

SBA04 SERIES BALL VALVE ACTUATOR

DESCRIPTION

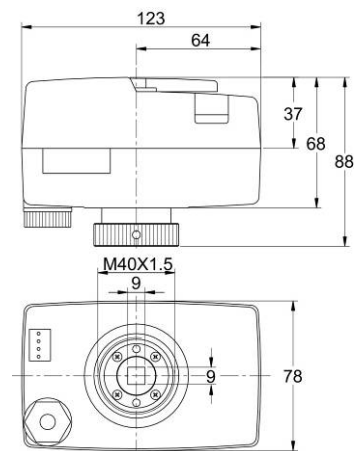
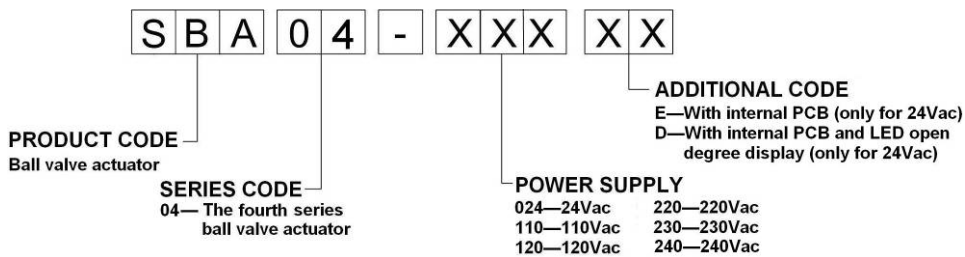
SBA04 series ball valve actuator is using bi-directional motor. Matching with SBV series ball valve, it is mainly used in central air-conditioning system, heating system, water treatment, and production industry to control the flow of chilled/hot medium



CHARACTERISTIC

- Bi-directional AC motor
- Application for valves of DN15 to DN50
- Fireproof ABS engineering plastic, measure up UL94V-0 standard
- With manual switch and position indicator
- On/off type or floating (PID adjusting) type
- Detachable design, easy to install and maintain
- Fluid temperature and ambient temperature are hard to reach inside of actuator.
- High reliable and safety requirement level
- Actuator manual handle can be disassembled to install on the valve stem for opening or close the valve.
- 0(2)~10V dc or 0(4)~20mA dc control input signal, proportional control.
- 0~10V feedback signal.
- With LED open degree display

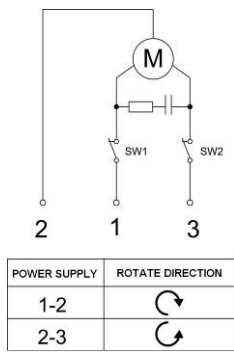
MODEL SELECTION



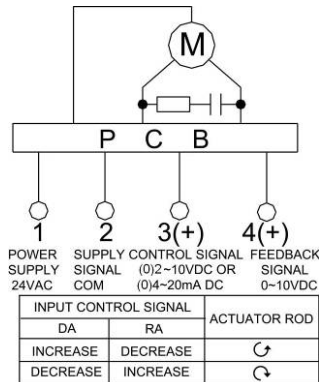
SPECIFICATIONS AND DATA

MODEL		SBA04-024E	SBA04-024D	SBA04-024	SBA04-110	SBA04-120	SBA04-220	SBA04-230	SBA04-240
POWER SUPPLY		24Vac	24Vac	24Vac	110Vac	120Vac	220Vac	230Vac	240Vac
POWER CONSUMPTION		4VA	4.5VA	3VA			5VA		
OPEN DEGREE DISPLAY		N/A	Yes	N/A					
CONTROL SIGNAL		0(2)~10V dc or 0(4)~20mA dc		—					
DEFAULT SETTING		Input signal: 0~10Vdc; Mode: DA							
CURRENT FREQUENCY		50/60Hz							
TORQUE		≥5Nm							
OPERATION TIME		≈50s (50Hz, 90 °)							
MAXIMUM ANGLE		90°<limiter≤95°							
CONNECTING WIRES		0.5~1 mm ²							
MATERIAL	COVER	Fireproof ABS engineering plastic							
	CHASSIS	Fireproof Reinforced nylon PA6-110							
	GEAR	POM (polyoxymethylene) + Fireproof Reinforced nylon PA6-230 + Brass HPb59-1							
OPERATION TEMP.		-5~+50℃							
STORAGE TEMP.		-30~70℃							
IP CLASS		IP54							

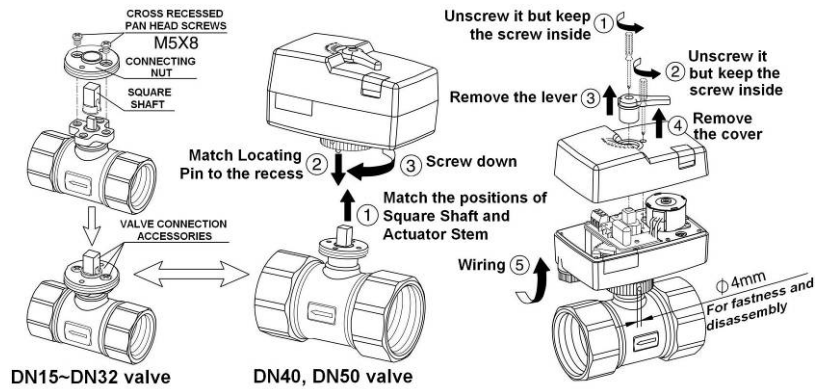
WIRING



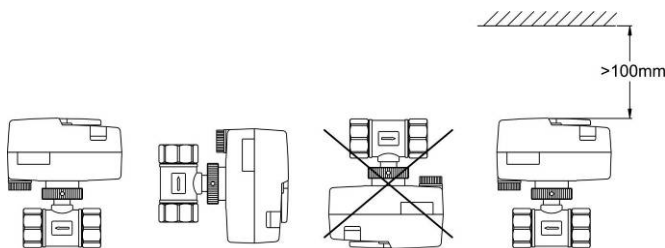
PCB WIRING



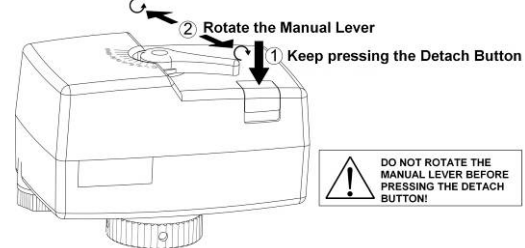
INSTALLATION INSTRUCTION



INSTALLATION INSTRUCTION



MANUAL SWITCH



PCB SETTING

- Study status:** After power is on, set JP1 switch as request (refer to the following list). First, switch "4" of JP1 to position ON, then press SW1 STUDY/REPOSITON button, buzzer will sound every 5 seconds, and the actuator stem is going down (opening valve) until gears are blocked (has reached the maximum stroke). Then the stem will go upward until gears are blocked again (has been in the initial position). Buzzer will make a long sound to indicate the study status is over. MCU will keep the data in memory even power is off.

Then switch "4" of JP1 back to position OFF to transform to running status. If this step is missed, the actuator will operate as usual, but it will go through the study status every time when power is on.

- Running status:** The actuator will return to fully closed position every time when power is on. It will close the valve at first, and then the buzzer will make a long sound to indicate the actuator is ready for control signal.
- Study/running status shift:** If user needs to switch study/running status, make sure the JP1 has been set correctly, then press SW1 STUDY/REPOSITON button. Don't need to cut off power.

JP1 SWITCH SETTING:					PCB DIAGRAM	LED DISPLAY
CONTROL SIGNAL		0~10V DC	2~10V DC	0~20mA DC	4~20mA DC	<p>OPEN PERCENTAGE DISPLAY</p> <p>OPERATING DIRECTION INDICATOR LIGHT</p>
STATUS SWITCH		OFF ON	OFF ON	OFF ON	OFF ON	
RUNNING STATUS	DA					
	RA					
STUDY STATUS	DA					<p>DEFAULT SETTING OFF ON</p>
	RA					

NOTICE: We strongly recommend that JP1 switch should be set on running status in normal use.

Note: If power supply is switched from 50Hz to 60Hz, please operate Study/running status shift again. For a fully function of the actuator, Please indicate current frequency of local power in orders.

SBV01 SERIES FULL PORT BALL VALVE BODY

DESCRIPTION

SBV01 series ball valve bodies are widely used to control water flow in central air-conditioning, heating system. The valves are 3-piece structure, and have six sizes: DN15, DN20, DN32, DN40 and DN50.



The ball sealing inside the valve is made of PTFE material of high lubricating ability and wearability. It makes the valve has high closing-off pressure and great sealing.



ACTUATOR APPLICATION	VALVE SIZE	CONNECTION
SBA01	DN15, DN 20, DN 25	Release button
SBA04	DN 40, DN 50	Bolt

MATERIAL

MODEL SELECTION

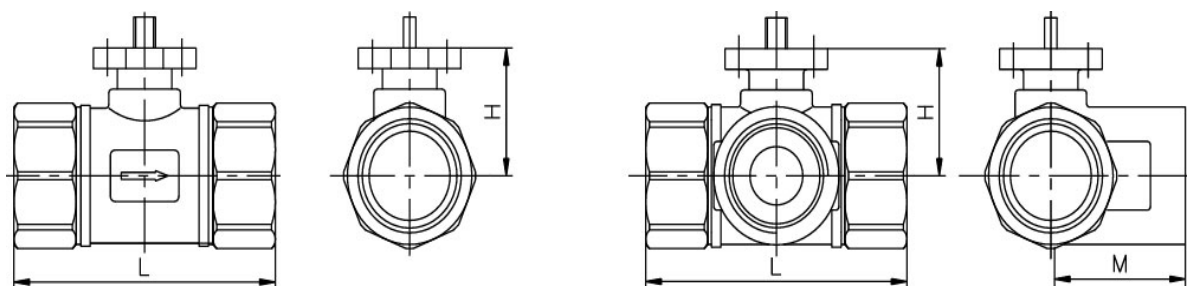
MATERIAL		MODEL SELECTION
MATERIAL	BODY	Forged brass
	BALL	Casting brass (chrome-plate) / SS
	BALL SEALING	PTFE (Poly tetrae fluoro ethylene)
	STEM	SS / brass
	SEAL	NBR
WORKING MEDIA		Chilled/hot water; 50% glycol
MEDIA TEMPERATURE		2°C~94°C

The diagram shows the breakdown of the valve model number **SBV 01 G 2 15 160 B**:

- PRODUCT CODE**: SBV
- SERIES CODE**: 01
- CONNECTION**: G
 - N—NPT thread
 - G—GSP thread
- VALVE TYPE**: 2
 - 2—2-way valve
 - 3—3-way valve
- SIZE (mm)**: 15
 - 15—DN15
 - 20—DN20
 - 25—DN25
 - 32—DN32
 - 40—DN40
 - 50—DN50
- Kv RATING**: 160
 - 120—Kv=12
 - 046—Kv=4.6
- BALL MATERIAL**: B
 - B—Brass ball
 - S—Stainless steel ball

TECHNICAL DATA

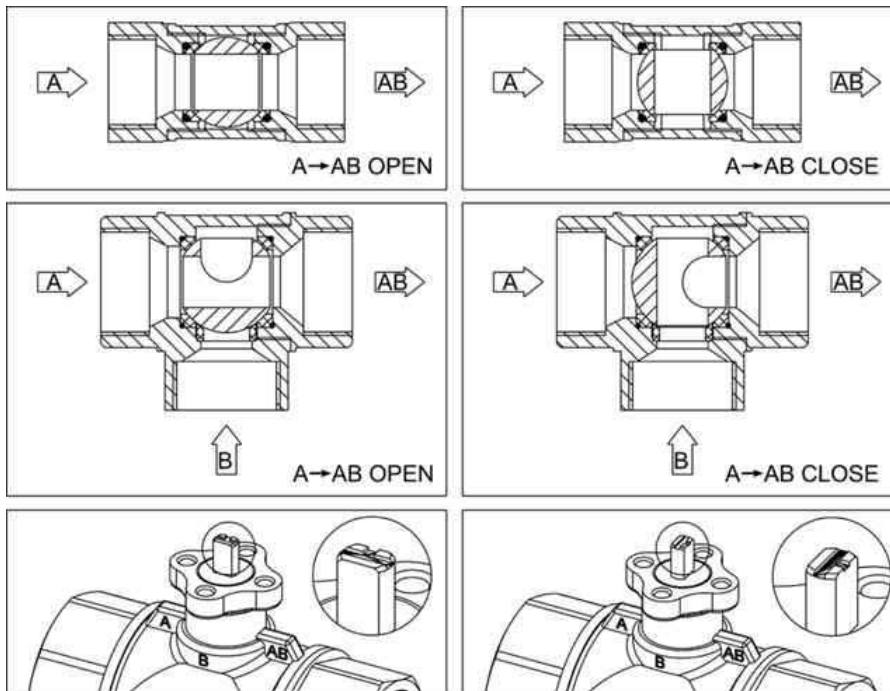
MODEL	TYPE	FLOW RATE		CONNECTION	CLOSSE-OFF PRESSURE (MPa)	RATED BODY PRESSURE. (MPa)
		Kv	Cv			
SBV01G215120B(S)	2-way	12	14	G1/2	0.6	2.5
SBV01G315120B(S)	3-way	12	14		0.6	
SBV01G220150B(S)	2-way	15	17.5	G3/4	0.6	
SBV01G320150B(S)	3-way	15	17.5		0.6	
SBV01G225220B(S)	2-way	22	25	G1	0.6	
SBV01G325220B(S)	3-way	22	25		0.6	
SBV01G232310B(S)	2-way	31	36.3	G11/4	0.6	
SBV01G332310B(S)	3-way	31	36.3		0.6	
SBV01G240330B(S)	2-way	33	38.6	G11/2	0.6	
SBV01G340330B(S)	3-way	33	38.6		0.6	
SBV01G250500B(S)	2-way	50	58.5	G2	0.6	
SBV01G350500B(S)	3-way	50	58.5		0.6	



DIMENSIONS (MM)

DN	DIMENSIONS (mm)				THREAD G	MAX. PIPE THREAD SIZE (mm)
mm	L		H	M		
	2-way	3-way				
15	68	68	32	33	1/2"	13
20	68	68	32	34	3/4"	13
25	82	84	37	43	1"	17
32	98	104	48	50	1 1/4"	19
40	105	111	48	50	1 1/2"	19
50	122	143	52	61	2"	29

FLOW DIRECTION



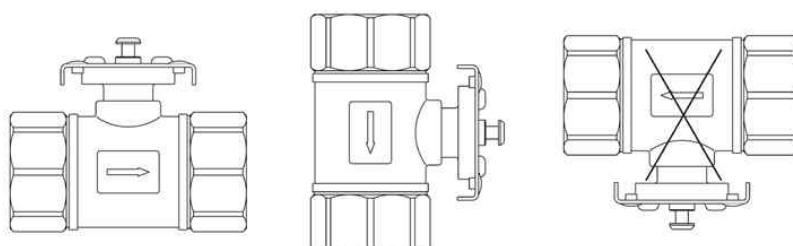
The Kv (Cv) ratings listed on above table are from port A to port AB. The flow ratings from port B to port AB are about 50% of above Kv (Cv) ratings.

SBV01 series 2-way valve is a flow-cutting device. Because of that, it must be installed on the return pipe to reduce thermal stress of the valve ball sealing. SBV01 series 3-way valve can be used as mixing valve or diverted valve. **Please notice that the "T" mark on valve stem indicates the ports on the valve ball.**

INSTALLATION & ADJUSTMENT

Because the valve can be installed on the pipe without the actuator, the adjustment can only processed after the actuator assembled on the valve. The installation of the actuator is very easy, no tools request. Please see the details on Installation Indication.

The ball valve can be installed horizontally or vertically. **THE ACTUATOR MUST BE INSTALLED ABOVE THE VALVE BODY.**



D04	D03	D02	D01
081028	071201	070806	070428

SBV02 SERIES CHARACTERIZED OPENING BALL VALVE BODY

DESCRIPTION

SBV02 series ball valve bodies are widely used to control water flow in central air-conditioning, heating system. Controlled by standard floating signal or 3-point signal from angle rotation actuators, the valve ball can be rotated to different angle. The valves are 3-piece structure, and have six sizes: DN15, DN20, DN25, DN32, DN40 and DN50.

The ball sealing inside the valve is made of PTFE material of high lubricating ability and wearability. It makes the valve has high closing-off pressure and great hermetization. The valves can be matched with SBA01 and SBA04 series actuators.

ACTUATOR APPLICATION	VALVE SIZE	ACTUATOR CONNECTION
SBA01	DN15, DN 20, DN 25	Press button
SBA04	DN32, DN 40, DN 50	Bolt



MATERIAL

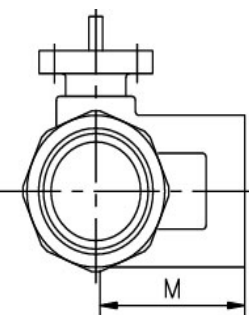
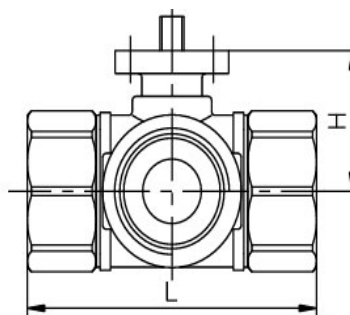
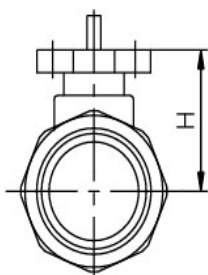
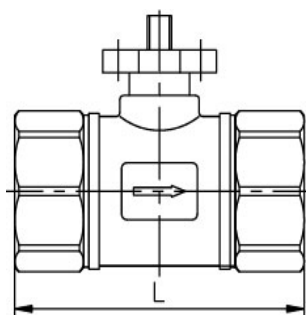
MODEL SELECTION

MATERIAL	BODY	Forged brass
	BALL	Casting brass (chrome-plate)
	SEAT	PTFE (Poly tetrae fluoro ethylene)
	STEM	Stainless steel
	O-RING	NBR
WORKING MEDIA		Chilled/hot water or 50% glycol
MEDIA TEMPERATURE		2℃~94℃

PRODUCT CODE	SBV	BALL MATERIAL	B—Brass ball S—Stainless steel ball
SERIES CODE	02	Kv RATING	120—Kv=12 046—Kv=4.6
CONNECTION	G	SIZE (mm)	15—DN15 20—DN20 25—DN25 32—DN32 40—DN40 50—DN50
VALVE TYPE	2		
	15		
	160		
	B		

DIMENSIONS (MM)

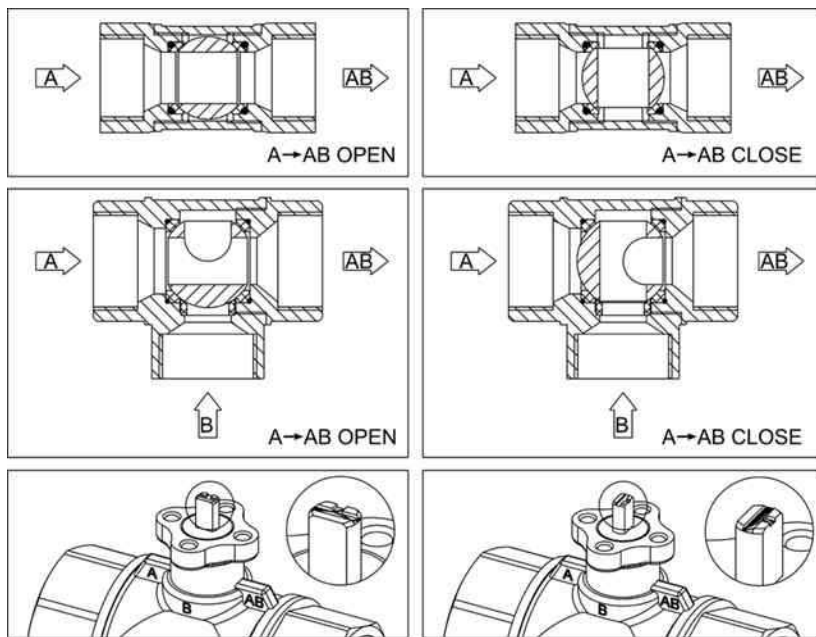
SIZE (mm)	DIMENSION (mm)				THREAD (G)	MAX. PIPE THREAD SIZE (mm)
	L		H	M		
	2-way	3-way				
15	68	68	32	33	1/2 "	13
20	68	68	32	34	3/4 "	13
25	82	84	37	43	1 "	17
32	98	104	48	50	1 1/4 "	19
40	105	111	48	50	1 1/2 "	19
50	122	143	52	61	2 "	29



TECHNICAL DATA

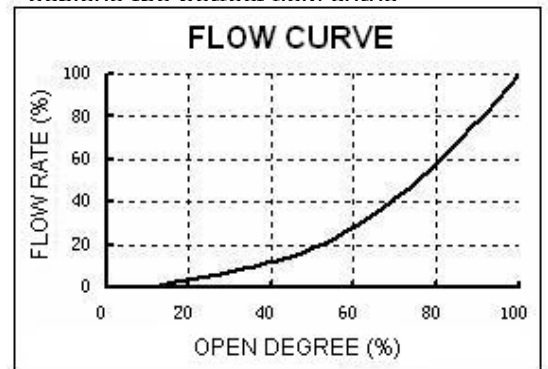
MODEL	TYPE	FLOW RATE		CONNECTION THREAD	CLOSE OFF PRESSURE (MPa)	RATED BODY PRESSURE. (MPa)
		Kv	Cv			
SBV02G215040B(S)	2-way	4	4.7	G1/2	0.6	2.5
SBV02G315040B(S)	3-way	4	4.7		0.6	
SBV02G220063B(S)	2-way	6.3	7.4	G3/4	0.6	
SBV02G320063B(S)	3-way	6.3	7.4		0.6	
SBV02G225100B(S)	2-way	10	11.7	G1	0.6	
SBV02G325100B(S)	3-way	10	11.7		0.6	
SBV02G232160B(S)	2-way	16	18.7	G1 1/4	0.6	
SBV02G332160B(S)	2-way	16	18.7		0.6	
SBV02G240250B(S)	2-way	25	29.3	G1 1/2	0.6	
SBV02G340250B(S)	3-way	25	29.3		0.6	
SBV02G250400B(S)	2-way	40	46.8	G2	0.6	
SBV02G350400B(S)	3-way	40	46.8		0.6	

FLOW DIRECTION



The Kv (Cv) ratings listed on above table are from port A to port AB. The flow ratings from port B to port AB are about 70% of above Kv (Cv) ratings.

The characterized opening side of the valve is connecting to water inlet pipe to achieve the perfect flow curve.

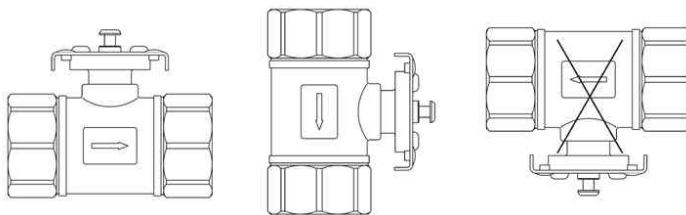


SBV02 series 2-way valve must be installed on the return pipe to reduce thermal stress on the valve ball sealing. SBV02 series 3-way valve can be used as mixing valve or diverted valve. **Please notice that the “T” mark on valve stem indicates the ports on the valve ball.**

INSTALLATION & ADJUSTMENT

Because the valve can be installed on the pipe without the actuator, the adjustment can only processed after the actuator assembled on the valve. The installation of the actuator is very easy, no tools request. Please see the details on Installation Indication.

The ball valve can be installed horizontally or vertically. **THE ACTUATOR MUST BE INSTALLED ABOVE THE VALVE BODY.**



D02	D01
081010	071220