

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 90°C

MAX WORKING PRESSURE

LP 8 bar

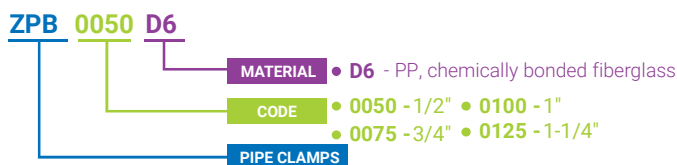
MATERIAL Body
O-ring
Metal parts

D6 PP, chemically bonded fiberglass
E8 NBR
B2 AISI 304 Stainless Steel

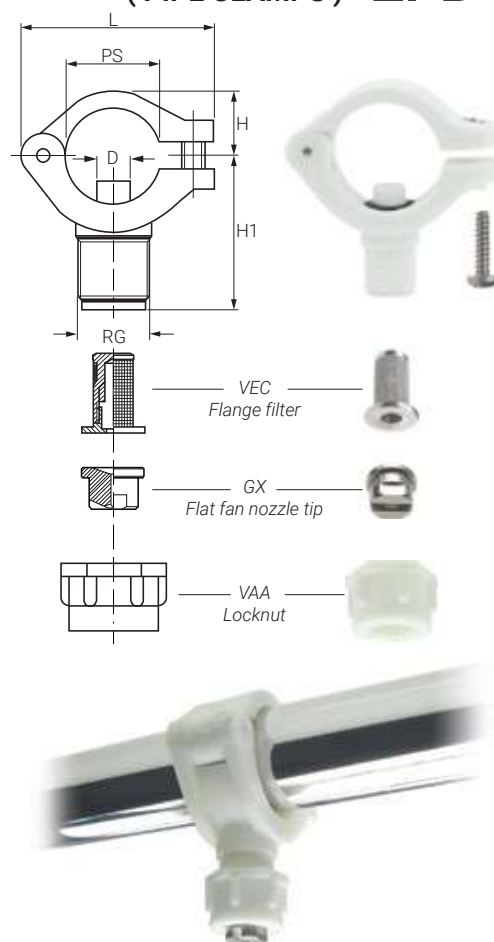
CODE	RG inch	PS inch	PD mm	D mm	H mm	H1 mm	L mm	W g
ZPB 0050 D6SG	3/8"	1/2"	21 / 22	7,60	15,0	36,0	44,5	20,0
ZPB 0074 D6SG		-	25	7,60	19,0	39,0	51,5	24,0
ZPB 0075 D6SG		3/4"	26 / 27	7,60	19,0	39,0	51,5	26,0
ZPB 0100 D6SG		1"	33 / 34	10,0	23,0	46,0	62,0	30,0
ZPB 0125 D6SG		1-1/4"	42 / 43	12,0	35,0	55,0	85,0	75,0

HOW TO MAKE UP THE PRODUCT CODE

Ex.: ZPB 0050 D6



(PIPE CLAMPS) ZPB



(PLASTIC BAYONET PIPE CLAMPS) ZPC

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"

MAX WORKING TEMPERATURE

LT 90°C

MAX WORKING PRESSURE

LP 8 bar

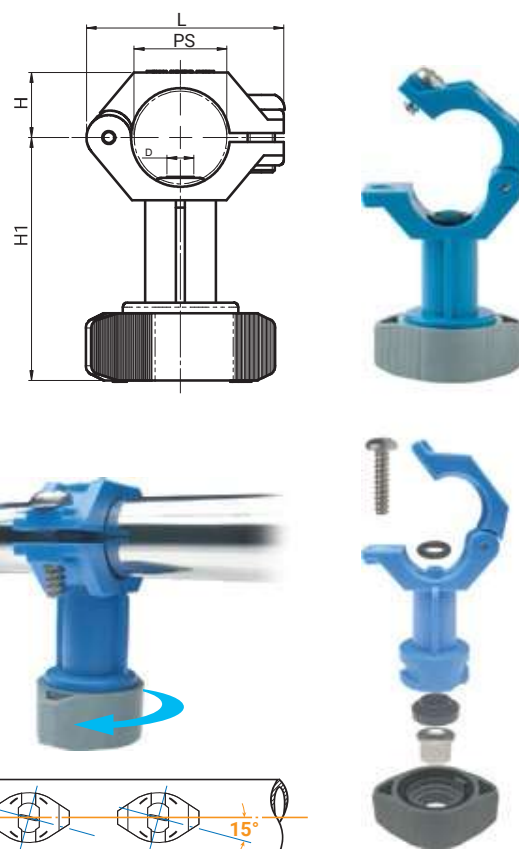
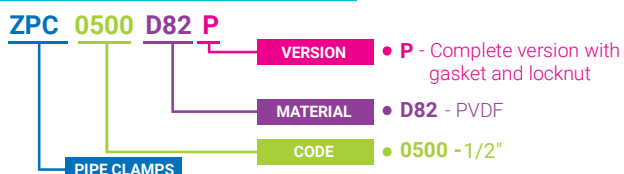
MATERIAL Body
O-ring
Metal parts

D82 PVDF, moulded
E7 Viton
B3 AISI 316 Stainless Steel

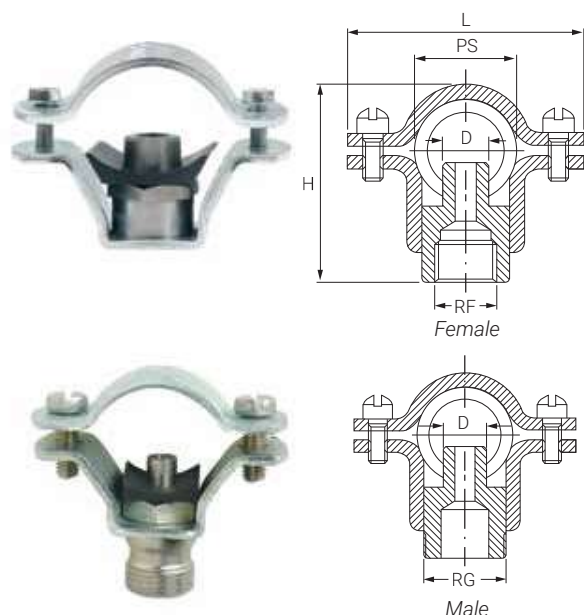
CODE	PS inch	PD mm	D mm	H mm	H1 mm	L mm	W g
ZPC 0500 D82P	1/2"	20/22	6.0	14.5	54.0	44.0	45.0

HOW TO MAKE UP THE PRODUCT CODE

Ex.: ZPC 0500 D82P



ZPM (METAL PIPE CLAMPS)



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 20 bar
MATERIAL	Body Screws Nipples Gasket
	B2 AISI 304 Stainless Steel A8 Zinc coated steel B2 AISI 304 Stainless Steel B31 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"				48	
ZPM 0050 xxUW		3/8"					
ZPM 0075 xxAW	3/4"	1/8"	17	11	7	45	58
ZPM 0075 xxBW		1/4"				53	
ZPM 0075 xxUW		3/8"					
ZPM 0100 xxAW	1"	1/8"	17	11	7	45	65
ZPM 0100 xxBW		1/4"				53	
ZPM 0100 xxUW		3/8"					
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"					

ZPM Metal clamps
+
PF Hollow cone nozzle

CODE COMPLEMENTS

Ex.: ZPM 0050 A8 AA

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

NOTE: Nipple thread (letter **Y**) can be 3/8" BSP F (letter C) or 1/2" BSP F (letter D) only for pipe sizes (PS in the above table) equal or grater than 1-1/2".

ZPM 0050 **xx YW**

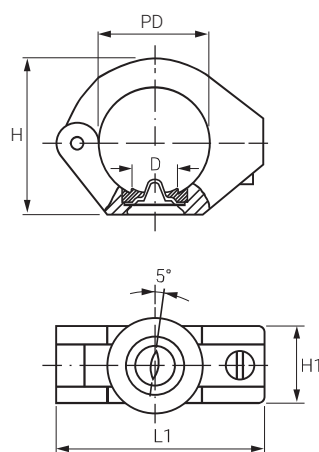
XX	FOR CLAMP MATERIAL	Y	FOR NIPPLE THREAD	W	FOR NIPPLE MATERIAL
A8	Zinc coated steel	A	1/8" BSP Female	A	Brass
B2	AISI 304	B	1/4" BSP Female	B	AISI 303
		C	3/8" BSP Female	C	AISI 316L
		D	1/2" BSP Female		
		U	3/8" BSP Male		

(DISK NOZZLE PIPE CLAMP) ZPH**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	LT	90°C
MAX WORKING PRESSURE	LP	7 bar
FITTING DIMENSIONS	Outer pipe diameter	50 mm
	Inner pipe diameter	47 mm
	Feed hole	19 mm
MATERIAL	Fascetta	D6 PP, chemically bonded fiberglass
	Perno, vite	B3 AISI 316 Stainless Steel
TYPICAL APPLICATION	Paper machines self-cleaning pipes	



CODE	PD mm	D mm	H mm	H1 mm	L1 mm
ZPH 0150 D6	52	19	70	34	91

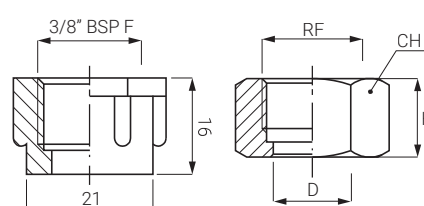
HOW TO MAKE UP THE PRODUCT CODE Ex.: ZPH 0150 D6

**(LOCKNUTS) VAA****LOCKNUTS**

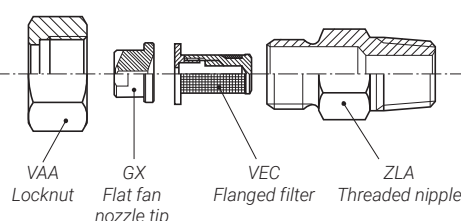
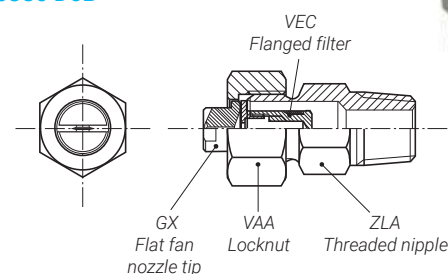
VAA locknuts in steel or brass are mounted on all ZAA, ZAC, ZLA and ZPB nipples to fix various types of nozzles. The VAA 0380 D6B locknut, on the other hand, is used with the ZPB clamp.

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		•

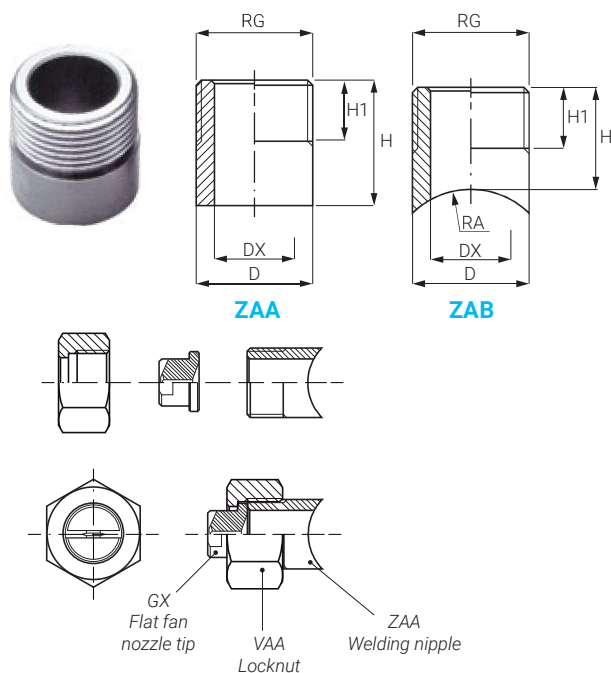
HOW TO MAKE UP THE PRODUCT CODE Ex.: VAA 0380 B1B



VAA 0380 D6B



ZAA / ZAB (STANDARD WELDING NIPPLES)



STANDARD WELDING 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.

THREAD SIZE 3/8", 3/4"

MATERIAL **B1** AISI 303 Stainless Steel **D1** PP
B31 AISI 316L Stainless Steel **D8** PVDF

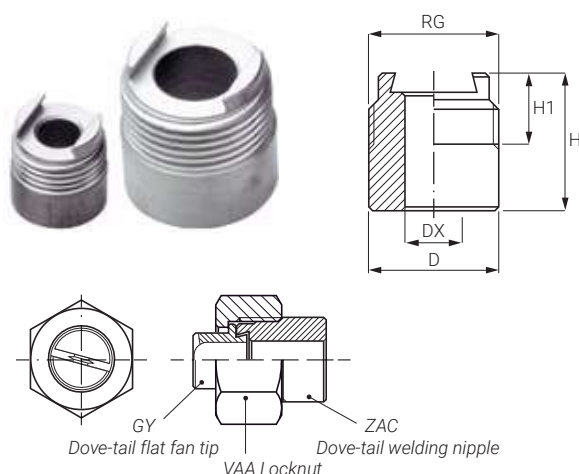
CODE	RG inch	H mm	H1 mm	D mm	DX mm	RA mm	W g
ZAA C018 xxG	3/8"	18	10	17	11.5	-	20
ZAA E027 xxG	3/4"	27	15	27	18.0	-	61

RADIUSED

ZAB C018 xxD	3/8"	18	10	17	11.5	10.0	20
ZAB C018 xxE						12.5	
ZAB C018 xxF						16.0	
ZAB C018 xxG						20.0	
ZAB C018 xxH						25.0	

PNR Italia is available to supply additional models with measures on request.

ZAC (DOVE-TAIL WELDING NIPPLES)



DOVE-TAIL WELDING NIPPLES

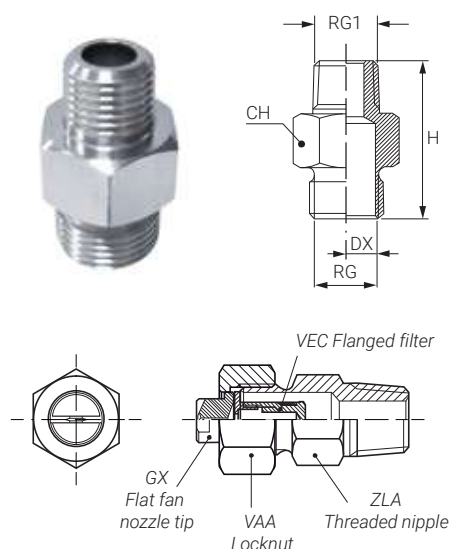
ZAC welding nipples are manufactured with a dovetail end to match GY type dove-tail nozzle tips. One end of the nipple is fastened onto the pipe and the other end to the nozzle tip by means of a VAA locknut. The dove-tail design of these nipples keeps them properly orientated in the desired position,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

THREAD SIZE 3/8", 3/4", 1 1/4"

MATERIAL **B1** AISI 303 Stainless Steel **D2** PP
B31 AISI 316L Stainless Steel **D8** PVDF

CODE	RG inch	H mm	H1 mm	D mm	DX mm	W g
ZAC C018 xx	3/8"	18.0	10.0	17	7.5	20
ZAC E027 xx	3/4"	27.5	14.0	27	14.0	61
ZAC G040 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.

INLET THREAD SIZE 1/8", 1/4", 3/8", 1/2", 3/4"

OUTLET THREAD SIZE 1/8", 1/4", 3/8", 1/2", 3/4"

CONNECTION RG1: BSPT (A), BSP (C)

MATERIAL

B1 AISI 303 Stainless Steel

B31 AISI 316L Stainless Steel

RG: BSP

T1 Brass

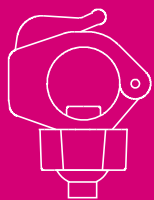
D1 PVC

D2 PP

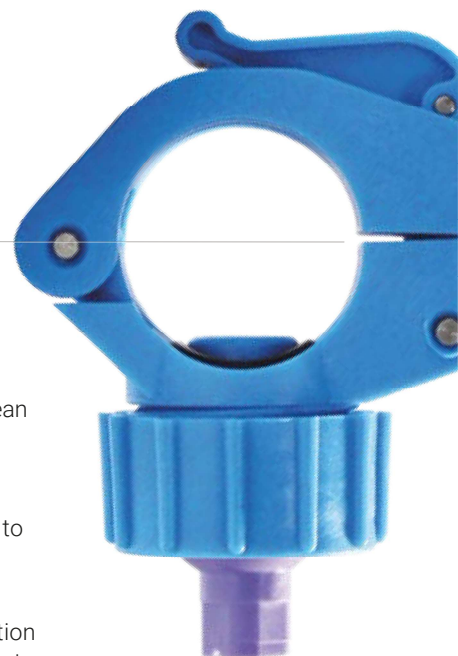
D8 PVDF

CODE	RG inch	RG1 poll	DX mm	H mm	CH mm	W g	RG1 RG	1/8"	1/4"	3/8"	1/2"	3/4"
ZLx 1212 xxB	1/8"	1/8"	5.00	25.0	14	18	1/8"	•	•	•	•	•
ZLx 2525 xxB	1/4"	1/4"	7.50	29.0	19	20	1/4"		•	•	•	•
ZLx 3838 xxB	3/8"	3/8"	10.0	35.0	19	25	3/8"	•	•	•	•	•
ZLx 5050 xxB	1/2"	1/2"	15.0	38.0	27	50	1/2"			•	•	•
ZLx 7575 xxB	3/4"	3/4"	18.0	40.0	32	90	3/4"				•	•

The table on the right shows the different combinations PNR Italia can produce, based on the inlet thread size RG1 and the outlet thread size RG. Our Technical Office is at your disposal to give you codes and dimensions.

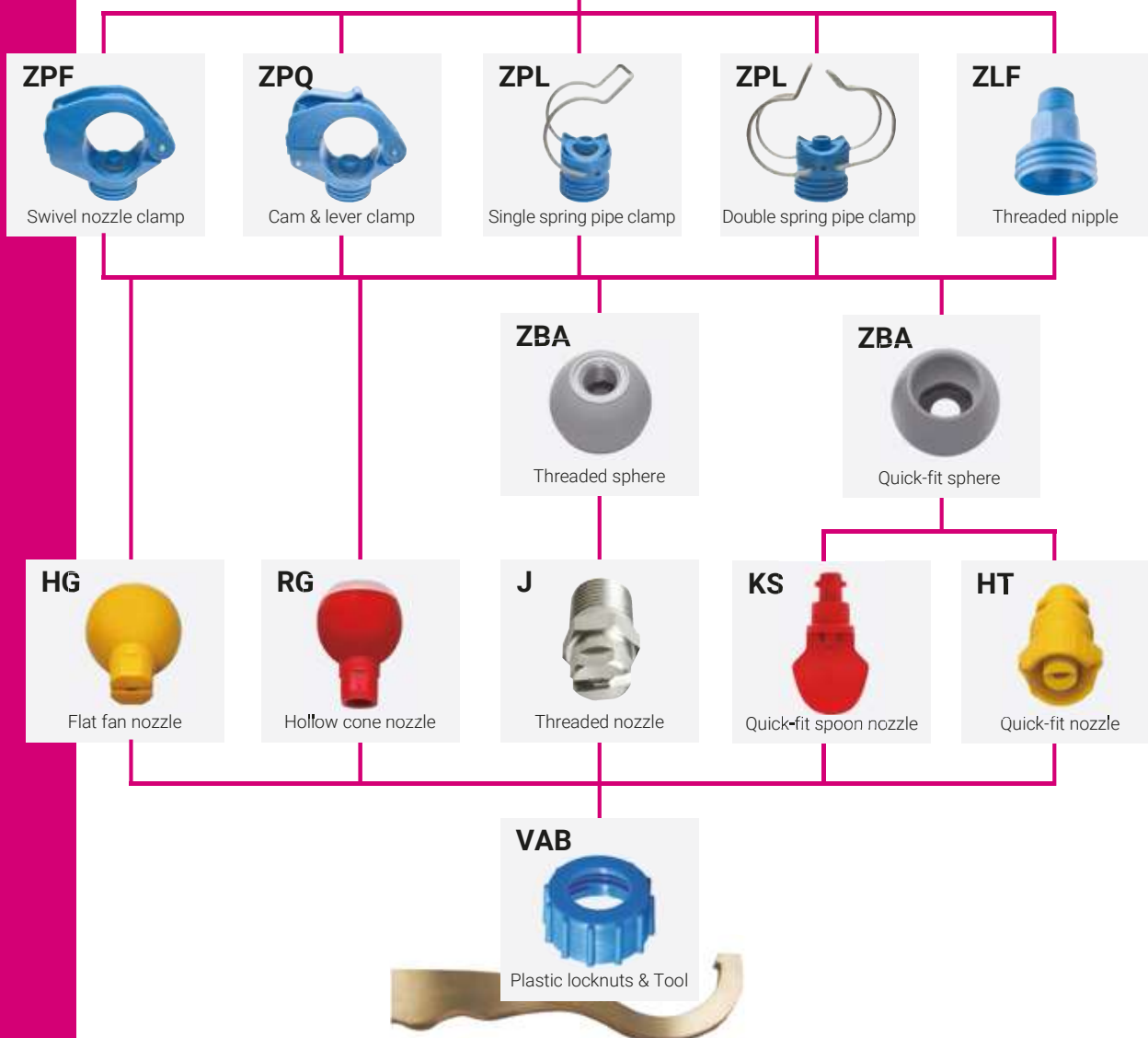


CLIP-ON NOZZLES



Diversified manufacturing is a competitiveness key-factor today. PNR Italy manufactures several diversified products to meet all costumers' needs and help them achieve their production targets. Its complete product range includes clip-on nozzles which now widely used by European and American automobile manufacturers. In the automobile industry the coating lines are representative of diversified production requiring timely adjustments of nozzles spray direction and coverage. Moreover, in such operating environments, nozzles must be regularly cleaned and serviced to ensure high quality coating.

To satisfy such requirements PNR has developed cutting-edge quality products to enhance the productivity and competitiveness of the production plant. PNR clip-on adjustable nozzles, made with innovative design and in top quality materials, shorten installation, adjustment and servicing times to the benefit of production efficiency. These nozzles are installed on pipes and can be rapidly released and changed at any time or easily adjusted to different production conditions.



(SWIVEL NOZZLE CLAMPS) **ZPF**

SWIVEL NOZZLE CLAMPS

ZPF swivel clamps are specially designed for HGQ, RGN and ZBA series. To install them on pipes all you need is drill a hole, insert the nozzle clamp inside and fasten it with a simple screwdriver. The nozzle clamp body is in PP chemically bonded fibreglass whereas accessoril bolts and screws are made in stainless steel AISI 316. They are robust, easy to install, adjust and service and their design revolutioned modern surface pre-treatment plants. They provide excellent performance at high temperatures and easy spray jet orientation.

TYPICAL APPLICATION

Cleaning equipment used in pre-treatment for coating process

MAX WORKING TEMPERATURE

LT 90°C

MAX WORKING PRESSURE

LP 5 bar

MATERIAL Body
Pin & bolt
O-ring

D6 PP, chemically bonded fiberglass
B3 AISI 316 Stainless Steel
E8 NBR

CODE	PS inch	PD mm	D mm	H mm	H1 mm	L mm	A deg	W g
ZPF A125 D6	1 1/4"	41/43	20.0	83	54	84	40°	85
ZPF B125 D6			17.0					
ZPF C125 D6			14.0					
ZPF A150 D6	1 1/2"	46/49	20.0	90	57	90	40°	88
ZPF B150 D6			17.0					
ZPF C150 D6			14.0					

HOW TO MAKE UP
THE PRODUCT CODE

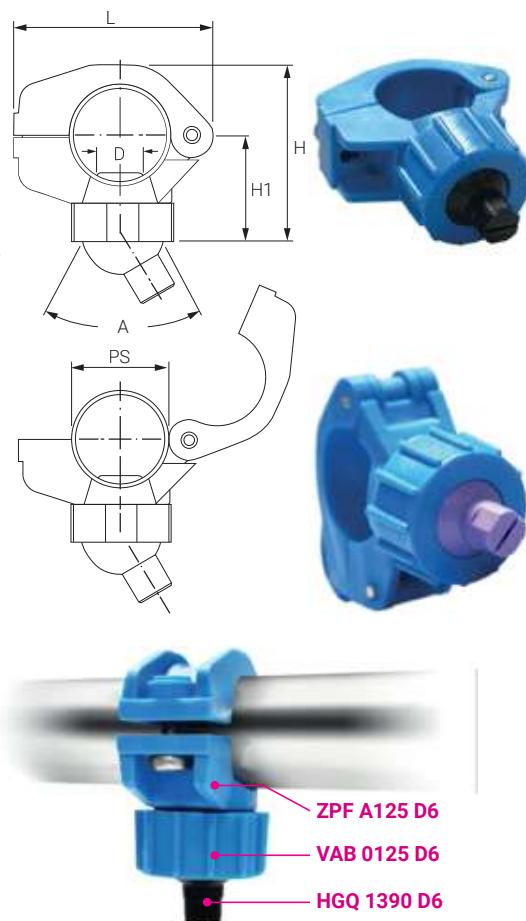
Ex.: ZPF A125 D6

ZPF **A125** **D6**

MATERIAL • **D6** - PP, chemically bonded fiberglass

CODE

SWIVEL NOZZLE PIPE CLAMPS

(SWIVEL NOZZLE CAM AND LEVER CLAMPS) **ZPQ**

SWIVEL NOZZLE CAM AND LEVER CLAMPS

ZPQ cam and lever clamps are specially designed for HGQ, RGN and ZBA ball nozzles. Only three steps to install them on a pipe: drill a hole, wrap the cam around the pipe and pull the lever down to block it. No need of tools. The body is in PP chemically bonded fibreglass whereas accessoril bolts and screws are made in stainless steel AISI 316. ZPQ swivel nozzles with cam and lever clamps provide excellent performance at high temperatures and easy spray jet orientation.

COMMON APPLICATION

Surface pre-treatment plants

MAX WORKING TEMPERATURE

LT 90°C

MAX WORKING PRESSURE

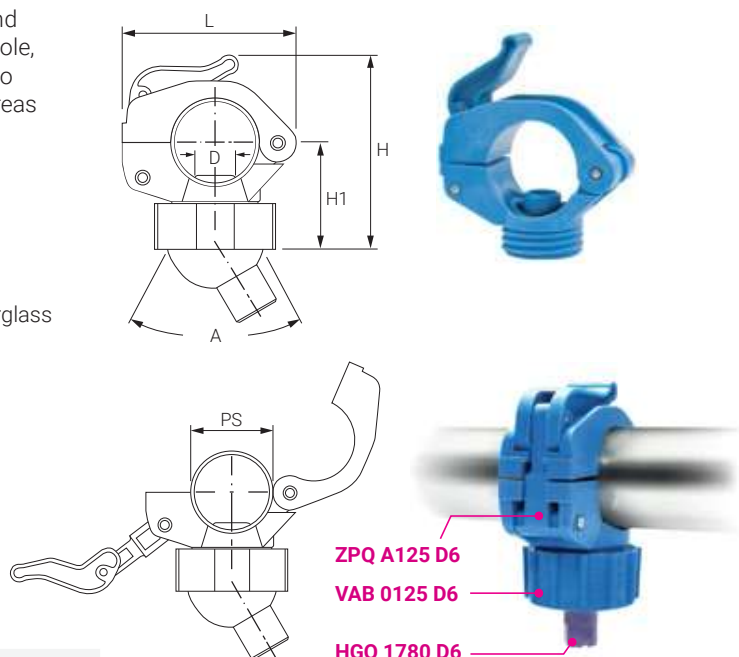
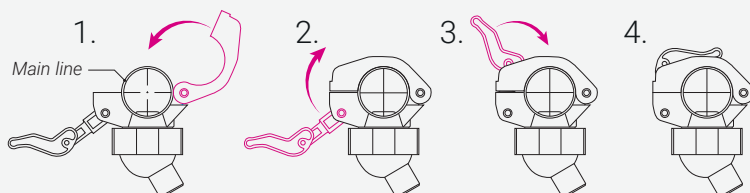
LP 5 bar

MATERIAL Body
Pin & bolt
O-ring
Seal

D6 PP, chemically bonded fiberglass
B3 AISI 316 Stainless Steel
E8 NBR
D22 Soft polypropylene

CODE	PS inch	PD mm	D mm	H mm	H1 mm	L mm	A deg	W g
ZPQ A125 D6	1 1/4"	42/43	20.0	93	41	84	40°	87
ZPQ B125 D6			17.0					
ZPQ A150 D6	1 1/2"	48/49	20.0	96	44	95	40°	97
ZPQ B150 D6			17.0					

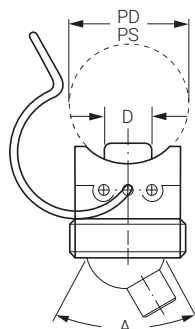
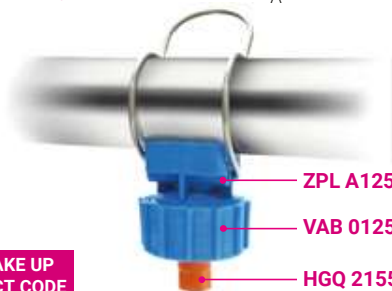
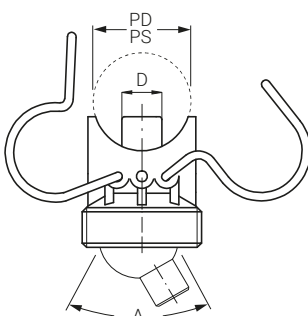
HOW TO INSTALL THE SWIVEL NOZZLE CAM & LEVER CLAMPS



ZPL (SWIVEL NOZZLE SPRING PIPE CLAMPS)



ZPL Single spring

ZPL Double spring
Better stability

ZPL A125 D6 S1B

VAB 0125 D6

HGQ 2155 D5

HOW TO MAKE UP THE PRODUCT CODE

ZPL A 100 D6 X Y Z

VERSION • B - Nuova versione

SPRING NUMBER • 1 - Single spring
• 2 - Double spring (only AISI 302)SPRING MATERIAL • S - AISI 302 Stainless Steel
• A - AISI 316L Stainless Steel

MATERIAL • D6 - PP, chemically bonded fiberglass

PIPE DIAMETER
NIPPLE DIAMETER • 100 - Ø 33.4 mm • 150 - Ø 48.3 mm
• 101 - Ø 32.0 mm • 151 - Ø 50.0 mm
• 125 - Ø 42.2 mm • 200 - Ø 60.3 mm
• 126 - Ø 40.0 mm • 201 - Ø 63.0 mmCLAMP TYPE
• A - Ø 20 mm
• B - Ø 17 mm
• C - Ø 14 mm

SWIVEL NOZZLE SPRING PIPE CLAMPS

ZPL pipe clamps are specially designed for swivel ball nozzles. Drill a hole and fix the clamp with the spring(s). Body is made of fibreglass reinforced PP, screw and spring in AISI 316L (or AISI 302). ZPL swivel nozzles work under high temperature and high degree of intensity. ZPL swivel nozzle pipe clamps are widely used in surface pre-treatment.

TYPICAL APPLICATION Cleaning equipment used in pre-treatment for coating process

MAX WORKING TEMPERATURE LT 80°C

MAX WORKING PRESSURE Single spring 3 bar

Double spring 7 bar

MATERIAL Body D6 PP, chemically bonded fiberglass

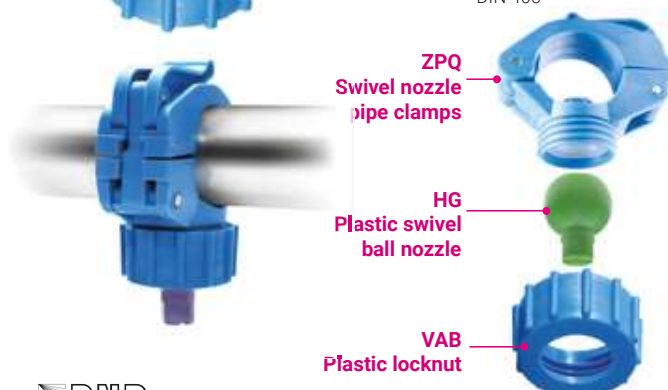
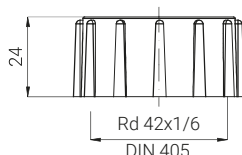
Spring N1 AISI 302 Stainless Steel

B31 AISI 316L Stainless Steel

O-ring E8 NBR

CODE	PS		PD mm	D mm	A deg
	inch	DN			
ZPL A100 D6 XYZ	1"	DN25	33.4	20.0	40°
ZPL B100 D6 XYZ	1"	DN25	33.4	17.0	40°
ZPL C100 D6 XYZ	1"	DN25	33.4	14.0	40°
ZPL A101 D6 XYZ	1"	DN25	32.0	20.0	40°
ZPL B101 D6 XYZ	1"	DN25	32.0	17.0	40°
ZPL C101 D6 XYZ	1"	DN25	32.0	14.0	40°
ZPL A125 D6 XYZ	1 1/4"	DN32	42.2	20.0	40°
ZPL B125 D6 XYZ	1 1/4"	DN32	42.2	17.0	40°
ZPL C125 D6 XYZ	1 1/4"	DN32	42.2	14.0	40°
ZPL A126 D6 XYZ	1 1/4"	DN32	40.0	20.0	40°
ZPL B126 D6 XYZ	1 1/4"	DN32	40.0	17.0	40°
ZPL C126 D6 XYZ	1 1/4"	DN32	40.0	14.0	40°
ZPL A150 D6 XYZ	1 1/2"	DN40	48.3	20.0	40°
ZPL B150 D6 XYZ	1 1/2"	DN40	48.3	17.0	40°
ZPL C150 D6 XYZ	1 1/2"	DN40	48.3	14.0	40°
ZPL A151 D6 XYZ	1 1/2"	DN40	50.0	20.0	40°
ZPL C151 D6 XYZ	1 1/2"	DN40	50.0	14.0	40°
ZPL A200 D6 XYZ	2"	DN50	60.3	20.0	40°
ZPL B200 D6 XYZ	2"	DN50	60.3	17.0	40°
ZPL C200 D6 XYZ	2"	DN50	60.3	14.0	40°
ZPL A201 D6 XYZ	2"	DN50	63.0	20.0	40°
ZPL B201 D6 XYZ	2"	DN50	63.0	17.0	40°
ZPL C201 D6 XYZ	2"	DN50	63.0	14.0	40°

VAB (PLASTIC LOCKNUTS)

ZPQ
Swivel nozzle
pipe clampsHG
Plastic swivel
ball nozzleVAB
Plastic locknut

PLASTIC LOCKNUTS

VAB plastic locknuts are exclusively designed for ball nozzles. Their special thread and shape allow to assemble the cap and by hand, with no need of tools, thus making all servicing operations easier and quicker. They are made of high quality PP or chemically bonded fiberglass to keep stability at high temperatures and offer the best resistance to chemicals.

MATERIAL D6 PP, caricato fibravetro

MAX WORKING TEMPERATURE LT 80°C

HOW TO MAKE UP THE PRODUCT CODE

Ex.: VAB 0125 D6

VAB 0125 D6

MATERIAL • D6- PP, chemically bonded fiberglass

CODE

LOCKNUT

(SWIVEL NOZZLE THREADED NIPPLE) **ZLF**

SWIVEL NOZZLE THREADED NIPPLE

ZLF series threaded nipples offer another convenient type of installation for swivel ball nozzles. They are made of fibreglass reinforced PP. ZLF series work under high temperature and high degree of intensity. ZLF threaded nipples are widely used in surface pre-treatment.

TYPICAL APPLICATION Cleaning equipment used in pre-treatment for coating process

MATERIAL **D6** PP, chemically bonded fibreglass

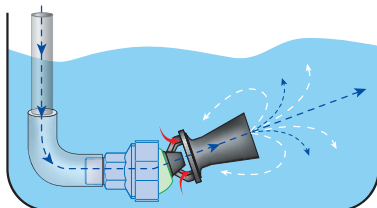
CODE	RG inch BSPT	RG inch NPT	W g
ZLF A038 D6	3/8"	-	15
ZLF B038 D6	-	3/8"	
ZLF A050 D6	1/2"	-	
ZLF B050 D6	-	1/2"	

MAX WORKING TEMPERATURE

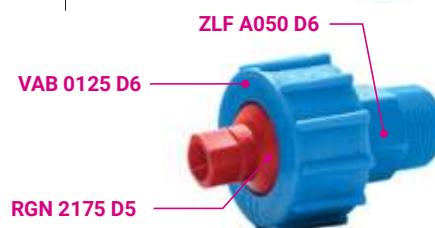
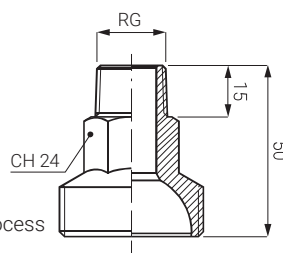
LP 4 bar

MAX WORKING TEMPERATURE

LT 90°C



ZLF threaded nipples offer the best mixing effect and are often used in combination with UPB mixing eductors.

(PLASTIC END CAPS) **VAE**

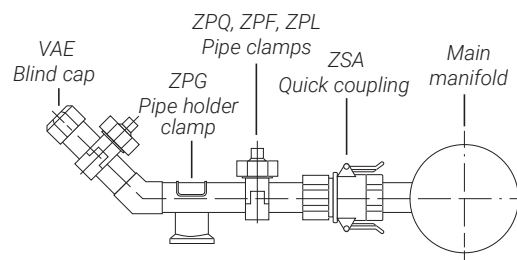
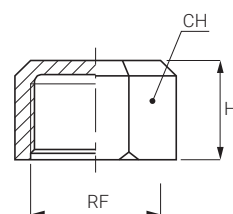
PLASTIC END CAPS

VAE plastic caps are specially used to close pipes ends. Besides, 1 1/4" VAE 1250 D6 plastic caps can be used to seal pipes ends when, to manufacture different size products, it's necessary to reduce the quantity of swivel nozzles. They are made of high quality PP or chemically bonded fibreglass to keep stability at high temperatures and offer the best resistance to chemicals. They are widely used in surface pre-treatment.

MATERIAL **D6** PP, chemically bonded fibreglass

MAX WORKING TEMPERATURE LT 90°C

CODE	RF inch	H mm	CH mm
VAE 0100 D6	1"	25	42
VAE 0125 D6	1 1/4"	32	52
VAE 0150 D6	1 1/2"	32	60

(THREADED AND QUICK-FIT SPHERES) **ZBA**

THREADED AND QUICK-FIT SPHERES

ZBA swivel nozzles are produced with three different types of connections: threaded, quick-fit and blind hole. The threaded nozzles are assembled to threaded swivel joints. The quick-fit types are designed for HTQ/KSQ quick-fit flat fan nozzles whereas the blind hole models are specially used in spraying processes requiring changes and pauses.

CODE	CONNECTION			TYPE	L mm	D mm	H mm
	RF/RG	M/F	BSP/NPT				
ZBA 0000 D5x	Blind	---	---	---	35.0	17.5	27.5
ZBA 0039 D5	3/8"	M	BSP	Mobile	35.0	20.0	27.3
ZBA GAT1 D5x	1/8"	F	BSP	Mobile	35.0	20.0	27.3
ZBA GBT1 D5x	1/4"	F	BSP	Mobile	35.0	20.0	27.3
ZBA GCT1 D5x	3/8"	F	BSP	Mobile	35.0	20.0	27.3
ZBA GDT1 D5x	1/2"	F	BSP	Mobile	35.0	20.0	27.3
ZBA NAT1 D5x	1/8"	F	NPT	Mobile	35.0	20.0	27.3
ZBA NBT1 D5x	1/4"	F	NPT	Mobile	35.0	20.0	27.3
ZBA NCT1 D5x	3/8"	F	NPT	Mobile	35.0	20.0	27.3
ZBA NDT1 D5x	1/2"	F	NPT	Mobile	35.0	20.0	27.3
ZBA GAT2 D5x	1/8"	F	BSP	Fissa	27.4	26.0	35.1
ZBA GBT2 D5x	1/4"	F	BSP	Fissa	27.4	26.0	35.1
ZBA GCT2 D5x	3/8"	F	BSP	Fissa	27.4	26.0	35.1
ZBA GDT2 D5x	1/2"	F	BSP	Fissa	27.4	26.0	35.1
ZBA QQN2 D6	Quick	---	---	Mobile	35.0	23.4	27.0

Gasket
(LPDE)

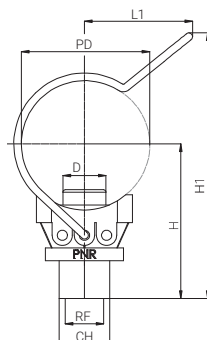
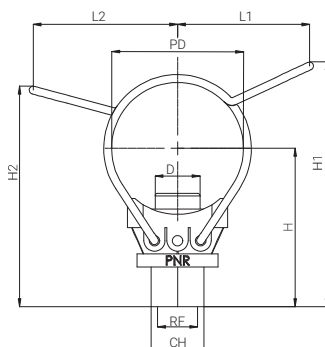


Body
(PP, chemically
bonded fibreglass)

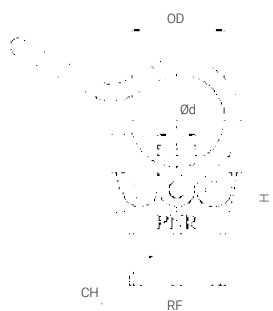
ZPN (SPRING PIPE CLAMPS)



ZPN Single spring

ZPN Double spring
Better stability

ZPN MINI Single spring



CODE AND DIMENSION FOR ZPN

CODE	RF inch	PS		PD mm	D mm	CH mm
		inch	DN			
ZPN B151 D6C1	3/8" F	1 1/2"	DN40	48.2 - 50.0	17.0	20
ZPN B151 D6D1	1/2" F	1 1/2"	DN40	48.2 - 50.0	17.0	26
ZPN B151 D6C2	3/8" F	1 1/2"	DN40	48.2 - 50.0	17.0	20
ZPN B151 D6D2	1/2" F	1 1/2"	DN40	48.2 - 50.0	17.0	26

SPRING PIPE CLAMPS

ZPN spring clamps provide quick connection of 3/8" and 1/2" male threaded nozzles to 1 1/2" pipes. Geometrical characteristics of ZPN are same as ZPL in connection pipe side. Single or double spring versions are available. ZPN pipe clamps are widely used in pre-treatment for coating process.

TYPICAL APPLICATION Cleaning equipment used in pre-treatment for coating process

MAX WORKING TEMPERATURE LT 90°C

MAX WORKING PRESSURE Single spring 3 bar
Double spring 7 bar

MATERIAL Body **D6** PP, chemically bonded fiberglass
Spring **N1** AISI 302 Stainless Steel
B31 AISI 316L Stainless Steel
O-ring **E8** NBR

MINI SPRING PIPE CLAMPS

ZPN MINI spring clamps provide quick connection of 1/8", 1/4", 3/8" and 1/2" female threaded to 1/2", 3/4" and 1" pipes. It's enough make one hole on pipe, insert the clamp with the seal and fix to pipe with the spring. Up to now, only single spring model is available. Models are made of different colours, depending on pipe size (yellow clamp for pipe size 1/2", green clamp for pipe size 3/4", blue clamp for pipe size 1").

TYPICAL APPLICATION Cleaning equipment used in pre-treatment for coating process

MAX WORKING TEMPERATURE LT 90°C

MAX WORKING PRESSURE LP 5 bar

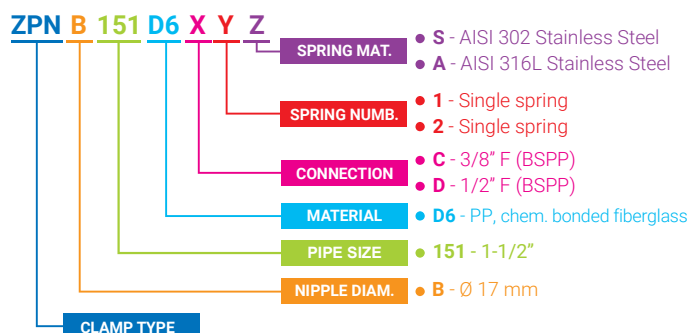
MATERIAL Body **D6** PP, chemically bonded fiberglass
Spring **B3** AISI 316 Stainless Steel
O-ring **E8** NBR

CODE AND DIMENSION FOR ZPN MINI

CODE	RF inch	OD inch	Ød mm	CH mm	H mm	COLOUR
ZPN E050 D6AMA	1/8" F	1/2"	9.00	16	38.0	YELLOW
ZPN E050 D6BMA	1/4" F	1/2"	9.00	18	38.0	
ZPN E050 D6CMA	3/8" F	1/2"	9.00	22	38.0	
ZPN E050 D6DMA	1/2" F	1/2"	9.00	24	38.0	
ZPN D075 D6AMA	1/8" F	3/4"	11.0	16	41.0	GREEN
ZPN D075 D6BMA	1/4" F	3/4"	11.0	18	41.0	
ZPN D075 D6CMA	3/8" F	3/4"	11.0	22	41.0	
ZPN D075 D6DMA	1/2" F	3/4"	11.0	24	41.0	
ZPN F100 D6AMA	1/8" F	1"	13.0	16	45.0	BLUE
ZPN F100 D6BMA	1/4" F	1"	13.0	18	45.0	
ZPN F100 D6CMA	3/8" F	1"	13.0	22	45.0	
ZPN F100 D6DMA	1/2" F	1"	13.0	24	45.0	

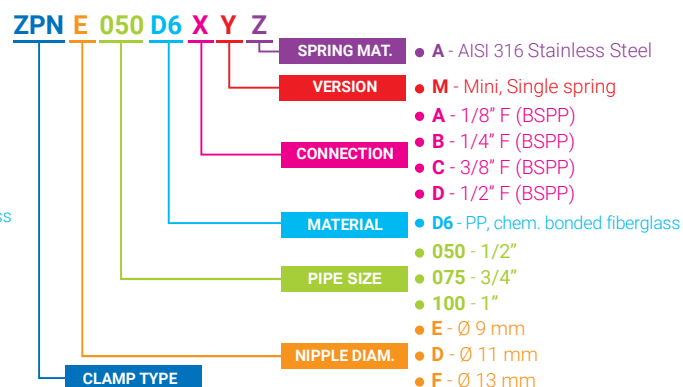
HOW TO MAKE UP THE PRODUCT CODE

ZPN



HOW TO MAKE UP THE PRODUCT CODE

ZPN MINI



(MINI QUICK-FIT NOZZLES) DT/QM, HT/QM

MINI QUICK-FIT NOZZLES

DT/QM full cone spray nozzles and HT/QM flat fan spray nozzles, assembled onto a nipple with 3/8", 1/4" e 1/8" BSPT connections, offer the convenience of a quick coupling which allows a simple assembly. Moreover, the special seal - **patented by PNR Italia** - between nipple and nozzle avoids any risk of leakage. To allow a perfect spray pattern alignment, the spray jet has an offset angle of 10° from the hexagon of the nipple onto which the nozzle is assembled. This type of nozzles are extremely convenient for maintenance and can be quickly replaced in case of clogging. The various flow rates of these nozzles are marked by different colours. They are made in glass fibre-reinforced PP to ensure maximum stability at high temperatures and chemical resistance.

MATERIAL D6 PP, chemically bonded fiberglass
NIPPLE DIMENSIONS 1/8", 1/4", 3/8" BSPT
MAX TEMP. D'ESERCIZIO LT 90 °C
TYPICAL APPLICATION

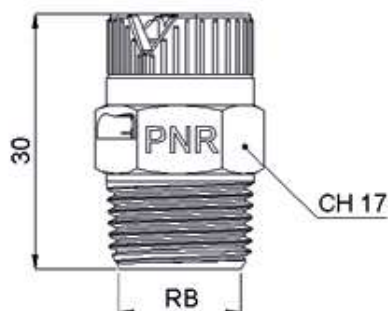
Washing: food cleaning, parts cleaning, filter cloth cleaning, vehicles cleaning

Lubrication: spray of lubricants and release agents

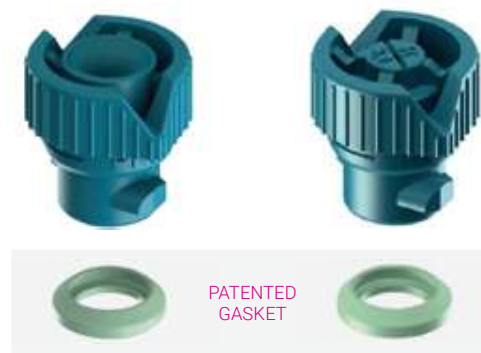
Agriculture: spray of antifouling chemicals

Cooling: product cooling

Other applications: spray of chemicals



	CODE	Capacity at different pressure values					Colour
		1.0	2.0	3.0	4.0	5.0	
45° 65° 90° 120°	DTx 0780 D6QM	0.45	0.64	0.78	0.90	1.01	GREY
	DTx 1100 D6QM	0.58	0.82	1.00	1.15	1.29	BROWN
	DTx 1120 D6QM	0.69	0.98	1.20	1.39	1.55	BLACK
	DTx 1150 D6QM	0.87	1.22	1.50	1.73	1.94	LIGHT ORANGE
	DTx 1190 D6QM	1.10	1.55	1.90	2.19	2.45	LIGHT GREEN
	DTx 1235 D6QM	1.36	1.92	2.35	2.71	3.03	LIGHT YELLOW
	DTx 1294 D6QM	1.70	2.40	2.94	3.39	3.80	SKY BLUE
	DTx 1370 D6QM	2.14	3.02	3.70	4.27	4.78	WHITE
	DTx 1470 D6QM	2.71	3.84	4.70	5.43	6.07	RED
	DTx 1590 D6QM	3.41	4.82	5.90	6.81	7.62	DARK GREY
	DTx 1740 D6QM	4.27	6.04	7.40	8.54	9.55	BROWN/BLACK
	DTx 2112 D6QM	6.47	9.14	11.2	12.9	14.5	RED ORANGE

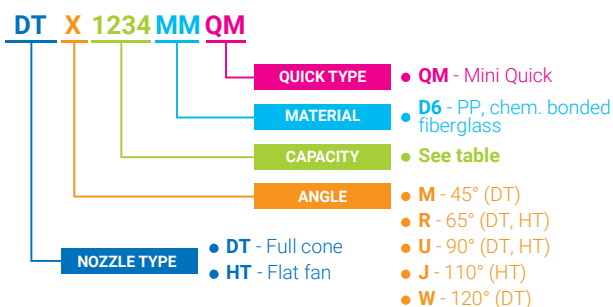


DT/QM
+
Gasket
+
Nipple

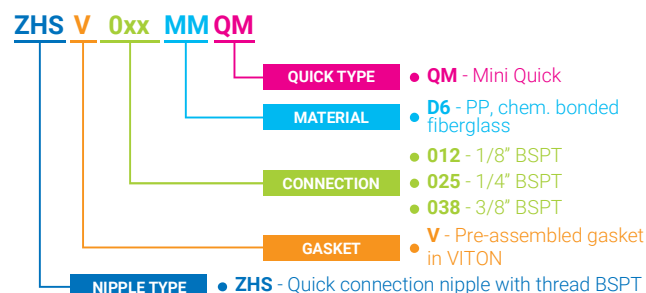
HT/QM
+
Gasket
+
Nipple

	CODE	Capacity at different pressure values					Colour
		1.0	2.0	3.0	4.0	5.0	
65° 90° 110°	HTx 0780 D6QM	0.45	0.64	0.78	0.78	1.01	GREY
	HTx 1100 D6QM	0.58	0.82	1.00	1.15	1.29	BROWN
	HTx 1120 D6QM	0.69	0.98	1.20	1.39	1.55	BLACK
	HTx 1160 D6QM	0.92	1.31	1.60	1.85	2.07	LIGHT ORANGE
	HTx 1190 D6QM	1.10	1.55	1.90	2.19	2.45	LIGHT GREEN
	HTx 1233 D6QM	1.35	1.90	2.33	2.69	3.01	LIGHT YELLOW
	HTx 1310 D6QM	1.79	2.53	3.10	3.58	4.00	SKY BLUE
	HTx 1390 D6QM	2.25	3.18	3.90	4.50	5.03	WHITE
	HTx 1590 D6QM	3.41	4.82	5.90	6.81	7.62	DARK GREY
	HTx 1780 D6QM	4.50	6.37	7.80	9.01	10.1	BROWN/BLACK
	HTx 1980 D6QM	5.66	8.00	9.80	11.3	12.7	PURPLE
	HTx 2117 D6QM	6.75	9.55	11.7	13.5	15.1	RED ORANGE
	HTx 2135 D6QM	7.79	11.0	13.5	15.6	17.4	LILAC
	HTx 2153 D6QM	8.83	12.5	15.3	17.7	19.8	GREEN
	HTx 2195 D6QM	11.3	15.9	19.5	22.5	25.2	YELLOW
	HTx 2230 D6QM	13.3	18.8	23.0	26.6	29.7	BLUE
	HTx 2280 D6QM	16.2	22.9	28.0	32.3	36.1	RED

HOW TO MAKE UP THE PRODUCT CODE



HOW TO MAKE UP THE PRODUCT CODE

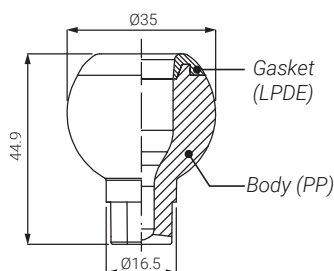


NOTE: each nozzle, both DT/QM and HT/QM, of any capacity, can be mounted on all three types of nipples.

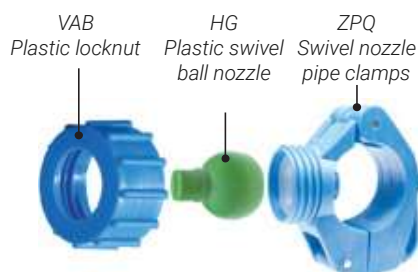
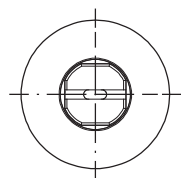
HG, RG (PLASTIC SWIVEL BALL NOZZLES)



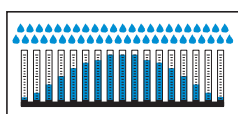
HGQ 2117 D5
Flat fan nozzle



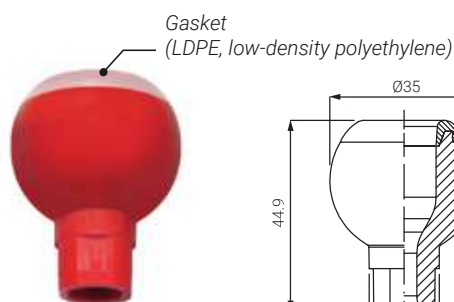
Gasket
(LDPE, low-density polyethylene)



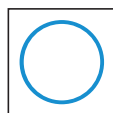
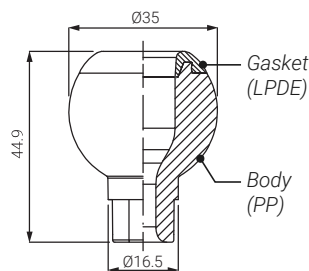
Spray section



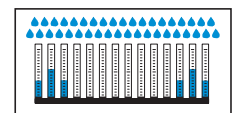
Convex distribution



RGN
Hollow cone nozzle



Spray section



Concave distribution



PLASTIC SWIVEL BALL NOZZLES

HGQ and RGN plastic swivel ball nozzles are designed for diversified applications. They allow an easy adjustment of their spray jet direction and offer a quick-fit connection.

NOZZLE TYPE	Flat fan nozzles (HG), Hollow cone nozzles (RG)
TYPICAL APPLICATION	Cleaning equipment used in pre-treatment for coating process
MATERIAL	Body D5 PP, talcum filled D6 PP, chemically bonded fiberglass

HG - FLAT FAN NOZZLES

HGQ flat fan nozzles feature a 60° spray angle and their wide range of flow rates makes them the best choice in pre-treatment plants. For an easier identification and use, they are made in different colours depending on the flow rate. The material is top quality PP, chemically bonded fiberglass to offer the best stability at high temperatures and resistance to chemicals.

	CODE	Capacity at different pressure values						(l/min) (bar)	Colour	W g
		0.5	0.7	1.0	1.5	2.0	3.0			
60°	HGQ 1390 xx	1.70	2.00	2.40	2.90	3.30	3.90		BLACK	16
	HGQ 1780 xx	3.18	3.77	4.50	5.52	6.37	7.80		PURPLE	
	HGQ 1980 xx	4.00	4.70	5.60	6.90	8.00	9.80		BROWN	
	HGQ 2117 xx	4.60	5.50	6.50	8.00	9.30	11.7		YELLOW	
	HGQ 2135 xx	5.50	6.50	7.80	9.50	11.0	13.5		GREY	
	HGQ 2155 xx	6.20	7.40	8.80	10.8	12.5	15.5		RED	
	HGQ 2195 xx	7.80	9.20	11.0	13.8	15.6	19.5		GREEN	
	HGQ 2230 xx	9.50	11.3	13.5	16.3	19.1	23.0		BLUE	
	HGQ 2270 xx	10.9	12.8	15.4	18.8	21.7	27.0		SKY BLUE	
	HGQ 2337 xx	13.8	16.4	19.5	24.0	27.7	33.7		WHITE	
	HGQ 2410 xx	16.7	19.8	23.6	29.0	33.5	41.0		PINK	

RG - HOLLOW CONE NOZZLES

RGN hollow cone nozzles have a 50° spray angle and offer a wide range of flow rates, all identified by a particular nozzle colour to avoid any possible confusion. The material is top quality PP, chemically bonded fiberglass to offer the best stability at high temperatures and resistance to chemicals. For these features they are widely used in pre-treatment plants.

	CODE	Capacity at different pressure values						(l/min) (bar)	Colour	W g
		0.5	0.7	1.0	1.5	2.0	3.0			
50°	RGN 2175 xx	7.10	8.50	10.1	12.4	14.3	17.5		ROSSO	25
	RGN 2215 xx	8.80	10.4	12.4	15.2	17.6	21.5		BLU	
	RGN 2390 xx	15.9	18.8	22.5	27.6	31.8	39.0		NERO	

HOW TO MAKE UP THE PRODUCT CODE

Ex.: HGQ 1390 D5

HGQ 1390 D5

MATERIAL

- **D5** - PP, talcum filled
- **D6** - PP, chemically bonded fiberglass

CAPACITY

NOZZLE TYPE

- **HGQ** - Flat fan nozzles (60°)
- **RGN** - Hollow cone nozzles (50°)

(FLAT FAN QUICK-FIT SPOON NOZZLES) **KS/QQ**

FLAT FAN QUICK-FIT SPOON NOZZLES

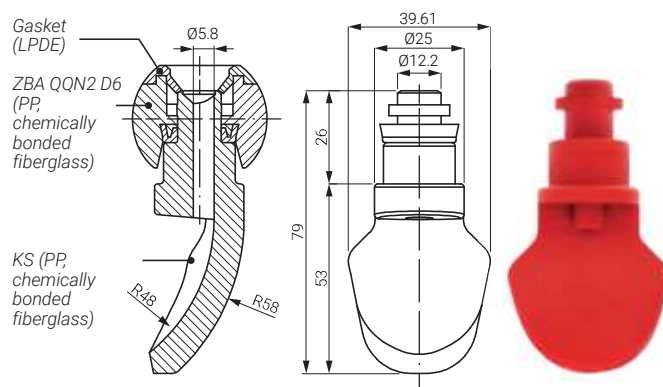
KS flat fan quick-fit spoon nozzles produce a flat spray pattern with a 50° or 60° deflection spray angle and offer the highest possible impact for a given feed pressure, up to 60° compared to standard turbulence flat fan nozzles. The innovative design ensures the ideal efficiency for deep cleaning and their quick connection makes them easy to assemble and avoids leakage. The different flow rates are identified by their colours available for proper selection. Materials are high quality PP and chemically bonded fibreglass to keep stability at high temperatures and be chemicals-resistant. These nozzles are widely used in surface pre-treatments.

MATERIAL

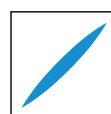
D6 PP, chemically bonded fiberglass

TYPICAL APPLICATION

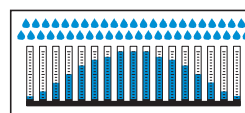
Cleaning equipment used in pre-treatment for coating process



	CODE	Capacity at different pressure values (l/min) (bar)						Colour	W g
		0.5	0.7	1.0	1.5	2.0	3.0		
50°	KSN 2155 D6QQS	6.20	7.40	8.80	10.8	12.5	15.5	RED	23
	KSN 2195 D6QQS	7.80	9.20	11.0	13.5	15.6	19.5	GREEN	
	KSQ 2230 D6QQS	9.50	11.3	13.5	16.5	19.1	23.0	BLUE	
	KSQ 2270 D6QQS	10.9	12.8	15.4	18.8	21.7	27.0	SKY BLUE	
60°	KSQ 2337 D6QQS	13.9	16.4	19.6	24.0	27.7	33.7	WHITE	
	KSQ 2390 D6QQS	15.9	18.8	22.5	27.6	31.8	39.0	ORANGE	
	KSQ 2410 D6QQS	16.7	19.8	23.6	29.0	33.5	41.0	PINK	
	KSQ 2433 D6QQS	17.7	21.0	25.0	30.6	35.3	43.3	BROWN	



Spray section



Convex distribution

(FLAT FAN QUICK-FIT NOZZLES) **HT/QQ**

FLAT FAN QUICK-FIT NOZZLES

HTQ type flat fan quick-fit nozzles feature 60° spray angle and impact force for a given feed pressure. The new design offers the ideal efficiency for cleaning, quick-fit design for ease of assembly and seal that avoids leakage. Different flow rates are distinguished by color and available for selection. The materials are high quality PP, chemically bonded fiberglass in order to remain stable in high temperature and chemical attacks. They are widely used in surface pre-treatment.

SPRAY ANGLE

60°

MATERIAL

D6

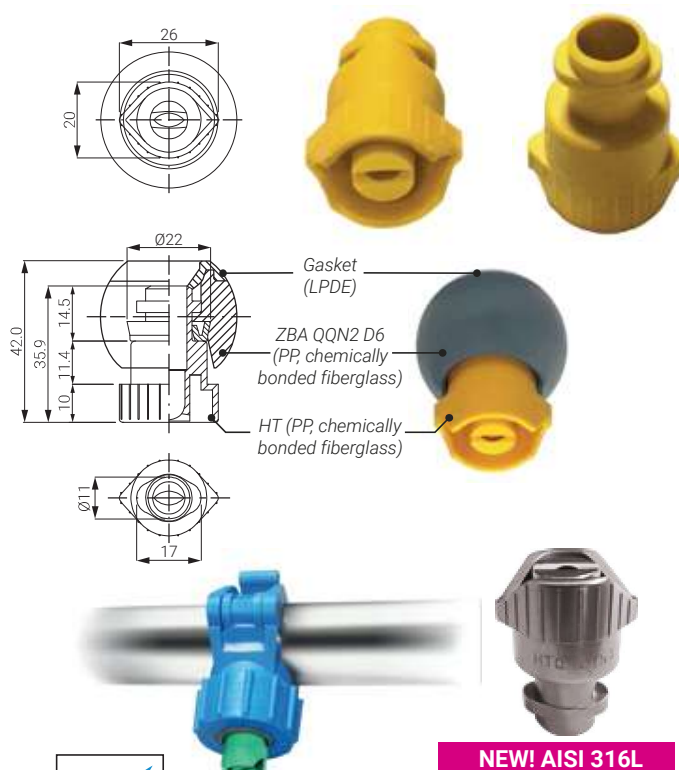
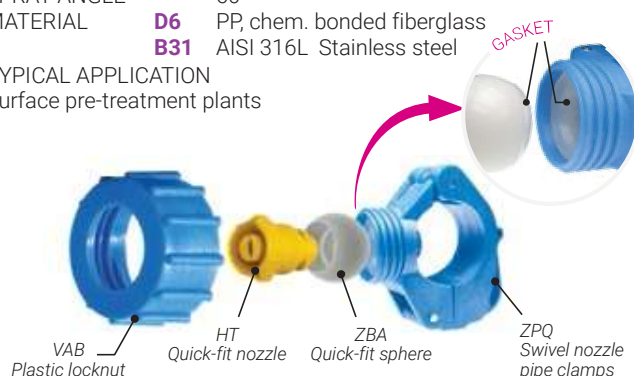
PP, chem. bonded fiberglass

B31

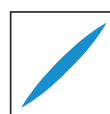
AISI 316L Stainless steel

TYPICAL APPLICATION

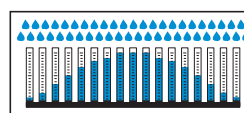
Surface pre-treatment plants



	CODE	Capacity at different pressure values (l/min) (bar)						Colour
		0.5	0.7	1.0	1.5	2.0	3.0	
60°	HTQ 1390 xxQQS	1.60	1.90	2.30	2.80	3.20	3.90	BLACK
	HTQ 1590 xxQQS	2.40	2.80	3.40	4.20	4.80	5.90	PURPLE
	HTQ 1780 xxQQS	3.20	3.80	4.50	5.50	6.40	7.80	LILAC
	HTQ 2117 xxQQS	4.80	5.70	6.80	8.30	9.60	11.7	YELLOW
	HTQ 2153 xxQQS	6.20	7.40	8.90	11.0	12.8	15.3	RED
	HTQ 2195 xxQQS	8.00	9.40	11.3	13.8	15.9	19.5	GREEN
	HTQ 2230 xxQQS	9.40	11.1	13.3	16.3	18.8	23.0	BLUE
	HTQ 2274 xxQQS	11.2	13.2	15.6	19.1	22.4	27.4	SKY BLUE



Spray section



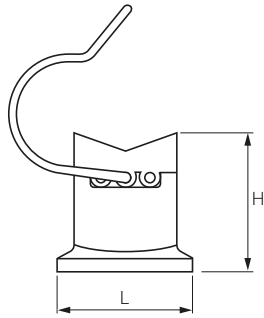
Convex distribution



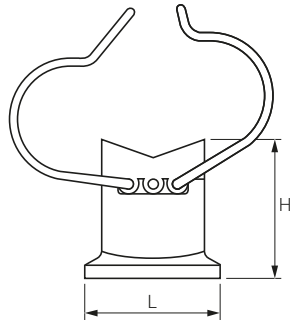
ZPG (PIPE HOLDERS)



SINGLE SPRING



DOUBLE SPRING



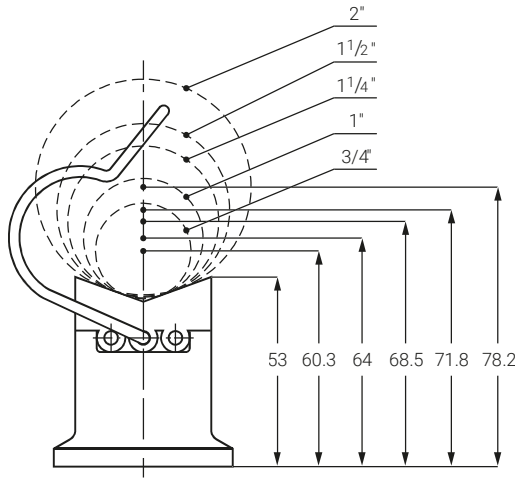
PIPE HOLDERS

ZPG pipe holders are a user-friendly and convenient solution for fixing spray manifolds onto tunnels walls in surface treatment plants. They are easy to assemble, excellent fastening and low cost. The single spring type is suitable for plastic holder whereas the double spring version is meant for metallic pipe holders.

TYPICAL APPLICATION	Cleaning equipment used in pre-treatment for coating process
PIPE SIZE	PS 3/4", 1", 1 1/4", 1 1/2", 2"
MATERIAL Body	D6 PP, chemically bonded fiberglass
Springs	N1 AISI 302, heat treated

CODE		PS	D	H	L	CH	W
Single spring	Double spring	inch	mm	mm	mm	mm	g
ZPG 1075 D6	ZPG 2075 D6	3/4"	11	53	50	17	72
ZPG 1100 D6	ZPG 2100 D6	1"					72
ZPG 1125 D6	ZPG 2125 D6	1 1/4"					90
-	ZPG 2150 D6	1 1/2"					90
-	ZPG 2200 D6	2"					110

Weight values are based on the double spring version



ZPG body is designed to be fastened to the tunnel wall by means of one M10 bolt with 17 mm hexagonal head.

The drawing shows the distances of the pipe central axis from the wall for different pipe sizes assembled onto the pipe holder.

HOW TO MAKE UP THE PRODUCT CODE

Ex.: ZPG 1075 D6

ZPG 1075 D6

MATERIAL • **D6** - PP, chemically bonded fiberglass

PIPE CODE • **075** - 3/4"
• **100** - 1"
• **125** - 1 1/4"
• **150** - 1 1/2"
• **200** - 2"

CLAMP CODE • **1** - Single spring
• **2** - Double spring

PIPE HOLDERS



The above photo shows a top coating plant using our products.

(QUICK COUPLING JOINTS) ZSA

QUICK COUPLING JOINTS

ZSA quick couplings for pipes find considerable applications in surface pre-treatment plants due to their operational flexibility and quick and easy maintenance. They have been designed for industrial applications, offer considerable strength and are made of high quality materials resistant to corrosion and structural stress.

THREAD SIZE	3/4", 1", 1-1/4", 1-1/2"
THREAD SPECIFICATION	BSPP
TYPICAL APPLICATIONS	Cleaning equipment used in pre-treatment for coating process Addition and release of liquids in chemical tankers
MATERIAL	Body D6 PP, chemically bonded fiberglass Lever B31 AISI 316L Stainless Steel, cast B35 AISI 316 Stainless Steel, sintered O-ring D8 PVDF, Polyvinylidene fluoride E0 EPDM E7 Viton E8 NBR

HOW TO MAKE UP THE PRODUCT CODE

Ex.: ZSA 0075 B3BG

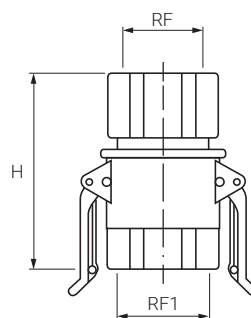
ZSA 0075 B3 x G

CONNEC. • **G** - BSPP

MATERIAL • **B3** - AISI 316 Stainless Steel

CODE • **D6** - PP, chemically bonded fiberglass

QUICK COUPLING JOINTS

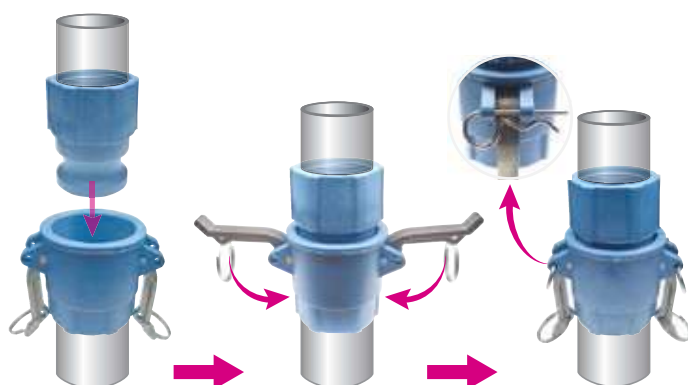


CODE	RF1 inch	RF inch	H mm	LP bar	W kg
ZSA 0075 B3xG	3/4"	3/4"	68	15	*
ZSA 0075 D6xG			85	9	*
ZSA 0100 B3xG	1"	1"	78	15	*
ZSA 0100 D6xG			93	7	*
ZSA 0125 B3xG	1 1/4"	1 1/4"	89	15	*
ZSA 0125 D6xG			113	7	*
ZSA 0150 D6xG	1 1/2"	1 1/4"	113	6	*
ZSA 0151 B3xG	1 1/2"	1 1/2"	83	15	*
ZSA 0151 D6xG			113	6	*

* Weight values for different materials are given on request

X	Orientation	Lever material	O-ring	Rings
B	Fixed	AISI 316L, sint	EPDM	AISI 316
C	Fixed	PVDF	EPDM	AISI 316
D	Fixed	PVDF	VITON	AISI 316
F	Fixed	PVDF	EPDM	-
G	Fixed	PVDF	VITON	-
H	Fixed	AISI 316L, sint	VITON	AISI 316
S	Free	AISI 316L, sint	EPDM	AISI 316
R	Free	AISI 316L, microf	EPDM	AISI 316
Q	Free	AISI 316, mecc.	NBR	AISI 316
T	Free	PVDF	EPDM	AISI 316
U	Free	PVDF	VITON	AISI 316
V	Free	PVDF	EPDM	-
W	Free	PVDF	VITON	-
X	Free	AISI 316, mecc.	VITON	-
Y	Free	AISI 316L, sint	VITON	AISI 316

QUICK COUPLING JOINTS - INSTALLMENT



A. Join two parts of quick coupling together B. Put levers down and fasten C. Fix bolt and complete setup

QUICK FITTING RISERS AND HEADER MANIFOLDS

Our range of products for surface pre-treatment plants is the most complete on the market and has been developed in collaboration with the most important system manufacturers on a worldwide basis. PNR has designed most of the assembly accessories commonly adopted today in pre-treatment plants. Right figure shows the installment steps. Quick couplings and pipe holder clamps can be quickly assembled and disassembled in seconds to minimize maintenance and shut-off time.

