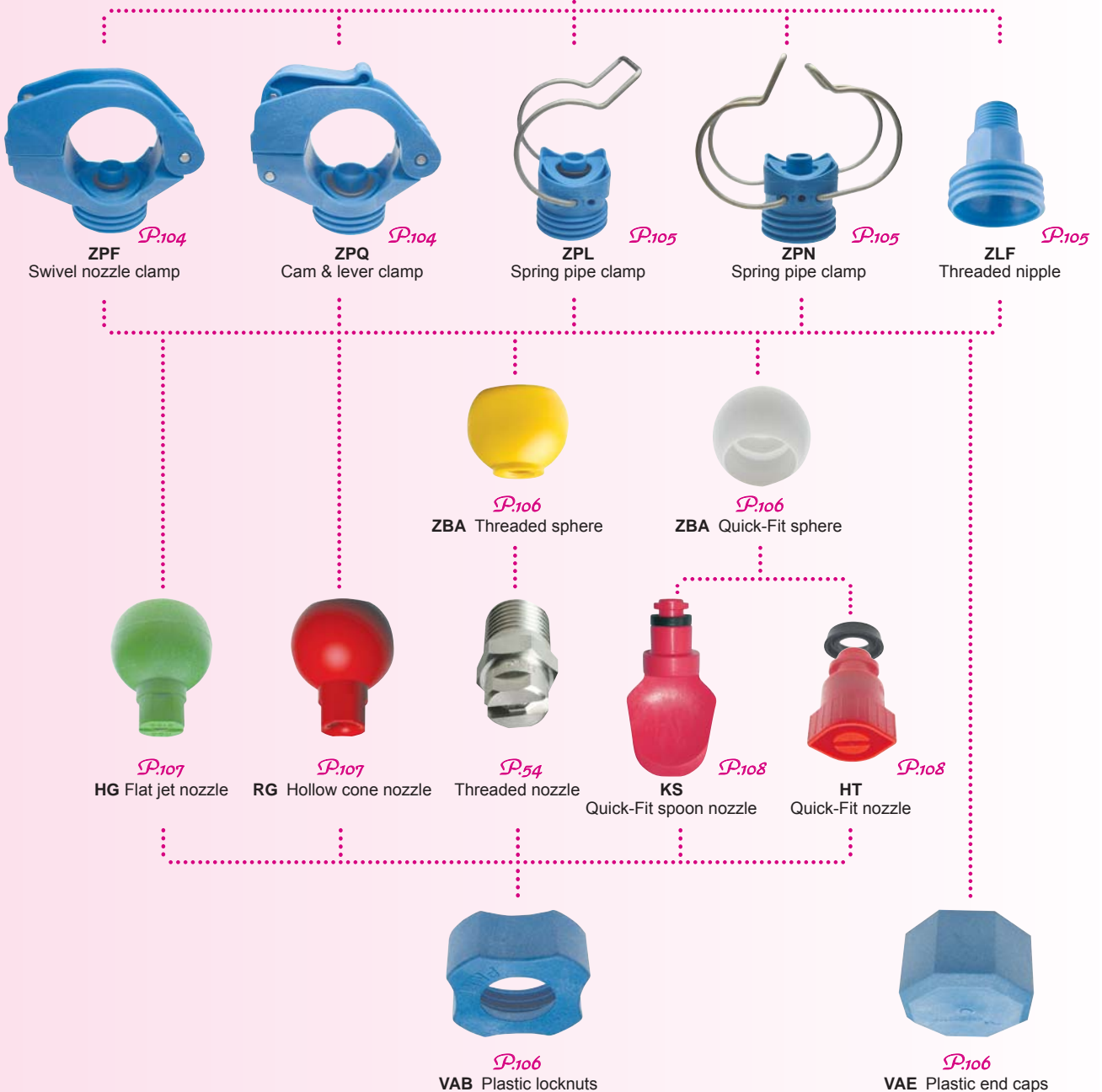
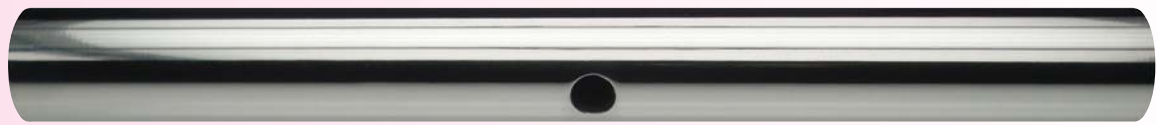


Clip-On Nozzles

Diversified manufacturing is an important competitiveness today. Italy PNR Company produces diversified products in order to help customers achieve production targets and develop a series of clip-on nozzles. PNR has business relationships with the world's top painting factory. Germany DÜRR Company uses PNR's products and has long-term cooperation. PNR products are widely used in Europe and the United States automobile manufacturers such as: BENZ, BMW, PORSCHE, AUDI, VW, OPEL, ALFA ROMEO, VOLVO, PEUGEOT, CITROEN and FIAT. Automobile coating lines and 3C line are representative for diversified production. When producing different sizes, nozzle spray direction and coverage must be timely adjustments.

In addition, nozzles must also regularly clean and maintain in order to ensure high-quality coating products. PNR fully understands and offers quality products to help enhance the competitiveness. Do you want to have world-class high quality, shorten the processing and reduce rework loss? Please contact us.

Swivel nozzles can be changed at any time or the direction of spray nozzle type for different production conditions. This meets diverse needs and in full accordance with actual specifications (as shown below).



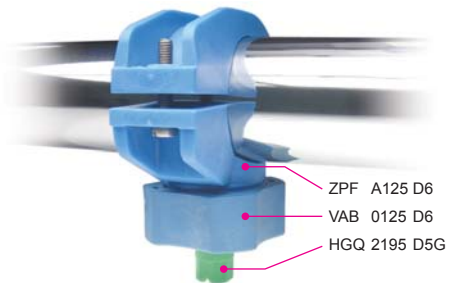
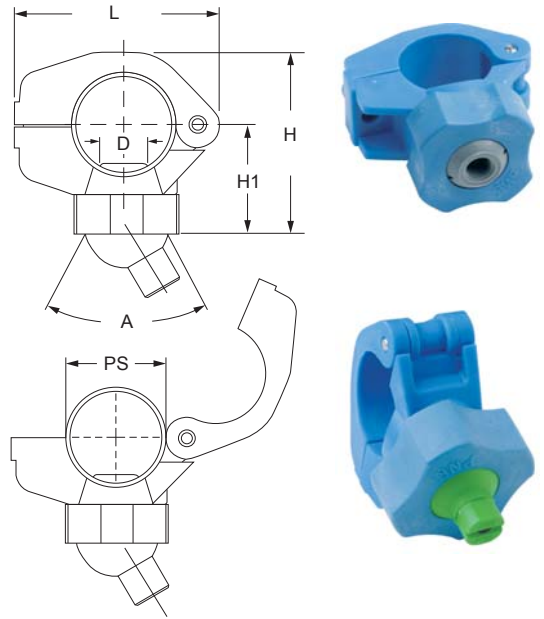
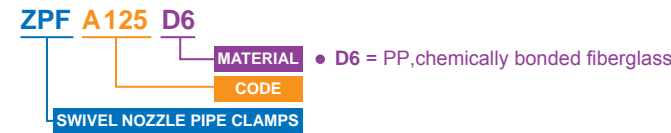
SWIVEL NOZZLE PIPE CLAMPS

ZPF swivel nozzle pipe clamps are specially designed for HGQ, RGN and ZBA series. Drill a hole, put pipe clamp on it and fasten it with screwdriver. Body is made of glassfiber reinforced PP. Screws and bolts are made of SUS316. ZPF swivel nozzles work under high temperature and adjust spray direction.

- Typical applications Cleaning equipment used in pre-treatment for coating process
- Max working temperature **LT** 80°C
- Max working pressure **LP** 5 bar
- Material Body **D6** PP,chemically bonded fiberglass
 Pin & bolt **B3** AISI 316 Stainless steel
 O-ring **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 NOZZLE CODE EX : ZPF A125 D6



CLIP-ON NOZZLES

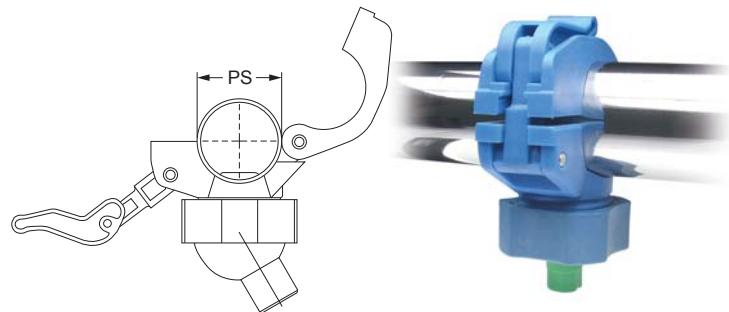
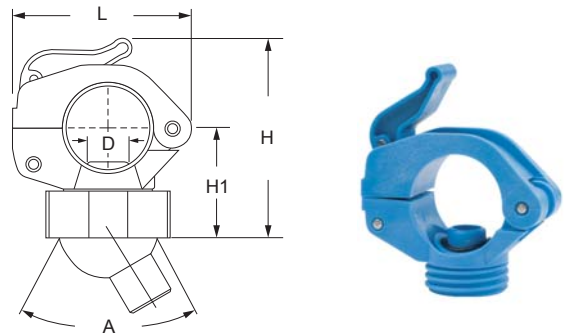
(SWIVEL NOZZLE CAM AND LEVER CLAMPS) ZPQ

SWIVEL NOZZLE CAM AND LEVER CLAMPS

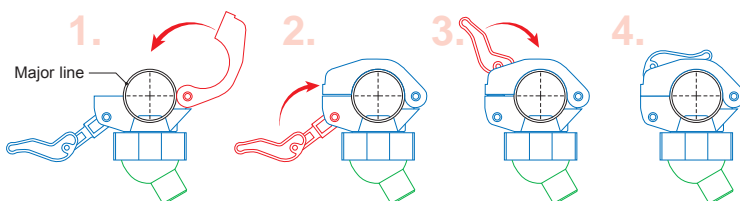
ZPQ cam and lever clamps are specially designed for HGQ, RGN and ZBA ball nozzles. Three steps to install, drill a hole, put a clamp on the pipe and then hold down two sides without any tools. Body is made of glassfiber reinforced PP. Screws and bolts are made of SUS316. ZPQ swivel nozzles work under high temperature and adjust spray direction according to actual condition.

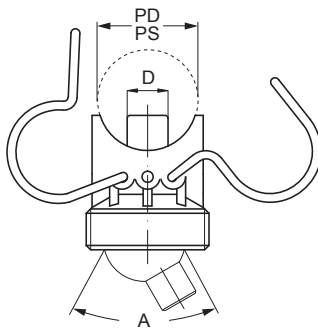
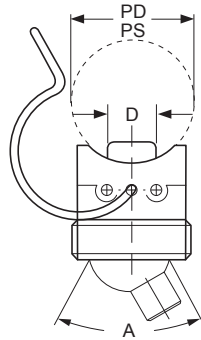
- Common Applications Surface pre-treatment plants
- Max working temperature **LT** 80°C
- Max working pressure **LP** 5 bar
- Material Body **D6** PP,chemically bonded fiberglass
 Pin & bolt **B3** AISI 316 Stainless steel
 O-ring **E8** NBR
 Seal **D22** Soft polypropylene

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





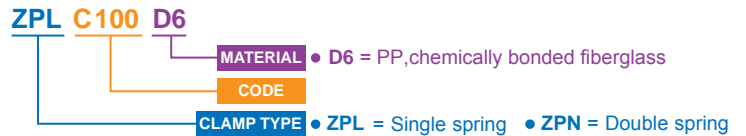
SWIVEL NOZZLE SPRING PIPE CLAMPS

ZPL/ZPN pipe clamps are specially designed for swivel ball nozzles. Drill a hole and fix the clamp with one screw. Body is made of glassfiber reinforced PP, screw and spring SUS316. ZPL/ZPN swivel nozzles work under high temperature and high degree of intensity. ZPL/ZPN swivel nozzle pipe clamps are widely used in surface pre-treatment.

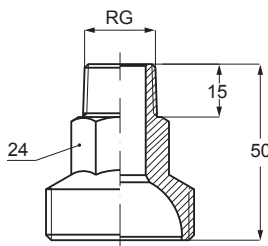
- Typical application Cleaning equipment used in pre-treatment for coating process
- Max working temperature **LT** 80°C
- Max working pressure ZPL Single spring 2bar
ZPN Double spring 3bar
- Materials Body **D6** PP,chemically bonded fiberglass
Spring **N1** AISI 302 Stainless steel, heat treated
O-ring **E8** NBR

Code		PS	PD	D	A	W
Single spring	Double spring	inch	mm	mm	deg	g
ZPL C100 D6	ZPN C100 D6	1"	32/34	14.0	40°	
ZPL A125 D6	ZPN A125 D6	1 1/4"	41/43	20.0	40°	
ZPL B125 D6	ZPN B125 D6			17.0		
ZPL C125 D6	ZPN C125 D6			14.0		46/65
ZPL A150 D6	ZPN A150 D6	1 1/2"	46/49	20.0	40°	
ZPL B150 D6	ZPN B150 D6			17.0		
ZPL C150 D6	ZPN C150 D6			14.0		

HOW TO MAKE UP THE NOZZLE CODE **EX : ZPL C100 D6**



ZLF (SWIVEL NOZZLE THREADED NIPPLE)



SWIVEL NOZZLE THREADED NIPPLE

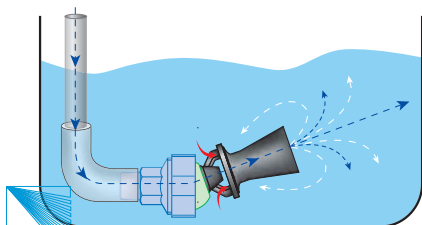
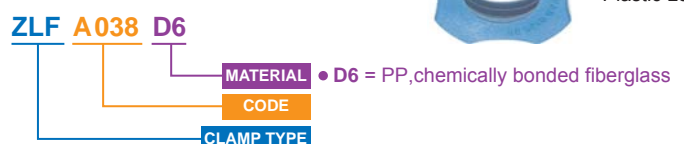
ZLF series swivel nozzle threaded nipple offers another installment for swivel ball nozzles. It is made of glassfiber reinforced PP. ZLF series work under high temperature and high degree of intensity. ZLF series swivel nozzle threaded nipples are widely used in surface pre-treatment.

- Typical application Cleaning equipment used in pre-treatment for coating process
- Max working temperature **LT** 80°C
- Max working pressure **LP** 4 bar
- Material **D6** PP,chemically bonded fiberglass

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"	



HOW TO MAKE UP THE NOZZLE CODE **EX : ZLF A038 D6**

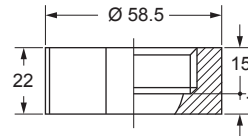


ZLF threaded nipples often go with UPB series mixing eductors. ZLF series offer best mixing effect.

PLASTIC LOCKNUTS

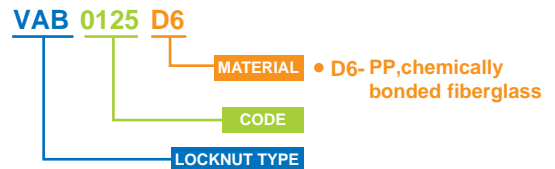
VAB plastic locknuts are exclusive for ball nozzles. Its special thread and the outside shape allow to easily assemble the cap by hand, without the use of any tools, making maintenance operations easier and faster. The materials are high quality PP, chemically bonded fiberglass in order to remain stable in high temperature and chemical attacks. It is widely used in surface pre-treatment.

- Material **D6** PP,chemically bonded fiberglass
- Max working temperature **LT** 80°C



VAB 0125 D6

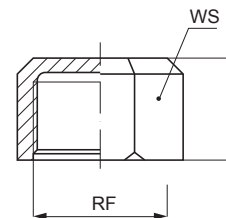
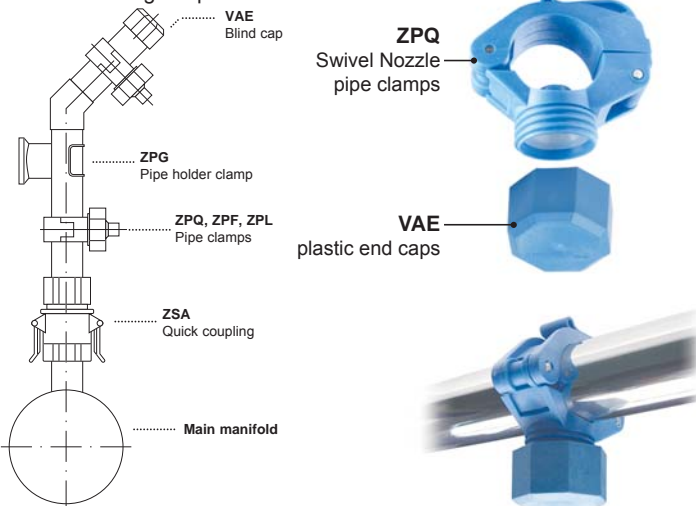
HOW TO MAKE UP THE NOZZLE CODE EX : VAB 0125 D6



PLASTIC END CAPS

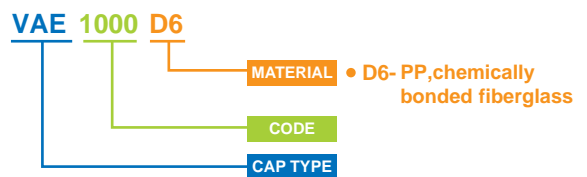
VAE plastic end caps are specially used for sealing of end pipe. Additionally, when producing different size products with the requirement of reduction of the quantity of swivel nozzles, you can use 1-1/4" VAE 1250 D6 plastic end caps for sealing. The materials are high quality PP, chemically bonded fiberglass in order to remain stable in high temperature and chemical attacks. It is widely used in surface pre-treatment.

- Material **D6** PP,chemically bonded fiberglass
- Max working temperature **LT** 80°C



Code	RF inch	H mm	WS mm
VAE 1000 D6	1"	25	42
VAE 1250 D6	1 1/4"	32	52
VAE 1500 D6	1 1/2"	32	60

HOW TO MAKE UP THE NOZZLE CODE EX : VAE 1000 D6

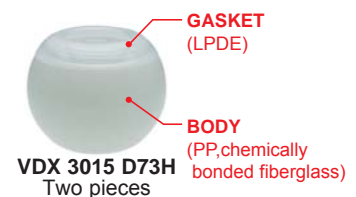


(THREADED AND QUICK-FIT SPHERES) **ZBA**

THREADED AND QUICK-FIT SPHERES

ZBA series swivel nozzles have three types that are threaded, quick-fit and blind hole. Threaded swivel joints go with threaded nozzles. Quick-fit swivel joints are for HTQ/KSQ quick-fit flat jet nozzles. In addition, when production process changes and pauses spraying, blind holes joint is just for this.

Code		BSPP	NPT
One piece	Two pieces		
Body: PP,chemically bonded fiberglass	Body: PP,chemically bonded fiberglass Gasket :LPDE		
ZBA A025 D5	ZBA GBN1 D5G	1/4" F	
ZBA B025 D5	ZBA NBN1 D5G		1/4" F
ZBA A038 D5	ZBA GCN1 D5G	3/8" F	
ZBA B038 D5	ZBA NCN1 D5G		3/8" F
ZBA A050 D5	ZBA GDN1 D5G	1/2" F	
ZBA 0000 D5	ZBA 00N0 D5Y	Blind	
ZBA QQN1 D5	ZBA QQN1 D6G	Quick connection	



PLASTIC SWIVEL BALL NOZZLES

HGQ and RGN type plastic swivel ball nozzles are designed for diversified applications. HGQ and RGN nozzles are adjustable for its spray direction and quick-fit.

- Nozzle type Flat jet nozzles
Hollow cone nozzles
- Typical application Cleaning equipment used in pre-treatment for coating process
- Material Body **D5** Powder-filled polypropylene

FLAT JET NOZZLES

HGQ type flat jet nozzles feature 60° spray angle and offer impact force for a given feed pressure. There are many kinds of flow rates available and each rate has its color to avoid confusion. The materials are high quality PP, chemically bonded fiberglass in order to remain stable in high temperature and chemical attacks. It is widely used in surface pre-treatment.

	Code	Capacity (lpm) at different pressure values (bar)					Color	W g
60°	HGQ 1390 D5G	1.6	1.9	2.3	2.8	3.2	Black	16
	HGQ 1770 D5G	3.1	3.7	4.4	5.4	6.3	Violet	
	HGQ 1980 D5G	4.0	4.7	5.7	6.9	8.0	Brown	
	HGQ 2117 D5G	4.8	5.7	6.8	8.3	9.6	Yellow	
	HGQ 2135 D5G	5.5	6.5	7.8	9.5	11.0	Gray	
	HGQ 2155 D5G	6.3	7.5	8.9	11.0	12.7	Red	
	HGQ 2195 D5G	8.0	9.4	11.3	13.8	15.9	Green	
	HGQ 2230 D5G	9.4	11.1	13.3	16.3	18.8	Blue	
	HGQ 2270 D5G	11.0	13.0	15.6	19.1	22.0	Sky Blue	
	HGQ 2337 D5G	13.8	16.3	19.5	23.8	27.5	White	
	HGQ 2410 D5G	16.7	19.8	23.7	29.0	33.5	Pink	

Pressure (bar) 0,5 0,7 1,0 1,5 2,0

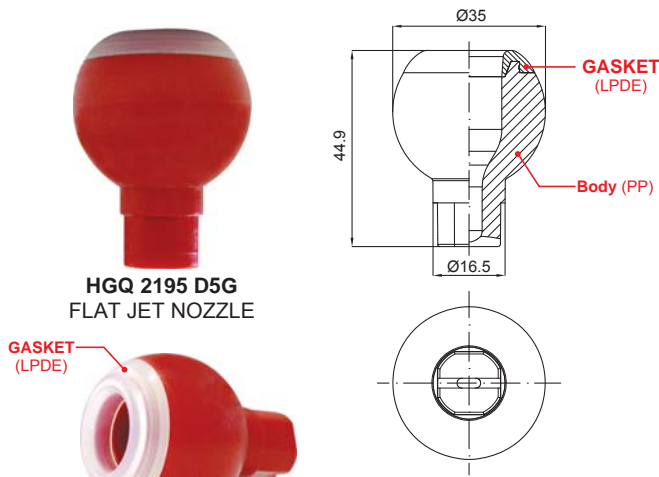
HOLLOW CONE NOZZLES

RGN type hollow cone nozzles feature 50° spray angle and offer impact force for a given feed pressure.

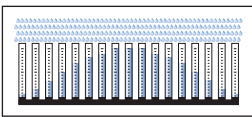
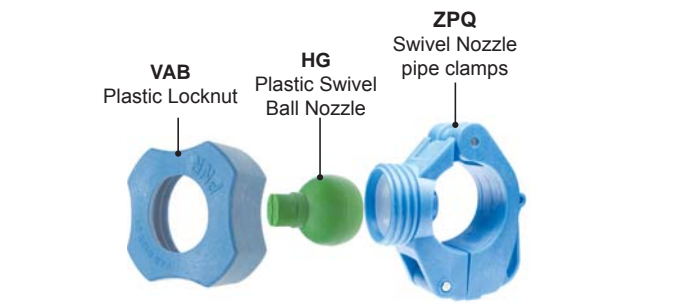
There are three kinds of flow rates available and each rate has its color to avoid confusion. The materials are high quality PP, chemically bonded fiberglass in order to remain stable in high temperature and chemical attacks. It is widely used in surface pre-treatment.

	Code	Capacity (lpm) at different pressure values (bar)					Color	W g
50°	RGN 2175 D5G	7.1	8.5	10.1	12.4	14.3	Red	25
	RGN 2215 D5G	8.8	10.4	12.4	15.2	17.6	Blue	
	RGN 2390 D5G	15.9	18.8	22.5	27.6	31.8	Black	

Pressure (bar) 0,5 0,7 1,0 1,5 2,0

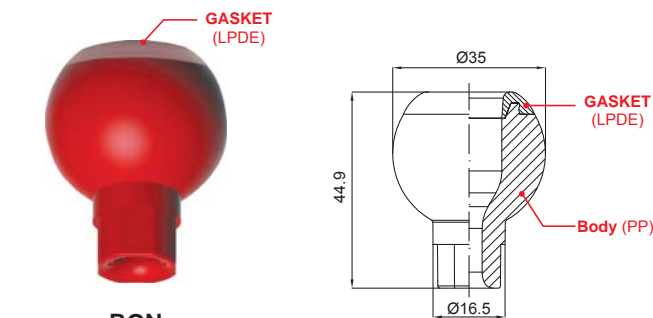


HGQ 2195 D5G
FLAT JET NOZZLE

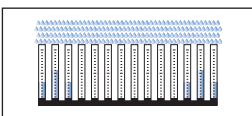


Spray section

Distribution



RGN
HOLLOW CONE NOZZLE



Spray section

Distribution



HOW TO MAKE UP THE NOZZLE CODE

EX : HGQ 1390 D5G

HGQ 1390 D5G

MATERIAL • D5 = Powder-filled polypropylene

CAPACITY

NOZZLE TYPE • HGQ = Flat Jet Nozzles (60°)

• RGN = Hollow Cone Nozzles (50°)

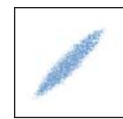
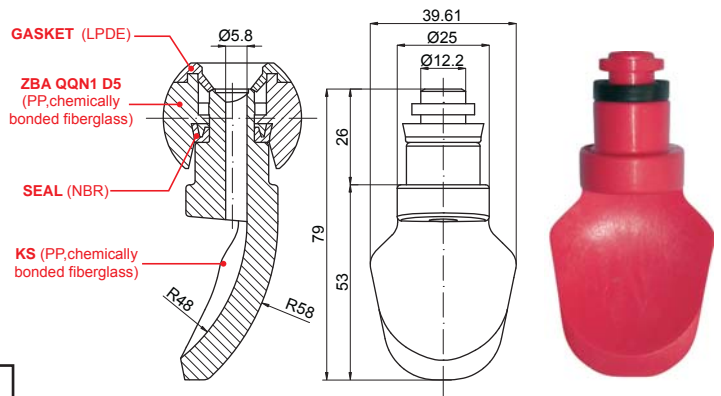
FLAT JET QUICK-FIT SPOON NOZZLES

KS type flat jet quick-fit spoon nozzles feature splash-plate design with a 60° spray angle and the highest possible impact for a given feed pressure, up to 60% with respect to a standard turbulence flat jet nozzle. 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. It is widely used in surface pre-treatment.

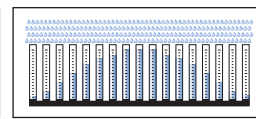
- Material PP, chemically bonded fiberglass
- Typical applications Cleaning equipment used in pre-treatment for coating process

Code	Capacity at different pressure values (bar)						(lpm)	Color	W g
60°	KSQ 2155 D6QQ	6.3	7.5	8.9	11.0	12.7	Red	23	
	KSQ 2195 D6QQ	8.0	9.4	11.3	13.8	15.9	Green		
	KSQ 2230 D6QQ	9.4	11.1	13.3	16.3	18.8	Blue		
	KSQ 2270 D6QQ	11.0	13.0	15.6	19.1	22.0	Sky Blue		
	KSQ 2337 D6QQ	13.8	16.3	19.5	23.8	27.5	White		
	KSQ 2390 D6QQ	15.9	18.8	22.5	27.6	31.8	Orange		
	KSQ 2410 D6QQ	16.7	19.8	23.7	29.0	33.5	Pink		
	KSQ 2433 D6QQ	17.7	20.9	25.0	30.6	35.4	Brown		

Perssure(bar) 0,5 0,7 1,0 1,5 2,0



Spray section



Distribution



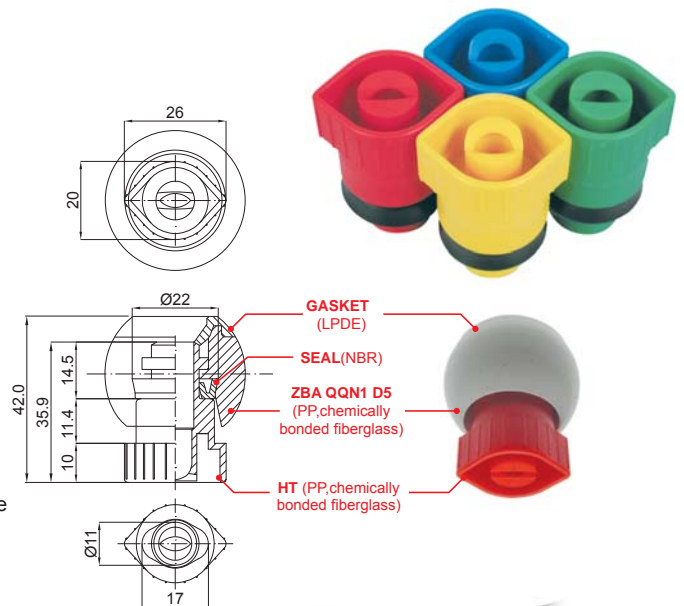
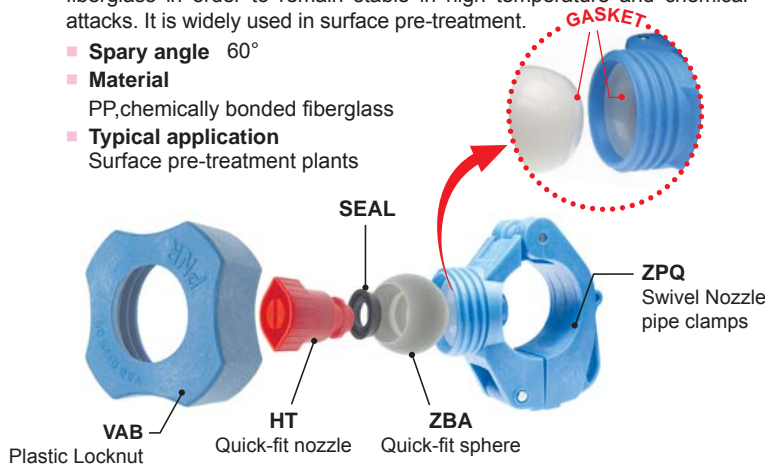
CLIP-ON NOZZLES

(FLAT JET QUICK-FIT NOZZLES) **HT**

FLAT JET QUICK-FIT NOZZLES

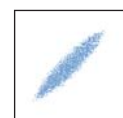
HTQ type flat jet quick-fit nozzles feature 60° spray angle and impact force for a given feed pressure. The new design offers the ideal efficiency for cleaning, quick-fit design for ease of assembly and seal that avoids leakage. Different flow rates are distinguished by color and available for selection.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

- Sprary angle 60°
- Material PP, chemically bonded fiberglass
- Typical application Surface pre-treatment plants

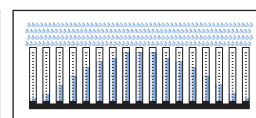


Code	Capacity at different pressure values (bar)						(lpm)	Color
60°	HTQ 1390 D6QQ	1.6	1.9	2.3	2.8	3.2	Black	
	HTQ 1590 D6QQ	2.4	2.8	3.4	4.2	4.8	Violet	
	HTQ 1780 D6QQ	3.2	3.8	4.5	5.5	6.4	Lilac	
	HTQ 2117 D6QQ	4.8	5.7	6.8	8.3	9.6	Yellow	
	HTQ 2153 D6QQ	6.2	7.4	8.8	10.8	12.5	Red	
	HTQ 2195 D6QQ	8.0	9.4	11.3	13.8	15.9	Green	
	HTQ 2230 D6QQ	9.4	11.1	13.3	16.3	18.8	Blue	
	HTQ 2274 D6QQ	11.2	13.2	15.8	19.4	22.4	Sky Blue	

Perssure(bar) 0,5 0,7 1,0 1,5 2,0



Spray section

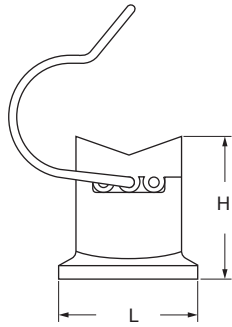


Distribution

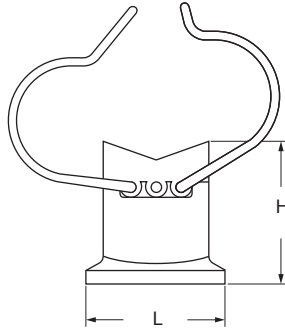




Single spring



Double spring



PIPE HOLDERS

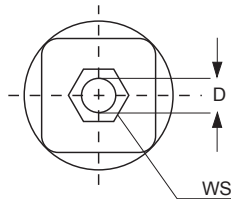
ZPG type pipe holders offer an easy and convenient solution for holding spray manifolds to the tunnel wall in surface treatment plants. ZPG type pipe holders feature easy assembly, firm and low cost. Single spring is suitable for plastic holder and double spring for metallic holder.

- 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 Stainless steel, heat treated

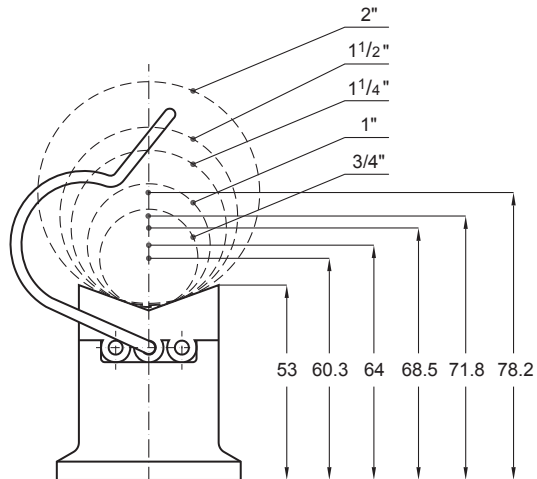
Code		PS inch	D mm	H mm	L mm	WS mm	W g
Single spring	Double spring						
ZPG 1075 D6	ZPG 2075 D6	3/4"	11	53	50	17	72
ZPG 1100 D6	ZPG 2100 D6	1"					72
ZPG 1125 D6	ZPG 2125 D6	1 1/4"					90
-	ZPG 2150 D6	1 1/2"					90
-	ZPG 2200 D6	2"					110

Weight values are based on the double spring version

CLIP-ON NOZZLES

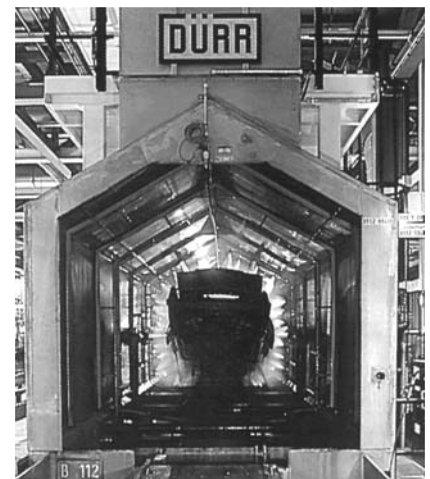
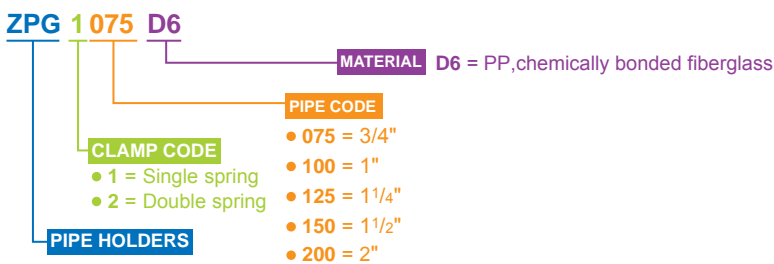


ZPG body design has provision for being secured to the wall by means of one M10 bolt with hexagonal 17mm head



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

HOW TO MAKE UP THE NOZZLE CODE EX : ZPG 1075 D6

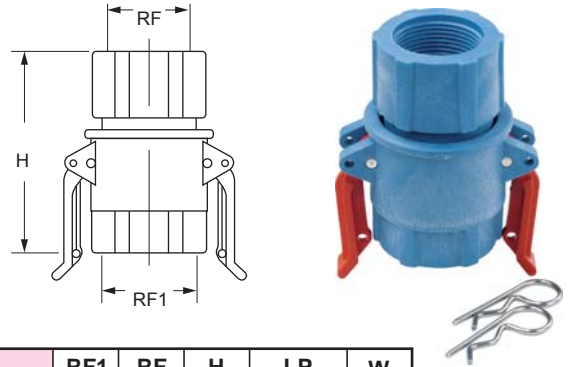


Above shows European top coating factory uses our product.

QUICK COUPLING JOINTS

ZSA quick coupling joints are a very popular solution for industries requirements of ease of operation.

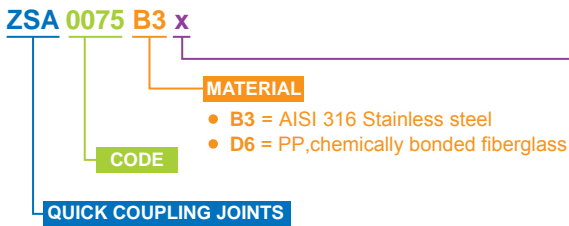
- Thread size 3/4" , 1" , 1 1/4" , 1 1/2"
- Thread specification BSP , NPT
- Typical applications Cleaning equipment used in pre-treatment for coating process
Liquid addition and output for chemistry tanker
- Material
 - Body **D6** PP,chemically bonded fiberglass
 - B3** AISI 316 Stainless steel
 - Lever **B31** AISI 316L Stainless, cast
 - B35** AISI 316L Stainless, sintered
 - D8** PVDF, Polyvinylidene fluoride
 - O-ring **E0** EPDM
 - E7** Viton
 - E8** NBR



Code	RF1 inch	RF inch	H mm	LP bar	W kg
ZSA 0075 B3x	3/4"	3/4"	85	15	*
ZSA 0100 B3x	1"	1"	73	15	
ZSA 0100 D6x			73	7	
ZSA 0125 B3x	1 1/4"	1 1/4"	110	15	
ZSA 0125 D6x				7	
ZSA 0150 D6x	1 1/2"	1 1/4"	110	6	
ZSA 0151 B3x	1 1/2"	1 1/2"	110	15	
ZSA 0151 D6x				6	

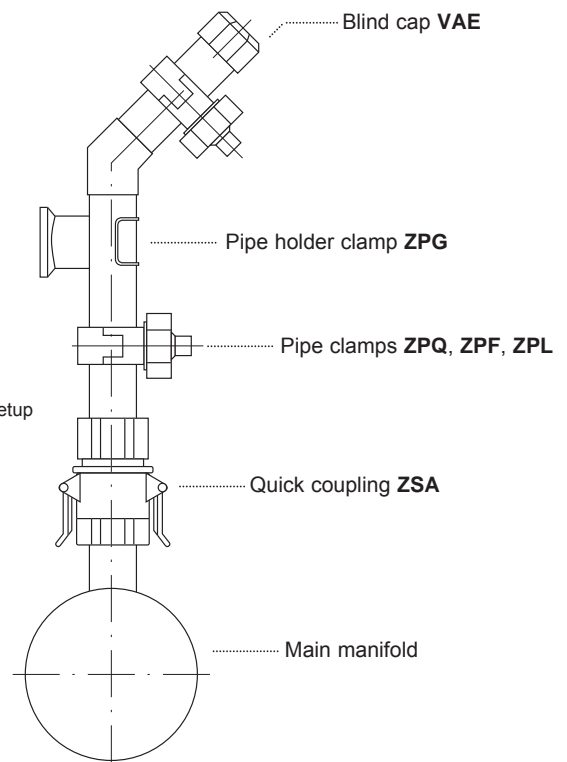
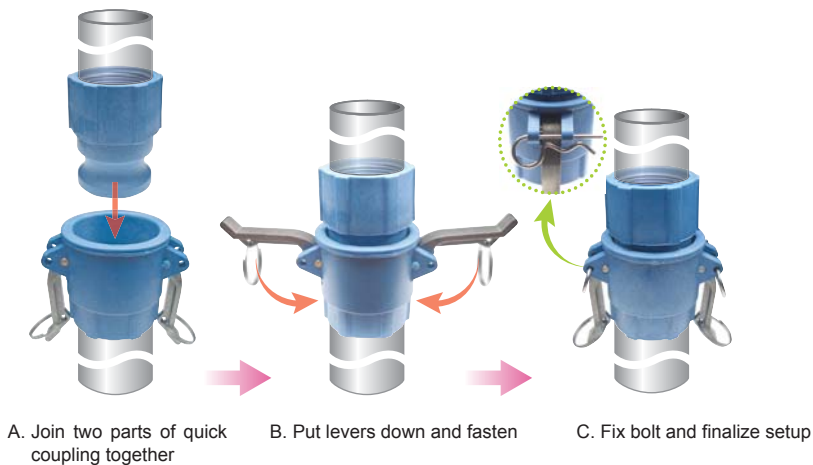
* Please contact our sales for more information.

HOW TO MAKE UP THE NOZZLE CODE EX : ZSA 0075 B3B



X	Orientation	Lever material	O-ring	Rings
B	Fixed	AISI 316, sint	EPDM	AISI 316
C	Fixed	PVDF	EPDM	AISI 316
D	Fixed	PVDF	VITON	AISI 316
H	Fixed	AISI 316, sint	VITON	AISI 316
S	Free	AISI 316, sint	EPDM	AISI 316
T	Free	PVDF	EPDM	AISI 316
U	Free	PVDF	VITON	AISI 316
Y	Free	AISI 316, sint	VITON	AISI 316

QUICK COUPLING JOINTS- INSTALLMENT



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 coupling and pipe holder clamp can be quickly assembled and disassembled in seconds to minimize maintenance and shut-off time.