PNR

SPRAY NOZZLES FOR INDUSTRIAL APPLICATIONS



SPRAY NOZZLES & ASSEMBLY FITTINGS

GENERAL CATALOGUE

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 and 3C 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. PNR clip-on nozzles fully comply with below specifications.





P.104
ZPF
Swivel nozzle clamp



P.104
ZPQ
Cam & lever clamp



P.105
ZPL
Single spring pipe clamp



P.105
ZPL
Double spring pipe clamp



P.106
ZLF
Threaded nipple



P.106
ZBA Threaded sphere



P.106
ZBA Quick-fit sphere



P.109
HG Flat fan nozzle



P.109
RG Hollow cone nozzle



P.54
Threaded nozzle



P.110
KS
Quick-fit spoon nozzle



P.110
HT
Quick-fit nozzle



P.105
VAB Plastic locknuts & Tool

(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 accessorial 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.

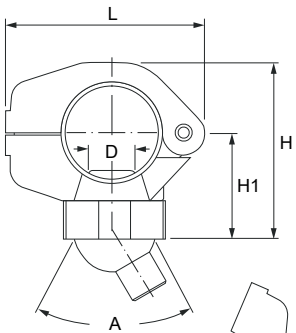
- **Typical application** Cleaning equipment used in pre-treatment for coating process
- **Max working temperature** **LT** 80°C
- **Max working pressure** **LP** 5 bar
- **Materials** Body **D6** PP, chemically bonded fiberglass
  Pin & bolt **B3** AISI 316 Stainless steel
  O-ring **E8** NBR

Code	PS inch	PD mm	D mm	H mm	H1 mm	L mm	A deg	W g
ZPF A125 D6	1¼"	41/43	20.0	83	54	84	40°	85
ZPF B125 D6			17.0					
ZPF C125 D6			14.0					
ZPF A150 D6	1½"	46/49	20.0	90	57	90	40°	88
ZPF B150 D6			17.0					
ZPF C150 D6			14.0					

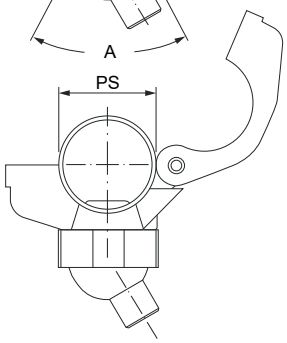
HOW TO MAKE UP THE **PRODUCT CODE** EX.: ZPF A125 D6

ZPF A125 D6
- ZPF — SWIVEL NOZZLE PIPE CLAMPS
- A125 — CODE
- D6 — MATERIAL

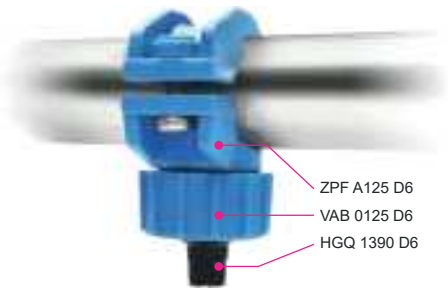
● **D6** - PP, chemically bonded fiberglass











CLIP-ON NOZZLES

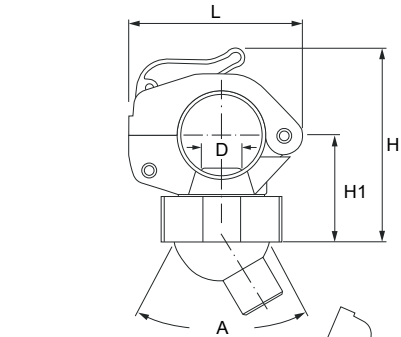
(SWIVEL NOZZLE CAM AND LEVER CLAMPS) ZPQ

SWIVEL NOZZLE CAM AND LEVER CLAMPS

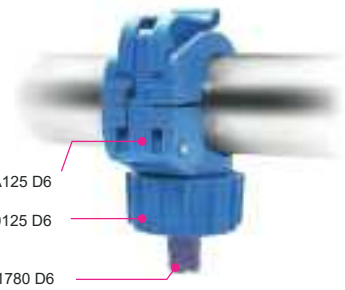
ZPQ cam and lever clamps are specially designed for HGQ, RGN and ZBA ball nozzles. Only three steps to install them on a pipe: drill a hole, wrap the cam around the pipe and pull the lever down to block it. No need of tools. The body is in PP chemically bonded fibreglass whereas accessorial bolts and 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** 80°C
- **Max working pressure** **LP** 5 bar
- **Materials** Body **D6** PP, chemically bonded fiberglass
  Pin & bolt **B3** AISI 316 Stainless steel
  O-ring **E8** NBR
  Seal **D22** Soft polypropylene

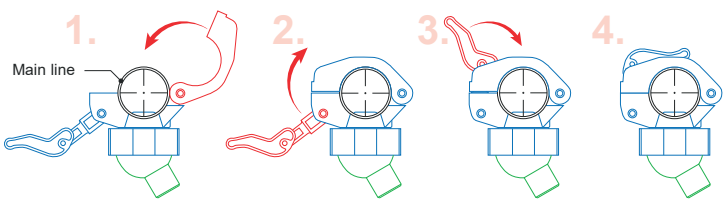
Code	PS inch	PD mm	D mm	H mm	H1 mm	L mm	A deg	W g
ZPQ A125 D6	1¼"	42/43	20.0	93	41	84	40°	87
ZPQ B125 D6			17.0					
ZPQ A150 D6	1½"	48/49	20.0	96	44	95	40°	97
ZPQ B150 D6			17.0					







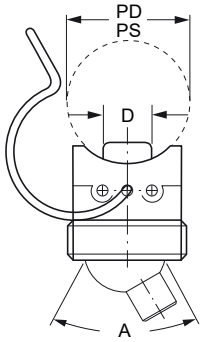
HOW TO INSTALL THE SWIVEL NOZZLE CAM & LEVER CLAMPS



ZPL (SWIVEL NOZZLE SPRING PIPE CLAMPS)

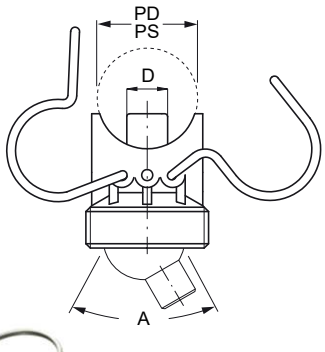


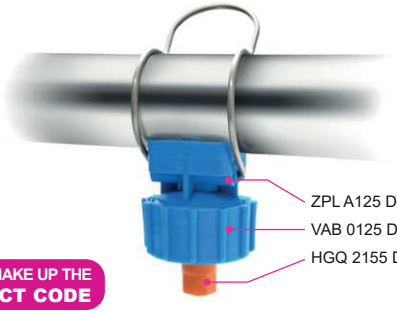
ZPL Single spring





ZPL Double spring
Better stability





SWIVEL NOZZLE SPRING PIPE CLAMPS

ZPL pipe clamps are specially designed for swivel ball nozzles. Drill a hole and fix the clamp with one screw. 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
- **Materials**
  - Body — **D6** PP, chemically bonded fiberglass
  - Spring — **N1** AISI 302 Stainless steel; **B31** AISI 316L Stainless steel
  - O-ring — **E8** NBR

Codice	PS		PD	D	A
	poll	DN	mm	mm	deg
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	1¼"	DN32	42.2	20.0	40°
ZPL B125 D6 XYZ	1¼"	DN32	42.2	17.0	40°
ZPL C125 D6 XYZ	1¼"	DN32	42.2	14.0	40°
ZPL A126 D6 XYZ	1¼"	DN32	40.0	20.0	40°
ZPL B126 D6 XYZ	1¼"	DN32	40.0	17.0	40°
ZPL C126 D6 XYZ	1¼"	DN32	40.0	14.0	40°
ZPL A150 D6 XYZ	1½"	DN40	48.3	20.0	40°
ZPL B150 D6 XYZ	1½"	DN40	48.3	17.0	40°
ZPL C150 D6 XYZ	1½"	DN40	48.3	14.0	40°
ZPL A151 D6 XYZ	1½"	DN40	50.0	20.0	40°
ZPL C151 D6 XYZ	1½"	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°

HOW TO MAKE UP THE PRODUCT CODE

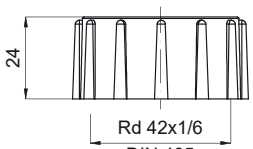
ZPL A 100 D6 X Y Z

- **VERSION**: **B** - New version
- **SPRING NUMB.**: **1** - Single spring; **2** - Double spring
- **SPRING MAT.**: **S** - AISI 302 Stainless steel; **A** - AISI 316L Stainless steel
- **MATERIAL**: **D6** - PP, chemically bonded fiberglass
- **PIPE DIAM.**: **100** - Ø 33.4 mm; **101** - Ø 32.0 mm; **125** - Ø 42.2 mm; **126** - Ø 40.0 mm; **150** - Ø 48.3 mm; **151** - Ø 50.0 mm; **200** - Ø 60.3 mm; **201** - Ø 63.0 mm
- **NIPPLE DIAM.**: **A** - Ø 20 mm; **B** - Ø 17 mm; **C** - Ø 14 mm
- **CLAMP TYPE**

VAB (PLASTIC LOCKNUTS)









ZPQ
Swivel nozzle pipe clamps



HG
Plastic swivel ball nozzle

VAB
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 fibreglass to keep stability at high temperatures and offer the best resistance to chemicals.

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

HOW TO MAKE UP THE PRODUCT CODE Es.: VAB 0125 D6

VAB 0125 D6

- **MATERIAL**: **D6**- PP, chemically bonded fiberglass
- **CODE**
- **LOCKNUT**

(SWIVEL NOZZLE THREADED NIPPLE) ZLF

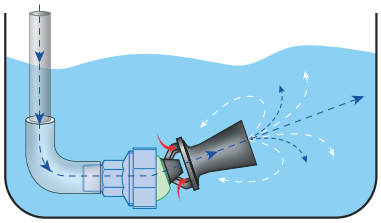
SWIVEL NOZZLE THREADED NIPPLE

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.

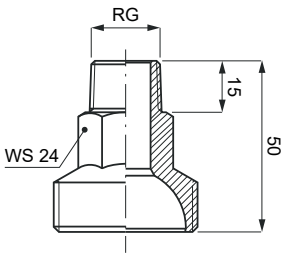
- **Typical application** Cleaning equipment used in pre-treatment for coating process
- **Material** **D6** PP, chemically bonded fiberglass

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

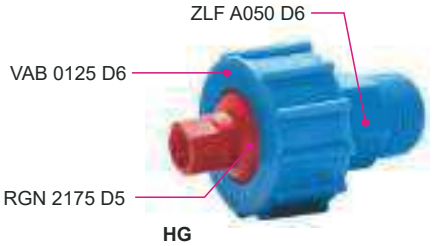
- **Max working temperature**
  LP 4 bar
- **Max working temperature**
  LT 80°C



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









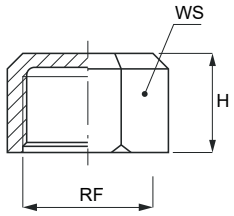
(PLASTIC END CAPS) VAE

PLASTIC END CAPS

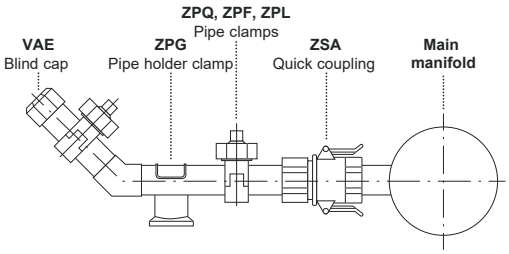
VAE plastic caps are specially used to close pipes ends. Besides, 1 1/4" VAE 1250 D6 plastic caps can be used to seal pipes ends when, to manufacture different size products, it's necessary to reduce the quantity of swivel nozzles. They are made of high quality PP or chemically bonded fibreglass to keep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

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

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







(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.

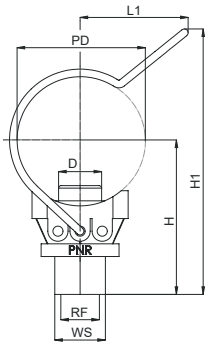
Code	Connection			Type	L	D	H
	RF/RG	M/F	BSP/NPT		mm	mm	mm
ZBA 0000 D5x	Cieca	---	---	---	35.0	17.5	27.5
ZBA 0039 D5	3/8"	M	BSP	Mobile	35.0	20.0	27.3
ZBA GAT1 D5x	1/8"	F	BSP	Mobile	35.0	20.0	27.3
ZBA GBT1 D5x	1/4"	F	BSP	Mobile	35.0	20.0	27.3
ZBA GCT1 D5x	3/8"	F	BSP	Mobile	35.0	20.0	27.3
ZBA GDT1 D5x	1/2"	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	Fixed	27.4	26.0	35.1
ZBA GBT2 D5x	1/4"	F	BSP	Fixed	27.4	26.0	35.1
ZBA GCT2 D5x	3/8"	F	BSP	Fixed	27.4	26.0	35.1
ZBA GDT2 D5x	1/2"	F	BSP	Fixed	27.4	26.0	35.1
ZBA QQN2 D6	Quick	---	---	Mobile	35.0	23.4	27.0



ZPN (SPRING PIPE CLAMPS)

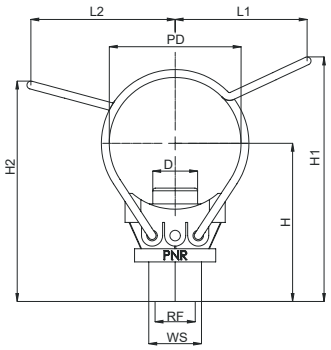


ZPN Single spring



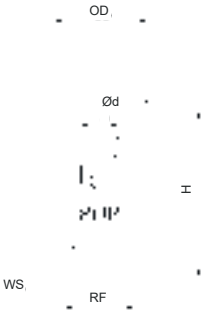


ZPN Double spring
Better stability





ZPN MINI Single spring



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 widly used in pre-treatment for coating process.

- **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

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** 80°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

Code	RF	PS		PD	D	WS
	poll	poll	DN	mm	mm	mm
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

Code and dimension for ZPN mini

Code	RF	OD	Ød	WS	H	Colour
	poll	poll	mm	mm	mm	
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

ZPN B 151 D6 X Y Z

- CLAMP TYPE: ZPN
- NIPPLE DIAM.: B - Ø 17 mm
- PIPE SIZE: 151 - 1-1/2"
- MATERIAL: D6 - PP, chem. bonded fiberglass
- CONNECTION: C - 3/8" F (BSPP); D - 1/2" F (BSPP)
- SPRING NUMB.: 1 - Single spring; 2 - Double spring
- SPRING MAT.: S - AISI 302 Stainless steel; A - AISI 316L Stainless steel

HOW TO MAKE UP THE PRODUCT CODE ZPN MINI

ZPN E 050 D6 X Y Z

- CLAMP TYPE: ZPN
- NIPPLE DIAM.: E - Ø 9 mm; D - Ø 11 mm; F - Ø 13 mm
- PIPE SIZE: 050 - 1/2"; 075 - 3/4"; 100 - 1"
- MATERIAL: D6 - PP, chem. bonded fiberglass
- CONNECTION: A - 1/8" F (BSPP); B - 1/4" F (BSPP); C - 3/8" F (BSPP); D - 1/2" F (BSPP)
- VERSION: M - Mini, single spring
- SPRING MAT.: A - AISI 316 Stainless steel

MINI QUICK-FIT NOZZLES

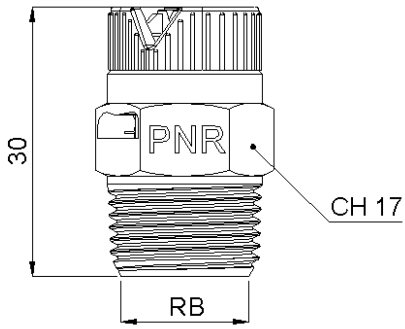
DT/QM full cone spray nozzles and HT/QM flat fan spray nozzles, assembled onto a nipple with 3/8”, 1/4" e 1/8” BSPT connections, offer the convenience of a quick coupling which allows a simple assembly. Moreover, the special seal between nipple and nozzle avoids any risk of leakage. To allow a perfect 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.

- **Materials** **D6** PP, chemically bonded fiberglass
- **Nipple dim.** 1/8”, 1/4”, 3/8” BSPT
- **Max working temp.** **LT** 95 °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



DT/QM + Gasket + Nipple HT/QM + Gasket + Nipple



◁	Code	Capacity at different pressure values (l/min) (bar) 1.0	2.0	3.0	4.0	5.0	Colour
45°	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	L. orange
65°	DTx 1190 D6QM	1.10	1.55	1.90	2.19	2.45	L. green
	DTx 1235 D6QM	1.36	1.92	2.35	2.71	3.03	L. yellow
90°	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
120°	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	Dark orange

◁	Code	Capacity at different pressure values (l/min) (bar) 1.0	2.0	3.0	4.0	5.0	Colour
65°	HTx 0780 D6QM	0.45	0.64	0.78	0.78	1.01	Gray
	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	Orange
	HTx 1190 D6QM	1.10	1.55	1.90	2.19	2.45	L. green
	HTx 1233 D6QM	1.35	1.90	2.33	2.69	3.01	L. yellow
	HTx 1310 D6QM	1.79	2.53	3.10	3.58	4.00	Sky blue
90°	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
110°	HTx 1780 D6QM	4.50	6.37	7.80	9.01	10.1	Black/Brown
	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

DT X 1234 MM QM

- QUICK TYPE: **QM** - Mini Quick
- MATERIAL: **D6** - PP, chemically bonded fiberglass
- CAPACITY: See table
- ANGLE: **M** - 45° (DT); **R** - 65° (DT, HT); **U** - 90° (DT, HT); **J** - 110° (HT); **W** - 120° (DT)
- NOZZLE TYPE: **DT** - Full cone; **HT** - Flat fan

HOW TO MAKE UP THE PRODUCT CODE

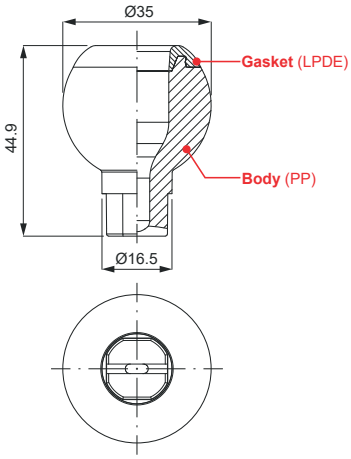
ZHS V 0xx MM QM

- QUICK TYPE: **QM** - Mini Quick
- MATERIAL: **D6** - PP, chemically bonded fiberglass
- CONNECTION: **012** - 1/8” BSPT; **025** - 1/4” BSPT; **038** - 3/8” BSPT
- GASKET: **V** - Pre-assembled gasket in VITON
- NIPPLE TYPE: **ZHS** - Quick connection nipple with thread BSPT

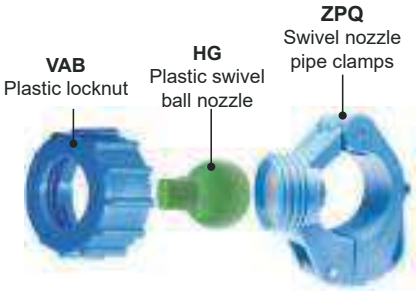
NOTE: each nozzle, both DT/QM and HT/QM, of any capacity, can be mounted on all three types of nipples.

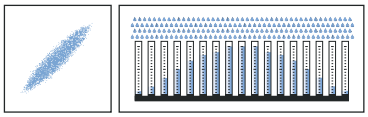


HGQ 2117 D5
Flat fan nozzle









Spray section *Convex 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

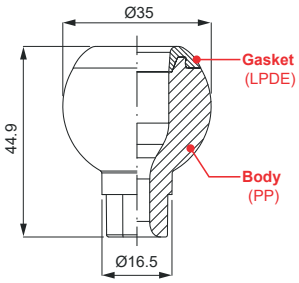
FLAT FAN NOZZLES

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 fibreglass to offer the best stability at high temperatures and resistance to chemicals.

	Code	Capacity at different pressure values (l/min) (bar)						Color	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	



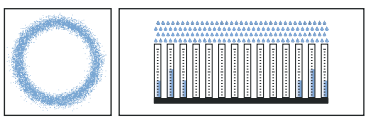
RGN
Hollow cone nozzle



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 fibreglass 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)						Color	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	Red	25
	RGN 2215 xx	8.80	10.4	12.4	15.2	17.6	21.5	Blue	
	RGN 2390 xx	15.9	18.8	22.5	27.6	31.8	39.0	Black	



Spray section *Concave distribution*



HOW TO MAKE UP THE NOZZLE CODE EX.: HGQ 1390 D5

HGQ 1390 D5

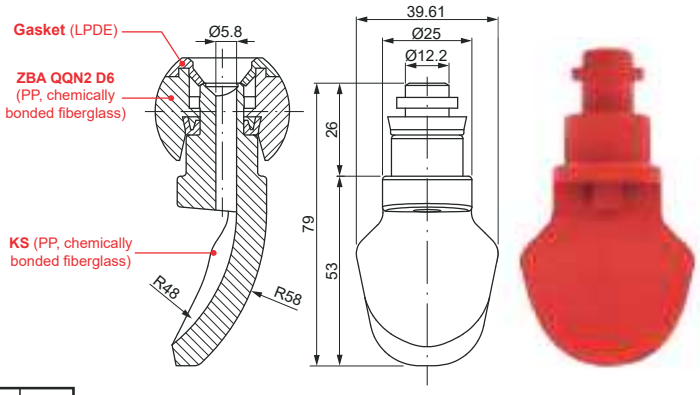
- MATERIAL: • **D5** - PP, talcum filled • **D6** - PP, chemically bonded fiberglass
- CAPACITY
- NOZZLE TYPE: • **HGQ** - Flat fan nozzles (60°) • **RGN** - Hollow cone nozzles (50°)

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

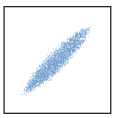
FLAT FAN QUICK-FIT SPOON NOZZLES

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.

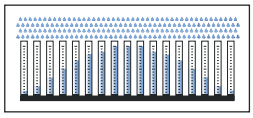
- **Material** PP, chemically bonded fiberglass
- **Typical application** Cleaning equipment used in pre-treatment for coating process



◁	Code	Capacity at different pressure values (l/min) (bar) 0.5	0.7	1.0	1.5	2.0	3.0	Color	W g
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	
60°	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	
	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



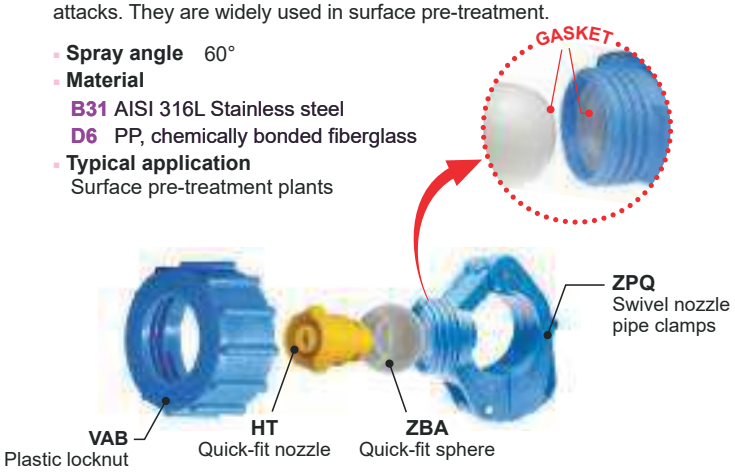
CLIP-ON NOZZLES

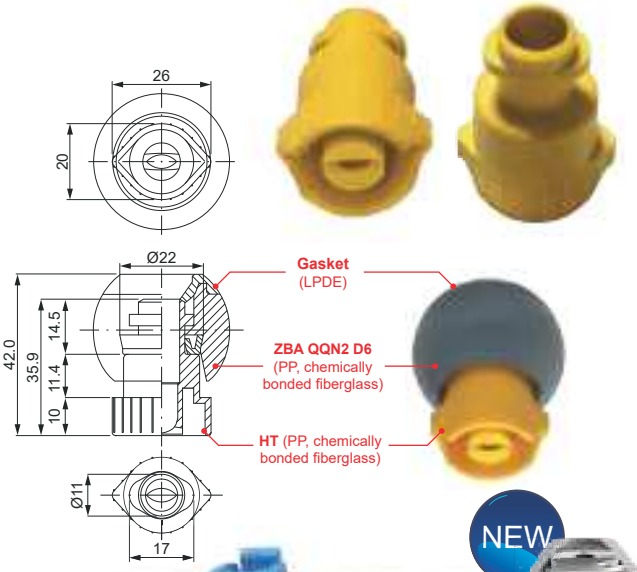
(FLAT FAN QUICK-FIT NOZZLES) HT/QQ

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.

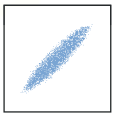
- **Spray angle** 60°
- **Material**
  - **B31** AISI 316L Stainless steel
  - **D6** PP, chemically bonded fiberglass
- **Typical application**
  Surface pre-treatment plants



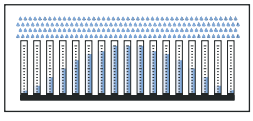




◁	Code	Capacity at different pressure values (l/min) (bar) 0.5	0.7	1.0	1.5	2.0	3.0	Color
60°	HTQ 1390 xxQQS	1.60	1.90	2.30	2.80	3.20	3.90	Black
	HTQ 1590 xxQQS	2.40	2.80	3.40	4.20	4.80	5.90	Purple
	HTQ 1780 xxQQS	3.20	3.80	4.50	5.50	6.40	7.80	Lilac
	HTQ 2117 xxQQS	4.80	5.70	6.80	8.30	9.60	11.7	Yellow
	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

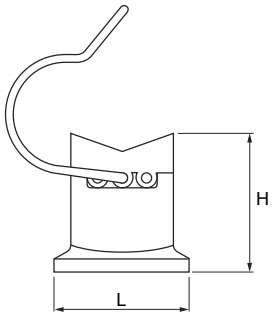


Convex distribution



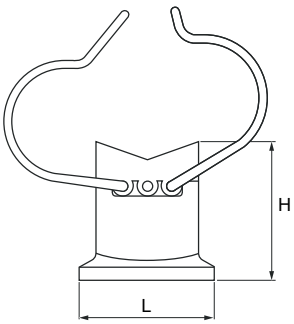


Single spring





Double spring



PIPE HOLDERS

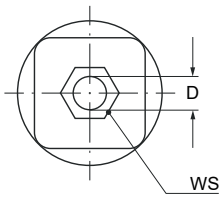
ZPG pipe holders are a user-friendly and convenient solution for fixing spray manifolds onto tunnels walls in surface treatment plants. They are easy to assemble, excellent fastening and low cost. The single spring type is suitable for plastic holder whereas the double spring version is meant for metallic 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"
- **Materials** Body **D6** PP, chemically bonded fiberglass
  Springs **N1** AISI 302 Stainless steel, heat treated

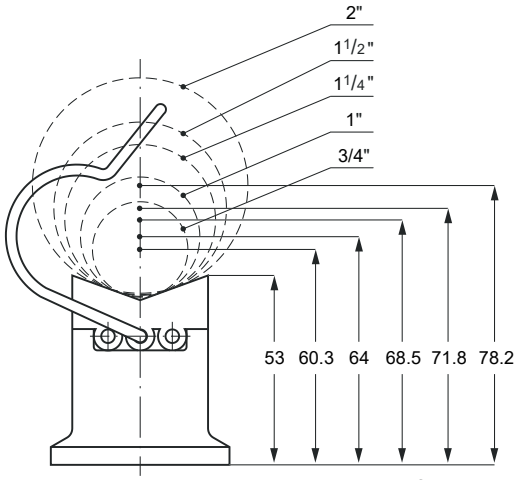
Code		PS	D	H	L	WS	W
Single spring	Double spring	inch	mm	mm	mm	mm	g
ZPG 1075 D6	ZPG 2075 D6	3/4"	11	53	50	17	72
ZPG 1100 D6	ZPG 2100 D6	1"					72
ZPG 1125 D6	ZPG 2125 D6	1 1/4"					90
-	ZPG 2150 D6	1 1/2"					90
-	ZPG 2200 D6	2"					110

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 1 075 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



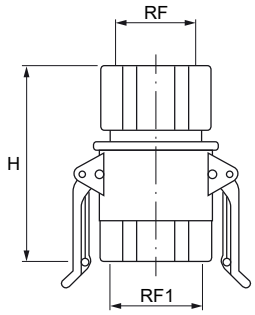
The above photo shows a European top coating plant using our products

QUICK COUPLING JOINTS

ZSA quick coupling joints are a very popular solution for industrial facilities requiring ease of operation.

- **Thread size** 3/4", 1", 1¼", 1½"
- **Thread specification** BSP, NPT
- **Typical applications** Cleaning equipment used in pre-treatment for coating process
  Addition and release of liquids in chemical tankers
- **Materials**

Body	**D6**	PP, chemically bonded fiberglass
	B3	AISI 316 Stainless steel
Lever	**B31**	AISI 316L Stainless steel, cast
	B35	AISI 316 Stainless steel, sintered
	D8	PVDF, Polyvinylidenefluoride
O-ring	**E0**	EPDM
	E7	Viton
	E8	NBR





Codice	RF1 poll	RF poll	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	1¼"	1¼"	89	15	*
ZSA 0125 D6xG			113	7	*
ZSA 0150 D6xG	1½"	1¼"	113	6	*
ZSA 0151 B3xG	1½"	1½"	83	15	*
ZSA 0151 D6xG			113	6	*

** Weight values for different materials are given on request.*

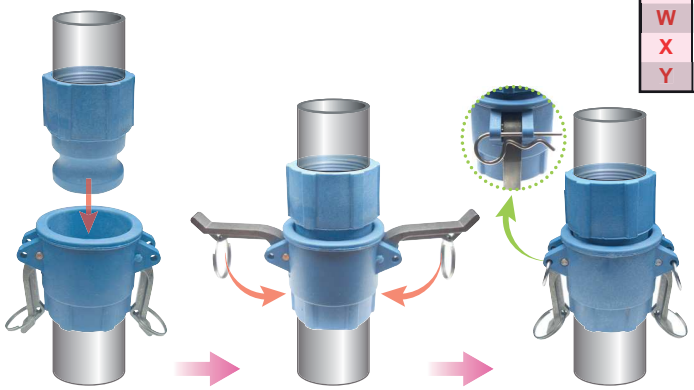
HOW TO MAKE UP THE PRODUCT CODE EX.: ZSA 0075 B3BG

ZSA 0075 B3 x

- MATERIAL
  - **B3** - AISI 316 Stainless steel
  - **D6** - PP, chemically bonded fiberglass
- CODE
- QUICK COUPLING JOINTS

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	none
G	Fixed	PVDF	VITON	none
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, mech. lav.	NBR	AISI 316
T	Free	PVDF	EPDM	AISI 316
U	Free	PVDF	VITON	AISI 316
V	Free	PVDF	EPDM	none
W	Free	PVDF	VITON	none
X	Free	AISI 316, mech. lav.	VITON	none
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.

