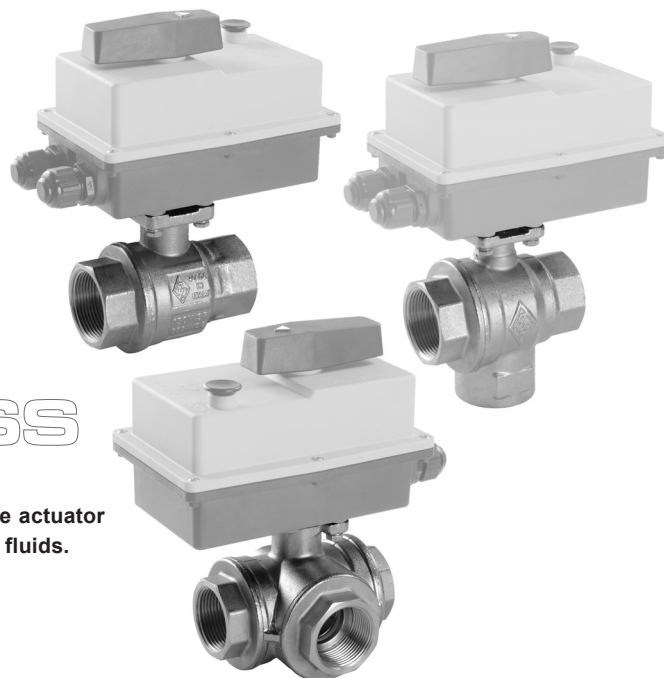


PRO Range

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
- in accordance with Ministerial Decree 174, 06/04/2004



BRASS

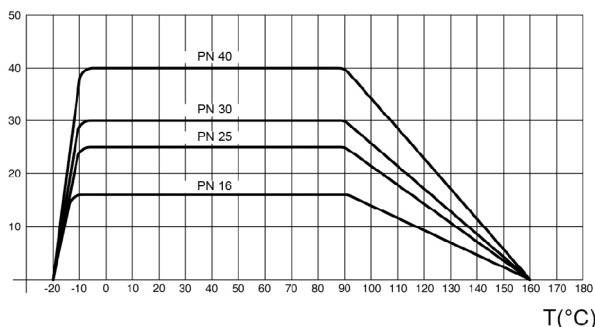
FUNCTIONS

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

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 EPDM & PTFE-compatible fluids • Other fluids on request

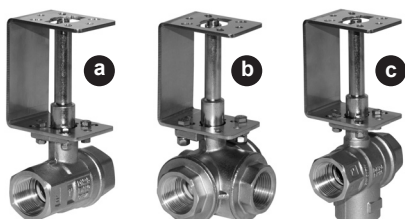
TEMPERATURES

• 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

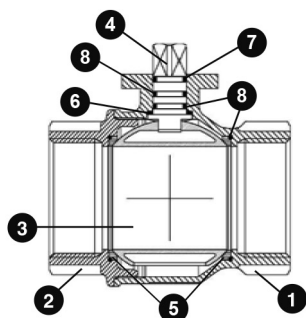
VERSIONS

Ball valve	DN	Connections	PN	Kvs [m ³ /h]	Δp max [bar]	To be combined with series
2-WAY FULL BORE 	-	Rp 1/4"	40	5,4	40	DIAMANT PRO ISO
	10	Rp 3/8"	40	6	40	DIAMANT PRO ISO
	15	Rp 1/2"	40	16,3	40	DIAMANT PRO ISO
	20	Rp 3/4"	40	29,5	40	DIAMANT PRO ISO
	25	Rp 1"	40	43	40	DIAMANT PRO ISO
	32	Rp 1"1/4	40	89	25	DIAMANT PRO ISO
	40	Rp 1"1/2	40	230	40	COMPACT PRO
	50	Rp 2"	40	265	25	COMPACT PRO
	65	Rp 2"1/2	25	540	40	UNIVERSAL PRO
	80	Rp 3"	16	873	25	UNIVERSAL PRO
	100	Rp 4"	16	1390	16	UNIVERSAL PRO
	100	Rp 4"	16	1390	6	UNIVERSAL PRO

Ball valve	DN	Connections	PN	Kvs [m ³ /h]	Δp max [bar]	To be combined with series
3-WAY • "T"-PORT / "L"-PORT FULL BORE 	The data below are the same for the "T"-port and "L"-port valves					
	-	Rp 1/4"	30	2,8	30	DIAMANT PRO ISO
	10	Rp 3/8"	30	3	30	DIAMANT PRO ISO
	15	Rp 1/2"	30	3,9	30	DIAMANT PRO ISO
	20	Rp 3/4"	30	7,9	16	DIAMANT PRO ISO
	25	Rp 1"	16	13	30	COMPACT PRO
	32	Rp 1"1/4	10	20,7	16	COMPACT PRO
	40	Rp 1"1/2	10	38,7	6	UNIVERSAL PRO
	50	Rp 2"	10	54	10	UNIVERSAL PRO
	50	Rp 2"	10	54	10	UNIVERSAL PRO

Ball valve	DN	Connections	PN	Kvs [m ³ /h]	Δp max [bar]	To be combined with series
3-WAY DIVERTING / MIXING FULL BORE 	The data below are the same for both 2-hole diverting valve and 3-hole mixing valve					
	15	Rp 1/2"	25	6	25	DIAMANT PRO ISO
	20	Rp 3/4"	16	11,5	16	DIAMANT PRO ISO
	25	Rp 1"	16	18,3	10	DIAMANT PRO ISO
	32	Rp 1"1/4	10	27,2	16	COMPACT PRO
	40	Rp 1"1/2	10	47,3	10	COMPACT PRO
50	Rp 2"	10	73	10	UNIVERSAL PRO	
50	Rp 2"	10	73	10	UNIVERSAL PRO	

MATERIALS USED



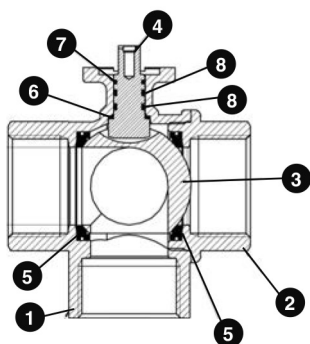
2-WAY FF ISO 5211 BRASS BALL VALVE

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



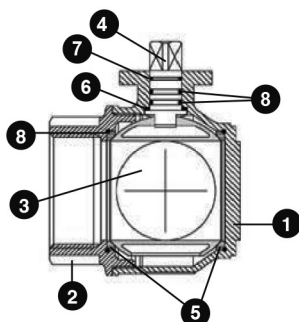
PRO Range

BRASS BALL VALVES WITH ISO 5211 CONNECTION



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

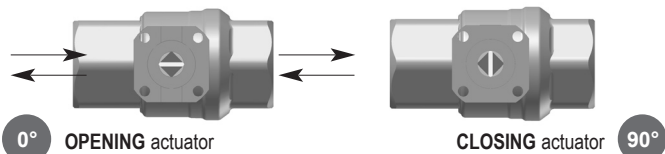
1	CASE	BRASS CW617N UNI EN 12165
2	COUPLING	BRASS CW617N UNI EN 12165
3	BALL	BRASS CW617N UNI EN 12165
4	CONTROL ROD	BRASS CW614N UNI EN 12164
5	BALL SEAL	P.T.F.E.
6	ANTIFRICTION SEAL	P.T.F.E.
7	ANTIFRICTION SEAL	P.T.F.E.
8	O-RING	FKM

2-WAY BALL VALVE

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

OPEN valve

CLOSED valve



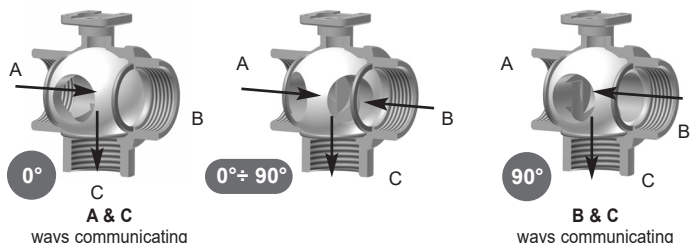
3-WAY DIVERTER / MIXER BALL VALVE

MIXING/DIVERTING BALL VALVE (3-HOLE BALL)

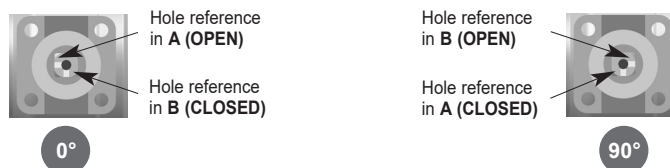
The **MIXING/DIVERTING** ball valve has a 3-hole ball with one hole pointed towards the common way C (always open) and two more holes which are orthogonal to the first one and to each other. When one of these two holes is pointed towards one of the two inlets, for example A, the second inlet B is closed.

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

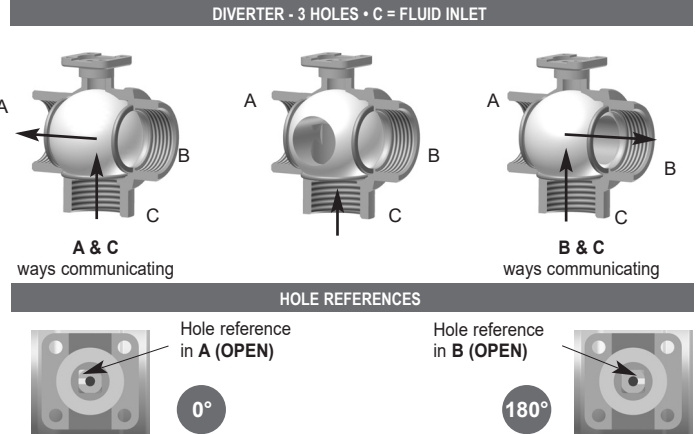


PRO Range

BRASS BALL VALVES WITH ISO 5211 CONNECTION

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).

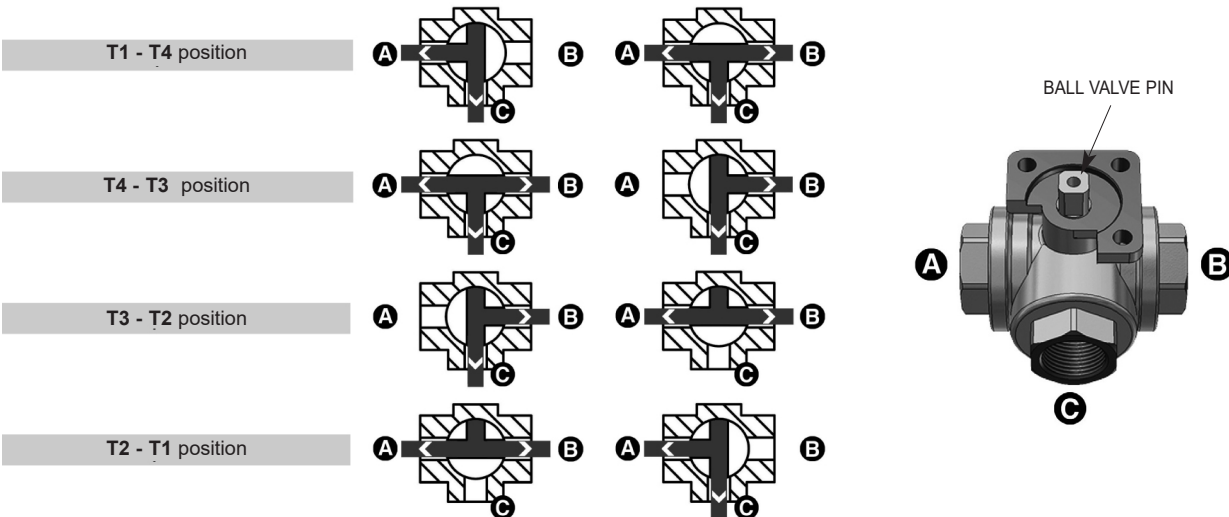


3-WAY DIVERTER BALL VALVES

In **Diamant PRO 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.

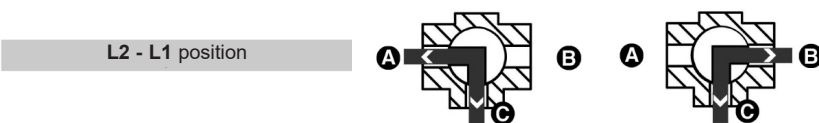
DIVERTER BALL VALVE • "T" BALL

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.

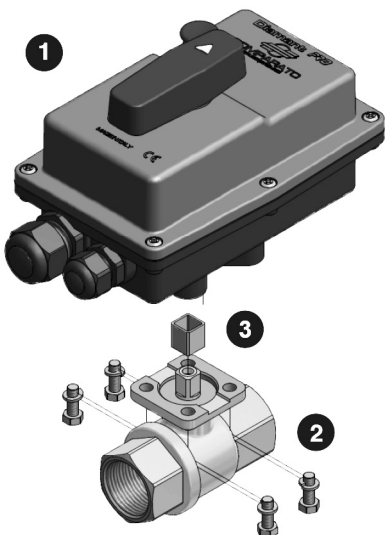


PRO Range

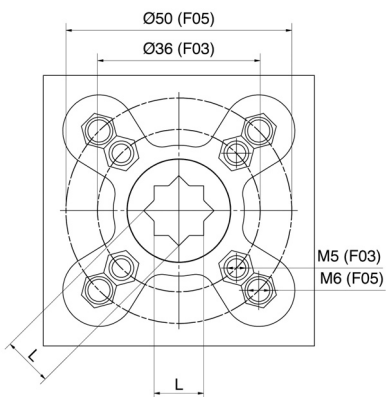
BRASS BALL VALVES WITH ISO 5211 CONNECTION

CONNECTION TO THE BALL VALVE

DIRECT CONNECTION

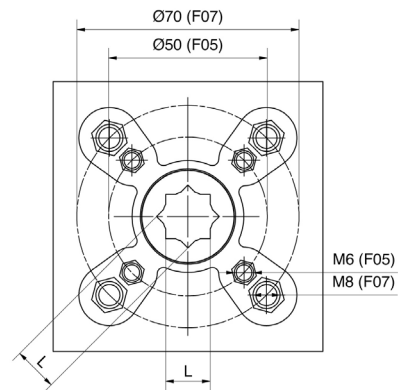


Diamant PRO ISO
Compact PRO ISO



ISO 5211 connection	L
F03	9 mm
F05	11 mm

Universal PRO ISO

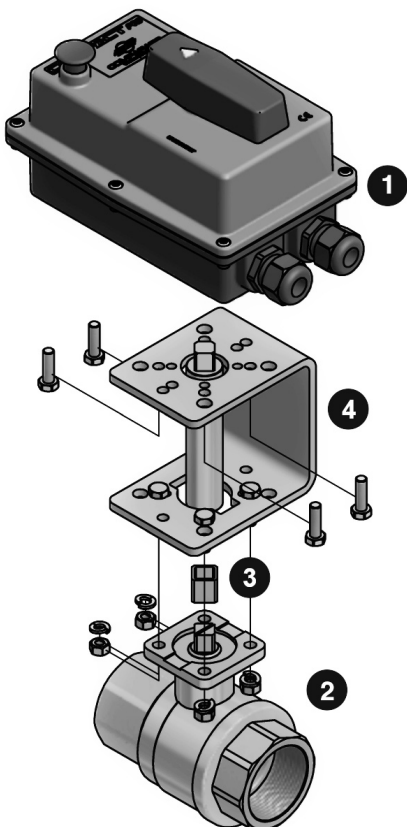


ISO 5211 connection	L
F05	11 mm
F07	14 mm

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

CONNECTION TO THE BALL VALVE WITH A SPACER

On **Compact PRO** and **Universal PRO** motorised valves, the insulation spacer can be added by adding "D1" to the end of the assembly code. For the use of the insulation spacer (or spacer with manual opening) with **Diamant PRO** actuators, please refer to the technical data sheet "**Diamant PRO Comparato connection - DP0.0-20**".



Compact PRO
Universal PRO

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



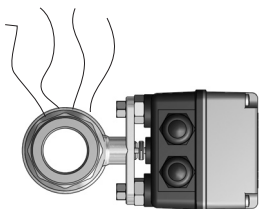
PRO Range

BRASS BALL VALVES WITH ISO 5211 CONNECTION

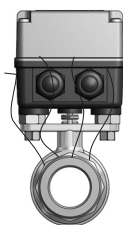
INSTALLATION

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

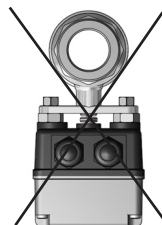
RECOMMENDED POSITION



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 	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 	15	1/2"	31	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
	-	1/4"	31	48	67	33,5
	10	3/8"	31	48	67	33,5

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



PRO Range

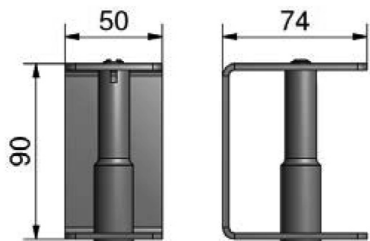
BRASS BALL VALVES WITH ISO 5211 CONNECTION

SPACER FOR INSULATION WITH OR WITHOUT MANUAL OVERRIDE

Diamant PRO COMPARATO connection

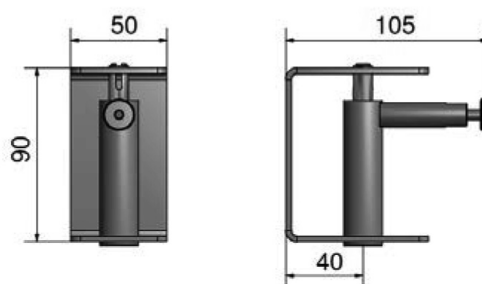
Spacer for insulation
ISO 5211 connection - ball valve side
COMPARATO connection - actuator side

Spare parts code **DIDM01**



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

Spare parts code **DIDM02**

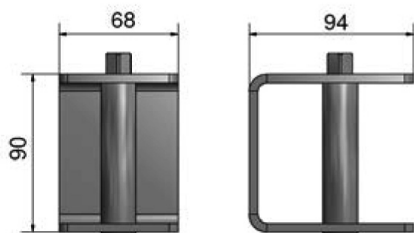


To be combined with actuators without manual top opening only

Compact PRO - Universal PRO

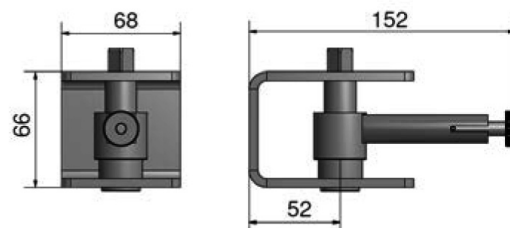
Spacer for insulation

COMPACT PRO spare parts code - **DICOM35**
UNIVERSAL PRO spare parts code - **DICOM57**



Spacer for insulation
with manual override

COMPACT PRO spare parts code - **DICO05ADC**
UNIVERSAL PRO spare parts 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

COMPACT PRO ACTUATOR • ALL IN ONE, 2-point ON/OFF and 3-point ON/OFF or modulating, nominal torque: 22 Nm, power supply: 230 V - 50/60 Hz, operating time: 45 sec / 90°, operating angle: 90°, protection degree: IP67, for 2-way or 3-way ball valve, connection to ball valve via ISO 5211 F03/F05 connection, two auxiliary microswitches and manual override from the top.

COMPACT PRO BRASS BALL VALVE • CW617N UNI EN 12165, EPDM 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: **CY222AE2M5**

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 *

- 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



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