

### Function

The zone valves are aimed at automatically controlling and diverting the fluids in heating, air conditioning and sanitary water systems.

They are controlled by a servo-control, connected to a room thermostat provided with automatic return function, regulating the ambient temperature. All servomotors are equipped with an auxiliary micro-switch to control the pump.

This product, easy to install, shows high hydraulic performance in reduced sizes, this makes it specially suitable for zone heating installations.

#### Advantages of the zone ball valves:

- Excellent seal
- Quick opening/closing time
- Low pressure drop rates
- Operation under high differential pressures

#### Advantages of the ICMA zone valves:

- Soft seat ball movement, valve opening torque < 45 lbf-in 6 Nm
- Quick connection system
- The motor can be used manually as a release device in the event of power failure
- Highly reliable motor, manufactured in Switzerland
- High precision gears, in sintered metal materials
- Low noise level .
- Motor start-up torque doubled if compared with the valve body
- Quick and repeatable motor lock/unlock, without damaging the motor or the valve
- Severe and rigorous factory testing and quality control procedure (50.000 cycles)

### TECHNICAL FEATURES

#### VALVE BODY

Body:	Brass CW617N UNI 12165
Control stem:	Brass CW614N UNI 12164
Ball:	Brass CW614N UNI 12164 Chromium plated
Ball sealing gasket:	PTFE
O-Ring:	EPDM PEROX - (high resistance)

#### SERVOCONTROL

Upper protection shell:	Clear ABS
Lower protection shell:	Nylon 66 Nero

### PERFORMANCES

#### VALVE BODY

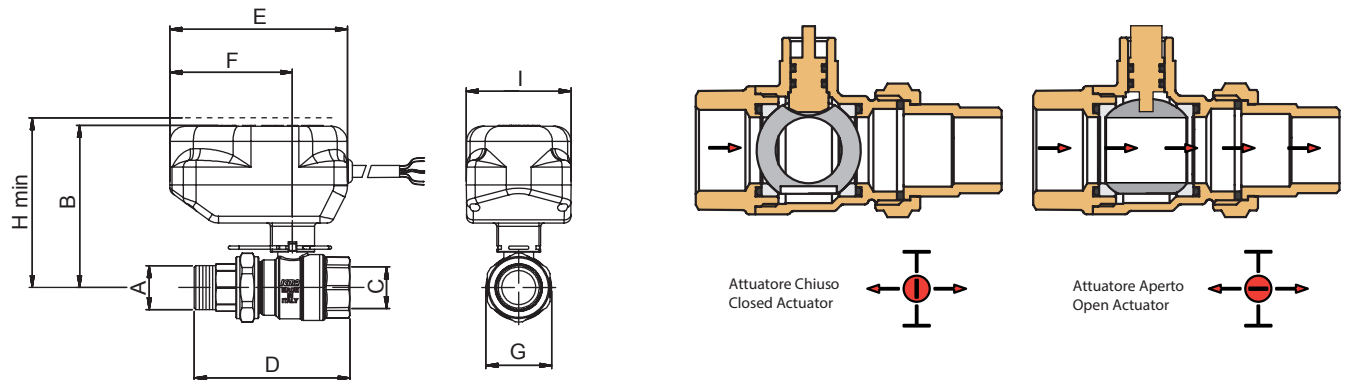
Working fluids:	water, glycol-based solutions Max 50%
Max. operating 'pressure:	10 bar
Temperature range:	23°/230°F (-5°/110°C)
Max. differential pressure:	10 bar

#### SERVOCONTROL

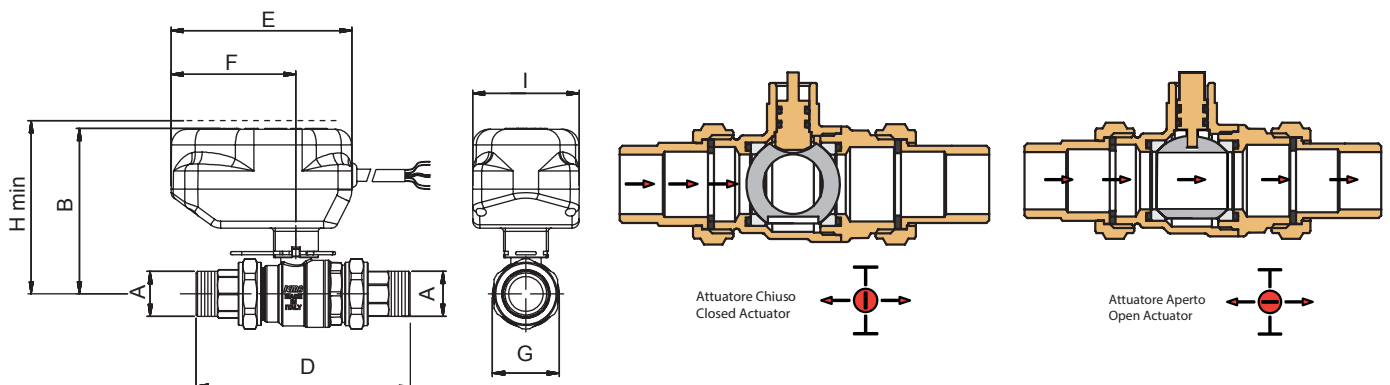
Synchronous motor:	230 VAC (±10%) 50÷60 Hz
Power absorbed:	5VA
Capacity of the auxiliary micro-switch contacts:	Max 1A
Protection degree:	IP 44 vertical control stem - IP 40 (casing)
Movement time (90° rotation angle):	45 sec.
Dynamic start up torque:	12 Nm
Cable length:	1 m
Standard operating mode:	NC (normally closed)



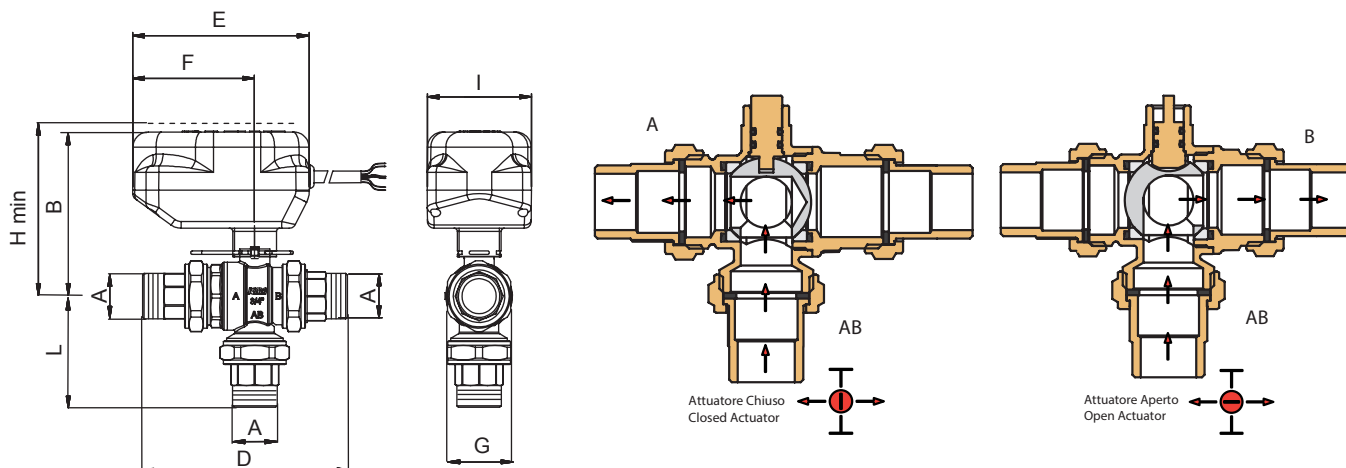
### Dimensions



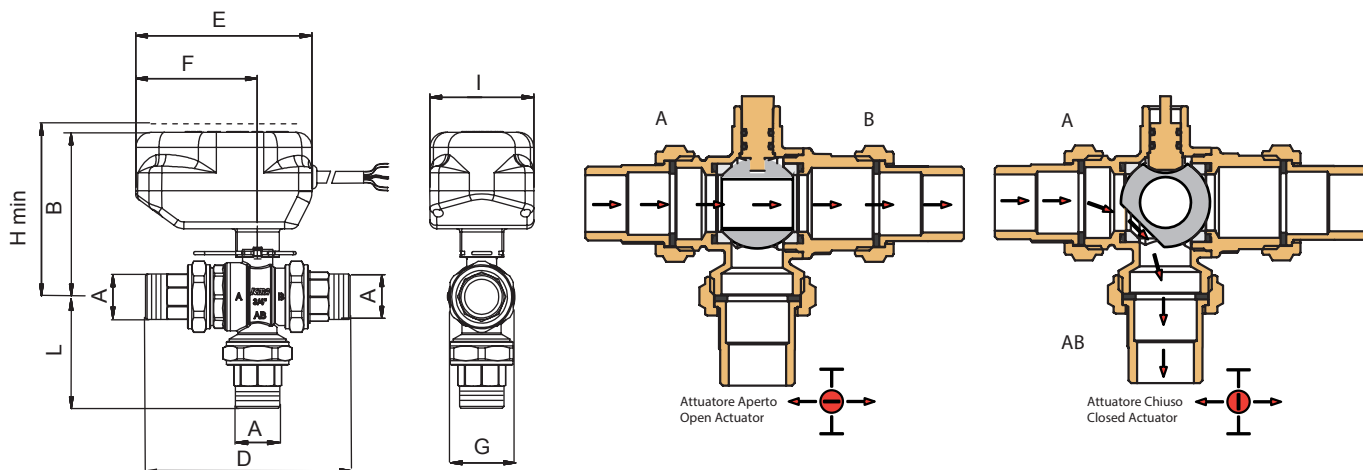
CODE	DN	A	B	C	D	E	F	G	H	I	NOTE
82331AD05	15	1/2" M	95	1/2" F	80	105	73	Ø33	115	62	VALVE ONLY
82331AE05	20	3/4" M	95	3/4" F	92	105	73	Ø40	115	62	VALVE ONLY
82331AF05	25	1" M	100	1" F	105	105	73	Ø48	120	62	VALVE ONLY
82331AG05	32	1"1/4 M	105	1"1/4 F	118	105	73	Ø58	125	62	VALVE ONLY
82341AD0553	15	1/2" M	95	1/2" F	80	105	73	Ø33	115	62	VALVE+ ACT
82341AE0553	20	3/4" M	95	3/4" F	92	105	73	Ø40	115	62	VALVE+ ACT
82341AF0553	25	1" M	100	1" F	105	105	73	Ø48	120	62	VALVE+ ACT
82341AG0553	32	1"1/4 M	105	1"1/4 F	118	105	73	Ø58	125	62	VALVE+ ACT



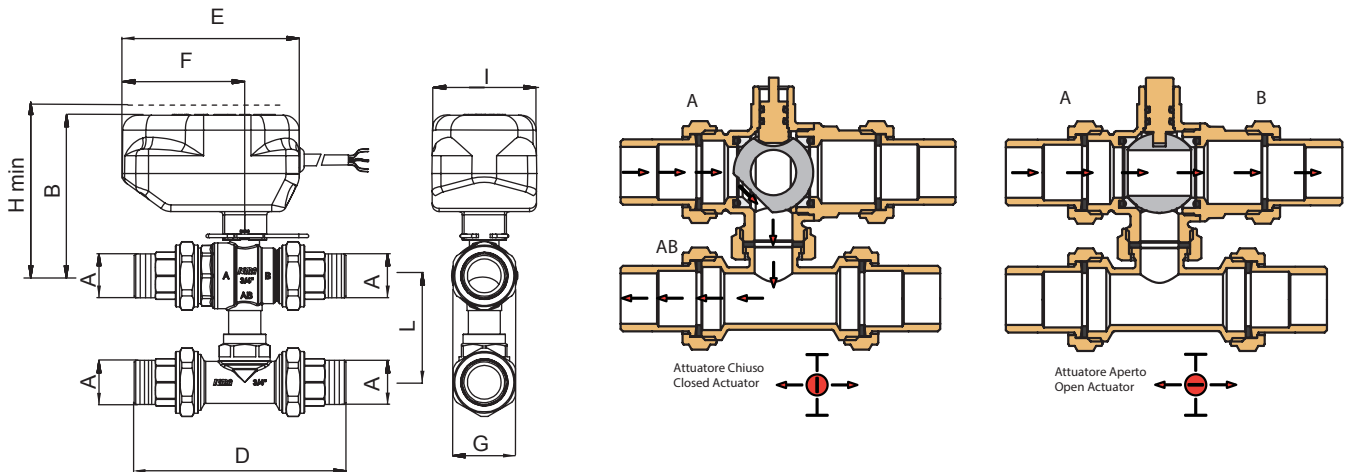
CODE	DN	A	B	D	E	F	G	H	I	NOTE
82332AD05	15	1/2" M	95	105	105	73	Ø33	115	62	VALVE ONLY
82332AE05	20	3/4" M	95	123	105	73	Ø40	115	62	VALVE ONLY
82332AF05	25	1" M	100	140	105	73	Ø48	120	62	VALVE ONLY
82332AG05	32	1"1/4 M	105	153	105	73	Ø58	125	62	VALVE ONLY
82342AD0553	15	1/2" M	95	105	105	73	Ø33	115	62	VALVE+ ACT
82342AE0553	20	3/4" M	95	123	105	73	Ø40	115	62	VALVE+ ACT
82342AF0553	25	1" M	100	140	105	73	Ø48	120	62	VALVE+ ACT
82342AG0553	32	1"1/4 M	105	153	105	73	Ø58	125	62	VALVE+ ACT



CODE	DN	A	B	D	E	F	G	H	I	L	NOTE
82333AE05	20	3/4" M	95	92	105	73	Ø40	115	62	63	VALVE ONLY
82333AF05	25	1" M	100	105	105	73	Ø48	120	62	72	VALVE ONLY
82333AG05	32	1"1/4 M	105	118	105	73	Ø58	125	62	80	VALVE ONLY
82343AE0553	20	3/4" M	95	92	105	73	Ø40	115	62	63	VALVE+ ACT
82343AF0553	25	1" M	100	105	105	73	Ø48	120	62	72	VALVE+ ACT
82343AG0553	32	1"1/4 M	105	118	105	73	Ø58	125	62	80	VALVE+ ACT



CODE	DN	A	B	D	E	F	G	H	I	L	NOTE
82334AE05	20	3/4" M	95	123	105	73	Ø40	115	62	63	VALVE ONLY
82334AF05	25	1" M	100	140	105	73	Ø48	120	62	72	VALVE ONLY
82334AG05	32	1"1/4 M	105	153	105	73	Ø58	125	62	80	VALVE ONLY
82344AE0553	20	3/4" M	95	123	105	73	Ø40	115	62	63	VALVE+ ACT
82344AF0553	25	1" M	100	140	105	73	Ø48	120	62	72	VALVE+ ACT
82344AG0553	32	1"1/4 M	105	153	105	73	Ø58	125	62	80	VALVE+ ACT



CODE	DN	A	B	D	E	F	G	H	I	L	NOTE
82336AE05	20	3/4" M	95	123	105	73	Ø40	115	62	63	VALVE ONLY
82336AF05	25	1" M	100	140	105	73	Ø48	120	62	72	VALVE ONLY
82336AG05	32	1"1/4 M	105	153	105	73	Ø58	125	62	80	VALVE ONLY
82346AE0553	20	3/4" M	95	123	105	73	Ø40	115	62	63	VALVE+ ACT
82346AF0553	25	1" M	100	140	105	73	Ø48	120	62	72	VALVE+ ACT
82346AG0553	32	1"1/4 M	105	153	105	73	Ø58	125	62	80	VALVE+ ACT

### Construction Notes

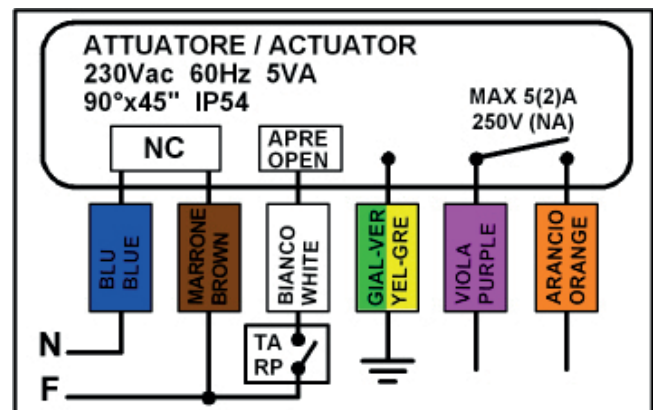
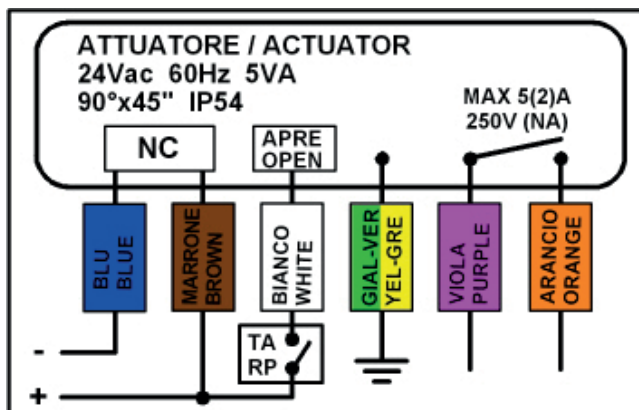
#### SERVO-CONTROL

The electric diagram shows a two-point servo-control, with relay.

The valve opens when the voltage is sent on the white wire, the closure occurs when the voltage is cut off. Actuator normally closed.

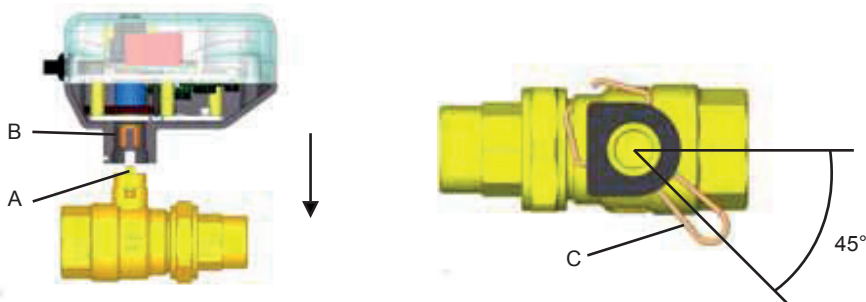
The actuator is provided with an auxiliary micro-switch, that is activated when the valve reaches the open position, and enables the pump starting. (Max contact capacity 0.8A 220Volt ).

The actuator is provided with a two-way motor, allowing opening and closing the valve (90° movement angle), both clockwise and counter clockwise.

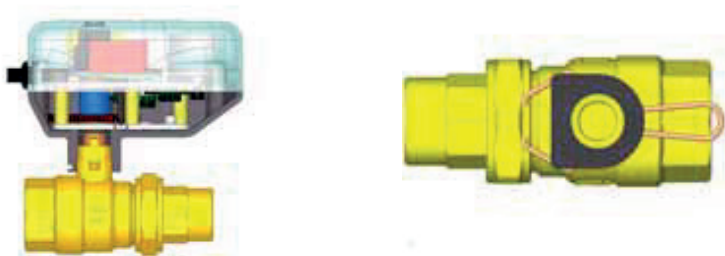


### SERVO-CONTROL / VALVE COUPLING

The actuator is locked to the valve body by the control stem A and the geared motor shaft B. Coupling is performed by the spring C.



To insert the actuator into the valve body position the fork at 45°

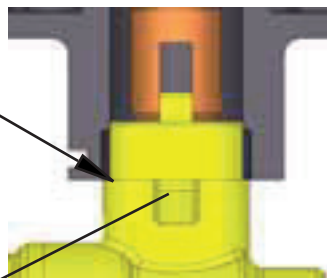


Insert the actuator into the seat and position the fork parallel to the valve body, to assure coupling.

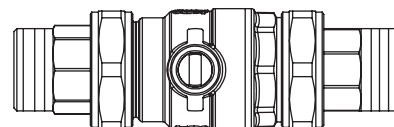
### MANUAL RELEASE FUNCTION

The actuator can be used as a key for the valve manual release. This system enables opening/closing the flow during installation, or releasing the valve, if required.

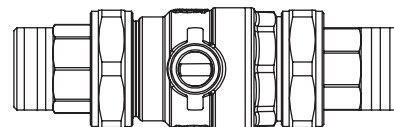
Keep to the edge of the valve body hooking tooth.



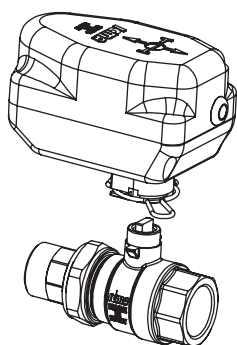
Tooth



VERTICAL SPINDLE VALVE CLOSED



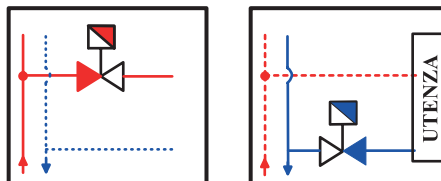
HORIZONTAL SPINDLE VALVE OPEN



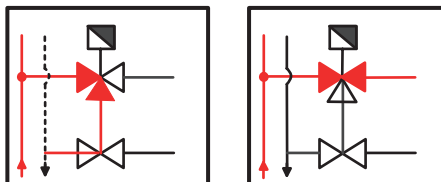
Put the motor on the valve body (as shown in the picture). Rotate the actuator clockwise or counter-clockwise, until the valve ball reaches required position.

### INSTALLATION

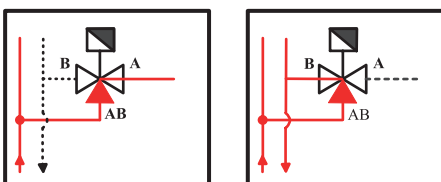
Two-way valves can be installed both on delivery/return piping.



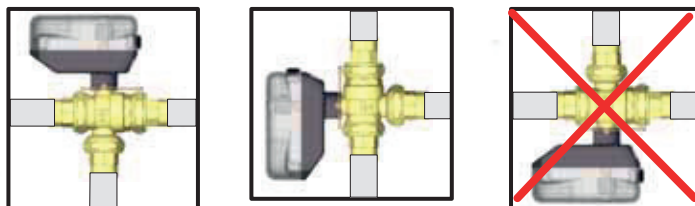
Three-way valves, bypass version, must be installed on the delivery piping.



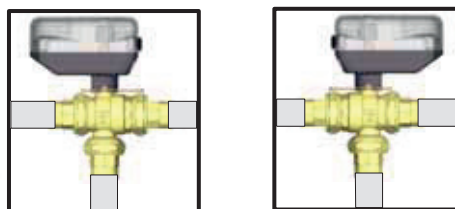
The diverting, three-way valves are usually installed on the delivery piping, with normal flow AB to B and diverting AB to A.



The actuator can be installed on the valve body in the two positions shown.



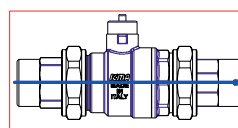
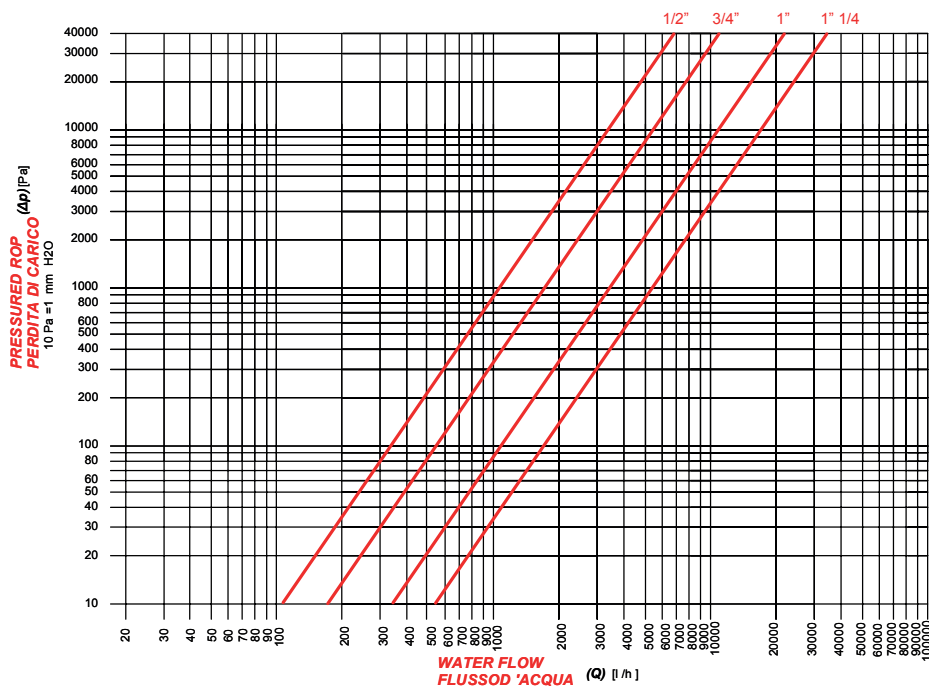
It is allowed to install the actuator in horizontal and vertical positions, never in upside down position.



### HYDRAULICAL FEATURES

Art.331-332-341-342 2 way zone ball valve

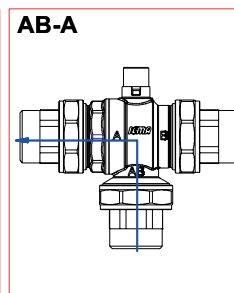
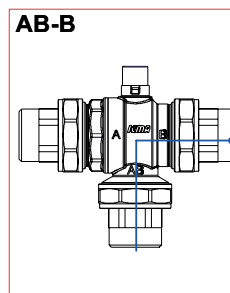
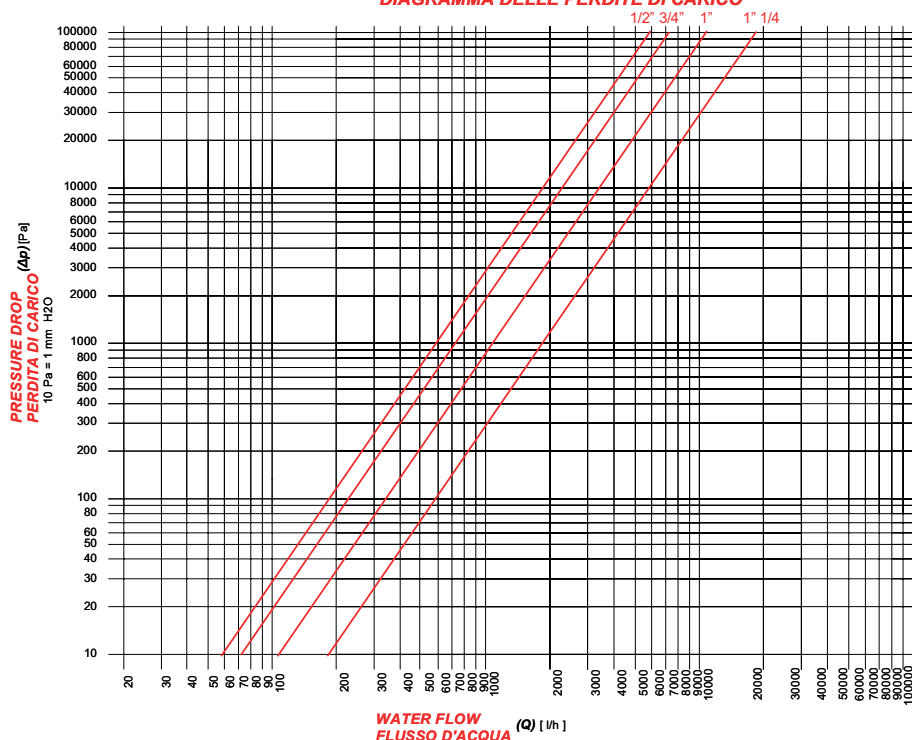
**Zone ball valveA rt.331-332**  
**Valvola di zona a sfera Art.331-332**  
**PRESSURED ROP DIAGRAM**  
**DIAGRAMMA DELLE PERDITE DI CARICO**



Size	Kv [m <sup>3</sup> /h]
1/2"	10,82
3/4"	16,9
1"	33,9
1 1/4"	52,36

Art. 333-343 3 way zone ball valve "DIVERTING"

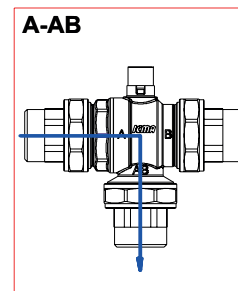
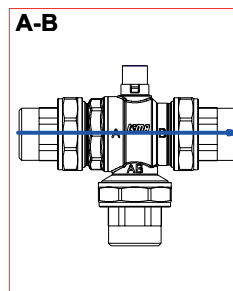
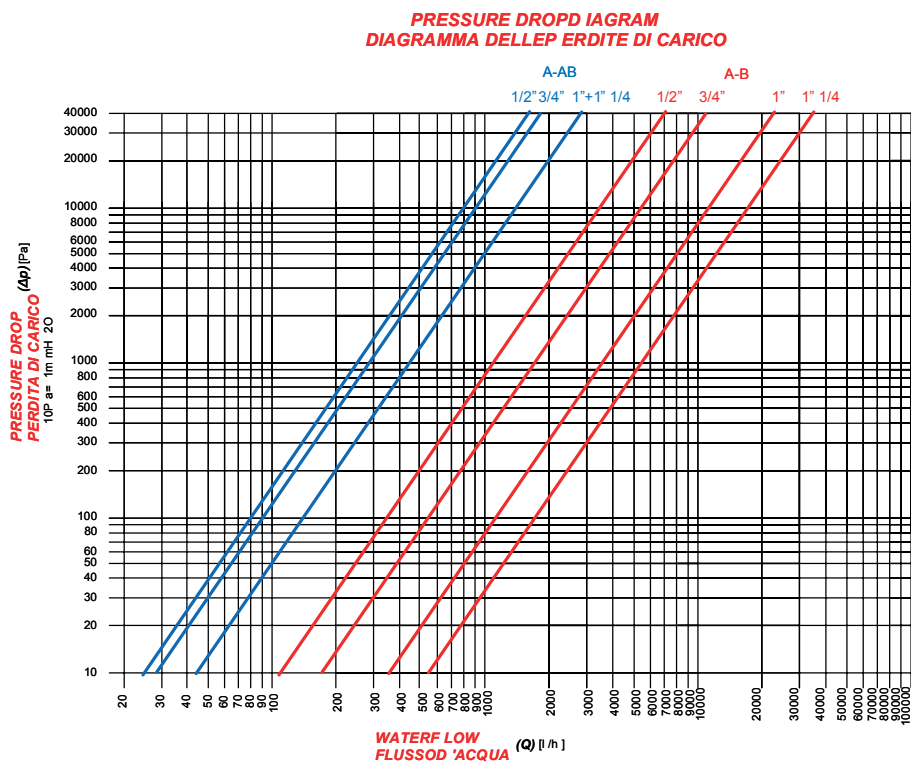
**Zone ball valve Art.333**  
**Valvola di zona a sfera Art.333**  
**PRESSURE DROP DIAGRAM**  
**DIAGRAMMA DELLE PERDITE DI CARICO**



Size	Kv [m <sup>3</sup> /h]
1/2"	5,94
3/4"	7,10
1"	11,98
1 1/4"	18,56

Size	Kv [m <sup>3</sup> /h]
1/2"	5,94
3/4"	7,10
1"	11,98
1 1/4"	18,56

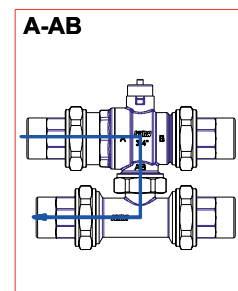
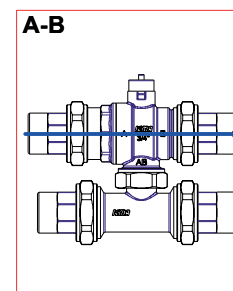
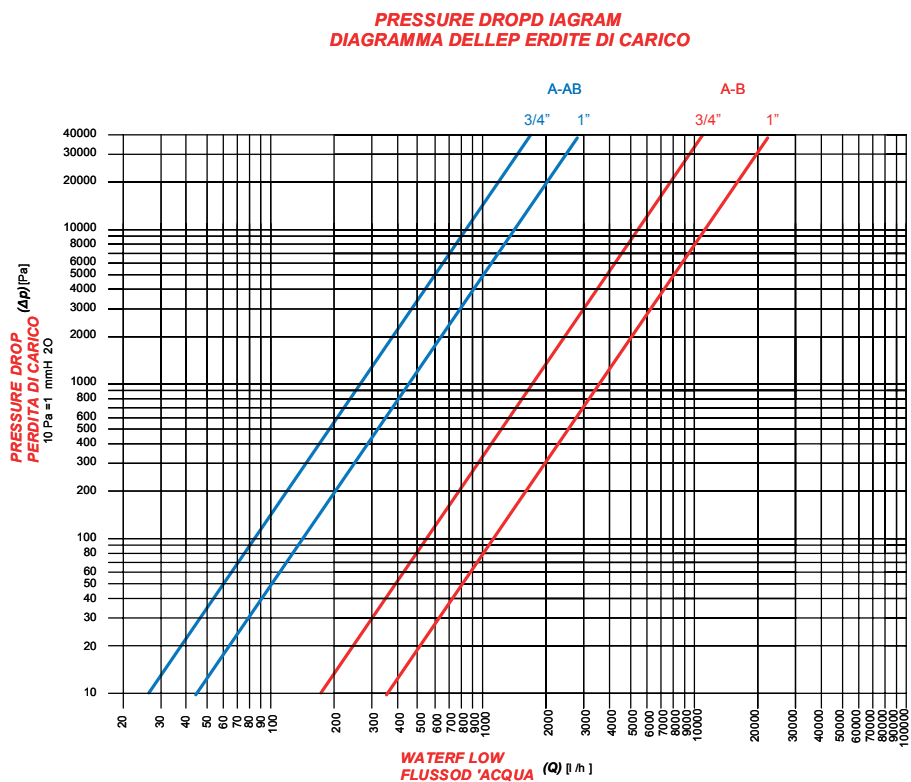
Art. 334-344 3 way zone ball valve "BY-PASS"



Size	Kv[[m³/h]
1/2"	10,82
3/4"	16,9
1"	33,9
1"1/4	55,36

Size	Kv[[m³/h]
1/2"	2,52
3/4"	2,86
1"	4,52
1"1/4	4,52

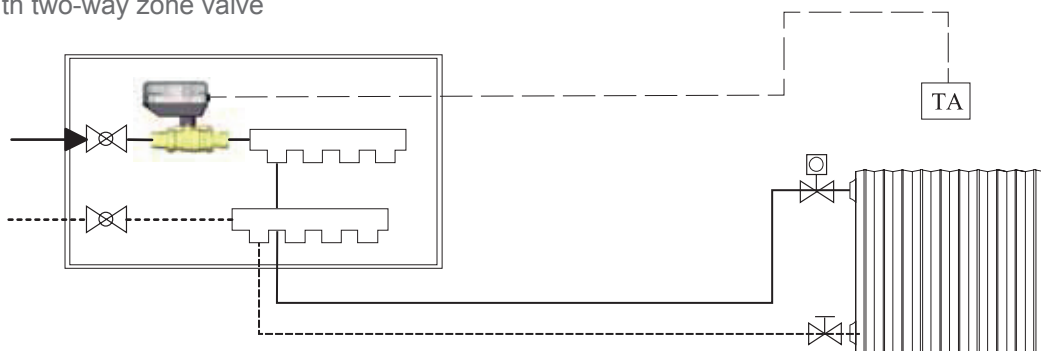
Art. 336-346 4 way zone ball valve



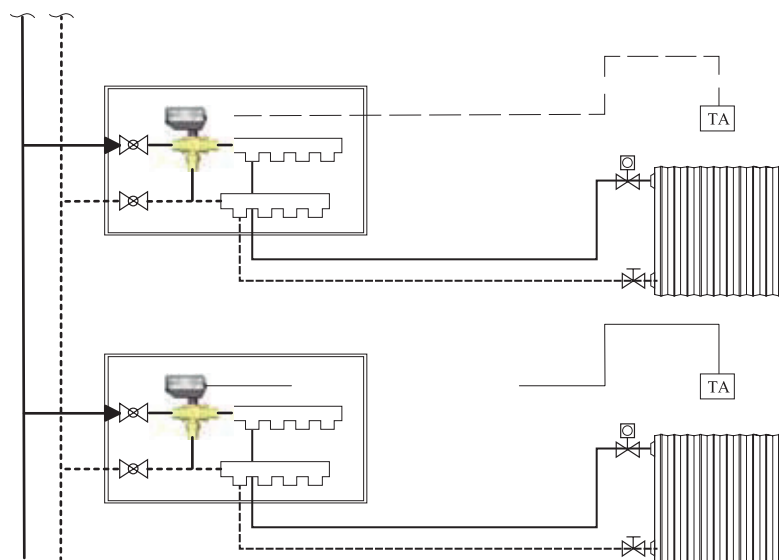
Size	Kv[[m³/h]
3/4"	16,9
1"	33,9

Size	Kv[[m³/h]
3/4"	2,64
1"	4,30

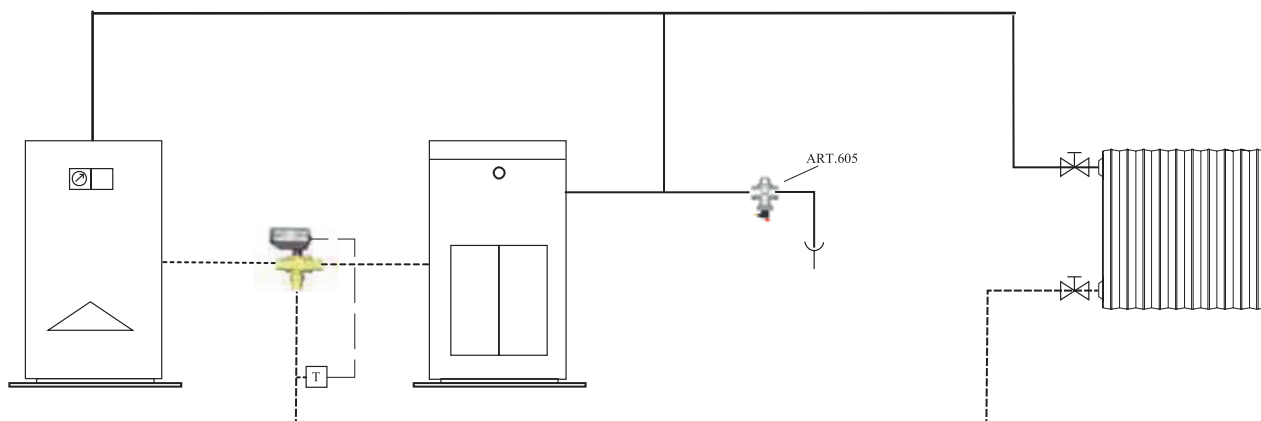
Installation with two-way zone valve



Installation with three-way zone valve, BY-PASS version



Installation with three-way valve, DIVERTING version



Installation with four-way zone valve

