



Brass Valves - 3-Way Electric VBDW Series

Description

The VBDW series dirty-water valve features an innovative 3-way solenoid that permits the valve to open fully under most flow conditions. It is made of high quality cast brass and stainless steel for long wear and cost effectiveness. All internal valve components are accessible through the top of the valve for easy maintenance.

Application

Especially suited for commercial, industrial or golf course use. This valve may be used either as a remote control valve or a mainline master control valve.

Features

- Available in 3/4", 1", 1 1/4", 1 1/2" and 2" sizes.
- Non-continuous flow through solenoid and valve orifices minimizes clogging.
- Moisture and electrical surge resistant direct burial solenoid.
- High strength, molded Buna-N diaphragm reinforced with mesh nylon has a 600 lb. Burst test rating.
- Slow closing and opening speeds extend diaphragm assembly life.
- Accessibility to all internal components through top of valve makes servicing easy.
- Low friction loss design provides more water-efficient service.
- Normally closed reverse flow design.
- Brass cross handle.
- Optional 120 VAC - 50/60 Hz high voltage solenoid (HV).
- Manual operation with each solenoid.
- Optional British Standard Pipe Threaded version available (BS).
- Five-year warranty.



VBDW15
1 1/2" Dirty-Water Valve

Operating Ranges		
Flow	0 - 190 gpm	0 - 43.2 m ³ /h
Pressure	10 - 200 psi	70 - 13.8 Bars
Valve Closing Speed	0.4 - 3.4 sec @	0.4 - 3.4 sec @
	50 - 100 psi	3.4 - 6.8 Bars

Solenoid Ratings
Comes standard with 980067 solenoid:
8.5 VA holding (0.35 A at 24 VAC, 60 Hz)
10.2 VA holding (0.42 A at 24 VAC, 50 Hz)
DC Resistance - 18.8
Min./ Max. Voltage - 20/30 VAC

Solenoid Ratings
HV option comes with 515009 solenoid:
8.5 VA holding (0.08 A at 110 VAC, 60 Hz)
10.2 VA holding (0.09 A at 110 VAC, 50 Hz)
DC Resistance - 347 Ohms
Min./ Max. Voltage - 108/120 VAC
Conduit hole - 1/2"

To Specify:

V	B	DW	15	HV
Valve	Brass	Dirty Water	Size	Option

Model Descriptions				
Model No.	Description	Dimensions (Inches)		
		Height	Width	Length
VBDW07	3/4" NPT, brass dirty water solenoid valve w/FC	4 1/2	2 1/2	4
VBDW10	1" NPT, brass dirty water solenoid valve w/FC	4 3/4	2 1/2	4 1/4
VBDW12	1 1/4" NPT, brass dirty water solenoid valve w/FC	5 1/4	2 3/4	4 7/8
VBDW15	1 1/2" NPT, brass dirty water solenoid valve w/FC	6	3 1/2	5
VBDW20	2" NPT, brass dirty water solenoid valve w/FC	6 3/4	5	6
OPTIONS	For BSPT add (BS) to model number For 120 VAC-50/60 Hz add (HV) to model number			

Specifications

The valve shall be brass, normally closed, globe type electric solenoid actuated by a 3-way solenoid to minimize flow through small orifices. The solenoid shall incorporate a device for manual operation. The valve solenoid, when energized electrically or manually, shall bleed water to atmosphere. The bleeding shall continue until the valve is fully open. Upon reaching full open condition, the bleeding shall cease. The valve shall also have non-continuous bleeding when operated in the manual mode.

The valve body shall be constructed of cast red brass and a stainless steel flow control stem. The diaphragm shall be molded laminar Buna-N rubber and sheet nylon construction, with stainless steel back-up plates. Bonnet/body bolts shall be stainless steel.

The valve shall be completely serviceable without removal from the pipe line. All internal parts shall be removable through the top of the valve by removing the valve bonnet assembly. There shall be no external tubing required to operate the valve.

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

The valve shall be Model No. _____.

VBDW 3-Way Electric Valve Performance Tables

Pressure Loss in PSI			
GPM	VBDW07	VBDW10	VBDW12
5	0.5	0.4	0.2
10	1.1	1.0	0.4
15	2.4	2.0	0.8
20	4.3	3.4	1.1
25	7.0	5.0	1.8
30	10.9	7.3	2.5
35	14.3	10.0	3.2
40	18.7	12.9	4.3
45		16.2	5.4
50		20.5	6.7
55			7.9
60			9.5
65			11.2
70			13.0
75			14.9
80			17.1

Pressure Loss in Bars				Metric
m ³ /hr	VBDW07	VBDW10	VBDW12	
1.13	0.03	0.03	0.01	
2.25	0.07	0.07	0.03	
3.38	0.16	0.14	0.05	
4.50	0.29	0.23	0.07	
5.63	0.48	0.34	0.12	
6.75	0.74	0.50	0.17	
7.88	0.97	0.68	0.22	
9.00	1.27	0.88	0.29	
10.13		1.10	0.37	
11.25		1.39	0.46	
12.38			0.54	
13.50			0.65	
14.63			0.76	
15.75			0.88	
16.88			1.01	
18.00			1.16	

Pressure Loss in kPa				Metric
l/hr	VBDW07	VBDW10	VBDW12	
19.0	3.4	2.8	1.4	
38.0	7.6	6.9	2.8	
57.0	16.5	13.8	5.5	
76.0	29.6	23.4	7.6	
95.0	48.1	34.4	12.4	
114.0	74.9	50.2	17.2	
133.0	98.3	68.8	22.0	
152.0	128.6	88.7	29.6	
171.0		111.4	37.1	
190.0		140.9	46.1	
209.0			54.3	
228.0			65.3	
247.0			77.0	
266.0			89.4	
285.0			102.4	
304.0			117.6	

Pressure Loss in PSI		
GPM	VBDW15	VB20
5	0.0	0.0
10	0.2	0.0
20	0.6	0.3
30	1.2	0.6
40	2.0	0.9
50	3.0	1.4
60	4.0	1.9
70	5.8	2.5
80	7.5	3.2
90	9.6	4.2
100	11.6	5.1
110	14.0	6.2
120	16.8	7.3
130	20.0	8.6
140		9.9
150		11.2
160		12.9
170		14.8
180		16.5
190		19.0

Pressure Loss in kPa - Metric		
m ³ /hr	VBDW15	VBDW20
19.0	0.0	0.0
38.0	1.4	0.0
76.0	4.1	2.1
114.0	8.3	4.1
152.0	13.8	6.2
190.0	20.6	9.6
228.0	27.5	13.1
266.0	39.9	17.2
304.0	51.6	22.0
342.0	66.0	28.9
380.0	79.8	35.1
418.0	96.3	42.6
456.0	115.5	50.2
494.0	137.5	59.1
532.0		68.1
570.0		77.0
608.0		88.7
646.0		101.8
684.0		113.4
722.0		130.6

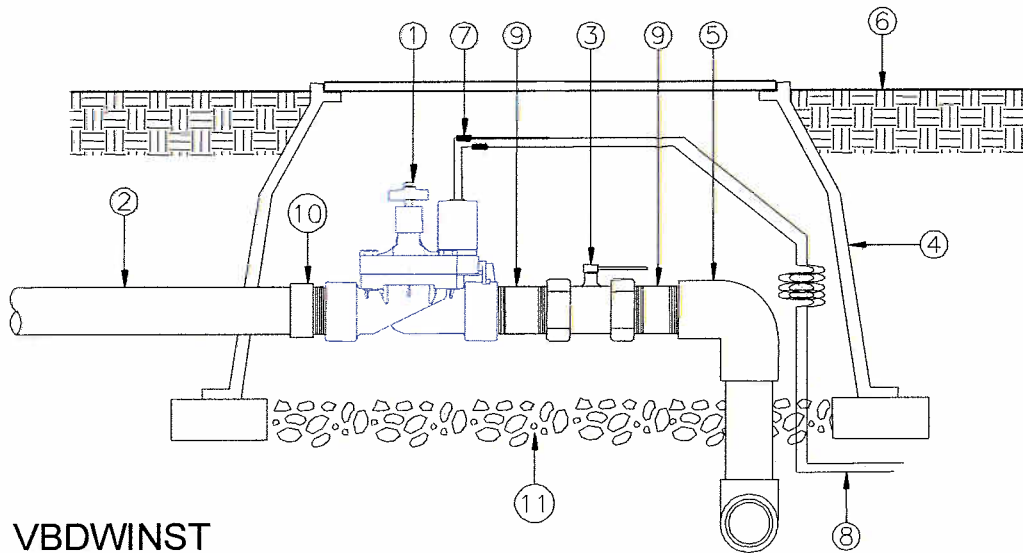
Pressure Loss in Bars - Metric		
l/hr	VBDW15	VBDW20
1.13	0.00	0.00
2.25	0.01	0.00
4.50	0.04	0.02
6.75	0.08	0.04
9.00	0.14	0.06
11.25	0.20	0.10
13.50	0.27	0.13
15.75	0.39	0.17
18.00	0.51	0.22
20.25	0.65	0.29
22.50	0.79	0.35
24.75	0.95	0.42
27.00	1.14	0.50
29.25	1.36	0.58
31.50		0.67
33.75		0.76
36.00		0.88
38.25		1.01
40.50		1.12

Installation

Install the valves as shown in the installation detail. The only acceptable sealant shall be Teflon™ tape or Teflon™ paste.

Make electrical solenoid connections with watertight connectors. Care should be taken during installation to prevent dirt and debris from entering the irrigation system; flush system prior to final installation of valves and again prior to final sprinklers, nozzles and other emitter installation.

Note: All irrigation systems should be properly filtered to eliminate contaminants. Chemical pollutants may also be hazardous to valve life and operation. Be sure to determine the fitness of any product for its application.



3-Way Electric, Brass Valve VBDW Series Installation Detail

1. Buckner VBDW 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