Sureflow® C30 COMBINATION AIR VALVE
TECHNICAL DATA

DOUBLE ORIFICE, AIR ACCUMULATION AND VACUUM PREVENTION, LOW PRESSURE SEALING

FEATURES

Straight flow body with large diameter automatic orifice

Aerodynamic full-body kinetic shield

Compact, simple and reliable structure

Fully corrosion-resistant parts

Surge Protection (optional)

Inflow Prevention (optional)

Service Ports fitted (optional)

Threaded Side outlet (Optional for DN50/2")

DESCRIPTION

Sureflow C30 is a high quality combination air valve for a variety of water networks and operating conditions. It evacuates air during pipeline filling, allows efficient release of air pockets from pressurized pipes, and enables large air volume intake in the event of network draining.

With its advanced aerodynamic design, this double orifice valve provides excellent protection against air accumulation and prevents vacuum formation with improved sealing in low pressure conditions.

APPLICATIONS

Pipelines – Protection against air accumulation and vacuum formation at elevations, slope change points and road/river crossings.

Water networks – Protection against air accumulation and vacuum formation.

In proximity to control valves and water meters – Prevention of biased readings and inaccurate pressure regulation due to air flow through these devices.

Industrial and residential networks - Protection against air accumulation.

BENEFITS

Higher than usual air flow rates

Low pressure sealing (0.1bar)

Lower maintenance and increased life span

Pressure gauge connection, check point or test drain for air valve function.

PRINCIPLES OF OPERATION

Pipeline Filling:
During the filling process of a pipeline, high air flow is forced out through the kinetic orifice of the air valve. Once water enters the valve's chamber, the float buoyed upward causes the kinetic orifice to close. The unique aerodynamic structure of the valve body and float ensures that the float cannot be closed before water reaches the valve.

Pressurized Operation:
During pressurized operation of the pipeline, air accumulates in the upper part of the air valve chamber, causing the float to gravitate downwards. This in turn causes the automatic orifice to open, releasing the accumulated air. Once the air is discharged, the water level and float rise, causing the automatic orifice to close.

Pipeline Draining:
When a pipeline is drained, a negative differential pressure is created causing atmospheric air to push the float down. The kinetic orifice stays open and air enters the valve chamber, preventing vacuum formation in the pipe.

Surge Protection (anti-slam):
The anti-slam device is fitted to the air valve outlet. In the event of pressure surge, it partially closes the valve's outlet. The approaching water column decelerates due to the resistance of the rising air pressure in the valve. This is typically used on pump stations and at specific pipeline locations to minimise pressure surges during pipe filling or power failure conditions at the pump station.

Inflow Prevention:
The inflow prevention is a Normally Closed check device fitted on the valve's outlet and prevents flow of atmospheric air into the valve. Typically used to prime pump suction lines or on pipelines requiring only air discharge and no air re-entry such as siphons.

VALVE SELECTION

Body Material:
Standard – Glass-reinforced plastic
Inlet sizes:
DN20, DN25, DN50, DN80 (¾", 1", 2", 3")
Connections:
Threaded Male BSPT
Outlets:
Sideways, downwards (only for DN50-80,2-3")
Additional features:
Surge Protection (C30-SP)
Inflow Prevention (C30-IP)
Service Port fitted with plug
DN3 (1/8") for DN20-25 (3/4-1")
DN6 (1/4") for DN50-80 (2-3")

OPERATIONAL DATA

Pressure rating : PN16

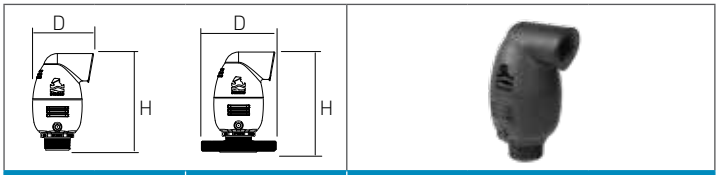
Operating pressure range: 0.1 - 16 bar

Operating temperature: Water up to 60°C

ORIFICES SPECIFICATION

Size		Kinetic		Automatic
DN	Inch	d[mm]	Ad[mm²]	Ad[mm²]
20	¾''	20.2	320	5.4
25	1''	20.2	320	5.4
50	2''	45.0	1,590	12.2
80	3"	45.0	1,590	12.2

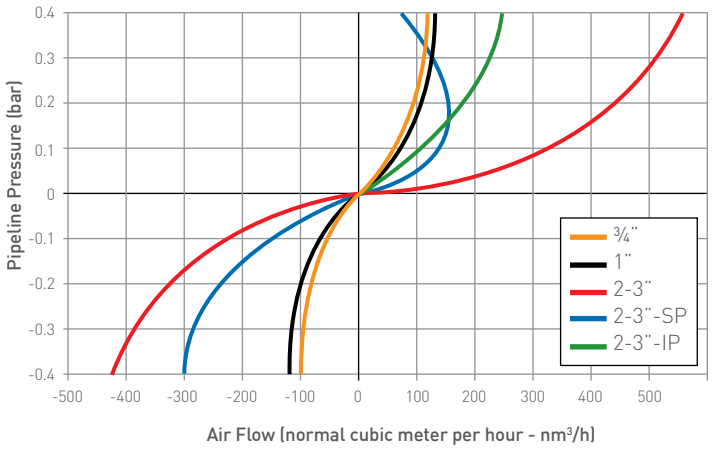
DIMENSIONS & WEIGHTS



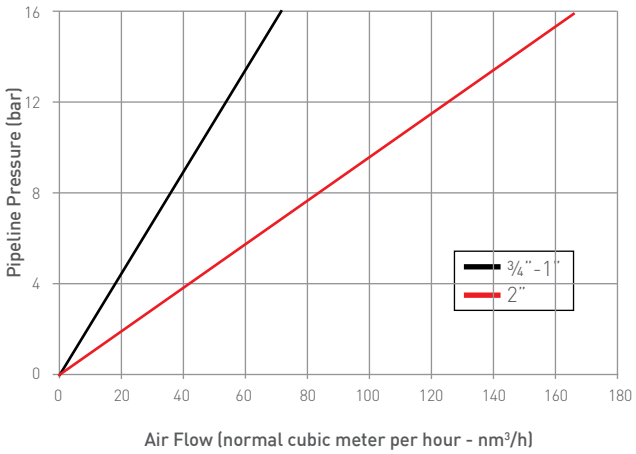
Size			Side Outlet		
DN	Inch	Connec-tion	D (mm)	H (mm)	Weight (Kg)
20	¾''	Threaded	97	160	0.44
25	1''	Threaded	97	160	0.45
50	2''	Threaded	143	230	1.30
50	2''	Flanged	165	240	1.95
80	3"	Flanged	200	240	2.25

AIR FLOW PERFORMANCE CHARTS

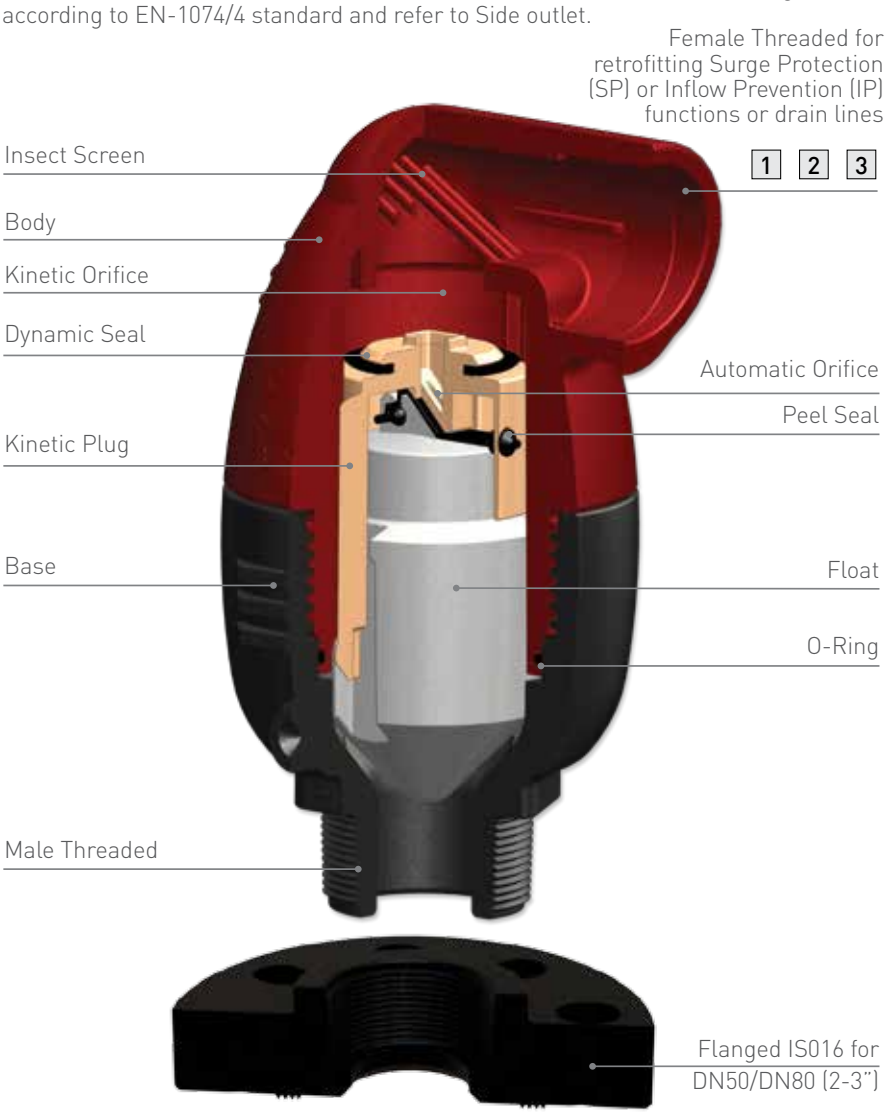
Air Relief and Intake
(Pipeline Filling and Draining, Vacuum Conditions)

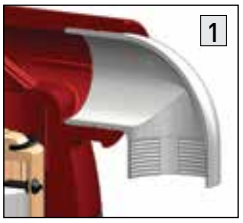


Air Release (Pressurized Operation)

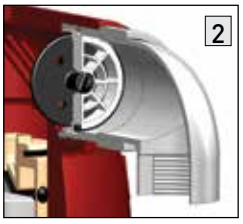


Air relief and intake charts are based on actual measurements, made during 2015 in Air Flow test bench, according to EN-1074/4 standard and refer to Side outlet.

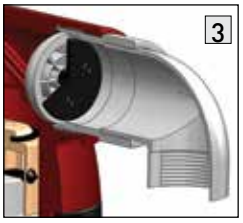




Down outlet and connection to drainage pipe (only 2"-C30)



Surge Protection (anti-slam) – (2"-C30-SP)



Inflow Prevention (2"-C30-IP)

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PARTS LIST AND MATERIALS

	Description	Material	Remarks
1	Base BSP/NPT	Glass Reinforced Polyamide (for Drinking Water)	
2	Body	Glass Reinforced Polyamide (for Drinking Water)	
3	Down Outlet	Polypropylene	
4	Float	Polypropylene (for Drinking Water)	
5	Kinetic Plug	Glass Reinforced Polyamide (for Drinking Water)	
6	Kinetic Orifice Seal	EPDM (for Drinking Water)	
7	Automatic Orifice Seal	EPDM (for Drinking Water)	
8	O-Ring	EPDM (for Drinking Water)	
9	Exit	Polypropylene	Only C30-SP, C30-IP
10	Grid	Glass Reinforced Polyamide	Only C30-SP, C30-IP
11	Surge Protection Seal	EPDM	Only C30-SP
12	Flow Prevention Seal	EPDM	Only C30-IP
13	O-Ring	EPDM	Only C30-SP, C30-IP
14	Test Point (Optional)	Stainless Steel	
15	Flanged Table ISO16	Glass Reinforced Polyamide	Only for DN50-80 (2-3")

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