

PRO Range

BRASS BALL VALVES WITH ISO 5211 CONNECTION

USE

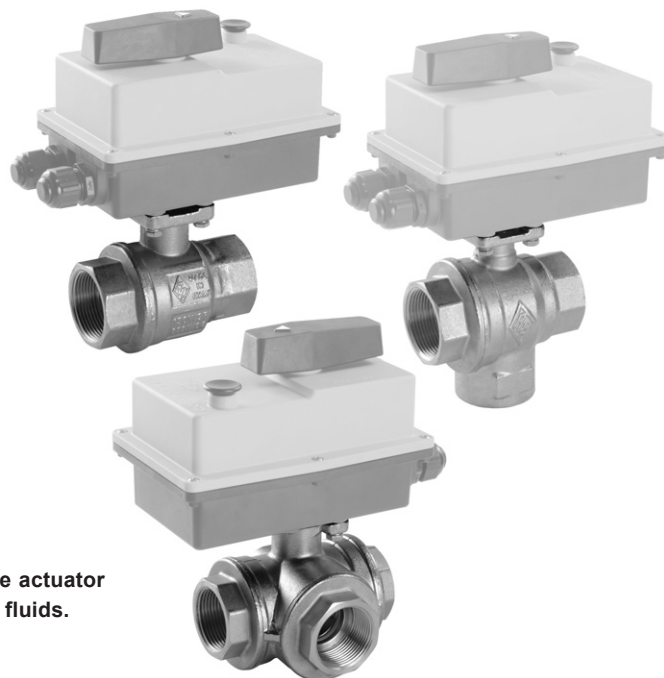
- systems using alternative energy
- automation systems
- glycol cooling systems
- heating / cooling systems
- open and closed hydraulic systems
- industrial systems using hot and cold fluids
- water treatment systems
- compressed air systems

MAIN FEATURES

- female threaded connections EN 10226-1 Rp
- actuator connection ISO 5211
- compliant with Italian Ministerial Decree No. 174 of 06/04/2004
- zero leakage – EN 12266-1 Grade A

FUNCTIONS

The 2-way and 3-way ball valves, in combination with the suitable actuator of the **PRO** range, are used to intercept, divert, regulate and mix fluids.

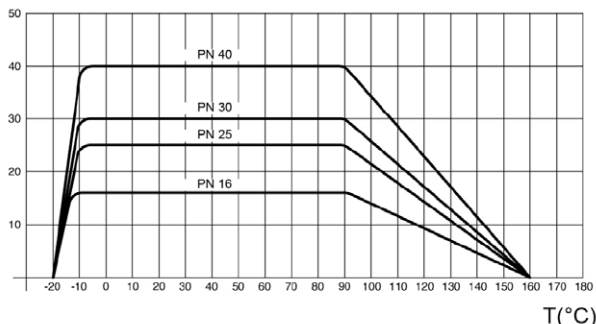


TECHNICAL FEATURES

BRASS BALL VALVES ISO 5211 connection FULL BORE

BRASS

PN [bar] DIAGRAM PN = f(T)



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

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

The expression provided applies to water or technically similar fluids.

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

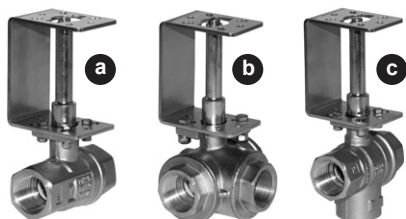
TEMPERATURES

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

* -15°C for 3-WAY DIVERTER / MIXER versions

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




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



PRO Range

BRASS BALL VALVES WITH ISO 5211 CONNECTION

VERSIONS AND HYDRAULIC FEATURES

Ball valve	DN	Connections	PN	Kvs [m ³ /h]	Δp max [bar]	Function	Ball drilling	Rotation	Code	Actuator to be paired
 <p>2-WAY FF FULL PORT</p>	-	Rp 1/4"	40	5,4	40			90°	DC2S2P5	Diamant PRO ISO 5211 **
	10	Rp 3/8"	40	6	40			90°	DC2R2P5	Diamant PRO ISO 5211 **
	15	Rp 1/2"	40	16,3	40			90°	DC2A2P5	Diamant PRO ISO 5211 **
	20	Rp 3/4"	40	29,5	40			90°	DC2B2P5	Diamant PRO ISO 5211 **
	25	Rp 1"	40	43	40			90°	DC2C2P5	Diamant PRO ISO 5211 **
	32	Rp 1"1/4	40	89	25			90°	DC2D2P5	Diamant PRO ISO 5211 ** Compact PRO
	40	Rp 1"1/2	40	230	40			90°	UC2E2M5	Compact PRO
	50	Rp 2"	40	265	25			90°	UC2F2M5	Compact PRO Universal PRO
	65	Rp 2"1/2	25	540	25			90°	UC2G2M5	Universal PRO
	80	Rp 3"	16	873	16			90°	UC2H2M5	Universal PRO
	100	Rp 4"	16	1390	6			90°	UC2I2M5	Universal PRO
	 <p>3-WAY FFF VERTICAL FULL PORT</p>	15	Rp 1/2"	25	6	25	Mixing/ Diverting	"3-hole"	90°	DC3A3E5
20		Rp 3/4"	16	11,5	16	"3-hole"		90°	DC3B3E5	Diamant PRO ISO 5211 **
25		Rp 1"	16	18,3	10	"3-hole"		90°	DC3C3E5	Diamant PRO ISO 5211 ** Compact PRO
32		Rp 1"1/4	10	27,2	10	"3-hole"		90°	UC3D3E5	Compact PRO
40		Rp 1"1/2	10	47,3	6	"3-hole"		90°	UC3E3E5	Compact PRO Universal PRO
50		Rp 2"	10	73	10	"3-hole"		90°	UC3F3E5	Universal PRO
15		Rp 1/2"	25	6	25	Diverting	"2-hole"	180°	DC3A2E5	Diamant PRO ISO 5211 **
20		Rp 3/4"	16	11,5	16		"2-hole"	180°	DC3B2E5	Diamant PRO ISO 5211 **
25		Rp 1"	16	18,3	10		"2-hole"	180°	DC3C2E5	Diamant PRO ISO 5211 ** Compact PRO
32		Rp 1"1/4	10	27,2	10		"2-hole"	180°	UC3D2E5	Compact PRO
40		Rp 1"1/2	10	47,3	6		"2-hole"	180°	UC3E2E5	Compact PRO Universal PRO
50		Rp 2"	10	73	10		"2-hole"	180°	UC3F2E5	Universal PRO
 <p>3-WAY FFF HORIZONTAL FULL PORT</p>	-	Rp 1/4"	30	2,8 *	30	Diverting	"T" ball	90°	DC3S6E5	Diamant PRO ISO 5211 **
	10	Rp 3/8"	30	3 *	30		"T" ball	90°	DC3R6E5	Diamant PRO ISO 5211 **
	15	Rp 1/2"	30	3,9 *	30		"T" ball	90°	DC3A6E5	Diamant PRO ISO 5211 **
	20	Rp 3/4"	16	7,9 *	16		"T" ball	90°	DC3B6E5	Diamant PRO ISO 5211 ** Compact PRO
	25	Rp 1"	16	13 *	16		"T" ball	90°	UC3C6E5	Compact PRO
	32	Rp 1"1/4	10	20,7 *	6		"T" ball	90°	UC3D6E5	Compact PRO Universal PRO
	40	Rp 1"1/2	10	38,7 *	10	"T" ball	90°	UC3E6E5	Universal PRO	
	50	Rp 2"	10	54 *	10	"T" ball	90°	UC3F6E5	Universal PRO	
	-	Rp 1/4"	30	2,8	30	Diverting	"L" ball	90°	DC3S5E5	Diamant PRO ISO 5211 **
	10	Rp 3/8"	30	3	30		"L" ball	90°	DC3R5E5	Diamant PRO ISO 5211 **
	15	Rp 1/2"	30	3,9	30		"L" ball	90°	DC3A5E5	Diamant PRO ISO 5211 **
	20	Rp 3/4"	30	7,9	16		"L" ball	90°	DC3B5E5	Diamant PRO ISO 5211 ** Compact PRO
25	Rp 1"	16	13	16	"L" ball		90°	UC3C5E5	Compact PRO	
32	Rp 1"1/4	10	20,7	6	"L" ball		90°	UC3D5E5	Compact PRO Universal PRO	
40	Rp 1"1/2	10	38,7	10	"L" ball	90°	UC3E5E5	Universal PRO		
50	Rp 2"	10	54	10	"L" ball	90°	UC3F5E5	Universal PRO		

* Value referred to the less favored port (angled port)

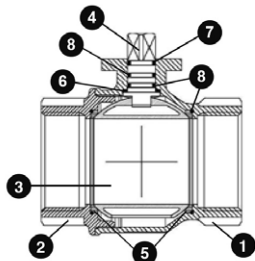
** In case of coupling with the spacers on page 6 (DIDM01 - DIDM02), a Diamant PRO actuator with COMPARATO connection must be used.



P20 Range

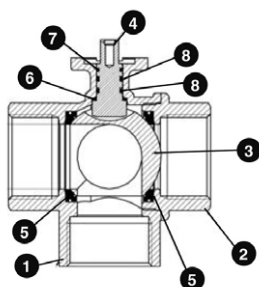
BRASS BALL VALVES WITH ISO 5211 CONNECTION

MATERIALS USED



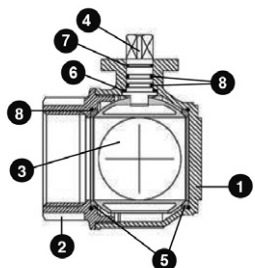
2-WAY FF ISO 5211 BRASS BALL VALVE

1	CASE	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	ANTIFRICTION SEAL	P.T.F.E.	
7	ANTIFRICTION SEAL	P.T.F.E.	
8	O-RING	FKM	



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

1	CASE	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	ANTIFRICTION SEAL	P.T.F.E.	
7	ANTIFRICTION SEAL	P.T.F.E.	
8	O-RING	FKM	

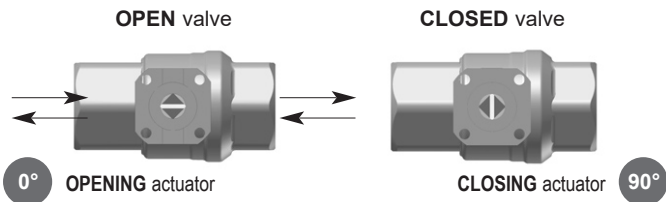


3-WAY FFF ISO 5211 BRASS BALL VALVE

1	CASE	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	ANTIFRICTION SEAL	P.T.F.E.	
7	ANTIFRICTION SEAL	P.T.F.E.	
8	O-RING	FKM	

2-WAY BALL VALVE

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



PRO Range

BRASS BALL VALVES WITH ISO 5211 CONNECTION

3-WAY DIVERTER / MIXER BALL VALVE

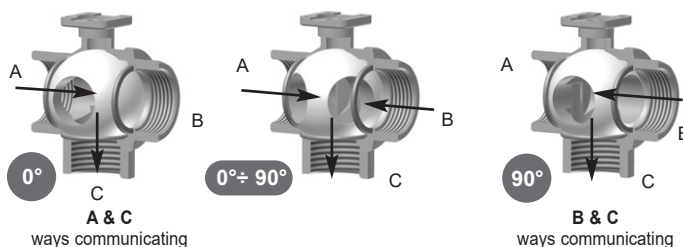
MIXING/DIVERTING BALL VALVE (3-HOLE BALL)

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.

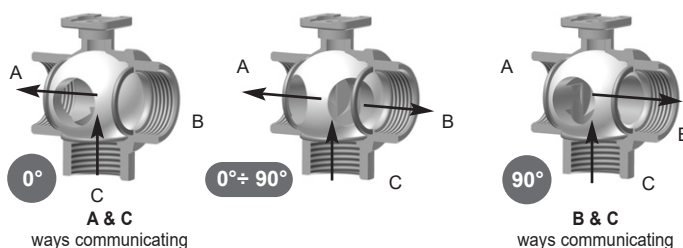
When the operation is completed, with a rotation of the ball of 90°, the second hole is oriented on the second way (B), closing the first one (A). A characteristic of the 3-hole ball valve is that it closes one way, while the other one starts opening: for a short while, during the operating phase, all 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

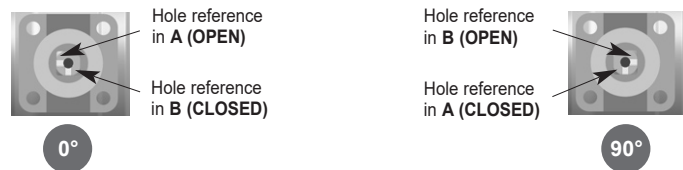
MIXING FUNCTION



DIVERTING FUNCTION



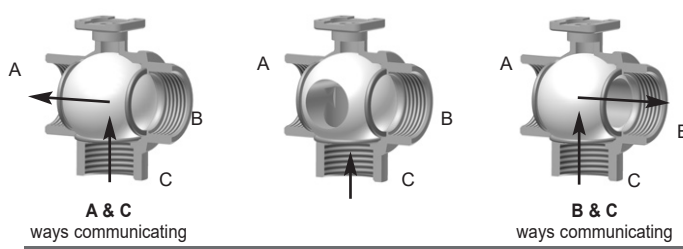
HOLE REFERENCES



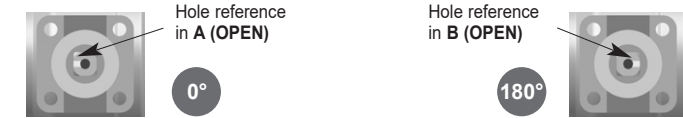
DIVERTER BALL VALVE (2-HOLE BALL)

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



P20 Range

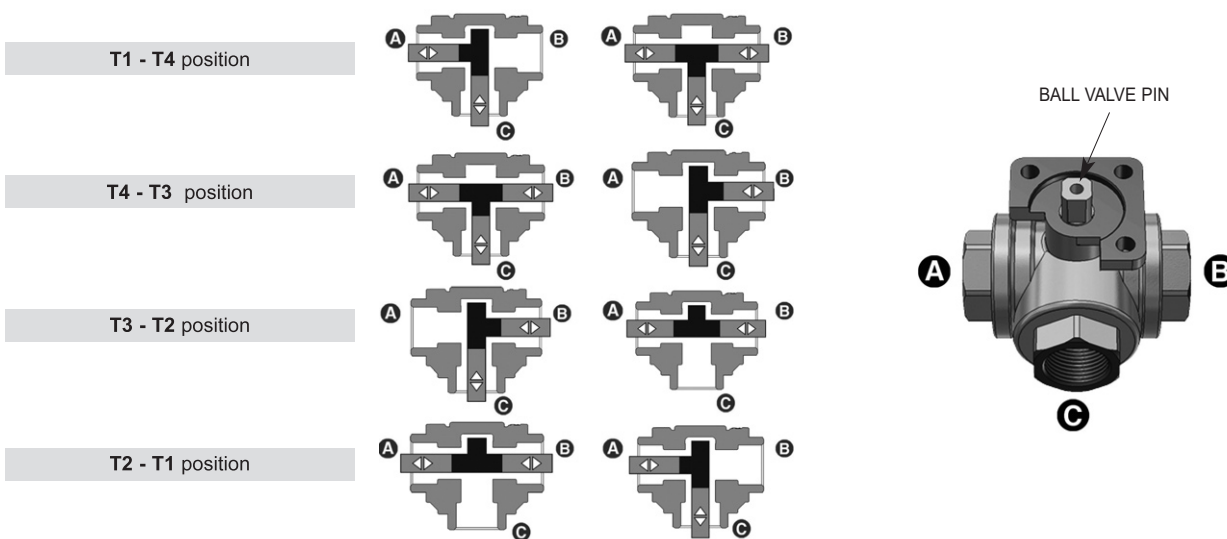
BRASS BALL VALVES WITH ISO 5211 CONNECTION

3-WAY DIVERTER BALL VALVES

In **Diamant P20 ISO** valves, the horizontal 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: 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.

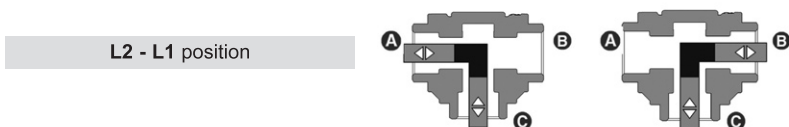
DIVERTER BALL VALVE • “T” BALL

The T-BALL diverter valve features a ball that can be used differently depending on the initial orientation. As can be seen in the opposite 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.

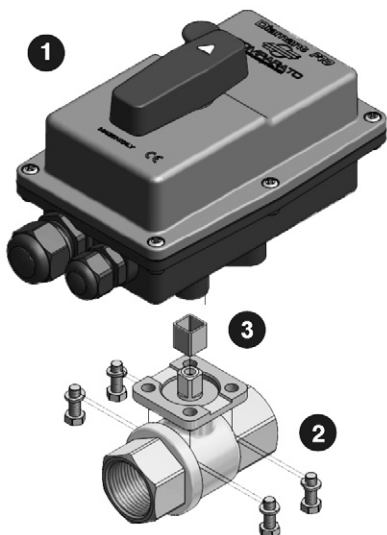


PRO Range

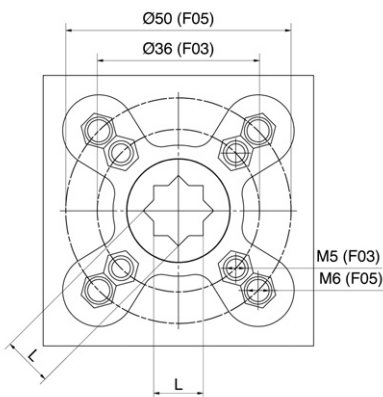
BRASS BALL VALVES WITH ISO 5211 CONNECTION

CONNECTION TO THE BALL VALVE

DIRECT CONNECTION

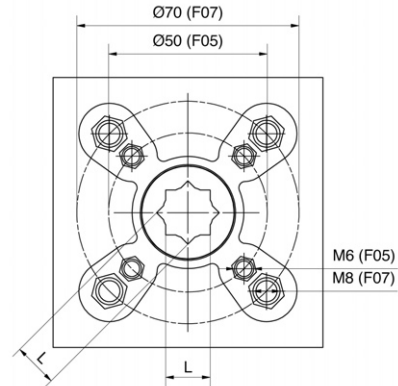


Diamant PRO ISO
Compact PRO ISO



ISO 5211 connection	L
F03	9 mm
F05	11 mm

Universal PRO ISO

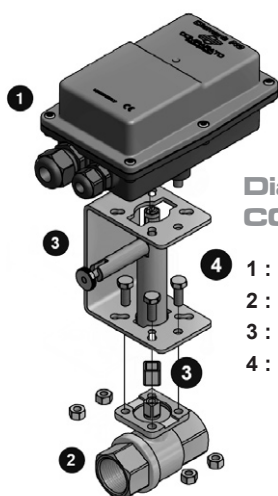


ISO 5211 connection	L
F05	11 mm
F07	14 mm

- 1: PRO Range actuator
- 2: Ball valve
- 3: Adapter (if necessary)

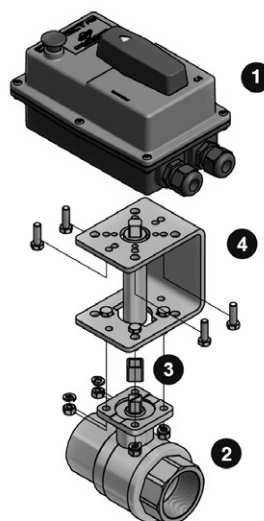
CONNECTION TO THE BALL VALVE WITH A SPACER

It is possible to insert a spacer between the actuator and the valve body to facilitate pipe insulation and reduce the influence of fluid temperature on the actuator. The spacer can be with a direct shaft or with manual override. For valve bodies to be paired with **Diamant PRO** actuators, inserting the spacer (DIDM01 - DIDM02) converts the actuator connection from ISO 5211 to **COMPARATO** connection. In this case, a **Diamant PRO actuator with COMPARATO connection** must be used.



Diamant PRO
COMPARATO connection

- 1: Diamant PRO with COMPARATO connection
- 2: Ball valve with ISO 5211 connection
- 3: Adapter (if necessary)
- 4: COMPARATO-ISO 5211 connection spacer



Compact PRO
Universal PRO

- 1: Compact PRO / Universal PRO
- 2: Ball valve
- 3: Adapter (if necessary)
- 4: Spacer for insulation



Do not combine spacers with manual opening with actuators that are also equipped with top manual override.



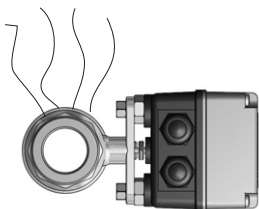
PRO Range

BRASS BALL VALVES WITH ISO 5211 CONNECTION

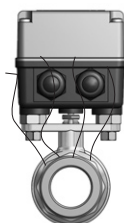
INSTALLATION

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

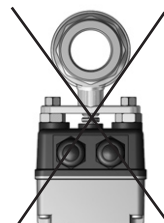
RECOMMENDED POSITION



ALLOWED POSITION



FORBIDDEN POSITION



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

OVERALL SIZE

	MODEL	DN	Ø	A *	B	C	
2-way		-	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	
		40	1"1/2	64	100	114	
		50	2"	73	119	138	
		65	2"1/2	89	143	165	
		80	3"	98	160	188	
100	4"	117	200	225			
3-way Diverting Mixing		DN	Ø	A *	B	C	
		15	1/2"	31	65	64	
		20	3/4"	42	82	74	
		25	1"	45	92	89	
		32	1"1/4	49	104	100	
		40	1"1/2	61	123	110	
50	2"	67	140	130			
3-way "T"-port "L"-port		DN	Ø	A *	B	C	D
		-	1/4"	31	48	67	33,5
		10	3/8"	31	48	67	33,5
		15	1/2"	33	53	77	38,5
		20	3/4"	42	66	87	43,5
		25	1"	47	77	105	52,5
		32	1"1/4	60	96	122	61
		40	1"1/2	74	117	138	69
50	2"	85	141	166	83		

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



PRO Range

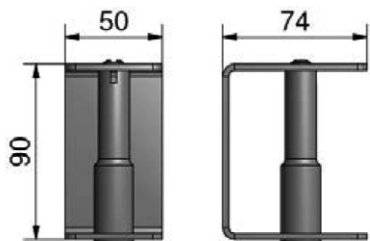
BRASS BALL VALVES WITH ISO 5211 CONNECTION

SPACER FOR INSULATION WITH OR WITHOUT MANUAL OVERRIDE

Diamant PRO COMPARATO connection

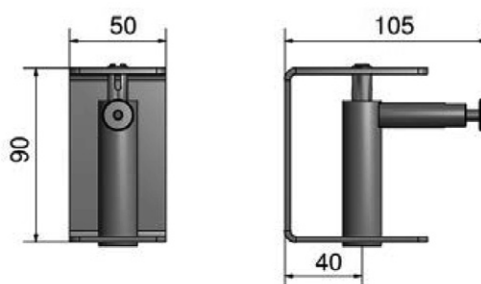
Spacer for insulation
ISO 5211 connection - ball valve side
COMPARATO connection - actuator side

Code DIDM01



Spacer for insulation and manual override
ISO 5211 connection - ball valve side
COMPARATO connection - actuator side

Code DIDM02

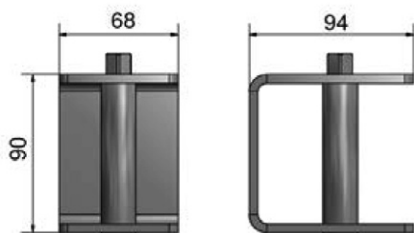


To be combined with actuators without manual top opening only

Compact PRO - Universal PRO

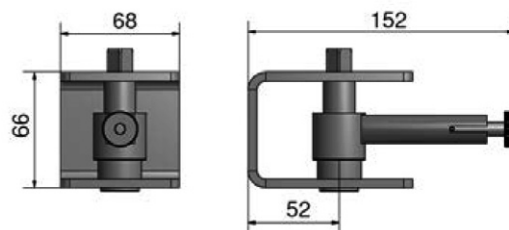
Spacer for insulation

COMPACT PRO code - DICOM35
UNIVERSAL PRO code - DICOM57



Spacer for insulation
with manual override

COMPACT PRO code - DICO05ADC
UNIVERSAL PRO code - DICO07ADC



To be combined with actuators without manual top opening only



PRO Range

BRASS BALL VALVES WITH ISO 5211 CONNECTION

ACTUATOR COMBINATION

The ball valves can be combined with all the IP67 and IP68 actuators in the **Diamant**, **Compact** and **Universal** range, depending on their use.



DN	Ø	2-way BRASS	3-way BRASS "T"-port "L"-port	3-way BRASS Mixing Diverting
-	1/4"	DIAMANT PRO ISO	DIAMANT PRO ISO	-
10	3/8"	DIAMANT PRO ISO	DIAMANT PRO ISO	-
15	1/2"	DIAMANT PRO ISO	DIAMANT PRO ISO	DIAMANT PRO ISO
20	3/4"	DIAMANT PRO ISO	DIAMANT PRO ISO COMPACT PRO	DIAMANT PRO ISO
25	1"	DIAMANT PRO ISO	COMPACT PRO	DIAMANT PRO ISO COMPACT PRO
32	1"1/4	DIAMANT PRO ISO COMPACT PRO	COMPACT PRO UNIVERSAL PRO	COMPACT PRO
40	1"1/2	COMPACT PRO	UNIVERSAL PRO	COMPACT PRO UNIVERSAL PRO
50	2"	DIAMANT PRO ISO COMPACT PRO	UNIVERSAL PRO	UNIVERSAL PRO
65	2"1/2	UNIVERSAL PRO	-	-
80	3"	UNIVERSAL PRO	-	-
100	4"	UNIVERSAL PRO	-	-

Other combinations on request

EXAMPLE OF SPECIFICATIONS

BALL VALVE • 2-WAY COMPACT PRO brass CW617N UNI EN 12165, FKM and PTFE seals, full port, PN40, UNI EN 10226-1 threads. Operating temperatures -10°C...+110°C. Fluid type: water with glycol max. 30%. Connection to the actuator with ISO 5211 connection. Version: 2-WAY FF DN40 - 1"1/2 - Kvs 230.

Brand: **COMPARATO**

Code: **UC2E2M5**

SPACER • Spacer for insulation, bracket in AISI 304, connecting rod in AISI 303, connection to valve body ISO 5211. Version: With manual override - H 66 mm - for pairing with ISO 5211 Compact PRO actuators.

Brand: **COMPARATO**

Code: **DICO05ADC**

UPDATED DATA SHEETS AVAILABLE AT 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.

DIAMANT PRO ISO 5211 *

- DIAMANT PILOT
- DIAMANT SMART PRO
- DIAMANT CLIMA
- DIAMANT CRONO
- DIAMANT IP68
- DIAMANT DC

* Direct connection to ISO 2-way and 3-way ball valves is only possible with DIAMANT PRO actuators with ISO 5211 connection

COMPACT PRO

- COMPACT PILOT
- COMPACT SMART PRO
- COMPACT CLIMA
- COMPACT CRONO
- COMPACT IP68
- COMPACT DC

UNIVERSAL PRO

- UNIVERSAL PILOT
- UNIVERSAL SMART PRO
- UNIVERSAL IP68
- UNIVERSAL DC



HYDROTHERMAL SYSTEMS
COMPARATO NELLO S.r.l.

17014 CAIRO MONTENOTTE (SV) ITALIA VIALE DELLA LIBERTÀ • LOCALITÀ FERRANIA • Tel. +39 019 510.371 - FAX +39 019 517.102

www.comparato.com

e-mail: info@comparato.com

UNI EN ISO 9001:2015 CERTIFIED COMPANY