

Description

The single effect air valve is designed to extract and push the air inside the piping network. It allows for major air ventilation at pump startup.

Features

Designed to be easily disassembled for cleaning. The large clear passageway allows lots of air to flow in and out easily. The elbow cap design is ideal for directing wastewater/air spray. With the internal weight removed, these airvents can easily be used as a flush port.



Part No.	APVSSE-100	APVSSE-200
Inlet	1"	2"
Max Pressure	80 psi/185 ft.	80 psi/185 ft.
Max Temp	140 oF	140 oF
Height	8.0"	

Specification

The Single Effect Air Valve shall provide instant on-continuous air relief. The body and base shall be made of strengthened nylon with glass fibre. The internal weight shall be made of molded plastic and shall be removable for easy cleaning. The air vacuum breaker shall be part number APVSSE-100 or APVSSE-200 as supplied by Geoflow, Inc.

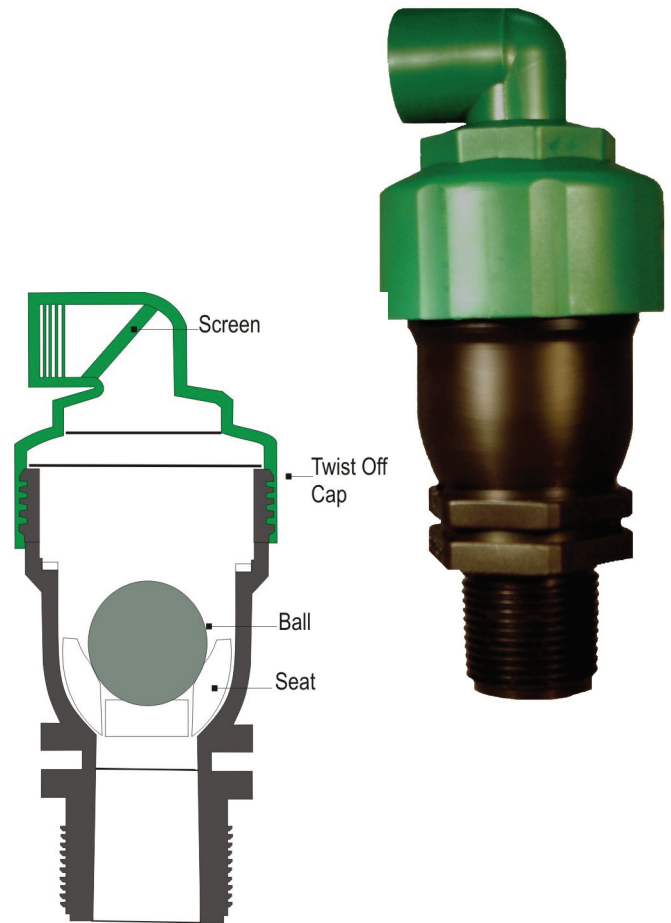


Description

Air release occurs when air escape the system at startup and vacuum relief allows air to enter during shutdown. The air vent vacuum breakers are installed at the highest points in the drip field to keep soil from being sucked into the emitters due to back siphoning and back pressure. This is an absolute necessity with underground drip systems. They are also used for proper drainage of the supply and return manifolds. Use one on the high point of the supply manifold and one on the high point of the return manifold and any high points of the system.

Features

Geoflow's new kinetic air vacuum breakers have a twist off cap that is easy to take apart for cleaning. The large clear passageway allows lots of air to flow in and out easily. The elbow cap design is ideal for directing wastewater spray, directing spray downward. With the ball removed, these airvents can easily be used as a flush port.



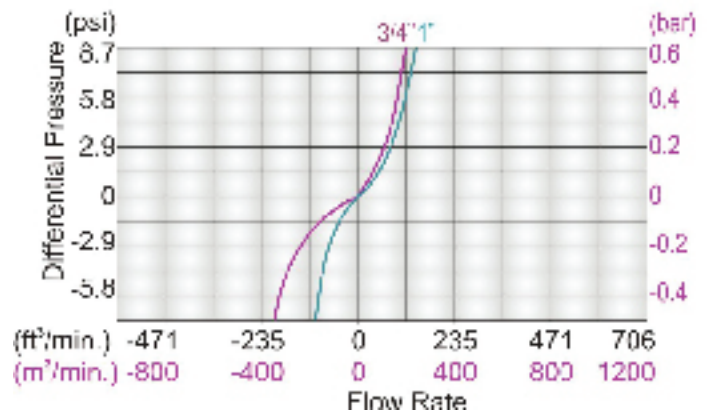
Part No.	APVBK75L	APVBK100L
Inlet	3/4"	1"
Max Pressure	80 psi/185 ft.	80 psi/185 ft.
Max Temp	140 oF	140 oF
Height	5"	5.5"
Weight	1 oz.	1.2 oz.

Available in drip packages or sold separately.

Specification

The Air Vacuum Breaker shall provide instant and continuous vacuum relief and non-continuous air relief. Both the body and the ball shall be made of molded plastic. The ball shall be removable for easy cleaning. The air vacuum breaker shall be part number APVBK75L or APVBK100L as supplied by Geoflow, Inc.

Air and Vacuum Flow Rate

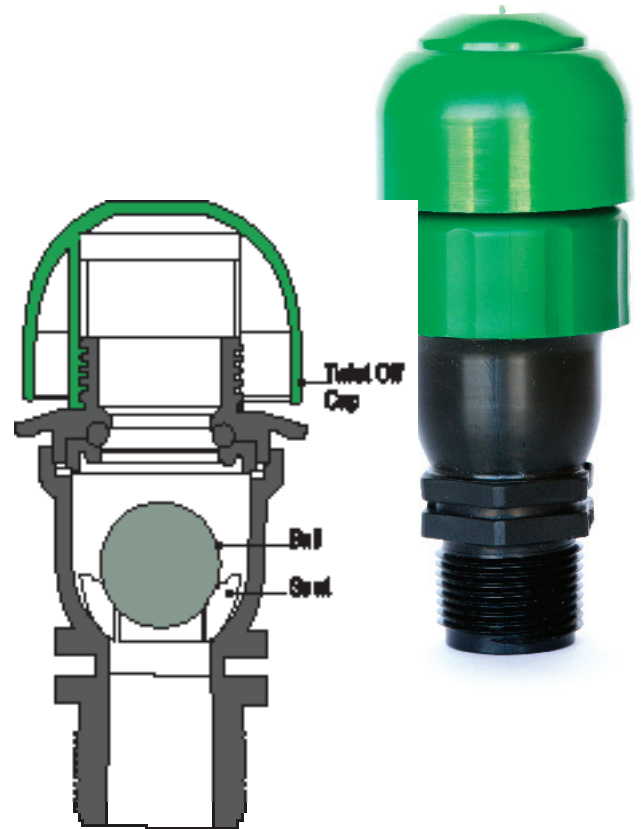


Description

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Features

Geoflow's new kinetic air vacuum breakers have a twist off cap that is easy to take apart for cleaning. No need to remove the valve to maintain it. The large clear passageway allows lots of air to flow in and out easily. The protected mushroom cap is ideal for wastewater, directing spray downward.

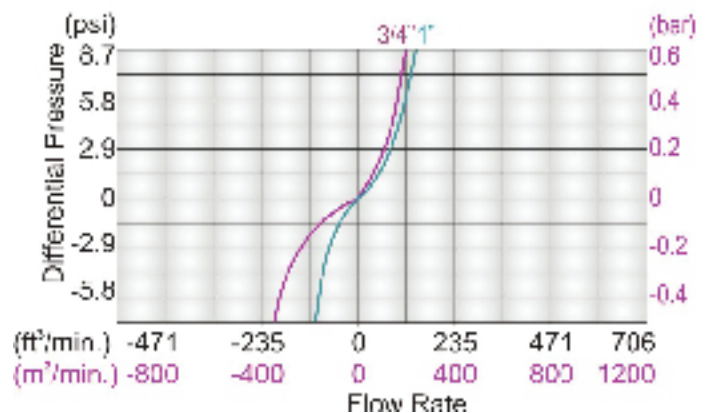


Part No.	APVBK75m	APVBK100m
Inlet	3/4"	1"
Max. Flow Rate	30 gpm	
Max Pressure	80 psi/185 ft.	80 psi/185 ft.
Max Temp	140 oF	140 oF
Height	5"	5.5"
Weight	1 oz.	1.2 oz.

Specification

The Air Vacuum Breaker body and ball shall be made of molded plastic. The ball shall be removable for easy cleaning. The Air Vacuum Breaker shall be part number APVBK75m or APVBK100m as supplied by Geoflow, Inc.

Air and Vacuum Flow Rate



Description

The Ball Check valves prevent backflow or drain down in the system. The true union provides easy access for inline installation and servicing. The true union ball check is designed for quick positive sealing with minimum turbulence, low restriction, and efficient fluid transfer. It can be installed vertically or horizontally. System pressure will unseat the ball, allowing flow. Backflow or head pressure of 30" or 1 to 2 psi will seat the ball and stop backflow. Each check valve ships with female thread and socket adapters. This valve is manufactured 100% from thermoplastic materials, making it less susceptible to corrosion.



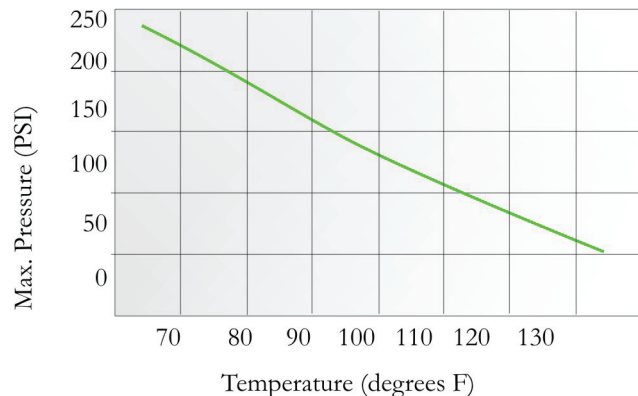
Model No.	Inlet/Outlet (FPT or socket)	Length (inches)	Height (inches)	Max Temp (F)	Weight (lbs.)
CV-B-05	0.5"	3.50"	2.00"	140 °	0.75
CV-B-10	1.0"	5.09"	2.31"	140 °	1.1
CV-B-15	1.5"	6.59"	3.81"	140 °	2.2
CV-B-20	2.0"	7.53"	4.22"	140 °	3.0

Specification

All thermoplastic check valves shall be True Union Ball type constructed from PVC Type I Cell Classification 12454. Socket end connections are manufactured to ASTM D2467-94. Threaded connections are manufactured to ASTM D2464-88.

The O-Ring seat shall be Viton®. All valve components shall be replaceable. The check valve shall be pressure rated at 235 psi, non-shock water at 73° F. The ball check valve shall be Geoflow part number CV-B-X.

True Union Ball Check
 Maximum Pressure Rating
 at Given Temperature



INSTALLATION, OPERATION & MAINTENANCE

- Systems should always be depressurized and drained prior to installing or maintaining your True Union Ball Check Valves.
- Temperature effect on piping systems should always be considered when the systems are initially designed. Piping systems must be designed and supported to prevent excess mechanical loading on valve equipment due to system misalignment, weight, shock, vibration, and the effects of thermal expansion and contraction.
- Because PVC and CPVC plastic products become brittle below 40°F, Geoflow recommends caution in their installation and use below this temperature.
- Due to differential thermal expansion rates between metal and plastic, transmittal of pipe vibration, and pipe loading forces **DIRECT INSTALLATION OF METAL PIPE INTO PLASTIC CONNECTIONS IS NOT RECOMMENDED**. Wherever installation of plastic valves into metal piping systems is necessary, it is recommended that at least 10 pipe diameter in length of plastic pipe be installed upstream and downstream of the plastic valve to compensate for the factors mentioned above.
- **SOCKET CONNECTION:** Socket end connections are manufactured to ASTM D2467 (PVC) and F-439 (CPVC). Solvent cementing of socket end connections to pipe should be performed per ASTM specifications D2855-87. Cut pipe square. Chamfer and deburr pipe. Surfaces must be cleaned and free of moisture, oil, dirt and other foreign material. Remove Union-nuts and end connectors from valve body. Slide Union-nuts, with threads facing valve, onto pipe to which the end connector is to be cemented. Apply primer to inside socket surface of end connector. Never allow primer or cement to contact valve ball or end connector o-ring sealing surfaces, as leaking may result. Use a scrubbing motion. Repeat applications may be necessary to soften the surface of the socket. Next, liberally apply primer to the male end of the pipe to the length of the socket depth. Again apply to the socket, and without delay apply cement to the pipe while the surface is still wet with primer. Next apply cement lightly, but uniformly to the inside of the socket. Apply a second coat of cement to the pipe, and assemble end connector to the pipe, rotating the end connector 1/4 turn in one direction as it is slipped to full depth on to the pipe. The end connector should be held in position for approx. 30 seconds to allow the connection to “set”. After assembly wipe off excess cement. Follow cement manufacturers guidelines for proper “cure-time”, based on the pipe size that you are joining.
- **THREADED CONNECTION:** Threaded end connections are manufactured to ASTM specifications D2464. F437 and ANSI B1.20.1. Due to the variable quality and tolerances of plastic male threaded nipples, Colonial no longer recommends the use of PTFE (Teflon®) tape. We recommend using the following thread sealant: IPS WELD-ON All Seal™. To provide a leak proof joint, the pipe should be threaded into the end connection “hand tight”. A strap wrench may be used to tighten the joint an additional 1/2 turn past hand tight. Tightening beyond this point may induce excessive stress that could cause failure.

Spring Check Valve Description

The spring check valve is used to prevent backflow and siphoning. The ½ pound stainless steel spring maintains a positive seal, even when no back pressure is present. Minimum of 2 psi required to open the valve.



Model No.	Inlet/Outlet (FPT or socket)	Length (inches)	Height (inches)	Max Temp (F)
CV-S-05	0.5"	4.13"	2.22"	140 °
CV-S-10	1.0"	5.25"	2.88"	140 °
CV-S-15	1.5"	5.9"	3.89"	140 °
CV-S-20	2.0"	7.0"	4.29"	140 °

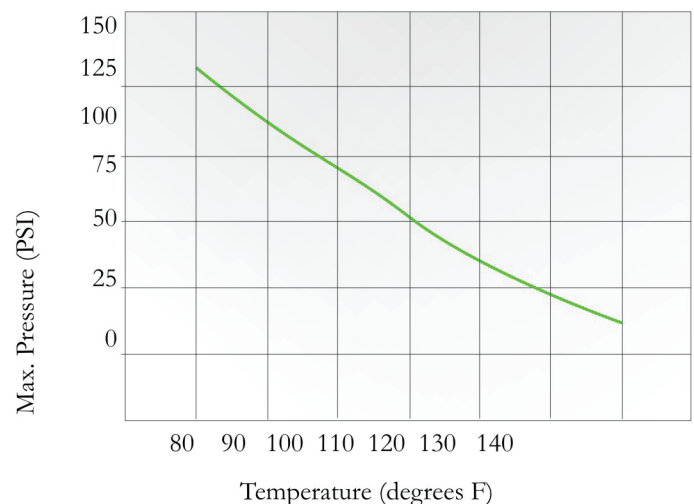
Spring Check Specifications

Thermoplastic Spring check valves shall be constructed from PVC Type 1, cell class 12454 material conforming to ASTM D-1784. Seals shall be EPDM. Valves shall have socket end connections for solvent weld. All Spring check valves shall be pressure rated at 150 psi at 73 degrees F. All spring check valves shall require 2 psi to open.

Spring Check Installation

Connection - FIPT slip connections. Install in a box for easy access. It is recommended that these check valves be installed no closer than 10 pipe diameters from a pump and no closer than 5 pipe diameters from an elbow

Spring Check
Maximum Pressure Rating
at Given Temperature



Description

Index valves are used in multiple zone systems as an alternative to solenoid valves. They are hydraulically operated and require no electricity. They work with single zone drip panels.

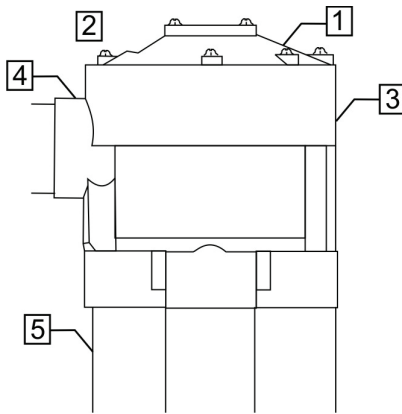


Dimensions 5.75" x 5.75"

Part No.	Zones	Flow	Inlet	Outlet
4402	2 zone	10-40 gpm	1.25" slip	1.25" slip
4403	3 zone	10-40 gpm	1.25" slip	1.25" slip
4404	4 zone	10-40 gpm	1.25" slip	1.25" slip
4405	5 zone	10-25 gpm	1.25" slip	1.00" slip
4406	6 zone	10-25 gpm	1.25" slip	1.00" slip

Specification

The valve top and body shall be constructed of high strength ABS plastic. The inlet shall be 1.25" slip and glue port for PVC pipe connection. The four outlet model shall be designed for 1.25" PVC outlet pipe and the six outlet model shall be for 1" PVC outlet pipe. The valve shall be Geoflow model HT4402, HT4403, HT4404, HT4405 or HT4406



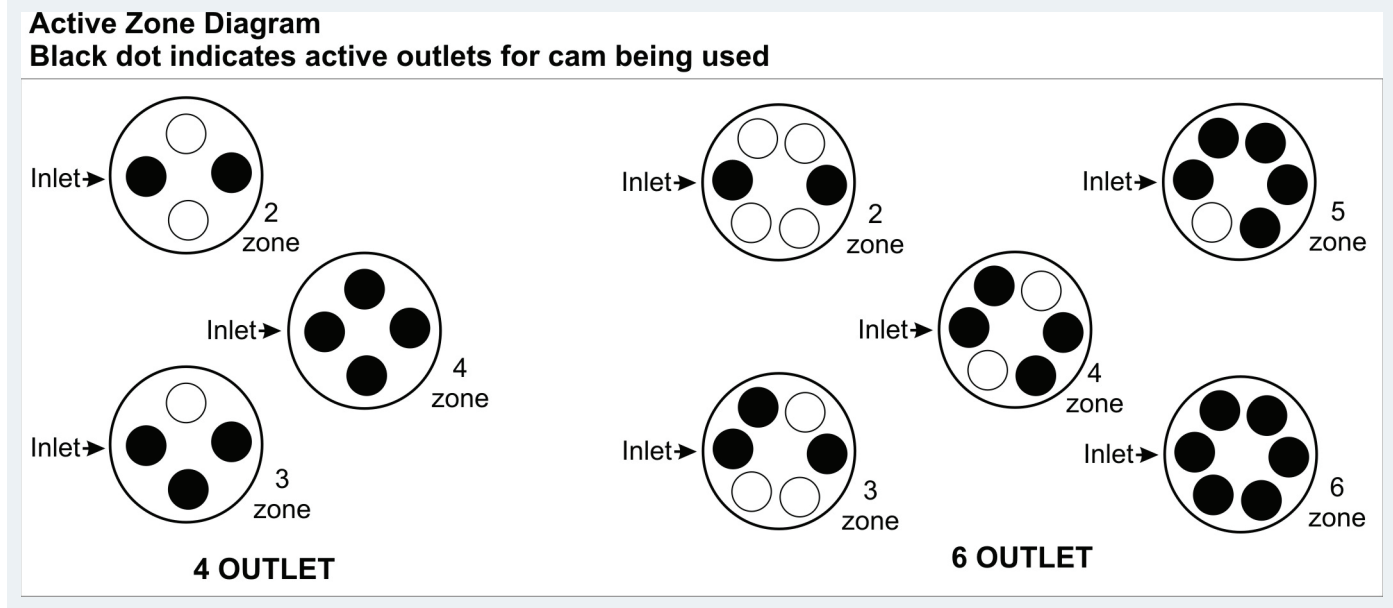
1. CAM - Used to index the valve to the next zone and controls how many outlets are to be used. May be changed to increase or decrease number of operating zones. Secured to valve top with two cam retaining screws.
2. VALVE TOP - A high strength ABS plastic top secured with seven valve top retaining screws.
3. VALVE BODY - A high strength ABS plastic housing.
4. INLET - Glue connection to 1.25" pipe
5. OUTLETS - 4 outlet model - 1.25" PVC pipe
6 outlet model - 1.00" PVC pipe

Pressure Losses

Part No.	No. of Zones	Flow rate							
		10 gpm		20 gpm		30 gpm		40 gpm	
		psi	ft.	psi	ft.	psi	ft.	psi	ft.
4402	2 zone	2.0	4.62	3.0	6.93	4.5	10.4	6.4	14.8
4403	3 zone	2.0	4.62	3.0	6.93	4.5	10.4	6.4	14.8
4404	4 zone	2.0	4.62	3.0	6.93	4.5	10.4	6.4	14.8
4405	5 zone	2.5	5.8	4.5	10.4	7.5	17.3	na	na
4406	6 zone	2.5	5.8	4.5	10.4	7.5	17.3	na	na

Installation

- Install an atmospheric Vacuum Breaker between the pump and the valve to releases any vacuum created between the pump and the valve on shutdown.
- For installation with large terrain elevations, or applications with high lift requirements the valve should be installed at the highest point in the system, or in non-freezing conditions check-valves should be installed near the valve in the elevated lines to prevent the back flow of water from the higher locations to the lower zones.
- In freezing climates install so the index valve will self drain. Insulate the valve.
- Back pressure should not exceed 2 ft. for reliable rotation, so a pressure relief vent or separate drain line may be required.
- When connecting the lines to the valve outlets, ensure that the correct cam is installed. Install lines to outlets corresponding to the numbers on the cam.
- Do NOT turn the valve upside down when gluing the inlet and outlet lines into the valve. Allow glue to dry for at least two hours before operating the valve. For best results use a multipurpose glue.
- To seal off the unused outlets, install a piece of PVC pipe at least 6 inches in length to the outlet and cap the pipe.



CAM Replacement instructions

- Replacement cams are available to increase or decrease the number of operating outlets on the 4000 Series Valve. **BE SURE YOU HAVE THE CORRECT REPLACEMENT CAM.** Except for the two zone cam, cams for the four outlet valves and the six outlet valves are NOT interchangeable. The correct bottom to be used is marked on the top of the cam.
- To remove cam, remove two cam retaining screws and pry up gently with screwdriver.
- To install a new cam, partially insert the cam into the valve top and rotate it counterclockwise while applying gentle downward pressure. This allows the upper lug on the stem in the valve to slip into the cam. The cam should slip into place easily. When installed correctly, the cam should slide down in place with NO tendency to spring back. Improper installation will cause the valve to jam and prevent the valve from advancing properly.
- **CAUTION** Cams for operation of fewer than the full number of outlets have one or more cam slots blocked. Because of this, it is important to make sure that the cam is lowered in the valve so that the lug on the stem in the valve is inserted into an open cam slot in the cam.

Cams

- 2 zone cam for 4 or 6 outlet valve
- 3 zone cam for 4 outlet valve
- 4 zone cam for 4 outlet valve
- 3 zone cam for 6 outlet valve
- 5 zone cam for 6 outlet valve
- 6 zone cam for 6 outlet valve

Cam retainer screw set
(2) (10-24 x 3/4 Phil Pan SS)

Valve Top retainer screw set
(7) (10 x 1 Phil Pan SS)

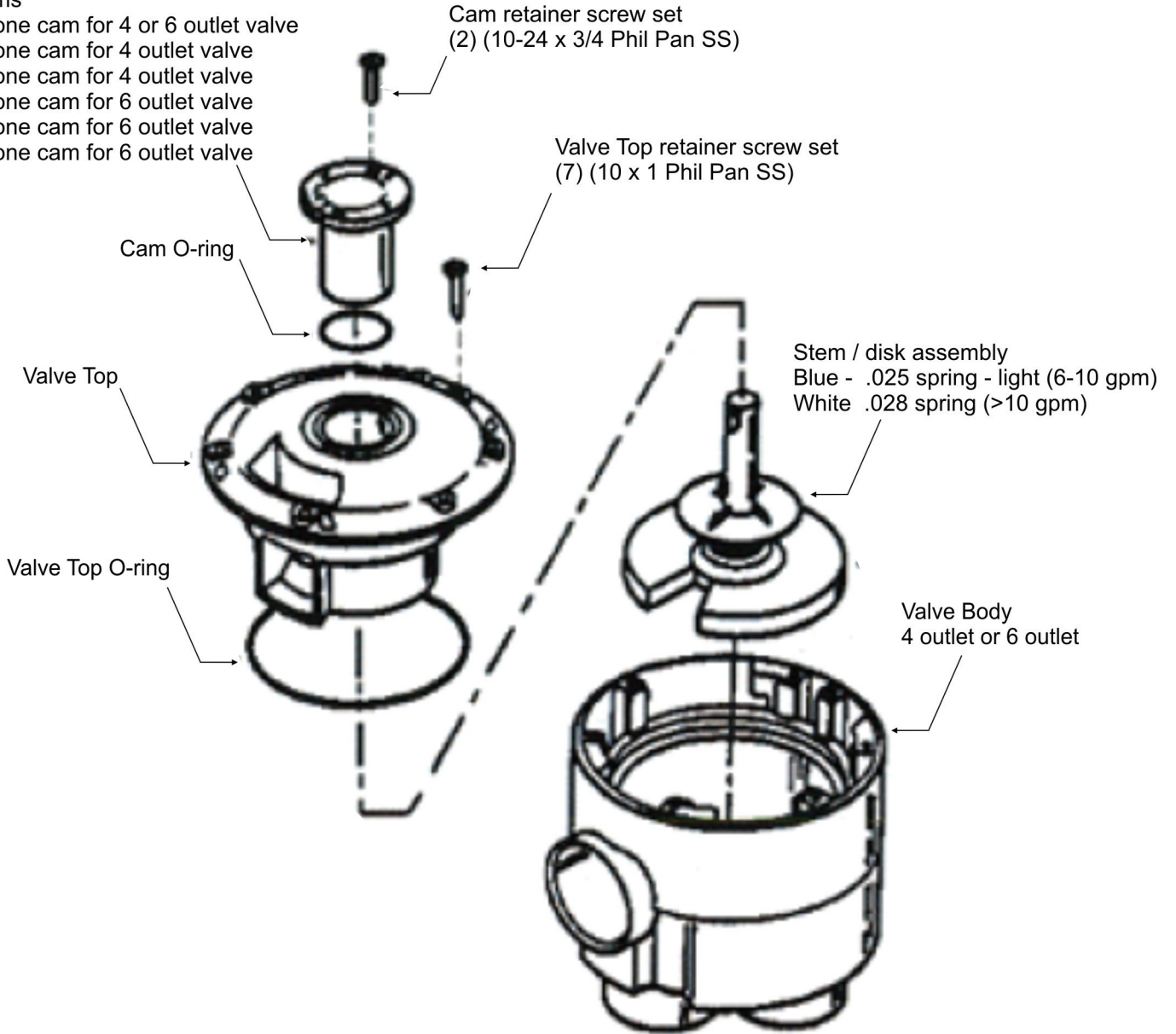
Cam O-ring

Stem / disk assembly
Blue - .025 spring - light (6-10 gpm)
White .028 spring (>10 gpm)

Valve Top

Valve Top O-ring

Valve Body
4 outlet or 6 outlet



Troubleshooting

1. PROBLEM: Valve Does Not Change or Cycle to Next Zone or Outlet

- CAUSE: The stem and disk assembly is not rotating when the water flow is turned OFF and then back ON.
 - a. Ensure there is no debris inside the cam. Clean and carefully reinstall the cam.
 - b. If fewer than the maximum number of outlets are being used, check the installation of the cam. Ensure that the stem and disk assembly is not being held down by an improperly installed cam. Refer to the Cam Replacement Instructions.
 - c. Remove the valve top and check for proper movement of stem and disk assembly. Check for and remove any debris or foreign objects that may jam or retard the movement of the disk.
 - d. Check for freedom of movement of stem and disk assembly up and down over the center pin in bottom of valve. Scale deposits may build up on the pin and hold stem and disk assembly down. Clean pin and again check for freedom of movement.
 - e. Be sure that all operating outlets are not capped and that the flow to operating zones is not restricted in any manner. This would cause pressure to build up in the valve and lock the stem and disk assembly in the down position.
 - f. The back flow of water from uphill lines may be preventing the valve from cycling properly. This can happen when the valve is placed too far below an elevated irrigation line. If the valve cannot be placed close to the high point of the system, a check valve should be installed near the valve in the outlet line that runs uphill from the valve.

2. PROBLEM: Water Comes Out of all the Valve Outlets

- CAUSE A: Stem and disk assembly not seating properly on valve outlet.
 - a. Check for sufficient water flow. A minimum of 10 GPM is required to properly seat the disk. For flows between 6-10 gpm a lighter (.025 blue) spring is available.
 - b. Remove the valve top and check the inside walls to ensure that nothing is interfering with the up and down movement of the stem and disk assembly inside the valve.
- CAUSE B: Insufficient pressure for disk to seat over valve outlet.
 - a. Check design for adequate pressure
 - b. Check for leaks that could reduce pressure.

3. PROBLEM: Valve Skips Outlets or Zones

- CAUSE: For a pump installation, the pump may be losing its prime, causing the water flow to surge. This will cause the valve to cycle quickly several times, skipping one or more zones. Verify that the flow to the valve is constant by removing the valve top and watch the flow when the pump is turned ON after having been OFF for at least 15 minutes. The flow should be steady and uninterrupted.
 - a. Seal any pump suction line leaks.
 - b. Replace or install suction line check valve to prevent pump from losing its prime.
- CAUSE: The stem and disk assembly is being advanced past the desired outlet.
 - a. Ensure that the correct cam for the desired number of zones is installed and that the outlet lines are installed

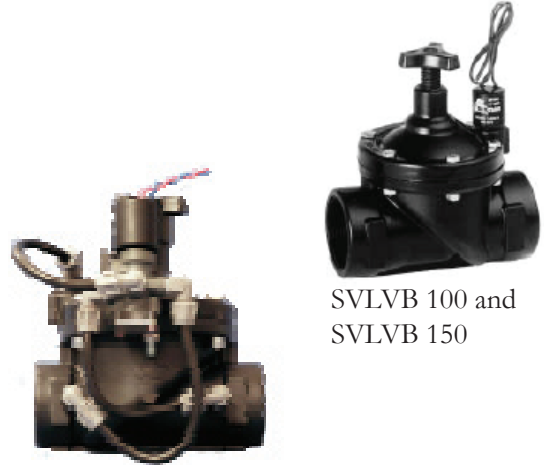
Description

The Solenoid Valve is used to flush field and filters and as zone valves. It is electrically operated. It is normally closed, and in the event of a power failure the valve will close.

Geoflow's automatic water control valves are designed for vertical or horizontal installation. The Wye 'Y' valve body design includes a full bore seat with unobstructed flow path, free of any in-line ribs, supporting cage, or shafts. Its unitized Flexible Super Travel (FST) diaphragm and guided plug provide a significantly 'look through' passage from end to end resulting in ultra-high flow capacity with minimal pressure loss.

The combination of a long travel guided valve plug, peripherally supported diaphragm, and replaceable valve seal provides:

- No chattering or slamming closed
- Accurate and stable regulation with smooth motion
- Low operating pressure requirements
- No diaphragm erosion and distortion
- Chemical resistant

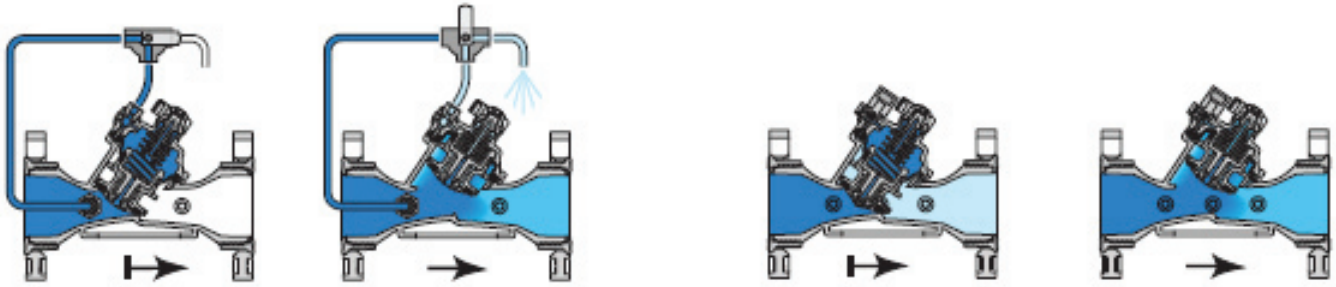


SVLVB200 and
SVLVB300

SVLVB100 and
SVLVB150

	SVLVB-100	SVLVB 150	SVLVB 200	SVLVB 300
Inlet/Outlet Size (FNPT)	1"	1.5"	2"	3"
Length (L)	4.3"	6.3"	9.0"	12.2"
Height (H)	4.5"	7.2"	7.4"	11.0"
Width (W)	3.0"	5.0"	5.4"	
R	7/8"	1-3/8"	1-5/8"	4.0"
Weight	12.5 oz	2.2 lbs.	2.97 lbs.	8.8 lbs
Valve pattern	Globe	Globe	Wye 'Y'	Wye 'Y'
Operating range	10 - 150 psi	10 - 150 psi	7 - 140 psi	7 - 140 psi
Max pressure	180 deg F	180 deg F	180 deg F	180 deg F
Materials				
Body & cover	Nylon reinforced	Nylon reinforced	Glass filled nylon	Glass filled nylon
Metal parts	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Diaphragm	Natural rubber	Natural rubber	NBR (Buna-N), nylon reinforced fabric	NBR (Buna-N), nylon reinforced fabric
Seals	NBR & NR	NBR & NR	NBR (Buna-N)	NBR (Buna-N)

On/Off Modes



3-Way Control

Line pressure applied to the control chamber of the valve creates a hydraulic force that moves the valve to the closed position and provides drip tight sealing. Discharging pressure from the control chamber to the atmosphere causes the line pressure under the plug to open the valve.

2-Way Internal Control

Line pressure enters the control chamber through the internal restriction. The closed solenoid causes pressure to accumulate in the control chamber, thereby shutting the valve. Opening the Solenoid releases more flow from the control chamber than the restriction can allow in. This causes pressure in the control chamber to drop, allowing the valve to open.

Installation

The manual bleed lever should always be in the VERTICAL position and the dial on top should be free spinning. Clockwise rotation closes valve.

Pressure Loss through valves (in psi)

Recommended minimum pressure differential: 7 psi

Electrical data:

Wiring requires a single lead from the controller to each solenoid valve, plus a common neutral to all solenoids. Type UF wire, UL listed, is recommended for all hookups.

Standard 24V ACV (50-60Hz)

Current Holding 0.24A 5.76 VA

Current Inrush 0.46A 11.04VA

Maximum allowable loss 4.8 Volts for the 24V AC system

Contact Geoflow for optional voltages or larger valves

Maximum Length of wire run – Controller to Valve

# Wire	Resistance Ohm / 1000'	Maximum Run
#18	6.39	800 Ft.
#16	4.02	1,275 Ft.
#14	2.58	2,000 Ft.
#12	1.62	3,200 Ft.
#10	1.02	5,100 Ft.
#8	0.641	8,000 Ft.
#6	0.403	12,750 Ft.
#4	0.253	20,500 Ft.
#2	0.158	32,500 Ft.

Maximum Voltage loss with a valve with a three way Solenoid is 4.8 Volts

[1] Cover Ring

The cover ring fastens valve cover to body, stiffening and strengthening the valve body, enabling simple maintenance. A cover ring key is available.

[2] Pilot Adaptor

The pilot adaptor allows us to connect the mini-pilot valve or the Galit hydraulic relay to the valve body.

[3] Valve Cover

The cover's strong construction meets rough service conditions. Optional cover types (3"; DN80 and smaller valves) are capable of accepting a Flow Stem, a Flow Stem + Position Indicator, and a 2-Way Solenoid (2W-N1 Electric Type).

[4] Auxiliary Closing Spring

One single high grade stainless steel spring provides a wide operation range, ensuring low opening pressure and secured closing.

[5] Plug Assembly

The unitized Flexible Super Travel (FST) plug assembly combines a long travel guided valve plug, peripherally supported diaphragm, and replaceable diaphragm and valve seal. The diaphragm fully meets the valve's operating pressure range requirements.

[5.1] Diaphragm Holder

[5.2] Diaphragm

[5.3] Plug

[5.4] Plug Seal

[6] hYflow 'Y' Valve Body

Glass-filled nylon construction meets rough service conditions with high chemical and cavitation resistance.

End-to-end "look-through" design and full bore seat with unobstructed flow path, free of any in-line ribs, supporting cage, or shafts, enables ultra-high flow capacity with minimal pressure loss.

[7] End Connections

Adaptable on-site to a wide range of end connection types and sizes:

[7.1] Flanges: Plastic or metal "Corona" with elongated slots enable

meeting diverse flange standards ISO, ANSI and JIS.

[7.2] Flange adaptor external thread

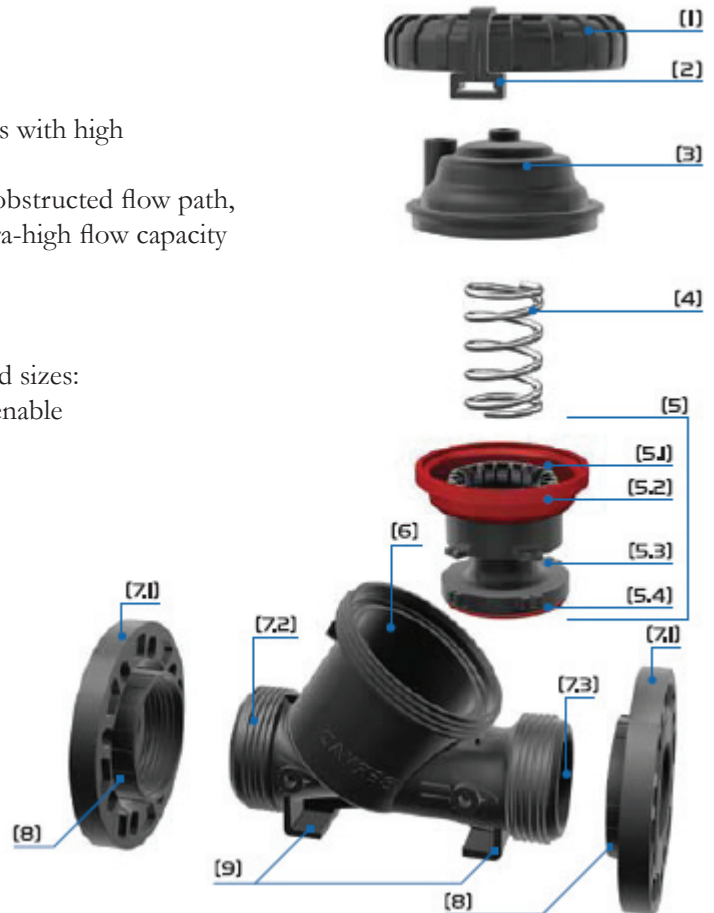
[7.3] Internal threads

[8] Flange Adapter

Articulated flange connections isolate the valve from line bending and pressure stresses.

[9] Valve Legs

Stabilize the valve and serve also as mounting brackets.



2-WIRE MOTORIZED BALL VALVE 1" STAINLESS BVLVACT100SS

Description:

The BVLVACT100SS can be wired to standard GEO control panels as an alternative to solenoid valves, because unlike most motorized ball valves, it has 2-wires that operate with a simple on off switch or output.

Unlike solenoid valves, motorized valves do not require minimum backpressure to stay open. The valve can be energized to open, and left hooked up, with negligible energy used once fully opened. To close, simply shutoff power to the valve. The 2 wire auto return model is perfect for situations where the valve needs to be closed in case of power loss. When on, it will remain open, when turned off (or when power is lost for any other reason) the valve automatically closes.



Specifications

Valve Material : SS304

Ball Seat : PTFE

Seal : EPDM

Operating Time : 6-8 Seconds

Working Voltage : 9-24V AC/DC

Max Power : 5 W

Max Torque : 6 N m

Max Pressure : 145 psi / 10 Bar

Temperature Range for Flow Medium : 0°C to 100°C

Ambient Temperature Range : -5°C to 40°C

Enclosure Rating : IP65

Life Expectancy : 80,000 to 100,000 Cycles

Bore Type : Full

Thread Type : 1inch NPT

Wiring Type : 2 Wire Auto Return

This model opens and closes in 6-8 seconds, and remains in its new position while expending almost no energy.

