

3BM-1S Type Ball Valve Type Motor Valve (for Liquids, Air or Gases)

Three-way valve for on/off control

3BM-1S Type is a compact motor valve with characteristics of ball valve and a 3-way, 2-port (L) structure.



FEATURES

- Large operating power.
- The signal for valve switching can be drawn out.
- The state of valve can be checked from outside.
- No limitation on flow direction and installation direction.
- Manual valve switching possible.
- Embedded thermal protector (for size 32~50mm above)
- Rainproof, suitable for outdoor application.*

SPECIFICATIONS

Model name	3BM-1S	
Code name	3BM1S-F	
Applicable fluid	Liquids, air & gases	
Fluid temperature	-10~100°C(Freezing is not allowed.)	
Applicable pressure	Max. 1.0MPa	
Ambient temperature	-10~50°C	
Operation	ON/OFF control	
Leakage allowance	Nil(Confirm at pressure gauge)	
End connection	Screwed JIS Rc	
Valve body pressure test	Hydraulic 1.5MPa	
Materials	Body(Brass), Ball(Brass, Chrome plated), Cover(Cast aluminum)	
Rated voltage	AC100/110V 50/60Hz or AC200/220V 50/60Hz	
Allowable voltage fluctuation range	Rated voltage ±5%	
Size	15~25(1/2"~1")	32~50(1 1/4"~2")
Rated capacity	22VA	50VA
Rated current	AC100V:0.22A, AC200V:0.11A	AC100V:0.50A, AC200V:0.25A
Starting current	AC100V:0.30A, AC200V:0.15A	AC100V:0.90A, AC200V:0.45A
Switch off time	Size 15~25mm Approx. 2sec, Size 32~50mm Approx. 4sec	
Insulation	Class E	
Time rating	30min	
Withstanding voltage test	AC1500V/min	
Insulation resistance	50MΩ or more	
Overload protection	Thermal protector is built in (Size 32~50mm)	
Protection	Rain proof (with cabtyre cable)*	
Open/close check contact	Provided (voltage) Contact capacity: AC125, 250V, 10A(Equivalent to JIS C4505 V3)	
Manual control device	Equipped	

* Avoid exposure to direct sunray in the case of outdoor installation.

DIMENSIONS

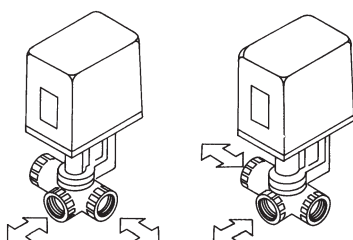
(mm)

Size	d	L	L ₁	G	H	A	B	Port size	Cv value	Mass(kg)
15(1/2")	1/2"	67	33.5	16	234	139	89	10	2.8	3.4
20(3/4")	3/4"	68	34	21	238	139	89	15	7.5	3.5
25(1")	1"	78.5	39.5	24	242	139	89	20	12	3.8
32(1 1/4")	1 1/4"	89	44.5	25	281	159	109	25	18.5	5.9
40(1 1/2")	1 1/2"	100	50	33	283	159	109	32	30	6.2
50(2")	2"	115	57.5	39	290	159	109	40	45	7.2

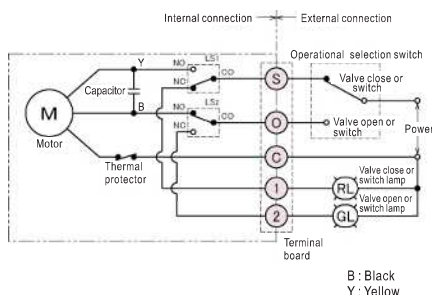
OPERATION

CO power-on

CS power-on

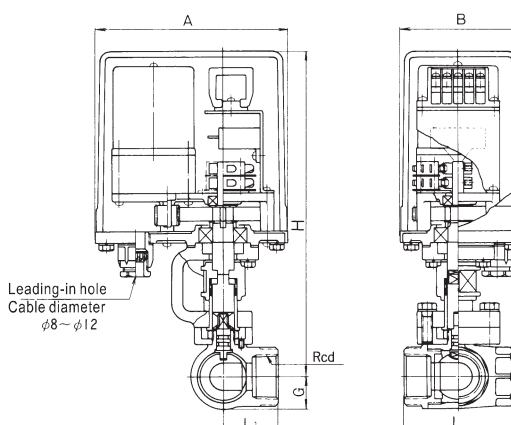


CIRCUIT DIAGRAM OF ACTUATOR



(the state that switching is completed when CS is on)
Note: Size 15~25mm product has no thermal protector embedded.

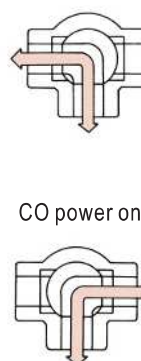
CONSTRUCTION



DIRECTION OF FLOW

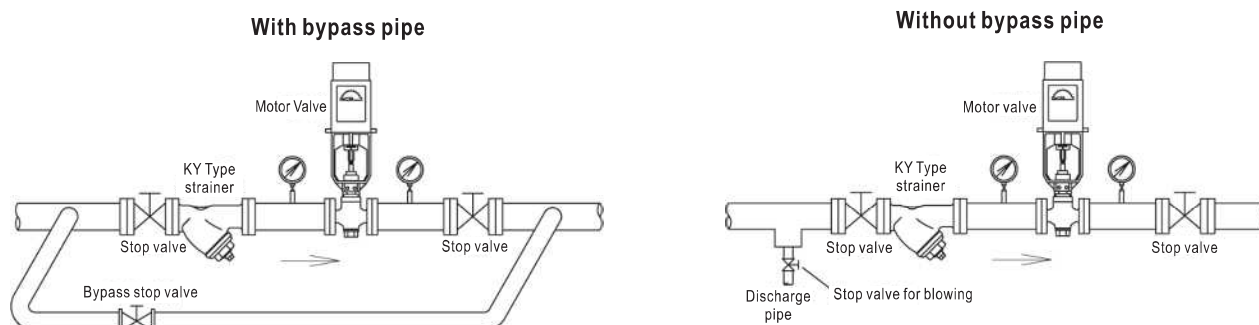
CS power on

CO power on



DATA/ML Type Motor Valve

Fig.1 Piping example



■ Selection and Installation

1. Install strainer on the primary side of motor valve (see Fig.1).
2. Install a bypass pipe (with stop valve) between the primary and secondary sides of motor valve if the operation of equipment cannot be stopped (see Fig.1).
If you do not intend to install bypass pipe, install blowing stop valve, which is branched from the main pipe, right before the stop valve on the primary side of motor valve, to allow flushing.
3. Install the valve upright to horizontal pipe or on vertical pipe (see Fig.2). For installation on vertical pipe and when the size is 80mm above, leave sufficient space for maintenance purpose.
4. As for application with 1 piece of operational switch, in the case 2 or more motor valves are connected through parallel connection, install external relay and the operation should be performed through the contact of relay.
5. The ambient temperature should be within the range of applicable temperature described in specifications.
In addition, avoid using motor valve in environment where there is excessive humidity, dust, corrosive gas or explosive gas.
6. Install steam trap on piping if the valve is used for steam.
7. When the fluid is liquid, the pressure in pipe may increase due to thermal expansion caused by ambient temperature when valve is closed. In such cases, it is recommended to install relief valve to protect machine (see Fig. 3).
8. Make sure the arrow mark on motor valve match with the direction of flow of fluid.
9. Leave some space for disassembling and maintenance.
10. Fix and support piping properly to prevent motor valve from being damaged due to weight of piping, excessively large stress, bending force or vibration.
11. Discharge drain or apply thermal insulation if there is risk of freezing.

Fig.2 Direction of installation of ML motor valve

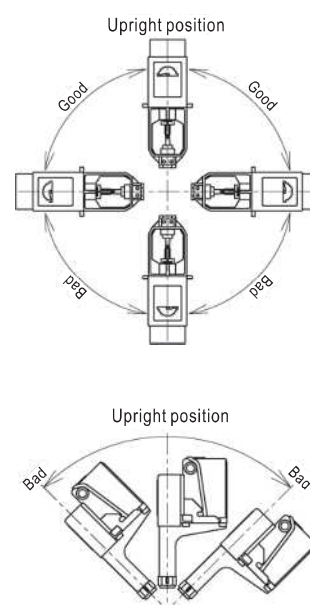
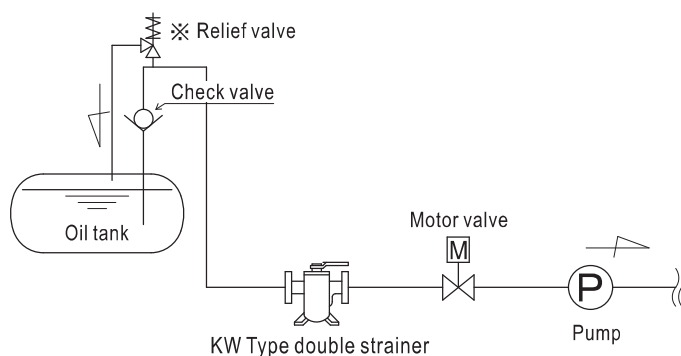


Fig.3 Relief valve installation



※Install relief valve if pressure rise due to thermal expansion or other factors is anticipated.