

Sureflow® C50

SEWAGE & WASTEWATER COMBINATION AIR VALVE

TECHNICAL DATA

DOUBLE ORIFICE WITH SURGE PROTECTION, AIR ACCUMULATION AND VACUUM PREVENTION, LOW PRESSURE SEALING, EASY MAINTENANCE



FEATURES

- Straight flow body with large diameter automatic orifice
- Aerodynamic full-body kinetic shield
- Elongated body design with non-stick coating
- Valve is opened from the top
- 2 service ports
- Compact, simple, robust and reliable structure
- Fully corrosion-resistant parts
- Surge Protection (optional)
- Inflow Prevention (optional)
- Drainage valve (optional)

DESCRIPTION

Sureflow C50 is a high quality combination air valve for a variety of sewage and wastewater networks and operating conditions. It evacuates air during pipeline filling, allows efficient release of air and gas pockets from pressurized pipes, and enables large volume air intake in the event of network draining.

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

APPLICATIONS

Sewage and wastewater pumping stations – Air relief and vacuum prevention.

Sewage and wastewater pipelines – Protection against air and gas accumulation and vacuum formation at elevations, slope change points and at road/river crossings.

Municipal and industrial wastewater treatment plants – Protection against air and gas accumulation and vacuum formation.

BENEFITS

- Higher than usual air flow rates.
- Low pressure sealing (0.05 bar).
- Vortex back washing.
- Lower and easier maintenance.
- Increased life span.

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 upwards 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:

DN50, DN80, DN100
(2" 3" 4")

Connections:

Threaded Male & Female BSPT
Flanged AS 4087

Outlets:

Sideways, downwards

Additional features:

Surge Protection (C50-SP)
Inflow Prevention (C50-IP)

OPERATIONAL DATA

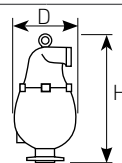
Maximum test pressure - 16 bar (PN16)
Operating pressure range: 0.05 - 10 bar
Operating temperature: Water up to 60°C

ORIFICES SPECIFICATION

Size		Kinetic		Automatic
DN	Inch	d[mm]	Ad[mm ²]	Ad[mm ²]
50	2"	45.0	1,590	12.2
80	3"	45.0	1,590	12.2
100	4"	45.0	1,590	12.2

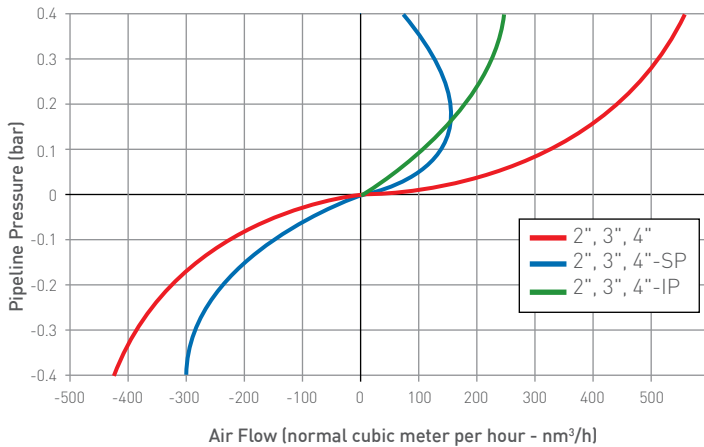
DIMENSIONS & WEIGHTS

Size			Side Outlet		
DN	Inch	Connection	D (mm)	H (mm)	Weight (Kg)
50	2"	Threaded	230	458	5.5
80	2"	Flanged	230	478	6.5
80	3"	Flanged	230	478	6.8
100	4"	Flanged	230	478	7.0

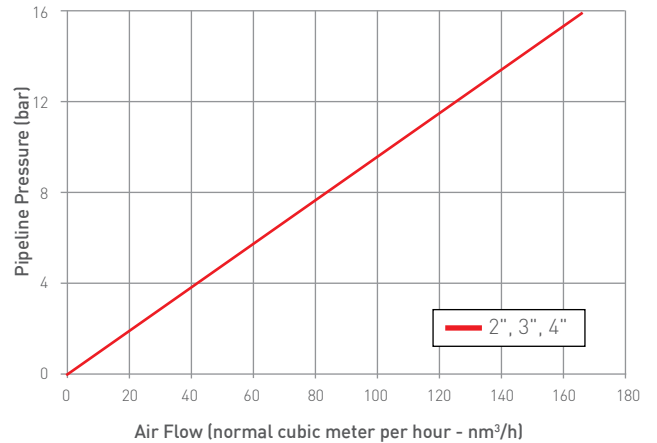


AIR FLOW PERFORMANCE CHARTS

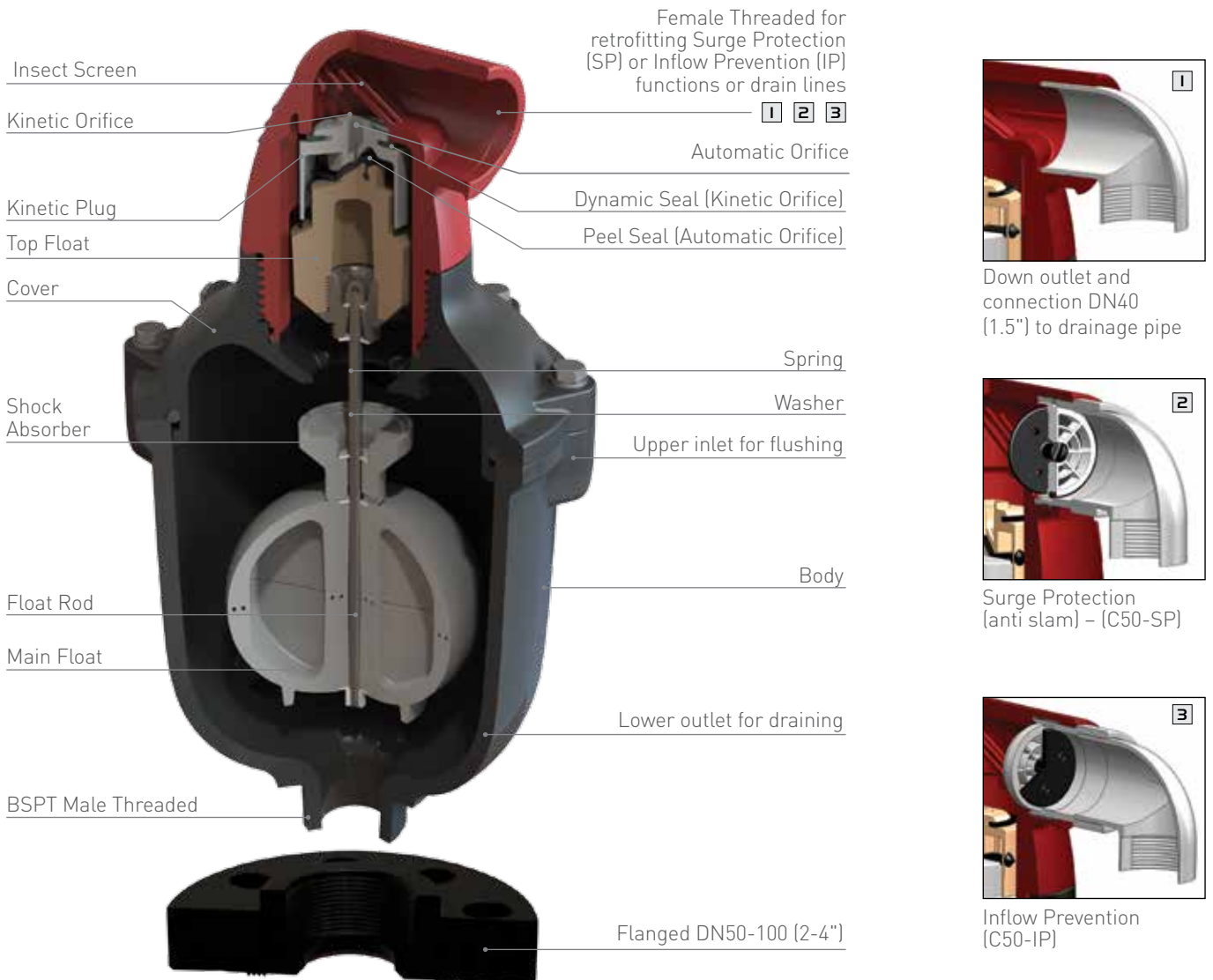
Air Relief and Intake (Pipeline Filling, Draining & Vacuum Conditions)



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.



PARTS LIST AND MATERIALS

	Description	Material	Standards/Remarks
1	Body BSP/NPT Male	Glass Reinforced Nylon	Optional - Stainless Steel
2	Neck	Glass Reinforced Nylon	Optional - Stainless Steel
3	Down outlet	Polypropylene	
4	Cover	Glass Reinforced Nylon	Optional - Stainless Steel
5	Top Float	Polypropylene	
6	Main Float	Polypropylene	
7	Kinetic Plug	Nylon	
8	Peel Seal	EPDM	Optional - Viton
9	Kinetic Seal	EPDM	Optional - Viton
10	Hex domed nut	Stainless Steel	SS316 A4
11	Washer	Stainless Steel	SS316 A4
12	Float Rod	Stainless Steel	SS316 A4
13	Top Float Nut	Nylon	
14	Spring	Stainless Steel	SS316 A4
15	Washer	Stainless Steel	SS316 A4
16	Nut	Stainless Steel	SS316 A4
17	Insert M12	BRASS	SS316 A4
18	O-Ring	EPDM	Optional - Viton
19	Bolt	Stainless Steel	SS316 A4
20	Washer	Stainless Steel	SS316 A4
21	Surge Protection (Optional)	Glass Reinforced Nylon, PP, EPDM	
22	Inflow Prevention (Optional)	Glass Reinforced Nylon, PP, EPDM	