STRAIGHT JET NOZZLES

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.

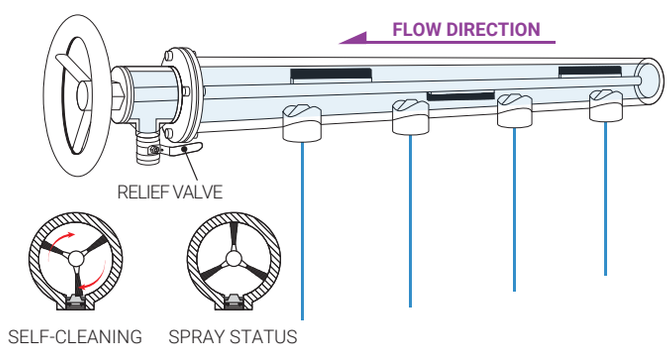
HIGHLY EXTENDED SERVICE LIFE

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.

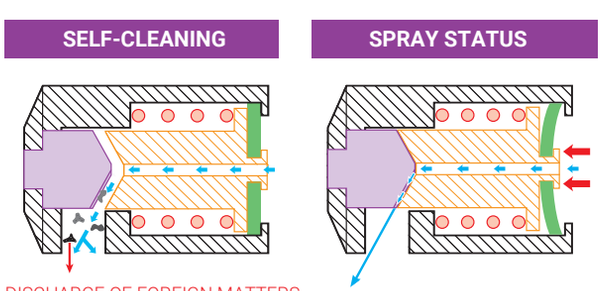
SELF-CLEANING SHOWER PIPE AND NOZZLES

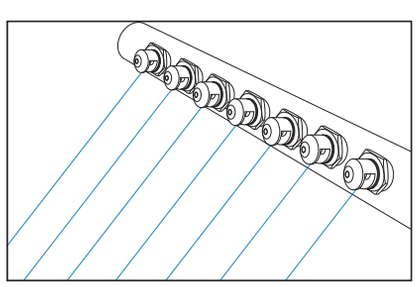
Paper making requires a great deal of water. Waste water is often reused to clean filters and felts to save costs and reduce water consumption. Reclaimed water contains solids and impurities that cause nozzles clogging and shutdowns for maintenance. Self-cleaning spray pipes and nozzles are the best 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.



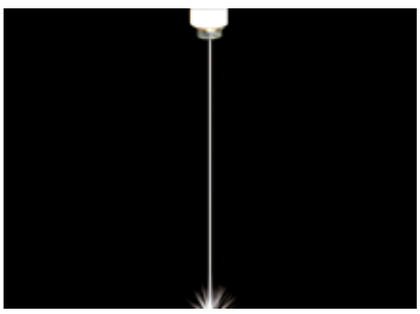


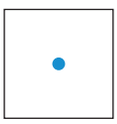
(STRAIGHT JET NOZZLES) FAA / FBA

FAA / FBA HIGH IMPACT SOLID STREAM NOZZLES

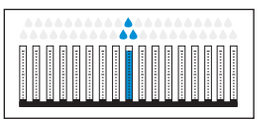
FAA/FBA types nozzles are specially designed for high pressure cleaning and washing operations. They are made in Stainless Steel 416, accurately machined and perfectly polished. They are particularly hard, resistant to wear, have a long service life and offer high precision performances.

THREAD SPECIFICATION: BSPT, NPT
TYPICAL APPLICATIONS
Washing: filter cloth, felts, parts.
Other applications: paint scraping, rust removal, shell removal.

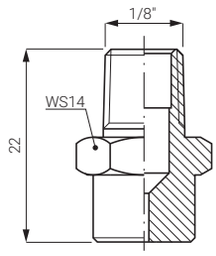




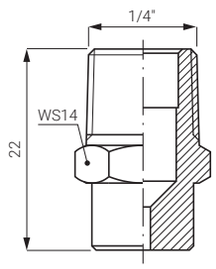
Spray section



Distribution



FAA

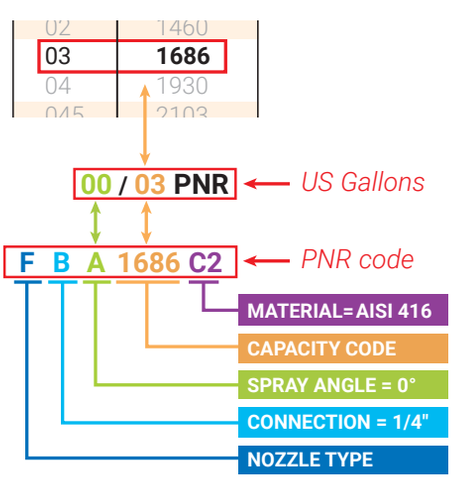


FBA

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**	2.06	2.52	3.25	3.85	4.60	5.63	6.51
•	•	•	025	**1560**	2.50	3.07	3.96	4.69	5.60	6.86	7.92
•	•	•	03	**1686**	3.07	3.76	4.85	5.74	6.86	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**	4.61	5.64	7.28	8.62	10.3	12.6	14.6
•	•	•	05	**2116**	5.19	6.35	8.20	9.71	11.6	14.2	16.4
•	•	•	055	**2126**	5.63	6.90	8.91	10.5	12.6	15.4	17.8
•	•	•	06	**2138**	6.17	7.56	9.76	11.5	13.8	16.9	19.5
•	•	•	065	**2149**	6.66	8.16	10.5	12.5	14.9	18.2	21.1
•	•	•	07	**2160**	7.16	8.76	11.3	13.4	16.0	19.6	22.6
•	•	•	075	**2170**	7.60	9.31	12.0	14.2	17.0	20.8	24.0
•	•	•	08	**2181**	8.09	9.91	12.8	15.1	18.1	22.2	25.6
•	•	•	085	**2192**	8.59	10.5	13.6	16.1	19.2	23.5	27.2
•	•	•	09	**2204**	9.12	11.2	14.4	17.1	20.4	25.0	28.8
•	•	•	095	**2220**	9.84	12.1	15.6	18.4	22.0	26.9	31.1
•	•	•	10	**2230**	10.3	12.6	16.3	19.2	23.0	28.2	32.5
•	•	•	11	**2248**	11.1	13.6	17.5	20.7	24.8	30.4	35.1
•	•	•	12	**2272**	12.2	14.9	19.2	22.8	27.2	33.3	38.5
•	•	•	12.5	**2280**	12.5	15.3	19.8	23.4	28.0	34.3	39.6
•	•	•	13	**2296**	13.2	16.2	20.9	24.8	29.6	36.3	41.9
•	•	•	14	**2320**	14.3	17.5	22.6	26.8	32.0	39.2	45.3
•	•	•	15	**2341**	15.2	18.7	24.1	28.5	34.1	41.8	48.2
•	•	•	16	**2360**	16.1	19.7	25.5	30.1	36.0	44.1	50.9
•	•	•	18	**2410**	18.3	22.5	29.0	34.3	41.0	50.2	58.0
•	•	•	20	**2456**	20.4	25.0	32.2	38.2	45.6	55.8	64.5
•	•	•	25	**2567**	25.4	31.1	40.1	47.4	56.7	69.4	80.2
•	•	•	30	**2682**	30.5	37.4	48.2	57.1	68.2	83.5	96.4
•	•	•	35	**2800**	35.8	43.8	56.6	66.9	80.0	98.0	113
•	•	•	40	**2910**	40.7	49.8	64.3	76.1	91.0	111	128
•	•	•	50	**3113**	50.5	61.9	79.9	94.5	113	138	160
•	•	•	60	**3135**	60.4	73.9	95.5	113	135	165	191

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

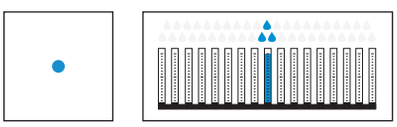
Flow stabilizers are used to improve the stability of the liquid flow as they reduce losses caused by internal turbulence and allow to use a higher percentage of the liquid vein energy to generate a high impact solid flat fan. Flow stabilizers can be installed on all nozzles.

GD (STRAIGHT JET NOZZLES)

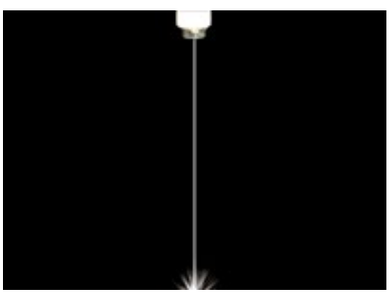
GDA SERIES NEEDLE JET NOZZLES

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.

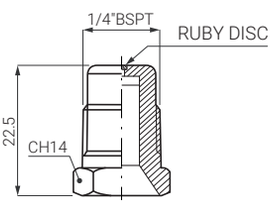
THREAD SPECIFICATION: BSPT, 9/16-24NEF
TYPICAL APPLICATIONS
Washing: filter cloth washing, woolen blanket washing, parts washing
Other applications: scrape paint, rust removal



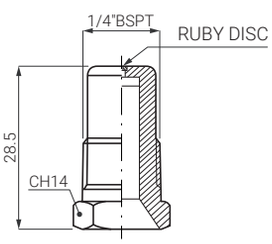
Spray section *Distribution*



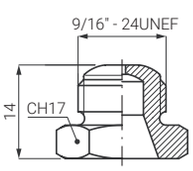
GDA needle jet nozzles are a one-piece construction, suitable to work with operating pressures lower than 20 bar and have a hard ruby spray tip, ideal to work with pressures lower than 200 bar. They are precisely machined and have a hydrodynamic design to produce a solid stream needle jet. Their stainless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



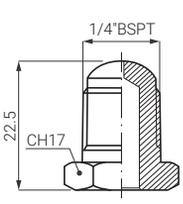
RUBY NOZZLE TIP



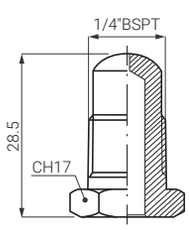
RUBY NOZZLE TIP



METAL / RUBY NOZZLE TIP



METAL



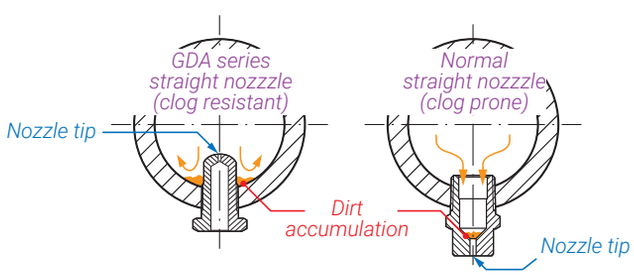
METAL

Nozzle type		CODE	D mm	Capacity at different pressure values (l/min) (bar)								
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					
•	•	GDA 0170 xx xy	0.40	0.17	0.22	0.31	0.44	0.54	0.69	0.82	0.98	1.20
•	•	GDA 0290 xx xy	0.50	0.29	0.37	0.53	0.75	0.92	1.18	1.40	1.67	2.05
•	•	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 lenght	y = Thread
A for 14.0 mm	A for 1/4" BSPT
B for 28.5 mm	B for 9/16 - 24 UNEF
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.



HOW TO MAKE UP THE NOZZLE CODE

EX.: GDA 0120 B1AA

GD A 0120 xx xy

- GD — NOZZLE TYPE
- A — SPRAY NOZZLE
- 0120 — CAPACITY
- xx — MATERIAL
- xy — COMPLETE NOZZLE CODE

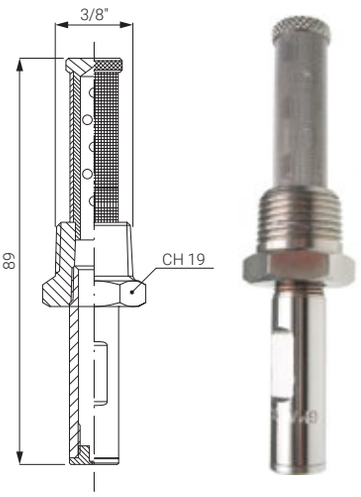
NOZZLE TYPE: • A - 0°

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

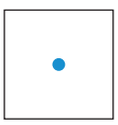
(STRAIGHT NOZZLES / PAPER WEB TRIMMERS) GMA

GMA SERIES PAPER WEB TRIMMERS

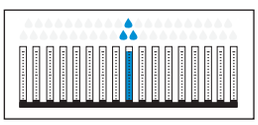
GMA nozzles produce a glass-rod like needle jet, ideal in paper mills to cut and trim the side of your paper web with a sharp edge, precise, clean and with no dust. They are precisely machined. Their smooth high quality ruby tip and special design produce a solid straight jet for precision trimming.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



THREAD SPECIFICATION: 3/8" BSPT, 3/8" NPT
FILTERING FINENESS: 150 Mesh
TYPICAL APPLICATIONS
Felt and wire cleaning
Parts washing NP



Spray section



Distribution

	CODE	D mm
0°	**GMA 0380 xxy**	0.381
	GMA 0500 xxy	0.508
	GMA 0630 xxy	0.635
	GMA 0810 xxy	0.810
	GMA 0890 xxy	0.889
	GMA 0910 xxy	0.914
	GMA 1010 xxy	1.016
	GMA 1220 xxy	1.219

NEW CODE

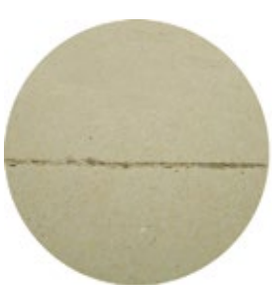
GMA codes have been modified, based on the orifice diameter, measured for every nozzle. Please contact use if you need the capacity at different pressure.

PERFECT CLEANING

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

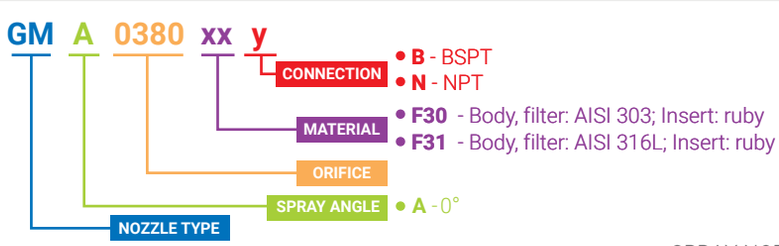
PAPER MACHINE TRIMMING

Poor trim effect *VS* *Perfect trim effect*



HOW TO MAKE UP THE NOZZLE CODE

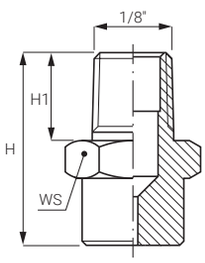
Ex.: GMA 0380 F30B

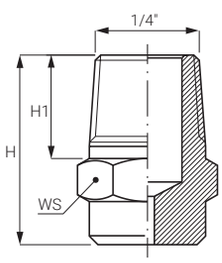


JAA / JBA (STRAIGHT JET NOZZLES)

JAA

JBA



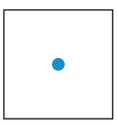


JAA/JBA HIGH IMPACT STRAIGHT JET NOZZLES

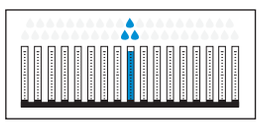
J type high impact straight jet nozzles are a one-piece construction in stainless steel, suitable to work with pressures lower than 20 bar, and have a ruby spray tip suitable for operating pressures lower than 200 bar. The two types, JAA and JBA, have a special hydrodynamic design and are machined with 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

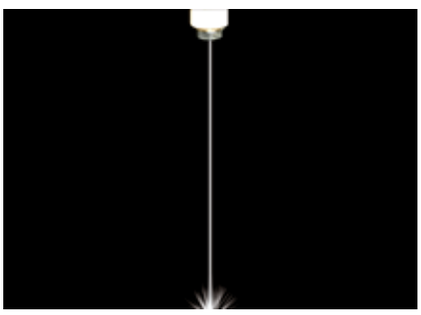
TYPICAL APPLICATIONS
Washing: Felts, filter cloths and parts washing
Other applications: Paint scraping
Rust and shell removal



Spray section



Distribution



DIMENSIONS AND WEIGHTS

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

Nozzle type			CODE	D	Capacity at different pressure values (l/min) (bar)			
JAA (1/8")	JBA (1/4")	JCA (3/8")			3.0	5.0	10	20
•	•		**0060**	0.28	0.06	0.08	0.11	0.15
•	•		**0100**	0.34	0.10	0.13	0.18	0.26
•	•		**0130**	0.38	0.13	0.17	0.24	0.34
•	•		**0150**	0.40	0.15	0.19	0.27	0.39
•	•		**0200**	0.46	0.20	0.26	0.37	0.52
•	•		**0260**	0.53	0.26	0.34	0.47	0.67
•	•		**0390**	0.66	0.39	0.50	0.71	1.01
•	•		**0590**	0.79	0.59	0.76	1.08	1.52
•	•		**0780**	0.91	0.78	1.01	1.42	2.01
•	•		**1120**	1.10	1.20	1.55	2.19	3.10
•	•		**1160**	1.30	1.60	2.07	2.92	4.13
•	•		**1190**	1.30	1.90	2.45	3.47	4.91
•	•		**1233**	1.50	2.33	3.01	4.25	6.02
•	•		**1310**	1.70	3.10	4.00	5.66	8.00
•	•		**1385**	1.80	3.85	4.97	7.03	9.94
•	•		**1490**	2.10	4.90	6.33	8.95	12.7
•	•		**1581**	2.30	5.81	7.50	10.6	15.0
•	•	•	**1780**	2.70	7.80	10.1	14.2	20.1
•	•	•	**1980**	3.00	9.80	12.7	17.9	25.3
•	•	•	**2124**	3.40	12.4	16.0	22.6	32.0
•	•	•	**2153**	3.80	15.3	19.8	27.9	39.5
	•	•	**2195**	4.30	19.5	25.2	35.6	50.3
	•	•	**2245**	4.80	24.5	31.6	44.7	63.3
	•	•	**2274**	5.20	27.4	35.4	50.0	70.7
	•	•	**2310**	5.40	31.0	40.0	56.6	80.0
	•	•	**2390**	6.00	39.0	50.3	71.2	101
	•	•	**2470**	6.20	47.0	60.7	85.8	121

HOW TO MAKE UP THE NOZZLE CODE

Ex.: JAA 0170 B1

J A A 0170 xx

- **NOZZLE TYPE**
- **CONNECTION** • **A** - 1/8" • **B** - 1/4" • **C** - 3/8"
- **SPRAY ANGLE** • **A** - 0°
- **CAPACITY**
- **MATERIAL** • **B1** - AISI 303 Stainless steel body • **B31** - AISI 316L Stainless steel body • **T1** - Brass

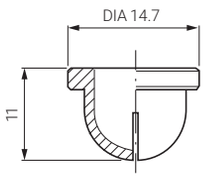
(AIR & STEAM FLAT FAN TIPS) GZS

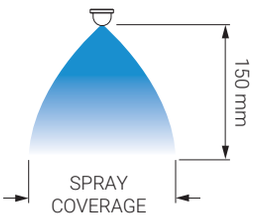
AIR & STEAM FLAT FAN TIPS

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

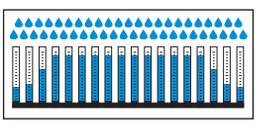
CONNECTION:
flanged nozzle tip

TYPICAL APPLICATIONS:
water removal from surfaces, flocks and water blow off



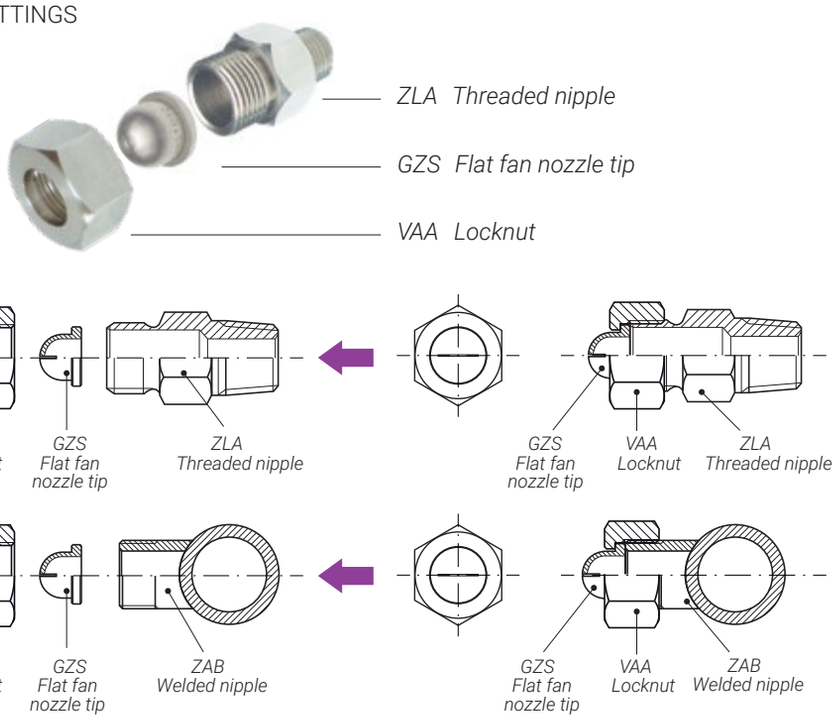



Spray section


Uniform distribution

	CODE	D mm	Air capacity (Nm³/hour) at different pressure values (bar)				Steam capacity (kg/hour) at different pressure values (bar)				Spray coverage mm	
			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