



MINI MOTORIZED BALL VALVE



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Quality 

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MINI MOTORIZED BALL VALVE

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DESCRIPTION

Mini motorized ball valves are used for general purposes in air conditioning systems, heating and cooling lines and other processes. These valves are driven by a bi-directional motor. The feedback signal is received when the valve is fully opened (models with auxiliary contacts). This feature makes it possible to operate a different device following the opening of the valve

FEATURES

Convalve AC/DC mini motorized ball valve consists of an on/off type or 3-point type actuator and CBBVM/CSBVM series ball valves, which have compact structure, stable operation, the excellent capacity of water stoppage, large water flow rate, zero dirt block, and low torque.

Mini-motorized ball valves are widely used in HVAC systems, heating systems, water treatment systems and some industrial applications.

ADVANTAGE

- Low resistance with the medium
- Lightweight and small-volume components, which is easy to install and transportation
- Healthful and non-toxic: the product belongs to environmentally green protective building materials. It can be used in the piping system of pure water and drinking water
- High-temperature resistance: the maximum sustained working temperature is up to 70°C, the maximum transient temperature is up to 95°
- Higher flow capacity: smooth interior walls result in lower pressure loss and higher volume than metal pipes
- Attractive appearance and professional design
- Competitive prices
- Long service life: more than 50 years under normal condition
- 100% leakage testing, ensuring the tightness

APPLICATION

- Potable water pipe networks for cold and warm water installations in residential
- Buildings, hospitals, hotels, schools, office buildings and shipbuilding
- Pipe networks for rainwater utilization systems
- Pipe networks for compressed air plants
- Pipe networks for swimming pool facilities
- Pipe networks for solar plants
- Pipe networks in agriculture and horticulture
- Heating pipes for residential housing
- Pipe networks for industry, i.e. transport of aggressive fluids (acid, alkali)
- Transport of liquid foods

OPERATION

Convalve mini motorized ball valve is motor-operated by a type of EA7220A, EA7220AM, EA7024D and EA7024DM actuator. The actuator is controlled by a modulating on/off or 3-point control system and move the ball of the valve, to the opening position detected by the control signal.

TECHNICAL DATA VALVE

VALVE BODY

- Medium: cold/hot water, air, gases
- Temperature of medium: 2° C...90° C (Max. 120° C for SS304)
- Rated pressure: PN20
- Pipe connector: BSP internal thread
- Ambient temp. range: -5...+60° C; 0...90%RH
- Size: 1/2", 3/4", 1" and 1-1/4"
- Valve type: 2-way and 3-way

MATERIAL

- Valve body: forged brass, 2.0381
 - Sealing: EPDM+PTFE, with double O-ring
 - Ball: nickel-plated brass
 - Stem: EPDM O-rings, with double O-ring
-
- Valve body: Stainless Steel SS304, 1.4308
 - Sealing: EPDM+PTFE, with double O-ring
 - Ball: Stainless Steel SS304
 - Stem: EPDM O-rings, with double O-ring

STAINLESS DIMENSION

MODEL NO.		INNER DIA.	INCH	KVS (M ³ /H)
CSBVM215	2-way	15mm	1/2"	8.97
CSBVM220		20mm	3/4"	15.94
CSBVM225		25mm	1"	24.85
CSBVM315	3-way	15mm	1/2"	8.97
CSBVM320		20mm	3/4"	15.94
CSBVM325		25mm	1"	24.85

BRASS DIMENSION

MODEL NO.		INNER DIA.	INCH	KVS (M ³ /H)
CBBVM215	2-way	12mm	1/2"	6.15
CBBVM220		15mm	3/4"	10.50
CBBVM225		20mm	1"	16.10
CBBVM232		22mm	1-1/4"	25
CBBVM315	3-way	10mm	1/2"	3.95
CBBVM320		15mm	3/4"	6.80
CBBVM325		18mm	1"	15.80



TECHNICAL DATA ACTUATOR AC

ACTUATOR

- EA7.....AM AC230/110/24V, 50/60Hz, 3-point
- EA7.....A AC230/110/24V, 50/60Hz, on/off
- Output torque: >3.5N.m
- Angle of rotation: 90°
- Protection rating: IP54/IP55/IP65*
- On/off time: 16 sn. (50Hz)
- Ambient Temperature: -10° C ~80° C
- Ambient humidity: 0~90%RH

FUNCTION (3-POINT OR ON/OFF TYPE)

The actuator is controlled by a modulating on/off or 3-point control signal, using reversible synchronous motor and gear speed reducer drive to fix and lock.

EA7.....DM 3-POINT TYPE

- Brown wire is power on.....Valve open
- Black wire is power onValve close
- Brown or black wire is power off.....Valve keep the current position
- Blue wire is connected to the null wire.....Also can be used as on/off type.

EA7.....D ON/OFF TYPE

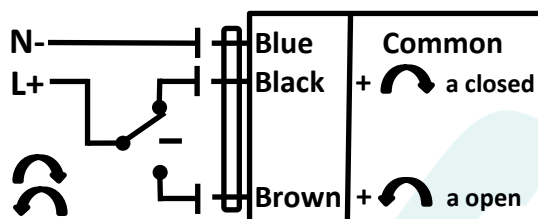
- Blue wire is the control wire.....Power on: valve open, power off: valve close
- Black wire is connected to the com.
- Brown wire is connected to the power wire.
- Only can be used as on/off type.

MODEL NO.	WORKING VOLTAGE	ACTUATOR TYPE	OUTPUT TORQUE	CONSUMPTION	ON/OFF TIME	VALVE BODY
EA7220AM	230VAC±15% 50/60Hz	3-point or on/off	3.5N.m	7W	50Hz:16 sn 60Hz:12 sn	CBBVM215 CBBVM220 CBBVM225 CBBVM232 CBBVM315 CBBVM320 CBBVM325
EA7220A		On/off				
EA7110AM	110VAC±15% 50/60Hz	3-point or on/off				
EA7110A		On/off				
EA7024AM	24VAC±15% 50/60Hz	3-point or on/off				
EA7024A		On/off				

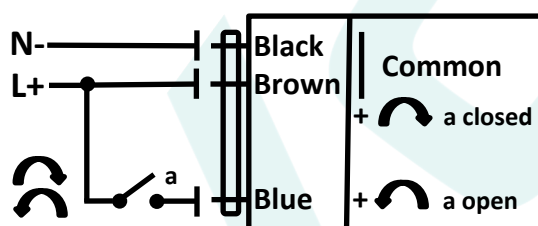
INSTALLATION

Insert the valve stem to the bottom of the actuator, and insert 2 pin, located in the bottom of the actuator to the valve's mounting hole. Then screw down the brass cap nut.

WIRING



Valve (ON) : Brown wire
 Valve (OFF) : Black wire
 Com(N) : Blue wire
Black wire and brown wire are prohibited to get electricity at the same time!
 EA7024AM , EA7110AM , EA7220AM



Control wire : Black wire
 Power wire(L) : Brown wire
 Common port(N) : Blue wire
 EA7024A , EA7110A , EA7220A

TECHNICAL DATA ACTUATOR DC

ACTUATOR

- EA7.....M DC3/6-12/24V, 3-point
- EA7.....D DC3/6-12/24V, on/off
- Output torque: 2 N.m
- Angle of rotation: 90°
- Protection rating: IP54/IP55/IP65*
- On/off time: 5-12 sec
- Ambient Temperature: -10° C ~80° C
- Ambient humidity: 0~90%RH

FUNCTION (3-POINT OR ON/OFF TYPE)

The actuator is controlled by a modulating on/off or 3-point control signal, using reversible synchronous motor and gear speed reducer drive to fix and lock.

EA7.....DM 3-POINT TYPE

- Brown wire is power on.....Valve open
- Black wire is power onValve close
- Brown or black wire is power off.....Valve keep the current position
- Blue wire is connected to the null wire.....Also can be used as on/off type.

EA7.....D ON/OFF TYPE

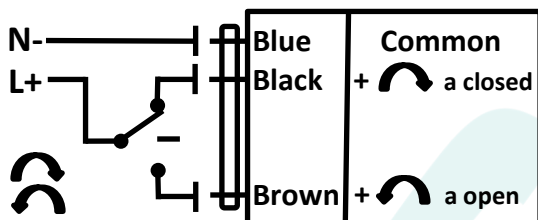
- Blue wire is the control wire.....Power on: valve open, power off: valve close
- Black wire is connected to the com.
- Brown wire is connected to the power wire.
- Only can be used as on/off type.

MODEL NO.	WORKING VOLTAGE	ACTUATOR TYPE	OUTPUT TORQUE	CONSUMPTION	ON/OFF TIME	VALVE BODY	
EA7003DM	DC3V	3-point or on/off	2 N.m	2W	5-12 sec	CBBVM215 CBBVM220 CBBVM225 CBBVM232 CBBVM315 CBBVM320 CBBVM325	
EA7003D		On/off					CSBVM215 CSBVM220
EA7012DM	DC12V	3-point or on/off					CSBVM225 CSBVM315
EA7012D		On/off					CSBVM320 CSBVM325
EA7024DM	DC24V	3-point or on/off					
EA7024D		On/off					

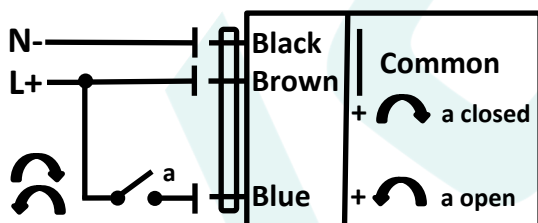
INSTALLATION

Insert the valve stem to the bottom of the actuator, and insert 2 pin, located in the bottom of the actuator to the valve's mounting hole. Then screw down the brass cap nut.

WIRING

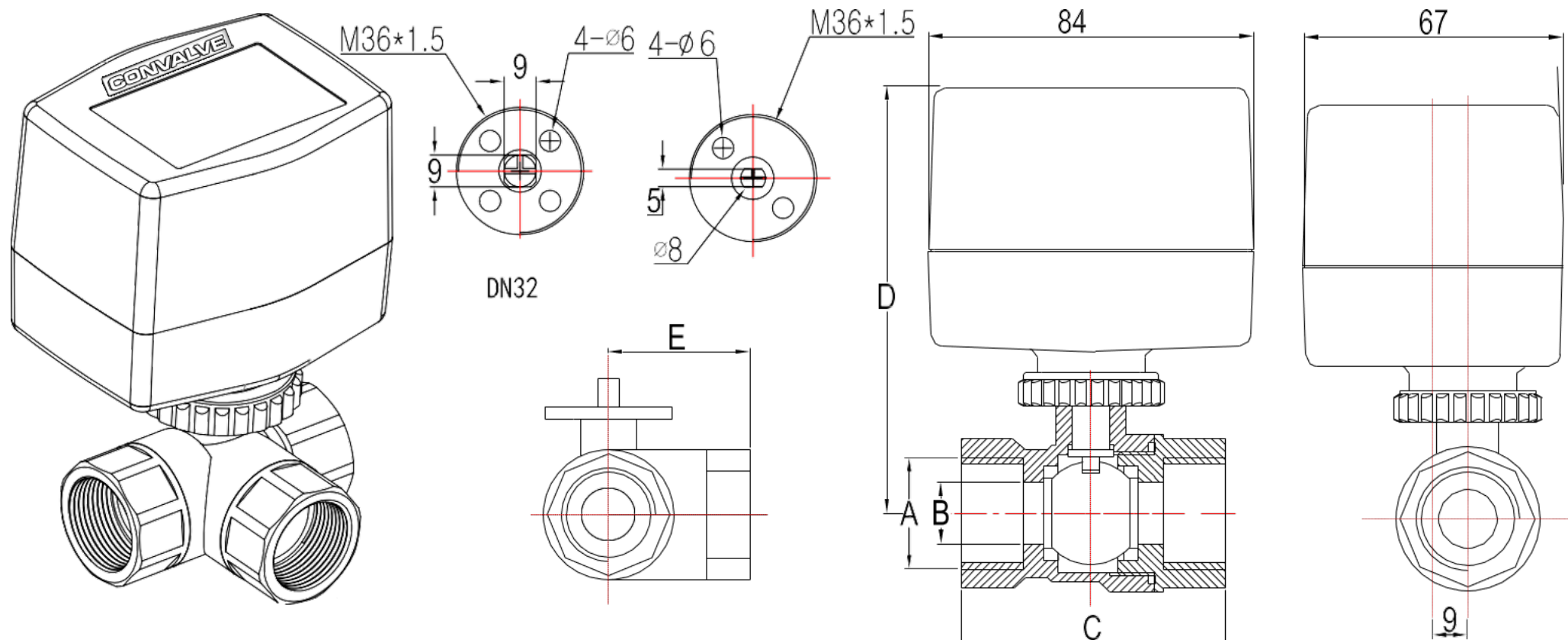


Valve (ON) : Brown wire
 Valve (OFF) : Black wire
 Com(N) : Blue wire
Black wire and brown wire are prohibited to get electricity at the same time!
 EA7003DM , EA7012DM , EA7024DM



On-Off wire : Blue Wire
 Power wire : Brown Wire
 Com(N) : Black Wire
 EA7003D , EA7012D , EA7024D

VALVE STRUCTURE : 2 WAY / 3 WAY STAINLESS / BRASS



Unit: mm (Allowable tolerance±2)

2 WAY BRASS

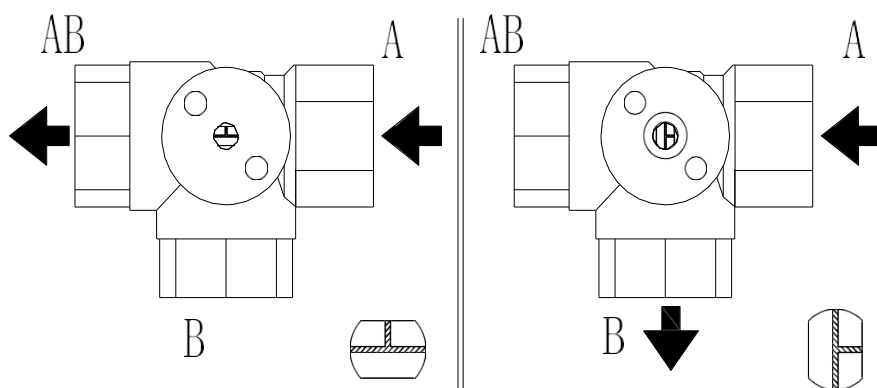
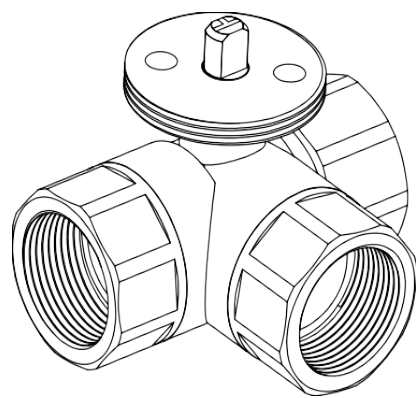
A	B	C	D
G1/2"	12	52	114
G3/4"	15	58	116
G1"	20	73	123
G1-1/4"	22	98	131

3 WAY BRASS

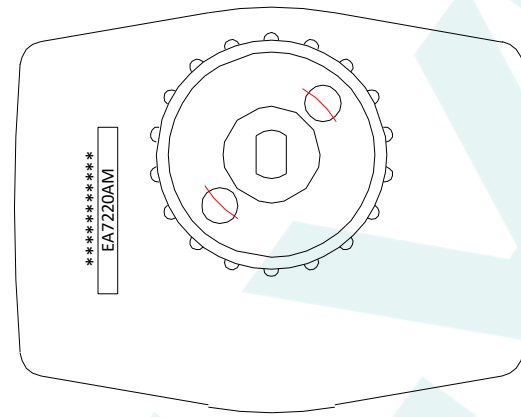
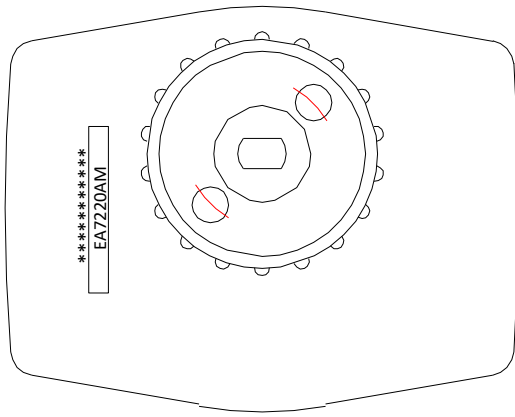
A	B	C	D	E
G1/2"	10	56	114	30
G3/4"	13	69.5	118	37
G1"	18	82	121	43
G1-1/4"	22	98	131	49

2 WAY STAINLESS

A	B	C	D
G1/2"	15	57	117
G3/4"	20	65	120
G1"	25	79	124

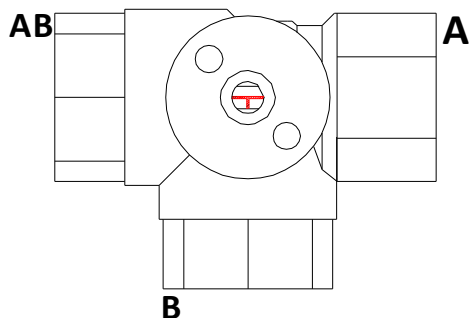


Before installation 3 way valve, please double check the direction of ball core {the "T" mark shown on the top of the valve stem }. Left picture for factory setting reference; Right picture for optional setting. Please indicate flow diagram before ordering.

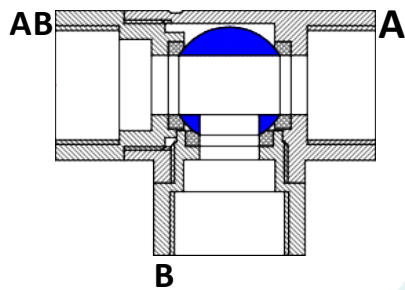


ACTUATOR STATE AS DELIVERED

INSTALLATION METHOD 1

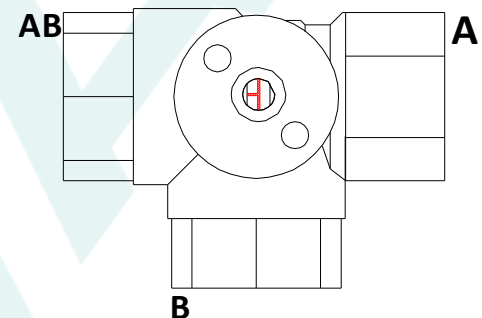


EA7024A/EA7110A/EA7220A:
The power is supplied to the Black wire and the Brown wire, valves will be opened.
EA7003DM/EA7012DM/EA7024DM:
The power is supplied to the Brown wire, valves will be opened.

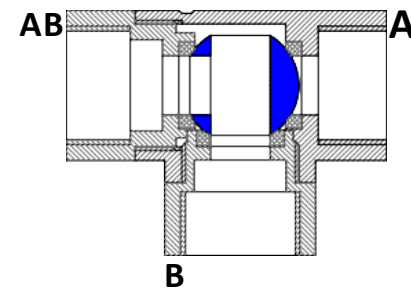


90 degrees counter clockwise turn

90 degrees clockwise turn

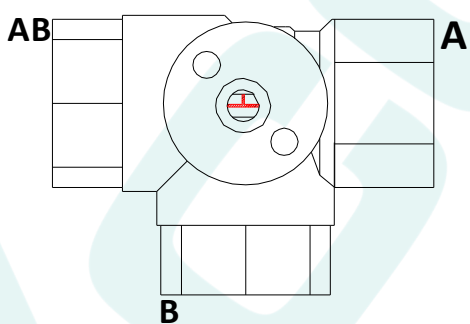


EA7024A/EA7110A/EA7220A:
The power is supplied to the Brown wire valves will be closed.
EA7003DM/EA7012DM/EA7024DM:
The power is supplied to the Blue wire valves will be closed.

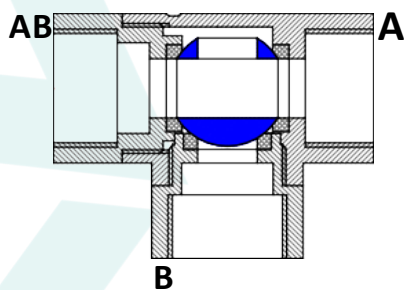


EA7220AM(A)+CBBVM315/20/25. at 90 degrees clockwise and counterclockwise turn. Core Ball is "T" mode.

INSTALLATION METHOD 2

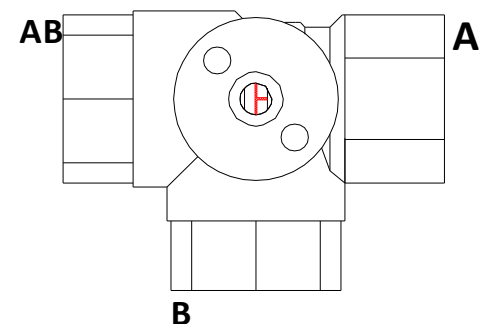


EA7024A/EA7110A/EA7220A:
The power is supplied to the Black wire and the Brown wire, valves will be opened.
EA7003DM/EA7012DM/EA7024DM:
The power is supplied to the Brown wire, valves will be opened.

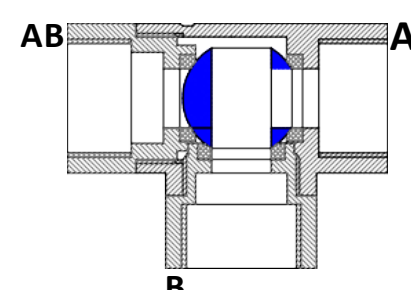


90 degrees counter clockwise turn

90 degrees clockwise turn

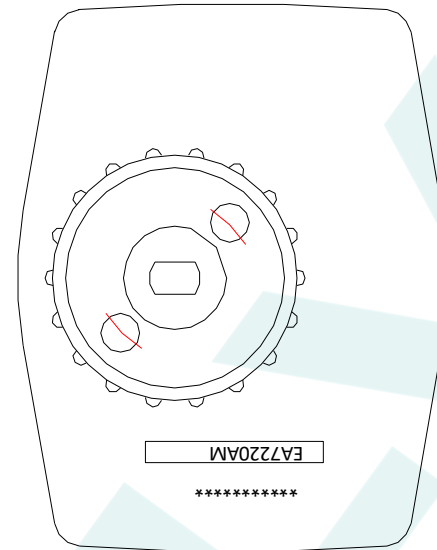
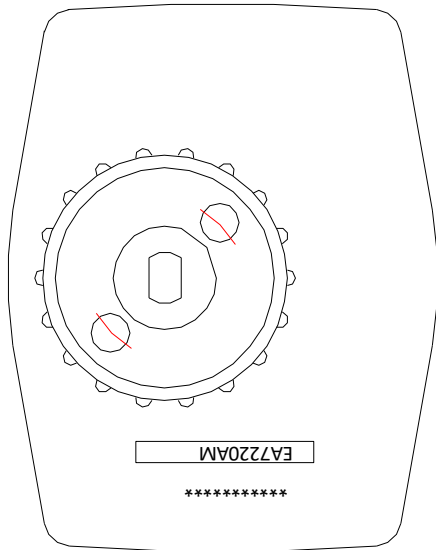


EA7024A/EA7110A/EA7220A:
The power is supplied to the Brown wire valves will be closed.
EA7003DM/EA7012DM/EA7024DM:
The power is supplied to the Blue wire valves will be closed.



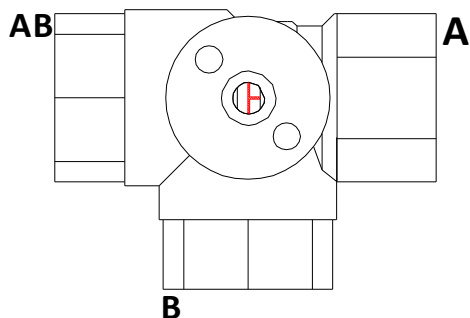
EA7220AM(A)+CBBVM315/20/25. at 90 degrees clockwise and counterclockwise turn. Core Ball is "T" mode

VALVE STRUCTURE: 3 WAY STAINLESS / BRASS

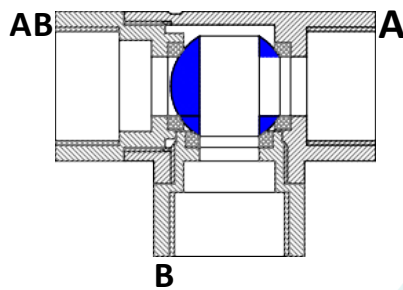


ACTUATOR STATE AS DELIVERED

INSTALLATION METHOD 1

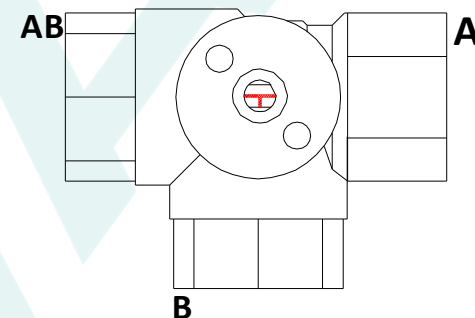


EA7024A/EA7110A/EA7220A:
The power is supplied to the Black wire and the Brown wire, valves will be opened.
EA7003DM/EA7012DM/EA7024DM:
The power is supplied to the Brown wire, valves will be opened.

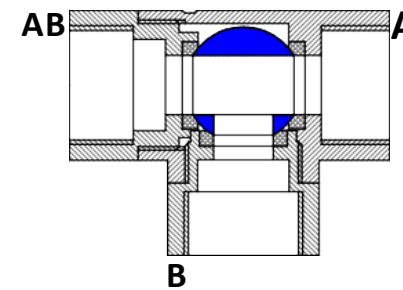


90 degrees counter clockwise turn

90 degrees clockwise turn

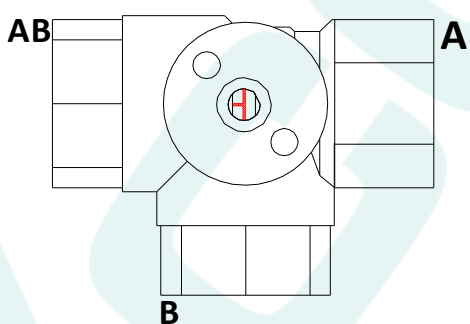


EA7024A/EA7110A/EA7220A:
The power is supplied to the Brown wire valves will be closed.
EA7003DM/EA7012DM/EA7024DM:
The power is supplied to the Blue wire valves will be closed.

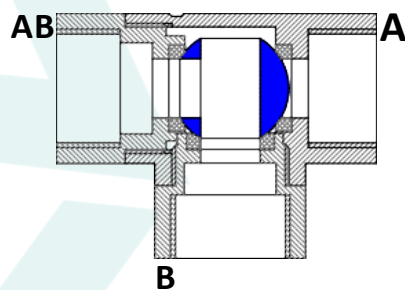


EA7220AM(A)+CBBVM315/20/25. at 90 degrees clockwise and counterclockwise turn. Core Ball is "T" mode.

INSTALLATION METHOD 2

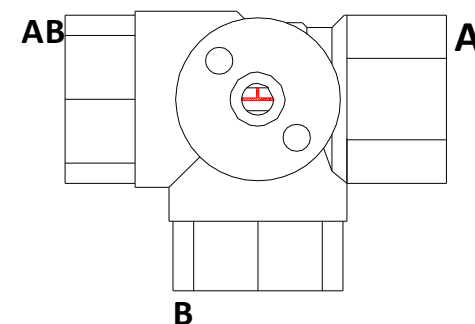


EA7024A/EA7110A/EA7220A:
The power is supplied to the Black wire and the Brown wire, valves will be opened.
EA7003DM/EA7012DM/EA7024DM:
The power is supplied to the Brown wire, valves will be opened.

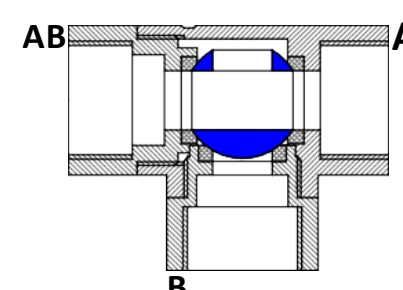


90 degrees counter clockwise turn

90 degrees clockwise turn



EA7024A/EA7110A/EA7220A:
The power is supplied to the Brown wire valves will be closed.
EA7003DM/EA7012DM/EA7024DM:
The power is supplied to the Blue wire valves will be closed.



EA7220AM(A)+CBBVM315/20/25. at 90 degrees clockwise and counterclockwise turn. Core Ball is "T" mode