

Semiconductor Fab Project Design.
Semiconductor Fab Pipeline Configuration.
Semiconductor Fab Pipeline Testing.



聯宸科技股份有限公司
Apex Union Technologies Co., Ltd

The expert of gas
pipeline technology



APEX UNION
Leading Technology
Quality Assurance



AUT Apex Union Technologies Co., Ltd.

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Connectivity trends
and achieve the future

ABOUT

AUT

Apex Union Technologies Co., Ltd. specializes in gas and liquid pipeline piping and testing technology in the semiconductor industry chain. It has leading technology and rich practical experience, and provides excellent technical support to major technology factories. Since the establishment in 2015, our engineering achievements have been widespread across Taiwan.

Quality

Provide excellent product and service quality

Efficiency

Efficiently execute and complete project tasks

Discipline

Require employees with strict discipline and system

Product Safety Instructions

Please read this document carefully before using the product.
For the safety of our company's products, it is necessary to confirm the product's selection, use, handling, and proper safety management.
To safely use our company's products, please follow the warnings and precautions to confirm your safety and prepare safety devices.

Precautions:

Warranty period:Our company's product warranty period is a full year from the date of delivery of the product to the customer's designated location.

Warranty scope:During the warranty period, we will provide free replacement products or necessary replacement parts without charge for any defects confirmed by our company, or the product will be returned to our company for repair.

The warranty does not cover the following situations:

1. When the usage conditions, environment, operation, or product specifications are exceeded, such as the handwheel torque value.

Handwheel torque value	HMV(MOV)04G2	HMV(MOV)08G2	HMV(MOV)12G2
Max lbf-in	4.5	8	18

2. The cause of the malfunction is not due to the valve.

3. Improper use of the product.

4. Malfunction caused by modification or disassembly of the valve.

5. The technical personnel could not foresee the cause of the malfunction before purchase.

6. Natural disasters or malfunctions not related to the company.

*This statement indicates that the warranty only covers the delivered product and does not cover any damage caused by delivery.

*It is the user's responsibility to confirm whether the system, machinery, device, and fluid used by their own company are suitable for the products of this company.

Regarding The Use Of Fluids:

The product seal is VITON; please confirm or consult our company in advance.

Regarding Fluid Temperature:

Please use within the fluid temperature range recorded in the catalog.

Regarding The Fluid Pressure Range:

Please use within the fluid pressure range recorded in the catalog.

Regarding The Surrounding Environment:

1. Please confirm whether the constituent materials and surrounding environment are suitable when using this product.

2. Do not allow liquid to adhere to the product.

3. Please use the product within the temperature range specified.

4. Do not use the product in locations where explosions, vibrations, or impacts are possible.

5. Do not use the product near heat sources, thermal radiation, or outdoors.

Maintenance And Inspection:

When replacing the valve, avoid any chemical liquid residue inside the valve from affecting surrounding machinery or personnel. Please completely flush the internal liquid with pure water or air before operation.

! For safety considerations, please pay attention to the following points during operation :

- 1 The operation of the valve will cause tiny gas to be released from the gas source hole on the side of the actuator. Even if it is a minimal amount, please ensure that no one is close to the gas source hole when the valve is drilled.
- 2 There may be attached crystals around the gas source hole and its vicinity.
- 3 Wear gloves when touching the valve, and do not touch it with bare hands.
- 4 Due to the use of hazardous chemicals, there may be residue between the actuator and diaphragm of the valve. Refrain from disassembling the valve by yourself.
- 5 If disassembly is necessary, please contact our company. If any problems occur after self-disassembly, our company will not be responsible.
- 6 To maintain the valve operating at its best performance, please conduct regular inspections 1 to 2 times yearly.

☐ Confirm that there is no leakage on the piping.

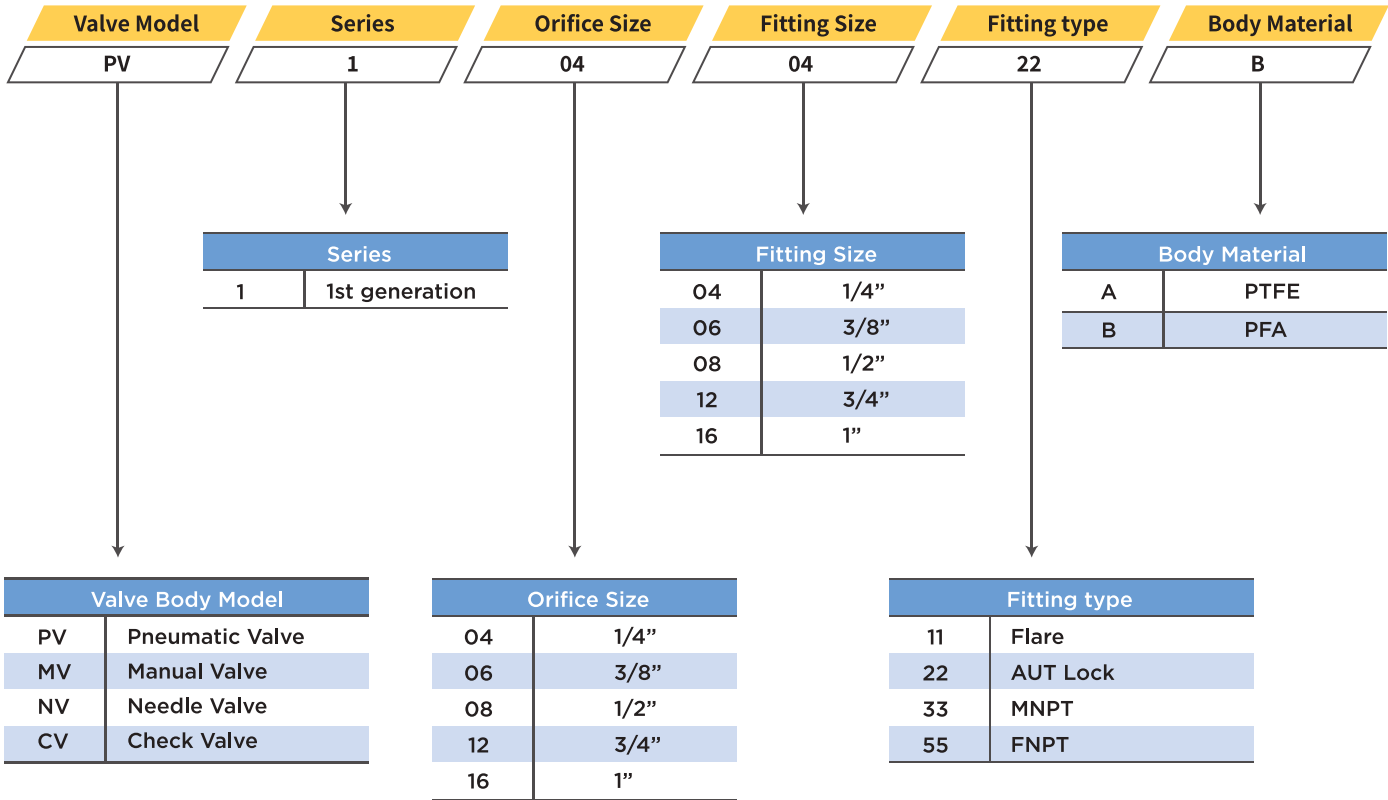
☐ Confirm that the parts have no abnormal conditions such as discoloration, deformation, corrosion, etc.

Part Numbering Guide Line

Example

PV104-0422B
Pneumatic Valve
1/4" Orifice Size 1st generation
1/4" AUT Lock
B=PFA

CONTENTS



 PV104-0411-B ★ PV104-0611-B P1	 PV104-0422-B ★ PV104-0622-B P3	 PV108-0811-B ★ PV108-1211-B P5	 PV108-0822-B ★ PV108-1222-B P7	 PV112-1611-B ★ P9
 PV112-1622-B ★ P11	 MV104-0411-B ★ MV104-0611-B P13	 MV104-0422-B ★ MV104-0622-B P15	 MV108-0811-B ★ MV108-1211-B P17	 MV108-0822-B ★ MV108-1222-B P19
 MV112-1611-B ★ P21	 MV112-1622-B ★ P23	 NV104-0411-B ★ NV104-0611-B P25	 CHECK VALVE ★ P27	 DIAPHRAGM PUMP ★ P29
 BELLOWS PUMP P31	★ High temperature The List of Fluid Compatibility for Products and Their Usage P33			



PV104-0411-B

Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
PV	Pneumatic Valve	04	1/4"	06	3/8"	22	AUT Lock	B	PFA



Specification	PV104
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95°C
Pilot Air Pressure	50~100 psi
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm ³ /min
Ambient temperature	0~60°C
Pilot Air Actuation Port	#10-32 / M5
Orifice	0.250 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

Cv value (Reference value)

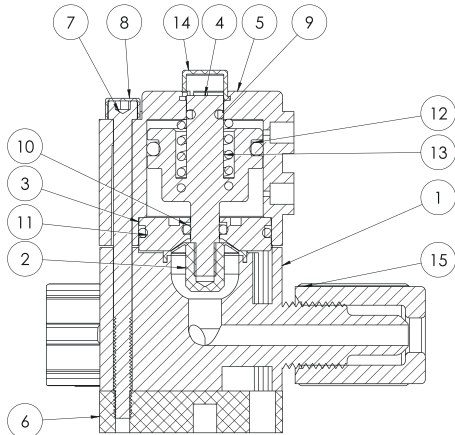
PV104-0411-B	100%
Cv	0.26
PV104-0611-B	100%
Cv	0.86

■ Above is for reference only

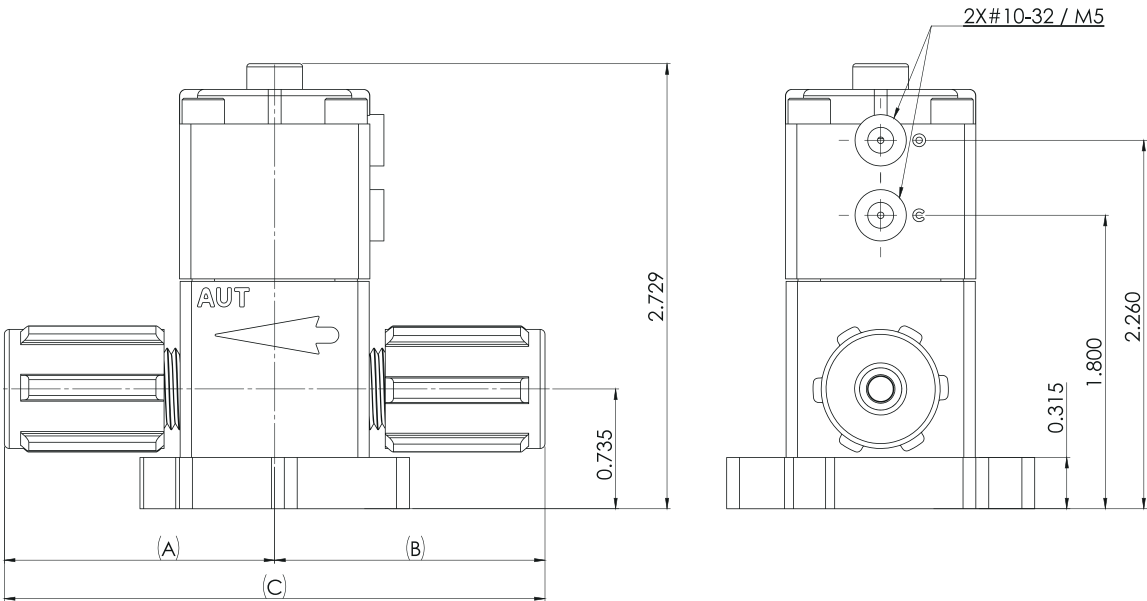
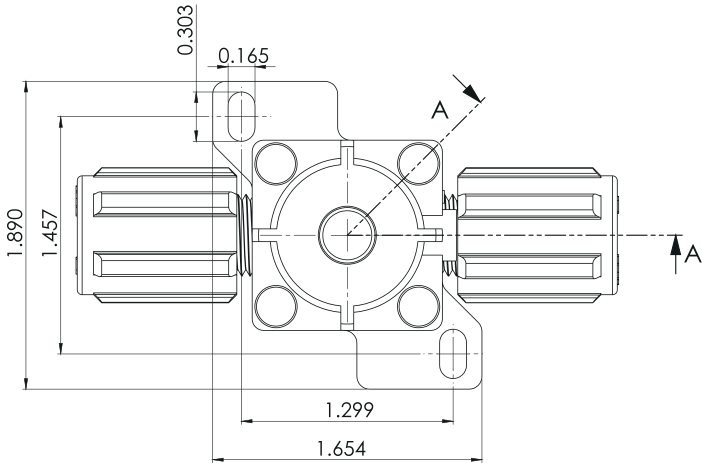
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	9	O-RING	VITON	1
2	DIAPHRAGM	PTFE	1	10	O-RING	VITON	1
3	GLAND	PP	1	11	O-RING	VITON	1
4	PISTON	PP	1	12	O-RING	VITON	1
5	HOUSING	PP	1	13	SPRING	SS, TD	1
6	BASE	PP	1	14	PISTON CAP	PP	1
7	SCREW	SS, TD	4	15	NUT	PFA	2
8	SCREW CAP	PP	4				



Exterior Structure (inch) :



Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
PV104-0411-B	1.658	1.658	3.317	88
PV104-0611-B	1.887	1.887	3.774	107



PV104-0422-B

Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
PV	Pneumatic Valve	04	1/4"	04	1/4"	11	Flare	B	PFA
				06	3/8"	22	AUT Lock		



Specification	PV104
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95°C
Pilot Air Pressure	50~100 psi
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm ³ /min
Ambient temperature	0~60°C
Pilot Air Actuation Port	#10-32 / M5
Orifice	0.250 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

Cv value (Reference value)

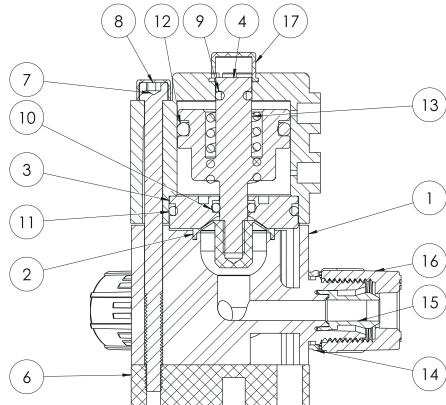
PV104-0422-B	100%
Cv	0.26
PV104-0622-B	100%
Cv	0.86

■ Above is for reference only

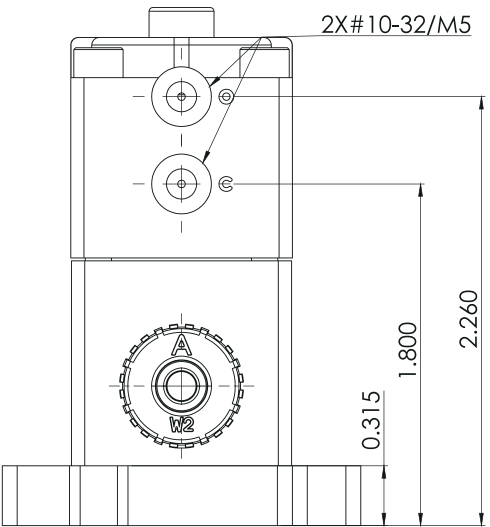
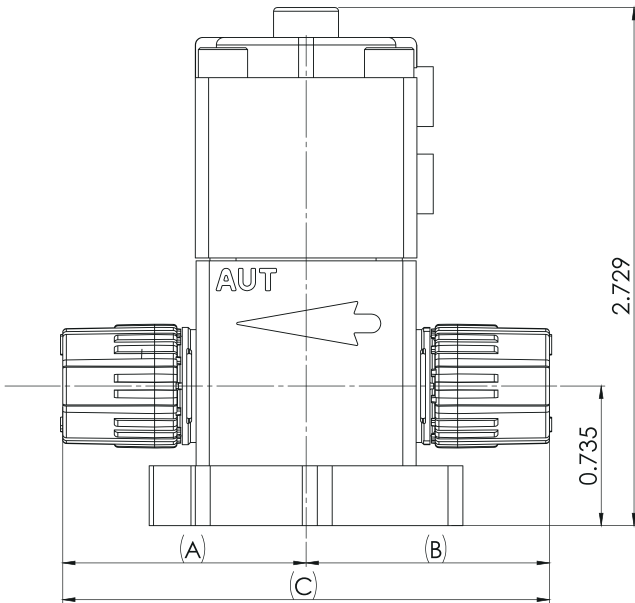
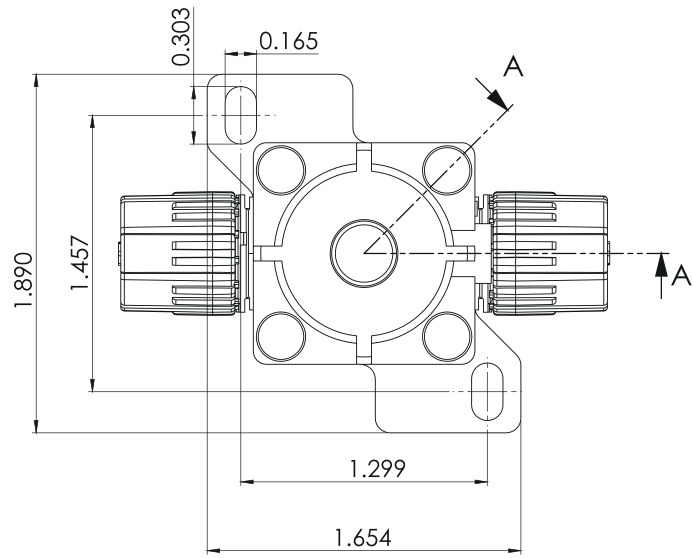
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	10	O-RING	VITON	1
2	DIAPHRAGM	PTFE	1	11	O-RING	VITON	1
3	GLAND	PP	1	12	O-RING	VITON	1
4	PISTON	PP	1	13	SPRING	SS, TD	1
5	HOUSING	PP	1	14	GAUGE RING	PFA	2
6	BASE	PP	1	15	SLEEVE	PFA	2
7	SCREW	SS, TD	4	16	NUT	PFA	2
8	SCREW CAP	PP	4	17	PISTON CAP	PP	1
9	O-RING	VITON	1				



Exterior Structure (inch) :



Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
PV104-0422-B	1.283	1.283	2.566	84
PV104-0622-B	1.465	1.465	2.930	103



PV108-0811-B

Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
PV	Pneumatic Valve	08	1/4"	08	1/2"	11	Flare	B	PFA
				12	3/4"	22	AUT Lock		



Specification	PV108
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95°C
Pilot Air Pressure	50~100 psi
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm ³ /min
Ambient temperature	0~60°C
Pilot Air Actuation Port	1/8-27 FNPT Thread
Orifice	0.400 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

Cv value (Reference value)

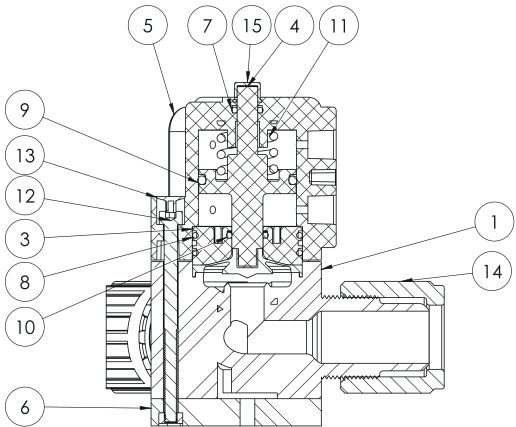
PV108-0811-B	100%
Cv	3.08
PV108-1211-B	100%
Cv	4.49

■ Above is for reference only

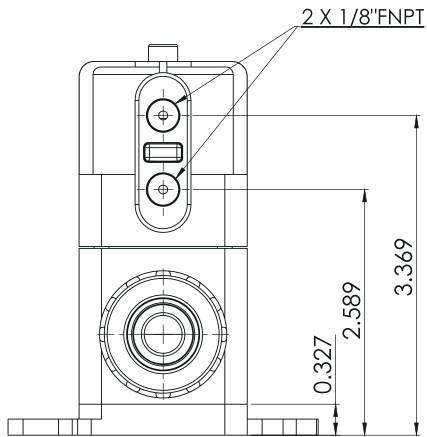
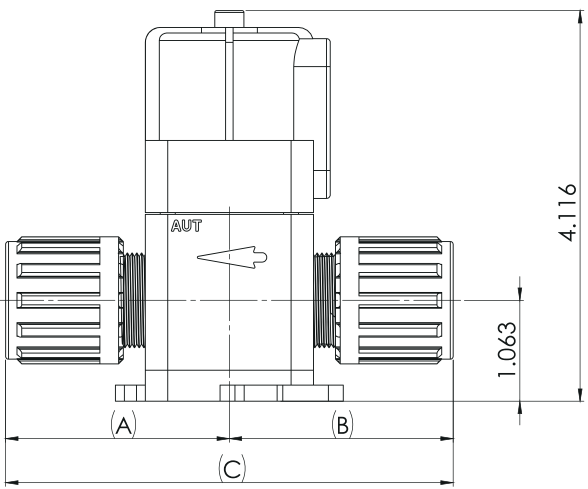
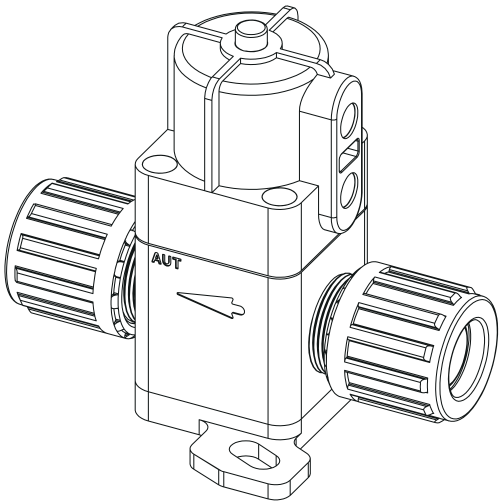
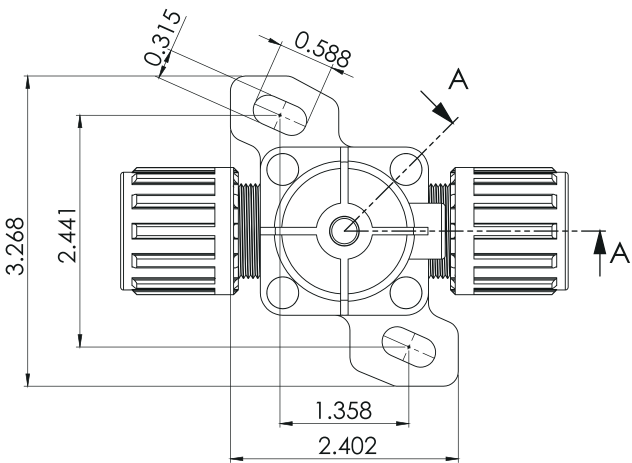
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	9	O-RING	VITON	1
2	DIAPHRAGM	PTFE	1	10	O-RING	VITON	1
3	GLAND	PP	1	11	SPRING	SS, TD	1
4	PISTON	PP	1	12	SCREWS	SS, TD	4
5	HOUSING	PP	1	13	SCREW CAP	PP	4
6	BASE	PP	1	14	NUT	PFA	2
7	O-RING	VITON	1	15	PISTON CAP	PP	1
8	O-RING	VITON	2				



Exterior Structure (inch) :



Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
PV108-0811-B	2.345	2.345	4.690	280
PV108-1211-B	2.358	2.358	4.716	295



PV108-0822-B

Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
PV	Pneumatic Valve	08	1/4"	08	1/2"	11	Flare	B	PFA
				12	3/4"	22	AUT Lock		



Specification	PV108
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95°C
Pilot Air Pressure	50~100 psi
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm ³ /min
Ambient temperature	0~60°C
Pilot Air Actuation Port	1/8-27 FNPT Thread
Orifice	0.400 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

Cv value (Reference value)

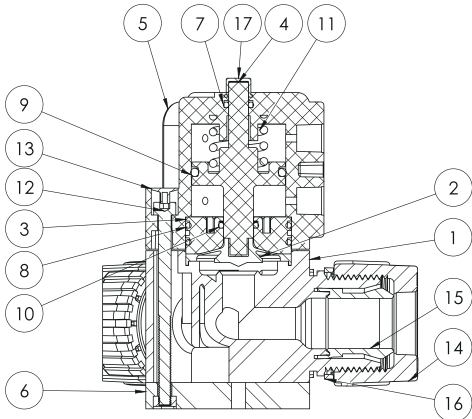
PV108-0822-B	100%
Cv	3.08
PV108-1222-B	100%
Cv	4.49

■ Above is for reference only

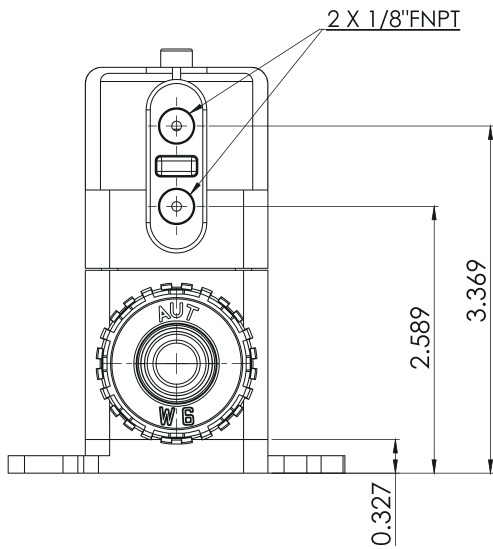
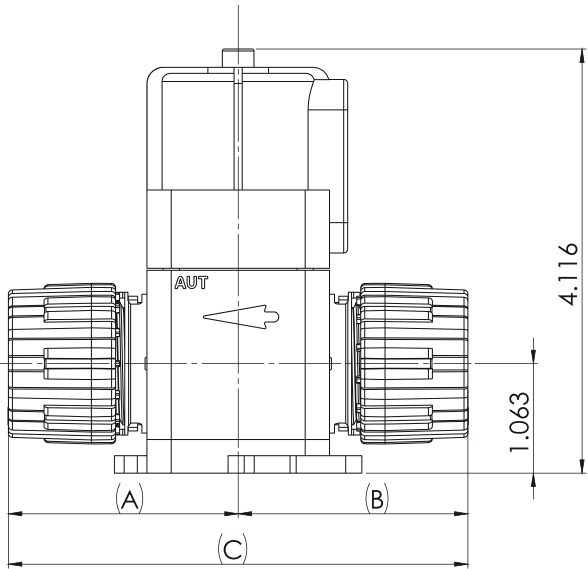
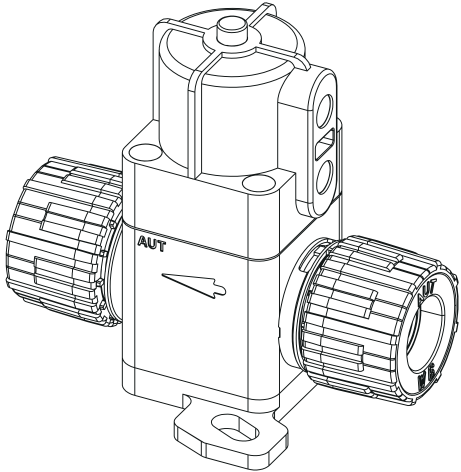
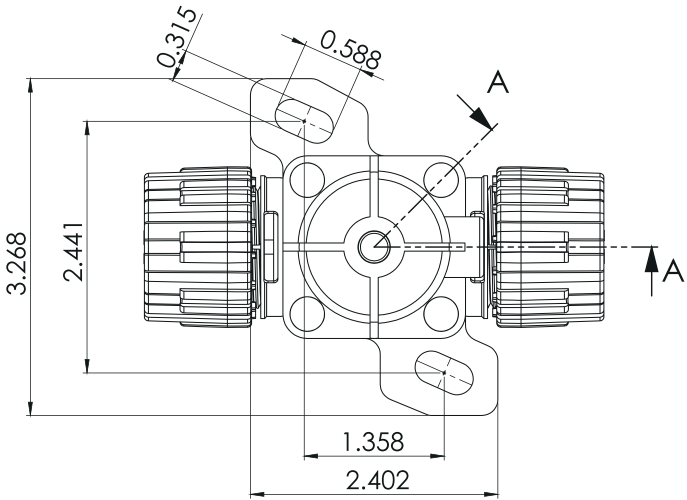
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	10	O-RING	VITON	1
2	DIAPHRAGM	PTFE	1	11	SPRING	SS, TD	1
3	GLAND	PP	1	12	SCREWS	SS, TD	4
4	PISTON	PP	1	13	SCREW CAP	PP	4
5	HOUSING	PP	1	14	NUT	PFA	2
6	BASE	PP	1	15	SLEEVE	PFA	2
7	O-RING	VITON	1	16	GAUGE RING	PFA	2
8	O-RING	VITON	2	17	PISTON CAP	PP	1
9	O-RING	VITON	1				



Exterior Structure (inch) :



Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
PV108-0822-B	1.970	1.970	3.940	224
PV108-1222-B	2.230	2.230	4.460	284



PV112-1611-B

Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
PV	Pneumatic Valve	12	3/4"	16	1"	22	AUT Lock	B	PFA



Specification	PV112
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95°C
Pilot Air Pressure	50~100 psi
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm³/min
Ambient temperature	0~60°C
Pilot Air Actuation Port	1/8-27 FNPT Thread
Orifice	0.780 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

Cv value (Reference value)

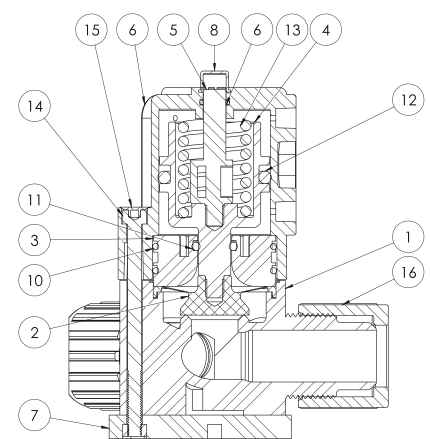
PV112-1611-B	100%
Cv	14.27

■ Above is for reference only

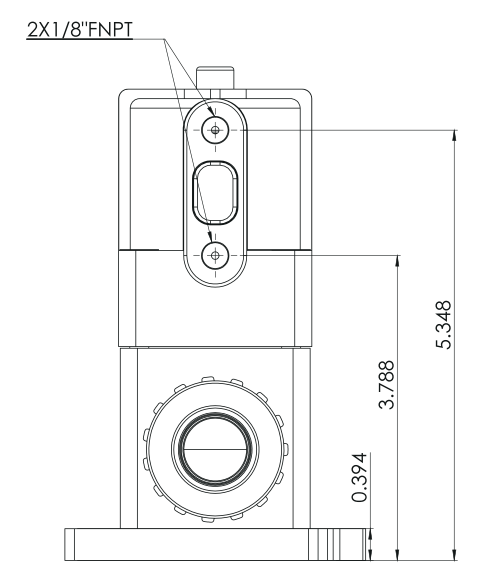
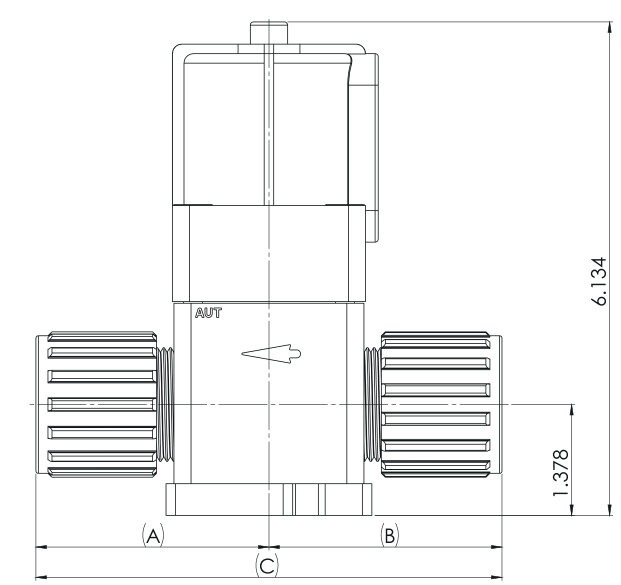
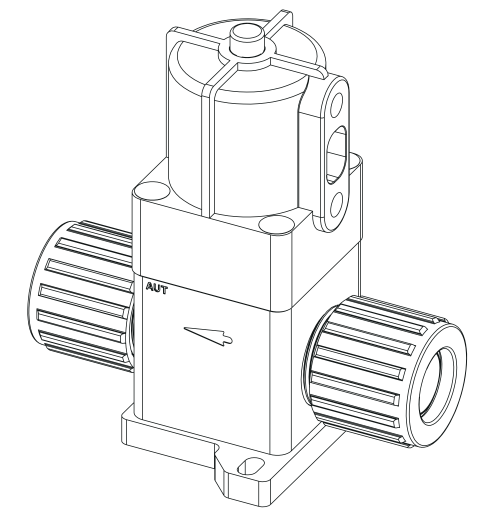
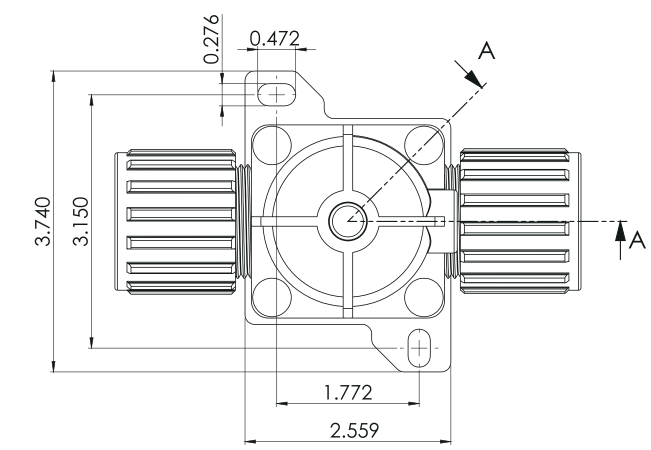
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	9	O-RING	VITON	1
2	DIAPHRAGM	PTFE	1	10	O-RING	VITON	2
3	GLAND	PP	1	11	O-RING	VITON	1
4	PISTON	PP	1	12	O-RING	VITON	1
5	STEM	PP	1	13	SPRING	SS, TD	1
6	HOUSING	PP	1	14	SCREWS	SS, TD	4
7	BASE	PP	1	15	TOP CAP	PP	4
8	PISTON CAP	Transparent PP	1	16	NUT	PFA	2



Exterior Structure (inch) :



Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
PV112-1611-B	2.902	2.902	5.803	756



PV112-1622-B

Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
PV	Pneumatic Valve	12	3/4"	16	1"	11	Flare	B	PFA
						22	AUT Lock		



Specification	PV112
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95°C
Pilot Air Pressure	50~100 psi
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm ³ /min
Ambient temperature	0~60°C
Pilot Air Actuation Port	1/8-27 FNPT Thread
Orifice	0.780 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

Cv value (Reference value)

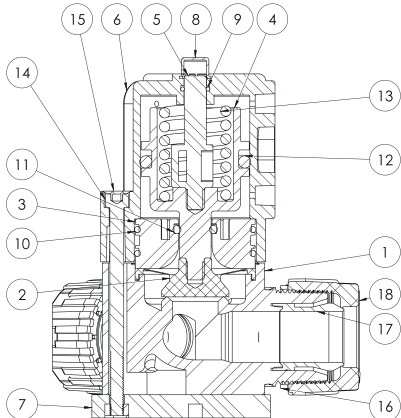
PV112-1622-B	100%
Cv	14.27

■ Above is for reference only

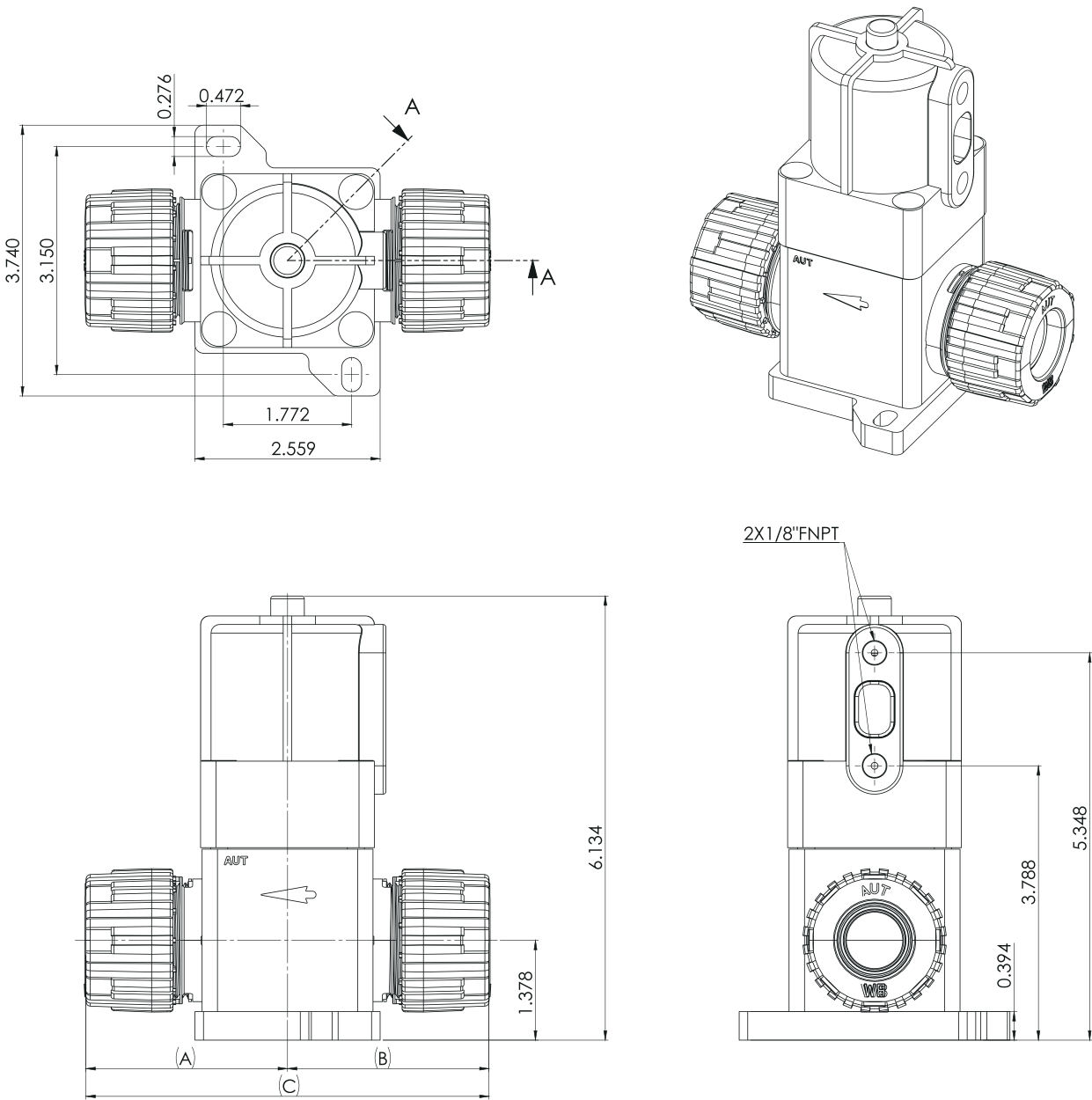
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	10	O-RING	VITON	2
2	DIAPHRAGM	PTFE	1	11	O-RING	VITON	1
3	GLAND	PP	1	12	O-RING	VITON	1
4	PISTON	PP	1	13	SPRING	SS, TD	1
5	STEM	PP	1	14	SCREW	SS, TD	4
6	HOUSING	PP	1	15	TOP CAP	PP	4
7	BASE	PP	1	16	GAUGE RING	PFA	2
8	PISTON CAP	Transparent PP	1	17	SLEEVE	PFA	2
9	O-RING	VITON	1	18	NUT	PFA	2



Exterior Structure (inch) :



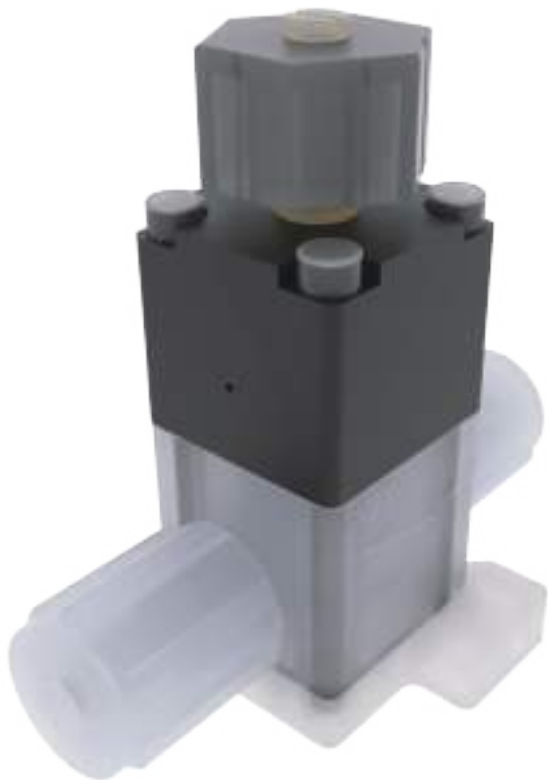
Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
PV112-1622-B	2.796	2.796	5.592	881



MV104-0411-B

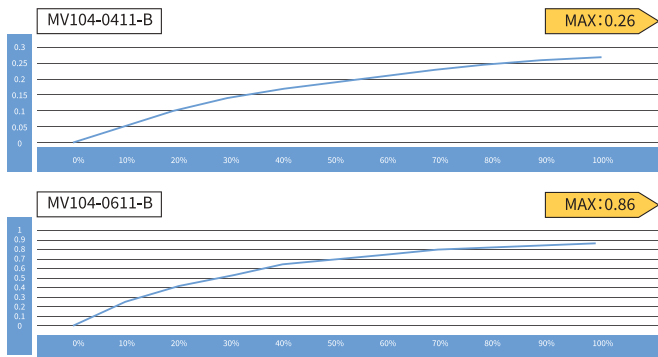
Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
MV	Manual Valve	04	1/4"	06	3/8"	11	Flare	B	PFA
				22	AUT Lock				



Specification	MV104
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95°C
Handle Torque	Max 4.5 lbf-in
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm ³ /min
Ambient temperature	0~60°C
Orifice	0.250 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

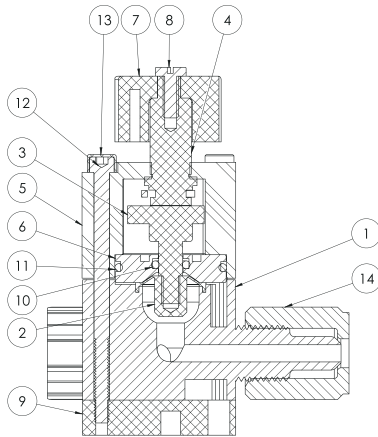
Cv value (Reference value)



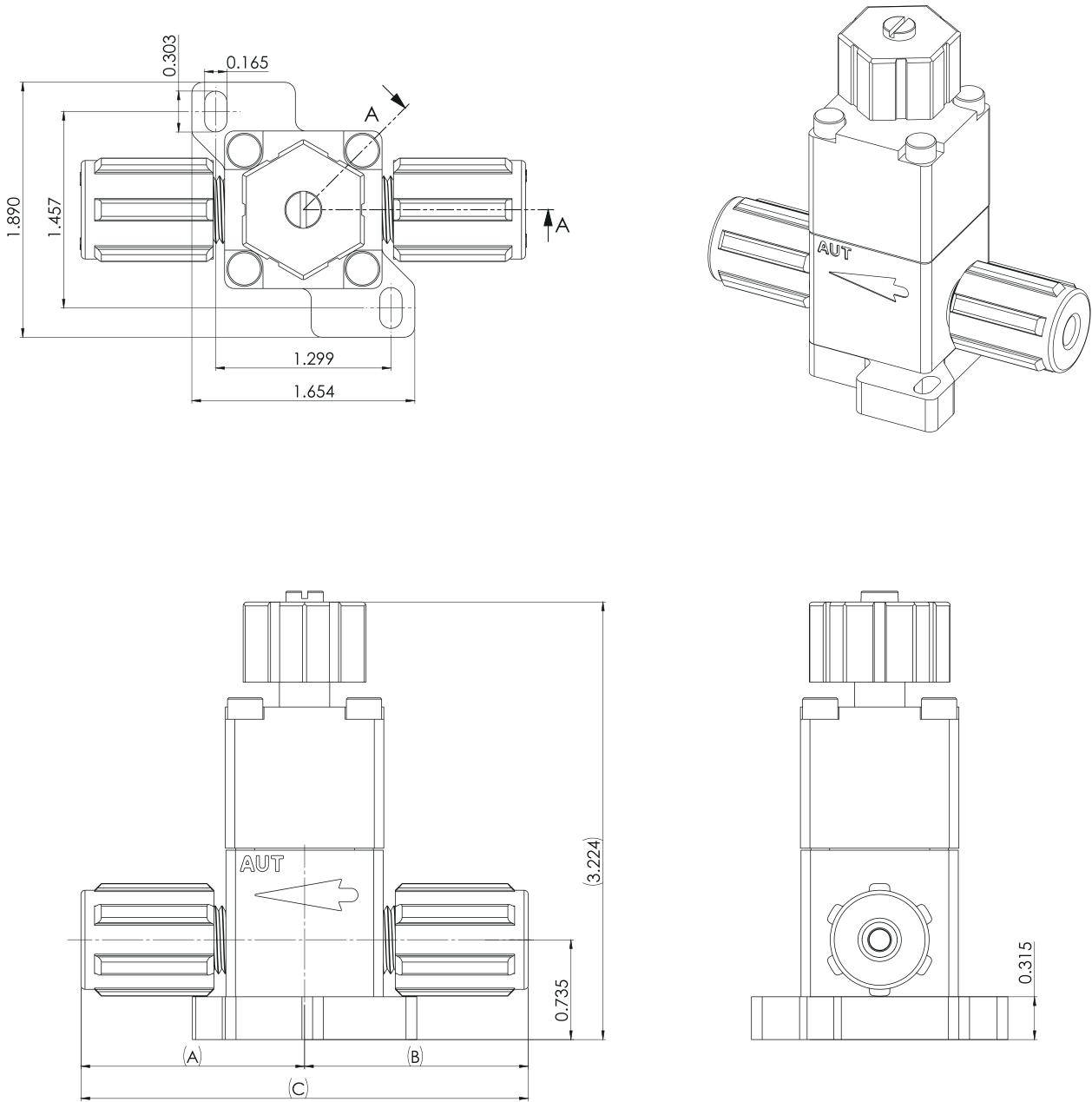
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	8	SCREW	NYLON	1
2	DIAPHRAGM	PTFE	1	9	BASE	PP	1
3	STEM	PP	1	10	O-RING	VITON	1
4	RETAINER	PPS	1	11	O-RING	VITON	1
5	HOUSING	PPS	1	12	SCREW	SS, TD	4
6	GLAND	PP	1	13	SCREW CAP	PP	4
7	KNOB	PP	1	14	NUT	PFA	2



Exterior Structure (inch) :



Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
MV104-0411-B	1.649	1.649	3.297	102
MV104-0611-B	1.877	1.877	3.755	114



MV104-0422-B

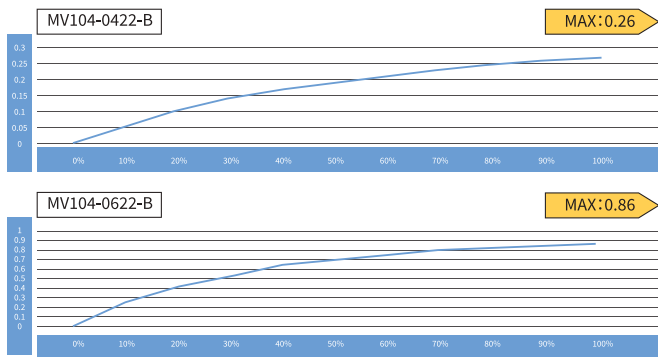
Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
PV	Pneumatic Valve	04	1/4"	06	3/8"	11	Flare	B	PFA
						22	AUT Lock		



Specification	MV104
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95°C
Handle Torque	Max 4.5 lbf-in
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm ³ /min
Ambient temperature	0~60°C
Orifice	0.250 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

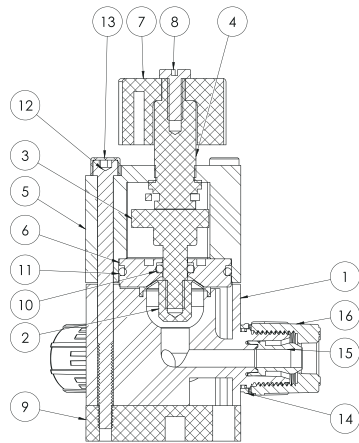
Cv value (Reference value)



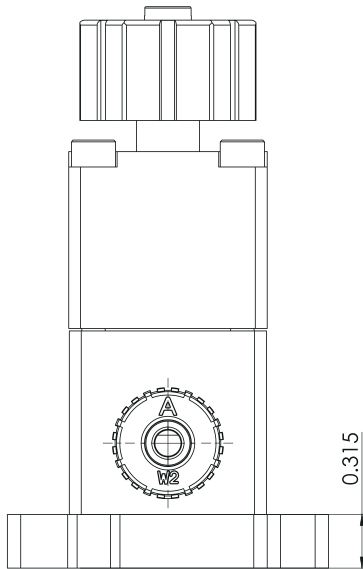
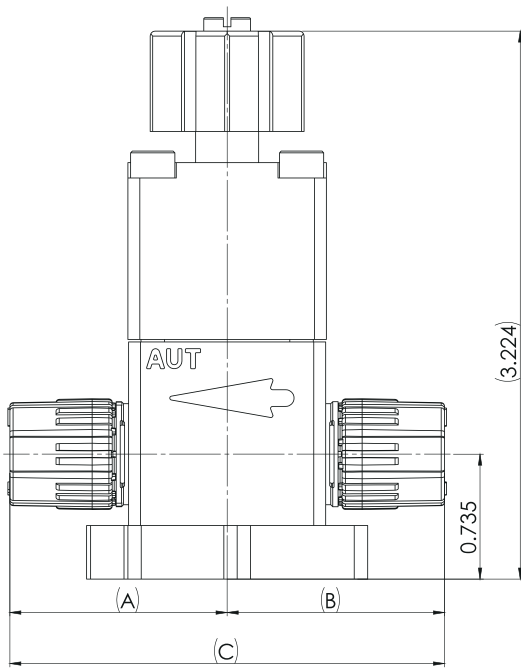
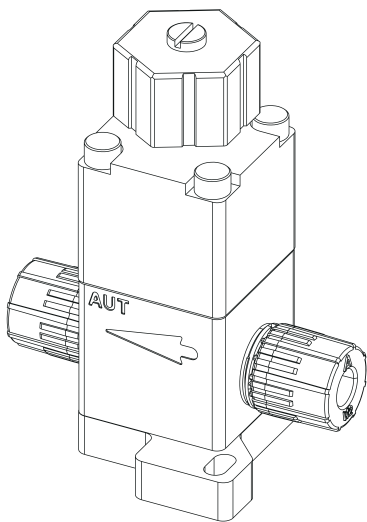
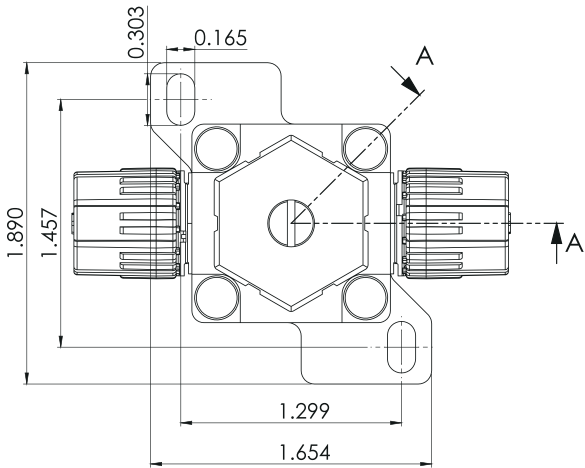
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	9	BASE	PP	1
2	DIAPHRAGM	PTFE	1	10	O-RING	VITON	1
3	STEM	PP	1	11	O-RING	VITON	1
4	RETAINER	PPS	1	12	SCREW	SS, TD	4
5	HOUSING	PPS	1	13	SCREW CAP	PP	4
6	GLAND	PP	1	14	GAUGE RING	PFA	2
7	KNOB	PP	1	15	SLEEVE	PFA	2
8	SCREW	NYLON	1	16	NUT	PFA	2



Exterior Structure (inch) :



Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
MV104-0422-B	1.279	1.279	2.558	82
MV104-0622-B	1.456	1.456	2.930	101



MV108-0811-B

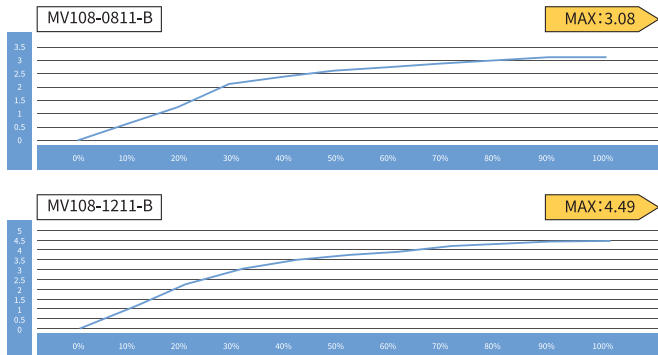
Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
MV	Manual Valve	08	1/2"	08	1/2"	11	Flare	B	PFA
				12	3/4"	22	AUT Lock		



Specification	MV108
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95°C
Handle Torque	Max 8 lbf-in
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm³/min
Ambient temperature	0~60°C
Orifice	0.400 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

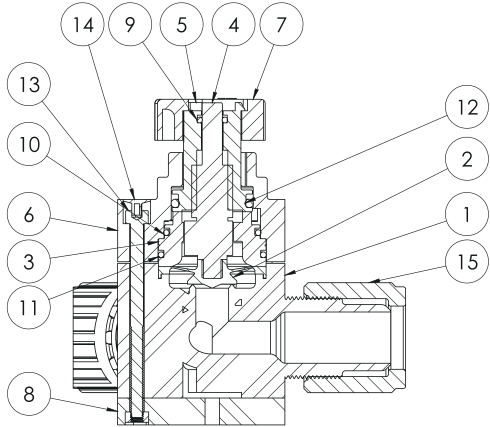
Cv value (Reference value)



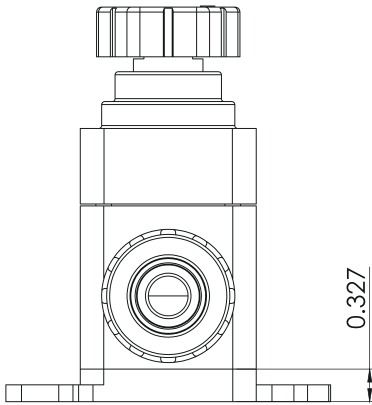
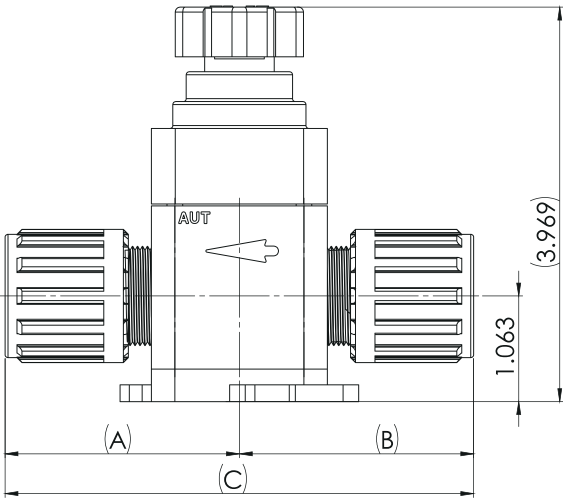
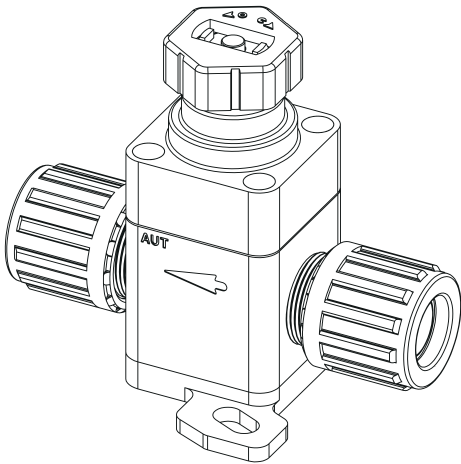
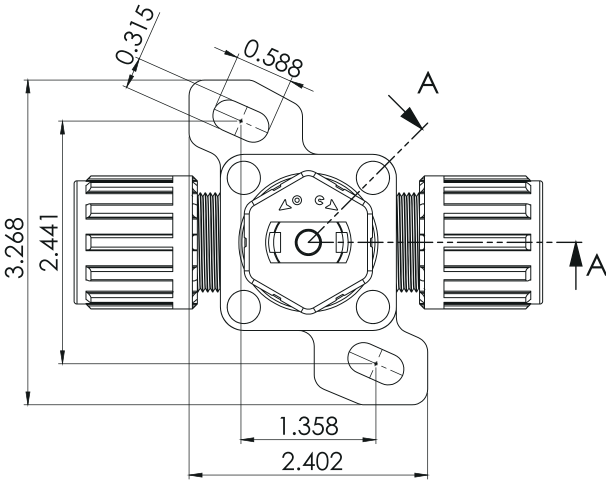
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	9	O-RING	VITON	1
2	DIAPHRAGM	PTFE	1	10	O-RING	VITON	1
3	GLAND	PP	1	11	O-RING	VITON	1
4	STEM	RED PP	1	12	O-RING	VITON	1
5	RETAINER	PP	1	13	SCREWS	SS, TD	4
6	HOUSING	PP	1	14	SCREW CAP	PP	4
7	KNOB	PP	1	15	NUT	PFA	2
8	BASE	PP	2				



Exterior Structure (inch) :



Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
MV108-0811-B	2.345	2.345	4.690	273
MV108-1211-B	2.358	2.358	4.716	287



MV108-0822-B

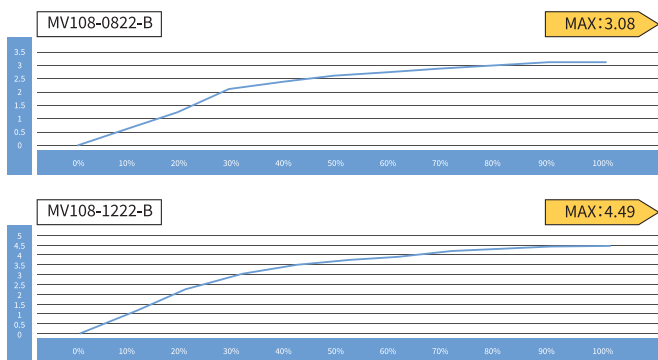
Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
MV	Manual Valve	08	1/2"	08	1/2"	11	Flare	B	PFA
				12	3/4"	22	AUT Lock		



Specification	MV108
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95℃
Handle Torque	Max 8 lbf-in
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm³/min
Ambient temperature	0~60℃
Orifice	0.400 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

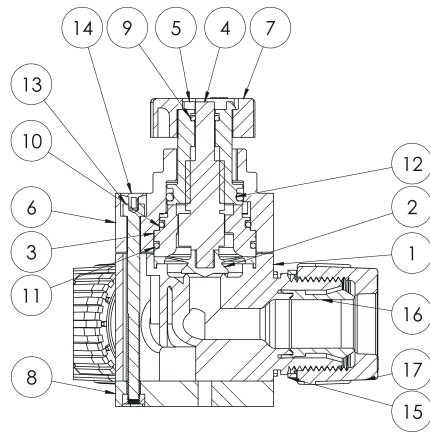
Cv value (Reference value)



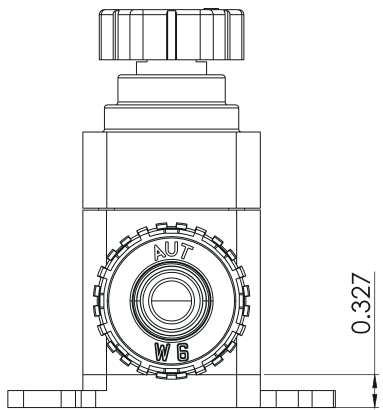
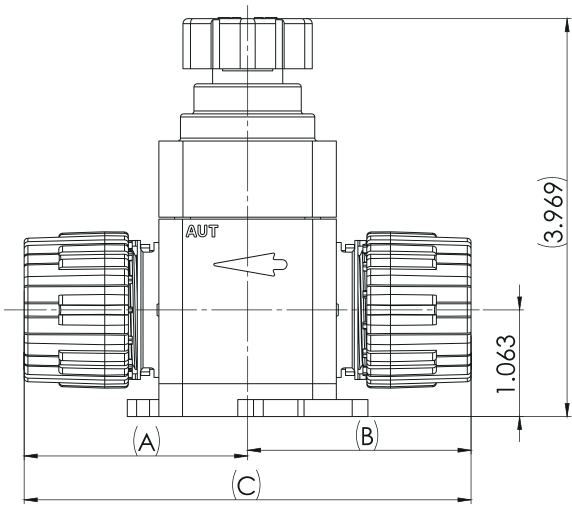
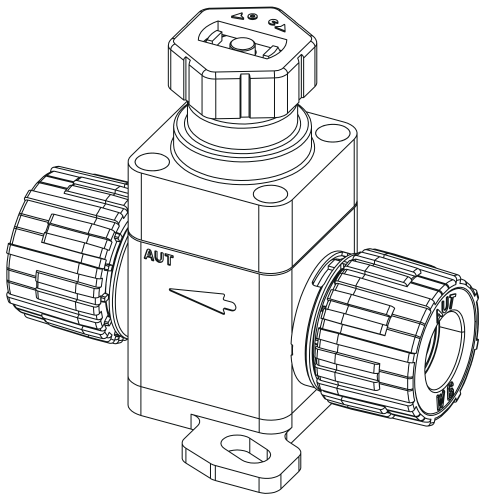
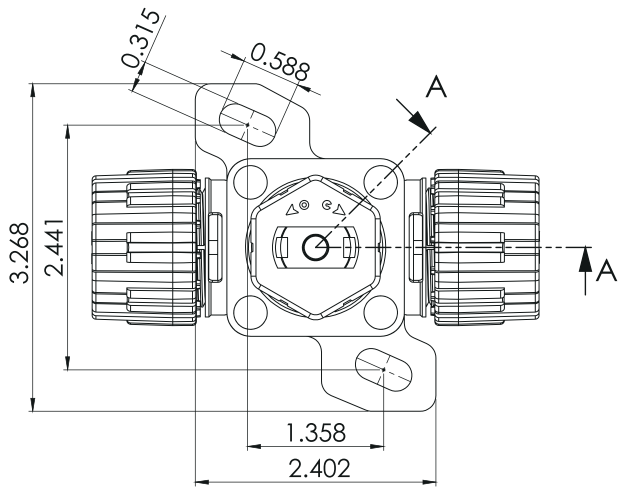
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	10	O-RING	VITON	1
2	DIAPHRAGM	PTFE	1	11	O-RING	VITON	1
3	GLAND	PP	1	12	O-RING	VITON	1
4	STEM	RED PP	1	13	SCREWS	SS, TD	4
5	RETAINER	PP	1	14	SCREW CAP	PP	4
6	HOUSING	PP	1	15	GAUGE RING	PFA	2
7	KNOB	PP	1	16	SLEEVE	PFA	2
8	BASE	PP	1	17	NUT	PFA	2
9	O-RING	VITON	1				



Exterior Structure (inch) :



Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
MV108-0822-B	1.970	1.970	3.940	217
MV108-1222-B	2.230	2.230	4.460	277



MV112-1611-B

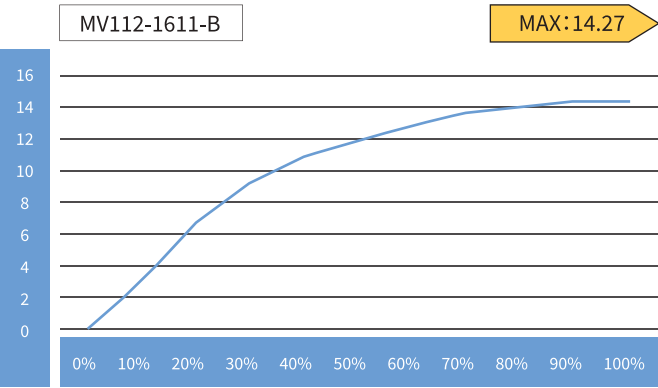
Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
MV	Manual Valve	12	3/4"	16	1"	11	Flare	B	PFA
						22	AUT Lock		



Specification	MV112
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95°C
Handle Torque	Max 18 lbf-in
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm³/min
Ambient temperature	0~60°C
Orifice	0.780 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

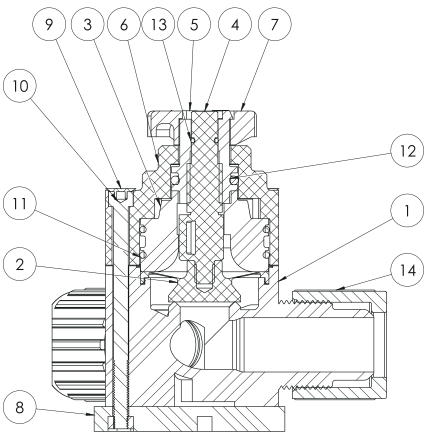
Cv value (Reference value)



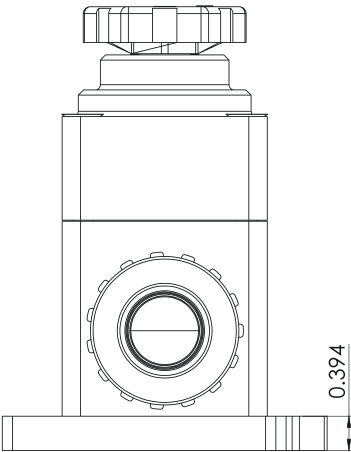
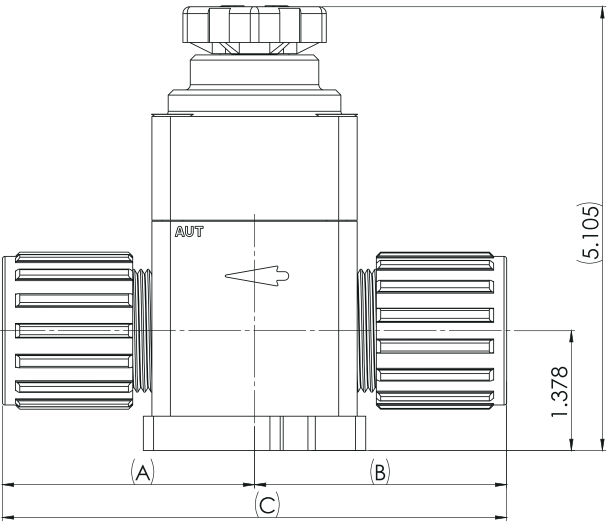
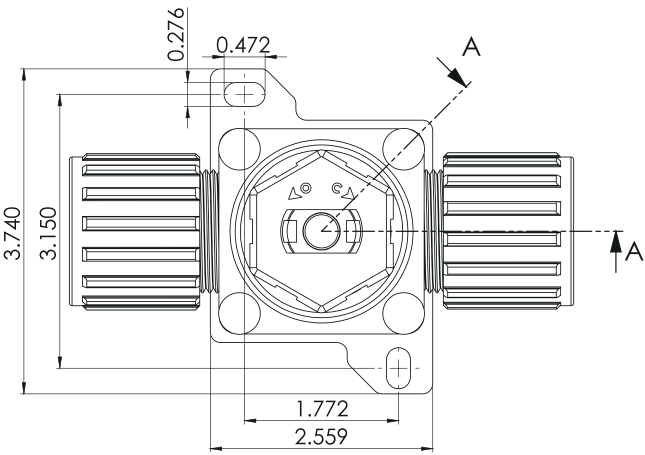
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	8	BASE	PP	1
2	DIAPHRAGM	PTFE	1	9	TOP CAP	PP	4
3	GLAND	PP	1	10	SCREW	SS, TD	4
4	STEM	PP	1	11	O-RING	VITON	2
5	RETAINER	PP	1	12	O-RING	VITON	1
6	HOUSING	PP	1	13	O-RING	VITON	1
7	KNOB	PP	1	14	NUT	PFA	2



Exterior Structure (inch) :



Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
MV112-1611-B	2.902	2.902	5.803	659



MV112-1622-B

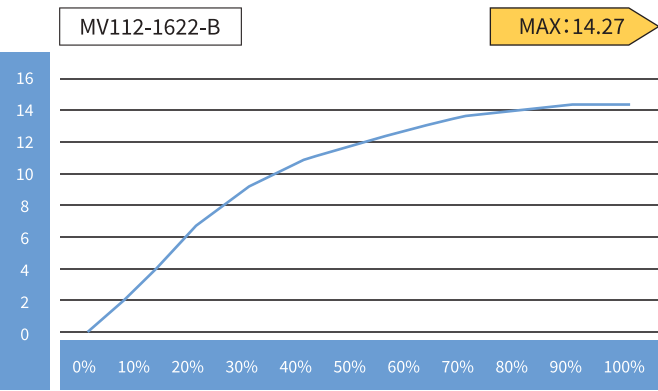
Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
MV	Manual Valve	12	3/4"	16	1"	11	Flare	B	PFA
						22	AUT Lock		



Specification	MV112
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95°C
Handle Torque	Max 18 lbf-in
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm ³ /min
Ambient temperature	0~60°C
Orifice	0.780 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

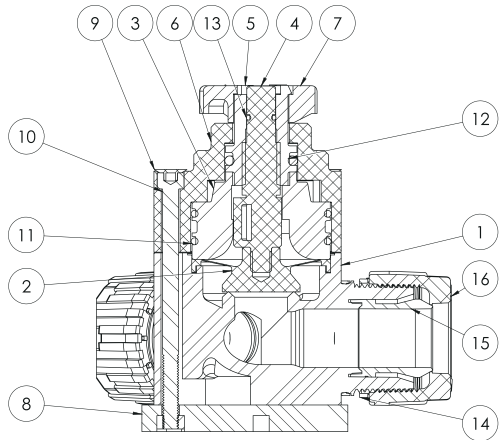
Cv value (Reference value)



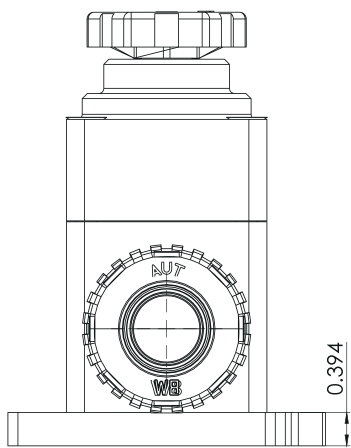
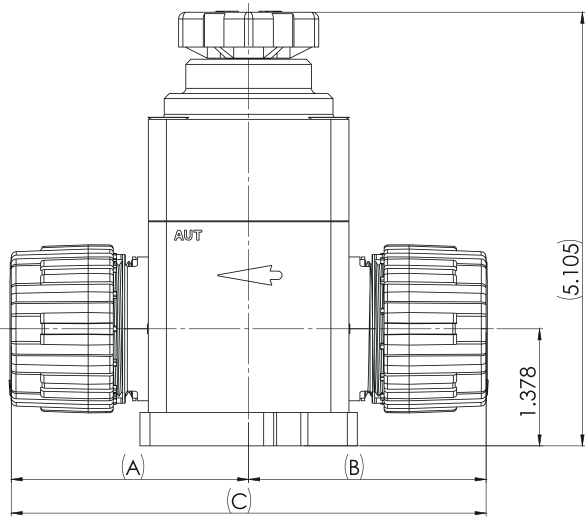
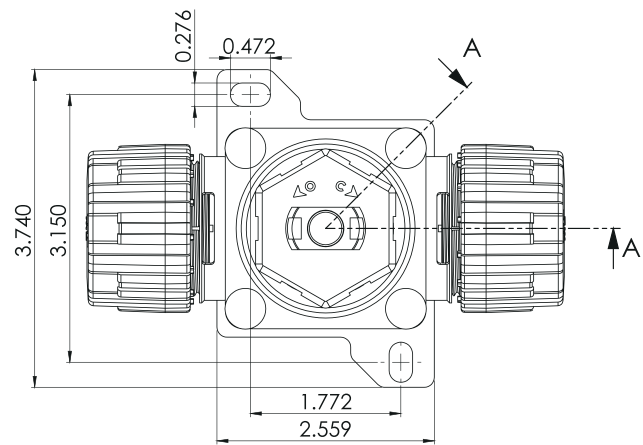
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	9	TOP CAP	PP	4
2	DIAPHRAGM	PTFE	1	10	SCREW	VITON	4
3	GLAND	PP	1	11	O-RING	VITON	2
4	STEM	PPS	1	12	O-RING	SS, TD	1
5	RETAINER	PPS	1	13	O-RING	PP	1
6	HOUSING	PP	1	14	GAUGE RING	PFA	2
7	KNOB	PP	1	15	SLEEVE	PFA	2
8	BASE	NYLON	1	16	NUT	PFA	2



Exterior Structure (inch) :



Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
MV112-1622-B	2.796	2.796	5.592	782



NV104-0411-B

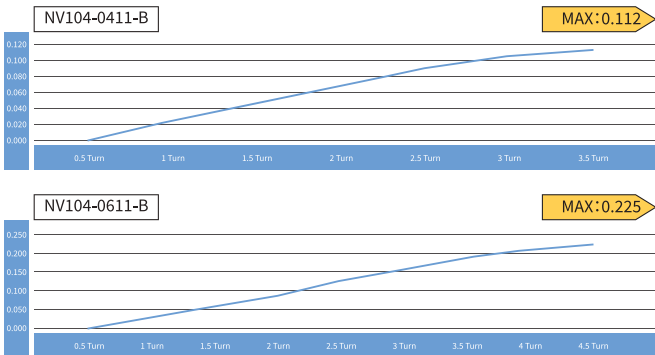
↓		↓		↓		↓		↓			
Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material			
NV	Needle Valve	04	1/4"	04	1/4"	06	3/8"	11	Flare	B	PFA



Specification	NV104
Using Fluid	Chemical solution, pure water, air, gas (*1)
Fluid Temperature	0~95°C
Forward Pressure (front to back)	0~85 psi
Back Pressure (back to front)	0~85 psi
Valve leakage	0 cm ³ /min
Ambient temperature	0~60°C
Orifice	0.250 inch

*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

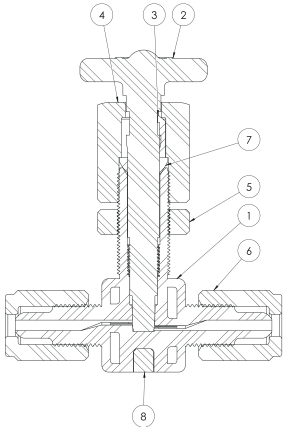
Cv value (Reference value)



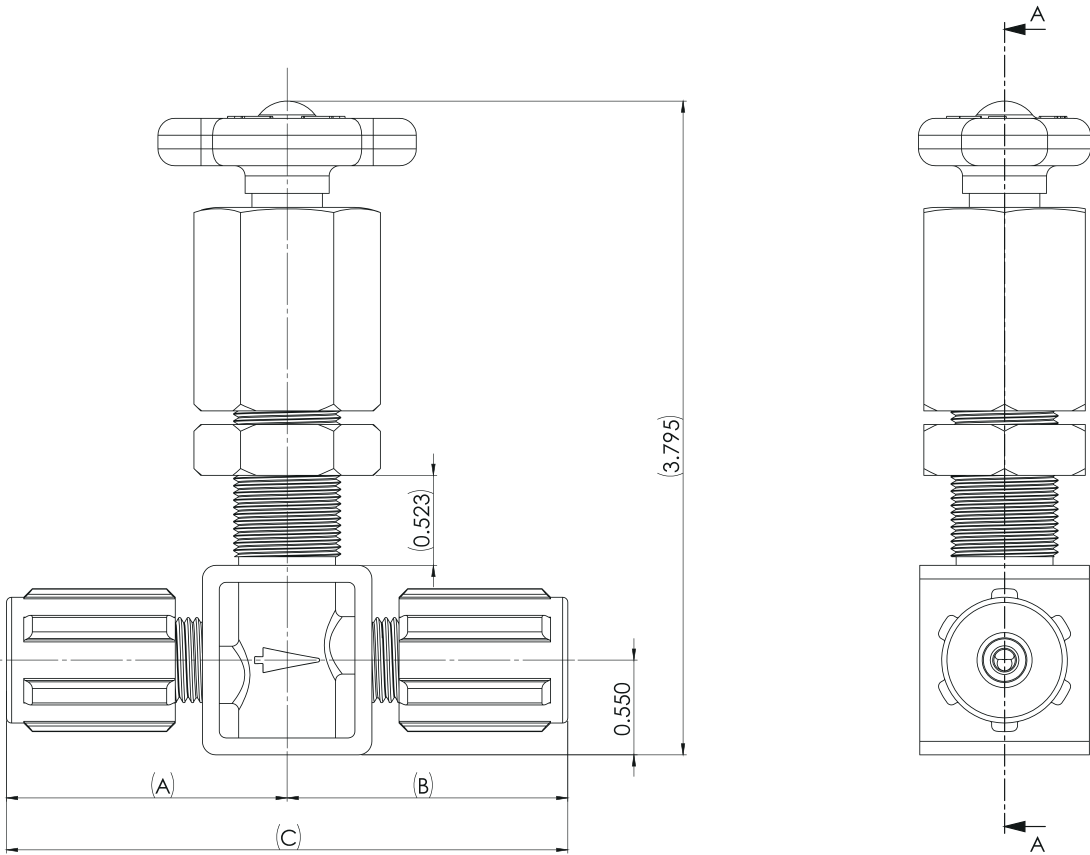
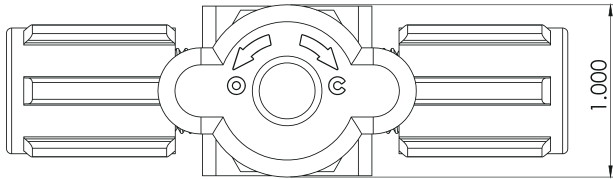
Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PFA	1	5	HALF NUT	PP	1
2	STEM	PFA	1	6	NUT	PFA	2
3	LOCATING RING	PFA	1	7	FERRULE STEM	PTFE	1
4	NUT BONNET	PFA	1	8	PLUG	PP	1



Exterior Structure (inch) :

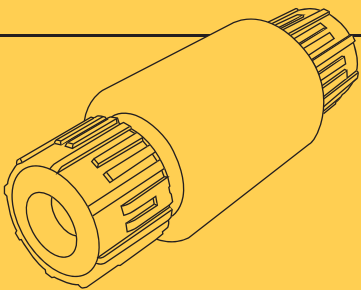


Part Numbering Guide Line

	(A)	(B)	(C)	Weigh(g)
NV104-0411-B	1.630	1.630	3.259	106
NV104-0611-B	1.780	1.780	3.559	115



CHECK VALVE



Valve Body Model		Orifice Size		Fitting Size		Fitting type		Body Material	
CV	Check Valve	04	1/4"	04	1/4"	11	Flare	A	PTFE
		06	3/8"	06	3/8"	22	AUT Lock		
		08	1/2"	08	1/2"				
		12	3/4"	12	3/4"				
		16	1"	16	1"				



Specification	CV104	CV106	CV108	CV112	CV116
Using Fluid	Chemical solution, pure water, air, gas (*1)				
Fluid Temperature	0~95°C				
Forward Pressure (front to back)	1~85 psi				
Back Pressure (back to front)	5~85 psi				
Valve leakage	0 cm³/min				
Ambient temperature	0~50°C				
Orifice	0.125 inch	0.188 inch	0.400 inch	0.630 inch	0.860 inch

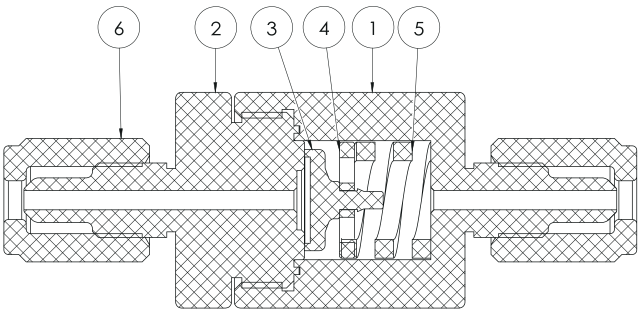
*1: Before use, please confirm whether the structure and material of the product, the liquid used, the environmental conditions, and other factors have any impact on the valve.

Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

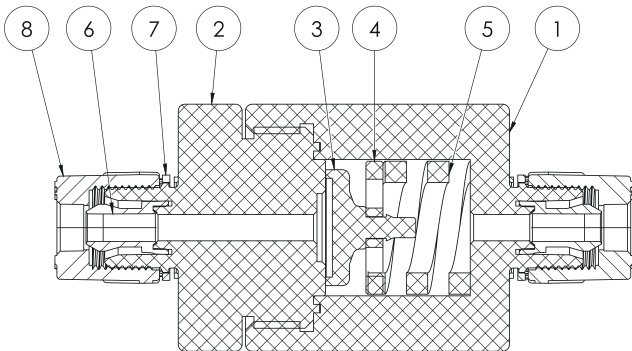
CV-11

NO	NAME	MATERIAL	QTY
1	BODY2	PTFE	1
2	BODY1	PTFE	1
3	DISK	PTFE	1
4	GUIDE	PTFE	1
5	PLASTIC SPRING	PTFE	1
6	NUT	PFA	2



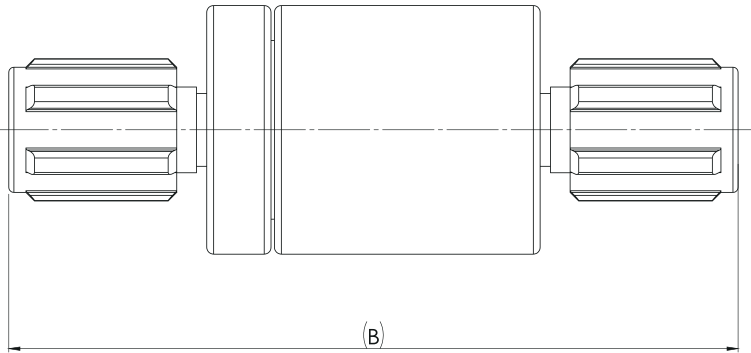
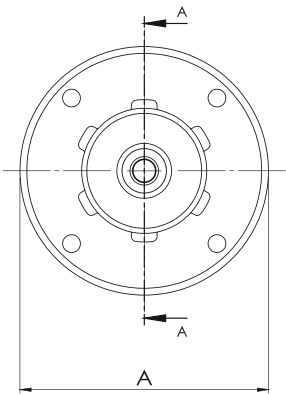
CV-22

NO	NAME	MATERIAL	QTY
1	BODY2	PTFE	1
2	BODY1	PTFE	1
3	DISK	PTFE	1
4	GUIDE	PTFE	1
5	PLASTIC SPRING	PTFE	1
6	SLEEVE	PFA	2
7	GAUGE RING	PFA	2
8	NUT	PFA	2

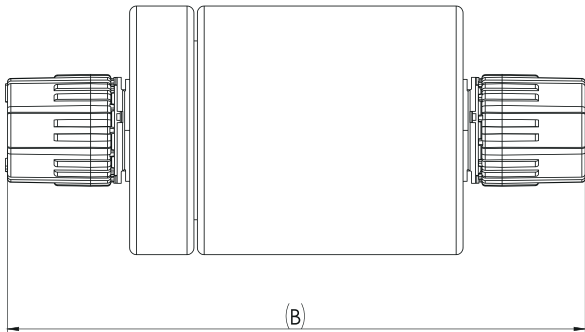
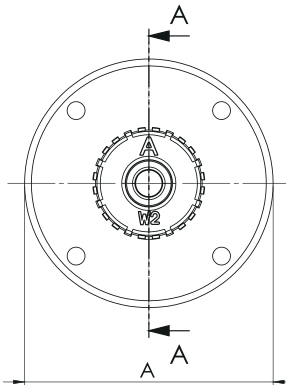


Exterior Structure (inch) :

CV-11



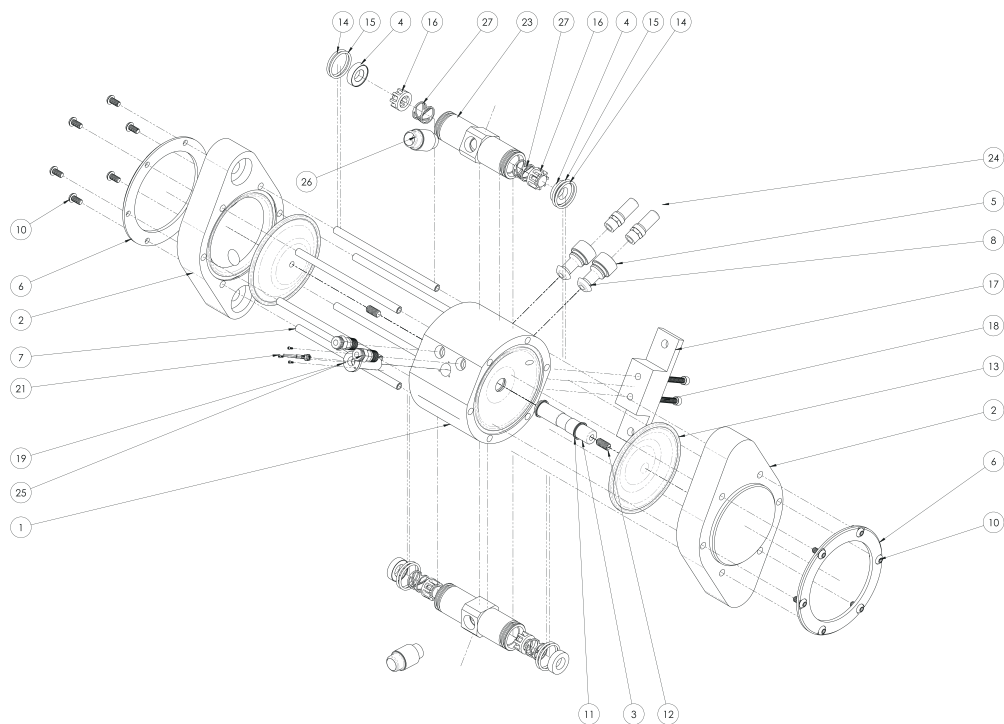
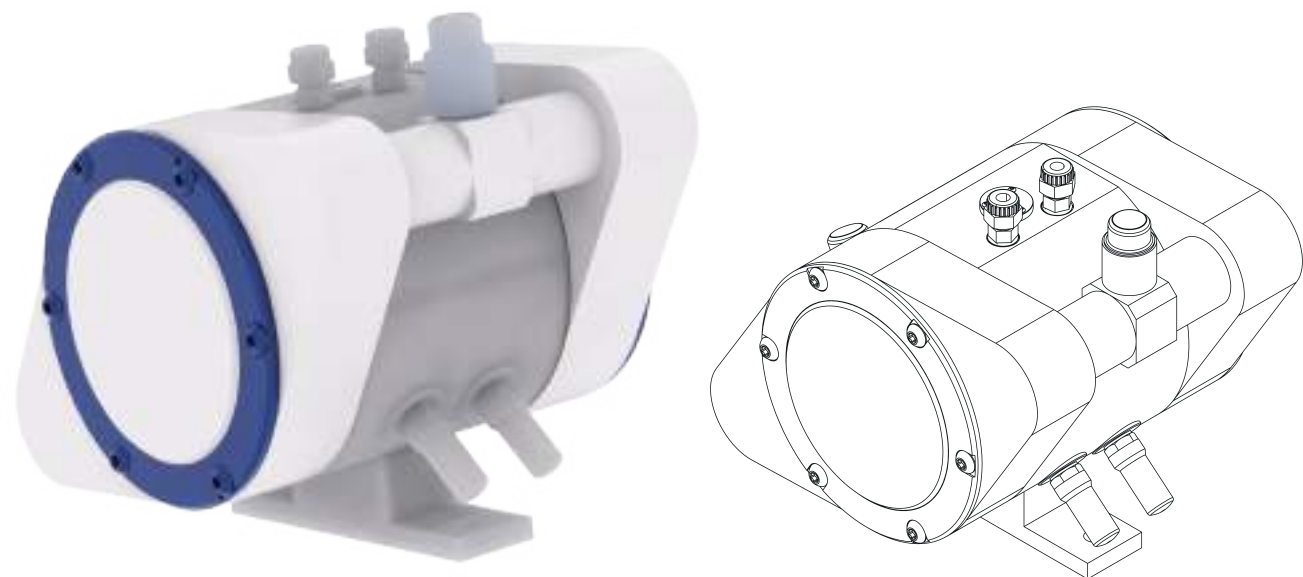
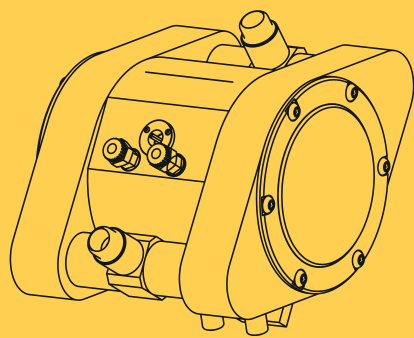
CV-22



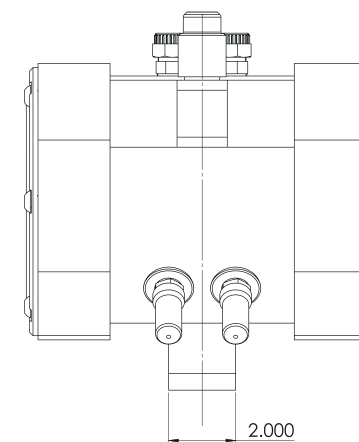
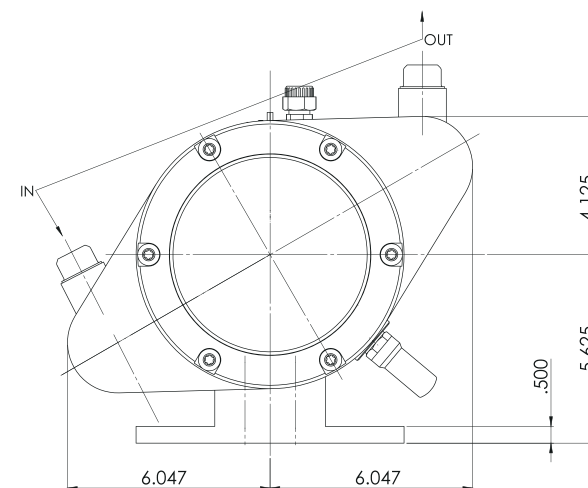
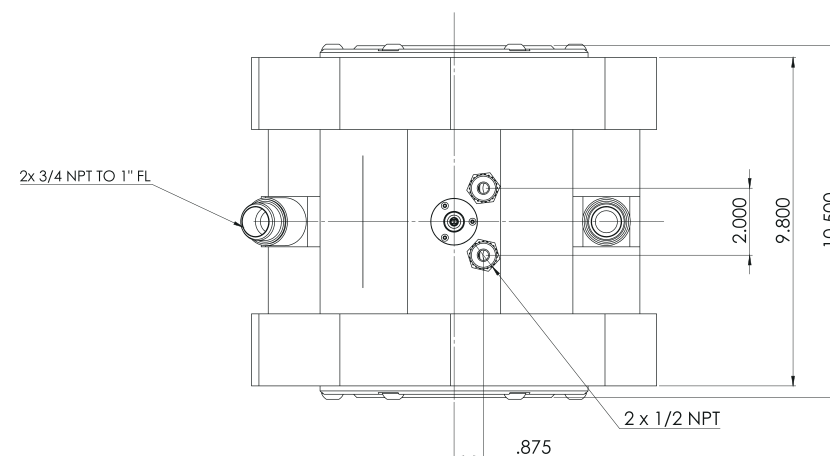
Part Numbering Guide Line

	(A)	(B)	Weigh(g)	Cv value
CV104-0411-A	1.450	4.255	141	0.34
CV104-0422-A	1.450	3.370	121	
CV106-0611-A	1.450	4.605	151	1.01
CV106-0622-A	1.450	3.730	142	
CV108-0811-A	1.450	4.845	179	2.36
CV108-0822-A	1.450	1.101	161	
CV112-1211-A	2.750	5.855	658	5.87
CV112-1222-A	2.750	5.615	688	
CV116-1611-A	2.750	6.175	737	13.5
CV116-1622-A	2.750	6.168	883	

DIAPHRAGM PUMP



Exterior Structure (inch) :

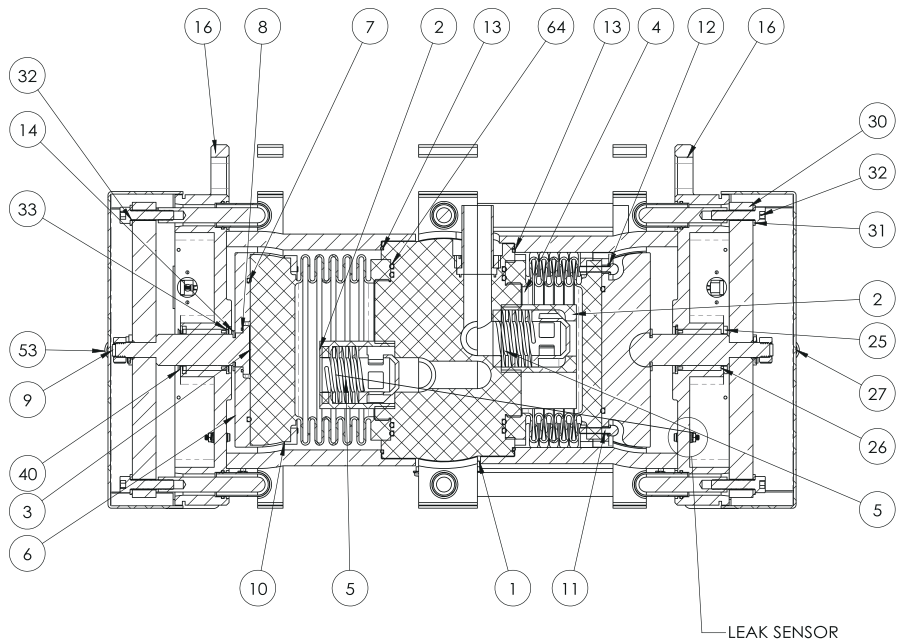
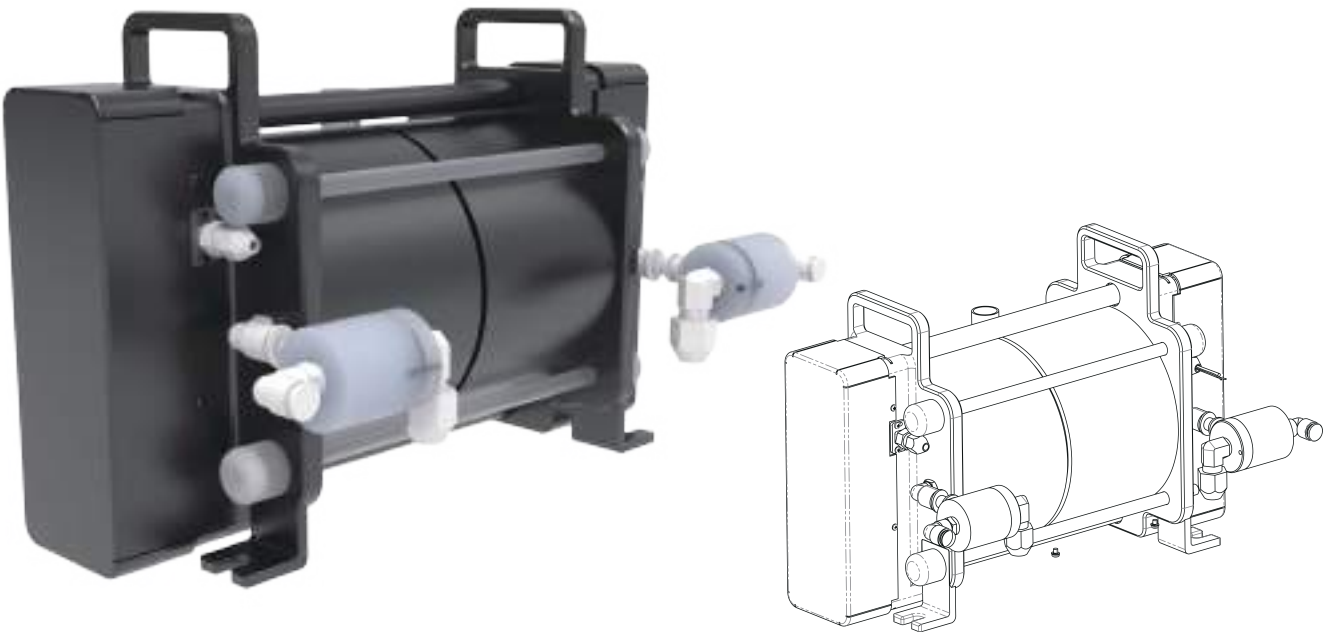
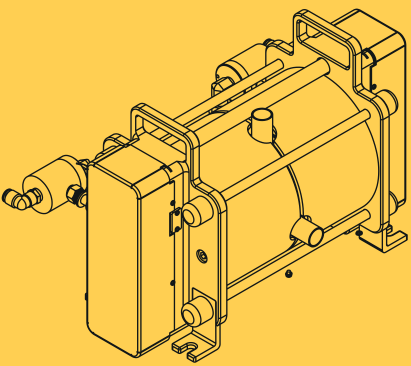


Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

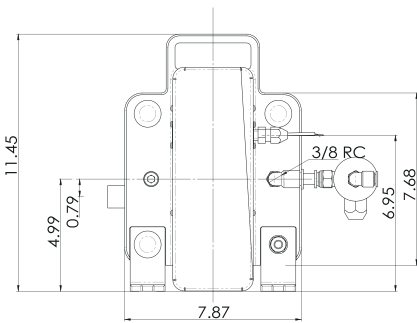
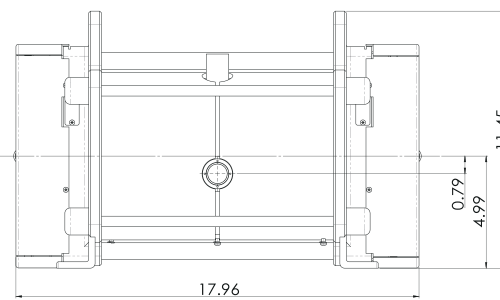
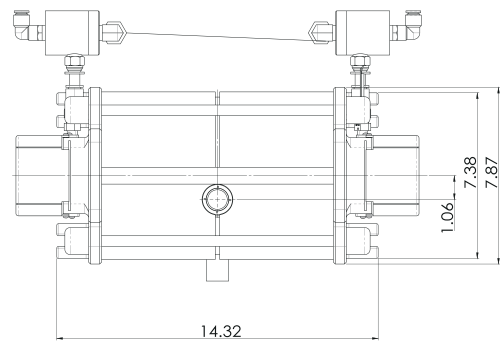
NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	BODY	PP	1	10	SCREW	SS,TD	1	19	CUP	PP	1
2	HEAD	PTFE	2	11	U-RING	NBR	2	20	O-RING	VITON	1
3	SHAFT	SUS316	1	12	SCREW	SS,TD	1	21	SCREW	SS,TD	3
4	MANIFOLD-SEAT	PTFE	4	13	DIAPHRAGM	PTFE	4	22	SENSOR	PBT46U-VL	1
5	QE INSERT	PP	2	14	O-RING	VITON	2	23	MANIFOLD	PTFE	2
6	END PLATE	SUS	2	15	O-RING	VITON	2	24	MUFFLER	AN40-04	2
7	TIE RODS	SUS	6	16	ACTUATOR	PFTE	6	25	FITTING	IMP66UAM	2
8	SEALS REPAIR KIT	VITON	2	17	BASE	POLYPRO	2	26	FITTING	PFA	2
9	O-RING	VITON	2	18	SCREW	SS,TD	2	27	SPRING	PFA	4

BELLOWS PUMP



SECTION A-A

Exterior Structure (inch) :



Internal structure and parts lists :

Note: All wetted fluid Components are PFA / PTFE

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
1	Pump head	PTFE	1	12	Spring	SUS	16	23	Packing stopper	SUS304	2
2	Valve case	PTFE	4	13	O-ring	FKM	2	24	Lip seal, Filler charged	PTFE	2
3	Bellows	PTFE	1	14	E-clip	SUS	2	25	Cylinder head cover	AL,anode	2
4	Bellows	PTFE	1	15	Cylinder head, left, welding	AL,TD	1	26	Connecting shaft	SUS304	2
5	Valve spring	PTFE	4	16	M4 Gasket	PTFE	4	27	Shaft cover	SUS304 / 4F coating	2
6	Bellows plate	AL,TD	2	17	SHCM4X18	SUS,TD	4	28	Connecting plate	SUS304	2
7	O-ring	FKM	2	18	O-ring	FKM	4	29	Gasket	SUS	4
8	O-ring	FKM	2	19	Gasket	PTFE	4	30	SHCM8X35	SUS	4
9	Pump shaft	SUS304	2	20	SPRING	SUS	10	31	Clip	SUS	2
10	Split flange	SUS	4	21	HEX SHCM4	SUS	4	32	Thread rod	SUS316	4
11	SHCM5X25	SUS	16	22	SFEM4	SUS	4	33	Tube	PFA	4

NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY	NO	NAME	MATERIAL	QTY
34	Spring Gasket	SUS	8	45	Quick exhaust valve	PP	2	56	Pump Cover	SUS, Baking enamel	1
35	Gasket	SUS	8	46	L-Fitting	CP-L12-R3/8"	2	57	M4x 5L, NKJ	SUS	6
36	HexM10	SUS	8	47	Fitting	PP	2	58	O-Ring	KFM	2
37	Cap	PP	8	48	Fitting	KQ2H11-36AS	2	59	O-Ring	KFM	2
38	SFPM3X8	SS	8	49	FF CORD	APS4-12U	2	60	Threaded inlet retaining ring	PTFE	2
39	Switch holder	PPE	2	50	FF CORD	AWG26	2	61	Vent Tube	PTFE	2
40	Switch holder for sensor	PPE	2	51	SRPM2.5X8	SUS	2	62	Gasket	SUS	2
41	Sensor	E2S-W21B	2	52	L-Fitting	KQ2L11-36AS	2	63	Spring Gasket	SUS	2
42	SRPM3X6	SUS	16	53	TUBE	PP	2	64	Hex M12	SUS	2
43	Hose	PP	2	54	Cylinder head, right	AL6061, 4F coating SUS	1				
44	NPT CAP	SUS	1	55	Pump Cover	Baking enamel	1				

The List of Fluid Compatibility for Products and Their Usage

※This table is based on experience and assessment and does not guarantee product performance.
※Except for pure water, the compatibility of the fluid used with the product material must be confirmed by personnel with chemical expertise.

		Actuator Material		Body Material	
		PPS	PVDF	PP	PFA / PTFE
Actuator Material		○	○	○	○
Acidic Fluid	Hydrogen Peroxide	○	○	○	○
	Ozone Water	△	△	△	○
	Sulfuric Acid	○	○	○	○
	Nitric Acid	○	○	○	○
	Ammonium fluoride(*1)	○	○(*2)	○	○
	Phosphoric Acid	○	○	○	○
	Hydrochloric Acid	○(*5)	○	○	○
	Sulfuric Acid+Hydrogen Peroxide(*2)	○(*3)	○(*3)	○(*3)	○(*3)
Alkaline Fluid	Sulfuric Acid + Ozone Water	△	△	△	○
	Ammonia	○	○	○	○
	Sodium Hydroxide	○	○	○	○
Organic Department Fluid	Potassium Hydroxide	○	○	○	○
	Isopropanol	○	○	○	○
	Acetone	△	X	△	○
Other Mixture(*1)	Butyl Acetate	X	X	△	△
	Stripper(*3)	○	○	○	○
	Thinner	○	X	○	○
	Developer	○	○	○	○
	Photoresist	○	○	○	○
	Electroplating Industry	○	○	○	○
	Slurry	○	○	○	○
	Air(*4)	○	○	○	○
Gas	Nitrogen(*4)	○	○	○	○

Alkaline Fluid	○	Can be used. (Please confirm according to the information on the product page.)
	△	Please get in touch with our company. (Some can be provided depending on the conditions.)
	X	Can't be used.

*1 : The mixture of various chemicals is mainly used in many cases. We cannot grasp all the effects. Please confirm the applicability of the product composition materials and the fluid used before determining whether it can be used.
*2 : The fluid temperature should be between 5 and 80°C if using hydrofluoric acid or hydrofluoric acid-containing solution. The valve body with the bypass cannot be used for hydrofluoric acid or hydrofluoric acid-containing solution.
*3 : Please get in touch with our company if using sulfuric acid and hydrogen peroxide above 100°C.
*4 : When using gas, a maximum seat leakage of 1cm3/min (air pressure) may occur.
*5 : When it is necessary to implement measures against acidic fluids or permeating gases, customized products can be ordered by contacting our company.

MILESTONE

- 2015 _____ AUT(APEX UNION TECHNOLOGIES CO., LTD) established
- 2015 _____ Inaugurated Zhubei office
- 2016 _____ Inaugurated Taichung office
- 2017 _____ ISO 9001:2015 certification
- 2018 _____ OHSAS 18001:2007 certification
- 2018 _____ Inaugurated Tainan office
- 2020 _____ ISO 45001:2018 certification
- 2021 _____ Inaugurated Baoshan, Hsinchu office
- 2021 _____ ISO 9001:2015 certification
- 2023 _____ AUT America established
- 2024 _____ AUT Japan established
- 2024 _____ ISO 9001:2015 certification