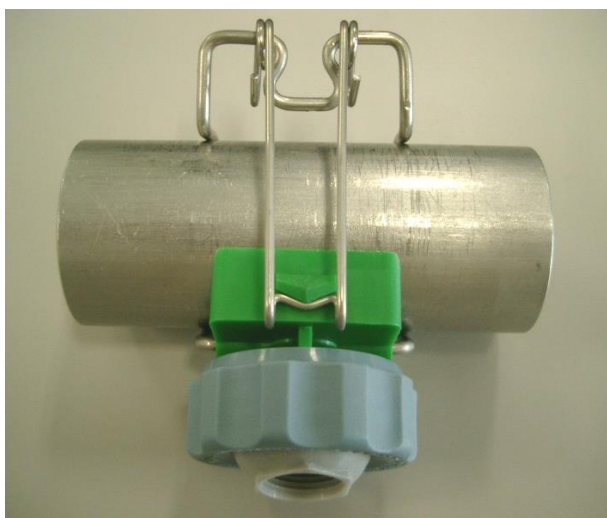


## INSTRUCTION MANUAL

### Ball Joint Adaptor QBP Series



Note: Shape and color differ depending on the product code.

Thank you for purchasing this product.

Prior to use, read this manual carefully and familiarize yourself with the proper operation of the product for best performance.

H. Ikeuchi & Co., Ltd. takes no responsibility for any accidents and/or injuries resulting from improper handling, installation and/or operation.

After reading, keep this manual handy for quick reference.

Please be aware that due to continuing efforts to improve our products, some details in this manual may differ from the actual product.



“The Fog Engineers”  
**H. IKEUCHI & Co., LTD.**

## 1. Safety Precautions

Prior to use, please read these “Safety Precautions” and use this product properly. Improper use may result in injury and damage to the product.



WARNING

Do not use the product beyond the maximum liquid pressure of 0.4 MPa.



WARNING

Do not use the product outside of the temperature range of 5–80°C.



WARNING

Do not use the product in freezing cold environments.



WARNING

Do not connect the product to pipes that do not meet the specifications detailed in Table 3 on Page 4.



WARNING

To prevent a water hammer, avoid a sudden increase in liquid pressure.



WARNING

Firmly attach the spring clip type mounting bracket to the pipe.  
See Page 4.



WARNING

DO NOT apply water pressure to the product while the cap is loose.



WARNING

In order to avoid any unexpected accidents or injuries, do not stand near or in front of the product and keep your face away.

## 2. Before Use (Instructions & Cautions)



Be sure to flush the pipes before installing the product to remove any dirt and foreign matter.



Avoid installing the product immediately on or after a bend in the pipe or an elbow. Turbulence can affect the performance of the nozzle to be attached to this product.



To prevent the attached nozzle from clogging, install strainers or use a water treatment system, depending on the water quality.



Do not scratch the attached nozzle. Do not use nails, pins or other hard objects to touch or clean the nozzle orifices, which may damage the nozzle.



Do not apply any strong force, shock or vibration to the product.



Store the product in a clean, dust-free place.



When spraying liquid other than water, consider the chemicals in the liquid and the resistance of the product, nozzle and pipe to these chemicals. See Table 1 on Page 3 for the product materials.



The cap is lightly screwed in before shipment. Before use, adjust the direction of the attached nozzle with the ball adaptor, and then tighten the cap firmly by hand. DO NOT use any tool such as a spanner/wrench. See Page 5 for details.

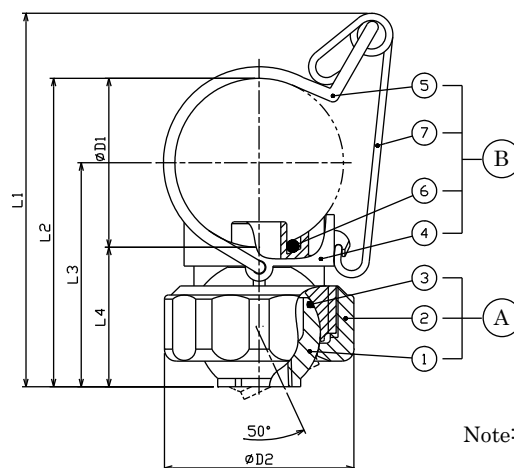


Apply sealant or sealing tape to the thread of the nozzle before installing the nozzle. For the nozzle tightening torque, see the instruction manual for the nozzle.



When attaching a nozzle with long threads, such as those with strainers, make sure that the nozzle does not stick out of the inlet side of the ball adaptor. If the nozzle protrudes into the adaptor body (part #4, see the next page), it can make it impossible to move the ball adaptor.

### 3. Structure, Dimension, and Weight



**Table 1. Components and material**

		No.	Components	Material*1	Remarks
A	Ball Joint Section	①	Ball Adaptor	FRPP	
		②	Cap	FRPP	
		③	O-ring	NBR	
B	Adaptor	④	Adaptor	FRPP	
		⑤	Spring Clip	S304	
		⑥	O-ring	NBR	
		⑦	Spring Lock	S304	Optional

\*1) In our material code, “S” represents “stainless steel”.  
For example, S304 stands for stainless steel 304.

**Table 2. Dimensions and weight**

QBP for Metal Pipes

Pipe size (inch)*2	Outer dimensions (mm)						Weight (g)
	L1*4	L2*4	L3*4	L4*4	øD1	øD2	
1	85	69	52	35	34	48	56
1 1/4	94	78	56	35	42.7	48	
1 1/2	100	84	59	35	48.6	48	
2	112	96	65	35	60.5	48	

\*2) Pipes should be stainless steel pipes and compliant with JIS G 3459.

QBP for PVC Pipes

Pipe size (ND)*3	Outer dimensions (mm)						Weight (g)
	L1*4	L2*4	L3*4	L4*4	øD1	øD2	
25A	83	67	51	35	32	48	56
30A	89	73	54	35	38	48	
40A	100	84	59	35	48.6	48	
50A	112	96	65	35	60.5	48	

\*3) Pipes should be PVC pipes and compliant with JIS K 6742.  
40A, 50A adaptors for PVC pipes are the same as 1 1/2", 2" adaptors for metal pipes.

\*4) With Rc1/2 threaded Ball Adaptor, each dimension of L1–L4 is 2 mm shorter than the above.

## 4. Operation

### 4-1. Piping compatible with QBP series

Use stainless steel pipes compliant with JIS G 3459 or PVC pipes compliant with JIS K 6742.

Table 3. Standard piping diameters

Pipe material	Stainless steel		PVC	
Standard	JIS G 3459		JIS K 6742	
Type	SUS-HTP, TP SGP (JIS G 3452)		VP and HIVP pipes	
Size (mm)	1	34.0±0.5	25A	32.0±0.2
	1 1/4	42.7±0.5	30A	38.0±0.3
	1 1/2	48.6±0.5	40A	48.0±0.3
	2	60.5±0.5	50A	60.0±0.4

### 4-2. Installation of QBP adaptor

- 4-2-1. Drill a hole into the pipe with a size of  $\phi 14.3$ – $14.8$  mm. If the hole is smaller, this adaptor will not be installed correctly. If it is larger, it may cause leakage.
- 4-2-2. Deburr the hole properly to prevent clogging and liquid leakage.
- 4-2-3. Avoid making chamfers or scratches around the hole. Any damage in the sealing area may cause leakage, because the O-ring (placed there) will not be able to maintain a firm seal.

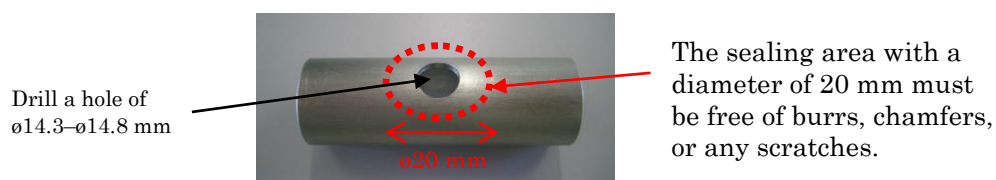


Fig. 1

- 4-2-4. Be sure to flush the pipes before installing the adaptor to remove any dirt and foreign matter.
- 4-2-5. Attach the spring clip securely to the piping. (Fig. 3)



Fig. 2

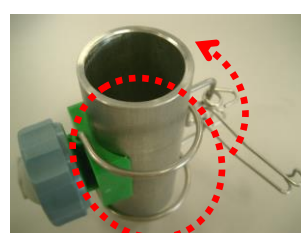


Fig. 3

4-2-6. Engage the spring lock (optional) firmly until it clicks.

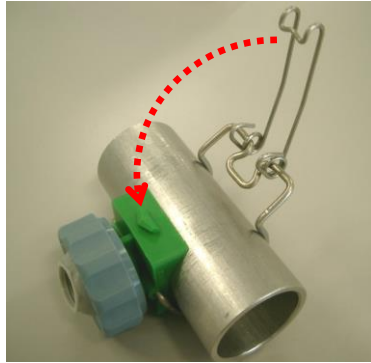


Fig. 4

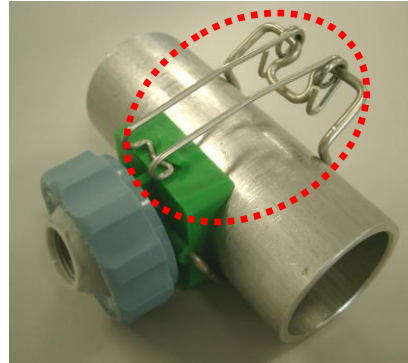


Fig. 5

4-2-7. To avoid water hammer, start spraying at a water pressure of 0.05–0.1 MPa, and then gradually increase to operating pressure.

### **4-3. Attaching nozzle to QBP adaptor (Adjusting the spray direction)**

4-3-1. Be sure to stop the pump before attaching or positioning the nozzle.

4-3-2. Tighten the cap firmly by hand to hold the ball adaptor in place.

4-3-3. Apply sealant or sealing tape to the thread of the nozzle, and screw the nozzle into the ball adaptor. See the nozzle instruction manual for tightening torque.

4-3-4. Slightly loosen the cap and adjust the spray direction of the nozzle with the ball adaptor.

4-3-5. When the direction is set, tighten the cap firmly by hand to hold the ball adaptor in place.

Note:

- DO NOT apply water pressure to the product when the cap is loose.
- Always tighten the cap by hand. DO NOT use any tool such as a spanner/wrench.

## 5. Troubleshooting

If there is a problem, please check the following items first. If the problem persists, please replace the product.

Table 4. Troubleshooting

No.	Problem	Probable cause	Solution
1	Nozzle not spraying, or the spray pattern is irregular	Liquid pressure is too low.	Check the pressure in the pipe and apply the proper pressure.
		Nozzle orifice and/or strainer are/is clogged.	Clean both, the nozzle and strainer (ultrasonic cleaning, air blowing, etc.).
2	Water leakage between piping and product	O-ring #6 for adaptor #4 is missing, or damaged.	Set or replace the O-ring.
		Spring clip is not correctly attached.	Attach it firmly on the pipe.
		Problem with the mounting hole	Deburr the hole (see Page 4). If necessary, replace the pipe.
3	Water leakage from cap	O-ring #3 for ball adaptor #1 is missing, or damaged.	Set or replace the O-ring.
		Cap #2 is loose.	Tighten the cap.
4	Water leakage from nozzle	Nozzle is not screwed in tight enough.	Tighten the nozzle.
5	Ball adaptor does not move	Cap #2 is over-tightened.	Loosen the cap. (Always tighten the cap firmly before starting to spray)

## 6. Warranty

There is a one-year warranty from the date of shipment.

Seller shall be responsible for any damage due to design or production and will replace the item free of charge.

Neither this warrant nor any implied warranty applies to damage or harm caused by any or all of the following: 1. Damage due to misapplication and/or misuse; 2. Improper repair and/or modification; 3. Natural disasters; 4. Normal wear-and-tear of consumable parts including clogged nozzles.