AIR VALVES

Clean Water / Wastewater / Industrial Application

Air Release Valves

Air Vacuum Valves

Combination Air Valves

Vacuum Breaker Valves

Anti-Slam Valves

INTRODUCTION

IRUA Tech Industries, S.L. was established in 1987 with the aim of manufacturing high performance valves for water applications, including Air Valves.

The Air Valves are a different type of valves and their function is the discharge and admission of air in the water pipelines, according to the requirements of each installation defined by the project engineers. In this way, the Air Valves are not only considered as protection and safety elements, but also as necessary for an efficient performance in every pumping system and network of pipes.

Although initially our valves were focused in water and wastewater supply systems, the fields have been extended over the years to drinking water producing plants, cooling systems, desalination plants, irrigation systems, mining or energy water circuits. In all these areas, **IRUA Tech Industries** provides tailor-made solutions in order to get the best performance of its valves.

Our specialization in water applications, the wide range of products available and the fulfilment of the most demanding design, quality and performance standards, made it possible for us to deliver our Air Valves in many important projects both nationally and internationally.

IRUA Tech Industries manufactures all the products listed in this catalogue in its own facilities in Galdácano (Spain) and all technical data shown in this catalogue are the result of the experience and tests carried out during more than 25 years.

This catalogue aims to serve as technical guideline for the installation of Air Valves in water supply systems and other kind of fluids, providing all the necessary data to ensure the correct selection and subsequent operation of the equipment installed.

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All data shown in this document are only for information purposes and may be modified to improve our products without prior notification

Figure 9100

¾" - 1" PN10-16

Air Release Valve

DESCRIPTION

Float operated air release valves with a compound lever mechanism designed to automatically exhaust the accumulated air in water systems while it is pressurized and operating.

The valve incorporates an elastomer orifice button to guarantee a drop tight closing. All internal parts including the buoy, are comprised fully of stainless steel and are designed to withstand continuous hard working conditions.

By means of the dismantling of the lid it will be possible to gain access to all the internal mechanisms for cleaning and maintenance.

Fluid

Clean Water.

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

CONSTRUCTION MATERIALS / COATING

Body: Ductile Iron EN GJS-500-7

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

Seat: Screw 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

See tables for aeration capacity and curves in page 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE	
PN10	Ø 2,25 mm
PN16	Ø 1,50 mm

Valid data for all DN

Consult for other orifice diameters

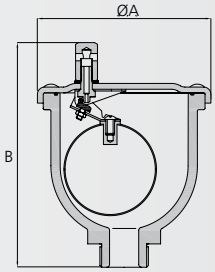
TEST PRESSURE

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

GENERAL DIMENSIONS AND WEIGHTS

DN	Connection	A	B	Weight
1" (ó 3/4")	Thread M.	132	160	3

Dimensions in mm and weight in kgs



ORDERING OPTIONS

- The key of the ball is installed in the input.
- Provided that it is larger than the diameter of the nozzle exit, the input connection maybe reduced or enlarged for easy installation without limiting its aeration capacity.

FULFILLED STANDARDS

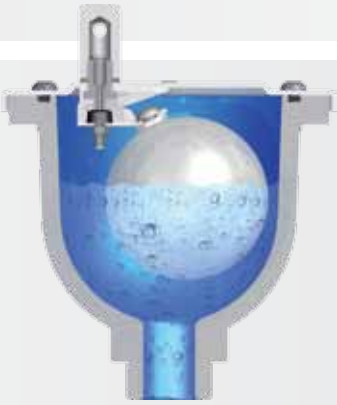
- EN 1074-1 & EN 1074-4
- AWWA C512

SEQUENCE OF FUNCTIONS

The water transmission systems usually have air inside which naturally rise and tend to accumulate at high points. The pockets of accumulated air have to be exhausted by means of automatic air release valves to keep the system in a good condition.

For air exhausting, the air release valve has a float and a compound level mechanism different for each figure, enough to pull the button away from the orifice at the standard internal working pressure.

While the water system is pressurized, the air release valve shall be working to eliminate the air pockets generated.



The valve will remain closed in position until it detects air pockets.

The valve will expel the air accumulated in a conduction when it is pressurized and in service.

Figure 9120

1” **PN10-16-25**

Air Release Valve

DESCRIPTION

Float operated air release valves with a compound lever mechanism designed to automatically exhaust the accumulated air in water systems while it is pressurized and operating.

The valve incorporates an elastomer orifice button to guarantee a drop tight closing. All internal parts including the buoy, are comprised fully of stainless steel and are designed to withstand continuous hard working conditions.

By means of the dismantling of the lid it will be possible to gain access to all the internal mechanisms for maintenance and cleaning.

Fluid

Clean Water.

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

CONSTRUCTION MATERIALS / COATING

Body: Ductile Iron EN GJS-500-7 **Lid**: Steel St-44

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

Seat: Screw A304 + NBR/EPDM

Bolting: Internal stainless steel A2 / External in galvanized steel and external 200 microns thickness

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

See tables for aeration capacity and curves in page 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE	
PN10	Ø 3,00 mm
PN16	Ø 2,25 mm
PN25	Ø 1,50 mm

Valid data for all DN

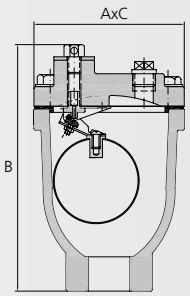
Consult for other orifice diameters

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”	F Thread	111	111	180	4

Dimensions in mm and weights in kgs



ORDERING OPTIONS

- The key of the ball is installed in the input.
- The key of the ball is 1/4” in the tape to access
- Provided that it is larger than the diameter of the nozzle exit, the input connection maybe reduced or enlarged for easy installation without limiting its aeration capacity.

FULFILLED STANDARDS

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

SEQUENCE OF FUNCTIONS

The water transmission systems usually have air inside which naturally rise and tend to accumulate at high points. The pockets of accumulated air have to be exhausted by means of automatic air release valves to keep the system in a good condition.

For air exhausting, the air release valve has a float and a compound level mechanism different for each figure, enough to pull the button away from the orifice at the standard internal working pressure.

While the water system is pressurized, the air release valve shall be working to eliminate the air pockets generated.

The valve will remain in closed position until it detects air pockets.

The valve will expel the air accumulated in a conduction when it is pressurized and in service.

Figure 9200

2”-DN50 PN10-16-25

Air Release Valve

CONSTRUCTION MATERIALS / COATING

Body: Ductile Iron EN GJS-500-7

Lid: ST-44

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

Seat: Screw 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

See tables for aeration capacity and curves in page 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE	
PN10	Ø 5,00 mm
PN16	Ø 3,00 mm
PN25	Ø 3,00 mm

Valid data for all DN

Consult for other orifice diameters

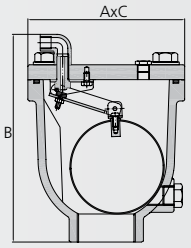
TEST PRESSURE

	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
2"	F Thread	169	169	230	11
DN50	Flange	165	165	290	12

Dimensions in mm and weights in kgs



ORDERING OPTIONS

- The key of the ball is installed in the input
- The key of the ball is 1/4” in the tape to access
- Lateral Drain Valve
- Provided that it is larger than the diameter of the nozzle exit, the input connection may be reduced or enlarge for easy installation without limiting its aeration capacity

FULFILLED STANDARDS

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

DESCRIPTION

Float operated air release valves with a compound lever mechanism designed to automatically exhaust the accumulated air in water systems while it is pressurized and operating.

The valve incorporates an elastomer orifice button to guarantee a drop tight closing. All internal parts including the buoy, are comprised fully of stainless steel and are designed to withstand continuous hard working conditions.

By means of the dismantling of the lid it will be possible to gain access to all the internal mechanisms for maintenance and cleaning.

Fluid

Clean Water.

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

SEQUENCE OF FUNCTIONS

The water transmission systems usually have air inside which naturally rise and tend to accumulate at high points. The pockets of accumulated air have to be exhausted by means of automatic air release valves to keep the system in a good condition.

For air exhausting, the air release valve has a float and a compound level mechanism different for each figure, enough to pull the button away from the orifice at the standard internal working pressure.

While the water system is pressurized, the air release valve shall be working to eliminate the air pockets generated.

The valve will remain in closed position until it detects air pockets.

Air purges at loading point.

Figure 9220

2”-DN80 **PN10-16-25**

High Capacity Air Release Valve

DESCRIPTION

Float operated air release valves with a compound lever mechanism designed to automatically exhaust the accumulated air in water systems while it is pressurized and operating.

The valve incorporates an elastomer orifice button to guarantee a drop tight closing. All internal parts including the buoy, are comprised fully of stainless steel and are designed to withstand continuous hard working conditions.

By means of the dismantling of the lid it will be possible to gain access to all the internal mechanisms for maintenance and cleaning.

Fluid

Clean Water.

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

CONSTRUCTION MATERIALS / COATING

Body: Ductile Iron EN GJS-500-7
Lid: St-44
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

See tables for aeration capacity and curves in page 31.

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

Valid data for all DN

Consult for other orifice diameters

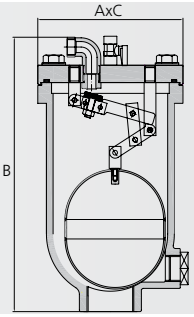
TEST PRESSURE

	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
2"	F Thread	185	185	375	13
DN80	Flange	200	200	375	15

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



ORDERING OPTIONS

- The key of the ball is installed in the input.
- The key of the ball is 1/4” in the tape to access.
- Lateral Drain Valve .
- Provided that it is larger than the diameter of the nozzle exit, the input connection may be reduced or enlarge for easy installation without limiting its aeration capacity

FULFILLED STANDARDS

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

SEQUENCE OF FUNCTIONS

The water transmission systems usually have air inside which naturally rise and tend to accumulate at high points. The pockets of accumulated air have to be exhausted by means of automatic air release valves to keep the system in a good condition.

For air exhausting, the air release valve has a float and a compound level mechanism different for each figure, enough to pull the button away from the orifice at the standard internal working pressure.

While the water system is pressurized, the air release valve shall be working to eliminate the air pockets generated.

The valve will remain in closed position until it detects air pockets.

The valve will expel the air accumulated in a conduction when it is pressurized and in service.

Figure 9230

DN100-DN150 PN10-16-25

High Capacity Air Release Valve

DESCRIPTION

Float operated air release valves with a compound lever mechanism designed to automatically exhaust the accumulated air in water systems while it is pressurized and operating.

The valve incorporates an elastomer orifice button to guarantee a drop tight closing. All internal parts including the buoy, are comprised fully of stainless steel and are designed to withstand continuous hard working conditions.

By means of the dismantling of the lid it will be possible to gain access to all the internal mechanisms for maintenance and cleaning.

Fluid

Clean Water.

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

CONSTRUCTION MATERIALS / COATING

Body: Ductile Iron EN GJS-500-7
Cover: ST-44
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

Ver tablas y curvas de aireación page 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE		
	DN100	DN150
PN10	Ø 12,5 mm	Ø 25,0 mm
PN16	Ø 9,5 mm	Ø 17,0 mm
PN25	Ø 8,0 mm	Ø 14,0 mm

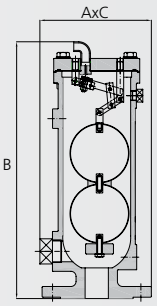
Consult for other orifice diameters.

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
DN100	Flange	185	212	600	45
DN150	Flange	441	441	780	144

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



ORDERING OPTIONS

- The key of the ball is installed in the input
- The key of the ball is 1/4" in the tape to access
- Lateral Drain Valve
- Provided that it is larger than the diameter of the nozzle exit, the input connection may be reduced or enlarge for easy installation without limiting its aeration capacity

FULFILLED STANDARDS

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

SEQUENCE OF FUNCTIONS

The water transmission systems usually have air inside which naturally rise and tend to accumulate at high points. The pockets of accumulated air have to be exhausted by means of automatic air release e valves to keep the system in a good condition.

For air exhausting, the air release valve has a float and a compound level mechanism different for each figure, enough to pull the button away from the orifice at the standard internal working pressure.

While the water system is pressurized, the air release valve shall be working to eliminate the air pockets generated.

The valve will remain in closed position until it detects air pockets.

The valve will expel the air accumulated in a conduction when it is pressurized and in service.

Figure 9250

2”-DN80-DN100 PN10-16

Air Release Valve for Wastewater

DESCRIPTION

Float operated air release valves with a double compound lever mechanism designed to automatically exhaust the accumulated air in water systems while it is pressurized and operating.

The valve incorporates an elastomer orifice button to guarantee a drop tight closing. All internal parts including the buoy, are comprised fully of stainless steel and are designed to withstand continuous hard working conditions.

By means of the dismantling of the lid it will be possible to gain access to all the internal mechanisms for maintenance and cleaning.

Fluid

Wastewater.

CONSTRUCTION MATERIALS / COATING

Body and Cover: Ductile Iron EN GJS-500-7
Float ball and Internal mechanisms: Stainless Steel A316
Seat: Stainless Steel A316 + NBR/EPDM
Bolting: Internal stainless steel A2 / External in galvanized steel.
Coating: Non-toxic epoxy. Internal and external 200 microns thickness.

Other material and special coating available upon request

TECHNICAL DATA / ENGINEERING

AERATION CAPABILITIES

See tables for aeration capacity and curves in page 31.

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

Valid data for all DN

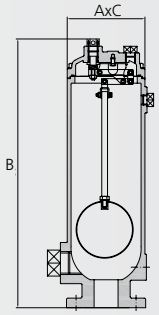
Consult for other orifice diameters

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"	F Thread	185	185	537	36
DN80	Flange.	241	241	630	36
DN100	Flange.	241	241	630	45

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



ORDERING OPTIONS

- The key of the ball is installed in the input
- The key of the ball is 1/4” in the tape to access
- Lateral Drain Valve
- Provided that it is larger than the diameter of the nozzle exit, the input connection may be reduced or enlarge for easy installation without limiting its aeration capacity

FULFILLED STANDARDS

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

SEQUENCE OF FUNCTIONS

The water transmission systems usually have air inside which naturally rise and tend to accumulate at high points. The pockets of accumulated air have to be exhausted by means of automatic air release valves to keep the system in a good condition.

For air exhausting, the air release valve has a float and a compound level mechanism different for each figure, enough to pull the button away from the orifice at the standard internal working pressure.

While the water system is pressurized, the air release valve shall be working to eliminate the air pockets generated.

The valve will remain in closed position until it detects air pockets.

The valve will expel the air accumulated in a conduction when it is pressurized and in service.

Figure 9270

DN80-DN100 PN10-16

High Capacity Air Release Valve for Wastewater

DESCRIPTION

Float operated air release valves with a compound lever mechanism designed to automatically exhaust the accumulated air in water systems while it is pressurized and operating.

The valve incorporates an elastomer orifice button to guarantee a drop tight closing. All internal parts including the buoy, are comprised fully of stainless steel and are designed to withstand continuous hard working conditions.

By means of the dismantling of the lid it will be possible to gain access to all the internal mechanisms for maintenance and cleaning.

Fluid

Wastewater

CONSTRUCTION MATERIALS / COATING

Body and Cover: Ductile Iron EN GJS-500-7
Float ball and Internal mechanisms: Stainless Steel A316
Seat: Stainless Steel A316 + NBR/EPDM
Bolting: Internal stainless steel A2 / External in galvanized steel.
Coating: Non-toxic epoxy. Internal and external 200 microns thickness.

Other material and special coating available upon request

TECHNICAL DATA / ENGINEERING

AERATION CAPABILITIES

See tables for aeration capacity and curves in page 31.

AUTOMATIC DRAIN / Ø STANDARD ORIFICE	
Working pressure: 0 to 5 bar	Ø 12,5 mm
Working pressure: 5 to 10 bar	Ø 11,0 mm

Valid data for all DN

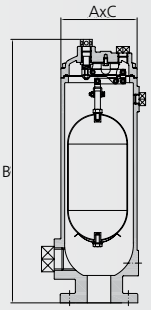
Consult for other orifice diameters

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
DN80	Flange	163	163	572	36
DN100	Flange	163	163	623	45

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



ORDERING OPTIONS

- The key of the ball is installed in the input
- The key of the ball is 1/4" in the tape to access
- Lateral Drain Valve
- Provided that it is larger than the diameter of the nozzle exit, the input connection may be reduced or enlarge for easy installation without limiting its aeration capacity

FULFILLED STANDARDS

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

SEQUENCE OF FUNCTIONS

The water transmission systems usually have air inside which naturally rise and tend to accumulate at high points. The pockets of accumulated air have to be exhausted by means of automatic air release valves to keep the system in a good condition.

For air exhausting, the air release valve has a float and a compound level mechanism different for each figure, enough to pull the button away from the orifice at the standard internal working pressure.

While the water system is pressurized, the air release valve shall be working to eliminate the air pockets generated.

The valve will remain in closed position until it detects air pockets.

The valve will expel the air accumulated in a conduction when it is pressurized and in service.

Figure 9300

1”-DN400 PN10-16-25

Bifunctional Air Vacuum Valve

DESCRIPTION

The automatic bi-functional valve of clean water and full bore valves with only one body being the entry and the exit equal to the DN specifications. 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.

Closes watertight apart from 1 bar

Consult for lower working pressures

Fluid

Clean water, consult operations y materials for lower working pressure

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 of 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

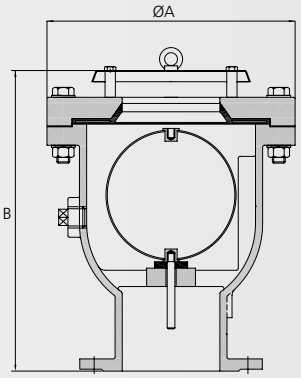
AERATION CAPABILITIES

BIG ORIFICE (FILLING / EMPTYING)
See tables for aeration capacities and curves in page 30.

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	Connections	ØA	B	Weight
1"	F Thread	98	215	4
1"	Flange	115	235	4
2"	F Thread	138	245	9
DN50	Flange	138	245	10
DN60/65	Flange	138	250	11
DN80	Flange	170	350	20
DN100	Flange	210	379	31
DN150	Flange	386	540	79
DN200	Flange	483	650	151
DN250	Flange	597	845	214
DN300	Flange	699	1010	345
DN350	Flange	778	1.105	460
DN400	Flange	851	1.210	592



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 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 speeds without the float ball ascending 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

The valve is permanently closed until there is a detection of depression.

Admission of large quantities of air during the emptying

Figure 9440

1"-DN300 PN40-64-100

High Pressure Air Vacuum Valve

DESCRIPTION

The automatic bi-functional valve of clean water and full bore with only one body being the entry and the exit equal to the DN specifications. The valve should perform the following operations.

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. The float ball will only rise and close by flotation.

2. Entrance and emissions of large quantities of air to avoid vacuum in the pipe or breaking.

Fluid

Clean water, consult operations and materials for ocean water, and processed crude water

CONSTRUCTION MATERIALS / COATING

Body and Cover: Ductile Iron EN GJS-500-7 for PN40
Carbon steel A216-WCB in PN64/PN100.
Float ball and Internal Mechanisms: Stainless Steel A304 (optional A316)
Seat: Stainless steel A304 + Elastomer NBR/EPDM of 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 page 30.

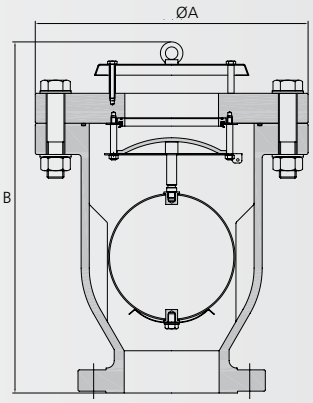
TEST PRESSURE

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	Connections	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

Consult for bigger sizes
Dimensions in mm and weights in kg (for PN40)
Connections: PN40-64 -100 s/EN-300 # -400# - 6-- # s/ANSI



ORDERING OPTIONS

- Pipe away version
- Lateral drain valve

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 speeds without the float ball ascending by the effect of this flow, thus allowing a complete air evacuation.

1. During the exhausting sequence, the air flowing around the float ball causes a resultant downward force which keeps the ball in an open position.
2. The flotation of the ball will seal the exhaust orifice when water reaches the ball.

Evacuation of large quantities of air during the filling

The valve will keep close during the normal working installations.

Admission of large quantities of air during the emptying

Figure 9350

DN50-DN200 **PN10-16**

Air Vacuum Valve for Wastewater

DESCRIPTION

These valves are for wastewater services and allow :

1. Exhausts large amounts of air automatically during pipeline filling in a controlled way.

2. Permits the entrance of large amounts of air when negative pressures or emptying conditions exist.

The ball float is completely spherical and closes by floating against a soft rubber seat which is easily interchangeable. All of the internal metal parts are made in stainless steel.

If cleaning accesories are required they consist of a butterfly valve for insulation and quick connection in the body which links with a 1.5 flexible hose to carry out a cleaning with water.

Watertight seal up 0.1 bar.

Check for lower working pressures

Fluid

Wastewater

CONSTRUCTION MATERIALS / COATING

Body and Cover: Ductile Iron EN GJS-500-7
Float ball and Internal Mechanisms: stainless steel. A316
Seat: stainless steal A316 + NBR/EPDM
Bolting: Internal stainless steel A2 / External en galvanized steel
Coating: Non-toxic Epoxy for drinkable water. Internal and external 200 µ

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 page 30.

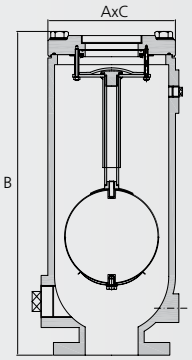
TEST PRESSURE

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

GENERAL DIMENSIONS AND WEIGHTS

DN	Connections	A	C	B	Weight
2" x 1"	F Thread	185	185	537	36
2" x 2"	F Thread	185	185	537	36
DN50	Flange	185	185	537	40
DN80	Flange	242	242	615	76
DN100	Flange	242	242	615	85
DN150	Flange	441	441	735	144
DN200	Flange	441	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

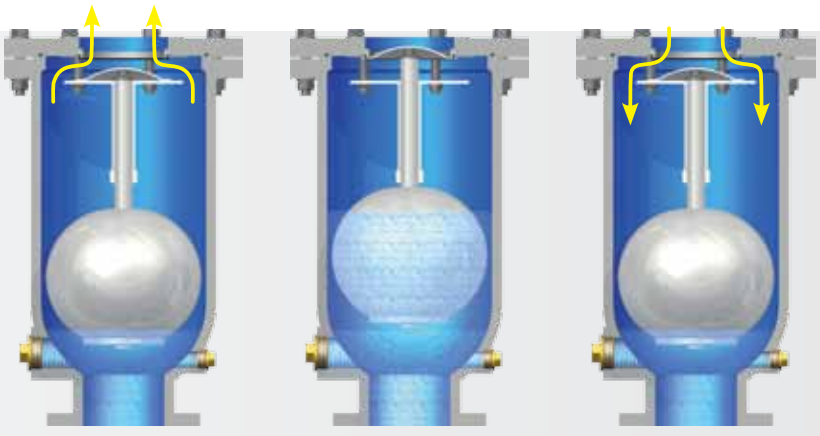
FULFILLED STANDARDS

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

KINETIC DESIGN. SEQUENCE OF FUNCTIONS

The kinetic valves are specially designed so that the air flow in evacuations reaches high velocity (speed of sound) avoiding the float ball ascending for the effect of the current and stopping any premature closing of the ball float 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

The valve is permanently closed until a depression is detected

Admission of large quantities of air during the emptying

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

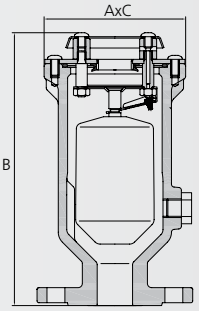
	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar
PN 25	38 bar	28 bar

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.

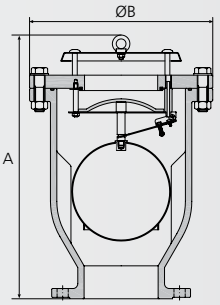
Consult for other orifice diameters

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

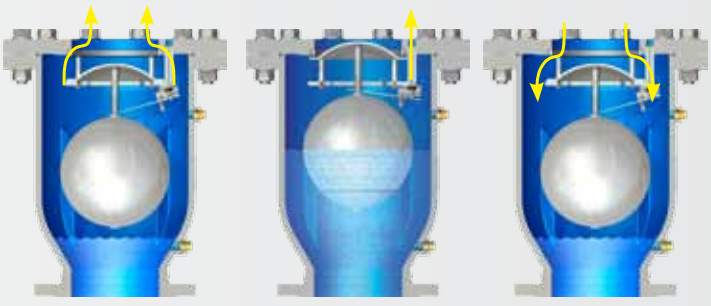
- EN 1074-1 & EN 1074-4
- AWWA C512

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 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

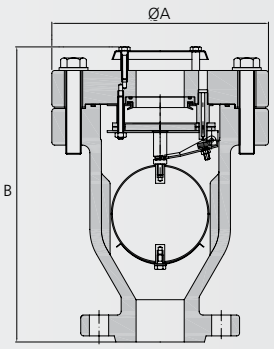
Consult for other orifice diameter

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

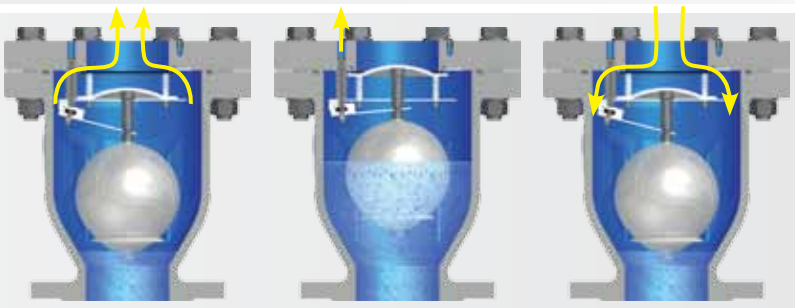
- EN 1074-1 & EN 1074-4
- AWWA C512

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

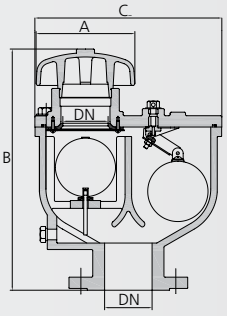
TEST PRESSURE	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar
PN 25	38 bar	28 bar

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

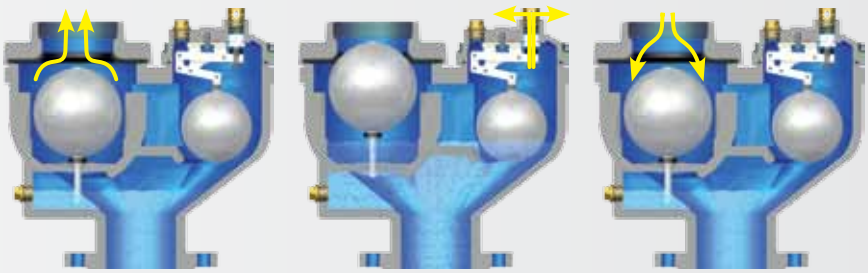
- EN 1074-1 & EN 1074-4
- AWWA C512

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 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

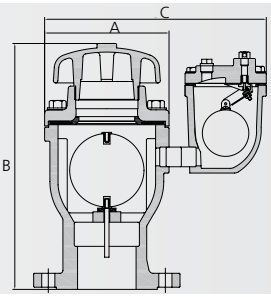
	BODY	SEAT
PN 10	15 bar	11 bar
PN 16	24 bar	18 bar
PN 25	38 bar	28 bar

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

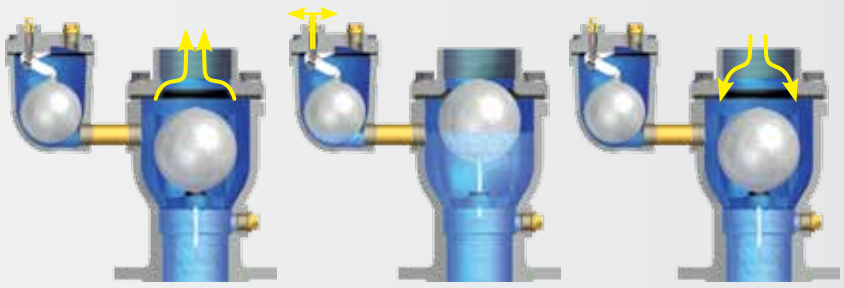
Clean Water. Consult operation and materials for sea water, raw water, etc.

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 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

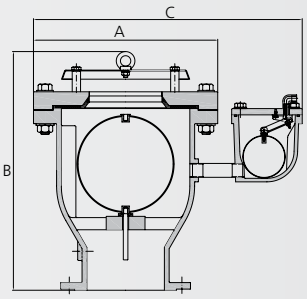
Consult for other orifice diameter

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:

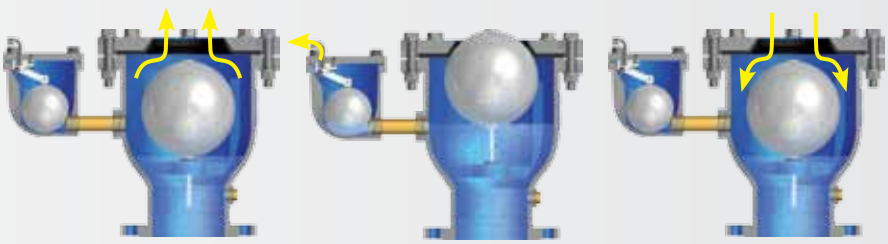
Clean Water. Consult operations and materials for sea water, raw water, etc.

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

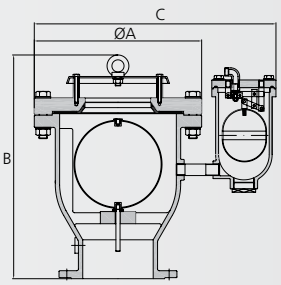
TEST PRESSURE

	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 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

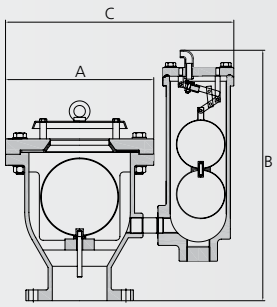
TEST PRESSURE

	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

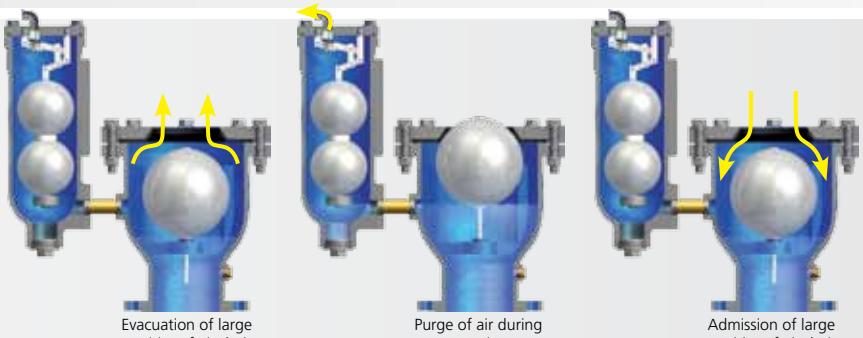
- EN 1074-1 & EN 1074-4
- AWWA C512

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 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

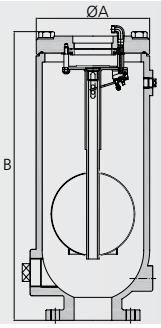
Orifices for PN10.
Consult for other orifice diameter.

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

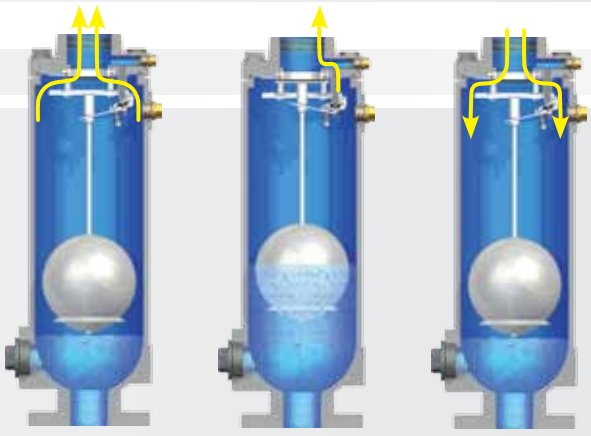
FULFILLED STANDARDS

- 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 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

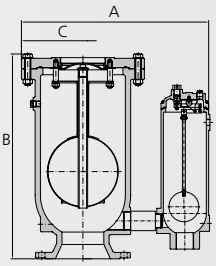
TEST PRESSURE

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

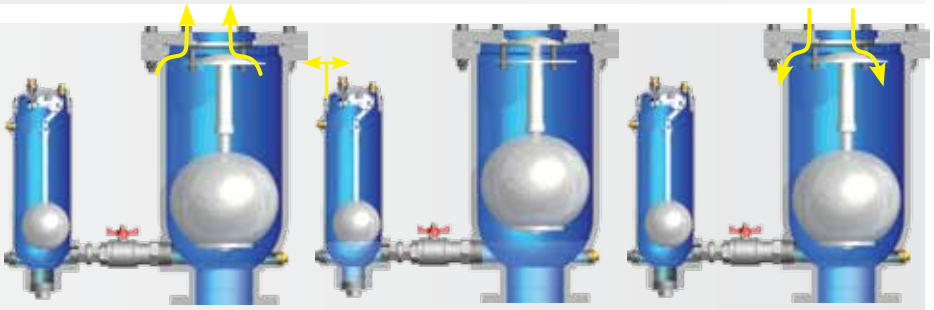
FULFILLED STANDARDS

- 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 9900

DN50-DN500 PN10-16-25

Vacuum Breaker Valve

DESCRIPTION

The automatic air inlet valve (adductor valve) allows entrance and emissions of large quantities of air during pipe emptying or depressions in water pipelines.

These vacuum relief valves shall be normally closed by means of a spring and open automatically only when the system pressure become negative, falling to approximately 0,02 bar below atmospheric pressure. The immediate admission of air into the system valve shall be assured by having 10% more inflow area than the inlet area of the valve, preventing then from vacuum and limiting the vacuum pressure to the one calculated for the system.

The double-sealing design (metal-metal and resilient) provides a "drop-tight" shut-off.

The air inlet valve incorporates a stainless steel screen and steel hood to avoid the entry of foreign particles.

Fluid

Clean water, consult operations and materials for ocean water, and processed crude water

CONSTRUCTION MATERIALS / COATING

Body : Ductile Iron EN GJS-500-7
Internal Mechanisms: Stainless steel and bronze
Seat: Elastomer NBR/EPDM of high durability
Upper protection: Steel with screen in stainless steel.
Bolting: Internal in 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

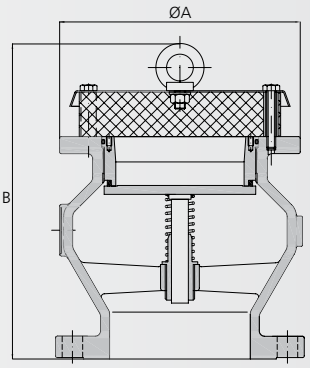
BIG ORIFICE (FILLING / EMPTYING)
See tables for aeration capacity and curves in page 30.

TEST PRESSURE

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	B	Weight
DN50	Flange	152	185	10
DN80	Flange	200	190	14
DN100	Flange	220	292	25
DN150	Flange	285	388	53
DN200	Flange	343	520	85
DN250	Flange	426	600	99
DN300	Flange	510	645	122
DN350	Flange	560	675	177
DN400	Flange	624	855	262
DN500	Flange	772	1.042	350



Dimensions in mm and weights in kg

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

ORDERING OPTIONS

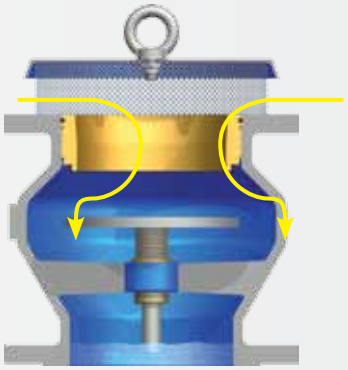
- Lateral drain valve
- Possibility to supply the valve with lateral drain valve (Fig. 9920).

FULFILLED STANDARDS

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

SEQUENCE OF FUNCTIONS

The valve will open when a water depression is detected due to drainage streams, fracture in the pipes, etc.



The valve will be closed during the filling and installation works.

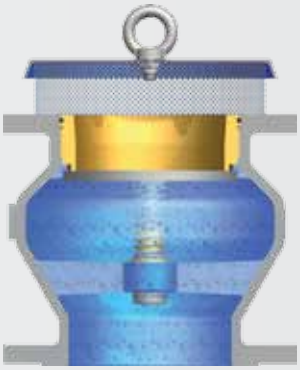


Figure 9920

DN80-DN500 PN10-16-25

Vacuum Breaker Valve with Air Release Valve

Combination valve (Fig. 9900 + Fig. 9120/9200/9220/9230…)

CONSTRUCTION MATERIALS / COATING

Body: Ductile Iron EN GJS-500-7

Internal Mechanisms: Stainless steel and bronze

Seat: Elastomer NBR/EPDM of high durability

Upper protection: Steel with screen in stainless steel

Bolting: Internal in 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 combined air inlet valve with air release valve will open automatically when the system pressure becomes negative falling down and below the atmospheric pressure and will close when the pressure inside the piping is restored. This allows to release small quantities of air cumulated in the system when the pressure is low.

The valve is formed by two independent valves, one air inlet valve or vacuum breaker and an automatic air release valve, mounted and assembled together as a whole and sole element.

The immediate admission of air into the system valve shall be assured by having 10% more inflow area than the inlet area of the valve.

The vacuum relief valve is normally closed by means of a spring and will open automatically only when the system pressure become negative, falling to approximately 0,02 bar below atmospheric pressure.

Fluid

Clean water, consult operations and materials for ocean water, and processed crude water

TECHNICAL DATA / ENGINEERING

NOTE: The drain valve used for this valve till DN 150 is Fig. 9120 and Fig. 9200 for higher size valves.

AERATION CAPABILITIES

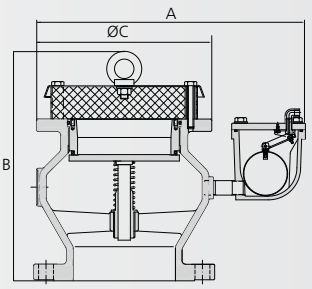
BIG ORIFICE (FILLING / EMPTYING)
See tables for aeration capacity and curves in pages 30 and 31.

TEST PRESSURE

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
DN80	Flange	385	188	290	19
DN100	Flange	476	254	292	43
DN150	Flange	430	300	360	56
DN200	Flange	595	360	455	80
DN250	Flange	585	425	542	114
DN300	Flange	662	485	531	175
DN350	Flange	700	555	575	374
DN400	Flange	780	620	735	478
DN500	Flange	885	715	1042	560



Dimensions in mm and weights in kg Fig. 9900 + Fig. 9200

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

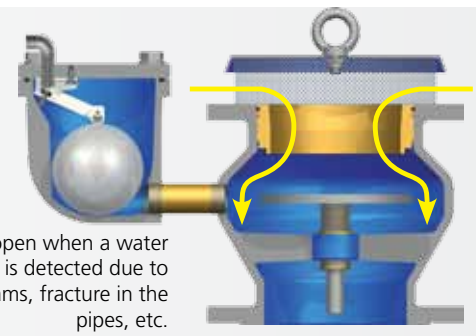
ORDERING OPTIONS

- Lateral drain valve
- Possibility to supply the air release valve according to different requirements.

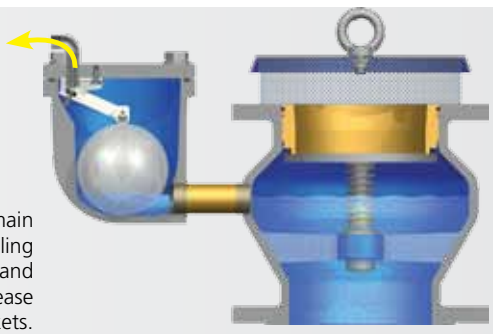
FULFILLED STANDARDS

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

SEQUENCE OF FUNCTIONS



The valve will open when a water depression is detected due to drainage streams, fracture in the pipes, etc.

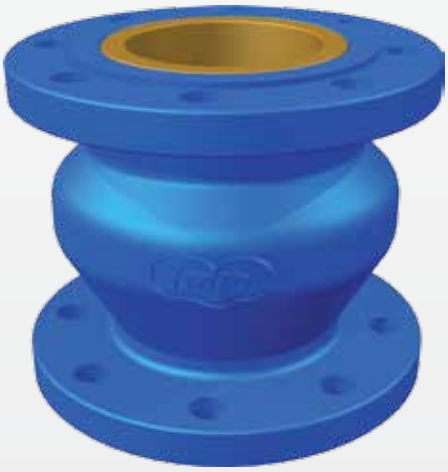


The valve will remain closed during the filling and installation works and in addition will release possible air pockets.

Figure 2840

DN80-DN400 PN10-16-25

Slow Closing Valve



DESCRIPTION

The slow closing valve is recommended to be installed at the air valve inlet during the filling.

The design prevents the valve from slamming when closed which can cause "water hammer" and the resultant noise and damage to piping systems.

This valve is recommended to be installed at high points where water column separations or pipelines collapses may occur.

If the liquid speed is above 3 mt per second, the water hammer and therefore the float against the seat can easily damage the valve. The same happens to deep well turbine pumps where the speed is too high and can easily exceed 3 mt. per second.

Fluid

Clean water, consult operations and materials for ocean water, and processed crude water

CONSTRUCTION MATERIALS / COATING

Body: Ductile Iron EN GJS-500-7
Internal Mechanisms: Stainless steel and bronze
Upper protection: Steel with screen in stainless steel
Bolting: Internal in stainless steel A2 / External in galvanized steel
Coating: Non-toxic epoxy for drinkable water. Internal and External 200 microns thickness

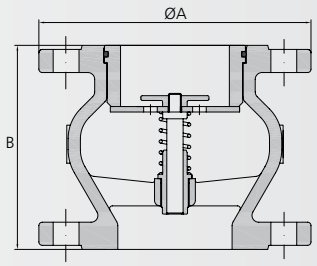
Other material and special coating available upon request

TECHNICAL DATA / ENGINEERING

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	B	Weight
DN80	Flange	200	150	14
DN100	Flange	220	184	18
DN150	Flange	285	248	33
DN200	Flange	340	318	54
DN250	Flange	420	400	88
DN300	Flange	515	362	129
DN350	Flange	560	388	362
DN400	Flange	637	549	479



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

ORDERING OPTIONS

- With disc generally open (NA)
- With disc generally closed (NC)

FULFILLED STANDARDS

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

SEQUENCE OF FUNCTIONS

This valve is specially designed to minimize water hamming in those systems where the working conditions are irregular and the valves are continuously opening and closing. In particular in those high points where the hydraulic gradient and the line conditions allow negative pressures or in those lines where the speed is 3,5 m/seg or even more.

If the liquid speed is above 3 mt per second, the water hammer and consequently the float against the seat can easily damage the valve. The same happens with deep well turbine pumps where the speed is too high and can easily exceed the mentioned 3 mt. per second.

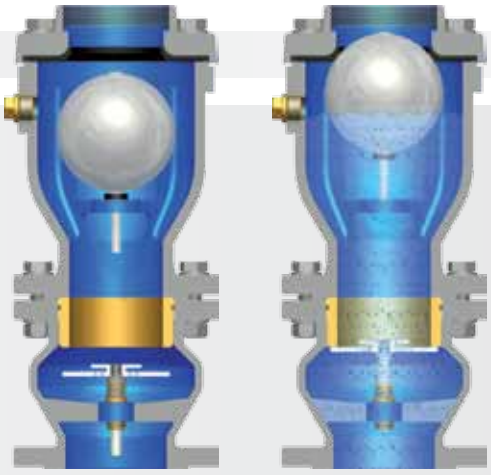


Figure 9330

1”-2”-3”-4”-6” PN10-16-25

Deepwell Service Air Vacuum Valve

DESCRIPTION

The deepwell service air/vacuum valve shall employ the Kinetic principle to automatically exhaust controlled quantities of air at pump start-up and to allow air to re-enter during draining or when a negative pressure occurs. Valves are designed to exhaust air up to sonic velocity without blowing shut. Valve shall be completed with a throttle device installed on the outlet to allow control of the air discharge rate and pressure and column ascent rate.

Specially recommended in high points where the hydraulic gradient and the service conditions allow uninterrupted negative pressure.

If the liquid speed is above 3 mt per second, the water hammer and therefore the float against the seat can easily damage the valve. The same happens to deep well turbine pumps where the speed is too high and can easily exceed 3 mt. per second.

Fluid

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

CONSTRUCTION MATERIALS / COATING

Body : Stainless steel A-316
Internal Mechanisms: Stainless steel A-304 in bronze and brass
Seat : Elastomer NBR/EPDM
Bolting: Internal stainless steel A2 / External in galvanized steel

Other material and special coating available upon request

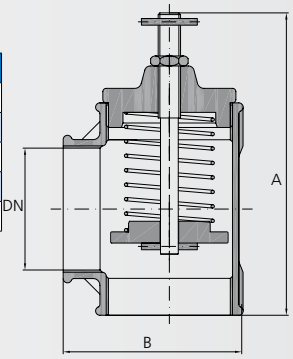
TECHNICAL DATA / ENGINEERING

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	B	Weight
1”	F Thread	125	55	8
2”	F Thread	180	95	12
3”	F Thread	250	135	30
4”	F Thread	300	160	50
6”	F Thread	420	225	95

Dimensions in mm and weights in kgs



FULFILLED STANDARDS

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

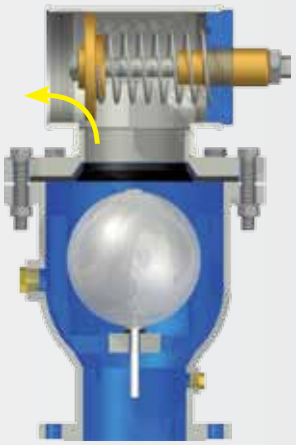
SEQUENCE OF FUNCTIONS

These Valves with restricted access use the kinetic principle to extract controlled amounts of air during the startup of the pump and allow air inlet during the stopping of the pump.

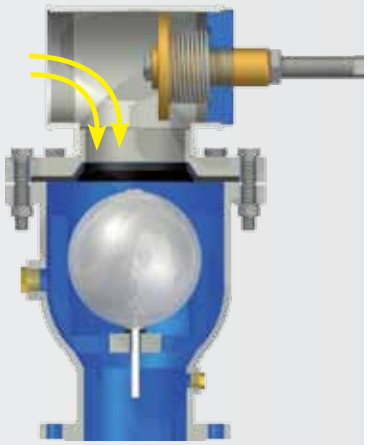
The control of the air output is carried out by means of a flow restrictor in the output of the valve. It is equipped with a system of adjustment of free flowing air that generates the restrictor, which will lower the speed when the fluid ascends the column of aspiration and therefore lowing the water hammer when the ball float closes by flotation of the fluid.

It is recommended to carry out the first tests during the installation with the restrictor closed as much as possible to evaluate gradually possible water hammer.

When the pumps stop the negative pressure permits the retrictor disc to withdraw from its original position creating a surface of entrance that is equivalent to the diameter of the valve (full bore).



Close regulation of valves

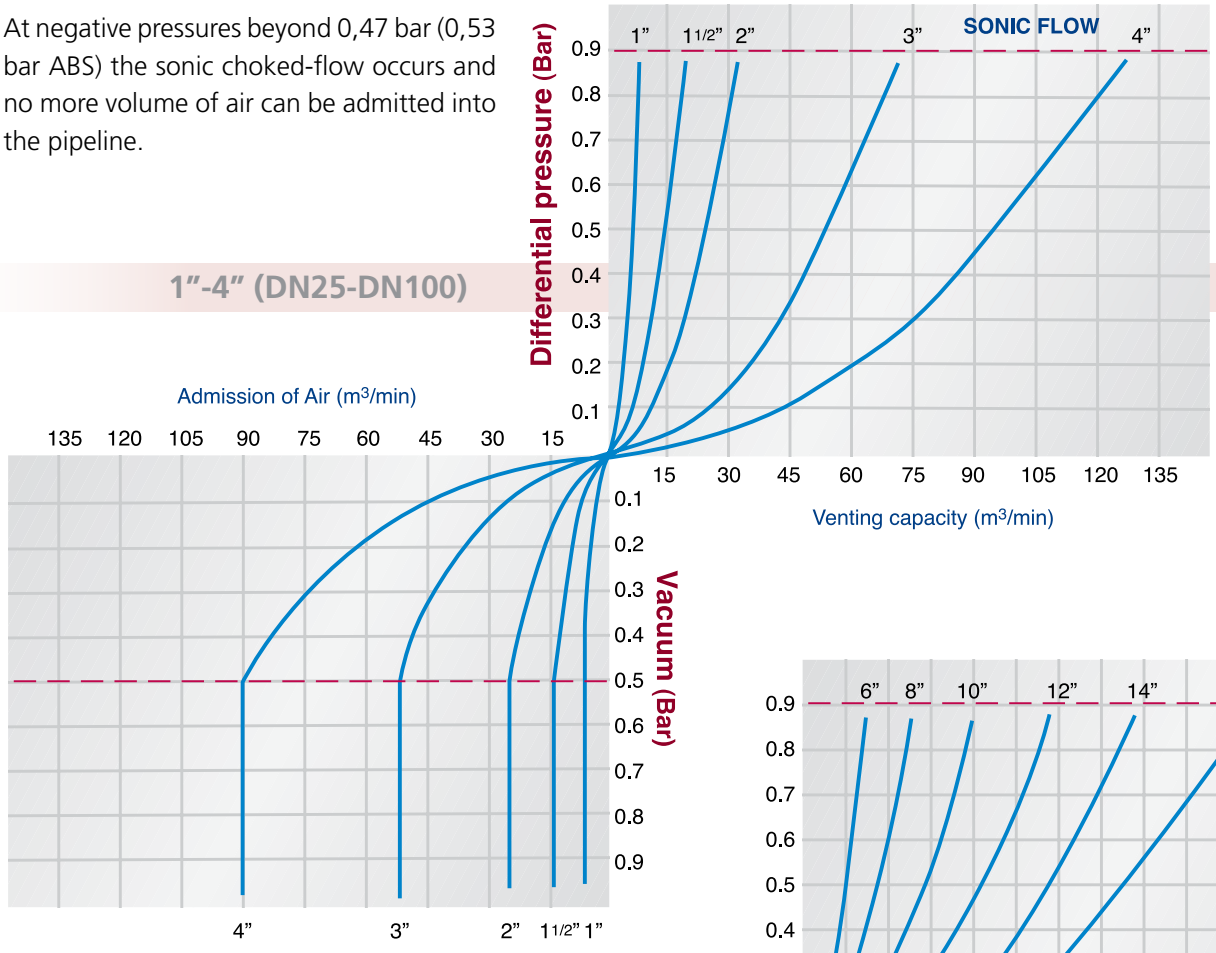


Open regulation of valves

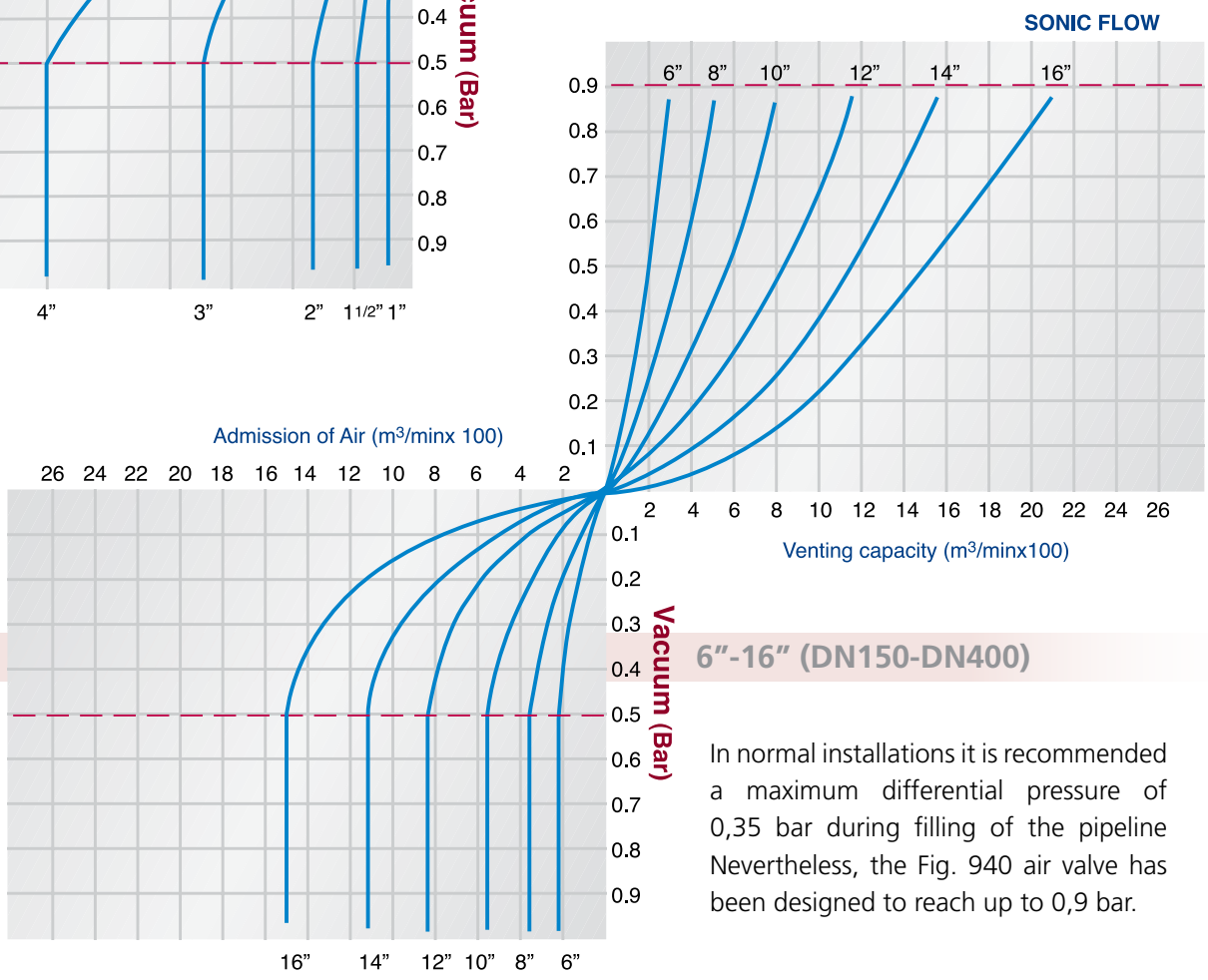
AIR VACUUM VALVES, AIR INLET AND OUTLET CURVES

At negative pressures beyond 0,47 bar (0,53 bar ABS) the sonic choked-flow occurs and no more volume of air can be admitted into the pipeline.

1”-4” (DN25-DN100)



6”-16” (DN150-DN400)



In normal installations it is recommended a maximum differential pressure of 0,35 bar during filling of the pipeline Nevertheless, the Fig. 940 air valve has been designed to reach up to 0,9 bar.

AIR RELEASE VALVES, SELECTION AND SIZING

METHOD 1: IF A SPECIFIC VENTING CAPACITY IS REQUIRED

A. USING TABLE #1

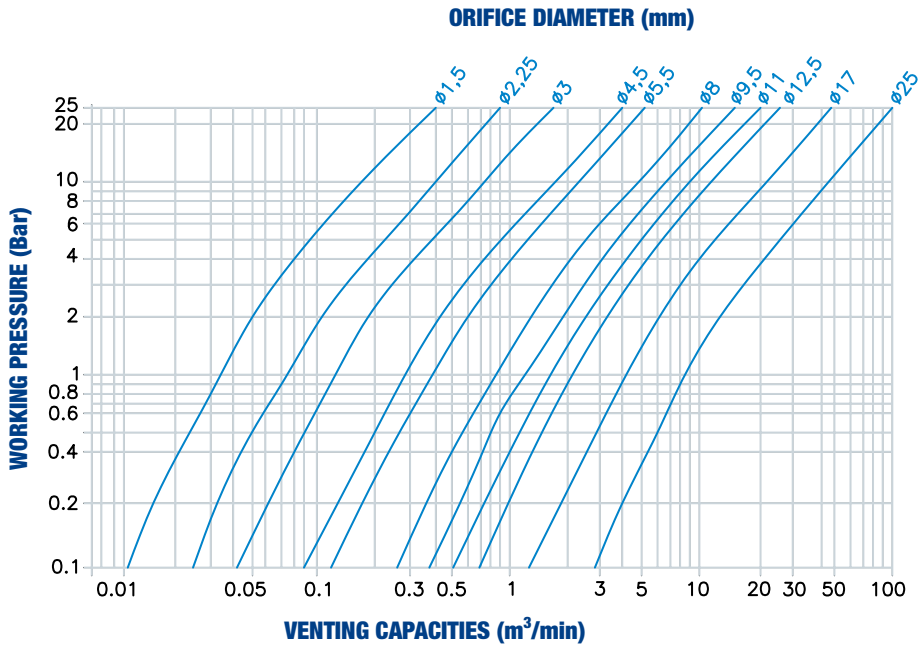
If the specific venting rate is known, refer to Table #1 and select the Air Release Valve which has an orifice available whose venting rate is at least equal to the required rate, at the maximum working pressure the valves will be operating. Select standard orifices whenever possible.

On a long pipeline, it is better to install Air Release Valves with smaller orifices at frequent intervals than to install a few valves with large orifices.

		CLEAN FLUIDS												SEWAGE SERVICE					
		9100		9120		9200		9220		9230 DN 100		9230 DN150		9250		9270		9290	
WORKING PRESSURE Bar	0,35 0,7 1 1,7 3,5 5	0,04 0,06 0,07 0,1 0,16 0,22	2,25	0,07 0,11 0,13 0,18 0,29 0,4	3	0,18 0,24 0,3 0,4 0,65 0,9	5	0,7 1 1,2 1,6 2,6 3,6	9,5	1,24 1,75 2,12 2,85 4,6 6,43	12,5	5 7 8,5 11,3 18,5 25,7	25	0,5 0,7 0,83 1,1 1,8 2,5	8	1,24 1,75 2,12 2,85 4,6 6,43	12,5	0,5 0,7 0,83 1,1 1,8 2,5	8
	7 8,5 10	0,28 0,35 0,41		0,5 0,62 0,73		1,15 1,4 1,65		4,62 5,63 6,64		8,22 10 11,8		32,9 40 47,2		1,16 1,4 1,66	4,5	6,3 7,67 9,05	11	1,16 1,4 1,66	4,5
	14 16	0,24 0,3	1,5	0,54 0,66	2,25	0,96 1,18	3	2,94 3,6	5,5	8,7 10,6	9,5	29,1 35,9	17	Consult Factory					
	20 25	0,22 0,27	1,25	0,3 0,4	1,5	1,4 1,65	3	3,43 4,25	5	8,8 10,9	8	26,9 33,3	14						
		FOR OTHER ORIFICES, CONSULT FACTORY																	

B. USING GRAPH #1

1. Enter system pressure and venting capacity onto Graph #1 and select nearest larger orifice diameter.
2. Consult available Air Release Valve orifice diameters on Table #1 and select valve with correct orifice diameter and pressure rating. SELECT A STANDARD ORIFICE WHENEVER POSSIBLE.
3. It is more efficient to install a greater quantity of air release valves at strategic locations with smaller orifice than lesser quantity with larger orifice.



MINING

Mineria El Abra / Calama (Chile)

WATER TREATMENT

Thames Water / Beckton
Desalination Plant, London (UK)

HIGH PRESSURE

Ciaqsa / Queretaro (México)

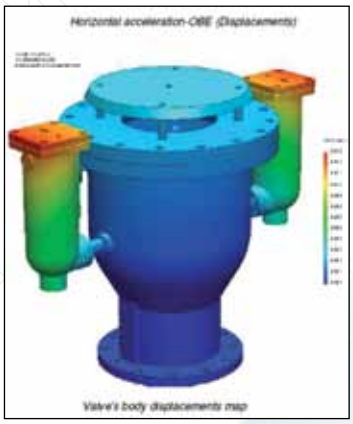
LNG TERMINAL

GATE LNG Receiving Terminal /
Maavlakte, Rotterdam
(The Netherlands)

DESALINATION PLANT

Water Corporation / Perth
(Australia)

SEISMIC TESTS REPORTS



Seismic reports o any other technical project report upon request.

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