



Honeywell

DESCRIPTION

The VBN2 and VBN3 Series are Honeywell's characterized flow, low torque, two- and three-way ball valves. They are designed to provide Cv ratings that closely match industry standard globe valves and they have equal percentage flow characteristics. A single-style bracket maximizes simplicity and flexibility in mounting spring or non-spring return actuators. The valve bodies are 1/2" to 3" NPT sizes and use low torque, low cost actuators.

FEATURES

- Parabolic flow insert constructed into the ball
- Cv ratings similar to globe valves
- Three-way body pattern similar to globe valves
- Low torque means smaller, lower cost actuators
- Common mounting bracket
- Removable manual override handle
- Flexible bracket orientation
- Plenum rated
- Available with or without actuator
- Nema 3R option available



VBN2, VBN3 Series

3

CONTROL VALVES

SPECIFICATIONS			
Size	1/2" to 3" FNPT (three-way to 2-1/2")	Media Compatibility	Hot or chilled water, up to 50% glycol
Cv Range	0.38 to 266	Media Temperature Range	-22° to 250°F (-30° to 121°C)
Body Pattern	Two-way and three-way (mixing or diverting)	Compatible Actuators	Any Honeywell or Kele 44 in-lb non-spring return or spring return actuator will operate all VBN2, VBN3 assemblies up to 3"
Flow Characteristic		Pressure Rating	360 psig (2482 kPa) @ 250°F (121°C)
Two-way	Equal percentage for models with parabolic insert, linear for full port models	Operating Temperature with KA/MN actuators	-5° to 140°F (-20° to 60°C)
Three-way	Equal percentage ports A-to-AB and linear ports B-to-AB	with KAS/MS actuators	-40° to 150°F (-40° to 65°C)
Leakage Rating	ANSI Class IV (0.01% of Cv)	with MVN actuators	-4° to 131°F (-20° to 55°C)
Maximum Closeoff Pressure		Warranty	5 years
Two-way	Two-way 1/2" and 3/4": 130 psid (897 kPa)		
Three-way	1" to 3": 100 psid (690 kPa)		
Three-way	1/2" to 1": 50 psid (345 kPa)		
Three-way	1-1/4" to 2-1/2": 40 psid (276 kPa)		
Materials Of Construction	Forged brass body (ASTM B283), nickel-plated brass (or stainless steel) ball and stem, EPDM o-ring stem seals and EPDM with reinforced Teflon® ball seals		



CONTROL VALVES

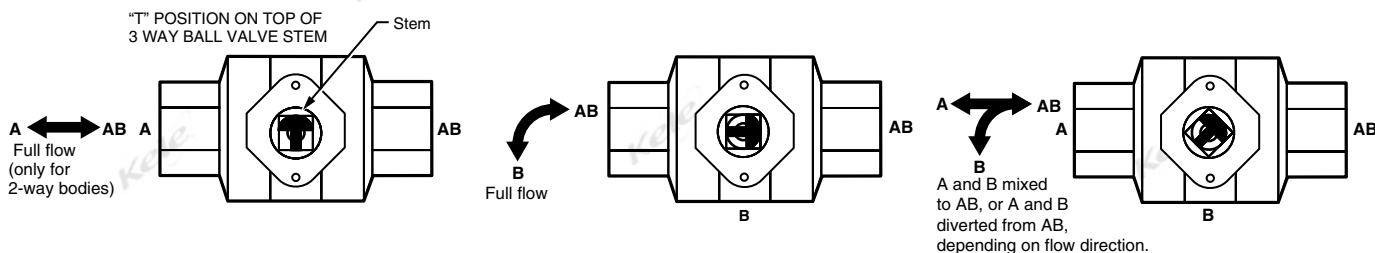
BALL VALVES

VBN2, VBN3 SERIES

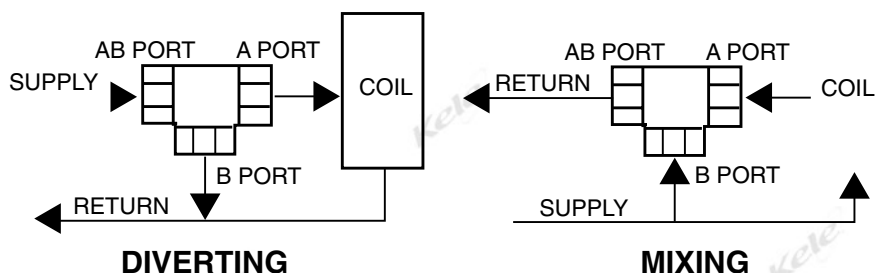
3

CONTROL VALVES

ORIENTATION OF BALL IN VALVE



FLOW ORIENTATION



Three-way ball valve flow for orientation (not to scale).

RANGEABILITY

Rangeability is a measure of a valve's controllability. It is a measured property and is expressed as the ratio of a valve's maximum flow rate to its minimum controllable flow rate.

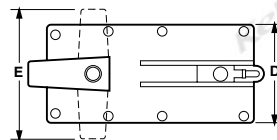
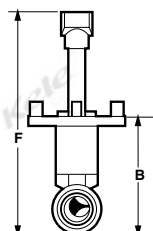
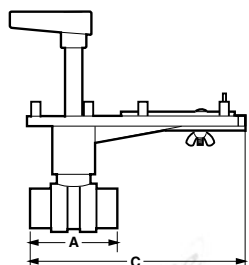
2-WAY AVAILABLE CV AND RANGEABILITY

VBN2A	CV	0.38	0.68	1.30	2.00	2.30	4.70	8.00	11.70	
	Rangeability	17	41	52	*	321	159	390	251	
VBN2B	CV	0.31	0.63	1.20	2.50	4.30	7.40	10.10	14.70	29.00
	Rangeability	17	41	52	321	159	*	390	251	1503
VBN2C	CV	4.40	9.00	15.30	26.00	44.00	54.00			
	Rangeability	159	390	1040	484	1263	1207			
VBN2D	CV	4.40	8.30	14.90	25.00	37.00	41.00	102.00		
	Rangeability	159	390	1040	*	484	1207	1263		
VBN2E	CV	23.00	30.00	41.00	74.00	172.00				
	Rangeability	484	*	603	1263	558				
VBN2F	CV	42.00	57.00	71.00	100.00	108.00	210.00	266.00		
	Rangeability	603	*	287	*	558	750	877		
VBN2G	Cv	45.00	55.00	72.00	101.00	162.00	202.00			
	Rangeability	250	*	287	558	750	877			
VBN2H	Cv	49.00	63.00	82.00	124.00	145.00				
	Rangeability	250	287	558	750	877				

* Data not available

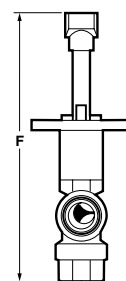
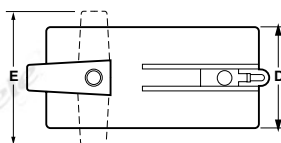
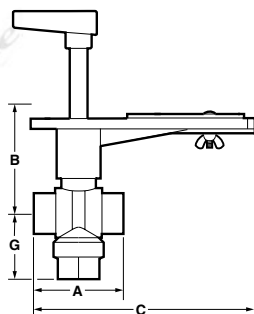


DIMENSIONS



Pipe Size	Model No.	Cv	Dimensions inches (mm)						Weight lb (kg)
			A	B	C	D	E	F	
1/2"	VBN2A	0.38, 0.68, 1.3, 2.0, 2.6, 4.7, 11.7	2-3/8 (60)	3-7/16 (87)	6-5/8 (168)	3 (76)	4 (102)	8-1/8 (206)	1 (0.5)
		8.0	2-5/8 (67)	3-11/16 (94)	6-1/2 (165)	3 (76)	4 (102)	8-5/16 (211)	1 (0.5)
3/4"	VBN2B	0.31, 0.63, 1.2, 2.5, 4.3, 7.4, 14.7	2-3/8 (60)	3-7/16 (87)	6-7/16 (164)	3 (76)	4 (102)	8-1/8 (206)	1 (0.5)
		10.1, 29	2-5/8 (67)	3-11/16 (94)	6-1/2 (165)	3 (76)	4 (102)	8-5/16 (211)	1 (0.5)
1"	VBN2C	9.0	3-3/4 (95)	3-11/16 (94)	7-1/16 (179)	3 (76)	4 (102)	8-5/16 (211)	1 (0.5)
		4.4, 15.3, 54	3 (76)	3-15/16 (100)	6-3/4 (171)	3 (76)	4 (102)	8-11/16 (221)	1.4 (0.6)
		26, 44	4-3/8 (111)	4-7/16 (113)	7-3/8 (187)	3 (76)	4 (102)	8-7/8 (225)	2.4 (1.1)
1-1/4"	VBN2D	4.4, 8.3, 14.9, 25, 41	3 (76)	3-15/16 (100)	6-11/16 (170)	3 (76)	4 (102)	8-11/16 (221)	1.4 (0.6)
		37, 102	3-5/8 (92)	4-7/16 (113)	7 (178)	3 (76)	4 (102)	9-1/16 (231)	2.4 (1.1)
1-1/2"	VBN2E	23, 30, 74	3-3/8 (86)	3-15/16 (100)	6-15/16 (176)	3 (76)	4 (102)	9-1/16 (231)	2.4 (1.1)
		41, 172	3-3/4 (95)	5-3/16 (132)	7-1/16 (179)	3 (76)	4 (102)	8-7/8 (225)	3.2 (1.5)
2"	VBN2F	42, 108	4 (102)	5-3/16 (132)	7-3/16 (183)	3 (76)	4 (102)	8-7/8 (225)	3.2 (1.5)
		57, 71, 100, 210, 266	4-3/8 (111)	5-3/4 (146)	7-7/16 (189)	3 (76)	4 (102)	10-1/2 (267)	5 (2.3)
2-1/2"	VBN2G	45, 55, 72, 101, 162, 202	4-3/4 (121)	5-3/4 (146)	7-9/16 (192)	3 (76)	4 (102)	10-1/2 (267)	5.5 (2.5)
3"	VBN2H	49, 63, 82, 124, 145	5 (127)	5-7/8 (149)	7-11/16 (195)	3 (76)	4 (102)	10-11/16 (271)	5.9 (2.7)

VBN2 dimensions in inches (millimeters)



Pipe Size	Model No.	Cv	Dimensions inches (mm)						Weight lb (kg)
			A	B	C	D	E	F	
1/2"	VBN3A	0.33, 0.59, 1.0, 2.4, 4.3, 8.0	3-1/2 (90)	3-5/16 (84)	7 (178)	3 (76)	4 (102)	9-3/8 (238)	2.4 (1.1)
3/4"	VBN3B	0.40, 0.66, 1.3, 2.4, 3.8, 7.0, 11.0	2-13/16 (71)	3-5/16 (84)	6-1/2 (168)	3 (76)	4 (102)	8-13/16 (224)	2 (0.9)
1"	VBN3C	0.40, 0.65, 1.3, 2.3, 3.5	3-13/16 (97)	3-5/16 (84)	7-5/16 (186)	3 (76)	4 (102)	9-1/2 (241)	2.8 (1.3)
		8.6, 22	3 (76)	3-13/16	6-13/16 (173)	3 (76)	4 (102)	9-13/16 (249)	2.6 (1.2)
		4.5, 14.9, 31	4-1/2 (114)	4 (102)	7-13/16 (198)	3 (76)	4 (102)	10-13/16 (275)	3.3 (1.5)
1-1/4"	VBN3D	4.1, 8.7, 19.0	3 (76)	3-13/16	6-13/16 (173)	3 (76)	4 (102)	9-13/16 (249)	2.5 (1.1)
		12.7, 27, 34	3-5/8 (92)	4 (102)	7-5/16 (186)	3 (76)	4 (102)	10-5/16 (262)	2.8 (1.3)
1-1/2"	VBN3E	4.0, 8.3, 13.4, 32	4-1/2 (114)	4 (102)	7-13/16 (198)	3 (76)	4 (102)	10-13/16 (275)	3.3 (1.5)
		24, 61	4 (102)	4-1/2 (114)	7-5/16 (186)	3 (76)	4 (102)	11 (279)	3.3 (1.5)
2"	VBN3F	24, 38, 57	4 (102)	4-1/2 (114)	7-5/16 (186)	3 (76)	4 (102)	11 (279)	3.3 (1.5)
		83, 109	5 (127)	5-13/16	7-13/16 (198)	3 (76)	4 (102)	12-5/16 (313)	3.8 (1.7)
2-1/2"	VBN3G	38, 74, 100	5 (127)	5-13/16	7-13/16 (198)	3 (76)	4 (102)	12-5/16 (313)	3.8 (1.7)

VBN3 dimensions in inches (millimeters)



CONTROL VALVES

BALL VALVES

VBN2, VBN3 SERIES

3

CONTROL VALVES

TABLE 1: VBN2 2-WAY VALVE CV CODE SELECTION CHART

Ordering Code	Valve Size							
	Cv							
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
B	0.38	0.31						
D	0.68	0.63						
E	1.3	1.2						
F	2.0							
G	2.6	2.5						
H	4.7	4.3	4.4	4.4				
J	8.0	7.4	9.0	8.3				
K	11.7*	10.1		14.9				
L		14.7*	15.3	25.0	23.0			
M		29.0*	26.0	37.0	30.0			
N			44.0*	41.0*	41.0	42.0	45.0	49.0
P			54.0*			57.0	55.0	63.0
R					74.0	71.0	72.0	82.0
S				102.0*		100.0	101.0	
T						108.0*		124.0
U							162.0	145.0*
1					172.0*	210.0	202.0*	
2						266.0*		

* Denotes Full port

TABLE 2: VBN3 3-WAY VALVE CV CODE SELECTION CHART

Ordering Code	Valve Size						
	Cv						
	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"
B	0.33						
C	0.59	0.4	0.4				
D		0.66	0.65				
E	1.0	1.3	1.3				
F	2.4	2.4	2.3				
G		3.8	3.5				
H	4.3		4.5	4.1	4.0		
J	8.0	7.0	8.6	8.7	8.3		
K		11.0*	14.9	12.7	13.4		
L			22.0	19.0*	24.0	24.0	
M			31.0	27.0	32.0*		
N				34.0*		38.0	38.0
P					61.0	57.0	
R						83.0	74.0
S							100.0*
T						109.0	

* Denotes Full port valve

CONTROL VALVES

BALL VALVES VBN2, VBN3 SERIES



3

CONTROL VALVES

ORDERING INFORMATION, VALVE BODY WITH ACTUATOR

MODEL	
VBN	VB Series Ball Valve with Female NPT threaded connections
CONFIGURATION	
2	2-Way
3	3-Way
CONNECTION SIZE	
A	1/2"
B	3/4"
C	1"
D	1-1/4"
E	1-1/2"
F	2"
G	2-1/2"
H	3" (2-Way valves only)
CODE for Cv SELECTION	
x	See Tables 1 and 2 for the Ordering Code to place here
3 ANSI 300 VALVE CONSTRUCTION	
P	Nickel chrome plate brass
S	316 stainless steel
ENCLOSURE	
A	MVN standard (1/2", 3/4", 1" and 1-1/4" valves)
L	MVN low profile (1/2", 3/4", 1" and 1-1/4" valves only)**
X	MN or MS
ACTUATOR	
0	No actuator (valve body only)
1	MVN613 On/Off or floating (90 second timing), Non-spring return
2	MVN643 On/Off or floating (30 second timing), Non-spring return
3	MVN713 Modulating, Non-spring return
4	MN6105A1011-Direct Coupled Actuator (DCA), floating On/Off (SPDT), Non-spring return
5	MN7505A2001-Direct Coupled Actuator (DCA), floating, modulation, On/Off (SPDT), Non-spring return
6	MS7505A2030- Direct Coupled Actuator (DCA), floating, modulation, On/Off (SPDT), Spring return
7	MS8105A1030- Direct Coupled Actuator (DCA), 2-Position (SPST), Spring return
FAIL SAFE POSITION	
0	Fail in place or No Actuator - Non-spring return actuators only
1	Fail safe open - Spring return actuators only
2	Fail safe closed - Spring return actuators only
3	Fail A to AB Open - Spring return actuators only
4	Fail B to AB Open - Spring return actuators only
OPTIONS	
00	Standard actuator- no options
01	1 meter cable
02	NEMA 3R Enclosure (DCA actuators only)

VBN 2 A B P A 1 1 00 **Example: VBN2ABPA1100**

*Standard base provides clearance between valve and actuator for insulation.

**Low profile base enables installation of valve and actuator in tight spaces.

NOTE: All functions and options are not available with all versions

NOTE: The part numbers selected are the Honeywell Short Order Codes. Ask your Kele rep for cross reference for complete factory assembly model number.

SSTAG
5112-3R
5112-11

RELATED PRODUCTS

Stainless steel tag on bead chain, 1" x 2" dogtag, custom engraved per order
NEMA 3R enclosure
Replacement mounting kit