



CAR WASH APPLICATION:

HIGH PRESSURE CLEANING WITH CERAMIC SPRAY NOZZLES





INCREASE THE PERFORMANCE OF YOUR CAR WASH

CERAMIC SPRAY NOZZLE TECHNOLOGY FOR CAR WASH APPLICATION

PROBLEMS WHEN CHOOSING THE WRONG SPRAY NOZZLE FOR A CAR WASH APPLICATION



UNWANTED EFFECTS OF THE WRONG NOZZLE APPLICATION FOR CAR WASH

-  QUICKLY WORN OUT NOZZLES
-  WASTED CHEMICALS
-  EXCESSIVE WATER WASTE
-  POOR SPRAY DISTRIBUTION





FACTORS

- 1** The material of the nozzle
- 2** The manufacturing process of the nozzle
- 3** Matching the application of the nozzle



ADVANTAGES OF CERAMIC NOZZLES



-  **High wear resistance**
 - High resistance to corrosion
 - Can maintain its strength up to 1400°C
 - This makes the material suitable for high-pressure cleaning.
-  **Highly resistant to chemicals and temperature**
 - Resistant to most acids and highly corrosive liquids
 - Higher chemical resistance compared to metal
-  **Cost efficient**
 - Reduced operating and running costs
 - Longer lifetime value
 - Stable performance
-  **Enhanced toughness**
 - Ceramic nozzles have a high abrasive resistance.
 - 100 times higher than brass
 - 20-30 times higher than stainless steel

Materials	Items	Chemical resistance											Heat resistance**	
		Hydrochloric acid	Concentrated Hydrochloric acid	Sulfuric acid (35%)	Concentrated sulfuric acid	Nitric acid (35%)	Concentrated nitric acid	Acetic acid	Sodium hydroxide (caustic soda)	Aqueous ammonia	Acetone	Trichloro-ethylene	Ethyl alcohol	Suitable (°C)
Metals	SUS303	x	x	x	x	o	Δ	Δ	o	o	o	o	400	800
	SUS304	x	x	x	x	o	o	o	o	o	o	o	400	800
	SUS316, SUS316L	x	x	x	o	o	Δ	o	o	o	o	o	400	800
Ceramics	CERJET® ceramics	o	o	o	o	o	o	o	x	o	o	o	700	800
	Alumina ceramics	o	o	o	o	o	o	o	Δ	o	o	o	1,000	1,200
	SiC	o	o	o	o	o	o	o	Δ	o	o	o	1,550	1,550
	SiSiC	o	o	o	o	o	o	o	Δ	o	o	o	1,350	1,350

CERAMIC NOZZLES FOR CAR WASH APPLICATION

- Ceramic nozzles are ideal for a high pressure cleaning application, like car wash, due to their high resistance to corrosion, chemicals and wear.
- Ceramic nozzles are a cost efficient and sustainable solution, as they have an increased lifespan, and help reduce operating and running costs with the minimum waste of water and chemicals.

VNP NOZZLE



<p>[Spray pattern]</p>	<p>NOZZLE CHARACTERISTICS</p> <ul style="list-style-type: none"> Flat spray pattern with uniform distribution across the pattern area Standard pressure: 3.0 MPa
<p>[Spray distribution]</p>	<p>APPLICATIONS:</p> <ul style="list-style-type: none"> High pressure cleaning: Automotives, containers, tanks, wire and felt Parts of paper making machines, wire-cylinders, filter presses, other Industrial cleaning and degreasing
<p>STRUCTURE</p>	<ul style="list-style-type: none"> One piece structure with a ceramic orifice insert
<p>MATERIAL</p>	<ul style="list-style-type: none"> Nozzle orifice : Ceramic Metal parts : S.303 Special order material: S316
<p>WEIGHT</p>	<ul style="list-style-type: none"> R1/8...S303: 7 g R1/4...S303: 20g

VNP SERIES

Spray angle code	Spray capacity code	Pipe conn. size		Spray angle (°)			Spray capacity (L/min)										Free pass dia. (mm)			
		R1/8	R1/4	1 MPa	3 MPa	5 MPa	1 MPa	2 MPa	2.5 MPa	3 MPa	3.5 MPa	4 MPa	4.5 MPa	5 MPa	6.5 MPa	8 MPa		10 MPa	15 MPa	
65	43	○	○	60	65	65	2.50	3.54	3.96	4.33	4.68	5.00	5.30	5.59	6.37	7.06	7.91	9.67	0.7	
	49	○	○	60	65	65	2.86	4.04	4.52	4.94	5.34	5.71	6.06	6.38	7.28	8.07	9.04	11.1	0.8	
	56	○	○	60	65	65	3.22	4.54	5.08	5.56	6.01	6.42	6.81	7.18	8.19	9.08	10.2	12.4	0.9	
	62	○	○	60	65	65	3.57	5.05	5.65	6.18	6.68	7.14	7.57	7.98	9.10	10.1	11.3	13.8	0.9	
	68	○	○	60	65	65	3.93	5.55	6.21	6.80	7.35	7.85	8.33	8.79	10.0	11.1	12.4	15.2	1.0	
	74	○	○	60	65	65	4.29	6.06	6.78	7.42	8.01	8.56	9.09	9.58	10.9	12.1	13.6	16.6	1.0	
	80	○	○	60	65	65	4.65	6.56	7.35	8.04	8.68	9.28	9.85	10.4	11.8	13.1	14.7	18.0	1.0	
	87	○	○	60	65	65	5.00	7.07	7.91	8.66	9.35	10.0	10.6	11.2	12.8	14.1	15.8	19.4	1.1	
	99	○	○	60	65	65	5.72	8.08	9.04	9.89	10.7	11.4	12.1	12.8	14.6	16.2	18.1	22.1	1.1	
	124	○	○	60	65	65	7.15	10.1	11.3	12.4	13.4	14.3	15.2	16.0	18.2	20.2	22.6	27.7	1.3	
	40	25	○	○	35	40	40	1.43	2.02	2.25	2.47	2.67	2.85	3.03	3.19	3.64	4.03	4.51	5.52	0.6
		31	○	○	35	40	40	1.78	2.52	2.82	3.09	3.34	3.57	3.78	3.99	4.55	5.05	5.64	6.91	0.7
37		○	○	35	40	40	2.14	3.03	3.39	3.71	4.01	4.28	4.54	4.79	5.46	6.06	6.77	8.30	0.7	
43		○	○	35	40	40	2.50	3.54	3.96	4.33	4.68	5.00	5.30	5.59	6.37	7.06	7.91	9.67	0.8	
49		○	○	35	40	40	2.86	4.04	4.52	4.94	5.34	5.71	6.06	6.38	7.28	8.07	9.04	11.1	1.0	
56		○	○	35	40	40	3.22	4.54	5.08	5.56	6.01	6.42	6.81	7.18	8.19	9.08	10.2	12.4	1.0	
62		○	○	35	40	40	3.57	5.05	5.65	6.18	6.68	7.14	7.57	7.98	9.10	10.1	11.3	13.8	1.1	
68		○	○	35	40	40	3.93	5.55	6.21	6.80	7.35	7.85	8.33	8.79	10.0	11.1	12.4	15.2	1.1	
74		○	○	35	40	40	4.29	6.06	6.78	7.42	8.01	8.56	9.09	9.58	10.9	12.1	13.6	16.6	1.1	
80		○	○	35	40	40	4.65	6.56	7.35	8.04	8.68	9.28	9.85	10.4	11.8	13.1	14.7	18.0	1.2	
87		○	○	35	40	40	5.00	7.07	7.91	8.66	9.35	10.0	10.6	11.2	12.8	14.1	15.8	19.4	1.2	
99		○	○	35	40	40	5.72	8.08	9.04	9.89	10.7	11.4	12.1	12.8	14.6	16.2	18.1	22.1	1.4	
124	○	○	35	40	40	7.15	10.1	11.3	12.4	13.4	14.3	15.2	16.0	18.2	20.2	22.6	27.7	1.5		
30	25	○	○	26	30	30	1.43	2.02	2.25	2.47	2.67	2.85	3.03	3.19	3.64	4.03	4.51	5.52	0.6	
	31	○	○	26	30	30	1.78	2.52	2.82	3.09	3.34	3.57	3.78	3.99	4.55	5.05	5.64	6.91	0.7	
	37	○	○	26	30	30	2.14	3.03	3.39	3.71	4.01	4.28	4.54	4.79	5.46	6.06	6.77	8.30	0.8	
	43	○	○	26	30	30	2.50	3.54	3.96	4.33	4.68	5.00	5.30	5.59	6.37	7.06	7.91	9.67	0.9	
	49	○	○	26	30	30	2.86	4.04	4.52	4.94	5.34	5.71	6.06	6.38	7.28	8.07	9.04	11.1	1.0	
	56	○	○	26	30	30	3.22	4.54	5.08	5.56	6.01	6.42	6.81	7.18	8.19	9.08	10.2	12.4	1.1	
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	68	○	○	26	30	30	3.93	5.55	6.21	6.80	7.35	7.85	8.33	8.79	10.0	11.1	12.4	15.2	1.1	
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25	25	○	○	22	25	25	1.43	2.02	2.25	2.47	2.67	2.85	3.03	3.19	3.64	4.03	4.51	5.52	0.7	
	31	○	○	22	25	25	1.78	2.52	2.82	3.09	3.34	3.57	3.78	3.99	4.55	5.05	5.64	6.91	0.7	
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	43	○	○	22	25	25	2.50	3.54	3.96	4.33	4.68	5.00	5.30	5.59	6.37	7.06	7.91	9.67	0.9	
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15	25	○	○	12	15	15	1.43	2.02	2.25	2.47	2.67	2.85	3.03	3.19	3.64	4.03	4.51	5.52	0.7	
	31	○	○	12	15	15	1.78	2.52	2.82	3.09	3.34	3.57	3.78	3.99	4.55	5.05	5.64	6.91	0.8	
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111	○	○	12	15	15	6.43	9.09	10.2	11.1	12.0	12.9	13.6	14.4	16.4	18.2	20.3	24.9	1.6		
124	○	○	12	15	15	7.15	10.1	11.3	12.4	13.4	14.3	15.2	16.0	18.2	20.2	22.6	27.7	1.7		

HOW TO ORDER To enquire about or order a specific nozzle, please refer to this coding system .

?(473 1/8M VNP 6543 S303

1/8M VNP 65 43 S303

Pipe conn. size¹ Spray angle code² Spray capacity code Material

1/8M 65 25 S303

1/4x1/8M 15 124

*1) "M" indicates male thread ("R" of the ISO standard) e.g. 1/8M = R1/8".

*2) Color of ceramic orifice differs depending on the nozzle code. When the spray angle code is 25 or 15 and the spray capacity code is between 43-124, it is marked by "AL99-" before the material code. Example: 1/8M VNP 2543 AL99-S303

CERAMIC NOZZLE VERSUS CONVENTIONAL NOZZLE

- Our ceramic nozzles last 20-30 times longer than the conventional stainless steel nozzles and 100 times longer than brass nozzles. If we assume that your ceramic nozzle last just 25 times longer, you can save around 155 euros per nozzle.
- Additionally, due to the reduction in water and chemicals used, the cost saving per spray nozzle is even higher.
- For a car wash with 1000 spray nozzles replacing its nozzles every 3rd year, this could mean a cost saving of more than 50.000 euros annually.

RESULTS WITH CERAMIC SPRAY NOZZLES



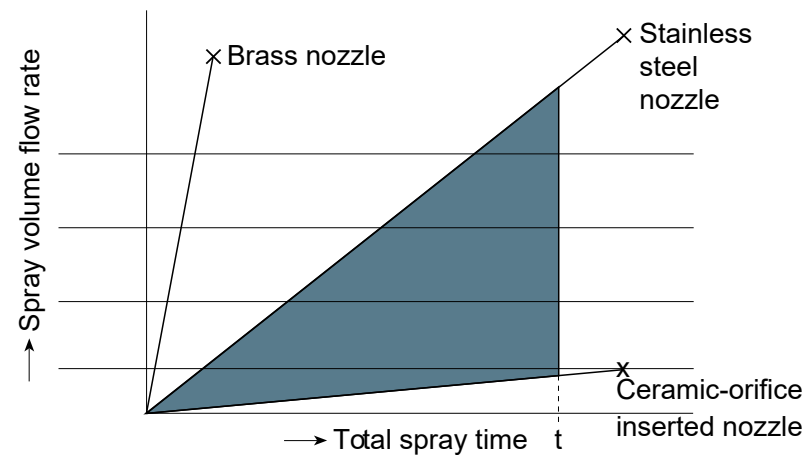
155 €
Saved per nozzle



20-30 X
Longer lifetime



10-15%
Less waste



ADVANTAGES OF CERAMIC VNP NOZZLES FOR CAR WASH

- ✓ Lifetime is significantly longer than other nozzle materials
- ✓ Stable performance
- ✓ Due to the high wear resistance, the spray volume flow rate will stay intact for longer
- ✓ Low maintenance
- ✓ High chemical resistance

SPRAY NOZZLE PRECISION GUARANTEE

Spray capacity tolerance



±5%

Guaranteed with a ±5% of the rated Spray Capacity at the standard pressure (set by nozzle product series)

Spray angle tolerance



±5%

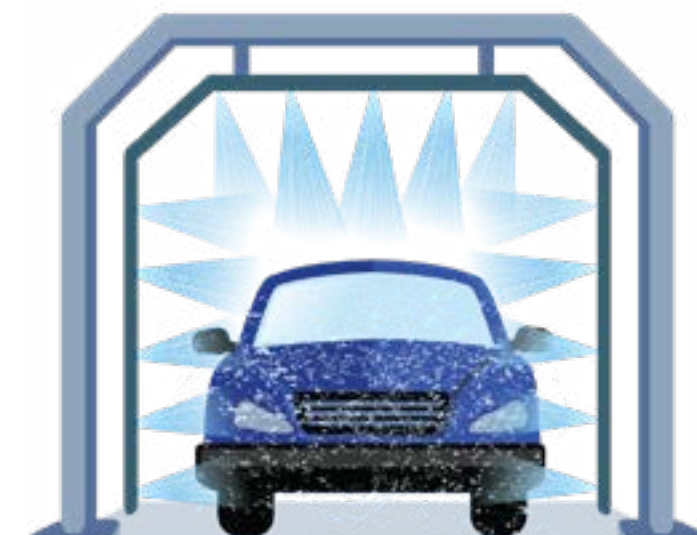
Guaranteed with a ±5% of the rated Spray Capacity at the standard pressure (set by nozzle product series) Spray angle is the angle of spray measured near the nozzle, unless otherwise specified.

Spray angle tolerance for solid stream jet



within 3°

Guaranteed within 3° from the nozzle body centerline at the standard pressure (set by nozzle product series).





Ikeuchi is a Japanese company with branches all over the world. It was founded in 1954 in Osaka and has since then expanded across Asia, North America and Europe.

For inquiries / information requests / quotations related this product, please contact us





Ikeuchi Europe

いけうち The fog engineers

“Taking the path less traveled”

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