

Description

VEB-46 (formerly VEP-43) series, 3-way, **mixing or diverting**, NPT control ball valves are designed for the control of hot or chilled water in HVAC applications. Valves range in size from **1/2 to 2-1/2 inches** and most feature an optimizing insert, which reduces and characterizes the ball opening for lower Cv ratings similar to globe valves.

The body design also provides a standard "T" pattern to simplify installation. They include a field-repairable blowout-proof stem and leak-proof shut-off. The reduced torque seals and O-rings eliminate the need for high torque actuators and are designed to work with KMC's low-torque, MEP-4000/5000 series actuators on all valve sizes.

Valve assemblies with MEP-4002V/4003V actuators have new brackets with a patent-pending, **quick-mounting** mechanism that creates a universal connection to VSI, Griswold, and other valve bodies. See the MEP-4000/4800 data sheet for more information.

Features

- ◆ Mixing or diverting applications
- ◆ Choice of tri-state (floating) or proportional inputs
- ◆ Choice of fail-safe (with switch-selectable direction) or non-fail-safe operation
- ◆ Equal percentage flow characteristics with optimizer insert (except indicated models)
- ◆ Cv ratings similar to globe valves
- ◆ Standard "T" pattern connections
- ◆ Field-repairable valve stem design

Accessories/Repair Parts

Valves With MEP-400xV Actuators (Only)

HPO-5074 Ball valve to actuator quick mount kit

Valves with Standard MEP-4000/5000 Series Actuator

HPO-5072 Ball valve to actuator repair kit

(See also the MEP-5372/5373/5374 data sheet for actuator auxiliary switches and connector accessories.)

MEP-5372/5373 Actuator



MEP-4003V Actuator

MEP-4002V Actuator Installed on Valve with Quick Mount

Models*

VEB-46 YYY B ZZ

Actuators

- CK: 0–10 VDC (MEP-4002V)
- CF: Tri-state (MEP-4003V)
- DL: Fail-safe, 2–10 VDC (MEP-5372)
- DH: Fail-safe, tri-state (MEP-5373)

Size / Cv

02C: 1/2" / 0.6 Cv^{FD}

02E: 1/2" / 1.0 Cv^{FD}

02G: 1/2" / 2.4 Cv^{FD}

02J: 1/2" / 4.3 Cv^{FD}

02L: 1/2" / 8.0 Cv

03G: 3/4" / 2.4 Cv

03J: 3/4" / 3.8 Cv

03M: 3/4" / 11.0 Cv^{FD*}

04H: 1" / 8.6 Cv

04N: 1" / 22.3 Cv

05E: 1-1/4" / 12.7 Cv

05J: 1-1/4" / 34.1 Cv*

06E: 1-1/2" / 23.5 Cv

06H: 1-1/2" / 61.1 Cv

08B: 2" / 38.2 Cv

08N: 2" / 108.5 Cv

10E: 2-1/2" / 74.1 Cv

10F: 2-1/2" / 99.5 Cv*

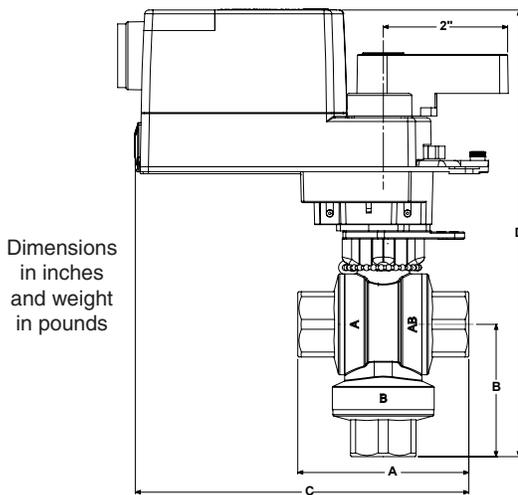
^{FD}"Fast Delivery" stocked items have a delivery time of approximately five business days. For all others, call for delivery time.

*Full-port, no optimizer insert

*NOTE: To select a **valve body and linkage only**:

- And attach your own **quick-mount MEP-4002V or MEP-4003V** actuator, specify VFB-46 YYY BC (e.g., VFB-4605JBC) with YYY the appropriate size and Cv from chart above.
- Or attach your own **standard MEP-4000/5000 series** actuator, specify VFB-46 YYY BX (e.g., VFB-4605JBX) with YYY the appropriate size and Cv (includes non-rotation brackets for both types of actuators).

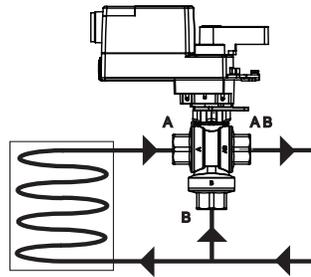
Dimensions



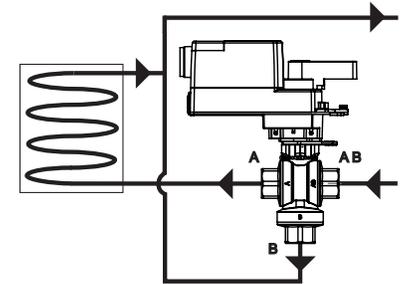
Dimensions
in inches
and weight
in pounds

(Actuators and mounting vary)

MIXING Flow Action:
Full CCW = Port A to AB
Full CW = Port B to AB



DIVERTING Flow Action:
Full CCW = Port AB to A
Full CW = Port AB to B



Size NPT	Model	A	B	C (Overall Length)		D (Overall Height)			Width (Not Shown)		Weight	
				MEP-4000(V)	MEP-5000	MEP-4002V	MEP-4003V	MEP-4000/5000	MEP-4000(V)	MEP-5000	MEP-4000(V)	MEP-5000
1/2"	VEB-4602	2.64	2.02	5.10	6.50	6.41	5.73	8.20	2.60	4.00	2.62	4.1
3/4"	VEB-4603	2.80	2.00	5.18	6.50	6.39	5.71	8.18			2.62	4.1
1"	VEB-4604	3.06	2.43	5.31	6.50	6.96	6.28	8.75			3.32	4.8
1-1/4"	VEB-4605	3.62	2.83	5.59	6.69	7.59	6.91	9.38			4.52	6
1-1/2"	VEB-4606	4.06	3.18	5.81	6.91	8.46	7.78	10.25	3.00	3.50	6.22	7.7
2"	VEB-4608B	4.00	3.30	5.78	6.88	8.89	8.21	10.68	6.22		7.7	
	VEB-4608N	5.00	3.80	6.28	7.38	9.39	8.71	11.18	9.52		11	
2-1/2"	VEB-4610	5.30	4.10	6.43	7.53	9.69	9.01	11.48	10.12		11.6	

Specifications

Service	Hot or chilled water, up to 50% glycol
Connections	Female NPT
Body Rating	360 psi (2482 kPa)
Max. Close-Off	1/2 to 1" = 50 psi (345 kPa); 1-1/4 to 2-1/2" = 40 psi (276 kPa)
Max. Differential Pressure	Same values as Max. Close-Off (see above)
Flow Characteristics	Equal percentage (with optimizer insert)
Rangeability	500 to 1
Leakage Rating	ANSI Class IV (0.01% of Cv)
Material	
Body	Forged brass ASTM B283-06
Stem	Brass
Ball	Nickel plated brass
Flow inserts	Glass filled polymer
Stem Seals	EPDM O-rings
Ball Seals	Teflon seals w/ EPDM O-rings

Temperature Limits

Medium	-22 to 250° F (-30 to 121° C)
Ambient	0 to 120° F (-18 to 49° C)
Shipping	-40 to 140° F (-40 to 60° C)

Actuators

MEP-4002V	40 in-lbs., 0-10 VDC
MEP-4003V	40 in-lbs., tri-state
MEP-5372	50 in-lbs., 2-10 VDC, fail-safe
MEP-5373	50 in-lbs., tri-state, fail-safe

CAUTION

Using mineral oil lubricants or other incompatible substances in system fluids may damage EPDM rubber seals in valves. Before using any lubricant or additive in a water or ethylene glycol base, consult the substance manufacturer for compatibility with EPDM (Ethylene Propylene Diene Monomer).

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