

### 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                                |

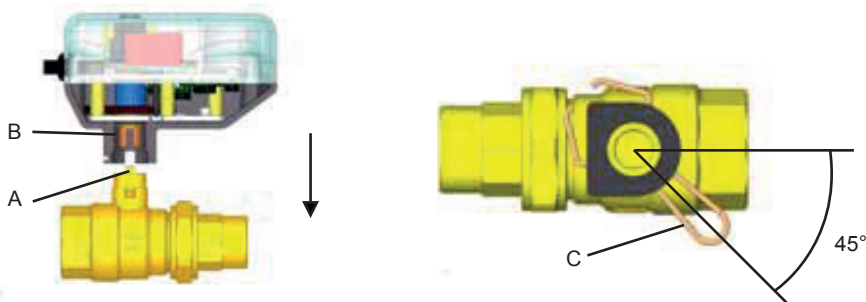
#### SERVOCONTROL

|  |  |
|--|--|
| 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)                         |

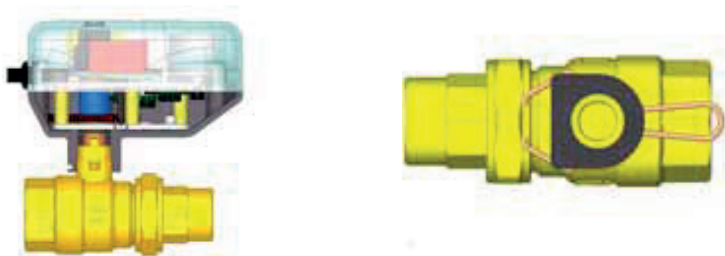


### SERVO-CONTROL / VALVE COUPLING

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°

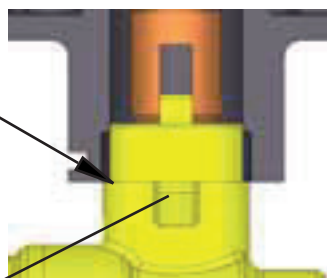


Insert the actuator into the seat and position the fork parallel to the valve body, to assure coupling.

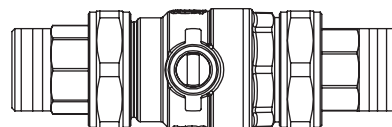
### MANUAL RELEASE FUNCTION

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.

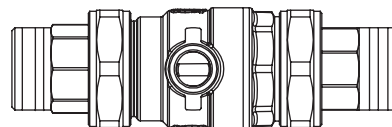
Keep to the edge of the valve body hooking tooth.



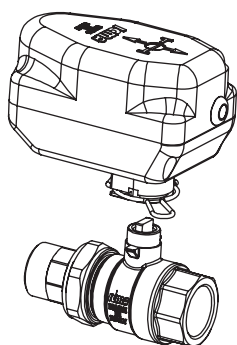
Tooth



VERTICAL SPINDLE  
VALVE CLOSED



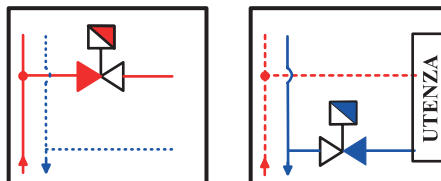
HORIZONTAL SPINDLE  
VALVE OPEN



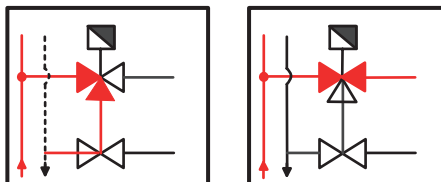
Put the motor on the valve body (as shown in the picture). Rotate the actuator clockwise or counter-clockwise, until the valve ball reaches required position.

### INSTALLATION

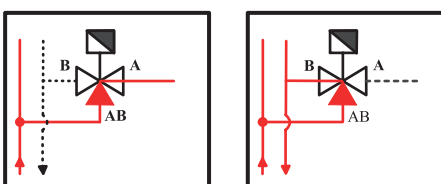
Two-way valves can be installed both on delivery/return piping.



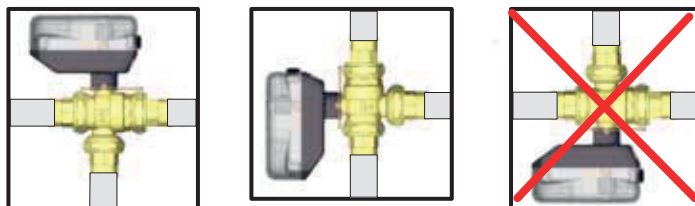
Three-way valves, bypass version, must be installed on the delivery piping.



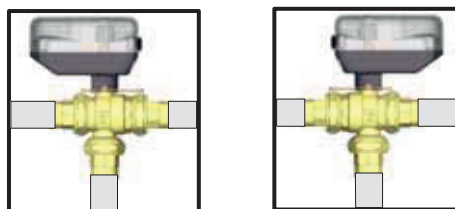
The diverting, three-way valves are usually installed on the delivery piping, with normal flow AB to B and diverting AB to A.



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



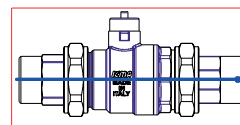
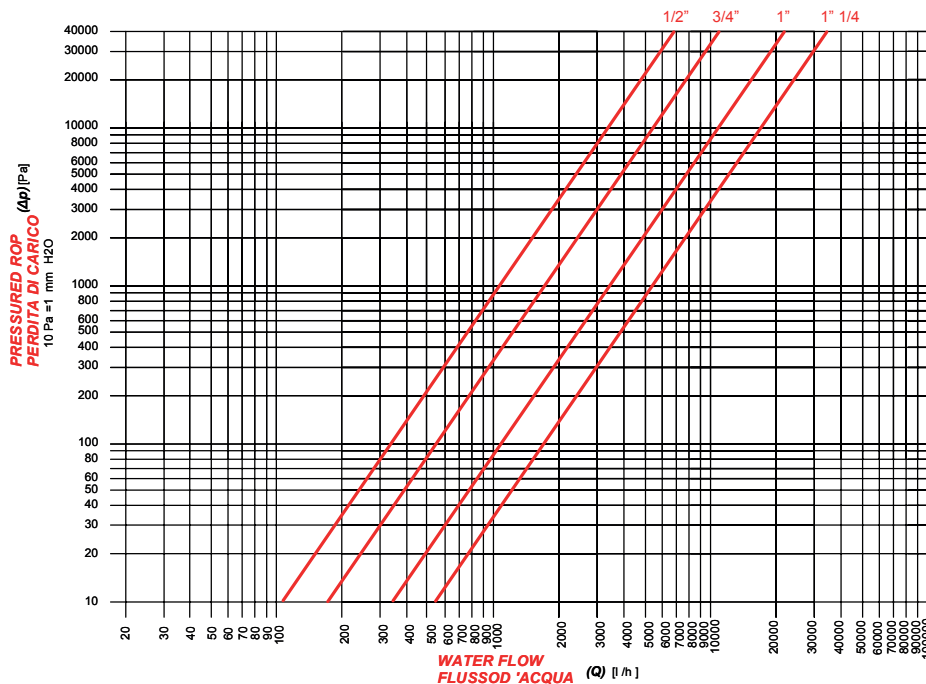
It is allowed to install the actuator in horizontal and vertical positions, never in upside down position.



### HYDRAULICAL FEATURES

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

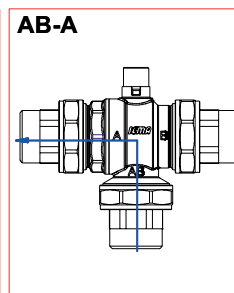
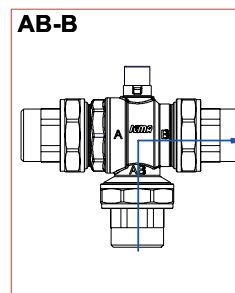
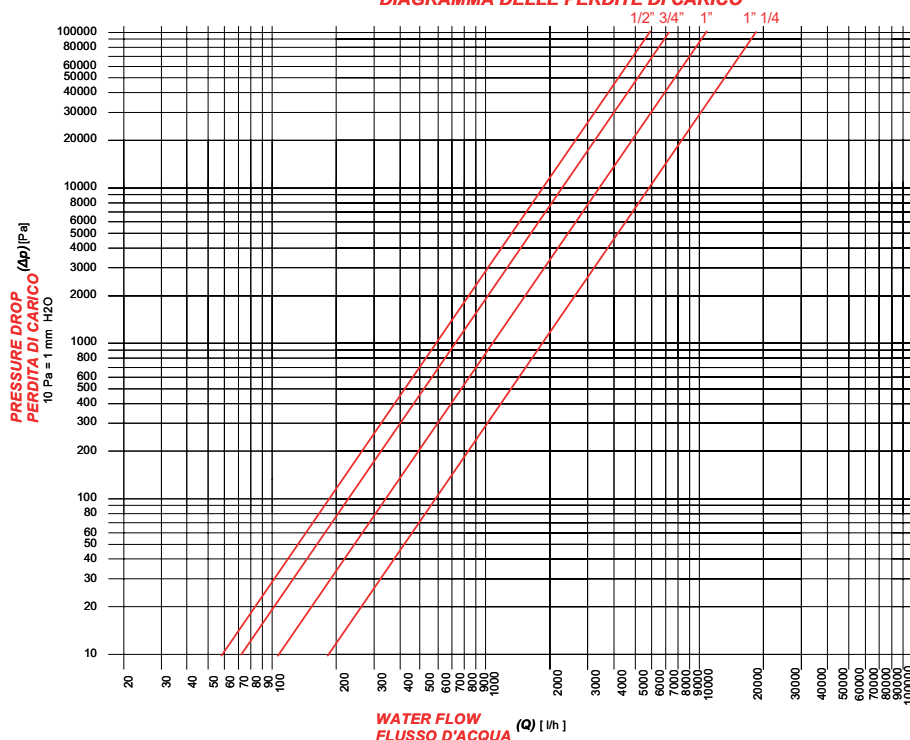
**Zone ball valveA rt.331-332**  
**Valvola di zona a sfera Art.331-332**  
**PRESSURED ROP DIAGRAM**  
**DIAGRAMMA DELLE PERDITE DI CARICO**



| Size   | Kv [m³/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"

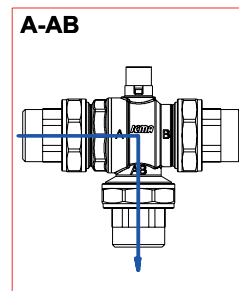
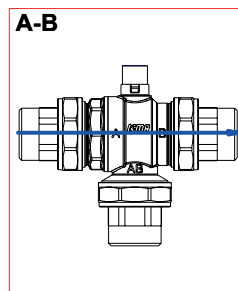
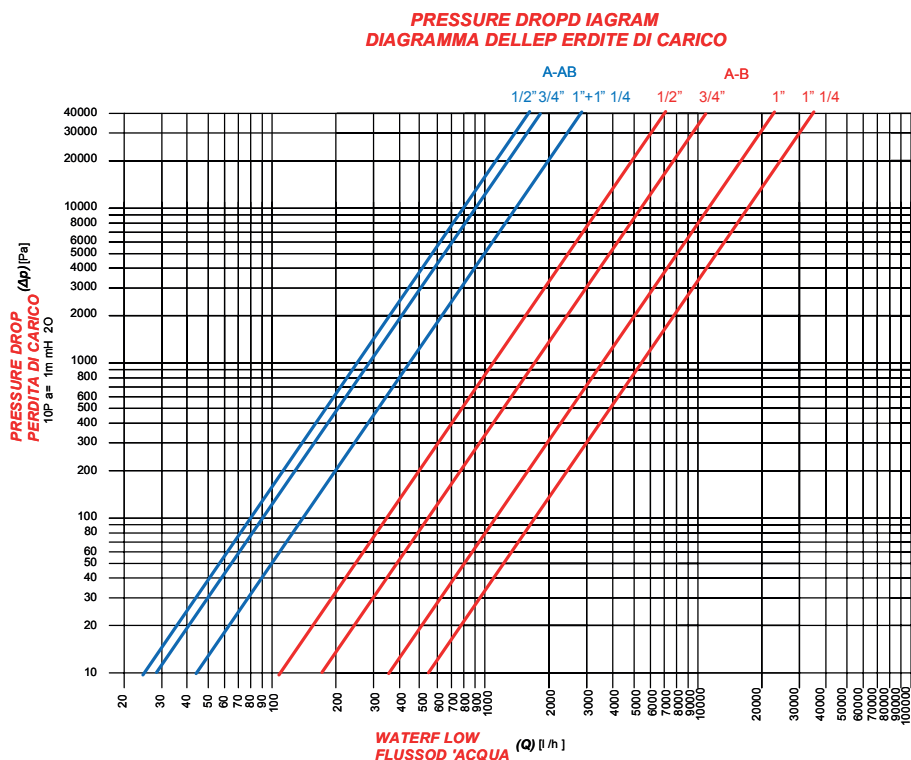
**Zone ball valve Art.333**  
**Valvola di zona a sfera Art.333**  
**PRESSURE DROP DIAGRAM**  
**DIAGRAMMA DELLE PERDITE DI CARICO**



| Size   | Kv [m³/h] |
|--------|-----------|
| 1/2"   | 5,94      |
| 3/4"   | 7,10      |
| 1"     | 11,98     |
| 1 1/4" | 18,56     |

| Size   | Kv [m³/h] |
|--------|-----------|
| 1/2"   | 5,94      |
| 3/4"   | 7,10      |
| 1"     | 11,98     |
| 1 1/4" | 18,56     |

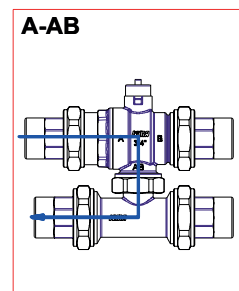
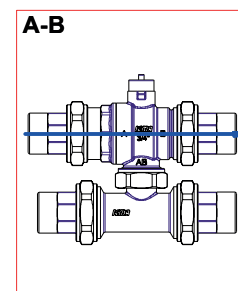
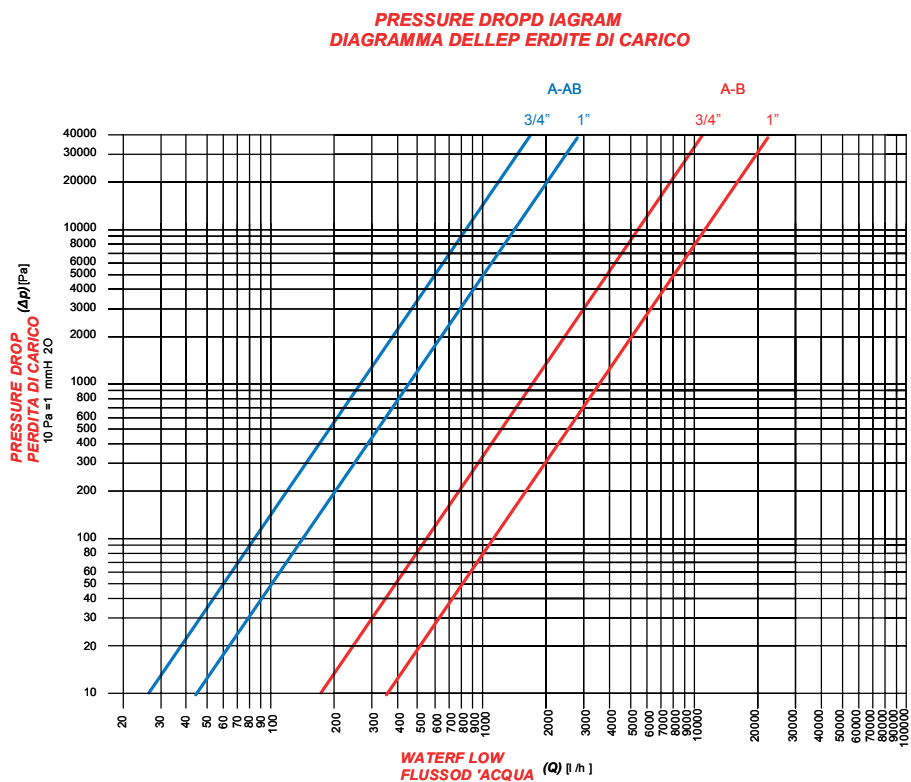
Art. 334-344 3 way zone ball valve "BY-PASS"



| 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      |

# MOTOR DRIVEN ZONE BALL VALVE

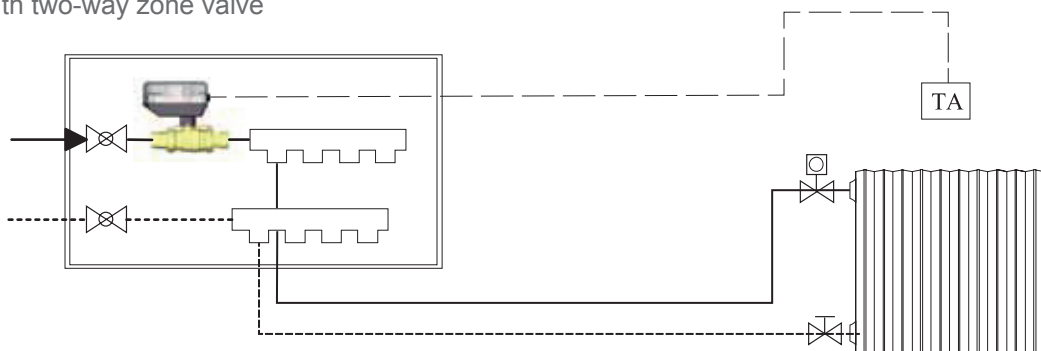
TECHNICAL SPECIFICATION

331-346

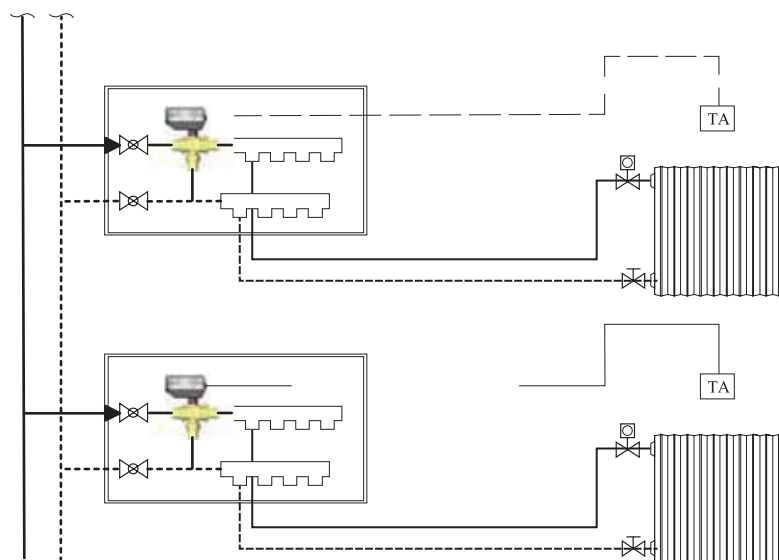
**ICMA** dal 1974  
tecnologia per il riscaldamento

TECHNICAL DATA SHEET 09/2017 - ENG

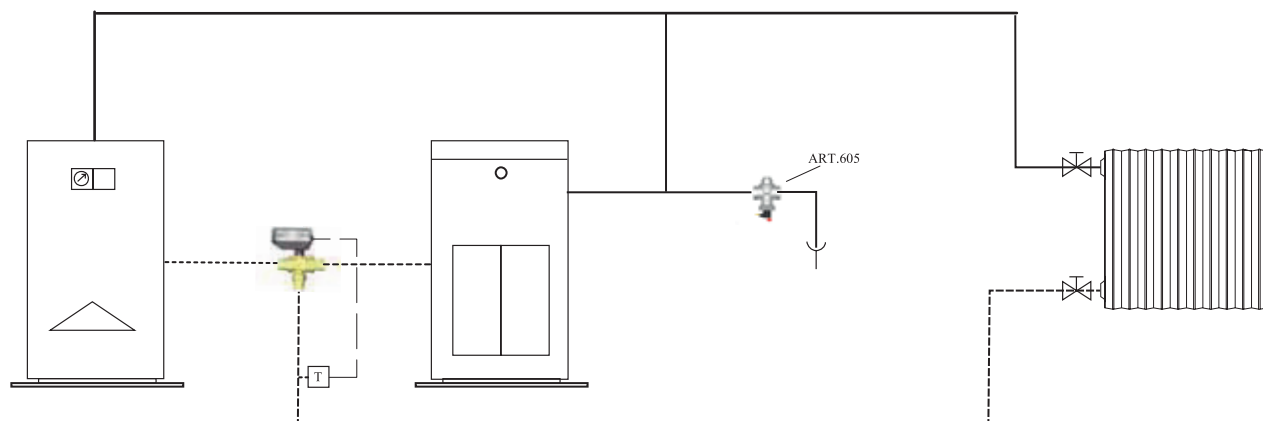
Installation with two-way zone valve



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



Installation with three-way valve, DIVERTING version



Installation with four-way zone valve

