

Cartridge Cage Valves

VCZM; VCZN Three-way Cartridge Cage Valves



Sweat Connection

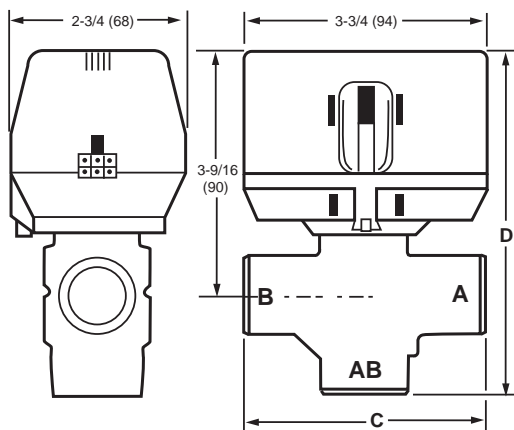


NPT Connection

Three-way Cartridge Cage Valves are intended for hydronic applications in a normal indoor environment to control the flow of hot water or chilled water glycol solution to 60% concentration. These valves are designed for zone control of heating/cooling systems, or to control individual fan coil, baseboard radiator or convactor applications. Depending on the model selected they can be controlled by SPST or SPDT two position controller, tristate (floating), or modulating proportional controller. For best control, outdoor temperature compensation of supply water temperature is recommended. For trouble-free operation of the product, good installation practice must include initial system flushing, chemical water treatment, and the use of a 50 micron (or finer) system side stream filter(s). Remove all filters before flushing.

- Quick open and linear flow characteristics available
- Mixing or diverting application
- A-AB-B body pattern
- 7000-series valves for floating and modulating non-fail safe applications
- 6000-series valves for two-position control
- High close-off rating independent of Cv
- Available with a variety of North American and international pipe fittings
- No tools required for actuator installation or removal
- Actuator removal does not require draining system
- Service is by replacement of cartridge, not valve body
- Cartridge replacement rebuilds valve to factory-new condition

Dimensions in inches (millimeters)



| PIPE FITTING SIZES | C | | D | |
|---------------------------------|---------|-----|---------|-----|
| | IN. | MM | IN. | MM |
| 3/8" FLARE \triangle | 3-7/8 | 98 | 5-11/32 | 136 |
| 1/2" SWEAT | 3-1/2 | 89 | 5-1/8 | 130 |
| 1/2" FLARE \triangle | 3-7/8 | 98 | 5-11/32 | 136 |
| 1/2" INVERTED FLARE \triangle | | | | |
| 1/2" NPT (int.) | | | | |
| 3/4" NPT (int.) | 3-11/16 | 94 | 5-1/8 | 130 |
| 3/4" SWEAT | | | 5-3/16 | 132 |
| 1" NPT (int.) | | | | 136 |
| 1" SWEAT | | | 5-11/32 | |
| 1-1/4" SWEAT | 4-5/16 | 110 | 5-5/8 | 142 |
| 1-1/4" NPT (int.) | | | | |

\triangle NO ADAPTERS

M16840

Valve Type: Cartridge Cage Valve

Valve Action: Stem up to close A port

Body Pattern: Three-way A-AB-B

Controlled Medium: Chilled or hot water with up to 60% Glycol

Maximum Safe Operating Pressure: 300 psi (2068 kPa (20 Bar))

Maximum Differential Pressure Ratings (Close-off): (414 kPa; 60 psi (4 bar))

Fluid Temperature Range: 34 F to 203 F (1 C to 95 C)

Ambient Temperature Range: 32 F to 150 F (0 C to 65 C)

Stem Travel: 0.4 in. (10 mm)

Materials

(Body): Bronze

(Stem): Stainless Steel

(Seat): EPDM O-ring seals on Noryl piston

(Cartridge): Ryton™, Noryl™ engineering plastic

(Packing): EPDM rubber

Approvals

Canadian Standards Association: CSA Certified

Accessories:

40007029-002-Wrench for cartridge (included with sweat valves and all replacement cartridges)

Cartridge Cage Valves

Valves with Linear Flow Characteristics

Comments: Characterized cartridge; Can be controlled by either a low or a line voltage SPDT or SPST or floating controller

| Product Number | Valve Size | | Flow Capacity | | Timing (sec. min.) when used with VC series Actuator | ConneC-tion Type | Actuation | Used With | Includes |
|----------------|------------|------|---------------|----------|--|------------------|------------------------------|---------------------------------------|-------------------------|
| | (inch) | DN | (Cv) | (Kv) | | | | | |
| VCZMA6100/U | 1/2 in. | DN15 | 3.7 Cv | 3.2 kvs | On/Off models with 6 seconds | Sweat | Must be purchased separately | VC actuators, 2-position, On-Off Type | Cartridge changing tool |
| VCZMC6100/U | 1/2 in. | DN15 | 3.8 Cv | 3.3 kvs | On/Off models with 6 seconds | Flare | Must be purchased separately | VC actuators, 2-position, On-Off Type | — |
| VCZMD6100/U | 1/2 in. | DN15 | 3.2 Cv | 2.74 kvs | On/Off models with 6 seconds | Inverted Flare | Must be purchased separately | VC actuators, 2-position, On-Off Type | — |
| VCZMK6100/U | 3/4 in. | DN20 | 6.6 Cv | 5.7 kvs | On/Off models with 6 seconds | Female NPT | Must be purchased separately | VC actuators, 2-position, On-Off Type | — |
| VCZML6100/U | 3/4 in. | DN20 | 6.6 Cv | 5.7 kvs | On/Off models with 6 seconds | Sweat | Must be purchased separately | VC actuators, 2-position, On-Off Type | Cartridge changing tool |
| VCZMR6100/U | 1 in. | DN25 | 8.3 Cv | 7.1 kvs | On/Off models with 6 seconds | Female NPT | Must be purchased separately | VC actuators, 2-position, On-Off Type | — |
| VCZMS6100/U | 1 in. | DN25 | 8.3 Cv | 7.1 kvs | On/Off models with 6 seconds | Sweat | Must be purchased separately | VC actuators, 2-position, On-Off Type | Cartridge changing tool |
| VCZNB6100/U | 1/2 in. | DN15 | 3.7 Cv | 3.2 kvs | On/Off models with 6 seconds | Female NPT | Must be purchased separately | VC actuators, 2-position, On-Off Type | — |
| VCZND6100/U | 1 1/4 in. | DN32 | 9.0 Cv | 7.7 kvs | On/Off models with 6 seconds | Female NPT | Must be purchased separately | VC actuators, 2-position, On-Off Type | — |
| VCZNE6100/U | 1 1/4 in. | DN32 | 9.0 Cv | 7.7 kvs | On/Off models with 6 seconds | Sweat | Must be purchased separately | VC actuators, 2-position, On-Off Type | Cartridge changing tool |

Valves with Linear Flow Characteristics

Comments: Characterized cartridge for use with non-fail safe floating and modulating actuators

| Product Number | Valve Size | | Flow Capacity | | Timing (sec. min.) when used with VC series Actuator | ConneC-tion Type | Actuation | Used With | Includes |
|----------------|------------|------|---------------|---------|--|------------------|---|--|-------------------------|
| | (inch) | DN | (Cv) | (Kv) | | | | | |
| VCZMA7100/U | 1/2 in. | DN15 | 3.7 Cv | 3.2 kvs | 2 minutes | Sweat | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | Cartridge changing tool |
| VCZMK7100/U | 3/4 in. | DN20 | 6.6 Cv | 5.7 kvs | 2 minutes | Female NPT | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | — |
| VCZML7100/U | 3/4 in. | DN20 | 6.6 Cv | 5.7 kvs | 2 minutes | Sweat | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | Cartridge changing tool |
| VCZNB7100/U | 1/2 in. | DN15 | 3.7 Cv | 3.2 kvs | 2 minutes | Female NPT | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | — |
| VCZND7100/U | 1 1/4 in. | DN32 | 9.0 Cv | 7.7 kvs | 2 minutes | Female NPT | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | — |
| VCZNE7100/U | 1 1/4 in. | DN32 | 9.0 Cv | 7.7 kvs | 2 minutes | Sweat | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | Cartridge changing tool |

Valves with Linear Flow Characteristics

Comments: Can be controlled by either a low voltage or a line voltage SPDT or SPST or floating controller; characterized cartridge for use with floating and modulating actuators

| Product Number | Valve Size | | Flow Capacity | | Timing (sec. min.) when used with VC series Actuator | ConneC-tion Type | Actuation | Used With | Includes |
|----------------|------------|------|---------------|---------|--|------------------|---|--|-------------------------|
| | (inch) | DN | (Cv) | (Kv) | | | | | |
| VCZMR7100/U | 1 in. | DN25 | 8.3 Cv | 7.1 kvs | 2 minutes | Female NPT | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | — |
| VCZMS7100/U | 1 in. | DN25 | 8.3 Cv | 7.1 kvs | 2 minutes | Sweat | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | Cartridge changing tool |

Cartridge Cage Valves

Valves with Modified Equal Percent Flow Characteristics

Comments: Characterized cartridge for use with non-fail safe floating and modulating actuators

| Product Number | Valve Size | | Flow Capacity | | Timing (sec, min.) when used with VC series Actuator | Connec-tion Type | Actuation | Used With | Includes |
|----------------|------------|------|---------------|---------|--|------------------|---|--|-------------------------|
| | (inch) | DN | (Cv) | (Kv) | | | | | |
| VCZMA7400/U | 1/2 in. | DN15 | 2.7 Cv | 2.3 kvs | 2 minutes | Sweat | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | Cartridge changing tool |
| VCZMA7500/U | 1/2 in. | DN15 | 0.7 Cv | 0.6 kvs | 2 minutes | Sweat | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | Cartridge changing tool |
| VCZMA7600/U | 1/2 in. | DN15 | 1.5 Cv | 1.3 kvs | 2 minutes | Sweat | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | Cartridge changing tool |
| VCZMA7800/U | 1/2 in. | DN15 | 1.5 Cv | 1.3 kvs | 2 minutes | Sweat | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | Cartridge changing tool |
| VCZMK7400/U | 3/4 in. | DN20 | 4.2 Cv | 3.6 kvs | 2 minutes | Female NPT | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | — |
| VCZMK7800/U | 3/4 in. | DN20 | 3.2 Cv | 2.7 kvs | 2 minutes | Female NPT | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | — |
| VCZML7800/U | 3/4 in. | DN20 | 3.2 Cv | 2.7 kvs | 2 minutes | Sweat | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | Cartridge changing tool |
| VCZNB7400/U | 1/2 in. | DN15 | 2.7 Cv | 2.3 kvs | 2 minutes | Female NPT | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | — |
| VCZNB7500/U | 1/2 in. | DN15 | 0.7 Cv | 0.6 kvs | 2 minutes | Female NPT | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | — |
| VCZNB7600/U | 1/2 in. | DN15 | 1.5 Cv | 1.3 kvs | 2 minutes | Female NPT | Proportional non-fail safe, purchase separately | VC6830/VC6831/VC6834; VC6930/VC6931/VC6934; VC7930/VC7931/VC7934 | — |