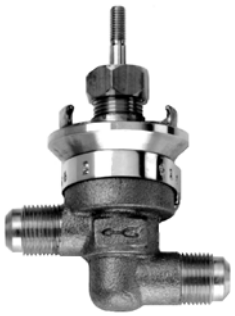
Code No. LIT-1924020
Issued December 2018

VB-3766, VB-3966, VB-4332 Series Brass Flare Valve Bodies, 1/2 in. Two-Way and Three-Way

Description

The 1/2 in. Two-Way and Three-Way Flare Valves accurately regulate the flow of hot or cold water in small HVAC terminal units, including fan coils, perimeter radiation, and reheat coils.

Refer to the *Flare Valves 1/2 in. Two-Way and Three-Way Product Bulletin (LIT-977175)* for important product application information.



VB-3766 Series Push-Down-To-Close

VB-3966 Series Push-Down-To-Open

VB-4332 Series Three-Way Mixing

Features

- available with or without a factory coupled V-3000-1 pneumatic or VA-805x Series electric actuator; these actuators can also be field mounted
- contains a modulating plug, which provides an equal percentage relationship (two-way) and linear relationship (three-way) between valve travel and flow at a constant pressure drop
- uses standard Johnson Controls® non-adjustable ring pack packing for proven reliability and long life
- a molded composition disk that ensures tight shutoff is bonded to the valve plug assembly and can be removed for servicing

Repair Information

If the Brass Flare Valve Body fails to operate within its specifications, replace the valve body, actuator, or entire assembly. For replacement parts, contact the nearest Johnson Controls representative.

Selection Chart

Code Number	Size, in.	Maximum Cv (kv)	Stroke, in.	Style[1]	End Connection
VB-3766-1	1/2	1.0 (.85)	1/2	PDTC	Flare
VB-3766-2		1.7 (1.5)			
VB-3766-3		3.2 (2.7)			
VB-3966-1		1.7 (1.5)	1/2	PDTO	
VB-3966-2		3.2 (2.7)			
VB-4332-4		1.2 (1.0)	5/16	Mixing	
VB-4332-5		2.0 (1.7)			

1. Push-Down-to-Close (PDTC); Push-Down-to-Open (PDTO)

Technical Specifications

VB-3766, VB-3966, VB-4332 Series Bronze Flare Valve Bodies, 1/2 in. Two-Way and Three-Way (Part 1 of 2)	
Service	Hot and Cold Water
Valve Stem Diameter	1/4 in.
Maximum Seat Leakage	PDTC and PDTO: 0.01% of Maximum Rated Valve Capacity (Cv); Three-Way Mixing: 0.25% of Maximum Rated Valve Capacity (Cv)
Maximum Recommended Operating Differential Pressure for Valve Sizing	35 psi (245 kPa)
Valve Stroke Length (Travel)	Two-Way (VB-3766, VB-3966): 1/2 in. Three-Way (VB-4332): 5/16 in.
Maximum Allowable Pressure/Temperature	(Two-Way) VB-3766, VB-3966: 400 psi (2,800 kPa) up to 150°F (66°C) Decreasing to 345 psi (2,415 kPa) at 281°F (140°C); (Three-Way Mixing) and VB-4332: 240 psi (1,750 kPa) Maximum to 281°F (140°C)

VB-3766, VB-3966, VB-4332 Series Bronze Flare Valve Bodies, 1/2 in. Two-Way and Three-Way (Part 2 of 2)		
Fluid Operating Temperature Limits		For VA-805x Electric Actuators: 35°F-195°F (2°C-90°C); For All Pneumatic Actuators: 35°F-281°F (2°C-38°C)
Maximum Closeoff Pressures		Refer to the *V-3766, V-3966, and V-4332 Brass Pneumatic Flare Valves 1/2 in. Two-Way and Three-Way Catalog Page (LIT-1924115)*.
Flow Characteristics	**VB-3766**	PDTC: Equal Percentage
	VB-3966	PDTO: Cv 1.7: Equal Percentage; Cv 3.2: Modified Equal Percentage
	VB-4332	Both Ports: Cv 1.0/1.5 Linear; PDTC/PDTO: Cv 1.7/2.3 Quick Opening/Linear
Materials	**Stem**	Stainless Steel
	Plug	PDTC (N.O.) and PDTO (N.C.): Brass with Molded and Bonded Composition Disk; Three-Way Mixing: Brass (Metal-to-Metal)
	Body	Cast Bronze with Natural Finish
	Packing	Non-Adjustable EPR (Ethylene Propylene Rubber) Ring Packs
Body Style and End Connection		Offset Globe for 1/2 in. S.A.E. Flared Connections
Rangeability and Flow Coefficient	**Max. Cv (kv) — Rangeability**	
	VB-3766 PDTC	1.0 (.85) — 7:1 1.7 (1.5) — 12:1 3.2 (2.7) — 23:1
	VB-3966 PDTO	1.8 (1.5) — 12:1 2.7 (2.3) — 23:1
	VB-4332 Mix	1.0 (.85) PDTC Port / 1.5 (1.28) PDTO Port — 10:1 for PDTC Port, 4:1 for PDTO Port 1.7 (1.5) PDTC Port / 2.3 (1.9) PDTO Port — 6:1 for Both Ports
Dimensions (End-to-End)	**VB-3766, VB-4332**	3-3/8 in.
	VB-3966	3-3/4 in.
Recommended Actuators	**Pneumatic**	V-3000-1, V-3000-8003
	Electric	VA-805x

WARNING This product is made of copper alloy, which contains lead. The product is therefore not to be used on drinking water.

WARNING This product can expose you to chemicals including lead, which is known to the State of California to cause cancer, birth defects, or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

WARNING: BRASS MAY CONTAIN LEAD

To fulfill our obligations towards Article 33, in accordance to the European REACH Regulation No 1907/2006 EC, we hereby inform you that this article contains the following Substances of Very High Concern mentioned on the Candidate list:

- Lead