TECHNICAL CATALOGUE





HYGIENIC VALVES FOR PIGGING SYSTEMS

BBZPPG SINGLE SEAT VALVE
B93JPG DOUBLE SEAT VALVE
BZAW3PG DOUBLE SEAL VALVE



QUALITY, INDUSTRIAL EFFICIENCY, PRODUCT RELIABILITY

The combination of technology, product customization and attention to details makes Bardiani Valvole an extraordinary supplier in its flexibility and ability to meet customer requests.

The standards achieved through experience and a process of continual improvement make it possible to reach maximum reliability. What is more, continual improvement allows Bardiani Valvole to take decisive steps forward also in offering increasingly competitive solutions.

Valves designed for every kind of applications



















HYGIENIC VALVES FOR PIGGING SYSTEMS

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UNIQUE FEATURES FOR QUALITY VALVES

Certified hygienic standards

All parts in contact with the product are made from AISI 316L stainless steel.

<0.8 μ m surface finish on parts in contact with the product (0.4 μ m on request).

To guarantee greater resistance and long lasting life valve bodies made from solid bar. Sealing solutions are all certified: Bardiani Valvole selects only European suppliers able to provide reliable seals.



Easy maintenance valves design

No special tools are required for maintenance, which saves time and increase costeffectiveness.

Spare parts are guaranteed over time thanks to the Bardiani Care program.

Bardiani care is a flexibile made-to-measure after-sales service program based on client needs which includes preventive maintenance, technical training and continual technical support.

Valve clusters and customized solutions

The combination of technology, product customization and attention to details makes Bardiani Valvole an extraordinary supplier in its **flexibility** and ability to meet customer requests.

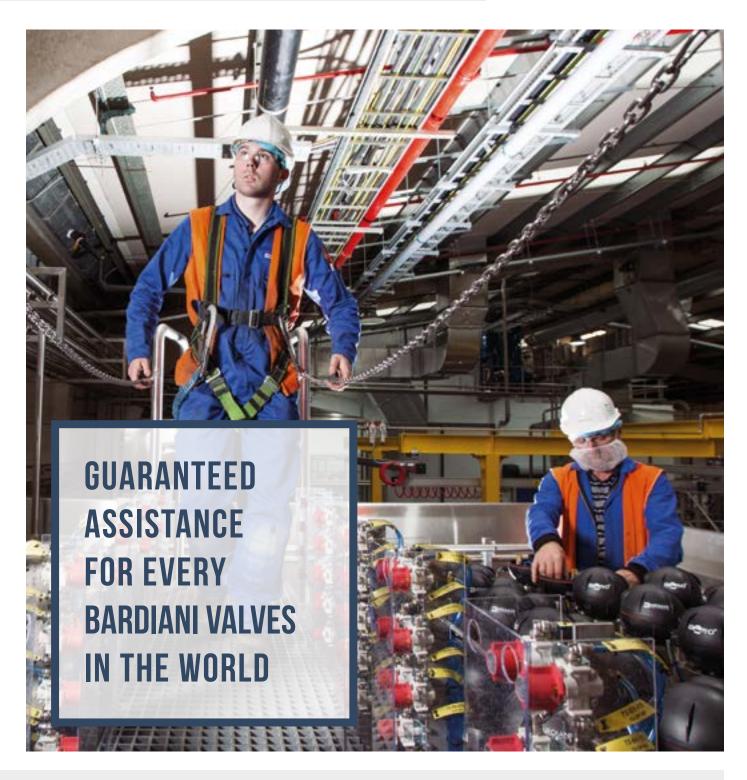
Bardiani **clusters** are made according to the customer's specific design, orbital welded, passivated and tested.

Thanks to the excellent product quality and the maximum responsiveness to the customer's needs, the valve clusters are one of the strong points of the Bardiani Valvole production range.

Social values

Respect for the founding values is also important from a business point of view. Being loyal to one's team and the commitments made means, amongst other things, being able to guarantee punctual delivery 97% of the time. On another level, focus on continuous improvement also allows us to establish enormously profitable and long-lasting collaboration with our customers because it promotes constant evolution. As well as the technical values, for Bardiani it is also essential to respect those values which have always distinguished the company's identity: honesty, respect, solidarity and social responsibility.





Sustainability for a better future

Environmental sustainability, social sustainability and economic sustainability, the pillars on which the company develops and outlines its present and its future.



SINGLE SEAT VALVE BBZPPG

Pneumatic single seat valve for pipping systems



DOUBLE SEAT VALVES

B93JPG

Pneumatic double seat valve for pipping systems

B93JPG REVERSE

Pneumatic double seat valve for pipping systems and reversed installation



Wide range of applications

- Beverage
- Food
- Confectionery
- Paint and coatings
- Pet food

- Homecare & household
- Personal care & beauty
- Chemicals & lubricants

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DOUBLE SEAL VALVE FOR PIGGING SYSTEMS BZAW3PG

Pneumatic double seal valve for pipping systems



VARIANTS PIG STOPPER

PIG stopper



Customized valves on request

On request all accessories are available for all sizes of valve and body configurations.

Additionally special ports, diameters and other tailor-made solutions are available.

Bardiani Valvole can also provide technical support, advice and feasibility analysis for other requests.

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VALVES FOR PIGGING SYSTEMS FEATURES AND BENEFITS

SPECIALIST VALVES FOR HYGIENIC AND SANITARY PIGGING

Liquid product recovery (pigging system) is used after a product transfer to **remove or recover residual liquid product** remaining in the pipeline of a process system.

Process pigging technology has been widely adopted by **food**, **beverage**, **homecare**, **paint**, **personal care**, **and pet food plants** throughout the world.

It's an extremely effective way to increase product yields, cut waste, speed up changeover times, improve profits and boost environmental sustainability.

Hygienic (sanitary) pigging systems are made up of variety of different parts and components: valves are an important aspect that enable the safe and effective running of a pigging system.

BARDIANI VALVOLE SOLUTION

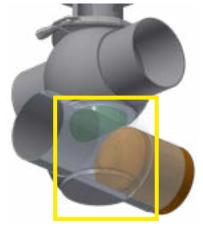
Piggable valves enable the smooth passage of the hygienic plug ('pig') thanks to special design of solid bodies and shutter.

The valves have a bore the same as that of the pipe and have no obstructions in closed position, too.

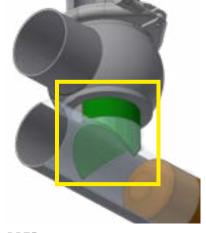
This enables the pig, when propelled through the pipeline to easily fit through the valves.

MINIMAL DEAD-SPACE VALVE TO MAXIMIZE PRODUCT RECOVERY

Specially designed valve body allows maximum product recovery from 30% up to 60% more, compared to standard single seat valve.



BBZPPGSingle seat valve for pigging system - internal view



BBZPSingle seat valve with T butt weld fitting

Sustanability of production processes

The pigging systems recover massive amounts of product residue from the main transfer paths which increases product yields and reduces waste significantly.

The pigging and liquid transfer equipment includes various specialist valves such as the unique minimal dead-space valve.

Valves are key components to ensure maximum recovery.

VALVES FOR MAXIMISING PRODUCT RECOVERY

Bardiani unique minimal dead-space valves ensure:

- · Maximization of product recovery.
- Easily changeable seals without the need for special tool.
- By **reducing waste**, water use, cleaning chemical use and subsequent disposal costs, it also helps towards the company's environmental sustainability goals.

MAIN BENEFITS

- Designed and **precision-engineered** for pigging systems
- Minimal dead-space valve to maximize product recovery
- **Sturdiness** thanks to valve body and shutter made from stainless steel **solid bar**
- Maximum flexibility thanks to different DN sizes
- Minimum number of seals in contact with the product
- **6 Easy maintenance** without use of special tools



CERTIFIED SEALING SOLUTIONS

In order to manufacture reliable and high quality products, Bardiani Valvole select only European partners able to supply certified, reliable and long-lasting seals.

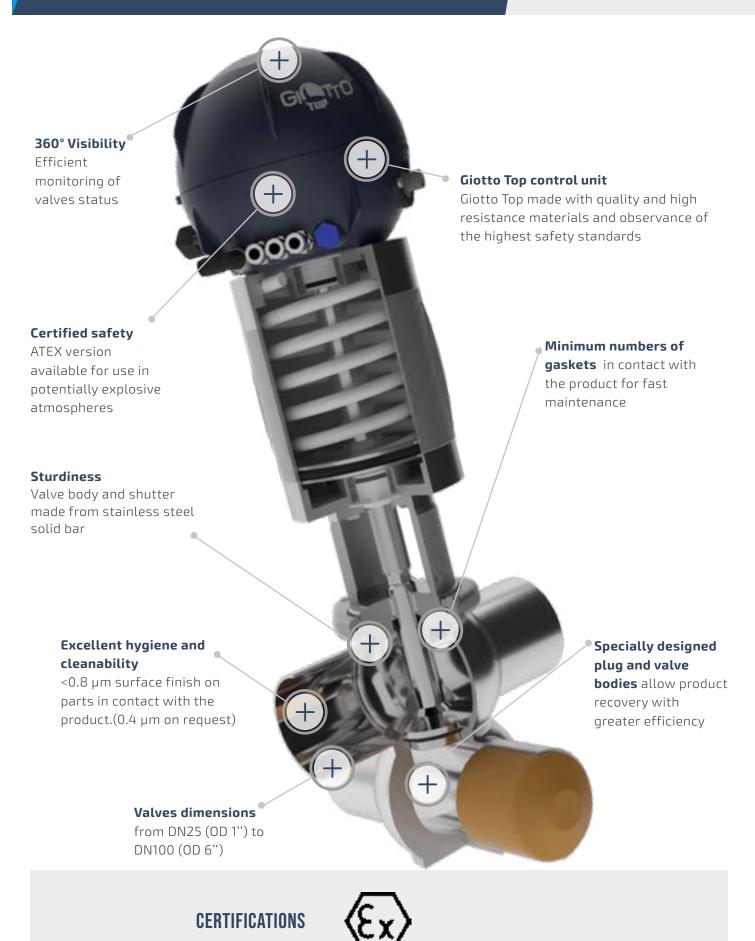
These are sealing solutions provided for valves for pigging systems:

EPDM is a polymer composed of ethylene, propylene and a small percentage of a diene and is particularly well-suited for applications involving polar media. It has an outstanding resistance to water and aqueous systems.

HNBR is distinguished by its resistance to greases, waxes and oils and for this reason, it is used in systems in which these media are contained or controlled.

FKM is an fluorinated material with a monomer composition, thanks to its good swelling resistance towards aliphatic and aromatic hydrocarbons, oils and greases.

BBZPPG SINGLE SEAT VALVE OVERVIEW



DESCRIPTION

BBZPPG single seat valve enables simple, fast, and effective cleaning and product recovery. Unlike standard valves, it features minimal dead-space which ensures maximum product recovery. It has been specially designed and engineered for applications with extremely high cleaning, sanitising and hygiene requirements. Fully piggable, the valve offers high levels of performance, reliability and effectiveness.

OPTIONS

STEAM BARRIER

A steam barrier is recommended for hygiene applications where high sterilisation temperatures are used to maintain product asepticity.



DIAPHRAGM

The use of a diaphragm inside the valve body allows to obtain a safe separation between the product inside the valve and the external environment.





	VALVE STRUCTURE			
Connections from DN25 to DN100	DIN, SMS, IDF, BS (RJT), Clamp, Flange	Other connections on request		
Material in contact with the product	AISI 316L (1.4404)	Other material on request		
Material gaskets in contact with the product (FDA homologation)	EPDM, FKM, HNBR	Other material on request		
Max product temperature (EPDM applications with air)	140 °C (284 °F)	For other temperature,		
Min product temperature (EPDM applications with air)	-10 °C (14 °F)	please ask Bardiani Valvole		
Max product pressure	10 bar (145 psi)			
Max working pressure	See table			
Finish on surfaces in contact with the product	Ra 0.8 µm (other types of surface finish on request).			
Diaphragm material	P.T.F.E. in contact with produc	t		

PNEUMATIC ACTUATOR STRUCTURE			
Air connectors	1/8" (BSP) for pipe 6 x 4 mm		
Air pressure	From 6 bar (87 psi) to 8 bar (116 psi)		
Cylinder material	AISI 304 (1.4301)		
Gasket material	NBR		

CERTIFICATIONS



BBZPPG VALVE BODIES CONFIGURATIONS





Legenda



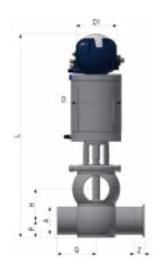
Recommended flow direction



 1° – 2° – $3^{\circ}how$ to read end connection with different stype and sizes

BBZPPG DIMENSIONS

BBZPPG



Legenda	
S/S	Welding
F/F	Male
-	on request

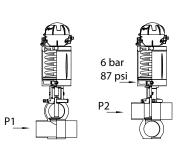
	S/S							F/F
DN	А	D	D1	Н		Р	Ó	
25	29x1.5	59	114	37.5	366	23	65	35
40	41x1,5	89.5	114	49.5	402	29	70	33
50	53x1.5	89.5	114	61.5	426	35	85	35
65	70×2	114.5	114	77.5	508.5	43	95	40
80	85x2	114.5	114	92.5	538.5	50.5	105	45
100	104x2	140	145	111.5	624	60	120	54

	S/S						
OD	А	D	D1	Н		Р	Ó
1"	25.4X1.5	59	114	33.9	366	24.9	65
1" 1/2	38.1x1.5	89.5	114	46.7	402.5	30.4	85
2"	50.8x1.5	89.5	114	59.3	426	36	85
2" 1/2	63.5x1.5	114.5	114	71.1	503	41	95
3"	76.1x2	114.5	114	83.7	530	47	105
4"	101.6×2	140	145	109.1	624	61	120

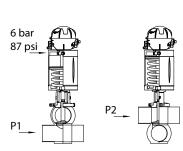
	S/S							CLAMP
OD	А	D	D1	Н		Р	Ó	
1"	25.4X1.65	59	114	33.7	366	24.9	65	12.7
1" 1/2	38.1x1.65	89.5	114	46.3	402.5	30.4	85	12.7
2"	50.8x1.65	89.5	114	59.1	426	36	85	12.7
2" 1/2	63.5x1.65	114.5	114	71.7	503	41	95	12.7
3"	76.2x1.65	114.5	114	84.5	530	47	105	12.7
4"	101.6x2.11	140	145	109.1	624	61	120	15.8

Other dimensions on request

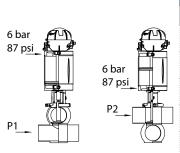
Legenda	
S.A.N.C.	Valve normally closed with single acting actuator (air opens/spring closes)
S.A.N.O.	Valve normally opened with single acting actuator (air closes/spring opens)
D.A.	Valve with double acting actuator (air opens/air closes)
cyl.	Cylinder size



		S.A.N.C.		
DN	INCHES/OD	cyl.	P1 bar/psi	P2 bar/psi
25	1"	59	8/116	10/145
40	1" 1/2	83	10/145	10/145
50	2"	83	9/130	10/145
65	2" 1/2	108	9/130	10/145
80	3"	108	5/72	6/87
100	4"	134	6/87	6/87

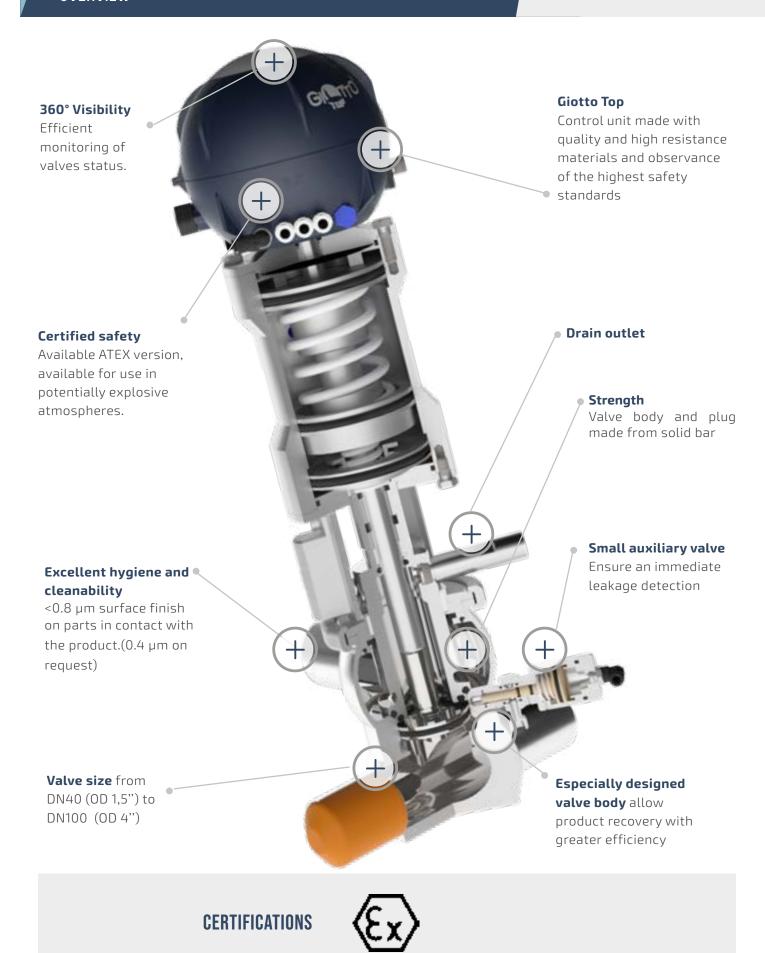


		S.A.N.O.		
DN	INCHES/OD	cyl.	P1 bar/psi	P2 bar/psi
25	1"	59	9/130	10/145
40	1" 1/2	83	10/145	10/145
50	2"	83	9/130	10/145
65	2" 1/2	108	9/130	10/145
80	3"	108	4.5/65	6.5/94
100	4"	134	4.5/65	8/115



		D.A.		
DN	INCHES/OD	cyl.	P1 bar/psi	P2 bar/psi
25	1"	59	10/145	10/145
40	1" 1/2	83	10/145	10/145
50	2"	83	10/145	10/145
65	2" 1/2	108	10/145	10/145
80	3"	108	10/145	10/145
100	4"	134	10/145	10/145

B93JPG DOUBLE SEAT VALVE OVERVIEW



DESCRIPTION

B93JPG enables complete and safe separation between two fluids and recovery of the product with PIG.

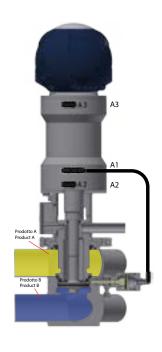
The lower body is specially designed to enable the smooth passage of the PIG; the upper body might have 1 or 2 horizontal ports.

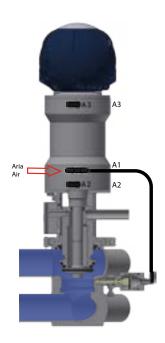
The upper shutter has an axial seal while the lower one has a radial seal.

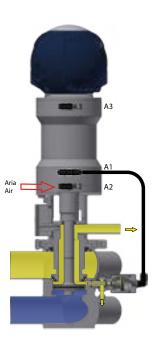
B93JPG may be installed vertical or suspended.

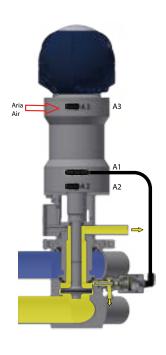
When vertical installed, CIP is draining by the port above the bodies and by the auxiliary valve.

WORKING PRINCIPLE









CLOSED VALVE

VALVE CLOSING (inlet air 1)

CLEANING
OF UPPER SEAT
(inlet air 2)

CLEANING OF LOWER SEAT (inlet air 3)

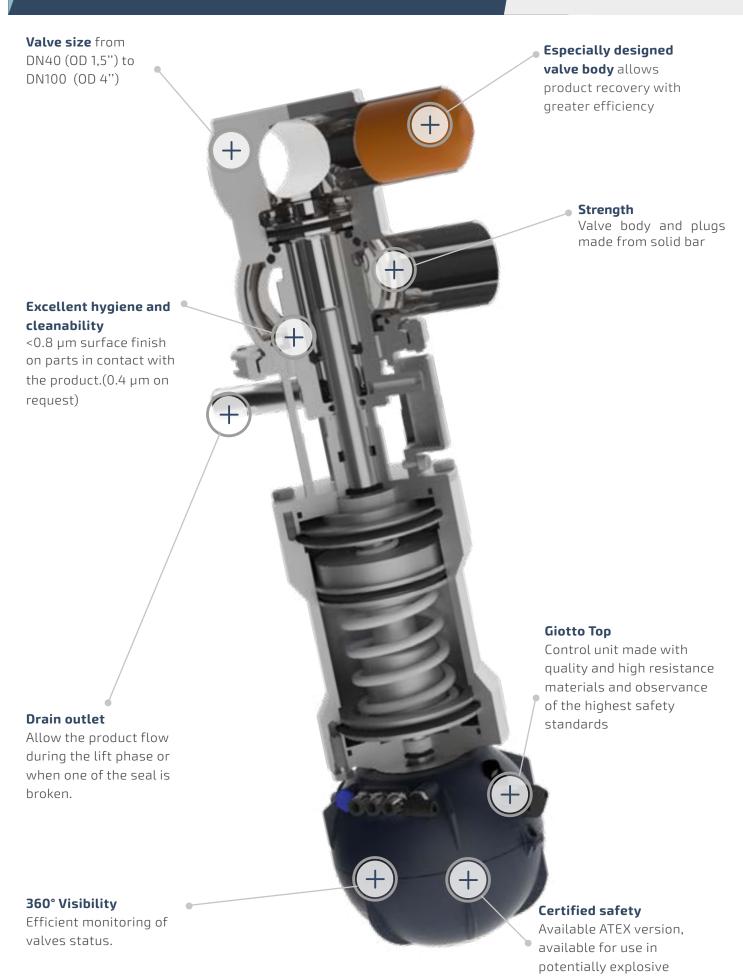
The product and the CIP are separated by the plugs, any leakage will flow out through the leakage duct, without contamination of the other line.

The lower plug lifts, pushing the upper one, and closes the access to the drainage duct, causing full opening of the valve. During this phase, the radial seal fitted in the lower plug gives a complete seal without any product leakage.

During the body cleaning phase, partial lifting (not adjustable stroke) of the upper plug allows the cleaning of the plugs, seats and draining ducts, flowing through the leakage detector.

During the body cleaning phase, partial lifting of the lower plug (not adjustable stroke) allows the cleaning of the plugs, seats and draining ducts.

DOUBLE SEAT VALVE B93JPG REVERSE OVERVIEW



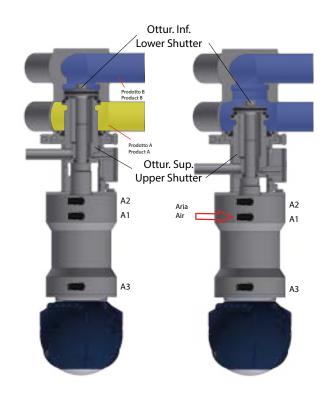
DESCRIPTION

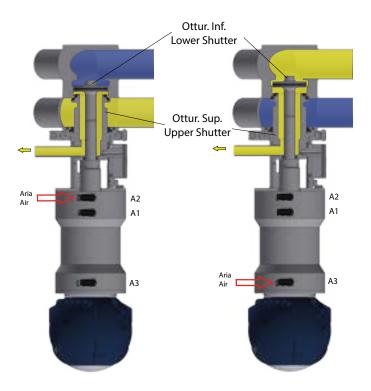
B93JPG REVERSE enables complete and safe separation between two fluids and recovery of the product with PIG. The upper body is specially designed to enable the smooth passage of the PIG; the upper body might have 1 or 2 horizontal ports. The upper plug has an axial seal while the lower one has a radial seal.

B93JPG REVERSE is ideal for vertical installation with actuator positioned in the lower part.

When vertical installed, CIP is draining by the drain outlet above the bodies.

WORKING PRINCIPLE





CLOSED VALVE

The product and the CIP are separated by the plugs, any leakage will flow out through the leakage duct, without contamination of the other line.

OPEN VALVE (inlet air 1)

The lower plug lifts, pushing the upper one, and closes the access to the drainage duct, causing full opening of the valve. During this phase, the radial seal fitted in the lower plug gives a complete seal without any product leakage.

CLEANING OF UPPER SEAT (inlet air 2)

During the body cleaning phase, partial lifting (not adjustable stroke) of the upper plug allows the cleaning of the plugs, seats and draining ducts, flowing through the leakage detector.

CLEANING OF LOWER SEAT (inlet air 3)

During the body cleaning phase, partial lifting of the lower plug (not adjustable stroke) allows the cleaning of the plugs, seats and draining ducts.

B93JPG - B935J REVERSE TECHNICAL DATA

D	n	2	
D	כ	_	



B93JPG REVERSE



	VALVE STRUCTURE				
Connections from DN40 to DN100	DIN, SMS, IDF, BS (RJT), Clamp, Flange	Other connections on request			
Material in contact with the product	AISI 316L (1.4404)	Other material on request			
Material gaskets in contact with the product (FDA homologation)	EPDM, FKM, HNBR	Other material on request			
Max product temperature (EPDM applications with air)	140 °C (284 °F)	For other temperature,			
Min product temperature (EPDM applications with air)	-10 °C (14 °F)	please ask Bardiani Valvole			
Max product pressure	10 bar (145 psi)				
Max working pressure	See table				
Finish on surfaces in contact with the product	Ra 0.8 µm (other types of surface finish on request).				

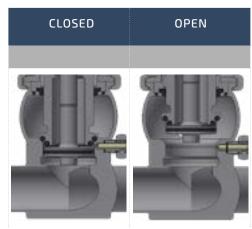
PNEUMATIC ACTUATOR STRUCTURE				
Air connectors	1/8" (BSP) for pipe 6 x 4 mm			
Air pressure	From 6 bar (87 psi) to 8 bar (116 psi)			
Cylinder material	AISI 304 (1.4301)			
Gasket material	NBR			

CERTIFICATIONS

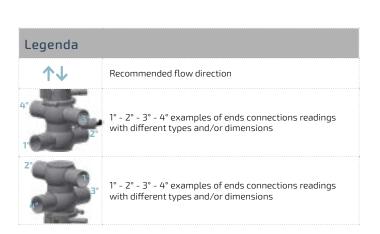


B93JPG - B935J REVERSEVALVE BODIES CONFIGURATION











B93JPG - B935J REVERSE DIMENSIONS

B93JPG/B93JPG REVERSE



Legenda	
S/S	Welding
F/F	Male
-	On request

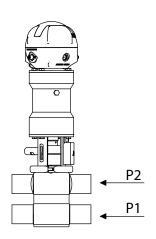
	S/S							
DN	А	D	D1	Н		Р	Ó	Z
40	41x1.5	124	145	72	546	29	90	21
50	53x1.5	124	145	84	570	35	110	35
65	70x2	124	145	100	602	43	120	40
80	85x2	146	145	115	663	50.5	130	45
100	104x2	146	145	134	701	60	150	54

	S/S								
OD									
1"1/2	38.1x1.5	124	145	69.2	546	27.5	90		
2"	50.8x1.5	124	145	81.8	570	36	110		
2" 1/2	63.5x1.5	124	145	94.6	597	40.5	120		
3"	76.1x2	146	145	106.2	655	47	130		
4"	101.6x2	146	145	131.6	701	62	150		

	S/S							CLAMP
OD								
1"1/2	38.1×1.65	124	145	68.8	546	27.5	90	12.7
2"	50.8x1.65	124	145	81.6	570	36	110	12.7
2" 1/2	63.5x1.65	124	145	94.4	597	40.5	120	12.7
3"	76.2x1.65	146	145	107	655	46.5	130	12.7
4"	101.6x2.11	146	145	131.6	701	62	150	15.8

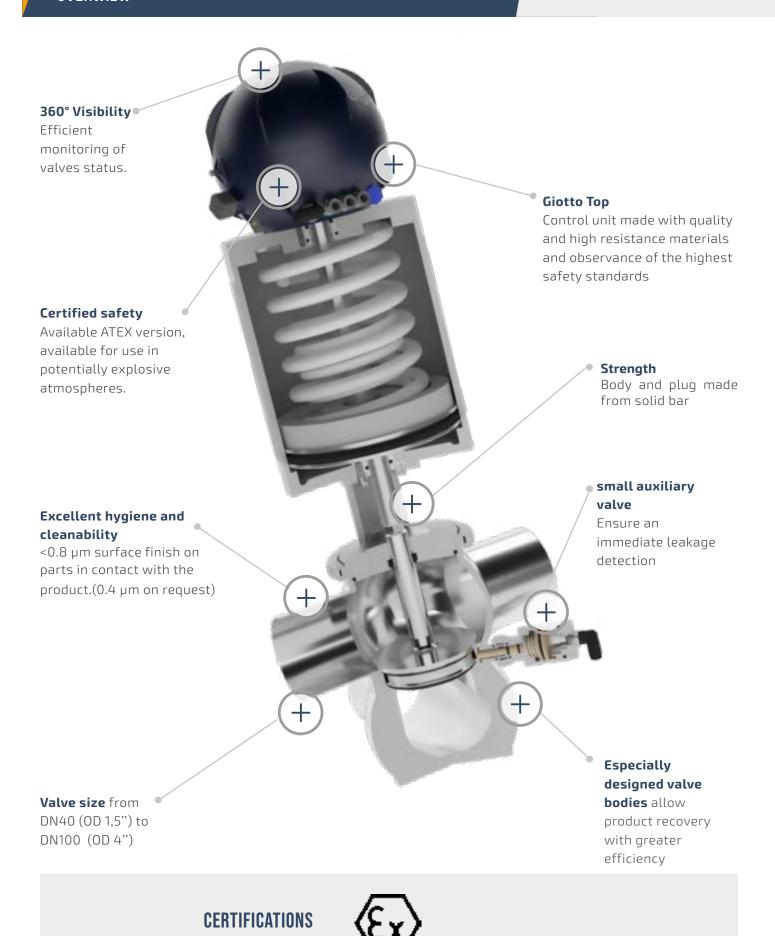
B93JPG - B935J REVERSEMAX.SEAL PRESSURES (BAR/PSI)

Legenda	
cyl.	Cylinder size



DN	INCHES/OD	cyl.	P1 bar/psi	P2 bar/psi
40	1"1/2	93	5/72	10/145
50	2"	93	5/72	10/145
65	2" 1/2	93	3.2/46	10/145
80	3"	115	2.8/41	10/145
100	4"	115	2/29	10/145

BZAW3PG DOUBLE SEAL VALVEOVERWIEW



DESCRIPTION

BZAW3PG guarantees separation between two fluids and recovery of the product with PIG.

The special design of the shutter provides a separation chamber between the two seals.

This ensures that any product leaks flow out through the two auxiliary valves located on the separation chamber, avoiding any contact between the two fluids.

The lower body is specially designed to enable the smooth passage of the PIG while the upper body might have 1 or 2 horizontal ports.

WORKING PRINCIPLE



CLOSED VALVE

Double seal shutter ensures a safe separation between the upper and the lower valve body. When the valve is closed, sterilisation or cleaning is allowed between the seals, by two auxiliary valves. Those valves allow eventual leackage detection.



VALVE OPENING

In the opening phase of the double seal shutter, the two auxiliary valves closes automatically.

BZAW3PG TECHNICAL DATA

BZAW3PG		VALVE STRUCTURE					
	Connections from DN40 to DN100	DIN, SMS, IDF, BS (RJT), Clamp, Flange	Other connections on request				
	Material in contact with the product	AISI 316L (1.4404)	Other material on request				
	Material gaskets in contact with the product (FDA homologation)	EPDM, FKM, HNBR	Other material on request				
	Max product temperature (EPDM applications with air)	140 °C (284 °F)	For other temperature,				
	Min product temperature (EPDM applications with air)	-10 °C (14 °F)	please ask Bardiani Valvole				
	Max product pressure	10 bar (145 psi)					
	Max working pressure	See table					
	Finish on surfaces in contact with the product Ra 0.8 μ m (other types of surface finish on request).						
	PNEUMATIC ACTUATOR STRUCTURE						
	Air connectors	1/8" (BSP) for pipe 6 x 4 mm					
	Air pressure	From 6 bar (87 psi) to 8 bar (116 psi)					
	Cylinder material	AISI 304 (1.4301)					
	Gasket material	NBR					
CERTIFICATIONS							





Legenda	
$\uparrow \downarrow$	Reccomended flow direction
4°, 2°, 2°, 1°	1° - 2° - 3° - 4° examples of ends connections readings with different types and/or dimensions

BZAW3PG



Legenda	
F/F	Male
S/S	Welding
-	On request

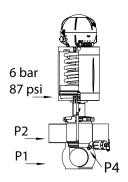
		S/S							
DN	А	D	D1	Н	L	Р	Ó	Z	
40	41x1.5	114.5	145	61.5	468	29	90	33	
50	53x1.5	140	145	73.5	536	35	100	35	
65	70x2	140	145	89.5	568	43	110	40	
80	85x2	168	145	104.5	629	51	120	45	
100	104×2	168	145	123.5	667	60	130	54	

	S/S						
OD	А	D		Н		Р	Q
1" 1/2	38.1x1.5	114.5	145	58.7	468	32	90
2"	50.8x1.5	140	145	71.3	536	35.5	100
2" 1/2	63.5x1.5	140	145	84.1	562	40	110
3"	76.1x2	168	145	95.7	621	47.5	120
4"	101.6x2	168	145	121.1	667	62	130

	S/S							CLAMP
OD								
1" 1/2	38.1x1.65	114.5	145	58.3	468	32	90	12.7
2"	50.8x1.65	140	145	71.1	536	36	100	12.7
2" 1/2	63.5x1.65	140	145	83.7	562	40	110	12.7
3"	76.2x1.65	168	145	96.5	621	47	120	12.7
4"	101.6x2.11	168	145	121.1	667	62	130	15.8

Other dimensions on request

Legenda		
cyl.	Cylinder size	



DN	INCHES/OD	cyl.	P1 bar/psi	P2 bar/psi
40	1"1/2	108	10/145	10/145
50	2"	134	10/145	10/145
65	2" 1/2	134	6.4/124	10/145
80	3"	156	8.6/124	5.7/82
100	4"	156	7.5/108	4.7/68

AUXILIARY VALVE CIRCUIT PRESSURE P4=6 BAR /87 PSI

PIG STOPPER

Pig stopper is necessary to prevent the progress of the pig in the launching or departing station, and allow the cleaning; or to place the PIG in the correct position before the product change phases.



Consultation of the "Instruction, Use and Maintenance Manual" is mandatory prior to the installation, use and maintenance of the products of all Products. All the information, indications, specifications, technical details provided herein are based on test data which the Manufacturer Bardiani Valvole S.p.A. holds to be reliable nevertheless the above is not deemed to be assumed as fully exhaustive inasmuch as not every possible use has been envisaged.

 All the illustrations and drawings provided are to be intended as indicative and therefore not binding, the illustrations being for presentation purposes only.

It is the Buyer's duty to assess the suitability of the Products
for the use he intends to make of the same prior to placing the
order as he/she will take the risks and accept liability in case
of incorrect choice and use of the Products.

 The Manufacturer strongly recommends the Buyer to contact their sales team and request any information that might be needed in relation to the specifications and uses of the Products.

 The information provided in this manual refers to the standard products manufactured by Bardiani Valvole S.p.A. and therefore cannot be assumed to apply to customized products as well.

 Bardiani Valvole S.p.A. reserves the right to amend and/or integrate and/or update the data and/or information and/or technical details relative to Products at any time and without prior notice. Please visit the website www.bardiani.com, where the latest updated of the "Instruction, Use and Maintenance Manual" can be found".

 The content and validity of the warranty covering the Products of Bardiani Valvole S.p.A are dealt with in the relevant section in the "Instruction, Use and Maintenance Manual" which constitutes an integral part of the Products themselves.

 Bardiani Valvole S.p.A., shall not in any way be held liable for immaterial, indirect and consequential damages, such as (by way of example only), damages or loss of business, contracts, opportunities, time, production, profits, goodwill, image etc..



BARDIANI CARE

Flexibile made-to-measure services based on client needs. And it is here, in its capacity to build a made-to-measure post-sales service for each customer that Bardiani Valvole makes the difference.



Preventive maintenance

- Customer-specific production schedules
- Life cycle analysis and inperson valve maintenance
- Maintenance costs monitoring



Technical trainings

- Hands-on trainings
- On site or at customer plants
- Video tutorials



Guaranteeing parts availability

- Original spare parts
- Prompt deliveries
- · Avalability over time



Continual technical support

- Dedicated and made by experienced technicians
- Quick claims resolution



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