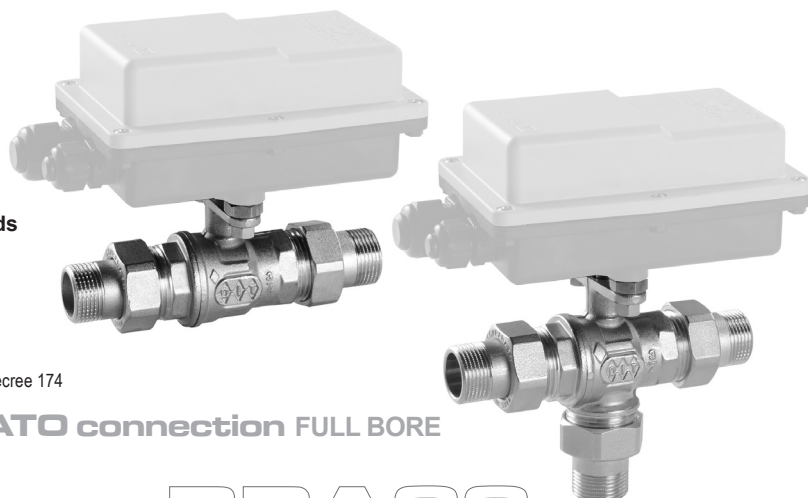


# Diamant P20

## BRASS BALL VALVES

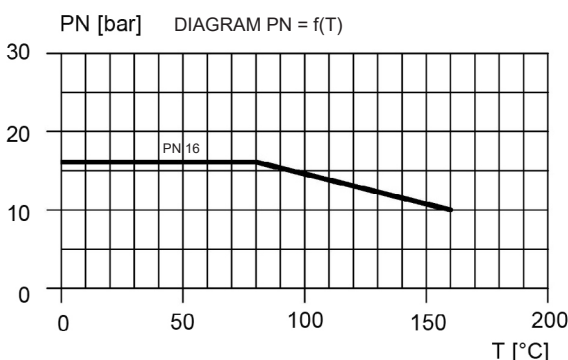
### USE

- systems using alternative energy
- automation systems
- glycol cooling systems
- heating/cooling systems
- open and closed hydraulic systems
- industrial systems in general using hot and cold fluids
- water treatment systems
- compressed air systems



**TECHNICAL FEATURES** • The ball valves comply with Ministerial Decree 174

### BRASS BALL VALVES COMPARATO connection FULL BORE



# BRASS

When the value of the flow is known, the general expression for the calculation of pressure losses is the following:

$$\Delta p [\text{bar}] = \left[ \frac{Q [\text{m}^3/\text{h}]}{k_{vs}} \right]^2$$

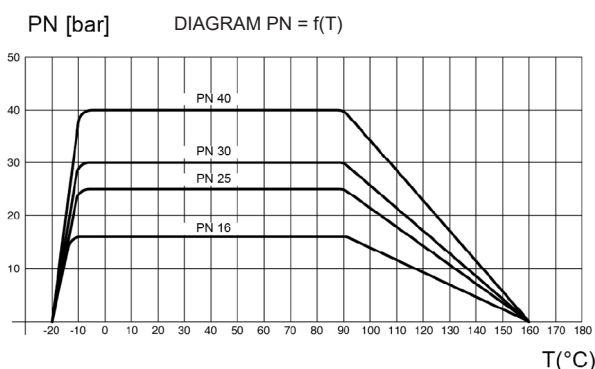
The expression provided applies to water or technically similar fluids.

**FLUIDS** Water and EPDM & PTFE-compatible fluids • Other fluids on request

### TEMPERATURES

• Minimum	Valve -10°C	Valve with spacer -20°C
• Maximum	+110 °C	+110°C

### BRASS BALL VALVES ISO 5211 connection FULL BORE



When the value of the flow is known, the general expression for the calculation of pressure losses is the following:

$$\Delta p [\text{bar}] = \left[ \frac{Q [\text{m}^3/\text{h}]}{k_{vs}} \right]^2$$

The expression provided applies to water or technically similar fluids.

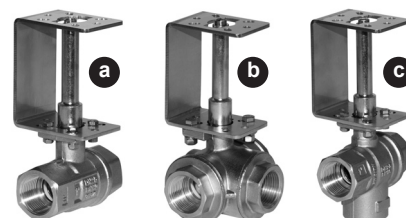
**FLUIDS** Water and EPDM & PTFE-compatible fluids • Other fluids on request

### TEMPERATURES

• Minimum	Valve -10°C	Valve with spacer -20°C
• Maximum	+110 °C	look down

- 2 way ball valve with ISO 5211 connection and spacer: Peak T \* = 160°C **a**
- 3 way ball valve with ISO 5211 connection and spacer: Peak T \* = 160°C **b**
- diverter/mixer ball valve with ISO 5211 connection and spacer: Peak T \* = 120°C **c**

\* Maximum temperature that can be reached for a short period of time



COMPARATO NELLO s.r.l.

AZIENDA CERTIFICATA UNI EN ISO 9001: 2015

# Diamant P20

## BRASS BALL VALVES

**HYDRAULIC VERSIONS AND FEATURES** • Unless otherwise specified, the maximum differential pressure value tallies with the PN

2-WAY ball valve	DN	Connections	PN	Kv <sub>s</sub> [m³/h]	Code
------------------	----	-------------	----	---------------------------	------



15	1/2" M	16	16,3	DC2A2A
20	3/4" M	16	29,5	DC2B2A
25	1" M	16	43	DC2C2A

2-WAY ball valve	DN	Connections	PN	Kv <sub>s</sub> [m³/h]	Code
------------------	----	-------------	----	---------------------------	------

**WITH SPACER**



15	1/2" M	16	16,3	DC2A2AD1
20	3/4" M	16	29,5	DC2B2AD1
25	1" M	16	43	DC2C2AD1

2-WAY ball valve	DN	Connections	PN	Kv <sub>s</sub> [m³/h]	Code
------------------	----	-------------	----	---------------------------	------

**WITH SPACER and OVERRIDE**



15	1/2" M	16	16,3	DC2A2AD2
20	3/4" M	16	29,5	DC2B2AD2
25	1" M	16	43	DC2C2AD2

3-WAY ball valves	DN	Connections	PN	Kv <sub>s</sub> [m³/h]	Code
-------------------	----	-------------	----	---------------------------	------

**MIXER / DIVERter 90° 3 HOLES**



20	3/4" M	16	11,5	DC3B3A
25	1" M	16	18,3	DC3C3A

**DIVERter 180° 2 HOLES**

20	3/4" M	16	11,5	DC3B2A
25	1" M	16	18,3	DC3C2A

3-WAY ball valves	DN	Connections	PN	Kv <sub>s</sub> [m³/h]	Code
-------------------	----	-------------	----	---------------------------	------

**WITH SPACER**



**MIXER / DIVERter 90° 3 HOLES**

20	3/4" M	16	11,5	DC3B3AD1
25	1" M	16	18,3	DC3C3AD1

**DEVIATORE 180° 2 FORI**

20	3/4" M	16	11,5	DC3B2AD1
25	1" M	16	18,3	DC3C2AD1

3-WAY ball valves	DN	Connections	PN	Kv <sub>s</sub> [m³/h]	Code
-------------------	----	-------------	----	---------------------------	------

**WITH SPACER and OVERRIDE**



**MIXER / DIVERter 90° 3 HOLES**

20	3/4" M	16	11,5	DC3B3AD2
25	1" M	16	18,3	DC3C3AD2

**DIVERter 180° 2 HOLES**

20	3/4" M	16	11,5	DC3B2AD2
25	1" M	16	18,3	DC3C2AD2

2-WAY FF 3-WAY FFF ball valves	DN	Connections	PN	Kv <sub>s</sub> [m³/h]	Code
--------------------------------	----	-------------	----	---------------------------	------

**WITH SPACER**



-	Rp 1/4"	40	5,4	DC2S2P5D1
10	Rp 3/8"	40	6	DC2R2P5D1
15	Rp 1/2"	40	16,3	DC2A2P5D1
20	Rp 3/4"	40	29,5	DC2B2P5D1
25	Rp 1"	40	43	DC2C2P5D1
32	Rp 1 1/4 *	40	89	DC2D2P5D1

**WITH SPACER and OVERRIDE**



-	Rp 1/4"	40	5,4	DC2S2P5D2
10	Rp 3/8"	40	6	DC2R2P5D2
15	Rp 1/2"	40	16,3	DC2A2P5D2
20	Rp 3/4"	40	29,5	DC2B2P5D2
25	Rp 1"	40	43	DC2C2P5D2
32	Rp 1 1/4 *	40	89	DC2D2P5D2

\* maximum differential pressure 25 bar (ΔP max)

**WITH SPACER**

**MIXER / DIVERter 90° 3 HOLES**



15	Rp 1/2"	16	6	DC3A3E5D1
20	Rp 3/4"	16	11,5	DC3B3E5D1
25	Rp 1" *	16	18,3	DC3C3E5D1

**DEVIATORE 180° 2 FORI**

15	Rp 1/2"	16	6	DC3A2E5D1
20	Rp 3/4"	16	11,5	DC3B2E5D1
25	Rp 1" *	16	18,3	DC3C2E5D1

**WITH SPACER and OVERRIDE**

**MIXER / DIVERter 90° 3 HOLES**



15	Rp 1/2"	16	6	DC3A3E5D2
20	Rp 3/4"	16	11,5	DC3B3E5D2
25	Rp 1" *	16	18,3	DC3C3E5D2

**DIVERter 180° 2 HOLES**

15	Rp 1/2"	16	6	DC3A2E5D2
20	Rp 3/4"	16	11,5	DC3B2E5D2
25	Rp 1" *	16	18,3	DC3C2E5D2

\* maximum differential pressure 10 bar (ΔP max)

**WITH SPACER**

**"T" BALL**



15	Rp 1/2"	30	3,9	DC3A6E5D1
20	Rp 3/4" *	30	7,9	DC3B6E5D1

**"L" BALL**

15	Rp 1/2"	30	3,9	DC3A5E5D1
20	Rp 3/4" *	30	7,9	DC3B5E5D1

**WITH SPACER and OVERRIDE**

**"T" BALL**



15	Rp 1/2"	30	3,9	DC3A6E5D2
20	Rp 3/4" *	30	7,9	DC3B6E5D2

**"L" BALL**

15	Rp 1/2"	30	3,9	DC3A5E5D2
20	Rp 3/4" *	30	7,9	DC3B5E5D2

\* maximum differential pressure 16 bar (ΔP max)

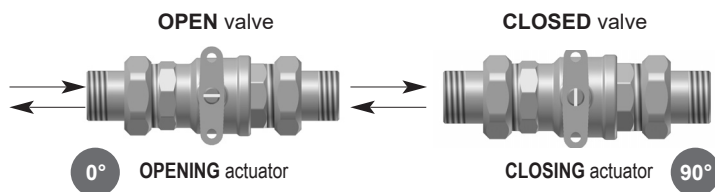


# Diamant PRO

## BRASS BALL VALVES

### 2-WAY BALL VALVE

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

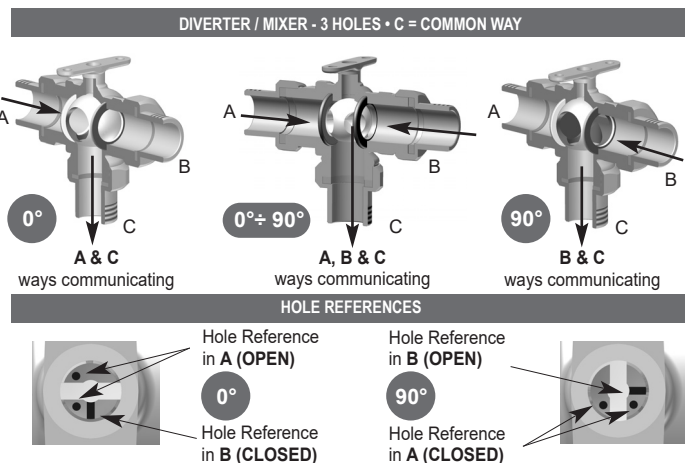


### 3 WAY DIVERTER/MIXER BALL VALVE

The 3-way version of **Diamant PRO** is available with two different balls. In both cases, one of the holes is positioned on the common way, which is therefore always open.

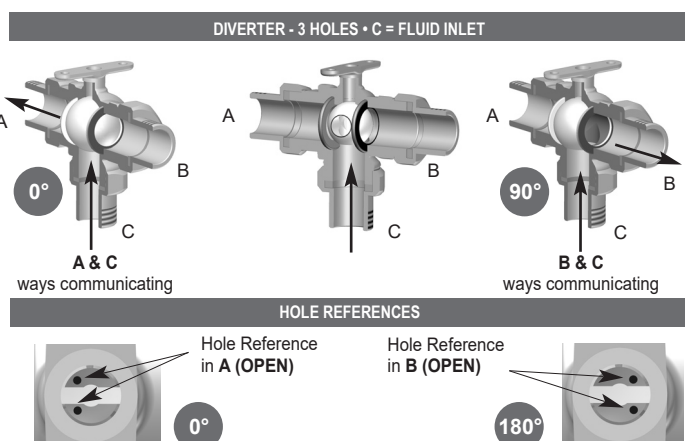
#### MIXER/DIVERTER BALL VALVE (3-HOLE BALL)

The **MIXER/DIVERTER** ball valve has a 3-hole sphere 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). The 3-hole ball valve has a particular feature: it can close one way and simultaneously start the opening of the other way. 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. On the control rod there are some symbols, which indicate sphere hole references.



#### DIVERTER BALL VALVE (2-HOLE BALL)

The **DIVERTER** ball valve has a 2-hole sphere: 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 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 a symbol, which indicates which way is communicating with the common one (C).



# Diamant *PRO*

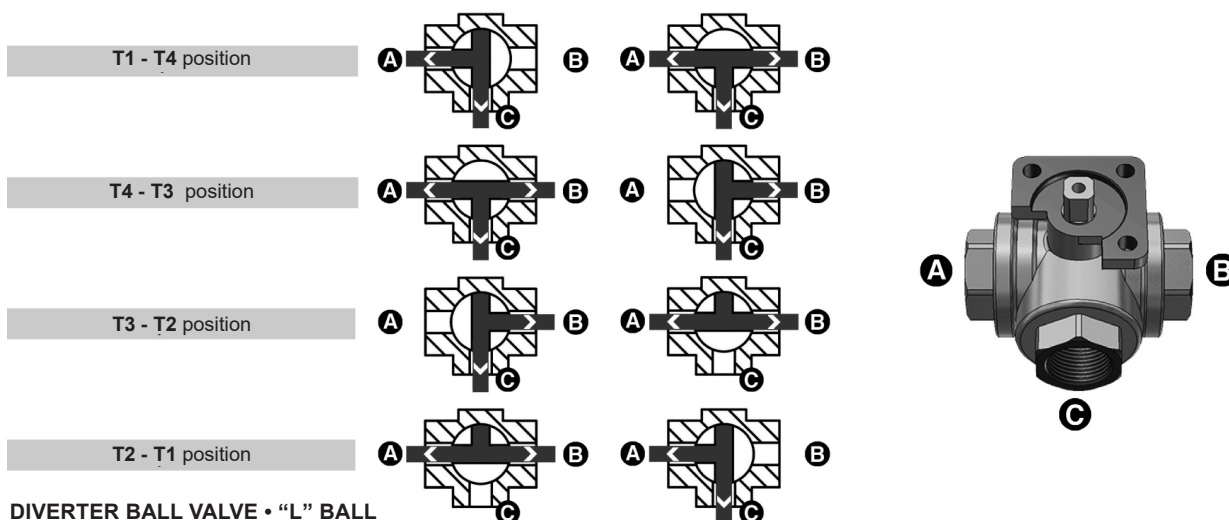
## BRASS BALL VALVES

### 3-WAY DIVERTER BALL VALVES

In **Diamant PRO** valves, the HORIZONTAL 3-way version is available with a T-ball or L-ball; in both cases, they are used to allow a DIVERSION. Both ball valves close one way and, at the same time, start opening of the other one: for 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.

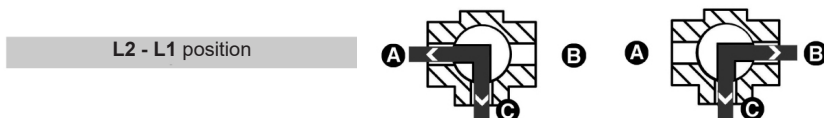
#### DIVERTER BALL VALVE • "T" BALL

The T-BALL DIVERTER ball valve features a ball that can be used differently 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.

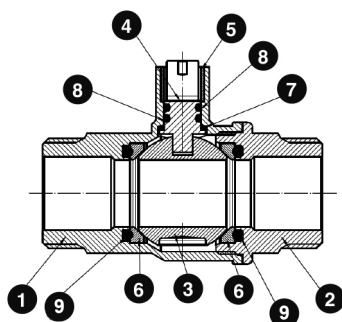


#### DIVERTER BALL VALVE • "L" BALL

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.

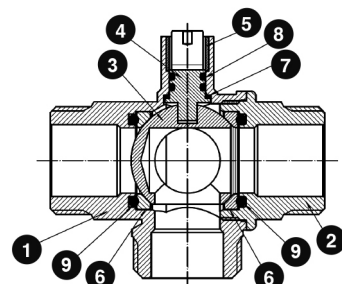


### MATERIALS USED



#### 2-WAY COMPARATO CONNECTION BRASS BALL VALVE

1	BODY	BRASS \ CW 617N - UNI EN 12165 NICKEL PLATING
2	COUPLING	BRASS \ CW 617N - UNI EN 12165 NICKEL PLATING
3	BALL	BRASS \ CW 617N - UNI EN 12165 CHROMED NICKEL
4	ROD	BRASS \ CW 614N - UNI EN 12164 NICKEL PLATING
5	SLEEVE	P.T.F.E.
6	BALL SEAL	P.T.F.E.
7	ATIFRICTION SEAL	P.T.F.E.
8	O-RING	EPDM
9	O-RING	NBR



#### 3-WAY COMPARATO CONNECTION BRASS BALL VALVE

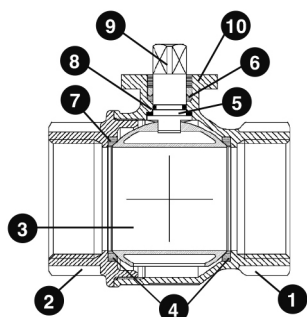
1	BODY	BRASS \ CW 617N - UNI EN 12165 NICKEL PLATING
2	COUPLING	BRASS \ CW 617N - UNI EN 12165 NICKEL PLATING
3	BALL	BRASS \ CW 617N - UNI EN 12165 CHROMED NICKEL
4	ROD	BRASS \ CW 614N - UNI EN 12164 NICKEL PLATING
5	SLEEVE	P.T.F.E.
6	BALL SEAL	P.T.F.E.
7	ATIFRICTION SEAL	P.T.F.E.
8	O-RING	EPDM
9	O-RING	NBR



# Diamant PRO

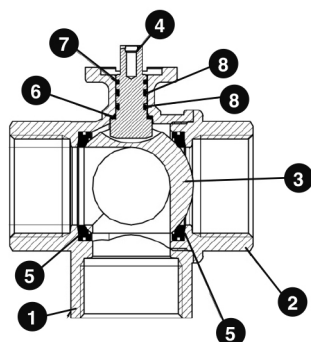
## BRASS BALL VALVES

### MATERIALS USED



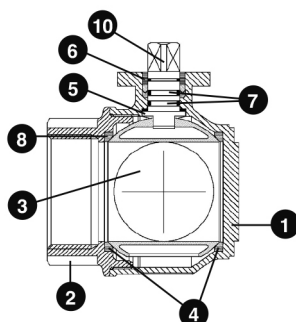
#### 2-WAY FF ISO 5211 CONNECTION BRASS BALL VALVE

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 WASHER	P.T.F.E.
7	O-RING	FKM
8	O-RING	FKM
9	CONTROL ROD	BRASS CW614N UNI EN 12164
10	FLANGE ISO 5211	BRASS CW617N UNI EN 12165



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

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



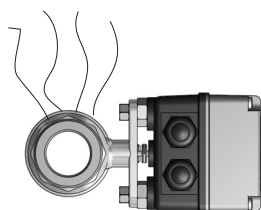
#### 3-WAY FFF ISO 5211 BRASS BALL VALVE

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 WASHER	P.T.F.E.
7	O-RING	FKM
8	O-RING	FKM
10	CONTROL ROD	BRASS CW614N UNI EN 12164

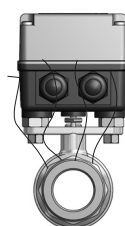
### INSTALLATION

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

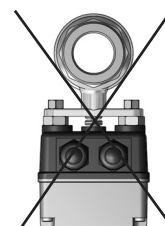
#### RECOMMENDED POSITION



#### ALLOWED POSITION



#### FORBIDDEN POSITION



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



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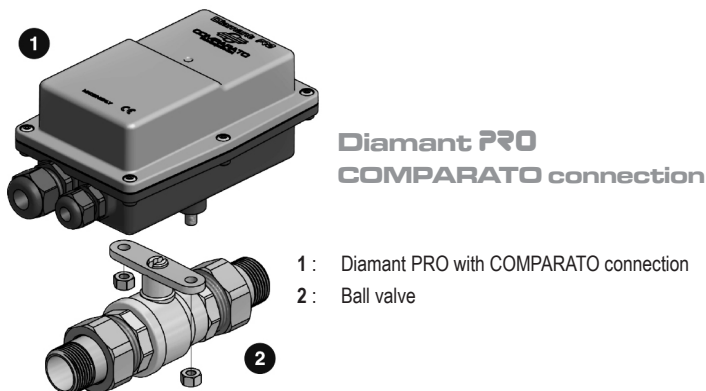
# Diamant PRO

BRASS BALL VALVES

## CONNECTION TO THE BALL VALVE

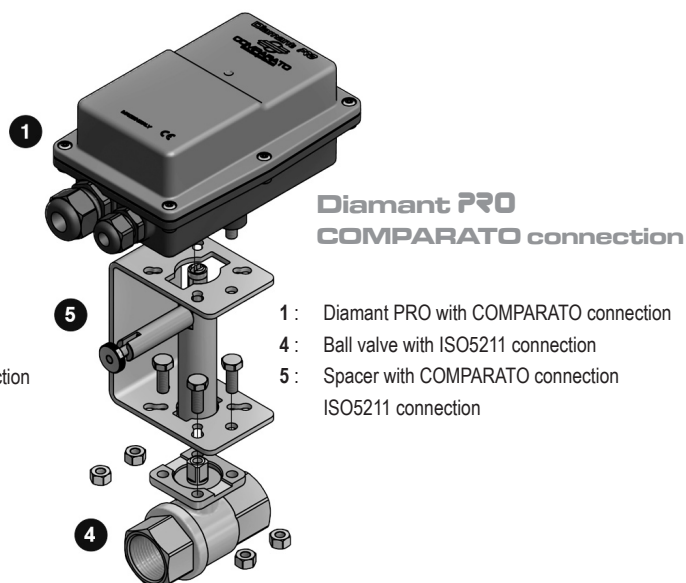
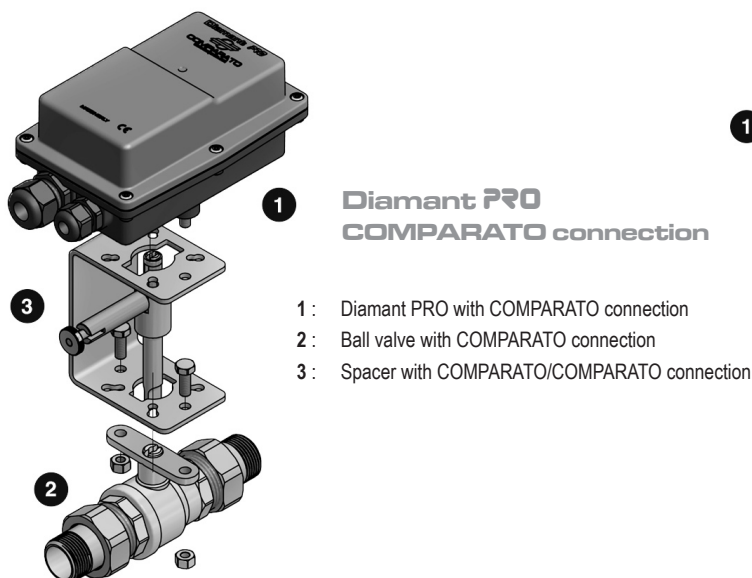
### DIRECT CONNECTION TO THE BALL VALVE

The direct connection of the **Diamant PRO** with **COMPARATO** connection can only be made on the ball valve with **COMPARATO** connection. For the direct coupling to **ISO 5211** connection ball valve see the **PRO Range** data sheet.



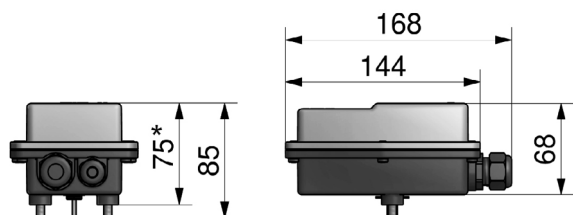
### CONNECTION TO THE BALL VALVE WITH A SPACER

The ball valves fitted with a spacer (both with direct rod and manual opening) must be motorized with a **Diamant PRO COMPARATO** connection, even if the ball valve has an **ISO 5211** port.

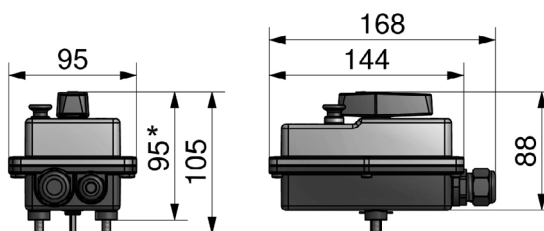


## OVERALL SIZE

**Diamant PRO**  
with **COMPARATO** connection



**Diamant PRO** with **COMPARATO** connection  
Version with **MANUAL OVERRIDE FROM THE TOP**



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



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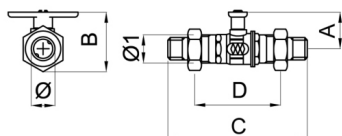
# Diamant PRO

## BRASS BALL VALVES

### OVERALL SIZE

### BALL VALVES

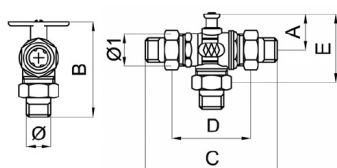
MODEL	DN	Ø UNIONS	Ø 1 BALL VALVES	A	B	C	D
2-way COMPARATO connection							



D: dimensions referred to the ball valve without unions

15	1/2"	3/4"	34	48	133	78
20	3/4"	1"	38	58	145	84
25	1"	1"1/4	42	66	164	94

3-ways  
Diverter  
Mixer  
COMPARATO  
connection

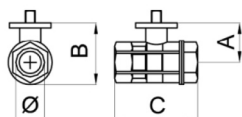


DN	Ø UNIONS	Ø 1 BALL VALVES	A	B	C	D	E
----	----------	-----------------	---	---	---	---	---

D - E: dimensions referred to the ball valve without unions

20	3/4"	1"	38	105	145	84	74
25	1"	1"1/4	42	117	164	94	82

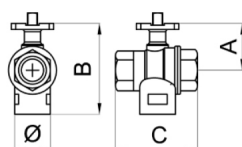
2-way  
ISO 5211  
connection



DN	Ø	A *	B	C
----	---	-----	---	---

8	1/4"	33	50	67
10	3/8"	33	50	67
15	1/2"	33	50	67
20	3/4"	35	55	76
25	1"	46	71	90
32	1"1/4	49	78	102

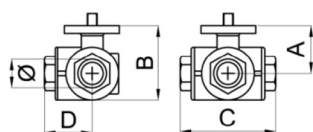
3-ways  
Diverter  
Mixer  
ISO 5211  
connection



DN	Ø	A *	B	C
----	---	-----	---	---

15	1/2"	31	65	64
20	3/4"	42	82	74
25	1"	45	92	89

3-ways  
"T" Ball  
"L" Ball  
ISO 5211  
connection



DN	Ø	A *	B	C	D
----	---	-----	---	---	---

15	1/2"	33	52	77	39
20	3/4"	42	66	89	44

\* the size of the spacer must always be added to the "A" dimension



# Diamant *PRO*

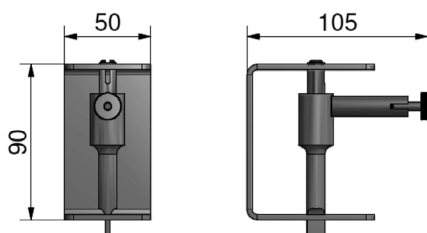
BRASS BALL VALVES

## INSULATION SPACERS AND MANUAL OVERRIDE

### SPACER with COMPARATO / COMPARATO connection

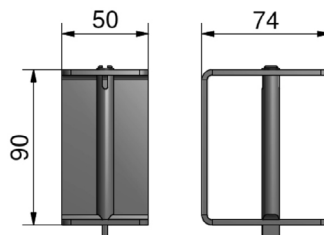
Spacer for insulation  
with manual opening  
COMPARATO - COMPARATO connection

Code ADSTD2



Spacer for insulation  
COMPARATO - COMPARATO connection

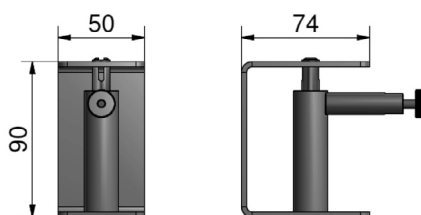
Code ADSTD1



### SPACER with COMPARATO / ISO 5211 connection

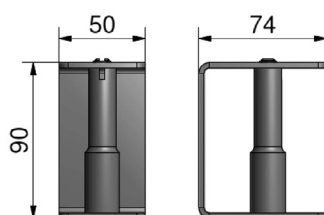
Spacer for insulation  
with manual opening  
COMPARATO - ISO 5211 connection

Code DIDM02



Spacer for insulation  
COMPARATO - ISO 5211 connection

Code DIDM01



## EXAMPLE OF SPECIFICATIONS

**DIAMANT PRO BRASS BALL VALVE** • CW617N UNI EN 12165, EPDM and PTFE seals, full port, PN16, with tangs and caps. Operating temperatures -20°C...+110°C. Fluid type: water with glycol max. 30%. Spacer for insulation in stainless steel with manual opening height 90 mm. Connection to the actuator with a Comparato Connection. Version: 2-WAY MM DN15 - 1/2" - Kvs 16,3

Brand: **COMPARATO**

Code: **DC2A2AD2**

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

In order to provide an up-to-date service, Comparato Nello S.r.l. reserves the right to modify technical data, drawings, graphs and photos of this data sheet at any time, without prior notice.

**BIM**  
BUILDING  
INFORMATION  
MODELING



**HYDROTHERMAL SYSTEMS**  
**COMPARATO NELLO s.r.l.**  
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