



Super Clean Class

Diaphragm Valves



Diaphragm Valve

The Diaphragm valve structures with 3 major parts (Body, Diaphragm and Bonnet). The mechanical structure of this valve is so simple that the complete isolation of fluid from the metal parts of valve body and trim. The diaphragm valve is mainly used in Chemical Plant using lot of corrosive liquids.

These Diaphragm valve may be used for weir, angle and straightway styles, and Diaphragm valve be classified inside body lining or non-lining type.



- ▲ Model No. ; RDV4000
Pneumatic Operation
w/Position Indicator
Weir type, Non-Lined, FF

Model No. ; (e.g.)

WDV4411 – Cast iron Body, FF
WDV4511 – Ductile iron Body, FF
WDV1107 – CF8 Weir Body, RF
WDV1800 – PVC/PVDF Body, RF

Design Description :

Type : Weir, Straightway and Angle Type

Size(A) : 15A ~ 400A,

(B) : $\frac{1}{2}$ B ~ 16B

Working Pressure : Max. 13.8 Kg/cm²

Materials

Body : Cast iron, Ductile cast iron,
Cast steel, PVC,
Cast stainless steel etc.

Lining : Rubber, Teflon and Non-lined
Diaphragm : Teflon, Rubber (EPDM etc.)

End connection : Flanged (FF or RF), SW, BW

Figure : Inside screw rising stem,
Bolted bonnet,
Rising hand-wheel

Characteristics of Diaphragm Valves

1. The unit is of compact design and easy operation.

The simple, high quality at lower cost through the unique and modular of all components.

2. High capacity

Streamlined body minimizes flow resistance and increases flow capacity, For applications for continuous flow with minimum loss of pressure and cavitation is minimum

3. Tight shut-off

Clamped between the diaphragm and trim alignment for tight shut-off.

4. Easy maintenance

Top entry diaphragm type for easy maintenance.

5. Stable operation

Heavy duty guiding provides stable operation of Diaphragm.

6. Linear contoured ports are designed

Semi-throttle contoured diaphragm are designed and the initial linear control reduces line hammer and shock associated with quick opening.

7. Diaphragm valves on severe service can be supplied.

Service involving erosive, corrosion, abrasion fluids containing suspended solids and high slurry or viscosity.

PFA Lined Diaphragm Valves

The range of applicable fluid is very wide from pure water for semi-conductor production to the sticky and contaminated sewage, from corrosive liquid with many contaminants to gas. Because as such a flexibility of valve configuration can keep the inside of the valve extremely clean with PTFE or PFA (Non-Elastic Fluoropolymer), the diaphragm valve is used as the key component in the process line requiring high purity fluid like the pure gas, liquid and water line in semi-conductor plant and pharmaceutical industry.



▲ Model No. ; **WDV1007**
Manual Operation
Weir type, RF
PFA Lined

Model No. ; (e.g.)

WDV1007 – CF8 Weir Body, RF

WDV1507 – A395 Weir Body, RF

WDV1607 – WCB Weir Body, RF

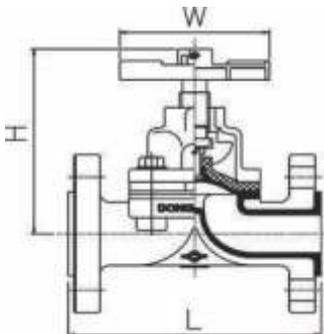
Design Description :

ANSI 150LB or KS 10K,
Weir type Body, PTFE+EPDM Diaphragm
Bolted Bonnet, Inside Screw,
Rising Stem, Non-rising Handwheel,
Flanged Ends – RF
Size(A) : 15A ~ 300A
(B) : ½B ~ 12B

Standard Features

340 or 440 Grade PFA Lined
Low internal volume & cavity
Clean for N₂ service
No packing in Stuffing box,
Compact size
Class 10 Clean Room

Dimension of End Connection



size	15A	20A	25A	40A	50A	65A	80A	100A	125A	150A	200A
	½B	¾B	1B	1½B	2B	2½B	3B	4B	5B	6B	8B
L	123	123	132	165	197	222	260	313	364	414	529
H	120	125	128	165	185	240	275	315	395	465	590
W	80	80	80	100	125	125	160	224	300	350	500

Kind of End Connection Style



▲ Raised Face



▲ Flat Face



▲ Taper Thread



▲ Socket Weld



▲ Butt Weld



▲ Ferrule

Diaphragm Valve for Biotechnology

DongYang F&C Co., Ltd. is a manufacturer and Exporter of fine quality products for the Biotechnology, Pharmaceutical & fermentation manufacturing industries. We specialize in products used for sterile fluid processing in cell culture and protein purification. Due to the diaphragm valve's streamlined flow path, absence of cavities and minimal contact surfaces, the valve is considered the "cleanest" valve or the valve least likely to cause contamination.



▲ Model No. ; **WDV7210**
Weir Body, Ferrule



▲ Model No. ; **GTH7030**
Globe Body, Ferrule



▲ Model No. ; **ADV7010**
Angle Body, Ferrule

Model No. ; (e.g.)

- SDV100** – CF8M Weir Body, RF
- SDV200** – CF3 Weir Body, BW
- WDV7210** – CF3M Weir Body, Clamp
- ADV7010** – CF8M Angle Body, Clamp

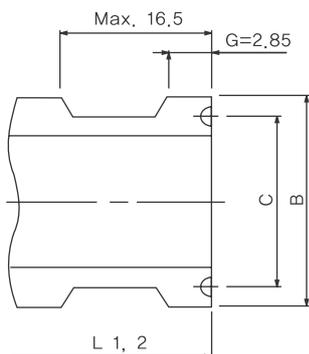
Standard Design Description :

Weir type Body,
Bolted Bonnet,
Inside Screw,
Rising Stem,
Rising Hand-wheel,
Size(A) : 8A ~ 100A
(B) : $\frac{1}{4}$ B ~ 4B

Standard Features

IDF End Connection
Weir type Body
Low internal volume
No packing in stuffing box
Compact & simple design
Metering actuators available
Diaphragm is only part in wetted area

Dimension of End Connection



unit : mm

DN	8	10	15	20	25	40	50	65	80	100
(B)	$\frac{1}{4}$ B	$\frac{3}{8}$ B	$\frac{1}{2}$ B	$\frac{3}{4}$ B	1B	$1\frac{1}{2}$ B	2B	$2\frac{1}{2}$ B	3B	4B
F to F (L1)	90.0	90.0	102	118	127	159	191	216	254	305
F to F (L2)	130	130	142	158	167	199	235	268	310	361
OD (B)	34.0	34.0	34.0	50.5	50.5	50.5	64.5	77.5	91.0	119
PCD (C)	27.5	27.5	27.5	43.5	43.5	43.5	56.5	70.5	83.5	110

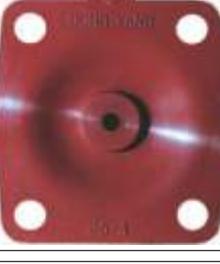
Remark ; 1. B, C and G Dimension are According to ISO2852
2. Face to Face dimension according to request

Type of Surface Treatment

Surface Treatment Method	Polishing Method	Buffing Method	
		Grinding Mesh	Aver. Ra(μ m)
Sand Blasting	EP(Electic Polishing)	# 400	0.1a
Glass Fitt	Grinding	# 300	0.4a – 0.9a
None	None	# 200	2.0a
		None	None

Diaphragm

The only wetted part is the diaphragm, which is typically available in multiple elastomer materials as well as EPDM rubber. This enables chemically compatible materials to be selected for almost any process media without the expense of upgrading the valve working parts, which are sealed from the process media by the diaphragm.

	<ul style="list-style-type: none"> • Mat'l: EPDM Rubber • Type: Square • Size: 6A, 8A, 10A, 15A • Use : Weir Body • Other : For Steam 6A, 8A; Hanger type 10A, 15A; Pin type 		<ul style="list-style-type: none"> • Mat'l: PFA+EPDM • Type: Square • Size: 15A – 80A • Use : Weir Body • Other : For Pure liquid Pin Type
	<ul style="list-style-type: none"> • Mat'l: EPDM Rubber • Type: Square • Size: 20A~80A • Use : Weir Body • Other : For Physic Screw type 		<ul style="list-style-type: none"> • Mat'l: PTFE Teflon • Type: Square • Size: 15A – 80A • Use : Weir Body • Other : For Pure liquid Pin Type
	<ul style="list-style-type: none"> • Mat'l: PTFE+EPDM • Type: Square • Size: 15A – 80A • Use : Weir Body • Other : For Acid liquid Pin Type Screw Type 		<ul style="list-style-type: none"> • Mat'l: Urethane Rubber • Type: Square • Size: 15A – 100A • Use : Weir Body • Other : For Solid media Screw Type
	<ul style="list-style-type: none"> • Mat'l: Silicon Rubber • Type: Square • Size: 15A – 80A • Use : Weir Body • Other : For Physic Pin Type 		<ul style="list-style-type: none"> • Mat'l: PTFE+EPDM • Type: Circle • Size: 100A – 400A • Use : Weir Body • Other : For Acid liquid Screw Type
	<ul style="list-style-type: none"> • Mat'l: EPDM Rubber • Type: Circle • Size: 100A – 400A • Use : Weir Body • Other : For Acid liquid Screw Type 		<ul style="list-style-type: none"> • Mat'l: EPDM Rubber • Type: Square • Size: 15A – 80A • Use : Straightway Body • Other : For Acid liquid Screw Type
	<ul style="list-style-type: none"> • Mat'l: EPDM Rubber • Type: Circle • Size: 100A – 350A • Use : Straightway Body • Other : For Acid liquid Screw Type 		<ul style="list-style-type: none"> • Mat'l: EPDM Rubber • Type: Circle • Size: 100A – 800A • Use : Actuators • Other :

Size of Cylinder for Pneumatic Operation



Dia. 30mm



Dia. 40mm



Dia. 80mm



Dia. 80mm
135mm
170mm



Dia. 200mm
250mm
300mm
350mm
400mm



Dia. 200mm
250mm
300mm
350mm
400mm over



Dia. 220mm
270mm
310mm
365mm
450mm
550mm

Action type of Actuators—Direct, Reverse, Double
Material ; Cylinder—ADC w/Anodizing(Dia.300mm under)
Ductile Iron(Dia.350mm and over)
Pipe style(Dia.200mm and over)
Diaphragm Actuators—Carbon steel Plate
Spring Material—SUP9
Grease Type—Silicon 300°C type

Accessories for Pneumatic Operation

Use for Control	Parts of Accessories
To on-off pneumatic	Stroke adjuster, Limit switch unit, Positioner, Solenoid valve unit, Manual operation unit
To control position	Positioner
To clean air	Air filter, Mist separator, Dryer
To control flow rate	Throttle, Speed controller, Booster relay, Quick exhaust valve
To control pressure	Relief valve, Air regulator, Pressure equalizing valve
To noise	Silence
To lubricate	Lubricator
To control direction	Directional valve, Check valve, Shuttle valve, Lock – up valve