Diamant 2000

MOTORIZED BALL VALVES

c UL us LISTED IND. CONT. EQ. 2TD8

USE

Diamant 2000 motorized valve has its peculiar use in interception and regulation of:

- **zone heating systems**
- **systems that make use of alternative energy**
- **industrial systems in general using hot and cold fluids**
- **automated systems in general**

Servocontrol

The **Diamant 2000** servocontrol is available in the following versions:

≫ **3-POINT** **without relay (deviator)**
terminal 1 neutral, phase on terminal 2 open,
deviated to terminal 3 close (see wiring diagram).
Each servocontrol must be engaged using a single control

≫ **2-POINT** **with relay (switch)**
terminal 1 neutral, terminal 2 fixed phase, terminal 3 control phase for opening (see wiring diagram).
Several servocontrols may be engaged from a single control

Both versions have an ON - OFF function (fully open or fully closed)
The 3-POINT version without relay may be set to intermediate positions using a suitable command.

For modulating regulations refer to page 16.

The **Diamant 2000** servo-control features:

- power to terminal 4 - with fully open valve to be used as a remote control (with indication of opening, pump relay engagement etc)
- power to terminal 5 with valve fully closed to be used as a remote control (closure indication)

OPTIONAL

- manual opening on the servo-control to engage the valve in the event of an electrical power failure or emergency.
- an auxiliary opening micro-switch (clean contact) which is electrically closed when the valve is open. optional use (opening complete indication, pump relay command, boiler command, PLC signal etc).
- an auxiliary closure micro-switch (clean contact) which is electrically closed when the valve is closed. optional use (closure completed indication, relay command, PLC signal etc).
- two micro-relays one for opening and one for closing.
- external components made of AISI 303 GVR and in OT 58 brass for the use of the servo-control in particularly difficult conditions (***PROTECTED TYPE***)

Thanks to the high quality of this servo-control it is widely used in a variety of industrial fields for the regulation of fluids in the preservation field, as well as in the food sector and in glycol passage.

NOTE External installations are not suggested ***IF CARRIED OUT AT DIRECT SUN/BAD WEATHER*** because, due to sudden thermal changes, infiltrations and/or condensate can occur inside the covering.
Installations can be carried out outdoors ***UPON PREVIOUS ARRANGING OF A SIMPLE EQUIPMENT PROTECTION***.
Protecting caps are under preparation and will be available in a short time.

SERVOCONTROL TECHNICAL FEATURES

- Electrical motor: dual-direction
- Electrical power supply: 230/110/24V 50 Hz (on request: 60Hz and 24V DC)
- Manoeuvre time (∠ 90°) : 35 sec. Torque on the control rod: 11 Nm
  Manoeuvre time (∠ 180°) : 70 sec. Torque on the control rod: 11 Nm
  Quotation on request (∠ 90°) : 4 sec. 5 Nm ● (∠ 90°) : 12 sec. 12 Nm. ● (∠ 90°) : from 110 to 330 sec. 16 Nm max
- Absorbed power: from 6,1 to 7,5 VA (version 230V 50 Hz)
  from 6,1 to 9,5 VA (version 110V 50 Hz)
  from 6,1 to 16,7 VA (version 24V 50 Hz)
- Degree of electrical protection: IP 55
- Electrical capacity of the auxiliary micro: 1A resistive
- Working environment temperature: minimum -10°C maximum 50°C
- Casing made of fire resistant plastic material - Class V0 - fitted with cable glands PG 9 for electrical connection.

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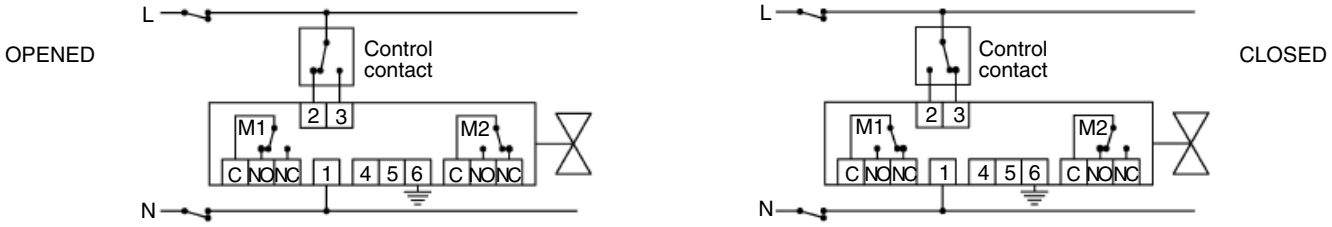
MOTORIZED BALL VALVES

ELECTRICAL CONNECTIONS

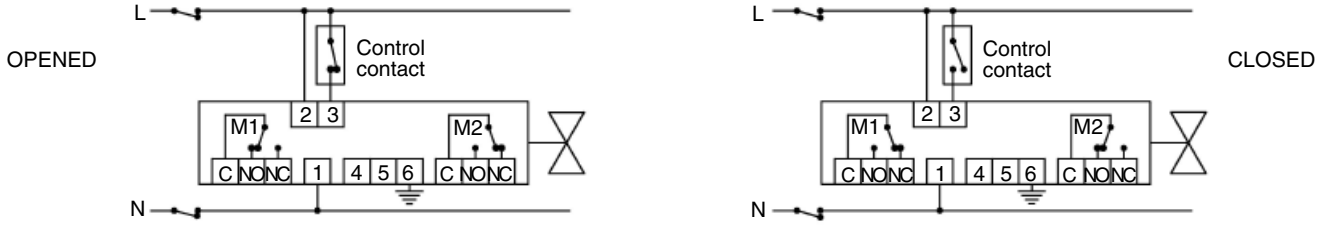
Servocontrol WITHOUT RELAY 3-POINT CONTROL



M1 FREE AUXILIARY MICRO-SWITCH ON OPENING (ON REQUEST)
M2 FREE AUXILIARY MICRO-SWITCH ON CLOSURE (ON REQUEST)

The illustrations show the terminals of the 3-POINT servocontrol, in the complete version which also features two auxiliary micros: the servocontrol is shown in the opening and closure conditions respectively.
Phase presence on terminal 2 opens the valve connected to the servocontrol, vice versa the presence of phase on terminal 3 undertakes the closure action.

Servocontrol WITH RELAY 2-POINT CONTROL



M1 FREE AUXILIARY MICRO-SWITCH ON OPENING (ON REQUEST)
M2 FREE AUXILIARY MICRO-SWITCH ON CLOSURE (ON REQUEST)

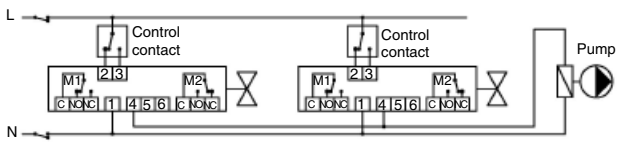
The illustrations show the terminals of the 2-POINT servocontrol with relay in the complete version which also features two auxiliary micros: the servocontrol is shown in the opening and closure conditions respectively.
The presence of phase on terminal 3 permits the opening of the valve connected to the servocontrol, while the absence of phase on the same terminal determines its closure. (electrical auto-closure)

NOTE:

In both cases, once opening has been undertaken, a power phase reaches terminal 4 and the contacts of the auxiliary micros, if present, arrange themselves as indicated in the diagram (opening servocontrol), vice versa, once closure occurs, a power phase reaches terminal 5 and the auxiliary micro contacts arrange themselves as shown in the relative diagram (closure servocontrol).

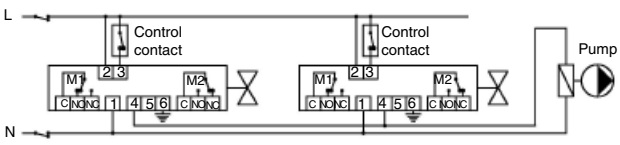
Both the 3-POINT and 2-POINT servocontrols with relay remain in their original position, in the absence of electrical power supply.

ELECTRICAL CONNECTION EXAMPLES



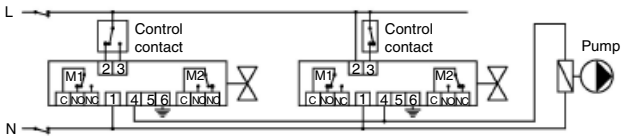
M1 FREE AUXILIARY MICRO-SWITCH ON OPENING (ON REQUEST)
M2 FREE AUXILIARY MICRO-SWITCH ON CLOSURE (ON REQUEST)

Pump stop connection with two standard servo-controls



M1 FREE AUXILIARY MICRO-SWITCH ON OPENING (ON REQUEST)
M2 FREE AUXILIARY MICRO-SWITCH ON CLOSURE (ON REQUEST)

Pump stop connection with two special with relay servo-controls



M1 FREE AUXILIARY MICRO-SWITCH ON OPENING (ON REQUEST)
M2 FREE AUXILIARY MICRO-SWITCH ON CLOSURE (ON REQUEST)

Connection of the pump stop with one standard and one special with relay servo-controls

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MOTORIZED BALL VALVES

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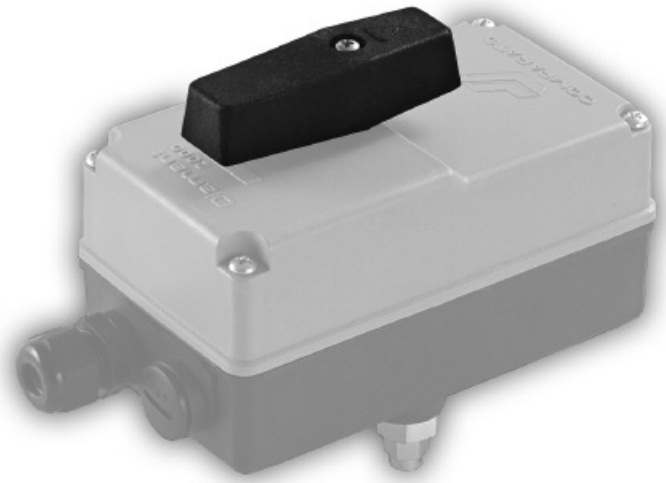
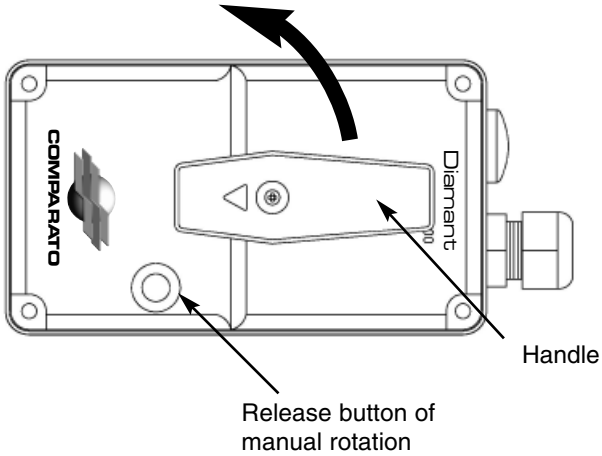
MANUAL OPENING

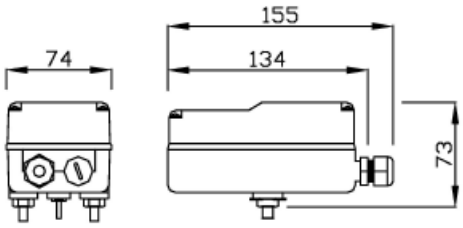
Diamant 2000 servocontrol may be fitted,with the exception of those with a rotation time of 4 and 12 sec, with an upper manual opening feature.

The manual opening feature makes it possible to operate the valve in emergency conditions.

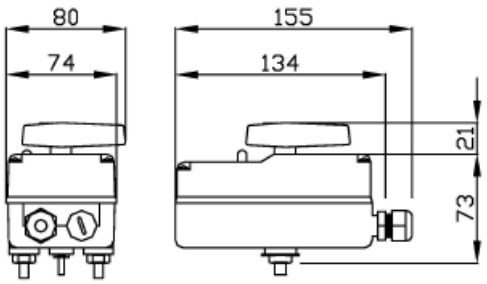




OVERALL DIMENSIONS (mm)
BASIC MODEL



OVERALL DIMENSIONS (mm)
MODEL WITH TOP MANUAL OPENING FEATURE



Diamant 2000

MOTORIZED BALL VALVES

Body valve

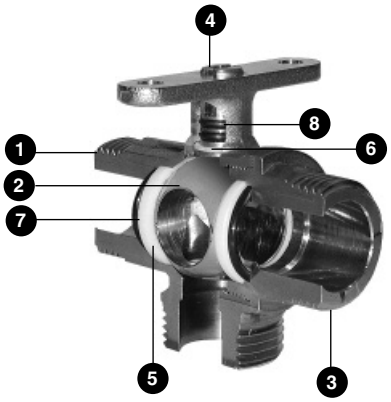
2 WAY • TOTAL PASSAGE
Ø 1/2" • 3/4" • 1"

3 WAY VERTICAL TOTAL PASSAGE
Ø 3/4" • 1"

BY-PASS
Ø 3/4" • 1"

All junctions are male and are constituited by spigots extremely duty for installation because it makes easy to fix body valve and servocontrol in the rignt position. In this way the manutenction operations are very easy.

Ball shutter assures a better hydraulic seal and reduces charge loss.



USED MATERIAL FOR BODY VALVE

1	BODY	BRASS OT 58 UNI 5705
2	SPHERE	CHROMATED NICKEL BARSS OT 58 UNI 5705
3	COUPLING	BRASS OT 58 UNI 5705
4	CONTROL ROD	BRASS OT 58 UNI 5705
5	SPHERE GASKET	P.T.F.E. (TEFLON®)
6	ROD GASKET	P.T.F.E. (TEFLON®)
7	BALANCE O-RING	EPDM o VITON®
8	CONTROL ROD O-RING	EPDM o VITON®

Body valves WITH SPACER FOR INSULATION

suitable for industrial use in particular temperature conditions
(systems with glycol refrigeration, industrial systems in general with hot and cold fluids)

2 WAY • TOTAL PASSAGE
Ø 1/2" • 3/4" • 1"
with spacer for insulation

2 WAY • TOTAL PASSAGE
Ø 1/2" • 3/4" • 1"
with spacer for insulation and manual override

3 WAY VERTICAL TOTAL PASSAGE
Ø 3/4" • 1"
with spacer for insulation

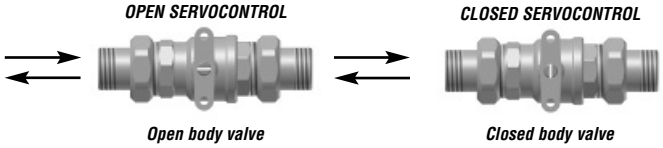
3 WAY VERTICAL TOTAL PASSAGE
Ø 3/4" • 1"
with spacer for insulation and manual override

Diamant 2000

MOTORIZED BALL VALVES

2 WAY Body valve

The body valve can be fitted without any differences as to the fluid sense.



3 WAY VERTICAL Body valve

In **Diamant 2000** valves, the 3 - way version available with two different spheres. In both cases, one hole is set axially to the common way,that is always opened.

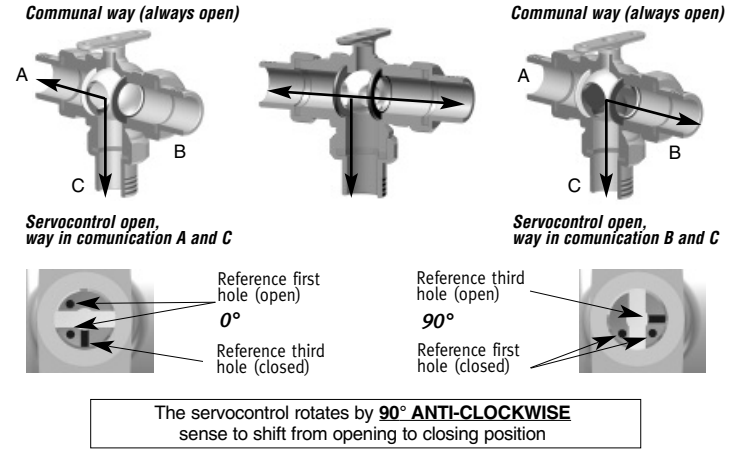
3 - WAY - 3 HOLE BODY VALVE.

In the case of 3 - hole ball, the second hole is located on one of the entrance ways while the third hole is positioned at right angles to the second hole: positioning towards the other entrance way requires 90° rotation.

A feature of the 3 hole shutter is that it is able to close one entrance way whilst beginning the opening of the next at the same time. For a short period, during the manoeuvre stage all the three ways inter-communicate.

Once the operation is complete the valve returns to being a deviation valve to all intents and purpose, so the use of the 3 - way - 3 hole deviation valve is recommended when the three deviated ways can communicate between themselves, which is usually the case in heating systems.

The control pin has two symbols, **a pair of dots** and **a dash**, indicating which way **is in communication with the communal way**.



The servocontrol rotates by **90° ANTI-CLOCKWISE** sense to shift from opening to closing position

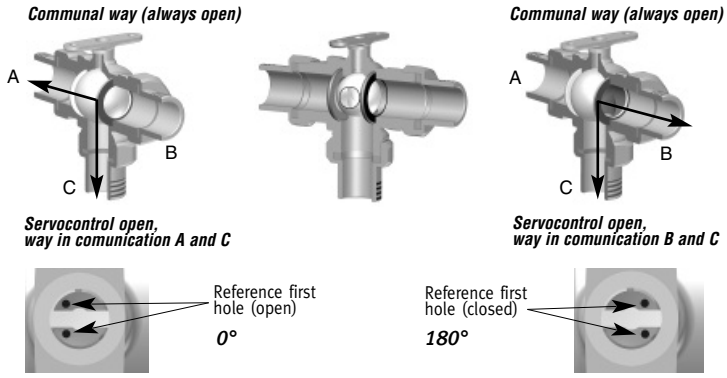
3 - WAY - 2 HOLE BODY VALVE

In the case of **2 hole** ball, the second hole is positioned on one of the two entrance ways; positioning to the other entrance way requires 180° rotation.

A feature of the **2 hole** shutter is that it is able to close one of the 2 entrance ways beforee preparing the other for opening.

The use of the 3 - way - **2 hole** deviation valve is necessary when the 2 deviated ways must never be in communication with each other.

The control pin has a symbol which consists of **a pair of dots** which indicates which way **is in communication with the communal way**.



The servocontrol rotates by **180° ANTI-CLOCKWISE** sense to shift from opening to closing position

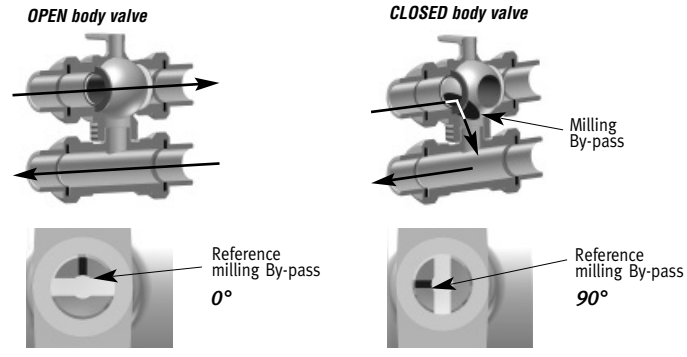
BY-PASS Body valve

The sphere of a by-pass valve differs from the one of 2 way valve because of the presence of a “facing” that allows the blow-by of a rate portion towards the return line, with closed valve.

For this reason in by-pass valve, it is important to recognise the fluid direction.

On command pin, you can find an hyphen that indicates the position of the ball facing. With closed valve, it must be always turned towards the coming fluid direction.

Using inter-axis eccentric tangs between the delivery and return may create a variation of between 48 and 72 mm.



The servocontrol rotates by **90° ANTI-CLOCKWISE** sense to shift from opening to closing position

Diamant 2000

MOTORIZED BALL VALVES

c UL us LISTED IND. CONT. EQ. 2TD8

BRASS Body valves WITH SPACER FOR INSULATION AND MANUAL OVERRIDE

suitable for industrial use in particular temperature conditions
(systems with glycol refrigeration, industrial systems in general with hot and cold fluids)

2 WAY • TOTAL PASSAGE
Ø 1/4" • 3/8" • 1/2"
• 3/4" • 1" • 1"1/4
with spacer for
insulation

2 WAY • TOTAL PASSAGE
Ø 1/4" • 3/8" • 1/2"
• 3/4" • 1" • 1"1/4
with spacer for
insulation and
manual override

3 WAY VERTICAL
TOTAL PASSAGE
Ø 1/2" • 3/4" • 1"
with spacer for
insulation

3 WAY VERTICAL
TOTAL PASSAGE
Ø 1/2" • 3/4" • 1"
with spacer for
insulation and
manual override

3 WAY HORIZONTAL
TOTAL PASSAGE
Ø 1/2" • 3/4" • 1"
with spacer for
insulation

3 VIE HORIZONTAL
TOTAL PASSAGE
Ø 1/2" • 3/4" • 1"
with spacer for
insulation and
manual override

AISI 316 Body valves WITH SPACER FOR INSULATION AND MANUAL OVERRIDE

suitable for industrial use in particular temperature conditions
(systems with glycol refrigeration, industrial systems in general with hot and cold fluids)

2 WAY • TOTAL PASSAGE
Ø 1/2" • 3/4" • 1"
with spacer for
insulation

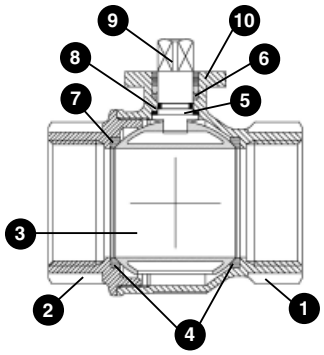
2 WAY • TOTAL PASSAGE
Ø 1/2" • 3/4" • 1"
with spacer for
insulation and
manual override

3 WAY HORIZONTAL
REDUCED PASSAGE
Ø 1/4" • 3/8" • 1/2"
with spacer for
insulation

3 WAY HORIZONTAL
REDUCED PASSAGE
Ø 1/4" • 3/8" • 1/2"
with spacer for
insulation and
manual override

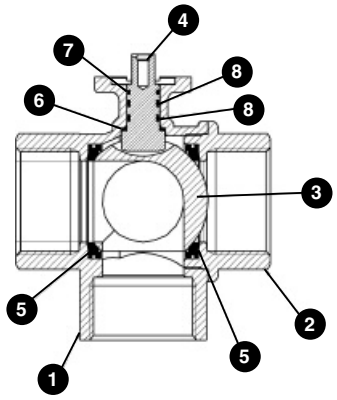
Diamant 2000

MOTORIZED BALL VALVES



USED MATERIAL FOR 2 WAY - ISO 5211 BODY VALVE

1	BODY	BRASS CW617N UNI EN 12165
2	COUPLING	BRASS CW617N UNI EN 12165
3	SPHERE	BRASS CW617N UNI EN 12165
4	SPHERE GASKET	P.T.F.E. (TEFLON®)
5	ANTI-FRICTION GASKET	P.T.F.E. (TEFLON®)
6	ROD GASKET	P.T.F.E. (TEFLON®)
7	O-RING	FKM VITON®
8	O-RING	FKM VITON®
9	CONTROL ROD	BRASS CW617N UNI EN 12165
10	ISO 5211 ADAPTOR	BRASS CW617N UNI EN 12165

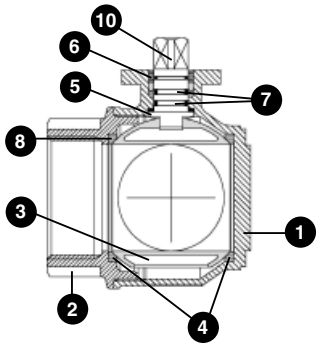


USED MATERIAL FOR 3 WAY VERTICAL - ISO 5211 BODY VALVE

1	BODY	BRASS CW617N UNI EN 12165
2	COUPLING	BRASS CW617N UNI EN 12165
3	SPHERE	BRASS CW617N UNI EN 12165
4	SPHERE GASKET	P.T.F.E. (TEFLON®)
5	ANTI-FRICTION GASKET	P.T.F.E. (TEFLON®)
6	ROD GASKET	P.T.F.E. (TEFLON®)
7	O-RING	FKM VITON®
8	O-RING	FKM VITON®

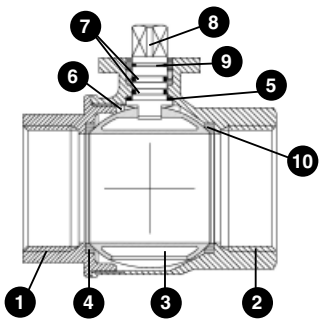
USED MATERIAL FOR 3 WAY HORIZONTAL - ISO 5211 BODY VALVE

1	BODY	BRASS CW617N UNI EN 12165
2	COUPLING	BRASS CW617N UNI EN 12165
3	SPHERE	BRASS CW617N UNI EN 12165
4	SPHERE GASKET	P.T.F.E. (TEFLON®)
5	ANTI-FRICTION GASKET	P.T.F.E. (TEFLON®)
6	ROD GASKET	P.T.F.E. (TEFLON®)
7	O-RING	FKM VITON®
8	O-RING	FKM VITON®
10	CONTROL ROD	BRASS CW617N UNI EN 12165



USED MATERIAL FOR 3 WAY HORIZONTAL - AISI 316 BODY VALVE

1	BODY	CF8M
2	COUPLING	CF8M
3	SPHERE	INOX AISI 316
4	SPHERE GASKET	P.T.F.E. (TEFLON®)
5	ANTI-FRICTION GASKET	P.T.F.E. (TEFLON®)
6	ROD GASKET	P.T.F.E. (TEFLON®)
7	O-RING	FKM VITON®
8	O-RING	FKM VITON®
10	CONTROL ROD	INOX AISI 316



USED MATERIAL FOR 2 WAY - AISI 316 BODY VALVE

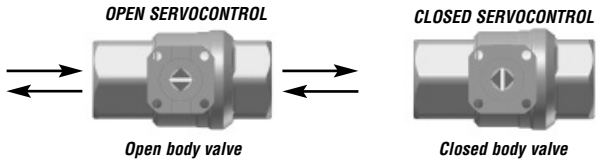
1	BODY	CF8M
2	COUPLING	CF8M
3	SPHERE	INOX AISI 316
4	SPHERE GASKET	P.T.F.E. (TEFLON®)
5	GASKET	P.T.F.E. (TEFLON®)
6	ROD WASHER	P.T.F.E. (TEFLON®)
7	O-RING	FKM VITON®
8	CONTROL ROD	INOX AISI 316
9	ROD GASKET	P.T.F.E. (TEFLON®)
10	O-RING	FKM VITON®

Diamant 2000

MOTORIZED BALL VALVES

2 WAY Body valve

The body valve can be fitted without any differences as to the fluid sense.



3 WAY VERTICAL Body valve

In **Diamant ISO** valves, the 3 - way version available with two different spheres. In both cases, one hole is set axially to the common way,that is always opened.

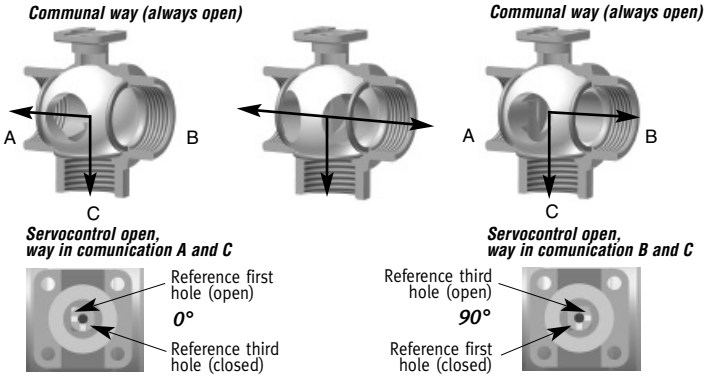
3 - WAY - 3 HOLE BODY VALVE.

In the case of 3 - hole ball, the second hole is located on one of the entrance ways while the third hole is positioned at right angles to the second hole: positioning towards the other entrance way requires 90° rotation.

A feature of the 3 hole shutter is that it is able to close one entrance way whilst beginning the opening of the next at the same time. For a short period, during the manoeuvre stage all the three ways inter-communicate.

Once the operation is complete the valve returns to being a deviation valve to all intents and purpose, so the use of the 3 - way - 3 hole deviation valve is recommended when the three deviated ways can communicate between themselves, which is usually the case in heating systems.

On the control rod there are two orthogonal **millings** that indicate which way **communicates with the common way.**



The servocontrol rotates by **90° ANTI-CLOCKWISE**

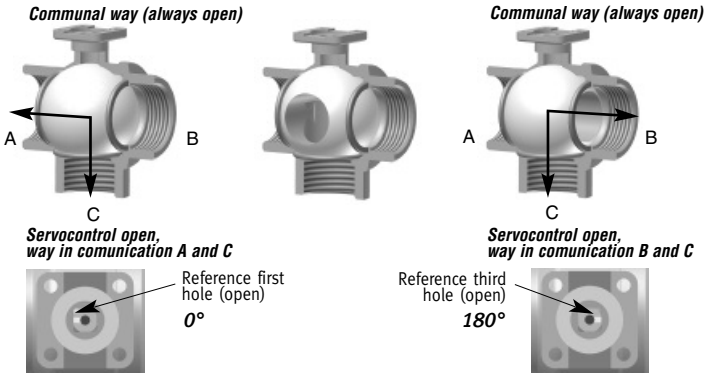
3 - WAY - 2 HOLE BODY VALVE

In the case of **2 hole** ball, the second hole is positioned on one of the two entrance ways; positioning to the other entrance way requires 180° rotation.

A feature of the **2 hole** shutter is that it is able to close one of the 2 entrance ways beforee preparing the other for opening.

The use of the 3 - way - **2 hole** deviation valve is necessary when the 2 deviated ways must never be in communication with each other.

On the control rod there is an orthogonal **milling** that indicates which way **communicates with the common way.**

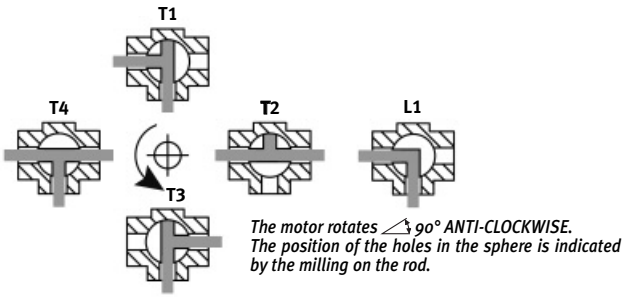


The servocontrol rotates by **90° ANTI-CLOCKWISE**

3 WAY HORIZONTAL Body valve

3 way **Diamant 2000** with ISO 5211 connection is available with 2 different spheres and totally 5 holes positions.

Positions and movement spheres holes scheme



The motor rotates 90° ANTI-CLOCKWISE.
The position of the holes in the sphere is indicated by the milling on the rod.

Diamant 2000

MOTORIZED BALL VALVES

c UL us LISTED IND. CONT. EQ. 2TD8

PVC Body valve

Pipe unions are avilable in threaded and to be glued versions.
Ball shutter assures a better hydraulic seal and reduces charge loss.

CONNECTION	2 WAY • TOTAL PASSAGE						
TO BE GLUED	DN	16	20	25	32		
THREADED	Ø	3/8"	1/2"	3/4"	1"		

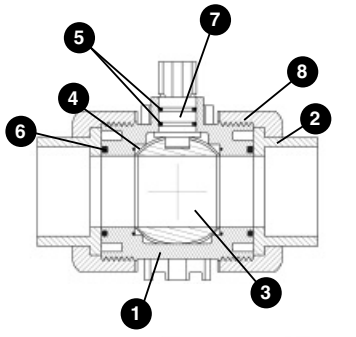
CONNECTION	2 WAY • TOTAL PASSAGE			
TO BE GLUED	DN	40	50	
THREADED	Ø	1"1/4	1"1/2	

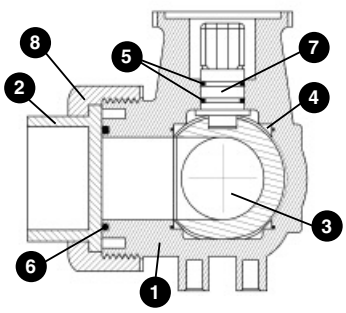
CONNECTION	3 WAY • TOTAL PASSAGE						
TO BE GLUED	DN	16	20	25	32	40	
THREADED	Ø	3/8"	1/2"	3/4"	1"	1"1/4	

PVC Body valve WITH MANUAL OVERRIDE

CONNECTION	2 WAY • TOTAL PASSAGE							
TO BE GLUED	DN	16	20	25	32	40	50	
THREADED	Ø	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	

CONNECTION	3 WAY • TOTAL PASSAGE						
TO BE GLUED	DN	16	20	25	32	40	
THREADED	Ø	3/8"	1/2"	3/4"	1"	1"1/4	





USED MATERIAL FOR 2 AND 3 WAY PVC BODY VALVE

1	BODY	PVC
2	COUPLING	PVC
3	SPHERE	PVC
4	SPHERE GASKET	P.T.F.E. (TEFLON®)
5	ROD GASKET	EPDM
6	SEAL GASKET	EPDM
7	CONTROL ROD	PVC
8	COUPLING RING NUT	PVC

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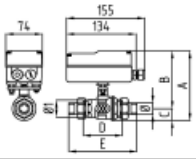
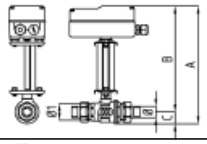
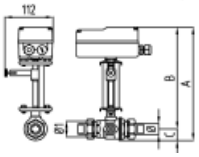
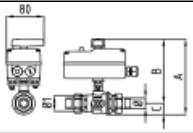
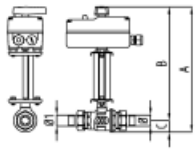
MOTORIZED BALL VALVES

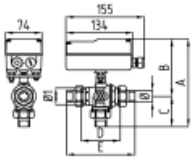
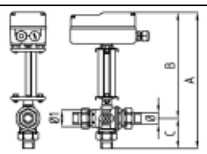
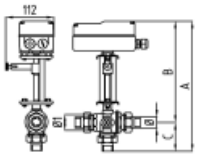
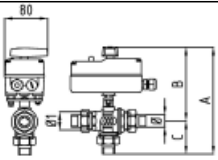
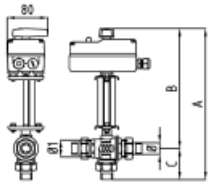
c UL us LISTED IND. CONT. EQ. 2TD8

OVERALL DIMENSIONS

BODY VALVES **BRASS (with tangs)**

MODEL	DN	Ø	Ø1	A	B	C	D	E
 **2 Way**	15	1/2"	3/4"	125	108	17	78	133
	20	3/4"	1"	134	113	21	84	145
	25	1"	1"1/4	143	117	26	94	164
 **2 Way** with spacer for insulation	15	1/2"	3/4"	223	206	17	78	133
	20	3/4"	1"	232	211	21	84	145
	25	1"	1"1/4	241	215	26	94	164
 **2 Way** with spacer for insulation and manual override	15	1/2"	3/4"	223	206	17	78	133
	20	3/4"	1"	232	211	21	84	145
	25	1"	1"1/4	241	215	26	94	164
 **2 Way** with manual override from above	15	1/2"	3/4"	147	130	17	78	133
	20	3/4"	1"	156	135	21	84	145
	25	1"	1"1/4	165	139	26	94	164
 **2 Way** with spacer for insulation and manual override from above	15	1/2"	3/4"	245	228	17	78	133
	20	3/4"	1"	254	233	21	84	145
	25	1"	1"1/4	263	237	26	94	164

BODY VALVES **BRASS (with tangs)**

MODEL	DN	Ø	Ø1	A	B	C	D	E
 **3 Way Vertical**	20	3/4"	1"	178	113	65	84	145
	25	1"	1"1/4	189	117	72	94	164
 **3 Way Vertical** with spacer for insulation	20	3/4"	1"	276	211	65	84	145
	25	1"	1"1/4	287	215	72	94	164
 **3 Way Vertical** with spacer for insulation and manual override from above	20	3/4"	1"	276	211	65	84	145
	25	1"	1"1/4	287	215	72	94	164
 **3 Way Vertical** with manual override from above	20	3/4"	1"	200	135	65	84	145
	25	1"	1"1/4	211	139	72	94	164
 **3 Way Vertical** with spacer for insulation and manual override from above	20	3/4"	1"	298	233	65	84	145
	25	1"	1"1/4	309	237	72	94	164

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MOTORIZED BALL VALVES

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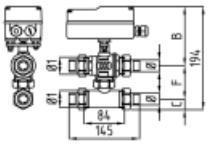
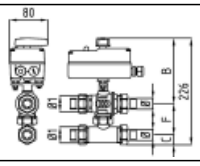
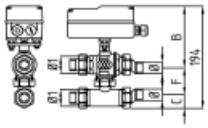
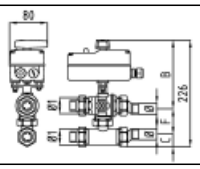
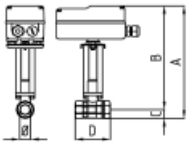
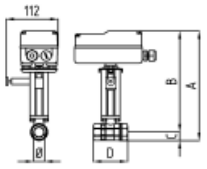
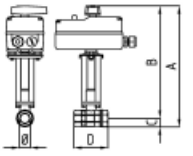
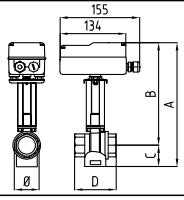
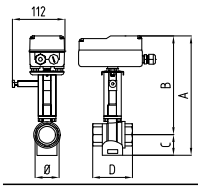
OVERALL DIMENSIONS

BODY VALVES **BRASS (with tangs)**

MODEL	DN	Ø	Ø1	B	C	F
 **By-Pass**	20	3/4"	1"	113	21	60
	25	1"	1"1/4	117	26	51
 **By-Pass** with manual override from above	20	3/4"	1"	135	21	70
	25	1"	1"1/4	139	26	61
 **By-Pass** and eccentric tangs	20	3/4"	1"	from 107 to 119	from 15 to 27	from 48 to 72
	25	1"	1"1/4	from 111 to 123	from 20 to 32	from 39 to 63
 **By-Pass** with manual override from above and eccentric tangs	20	3/4"	1"	from 129 to 141	from 15 to 27	from 58 to 82
	25	1"	1"1/4	from 133 to 145	from 20 to 32	from 49 to 73

BODY VALVES **ISO 5211 connection**

MODEL	DN	Ø	A	B	C	D	E
 **2 Way ISO 5211** with spacer for insulation	8	1/4"	215	198	17	67	
	10	3/8"	215	198	17	67	
	15	1/2"	215	198	17	67	
	20	3/4"	220	200	20	76	
	25	1"	234	209	25	90	
	32	1"1/4	242	212	29	102	
 **2 Way ISO 5211** with spacer for insulation and manual override	8	1/4"	215	198	17	67	
	10	3/8"	215	198	17	67	
	15	1/2"	215	198	17	67	
	20	3/4"	220	200	20	76	
	25	1"	234	209	25	90	
	32	1"1/4	242	212	29	102	
 **2 Way ISO 5211** with spacer for insulation and manual override from above	8	1/4"	236	219	17	67	
	10	3/8"	236	219	17	67	
	15	1/2"	241	221	17	67	
	20	3/4"	241	221	20	76	
	25	1"	255	231	25	90	
	32	1"1/4	263	234	29	102	
 **3 Way Vertical ISO 5211** with spacer for insulation	15	1/2"	228	194	34	64	
	20	3/4"	245	205	40	74	
	25	1"	256	209	47	89	
 **3 Way Vertical ISO 5211** with spacer for insulation and manual override	15	1/2"	228	194	34	64	
	20	3/4"	245	205	40	74	
	25	1"	256	209	47	89	

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MOTORIZED BALL VALVES

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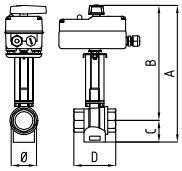
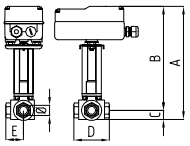
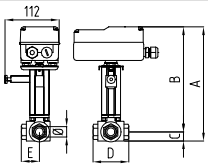
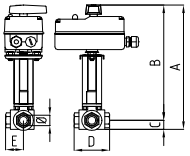
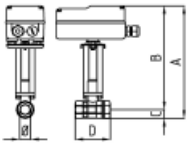
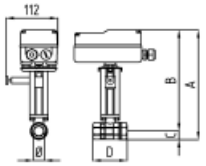
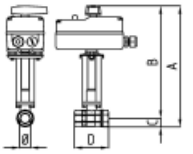
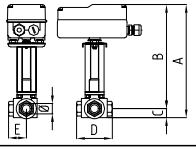
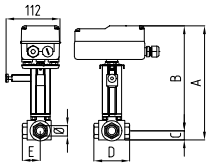
OVERALL DIMENSIONS

BODY VALVES ISO 5211 connection

MODEL	DN	Ø	A	B	C	D	E
 **3 Way Vertical ISO 5211** with spacer for insulation and manual override from above	15	1/2”	249	216	34	64	
	20	3/4”	266	227	40	74	
	25	1”	277	230	47	89	
 **3 Way Horizontal ISO 5211** with spacer for insulation	15	1/2”	215	196	19	77	39
	20	3/4”	231	207	24	87	44
	25	1”	240	210	30	105	53
 **3 Way Horizontal ISO 5211** with spacer for insulation and manual override	15	1/2”	215	196	19	77	39
	20	3/4”	231	207	24	87	44
	25	1”	240	210	30	105	53
 **3 Way Horizontal ISO 5211** with spacer for insulation and manual override from above	15	1/2”	237	218	19	77	39
	20	3/4”	252	228	24	87	44
	25	1”	262	232	30	105	53

BODY VALVES AISI 316

MODEL	DN	Ø	A	B	C	D	E
 **2 Way AISI 316** with spacer for insulation	15	1/2”	215	198	17	67	
	20	3/4”	215	198	21	78	
	25	1”	234	208	26	90	
 **2 Way AISI 316** with spacer for insulation and manual override	15	1/2”	215	198	17	67	
	20	3/4”	215	198	21	78	
	25	1”	234	208	26	90	
 **2 Way AISI 316** with spacer for insulation and manual override from above	15	1/2”	236	219	17	67	
	20	3/4”	240	219	21	78	
	25	1”	255	234	26	90	
 **3 Way Horizontal AISI 316** with spacer for insulation	8	1/4”	214	196	18	79	39
	10	3/8”	214	196	22	86	43
	15	1/2”	214	196	26	108	54
 **3 Way Horizontal AISI 316** with spacer for insulation and manual override	8	1/4”	214	196	18	79	39
	10	3/8”	214	196	22	86	43
	15	1/2”	214	196	26	108	54

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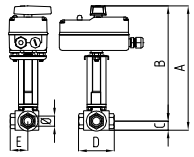
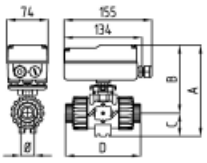
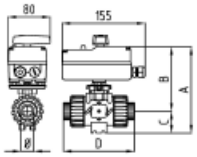
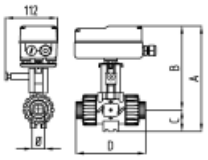
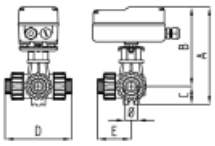
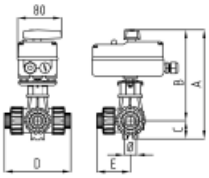
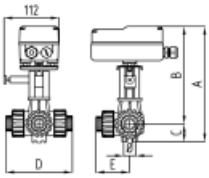
MOTORIZED BALL VALVES

OVERALL DIMENSIONS

MODEL	DN	Ø	A	B	C	D	E
 **3 Way Horizontal AISI 316** with spacer for insulation and manual override from above	8	1/4”	236	218	18	79	39
	10	3/8”	236	218	23	86	43
	15	1/2”	236	218	26	108	54

MODEL	DN	Ø TO BE GLUED mm	Ø THREADED	A	B	C	D	E
 **2 Way PVC**	10	16	3/8”	151	122	29	103	
	15	20	1/2”	151	122	29	103	
	20	25	3/4”	166	132	34	115	
	25	32	1”	176	137	39	128	
	32	40	1”1/4	233	187	46	146	
	40	50	1”1/2	245	193	52	164	
 **2 Way PVC** with manual override from above	10	16	3/8”	172	144	29	103	
	15	20	1/2”	172	144	29	103	
	20	25	3/4”	188	154	34	115	
	25	32	1”	197	158	39	128	
	32	40	1”1/4	255	209	46	146	
	40	50	1”1/2	267	215	52	164	
 **2 Way PVC** with manual override	10	16	3/8”	161	132	29	103	
	15	20	1/2”	161	132	29	103	
	20	25	3/4”	172	138	34	115	
	25	32	1”	181	142	39	128	
	32	40	1”1/4	225	179	46	146	
	40	50	1”1/2	237	185	52	164	
 **3 Way PVC**	10	16	3/8”	182	150	32	120	63
	15	20	1/2”	182	150	32	120	63
	20	25	3/4”	190	156	34	142	72
	25	32	1”	199	160	39	160	80
	32	40	1”1/4	213	167	46	183	92
 **3 Way PVC** with manual override from above	10	16	3/8”	204	172	32	120	63
	15	20	1/2”	204	172	32	120	63
	20	25	3/4”	213	178	34	142	72
	25	32	1”	222	182	39	160	80
	32	40	1”1/4	235	189	46	183	92
 **3 Way PVC** with manual override	10	16	3/8”	216	184	32	120	63
	15	20	1/2”	216	184	32	120	63
	20	25	3/4”	224	190	34	142	72
	25	32	1”	233	194	39	160	80
	32	40	1”1/4	247	200	46	183	92

BODY VALVES PVC

Diamant 2000

MOTORIZED BALL VALVES

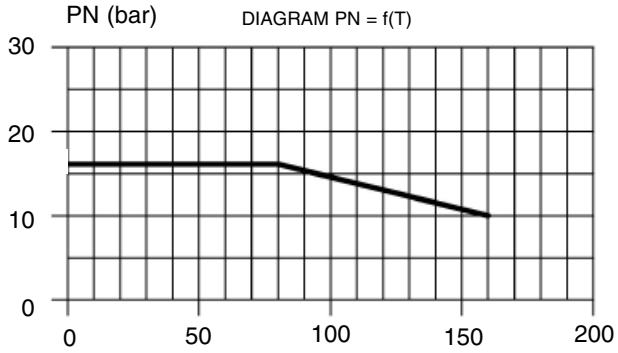
c UL us LISTED IND. CONT. EQ. 2TD8

FLUID MECHANICAL CHARACTERISTICS

BODY VALVES **BRASS (with tangs)**

Kv (m^3/h with Δp = 100kPa = 1bar)

MODEL	Ø	Kv
2 Way	1/2"	13
	3/4"	17
	1"	32
3 Way	3/4"	7,3
	1"	16
By-Pass	3/4"	1,9
	1"	2,9



The pressure drop general expression, knowing the nominal pressure value of the fluid, is the following one:

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

The above mentioned expression is valid for water and similar fluids.

PRESSURE

• *Test pressure*	*45 bar*
• *Nominal working pressure*	*16 bar*
• *Working max differential*	*16 bar*

FLUIDS *Usable fluids* — *Water and fluids compatible with EPDM® and TEFLON® • Other fluids on request*

*** TEMPERATURES**

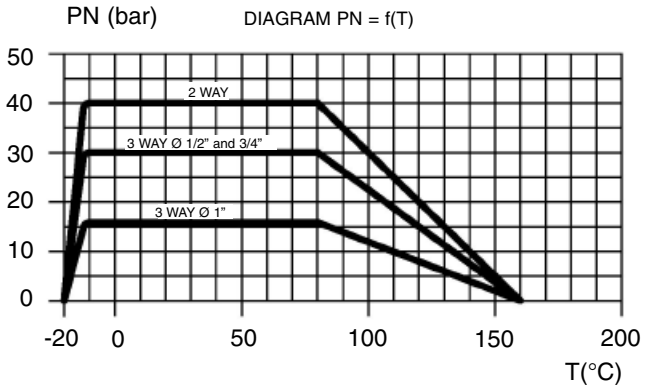
	Normal valve	*Valve with spacer for insulation* (for fluid compatible with these temperatures)
• *Minimum*	*+7 °C*	*-20 °C*
• *Maximum*	*+100 °C*	*+100 °C*

***** Higher temperatures on request

BODY VALVES **ISO 5211 connection**

Kv (m^3/h with Δp = 100kPa = 1bar)

MODEL	Ø	Kv
2 Way BRASS ISO 5211	1/4"	5,4
	3/8"	6
	1/2"	16,3
	3/4"	29,5
	1"	43
	1"1/4	89
3 Way BRASS vertical ISO 5211	1/2"	3,9
	3/4"	7,9
	1"	13
3 Way BRASS horizontal ISO 5211	1/2"	3,9
	3/4"	7,9
	1"	13



PRESSURE

	2 WAY	3 WAY 1/2" and 3/4"	3 WAY 1"
• *Nominal working pressure*	*40 bar*	*30 bar*	*16 bar*
• *Working max differential*	*16 bar*		

FLUIDS *Usable fluids* — *Water and fluids compatible with EPDM® and TEFLON® • Other fluids on request*

*** TEMPERATURES**

	Normal valve	*Valve with spacer for insulation* (for fluid compatible with these temperatures)
• *Minimum*	*+7 °C*	*-20 °C*
• *Maximum*	*+100 °C*	*+100 °C*

***** Higher temperatures on request

Diamant 2000

MOTORIZED BALL VALVES

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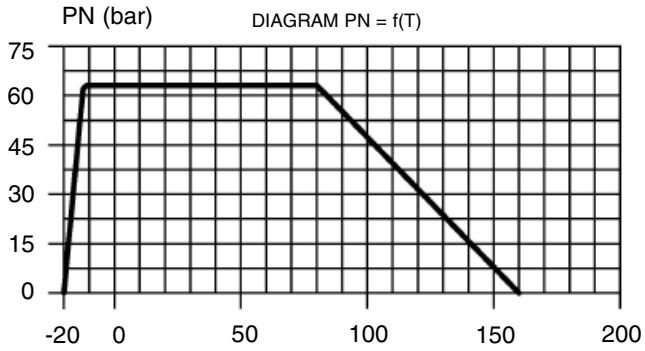
FLUID MECHANICAL CHARACTERISTICS

BODY VALVES **AISI 316**

Kv (m^3/h with Δp = 100kPa = 1bar)

MODEL	Ø	Kv
2 Way AISI 316	1/2”	16,3
	3/4”	29,5
	1”	43
3 Way AISI 316 Horizontal	1/4”	2,8
	3/8”	3
	1/2”	3,6



The pressure drop general expression, knowing the nominal pressure value of the fluid, is the following one:

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

The above mentioned expression is valid for water and similar fluids.

PRESSURE

• *Nominal working pressure*	*64 bar*
• *Working max differential*	*16 bar*

FLUIDS *Usable fluids* — *Water and fluids compatible with EPDM® and TEFLON® • Other fluids on request*

*** TEMPERATURES**

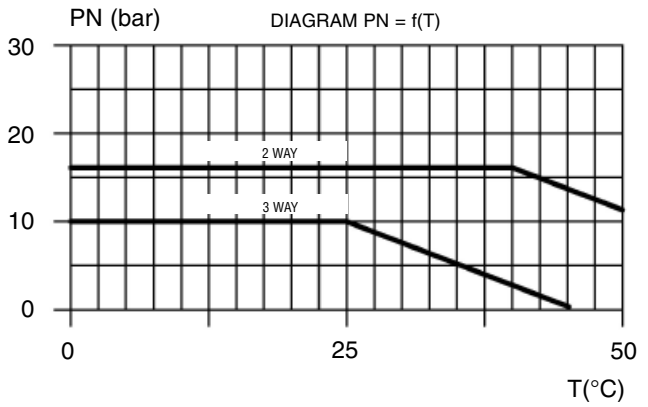
	Normal valve	*Valve with spacer for insulation* (for fluid compatible with these temperatures)
• *Minimum*	*+7 °C*	*-20 °C*
• *Maximum*	*+100 °C*	*+100 °C*

***** Higher temperatures on request

BODY VALVES **PVC**

Kv (m^3/h with Δp = 100kPa = 1bar)

MODEL	Ø	Kv
2 Way PVC	3/8”	4,8
	1/2”	12
	3/4”	23
	1”	46
	1”1/4	66
	1”1/2	105
3 Way PVC	3/8”	3,5
	1/2”	9
	3/4”	15,3
	1”	30,5
	1”1/4	61,2



PRESSURE

	2 WAY	**3 WAY**
• *Nominal working pressure*	*16 bar*	*10 bar*
• *Working max differential*	*16 bar*	

FLUIDS *Usable fluids* — *Water and fluids compatible with EPDM® and TEFLON® • Other fluids on request*

*** TEMPERATURES**

	2 WAY	**3 WAY**
• *Minimum*	*+7 °C*	*+7°C*
• *Maximum*	*+40°C*	*+25 °C*

***** Higher temperatures on request

Diamant 2000

MOTORIZED BALL VALVES

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USE IN ZONE HEATING SYSTEMS

Zone regulation is prescrived, in provided cases, by paraghraph no. 12 of art. n. 5 of D.P.R. 412/93 and regulated by art. 7 paraghraphs no. 3,4,5,7 and 8.
Diamant 2000 motorized valve can be used either in a "**ON - OFF**" regulation or a modulating one.

"**ON -OFF**" **REGULATION:**

You execute it with a traditional thermostat, that can be a two-wire one, to be coupled to a servocontrol 2-POINT type, or with three-wire thermostat to be coupled with a servocontrol 3-POINT type.

MODULATING REGULATION:

To obtain high returns, new plant engineering requests a modulating regulation.
Modulation action can be accomplished through two different kinds of servocontrol.

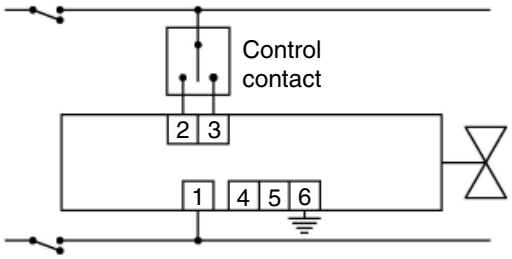
≫ MODULATING THERMOSTAT WITH 2-WIRE CONTROL (to be coupled to 2-POINT servocontrol with relay) and MODULATING THERMOSTAT WITH 3-WIRE CONTROL (to be coupled to 3-POINT servocontrol) which alternates opening and closing periods, which can be longer or shorter according to the difference between environmental temperature and set one.

≫ MODULATING THERMOSTAT WITH 3-WIRE CONTROL WITH STILL IN POSITION OF THE VALVE (to be coupled to 3-POINT servocontrol) which determines a valve opening angle proportional to the difference between environmental temperature and set one.

EXAMPLE:

With an environmental temperature of 15°C and a set one of 20°C, opening angle would be of 90° correspondent to 100% of the fluid passage, when the environmental temperature will increase to 19°C, opening angle decreases to 45°C correspondent to 50% of the fluid passage.
The more the difference between environmental temperature and set one decreases the more the opening angle will decrease, until a difference of 0°C correspondent to closed valve.

ELECTRIC SCHEME OF STANDARD TYPE SERVOCONTROL WITH MODULATING USE FOR STILL IN POSITION



UNI10348 norm provides different efficienty for different ways for zone regulation. In particular, the following scheme, shows how to a modulating zone regulation correspond higher values of efficiency.

ZONE REGULATION WITHOUT CLIMATIC PRE-REGULATION	Radiators and convectors	Radiant panels isolated from structure	Radiant panels flooded in the structure
"ON - OFF" regulator	0,93	0,91	0,87
Modulating regulator (proportional band 1°C)	0,97	0,96	0,92
Modulating regulator (proportional band 2 °C)	0,95	0,93	0,89

ZONE REGULATION WITHOUT CLIMATIC PRE-REGULATION	Radiators and convectors	Radiant panels isolated from structure	Radiant panels flooded in the structure
"ON - OFF" regulator	0,96	0,94	0,92
Modulating regulator (proportional band 1°C)	0,98	0,97	0,95
Modulating regulator (proportional band 2 °C)	0,97	0,96	0,94