

# MODEL TA-16 Series

## TA-16, TA-16L, TA-16CVA and TA-16CVS

# AIR VENT VALVE

## PRODUCT MANUAL

Thank you very much for choosing the Yoshitake's product. To ensure the correct and safe use of the product, please read this manual before use. This manual shall be kept with care for future references. The symbols used in this manual have the following meanings.



### Warning

This symbol indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.



### Caution

This symbol indicates a hazardous situation that, if not avoided, may result in minor or moderate injury or may result in only property damage.

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## 1. Overview

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Air vent valve is essential for air-conditioning piping system because air mixed in its piping leads to decline of heat-effectiveness, noise production or corrosion of equipment.

The TA-16 series air vent valve is made of stainless steel, except for the valve disc and gasket, offering high resistance to corrosion and durability. Its body is compact, and air is discharged automatically.

Moreover, available with the TA-16CV series air vent valve, which does not suck in air outside in order to prevent water level drop in piping when the equipment stops operating.

In addition, also available with various piping connection parts for exhaust outlet, such as manual valve or swivel joint (capable of turning 360 degrees). So, it is possible to meet any exhaust outlet piping widely.

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## 2. Features

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1. All parts, except for the valve disc and gasket, are made of stainless steel, offering high resistance to corrosion and durability (for the TA-16L, TA-16CVA and TA-16CVS, connection parts of exhaust outlet are made of copper).
2. Wide working pressure range (0.01-1.0 MPa) ensures stable exhaust capacity.
3. Can be installed in small space because of compact body.
4. No leakage by fluororubber valve disc.
5. Spring is attached to install joints in the exhaust outlet (except for the TA-16L).
6. Available with various piping connection parts for exhaust outlet, such as manual valve or swivel joint (capable of turning 360 degrees).
7. Complies with Japanese Water Works Law.

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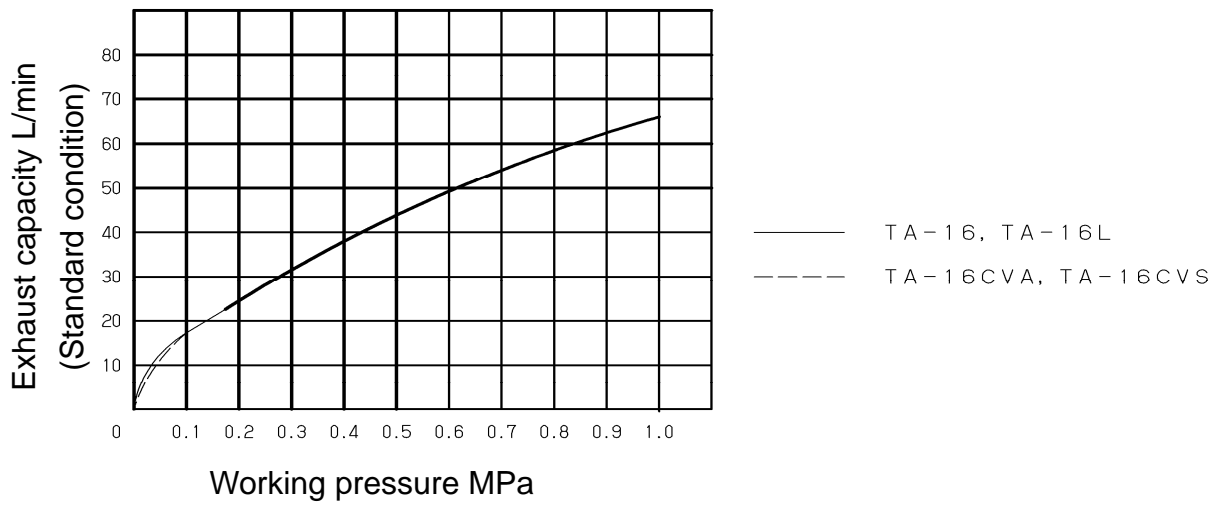
## 3. Specifications and Capacities

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### 3.1 Specifications

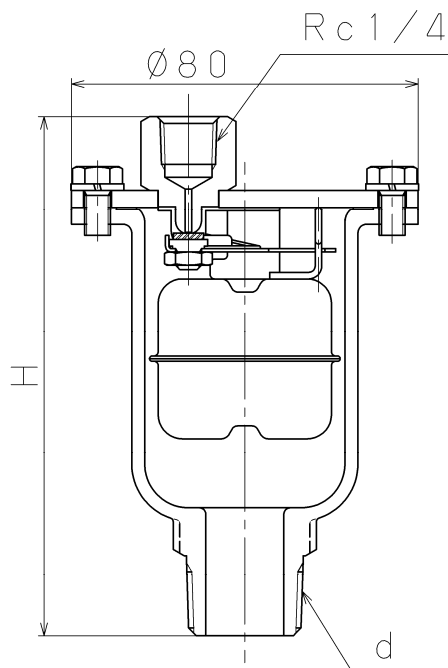
Model		TA-16	TA-16L	TA-16CVA	TA-16CVS
Nominal size		15-25A			
Application		Cold and hot water			
Working pressure		0.01-1.0 MPa			
Check valve		No		Provided	
Maximum temperature		90°C			
Material	Body, cover, float	Stainless steel			
	Valve disc, gasket	FKM (fluororubber)			
	L-shaped hose joint	-	Brass	-	
	Check valve joint (check valve)	-	-	FKM (fluororubber)	
Connection	Inlet	JIS R screwed			
	Outlet	JIS Rc 1/4 screwed	Φ6 (hose inside diameter)	JIS Rc 1/4 screwed	

### 3.2 Exhaust capacity chart



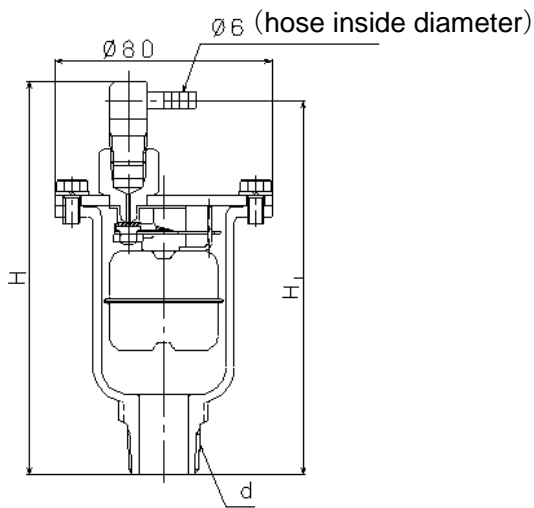
## 4. Dimensions and Weights

### ■ TA-16



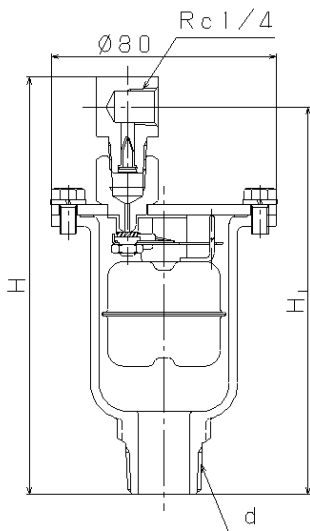
Nominal size	d	H	Weight (kg)
15A	R 1/2	118	0.66
20A	R 3/4	120	0.68
25A	R 1	124.5	0.74

■ TA-16L



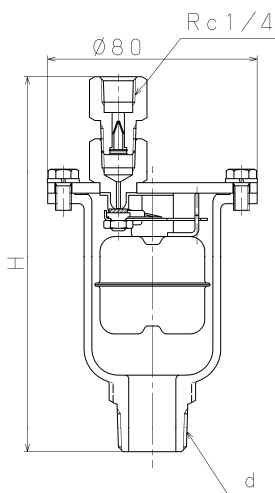
Nominal size	d	H <sub>1</sub>	H	Weight (kg)
15A	R 1/2	136	143	0.70
20A	R 3/4	138	145	0.72
25A	R 1	144	149.5	0.78

■ TA-16CVA



Nominal size	d	H <sub>1</sub>	H	Weight (kg)
15A	R 1/2	135.5	146	0.72
20A	R 3/4	137.5	148	0.74
25A	R 1	142	152.5	0.80

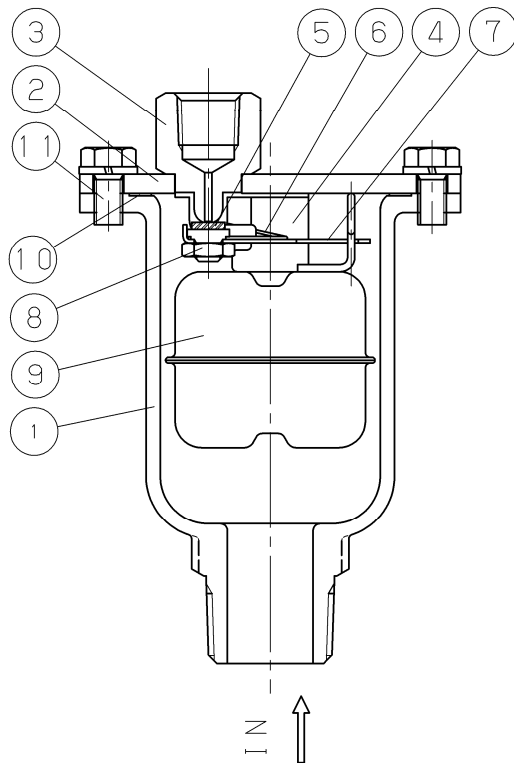
■ TA-16CVS



Nominal size	d	H	Weight (kg)
15A	R 1/2	142	0.70
20A	R 3/4	144	0.72
25A	R 1	148.5	0.78

## 5. Operation

1. After the installation, air exists in the product, and the float [9] is lowered by its own weight. In this condition, since the valve disc [5] is kept open by the lever [7], air is discharged outside by the internal pressure of the system.
2. When air is discharged, hot or cold water flows into the product to make the float [9] come up on buoyancy and the force that keeps the valve disc [5] open through the lever [7] is lost. Then the valve disc [5] is closed by the spring [6] and pressure to the valve disc [5].
3. When air bubbles are generated in the system and collected into the product, the inside water level drops, and the float loses buoyancy and opens the valve disc [5] to discharge air.
4. Then the operation goes back to the above process [2]. Repeating the processes [2] and [3], air in the system can be removed.



No.	Main parts
1	Body
2	Cover
3	Seat (Exhaust outlet)
4	Hanger Metal
5	Valve Disc
6	Spring
7	Lever
8	Nut
9	Float
10	Gasket
11	Bolt

The above drawing shows the structure of the TA-16. The TA-16L has L-shaped hose joint screwed in the seat [3]. The TA-16CVA and TA-16CVS have check valve joints (the CV-16A and CV-16S respectively) screwed in each seat [3].

## 6. Maintenance

### 6.1 Precaution before use



#### Caution

1. Make sure to attach joint and hose to outlet of the product, and lead them to drain ditch.  
\* Failure to follow this notice may contaminate the surroundings, result in burns for high-temperature fluid or cause bodily injury or damage to the property when valve leakage happens.
  2. Install the product vertically to a place where air is easy to accumulate.  
\* Failure to follow this notice may prevent the product from functioning properly.
  3. Before installing the product, remove foreign substances and scale from the piping.  
\* Failure to follow this notice may prevent the product from functioning properly.
1. Install stop valve (cock or gate valve) to inlet of the product for maintenance and inspection.
  2. Plumb the exhaust outlet in a way that prevents backflow.

## 6.2 Precaution for use

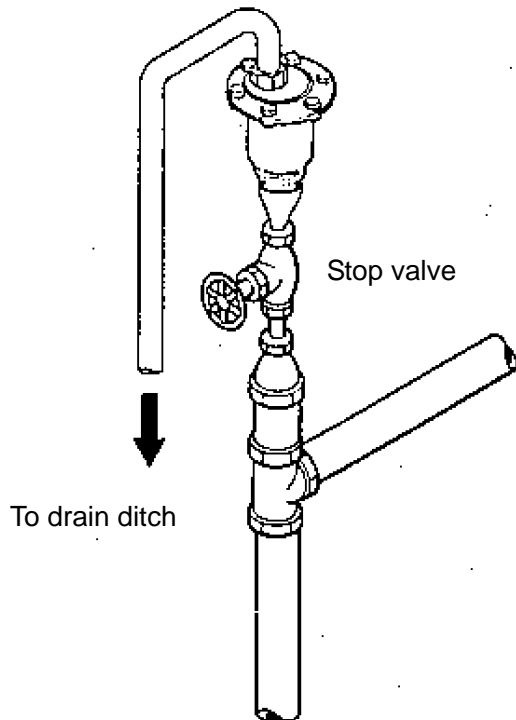


### Warning

Do not touch the product with bare hands in case of high-temperature fluid.  
\* Failure to follow this notice may result in burns.

1. A small amount of water may blow out with air at air discharge for initial operation. This is not a failure of the product.

## 6.3 Piping example



The drawing on the left shows a piping example of the TA-16.

## 6.4 Troubleshooting

Trouble	Cause	Remedy
No air discharge	1. The stop valve on inlet side of the product is kept closed.	1. Open the stop valve fully.
	2. Internal piping pressure is more than the appropriate value.	2. Lower the internal piping pressure, or replace the valve by one for high pressure.
	3. Air accumulates too slowly.	3. Install the valve on a place where air is easy to accumulate.
Water blowout	1. Foreign substances exist on the valve disc [5] and seat [3].	1. Remove and clean the valve disc [5] and seat [3].
	2. The float [9] is damaged and cannot work properly.	2. Replace the float [9].
Sucking in air outside (the TA-16CVA and TA-16CVS)	1. Foreign substances exist on the check valve.	1. Remove foreign substances.

## 6.5 Precaution for maintenance

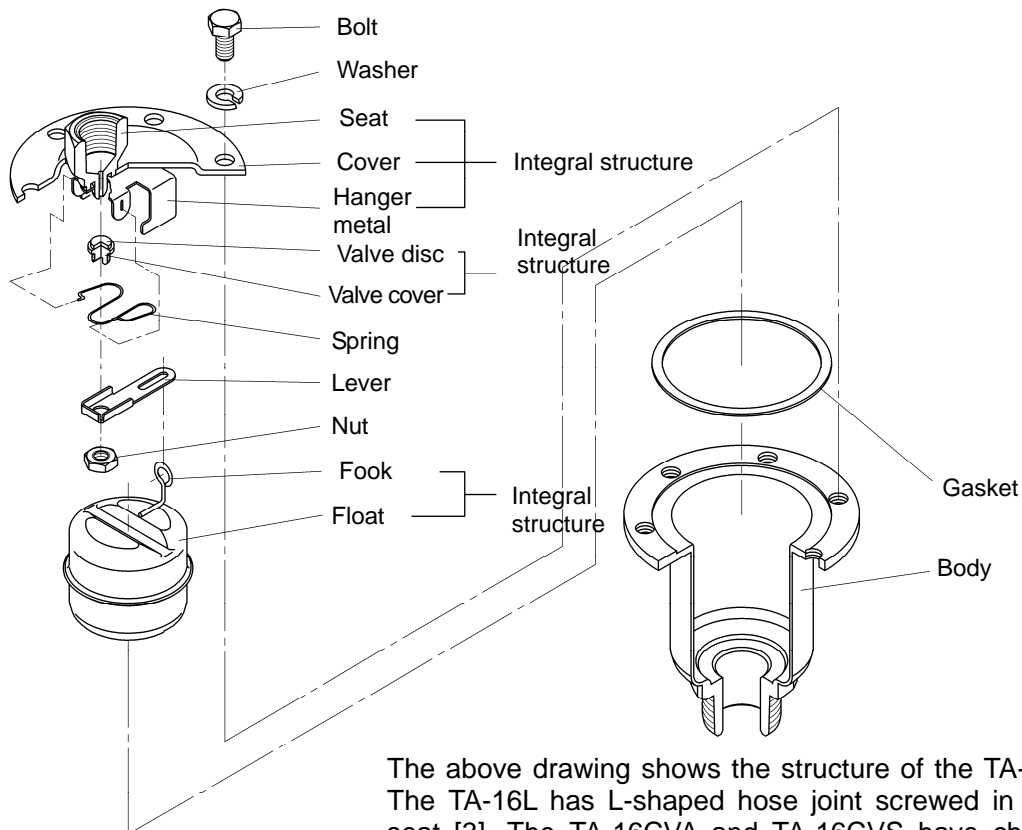


### Warning

Disassembling and inspections shall be performed by a professional or a valve manufacturer.

1. Completely discharge internal pressure of the product, piping and equipment, and cool down the product prior to disassembling or maintenance in case of high-temperature fluid.  
\*Failure to follow this notice may result in scalds or bodily injury due to residual pressure.

## 7. Exploded View



The above drawing shows the structure of the TA-16. The TA-16L has L-shaped hose joint screwed in the seat [3]. The TA-16CVA and TA-16CVS have check valve joints (the CV-16A and CV-16S respectively) screwed in each seat [3].

### 7.1 Caution for assembly



To attach the cover [2] to the body [1], place the body [1] from the above on the cover [2].

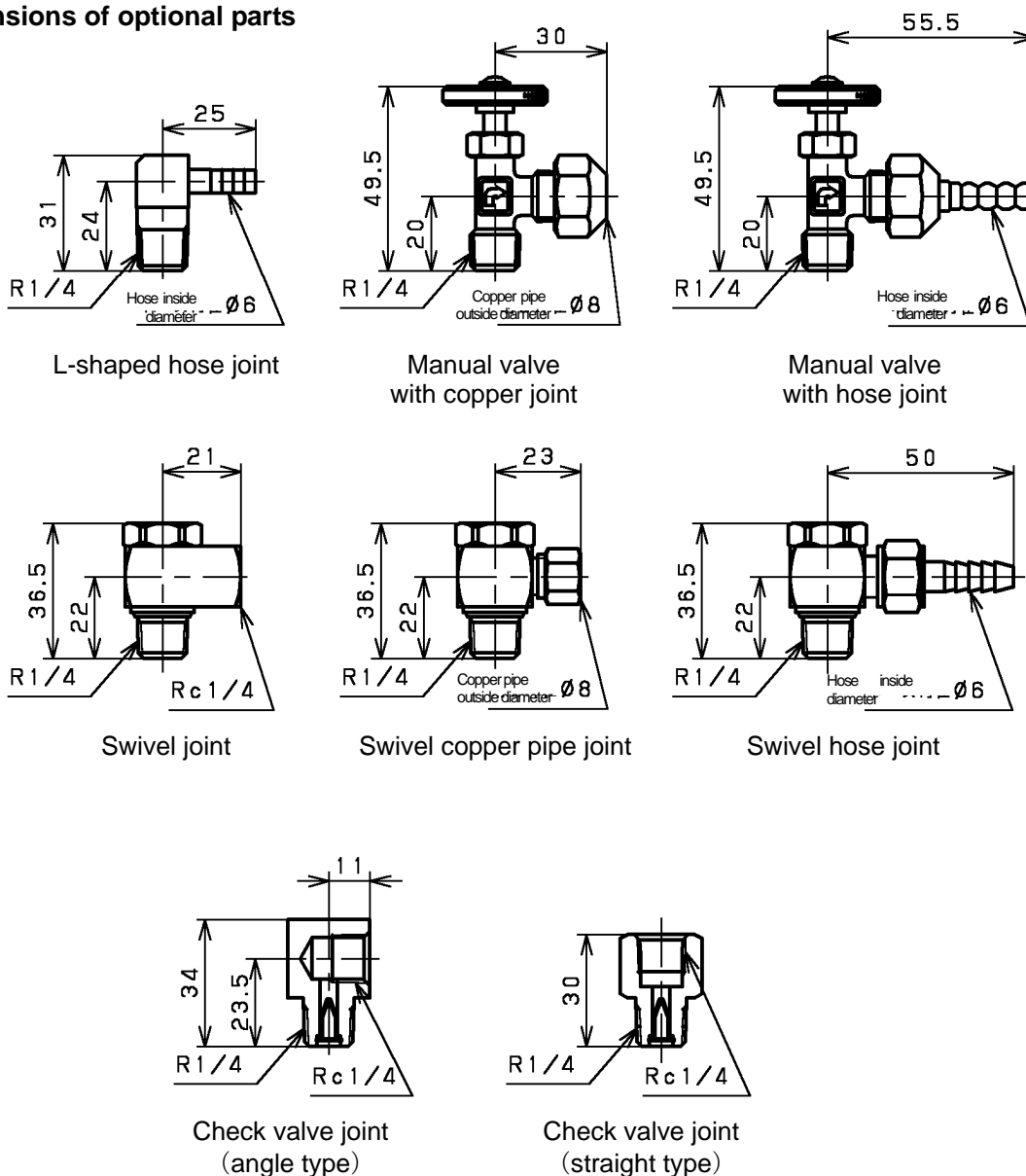
## 8. Optional parts

### 8.1 Optional parts (piping connection parts for exhaust outlet)

Optional parts	Connection	Others
L-shaped hose joint	R 1/4 X $\Phi 6$ (hose inside diameter)	This joint can be installed at our factory (Model: TA-16L).
Manual valve with copper joint	R 1/4 X $\Phi 8$ (copper pipe outside diameter)	Install this joint on the customer's side.
Manual valve with hose joint	R 1/4 X $\Phi 6$ (hose inside diameter)	Install this joint on the customer's side.
Swivel joint	R 1/4 X Rc 1/4	Install this joint on the customer's side.
Swivel copper pipe joint	R 1/4 X $\Phi 8$ (copper pipe outside diameter)	Install this joint on the customer's side.
Swivel hose joint	R 1/4 X $\Phi 6$ (hose inside diameter)	Install this joint on the customer's side.
Check valve joint (angle type)	R 1/4 X Rc 1/4	This joint can be installed at our factory (Model: TA-16CVA).
Check valve joint (straight type)	R 1/4 X Rc 1/4	This joint can be installed at our factory (Model: TA-16CVS).

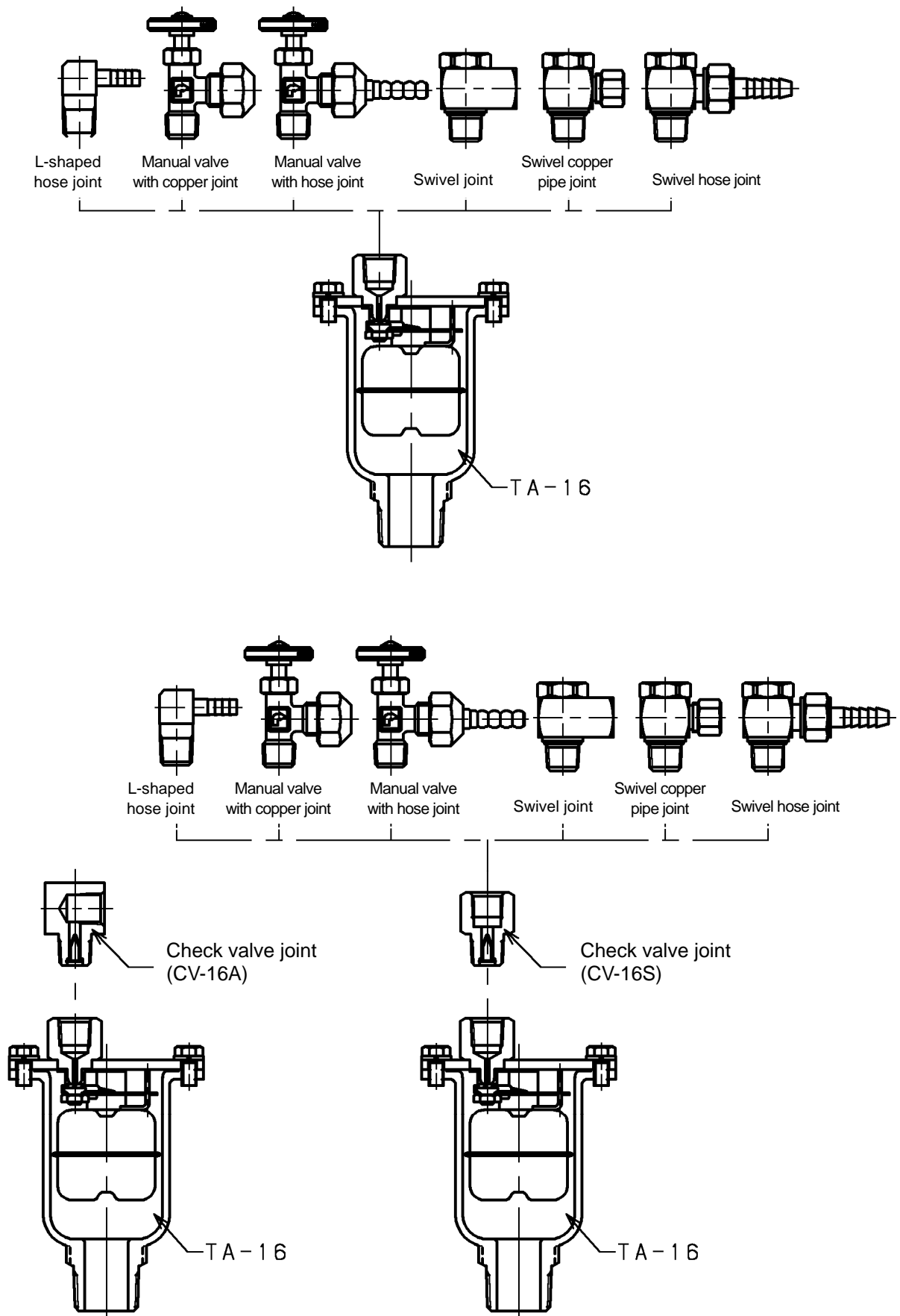
Optional parts, except for L-shaped hose joint and check valve joint, are requested to be installed on the customer's side to comply with model registrations for Japan Water Works Association.

### 8.2 Dimensions of optional parts





### 8.3 Combination of the product and optional parts



Caution: If check valve joint and swivel joint are used in combination, install the check valve joint to the TA-16 first, and then the swivel joint.