5.0 MPa Pilot Operated 3-Port Solenoid Valve

VCH400 Series

For Air

CE UK CA [Option]

Stable responsiveness

Response time dispersion within ±2 ms

Service life: 10 million cycles

Non-collision construction between the iron cores keeps equipment abrasion free.

↓

Improved responsiveness when switching off.
Reduced dispersion construction

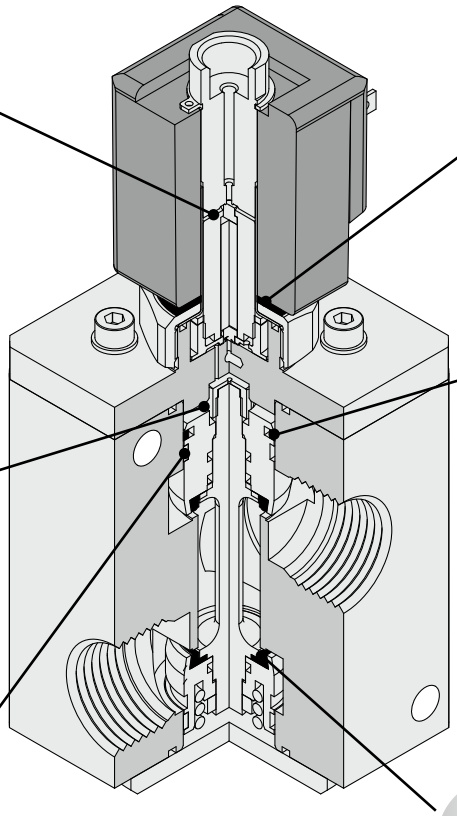
Improved durability by applying a **special surface treatment** to the sliding parts.

Unnecessary volume inside the pilot chamber is reduced.

↓

High speed response
Reduced dispersion

Using NSF-H1-certified grease on the guide ring (sliding part).
Special treatment containing **fluororesin is applied** to the body side sliding face.



Use of **shock absorbing rubber**, resulting in protection of the pilot valve and electric parts.

Special fluororesin sealant is adopted for the sliding part.

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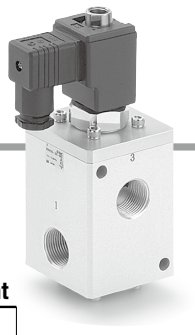
Stable responsiveness after extended disuse.
No likely to subject to a pressure.

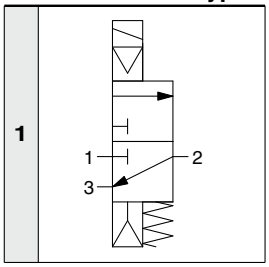
Improved durability under a high pressure environment with a **polyurethane elastomer** poppet



How to Order

VCH410 − 1 D − 06 G − ☐

Valve type



Voltage

1	100 VAC
2	200 VAC
3	110 VAC
4	220 VAC
5	24 VDC
6	12 VDC

Electrical entry

D	DIN connector
DL	DIN connector with light
DO	Without DIN connector, with gasket

∗ A surge voltage suppressor is integrated inside the coil as a standard feature.

Thread type
(Conforming to ISO1179-1 on the pneumatic/hydraulic G thread)

Port size

04	1/2
06	3/4
10	1

CE/UKCA-compliant

Nil	—
Q	CE/UKCA-compliant

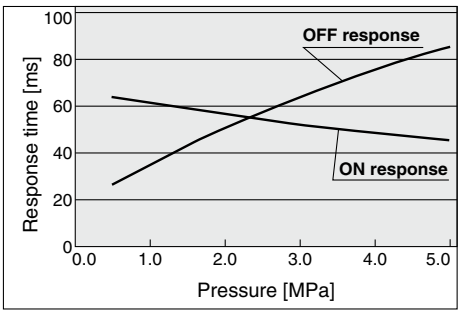
Specifications

Model			VCH410	
Valve specification	Valve construction		Pilot operated, poppet	
	Fluid		Air	
	Orifice		ø18	
	Flow characteristics	C value (Effective area)	G1/2 1→2:20 dm³/(s·bar) (100mm²) 2→3:22 dm³/(s·bar) (110mm²)	G3/4, 1 1→2:22 dm³/(s·bar) (110mm²) 2→3:24 dm³/(s·bar) (120mm²)
		b	G1/2 0.26	G3/4, 1 0.36
		Cv	G1/2 1→2 5.3 2→3 5.8	G3/4, 1 1→2 5.8 2→3 6.3
	Max. operating pressure		5.0 MPa	
	Operating pressure differential Note 1)		0.5 to 5.0 MPa	
	Fluid temperature		5 to 80°C	
	Ambient temperature		5 to 80°C	
	Body material		Aluminum + Hard anodized	
	Main seal material		Polyurethane elastomer	
	Enclosure		Water-jet-proof (Equivalent to IP65)	
	Port size		G1/2, 3/4, 1 (Conforming to ISO1179-1 on the pneumatic/hydraulic G thread)	
	Impact/Vibration resistance Note 2)		300/100 m/s² Note 3)	
	Weight		G1/2, 3/4: 1.83 kg, G1: 2.11 kg	
Coil specification	Rated voltage		12 VDC, 24 VDC, 100 VAC, 110 VAC, 200 VAC, 220 VAC (50/60 Hz)	
	Allowable voltage fluctuation		±10% of rated voltage	
	Electrical entry		DIN connector	
	Coil insulation type		Class B	
	Power consumption Note 4)		5 W (DC), 13 VA (AC)	

Note 1) • Be aware that even if the pressure differential is above the minimum operating pressure differential when the valve is closed, the pressure differential may fall below the minimum operating pressure differential when the valve opens, depending on the power of the supply source (pumps, compressors, etc.,) or the type of pipe restrictions.
• When used as a selector valve (pressurizing 1, 3 port), the pressure in the port should be within the range of the port 1 pressure port 3 pressure x 2 (2 times).
• Refer to the Design 7 and Selection 5 in the Precautions 1 on page 717.

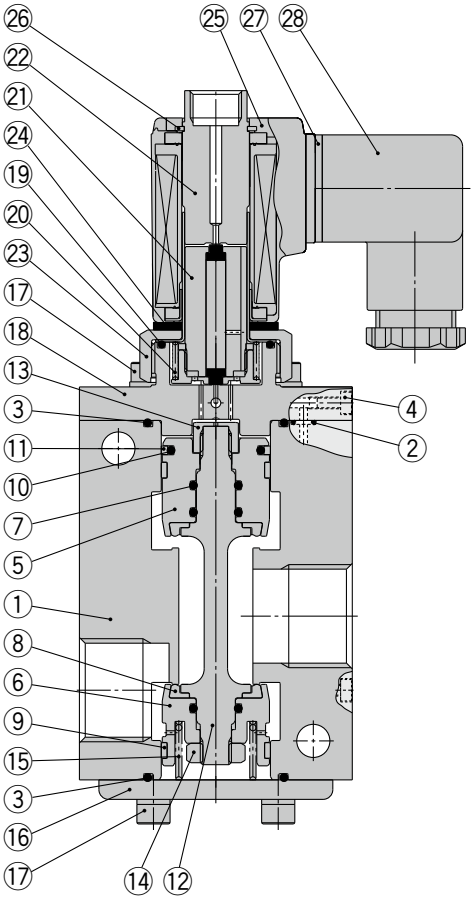
Note 2) Impact resistance: No malfunction resulted in an impact test using a drop impact tester. The test was performed one time each in the axial and right angle directions of the main valve and armature, for both energized and de-energized states. (Value in the initial stage)
Vibration resistance: No malfunction resulted in 8.3 to 2000 Hz, a one-sweep test performed in the axial and right angle directions of the main valve and armature for both energized and de-energized states. (Value in the initial stage)
Note 3) Vibration resistance is 50 m/s² when a light/surge voltage suppressor is attached.
Note 4) No inrush voltages are generated in the AC solenoid because a full-wave rectifier is used.

Response Time



Note 1) DC solenoid
Note 2) AC solenoid: It will cause delays around 20 to 30 msec in the OFF response time.
Note 3) Conforms to JIS B 8419-2010

Construction

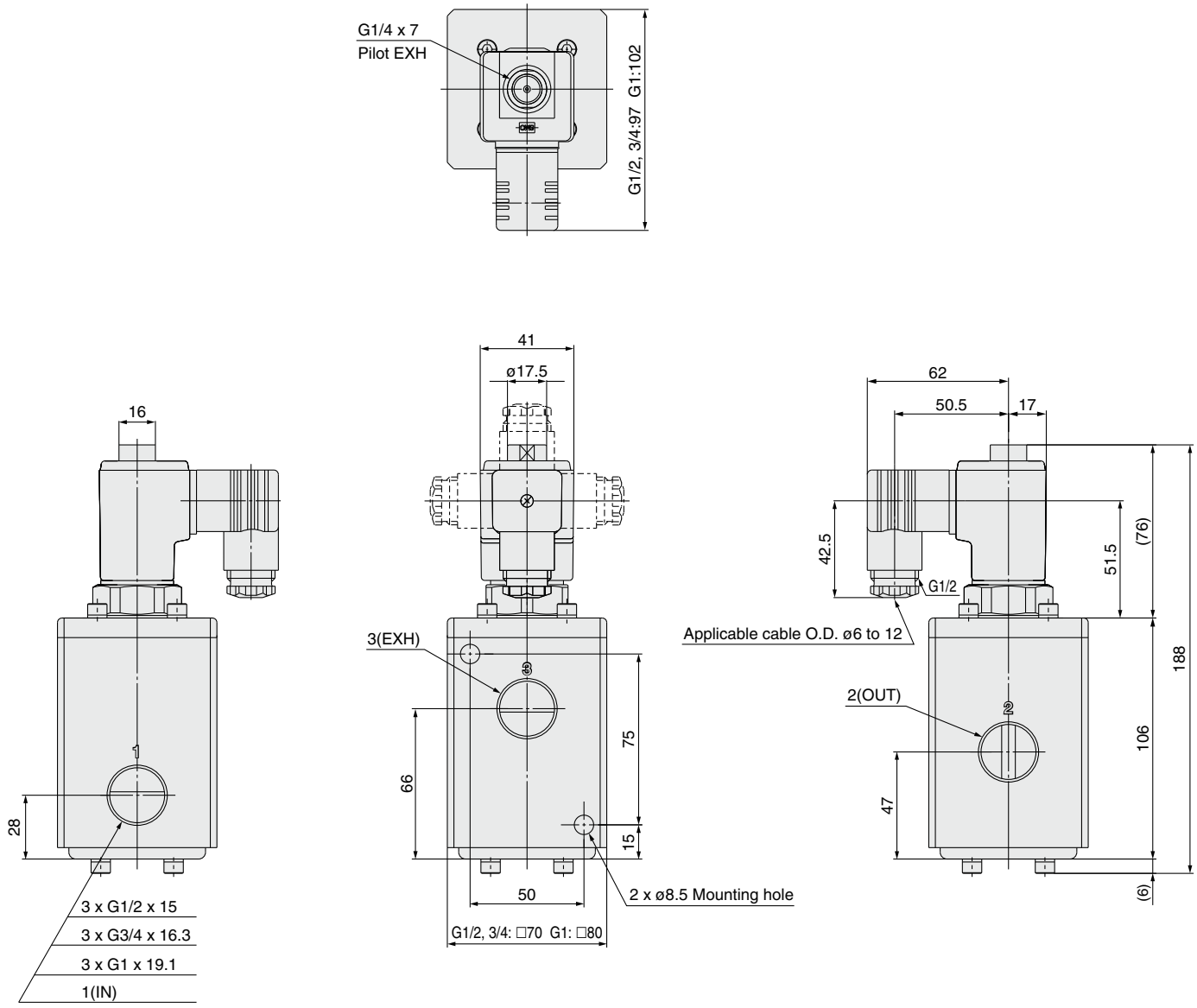


Component Parts

No.	Description	Material
1	Body	Aluminum + Hard anodized
2	O-ring	NBR
3	O-ring	NBR
4	Hexagon socket head cap screw	Stainless steel
5	Piston A	Aluminum + Hard anodized
6	Piston B	Aluminum + Hard anodized
7	O-ring	NBR
8	Poppet	Polyurethane elastomer
9	Guide ring	Resin
10	O-ring	NBR
11	Ring	Resin
12	Rod	Stainless steel
13	Hexagon nut	Brass
14	Hexagon nut class 3	Stainless steel
15	Poppet spring	Stainless steel
16	Plate	Steel + Electroless nickel plated
17	Hexagon socket head cap screw (with SW)	Carbon steel
18	Bonnet	Aluminum + Hard anodized
19	O-ring	NBR
20	Return spring	Stainless steel
21	Armature assembly	—
22	Tube assembly	Stainless steel
23	Nut	Brass
24	Rubber mount	NBR
25	DIN connector type solenoid coil	—
26	Round Type S retaining ring	Carbon steel
27	DIN terminal gasket	CR
28	DIN connector	—

Dimensions

VCH410



VCH40 Series
Made to Order Specifications:

Made to Order

Please contact SMC for detailed dimensions and specifications.

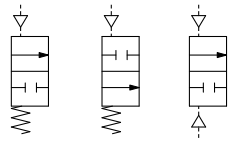
1 22.0 MPa 2-Port Air Operated Valve

AXT836 A

Specifications

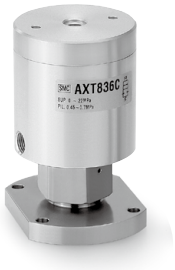
Symbol	Passage	Piping size
A	N.C.	1/4" fitting integrated type
B	N.O.	1/4" fitting integrated type
C	N.C.	Flange type
D	N.O.	Flange type
E	Double acting	1/4" fitting integrated type

Symbol



N.C. N.O. Double acting

Integrated fitting type



Flange type

Specifications

	A, C (N.C. type)	B, D (N.O. type)	E (Double acting)
Fluid	Air		
Fluid temperature	–10 to 60°C (No freezing)		
Ambient temperature	–10 to 60°C (No freezing)		
Operating pressure range	0 to 22.0 MPa		0 to 20.0 MPa
Proof pressure	35.0 MPa		
Pilot pressure range	0.4 to 0.7 MPa (Refer to Fig. 1.)	0.4 to 0.7 MPa (Refer to Fig. 2.)	0.3 to 0.5 MPa (Refer to Fig. 3.)
Valve leakage	0.1 cm^3/min or less		
Orifice diameter	2.8 mm		

Pilot Pressure Range

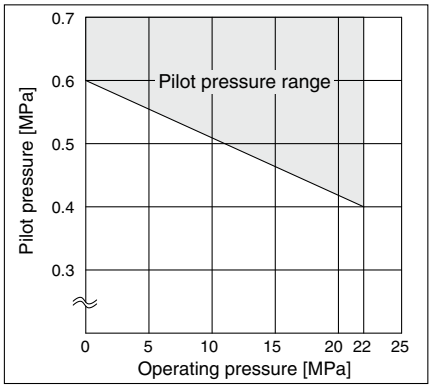


Fig. 1: AXT836A/AXT836C

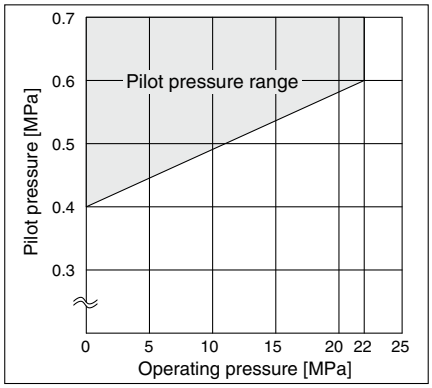


Fig. 2: AXT836B/AXT836D

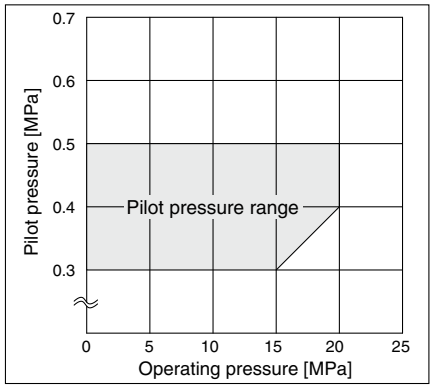
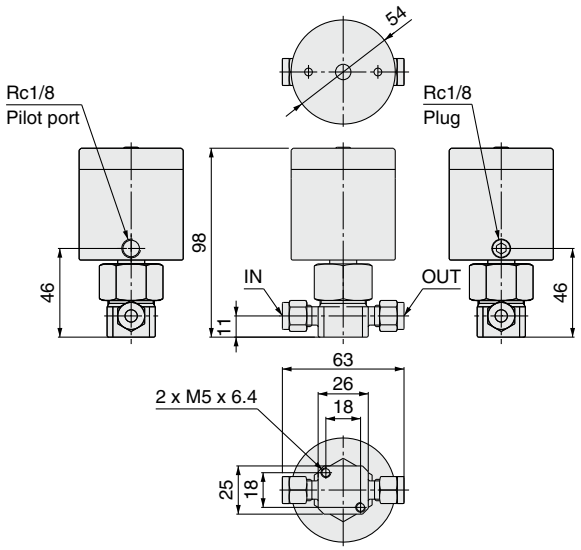


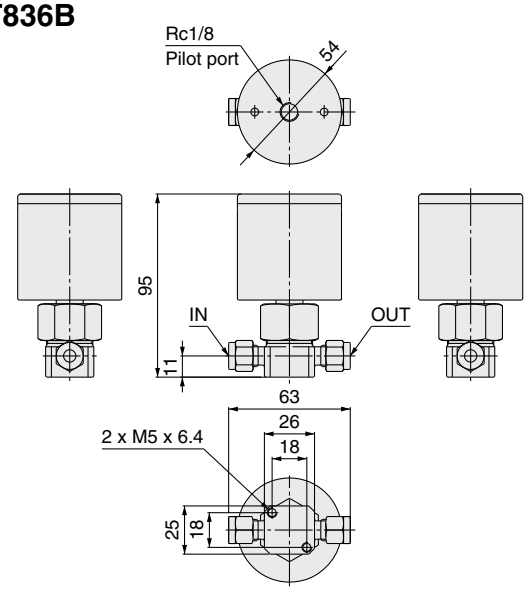
Fig. 3: AXT836E

Dimensions

AXT836A



AXT836B



SMC