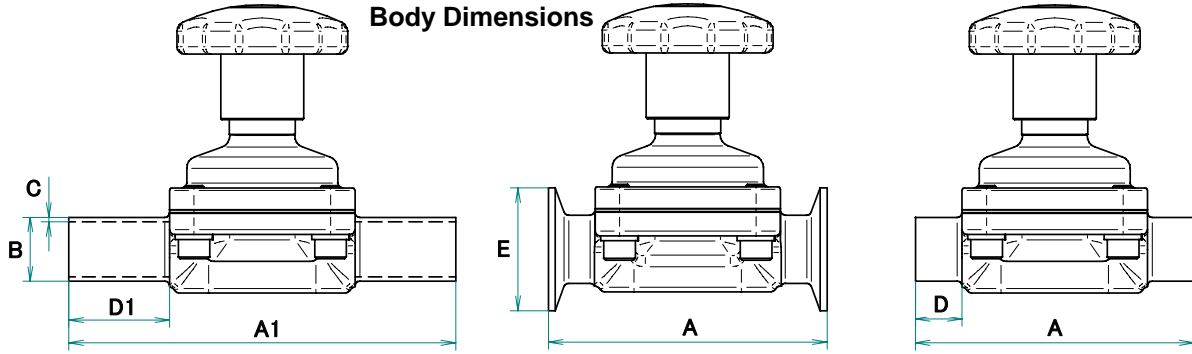
Such leaks are Level 2 or Level 3 Risk Classifications

### Risk Priority

		Probability of Detection		
		Low	Medium	High
Risk Classification	Level 3	High Priority	High Priority	Medium Priority
	Level 2	High Priority	Medium Priority	Low Priority
	Level 1	Medium Priority	Low Priority	Low Priority

Weirless Valve's high detectability for leaks reduces Risk Priority to *Medium* or *Low* Priority

### Body Dimensions



UNIT: Inch (mm)

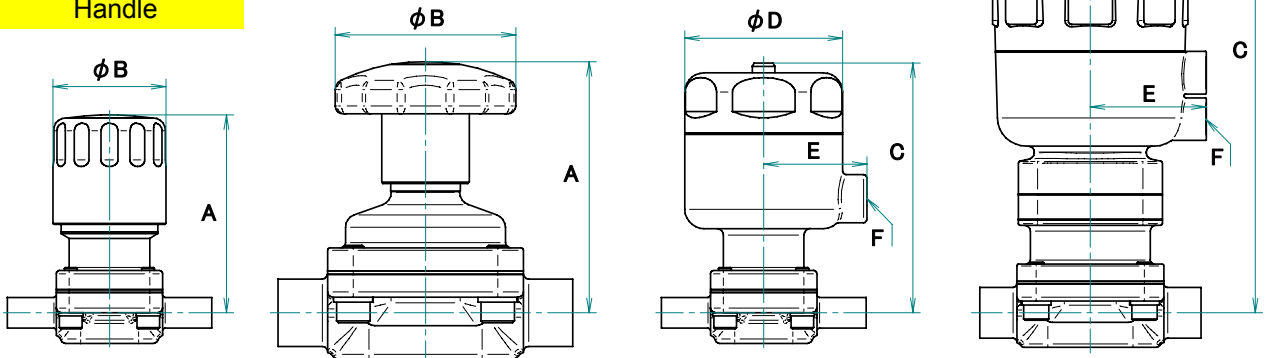
Size	A1	B	C	D1 *1	A	D	E *2
1/4"	3.0 (76.2)	0.25 (6.35)	0.035 (0.89)	1 (25.0)	2.5 (63.5)	0.77 (19.5)	0.984 (25.0)
3/8"	3.5 (88.9)	0.375 (9.52)	0.035 (0.89)	1 (25.0)	2.5 (63.5)	0.60 (15.2)	0.984 (25.0)
1/2"	4.75 (120.7)	0.5 (12.7)	0.065 (1.65)	1.5 (38.0)	3.5 (88.9)	0.94 (23.9)	0.984 (25.0)
3/4"	5.5 (139.7)	0.75 (19.05)	0.065 (1.65)	1.5 (38.0)	4 (101.6)	0.86 (21.8)	0.984 (25.0)
1"	6.25 (158.8)	1 (25.40)	0.065 (1.65)	1.5 (38.0)	4.5 (114.3)	0.75 (19.1)	1.984 (50.4)
1-1/2"	7.5 (190.5)	1.5 (38.10)	0.065 (1.65)	1.5 (38.0)	5.5 (139.7)	0.60 (15.3)	1.984 (50.4)
2"	8.5 (215.9)	2 (50.80)	0.065 (1.65)	1.5 (38.0)	6.25 (158.8)	0.51 (12.9)	2.516 (63.9)

\*1 ASME BPE TABLE DT-4

\*2 ASME BPE TABLE DT-5.1

### Upperworks Dimensions

Torque Limiter Handle



Valve Size 1/4", 3/8"

Valve Size 1/2" to 2"

Valve Size 1/4", 3/8"

Valve Size 1/2" to 2"

UNIT: Inch (mm)

Manual	Size	A	phi B	Auto	Size	C	phi D	E	F
	1/4"	2.1 (54)	0.9 (24)		1/4"	2.6 (65)	1.5 (37)	1.1 (27)	1/8 NPT
3/8"	2.4 (62)	1.4 (35)	3/8"	3.0 (77)	1.9 (49)	1.3 (32)	1/8 NPT		
1/2"	2.8 (70)	1.4 (35)	1/2"	5.6 (143)	2.5 (63)	1.5 (39)	G 1/8		
3/4"	3.4 (86)	2.0 (50)	3/4"	6.9 (175)	3.1 (80)	2.0 (52)	G 1/4		
1"	4.0 (101)	2.8 (70)	1"	8.3 (211)	4.0 (101)	2.4 (60)	G 1/4		
1-1/2"	5.3 (133.5)	4.3 (110)	1-1/2"	11.1 (281)	5.0 (127)	2.9 (73)	G 1/4		
2"	6.2 (157)	6.3 (160)	2"	13.0 (331)	6.2 (158)	3.4 (86)	G 1/4		

WLKB-006

**Fujikin Of America**  
Pharmaceutical & Biotechnology Division.

New Jersey Office.  
4 Alsan Way, Little Ferry, NJ 07643  
Phone: 1-201-641-1119  
Fax: 1-201-641-1137  
Email: biopharmasales@fujikin.com  
Web: www.fujikin.com