Diamant 2000 ISO

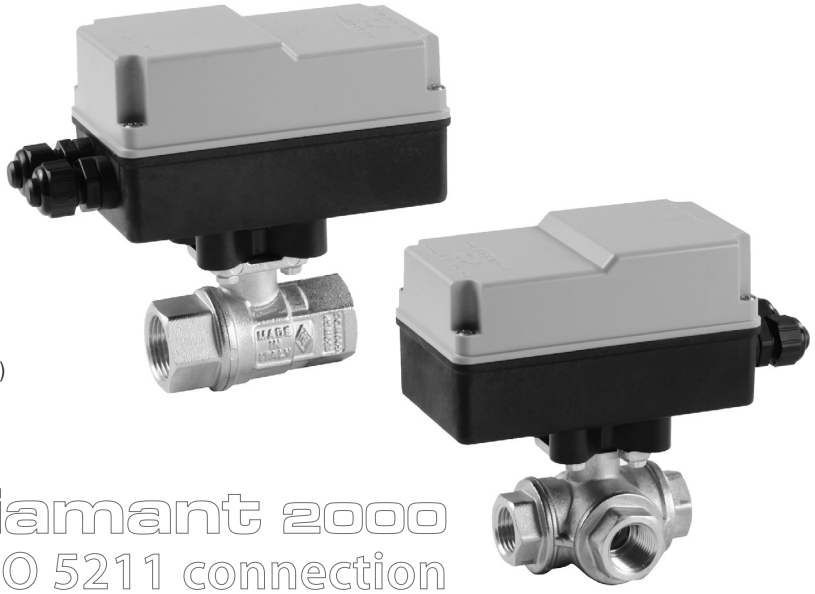
BRASS MOTORIZED BALL VALVES - FULL BORE

USE

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

KEY FEATURES

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



TECHNICAL FEATURES OF THE ACTUATOR	Diamant 2000 ISO			
Electric control	2/3-point ALL IN ONE			
Connection with 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 50/60Hz *			
Electrical connections	Internal terminal block			
Operating time (90°)	12 seconds	**35 seconds****	106 seconds	320 seconds
Nominal torque	11 Nm	**11 Nm**	11 Nm	11 Nm
Maximum power consumption	13 VA	7,5 VA		
Power output on the outlet phase to terminals 4 and 5	1 A resistive			
Maximum noise (at 1 meter distance)	35 dB(A) standard version			
Additional micro power output	1 A 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 12-sec versions, the 60Hz version it is available on request

** standard version

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VERSIONS

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

Actuator	DN	Rp	PN*	Δp Max	Kvs [m³/h]	Power supply	Operating time	Base code
2-WAY 								
	-	1/4"	40	40	5,4	230V 50/60Hz	35 sec. per 90°	DY222GS2P5
	10	3/8"	40	40	6	230V 50/60Hz	35 sec. per 90°	DY222GR2P5
	15	1/2"	40	40	16,3	230V 50/60Hz	35 sec. per 90°	DY222GA2P5
	20	3/4"	40	40	29,5	230V 50/60Hz	35 sec. per 90°	DY222GB2P5
	25	1"	40	40	43	230V 50/60Hz	35 sec. per 90°	DY222GC2P5
	32	1"1/4	40	25	89	230V 50/60Hz	35 sec. per 90°	DY222GD2P5
3-WAY 	"T" BALL							
	-	1/4"	30	30	2,8	230V 50/60Hz	35 sec. per 90°	DY222GS6E5
	10	3/8"	30	30	3	230V 50/60Hz	35 sec. per 90°	DY222GR6E5
	15	1/2"	30	30	3,9	230V 50/60Hz	35 sec. per 90°	DY222GA6E5
	20	3/4"	30	16	7,9	230V 50/60Hz	35 sec. per 90°	DY222GB6E5
	"L" BALL							
	-	1/4"	30	30	2,8	230V 50/60Hz	35 sec. per 90°	DY222GS5E5
	10	3/8"	30	30	3	230V 50/60Hz	35 sec. per 90°	DY222GR5E5
	15	1/2"	30	30	3,9	230V 50/60Hz	35 sec. per 90°	DY222GA5E5
	20	3/4"	30	16	7,9	230V 50/60Hz	35 sec. per 90°	DY222GB5E5
3-WAY MIXER / DIVERTER 	3-HOLE MIXER							
	15	1/2"	25	25	6	230V 50/60Hz	35 sec. per 90°	DY222GA3E5
	20	3/4"	16	16	11,5	230V 50/60Hz	35 sec. per 90°	DY222GB3E5
	25	1"	16	10	18,3	230V 50/60Hz	35 sec. per 90°	DY222GC3E5
	2-HOLE DIVERTER							
	15	1/2"	25	25	6	230V 50/60Hz	35 sec. per 90°	DY322GA2E5
	20	3/4"	16	16	11,5	230V 50/60Hz	35 sec. per 90°	DY322GB2E5
	25	1"	16	10	18,3	230V 50/60Hz	35 sec. per 90°	DY322GC2E5

ACCESSORIES

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

Power supply
1 = 110V 50/60 Hz
2 = 230V 50/60 Hz
4 = 24V 50/60 Hz

Extra microswitches
1 = Extra microswitch in opening position
2 = Extra microswitch in opening and closing position

Manual override from the top
A = Present
available for 35-sec standard version only

Operating time
D = 12 sec (90°)
C8 = 106 sec (90°)
32 = 320 sec (90°)

D Y 2 2 2 G A 2 P 5

STARTING base code

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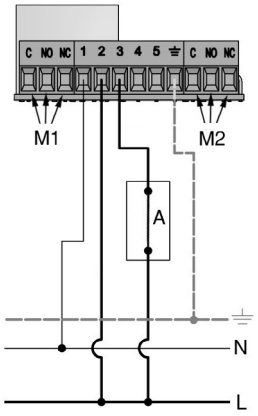
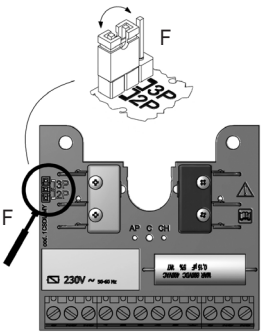
ELECTRICAL CONNECTIONS

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 (SWITCH) - One electric control can activate several actuators.

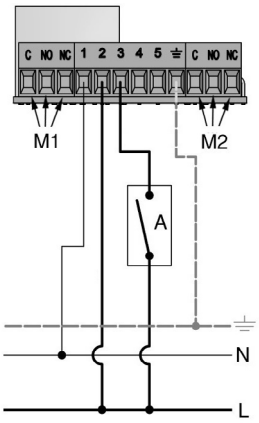
OPENING ACTUATOR





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

CLOSING ACTUATOR

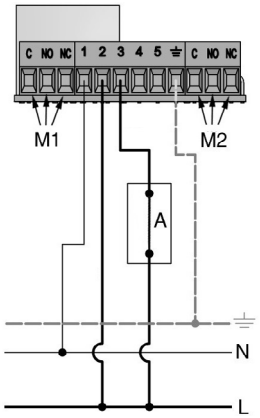


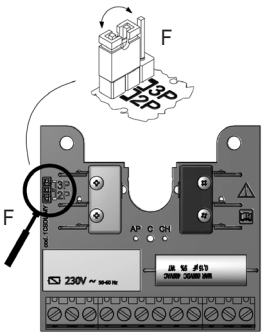
1 - Neutral
2 - Closing phase
3 - Opening phase
4 - Outlet opening phase
5 - Outlet closing phase
M1 - Auxiliary micro in opening position
M2 - Auxiliary micro in closing position

A - Switch-type control
⏚ - Earth

3-POINT CONTROL • ON/OFF (DIVERTER) - Each actuator must be operated by a single electric control

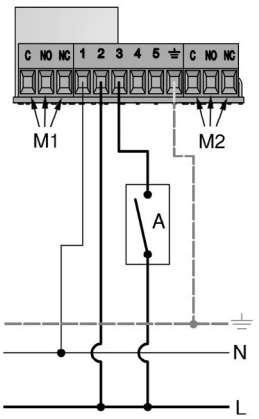
OPENING ACTUATOR





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

CLOSING ACTUATOR

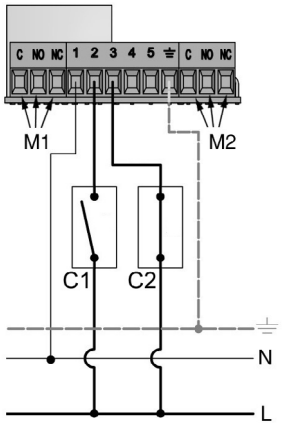


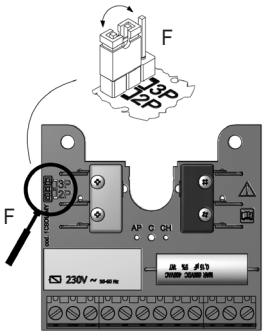
1 - Neutral
2 - Closing phase
3 - Opening phase
4 - Outlet opening phase
5 - Outlet closing phase
M1 - Auxiliary micro in opening position
M2 - Auxiliary micro in closing position

A - Switch-type control
⏚ - Earth

3-POINT CONTROL • MODULATING - Each actuator must be operated by a single electric control

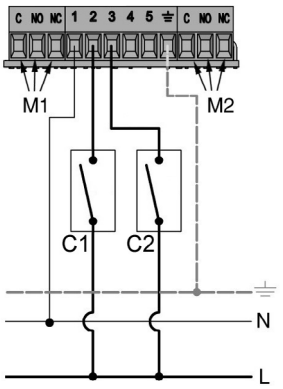
OPENING ACTUATOR



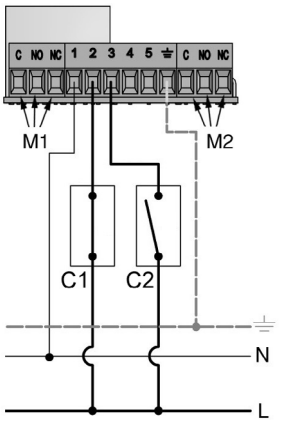


Place the jumper
as shown in the picture to have
the desired electrical connection

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

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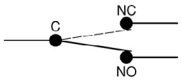
AUXILIARY MICROSWITCHES

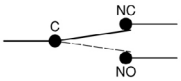
The layout of the extra microswitch contacts is shown in the following pictures:

M1 • OPENING AUXILIARY MICROSWITCH

OPEN VALVE

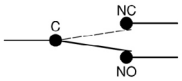


NON-OPEN VALVE

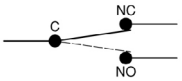


M2 • CLOSING AUXILIARY MICROSWITCH

CLOSED VALVE

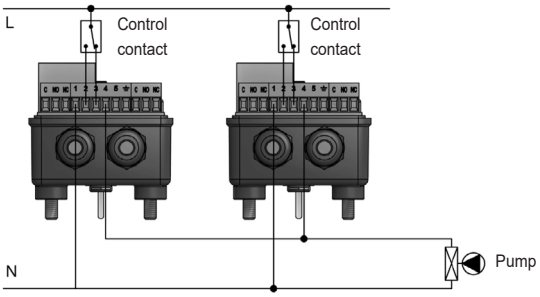


NON-CLOSED VALVE

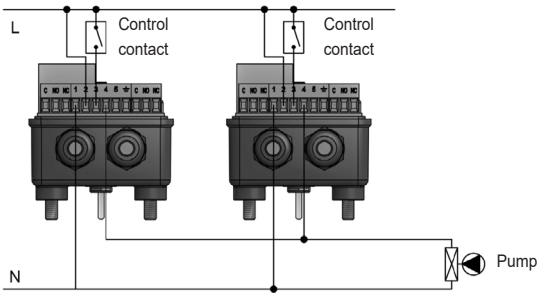


EXAMPLES OF ELECTRICAL CONNECTIONS

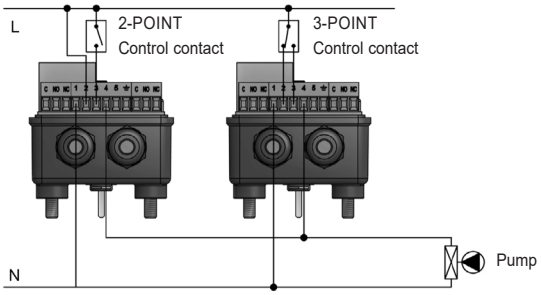
CONNECTION OF THE PUMP STOP WITH **TWO 3-POINT ACTUATOR**



CONNECTION OF THE PUMP STOP WITH **TWO 2-POINT ACTUATOR**

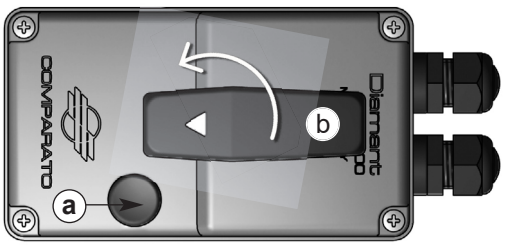


CONNECTION OF THE PUMP STOP WITH A **2-POINT ACTUATOR AND A 3-POINT ACTUATOR**



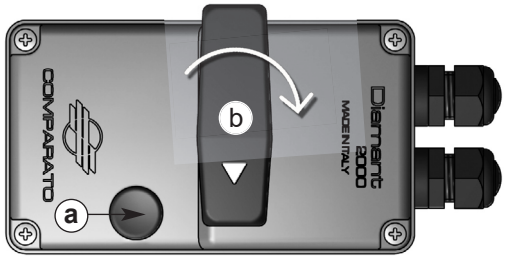
MANUAL OPERATION

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 **CLOSING** position.



Actuator in **CLOSING** position.

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

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

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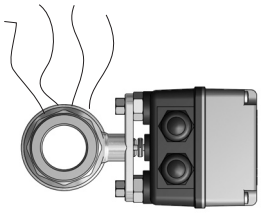
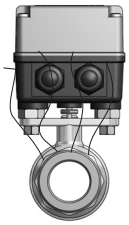
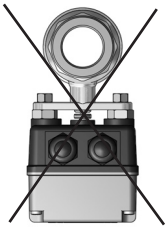
INSTALLATION

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

RECOMMENDED POSITION **ALLOWED POSITION** **FORBIDDEN POSITION**



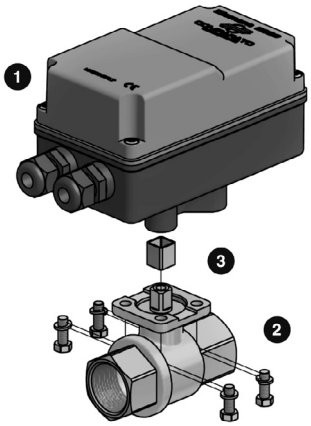




CAUTION! Do not use high-pressure water directly on the actuator (e.g. a pressure washer)

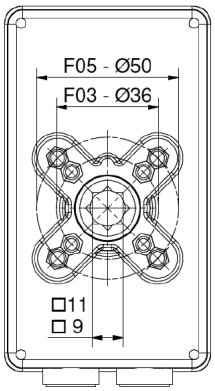
CONNECTION TO THE BALL VALVE

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



Diamant 2000
ISO 5211 connection

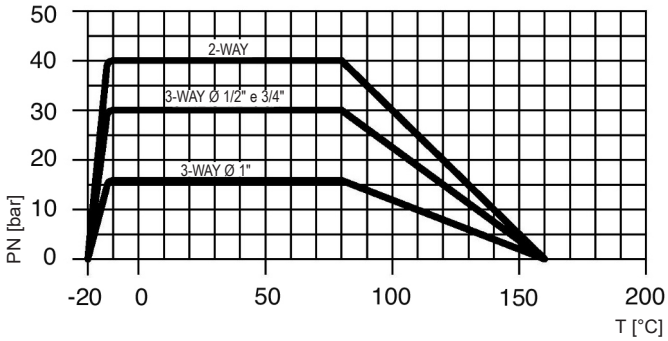
1 : Diamant 2000 ISO 5211 connection
2 : Ball valve
3 : Squared adapter (if necessary)



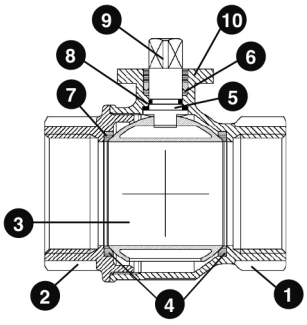
TECHNICAL FEATURES OF THE BALL VALVES

FEATURES	2-WAY	3-WAY	3-WAY DIVERTER / MIXER
Fluid type	Water (max 30% glycol)		
Fluid temperatures	+5°C...+100°C		
Operating angle	90°	90°	90° mixer - 180° diverter
Loss class EN12266	B		

DIAGRAM PN = f(T)



MATERIAL USED



2-WAY FF BRASS ISO 5211 BALL VALVE

1	BODY	BRASS CW617N UNI EN 12165
2	COUPLING	BRASS CW617N UNI EN 12165
3	BALL	BRASS CW617N UNI EN 12165
4	BALL SEAL	P.T.F.E
5	ANTI-FRICTION SEAL	P.T.F.E.
6	ROD SEAL	P.T.F.E.
7	O-RING	FKM
8	O-RING	FKM
9	CONTROL ROD	BRASS CW617N UNI EN 12165
10	ISO 5211 FLANGE	BRASS CW617N UNI EN 12165

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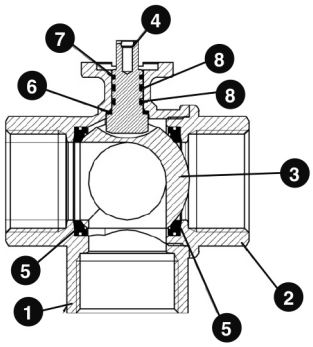
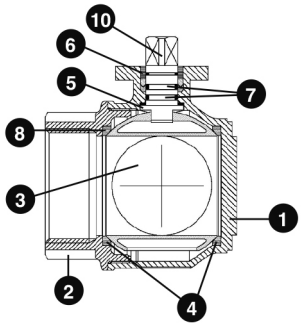


3-WAY DIVERTING/MIXING FFF
BRASS ISO 5211 BALL VALVE

1	BODY	BRASS CW617N UNI EN 12165
2	COUPLING	BRASS CW617N UNI EN 12165
3	BALL	BRASS CW614N UNI EN 12164
4	CONTROL ROD	P.T.F.E
5	BALL SEAL	P.T.F.E.
6	ANTI-FRICTION SEAL	P.T.F.E.
7	O-RING	FKM
8	O-RING	FKM



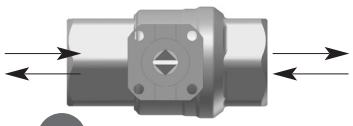
3-WAY FFF BRASS ISO 5211 BALL VALVE

1	BODY	BRASS CW617N UNI EN 12165
2	COUPLING	BRASS CW617N UNI EN 12165
3	BALL	BRASS CW617N UNI EN 12165
4	BALL SEAL	P.T.F.E
5	ANTI-FRICTION SEAL	P.T.F.E.
6	ROD SEAL	P.T.F.E.
7	O-RING	FKM
8	O-RING	FKM
10	CONTROL ROD	BRASS CW617N UNI EN 12165

2-WAY BALL VALVE

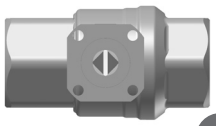
The ball valve can be mounted in both flow directions, without distinction.

OPEN valve



0° **OPENING** actuator

CLOSED valve



CLOSING actuator 90°

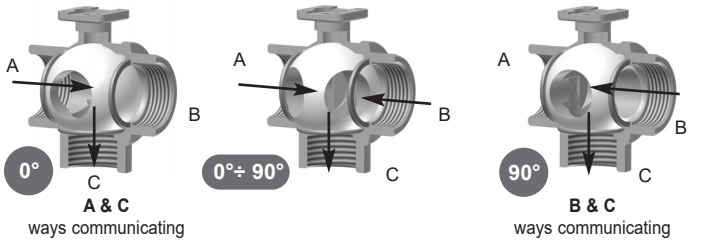
3 WAY DIVERTER / MIXER BALL VALVE

MIXING/DIVERTING BALL VALVE (3-HOLE BALL)

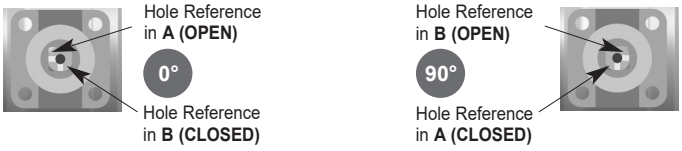
The **MIXING/DIVERTING** ball valve has a 3-hole ball with one hole pointed towards the common way C (always open) and two more holes which are orthogonal to the first one and to each other. When one of these two holes is pointed towards one of the two inlets, for example A, the second inlet B is closed.

When the operation is completed, with a rotation of the ball of 90°, the second hole is oriented on the second way (B), closing the first one (A). A characteristic of the 3-hole ball valve is that it closes one way, while the other one starts opening: for a short while, during the operating phase, all the three ways are communicating. Moreover, the above mentioned condition allows this valve to be used for mixing.

DIVERTER / MIXER - 3 HOLES • C = COMMON WAY



HOLE REFERENCES



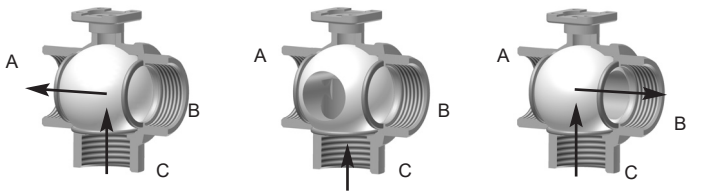
Diamant 2000 ISO

BRASS MOTORIZED BALL VALVES - FULL BORE

DIVERTER BALL VALVE (2-HOLE BALL)

The ball has 2 holes: the first hole is always oriented toward the common way (C), the second hole can be oriented toward either the A or B way, with a rotation of 180°. The **DIVERTING** ball valve closes one of the two inlets before the other one opens, therefore the two ways never communicate. On the control rod there is symbol, which indicates which way is communicating with the common one (C).

DIVERTER - 3 HOLES • C = FLUID INLET



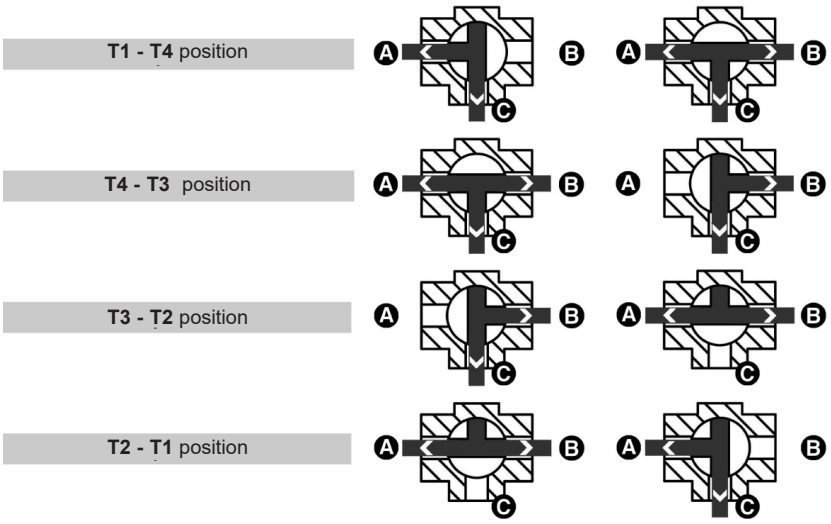
HOLE REFERENCES

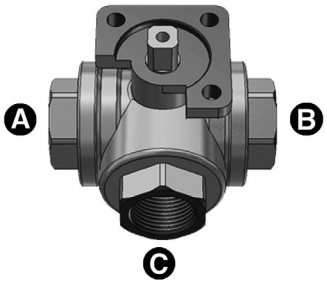
3-WAY BALL VALVES

In **Diamant 2000 ISO** valves, the 3-way version is available with a T-ball or L-ball; in both cases, they are used to allow a DEVIATION. Both ball valves close one way and, at the same time, start opening of the other one:f or a short period of time, during the operating phase, all three ways are in communication with each other. Despite the condition described above, however, it is not possible to carry out a mixing adjustment by means of this type of valve because of the limited dimensions of the sections created.

DIVERTER BALL VALVE • "T" BALL

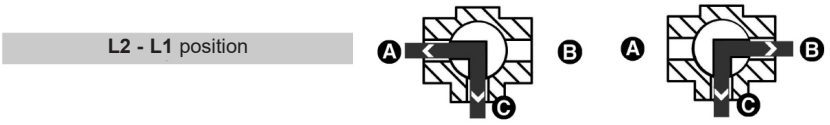
The T-BALL DIVERTER ball valve features a ball that can be used in different ways depending on the initial orientation. As can be seen in the picture, different configurations can be obtained through a 90° rotation. The position of the holes is indicated by a T engraved on the ball valve pin.





DIVERTER BALL VALVE • "L" BALL

The DIVERTER ball valve with L-SHAPED BALL has a common central way C and two ways which are put into communication with it when they make a 90° rotation. The position of the holes is indicated by an L engraved on the ball valve pin.



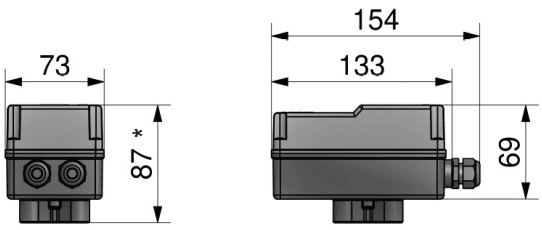
Diamant 2000 ISO

BRASS MOTORIZED BALL VALVES - FULL BORE

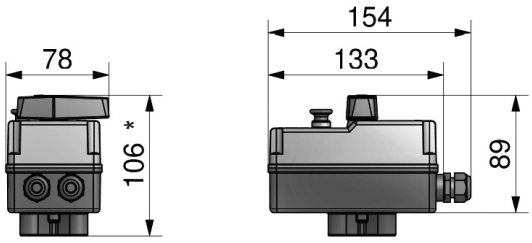
OVERALL SIZE

ACTUATOR

Diamant 2000
ISO 5211 connection

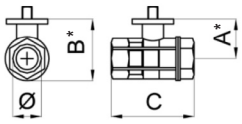
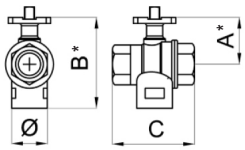
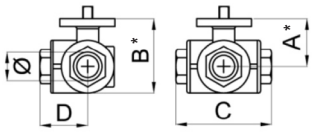


Diamant 2000 ISO 5211 connection
Version with MANUAL OVERRIDE FROM THE TOP



* 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
2-way		8	Rp 1/4"	33	50	67	
		10	Rp 3/8"	33	50	67	
		15	Rp 1/2"	33	50	67	
		20	Rp 3/4"	35	55	76	
		25	Rp 1"	46	71	90	
		32	Rp 1"1/4	49	78	102	
3-way Diverting Mixing		15	Rp 1/2"	31	65	64	
		20	Rp 3/4"	42	82	74	
		25	Rp 1"	45	92	89	
3-way "T"-port "L"-port		8	Rp 1/4"	31	48	67	34
		10	Rp 3/8"	31	48	67	34
		15	Rp 1/2"	33	52	77	39
		20	Rp 3/4"	42	66	89	44

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

EXAMPLE OF SPECIFICATIONS

DIAMANT 2000 MOTORIZED VALVE • 3-way female with full port. DIAMANT 2000 ISO 5211 ALL IN ONE (ON/OFF 2-point actuator, ON/OFF 3-point or modulating points), power supply: 230V - 50/60 Hz, operating time: 35 sec / 90°, operating angle: 90°, protection degree: IP65, ball valve. Brass ball valve CW617N UNI EN 12165, brass ball CW617N UNI EN 12165 chromed nickel, EPDM and p.t.f.e. seals, full port, PN30, UNI EN 10226-1 female thread, operating temperatures +5°C ÷ +100°C, fluid type: water with max 30% glycol, “T” ball, dimensions: DN 20 – 3/4" – Kvs 7,9 - maximum differential pressure 16 bar.

Brand: **COMPARATO**

Code: **DY222GB6E5**

BIM BUILDING INFORMATION MODELING

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