

## Brass Valves - 2-Way Electric VB Series

### Description

The VB series electric solenoid valves are a complete family of proven, high quality brass valves, in a variety of specialized configurations. Buckner brass valves feature an innovative metering design to keep the valve working and the maintenance to a minimum.

### Application

VB series brass valves are ideal for use on dirty-water systems with fine particles that may clog valves with filters or screens. They are corrosion-resistant, and perform well in effluent and dirty-water applications.

### Features

- Available in 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2" and 3" sizes.
- Slow, smooth opening and closing speeds reduce water hammer and extend life.
- Operational bleed water is metered through innovative flow passages.
- High strength, molded Buna-N diaphragm reinforced with mesh nylon has a 600 lb. burst test rating.
- Brass cross handle (use with TMVK valve key).
- Both internal and external manual bleed.
- Easier service with stainless steel hex head bolts.
- Corrosion-free operation with water proof solenoid.
- Normally closed reverse flow design, 3/4" - 2"
- Normally closed, forward flow on 2 1/2" & 3"
- Efficient design provides low friction loss performance.
- Optional heavy duty (HD) and 120 VAC (HV) solenoids.
- Optional British Standard Pipe Threaded version available (BS).
- Five-year warranty.



VB15  
1 1/2" Brass two-way electric valve

Operating Ranges		
Flow	5 - 500 gpm	1.13 - 113.6m <sup>3</sup> /h
Pressure	20 - 200 psi	1.4 - 13.8 Bars
Valve Closing Speed	0.9 -02.0 sec @	0.9 -02.0 sec @
	50 - 100 psi	3.4 - 6.8 Bars

Solenoid Ratings
<b>Comes standard with SLND1 or 620018 solenoid:</b>
5.8 VA holding (0.24 A at 24 VAC, 60 Hz)
6.9 VA holding (0.29 A at 24 VAC, 50 Hz)
DC Resistance - 27 Ohms (SLND1) 19 Ohms (620018)
Min./ Max. Voltage - 20/30 VAC

<b>HD option comes with 515013 solenoid</b>
7.5 VA holding (0.32 A at 24 VAC, 60 Hz)
9.0 VA holding (0.38 A at 24 VAC, 50 Hz)
Coil Resistance (DC) - 18.8 Ohms
Min./ Max. voltage - 20/30 VAC

<b>HV option comes with 620022 solenoid</b>
9 VA holding (75 mA at 120 VAC, 60 Hz)
DC Resistance - 525 Ohms
Min./ Max. voltage - 105/125 VAC
Conduit adapter - 1/2" Female NPT

### To Specify:

V	B	25	HD	BS
Valve	Brass	Size	Option	Option

Model Descriptions				
Model No.	Description	Dimensions (Inches)		
		Height	Width	Length
VB07	3/4" NPT two-way brass valve, with flow control	5 1/4	2 1/2	4
VB10	1" NPT two-way brass valve, with flow control	5 1/4	2 1/2	4 1/4
VB12	1 1/4" NPT two-way brass valve, with flow control	5 1/4	2 3/4	4 7/8
VB15	1 1/2" NPT two-way brass valve, with flow control	6	3 3/4	5
VB20	2" NPT two-way brass valve, with flow control	6 1/2	5	6
VB25	2 1/2" NPT two-way brass valve, with flow control	11 5/8	7 5/8	10
VB30	3" NPT two-way brass valve, with flow control	11 5/8	7 5/8	10
OPTIONS	For BSPT, add (BS) to model number. For 120 VAC-50/60 Hz add (HV) to model number For heavy duty 24 VAC-50/60 Hz add (HD) to model number			

## Specifications

The valve shall be globe pattern, normally closed, electric solenoid actuated, and diaphragm-operated. The valve shall use the reverse flow principle, equally pressurizing the top and bottom of the diaphragm assembly when deactivated, on 3/4" through 2" only.

The valve body and bonnet shall be constructed of cast red brass. All functional internal parts shall be of the highest grade, non-corrosive material (no yellow brass). The valve shall incorporate an armature lifting lever for manual operation via internal bleed. The valve shall also have a manual external bleed. The diaphragm shall be one-piece molded, and with a burst test strength of 600 psi. The valve shall incorporate a stainless steel flow control stem.

The valve shall operate between \_\_\_\_\_ and \_\_\_\_\_ psi through a flow range of \_\_\_\_\_ to \_\_\_\_\_ gpm.

The valve shall be Model No. \_\_\_\_\_.

## VB 2-Way Electric Valve Performance Tables

Pressure Loss in PSI			
GPM	VB07	VB10	VB12
5	3.6	3.3	
10	4.6	4.5	0.3
15	4.8	4.7	0.7
20	5.2	5.0	1.2
25	6.6	5.8	1.7
30	8.9	7.7	2.5
35	10.0	9.6	2.8
40		12.6	3.8
45		16.3	5.1
50			6.5
55			7.6
60			8.8
70			9.7

Pressure Loss in Bars				Metric
m3/hr	VB07	VB10	VB12	
1.13	0.24	0.22		
2.25	0.31	0.31	0.02	
3.38	0.33	0.32	0.05	
4.50	0.35	0.34	0.08	
5.63	0.45	0.39	0.12	
6.75	0.61	0.52	0.17	
7.88	0.68	0.65	0.19	
9.00		0.86	0.26	
10.13		1.11	0.35	
11.25			0.44	
12.38			0.52	
13.50			0.60	
15.75			0.66	

Pressure Loss in P: kPa				Metric
l/hr	VB07	VB10	VB12	
19.0	24.8	22.7		
38.0	31.6	30.9	2.1	
57.0	33.0	32.3	4.8	
76.0	35.8	34.4	8.3	
95.0	45.4	39.9	11.7	
114.0	61.2	52.9	17.2	
133.0	68.8	66.0	19.3	
152.0		86.6	26.1	
171.0		112.1	35.1	
190.0			44.7	
209.0			52.3	
228.0			60.5	
266.0			66.7	

Pressure Loss in PSI				
GPM	VB15	VB20	VB25	VB30
50	3.0			
60	3.7			
70	5.1	3.0		
80	7.6	3.4		
90	10.2	4.2		
100	13.0	4.8		
120		6.7		
140		7.2		
160		9.9	4.8	
180		13.7	5.9	
200		17.1	7.0	3.1
300			17.0	6.5
375				8.9

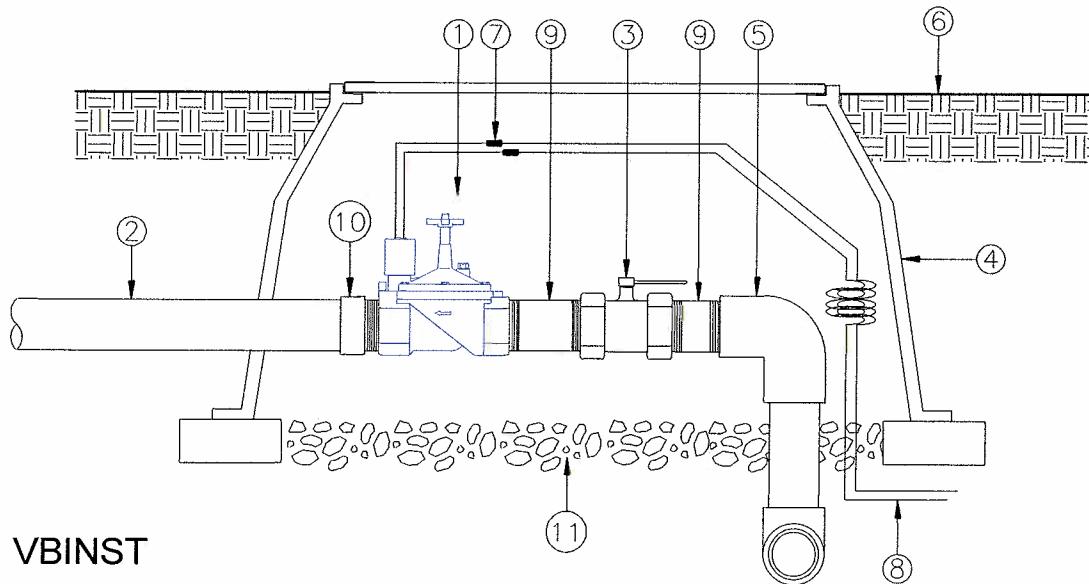
Pressure Loss in Bars					Metric
m3/hr	VB15	VB20	VB25	VB30	
11.25	0.20				
13.50	0.25				
15.75	0.35	0.20			
18.00	0.52	0.23			
20.25	0.69	0.29			
22.50	0.88	0.33			
27.00		0.46			
31.50		0.49			
36.00		0.67	0.33		
40.50		0.93	0.40		
45.00		1.16	0.48	0.21	
67.50			1.16	0.44	
84.38				0.61	

Pressure Loss in kPa					Metric
l/hr	VB15	VB20	VB25	VB30	
190.0	20.6				
228.0	25.4				
266.0	35.1	20.6			
304.0	52.3	23.4			
342.0	70.1	28.9			
380.0	89.4	33.0			
456.0		46.1			
532.0		49.5			
608.0		68.1	33.0		
684.0		94.2	40.6		
760.0		117.6	48.1	21.3	
1140.0			116.9	44.7	
1425.0				61.2	

## Installation

Note direction of flow (arrow on valve body). The only acceptable sealant is Teflon™ tape. Never use paste near valves. Make all electrical connections with watertight connectors. Check local codes.

Note: All irrigation systems should be properly filtered to eliminate contaminants. These valves are designed to pass the fine contaminants that get into any port. Chemical pollutants may also be hazardous to valve life and operation. Be sure to determine the fitness of any product for its application.



### 2-Way Electric, Brass Valve VB Series Installation Detail

1. Buckner VP series valve Model # \_\_\_\_\_
2. Lateral line piping
3. Shut-off valve
4. Valve box
5. PVC Schedule 40 S x T ell
6. Finish grade
7. Waterproof wire connectors
8. PVC Common and control wires to controller location
9. \_\_\_\_\_ PVC schedule 80 nipple (\_\_\_\_\_ min. length)
10. PVC male adapter
11. Pea Gravel - 12" deep

NOTE: Teflon™ tape all threaded joints