

STANDARD AND LARGE CAPACITIES

3/8" STANDARD CAPACITY TIPS

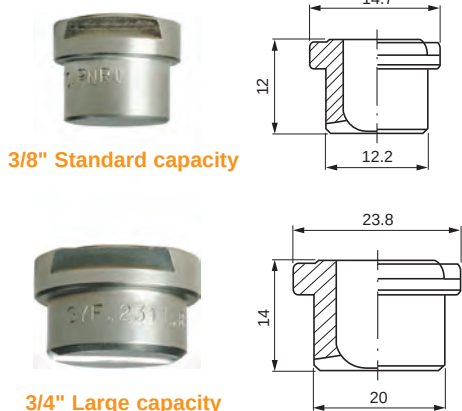
						Code	D mm	Capacity at different pressure values									(l/min) (bar)	
GXA 0°	GXF 30°	GXM 45°	GXQ 60°	GXU 90°	GXW 120°			0.5	1.0	1.5	2.0	3.0	4.0	5.0	7.0	10		
•	•	•	•	•	•	1190	1.30	0.78	1.10	1.34	1.55	1.90	2.19	2.45	2.90	3.47		
•	•	•	•	•	•	1233	1.50	0.95	1.35	1.65	1.90	2.33	2.69	3.01	3.56	4.25		
•	•	•	•	•	•	1310	1.70	1.27	1.79	2.19	2.53	3.10	3.58	4.00	4.74	5.66		
•	•	•	•	•	•	1385	1.80	1.57	2.22	2.72	3.14	3.85	4.45	4.97	5.88	7.03		
•	•	•	•	•	•	1490	2.10	2.00	2.83	3.46	4.00	4.90	5.66	6.33	7.48	8.95		
•	•	•	•	•	•	1581	2.30	2.37	3.35	4.11	4.74	5.81	6.71	7.50	8.87	10.6		
•	•	•	•	•	•	1780	2.70	3.18	4.50	5.52	6.37	7.80	9.01	10.1	11.9	14.2		
•	•	•	•	•	•	1980	3.00	4.00	5.66	6.93	8.00	9.80	11.3	12.7	15.0	17.9		
•	•	•	•	•	•	2124	3.40	5.06	7.16	8.77	10.1	12.4	14.3	16.0	18.9	22.6		
	•	•	•	•	•	2153	3.80	6.25	8.83	10.8	12.5	15.3	17.7	19.8	23.4	27.9		
	•	•	•	•	•	2194	4.30	7.92	11.2	13.7	15.8	19.4	22.4	25.0	29.6	35.4		
	•	•	•	•	•	2245	4.80	10.0	14.1	17.3	20.0	24.5	28.3	31.6	37.4	44.7		

3/4" LARGE CAPACITY TIPS

GXA 0°	GXF 30°	GXM 45°	GXQ 60°	GXU 90°	GXW 120°	Code	D mm	Capacity at different pressure values									(l/min) (bar)	
								0.5	1.0	1.5	2.0	3.0	4.0	5.0	7.0	10		
	•	•	•	•	•	1781	2.70	3.18	4.50	5.52	6.37	7.80	9.01	10.1	11.9	14.2		
	•	•	•	•	•	1981	3.00	4.00	5.66	6.93	8.00	9.80	11.3	12.7	15.0	17.9		
•	•	•	•	•	•	2125	3.40	5.06	7.16	8.77	10.1	12.4	14.3	16.0	18.9	22.6		
•	•	•	•	•	•	2154	3.80	6.25	8.83	10.8	12.5	15.3	17.7	19.8	23.4	27.9		
•	•	•	•	•	•	2195	4.30	7.92	11.2	13.7	15.8	19.4	22.4	25.0	29.6	35.4		
•	•	•	•	•	•	2246	4.80	10.0	14.1	17.3	20.0	24.5	28.3	31.6	37.4	44.7		
•	•	•	•	•	•	2311	5.40	12.7	18.0	22.0	25.4	31.1	35.9	40.1	47.5	56.8		
•	•	•	•	•	•	2490	6.40	20.0	28.3	34.6	40.0	49.0	56.6	63.3	74.8	89.5		
•	•	•	•	•	•	2610	7.50	24.9	35.2	43.1	49.8	61.0	70.4	78.8	93.2	111		
	•	•	•	•	•	2760	8.30	31.0	43.9	53.7	62.1	76.0	87.8	98.1	116	139		
	•	•	•	•	•	3122	12.5	49.8	70.4	86.3	99.6	122	141	158	186	223		

ASSEMBLY FITTINGS CODING

Name	Code and material	Appearance	Standard size 3/8"	Large size 3/4"
Locknut <i>P.88</i>	B1 - AISI 303 SS B3 - AISI 316 SS T1 - Brass D6 - Fiberglass reinforced PP		VAA 0380 xx	VAA 0750 xx
Welding nipple <i>P.89</i>	B1 - AISI 303 SS B31 - AISI 316L SS		ZAA 1738 xx	ZAA 2775 xx
Threaded nipple <i>P.89</i>	B1 - AISI 303 SS B31 - AISI 316L SS T1 - Brass		ZLA 2538 xx	ZLA 7575 xx
Metal pipe clamp <i>P.87</i>	B1 - AISI 303 SS T1 - Brass		ZPM	—
Plastic pipe clamp <i>P.86</i>	D6 - Fiberglass reinforced PP		ZPB 0050 D6	—
Plastic bayonet pipe clamp <i>P.86</i>	D82 - PVDF		ZPC 0050 D82	—
Flanged filter <i>P.92</i>	B1 - AISI 303 SS B3 - AISI 316 SS T1 - Brass D3 - Polyamide		VEC 0138 xx	—



STANDARD AND LARGE CAPACITIES

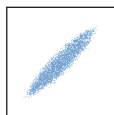
GY flat fan nozzle tips are usually mounted onto a pipe by means of a welding nipple and secured in place with a retaining nut. Therefore, they can be easily replaced and their dovetail connection assures an always precise assembly as the nozzle can be assembled only when the flat fan is properly oriented. They are available in three types: 3/8" standard capacity, 3/4" large capacity and 1" extra-large capacity. The tip models shown on this page deliver the most popular capacity values, while GY flat fan tips with bigger capacities and sizes can be manufactured on request and supplied with matching dovetail nipples and retaining nuts. Please find information about instalment and accessories on page 89.

■ **Connection:** Dovetail flat fan tips

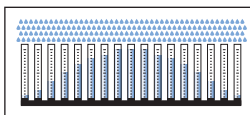
■ **Typical applications**

Washing: steel cleaning
filter cloth cleaning
parts cleaning

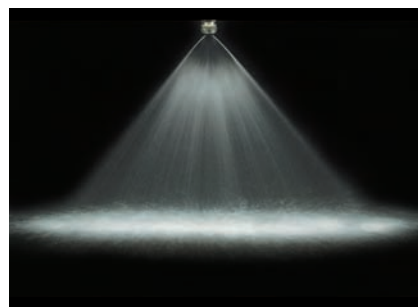
Cooling: steel cooling, product cooling



Spray section



Convex distribution

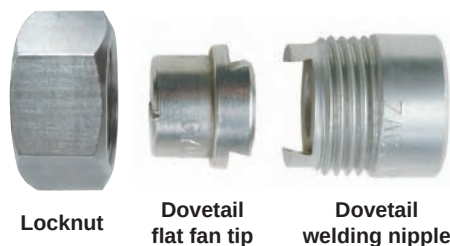


SPRAY ANGLE CODES

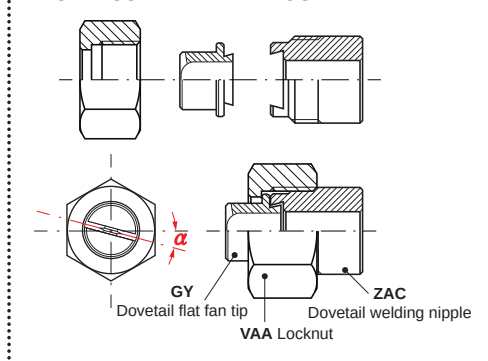
GYA	GYF	GYM	GYQ	GYU	GYW
0°	30°	45°	60°	90°	120°

ASSEMBLY FITTINGS

The picture below shows a GY nozzle tip (in the middle) assembled with a dovetail nipple (right) and a locknut (left).



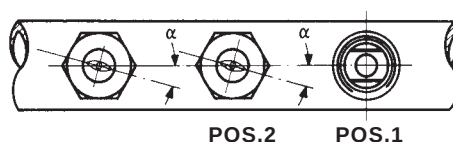
GY ASSEMBLY FITTINGS



DOVETAIL NIPPLES

GY nozzle tips are assembled onto their own series of matching dovetail nipples, to assure perfect alignment: the two tip sizes require nipples and caps as shown in the table below.

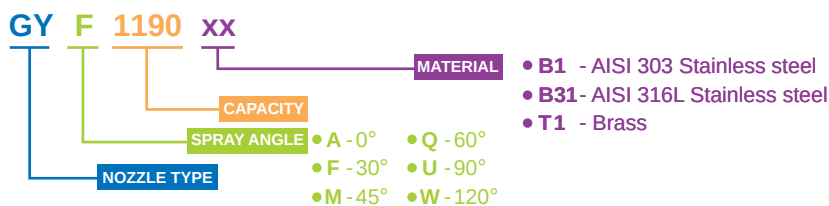
The orientation of the spray jets, properly inclined to avoid their interfering, is automatically obtained welding the nipples in place with their dovetail aligned along the pipe axis. This is easily done by running a straight rule across the dovetail profile machined on the nipple.



See values for jet deviation angle (α) beside capacity tables next page.

HOW TO MAKE UP THE NOZZLE CODE

EX.: GYF 1190 B1



STANDARD AND LARGE CAPACITIES

3/8" STANDARD CAPACITY TIPS

Jet deviation angle $\alpha = 5^\circ$

GYF 30°	GYM 45°	GYQ 60°	GYU 90°	GYW 120°	Capacity code	D mm	Capacity at different pressure values								(l/min) (bar)
							0.5	1.0	1.5	2.0	3.0	4.0	5.0	7.0	10
•	•	•	•	•	1190	1.30	0.78	1.10	1.34	1.55	1.90	2.19	2.45	2.90	3.47
•	•	•	•	•	1233	1.50	0.95	1.35	1.65	1.90	2.33	2.69	3.01	3.56	4.25
•	•	•	•	•	1310	1.70	1.27	1.79	2.19	2.53	3.10	3.58	4.00	4.74	5.66
•	•	•	•	•	1385	1.80	1.57	2.22	2.72	3.14	3.85	4.45	4.97	5.88	7.03
•	•	•	•	•	1490	2.10	2.00	2.83	3.46	4.00	4.90	5.66	6.33	7.48	8.95
•	•	•	•	•	1581	2.30	2.37	3.35	4.11	4.74	5.81	6.71	7.50	8.87	10.6
•	•	•	•	•	1780	2.70	3.18	4.50	5.52	6.37	7.80	9.01	10.1	11.9	14.2
•	•	•	•	•	1980	3.00	4.00	5.66	6.93	8.00	9.80	11.3	12.7	15.0	17.9
•	•	•	•	•	2124	3.40	5.06	7.16	8.77	10.1	12.4	14.3	16.0	18.9	22.6
•	•	•	•	•	2153	3.80	6.25	8.83	10.8	12.5	15.3	17.7	19.8	23.4	27.9
•	•	•	•	•	2194	4.30	7.96	11.3	13.8	15.9	19.5	22.5	25.2	29.8	35.6

3/4" LARGE CAPACITY TIPS

Jet deviation angle $\alpha = 15^\circ$

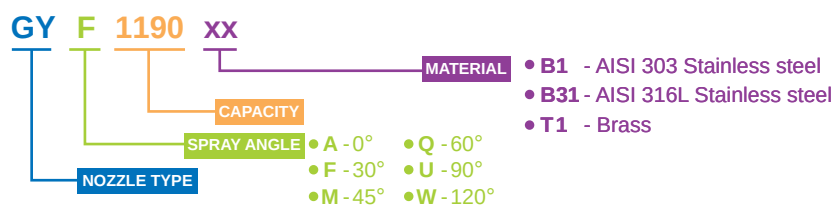
GYA 0°	GYF 30°	GYM 45°	GYQ 60°	GYU 90°	GYW 120°	Capacity code	D mm	Capacity at different pressure values								(l/min) (bar)
								0.5	1.0	1.5	2.0	3.0	4.0	5.0	7.0	10
•	•	•	•	•	•	1781	2.70	3.18	4.50	5.52	6.37	7.80	9.01	10.1	11.9	14.2
•	•	•	•	•	•	1981	3.00	4.00	5.66	6.93	8.00	9.80	11.3	12.7	15.0	17.9
•	•	•	•	•	•	2125	3.40	5.06	7.16	8.77	10.1	12.4	14.3	16.0	18.9	22.6
•	•	•	•	•	•	2154	3.80	6.25	8.83	10.8	12.5	15.3	17.7	19.8	23.4	27.9
•	•	•	•	•	•	2195	4.30	7.92	11.2	13.7	15.8	19.4	22.4	25.0	29.6	35.4
•	•	•	•	•	•	2246	4.80	10.0	14.2	17.4	20.1	24.6	28.4	31.8	37.6	44.9
•	•	•	•	•	•	2311	5.40	12.7	18.0	22.0	25.4	31.1	35.9	40.1	47.5	56.8
•	•	•	•	•	•	2490	6.40	20.0	28.3	34.6	40.0	49.0	56.6	63.3	74.8	89.5
•	•	•	•	•	•	2610	7.50	24.9	35.2	43.1	49.8	61.0	70.4	78.8	93.2	111
•	•	•	•	•	•	2760	8.30	31.0	43.9	53.7	62.1	76.0	87.8	98.1	116	139
•	•	•	•	•	•	3122	12.5	49.8	70.4	86.3	99.6	122	141	158	186	223

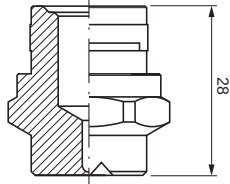
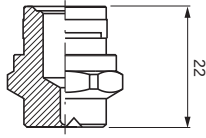
ASSEMBLY FITTINGS CODING

Name	Code and material	Appearance	Model no.	
			Standard size 3/8"	Large size 3/4"
Locknut <i>P.88</i>	B1 - AISI 303 SS B3 - AISI 316 SS T1 - Brass		VAA 0381 xx	VAA 0750 xx
Dovetail welding nipple <i>P.89</i>	B1 - AISI 303 SS B31 - AISI 316L SS		ZAC 1738 xx	ZAC 2775 xx

HOW TO MAKE UP THE
NOZZLE CODE

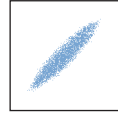
EX.: GYF 1190 B1



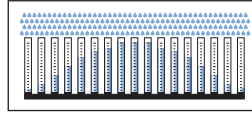


STANDARD AND LARGE CAPACITY

The HT series flat fan nozzles offer the same quality and technical characteristics of the standard types but also the additional convenience of a bayonet coupling which allows a simple assembly with no need of tools and an automatic spray pattern alignment. The optimum performance of your system or machine is then conveniently safeguarded, with a noticeable reduction in service cost and production loss for system downtime. HT series are widely applied to working environments that are easy to clog. HT nozzles are available with standard and large capacity.



Spray section



Convex distribution



STANDARD CAPACITY TIPS

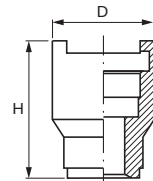
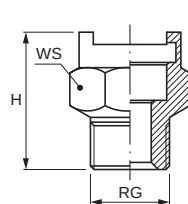
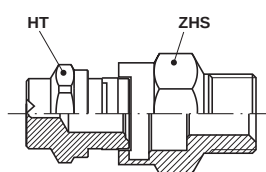
HTA 0°	HTL 40°	HTN 50°	HTR 65°	HTV 95°	HTJ 110°	Code	D mm	Capacity at different pressure values									(l/min) (bar)	
								0.5	1.0	1.5	2.0	3.0	4.0	5.0	7.0	10		
•	•	•	•	•	•	1310	1.70	1.27	1.79	2.19	2.53	3.10	3.58	4.00	4.74	5.66		
•	•	•	•	•	•	1385	1.80	1.57	2.22	2.72	3.14	3.85	4.45	4.97	5.88	7.03		
•	•	•	•	•	•	1490	2.10	2.00	2.83	3.46	4.00	4.90	5.66	6.33	7.48	8.95		
•	•	•	•	•	•	1581	2.30	2.37	3.35	4.11	4.74	5.81	6.71	7.50	8.87	10.6		
•	•	•	•	•	•	1780	2.70	3.18	4.50	5.52	6.37	7.80	9.01	10.1	11.9	14.2		
•	•	•	•	•	•	1980	3.00	4.00	5.66	6.93	8.00	9.80	11.3	12.7	15.0	17.9		
•	•	•	•	•	•	2124	3.40	5.06	7.16	8.77	10.1	12.4	14.3	16.0	18.9	22.6		
•	•	•	•	•	•	2153	3.80	6.25	8.83	10.8	12.5	15.3	17.7	19.8	23.4	27.9		
•	•	•	•	•	•	2194	4.30	7.96	11.3	13.8	15.9	19.5	22.5	25.2	29.8	35.6		

LARGE CAPACITY TIPS

HTA 0°	HTL 40°	HTN 50°	HTR 65°	HTV 95°	HTJ 110°	Code	D mm	Capacity at different pressure values									(l/min) (bar)	
								0.5	1.0	1.5	2.0	3.0	4.0	5.0	7.0	10		
•			•	•	•	2310	5.40	12.7	17.9	21.9	25.3	31.0	35.8	40.0	47.4	56.6		
•	•	•	•	•		2390	6.00	15.9	22.5	27.6	31.8	39.0	45.0	50.3	59.6	71.2		
•		•				2470	6.60	19.2	27.1	33.2	38.4	47.0	54.3	60.7	71.8	85.8		
•	•	•	•			2590	7.50	24.1	34.1	41.7	48.2	59.0	68.1	76.2	90.1	108		
•	•	•	•			2780	8.70	31.8	45.0	55.2	63.7	78.0	90.1	101	119	142		

ACCESSORIES We offer various specification and materials of nipples. Please see below ordering code.

	Thread size (RG) inch	Standard size	Large size	H mm	WS mm	D mm
Male nipple	1/4"	ZHS 0025 xxQ1	-	29	22	-
	3/8"	ZHS 0038 xxQ1	-	29	22	-
Female nipple	1/2"	-	ZHS 0050 xxQ2	35	30	-
	3/8"	ZHT 0038 xxQ1	-	29	22	-
Welding nipple	-	ZHU 0038 xxQ1	ZHU 0050 xxQ2	32	-	28
Seal (Viton) for SS nipples	-	VDH BQ10 E7	VDH BQ20 E7	-	-	-
Seal (BUNA) for brass nipples	-	VDH BQ10 E8	VDH BQ20 E8	-	-	-



ZHU 0038 xxQ1

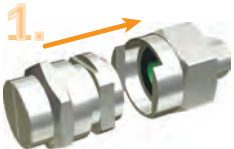


ZHS 0025 xxQ1



ZHS 0050 xxQ2

Quick-connect nozzles



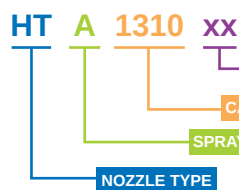
HT + ZHS

Typical applications

- Washing**
 - Steel and PCB cleaning
 - Filter cloth cleaning
- Cooling**
 - Steel cooling
 - Product cooling
- Other applications**
 - Pre-treatment for coating process
 - Sewage treatment system

HOW TO MAKE UP THE NOZZLE CODE

EX.: HTA 1310 B1



- NOZZLE TYPE**
 - HT - 0°
 - HTL - 40°
 - HTN - 50°
 - HTR - 65°
 - HTV - 95°
 - HTJ - 110°
- SPRAY ANGLE**
 - A - 0°
 - L - 40°
 - N - 50°
 - R - 65°
 - V - 95°
 - J - 110°
- CAPACITY**
 - 1310
- MATERIAL**
 - B1 - AISI 303 Stainless steel
 - B31 - AISI 316L Stainless steel
 - T1 - Brass

LOW FLOW FLAT FAN NOZZLES

These standard flat fan nozzles are available in a wide range of capacities, spray angles and materials. Nozzles shown on this page cover the low to minimal capacity range from 0.06 to 1.60 litres per minute. The tiny outlet orifices, machined with high precision, may required to be protected from clogging by means of an adequate filter positioned inside the supply line, depending upon the quantity and type of the solid particles suspended in the liquid. These nozzles can be made with a customized inner thread for a VEF filter (*optional). We suggest to buy these nozzles with their related VEF filter.



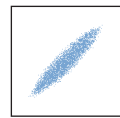
■ **Thread specification:** BSPT, NPT

■ **Typical applications**

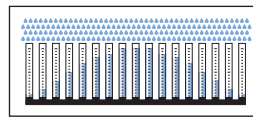
Washing: steel and PCB cleaning
glass substrate cleaning

Cooling: steel cooling, product cooling

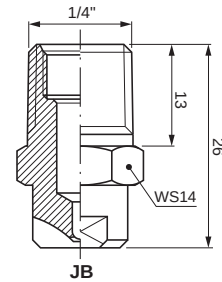
Other applications: pre-treatment for
coating process, sewage treatment system



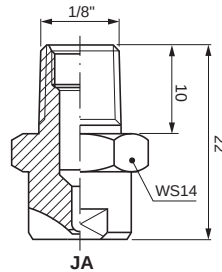
Spray section



Convex distribution



JB



JA



	25°	40°	50°	65°		80°	95°	110°	Capacity code	D mm	Capacity at different pressure values (l/min) (bar)							
1/8"	JAD	JAL	JAN	JAR		JAT	JAV	JAJ			0.7	1.0	1.5	2.0	3.0	5.0	7.0	10
1/4"	JBD	JBL	JBN	JBR		JBT	JBV	JBJ			0.7	1.0	1.5	2.0	3.0	5.0	7.0	10
0060				•					0060	0.28	0.029	0.035	0.04	0.05	0.06	0.08	0.09	0.11
0100				•					0100	0.34	0.048	0.06	0.07	0.08	0.10	0.13	0.15	0.18
0130	•			•				•	0130	0.38	0.06	0.08	0.09	0.11	0.13	0.17	0.20	0.24
0150	•			•				•	0150	0.40	0.07	0.09	0.11	0.12	0.15	0.19	0.23	0.27
0200	•			•		•	•	•	0200	0.46	0.096	0.12	0.14	0.16	0.20	0.26	0.31	0.37
0260	•	•	•	•		•	•	•	0260	0.53	0.10	0.15	0.18	0.21	0.26	0.34	0.40	0.47
0390	•	•	•	•		•	•	•	0390	0.66	0.19	0.23	0.28	0.32	0.39	0.50	0.60	0.71
0590	•	•	•	•		•	•	•	0590	0.79	0.28	0.34	0.42	0.48	0.59	0.76	0.90	1.08
0780	•	•	•	•		•	•	•	0780	0.91	0.38	0.45	0.55	0.64	0.78	1.01	1.19	1.42
1120	•	•	•	•		•	•	•	1120	1.10	0.58	0.69	0.85	0.98	1.20	1.55	1.83	2.19
1160	•	•	•	•		•	•	•	1160	1.30	0.77	0.92	1.13	1.31	1.60	2.07	2.44	2.92

LIMIT OF MATERIALS PROCESSING

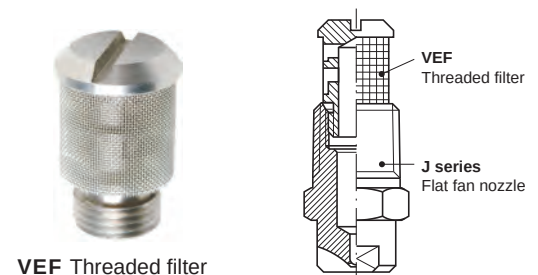
Hard materials such as stainless steel are extremely difficult to work with small profile drills, therefore not all nozzle sizes are available in all materials. Our sales office will offer you the best choice according to the materials and specifications you require.

Material	0060	0100	0130	0150	0200	0260	0390	0590	0780	1120	1160
B31 - AISI 316L SS								•	•	•	•
B1 - AISI 303 SS					•	•	•	•	•	•	•
T1 - Brass	•	•	•	•	•	•	•	•	•	•	•

※ VEF THREADED FILTERS (OPTIONAL)

J series small capacity nozzles have a small diameter and can work with clean liquids. So, if you order small capacity nozzles, we suggest you to order VEF threaded filters too, to avoid clogging. Please see page 91 for more information.

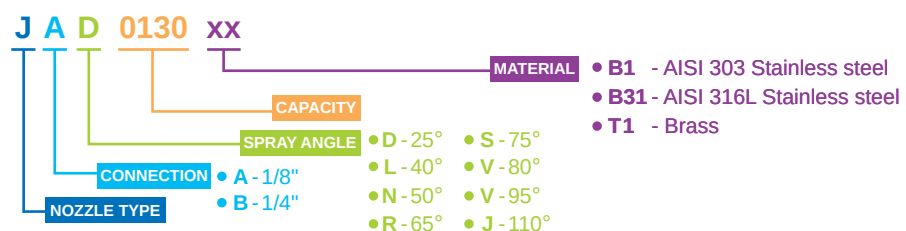
Nozzle type	Thread filter code	Thread size
JA (1/8")	VEF 0038 B3	M7
JB (1/4")	VEF 0138 xx	3/8"UNF

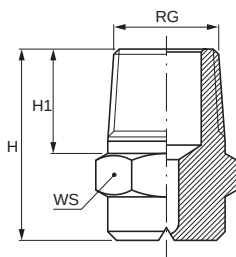


VEF Threaded filter

HOW TO MAKE UP THE NOZZLE CODE

EX.: JAD 0130 B1





STANDARD CAPACITY FLAT FAN NOZZLES

Standard flat fan nozzles are available in a wide range of different capacities, spray angles, thread sizes and materials. Used in several industrial applications, they produce a mist spray and supply an appropriate force of impact.

Typical applications

Washing: parts cleaning, food cleaning, filter cloth cleaning

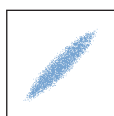
Spray: spray of chemicals, disinfectant and lubricating fluids

Cooling: metal parts and vehicles cooling

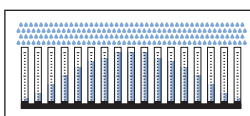
Other applications: water curtain for toxic gases separation, cleaning systems

In steelworks they are used in the pickling process to remove surface oxides layers formed during the hot metalwork.

Thread specification: BSPT, NPT



Spray section



Convex distribution



SPRAY ANGLE CODES

JBA	JBC	JBF	JBM	JBQ	JBU	JBW
0°	20°	30°	45°	60°	90°	120°

THREAD SIZE CODES (RG)

JA	JB	JC
1/8"	1/4"	3/8"

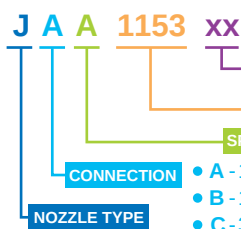
	JAA 1/8"	JBA 1/4"	JCA 3/8"	Capacity code	D mm	Capacity at different pressure values								(l/min) (bar)
						0.5	1.0	2.0	3.0	4.0	5.0	7.0	10	20
0°	•	•		1153	1.25	0.62	0.88	1.25	1.53	1.77	1.98	2.34	2.79	3.95
	•	•		1190	1.30	0.78	1.10	1.55	1.90	2.19	2.45	2.90	3.47	4.91
	•	•		1233	1.50	0.95	1.35	1.90	2.33	2.69	3.01	3.56	4.25	6.02
	•	•		1310	1.70	1.27	1.79	2.53	3.10	3.58	4.00	4.74	5.66	8.00
	•	•		1385	1.80	1.57	2.22	3.14	3.85	4.45	4.97	5.88	7.03	9.94
	•	•		1490	2.10	2.00	2.83	4.00	4.90	5.66	6.33	7.48	8.95	12.7
	•	•		1581	2.30	2.37	3.35	4.74	5.81	6.71	7.50	8.87	10.6	15.0
	•	•	•	1780	2.70	3.18	4.50	6.37	7.80	9.01	10.1	11.9	14.2	20.1
	•	•	•	1980	3.00	4.00	5.66	8.00	9.80	11.3	12.7	15.0	17.9	25.3
	•	•	•	2124	3.40	5.06	7.16	10.1	12.4	14.3	16.0	18.9	22.6	32.0
	•	•	•	2153	3.80	6.25	8.83	12.5	15.3	17.7	19.8	23.4	27.9	39.5
	•	•	•	2195	4.30	7.96	11.3	15.9	19.5	22.5	25.2	29.8	35.6	50.3
		•	•	2245	4.80	10.0	14.1	20.0	24.5	28.3	31.6	37.4	44.7	63.3
		•	•	2274	5.20	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7
		•	•	2310	5.40	12.7	17.9	25.3	31.0	35.8	40.0	47.4	56.6	80.0
		•	•	2390	6.00	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101
		•	•	2470	6.20	19.2	27.1	38.4	47.0	54.3	60.7	71.8	85.8	121

DIMENSIONS AND WEIGHTS

Code	Size (RG)	H	H1	WS	W
unit	inch	mm	mm	mm	gram
JA	1/8"	19.5	11	12	9
JB	1/4"	22.0	12	14	18
JC	3/8"	25.0	14	17	34

HOW TO MAKE UP THE NOZZLE CODE

EX.: JAA 1153 B1



MATERIAL

- B1 - AISI 303 Stainless steel
- B31 - AISI 316L Stainless steel
- T1 - Brass
- D1 - PVC (optional)
- E1 - PTFE (optional)

STANDARD CAPACITY FLAT FAN NOZZLES

	JAC 1/8"	JBC 1/4"	JCC 3/8"	Capacity code	D mm	Capacity at different pressure values								(l/min) (bar)	
						0.5	1.0	2.0	3.0	4.0	5.0	7.0	10	20	
20°	•	•		1153	1.25	0.62	0.88	1.25	1.53	1.77	1.98	2.34	2.79	3.95	
	•	•		1190	1.30	0.78	1.10	1.55	1.90	2.19	2.45	2.90	3.47	4.91	
	•	•		1233	1.50	0.95	1.35	1.90	2.33	2.69	3.01	3.56	4.25	6.02	
	•	•		1310	1.70	1.27	1.79	2.53	3.10	3.58	4.00	4.74	5.66	8.00	
	•	•		1385	1.80	1.57	2.22	3.14	3.85	4.45	4.97	5.88	7.03	9.94	
	•	•		1490	2.10	2.00	2.83	4.00	4.90	5.66	6.33	7.48	8.95	12.7	
	•	•		1581	2.30	2.37	3.35	4.74	5.81	6.71	7.50	8.87	10.6	15.0	
		•	•	1780	2.70	3.18	4.50	6.37	7.80	9.01	10.1	11.9	14.2	20.1	
		•	•	1980	3.00	4.00	5.66	8.00	9.80	11.3	12.7	15.0	17.9	25.3	
		•	•	2124	3.40	5.06	7.16	10.1	12.4	14.3	16.0	18.9	22.6	32.0	
		•	•	2153	3.80	6.25	8.83	12.5	15.3	17.7	19.8	23.4	27.9	39.5	
		•	•	2195	4.30	7.96	11.3	15.9	19.5	22.5	25.2	29.8	35.6	50.3	
		•	•	2245	4.80	10.0	14.1	20.0	24.5	28.3	31.6	37.4	44.7	63.3	
		•	•	2274	5.20	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7	
		•	•	2310	5.40	12.7	17.9	25.3	31.0	35.8	40.0	47.4	56.6	80.0	
		•	•	2390	6.00	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101	
		•	•	2470	6.20	19.2	27.1	38.4	47.0	54.3	60.7	71.8	85.8	121	
30°	•	•		1153	1.25	0.62	0.88	1.25	1.53	1.77	1.98	2.34	2.79	3.95	
	•	•		1190	1.30	0.78	1.10	1.55	1.90	2.19	2.45	2.90	3.47	4.91	
	•	•		1233	1.50	0.95	1.35	1.90	2.33	2.69	3.01	3.56	4.25	6.02	
	•	•		1310	1.70	1.27	1.79	2.53	3.10	3.58	4.00	4.74	5.66	8.00	
	•	•		1385	1.80	1.57	2.22	3.14	3.85	4.45	4.97	5.88	7.03	9.94	
	•	•		1490	2.10	2.00	2.83	4.00	4.90	5.66	6.33	7.48	8.95	12.7	
	•	•		1581	2.30	2.37	3.35	4.74	5.81	6.71	7.50	8.87	10.6	15.0	
	•	•	•	1780	2.70	3.18	4.50	6.37	7.80	9.01	10.1	11.9	14.2	20.1	
		•	•	1980	3.00	4.00	5.66	8.00	9.80	11.3	12.7	15.0	17.9	25.3	
		•	•	2124	3.40	5.06	7.16	10.1	12.4	14.3	16.0	18.9	22.6	32.0	
		•	•	2153	3.80	6.25	8.83	12.5	15.3	17.7	19.8	23.4	27.9	39.5	
		•	•	2195	4.30	7.96	11.3	15.9	19.5	22.5	25.2	29.8	35.6	50.3	
		•	•	2245	4.80	10.0	14.1	20.0	24.5	28.3	31.6	37.4	44.7	63.3	
		•	•	2274	5.20	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7	
			•	2310	5.40	12.7	17.9	25.3	31.0	35.8	40.0	47.4	56.6	80.0	
			•	2390	6.00	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101	
			•	2470	6.20	19.2	27.1	38.4	47.0	54.3	60.7	71.8	85.8	121	
45°	•	•		1153	1.25	0.62	0.88	1.25	1.53	1.77	1.98	2.34	2.79	3.95	
	•	•		1190	1.30	0.78	1.10	1.55	1.90	2.19	2.45	2.90	3.47	4.91	
	•	•		1233	1.50	0.95	1.35	1.90	2.33	2.69	3.01	3.56	4.25	6.02	
	•	•	•	1310	1.70	1.27	1.79	2.53	3.10	3.58	4.00	4.74	5.66	8.00	
	•	•	•	1385	1.80	1.57	2.22	3.14	3.85	4.45	4.97	5.88	7.03	9.94	
	•	•	•	1490	2.10	2.00	2.83	4.00	4.90	5.66	6.33	7.48	8.95	12.7	
	•	•	•	1581	2.30	2.37	3.35	4.74	5.81	6.71	7.50	8.87	10.6	15.0	
	•	•	•	1780	2.70	3.18	4.50	6.37	7.80	9.01	10.1	11.9	14.2	20.1	
	•	•	•	1980	3.00	4.00	5.66	8.00	9.80	11.3	12.7	15.0	17.9	25.3	
	•	•	•	2124	3.40	5.06	7.16	10.1	12.4	14.3	16.0	18.9	22.6	32.0	
	•	•	•	2153	3.80	6.25	8.83	12.5	15.3	17.7	19.8	23.4	27.9	39.5	
		•	•	2195	4.30	7.96	11.3	15.9	19.5	22.5	25.2	29.8	35.6	50.3	
		•	•	2245	4.80	10.0	14.1	20.0	24.5	28.3	31.6	37.4	44.7	63.3	
		•	•	2274	5.20	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7	
		•	•	2310	5.40	12.7	17.9	25.3	31.0	35.8	40.0	47.4	56.6	80.0	
			•	2390	6.00	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101	
			•	2470	6.20	19.2	27.1	38.4	47.0	54.3	60.7	71.8	85.8	121	

SPRAY ANGLE CODES

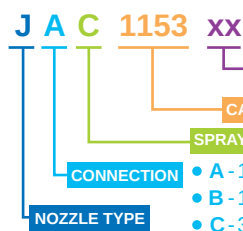
JBA	JBC	JBF	JBM	JBQ	JBW	JBU
0°	20°	30°	45°	60°	90°	120°

THREAD SIZE CODES (RG)

JA	JB	JC
1/8"	1/4"	3/8"

HOW TO MAKE UP THE
NOZZLE CODE

EX.: JAC 1153 B1



• A - 0°

• C - 20°

• F - 30°

• M - 45°

• Q - 60°

• U - 90°

• W - 120°

- B1 - AISI 303 Stainless steel
- B31 - AISI 316L Stainless steel
- T1 - Brass
- D1 - PVC (optional)
- E1 - PTFE (optional)

STANDARD CAPACITY FLAT FAN NOZZLES

	JAQ 1/8"	JBQ 1/4"	JCQ 3/8"	Capacity code	D mm	Capacity at different pressure values								(l/min) (bar)
						0.5	1.0	2.0	3.0	4.0	5.0	7.0	10	20
60°	•	•		1153	1.25	0.62	0.88	1.25	1.53	1.77	1.98	2.34	2.79	3.95
	•	•		1190	1.30	0.78	1.10	1.55	1.90	2.19	2.45	2.90	3.47	4.91
	•	•		1233	1.50	0.95	1.35	1.90	2.33	2.69	3.01	3.56	4.25	6.02
	•	•	•	1310	1.70	1.27	1.79	2.53	3.10	3.58	4.00	4.74	5.66	8.00
	•	•	•	1385	1.80	1.57	2.22	3.14	3.85	4.45	4.97	5.88	7.03	9.94
	•	•	•	1490	2.10	2.00	2.83	4.00	4.90	5.66	6.33	7.48	8.95	12.7
	•	•	•	1581	2.30	2.37	3.35	4.74	5.81	6.71	7.50	8.87	10.6	15.0
	•	•	•	1780	2.70	3.18	4.50	6.37	7.80	9.01	10.1	11.9	14.2	20.1
	•	•	•	1980	3.00	4.00	5.66	8.00	9.80	11.3	12.7	15.0	17.9	25.3
	•	•	•	2124	3.40	5.06	7.16	10.1	12.4	14.3	16.0	18.9	22.6	32.0
	•	•	•	2153	3.80	6.25	8.83	12.5	15.3	17.7	19.8	23.4	27.9	39.5
		•	•	2195	4.30	7.96	11.3	15.9	19.5	22.5	25.2	29.8	35.6	50.3
		•	•	2245	4.80	10.0	14.1	20.0	24.5	28.3	31.6	37.4	44.7	63.3
		•	•	2274	5.20	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7
		•	•	2310	5.40	12.7	17.9	25.3	31.0	35.8	40.0	47.4	56.6	80.0
			•	2390	6.00	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101
			•	2470	6.20	19.2	27.1	38.4	47.0	54.3	60.7	71.8	85.8	121
90°	•	•		1153	1.25	0.62	0.88	1.25	1.53	1.77	1.98	2.34	2.79	3.95
	•	•		1190	1.30	0.78	1.10	1.55	1.90	2.19	2.45	2.90	3.47	4.91
	•	•		1233	1.50	0.95	1.35	1.90	2.33	2.69	3.01	3.56	4.25	6.02
	•	•	•	1310	1.70	1.27	1.79	2.53	3.10	3.58	4.00	4.74	5.66	8.00
	•	•	•	1385	1.80	1.57	2.22	3.14	3.85	4.45	4.97	5.88	7.03	9.94
	•	•	•	1490	2.10	2.00	2.83	4.00	4.90	5.66	6.33	7.48	8.95	12.7
	•	•	•	1581	2.30	2.37	3.35	4.74	5.81	6.71	7.50	8.87	10.6	15.0
	•	•	•	1780	2.70	3.18	4.50	6.37	7.80	9.01	10.1	11.9	14.2	20.1
	•	•	•	1980	3.00	4.00	5.66	8.00	9.80	11.3	12.7	15.0	17.9	25.3
	•	•	•	2124	3.40	5.06	7.16	10.1	12.4	14.3	16.0	18.9	22.6	32.0
	•	•	•	2153	3.80	6.25	8.83	12.5	15.3	17.7	19.8	23.4	27.9	39.5
		•	•	2195	4.30	7.96	11.3	15.9	19.5	22.5	25.2	29.8	35.6	50.3
		•	•	2245	4.80	10.0	14.1	20.0	24.5	28.3	31.6	37.4	44.7	63.3
		•	•	2274	5.20	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7
		•	•	2310	5.40	12.7	17.9	25.3	31.0	35.8	40.0	47.4	56.6	80.0
			•	2390	6.00	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101
			•	2470	6.20	19.2	27.1	38.4	47.0	54.3	60.7	71.8	85.8	121
120°	•	•		1153	1.25	0.62	0.88	1.25	1.53	1.77	1.98	2.34	2.79	3.95
	•	•		1190	1.30	0.78	1.10	1.55	1.90	2.19	2.45	2.90	3.47	4.91
	•	•		1233	1.50	0.95	1.35	1.90	2.33	2.69	3.01	3.56	4.25	6.02
	•	•	•	1310	1.70	1.27	1.79	2.53	3.10	3.58	4.00	4.74	5.66	8.00
	•	•	•	1385	1.80	1.57	2.22	3.14	3.85	4.45	4.97	5.88	7.03	9.94
	•	•	•	1490	2.10	2.00	2.83	4.00	4.90	5.66	6.33	7.48	8.95	12.7
	•	•	•	1581	2.30	2.37	3.35	4.74	5.81	6.71	7.50	8.87	10.6	15.0
	•	•	•	1780	2.70	3.18	4.50	6.37	7.80	9.01	10.1	11.9	14.2	20.1
	•	•	•	1980	3.00	4.00	5.66	8.00	9.80	11.3	12.7	15.0	17.9	25.3
		•	•	2124	3.40	5.06	7.16	10.1	12.4	14.3	16.0	18.9	22.6	32.0
		•	•	2153	3.80	6.25	8.83	12.5	15.3	17.7	19.8	23.4	27.9	39.5
		•	•	2195	4.30	7.96	11.3	15.9	19.5	22.5	25.2	29.8	35.6	50.3
		•	•	2245	4.80	10.0	14.1	20.0	24.5	28.3	31.6	37.4	44.7	63.3
		•	•	2274	5.20	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7
			•	2310	5.40	12.7	17.9	25.3	31.0	35.8	40.0	47.4	56.6	80.0
			•	2390	6.00	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101
			•	2470	6.20	19.2	27.1	38.4	47.0	54.3	60.7	71.8	85.8	121

SPRAY ANGLE CODES

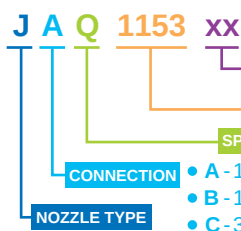
JBA	JBC	JBF	JBM	JBQ	JBU	JBW
0°	20°	30°	45°	60°	90°	120°

THREAD SIZE CODES (RG)

JA	JB	JC
1/8"	1/4"	3/8"

HOW TO MAKE UP THE
NOZZLE CODE

EX.: JAQ 1153 B1

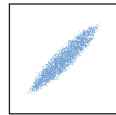


LARGE CAPACITY FLAT FAN NOZZLES

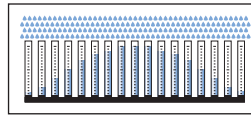
J series standard flat fan nozzles are available in a wide range of different capacities, spray angles, thread sizes and materials. The large capacity models produce a high-impact spray jet with a mist effect and a powerful washing action.



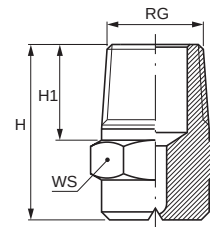
Thread specification: BSPT, NPT



Spray section



Convex distribution



	1/2"	3/4"	1"	Code	Capacity at different pressure values									(l/min) (bar)	
					0.5	1.0	2.0	3.0	4.0	5.0	7.0	10	20		
0°	•			JDA 2590 xx	24.1	34.1	48.2	59.0	68.1	76.2	90.1	108	152		
	•			JDA 2780 xx	31.8	45.0	63.7	78.0	90.1	101	119	142	201		
		•		JEA 3134 xx	54.7	77.4	109	134	155	173	205	245	346		
		•		JEA 3275 xx	112	159	225	275	318	355	420	502	710		
			•	JFA 3390 xx	159	225	318	390	450	503	596	712	1007		
		•	JFA 3435 xx	178	251	355	435	502	562	664	794	1123			
15°	•			JDB 2195 xx	7.96	11.3	15.9	19.5	22.5	25.2	29.8	35.6	50.3		
	•			JDB 2274 xx	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7		
	•			JDB 2390 xx	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101		
		•		JEB 2990 xx	40.4	57.2	80.8	99.0	114	128	151	181	256		
25°	•			JDD 2390 xx	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101		
	•			JDD 2590 xx	24.1	34.1	48.2	59.0	68.1	76.2	90.1	108	152		
	•			JDD 2780 xx	31.8	45.0	63.7	78.0	90.1	101	119	142	201		
			•	JFD 3195 xx	79.6	113	159	195	225	252	298	356	503		
40°	•			JDL 2195 xx	7.96	11.3	15.9	19.5	22.5	25.2	29.8	35.6	50.3		
	•			JDL 2240 xx	9.80	13.9	19.6	24.0	27.7	31.0	36.7	43.8	62.0		
	•			JDL 2274 xx	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7		
	•			JDL 2390 xx	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101		
	•			JDL 2590 xx	24.1	34.1	48.2	59.0	68.1	76.2	90.1	108	152		
50°	•			JDN 2274 xx	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7		
	•			JDN 2390 xx	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101		
	•			JDN 2590 xx	24.1	34.1	48.2	59.0	68.1	76.2	90.1	108	152		
	•			JDN 2780 xx	31.8	45.0	63.7	78.0	90.1	101	119	142	201		
		•		JEN 3158 xx	64.5	91.2	129	158	182	204	241	288	408		
			•	JFN 3195 xx	79.6	113	159	195	225	252	298	356	503		
	•		•	JFN 3230 xx	93.9	133	188	230	266	297	351	420	594		
65°	•			JDR 2195 xx	7.96	11.3	15.9	19.5	22.5	25.2	29.8	35.6	50.3		
	•			JDR 2240 xx	9.80	13.9	19.6	24.0	27.7	31.0	36.7	43.8	62.0		
	•			JDR 2274 xx	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7		
	•			JDR 2390 xx	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101		
	•			JDR 2590 xx	24.1	34.1	48.2	59.0	68.1	76.2	90.1	108	152		
			•	JFR 2780 xx	31.8	45.0	63.7	78.0	90.1	101	119	142	201		
80°	•			JDT 2195 xx	7.96	11.3	15.9	19.5	22.5	25.2	29.8	35.6	50.3		
	•			JDT 2240 xx	9.80	13.9	19.6	24.0	27.7	31.0	36.7	43.8	62.0		
	•			JDT 2274 xx	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7		
	•			JDT 2390 xx	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101		
	•			JDT 2590 xx	24.1	34.1	48.2	59.0	68.1	76.2	90.1	108	152		
	•			JDT 2780 xx	31.8	45.0	63.7	78.0	90.1	101	119	142	201		
		•		JET 2780 xx	31.8	45.0	63.7	78.0	90.1	101	119	142	201		
		•		JET 3158 xx	64.5	91.2	129	158	182	204	241	288	408		
95°	•			JDV 2195 xx	7.96	11.3	15.9	19.5	22.5	25.2	29.8	35.6	50.3		
	•			JDV 2240 xx	9.80	13.9	19.6	24.0	27.7	31.0	36.7	43.8	62.0		
	•			JDV 2274 xx	11.2	15.8	22.4	27.4	31.6	35.4	41.9	50.0	70.7		
	•			JDV 2390 xx	15.9	22.5	31.8	39.0	45.0	50.3	59.6	71.2	101		
	•			JDV 2590 xx	24.1	34.1	48.2	59.0	68.1	76.2	90.1	108	152		

SPRAY ANGLE CODES

Nozzle code	Spray angle
JDA	0°
JDB	15°
JDD	25°
JDL	40°
JDN	50°
JDR	65°
JDT	80°
JDV	95°

DIMENSIONS AND WEIGHTS

Below are dimensions and specifications for use.

Code	Size	H	H1	WS	W
		inch	mm	mm	gram
JD	1/2"	33	17	22	65
JE	3/4"	41	20	27	130
JF	1"	61	22	27	215

Typical applications

Washing

Tanks, large parts and vehicles cleaning

Spray

Spray of chemicals
Disinfectants and lubricating fluids

Cooling

Parts cooling
Steel cooling

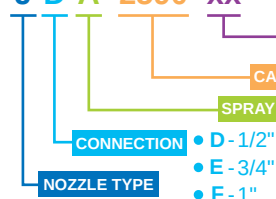
Other applications

Water curtain to separate toxic gases
Fire-fighting systems

HOW TO MAKE UP THE NOZZLE CODE

EX.: JDA 2590 B1

J D A 2590 xx



MATERIAL

- B1 - AISI 303 Stainless steel
- B31 - AISI 316L Stainless steel
- T1 - Brass

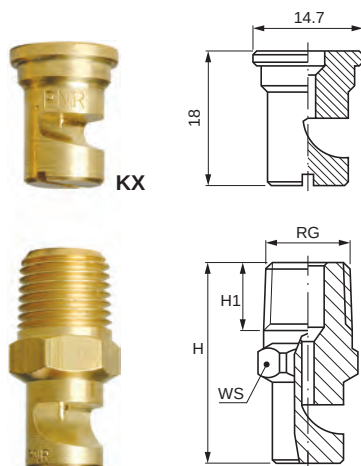
CAPACITY

SPRAY ANGLE

CONNECTION

NOZZLE TYPE

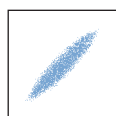
- A - 0°
- B - 15°
- D - 25°
- L - 40°
- N - 50°
- R - 65°
- T - 80°
- V - 95°



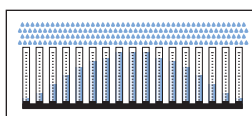
LARGE SPRAY ANGLE

K flat fan nozzles work on the deflection principle conveying a water vein onto a machined deflection surface, and produce a jet with a wide angle flat spray pattern, medium impact value and medium size droplets. Between their inlet orifice and spray orientation there is a 75° angle (see below). Their round outlet orifice and free inside passage minimize the risk of clogging. In addition, compared to standard flat fan nozzles working with a limited operating pressure, the K series models with large spray angles produce an excellent mist effect. These K nozzles are available with threaded connections, for capacities from 0390 and 3350, and also as tips to be assembled onto a nipple by means of a retaining nut. An alternative option are the KX types.

■ Thread specification: BSPT, NPT



Spray section



Convex distribution



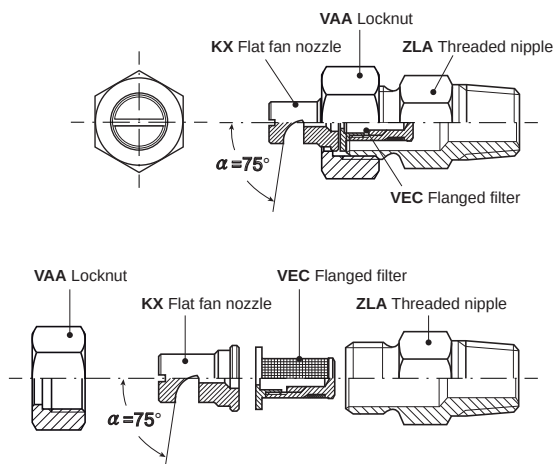
THREAD SIZE AND DIMENSIONS

Here below please find available thread sizes and nozzles dimensions. Different capacities correspond to different deflection angles. The external dimensions may differ even if the thread size is the same. The table includes the largest nozzles with a given thread size. Please contact our Sales department for more information.

Code	Thread size (RG) inch	H mm	H1 mm	WS mm
KGW	1/8"	31	10.0	14
KHW	1/4"	34	12.5	14
KIW	3/8"	44	13.0	17
KJW	1/2"	49	17.0	22
KKW	3/4"	65	20.0	36
KLW	1"	92	26.0	46

ASSEMBLY FITTINGS

The below illustration shows the assembly of a KX nozzle tip (in the middle) with a nipple and a locknut.



Locknut Flat fan nozzle Welding nipple

Typical applications

Washing: fruits, vegetables, crushed stones, other

Spray: rolling oil, release agents, coolants

Cooling: metal parts, bottles

Other applications: foam dispersion, fire-fighting systems, water curtains

HOW TO MAKE UP THE
NOZZLE CODE

EX.: KGW 0390 B1

K G W 0390 XX

CONNECTION

• G - 1/8" • J - 1/2"
• H - 1/4" • K - 3/4"
• I - 3/8" • L - 1"

NOZZLE TYPE

SPRAY ANGLE

• W - 120° (Wide spray angle)
• X - Ø14.7

CAPACITY

MATERIAL

• B1 - AISI 303 Stainless steel
• B31 - AISI 316L Stainless steel
• T1 - Brass

LARGE SPRAY ANGLE

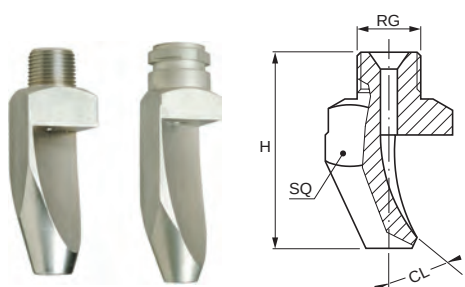
KGW 1/8"	KHW 1/4"	KIW 3/8"	KJW 1/2"	KKW 3/4"	KLW 1"	KXW	D mm	Code	Capacity at different pressure values (l/min) (bar)							Spray angle (°) at pressure (bar)	
									0.5	1.0	2.0	3.0	4.0	5.0	7.0	1.5	4.0
•						•	0.6	0390	0.16	0.23	0.32	0.39	0.45	0.50	0.60	90°	120°
•						•	0.7	0590	0.24	0.34	0.48	0.59	0.68	0.76	0.90	105°	120°
•						•	0.8	0780	0.32	0.45	0.64	0.78	0.90	1.01	1.19	110°	125°
•						•	1.0	1120	0.49	0.69	0.98	1.20	1.39	1.55	1.83	105°	122°
•	•					•	1.1	1160	0.65	0.92	1.31	1.60	1.85	2.07	2.44	110°	130°
•	•					•	1.3	1200	0.82	1.15	1.63	2.00	2.31	2.58	3.06	120°	130°
•	•					•	1.4	1230	0.94	1.33	1.88	2.30	2.66	2.97	3.51	110°	125°
•	•					•	1.6	1310	1.27	1.79	2.53	3.10	3.58	4.00	4.74	120°	130°
•	•					•	1.8	1390	1.59	2.25	3.18	3.90	4.50	5.03	5.96	130°	140°
•	•					•	2.3	1590	2.41	3.41	4.82	5.90	6.81	7.62	9.01	120°	130°
•	•					•	2.6	1780	3.18	4.50	6.37	7.80	9.01	10.1	11.9	130°	140°
•	•					•	2.9	1940	3.84	5.43	7.68	9.40	10.9	12.1	14.4	140°	150°
•	•					•	3.3	2117	4.78	6.75	9.55	11.7	13.5	15.1	17.9	110°	120°
•	•					•	3.6	2141	5.76	8.14	11.5	14.1	16.3	18.2	21.5	120°	130°
•	•					•	3.8	2157	6.41	9.06	12.8	15.7	18.1	20.3	24.0	120°	130°
	•					•	4.0	2172	7.02	9.93	14.0	17.2	19.9	22.2	26.3	125°	135°
	•					•	4.1	2188	7.68	10.9	15.4	18.8	21.7	24.3	28.7	130°	140°
	•					•	4.4	2210	8.57	12.1	17.1	21.0	24.2	27.1	32.1	135°	145°
		•				•	4.5	2230	9.39	13.3	18.8	23.0	26.6	29.7	35.1	110°	120°
		•				•	5.0	2270	11.0	15.6	22.0	27.0	31.2	34.9	41.2	115°	125°
		•	•			•	5.3	2310	12.7	17.9	25.3	31.0	35.8	40.0	47.4	125°	135°
		•	•				5.6	2350	14.3	20.2	28.6	35.0	40.4	45.2	53.5	130°	140°
			•				6.0	2390	15.9	22.5	31.8	39.0	45.0	50.3	59.6	130°	140°
			•				6.5	2470	19.2	27.1	38.4	47.0	54.3	60.7	71.8	135°	140°
			•				7.1	2550	22.5	31.8	44.9	55.0	63.5	71.0	84.0	135°	145°
			•				7.5	2630	25.7	36.4	51.4	63.0	72.7	81.3	96.2	140°	150°
				•			8.0	2700	28.6	40.4	57.2	70.0	80.8	90.4	107	130°	140°
				•			8.4	2780	31.8	45.0	63.7	78.0	90.1	101	119	135°	145°
				•			8.7	2860	35.1	49.7	70.2	86.0	99.3	111	131	135°	145°
				•			9.3	2940	38.4	54.3	76.8	94.0	109	121	144	140°	150°
				•			10.3	3110	44.9	63.5	89.8	110	127	142	168	125°	135°
				•			11.0	3125	51.0	72.2	102	125	144	161	191	130°	135°
				•			11.4	3141	57.6	81.4	115	141	163	182	215	130°	135°
				•			12.2	3164	67.0	94.7	134	164	189	212	251	135°	145°
					•		14.6	3235	95.9	136	192	235	271	303	359	130°	135°
					•		17.9	3350	143	202	286	350	404	452	535	130°	135°

ASSEMBLY ACCESSORIES

KX series nozzles are assembled with pipe clamp, welding nipple and locknut.

Our assembly accessories are available in many different types and materials. Please see on page 44 for more information.

Name	Code and material	Appearance	Model no.	
			3/8" Standard size	3/4" Large size
Locknut <i>P.88</i>	B1 - AISI 303 SS B3 - AISI 316 SS T1 - Brass D6 - Fiberglass reinforced PP		VAA 0380 xx	VAA 0750 xx
Welding nipple <i>P.89</i>	B1 - AISI 303 SS B31 - AISI 316L SS		ZAA 1738 xx	ZAA 2775 xx
Threaded nipple <i>P.89</i>	B1 - AISI 303 SS B31 - AISI 316L SS T1 - Brass		ZLA 2538 xx	ZLA 7575 xx
Metal pipe clamp <i>P.87</i>	B1 - AISI 303 SS T1 - Brass		ZPM	-
Plastic pipe clamp <i>P.86</i>	D6 - Fiberglass reinforced PP		ZPB 0050 D6	-



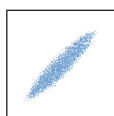
HIGH IMPACT TYPES

The K series nozzles of this type are designed with a spoon-shaped deflected surface to concentrate the liquid flow and produce a narrow-angle flat fan spray with a high impact value. For this feature they are widely used in all working environments requiring powerful jets. Compared to the standard cat-eye-shaped flat fan nozzle tips, K nozzles have a larger and free inner passage and are less subject to clogging, provide high performance cleaning efficiency and have an extended operating life. They are designed with a specific angle (see ~ CL on the left drawing) between inlet orifice and spray orientation surface. These nozzles are available with standard male threads but also with quick coupling nipples to shorten maintenance time. Please contact our Sales department for more information.

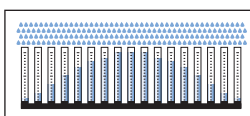
■ **Thread specification:** BSPT, NPT

■ **Typical applications**

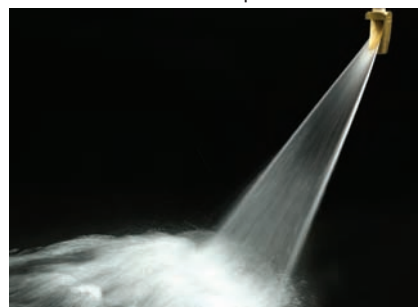
cleaning of parts, crushed stone, road, aircrafts, vehicles and tanks.



Spray section



Convex distribution



THREAD SIZE CODE

KOx	1/8"
KPx	1/4"
KQx	3/8"
KRx	1/2"
KSx	3/4"
KTx	QC

QUICK COUPLING NIPPLES

Please refer to below table for dimensions and materials suitable for different uses.

Name	Thread size (RG) inch	Standard size	Large size	H mm	WS mm	D mm
Male nipple	1/4"	ZHS 0025 xxQ1	-	29	22	-
	3/8"	ZHS 0038 xxQ1	-	29	22	-
	1/2"	-	ZHS 0050 xxQ2	35	30	-
Female nipple	3/8"	ZHT 0038 xxQ1	-	29	22	-
Welding nipple	-	ZHU 0038 xxQ1	ZHU 0050 xxQ2	32	-	28
Seal (Viton) for SS nipple	-	VDH BQ10 E7	VDH BQ20 E7	-	-	-
Seal (BUNA) for brass nipple	-	VDH BQ10 E8	VDH BQ20 E8	-	-	-



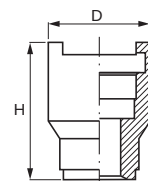
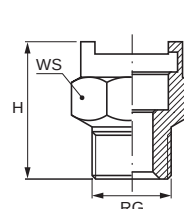
ZHS + KTH



ZHS 0025 xxQ1



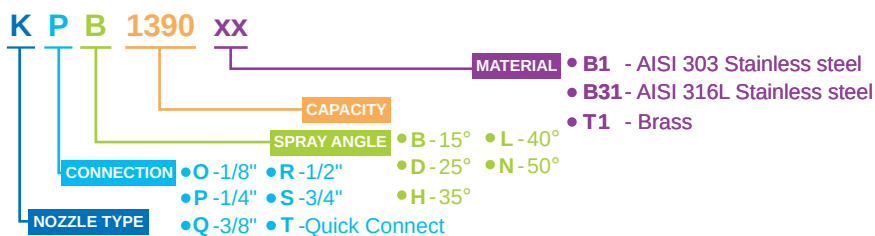
ZHS 0050 xxQ2



ZHU 0038 xxQ1

HOW TO MAKE UP THE NOZZLE CODE

EX.: KPB 1390 B1

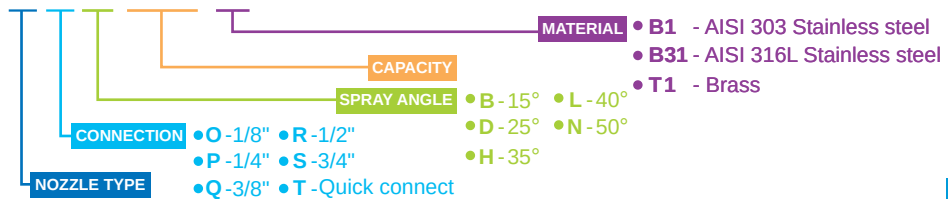


HIGH IMPACT TYPES

		1/8"	1/4"	3/8"	1/2"	3/4"	QC	Code	D mm	Capacity at different pressure values (l/min) (bar)							CL deg	H mm	SQ mm
										2.0	3.0	4.0	5.0	6.0	7.0	10			
15°			KPB KPB					1390	1.9	3.18	3.90	4.50	5.03	5.52	5.96	7.12	22°	48	15
								1780	2.6	6.37	7.80	9.01	10.1	11.0	11.9	14.2	19°	54	
				KQB KQB				2117	3.2	9.55	11.7	13.5	15.1	16.5	17.9	21.4	25°	72	20
				KQB				2156	3.7	12.7	15.6	18.0	20.1	22.1	23.8	28.5	18°	92	
								2195	4.2	15.9	19.5	22.5	25.2	27.6	29.8	35.6	15°	90	
					KRB KRB			2230	4.6	18.8	23.0	26.6	29.7	32.5	35.1	42.0	14°	125	25
					KRB			2310	5.3	25.3	31.0	35.8	40.0	43.8	47.4	56.6	14°	130	
								2390	5.9	31.8	39.0	45.0	50.3	55.2	59.6	71.2	14°	137	
						KSB		2780	8.4	63.7	78.0	90.1	101	110	119	142	14°	191	30
25°			KPD					2156	3.7	12.7	15.6	18.0	20.1	22.1	23.8	28.5	25°	65	20
35°	KOH						KTH	1160	1.2	1.31	1.60	1.85	2.07	2.26	2.44	2.92	40°	23	12
			KPH					1390	1.9	3.18	3.90	4.50	5.03	5.52	5.96	7.12	36°	37	15
			KPH	KQH KQH				1780	2.6	6.37	7.80	9.01	10.1	11.0	11.9	14.2	30°	43	20
				KQH KQH				1980	2.9	8.00	9.80	11.3	12.7	13.9	15.0	17.9	28°	49	
				KQH				2117	3.3	9.55	11.7	13.5	15.1	16.5	17.9	21.4	28°	52	
								2156	3.7	12.7	15.6	18.0	20.1	22.1	23.8	28.5	26°	58	
								2195	4.1	15.9	19.5	22.5	25.2	27.6	29.8	35.6	23°	64	
					KRH KRH		KTH KTH	2230	4.5	18.8	23.0	26.6	29.7	32.5	35.1	42.0	22°	73	25
					KRH			2310	5.3	25.3	31.0	35.8	40.0	43.8	47.4	56.6	24°	81	
								2390	5.9	31.8	39.0	45.0	50.3	55.2	59.6	71.2	19°	89	
						KSH KSH		2630	7.5	51.4	63.0	72.7	81.3	89.1	96.2	115	23°	114	32
								2780	8.4	63.7	78.0	90.1	101	110	119	142	22°	122	
40°			KQL					2156	3.7	12.7	15.6	18.0	20.1	22.1	23.8	28.5	35°	60	25
			KQL					2195	4.1	15.9	19.5	22.5	25.2	27.6	29.8	35.6	33°	64	
			KQL					2230	4.5	18.8	23.0	26.6	29.7	32.5	35.1	42.0	33°	72	
			KQL					2270	5.0	22.0	27.0	31.2	34.9	38.2	41.2	49.3	29°	75	
			KQL					2310	5.2	25.3	31.0	35.8	40.0	43.8	47.4	56.6	26°	77	
			KQL					2350	5.7	28.6	35.0	40.4	45.2	49.5	53.5	63.9	28°	77	
			KQL					2390	6.0	31.8	39.0	45.0	50.3	55.2	59.6	71.2	28°	87	
50°		KPN						1390	1.9	3.18	3.90	4.50	5.03	5.52	5.96	7.12	60°	31	15
		KPN	KQN					1980	2.9	8.00	9.80	11.3	12.7	13.9	15.0	17.9	42°	41	20
		KPN	KQN					2156	3.7	12.7	15.6	18.0	20.1	22.1	23.8	28.5	45°	47	
			KQN					2230	4.5	18.8	23.0	26.6	29.7	32.5	35.1	42.0	37°	55	25
			KQN					2390	6.0	31.8	39.0	45.0	50.3	55.2	59.6	71.2	40°	72	30
			KQN					2490	6.7	40.0	49.0	56.6	63.3	69.3	74.8	89.5	38°	72	
			KQN					2630	7.5	51.4	63.0	72.7	81.3	89.1	96.2	115	37°	72	
			KQN					2780	8.4	63.7	78.0	90.1	101	110	119	142	32°	72	

HOW TO MAKE UP THE
NOZZLE CODE

EX.: KPB 1390 B1

K P B 1390 XX

FLAT FAN NOZZLES / COIN NOZZLES

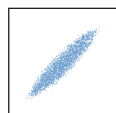
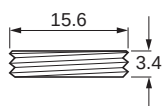
GC series coin nozzles with thickness 3.4 mm have a special thin coin-edge design. They do not protrude out of a pipe surface and their jet is close to the turbulence structure. They can be aligned in narrow spaces and easily cleaned. Within the delivery pipe these nozzles are assembled to, a rotating steel brush takes off all the dirt which is washed out by water and then flushed through a release valve positioned at the end of the pipe (See pictures below).

The revolutionary design of our coin nozzles makes them easy to clean and remove thus favouring a greater efficiency and productivity of the industrial plant they are used in.

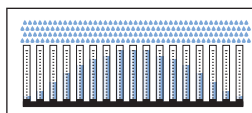
■ **Thread specification:** 5/8 - 18 UNF

■ **Typical applications**

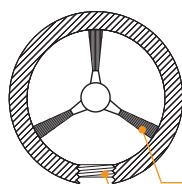
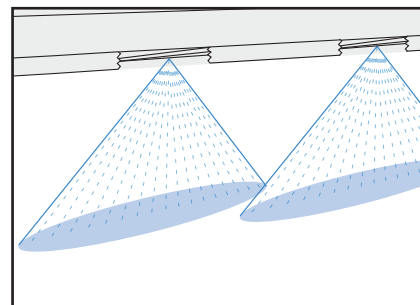
woolen blankets cleaning in paper mills,
filter cloth of sludge dewatering machine
cleaning



Spray section



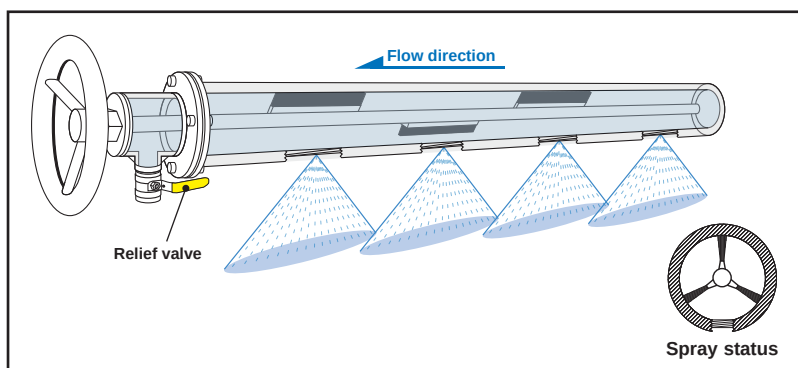
Convex distribution



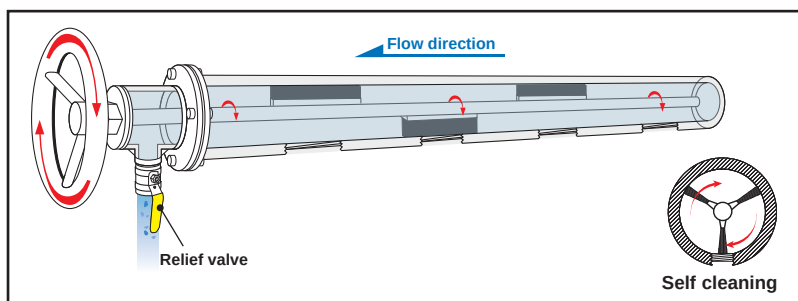
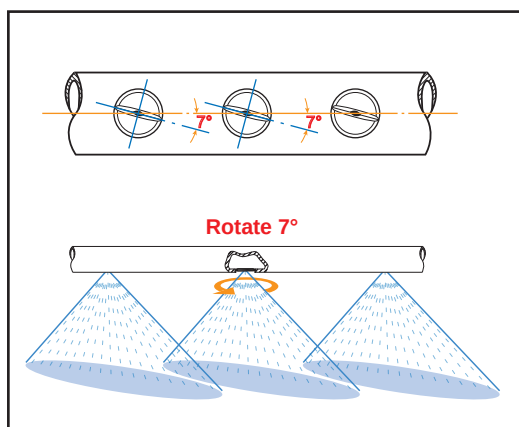
Self cleaning steel brush

GC serial coin nozzle

	Code	Capacity at different pressure values								(l/min) (bar)
		0.7	1.5	2.0	3.0	4.0	6.0	7.0	10.0	
45°	GCM 1510 xx	2.90	4.20	5.10	5.90	6.60	7.20	7.80	9.30	
60°	GCQ 1210 xx	1.20	1.70	2.10	2.40	2.70	3.00	3.20	3.80	
	GCQ 1510 xx	2.90	4.20	5.10	5.90	6.60	7.20	7.80	9.30	
	GCQ 1950 xx	5.50	7.80	9.50	11.0	12.3	13.4	14.5	17.3	
65°	GCR 1750 xx	4.30	6.10	7.50	8.70	9.70	10.6	11.5	13.7	
	GCR 1950 xx	5.50	7.80	9.50	11.0	12.3	13.4	14.5	17.3	
80°	GCT 1510 xx	2.90	4.20	5.10	5.90	6.60	7.20	7.80	9.30	
	GCT 1950 xx	5.50	7.80	9.50	11.0	12.3	13.4	14.5	17.3	



Spray status



Self cleaning

HOW TO MAKE UP THE
NOZZLE CODE

EX.: GCM 1510 B1

GC M 1510 xx

MATERIAL

- B1 - AISI 303 Stainless steel
- B31 - AISI 316L Stainless steel (optional)

CAPACITY

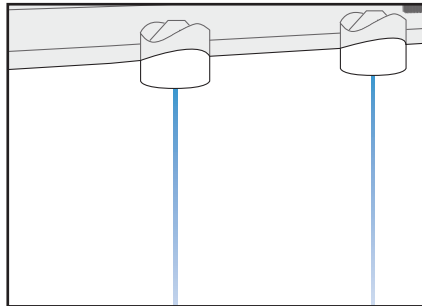
SPRAY ANGLE

- M - 45°
- Q - 60°
- R - 65°
- T - 80°

NOZZLE TYPE

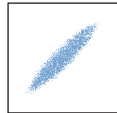
FLAT FAN NOZZLES / DISC NOZZLES

In GE series disc nozzles with thickness 1.2 mm the spray jet is close to the turbulence structure and this special design makes them very easy to clean. Within the delivery pipe these nozzles are assembled to a steel brush, that can be manually or automatically rotated, which takes off all the dirt washed out by water and then flushed out through a release valve positioned at the end of the pipe. Disc nozzles, with their special low profile design, can be easily removed for cleaning so they reduce maintenance times and costs and improve the plant efficiency.

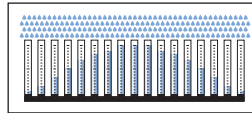


■ Typical applications

washing or spraying in pulp and paper mills, mesh fabrics cleaning, water treatment systems, screen and filter (felt and wire) washing and many more.



Spray section



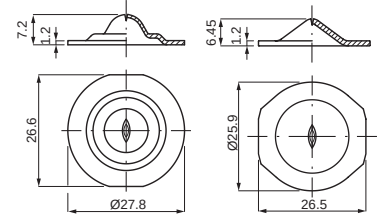
Convex distribution



	Code	D1 mm	Capacity at different pressure values						(l/min) (bar)
			3.0	4.0	6.0	10	15	20	
60°	GEQ 0900 xx	1.0	0.90	1.04	1.27	1.64	2.01	2.32	
	GEQ 1170 xx	1.5	1.70	1.96	2.40	3.10	3.80	4.39	
	GEQ 1234 xx	1.7	2.34	2.70	3.31	4.27	5.23	6.04	
	GEQ 1310 xx	2.0	3.10	3.58	4.38	5.66	6.93	8.00	
	GEQ 1490 xx	2.5	4.90	5.66	6.93	8.95	11.0	12.7	
	GEQ 1780 xx	3.0	7.80	9.01	11.0	14.2	17.4	20.1	
	GEQ 2124 xx	4.0	12.4	14.3	17.5	22.6	27.7	32.0	
	GEQ 2194 xx	5.0	19.4	22.4	27.4	35.4	43.4	50.1	
75°	GEQ 2310 xx	7.0	23.0	26.6	32.5	42.0	51.4	59.4	
	GES 0900 xx	1.0	0.90	1.04	1.27	1.64	2.01	2.32	
	GES 1170 xx	1.5	1.70	1.96	2.40	3.10	3.80	4.39	
	GES 1234 xx	1.7	2.34	2.70	3.31	4.27	5.23	6.04	
	GES 1310 xx	2.0	3.10	3.58	4.38	5.66	6.93	8.00	
	GES 1490 xx	2.5	4.90	5.66	6.93	8.95	11.0	12.7	
	GES 1780 xx	3.0	7.80	9.01	11.0	14.2	17.4	20.1	
	GES 2124 xx	4.0	12.4	14.3	17.5	22.6	27.7	32.0	
	GES 2194 xx	5.0	19.4	22.4	27.4	35.4	43.4	50.1	
	GES 2310 xx	7.0	23.0	26.6	32.5	42.0	51.4	59.4	

FLAT FAN NOZZLES

HOW TO MAKE UP THE NOZZLE CODE EX.: GES 1310 C7MV

Flat fan nozzle - EU
GES 1310 C7MVFlat fan nozzle - US
GES 1310 C7SV

GE S 1310 xx

NOZZLE TYPE: Q - 60°, S - 75°

SPRAY ANGLE

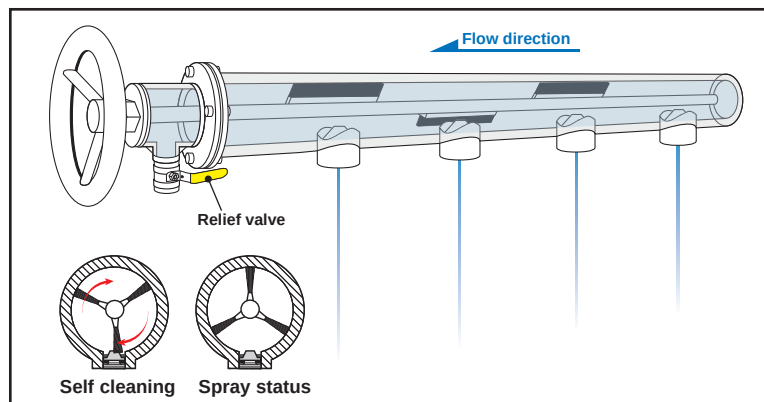
CAPACITY

MATERIAL

- C7MV - AISI 316Ti Stainless steel (EU)
- C7SV - AISI 316Ti Stainless steel (US)

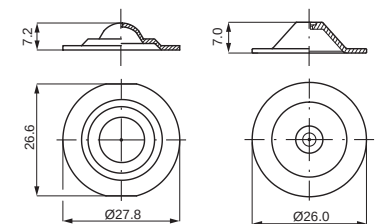
GEA SERIAL STRAIGHT NOZZLES

D mm	Nozzle type		Code	Capacity at different pressure values						(l/min) (bar)
	Stainless steel	Ruby insert		3.0	4.0	6.0	10	15	20	
0.40		•	0170	0.17	0.20	0.24	0.31	0.38	0.44	
0.50		•	0290	0.29	0.33	0.41	0.53	0.65	0.75	
0.60		•	0320	0.32	0.37	0.45	0.58	0.72	0.83	
0.70		•	0420	0.42	0.48	0.59	0.77	0.94	1.08	
0.80	•	•	0500	0.50	0.58	0.71	0.91	1.12	1.29	
0.85		•	0620	0.62	0.72	0.88	1.13	1.39	1.60	
0.90		•	0780	0.78	0.90	1.10	1.42	1.74	2.01	
1.00	•	•	0900	0.90	1.04	1.27	1.64	2.01	2.32	
1.10		•	1100	1.10	1.27	1.56	2.01	2.46	2.84	
1.20	•	•	1130	1.30	1.50	1.84	2.37	2.91	3.36	
1.50	•		1170	1.70	1.96	2.40	3.10	3.80	4.39	
2.00	•		1310	3.10	3.58	4.38	5.66	6.93	8.00	



STRAIGHT NOZZLES

HOW TO MAKE UP THE NOZZLE CODE EX.: GEA 0900 C7S

Metal
GEA 0900 C7SRuby nozzle tip
GEA 0900 F31

GE A 0900 xx

NOZZLE TYPE: A - 0°

SPRAY ANGLE

CAPACITY

MATERIAL

- C7S - AISI 316Ti Stainless steel body
- F30 - Ruby insert, 303 body
- F31 - Ruby insert, 316L body

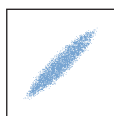


GF SERIES SELF-CLEANING NOZZLES

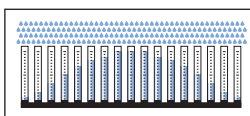
The self-cleaning design of the GF series nozzles allow an easy maintenance of cleaning spray bars and shower headers. The nozzle body contains a mobile piston whose opening and closure is operated by the water pressure. For example, when nozzles wash mesh fabrics with an operating pressure of 3 bar, this pressure is higher than a spring force of 1 bar. Piston and nozzle body come close producing a flat fan spray. If the inlet pressure is reduced to 0.5 bar, lower than a spring force of 1 bar, piston and nozzle body separate opening to the maximum distance. Water pressure remains at 0.5 bar and removes any build up when back to normal condition. In a word, to clean these nozzles it's sufficient to reduce pressure to avoid the accumulation of dirt inside. GF self-cleaning nozzles are easy to install, align and clean ensuring relevant time and costs savings. The spring force is set depending on customer's plant working pressure.

Typical applications

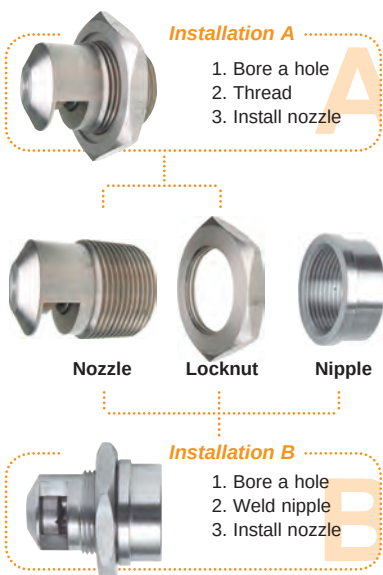
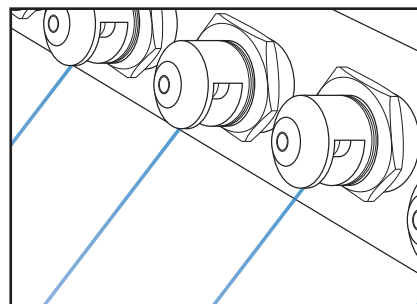
washing or spraying in pulp and paper mills, mesh fabrics cleaning, water treatment systems, and many more.



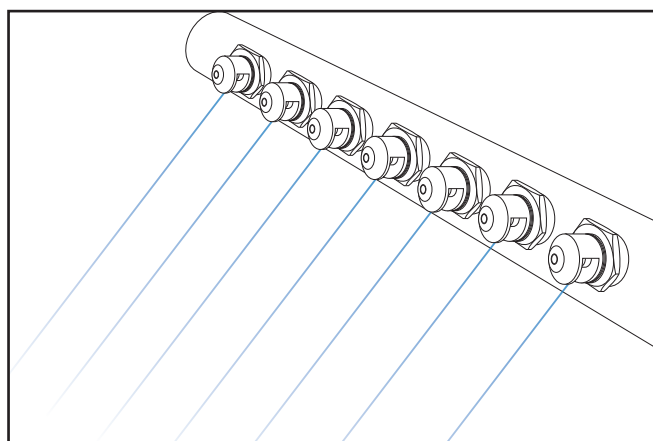
Spray section



Convex distribution



	Code	Capacity at different pressure values									(l/min) (bar)
		3.0	4.0	5.0	6.0	7.0	8.0	10	15	20	
0°	GFA 1100 B3 xx	1.00	1.15	1.29	1.41	1.53	1.63	1.83	2.24	2.58	
	GFA 1235 B3 xx	2.35	2.71	3.03	3.32	3.59	3.84	4.29	5.25	6.07	
	GFA 1330 B3 xx	3.30	3.81	4.26	4.67	5.04	5.39	6.02	7.38	8.52	
45°	GFM 1630 B3 xx	6.30	7.27	8.13	8.91	9.62	10.3	11.5	14.1	16.3	
	GFM 1750 B3 xx	7.50	8.66	9.68	10.6	11.5	12.2	13.7	16.8	19.4	
	GFM 1970 B3 xx	9.70	11.2	12.5	13.7	14.8	15.8	17.7	21.7	25.0	
	GFM 2121 B3 xx	12.1	14.0	15.6	17.1	18.5	19.8	22.1	27.1	31.2	
	GFM 2139 B3 xx	13.9	16.1	17.9	19.7	21.2	22.7	25.4	31.1	35.9	
60°	GFQ 1630 B3 xx	6.30	7.27	8.13	8.91	9.62	10.3	11.5	14.1	16.3	
	GFQ 1750 B3 xx	7.50	8.66	9.68	10.6	11.5	12.2	13.7	16.8	19.4	
	GFQ 1970 B3 xx	9.70	11.2	12.5	13.7	14.8	15.8	17.7	21.7	25.0	
	GFQ 2121 B3 xx	12.1	14.0	15.6	17.1	18.5	19.8	22.1	27.1	31.2	
	GFQ 2139 B3 xx	13.9	16.1	17.9	19.7	21.2	22.7	25.4	31.1	35.9	
80°	GFT 1630 B3 xx	6.30	7.27	8.13	8.91	9.62	10.3	11.5	14.1	16.3	
	GFT 1750 B3 xx	7.50	8.66	9.68	10.6	11.5	12.2	13.7	16.8	19.4	
	GFT 1970 B3 xx	9.70	11.2	12.5	13.7	14.8	15.8	17.7	21.7	25.0	
	GFT 2121 B3 xx	12.1	14.0	15.6	17.1	18.5	19.8	22.1	27.1	31.2	
	GFT 2139 B3 xx	13.9	16.1	17.9	19.7	21.2	22.7	25.4	31.1	35.9	

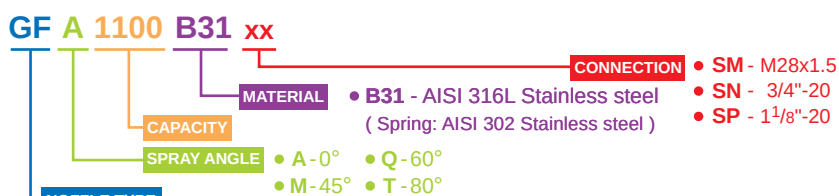


Thread specification	M28 x 1.5	3/4" - 20	1 1/8" - 20
Nozzle	GFx xxxx B3SM	GFx xxxx B3SN	GFx xxxx B3SP
Nipple	XGF 2832 B3SM	XGF 2832 B3SN	XGF 2832 B3SP
Locknut	XGF 7010 B3SM	XGF 7010 B3SN	XGF 7010 B3SP

Self cleaning	Spray status

HOW TO MAKE UP THE NOZZLE CODE

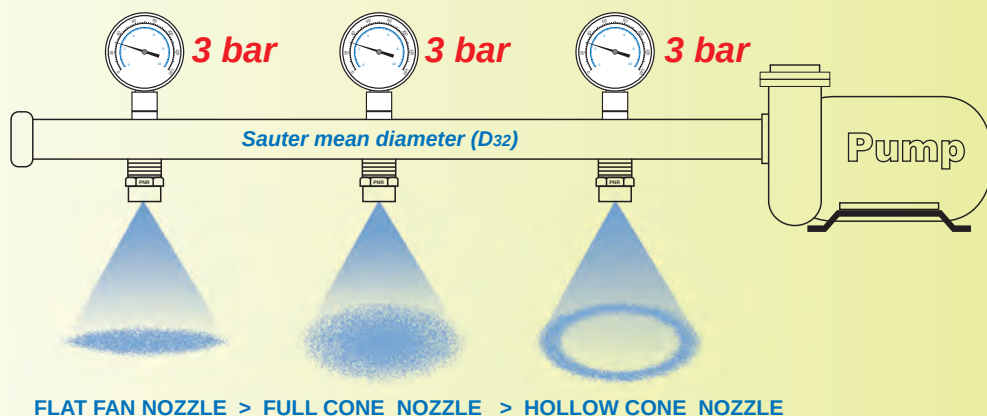
EX.: GFA 1100 B31SM



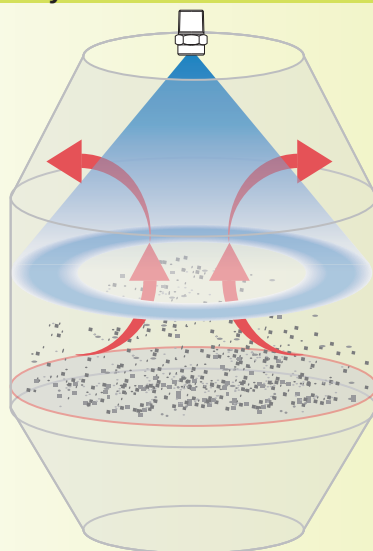


❑ Mist spray

Hollow cone nozzles provide a finely atomized mist and a very uniform hollow cone spray pattern. They are ideal to capture suspended particles and offer higher performances than other nozzles with same operating pressure and capacity. These nozzles are widely used for their efficiency in cooling and cleaning of gases, dust control, absorption processes and air-humidification.



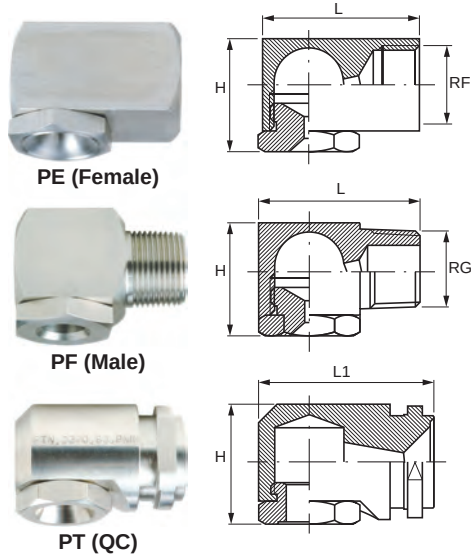
❑ Poor gas scrub efficiency?



Hollow cone nozzles produce a ring-shaped spray pattern where all the liquid jet is concentrated on the outer edge of the ring. Users may fear that offset nozzles do not catch all suspended particles because air flows through directly from the centre. Hollow cone nozzles are the solution to this problem as their fine mist spray provides a better scrubbing effect.

❑ Accurate offset settings

The correct positioning of hollow cone nozzles is of vital importance. There are matrix and offset settings. Please see on page 18 for more information.

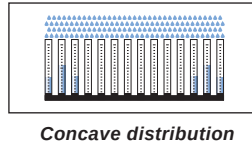
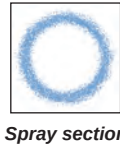


STANDARD ANGLE SPRAY NOZZLES

PE/PF hollow cone nozzles generate a ring-shaped spray pattern with finely atomized droplets and work on the tangential flow principle. Inside these nozzles there is an axial groove that injects the liquid tangentially into the vortex chamber where the strong centrifugal force produces a high rotational velocity and generates a finely atomized liquid flow. As these nozzles have a large inside free passage and no swirl insert, they offer the maximum resistance to clogging. PE/PF nozzles are widely used in many production processes and their variety of spray angles and capacities make them suitable for all kinds of working environments.

Thread specification

Female thread (PE series): BSPT, NPT
Male thread (PF series): BSP, NPT



STANDARD ANGLE SPRAY NOZZLES

	RF RG inch	PEN Female	PFN Male	PTN QC	Code	DE mm	DU mm	Capacity at different pressure values (l/min) (bar)								Dimensions mm		
								0.5	0.7	1.0	2.0	3.0	5.0	7.0	10	H	L	L1
50°	3/8"		•	•	2180	5.9	7.9	7.35	8.69	10.4	14.7	18.0	23.2	27.5	32.9	24	34	35
			•	•	2220	7.5	7.9	8.98	10.6	12.7	18.0	22.0	28.4	33.6	40.2			
			•	•	2390	8.7	9.5	15.9	18.8	22.5	31.8	39.0	50.3	59.6	71.2			
70°	1/8"		•		0390	0.79	1.2	0.16	0.19	0.23	0.32	0.39	0.50	0.60	0.71	19	24	26
			•		0780	1.6	1.6	0.32	0.38	0.45	0.64	0.78	1.01	1.19	1.42			
		•	•		1160	2.0	2.0	0.65	0.77	0.92	1.31	1.60	2.07	2.44	2.92			
		•	•		1230	2.4	2.4	0.94	1.11	1.33	1.88	2.30	2.97	3.51	4.20			
		•	•		1390	3.2	3.2	1.59	1.88	2.25	3.18	3.90	5.03	5.96	7.12			
		•	•		1630	4.0	4.0	2.57	3.04	3.64	5.14	6.30	8.13	9.62	11.5			
	1/4"		•		1780	4.4	4.4	3.18	3.77	4.50	6.37	7.80	10.1	11.9	14.2			
		•	•	•	0781	1.6	1.6	0.32	0.38	0.45	0.64	0.78	1.01	1.19	1.42	23	32	32
		•	•	•	1161	2.0	2.0	0.65	0.77	0.92	1.31	1.60	2.07	2.44	2.92			
		•	•	•	1231	2.4	2.4	0.94	1.11	1.33	1.88	2.30	2.97	3.51	4.20			
		•	•	•	1391	3.6	3.6	1.59	1.88	2.25	3.18	3.90	5.03	5.96	7.12			
		•	•	•	1631	4.0	4.0	2.57	3.04	3.64	5.14	6.30	8.13	9.62	11.5			
	3/8"		•		1781	4.8	4.4	3.18	3.77	4.50	6.37	7.80	10.1	11.9	14.2			
		•	•	•	2117	5.9	5.2	4.78	5.65	6.75	9.55	11.7	15.1	17.9	21.4			
		•	•		1392	3.6	3.2	1.59	1.88	2.25	3.18	3.90	5.03	5.96	7.12	24	34	35
		•	•		1632	4.4	4.0	2.57	3.04	3.64	5.14	6.30	8.13	9.62	11.5			
		•	•		1782	5.2	4.4	3.18	3.77	4.50	6.37	7.80	10.1	11.9	14.2			
		•	•		2118	5.9	5.6	4.78	5.65	6.75	9.55	11.7	15.1	17.9	21.4			
	1/2"		•		2157	7.1	6.4	6.41	7.58	9.06	12.8	15.7	20.3	24.0	28.7			
		•	•		2196	7.5	7.5	8.00	9.47	11.3	16.0	19.6	25.3	29.9	35.8			
		•	•		2230	8.3	7.9	9.39	11.1	13.3	18.8	23.0	29.7	35.1	42.0			
		•	•		2197	9.5	6.4	8.00	9.47	11.3	16.0	19.6	25.3	29.9	35.8	31	50	50
		•	•		2231	9.5	7.5	9.39	11.1	13.3	18.8	23.0	29.7	35.1	42.0			
		•	•	•	2310	9.5	9.1	12.7	15.0	17.9	25.3	31.0	40.0	47.4	56.6			
	3/4"		•		2391	9.5	11.1	15.9	18.8	22.5	31.8	39.0	50.3	59.6	71.2			
		•	•	•	2470	9.5	13.1	19.2	22.7	27.1	38.4	47.0	60.7	71.8	85.8			
		•	•		2311	12.7	7.9	12.7	15.0	17.9	25.3	31.0	40.0	47.4	56.6	39	55	58
		•	•		2392	12.7	9.5	15.9	18.8	22.5	31.8	39.0	50.3	59.6	71.2			
		•	•		2471	12.7	11.1	19.2	22.7	27.1	38.4	47.0	60.7	71.8	85.8			
		•	•		2550	12.7	12.7	22.5	26.6	31.8	44.9	55.0	71.0	84.0	100			
		•	•		2630	12.7	14.3	25.7	30.4	36.4	51.4	63.0	81.3	96.2	115			
		•	•		2700	12.7	14.7	28.6	33.8	40.4	57.2	70.0	90.4	107	128			
		•	•		2780	12.7	15.9	31.8	37.7	45.0	63.7	78.0	101	119	142			
		•	•		2860	12.7	17.1	35.1	41.5	49.7	70.2	86.0	111	131	157			
		•	•		2940	12.7	18.3	38.4	45.4	54.3	76.8	94.0	121	144	172			
			•															
			•															
			•															

HOW TO MAKE UP THE
NOZZLE CODE

EX.: PES 1160 B1

PE S 1160 XX

NOZZLE TYPE • PE - Female
• PF - Male
• PT - QC

SPRAY ANGLE

• N - 50°
• S - 70°
• W - 120°

CAPACITY

MATERIAL

• B1 - AISI 303 Stainless steel
• B31 - AISI 316L Stainless steel
• T1 - Brass



WIDE ANGLE SPRAY NOZZLES

		RF	PEW	PFW	PTW	Code	DE mm	DU mm	Capacity at different pressure values								Dimensions mm		
		inch	Female	Male	QC				(l/min) (bar)								H	L	L1
									0.5	0.7	1.0	2.0	3.0	5.0	7.0	10			
120°	1/8"	•	•			0390	0.79	1.2	0.16	0.19	0.23	0.32	0.39	0.50	0.60	0.71	19	24	26
						0780	1.6	1.6	0.32	0.38	0.45	0.64	0.78	1.01	1.19	1.42			
						1200	2.0	2.8	0.82	0.97	1.15	1.63	2.00	2.58	3.06	3.65			
						1230	2.4	2.8	0.94	1.11	1.33	1.88	2.30	2.97	3.51	4.20			
		•	•			1270	2.4	3.2	1.10	1.30	1.56	2.20	2.70	3.49	4.12	4.93			
						1320	2.0	4.4	1.31	1.55	1.85	2.61	3.20	4.13	4.89	5.84			
						1390	3.2	3.2	1.59	1.88	2.25	3.18	3.90	5.03	5.96	7.12			
						1510	3.2	4.4	2.08	2.46	2.94	4.16	5.10	6.58	7.79	9.31			
						1700	4.0	4.4	2.86	3.38	4.04	5.72	7.00	9.04	10.7	12.8			
	1/4"	•	•	•		0781	1.6	1.6	0.32	0.38	0.45	0.64	0.78	1.01	1.19	1.42	23	32	32
						1130	1.6	3.2	0.53	0.63	0.75	1.06	1.30	1.68	1.99	2.37			
						1160	1.6	4.4	0.65	0.77	0.92	1.31	1.60	2.07	2.44	2.92			
						1190	1.6	5.6	0.78	0.92	1.10	1.55	1.90	2.45	2.90	3.47			
		•	•	•		1271	2.0	3.2	1.10	1.30	1.56	2.20	2.70	3.49	4.12	4.93			
						1321	2.0	4.4	1.31	1.55	1.85	2.61	3.20	4.13	4.89	5.84			
						1391	3.6	3.2	1.59	1.88	2.25	3.18	3.90	5.03	5.96	7.12			
						1511	3.6	4.4	2.08	2.46	2.94	4.16	5.10	6.58	7.79	9.31			
						1600	3.6	5.6	2.45	2.90	3.46	4.90	6.00	7.75	9.17	11.0			
		•	•	•		1701	4.0	4.4	2.86	3.38	4.04	5.72	7.00	9.04	10.7	12.8			
						1780	4.8	4.4	3.18	3.77	4.50	6.37	7.80	10.1	11.9	14.2			
						1860	4.0	5.6	3.51	4.15	4.97	7.02	8.60	11.1	13.1	15.7			
						1940	4.8	5.6	3.84	4.54	5.43	7.68	9.40	12.1	14.4	17.2			
	3/8"	•	•			2117	6.0	5.6	4.78	5.65	6.75	9.55	11.7	15.1	17.9	21.4			
						1512	3.6	4.4	2.08	2.46	2.94	4.16	5.10	6.58	7.79	9.31	24	34	35
						1601	3.6	5.6	2.45	2.90	3.46	4.90	6.00	7.75	9.17	11.0			
						1702	4.4	4.4	2.86	3.38	4.04	5.72	7.00	9.04	10.7	12.8			
		•	•			1781	5.2	4.4	3.18	3.77	4.50	6.37	7.80	10.1	11.9	14.2			
						1861	4.4	5.6	3.51	4.15	4.97	7.02	8.60	11.1	13.1	15.7			
						1941	5.2	5.6	3.84	4.54	5.43	7.68	9.40	12.1	14.4	17.2			
						2102	4.4	7.5	4.16	4.93	5.89	8.33	10.2	13.2	15.6	18.6			
		•	•			2110	5.2	6.0	4.49	5.31	6.35	8.98	11.0	14.2	16.8	20.1			
						2118	6.0	5.6	4.78	5.65	6.75	9.55	11.7	15.1	17.9	21.4			
						2133	6.0	6.0	5.43	6.42	7.68	10.9	13.3	17.2	20.3	24.3			
						2157	7.1	6.0	6.41	7.58	9.06	12.8	15.7	20.3	24.0	28.7			
	1/2"	•	•	•		2172	6.0	7.9	7.02	8.31	9.93	14.0	17.2	22.2	26.3	31.4			
						2196	7.5	7.5	8.00	9.47	11.3	16.0	19.6	25.3	29.9	35.8			
						2220	7.5	7.9	8.98	10.6	12.7	18.0	22.0	28.4	33.6	40.2			
						2391	9.5	11.1	15.9	18.8	22.5	31.8	39.0	50.3	59.6	71.2	31	50	50
	3/4"		•			2630	12.7	14.3	25.7	30.4	36.4	51.4	63.0	81.3	96.2	115	39	55	58

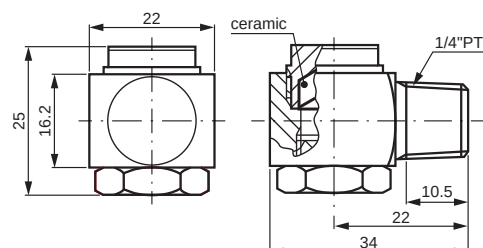
(STARCH NOZZLE) **PFS 1122 F5**

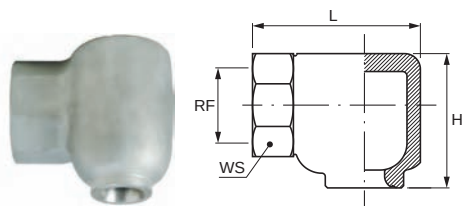
STARCH NOZZLE

In papermaking, the application of starch by spraying is a very common process aid used to provide additional paper strength and to improve the quality, surface and printability of the paper. Our **PFS 1122 F5** is a nozzle specially designed for spraying starch. Its bottom part in ceramic provides an excellent wear-resistance and its internal vaneless design minimizes clogging.

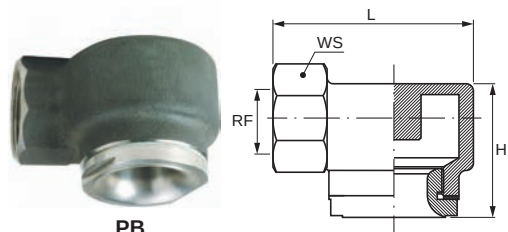


		RF	Code	D	Capacity at different pressure values								(l/min) (bar)	
		inch		mm	0.5	0.7	1.0	2.0	3.0	5.0	7.0	10		
75°		1/4"	1122	2.0	0.51	0.59	0.72	1.00	1.22	1.55	1.86	2.22		





PA



PB

TANGENTIAL NOZZLES

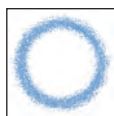
PA/PB tangential nozzles generate a hollow cone spray pattern of finely atomized droplets and work on the tangential flow principle. They are designed with a tangential method of atomization. Inside these nozzles there is an axial groove that injects the liquid tangentially into the vortex chamber where the strong centrifugal force produces a high rotational velocity and generates a finely atomized liquid flow. As these nozzles have a large free passage inside and no swirl insert, they offer the maximum resistance to clogging. PA/PB nozzles are widely used in exhaust scrubbers and are suitable to spray flows with particles.

Typical applications

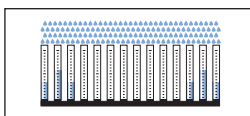
Washing: exhaust scrubbers, desulfuration, denitrification

Cooling: cooling of high temperature gas, product cooling

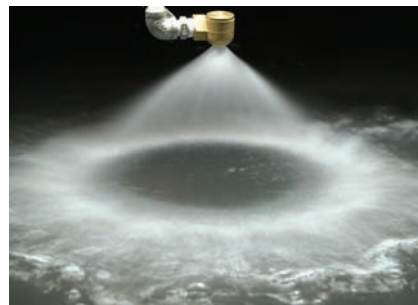
Thread specification: BSP, NPT (on request)



Spray section



Concave distribution



	Code	RF inch	DE mm	DU mm	Capacity at different pressure values									(l/min) (bar)		Dimensions mm		
					0.3	0.5	0.7	1.0	2.0	3.0	5.0	7.0	10	H	L	WS		
70°	PAS 1170 xx	3/8"	3.5	2.0	0.54	0.69	0.82	0.98	1.39	1.70	2.19	2.60	3.10	27	37	22		
90°	PAU 1390 xx	3/8"	4.0	3.8	1.23	1.59	1.88	2.25	3.18	3.90	5.03	5.96	7.12					
	PAU 1670 xx	1/2"	5.6	5.2	2.12	2.74	3.24	3.87	5.47	6.70	8.65	10.2	12.2	38	46	27		
	PAU 1850 xx		5.7	6.0	2.69	3.47	4.11	4.91	6.94	8.50	11.0	13.0	15.5					
	PAU 2115 xx		6.6	6.9	3.64	4.69	5.56	6.64	9.39	11.5	14.8	17.6	21.0					
	PAU 2220 xx	3/4"	8.5	9.0	6.96	8.98	10.6	12.7	18.0	22.0	28.4	33.6	40.2	48	60	36		
	PAU 2320 xx		9.5	11.5	10.1	13.1	15.5	18.5	26.1	32.0	41.3	48.9	58.4					
	PAU 2420 xx		9.6	14.0	13.3	17.1	20.3	24.2	34.3	42.0	54.2	64.2	76.7					
	PAU 2730 xx	1"	20x10	13.7	23.1	29.8	35.3	42.1	59.6	73.0	94.2	112	133	60	75	46		
	PAU 2970 xx			16.5	30.7	39.6	46.9	56.0	79.2	97.0	125	148	177					
	PAU 3147 xx	1 1/2"	32x16	19.5	46.5	60.0	71.0	84.9	120	147	190	225	268	90	93	60		
	PAU 3194 xx			22.0	61.3	79.2	93.7	112	158	194	250	296	354					
	PAU 3244 xx	2"	35x20	26.5	77.2	99.6	118	141	199	244	315	373	445	127	117	80		
	PAU 3294 xx			28.5	93.0	120	142	170	240	294	380	449	537					
	PAU 3364 xx	2 1/2"	25x40	29.5	115	149	176	210	297	364	470	556	665	156	140	100		
PAU 3490 xx			36.5	155	200	237	283	400	490	633	748	895						
PAU 3605 xx			45.0	191	247	292	349	494	605	781	924	1105						
130°	PBY 1390 xx	3/8"	3.0	4.5	1.23	1.59	1.88	2.25	3.18	3.90	5.03	5.96	7.12	27	37	22		
	PBY 1850 xx		4.4	7.5	2.69	3.47	4.11	4.91	6.94	8.50	11.0	13.0	15.5					
	PBY 1980 xx	1/2"	4.0	12.0	3.10	4.00	4.73	5.66	8.00	9.80	12.7	15.0	17.9	35	46	27		
	PBY 2128 xx		4.7	12.0	4.05	5.23	6.18	7.39	10.5	12.8	16.5	19.6	23.4					
	PBY 2208 xx		6.5	12.0	6.58	8.49	10.0	12.0	17.0	20.8	26.9	31.8	38.0	50	60	36		
	PBY 2220 xx	3/4"	6.1	15.0	6.96	8.98	10.6	12.7	18.0	22.0	28.4	33.6	40.2					
	PBY 2320 xx		6.5	19.0	10.1	13.1	15.5	18.5	26.1	32.0	41.3	48.9	58.4					
	PBY 2420 xx		8.0	19.0	13.3	17.1	20.3	24.2	34.3	42.0	54.2	64.2	76.7					
	PBY 2730 xx	1"	13.4	26.0	23.1	29.8	35.3	42.1	59.6	73.0	94.2	112	133	60	93	47		
	PBY 2970 xx		14.0	26.0	30.7	39.6	46.9	56.0	79.2	97.0	125	148	177					
	PBY 3147 xx	1 1/2"	15.0	37.0	46.5	60.0	71.0	84.9	120	147	190	225	268	75	111	60		
	PBY 3194 xx		19.5	37.0	61.3	79.2	93.7	112	158	194	250	296	354					
	PBY 3244 xx	2"	22.0	45.0	77.2	99.6	118	141	199	244	315	373	445	91	140	75		
	PBY 3294 xx		27.1	45.0	93.0	120	142	170	240	294	380	449	537					
	PBY 3364 xx	2 1/2"	25.5	64.0	115	149	176	210	297	364	470	556	665	128	193	90		
	PBY 3490 xx		33.0	64.0	155	200	237	283	400	490	633	748	895					
	PBY 3605 xx		38.0	64.0	191	247	292	349	494	605	781	924	1105					
	PBY 3665 xx		43.0	64.0	210	271	321	384	543	665	859	1016	1214					

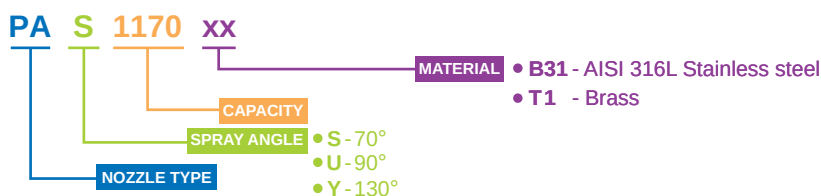
THREAD SIZE AND MATERIALS

The table on the right side shows thread size and materials

Material	3/8"	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"
B31- AISI 316L SS				•	•	•	•
T1 - Brass	•	•	•	•			

HOW TO MAKE UP THE NOZZLE CODE

EX.: PAS 1170 B31



MOULDED PLASTIC NOZZLES

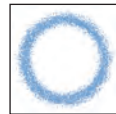
PN/PO series hollow cone nozzles made by plastic moulding, offer a high chemical resistance and low prices. They are tangential nozzles and produce a hollow cone spray of atomized droplets. As they have a large free passage and no swirling vane inside their body, they are highly clog-resistant. PN/PO nozzles are efficient, cost-effective and widely used in many processing lines. Moreover, they can be easily assembled in large quantity onto pipe manifolds.



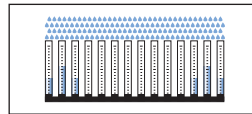
■ Thread specification

Male thread (PO series): BSPT
Female thread (PN series): BSP

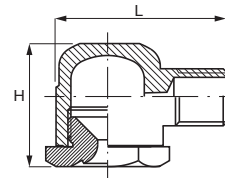
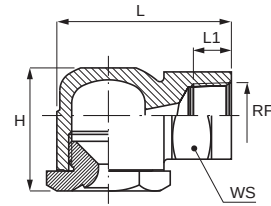
■ Max operation temperature: 90°C



Spray section



Concave distribution



PN - Female

PO - Male

	RF RG	PNS Female	POS Male	Code	DE mm	DU mm	Capacity at different pressure values								Dimensions mm			
							0.5	0.7	1.0	2.0	3.0	5.0	7.0	10	H	L	L1	WS
70°	3/8"	•	•	1170	2.4	2.5	0.69	0.82	0.98	1.39	1.70	2.19	2.60	3.10	31	44	20	22
80°	3/8"	•	•	1260	2.7	3.3	1.06	1.26	1.50	2.12	2.60	3.36	3.97	4.75	31	44	20	22
90°	3/8"	•	•	1390	3.6	2.8	1.59	1.88	2.25	3.18	3.90	5.03	5.96	7.12	31	44	20	22
		•	•	1670	3.6	6.0	2.74	3.24	3.87	5.47	6.70	8.65	10.2	12.2				
		•	•	1850	4.4	5.2	3.47	4.11	4.91	6.94	8.50	11.0	13.0	15.5				
		•	•	2115	4.8	6.0	4.69	5.56	6.64	9.39	11.5	14.8	17.6	21.0				
		•	•	2220	6.4	9.1	8.98	10.6	12.7	18.0	22.0	28.4	33.6	40.2				
130°	1/2"	•	•	2320	6.4	13.1	13.1	15.5	18.5	26.1	32.0	41.3	48.9	58.4	42	55	35	30
		•	•	2398	9.1	11.1	16.2	19.2	23.0	32.5	39.8	51.4	60.8	72.7				
	3/8"	•	•	1170	2.0	2.5	0.69	0.82	0.98	1.39	1.70	2.19	2.60	3.10	31	44	20	22
		•	•	1260	2.0	3.2	1.06	1.26	1.50	2.12	2.60	3.36	3.97	4.75				
		•	•	1390	3.6	3.2	1.59	1.88	2.25	3.18	3.90	5.03	5.96	7.12				

PO MALE THREAD NOZZLES

ZPB fastening clamps in plastic usually connect to 3/8" female threads. They are flexible, durable and low cost. Please see more on page 86.

TYPICAL APPLICATIONS

Washing: exhaust scrubbers, parts cleaning, pre-treatment in coating process, dust and foam control, filter spraying

Cooling: wire cooling, plastic pipe cooling

Other applications: humidification systems, etc.



PN (Female) + ZPB Plastic pipe clamp

HOW TO MAKE UP THE
NOZZLE CODE

EX.: PNS 1170 D6

PN S 1170 XX

NOZZLE TYPE • PN - Female
• PO - Male

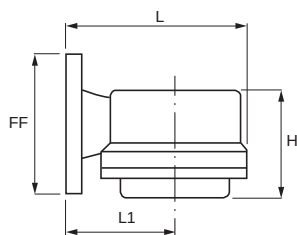
CAPACITY

SPRAY ANGLE

• S-70° • U-90°
• T-80° • Y-130°

MATERIAL

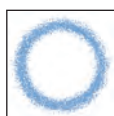
• D6 - PP, chemically bonded fiberglass



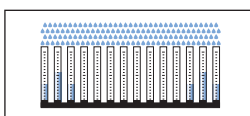
TANGENTIAL NOZZLES / LARGE FLOW RATES

PR nozzles produce a hollow cone spray pattern based on the tangential jet principle generating atomized flows with large flow rates. They have a vaneless and large free inside passage and offer a considerable resistance to clogging and high performances.

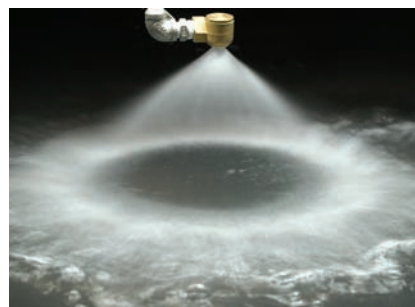
- **Flange**
DIN2633-ND16, JIS
- **Typical applications**
Desulfurization
Denitrification
Exhaust scrubbers
Coke quenching towers



Spray section



Concave distribution



	Code	DN inch	DE mm	DU mm	Capacity at different pressure values (l/min) (bar)					Dimensions mm			
					0.5	1.0	2.0	3.0	5.0	FF	H	L	L1
130°	PRY 3612 xx	3"	31.0	90	250	353	500	612	790	200	157	250	150
	PRY 3685 xx		34.0	90	280	395	559	685	884				
	PRY 3771 xx		36.5	90	315	445	630	771	995				
	PRY 3869 xx		39.5	90	355	502	710	869	1122				
	PRY 3979 xx		40.0	90	400	565	799	979	1264				
	PRY 4110 xx		43.0	90	449	635	898	1100	1420				
	PRY 4122 xx	4"	50.0	90	498	704	996	1220	1575				
	PRY 4153 xx		57.0	90	625	883	1249	1530	1975				
	PRY 4195 xx		60.0	145	796	1126	1592	1950	2517	220	242	355	200
	PRY 4244 xx		70.0	145	996	1409	1992	2440	3150				
	PRY 4306 xx		79.0	145	1249	1767	2498	3060	3950				
	PRY 4385 xx		87.0	145	1572	2223	3144	3850	4970				

HOW TO MAKE UP THE
NOZZLE CODE

EX.: PRY 3612 B31

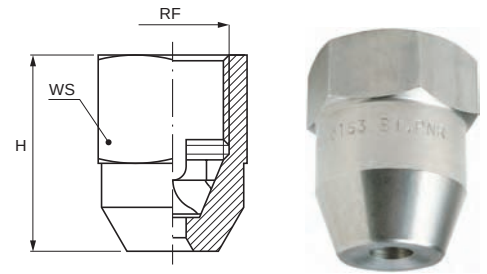
PR Y 3612 xx



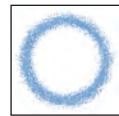
- **MATERIAL** • B31 - AISI 316L Stainless steel
- G1 - Cast iron

IN LINE SPRAY / INSIDE VANE

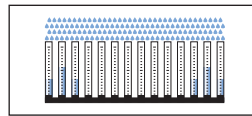
RA nozzles are tangential hollow cone nozzles that produce a finely atomized spray in line with the inlet supply pipe. In their body there is a carefully machined swirl vane with two spiral grooves which produce a wide range of capacities, starting from very low values. The strong centrifugal force inside the vortex chamber creates a high speed rotation of the liquid flow producing an atomized mist. For small capacity RA nozzles we suggest to place a suitable filter before their inlet orifice to avoid clogging.



■ Thread specification: BSP, NPT



Spray section



Concave distribution

	Code	RF inch	D mm	D1 mm	Capacity at different pressure values								(l/min) (bar)		Dimensions mm	
					0.5	0.7	1.0	2.0	3.0	5.0	7.0	10			H	WS
80°	RAT 0200 xx	1/8"	1.0	0.5	0.08	0.10	0.12	0.16	0.20	0.26	0.31	0.37	18	17		
	RAT 0390 xx		1.7	0.5	0.16	0.19	0.23	0.32	0.39	0.50	0.60	0.71				
60°	RAQ 0490 xx	3/8"	1.1	0.6	0.20	0.24	0.28	0.40	0.49	0.63	0.75	0.89	29	22		
	RAQ 0770 xx		1.6	0.6	0.31	0.37	0.44	0.63	0.77	0.99	1.18	1.41				
	RAQ 1122 xx		2.0	0.6	0.50	0.59	0.70	1.00	1.22	1.58	1.86	2.23				
90°	RAU 1208 xx	3/8"	3.0	1.0	0.85	1.00	1.20	1.70	2.08	2.69	3.18	3.80	29	22		
	RAU 1306 xx		4.0	1.6	1.25	1.48	1.77	2.50	3.06	3.95	4.67	5.59				
	RAU 1490 xx		4.2	1.6	2.00	2.37	2.83	4.00	4.90	6.33	7.48	8.95				
	RAU 1612 xx		4.7	1.6	2.50	2.96	3.53	5.00	6.12	7.90	9.35	11.2				
	RAU 1772 xx		5.5	1.6	3.15	3.73	4.46	6.30	7.72	9.97	11.8	14.1				
	RAU 2104 xx		6.3	1.6	4.25	5.02	6.00	8.49	10.4	13.4	15.9	19.0				
	RAU 1491 xx	1/2"	5.0	1.8	2.00	2.37	2.83	4.00	4.90	6.33	7.48	8.95	36	27		
	RAU 1551 xx		5.5	1.8	2.25	2.66	3.18	4.50	5.51	7.11	8.42	10.1				
	RAU 1686 xx		6.0	1.8	2.80	3.31	3.96	5.60	6.86	8.86	10.5	12.5				
	RAU 1980 xx		6.3	2.0	4.00	4.73	5.66	8.00	9.80	12.7	15.0	17.9				
	RAU 2137 xx		6.7	2.0	5.59	6.62	7.91	11.2	13.7	17.7	20.9	25.0				
	RAU 2153 xx		7.5	2.0	6.25	7.39	8.83	12.5	15.3	19.8	23.4	27.9				
	RAU 2196 xx		9.0	2.0	8.00	9.47	11.3	16.0	19.6	25.3	29.9	35.8				

Typical applications

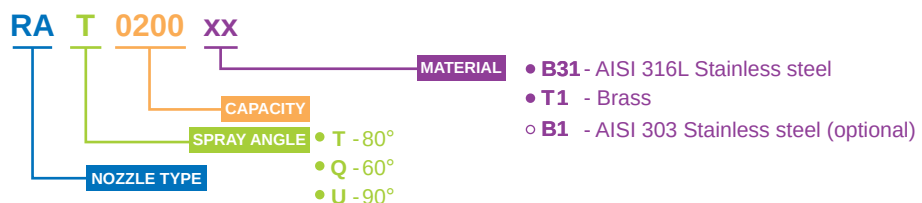
Cooling: gas, products, pipes cooling

Washing: exhaust scrubbers, parts washing

Other applications: dust control, humidification and air refreshing systems

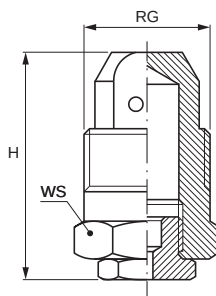
HOW TO MAKE UP THE NOZZLE CODE

EX.: RAT 0200 B31

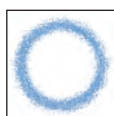


IN LINE SPRAY / VANELESS

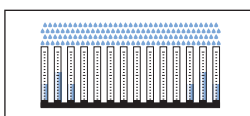
These nozzles, designed with no inside whirling vane and a wide unobstructed passage, produce a hollow cone spray pattern, and are highly resistant to clogging. The liquid flow enters at high speed through the top eccentric orifice into the nozzle swirl chamber where the strong centrifugal force generates finely atomized droplets. These nozzles, the ideal choice for dust control applications, are particularly suitable for coal dust suppression and for this reason they are called "miner's nozzles".



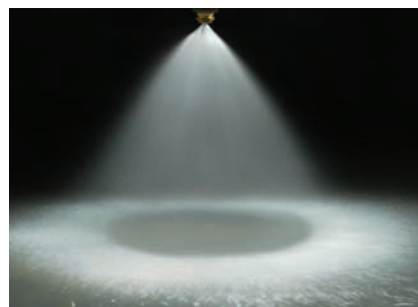
■ Thread specification: BSPT, NPT



Spray section



Concave distribution



	Code	RG inch	D Orifice mm	D1 Inlet mm	Capacity at different pressure values								Dimensions mm	
					0.5	0.7	1.0	2.0	3.0	5.0	7.0	10	H	WS
60°	RBQ 1160 XX	3/8"	2.0	2.0	0.65	0.77	0.92	1.31	1.60	2.07	2.44	2.92	31	17
	RBQ 1230 XX		2.4	2.4	0.94	1.11	1.33	1.88	2.30	2.97	3.51	4.20		
	RBQ 1390 XX		3.2	2.3	1.59	1.88	2.25	3.18	3.90	5.03	5.96	7.12		
	RBQ 1630 XX		3.9	3.8	2.57	3.04	3.64	5.14	6.30	8.13	9.62	11.5		
	RBQ 2110 XX		4.4	*4.0	4.49	5.31	6.35	8.98	11.0	14.2	16.8	20.1		
70°	RBS 1391 XX	1/2"	3.5	3.0	1.59	1.88	2.25	3.18	3.90	5.03	5.96	7.12	37	22
	RBS 1631 XX		4.0	4.0	2.57	3.04	3.64	5.14	6.30	8.13	9.62	11.5		
	RBS 1781 XX		4.5	2.9	3.18	3.77	4.50	6.37	7.80	10.1	11.9	14.2		
	RBS 2117 XX		5.1	*3.4	4.82	5.70	6.81	9.63	11.8	15.2	18.0	21.5		
	RBS 2157 XX		7.0	*3.6	6.45	7.63	9.12	12.9	15.8	20.4	24.1	28.8		
	RBS 2196 XX		7.3	*4.8	7.96	9.42	11.3	15.9	19.5	25.2	29.8	35.6		
		3/4"											43	32
	RBS 1782 XX		4.7	4.5	3.18	3.77	4.50	6.37	7.80	10.1	11.9	14.2		
	RBS 2118 XX		5.9	4.8	4.82	5.70	6.81	9.63	11.8	15.2	18.0	21.5		
	RBS 2197 XX		7.0	6.5	7.96	9.42	11.3	15.9	19.5	25.2	29.8	35.6		
	RBS 2390 XX		9.3	*6.0	15.9	18.8	22.5	31.8	39.0	50.3	59.6	71.2		
80°	RBT 2310 XX	1 1/2"	10.0	*7.0	12.7	15.0	17.9	25.3	31.0	40.0	47.4	56.6	69	50
	RBT 2550 XX		12.9	*8.5	22.5	26.6	31.8	44.9	55.0	71.0	84.0	100		
	RBT 2630 XX		15.0	*8.5	25.7	30.4	36.4	51.4	63.0	81.3	96.2	115		
	RBT 2700 XX		14.6	*9.0	28.6	33.8	40.4	57.2	70.0	90.4	107	128		
	RBT 2940 XX		19.8	*10.0	38.4	45.4	54.3	76.8	94.0	121	144	172		

* Double inlet orifice

Typical applications

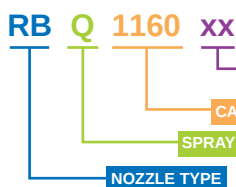
Cooling: gas cooling, product cooling, pipe cooling

Washing: exhaust scrubbers, product cleaning

Other applications: dust control, humidification systems, sterilization

HOW TO MAKE UP THE NOZZLE CODE

EX.: RBQ 1160 B1



MATERIAL

- B1 - AISI 303 Stainless steel
- T1 - Brass
- B31- AISI 316L Stainless steel (optional)

CAPACITY

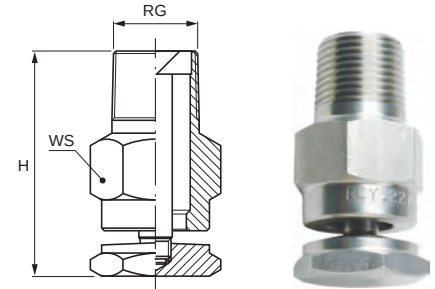
SPRAY ANGLE

- Q - 60°
- S - 70°
- T - 80°

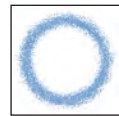
NOZZLE TYPE

IN LINE SPRAY

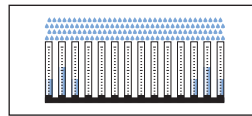
RC type deflected nozzles produce a ring-shaped hollow cone spray pattern, in line with the nozzle inlet supply pipe. The water flow hits the deflection cap fixed onto the nozzle outlet orifice producing small droplets, very wide spray angles and uniform distribution. The deflection cap determines the various deflection angles. This nozzles are highly efficient and clog resistant.



■ Thread specification: BSPT, NPT



Spray section



Concave distribution

	RG inch		Code	Capacity at different pressure values								Dimensions mm	
	1/4"	3/8"		0.5	0.7	1.0	2.0	3.0	5.0	7.0	10	H	WS
150°	•		RCY 1780 xx	3.18	3.77	4.50	6.37	7.80	10.1	11.9	14.2	33	17
	•		RCY 2117 xx	4.82	5.70	6.81	9.63	11.8	15.2	18.0	21.5		
	•		RCY 2157 xx	6.41	7.58	9.06	12.8	15.7	20.3	24.0	28.7		
	•		RCY 2196 xx	7.96	9.42	11.3	15.9	19.5	25.2	29.8	35.6		
		•	RCY 2230 xx	9.39	11.1	13.3	18.8	23.0	29.7	35.1	42.0	44	22
		•	RCY 2270 xx	11.0	13.0	15.6	22.0	27.0	34.9	41.2	49.3		
		•	RCY 2310 xx	12.7	15.0	17.9	25.3	31.0	40.0	47.4	56.6		
180°		•	RCY 2350 xx	14.3	16.9	20.2	28.6	35.0	45.2	53.5	63.9		
		•	RCY 2390 xx	15.9	18.8	22.5	31.8	39.0	50.3	59.6	71.2		
	•		RCZ 1780 xx	3.18	3.77	4.50	6.37	7.80	10.1	11.9	14.2	33	17
	•		RCZ 2117 xx	4.82	5.70	6.81	9.63	11.8	15.2	18.0	21.5		
	•		RCZ 2157 xx	6.41	7.58	9.06	12.8	15.7	20.3	24.0	28.7		
	•		RCZ 2196 xx	7.96	9.42	11.3	15.9	19.5	25.2	29.8	35.6		
		•	RCZ 2230 xx	9.39	11.1	13.3	18.8	23.0	29.7	35.1	42.0	44	22
		•	RCZ 2270 xx	11.0	13.0	15.6	22.0	27.0	34.9	41.2	49.3		
		•	RCZ 2310 xx	12.7	15.0	17.9	25.3	31.0	40.0	47.4	56.6		
		•	RCZ 2350 xx	14.3	16.9	20.2	28.6	35.0	45.2	53.5	63.9		
		•	RCZ 2390 xx	15.9	18.8	22.5	31.8	39.0	50.3	59.6	71.2		

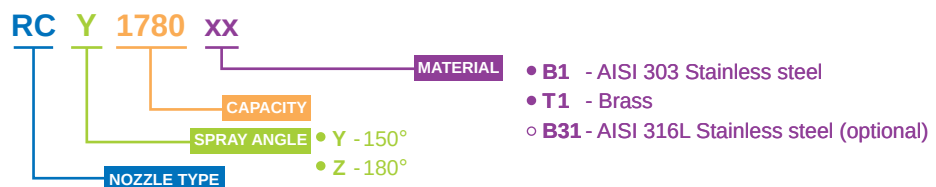
Typical applications

Washing: exhaust scrubbers, small tanks, pipes interiors

Other applications: pipes coating, dust control, fire protection

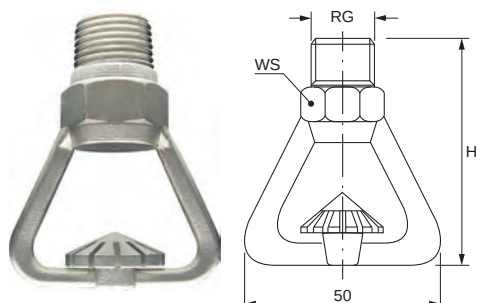
HOW TO MAKE UP THE NOZZLE CODE

EX.: RCY 1780 B1



DEFLECTED SPRAY

RO hollow cone medium velocity spray nozzles are specially designed for fire-fighting engineering. They produce an excellent water rain and their deflected jet assures a wide spray coverage. The spray pattern is formed by the liquid flowing from the nozzle orifice over the surface of the below deflector with a special slotted design. All RO nozzles are certified by the EU fire regulations.

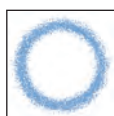


■ **Thread specification:** BSPT, NPT

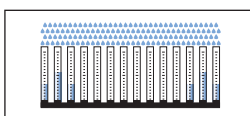
■ **Typical applications**

Fire-fighting: fire extinguishing, cooling

Other applications: tank cleaning, exhaust scrubbers



Spray section



Concave distribution



COMPLETE NOZZLE CODE

Code	Connection	Filter material	
		Copper	SS
FB	BSP/BSPT	•	
FN	NPT	•	
GB	BSP/BSPT		•
GN	NPT		•
SN	NPT	NO FILTER	

	Code	RG inch	D mm	Capacity at different pressure values (l/min) (bar)						WS mm	H mm
				1.0	3.0	5.0	6.0	7.0	10.0		
130°	ROY 1810 xx yy	1/2"	3.0	4.8	8.1	10.3	11.3	12.2	14.5	25	65
	ROY 2115 xx yy		3.5	6.7	11.5	14.9	16.4	17.6	20.5		
	ROY 2156 xx yy		4.0	9.0	15.6	20.0	22.0	24.0	29.0		
	ROY 2198 xx yy		4.5	11.5	19.8	25.0	28.0	30.0	36.0		
	ROY 2270 xx yy		5.0	15.8	27.0	35.0	39.0	42.0	50.0		
	ROY 2300 xx yy		5.5	18.0	30.0	40.0	44.0	48.0	57.0		
	ROY 2390 xx yy		6.0	23.0	39.0	50.0	55.0	60.0	71.0		
	ROY 2470 xx yy		6.5	27.0	47.0	61.0	66.0	72.0	86.0		
	ROY 2550 xx yy		7.0	31.0	55.0	72.0	77.0	84.0	91.0		
	ROY 2700 xx yy		8.0	41.0	70.0	92.0	103	112	130		
	ROY 2910 xx yy		9.0	52.0	91.0	117	129	140	165		
130°	ROY 3110 xx yy		10.0	64.0	110	139	152	165	200		
	ROY 3164 xx yy		12.0	95.0	164	214	236	255	290		
	ROY 1811 xx yy	3/4"	3.0	4.8	8.1	10.3	11.3	12.2	14.5	27	65
	ROY 2116 xx yy		3.5	6.7	11.5	14.9	16.4	17.6	20.5		
	ROY 2157 xx yy		4.0	9.0	15.6	20.0	22.0	24.0	29.0		
	ROY 2199 xx yy		4.5	11.5	19.8	25.0	28.0	30.0	36.0		
	ROY 2271 xx yy		5.0	15.8	27.0	35.0	39.0	42.0	50.0		
	ROY 2301 xx yy		5.5	18.0	30.0	40.0	44.0	48.0	57.0		
	ROY 2391 xx yy		6.0	23.0	39.0	50.0	55.0	60.0	71.0		
	ROY 2471 xx yy		6.5	27.0	47.0	61.0	66.0	72.0	86.0		
	ROY 2551 xx yy		7.0	31.0	55.0	72.0	77.0	84.0	91.0		
	ROY 2701 xx yy		8.0	41.0	70.0	92.0	103	112	130		
	ROY 2911 xx yy		9.0	52.0	91.0	117	129	140	165		
	ROY 3111 xx yy		10.0	64.0	110	139	152	165	200		
	ROY 3165 xx yy		12.0	95.0	164	214	236	255	290		

HOW TO MAKE UP THE NOZZLE CODE

EX.: ROY 1810 B31FB

RO Y 1810 xx yy

COMPLETE NOZZLE CODE

MATERIAL

- B31- AISI 316L Stainless steel
- T1 - Brass
- T8 - Brass, nickel plated
- T81- Brass, electroless nickel plated

CAPACITY

SPRAY ANGLE • Y - 130°

NOZZLE TYPE

HYDRAULIC ATOMIZERS

RX/RZ series hydraulic nozzles deliver a very finely atomized hollow cone spray, even at low pressure values. They contain a precisely machined insert with narrow passages that can be easily disassembled for cleaning in case of obstruction. Clogging can be avoided placing a fine mesh strainer on the main manifold or using an individual filter.

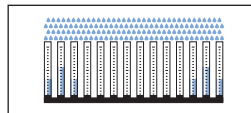
■ **Thread specification:** BSPT, NPT

■ **Typical applications**

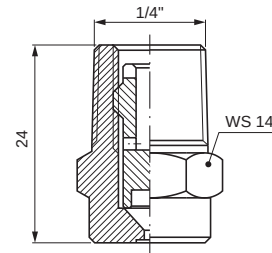
dust control, humidification, deodorant spray, disinfectant liquid spray, exhaust scrubbers



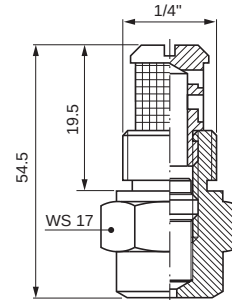
Spray section



Concave distribution



RX



RZ (+VEF)

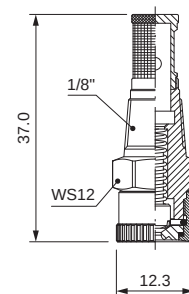
	Code	D mm	Capacity (l/hour) at different pressure values (bar)									
			1.5	2.0	3.0	4.0	5.0	6.0	10	15	20	50
80°	RXT 0060 xx	0.50	2.55	2.94	3.60	4.16	4.65	5.09	6.57	8.05	9.30	14.7
	RXT 0100 xx	0.50	4.24	4.90	6.00	6.93	7.75	8.49	11.0	13.4	15.5	24.5
	RXT 0130 xx	0.70	5.52	6.37	7.80	9.01	10.1	11.0	14.2	17.4	20.1	31.8
	RXT 0190 xx	0.70	8.06	9.31	11.4	13.2	14.7	16.1	20.8	25.5	29.4	46.5
	RXT 0250 xx	1.00	10.6	12.2	15.0	17.3	19.4	21.2	27.4	33.5	38.7	61.2
	RXT 0380 xx	1.00	16.1	18.6	22.8	26.3	29.4	32.2	41.6	51.0	58.9	93.1
	RXT 0510 xx	1.50	21.6	25.0	30.6	35.3	39.5	43.3	55.9	68.4	79.0	125
	RXT 0650 xx	1.60	27.6	31.8	39.0	45.0	50.3	55.2	71.2	87.2	101	159
	RXT 0780 xx	1.90	33.1	38.2	46.8	54.0	60.4	66.2	85.4	105	121	191
	RXT 0910 xx	1.90	38.6	44.6	54.6	63.0	70.5	77.2	99.7	122	141	223
	RXT 1116 xx	1.90	49.2	56.8	69.6	80.4	89.9	98.4	127	156	180	284
	RXT 1143 xx	1.90	60.7	70.1	85.8	99.1	111	121	157	192	222	350
	RXT 1166 xx	2.20	70.4	81.3	99.6	115	129	141	182	223	257	407

	Code	D mm	Capacity (l/min) at different pressure values (bar)									
			1.5	2.0	3.0	4.0	5.0	6.0	10	15	20	50
60°	RZQ 0080 xx	0.45	0.06	0.07	0.08	0.09	0.10	0.11	0.15	0.18	0.21	0.33
	RZQ 0120 xx	0.55	0.08	0.10	0.12	0.14	0.15	0.17	0.22	0.27	0.31	0.49
	RZQ 0250 xx	0.80	0.18	0.20	0.25	0.29	0.32	0.35	0.46	0.56	0.65	1.02
	RZQ 0390 xx	1.00	0.28	0.32	0.39	0.45	0.50	0.55	0.71	0.87	1.01	1.59
	RZQ 0560 xx	1.20	0.40	0.46	0.56	0.65	0.72	0.79	1.02	1.25	1.45	2.29
	RZQ 0780 xx	1.40	0.55	0.64	0.78	0.90	1.01	1.10	1.42	1.74	2.01	3.18
	RZQ 1100 xx	1.60	0.71	0.82	1.00	1.15	1.29	1.41	1.83	2.24	2.58	4.08
	RZQ 1140 xx	1.90	0.99	1.14	1.40	1.62	1.81	1.98	2.56	3.13	3.61	5.72
	RZQ 1170 xx	2.10	1.20	1.39	1.70	1.96	2.19	2.40	3.10	3.80	4.39	6.94
	RZQ 1200 xx	2.30	1.41	1.63	2.00	2.31	2.58	2.83	3.65	4.47	5.16	8.16

SISTER PRODUCTS

RXY 0620 C7 nozzles produce a very finely atomized spray with a wide angle. Their special tip in hard ceramic and internal swirl vane ensure a long service life and high resistance to wear. The nozzle body and filter are in Stainless Steel 316L. These nozzles are particularly suitable for chemical working environments and use a 120 Mesh filter to avoid clogging. Their special design ensure easy cleaning and simple servicing.

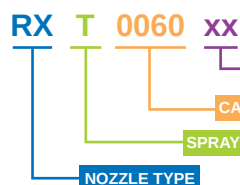
	Code	D mm	Capacity (l/min) at different pressure values (bar)					
			1.5	2.0	2.5	3.0	4.0	5.0
145°	RXY 0620 C7	1.96	0.44	0.51	0.57	0.62	0.72	0.80



RXY 0620 C7

HOW TO MAKE UP THE NOZZLE CODE

EX.: RXT 0060 B1

**MATERIAL**

- B1 - AISI 303 Stainless steel (RX)
- B31- AISI 316L Stainless steel (RZ)
- C7 - AISI 316 Stainless steel+Ceramic (RX)
- T1 - Brass

- T - 80°
- Q - 60°

Concentrated high impact force

Solid stream nozzles provide a sharp and concentrated high pressure spray jet. These nozzles offer a stronger impact force than other types at the same operating pressures and flow rates.

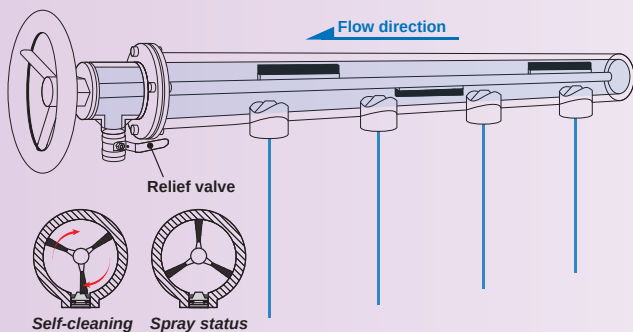
Highly extended service life

Solid stream nozzles are designed for applications requiring medium or high liquid pressures. High pressures may shorten nozzles service life. After a long research and many application tests, our engineers found out that ruby with a second hardness level is the ideal material to overcome this problem and extend nozzles durability as it resists abrasion or scratching. The nozzle tips are precisely machined and polished to ensure a perfect solid stream and enhance performance.



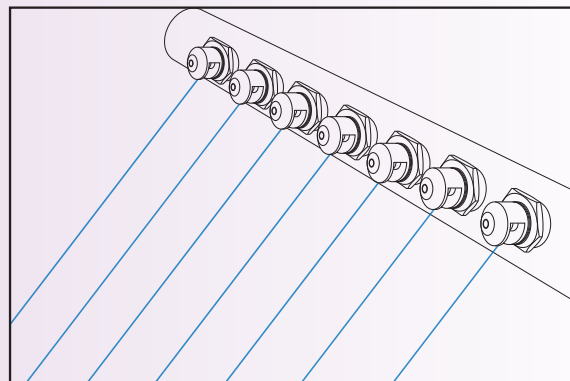
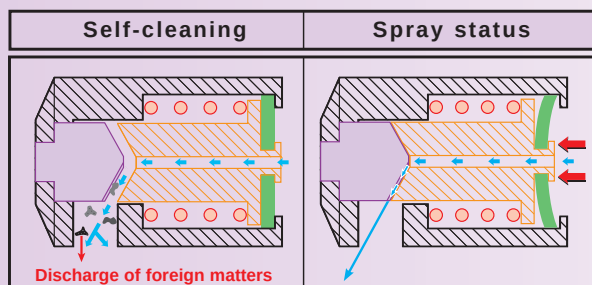
Self-cleaning shower pipe and nozzles

Paper making requires a great deal of water. Waste water is often reused to clean filters and felts to save costs and reduce water consumption. Reclaimed water contains solids and impurities that cause nozzles clogging and shutdowns for maintenance. Self-cleaning spray pipes and nozzles are the best solution to this. Their revolutionary design helps improving a great deal both production efficiency and industrial competitiveness.



Self-cleaning spray pipes contain a rotating steel brush which can be automatically or manually operated and an escape valve at their outlet. The rotating brush removes all the dirt from the pipe walls using water.

The nozzle body contains a mobile piston and its opening and closing are controlled by the operating water pressure. For example, when nozzles wash mesh fabrics with an operating pressure of 3 bar, this pressure is higher than a spring force of 1 bar. Piston and nozzle body come close producing a flat fan. If the inlet pressure is reduced to 0.5 bar, lower than a spring force of 1 bar, piston and nozzle body separate opening to the maximum distance. Water pressure remains at 0.5 bar and removes any build up when back to normal condition. Self-cleaning nozzles are easy to install, align and clean and ensuring relevant time and costs savings. The spring force is set depending on customer's plant working pressure.



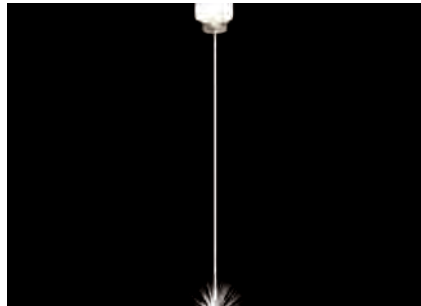
FAA/FBA HIGH IMPACT SOLID STREAM NOZZLES

FAA/FBA types nozzles are specially designed for high pressure cleaning and washing operations. They are made in Stainless Steel 416, accurately machined and perfectly polished. They are particularly hard, resistant to wear, have a long service life and offer high precision performances.

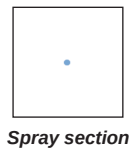
■ **Typical applications**

Washing: filter cloth, felts, parts.

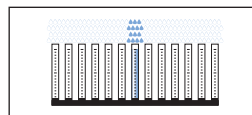
Other applications: paint scraping, rust removal, shell removal.



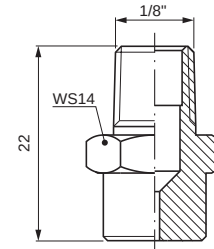
■ **Thread specification:** BSPT, NPT



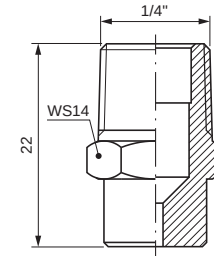
Spray section



Distribution



FAA



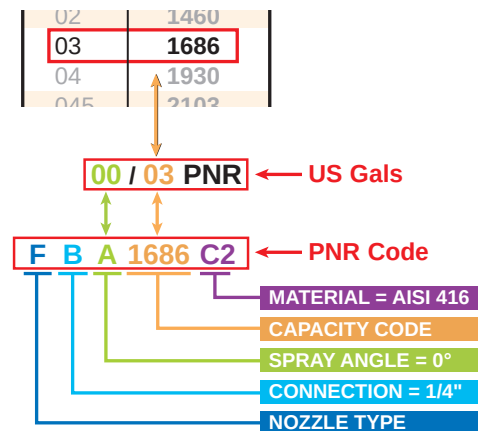
FBA

Nozzle type			US Gals	PNR Code	Capacity at different pressure values (l/min) (bar)						
FAA 1/8"	FBA 1/4"	FXA			20	30	50	70	100	150	200
•	•	•	015	1340	1.52	1.86	2.40	2.84	3.40	4.16	4.81
•	•	•	02	1460	2.00	2.50	3.20	3.80	4.60	5.60	6.40
•	•	•	025	1560	2.50	3.07	3.96	4.69	5.60	6.86	7.92
•	•	•	03	1686	3.10	3.70	4.80	5.70	6.80	8.40	9.70
•	•	•	035	1812	3.63	4.45	5.74	6.79	8.12	9.94	11.5
•	•	•	04	1930	4.16	5.09	6.58	7.78	9.30	11.4	13.2
•	•	•	045	2103	4.60	5.60	7.20	8.60	10.3	12.6	14.5
•	•	•	05	2116	5.10	6.20	8.10	9.50	11.4	14.0	16.1
•	•	•	055	2126	5.60	6.90	8.91	10.5	12.5	15.4	17.7
•	•	•	06	2138	6.10	7.50	9.70	11.4	13.8	16.7	19.3
•	•	•	065	2149	6.60	8.10	10.5	12.4	14.9	18.1	21.0
•	•	•	07	2160	7.16	8.76	11.3	13.4	16.0	19.6	22.6
•	•	•	075	2170	7.60	9.40	12.0	14.2	17.0	21.0	24.0
•	•	•	08	2181	8.20	10.0	12.9	15.3	18.1	22.0	26.0
•	•	•	085	2192	8.70	10.6	13.7	16.2	19.2	24.5	27.0
•	•	•	09	2204	9.20	11.2	14.5	17.2	20.4	25.0	29.0
•	•	•	095	2226	9.70	11.9	15.3	18.1	22.6	27.0	31.0
•	•	•	10	2230	10.2	12.5	16.1	19.1	23.0	28.0	32.0
•	•	•	11	2248	11.2	13.7	17.7	21.0	24.8	31.0	35.0
•	•	•	12	2272	12.2	15.0	19.3	23.0	27.2	33.0	39.0
•	•	•	12.5	2280	12.7	15.6	20.0	24.0	28.0	35.0	40.0
•	•	•	13	2296	13.3	16.2	21.0	25.0	29.6	36.0	42.0
•	•	•	14	2320	14.3	17.5	23.0	27.0	32.0	39.0	45.0
•	•	•	15	2341	15.3	18.7	24.0	29.0	34.1	42.0	48.0
•	•	•	16	2360	16.3	20.0	26.0	31.0	36.0	45.0	52.0
•	•	•	18	2410	18.3	22.0	29.0	34.0	41.0	50.0	58.0
•	•	•	20	2456	20.0	25.0	32.0	38.0	45.6	56.0	64.0
•	•	•	25	2567	25.0	31.0	40.0	48.0	56.7	70.0	81.0
•	•	•	30	2682	31.0	37.0	48.0	57.0	68.2	84.0	97.0
•	•	•	35	2800	36.0	44.0	56.0	67.0	80.0	98.0	113
•	•	•	40	2970	41.0	50.0	64.0	76.0	97.0	112	129
•	•	•	50	3113	51.0	62.0	81.0	95.0	113	140	161
•	•	•	60	3135	61.0	75.0	97.0	114	135	167	193

HOW TO MAKE UP THE NOZZLE CODE
PRODUCT IDENTIFICATION CODE

The above table shows the "American Capacity Code", that is, the capacity in Gallons per minute at an operating pressure of 40 psi, and the "PNR Capacity Code" (in Litres/min) at a capacity of 100 bar. For the convenience of worldwide use, all nozzles are expressed with the US coding system.

For Example: nozzle **FBA 1686 C2** (PNR code) will be codified as **"00/03"** (US Gallons) with a spray angle 0° and capacity 0.3 Gals/min at a pressure of 40 psi.



FLOW STABILIZER

Flow stabilizers are used to improve the stability of the liquid flow as they reduce losses caused by internal turbulence and allow to use a higher percentage of the liquid vein energy to generate a high impact solid flat fan. Flow stabilizers can be installed on all nozzles.



GDA SERIES NEEDLE JET NOZZLES

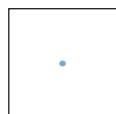
GDA models are classic high impact needle jet nozzles, easy to clean and clog-resistant. Their tips spray a solid stream of high pressure water inside pipes usually containing a steel brush that can be manually or automatically rotated. The rotating brush moving inside the pipe takes all the dirt off the inner walls and then flushes out the debris through an escape valve. For their revolutionary design, GDA nozzles are ideal for high pressure cleaning in paper mills and in all industrial processes requiring a high impact needle spray jet. Their resistance to clogging ensures greater productivity and low servicing costs.

■ **Thread specification:** BSPT, 9/16-24NEF

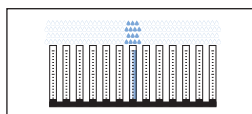
■ **Typical applications**

Washing: filter cloth washing, woolen blanket washing, parts washing

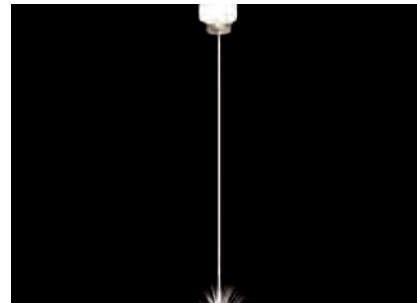
Other applications: scrape paint, rust removal



Spray section



Distribution



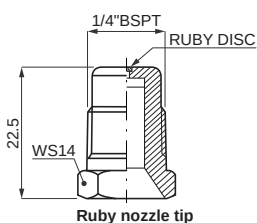
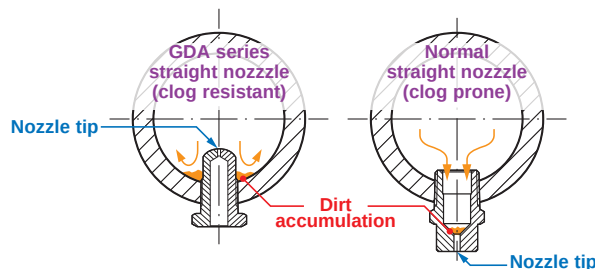
GDA needle jet nozzles are a one-piece construction, suitable to work with operating pressures lower than 20 bar and have a hard ruby spray tip, ideal to work with pressures lower than 200 bar. They are precisely machined and have a hydrodynamic design to produce a solid stream needle jet. Their stainless steel body and ruby tip ensure a long service life and a high resistance to wear.

Nozzle type		Code	D mm	Capacity at different pressure values								
Stainless steel	Ruby insert			3.0	5.0	10	20	30	50	70	100	150
•	•	GDA 0120 xx xy	0.35	0.12	0.15	0.22	0.31	0.54	0.69	0.82	0.98	1.20
•	•	GDA 0170 xx xy	0.40	0.17	0.22	0.31	0.44	0.92	1.18	1.40	1.67	2.05
•	•	GDA 0290 xx xy	0.50	0.29	0.37	0.53	0.75	1.01	1.31	1.55	1.85	2.26
•	•	GDA 0320 xx xy	0.60	0.32	0.41	0.58	0.83	1.01	1.31	1.55	1.85	2.26
•	•	GDA 0420 xx xy	0.70	0.42	0.54	0.77	1.08	1.33	1.71	2.03	2.42	2.97
•	•	GDA 0500 xx xy	0.80	0.50	0.65	0.91	1.29	1.58	2.04	2.42	2.89	3.54
•	•	GDA 0620 xx xy	0.85	0.62	0.80	1.13	1.60	1.96	2.53	2.99	3.58	4.38
•	•	GDA 0780 xx xy	0.90	0.78	1.01	1.42	2.01	2.47	3.18	3.77	4.50	5.52
•	•	GDA 0890 xx xy	1.00	0.89	1.15	1.62	2.30	2.81	3.63	4.30	5.14	6.29
•	•	GDA 1120 xx xy	1.10	1.20	1.55	2.19	3.10	3.79	4.90	5.80	6.93	8.49
•	•	GDA 1153 xx xy	1.20	1.53	1.98	2.79	3.95	4.84	6.25	7.39	8.83	10.8
•	•	GDA 1160 xx xy	1.40	1.60	2.07	2.92	4.13					
•	•	GDA 1270 xx xy	1.80	2.70	3.49	4.93	6.97					
•	•	GDA 1450 xx xy	2.40	4.50	5.81	8.22	11.6					
•	•	GDA 1730 xx xy	3.20	7.30	9.42	13.3	18.8					

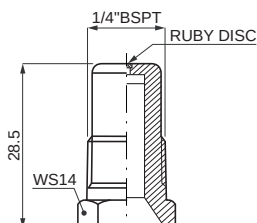
COMPLETE NOZZLE CODE

x = Body length	y = Thread
A for 14.0 mm	A for 1/4" BSPT
B for 28.5 mm	B for 9/16 - 24 NEF
C for 22.5 mm	

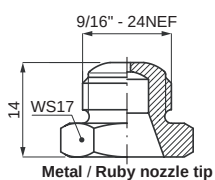
GD nozzles are installed with their spray tips inside the pipe that spray in high pressure fluids producing turbulence to remove all dirt off the inner pipe walls. Used in combination with self-cleaning pipes, these nozzles assure complete cleaning, productivity improvement, minimal maintenance.



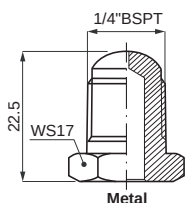
Ruby nozzle tip



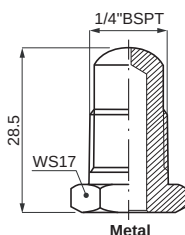
Ruby nozzle tip



Metal / Ruby nozzle tip



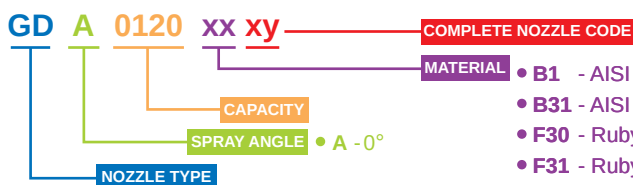
Metal



Metal

HOW TO MAKE UP THE NOZZLE CODE

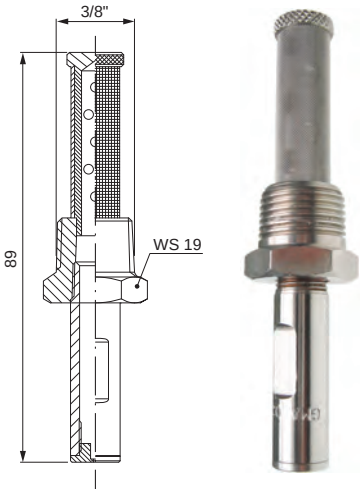
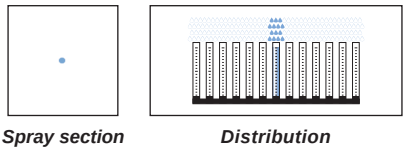
EX.: GDA 0120 B1AA



- B1 - AISI 303 Stainless steel body
- B31 - AISI 316L Stainless steel body
- F30 - Ruby insert, 303 body
- F31 - Ruby insert, 316L body

GMA SERIES PAPER WEB TRIMMERS

GMA nozzles produce a glass-rod like needle jet, ideal in paper mills to cut and trim the side of your paper web with a sharp edge, precise, clean and with no dust. They are precisely machined. Their smooth high quality ruby tip and special design produce a solid straight jet for precision trimming. A 150 mesh stainless steel filter avoids clogging. Their stainless steel body and ruby spray tip assures a long service life.

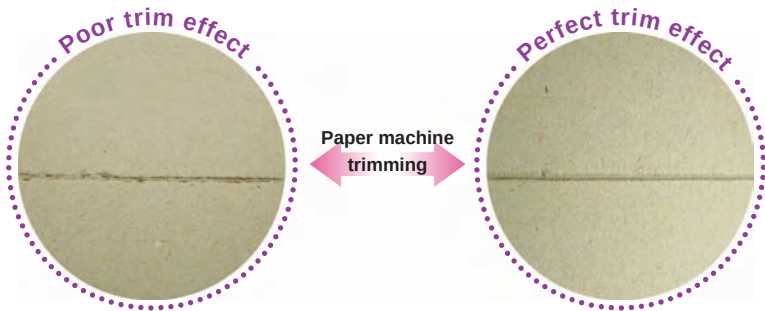


	Code	D mm	Capacity at different pressure values					(l/min) (bar)
			3.0	5.0	10	15	20	
0°	GMA 0080 xx	0.30	0.08	0.10	0.15	0.18	0.21	
	GMA 0170 xx	0.40	0.17	0.22	0.31	0.38	0.44	
	GMA 0290 xx	0.50	0.29	0.37	0.53	0.65	0.75	
	GMA 0320 xx	0.60	0.32	0.41	0.58	0.72	0.83	
	GMA 0500 xx	0.70	0.50	0.65	0.91	1.12	1.29	
	GMA 0620 xx	0.80	0.62	0.80	1.13	1.39	1.60	
	GMA 0860 xx	0.90	0.86	1.11	1.57	1.92	2.22	
	GMA 1100 xx	1.00	1.00	1.29	1.83	2.24	2.58	
	GMA 1160 xx	1.10	1.60	2.07	2.92	3.58	4.13	
	GMA 1220 xx	1.20	2.20	2.84	4.02	4.92	5.68	

- Thread specification: 3/8" BSPT, 3/8" NPT
- Filtering fineness: 150 Mesh
- Typical applications
 - Felt and wire cleaning
 - Parts washing
- Other application
 - Paper trimming

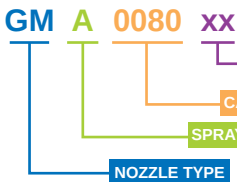
PERFECT CLEANING

GMA top quality ruby tips produce a solid needle spray jet to trim paper web with a precise and sharp edge cut.



HOW TO MAKE UP THE
NOZZLE CODE

EX.: GMA 0080 F30



- MATERIAL**
- F30 - Ruby insert, 303 body
 - F31 - Ruby insert, 316L body
 - F32 - Diamond insert, 303 body
 - F33 - Diamond insert, 316L body



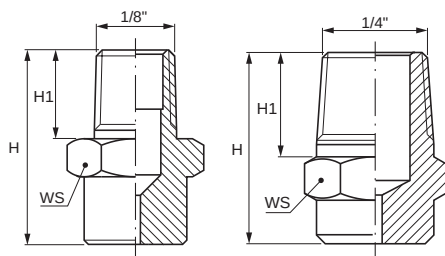
JAA



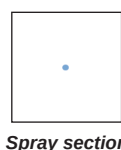
JBA

JAA/JBA HIGH IMPACT STRAIGHT JET NOZZLES

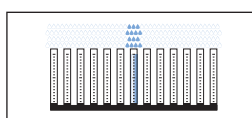
J type high impact straight jet nozzles are a one-piece construction in stainless steel, suitable to work with pressures lower than 20 bar, and have a ruby spray tip suitable for operating pressures lower than 200 bar. The two types, JAA and JBA, have a special hydrodynamic design and are machined with high precision to produce a solid needle jet. Their stainless steel body is highly resistant to chemicals and wear and assure a long service life.



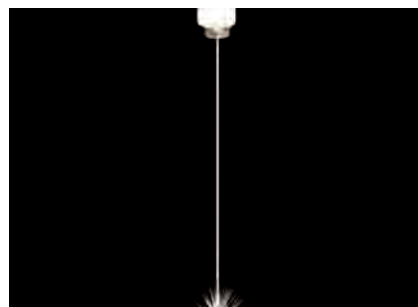
■ Thread specification: BSPT



Spray section



Distribution



Typical applications

Washing

Felts, filter cloths and parts washing

Other applications

Paint scraping

Rust and shell removal

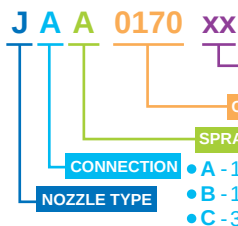
DIMENSIONS AND WEIGHTS

Code	Size	H	H1	WS	W
unit	inch	mm	mm	mm	gram
JA	1/8"	19.5	11	12	9
JB	1/4"	22.0	12	14	18
JC	3/8"	25.0	14	17	34

D	Nozzle type (Stainless steel)			Code	Capacity at different pressure values (l/min) (bar)									
	JAA (1/8")	JBA (1/4")	JCA (3/8")		3.0	5.0	10	20						
0.0	•	•		0150	0.15	0.19	0.27	0.39						
0.40	•	•		0200	0.20	0.26	0.37	0.52						
0.6	•	•		0260	0.26	0.34	0.47	0.67						
0.60	•	•		0390	0.39	0.50	0.71	1.00						
0.75	•	•		0590	0.59	0.76	1.08	1.52						
0.85	•	•		0780	0.78	1.01	1.42	2.01						
1.0	•	•												
1.00	•	•		1120	1.20	1.55	2.19	3.10						
1.20	•	•		1160	1.60	2.07	2.92	0						
1.30	•	•		1190	1.90	2.45	3.47	4.91						
1.50	•	•		1233	2.33	3.01	4.25	6.02						
1.70	•	•		1310	3.10	4.00	5.66	8.00						
1.90	•	•		1385	3.85	4.97	7.03	9.94						
2.10	•	•		1490	4.90	6.33	8.95	12.7						
2.30	•	•		1581	5.81	7.50	10.6	15.0						
2.70	•	•	•	1780	7.80	10.1	14.2	20.1						
3.00	•	•	•	1980	9.80	12.7	17.9	25.3						
3.40		•	•	2124	12.4	16.0	22.6	32.0						
4.00		•	•	2153	15.3	19.8	27.9	39.5						
4.30		•	•	2195	19.5	25.2	35.6	50.3						
4.80		•	•	2245	24.5	31.6	44.7	63.3						
5.10		•	•	2274	27.4	35.4	50.0	70.7						
5.40		•	•	2310	31.0	40.0	56.6	80.0						
6.00		•	•	2390	39.0	50.3	71.2	101						
6.60		•	•	2470	47.0	60.7	85.8	121						

HOW TO MAKE UP THE NOZZLE CODE

EX.: JAA 0170 B1



MATERIAL

- B1 - AISI 303 Stainless steel body
- B31 - AISI 316L Stainless steel body
- F30 - Ruby insert, 303 body
- F31 - Ruby insert, 316L body
- F32 - Diamond insert, 303 body
- F33 - Diamond insert, 316L body

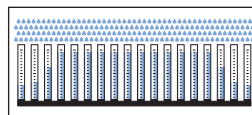
AIR & STEAM FLAT FAN TIPS

GZ air & steam flat fan tips are ideal for gas application.
They are widely used in drying processes.

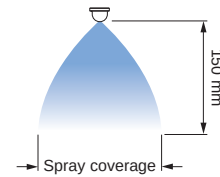
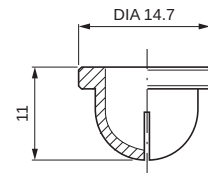
- **Typical applications:** water removal from surfaces, flocks and water blow off
- **Connection:** flanged nozzle tip



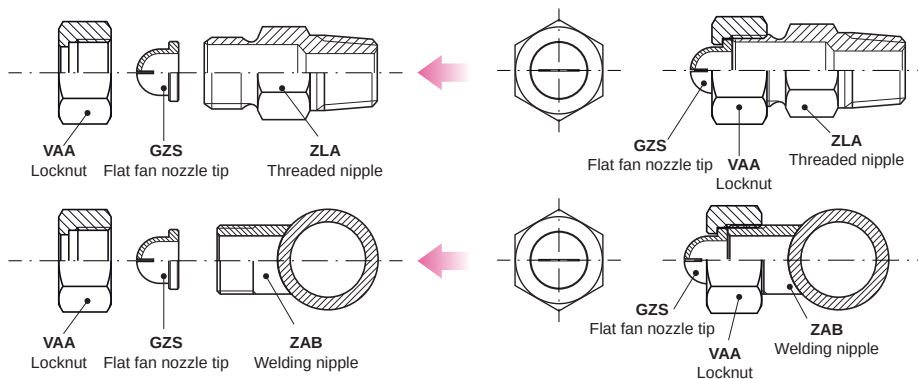
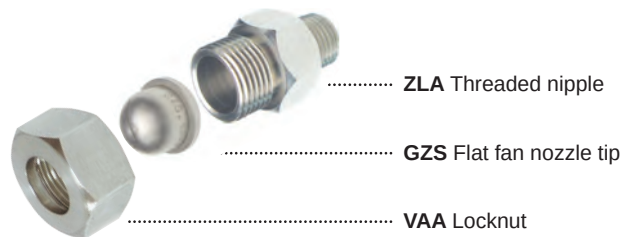
Spray section



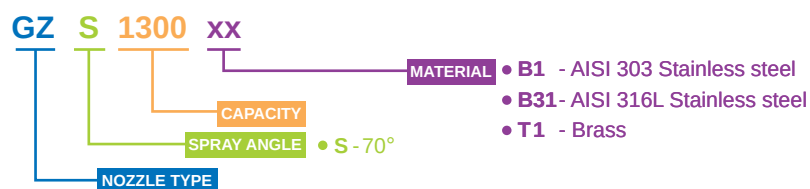
Distribution



	Code	D mm	Air capacity (Nm ³ /hour) at different pressure values (bar)				Steam capacity (kg/hour) at different pressure values (bar)				Spray coverage	
			0.5 bar	2.0 bar	5.0 bar	10 bar	0.5 bar	2.0 bar	5.0 bar	10 bar	2.0 bar	5.0 bar
70°	GZS 1300 xx	1.3	1.2	3.0	6.0	11.0	0.9	1.9	3.7	6.7	70	85
	GZS 1350 xx	1.5	2.0	3.5	7.1	12.6	1.0	2.1	4.1	7.7	72	87
	GZS 1500 xx	1.8	2.3	5.3	10.7	19.5	1.7	3.3	6.6	11.8	110	125
	GZS 1800 xx	2.1	3.2	8.0	16.0	29.0	2.5	5.0	9.9	18.0	115	140
	GZS 2150 xx	2.8	5.4	13.0	26.0	48.0	4.2	8.2	16.0	29.0	130	170
	GZS 2200 xx	3.6	8.9	21.7	43.3	79.4	6.8	13.6	27.0	48.0	140	180
	GZS 2315 xx	4.3	13.0	31.8	65.6	120.2	10.3	20.6	40.4	73.0	170	215

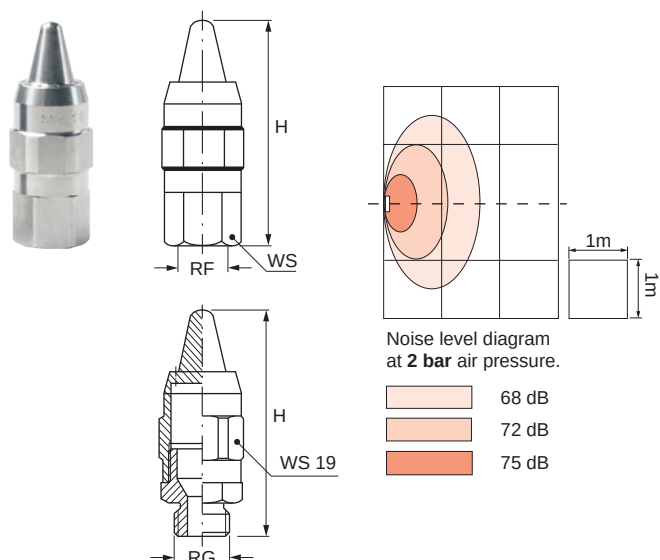
ASSEMBLY FITTINGS**HOW TO MAKE UP THE NOZZLE CODE**

EX.: GZS 1300 B1



UEA D020 (FULL CONE NOZZLES)

www.pnr.eu



AIR BLOW-OFF NOZZLES · ROUND JET

UEA D020 compressed air blowing nozzles produce a powerful air jet concentrated on a well defined impact point. They are specially designed for deep and blind holes drying, produce lower noise and reduce pressure loss.

- Thread size 1/4"
- Thread specification BSP, NPT
- Material V7 Aluminium, electroless nickel plated
B31 AISI 316L Stainless steel
- Typical applications Water removal from surfaces
Flocks and water blow off

Code	RF inch	Air capacity at different pressure values (Nm ³ /hour) (bar)					H mm	WS mm
		2.0	3.0	4.0	5.0	6.0		
UEA D020 xx yy	1/4"	15	20	25	31	35	55	17

HOW TO MAKE UP THE NOZZLE CODE EX.: UEA D020 B31SG

UEA D020 B31 yy

NOZZLE TYPE: UEA D020

MATERIAL: B31

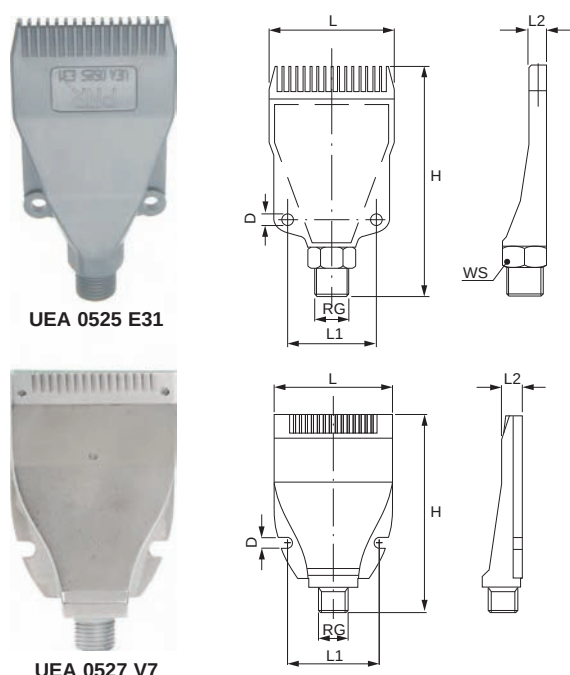
THREAD CODES: SG - BSP (Female), MG - BSP (Male), SN - NPT (Female), MN - NPT (Male)

• B31 - AISI 316L Stainless steel
LT: 400°C LP: 15 bar

• V7 - Aluminium, electroless nickel plated
LT: 95°C LP: 15 bar

These air blowers meet the requirements of American OSHA regulations

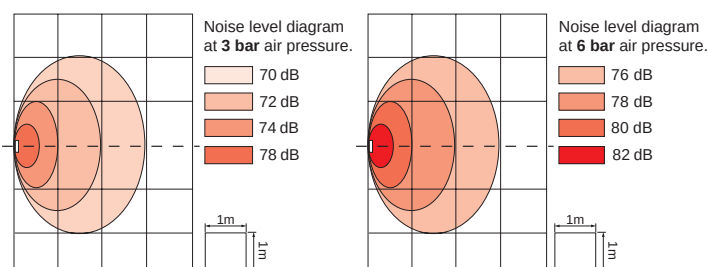
UEA 0525 / 0527 (AIR BLOWERS - FLAT FAN)



AIR BLOWERS - FLAT FAN

UEA series compressed air blowers are the best choice for operating environments requiring strong impact laminar sprays. The compressed air flow is blown through 16 orifices producing a strong impact jet, limited noise level and uniform spray. They are suitable to be installed on moving conveyors.

- Thread size 1/4"
- Thread specification BSPT, NPT
- Material E31 Polyacetalic resin (POM)
V7 Aluminium, electroless nickel plated
- Typical applications Water removal from surfaces
Flocks and water blow off



Code	RG inch	Air capacity at different pressure values (Nm ³ /hour) (bar)					H mm	L mm	L1 mm	L2 mm	D mm	WS mm
		1.0	2.0	3.0	4.0	5.0						
UEA 0525 E31 yy	1/4"	10	17	22	28	33	90.0	48	35	6.5	4.5	16
UEA 0527 V7 yy	1/4"	10	17	22	28	33	86.5	51	40	9.0	5.1	17

HOW TO MAKE UP THE NOZZLE CODE EX.: UEA 0525 E31SG

UEA 0525 E31 yy

NOZZLE TYPE: UEA 0525

MATERIAL: E31

THREAD CODES: SG - BSP, SN - NPT

• E31 - Polyacetalic resin (POM)
LT: 80°C LP: 7 bar

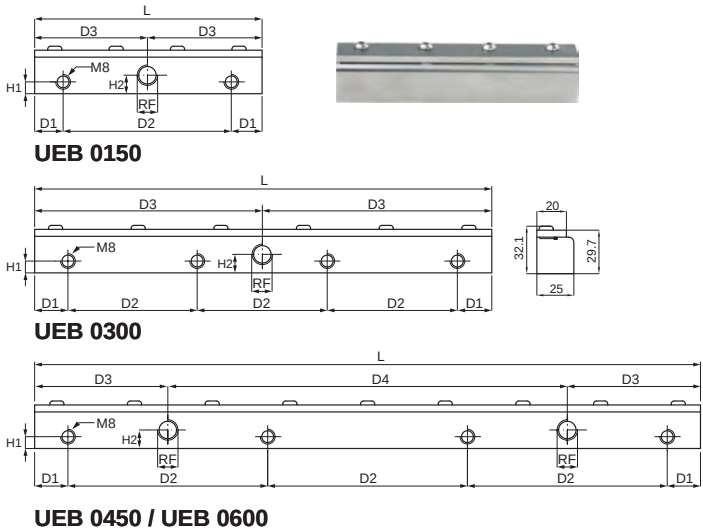
• V7 - Aluminium, electroless nickel plated
LT: 150°C LP: 15 bar

These air blowers meet the requirements of American OSHA regulations

HIGH EFFICIENCY AIR KNIVES

UEB air knives produce a high impact laminar jet of compressed air. They are fully adjustable and precisely engineered with a special design based on the Coanda effect, the natural tendency of a fluid jet to be attracted to a nearby surface. The air blade coming out through their side slot follows the radiused profile and leaves the blower body with a 90° angle from the original direction. The negative pressure brings in a 20 times bigger wind volume allowing a high energy saving. They offer an excellent drying performance and eliminate static electricity.

- Length: 150 mm, 300 mm, 450 mm, 600 mm
- Typical applications: Water removal from surfaces
Flocks and water blow off
Water removal before stick and print
- Max working temperature **LT** 95°C
- Max working pressure **LP** 7 bar
- Thread specification **BSP**, **NPT**
- Thread size **1/4"**
- Materials Body **V7** Aluminium,electroless nickel plated
B3 AISI 316 Stainless steel
Upper plate **A9** Nickel plated steel
B3 AISI 316 Stainless steel



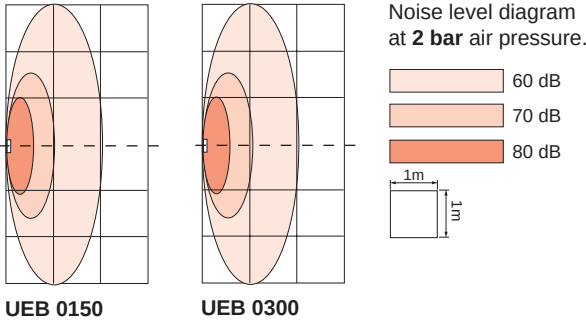
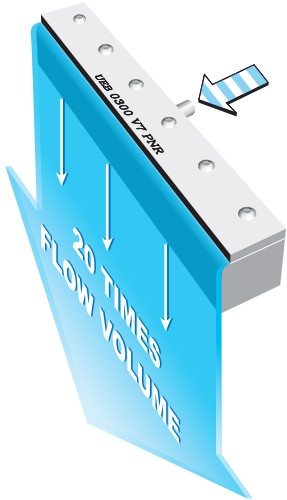
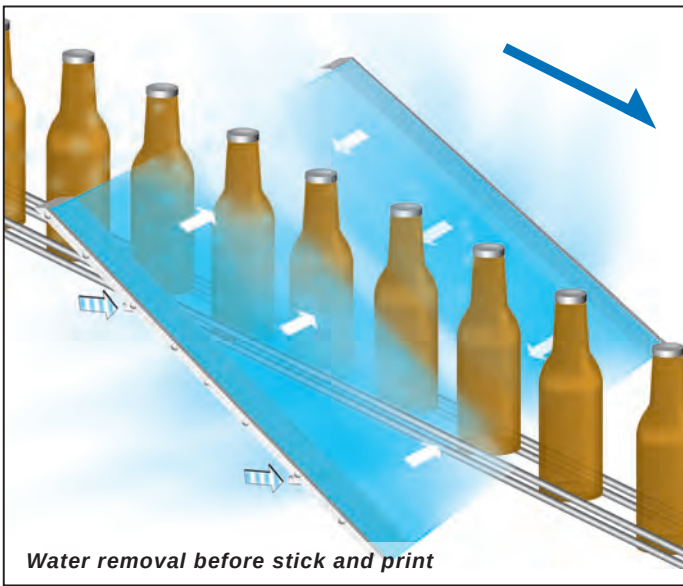
Code	RF inch	Air capacity (Nm³/min)										Dimensions							W kg
		AI	AO	AI	AO	AI	AO	AI	AO	AI	AO	D1 mm	D2 mm	D3 mm	D4 mm	H1 mm	H2 mm	L mm	
UEB 0150 xx yy	1/4"	0.26	4.70	0.34	6.00	0.42	7.10	0.51	8.60	0.60	10.6	20.0	110	75	-	8	12.5	150	0.3
UEB 0300 xx yy		0.52	9.40	0.68	12.0	0.84	14.2	1.02	17.2	1.20	21.2	22.5	85	150	-			300	0.7
UEB 0450 xx yy		0.78	14.1	1.03	18.0	1.26	21.3	1.53	25.8	1.80	31.8	22.5	135	90	270			450	0.9
UEB 0600 xx yy		1.03	18.7	1.40	24.0	1.68	28.4	2.04	34.4	2.40	42.4	22.5	185	150	300			600	1.4



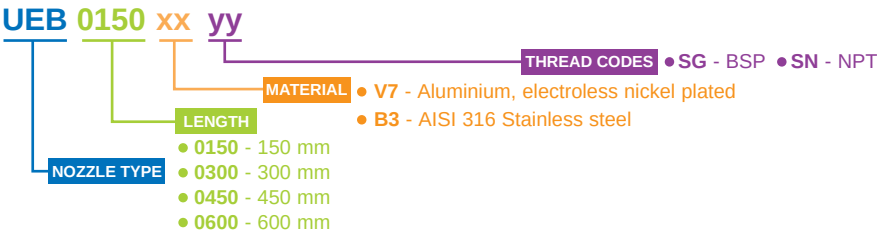
The table shows the air capacity as a function of the air pressure whereas the below graphs show the noise level as a function of the front and side distances from the nozzle outlet at an operating pressure of 2 bar. The air flow leaving the nozzle orifice drags along ambient air, the air blade produced by the nozzle (AIR OUT) has a larger flow rate which is a multiple of the feed air flow (AIR IN).

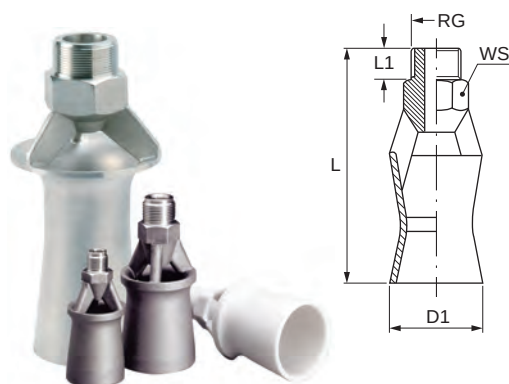
SAVE ENERGY AND INCREASE THE AMOUNT OF WIND

The compressed air exits through the side slot following the radiused profile and leaves the body with an angle of 90° from the original direction. The negative pressure brings in 20 times wind volume and saves energy consumption greatly.



HOW TO MAKE UP THE
NOZZLE CODE
EX.: UEB 0150 V7SG



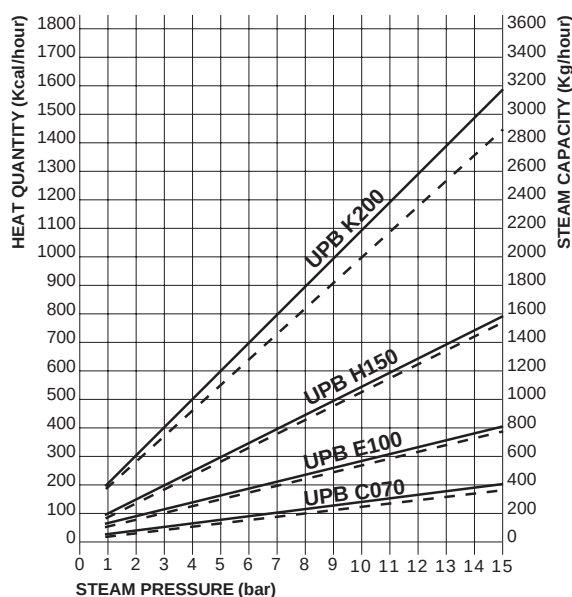


MIXING EDUCTORS

UPB mixing eductors are energy saving products. Their robust bell-shaped body minimizes the risk of damage during maintenance operations and the Venturi design assures a high mixing efficiency. These eductors enable the circulation of large volumes of liquid and are ideal for continuous blending and stirring of liquids or solutions in tanks. The UPB eductors are installed at the bottom of a tank and pressurized to spray the solution. This flow creates a powerful negative pressure that allows to take in four times the liquid volume, mix it with a solution inside the nozzle and spray it back into the tank at a high speed. 1 HP pump and UPB mixing eductor can replace a 5 HP mixing eductor. UPB eductors are an efficient way to get the best performance from re-circulating process tanks and are cost-effective because they reduce the electrical costs.

- Typical applications: Liquid mixing in electroplating and automotive paint factories
- Thread specification: BSPT, NPT
- Max working temperature: LT 80°C (PP), 90°C (PVDF)
- Materials: B31 AISI 316L Stainless steel, D6 PP, chemically bonded fiberglass, D82 PVDF, moulded (3/8" Parallel Male thread)

STEAM CONSUMPTION CHART



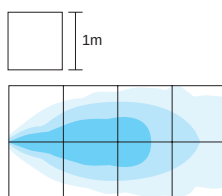
Code	RG inch	D mm	Flow rate at pressure (l/min) (bar)					D1 mm	L mm	L1 mm	WS mm
			1.0	2.0	3.0	4.0	5.0				
UPB C070 B31Sx	3/8"	7.0	34	48	59	68	76	45	98	15	22
UPB C070 D6Sx		7.0	34	48	59	68	76				
UPB C070 D82Sx		7.0	34	48	59	68	76				
UPB E100 B31R _x	1/2"	10.0	63	89	109	126	141	60	132	20	30
UPB E100 B31S _x	3/4"	10.0	63	89	109	126	141	60	132	20	30
UPB E100 D6S _x											
UPB H150 B31S _x	1 1/2"	15.0	155	220	268	310	346	110	225	30	60
UPB K200 B31S _x	2"	20.0	206	287	357	410	460	102	295	30	70

EX.: UPB C070 B31S_x

x = Thread codes

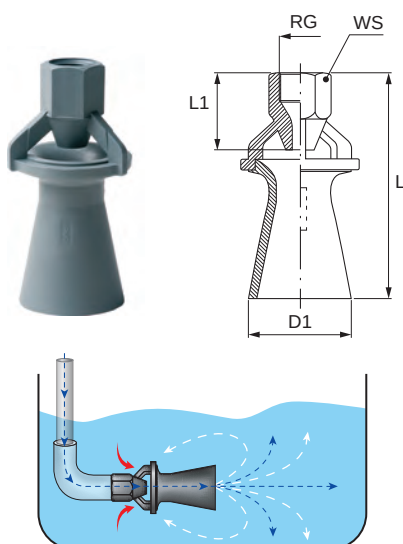
- B = BSPT, S.Steel only
- G = BSPP, PP & PVDF
- N = NPT, all materials

The table aside shows the working condition of UPB C070 B31 eductor when set at 50 cm depth.



Under normal operating conditions, with feed pressure values ranging from 2 to 4 bars, eductors with a total capacity equal to 20% of the liquid volume to be stirred proved to be adequate for most industrial applications. Please contact us for additional information about eductors layouts.

UPD (MIXING EDUCTORS)



MIXING EDUCTORS

UPD mixing eductors, whose design applies the "Coanda Effect", enable the circulation of large volumes of liquid. They are installed at the bottom of a tank and pressurized to spray the solution.

This flow creates a powerful negative pressure that allows to take in four times the liquid volume, mix it with a solution inside the nozzle and spray it back into the tank at a high speed. 1 HP pump and UPB mixing eductor can replace a 5 HP mixing eductor. UPD eductors offer a high mixing efficiency and are cost effective because they save energy and are resistant to wear and corrosion. UPD eductors have the same technical features of the UPB models, but they come with a female thread connection.

- Thread specification: BSPT, NPT
- Materials: B31 AISI 316L Stainless steel, D6 PP, chemically bonded fiberglass
- Max working temperature: LT 80°C (PP)
- Typical applications: Liquids mixing in electroplating, automotive painting, chemical plants.

Code	RG inch	D mm	Flow rate at pressure (l/min) (bar)					D1 mm	L mm	L1 mm	WS mm
			1.0	2.0	3.0	4.0	5.0				
UPD E100 D6xx	3/4"	10	63	89	109	126	141	75	147	30	34
UPD H150 D6Sxx	1 1/2"	15	141	199	243	281	313	80	225	45	60
UPD H150 B31Sxx	1 1/2"	15	141	199	243	281	313	80	239	83	60
UPD K200 B31Sxx	2"	20	206	287	357	412	460	102	295	83	70

EX.: UPD E100 D6xx

xx = Thread codes

- SG - BSP
- SN - NPT

PLASTIC PIPE CLAMPS

ZPB plastic pipe clamps allow a quick, professional and convenient instalment of GX, BX or KX flanged nozzles onto manifolds. Using these clamps it's not necessary to weld nipples or use thick pipes, all you need is one hole in the pipe. ZPB body is made in PP reinforced glass fiber while screws and bolts are in stainless steel AISI 316 to assure a good corrosion resistance. VEA, VEC and VED flanged filters are available on request to prevent clogging.

- Typical applications

Pre-treatment for coating process
Parts cleaning
- Max working temperature

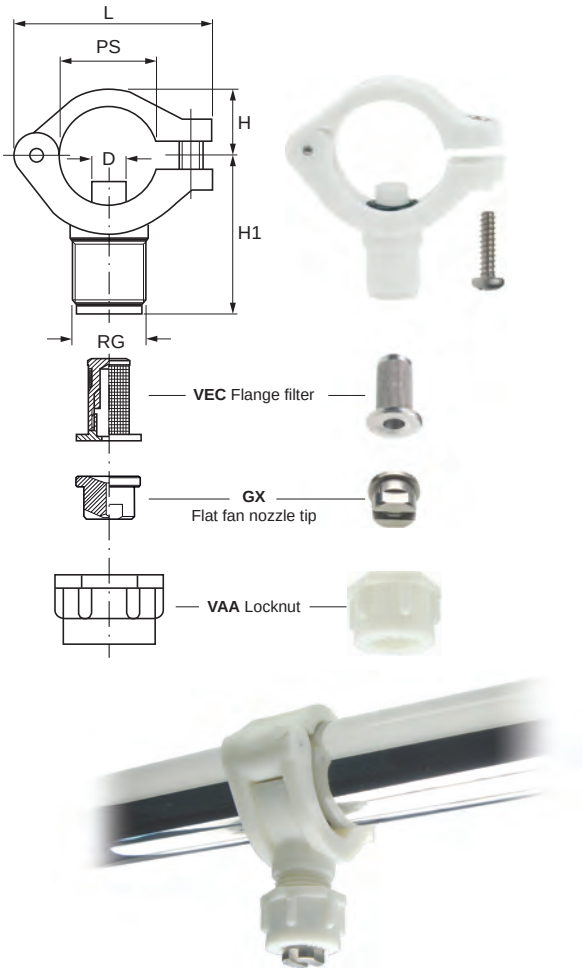
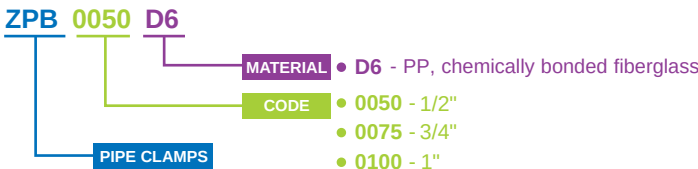
LT 80°C
- Max working pressure

LP 8 bar
- Materials

Body D6 PP, chemically bonded fiberglass
O-ring E8 NBR
Metal parts B2 AISI 304 Stainless steel

Code	RG inch	PS inch	OD mm	D mm	H mm	H1 mm	L mm	W g
ZPB 0050 D6	3/8"	1/2"	21/22	7.3	16.0	36	44	20
ZPB 0075 D6		3/4"	26/27	7.3	17.5	39	51	26
ZPB 0100 D6		1"	33/34	10.0	21.0	46	61	30

HOW TO MAKE UP THE PRODUCT CODE EX.: ZPB 0050 D6



PLASTIC BAYONET PIPE CLAMPS

ZPC plastic bayonet pipe clamps serve for a quick and easy instalment of GX type flat fan flanged nozzles. No need to weld nozzles or use thick pipes to thread. It's sufficient to make a hole in the pipe and fix the clamp in. The clamp body is in PVDF while screws and bolts are in stainless steel AISI 316, suitable for high temperatures. Their quick-fit cap is easy to disassemble for cleaning. The flat fan orientation has an offset angle of 10° from the main manifold axis to avoid jets overlapping.

- Typical applications

PCB wet process
Pre-treatment for coating process
- Pipe size

PS 1/2", 3/4"
- Max working temperature

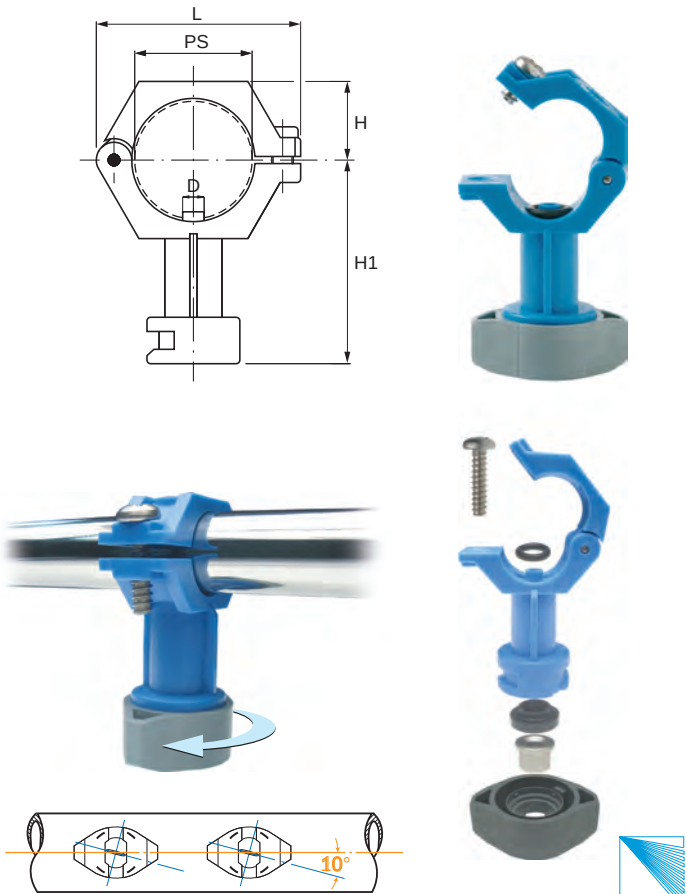
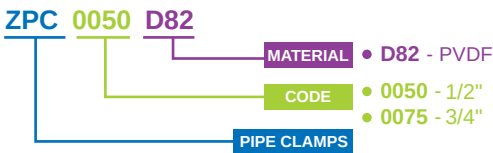
LT 90°C
- Max working pressure

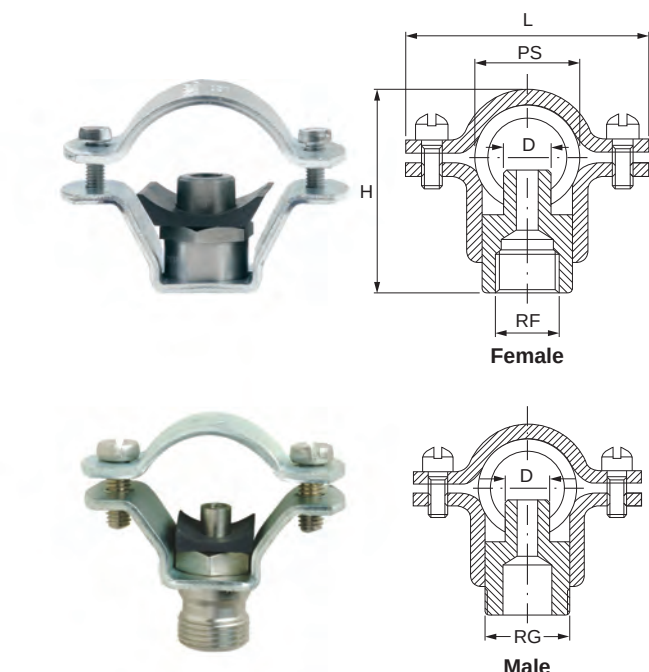
LP 8 bar
- Materials

Body D82 PVDF, moulded
O-ring E7 Viton
Metal parts B3 AISI 316 Stainless steel

Code	PS inch	PD mm	D mm	H mm	H1 mm	L mm	W g
ZPC 0050 D82	1/2"	20/22	7.6	16.0	36	44	21
ZPC 0075 D82	3/4"	25/27	7.6	17.5	39	50	25

HOW TO MAKE UP THE PRODUCT CODE EX.: ZPC 0050 D82





ZPM Metal clamps + PF Hollow cone nozzle

METAL PIPE CLAMPS

ZPM metal pipe clamps are suitable for a quick, easy and safe instalment of various types of nozzles on pipes.

They can be fit into a pipe simply by making a hole on it. As it's not necessary to thread thick pipes or weld the nozzles, these clamps assure a relevant time and costs saving.

Thread size	1/8", 1/4", 3/8", 1/2"
Connection	BSP, NPT
Typical applications	Pre-treatment for coating process Exhaust Scrubber
Pipe size	PS 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2"
Max working temperature	LT 80°C
Max working pressure	LP 17 bar
Materials	Body Screws Nipples Gasket
	B2 AISI 304 Stainless steel A8 Zinc coated steel B2 AISI 304 Stainless steel B3 AISI 316l Stainless steel T1 Brass E0 EPDM

Code	PS inch	RF/RG inch	LP bar	LQ l/min	D mm	H mm	L mm
ZPM 0050 xxAW	1/2"	1/8"	17	11	7	40	49
ZPM 0050 xxBW		1/4"					
ZPM 0050 xxUW		3/8"				48	
ZPM 0075 xxAW	3/4"	1/8"	17	11	7	45	58
ZPM 0075 xxBW		1/4"					
ZPM 0075 xxUW		3/8"				53	
ZPM 0100 xxAW	1"	1/8"	17	11	7	45	65
ZPM 0100 xxBW		1/4"					
ZPM 0100 xxUW		3/8"				53	
ZPM 0125 xxYW	1 1/4"	1/4"	9	45	18	68	71
ZPM 0125 xxYW		3/8"					
ZPM 0125 xxYW		1/2"					
ZPM 0150 xxYW	1 1/2"	1/4"	9	45	18	72	90
ZPM 0150 xxYW		3/8"					
ZPM 0150 xxYW		1/2"					
ZPM 0200 xxYW	2"	1/4"	9	45	18	85	100
ZPM 0200 xxYW		3/8"					
ZPM 0200 xxYW		1/2"					
ZPM 0250 xxYW	2 1/2"	1/4"	9	45	18	110	118
ZPM 0250 xxYW		3/8"					
ZPM 0250 xxYW		1/2"					

CODE COMPLEMENTS

EX.: ZPM 0050 A8 AA

Replace **xx** and **YW** in the above codes as shown below

ZPM 0050 **xx** **YW**

XX	For clamp material	Y	For nipple thread	W	For nipple material
A8	Zinc coated steel	A	1/8" BSP Female	A	Brass
B2	AISI 304	B	1/4" BSP Female	B	AISI 303
		C	3/8" BSP Female	C	AISI 316
		D	1/2" BSP Female		
		U	3/8" BSP Male		

DISK NOZZLE PIPE CLAMP

ZPH pipe clamps are specially designed for the quick and easy instalment of disc nozzles onto pipes. These clamps are very convenient as there's no need to buy expensive metal tips or welded nozzle tips. You must drill a 19 mm diameter hole on the pipe, insert the clamp into it and fix it with screws. Their design, which allows to position the disc nozzles with a 5° offset angle, assures a proper jet orientation. These clamps avoid spray jets interference and are ideal for nozzles cleaning steel brushes.

- Max working temperature

■ Max working pressure

■ Fitting dimensions

■ Materials

■ Typical application
- LT 80°C

LP 7 bar

Outer pipe diameter 50 mm

Inner pipe diameter 47 mm

Feed hole 19 mm

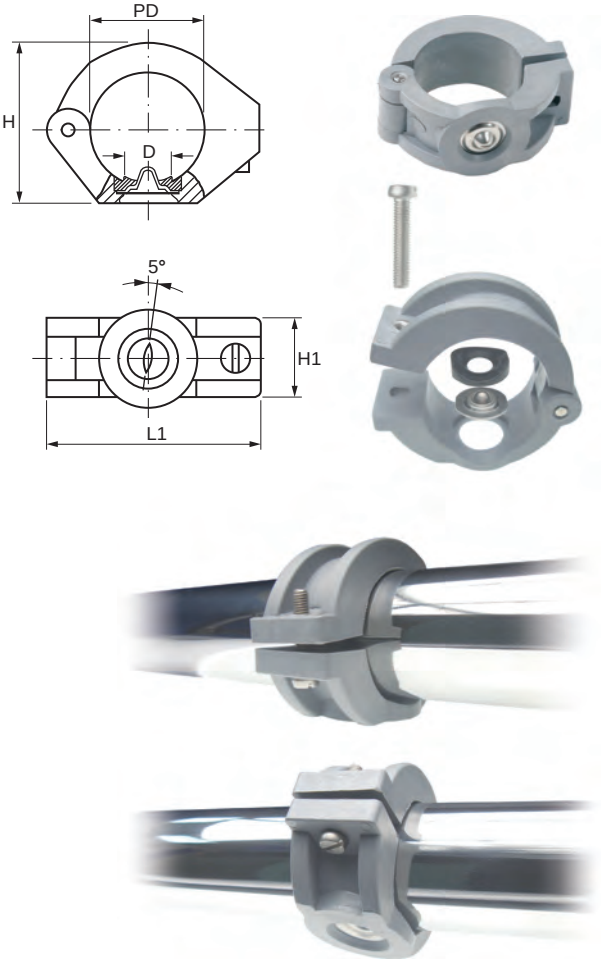
Clamp D6 PP, chemically bonded fiberglass

Pin, bolt B3 AISI 316 Stainless steel

Paper machines self-cleaning pipes

Code	OD mm	D mm	H mm	H1 mm	L1 mm
ZPH 0150 D6	52	19	70	34	91

HOW TO MAKE UP THE PRODUCT CODE EX.: ZPH 0150 D6

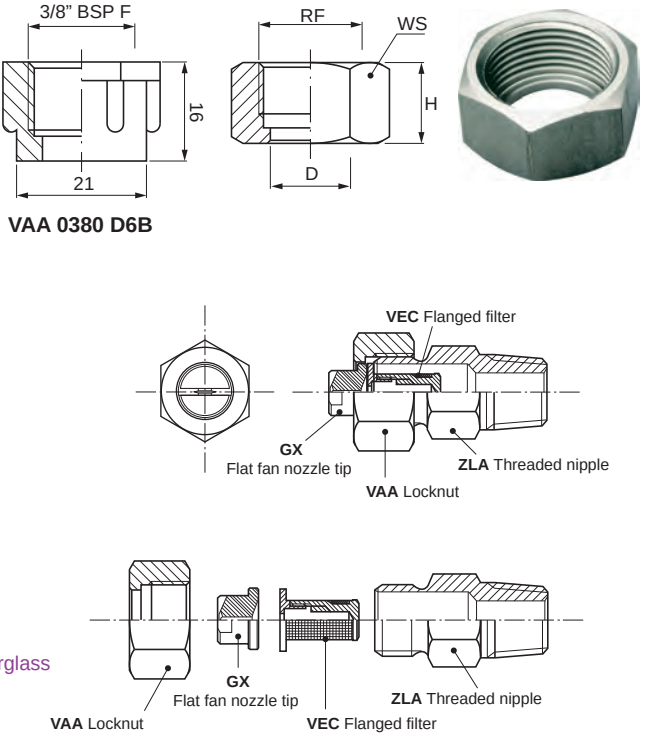
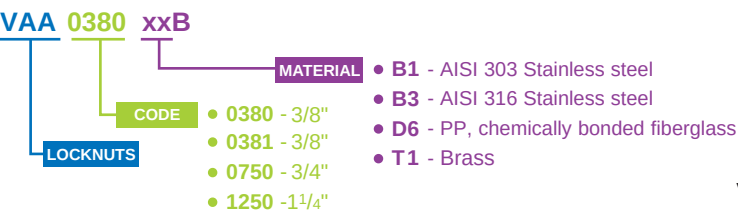


LOCKNUTS

VAA locknuts go with ZAA, ZAC, ZLA and ZPB to fix different nozzles.

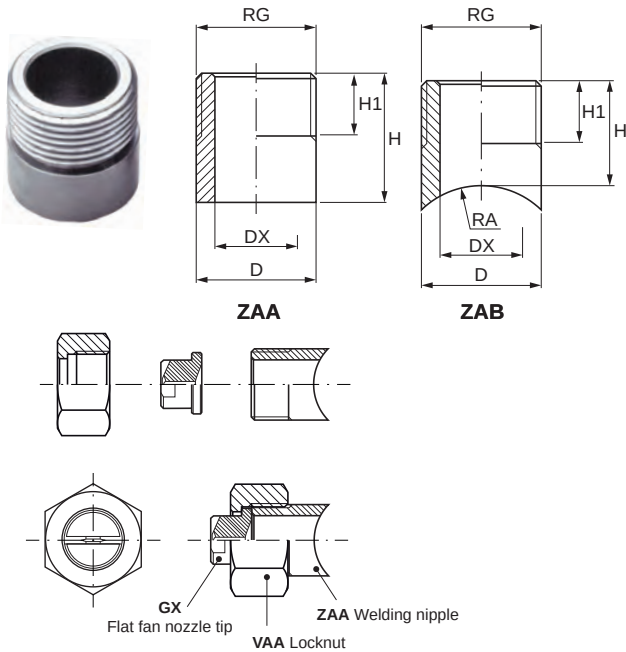
Code	RF inch	D mm	H mm	WS mm	Material	
					Plastic	Metal
VAA 0380 xxB	3/8"	12.9	12	22	•	•
VAA 0381 xxB	3/8"	12.5	15	22		•
VAA 0750 xxB	3/4"	20.5	16	32		•
VAA 1250 xxB	1 1/4"	32.5	27	50		•

HOW TO MAKE UP THE PRODUCT CODE EX.: VAA 0380 B1B



ZAA / ZAB (STANDARD WELD NIPPLES)

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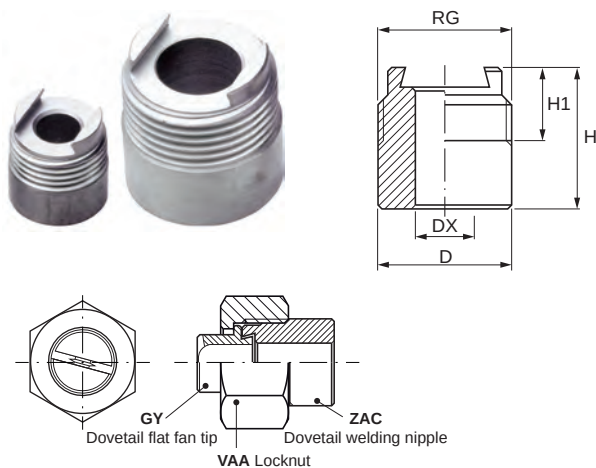
STANDARD WELD NIPPLES

ZAA/ZAB welding nipples allow the assembly of GX, BX or KX series nozzle tips onto pipes and spray manifolds. One end of the nipple is fixed onto the pipe and the other to the nozzle tip. ZAA is a standard model with a flat welding surface. ZAB is radiused type with a curved welding surface that fits the pipe diameter. VAA locknut goes with ZAA/ZAB weld nozzle tip. Additionally, we suggest you to add VEA, VEC or VED flanged filters to avoid clogging when you use small orifice nozzles. Please refer to page 91 for more information.

- Thread size 3/8", 3/4"
- Materials **B1** AISI 303 Stainless steel
B31 AISI 316L Stainless steel

Code	RG inch	H mm	H1 mm	D mm	DX mm	RA mm	W g
STANDARD							
ZAA 1738 xx	3/8"	18	10	17	11.5	-	20
ZAA 2775 xx	3/4"	27	15	27	18.0	-	61
RADIUSED							
ZAB 1738 xxD	3/8"	18	10	17	11.5	10.0	20
ZAB 1738 xxE						12.5	
ZAB 1738 xxF						16.0	
ZAB 1738 xxG						20.0	
ZAB 1738 xxH						25.0	

ZAC (DOVETAIL WELDING NIPPLES)



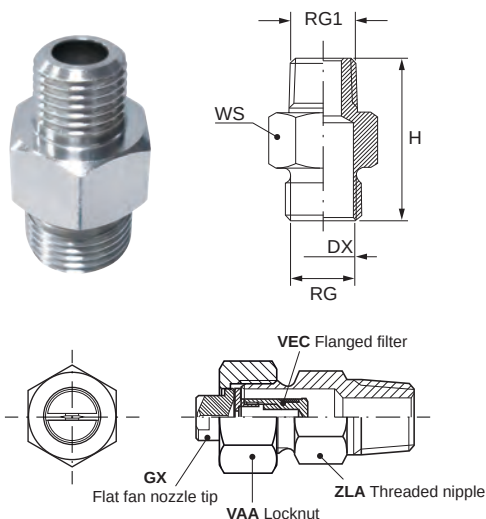
DOVETAIL WELDING NIPPLES

ZAC welding nipples are manufactured with a dovetail end to match GY type dovetail nozzle tips. One end of the nipple is fastened onto the pipe and the other end to the nozzle tip by means of a VAA locknut. The dovetail design of these nipples keeps them properly orientated in the desired position, thus shortening time for nozzle tips cleaning and orientation adjustments.

- Thread size 3/8", 3/4", 1 1/4"
- Material **B31** AISI 316L Stainless steel

Code	RG inch	H mm	H1 mm	D mm	DX mm	W g
ZAC 1738 xx	3/8"	18.0	10.0	17	7.5	20
ZAC 2775 xx	3/4"	27.5	14.0	27	14.0	61
ZAC 4225 xx	1 1/4"	40.0	21.0	42	20.0	280

ZLA / ZLC (STANDARD THREADED NIPPLES)



STANDARD THREADED NIPPLES

ZLA threaded nipples have a flanged end to match nozzle tips type GX, BX or KX. One end of the nipple gets assembled onto the pipe and the other end to the nozzle tip to which it is fixed by means of a VAA locknut. In addition, flanged filters VEA, VEC and VED can be assembled to avoid clogging. Please find more information on page 91.

Code	RG inch	RG1 inch	DX mm	H mm	WS mm	W g
ZLx 3825 xxB	3/8"	1/4"	7.5	32.5	19	25
ZLx 3838 xxB	3/8"	3/8"	10.0	35.0	19	25
ZLx 7575 xxB	3/4"	3/4"	18.0	35.0	32	90

HOW TO MAKE UP THE PRODUCT CODE

EX.: ZLA 3825 B1B

NIPPLE ZLx **CONNECTION** 3825 **CODE** xxB **MATERIAL** • **B31** - AISI 316L Stainless steel
• **T1** - Brass
• **A** = BSPT
• **C** = BSP

PRESSURE TANKS

UMR pressure tanks are widely used to spray liquids under pressure containing disinfectants and so on. They are an excellent choice as they make it possible to deliver liquids to air atomizers without requiring expensive pumps and can also be operated as mobile units.

- Inlet / Outlet diameter

■ Max working pressure

■ Materials
- Quick connection or 1/4" PT (Female)

LP 9 bar

B2 AISI 304 Stainless steel

E8 Synthetic rubber (NBR)

E31 Delrin® - B2 AISI 304

E0 EPDM
- Body

Base & Handles

Quick connection

O-Ring

Code	Cover and nipples	CA liters	D mm	H mm	W kg	LP bar
UMR 0090 B2	UMR C090 B2	9	232	340	3.7	9
UMR 0190 B2	UMR C190 B2	19	219	630	4.3	9

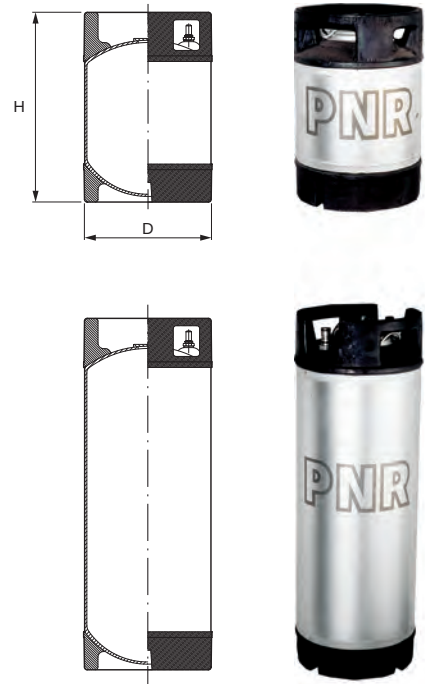
PRESSURE TANKS - ACCESSORIES	
XUM R100 E31	Liquid connection kit connection: 7/16-20UNF 
XUM R110 E31	Air connection kit connection: 7/16-20UNF 

Please note that both connection kit, air and liquid, can only be supplied as a complete assembly, it is not possible to supply single components.



PRESSURE TANK OPERATION

Remove the pressure tank cover, fill in the liquid and put the cover back on. Fill the tank with compressed air. The liquid is pushed out (see picture above) by the pressure inside the tank which is higher than the outside pressure. Generally, we recommend to add a gas pressure regulator and a pressure gauge on the pressure tank inlet and outlet to adjust inside and outside pressures.



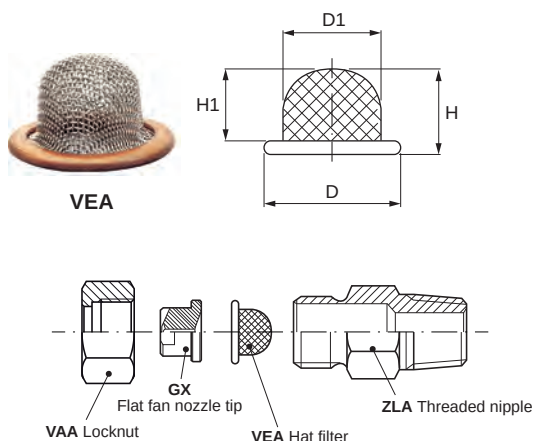
CE Marking
UMR pressure tanks comply with the requirements of the European 97/23/CE (PED) norm.

PRESSURE TANK

AUTO-DISINFECTION SYSTEM

The cart shown on the right is specially designed for disinfection in hospital areas where bacteria and germs must be safely eliminated. It's a portable small-sized complete system for automatic disinfection. Spray time and capacity can be automatically set. Its spray system is activated by an infrared rays sensor that safely detects people passing in its proximity.





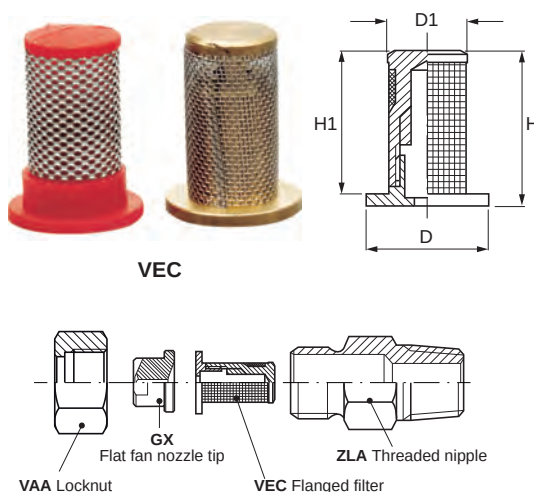
HAT FILTERS

VEA series hat-shaped filters are specially designed for 3/8" flanged nozzles and ZPB clamps.

- Mesh number 50, 75, 100 mesh
- Materials Collar **T9** Copper
Wire net **B3** AISI 316 Stainless steel
- Typical application Filtering before spraying liquids

Code	D mm	D1 mm	H mm	H1 mm	M mesh	Nozzle code
VEA 0138 T9	14.5	9.5	8.5	7.3	100	GX
VEA 0238 T9					75	BX FX
VEA 0338 T9					50	KX

VEC (FLANGED FILTERS)



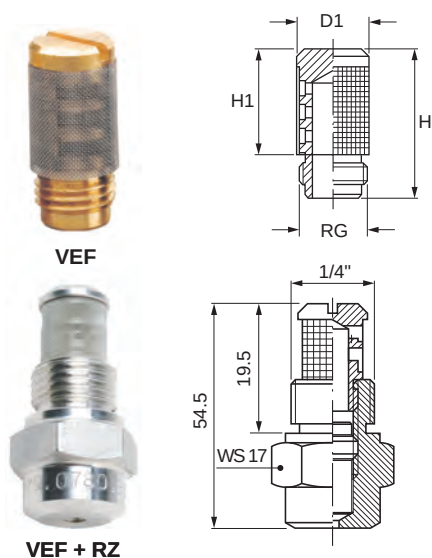
FLANGED FILTERS

VEC check-valve filters are specially designed for 3/8" flanged nozzles. Large filtering surface grants long exercise period without cleaning necessity. We recommend to assemble these filters on small capacity nozzles to avoid clogging and enhance their performance.

- Materials Body **B1** AISI 303 Stainless steel
B31 AISI 316L Stainless steel
D3 Nylon
T1 Brass
Wire net **B2** AISI 304 Stainless steel
- Typical application Filtering before spraying liquids

Code	D mm	D1 mm	H mm	H1 mm	M mesh	Nozzle code
VEC 0138 xx	15.0	10.0	20.0	18.5	100	GX
VEC 0238 xx					75	BX FX
VEC 0338 xx					50	KX

VEF (THREADED FILTERS)



THREADED FILTERS

VEF threaded filters are specially designed for 1/4" J series flat fan nozzles and RX/RZ hollow cone nozzles. They provide a top filtering action and protect nozzle tips. We recommend to assemble threaded filters on small capacity nozzles to avoid clogging and enhance their performance.

- Thread size 3/8" UNF
- Mesh number 50, 75, 100 mesh
- Materials Body **B1** AISI 303 Stainless steel
B3 AISI 316 Stainless steel
B31 AISI 316L Stainless steel
T1 Brass
Wire net **B2** AISI 304 Stainless steel
- Typical application Filtering before spraying liquids

Code	D1 mm	RG inch	H mm	H1 mm	M mesh	Nozzle code
VEF 0038 B3	8.1	M7	15.7	13.2	120	JA (1/8")
VEF 0138 xx	10.2	3/8"UNF	21.0	15.0	100	JB (1/4")
VEF 0238 xx					75	RX (1/4")
VEF 0338 xx					50	RZ (1/4")

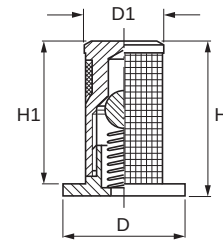
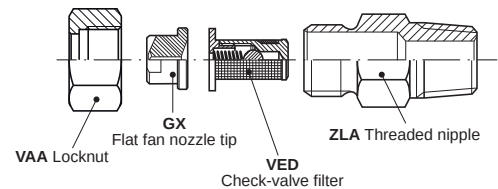
CHECK-VALVE FILTERS

VED series check-valve filters are specially designed for 3/8" flanged nozzles. VED filters contain a one-way ball valve to avoid dripping when spray is turned off. They also serve to protect the nozzle tips. We recommend to assemble check-valve filters on small capacity nozzles to avoid clogging and enhance their performance.

- Opening pressure: 1.4, 2.8 bar
- Wire net mesh size: 50, 75, 100 mesh
- Materials Body **B1** AISI 303 Stainless steel
 B31 AISI 316L Stainless steel
 D3 Nylon
 T1 Brass
 B2 AISI 304 Stainless steel

Wire net

Code	D mm	D1 mm	H mm	H1 mm	M mesh	Opening bar
VED 0138 xxC	15	10	20	18.5	100	1.4
VED 0238 xxC					75	
VED 0338 xxC					50	
VED 0138 xxD	15	10	20	18.5	100	2.8
VED 0238 xxD					75	
VED 0338 xxD					50	

**VED****CARTRIDGE SIZE TABLE**

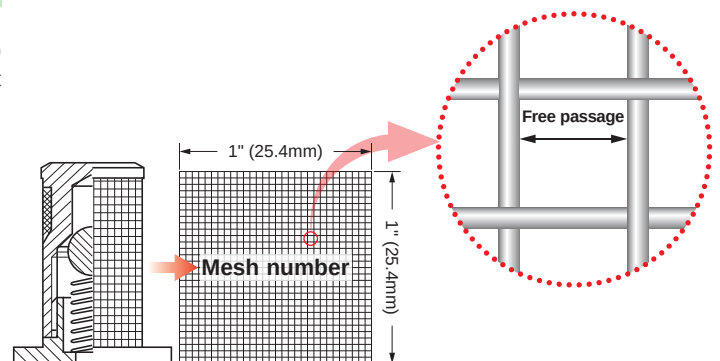
To figure out mesh sizes one has to count the number of openings from the centre of any one wire to the centre of a parallel wire one inch away. The number of openings in a filter cartridge is the mesh size. We highly recommend to add filters to small capacity nozzles to hold fine particulate matter. Please refer to the table below.

HOW TO CHOSE THE PROPER FILTER ?

The largest filter free passage < nozzle orifice

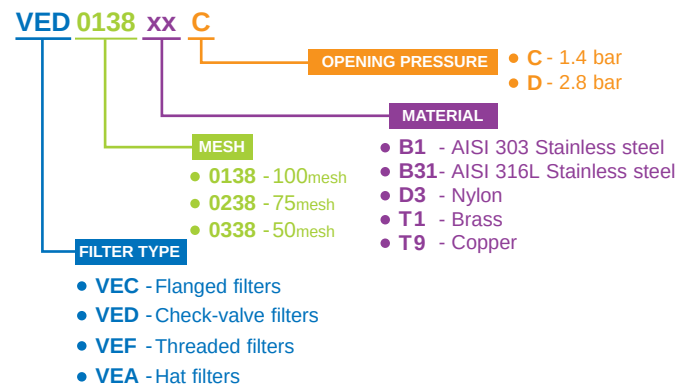
Ex : If the nozzle tip diameter is 0.3 mm, we suggest you to choose a 60 mesh filter or more (free passage 0.25 mm). Please consider that the higher is the number of mesh, the greater is the filtering power.

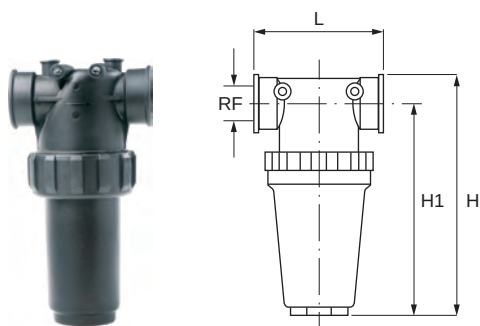
Mesh number	Free passage mm
30 - 32	0.6 - 0.58
50	0.3
60	0.25
75	0.2
80	0.18
100	0.15
150	0.1
200	0.075



We offer a large assortment of VE series filters for your convenience. Please refer to below table.

Code	VEC	VED	VEF	VEA
Appearance				
	Flanged filter	Check-valve filter	Threaded filter	Hat filter
B1 / AISI 303	•	•	•	
B31 / AISI 316L	•	•	•	
D3 / Nylon	•	•		
T1 / Brass	•	•	•	
T9 / Copper				•

**HOW TO MAKE UP THE
FILTER CODE**EX.: **VED 0138 B1C**



PLASTIC BODY FILTERS

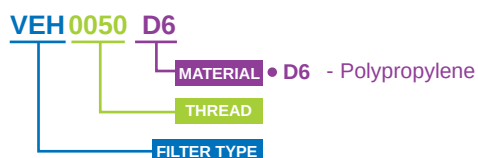
VEH filters with plastic body are a rational and economic solution for most operating environments. The threaded coupling between bowl and head allows a quick filter cleaning and easy replacement of the cartridge and no need of tools. They have a high particles retention and are durable.

- Inlet / Outlet thread size 1/2", 3/4", 1", 1 1/4", 1 1/2"
- Max steam pressure LP from 10 bar to 15 bar
- Capacity LQ 250 l/min
- Materials
 - Body D6 Polypropylene + 30% Glass fiber
 - Seal E0 EPDM
 - Cartridge B2 AISI 304 Stainless steel
- Typical application Filtering before spraying liquids

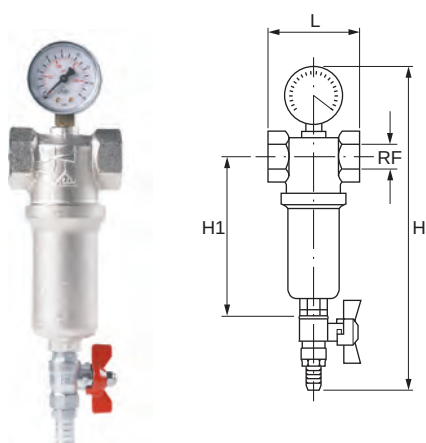
Code	RF inch BSPP	H mm	H1 mm	L mm	Q l/min	Cartridge	M mesh
VEH 0050 D21	1/2"	136	118	99	140	XVE H050 DA2	32
VEH 0051 D21						XVE H051 DA2	50
VEH 0052 D21						XVE H052 DA2	100
VEH 0075 D21	3/4"	136	118	99	140	XVE H050 DA2	32
VEH 0076 D21						XVE H051 DA2	50
VEH 0077 D21						XVE H052 DA2	100
VEH 0100 D21	1"	165	143	107	140	XVE H053 DA2	32
VEH 0101 D21						XVE H054 DA2	50
VEH 0102 D21						XVE H055 DA2	100
VEH 0125 D21	1 1/4"	279	239	146	250	XVE H060 DA2	32
VEH 0126 D21						XVE H061 DA2	50
VEH 0127 D21						XVE H062 DA2	100
VEH 0150 D21	1 1/2"	279	239	146	250	XVE H060 DA2	32
VEH 0151 D21						XVE H061 DA2	50
VEH 0152 D21						XVE H062 DA2	100

HOW TO MAKE UP THE FILTER CODE

EX.: VEH 0050 D21



VEL (BRASS BODY FILTERS)



BRASS BODY FILTERS

VEL type filters with body in brass are the ideal solution for small plants requiring easy cleaning and maintenance. When necessary, simply open the valve at the bottom of the filter and the dirt contained inside the cartridge is easily expelled. A manometer on the filter head shows the outlet pressure hence pressure drop when clogged.

- Inlet / Outlet thread size 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"
- Max operation temperature LT 100°C
- Max steam pressure LP 16 bar
- Materials
 - Body T8 Nickel plated brass
 - Cartridge B2 AISI 304 Stainless steel
- Typical application Filtering before spraying liquids

Code	RF inch BSPP	H mm	H1 mm	L mm	Q l/min	Cartridge	M mesh
VEL 0039 T8	3/8"	285	133	50	14	XVE L171 B2	150
VEL 0051 T8	1/2"	288	136	56	25		
VEL 0076 T8	3/4"	287	132	67	38	XVE L172 B2	
VEL 0101 T8	1"	295	137	80	72		
VEL 0126 T8	1 1/4"	343	169	92	118	XVE L200 B2	
VEL 0151 T8	1 1/2"	356	179	110	178	XVE L201 B2	
VEL 0201 T8	2"	362	179	110	213		

HOW TO MAKE UP THE FILTER CODE

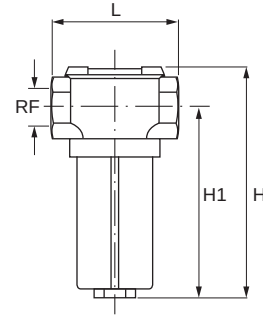
EX.: VEL 0039 T8



LARGE CAPACITY FILTERS

VEM filters are specially designed for high particle retention, easy maintenance and great efficiency in harsh operating conditions. Their bowl houses a large size cartridge for a longer operating life and reduced servicing times. The threaded connection to the filter body allows a quick removal with no need of tools. A plug placed at the bottom of the bowl allows to fit in a ball valve to purge the filter.

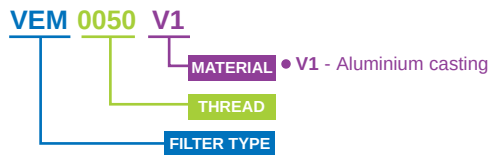
- Thread size 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3"
- Wire net mesh size 60, 80 mesh; other sizes available on request
- Max working pressure **LP** 20 bar
- Materials Body & bowl **V1** Aluminium casting
Cartridge **B2** AISI 304 Stainless steel
- Typical application Filtering before spraying liquids



Mesh number	Free passage mm
30 - 32	0.6 - 0.58
50	0.3
60	0.25
75	0.2
80	0.18
100	0.15
150	0.1
200	0.075

HOW TO MAKE UP THE FILTER CODE

EX.: VEM 0050 V1

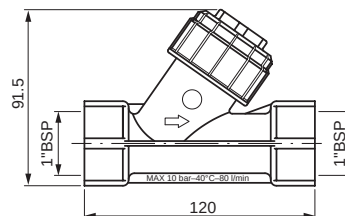


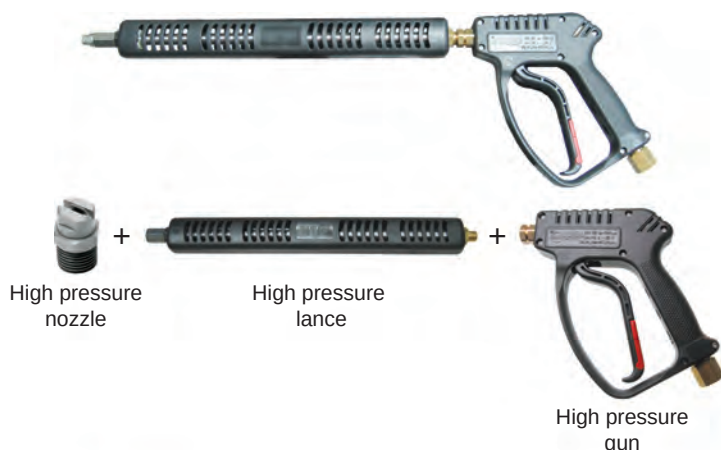
Code	RF inch BSPP	H mm	H1 mm	L mm	LP bar	Q l/min	Cartridge	M mesh	W kg
VEM 0050 V1	1/2"	210	152	105	40	70	XVE M075 B2	60	0.9
VEM 0051 V1							XVE M076 B2	80	
VEM 0075 V1	3/4"	210	152	105	40	95	XVE M075 B2	60	
VEM 0076 V1							XVE M076 B2	80	
VEM 0100 V1	1"	210	152	105	40	140	XVE M075 B2	60	
VEM 0101 V1							XVE M076 B2	80	
VEM 0125 V1	1 1/4"	270	210	140	30	280	XVE M150 B2	60	1.6
VEM 0126 V1							XVE M151 B2	80	
VEM 0150 V1	1 1/2"	270	210	140	30	315	XVE M150 B2	60	
VEM 0151 V1							XVE M151 B2	80	
VEM 0200 V1	2"	400	318	200	10	750	XVE M300 B2	30	5.6
VEM 0201 V1							XVE M301 B2	60	
VEM 0202 V1							XVE M302 B2	80	
VEM 0250 V1	2 1/2"	400	318	200	10	810	XVE M300 B2	30	
VEM 0251 V1							XVE M301 B2	60	
VEM 0252 V1							XVE M302 B2	80	
VEM 0300 V1	3"	400	318	200	10	1050	XVE M300 B2	30	
VEM 0301 V1							XVE M301 B2	60	
VEM 0302 V1							XVE M302 B2	80	

("Y" STYLE FILTER) **VEQ****"Y" STYLE FILTER**

VEQ xxGF B3G filter is widely used in all types of nozzles filtering systems. It allows for quick cleaning and replacement with no need of tools.

- Inlet / Outlet thread size 1/2" 3/4" 1"
- Mesh 60 Mesh
- Max operation temperature **LT** 40°C
- Max operation pressure **LP** 10 bar
- Max capacity **LQ** 80 l/min
- Materials Body **D6** PP, chemically bonded fiberglass
Cartridge **B3** AISI 316l Stainless steel
- Typical application Filtering before spraying liquids

**VEQ xxGF B3G**



UMW SERIES HIGH PRESSURE GUNS

UMW series spray guns are specially designed for high pressure cleaning. The main features are: light weight and easy to handle, heavy duty durability, high temperatures and high pressures resistant, low failure rate, low price. They can be supplied with a variety of pressure hoses and nozzles for all types of cleaning requirements. UMW spray guns are widely and successfully used in car washing and many other industrial applications.

Typical applications

Products cleaning
Equipment cleaning
Vehicles cleaning

Materials

Body
Inside parts

D4 Nylon, Glassfibers reinforced
B1 AISI 303 Stainless steel
C3 AISI 440 Stainless steel, hardened
T1 Brass

UMW 0010 D4 series economical and efficient spray guns are widely applied in industrial high pressure cleaning and car wash.

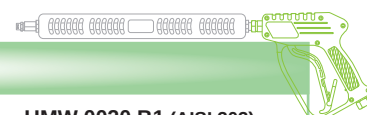
Nominal pressure	200 bar
Max operation pressure	LP 220 bar
Max operation temperature	LT 160 °C
Max capacity	LQ 30 l/min

Code	Inlet thread size EF	Outlet thread size UF	H mm	L mm	W kg
UMW 0010 D4	3/8"	1/4"	162	185	0.27

UMW 0020 D4 guns are suitable for heavy duty applications. They are light and have an ergonomic easy-grip handle. These spray guns are highly appreciated for operations requiring high pressure and large capacity.

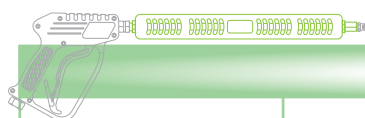
Nominal pressure	310 bar
Max operation pressure	LP 350 bar
Max operation temperature	LT 160 °C
Max capacity	LQ 40 l/min

Code	Inlet thread size EF	Outlet thread size UF	H mm	L mm	W kg
UMW 0020 D4	3/8"	1/4"	183	202	0.78



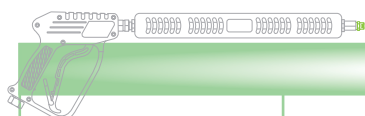
HIGH PRESSURE GUNS

Code	UMW 0020 D4 (Brass) Standard high pressure gun	UMW 0021 D4 (Brass) Swivel high pressure gun	UMW 0020 B1 (AISI 303) Sanitary high pressure gun
Appearance			
Code	UMW 0020 D4	UMW 0021 D4	UMW 0020 B1
Inlet thread size	3/8" BSP Female	3/8" BSP Female	3/8" BSP Female
Outlet thread size	1/4" BSP Female	1/4" BSP Female	1/4" BSP Female
Max operating pressure	350 bar	280 bar	280 bar
Max operating temperature	160°C	160°C	160°C
Max capacity	40 l/min	40 l/min	40 l/min
Inner parts	Brass	Brass	AISI 303
Outside shell	PP, chemically bonded fiberglass	PP, chemically bonded fiberglass	PP, chemically bonded fiberglass
Weight	0.78 kg	0.78 kg	0.83 kg
Swivel	✗	✓	✗
Security lock	✓	✓	✓



HIGH PRESSURE LANCE

Appearance			
Code	UMW 0038 A8	UMW 0045 B2	UMW 0047 B2
Liquid inlet diameter	1/4" BSPT Male	1/4" BSPT Male	1/4" BSPT Male
Liquid outlet diameter	1/4" BSP Female	1/4" BSP Female	1/4" BSP Female
Max operating pressure	280 bar	280 bar	200 bar
Max operating temper.	160°C	160°C	160°C
Spray lance	Zinc coated steel	AISI 304	AISI 304
Shank	Brass	AISI 303	AISI 303
Plastic material	PP, chemically bonded fiberglass	PP, chemically bonded fiberglass	PP, chemically bonded fiberglass
Length	380 mm	1200 mm, 1500 mm 1700 mm, 2000 mm	700 mm
Weight	0.4 kg	0.9 kg, 1.1 kg, 1.3 kg, 1.4 kg	0.56 kg



HIGH PRESSURE NOZZLES

Appearance			
Code	F series high pressure nozzles	UMW 0050 B2	UMW 0060 D2
Spray pattern	Straight / Flat fan (Fixed)	Straight / Flat fan (Free)	High pressure water (360°)
Spray angle	0°, 15°, 25°, 40°, 65°	0° ~ 40°	40°
Capacity	3.4 ~ 68.2 l/min at 100 bar	10.3 l/min at 100 bar	6.86 ~ 18.1 l/min at 100 bar
Thread size	1/4" BSP Male	1/4" BSP Female	1/4" BSP Female
Min operating pressure	--	--	80 bar
Max operating pressure	500 bar	280 bar	250 bar
Max operating temper.	600°C	90°C	100°C
Nozzle material	AISI 416	AISI 420	AISI 420
Shank	--	Brass	Brass
Plastic material	--	PP, chemically bonded fiberglass	PP, chemically bonded fiberglass



UMX 0020 T8

UMX SERIES WASH GUNS

UMX series spray guns are specially designed for heavy industrial cleaning. They are available in three different models, all featuring relevant advantages:

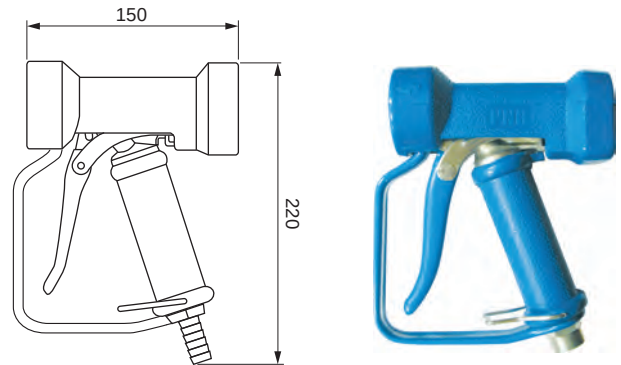
- Long operating life
- Ergonomic design for easy handling
- Drip-free and high sensitivity
- Safety trigger-lock
- Adjustable spray angle
- Variety of complementary hoses and nozzles
- Made in stainless steel to meet hygiene standards
- Max temperature 90°C
- Wide spray range
- Typical applications: products cleaning, equipment cleaning

UMX 0010
UMX 0020
UMX 0010 B3
90°C
0 ~ 100 l/min

WASH GUNS			
Code	UMX 0010 T8 Standard wash gun (Brass)	UMX 0010 B3 Sanitary wash gun (AISI 316)	UMX 0020 T8 Functional wash gun (Brass)
Appearance			
Code	UMX 0010 T8	UMX 0010 B3	UMX 0020 T8
Spray pattern	Straight / Hollow cone (adjustable)	Straight / Hollow cone (adjustable)	--
Spray angle	0° ~ 60°	0° ~ 60°	Universal nozzle
Inlet thread size	1/2" BSP Female	1/2" BSP Female	1/2" BSP Female
Outlet thread size	--	--	1/2" BSP Female
Max operating pressure	24 bar	24 bar	24 bar
Max operating temperature	90°C	90°C	90°C
Max capacity	100 l/min	60 l/min	100 l/min
Metal parts	Brass, nickel plated	AISI 316	Brass
Plastic material	Rubber	Rubber	Rubber
Weight	1.05 kg	1.05 kg	1.05 kg
Swivel	✓	✓	✓
Lock-ring	✓	✓	✓

HOT WATER SPRAY GUN

UMV series wash-guns have been specially designed for use in food, chemical and steel industry. They avoid hot water waste and their ergonomic shape makes them easy to handle. Their thick rubber casing safely protects operators' hands from hot water and avoids to damage floors and equipments in case the gun falls on the ground. Standard spray guns have a safety trigger-lock, a easy-hold grip and a swivel button at the end of the piston to adjust the spray angle to the desired direction. These spray-guns are constructed to match foam lances, bar lances and hot air lances. The chrome-plated brass model is used for normal operating environments whereas the version in stainless steel AISI 316 is suitable for use in the food and biotechnology industry and fully complies with European and American Directives for industrial production facilities.

**UMV 2210 xx**

■ Max working temperature	LT 80°C
■ Max working pressure	LP 25 bar
■ Max capacity	LQ 21 l/min (UMV2210 at 3 bar)

■ Thread size	1/2" BSP
■ Spray angle	5°~ 65°
■ Hose shank	13 mm - 1/2" hose fitting
■ Weight	0.9 kg
■ Materials	Body T2 Brass casting, chrome plated Lining B3 AISI 316 Stainless steel Stem E0 EPDM Trigger B3 AISI 316 Stainless steel

The versatility of this wash-gun is enhanced by the additional model UMV 2211 which can be assembled to nozzles or lances thanks to its 1/2" female thread. The three different lances shown here below can be easily assembled to the gun body with a 1/2" male nipple for various uses:

1. Foaming machines and equipment before washing. The foam lance comes with a quick-connect female coupling and the wash-gun outlet must be provided with a matching coupling.
2. General purpose 1/4" female thread outlet, 1/4" male thread inlet. Available both with heat protection sleeve, or zinc-plated steel. The general purpose lance needs a connection nipple 1/4" female to 1/2" male to be fit on the gun. Please see the complete washgun and components codes below.

UMV SERIES HOT WATER SPRAY GUN

Functional spray guns match front shut-off extensions for foam, hot water and general use

Code	Inlet diameter	Feature
UMV 2210 xx	1/2"	Standard, adjustable jet
UMV 2211 xx	1/2"	With 1/2" Female quick thread, without lance
UMV 220A xx	1/2"	With foam lance
UMV 220B xx	1/2"	With 1/4" BSP Female outlet, bare lance
UMV 220C xx	1/2"	With 1/4" BSP Female outlet, heat protected lance

Please complete product codes, ending with (**xx**), filling in the code of required material eg **T2**, chrome plated brass, or **B3** for AISI Stainless steel 316.



Please complete product codes, ending with (**xx**), filling in the code of required material eg **T2**, chrome plated brass, or **B3** for AISI Stainless steel 316.

SINGLE COMPONENTS

Code	Components
XUM V001 xx	Foam lance
XUM V002 xx	Quick-connect coupling for foam lance, 1/2" M
XUM V003 xx	Universal lance, 1/4" F out, heat protection
XUM V004 xx	Universal lance, 1/4" F out, zinc-plated steel
XUM V005 xx	Nipple, 1/4" F - 1/2" M, chrome plated brass

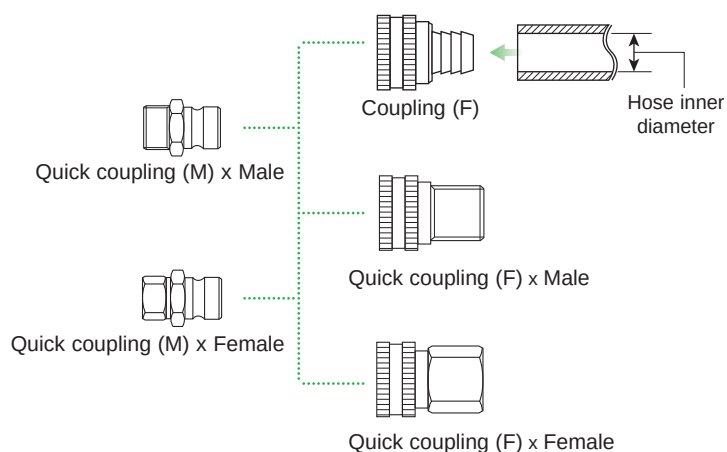
Please complete product codes, ending with (**xx**), filling in the code of required material eg **T2**, chrome plated brass, or **B3** for AISI Stainless steel 316.



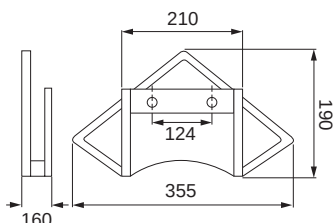
XUM VQM3 B3



XUM VQF6 B3



XUM US10 B2



HOT WATER SPRAY GUN ACCESSORIES

FLEXIBLE HOSE

This hose has been selected to be used with all models of UMV hot water spray-gun as it's made in top quality EPDM to outwear oil, high temperatures, high pressures and assure a long service life. Inlet and outlet ends are provided with female quick couplings for easy assembly and safety.

- Max working temperature **LT** 160°C
- Max working pressure **LP** 8 bar
- Materials Hose **E0** EPDM
- Couplings **B3** AISI 316 Stainless steel

Code	Size (inch)	Hose length (m)
XUM VT25 E0	1/2"	25
XUM VT20 E0	3/4"	20

QUICK COUPLINGS

XUM quick couplings are hot water spray gun accessories. It is convenient to assemble nozzle and spray gun. Please refer to below table for model no.

- Material **B3** AISI 316 Stainless steel

Code	Quick coupling tipo	Thread inch	Diameter mm
XUM VQF1 B3	Female	1/2" M	
XUM VQF2 B3	Female	1/2" F	
XUM VQF3 B3	Female	3/4" M	
XUM VQF4 B3	Female	3/4" F	
XUM VQF5 B3*	Female		13
XUM VQF6 B3*	Female		19
XUM VQM1 B3	Male	1/2" M	
XUM VQM2 B3	Male	1/2" F	
XUM VQM3 B3	Male	3/4" M	
XUM VQM4 B3	Male	3/4" F	

* These couplings have a hose shank with the shown dia size.

HOSE STAND

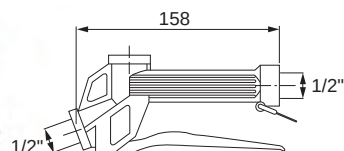
XUM quick couplings are hot water spray gun accessories. It is convenient to assemble nozzle and spray gun. Please refer to below table for model no.

- Material **B2** AISI 304 Stainless steel

UMS (PORTABLE WATER SPRAY GUN)



with flat fan nozzle



with lance



with UEA 0525 E31 air nozzle

PORTABLE WATER SPRAY GUN

UMS portable water spray-guns are widely used in industry. They have a lock ring to fix the handle while operating for a comfortable long use. The gun has a 1/2" female thread for nozzles assembly. The most common applications of this spray-gun are:

- (1) Blowing off of water and surface dust with a UEA 0525 E31 air nozzles
- (2) Parts and environment cleaning with suitable flat fan nozzles
- (3) Liquid filling or packing with proper complementary accessories

- Typical applications
 - Product cleaning
 - Liquid addition
 - Air spray gun
- Inlet / Outlet thread size **1/2" BSP**
- Max working temperature **LT** 100°C
- Max working pressure **LP** 50 bar
- Max capacity **LQ** 70 l/min
- Weight **W** 0.17 / 0.25 kg
- Materials
 - Inner parts **B1** AISI 303 Stainless steel
 - Inside seal **E7** Viton
 - Outside shell **E3** Acetalic resin