



MINI MOTORIZED BALL VALVE



ISO 9001
Quality 

ISO 14001
Environment 

OHSAS 18001
Health & Safety 



MINI MOTORIZED BALL VALVE

Scan me

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

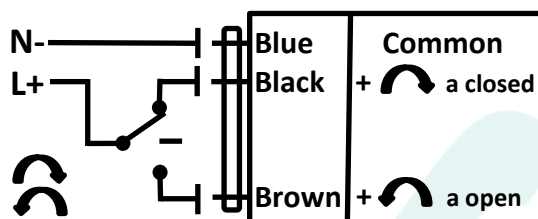
- Blue wire is the control wire.....Power on: valve open, power off: valve close
- Black wire is connected to the com.
- Brown wire is connected to the power wire.
- Only can be used as on/off type.

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				

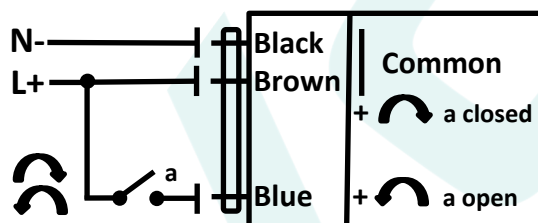
INSTALLATION

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

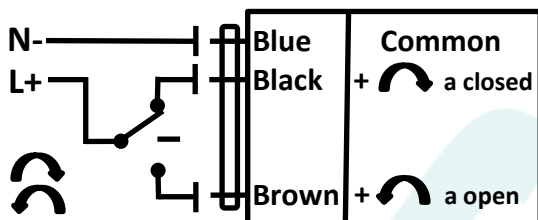
- Blue wire is the control wire.....Power on: valve open, power off: valve close
- Black wire is connected to the com.
- Brown wire is connected to the power wire.
- Only can be used as on/off type.

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					

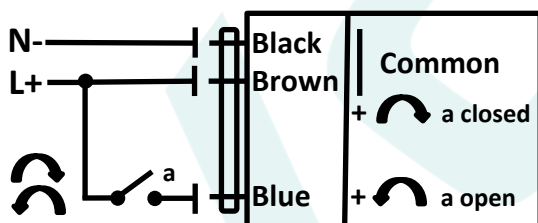
INSTALLATION

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

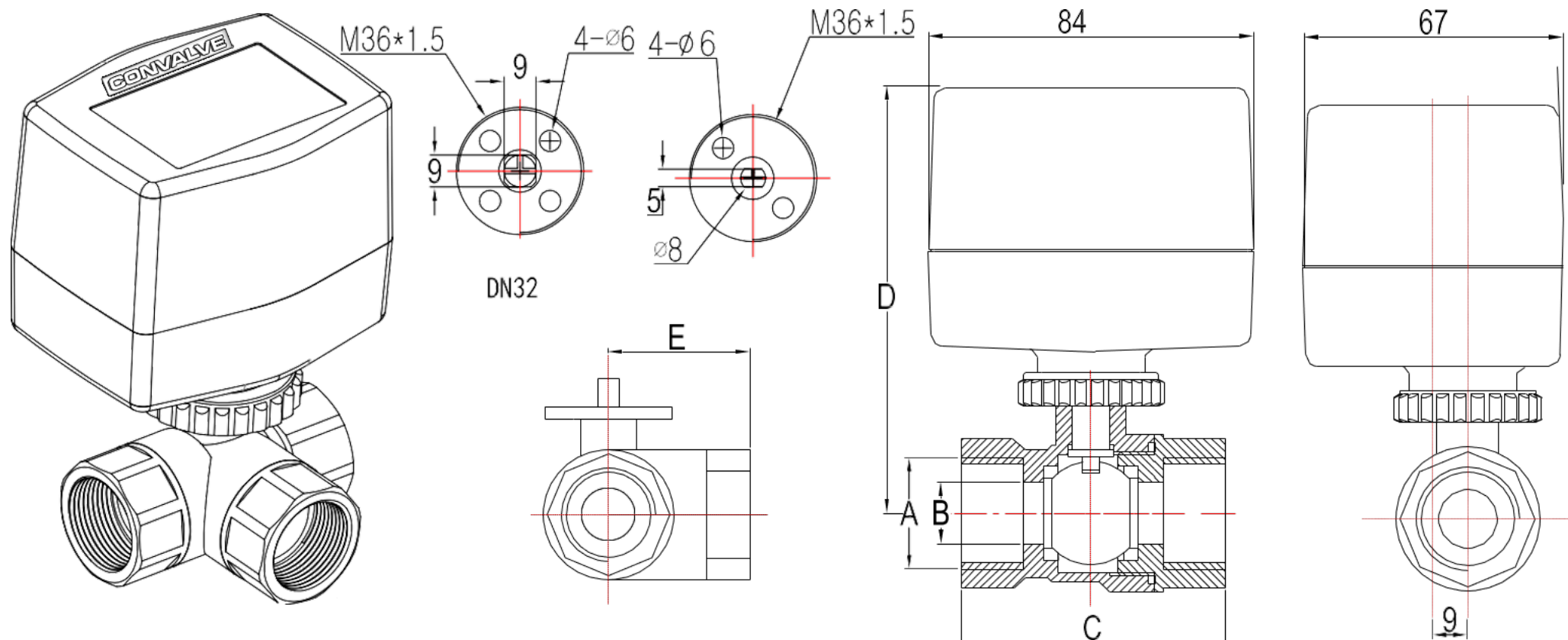


Valve (ON) : Brown wire
 Valve (OFF) : Black wire
 Com(N) : Blue wire
Black wire and brown wire are prohibited to get electricity at the same time!
 EA7003DM , EA7012DM , EA7024DM



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

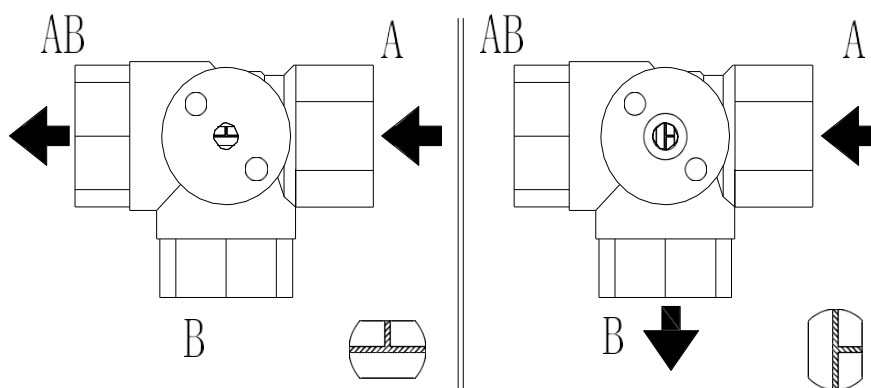
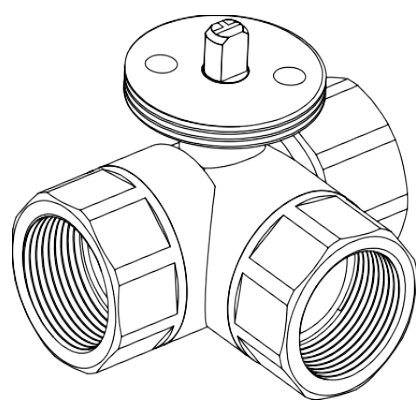
A	B	C	D
G1/2"	12	52	114
G3/4"	15	58	116
G1"	20	73	123
G1-1/4"	22	98	131

3 WAY BRASS

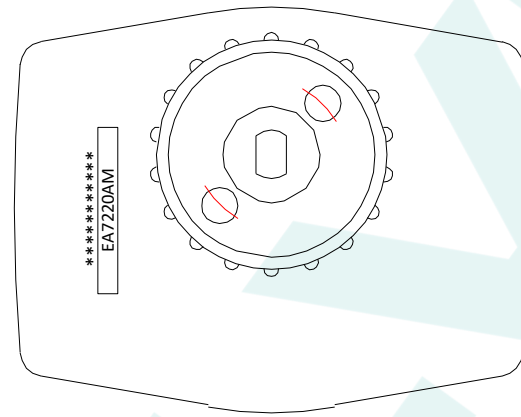
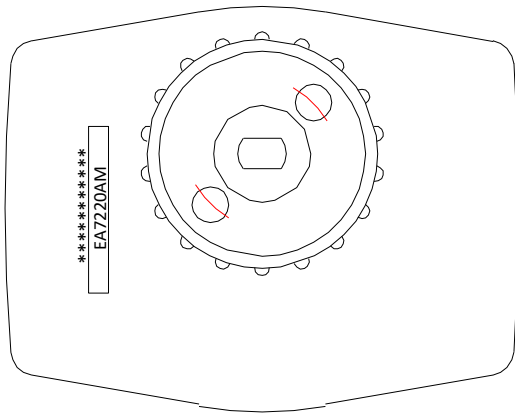
A	B	C	D	E
G1/2"	10	56	114	30
G3/4"	12	69.5	118	37
G1"	17	82	121	43
G1-1/4"	22	98	131	49

2 WAY STAINLESS

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

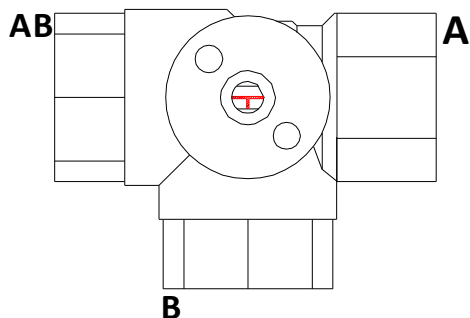


Before installation 3 way valve, please double check the direction of ball core {the "T" mark shown on the top of the valve stem }. Left picture for factory setting reference; Right picture for optional setting. Please indicate flow diagram before ordering.

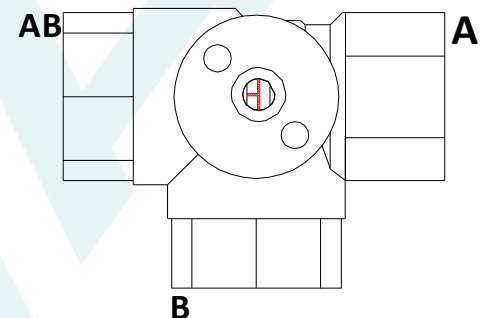
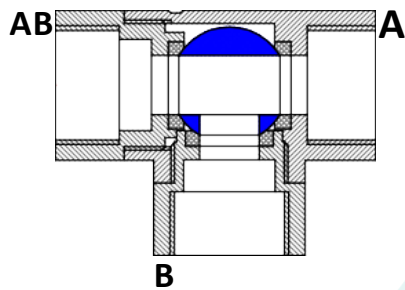


ACTUATOR STATE AS DELIVERED

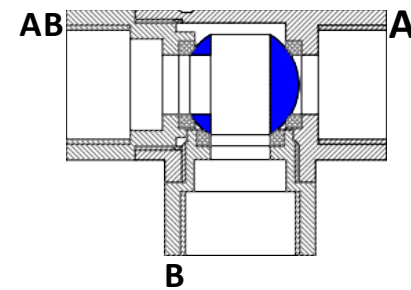
INSTALLATION METHOD 1



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.



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.

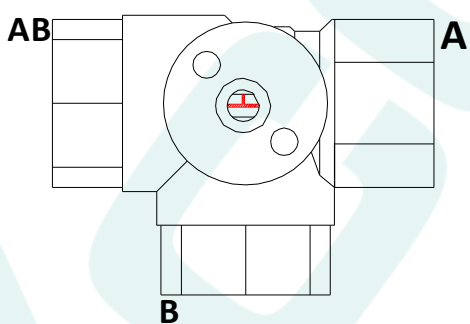


90 degrees counter clockwise turn

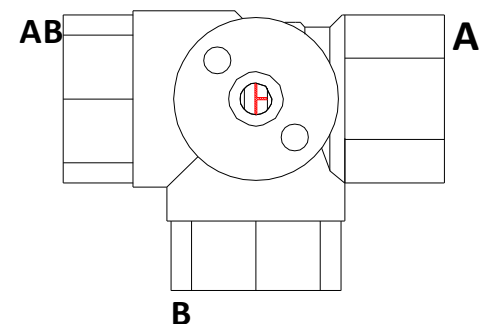
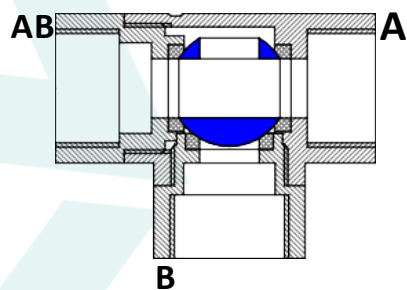
90 degrees clockwise turn

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

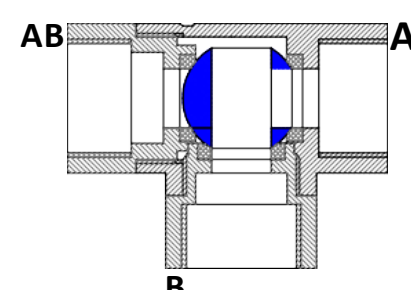
INSTALLATION METHOD 2



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.



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.

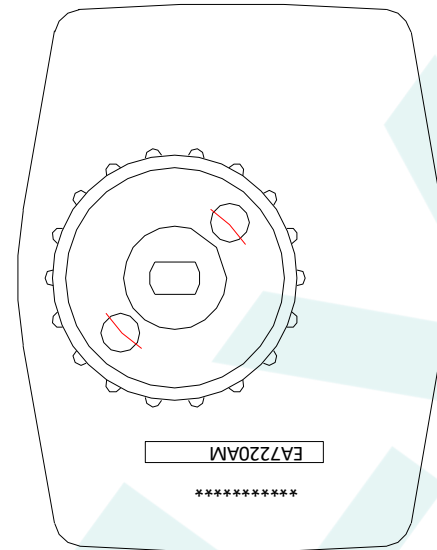
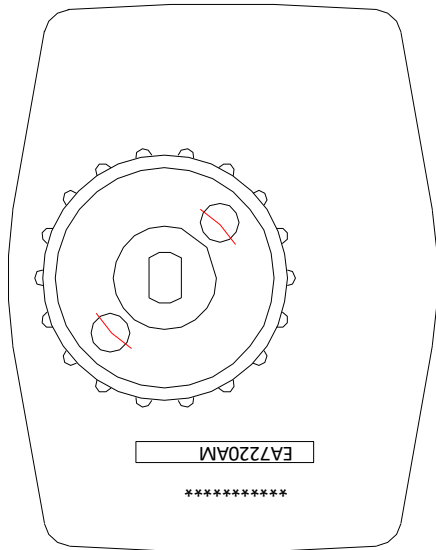


90 degrees counter clockwise turn

90 degrees clockwise turn

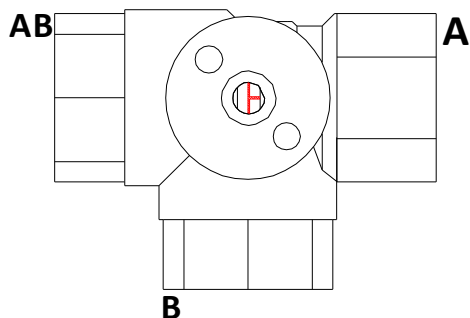
EA7220AM(A)+CBBVM315/20/25. at 90 degrees clockwise and counterclockwise turn. Core Ball is "T" mode

VALVE STRUCTURE: 3 WAY STAINLESS / BRASS

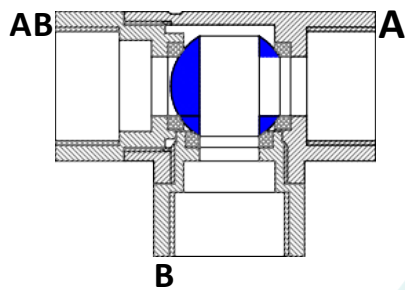


ACTUATOR STATE AS DELIVERED

INSTALLATION METHOD 1

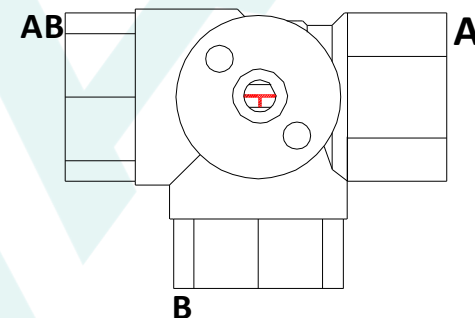


EA7024A/EA7110A/EA7220A:
The power is supplied to the Black wire and the Brown wire, valves will be opened.
EA7003DM/EA7012DM/EA7024DM:
The power is supplied to the Brown wire, valves will be opened.

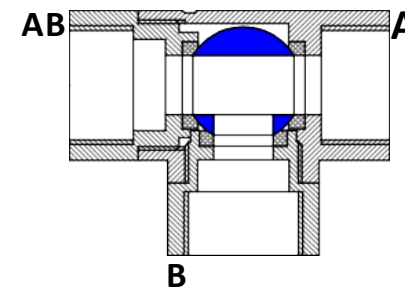


90 degrees counter clockwise turn

90 degrees clockwise turn

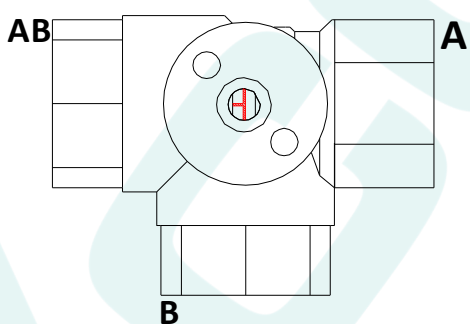


EA7024A/EA7110A/EA7220A:
The power is supplied to the Brown wire valves will be closed.
EA7003DM/EA7012DM/EA7024DM:
The power is supplied to the Blue wire valves will be closed.

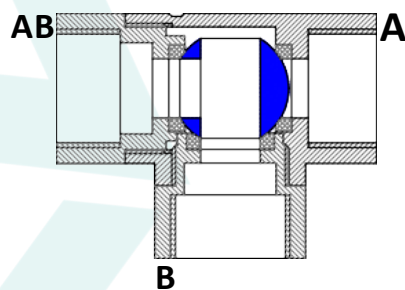


EA7220AM(A)+CBBVM315/20/25. at 90 degrees clockwise and counterclockwise turn. Core Ball is "T" mode.

INSTALLATION METHOD 2

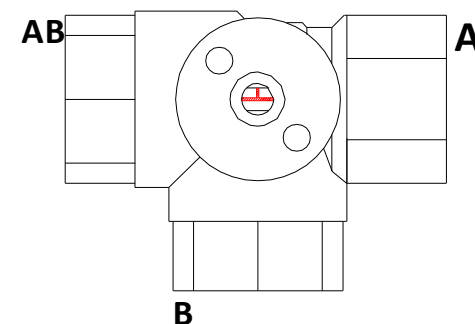


EA7024A/EA7110A/EA7220A:
The power is supplied to the Black wire and the Brown wire, valves will be opened.
EA7003DM/EA7012DM/EA7024DM:
The power is supplied to the Brown wire, valves will be opened.

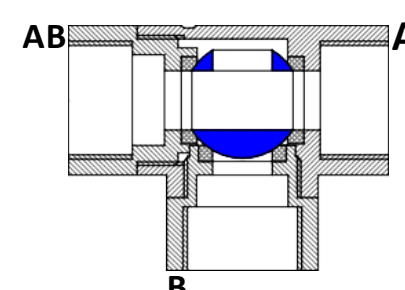


90 degrees counter clockwise turn

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