

# Diamant 2000 ISO

BRASS MOTORISED BALL VALVES - REDUCED PORT

**USE**

- zone heating/cooling systems (HVAC)
- systems using alternative energy
- household automation systems

**KEY FEATURES**

- ALL IN ONE electric control
- IP65 degree of electrical protection
- extra opening and closing microswitches (optional)
- manual override from the top (optional)
- different operating times (optional)



Diamant 2000  
ISO 5211 connection

TECHNICAL FEATURES OF THE ACTUATOR		Diamant 2000 ISO				
Electric control	2/3-point ALL IN ONE					
Connection to the ball valve	ISO 5211 F03 - F05 connection					
Operation	Modulating • ON/OFF					
Rotation	90° • 180°					
Motor	Bidirectional synchronous					
Power supply	230V 50/60 Hz • 24V 50/60 Hz • 110V 50/60 Hz *					
Electrical connection	Internal terminal block					
Operating time (90°)	4 seconds	12 seconds	<b>35 seconds**</b>	106 seconds	320 seconds	
Rated torque	5 Nm	11 Nm	<b>11 Nm</b>	11 Nm	11 Nm	
Maximum power consumption	13 VA		7,5 VA			
Power output on the outlet phase to terminals 4 and 5	1A, resistive					
Maximum noise (at 1 meter distance)	35 dB(A) standard version					
Additional micro power output	1A, resistive					
Operational room temperature	- 10° C ÷ 50° C					
Fluid temperature	See features of ball valves					
Protection degree	IP65					
External covering	Polycarbonate lid • glass-filled technopolymer base					
Material of external metal components and seals	AISI 303 GVR • EPDM seals					
Maintenance	None					
Certification	CE					

\* for the 4-sec and 12-sec versions, the 60Hz version it is available on request • \*\* standard version

**VERSIONS** • The codes below refer to the 230V 50/60 Hz version for the standard operating time of 35 sec for 90°.

Actuator	DN	Connections	PN	Δp max	Kvs [m³/h] *	Operating time	Power supply	Base code
	15	Rp 1/2"	16	3,4 bar	17	35 sec	230V 50/60Hz	DY222GA2R5
	20	Rp 3/4"	16	3,4 bar	10,5	35 sec	230V 50/60Hz	DY222GB2R5
	25	Rp 1"	16	3,4 bar	18,7	35 sec	230V 50/60Hz	DY222GC2R5
	32	Rp 1"1/4	16	3,4 bar	27,9	35 sec	230V 50/60Hz	DY222GD2R5
	40	Rp 1"1/2	16	3,4 bar	25	35 sec	230V 50/60Hz	DY222GE2R5
	50	Rp 2"	16	3,4 bar	42,5	35 sec	230V 50/60Hz	DY222GF2R5
	15	Rp 1/2"	16	3,4 bar	6	35 sec	230V 50/60Hz	DY222GA3R5
	20	Rp 3/4"	16	3,4 bar	4,8	35 sec	230V 50/60Hz	DY222GB3R5
	25	Rp 1"	16	3,4 bar	8,6	35 sec	230V 50/60Hz	DY222GC3R5
	32	Rp 1"1/4	16	3,4 bar	12,8	35 sec	230V 50/60Hz	DY222GD3R5
	40	Rp 1"1/2	16	3,4 bar	11,5	35 sec	230V 50/60Hz	DY222GE3R5
	50	Rp 2"	16	3,4 bar	19,5	35 sec	230V 50/60Hz	DY222GF3R5

\* for the 3-way versions, Kvs refers to the most hampered way.

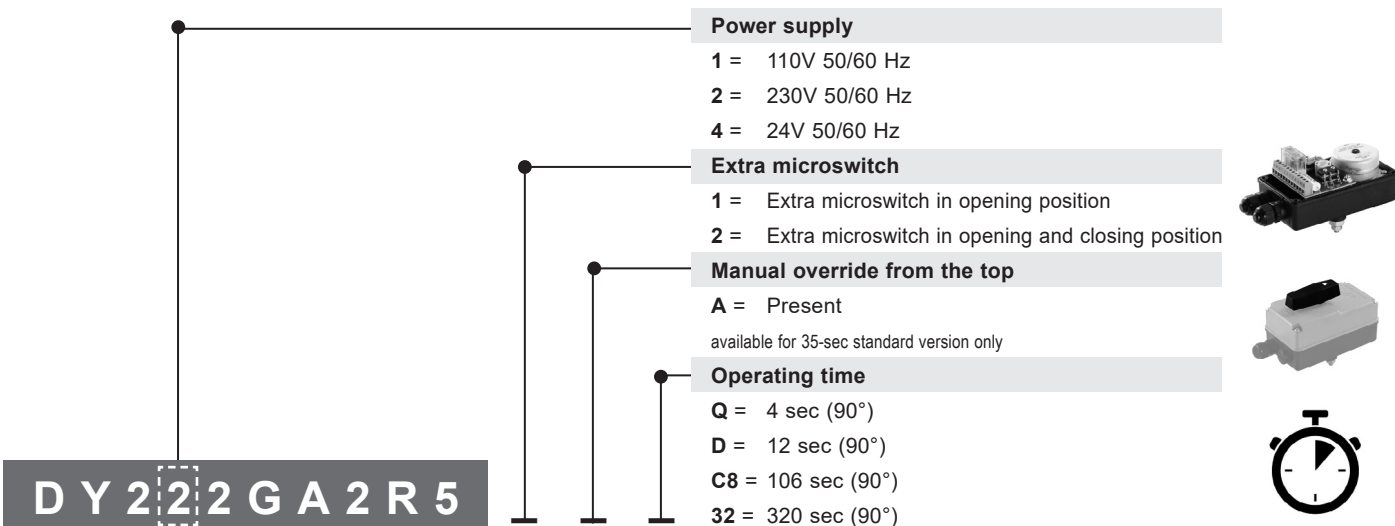


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## ACCESSORIES

To add any accessory, proceed as per the diagram below.



## STARTING base code

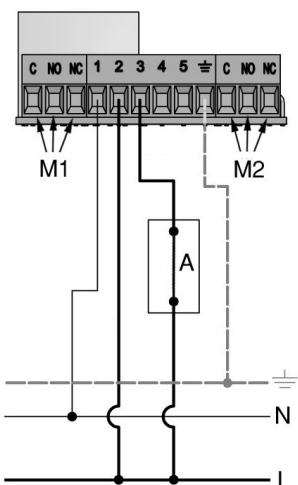
## ELECTRICAL CONNECTIONS

With the electrical **ALL IN ONE** control, you can select the **2-POINT** control or the **3-POINT** control by moving the selector (jumper) mounted on the electrical circuit inside the actuator.

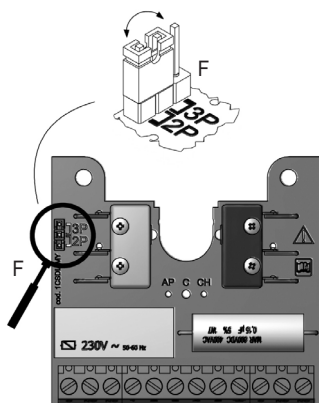
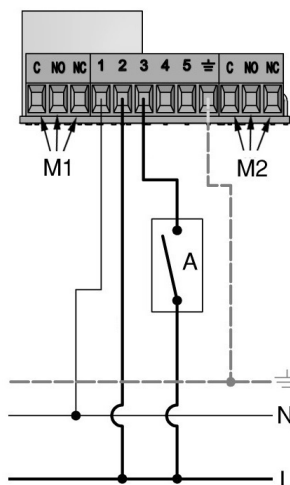
### 2-POINT CONTROL • ON/OFF

One electric control can activate several actuators.

#### OPENING ACTUATOR



#### CLOSING ACTUATOR



Place the jumper as shown in the picture to have the desired electrical connection

- 1 - Neutral
- 2 - Closing phase
- 3 - Opening phase
- 4 - Outlet opening phase
- 5 - Outlet closing phase
- M1 - Auxiliary micro in opening position
- M2 - Auxiliary micro in closing position
- A - Switch-type control
- ≡ - Earth



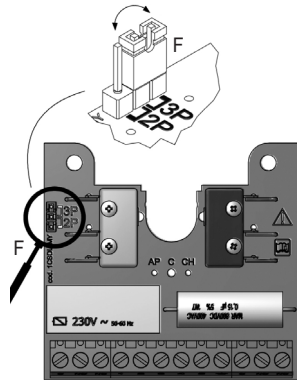
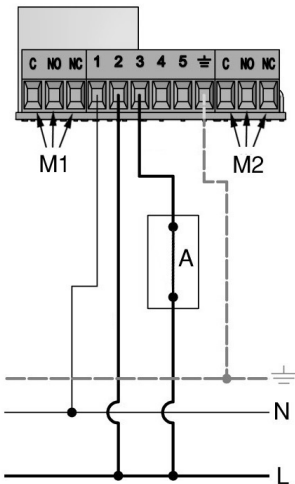
# Diamant 2000 ISO

BRASS MOTORISED BALL VALVES - REDUCED PORT

### 3-POINT CONTROL • ON/OFF

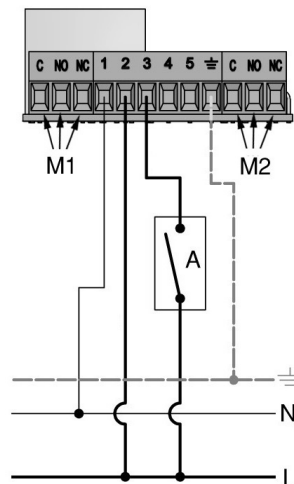
Each actuator must be operated by a single electric control

#### OPENING ACTUATOR



Place the jumper as shown in the picture to have the desired electrical connection

#### CLOSING ACTUATOR

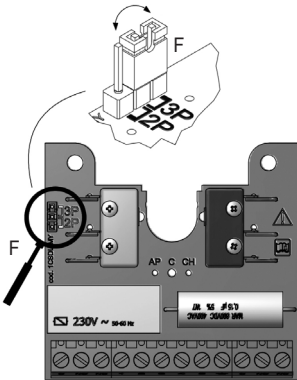
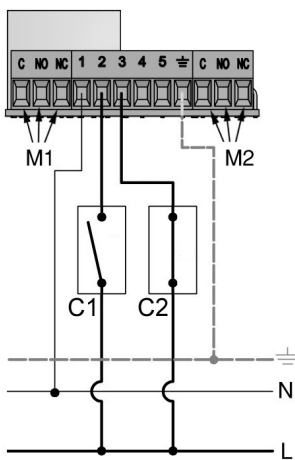


- 1 - Neutral
- 2 - Closing phase
- 3 - Opening phase
- 4 - Outlet opening phase
- 5 - Outlet closing phase
- M1 - Auxiliary micro in opening position
- M2 - Auxiliary micro in closing position
- A - Switch-type control
- ≡ - Earth

### 3-POINT CONTROL • MODULATING

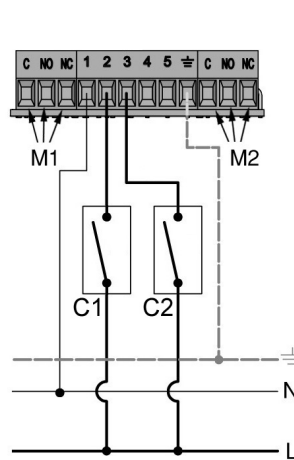
Each actuator must be operated by a single electric control

#### OPENING ACTUATOR

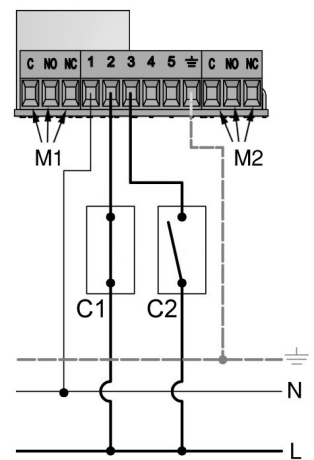


Place the jumper as shown in the picture to have the desired electrical connection

#### INTERMEDIATE POSITION



#### CLOSING ACTUATOR

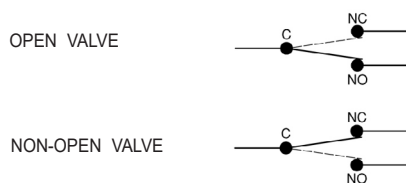


- 1 - Neutral
- 2 - Closing phase
- 3 - Opening phase
- 4 - Outlet opening phase
- 5 - Outlet closing phase
- M1 - Auxiliary micro in opening position
- M2 - Auxiliary micro in closing position
- C1 - Closing control
- C2 - Opening control
- ≡ - Earth

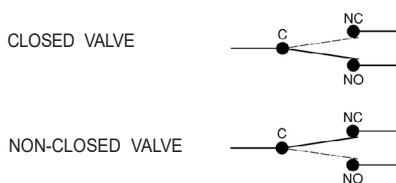
### AUXILIARY MICROSWITCHES

The layout of the extra microswitch contacts is shown in the following pictures:

#### M1 • OPENING AUXILIARY MICROSWITCH



#### M2 • CLOSING AUXILIARY MICROSWITCH

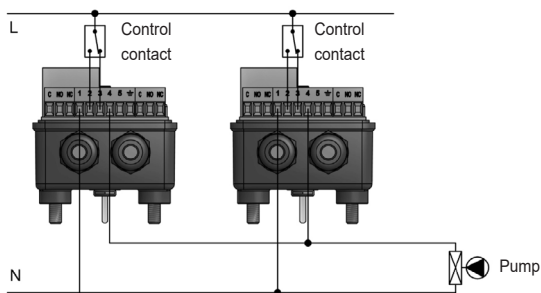


# Diamant 2000 ISO

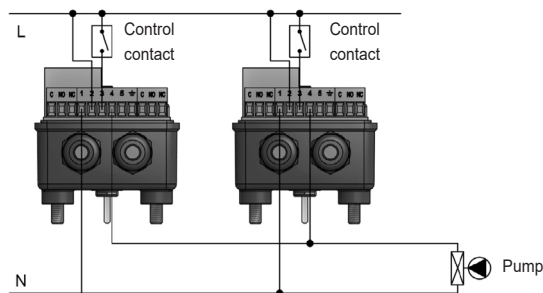
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## EXAMPLES OF ELECTRICAL CONNECTIONS

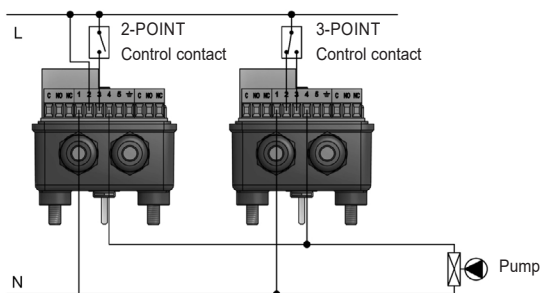
CONNECTION OF THE PUMP STOP WITH TWO 3-POINT ACTUATOR



CONNECTION OF THE PUMP STOP WITH TWO 2-POINT ACTUATOR

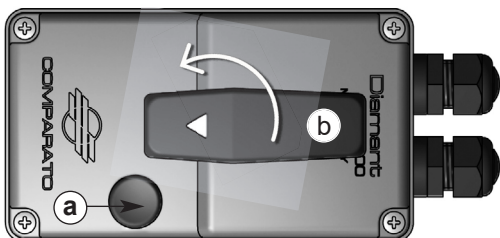


CONNECTION OF THE PUMP STOP WITH A 2-POINT ACTUATOR AND A 3-POINT ACTUATOR



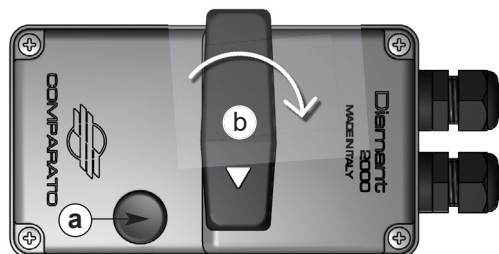
## MANUAL OPERATION

Only available for **Diamant 2000 ISO** with 35-second operating time. The manual override allows to activate the valve in case of emergency or black-out.



Actuator in **OPENING** position.

Press the release button (a) and, simultaneously, rotate the lever (b) 90° **COUNTERCLOCKWISE**, in order to move the actuator in the **CLOSED** position.



Actuator in **CLOSED** position.

Press the release button (a) and, simultaneously, rotate the lever (b) 90° **CLOCKWISE**, in order to move the actuator in the **OPEN** position.

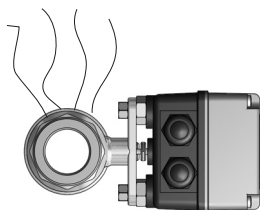


When you release the plunger, the actuator returns to the control position if it still powered and is able to perform the operation

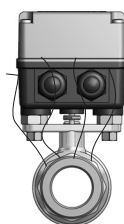
## INSTALLATION

The valve shall not be installed with the actuator's connection facing downwards.

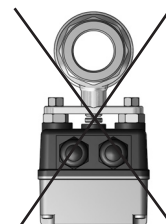
RECOMMENDED POSITION



ALLOWED POSITION



FORBIDDEN POSITION



CAUTION! Do not use high-pressure water directly on the actuator (e.g. a pressure washer)

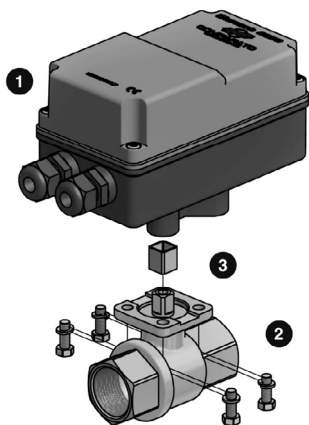


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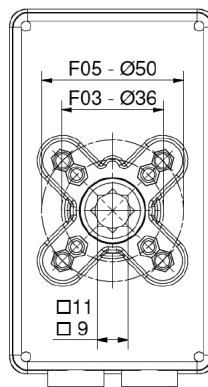
## CONNECTION TO THE BALL VALVE

For the evaluation of the overall size of motorised valves, take into account the assembling diagram (shown below) and the dimensions of each single component.



**Diamant 2000  
ISO 5211 connection**

- 1 : Diamant 2000 ISO 5211 connection
- 2 : Ball valve
- 3 : Squared adapter (if necessary)

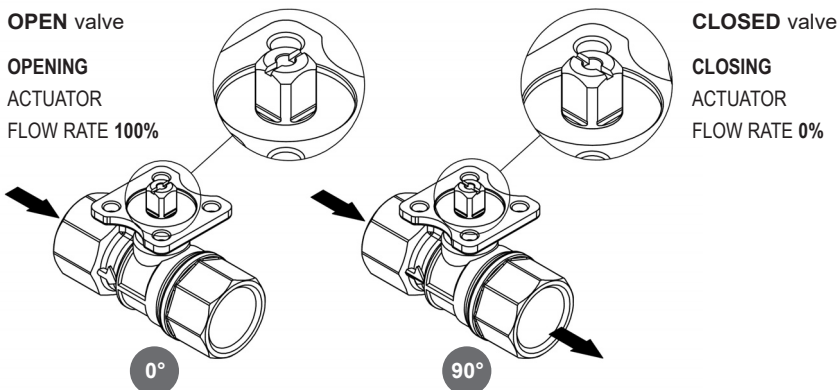


## BALL VALVE CHARACTERISTICS

TECHNICAL FEATURES OF THE BALL VALVES	
Fluid type	Water (max 30% glycol)
Fluid temperature	+5°C...+100°C
Rated pressure	16 bar
Δp max	3,4 bar
Operating angle	90°
2-WAY valve leakage	< 0,01% Kvs
3-WAY valve leakage	
- in-line way	< 0,01% Kvs
- third way	< 1% Kvs

## 2-WAY BALL VALVE

The ball valve can be mounted in both flow directions, without distinction.



# Diamant 2000 ISO

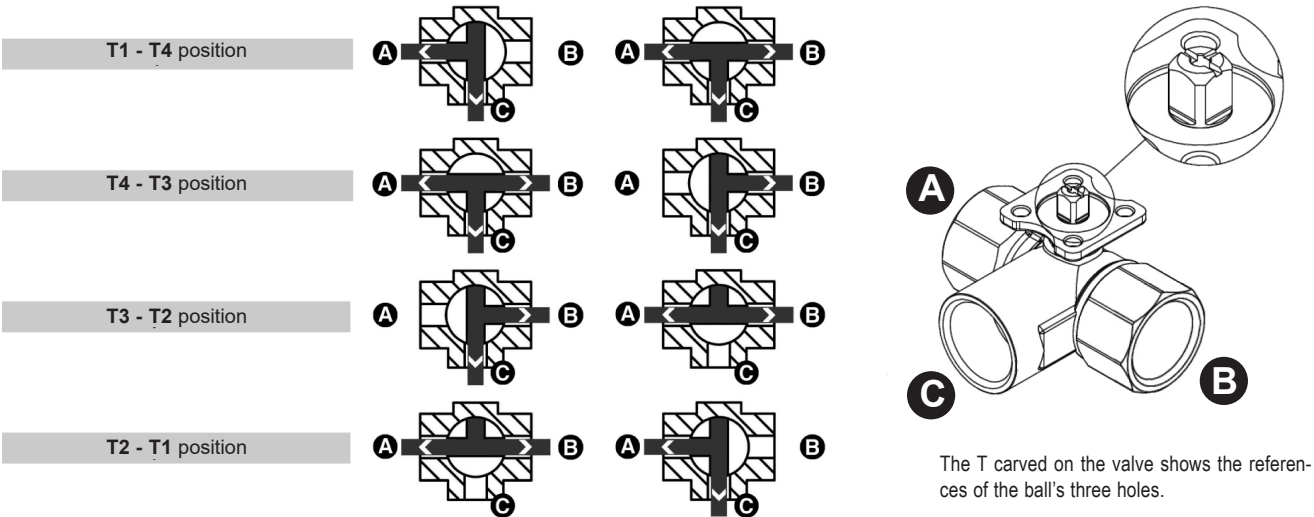
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## 3-WAY BALL VALVE – DIVERTING

**Diamant 2000 ISO** 3-way ball valve with partial bore are available with T-port and can be used for realizing a diverting action. During the operation the actuator closes one way and in the meantime opens the other way: all three ways communicate with each other.

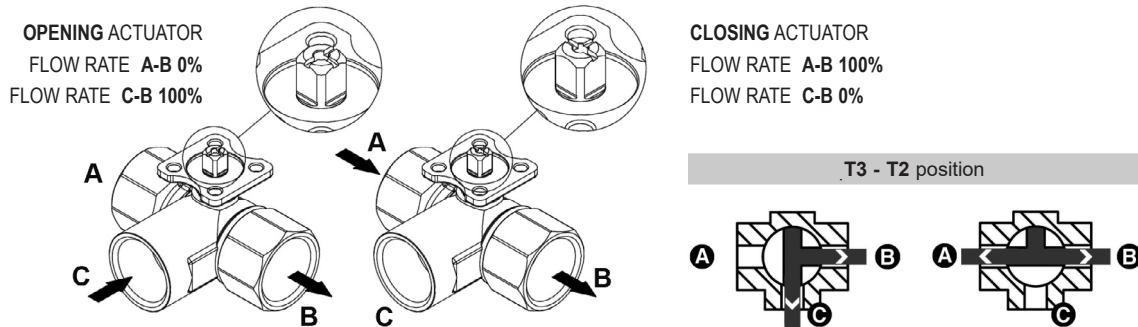
### DIVERTING BALL VALVE – T-PORT

The ball valve has a ball that can be used differently depending on the initial orientation. As can be seen in the figure, different configurations can be obtained through a 90° rotation. The position of the holes is indicated by a T engraved on the ball valve pin.

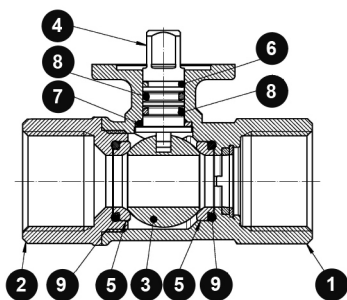


## 3-WAY BALL VALVE – MIXING

**Diamant 2000 ISO** 3-way ball valves with partial bore can be used for a mixing action in T3-T2 position as per the picture.



## MATERIAL USED



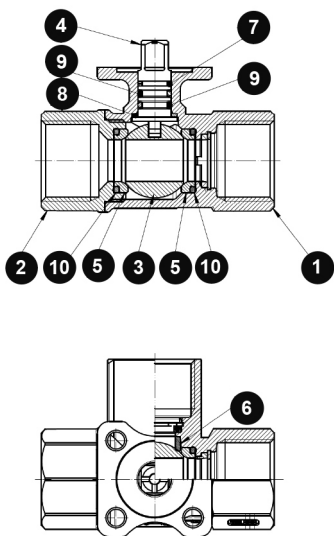
### 2-WAY FF BRASS ISO 5211 BALL VALVE

1	BODY	BRASS CW 617N - UNI EN 12420
2	COUPLING	BRASS CW 617N - UNI EN 12420
3	BALL	BRASS CW 617N - UNI EN 12420 / CHROMED NICKEL
4	ROD	BRASS CW 614N - UNI EN 12164 / NICKEL PLATING
5	BALL SEAL	P.T.F.E. 15% GRAFITE
6	ANTI-FRICTION SEAL	P.T.F.E.
7	ANTI-FRICTION SEAL	P.T.F.E. 15% GRAFITE
8	O-RING	EPDM
9	O-RING	EPDM



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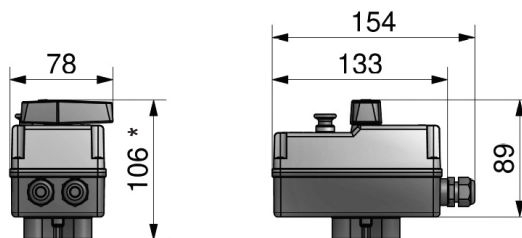
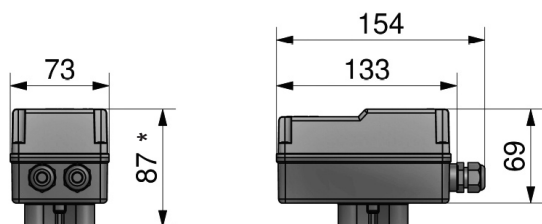
### 3-WAY FF BRASS ISO 5211 BALL VALVE

1	BODY	BRASS CW 617N - UNI EN 12420
2	COUPLING	BRASS CW 617N - UNI EN 12420
3	BALL	BRASS CW 617 PTL - UNI EN 12164 / NICKEL CHROME PLATING
4	ROD	BRASS CW 614N - UNI EN 12164 / NICKEL PLATING
5	BALL SEAL	P.T.F.E. 15% GRAPHITE
6	BALL SEAL	P.T.F.E.
7	ANTI-FRICTION SEAL	P.T.F.E.
8	ANTI-FRICTION SEAL	P.T.F.E. 15% GRAPHITE
9	O-RING	EPDM
10	O-RING	EPDM

### OVERALL SIZE

**Diamant 2000**  
ISO 5211 connection

**Diamant 2000 ISO 5211 connection**  
Version with **MANUAL OVERRIDE FROM THE TOP**



\* the size is to be taken into account when coupling the actuator to the ball valve

### BALL VALVES

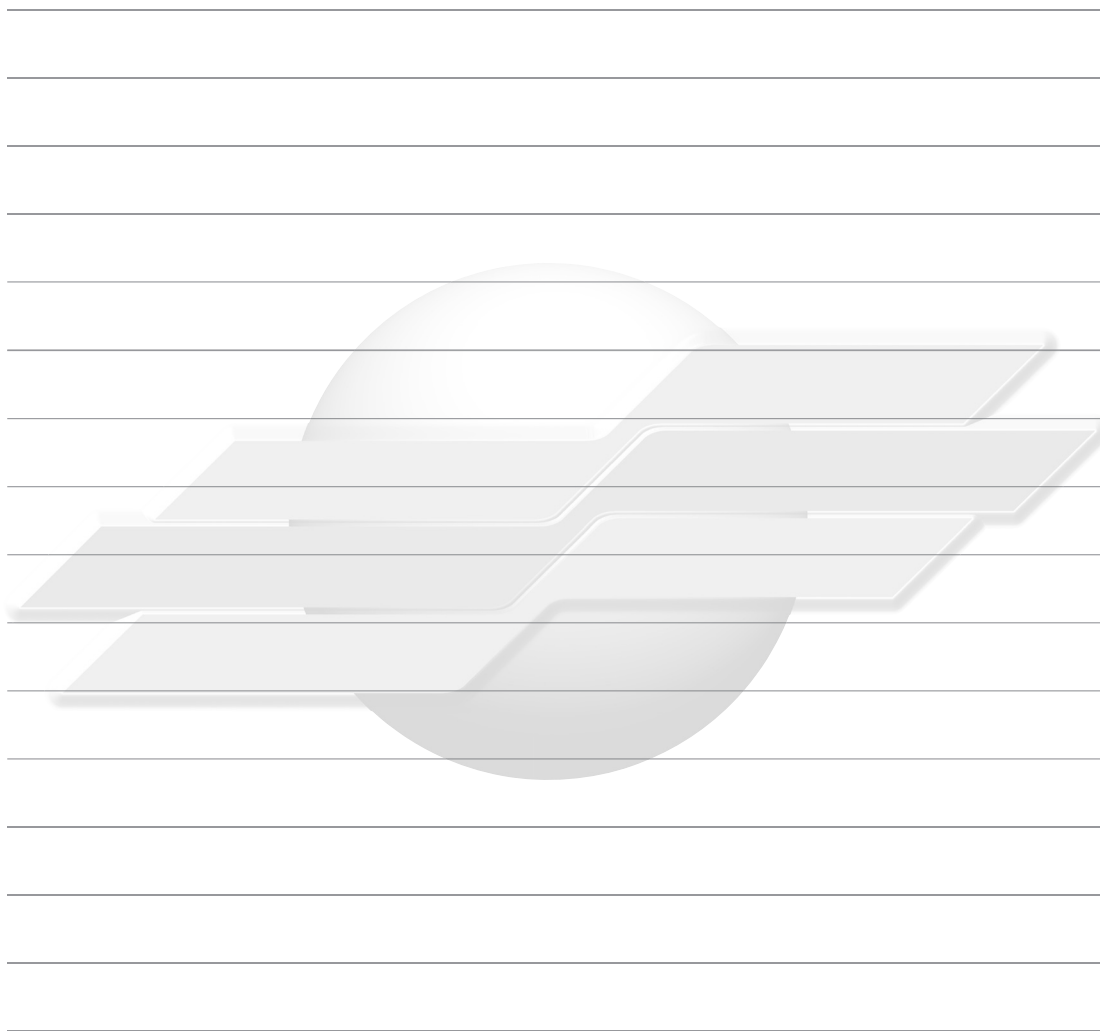
	MODEL	DN	Ø	A	B *	C	D	E
2-way		15	Rp 1/2"	71	40	31	33	
		20	Rp 3/4"	77	40	31	34	
		25	Rp 1"	91	42	33	41	
		32	Rp 1 1/4"	104	53	44	52	
		40	Rp 1 1/2"	105	53	44	58	
		50	Rp 2"	127	57	48	72	
3-way		15	Rp 1/2"	71	40	31	55	38
		20	Rp 3/4"	77	40	31	57	40
		25	Rp 1"	91	42	33	67	47
		32	Rp 1 1/4"	104	53	44	80	55
		40	Rp 1 1/2"	105	53	44	84	55
		50	Rp 2"	127	57	48	101	65

\* overall dimensions to be taken into account when combining with the actuator.



# Diamant 2000 ISO

BRASS MOTORISED BALL VALVES - REDUCED PORT



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## EXAMPLE OF SPECIFICATIONS

**DIAMANT 2000 MOTORISED VALVE** • 3-way female with reduced port, made up of: DIAMANT 2000 ISO actuator ALL IN ONE 2-point ON/OFF and 3-point ON/OFF or modulating, power supply: 230V - 50/60 Hz, operating time: 35 sec / 90°, operating angle: 90°, degree of protection: IP65; brass ball valve CW617N UNI EN 12420, PTFE seals, EPDM O-rings, PN16, max ΔP 3,4 bar, reduced port, female thread EN 10226-1, operating temperatures +5°C...+100°C. Fluid type water with glycol max 30%. Version: 3-way FFF DN50 – Rp 2" – Kvs 19,5.

Brand: **COMPARATO**

Code: **DY222GF3R5**

UPDATED DATA SHEETS AVAILABLE AT [www.comparato.com](http://www.comparato.com)

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MODELING



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