

Cartridge Cage Valves

VC Series Valve and Fail-Safe Actuator Assemblies



Valve Type: Cartridge Cage Valve

Valve Action: Stem up to close A port

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)

The Fail Safe VC6936 Floating and VC7936 Modulating Control valves provides proportional control of hot or chilled water in commercial heating and cooling applications, such as unit ventilators. On a power failure, this patented actuator design drives the valve to the fail safe position, either fully open or closed according to the installer's wiring connections.

These actuators use a microprocessor-controlled, low voltage stepper motor with a super capacitor-based power supply capable of storing enough power to drive the valve to its when 24V power is removed from the actuator.

A VC hydronic valve consists of a valve body, a replaceable characterized cartridge assembly and a Honeywell VC6900 or VC7900-series actuator, providing proportional flow control. Three-way bodies may be used in either diverting or mixing applications. VC valves use cam-operated cartridge travel to resist water hammer. Limit switches prevent motor overrun. For best control, outdoor temperature compensation of supply water temperature is recommended.

Timing (sec, min.): For VC6936: 2 minutes; For VC7936: installer-selectable 60 or 120 seconds

Materials

(Body): Bronze

(Stem): Stainless Steel

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

(Cartridge): Rytan®, Noryl™ engineering plastic

(Packing): EPDM rubber

Approvals

Canadian Standards Association: CSA Certified

Two-way, Straight-through Valves

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

Product Number	Valve Size		Flow Capacity		Connec- tion Type	Flow Characteristic	Actuation	Includes
	(inch)	DN	(Cv)	(Kv)				
VC6936AA1100/U	1/2 in.	DN15	3.5 Cv	3.1 kvs	Sweat	Linear	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936AA1400/U	1/2 in.	DN15	2.3 Cv	1.98 kvs	Sweat	Modified Equal Percent	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936AA1500/U	1/2 in.	DN15	0.7 Cv	0.6 kvs	Sweat	Modified Equal Percent	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936AA1600/U	1/2 in.	DN15	1.3 Cv	1.1 kvs	Sweat	Modified Equal Percent	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936AA1800/U	1/2 in.	DN15	1.9 Cv	1.6 kvs	Sweat	Modified Equal Percent	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936AL1100/U	3/4 in.	DN20	4.7 Cv	4.1 kvs	Female NPT	Linear	Floating (24V SP3T) fail-safe	—
VC6936AL1400/U	3/4 in.	DN20	3.9 Cv	3.4 kvs	Female NPT	Modified Equal Percent	Floating (24V SP3T) fail-safe	—
VC6936AL1800/U	3/4 in.	DN20	3.1 Cv	2.6 kvs	Female NPT	Modified Equal Percent	Floating (24V SP3T) fail-safe	—
VC6936AM1100/U	3/4 in.	DN20	4.7 Cv	4.1 kvs	Sweat	Linear	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936AM1400/U	3/4 in.	DN20	3.9 Cv	3.4 kvs	Sweat	Modified Equal Percent	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936AM1800/U	3/4 in.	DN20	3.1 Cv	2.6 kvs	Sweat	Modified Equal Percent	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936AR1100/U	1 in.	DN20	6.6 Cv	5.7 kvs	Female NPT	Linear	Floating (24V SP3T) fail-safe	—
VC6936AR1400/U	1 in.	DN20	4.2 Cv	3.6 kvs	Female NPT	Modified Equal Percent	Floating (24V SP3T) fail-safe	—
VC6936AS1100/U	1 in.	DN20	6.6 Cv	5.7 kvs	Sweat	Linear	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936AS1400/U	1 in.	DN20	4.2 Cv	3.6 kvs	Sweat	Modified Equal Percent	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936BB1100/U	1/2 in.	DN15	3.5 Cv	3.1 kvs	Female NPT	Linear	Floating (24V SP3T) fail-safe	—
VC6936BB1400/U	1/2 in.	DN15	2.3 Cv	1.98 kvs	Female NPT	Modified Equal Percent	Floating (24V SP3T) fail-safe	—
VC6936BB1500/U	1/2 in.	DN15	0.7 Cv	0.6 kvs	Female NPT	Modified Equal Percent	Floating (24V SP3T) fail-safe	—
VC6936BB1600/U	1/2 in.	DN15	1.3 Cv	1.1 kvs	Female NPT	Modified Equal Percent	Floating (24V SP3T) fail-safe	—
VC6936BB1800/U	1/2 in.	DN15	1.9 Cv	1.6 kvs	Female NPT	Modified Equal Percent	Floating (24V SP3T) fail-safe	—
VC6936BD1100/U	1 1/4 in.	DN32	7 Cv	6.0 kvs	Female NPT	Linear	Floating (24V SP3T) fail-safe	—
VC6936BE1100/U	1 1/4 in.	DN32	7 Cv	6.0 kvs	Sweat	Linear	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC7936AA1100/U	1/2 in.	DN15	3.5 Cv	3.1 kvs	Sweat	Linear	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936AA1400/U	1/2 in.	DN15	2.3 Cv	1.98 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936AA1500/U	1/2 in.	DN15	0.7 Cv	0.6 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936AA1600/U	1/2 in.	DN15	1.3 Cv	1.1 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936AA1800/U	1/2 in.	DN15	1.9 Cv	1.6 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936AL1100/U	3/4 in.	DN20	4.7 Cv	4.1 kvs	Female NPT	Linear	Modulating/Floating/PWM fail-safe	—
VC7936AL1400/U	3/4 in.	DN20	3.9 Cv	3.4 kvs	Female NPT	Modified Equal Percent	Modulating/Floating/PWM fail-safe	—
VC7936AL1800/U	3/4 in.	DN20	3.1 Cv	2.6 kvs	Female NPT	Modified Equal Percent	Modulating/Floating/PWM fail-safe	—
VC7936AM1100/U	3/4 in.	DN20	4.7 Cv	4.1 kvs	Sweat	Linear	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936AM1400/U	3/4 in.	DN20	3.9 Cv	3.4 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936AM1800/U	3/4 in.	DN20	3.1 Cv	2.6 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936AR1100/U	1 in.	DN20	6.6 Cv	5.7 kvs	Female NPT	Linear	Modulating/Floating/PWM fail-safe	—

Cartridge Cage Valves

Product Number	Valve Size		Flow Capacity		Conne- ction Type	Flow Characteristic	Actuation	Includes
	(inch)	DN	(Cv)	(Kv)				
VC7936AR1400/U	1 in.	DN20	4.2 Cv	3.6 kvs	Female NPT	Modified Equal Percent	Modulating/Floating/PWM fail-safe	—
VC7936AS1100/U	1 in.	DN20	6.6 Cv	5.7 kvs	Sweat	Linear	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936AS1400/U	1 in.	DN20	4.2 Cv	3.6 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936BB1100/U	1/2 in.	DN15	3.5 Cv	3.1 kvs	Female NPT	Linear	Modulating/Floating/PWM fail-safe	—
VC7936BB1400/U	1/2 in.	DN15	2.3 Cv	1.98 kvs	Female NPT	Modified Equal Percent	Modulating/Floating/PWM fail-safe	—
VC7936BB1500/U	1/2 in.	DN15	0.7 Cv	0.6 kvs	Female NPT	Modified Equal Percent	Modulating/Floating/PWM fail-safe	—
VC7936BB1600/U	1/2 in.	DN15	1.3 Cv	1.1 kvs	Female NPT	Modified Equal Percent	Modulating/Floating/PWM fail-safe	—
VC7936BB1800/U	1/2 in.	DN15	1.9 Cv	1.6 kvs	Female NPT	Modified Equal Percent	Modulating/Floating/PWM fail-safe	—
VC7936BD1100/U	1 1/4 in.	DN32	7 Cv	6.0 kvs	Female NPT	Linear	Modulating/Floating/PWM fail-safe	—
VC7936BE1100/U	1 1/4 in.	DN32	7 Cv	6.0 kvs	Sweat	Linear	Modulating/Floating/PWM fail-safe	Cartridge changing tool

Three-way, A-AB-B Valves

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

Product Number	Valve Size		Flow Capacity		Conne- ction Type	Flow Characteristic	Actuation	Includes
	(inch)	DN	(Cv)	(Kv)				
VC6936MA6100/U	1/2 in.	DN15	3.7 Cv	3.2 kvs	Sweat	Linear	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936MA6400/U	1/2 in.	DN15	2.7 Cv	2.3 kvs	Sweat	Modified Equal Percent	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936MA6500/U	1/2 in.	DN15	0.7 Cv	0.6 kvs	Sweat	Modified Equal Percent	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936MA6600/U	1/2 in.	DN15	1.5 Cv	1.3 kvs	Sweat	Modified Equal Percent	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936MK6100/U	3/4 in.	DN20	6.6 Cv	5.7 kvs	Female NPT	Linear	Floating (24V SP3T) fail-safe	—
VC6936MK6400/U	3/4 in.	DN20	4.2 Cv	3.6 kvs	Female NPT	Modified Equal Percent	Floating (24V SP3T) fail-safe	—
VC6936MK6800/U	3/4 in.	DN20	3.2 Cv	2.7 kvs	Female NPT	Modified Equal Percent	Floating (24V SP3T) fail-safe	—
VC6936ML6100/U	3/4 in.	DN20	6.6 Cv	5.7 kvs	Sweat	Linear	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936ML6400/U	3/4 in.	DN20	4.2 Cv	3.6 kvs	Sweat	Modified Equal Percent	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936ML6800/U	3/4 in.	DN20	3.2 Cv	2.7 kvs	Sweat	Modified Equal Percent	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC6936NB6100/U	1/2 in.	DN15	3.7 Cv	3.2 kvs	Female NPT	Linear	Floating (24V SP3T) fail-safe	—
VC6936NB6400/U	1/2 in.	DN15	2.7 Cv	2.3 kvs	Female NPT	Modified Equal Percent	Floating (24V SP3T) fail-safe	—
VC6936NB6500/U	1/2 in.	DN15	0.7 Cv	0.6 kvs	Female NPT	Modified Equal Percent	Floating (24V SP3T) fail-safe	—
VC6936NB6600/U	1/2 in.	DN15	1.5 Cv	1.3 kvs	Female NPT	Modified Equal Percent	Floating (24V SP3T) fail-safe	—
VC6936ND6100/U	1 1/4 in.	DN32	9 Cv	7.8 kvs	Female NPT	Linear	Floating (24V SP3T) fail-safe	—
VC6936NE6100/U	1 1/4 in.	DN32	9 Cv	7.8 kvs	Sweat	Linear	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC7936MA6100/U	1/2 in.	DN15	3.7 Cv	3.2 kvs	Sweat	Linear	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936MA6400/U	1/2 in.	DN15	2.7 Cv	2.3 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936MA6500/U	1/2 in.	DN15	0.7 Cv	0.6 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936MA6600/U	1/2 in.	DN15	1.5 Cv	1.3 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936MA6800/U	1/2 in.	DN15	1.5 Cv	1.3 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936MK6100/U	3/4 in.	DN20	6.6 Cv	5.7 kvs	Female NPT	Linear	Modulating/Floating/PWM fail-safe	—
VC7936MK6400/U	3/4 in.	DN20	4.2 Cv	3.6 kvs	Female NPT	Modified Equal Percent	Modulating/Floating/PWM fail-safe	—
VC7936MK6800/U	3/4 in.	DN20	3.2 Cv	2.7 kvs	Female NPT	Modified Equal Percent	Modulating/Floating/PWM fail-safe	—
VC7936ML6100/U	3/4 in.	DN20	6.6 Cv	5.7 kvs	Sweat	Linear	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936ML6400/U	3/4 in.	DN20	4.2 Cv	3.6 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936ML6800/U	3/4 in.	DN20	3.2 Cv	2.7 kvs	Sweat	Modified Equal Percent	Modulating/Floating/PWM fail-safe	Cartridge changing tool
VC7936NB6100/U	1/2 in.	DN15	3.7 Cv	3.2 kvs	Female NPT	Linear	Modulating/Floating/PWM fail-safe	—
VC7936NB6400/U	1/2 in.	DN15	2.7 Cv	2.3 kvs	Female NPT	Modified Equal Percent	Modulating/Floating/PWM fail-safe	—
VC7936NB6500/U	1/2 in.	DN15	0.7 Cv	0.6 kvs	Female NPT	Modified Equal Percent	Modulating/Floating/PWM fail-safe	—
VC7936NB6600/U	1/2 in.	DN15	1.5 Cv	1.3 kvs	Female NPT	Modified Equal Percent	Modulating/Floating/PWM fail-safe	—
VC7936ND6100/U	1 1/4 in.	DN32	9 Cv	7.8 kvs	Female NPT	Linear	Modulating/Floating/PWM fail-safe	—
VC7936NE6100/U	1 1/4 in.	DN32	9 Cv	7.8 kvs	Sweat	Linear	Modulating/Floating/PWM fail-safe	Cartridge changing tool

Three-way, A-AB-B Valves

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

Product Number	Valve Size		Flow Capacity		Conne- ction Type	Flow Characteristic	Actuation	Includes
	(inch)	DN	(Cv)	(Kv)				
VC6936MR6100/U	1 in.	DN25	8.3 Cv	7.2 kvs	Female NPT	Linear	Floating (24V SP3T) fail-safe	—
VC6936MS6100/U	1 in.	DN25	8.3 Cv	7.2 kvs	Sweat	Linear	Floating (24V SP3T) fail-safe	Cartridge changing tool
VC7936MR6100/U	1 in.	DN25	8.3 Cv	7.2 kvs	Female NPT	Linear	Modulating/Floating/PWM fail-safe	—
VC7936MS6100/U	1 in.	DN25	8.3 Cv	7.2 kvs	Sweat	Linear	Modulating/Floating/PWM fail-safe	Cartridge changing tool

Commercial Components