Complies to JIS standard for polyvinyl chloride piping (JIS K 6742)

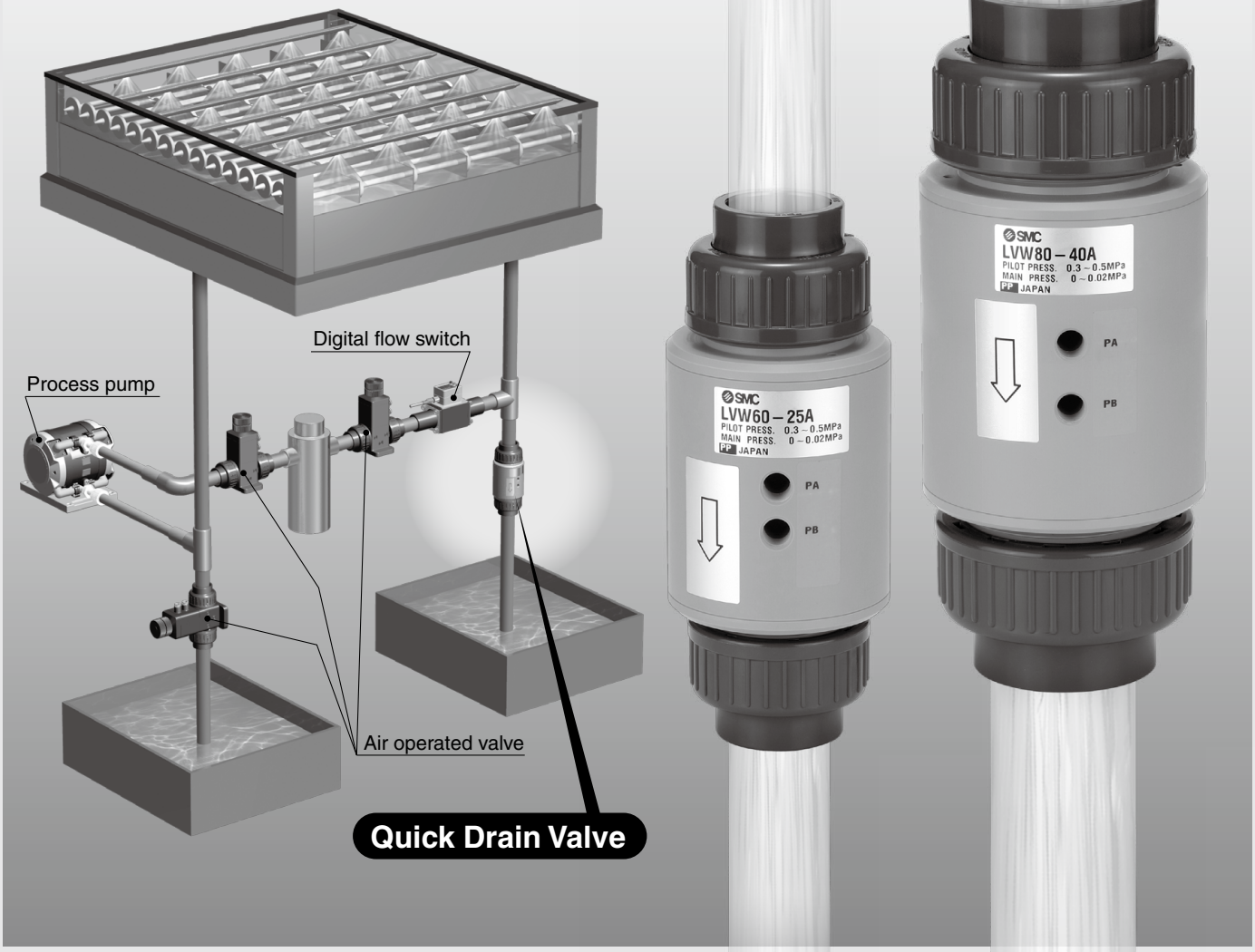
PVC Quick Drain Valve

LVW Series

Applicable fluids: Deionized water, Chemical liquids

Application Example

Cleaning Equipment



- **Fluid contact materials**

Body	PVC
Poppet	PTFE
O-ring	FKM (Standard) EPDM (Optional)

- **Orifice size**
  ø25, ø40, ø65, ø80

- **low-rate characteristics**
  Cv factor: 10 to 198

- **Easy piping with union connection**

- **Applicable PVC piping external diameter**
  ø32 to ø89

PVC Quick Drain Valve
LVW Series

How to Order

LVW 60 – 25A □ – □

Series

Symbol	Body class	Orifice size
60	6	ø25
80	8	ø40
90	9	ø65
		ø80

O-ring material

Symbol	Material
Nil	FKM
N	EPDM

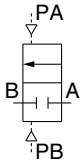
Pilot port thread type

Symbol	Thread type
Nil	Rc1/8
N	NPT1/8

Port size

Symbol	Applicable PVC piping external diameter	Body class
25A	ø32	6
32A	ø38	8
40A	ø48	
50A	ø60	9
65A	ø75	
80A	ø89	

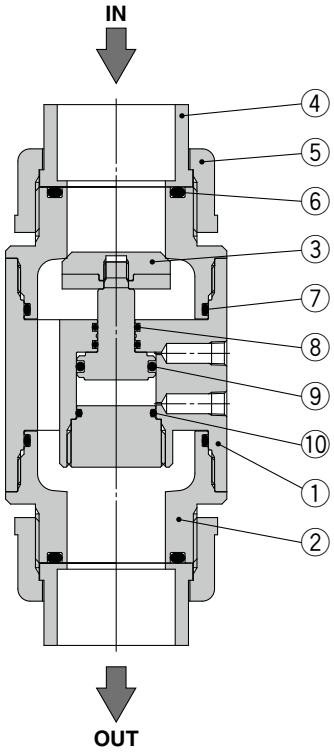
Symbol



Standard Specifications

Model		LVW60	LVW80		LVW90		
Nominal diameter		25A	32A	40A	50A	65A	80A
Applicable pipe size external diameter		ø32	ø38	ø48	ø60	ø75	ø89
Operating pressure		0 to 0.02 MPa					
Orifice size		ø25	ø40		ø65		ø80
Pilot pressure		0.3 to 0.5 MPa					
Flow rate characteristics	**Kv**	8.5	18.8	43.7	71.1	131.1	169.7
	Cv	10	22	51	83	153	198
Fluid temperature		0 to 60˚C					
Valve leakage		0 cm^3/min (with water pressure)					

Construction

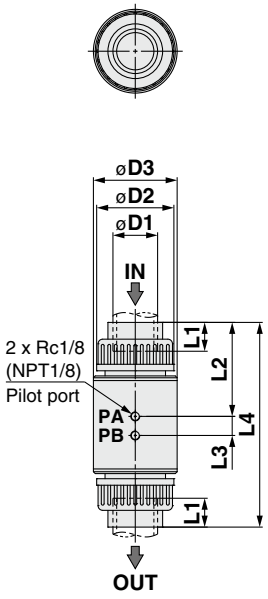


Component Parts

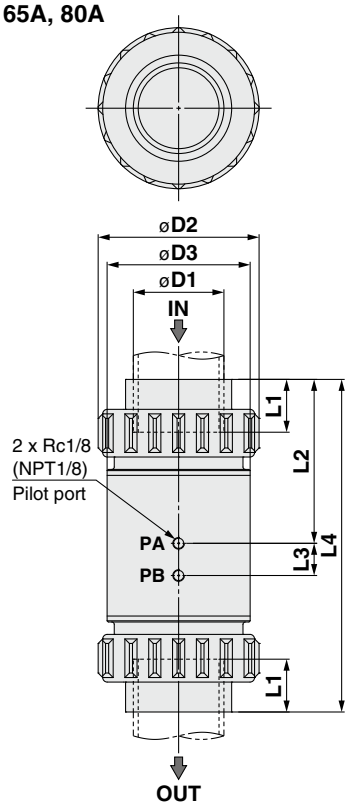
No.	Description	Material	Optional
1	**Body**	PVC	—
2	**Housing**	PVC	—
3	**Poppet**	PTFE	—
4	**Union end**	PVC	—
5	**Union nut**	PVC	—
6	**O-ring**	FKM	EPDM
7	**O-ring**	FKM	EPDM
8	**O-ring**	FKM	EPDM
9	**O-ring**	FKM	EPDM
10	**O-ring**	FKM	EPDM

Dimensions

Nominal diameter: 25A to 50A



Nominal diameter: 65A, 80A



Dimensions

(mm)

Part no.	L1	L2	L3	L4	D1	D2	D3
LVW60-25A	22	81.5	14.5	172	32	60	70
LVW80-32A	26	94	20.5	205	38	72	90
LVW80-40A	31	101	20.5	220	48	83	90
LVW90-50A	39	136.5	26	275	60	100	120
LVW90-65A	44	138.5	26	279	75	135	120
LVW90-80A	51	144.5	33	306	89	158	150

LVW Series
Applicable Fluids

PVC Quick Drain Valve
Material and Fluid Compatibility Check List

Chemical		Compatibility
Ammonium hydroxide	Temperature 40˚C or less	○ Material option "N" Note 2)
Isobutyl alcohol	Temperature 40˚C or less	○ Note 1), 2)
Isopropyl alcohol	Temperature 40˚C or less	○ Note 1), 2)
Hydrochloric acid	Concentration 30% or less	○ Note 2)
Hydrogen peroxide	Concentration 5% or less, Temperature 50˚C or less	○
Nitric acid (except fuming nitric acid)	Concentration 10% or less, Temperature 40˚C or less	○ Note 2)
Deionized water		○
Sodium hydroxide (Caustic soda)	Concentration 50% or less	○
Nitrogen gas		○
Ultrapure water		○
Sulfuric acid (except fuming sulfuric acid)	Concentration 30% or less	○ Note 2)
Phosphoric acid	Concentration 50% or less	○

The material and fluid compatibility check list provides reference values as a guide only.
Note 1) Since static electricity may be generated, implement suitable countermeasures.
Note 2) Fluid may pass through. Fluid that has passed through may have an impact on components made of different materials.

Table symbol
○ : Can be used
○ : Can be used under certain conditions

· Compatibility is indicated for fluid temperatures of 60°C or less.
· The material and fluid compatibility check list provides reference values as a guide only, therefore we do not guarantee the application to our product.
· The data above is based on the information presented by the material manufacturers.
· SMC is not responsible for its accuracy and any damage happened because of this data.

LVW Series
Specific Product Precautions 1

Be sure to read this before handling the products.
Refer to page 501 for Safety Instructions.

Design/Selection

⚠Warning

1. Check the specifications.

Give careful consideration to operating conditions such as the application, fluid and environment, and use within the operating ranges specified in this catalog.

2. Fluids

Operate after confirming the compatibility of the product's component materials with fluids, using the check list on page 219. Please contact SMC regarding fluids other than those in the check list. Operate within the indicated fluid temperature range.

3. Maintenance space

Ensure the necessary space for maintenance and inspections.

4. Fluid pressure range

Keep the supplied fluid pressure within the operating pressure range specified in this catalog.

5. Ambient environment

Install the product in an environment where there is no effect from radiant heat caused by heat sources, etc., and use within the ambient operating temperature range. After confirming the compatibility of the product's component materials with the ambient environment, operate so that fluid does not adhere to the product's exterior surfaces.

6. Liquid seals

When circulating fluid

Provide a relief valve in the system so that fluid does not get into the liquid seal circuit.

7. Countermeasures for static electricity

Since static electricity may be generated depending on the fluid being used, implement suitable countermeasures.

Mounting

⚠Warning

1. If air leakage increases or equipment does not operate properly, stop operation.

After mounting, perform suitable function and leak tests to confirm that the mounting is correct.

2. Operation manual

Mount and operate the product after reading the manual carefully and understanding its contents. Also, keep the manual where it can be referred to as necessary.

Piping

⚠Caution

1. Preparation before piping

Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove chips, cutting oil and other debris from inside the pipe. Install piping so that it does not apply pulling, pressing, bending or other forces on the valve body.

2. Use the tightening torques shown below for the pilot port.

Tightening Torque of Pilot Port

Pilot port	Torque (N·m)
Rc, NPT1/8	0.8 to 1.0

3. Use of metal fittings

In the case of threaded pilot port, do not pipe the metal fittings which can cause damage to the thread part.

4. Tighten the union nuts on both sides equally by hand. A watertight seal can be obtained by hand tightening.

Never use a pipe wrench etc., as it may break the product. Table 1 shows the tightening torque for reference.

Table 1 Tightening Torque of Union Nut

Nominal dia. mm (inch)	16 (1/2)	20 (3/4)	25 (1)	32 (1 1/4)	40 (1 1/2)	50 (2)
Tightening torque N·m	2.5	3.0	4.0	6.0	8.0	12.0

For fittings of 65A or larger, tighten the fittings by a further 1/8 rotation (45°) with a belt wrench after tightening by hand. However, do not use metal tools.

5. When applying adhesive to the union end, the seals can be damaged by the adhesive running into the seals. Always remove the union end and union nut from the body when applying adhesive.

6. In places where vibration could be applied to the union, take countermeasures to prevent vibration.

7. Do not tighten the union while there is pressure left in the piping.

Pilot Air Supply

⚠Warning

1. Use clean air.

Do not use compressed air which includes chemicals, synthetic oils containing organic solvents, salt, or corrosive gases, etc., as this may cause damage or malfunction.

LVW Series
Specific Product Precautions 2

Be sure to read this before handling the products.
Refer to page 501 for Safety Instructions.

Operating Environment

⚠Warning

1. **Do not use in locations having an explosive atmosphere.**
2. **Do not operate in locations where vibration or impact occurs.**
3. **In locations near heat sources, block off radiation heat.**
4. **Do not use in environments which exceed the ambient temperature specifications of the product.**

PVC Piping

⚠Caution

1. **PVC fitting (union)**

   The PVC fitting (union) must be mounted and joined by an engineer with sufficient knowledge.

   Be sure to confirm that there is no leakage from the fitting after mounting and joining. If it is mounted and joined by a person who does not have sufficient knowledge and skills, it may lead to failure such as leakage.
2. **When selecting adhesive for the PVC fitting (union), confirm that its heat resistance and endurance are compatible with the operating temperature of the fluids used. Otherwise, this may cause leakage and damage.**
3. **Do not apply excessive force to the PVC piping. This may cause damage.**
4. **When the PVC piping type is used, the higher the fluid temperature, the lower the proof pressure will be. Therefore, adjust the water hammer pressure carefully so that it does not exceed the proof pressure.**

Maintenance

⚠Warning

1. **Maintenance should be performed in accordance with the procedures in the operation manual.**

   Incorrect handling can cause damage or malfunction of machinery and equipment, etc.
2. **Before removing equipment or compressed air supply/ exhaust devices, shut off the air and power supplies, and exhaust compressed air from the system. Further, when restarting equipment after remounting or replacement, first confirm safety and then check the equipment for normal operation.**
3. **Perform work after removing residual chemicals and carefully replacing them with deionized water or air, etc.**
4. **Do not disassemble the product. Products which have been disassembled cannot be guaranteed.**
5. **In order to obtain optimum performance from valves, perform periodic inspections to confirm that there is no leakage from valves or fittings, etc.**

⚠Caution

1. **Removal of drainage**

   Flush drainage from filters regularly.

Operating Precautions

⚠Warning

1. **Operate within the ranges of the maximum operating pressure.**

⚠Caution

1. **Fluorine grease is used on the sliding part of the piston, so the grease is in contact with the fluid.**

Return of Product

⚠Warning

If the product to be returned is contaminated or is possibly contaminated with substances that are harmful to humans, for safety reasons, please contact SMC beforehand and then employ a specialist cleaning company to decontaminate the product. After the decontamination prescribed above has been carried out, submit a Product Return Request Sheet or the Detoxification/Decontamination Certificate to SMC and await SMC's approval and further instructions before attempting to return the item.

Please refer to the International Chemical Safety Cards (ICSC) for a list of harmful substances.