

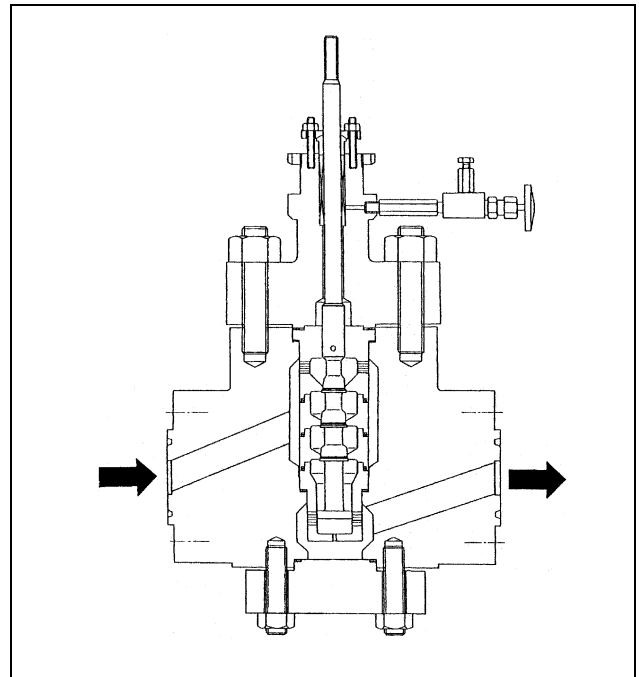
Special-Purpose Valve Multistage Pressure-Reduction Control Valve

Model EGVM / EAVM

OVERVIEWS

The multistage pressure-reduction control valve has a three-stage, contoured pressure-reduction mechanism and a two-stage, Multiple-orifice-cage pressure-reduction mechanism in its trim and is used to control high differential pressure fluid flow. The multistage pressure-reduction mechanism effectively consumes energy and thereby suppresses cavitation that would otherwise occur due to a steep pressure drop. The throttling passage is simple in construction and this prevents scale from depositing or clogging. The multistage pressure-reduction mechanism operates over the entire range from fully closed to fully open.

It is most suitable as a recirculation control valve on a boiler feed water pump or a pressure-reduction valve for high-pressure reactants.



SPECIFICATIONS

Body

Type

EGVM : Straight-through, forged globe valve
EAVM : Angle type, forged globe valve

Nominal size

1½, 2, 3, 4, 5, 6, 8 inches

Pressure rating

ANSI Classes 1500 and 2500

End connection

Stud-bolted end (RF, RJ)
Welded end BW (3 to 8 inches)

Material

JIS SFVA F11A, F22B, F5B
ASTM A182 F5, F11, F22

Bonnet

Plain bonnet (0 to 230 °C)

Gland type

Bolted gland

Packing

Grease provided. Graphite packing is used.

Gasket

Type

Spiral wound, Serrated

Material

Graphite, Stainless steel (SUS316), (PTFE)

Note) PTFE: Polytetrafluoroethylene

Trim

Valve plug

Single-seat, three-stage contoured
Equal percentage (%C)
Linear (LC)

Cage

Multiple-orifice design, single stage, variable-throttling, and
Multiple-orifice design, single stage, fixed-throttling.

Material

SUS440C, SUS630, SUS316 Stellite (#1, #6)

Actuator

Type

Double acting piston actuator (Model DAP)

Action

Direct-action or reverse-action

Supply pressure

490 kPa {5.0 kgf/cm²}

Air connection

Rc 1/4

Ambient temperature

-30 to 70°C

A pneumatic diaphragm actuator or an electric actuator can also be installed to order.

Valve action

Air-to-close (Used with direct action actuator configuration)

Air-to-open (Used with reverse action actuator configuration)

Optional Accessories

Positioner, pressure regulator with filter, hand wheel, limit switch, solenoid valve, motion transmitter, booster relay, air failure backup or lock system, and others.

Note) For optional items, refer to the specification sheets and installation drawings of respective accessories.

Additional Specifications

- Special inspections
Flow characteristic inspection, material inspection (material certificate), non-destructive inspections
- Special Air piping and joints

Performance

Rated Cv value

Refer to Table 1.

Inherent rangeability

30:1

Allowable differential pressure

Refer to Table 2.

Leakage specification

IEC 60534-4:1999 or JIS B 2005-4:2008

Class V

Hysteresis error

Within 1% of F.S. (with positioner)

Linearity

Within ±1% of F.S. (with positioner)

Finish

Blue (Munsell 10B 5/10) or silver, or customer-specified color

Table 1 Cv value and travels

Nominal size (in.)	1½	2	3	4	6	8 *1					
Rated Cv value	ANSI 1500	5	5	10	16	25	25	35	50	70	(110)
	ANSI 2500	2.5	2.5	6.3	10	16	16	25	35	50	(80)
Rated travel (mm)	14.3	14.3	25.0 *2	25.0	37.5	50					

*1: Valve size 8 in. series uses an electric actuator.

*2: For ANSI 2500 and Cv=10, the rated travel is 14.3 mm

Flow characteristic

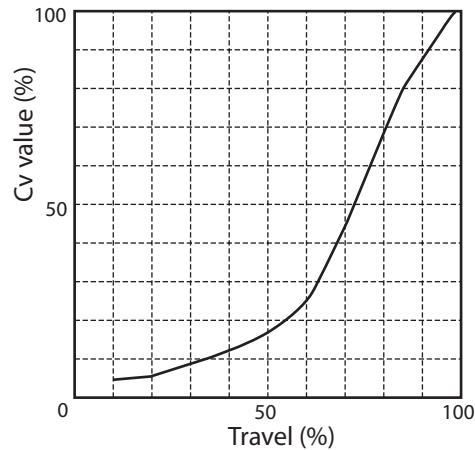


Figure 1 Flow characteristics - Equal percentage (%C)

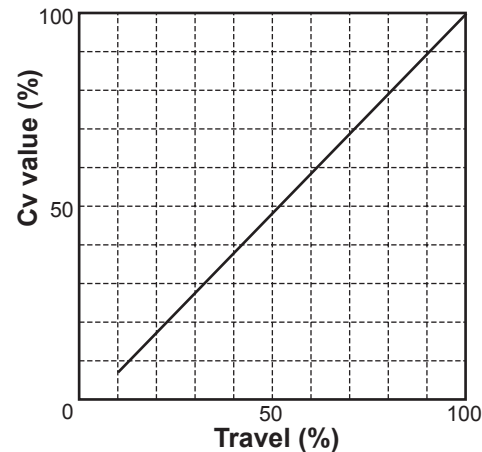


Figure 2 Flow characteristics - Linear (%)

Allowable differential pressure (Air-to-close and Air-to-open)**Table 2 Pressure rating of ANSI Class 1500**

Pressure rating	Actuator	Supply pressure kPa {kgf/cm ² }	kPa {kgf/cm ² } by rated Cv values						
			5	10	16	25	35	50	70
ANSI 1500	DAP560	490 {5.0}	26000 {265}	26000 {265}	20100 {205}	12700 {130}			
	DAP1000	490 {5.0}			26000 {265}	21600 {220}	15200 {155}	11300 {115}	
	DAP1500	490 {5.0}				26000 {265}	23500 {240}	16700 {170}	11300 {115}

Table 3 Pressure rating of ANSI Class 2500

Pressure rating	Actuator	Supply pressure kPa {kgf/cm ² }	kPa {kgf/cm ² } by rated Cv values						
			2.5	6.3	10	16	25	35	50
ANSI 2500	DAP560	490 {5.0}	42700 {435}	42700 {435}	32400 {330}	20100 {205}	12700 {130}		
	DAP1000	490 {5.0}			42700 {435}	34300 {350}	21600 {220}	15200 {155}	11300 {115}
	DAP1500	490 {5.0}				42700 {435}	33300 {340}	23500 {240}	16700 {170}

Note) 1) Positioner is necessary.

2) If a pneumatic backup system is used as a provision against air supply failures, base valve selection on either the normal supply air pressure or the set point of the backup system pressure (the trip pressure), whichever is lower.

3) Take care that the maximum allowable differential pressure does not exceed the highest working pressure in ANSI B16.34-1981

4) Take care that the inlet pressure (P1) does not exceed the allowable differential pressure for a closed valve.

Please, read 'Terms and Conditions' from following URL before the order and use.

<http://www.azbil.com/products/bi/order.html>

Specifications are subject to change without notice.

azbil

Azbil Corporation

Advanced Automation Company

1-12-2 Kawana, Fujisawa
Kanagawa 251-8522 Japan
URL: <http://www.azbil.com/>

4th Edition: Jun. 2015

No part of this publication may be reproduced or duplicated without the prior written permission of Azbil Corporation.