Figure 9400

1”-DN100 PN10-16-25

Monoblock Combination Air Valve

DESCRIPTION

The double body combination automatic air valve with kinetic effect is for clean water services. Designed for full flow being the input and output equal to the DN specifications. The body and cover in ductile iron and the internal mechanisms in stainless steel.

The valve should perform the following functions.

1.Exhausts large amounts of air during the filling process to ensure that the air can reach the outlet at the velocity of sound without the float ball being elevated and the mechanism shutting prematurely.

2.Admits large quantities of air during line breaks and draining operations to avoid vacuum in the pipe.

3. Expulsion of air pockets, accumulated in the filling process while in service (pressurized).

Closes watertight from 0.1 bar

Consult for lower working pressures

Fluid

Clean Water.

Consult operation and materials for sea water, raw water, etc.

CONSTRUCTION MATERIALS / COATING

Body: Ductile Iron EN GJS-500-7

Cover, Float ball and Internal mechanisms: Stainless Steel A304 (optional A316)

Seat: Elastomer NBR/EPDM

Bolting: Internal Stainless Steel A2 / External in Galvanized Steel

Coating: Non-toxic Epoxy for drinkable water. Internal and external 200 microns thickness

Other material and special coating available upon request

AERATION CAPABILITIES

BIG ORIFICE (FILLING / EMPTYING)

See tables for aeration capacity and curves in pages 30 and 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE						
DN	1”	2”	DN50	DN65	DN80	DN100
PN10/16	Ø 2 mm	Ø 3 mm	Ø 3 mm	Ø 3 mm	Ø 4 mm	Ø 5 mm
PN25	Ø 1,5 mm	Ø 2 mm	Ø 2 mm	Ø 2 mm	Ø 4 mm	Ø 5 mm

Consult for other orifice diameters

TEST PRESSURE

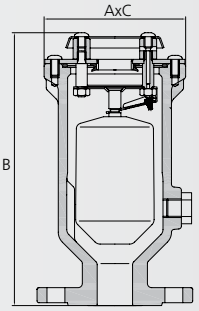
	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar
PN 25	38 bar	28 bar

GENERAL DIMENSIONS AND WEIGHTS

DN	Connection	A	C	B	Weight
1”	Thread M.	105	105	200	2,3
2”	Thread M.	140	140	258	4,9
DN50	Flange	140	140	258	7
DN65	Flange	140	140	260	9
DN80	Flange	184	184	355	18
DN100	Flange	222	222	394	25

Dimensions in mm and weights in kgs

Connections: PN10-16-25 s/EN - 150# s/ANSI



ORDERING OPTIONS

- Pipe away version
- Lateral drain valve / test
- Special closure for lower working pressure than 0,1 bar
- Buoy in ABS

FULFILLED STANDARDS

- EN 1074-1 & EN 1074-4
- AWWA C512

KINETIC DESIGN. SEQUENCE OF FUNCTIONS

The kinetic air/vacuum valves are specially designed so that the flow of air in evacuation reaches high speeds without the float ball being ejected by the effect of this flow, thus allowing a complete air evacuation.

1.During expulsion, the air flow circling around the float ball causes a result of force which keeps the ball in an open position.

2.The flotation of the ball will block the air flow when the water lifts up the ball.

Evacuation of large quantities of air during the filling

Purge of air during operation

Admission of large quantities of air during the emptying

Figure 9400
DN150-DN300 PN10-16-25

Monoblock Combination Air Valve

DESCRIPTION

The automatic trifunctional air valve with kinetic effect is for clean water services. Designed for full flow being the input and output equal to the DN specifications. The body and cover in ductile iron and the internal mechanisms in stainless steel.

The valve should perform the following functions.

1.Exhausts large amounts of air during the filling process to ensure that the air can reach the outlet at the velocity of sound without the float ball being elevated and the mechanism shutting prematurely.

2.Admits large quantities of air during line breaks and draining operations to avoid vacuum in the pipe.

3. Expulsion of air pocket accumulated in the filling process while in service (pressurized)

Closes watertight from 0.1 bar

Consult for lower working pressures

Fluid

Clean Water.

Consult operation and materials for sea water, raw water, etc.

CONSTRUCTION MATERIALS / COATING

Body: Ductile Iron EN GJS-500-7
Cover: Carbon steel ST-44
Float ball and Internal mechanisms: Stainless Steel A304 (optional A316)
Seat: Elastomer + NBR/EPDM
Bolting: Internal stainless steel A2 / External in galvanized steel
Coating: Non-toxic Epoxy for drinkable water. Internal and external 200 microns thickness

Other material and special coating available upon request

TECHNICAL DATA / ENGINEERING

AERATION CAPABILITIES

BIG ORIFICE (FILLING / EMPTYING)

See tables for aeration capacity and curves in pages 30 and 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE			
DN150	DN200	DN250	DN300
Ø 5 mm.	Ø 7 mm.	Ø 8 mm.	Ø 10 mm.

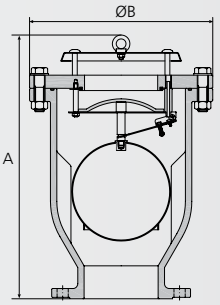
Consult for other orifice diameters

TEST PRESSURE	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar
PN 25	38 bar	28 bar

GENERAL DIMENSIONS AND WEIGHTS

DN	Connection	A	ØB	Weight
DN150	Flange	650	385	82
DN200	Flange	725	480	142
DN250	Flange	860	626	245
DN300	Flange	1000	756	370

Dimensions in mm and weights in kgs
Connections: PN10-16-25 s/EN -150# s/ANSI



ORDERING OPTIONS

- Pipe away version
- Lateral drain valve / test
- Special closure for lower working pressure than 0,1 bar
- Buoy in ABS

FULFILLED STANDARDS

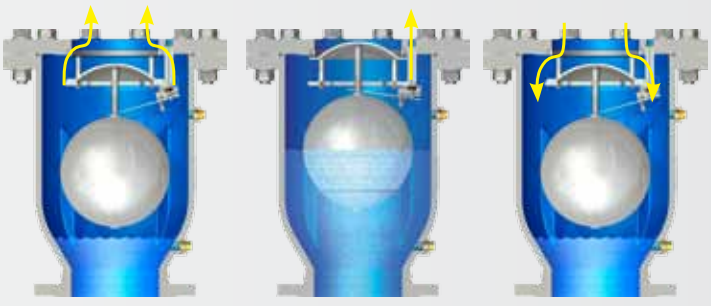
- EN 1074-1 & EN 1074-4
- AWWA C512

KINETIC DESIGN. SEQUENCE OF FUNCTIONS

The kinetic air/vacuum valves are specially designed so that the flow of air in evacuation reaches high speeds without the float ball being ejected by the effect of this flow, thus allowing a complete air evacuation.

1.During expulsion, the air flow circling around the float ball causes a result of force which keeps the ball in an open position.

2.The flotation of the ball will block the air flow when the water lifts up the ball.



Evacuation of large quantities of air during the filling

Purge of air during operation

Admission of large quantities of air during the emptying

Figure 9420

DN50-DN200 PN10-16

Combination Air Valve for Wastewater

DESCRIPTION

These valves are designed to exhaust large quantities of air during the filling, exhausts (bags) pockets of air that accumulate during the services and allow large quantities of air preventing vacuum.

It has a compact body that hosts all the mechanisms. The three functions are performed by a single float buoy built in stainless steel as well as the internal parts.

The main seat is built in NBR and is easily interchangeable . When the removal of sediments , fats and solids is frequent , an optional system of cleaning may be incorporated. This consists of a (isolated/ insulated) valve in the entrance and valves interconnected with rapid disconnection to allow a quick water cleaning.

Closes watertight from 0.1 bar

Consult for lower working pressures

Fluid:

Wastewater.

TSE: (Treated Sewage Effluent)

CONSTRUCTION MATERIALS / COATING

Body and Cover: Ductile Iron EN GJS-500-7

Float ball and Internal Mechanisms: Stainless steel A316

Seat: Elastomer NBR/EPDM high durability

Bolting: Internal Stainless steel A2 / External in Galvanized Steel

Coating: Non-toxic Epoxy for drinkable water. Internal and external 200 microns thickness

Other material and special coating available upon request

TECHNICAL DATA / ENGINEERING

AERATION CAPABILITIES

BIG ORIFICE (FILLING / EMPTYING)

See tables for aeration capacity and curves in pages 30 and 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE					
2" x 1 ¼"	2" x 2"	DN80	DN100	DN150	DN200
Ø 2 mm	Ø 3,5 mm	Ø 5 mm	Ø 5 mm	Ø 5 mm	Ø 5 mm

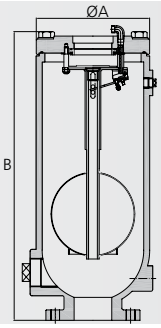
Orifices for PN10.
Consult for other orifice diameter.

TEST PRESSURE	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar

GENERAL DIMENSIONS AND WEIGHTS

DN	Connection	ØA	B	Weight
2"x11/4"	M Thread / Flange	150	398	20
2" x 2"	F Thread / Flange	185	537	36
DN80	Flange	241	615	76
DN100	Flange	241	615	85
DN150	Flange	441	730	144
DN200	Flange	441	748	155

Dimensions in mm and weights in kgs
Connections: PN10-16-25 s/EN -150# s/ANSI



ORDERING OPTIONS

- Pipe away version
- Lateral drain valve
- Special closure for lower working pressure than 0,1 bar

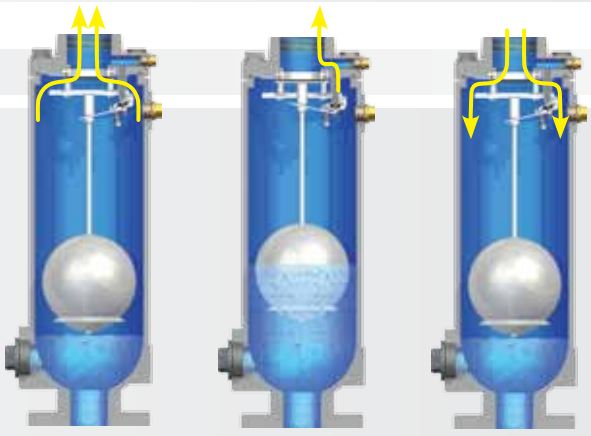
FULFILLED STANDARDS

- EN 1074-1 & EN 1074-4
- AWWA C512

KINETIC DESIGN. SEQUENCE OF FUNCTIONS

The kinetic air/vacuum valves are specially designed so that the flow of air in evacuations reaches high velocity (speed of sound) without the Buoy ascending for the effect of the current and stopping any premature closings until the evacuation is complete.

1. During expulsion, the air flow circling around the float ball causes a result of force which keeps the ball in an open position.
2. The flotation of the ball will block the air flow when the water reaches the Buoy.



Evacuation of large quantities of air during the filling

Purge of air during operation

Admission of large quantities of air during the emptying

Figure 9421

DN50/200 **PN10-16**

Combination Air Valve for Wastewater

PASO TOTAL

DESCRIPTION

These valves are designed to exhaust large quantities of air during the filling, exhausts (bags) pockets of air that accumulate during the services and allow large quantities of air preventing vacuum.

It has a compact body that hosts all the mechanisms. The three functions are performed by a single float buoy built in stainless steel as well as the internal parts.

The main seat is built in NBR and is easily interchangeable . When the removal of sediments , fats and solids is frequent , an optional system of cleaning may be incorporated. This consists of a (isolated/ insulated) valve in the entrance and valves interconnected with rapid disconnection to allow a quick water cleaning.

Closes watertight from 0.1 bar

Consult for lower working pressures

Fluid:

Wastewater.

TSE: (Treated Sewage Effluent)

CONSTRUCTION MATERIALS / COATING

Body: Ductile iron EN GJS-500-7
Cover. - Up to DN100 Stainless steel
- DN150 & DN200 Ductile iron/carbon steel
Internal mechanisms: A304 Stainless steel(A316 available)
Float ball: A316 Stainless steel(ABS available)
Seat: A316 Stainless steel
Sealing joint: Elastomer NBR/EPDM
Internal and external bolting: Internal in Stainless Steel A4 and external in Galvanized Steel
Coating: 250 microns of internal and external non toxic epoxy. Certificate of potability
Other materials or special coatings available upon request

TECHNICAL DATA / ENGINEERING

AERATION CAPABILITIES

BIG ORIFICE (FILLING / EMPTYING)
See tables for aeration capacity and curves in pages 30 and 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE					
2" x 1 ¼"	2" x 2"	DN80	DN100	DN150	DN200
Ø 2 mm	Ø 2 mm	Ø 2,5 mm	Ø 2,5 mm	Ø 4,5 mm	Ø 5,5 mm

Orifices for PN10. Consult for other orifice diameter.

TEST PRESSURE	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar
150	28 bar	21 bar

GENERAL DIMENSIONS AND WEIGHTS

DN	Connection	A	ØB	Weight
DN2"	Rosca H	440	186	24,4
DN50	Brida	440	186	27
DN80	Brida	516	270	44
DN100	Brida	516	270	51
DN150	Brida	610	385	146
DN200	Brida	808	502	198

Dimensions in mm and weights in kgs Connections: PN10-16-25 s/EN -150# s/ANSI

ORDERING OPTIONS

- Water hammer protection ; ANTI-SLAM VALVE
- Pipe away version
- Device for avoiding air entrance inside the pipe (check valve)
- Special internal materials: A316, Duplex, Super Duplex, titanium, etc.
- Special coatings: Enamel, polyurea, rilsan, teflon, halar, etc.
- Peterson intake
- High capacity air release with lever system
- Stainless steel float ball

FULFILLED STANDARDS

- EN 1074-1 & EN 1074-4
- AWWA C512

KINETIC DESIGN. SEQUENCE OF FUNCTIONS

The kinetic air/vacuum valves are specially designed so that the flow of air in evacuations reaches high velocity (speed of sound) without the Buoy ascending for the effect of the current and stopping any premature closings until the evacuation is complete.

1. During expulsion, the air flow circling around the float ball causes a result of force which keeps the ball in an open position.
2. The flotation of the ball will block the air flow when the water reaches the Buoy.

Evacuation of large quantities of air during the filling

Purge of air during operation

Admission of large quantities of air during the emptying

Figure 9430

1"-DN250 PN40-64-100

High Pressure Combination Air Valve

DESCRIPTION

The automatic trifunctional air valve with kinetic effect is for clean water services. Designed for full flow being the input and output equal to the DN specifications. The body and cover in ductile iron and the internal mechanisms in stainless steel. The valve performs the following functions:

1. Exhausts large amounts of air during the filling process to ensure that the air can reach the outlet at the velocity of sound without the float ball being elevated and the mechanism shutting prematurely.

2. Admits large quantities of air during line breaks and draining operations to avoid vacuum in the pipe.

3. Expulsion of air pockets accumulated in the filling process while in service (pressurized)

Fluid

Clean Water. Consult operation and materials for sea water, raw water, etc.

CONSTRUCTION MATERIALS / COATING

Body and Cover: Ductile Iron EN GJS-500- in PN40
Carbon steel A216-WCB for PN64/PN100

Float ball and Internal mechanisms: Stainless Steel A304 (optional A316)

Seat: Stainless Steel A304 + NBR/EPDM

Bolting: Internal stainless steel A2 / External in galvanized steel

Coating: Non-toxic Epoxy for drinkable water. Internal and external 200 microns thickness

Other material and special coating available upon request

TECHNICAL DATA / ENGINEERING

AERATION CAPABILITIES

BIG ORIFICE (FILLING / EMPTYING)

See tables for aeration capacity and curves in pages 30 and 31.

AERATION CAPABILITIES

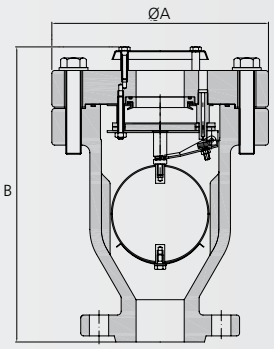
AUTOMATIC DRAIN / Ø STANDARD ORIFICE							
DN	1"	DN50	DN80	DN100	DN150	DN200	DN250
PN40	Ø 1,0 mm	Ø 1,5 mm	Ø 2,0 mm	Ø 2,0 mm	Ø 3,5 mm	Ø 5,0 mm	Ø 8,0 mm
PN64	Ø 1,0 mm	Ø 1,5 mm	Ø 2,0 mm	Ø 2,0 mm	Ø 3,5 mm	Ø 5,0 mm	Ø 8,0 mm
PN100	Ø 0,75 mm	Ø 1,0 mm	Ø 1,5 mm	Ø 2,0 mm	Ø 3,5 mm	Ø 4,0 mm	Ø 6,0 mm

Consult for other orifice diameter

TEST PRESSURE	BODY	SEAT
PN 40	60 bar	44 bar
PN 64	96 bar	71 bar
PN 100	150 bar	110 bar

GENERAL DIMENSIONS AND WEIGHTS

DN	Connection	A	B	Weight
1"	F Thread	134	185	15
DN50	Flange	225	350	47
DN65	Flange	225	350	51
DN80	Flange	282	370	65
DN100	Flange	300	395	75
DN150	Flange	437	632	172
DN200	Flange	517	795	228
DN250	Flange	626	920	350
DN300	Flange	670	1000	470



Dimensions in mm and weights in kgs
Connections: PN40-64-100 s/EN -300-400-600# s/ANSI

ORDERING OPTIONS

- Pipe away version
- Lateral drain valve / test

FULFILLED STANDARDS

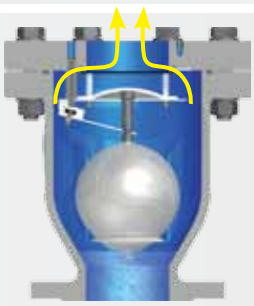
- EN 1074-1 & EN 1074-4
- AWWA C512

KINETIC DESIGN. SEQUENCE OF FUNCTIONS

The kinetic air/vacuum valves are specially designed so that the flow of air in evacuations reaches high speed of sounds without the float ball being ejected by the effect of this flow, thus allowing a complete air evacuation.

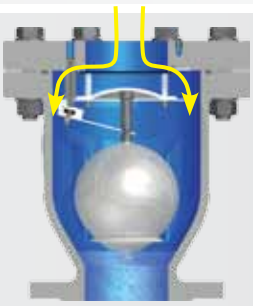
1. During expulsion the air flow circling around the float ball causing a result of force which keeps the ball in an open position.

2. The flotation of the ball will block the air flow when thewater lifts up the ball.



Evacuation of large quantities of air during the filling

Purge of air during operation



Admission of large quantities of air during the emptying

Figure 9450

1"-DN100 PN10-16-25

Compact Body Combination Air Valve

DESCRIPTION

The automatic trifunctional automatic air valve, double buoy with kinetic effect is for clean water services. Designed for full flow being the input and output equal to the DN specifications. The body and cover come in ductile iron and the internal mechanisms in stainless steel. The valve performs the following functions:

1. Exhausts large amounts of air during the filling process to ensure that the air can reach the outlet at the velocity of sound without the float ball being elevated and the mechanism shutting prematurely.

2. Admits large quantities of air upon during line breaks and draining operations to avoid vacuum in the pipe.

3. Expulsion of bags of air accumulated in the filling process while in service (pressurized)

Closes watertight from 1 bar. Consult for lower working pressures

Fluid:

Clean Water. Consult operation and materials for sea water, raw water, etc.

CONSTRUCTION MATERIALS / COATING

Body and Cover: Ductile Iron EN GJS-500-7

Float ball and Internal Mechanisms: Stainless Steel A304 (optional A316)

Seat: Stainless Steel A304 + NBR/EPDM

Bolting: Internal Stainless steel A2 / External in galvanized steel

Coating: Non-toxic Epoxy for drinkable water. Internal and external 200 microns thickness

Other material and special coating available upon request

TECHNICAL DATA / ENGINEERING

AERATION CAPABILITIES

BIG ORIFICE (FILLING / EMPTYING)

See tables for aeration capacity and curves in pages 30 and 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE			
DN	DN1"	DN50 & DN65	DN80 & DN100
PN10	Ø 2,25 mm	Ø 3,00 mm	Ø 4,75 mm
PN16	Ø 1,50 mm	Ø 2,25 mm	Ø 3,00 mm
PN25	Ø 1,25 mm	Ø 1,50 mm	Ø 3,00 mm

Consult for other orifice diameter

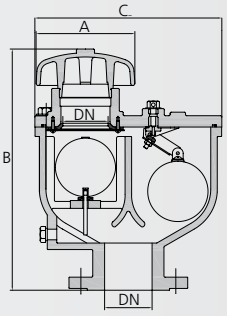
TEST PRESSURE	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar
PN 25	38 bar	28 bar

GENERAL DIMENSIONS AND WEIGHTS

DN	Connection	A	C	B	Weight
1"	F Thread / Flange	165	102	179	8
DN50	F Thread / Flange	233	132	290	16
DN60/65	Flange	233	132	290	17
DN80	Flange	315	168	400	35
DN100	Flange	386	210	416	49

Dimensions in mm and weights in kgs

Connections: PN10-16-25 s/EN -150# s/ANSI



ORDERING OPTIONS

- Pipe away version
- Lateral drain valve / test
- Special closure for lower working pressure than 0,5 bar

FULFILLED STANDARDS

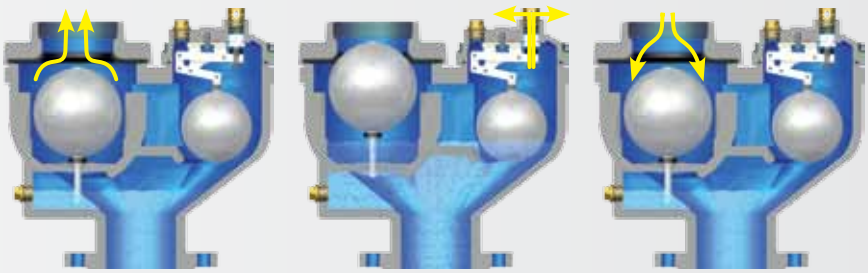
- EN 1074-1 & EN 1074-4
- AWWA C512

KINETIC DESIGN. SEQUENCE OF FUNCTIONS

The kinetic air/vacuum valves are specially designed so that the flow of air in evacuations reaches high velocity (speed of sound) without the Buoy ascending for the effect of the current and stopping any premature closings until the evacuation is complete.

1. During expulsion, the air flow circling around the float ball causes a result of force which keeps the ball in an open position.

2. The flotation of the ball will block the air flow when the water reaches the Buoy.



Evacuation of large quantities of air during the filling

Purge of air during operation

Admission of large quantities of air during the emptying

Figure 9500

DN150-DN400 PN10-16-25

Double Body Combination Air Valve

Combination valves (Fig. 9300 + Fig. 9200)

CONSTRUCTION MATERIALS / COATING

Body and Cover: Ductile Iron EN GJS-500-7

Float ball and Internal mechanisms: Stainless Steel A304 (optional A316)

Seat: Stainless Steel A304 + NBR/EPDM

Bolting: Internal Stainless steel A2 / External in Galvanized Steel

Coating: Non-toxic Epoxy for drinkable water. Internal and external 200 microns thickness

Other material and special coating available upon request

TECHNICAL DATA / ENGINEERING

AERATION CAPABILITIES

BIG ORIFICE (FILLING / EMPTYING)
See tables for aeration capacity and curves in pages 30 and 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE	
PN10	Ø 5,0 mm
PN16	Ø 3,0 mm
PN25	Ø 3,0 mm

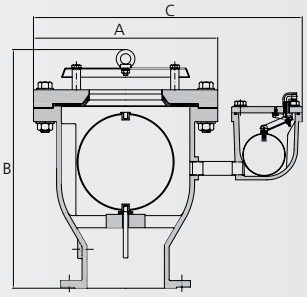
Valid data for all DN

Consult for other orifice diameter

TEST PRESSURE	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar
PN 25	38 bar	28 bar

GENERAL DIMENSIONS AND WEIGHTS

DN	Connection	A	C	B	Weight
DN150	Flange	388	605	540	94
DN200	Flange	483	685	650	156
DN250	Flange	597	815	845	275
DN300	Flange	699	890	1.010	358
DN350	Flange	780	980	1.105	475
DN400	Flange	851	1.050	1.210	615



Dimensions in mm and weight in kgs
Connections: PN10-16-25 s/EN -150# s/ANSI

ORDERING OPTIONS

- Pipe away version
- Lateral drain valve / test
- Special closure for lower working pressure than 0,5 bar

FULFILLED STANDARDS

- EN 1074-1 & EN 1074-4
- AWWA C512

DESCRIPTION

The automatic trifunctional air valve with kinetic effect is for clean water services. Designed for full flow being the input and output equal to the DN specifications. The body and cover come in ductile iron and the internal mechanisms in stainless steel. The valve performs the following functions:

1.Exhausts large amounts of air during the filling process to ensure that the air can reach the outlet at the velocity of sound without the float ball being elevated and the mechanism shutting prematurely.

2. Admits large quantities of air upon during line breaks and draining operations to avoid vacuum in the pipe.

3.Expulsion of bags of air accumulated in the filling process while in service (pressurized)

Closes watertight from 1 bar. Consult for lower working pressures

Fluid:

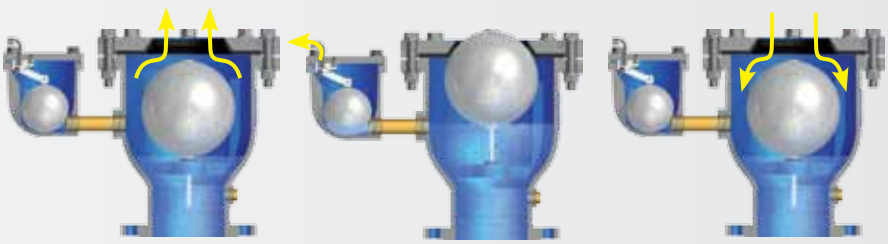
Clean Water. Consult operations and materials for sea water, raw water, etc.

KINETIC DESIGN. SEQUENCE OF FUNCTIONS

The kinetic air/vacuum valves are specially designed so that the flow of air in evacuations reach high speeds of sound without the float ball being ejected by the effect of this flow, thus allowing a complete air evacuation. Under demand the output of large amounts of air during filling can reach the speed of sound avoidirg a premature closing.

1.During the expulsion, the air flow circulates around the buoy provoking a result of power that keep the buoy in open position.

2.The flotation of the ball will block the air flow when the water lifts up the ball.



Evacuation of large quantities of air during the filling

Purge of air during operation

Admission of large quantities of air during the emptying

Figure 9510

DN150-DN400 PN10-16-25

Double Body Combination Air Valve

Combination valves (Fig. 9300 + Fig. 9220)

CONSTRUCTION MATERIALS / COATING

Body and Cover: Ductile Iron EN GJS-500-7

Float ball and Internal Mechanisms: Stainless Steel A304 (optional A316)

Seat: stainless steal A304 + NBR/EPDM

Bolting: Internal Stainless steel A2 / External in Galvanized Steel

Coating: Non-toxic Epoxy for drinkable water. Internal and external 200 microns **thickness**

Other material and special coating available upon request

DESCRIPTION

The automatic trifunctional air valve and kinetic effect for clean water-service. Designed for full-flow being input and output equal to the DN specifications. Ductile iron body and lid and internal mechanisms in stainless steel.

The valve should perform the following functions.

1.Exhausts large amounts of air during the filling process to ensure that the air can reach the outlet at the velocity of sound without the float ball being elevated and the mechanism shutting prematurely.

2.Admits large quantities of air during line breaks and draining operations to avoid vacuum in the pipe.

3.Expulsion of bags of air accumulated during the filling process while in service (pressurized)

Closes watertight from 1 bar

Consult for lower working pressures

Fluid

Clean Water

Consult operations and materials for sea water, water crude, products

TECHNICAL DATA / ENGINEERING

AERATION CAPABILITIES

BIG ORIFICE (FILLING / EMPTYING)
See tables for aeration capacity and curves in pages 30 and 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE	
PN10	Ø 9,5 mm
PN16	Ø 5,5 mm
PN25	Ø 5,0 mm

Valid data for all DN

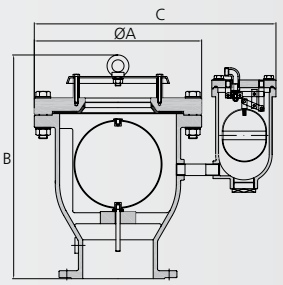
Consult for other orifice diameter

TEST PRESSURE

	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar
PN 25	38 bar	28 bar

GENERAL DIMENSIONS AND WEIGHTS

DN	Connection	A	C	B	Weight
DN150	Flange	386	625	540	92
DN200	Flange	483	700	650	164
DN250	Flange	597	820	845	227
DN300	Flange	699	900	1.010	358
DN350	Flange	778	990	1.105	473
DN400	Flange	851	1.060	1.210	605



Dimensions in mm and weights in kgs
Connections: PN10-16-25 s/EN -150# s/ANSI

ORDERING OPTIONS

- Pipe away version
- Lateral drain valve
- Special closure for lower working pressure than 0,5 bar

FULFILLED STANDARDS

- EN 1074-1 & EN 1074-4
- AWWA C512

KINETIC DESIGN. SEQUENCE OF FUNCTIONS

The kinetic air/vacuum valves are specially designed so that the flow of air in evacuations reaches high velocity (speed of sound) without the Buoy ascending for the effect of the current and stopping any premature closings until the evacuation is complete.

1.During expulsion, the air flow circling around the float ball causes a result of force which keeps the ball in an open position.

2.The flotation of the ball will block the air flow when the water reaches the Buoy.

Evacuation of large quantities of air during the filling

Purge of air during operation

Admission of large quantities of air during the emptying

Figure 9520
DN50-DN100 PN10-16-25

Double Body Combination Air Valve

Combination valves (Fig. 9300 + Fig. 9120)

CONSTRUCTION MATERIALS / COATING

Body and Cover: Ductile Iron EN GJS-500-7

Float ball and Internal mechanisms: Stainless Steel A304 (optional A316)

Seat: Stainless Steel A304 + NBR/EPDM

Bolting: Internal Stainless steel A2 / External in Galvanized Steel

Coating: Non-toxic Epoxy for drinkable water. Internal and external 200 microns thickness

Other material and special coating available upon request

TECHNICAL DATA / ENGINEERING

AERATION CAPABILITIES

BIG ORIFICE (FILLING / EMPTYING)
See tables for aeration capacity and curves in pages 30 and 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE	
PN10	Ø 3,0 mm
PN16	Ø 2,3 mm
PN25	Ø 1,5 mm

Valid data for all DN

Consult for other orifice diameter

TEST PRESSURE

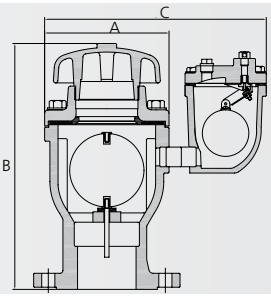
	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar
PN 25	38 bar	28 bar

GENERAL DIMENSIONS AND WEIGHTS

DN	Connection	A	C	B	Weight
2"	F Thread	138	285	245	13
DN50	Flange	138	285	265	14
DN60/65	Flange	138	285	265	16
DN80	Flange	175	300	350	23
DN100	Flange	213	345	375	35

Dimensions in mm and weights in kgs

Connections: PN10-16-25 s/EN -150# s/ANSI



ORDERING OPTIONS

- Pipe away version
- Lateral drain valve / test
- Special closure for lower working pressure than 0,5 bar

FULFILLED STANDARDS

- EN 1074-1 & EN 1074-4
- AWWA C512

DESCRIPTION

The automatic trifunctional air valve with kinetic effect is for clean water services. Designed for full flow being the input and output equal to the DN specifications. The body and cover come in ductile iron and the internal mechanisms in stainless steel. The valve performs the following functions:

1.Exhausts large amounts of air during the filling process to ensure that the air can reach the outlet at the velocity of sound without the float ball being elevated and the mechanism shutting prematurely.

2. Admits large quantities of air upon during line breaks and draining operations to avoid vacuum in the pipe.

3.Expulsion of bags of air accumulated in the filling process while in service (pressurized)

Closes watertight from 1 bar. Consult for lower working pressures

Fluid

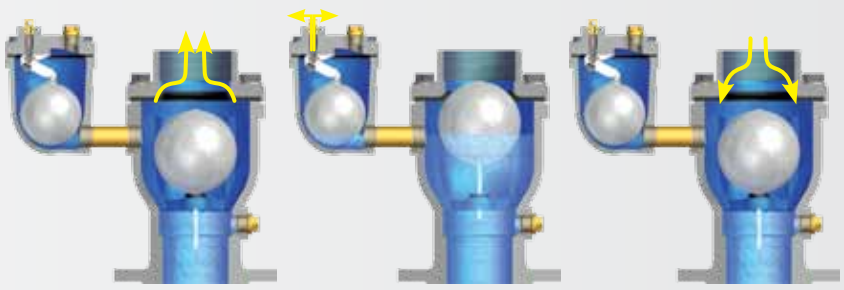
Clean Water. Consult operation and materials for sea water, raw water, etc.

KINETIC DESIGN. SEQUENCE OF FUNCTIONS

The kinetic air/vacuum valves are specially designed so that the flow of air in evacuations reaches high speeds of sounds. without the float ball being ejected by the effect of this flow, thus allowing a complete air evacuation. Under demand the output of large amounts of air during filling of the drive can reach the speed of sound without producing a premature closing.

1.During expulsion the air flow circling around the float ball causing a result of force which keeps the ball in an open position.

2 The flotation of the ball will block the air flow when the water lifts up the ball.



Evacuation of large quantities of air during the filling

Purge of air during operation

Admission of large quantities of air during the emptying

Figure 9530
DN150-DN400 PN10-16-25

Double Body Combination Air Valve

Combination valves (Fig. 9300 + Fig. 9230 DN100)

CONSTRUCTION MATERIALS / COATING

Body and Cover: Ductile Iron EN GJS-500-7
Float ball and Internal Mechanisms: Stainless Steel A304 (optional A316)
Seat: stainless steal A304 + NBR/EPDM
Bolting: Internal Stainless steel A2 / External in Galvanized Steel
Coating: Non-toxic Epoxy for drinkable water. Internal and external 200 microns thickness

Other material and special coating available upon reques

DESCRIPTION

Automatic trifunctional air valve with special capabilities and kinetic effect for clean water-service. Designed for full-flow being input and output equal to the DN specifications. Ductile iron body, lid and internal mechanisms in stainless steel.

The valve should perform the following functions:

1.Exhausts large amounts of air during the filling process to ensure that the air can reach the outlet at the velocity of sound without the float ball being elevated and the mechanism shutting prematurely.

2.Admits large quantities of air during line breaks and draining operations to avoid vacuum in the pipe.

3.Expulsion of bags of air accumulated in the filling process while in service (pressurized)

Closes watertight from 1 bar

Consult for lower working pressures

Fluid

Clean Water

Consult operations and materials for sea water, crude water crude, and products

TECHNICAL DATA / ENGINEERING

AERATION CAPABILITIES

BIG ORIFICE (FILLING / EMPTYING)
See tables for aeration capacity and curves in pages 30 and 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE	
PN10	Ø 12,5 mm
PN16	Ø 9,5 mm
PN25	Ø 8,0 mm

Valid data for all DN

Consult for other orifice diameter

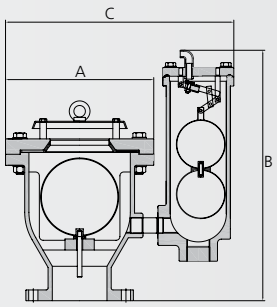
TEST PRESSURE

	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar
PN 25	38 bar	28 bar

GENERAL DIMENSIONS AND WEIGHTS

DN	Connection	A	C	B	Weight
DN150	Flange	386	612	655	94
DN200	Flange	483	690	765	188
DN250	Flange	597	830	966	307
DN300	Flange	699	905	1.073	390
DN350	Flange	780	998	1.120	402
DN400	Flange	851	1.066	1.230	647

Dimensions in mm and weights in kgs
Connections: PN10-16-25 s/EN -150# s/ANSI



ORDERING OPTIONS

- Pipe away version
- Lateral drain valve
- Special closure for lower working pressure than 0,5 bar

FULFILLED STANDARDS

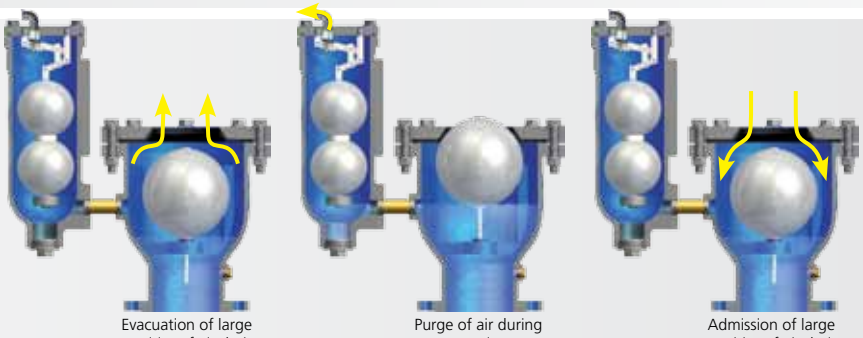
- EN 1074-1 & EN 1074-4
- AWWA C512

KINETIC DESIGN. SEQUENCE OF FUNCTIONS

The kinetic air/vacuum valves are specially designed so that the flow of air in evacuations, reaches high velocity's (speed of sound) without the Buoy ascending for the effect of the current and stopping any premature closings until the evacuation is complete.

1.During expulsion, the air flow circling around the float ball causes a result of force which keeps the ball in an open position.

2.The flotation of the ball will block the air flow when the water reaches the Buoy.



Evacuation of large quantities of air during filling

Purge of air during operations

Admission of large quantities of air during emptying

Figure 9550

DN50-DN150 **PN10-16**

Double Body Combination Air Valve for Wastewater

Combination valves (Fig. 9350 + Fig. 9250)

CONSTRUCTION MATERIALS / COATING

Body and Cover: Ductile Iron EN GJS-500-7
Float ball and Internal Mechanisms: Stainless steel A304 (optional A316)
Seat: Stainless steel A316 + NBR/EPDM
Bolting: Internal stainless steel A2 / External in galvanized steel
Coating: Non-toxic Epoxy for drinkable water. Internal and external 200 microns thickness

Other material and special coating available upon request

DESCRIPTION

These valves are designed to exhaust large quantities of air during the filling, exhausts air pockets accumulated during the services and allow large quantities of air preventing vacuum.

It has a compact body that hosts all the mechanisms. The three functions are performed by two float balls built in stainless steel.

The main seat is built in NBR and is easily interchangeable. When the removal of sediments , fats and solids is frequent ,an optional system of cleaning may be incorporated. This consists of an (isolated/ insulated) valve in the entrance and valves interconnected with rapid disconnection to allow a quick water cleaning.

Closes watertight up 0.1 bar

Consult for lower working pressures

Fluid:

Wastewater. Consult operation and materials for sea water, raw water, etc.

TECHNICAL DATA / ENGINEERING

AERATION CAPABILITIES

BIG ORIFICE (FILLING / EMPTYING)
See tables for aeration capacity and curves in pages 30 and 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE	
Working Pressure: 0 to 5 bar	Ø 8,0 mm
Working Pressure: 5 to 10 bar	Ø 4,5 mm

Valid data for all DN
Consult for other orifice diameter

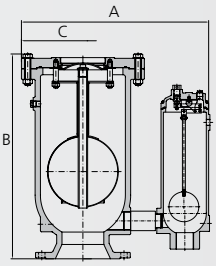
TEST PRESSURE

TEST PRESSURE	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar

GENERAL DIMENSIONS AND WEIGHTS

DN	Connection	A	C	B	Weight
2"x 1"	F Thread	465	Ø 185	690	86
2"x 2"	F Thread	465	Ø 185	690	86
DN50	Flange	465	Ø 185	695	90
DN80	Flange	545	Ø 241	700	140
DN100	Flange	545	Ø 241	700	145
DN150	Flange	670	Ø 441	735	205

Dimensions in mm and weights in kgs
Connections: PN10-16-25 s/EN -150# s/ANSI



ORDERING OPTIONS

- Pipe away version
- Lateral drain valve
- Special closure for lower working pressure than 0,1 bar

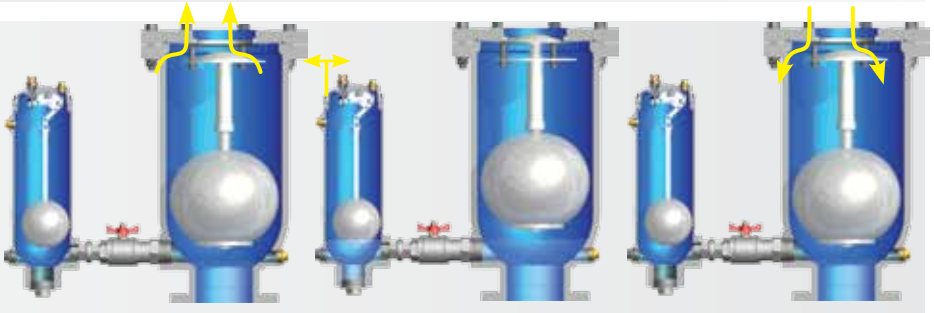
FULFILLED STANDARDS

- EN 1074-1 & EN 1074-4
- AWWA C512

KINETIC DESIGN. SEQUENCE OF FUNCTIONS

The kinetic air/vacuum valves are specially designed so that the flow of air in evacuations reaches high velocity (speed of sound) without the Buoy ascending for the effect of the current and stopping any premature closings until the evacuation is complete.

1. During expulsion, the air flow circling around the float ball causes a result of force which keeps the ball in an open position.
2. The flotation of the ball will block the air flow when the water reaches the Buoy.



Evacuation of large quantities of air during the filling

Purge of air during operation

Admission of large quantities of air during the emptying

Figure 9600

Monoblock Combination Air Valve

IRUA Tech Ind.

DN50-80-100-150-200

PN10-16-25 CLASS 150

KINETIC EFFECT

The kinetic Air Valve is designed to prevent premature valve closure while exhausting air to sonic velocity. This ensures complete purging of all air prior to valve closure.

1 At exhaustion aerodynamic force holds the ball in open position as air is moving across the air valve

2 Air valve closure begins when water rises in the valve and lifts the float ball.

TEST PRESSURE

	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar
PN 25	38 bar	28 bar
150#	28 bar	21 bar

Hydrostatic tests to float balls at 80 bar.

TECHNICAL FEATURES

- **Combination air valve for clean water**
- **Compact construction, single body and kinetic design.**
- **Full bore design: same inlet and outlet size according to DN specifications.**
- **Automatic direct action air-release.**
- **Dual closure system: metal-metal, to stand inner pressure effort on the seat; and metal-elastomeric, to ensure watertight closure (fig 1).**
- **Stainless steel connection for manometer or draining. Connection to body completely protected by epoxy coating to avoid any corrosion (fig 2).**
- **Float ball in ABS plastic material. High resistance to collapse pressure > 100 bar. Buoyancy over 50% of its volume to guarantee long term performance despite depositions might adhere on its surface.**
- **Design according to EN-1074-4 and AWWA C-512 standards.**

Fig 1

Fig 2

MATERIALS/COATINGS

Body: Ductile iron EN GJS-500-7
Cover: - Up to DN100 Stainless steel
- DN150 & DN200 Ductile iron/carbon steel
Internal mechanisms: A304 Stainless steel (A316 available)
Float-ball: ABS.
Seat: A304 Stainless steel (A316 available)
Sealing joint: Elastomer NBR/EPDM
Internal bolting: Stainless steel A2
External bolting: - Up to DN100 Stainless steel A2
- DN150 & DN200 Galvanized steel
Coating: 250 microns of internal and external non toxic epoxy. Certificate of potability
Other materials or special coatings available upon request

OPTIONS & ACCESORIES

- Water hammer protection ; ANTI-SLAM VALVE
- Pipe away version
- Device for avoiding air entrance inside the pipe (check valve)
- Special internal materials: A316, Duplex, Super Duplex, titanium, etc.
- Special coatings: Enamel, polyurea, rilsan, teflon, halar, etc.
- Peterson intake
- Stainless steel float ball

APPLICATION

- Water distribution networks
- Pumping stations
- Irrigation systems
- Ask for industrial application: desalination, mining, process water, etc.

GENERAL DIMENSIONS AND THREAD

DN	Connection	A	ØB	Weight
DN2"	Female tread	280	152	10,5
DN50	Flange	250	152	12
DN80	Flange	335	192	18
DN100	Flange	340	221	24
DN150	Flange	585	355	70
DN200	Flange	725	480	145

dimensions in mm and weight in kg. *Connections: PN 10-16-25 s/EN – 150# s/ANSI.*

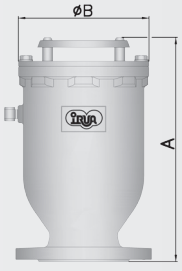
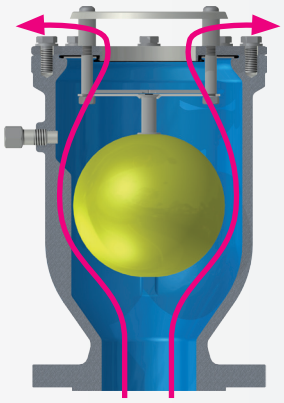


Figure 9600

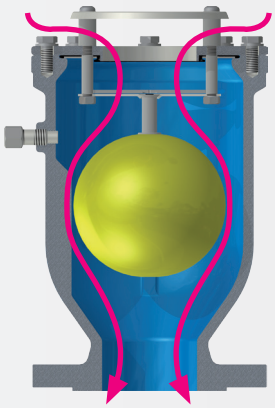
IRUA Tech Ind.

OPERATING SEQUENCE



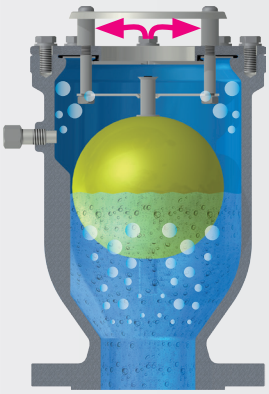
FILLING OF THE PIPELINE

Exhaust large quantities of air during the filling at up to sonic velocity without blowing shut



DRAINING OF THE PIPELINE

Admission of large quantities of air during drainage operations or when negative pressure occurs, to eliminate vacuum condition.

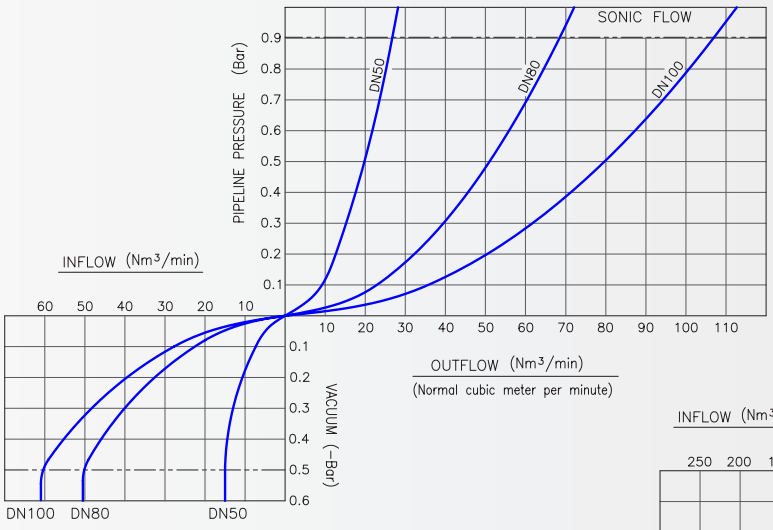


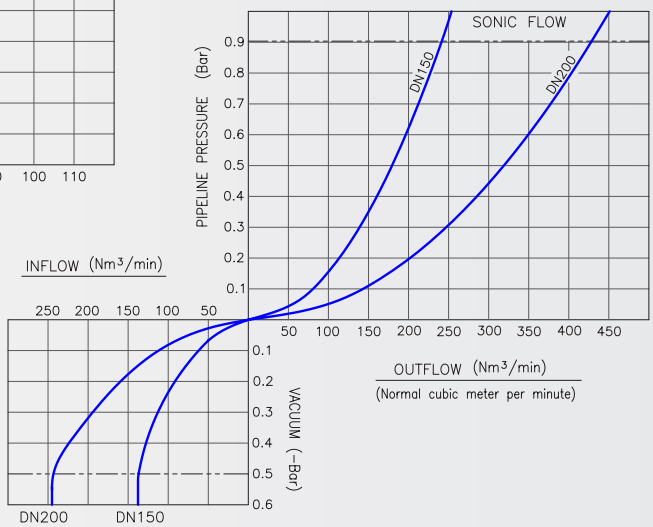
PIPELINE FLOWING AND UNDER PRESSURE

Exhaustion of trapped air pockets accumulated at pipeline high points while the system is flowing and under pressure.

The air valve will be watertight for pressures above 1 w.m.c (please contact us for lower working pressure)

FLOW CAPACITY





In normal installations it is recommended a maximum differential pressure of 0,35 bar during filling of the pipeline. If necessary to fill the pipe quickly, this air valve has been designed to reach up to 0,9 bar (kinetic design).

At negative pressures beyond 0,47 bar (0,53 bar ABS) , due to sonic flow, no more volume of air comes into the pipeline.

Tests performed by an independent organization at Irua Tech Industries test bench.

TEST BENCH

At IRUA facilities we have air test benches to prove the venting capacity of each valve. Equipped with the latest technical resources, both kinetic effect and venting capacity (inlet, outlet and purge) can be checked.

IRUA keeps the right to change or improve current design.
The drawings are orientative, for further information do not hesitate to contact Irua Tech Industries technical department

www.irua.es **irua@irua.es**

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