KKS069551-8E

Instruction Manual

KBN series Nozzles



Thank you for purchasing our CERJET® Spray Nozzles.

In order to use CERJET® Spray Nozzles safely and efficiently, you are requested to read this Instruction Manual and keep it readily available.

H. IKEUCHI & CO., LTD. takes no responsibility for any accidents and/or injuries resulting from improper handling, installation and/or operation.

Dimensions and design may be changed without notice for product improvement.



1. Safety Precautions

Prior to use, please read these "Safety Precautions" and use the nozzles properly.



Do not use nozzles beyond the maximum liquid pressure of 7MPa. Otherwise nozzles may break and/or be blown off of the pipe, resulting in injuries.



Do not use nozzles beyond the operating temperature range of $5\sim60^{\circ}$ C. Otherwise nozzles may break and/or be blown off of the pipe, resulting in injuries.



Do not use nozzles in temperatures below freezing. Otherwise nozzles may break and/or be blown off of the pipe, resulting in injuries.



Connect the nozzles only with the taper pipe thread (R1/4). Otherwise nozzles may break and/or be blown off of the pipe, resulting in injuries.



To avoid water hammer, do not increase pressure rapidly. Otherwise nozzles may break and/or be blown off of the pipe, resulting in injuries.



To provide against contingencies, do not stand in front of the nozzles or keep your face away from the nozzles.

2. Before Use (Instructions & Cautions)







Apply sealing tape on the thread of the nozzle before installation.



Screw the nozzle by hand first (making sure it's screwed in properly), then tighten with a torque wrench (size 14mm). (Recommended tightening torque: 4.5N·m) Tightening it too much may break the nozzle.



When connecting, make sure the nozzle end doesn't intervene in the pipe (refer to P. 3 "4. How to Use").



Do not place the nozzle at the immediate rear of a bent pipe or elbow. Turbulence may affect the nozzle performance.



To prevent the nozzles from clogging, apply strainers or use a water treatment system, depending on water quality. If the nozzle orifice is clogged, the strainer holder may come off (refer to P. 3 "5. Cautions").



Do not scratch or score the nozzle. Do not apply hard materials such as nails or needles to the ceramic part of the nozzle tip.



The plastic may yield to mechanical shock and must be handled gently.



Store the nozzle in a clean place free from dust.



When spraying liquid other than water, consider the chemical resistance of the nozzle resin to the liquid (refer to P. 5 "Chemical Resistance of KBN series Nozzles").

3. Warranty

The warranty period is one year after the date of shipment. The seller shall be responsible for repair at our designated place and/or replacement of the damaged parts if the damages are due to the seller's fault.

This warranty does not cover such cases as misuse, improper repair, modification, natural disasters, clogging of strainer or nozzle and exhaustion of consumable parts.





·Flush the pipes to purge foreign particles before installing the nozzle.

• Apply sealing tape on the thread of the nozzle before installation.

•Screw the nozzle by hand first (making sure it's screwed in properly), then tighten with a torque wrench (size 14mm). (Recommended tightening torque: 4.5N•m)

·Increase the liquid pressure gradually from low to high to avoid water-hammer.

5. Cautions

 \cdot The nozzle can not be disassembled.

• If the pressure is increased rapidly with the nozzle orifice clogged and air trapped inside the nozzle, the force works in a way that the strainer holder comes off and may lead to dropping off of the strainer holder inside the pipe.



 \cdot If the nozzle orifice is air blown with air blow gun from close distance (within 5 mm), the strainer holder may come off.



CERJET®

6. Troubleshooting

Check the following points in case of trouble. If the following solutions do not work, please replace the nozzle with a new one.

No.	Trouble	Probable Causes	Solution			
1	No spray.	Liquid pressure is too low.	Check the pressure in the pipe and apply the proper			
			pressure.			
		Nozzle orifice or strainer is clogged.	Replace the nozzle.			
2	Liquid dripping from Liquid pressure is too low. the nozzle orifice.		Check the pressure in the pipe and apply the proper			
			pressure.			
		Foreign particles sticking to the nozzle	Replace the nozzle.			
		orifice area.				
3	No hollow-cone spray	Liquid pressure is too low.	Check the pressure in the pipe and apply the proper			
	pattern available.		pressure.			
		Nozzle orifice is clogged.	Replace the nozzle.			
4	Liquid leaking.	Deterioration of sealing tape.	Replace or change the sealing tape.			
		Nozzles are not firmly screwed in.	Tighten the nozzles properly with a torque wrench.			
			(Recommended tightening torque: 4.5 N m)			

7. Structure and Components



Description	Material			
Body + Ceramic orifice	Polyamide + Alumina ceramic			
Closer	Polyester elastomer			
Spring	S304**			
Poppet	NBR			
Strainer screen	S316**			
Strainer holder	PP			
O-ring	NBR			
	Description Body + Ceramic orifice Closer Spring Poppet Strainer screen Strainer holder Oring			

* Poppet is included only in KBN-TPACVW (KBN with check valve).
** In our material code, "S" represents "stainless steel". (Example) S304 represents stainless steel 304.

8. Specifications

Code	80063	80125	8022		
Spray angle (°, Spray pressure 1MPa) *	80	80	80		
Spray capacity () /hr, Spray pressure 1MPa) *	2.00	4.10	7.25		
Length (mm)	27				
External diameter (mm)	Hex. 14				
Thread size	R1/4				
Mass (g)	4				
Maximum operating pressure (MPa)	7				
Operating temperature range (°C)	5-60				
Color of nozzle body					
Color of strainer holder	Strainer without check valve: Black Strainer with check valve: White				

* The above spray angle and spray capacity are the figures for KBN-TPACVW (KBN with check valve at operating pressure of 0.3MPa).

Chemical Resistance of KBN series Nozzles

Name of chemicals		Temperature (°C)			Name of chemicals	Temperature (°C)			
		20	40	60		Name of chemicals	20	40	60
Acidic	Hydrochloric acid (35%)	\times	\times	\times		Trichloroethylene	\triangle		
	Hydrochloric acid (100%)	×	×	×		Acetone	\bigtriangleup		
	Sulfuric acid (60%)	×	×	×		Methyl alcohol	\bigtriangleup	\bigtriangleup	\times
	Sulfuric acid (70%)	×	\times	\times	Organic	Ethyl alcohol	\triangle	\triangle	\times
	Sulfuric acid (90%)	×	\times	\times		Alcohol	\triangle		
	Sulfuric acid (98%)	×	\times	\times		Ethyl ether	0		
	Fluorinated acid (10%)	×	\times	\times		Benzene	0		
	Formic acid (50%)	×	\times	\times		Toluene	0		
	Oxalic acid (100%)	\triangle	\times	\times		Chloroform	\triangle		
	Phosphoric acid (60%)	×	\times	\times		Formalin	\triangle		
	Acetic acid(80%)	\triangle	\triangle	\times		Phenol	\times	\times	\times
						Gasoline	0		
	Sodium hydroxide	×	\times	\times		Glycerol	0		
ili	Ammonia	×	\times	\times		Lacquer thinner	0		
Alka	Sodium hypochlorite (bleach)	0	0	\triangle		Mild detergent	0	0	0
Re	Remarks		Symbols						
				\bigcirc : Not corrosive					
				\triangle : Corrosive					
				imes: Unusable					

9. Storing

·In cold season, before storing remove the nozzles from pipes to prevent damage from freezing.

· If the header and nozzles are impossible to remove, discharge water completely from the header and nozzles with compressed air.

 \cdot Store the nozzle in a clean place free from dust.