

piston valves



**The ultimate Technology
for fluid control**

ISO 9001 Certified Quality System

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=UNI EN ISO 9001/2000=



European
Community
Conformity



Underwriters
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**The ultimate Technology
for fluid control**

m&m international

spirax
/sarco Engineering Group

means:

- Working with a staff of qualified professionals
- Enjoying the benefits of the most advanced technological research
- Quality at competitive price
- Warranty of a company conforming to the rigorous ISO9001/2000 requirements
- Reliability of a 30-year experience on international markets
- To partner with a company belonging to a multinational group

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PRODUCT INDEX

BRONZE BODY / BRASS BONNET

actuator Ø 45



Ø 45	Normally Closed	CG205CTW00	÷	CG207CTY00	PAGE 4
	Normally Open	RCG205CTW00	÷	RCG207CTY00	
	Bidirectional N.C.	BCG205CTW00	÷	BCG207CTY00	
	Double Acting	DCG205CTW00	÷	DCG207CTY00	

actuator Ø 63/90



Ø 63 Ø 90	Normally Closed	CG205STW00	÷	CG210STJ00	PAGE 5
		CG207LTY00	÷	CG210LTJ00	
Ø 63 Ø 90	Normally Open	RCG205STW00	÷	RCG210STJ00	PAGE 6
		RCG207LTY00	÷	RCG210LTJ00	
Ø 63 Ø 90	Bidirectional N.C.	BCG205STW00	÷	BCG210STJ00	PAGE 7
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Ø 63	Double Acting	DCG205STW00	÷	DCG210STJ00	PAGE 8

manual angle seat valve



G 1/2" ÷ 2"	CG2050TW00	÷	CG2100TJ00	PAGE 9
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STAINLESS STEEL AISI316L

actuator Ø 45



Ø 45	Normally Closed	PG205CTW00	÷	PG206CTX00	PAGE 10
	Normally Open	RPG205CTW00	÷	RPG206CTX00	
	Bidirectional N.C.	BPG205CTW00	÷	BPG206CTX00	
	Double Acting	DPG205CTW00	÷	DPG206CTX00	

actuator Ø 63/90



Ø 63 Ø 90	Normally Closed	PG205STW00	÷	PG210STJ00	PAGE 11
		PG207LTY00	÷	PG210LTJ00	
Ø 63 Ø 90	Normally Open	RPG205STW00	÷	RPG210STJ00	PAGE 12
		RPG207LTY00	÷	RPG210LTJ00	
Ø 63 Ø 90	Bidirectional N.C.	BPG205STW00	÷	BPG210STJ00	PAGE 13
		BPG207LTY00	÷	BPG210LTJ00	
Ø 63	Double Acting	DPG205STW00	÷	DPG210STJ00	PAGE 14

manual angle seat valve



G 1/2" ÷ 2"	PG2050TW00	÷	PG2100TJ00	PAGE 15
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OPTIONAL WELD ENDS FOR S.S. PISTON VALVES

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FLANGE CONNECTIONS

actuator Ø 63/90

	Ø 63 Ø 90	Normally closed	PD205STW00	÷	PD210STJ00	PAGE 17
			PD207LTY00	÷	PD210LTJ00	
	Ø 63 Ø 90	Normally open	RPD205STW00	÷	RPD210STJ00	
			RPD207LTY00	÷	RPD210LTJ00	
	Ø 63 Ø 90	Bidirectional	BPD205STW00	÷	BPD210STJ00	
			BPD207LTY00	÷	BPD210LTJ00	

CLAMP CONNECTIONS

actuator Ø 45

	Ø 45	Normally closed	PC205CTW00	÷	PC206CTX00	PAGE 18-20
		Normally open	RPC205CTW00	÷	RPC206CTX00	
		Bidirectional	BPC205CTW00	÷	RPC206CTW00	

actuator Ø 63/90

	Ø 63 Ø 90	Normally closed	PC205STW00	÷	PC210STJ00	PAGE 18-20
			PC207LTY00	÷	PC210LTJ00	
	Ø 63 Ø 90	Normally open	RPC205STW00	÷	RPC210STJ00	
			RPC207LTY00	÷	RPC210LTJ00	
	Ø 63 Ø 90	Bidirectional	BPC205STW00	÷	BPC210STJ00	
			BPC207LTY00	÷	BPC210LTJ00	

HIGH TEMPERATURE VERSION

actuator Ø 63/90

	Ø 63 Ø 90	Normally closed	PG205STW0H	÷	PG207STY0H	PAGE 21-22
			PG208LTZ0H	÷	PG210LTJ0H	
	Ø 63 Ø 90	Bidirectional	BPG205STW0H	÷	BPG207STY0H	
			BPG208LTZ0H	÷	BPG210LTJ0H	

OPTIONS

FLOW REGULATOR	TRAVEL SWICHT	MANUAL OVERRIDE	TRAVEL SWITCH KIT page 23-24	SWITCH TYPE A	SWITCH TYPE B

PILOT SOLENOID VALVES

B356 / B326 / D326
page 25

N326CVEK EEX. PROOF.
page 26

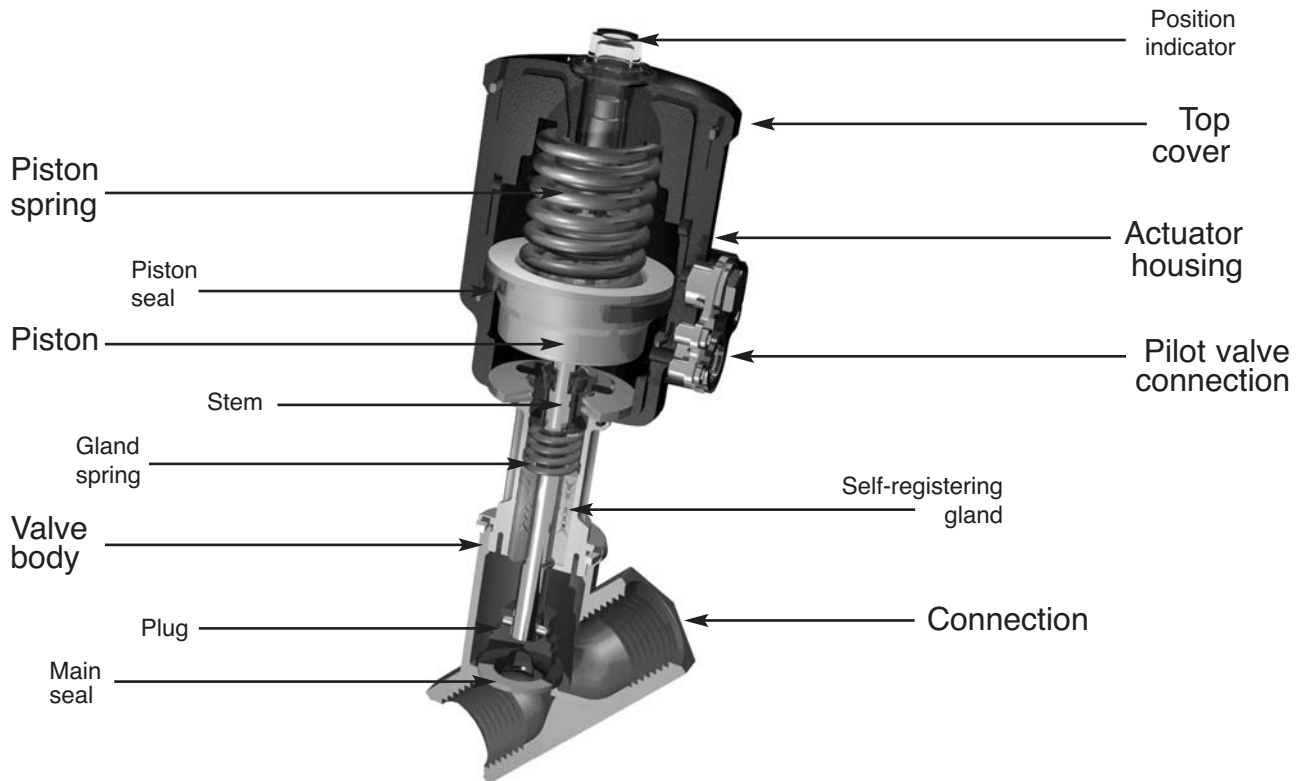
SELECTION CHARTS

BRONZE
page 32-34

STAINLESS STEEL
page 35-37

M&M INTERNATIONAL PISTON VALVES

Scheme of an M&M International piston valve components:



Benefits of M&M INTERNATIONAL PISTON VALVES

Standard versions with high performing components

Standard seal materials as FKM and PTFE.

Bidirectional version

Wide choice of connections

Actuator orientability at 360°

Red position indicator

Self-registering gland and chevron packing

Housing with angle seat design

s.s. valves with universal design

Universal mounting M&M solenoid pilot valves

Actuator with built-in exhaust filter

Covering a wide range of industrial applications with reduced stock

max. compatibility with fluids resistance at high temperatures

Waterhammer-free installation

Thread, welding, flange, clamp

Easy and quick installation

Immediate visibility of the valve position

Smooth stem movement for longer durability

High flow rate, low pressure drop

Suitable for vacuum applications

Max. flexibility during installation

Higher reliability

2/2 WAY PISTON VALVE, G 1/2" ÷ 1"; BRONZE

TECHNICAL SPECIFICATIONS

Media: water, oil, air, aggressive media and steam ⁽¹⁾
Media temperature: -10°C ... +180°C
Ambient temperature: -10°C ... +60°C
Pilot media: air, inert gases, water
Body material: bronze (CC491K EN 1982 : 2000)
Bonnet material: brass (CW617N EN 12165 : 1999)
Actuator body material: Polyamide PA6 (reinforced fiberglass 30%)
Seal material: PTFE
Position indicator as standard

TYPE: COMPACT 45



BENEFITS

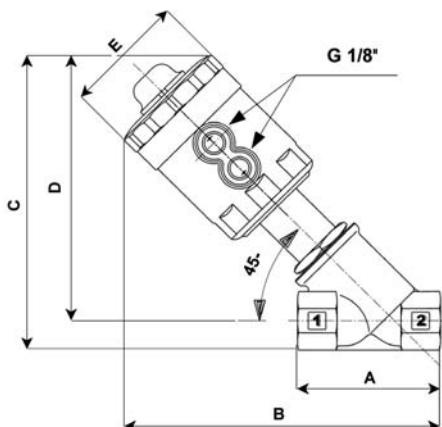
Waterhammer-free design for BCG type (2 → 1)
Actuator housing rotation 360°
Design suitable for vacuum applications up to 10 ⁻² mbar

OPTIONS

NPT connection (ex. code CN205CTW00)

SELECTION TABLE	VALVES	connection	DN orifice	Flow rate Kvs	Working pressure ⁽¹⁾		Flow direction	Pilot pressure ⁽²⁾		Function
	Code	(ISO 228 G)	(mm)	(l/min)	min (bar)	max (bar)		min (bar)	max (bar)	
	CG205CTW00	1/2"	15	75	0	16	1 → 2	3.8	10	normally closed
CG206CTX00	3/4"	20	133	0	16	1 → 2	5.8	10	normally closed	
CG207CTY00	1"	25	208	0	16	1 → 2	6.5	10	normally closed	
BCG205CTW00	1/2"	15	75	0	16 / 16	1 → 2 / 2 → 1	6.2 / 5	10	normally closed	
BCG206CTX00	3/4"	20	133	0	16 / 7	1 → 2 / 2 → 1	8.7 / 5	10	normally closed	
BCG207CTY00	1"	25	208	0	16 / 5	1 → 2 / 2 → 1	9.5 / 5	10	normally closed	
RCG205CTW00	1/2"	15	75	0	16	2 → 1	4	10	normally open	
RCG206CTX00	3/4"	20	133	0	16	2 → 1	6.2	10	normally open	
RCG207CTY00	1"	25	208	0	16	2 → 1	8.8	10	normally open	
DCG205CTW00	1/2"	15	75	0	16 / 16	1 → 2 / 2 → 1	3	10	double acting	
DCG206CTX00	3/4"	20	133	0	16 / 16	1 → 2 / 2 → 1	5	10	double acting	
DCG207CTY00	1"	25	208	0	16 / 16	1 → 2 / 2 → 1	8.5	10	double acting	

(1) Steam: Max. working pressure 10 bar (9 barg); - (2) Minimum pilot pressure at max. working pressure; for lower working pressure see selection charts



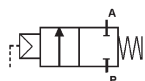
VERSION

	NC normally closed, over seat flow (1 → 2)
	NC normally closed, bidirectional (1 ↔ 2)
	NO normally open, under seat flow (2 → 1)
	DOUBLE ACTING bidirectional (1 ↔ 2)

DIMENSIONS & WEIGHTS

Connection	Actuator ø	A	B	C	D	E	weight
(ISO 228 G)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
1/2"	45	65	144	136	123	57	0.8
3/4"	45	75	149	142	126	57	0.9
1"	45	90	168	161	141	57	1.1

2/2 WAY PISTON VALVE, G 1/2" ÷ 2"; BRONZE



**normally closed
flow over seat**

TYPE: REGULAR NC

TECHNICAL SPECIFICATIONS

Media: water, oil, air, aggressive media and steam ⁽¹⁾
Media temperature: -10°C ... +180°C
Ambient temperature: -10°C ... +60°C
Pilot media: air, inert gases, water
Body material: bronze (CC491K EN 1982: 2000)
Bonnet material: brass (CW617N EN 12165: 1999)
Actuator body material: Polyamide PA6 (reinforced fiberglass 30%)
Seal material: PTFE
Position indicator as standard

BENEFITS

Actuator housing rotation 360°

OPTIONS

Manual override (ex. code CG205STWM0) see page 23

Stroke regulator (ex. code CG210STJR0) see page 23

Travel switch (ex. code CG208LTZi0) see page 23

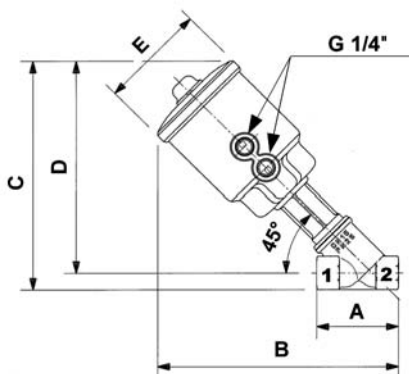
Design for vacuum applications up to 10⁻² mbar (ex. code CG205STW0V)

NPT connection (ex. code CN205STW00)



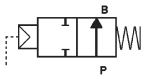
SELECTION TABLE	VALVES	connection	DN orifice	Flow rate Kvs	Working pressure ⁽¹⁾		Flow direction	Pilot pressure ⁽²⁾		Actuator ø
	Code	(ISO 228 G)	(mm)	(l/min)	min (bar)	max (bar)	(1→2)	min (bar)	max (bar)	(mm)
	CG205STW00	1/2"	15	87	0	20	over seat	3.7	10	63
CG206STX00	3/4"	20	164	0	20	over seat	4.4	10	63	
CG207STY00	1"	25	260	0	20	over seat	5	10	63	
CG208STZ00	1 1/4"	32	410	0	16	over seat	5.9	10	63	
CG209STK00	1 1/2"	40	700	0	16	over seat	9	10	63	
CG210STJ00	2"	50	950	0	11	over seat	8	10	63	
CG207LTY00	1"	25	260	0	20	over seat	2	8	90	
CG208LTZ00	1 1/4"	32	410	0	16	over seat	3.5	8	90	
CG209LTK00	1 1/2"	40	700	0	16	over seat	4	8	90	
CG210LTJ00	2"	50	950	0	15	over seat	6.5	8	90	

(1) Steam: Max. working pressure 10 bar (9 barg); - (2) Minimum pilot pressure at max. working pressure; for lower working pressure see selection charts;



DIMENSIONS & WEIGHTS	Connection	Actuator ø	A	B	C	D	E	weight
	(ISO 228 G)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
	1/2"	63	65	192	184	171	85	1.2
	3/4"	63	75	198	192	176	85	1.3
	1"	63	90	212	205	185	85	1.5
	1 1/4"	63	110	225	217	193	85	1.9
	1 1/2"	63	120	230	225	198	85	2.1
	2"	63	150	248	241	207	85	2.9
	1"	90	90	223	216	196	112	2.0
	1 1/4"	90	110	234	227	202	112	2.4
	1 1/2"	90	120	239	235	207	112	2.6
	2"	90	150	257	250	216	112	3.3

2/2 WAY PISTON VALVE, G 1/2" ÷ 2" NORMALLY OPEN; BRONZE



**normally open
flow under seat**

TYPE: REGULAR NO

TECHNICAL SPECIFICATIONS

Media: water, oil, air, aggressive media and steam⁽¹⁾
 Media temperature: -10°C ... +180°C
 Ambient temperature: -10°C ... +60°C
 Pilot media: air, inert gases, water
 Body material: bronze (CC491K EN 1982 : 2000)
 Bonnet material: brass (CW617N EN 12165 : 1999)
 Actuator body material: Polyamide PA6 (reinforced fiberglass 30%)
 Seal material: PTFE
 Position indicator as standard

BENEFITS

Waterhammer-free design
 Actuator housing rotation 360°

OPTIONS

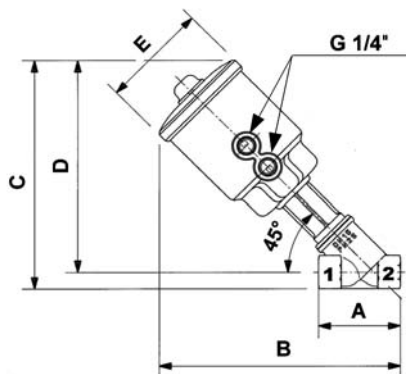
Manual override (ex. code RCG205STWM0) see page 23
 Stroke regulator (ex. code RCG210STJR0) see page 23
 Travel switch (ex. code RCG208LTZ10) see page 23
 Design for vacuum applications up to 10⁻² mbar (ex. code RCG205STW0V)
 NPT connection (ex. code RCN205STW00)



SELECTION TABLE

VALVES	connection	DN orifice	Flow rate Kvs	Working pressure ⁽¹⁾		Flow direction	Pilot pressure ⁽²⁾		Actuator ø
				min (bar)	max (bar)		min (bar)	max (bar)	
Code	(ISO 228 G)	(mm)	(l/min)			(2 → 1)			(mm)
RCG205STW00	1/2"	15	87	0	16	under seat	2.5	10	63
RCG206STX00	3/4"	20	164	0	16	under seat	4.3	10	63
RCG207STY00	1"	25	260	0	16	under seat	5.5	10	63
RCG208STZ00	1 1/4"	32	410	0	16	under seat	6.5	10	63
RCG209STK00	1 1/2"	40	700	0	16	under seat	9	10	63
RCG210STJ00	2"	50	950	0	12	under seat	9.4	10	63
RCG207LTY00	1"	25	260	0	16	under seat	2	8	90
RCG208LTZ00	1 1/4"	32	410	0	16	under seat	4	8	90
RCG209LTK00	1 1/2"	40	700	0	16	under seat	5	8	90
RCG210LTJ00	2"	50	950	0	16	under seat	7	8	90

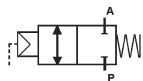
(1) Steam: Max. working pressure 10 bar (9 barg); - (2) Minimum pilot pressure at max. working pressure; for lower working pressure see selection charts;



DIMENSIONS & WEIGHTS

Connection	Actuator ø	A	B	C	D	E	weight
(ISO 228 G)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
1/2"	63	65	192	184	171	85	1.2
3/4"	63	75	198	192	176	85	1.3
1"	63	90	212	205	185	85	1.5
1 1/4"	63	110	225	217	193	85	1.9
1 1/2"	63	120	230	225	198	85	2.1
2"	63	150	248	241	207	85	2.9
1"	90	90	223	216	196	112	2.0
1 1/4"	90	110	234	227	202	112	2.4
1 1/2"	90	120	239	235	207	112	2.6
2"	90	150	257	250	216	112	3.3

2/2 WAY PISTON VALVE G 1/2" ÷ 2" BIDIRECTIONAL; BRONZE



**normally closed
flow over / under seat**

TYPE: REGULAR BD

TECHNICAL SPECIFICATIONS

Media: water, oil, air, aggressive media and steam ⁽¹⁾
Media temperature: -10°C ... +180°C
Ambient temperature: -10°C ... +60°C
Pilot media: air, inert gases, water
Body material: bronze (CC491K EN 1982 : 2000)
Bonnet material: brass (CW617N EN 12165 : 1999)
Actuator body material: Polyamide PA6 (reinforced fiberglass 30%)
Seal material: PTFE
Position indicator as standard

BENEFITS

Waterhammer-free design (with flow direction 2→1)
Actuator housing rotation 360°

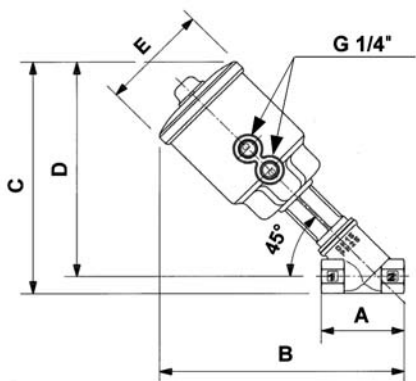
OPTIONS

Manual override (ex. code BCG205STWM0) see page 23
Flow regulator (ex. code BCG210STJR0) see page 23
Travel switch (ex. code BCG208LTZ0) see page 23
Design for vacuum applications up to 10 ⁻² mbar (ex. code BCG205STW0V)
NPT connection (ex. code BCN205STW00)



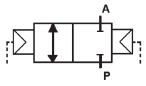
SELECTION TABLE	VALVES	connection	DN orifice	Flow rate Kvs	Working pressure ⁽¹⁾		Flow direction	Pilot pressure ⁽²⁾		Actuator ø
	Code	(ISO 228 G)	(mm)	(l/min)	min (bar)	max (bar)		min (bar)	max (bar)	(mm)
	BCG205STW00	1/2"	15	87	0	16	1→2 2→1	5.5 / 3.8	10	63
BCG206STX00	3/4"	20	164	0	16	1→2 2→1	6 / 3.8	10	63	
BCG207STY00	1"	25	260	0	16 / 11	1→2 2→1	6.5 / 3.8	10	63	
BCG208STZ00	1 1/4"	32	410	0	16 / 6	1→2 2→1	6.8 / 3.8	10	63	
BCG209STK00	1 1/2"	40	700	0	12 / 4	1→2 2→1	9 / 3.8	10	63	
BCG210STJ00	2"	50	950	0	8 / 2.5	1→2 2→1	9 / 3.8	10	63	
BCG207LTY00	1"	25	260	0	16 / 14	1→2 2→1	4 / 3.3	8	90	
BCG208LTZ00	1 1/4"	32	410	0	16 / 12	1→2 2→1	5 / 3.3	8	90	
BCG209LTK00	1 1/2"	40	700	0	16 / 8	1→2 2→1	6 / 3.3	8	90	
BCG210LTJ00	2"	50	950	0	14 / 5	1→2 2→1	8 / 3.3	8	90	

(1) Steam: Max. working pressure 10 bar (9 barg); - (2) Minimum pilot pressure at max. working pressure; for lower working pressure see selection charts;



DIMENSIONS & WEIGHTS	Connection	Actuator ø	A	B	C	D	E	weight
	(ISO 228 G)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
	1/2"	63	65	192	184	171	85	1.2
	3/4"	63	75	198	192	176	85	1.3
	1"	63	90	212	205	185	85	1.5
	1 1/4"	63	110	225	217	193	85	1.9
	1 1/2"	63	120	230	225	198	85	2.1
	2"	63	150	248	241	207	85	2.9
	1"	90	90	223	216	196	112	2.0
	1 1/4"	90	110	234	227	202	112	2.4
	1 1/2"	90	120	239	235	207	112	2.6
	2"	90	150	257	250	216	112	3.3

2/2 WAY PISTON VALVE, G 1/2" ÷ 2" DOUBLE ACTING; BRONZE



**double acting
flow over / under seat**

TYPE: REGULAR DA

TECHNICAL SPECIFICATIONS

Media: water, oil, air, aggressive media and steam ⁽¹⁾
Media temperature: -10°C ... +180°C
Ambient temperature: -10°C ... +60°C
Pilot media: air, inert gases, water
Body material: bronze (CC491K EN 1982 : 2000)
Bonnet material: brass (CW617N EN 12165 : 1999)
Actuator body material: Polyamide PA6 (reinforced fiberglass 30%)
Seal material: PTFE
Position indicator as standard

BENEFITS

Waterhammer-free design (with flow direction 2→1)
Actuator housing rotation 360°

OPTIONS

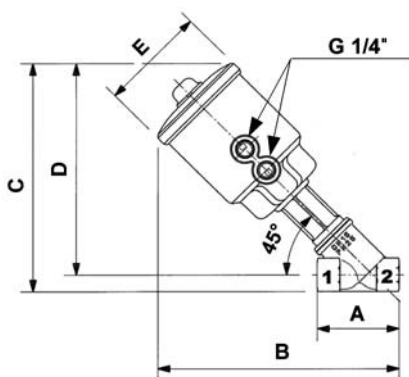
Manual override (ex. code DCG205STWM0) see page 23
Stroke regulator (ex. code DCG210STJR0) see page 23
Travel switch (ex. code DCG208LTZ10) see page 23
Design for vacuum applications up to 10 ⁻² mbar (ex. code DCG205STW0V)
NPT connection (ex. code DCN205STW00)



SELECTION TABLE

VALVES	connection	DN orifice	Flow rate Kvs	Working pressure ⁽¹⁾		Flow direction	Pilot pressure ⁽²⁾		Actuator ø
				min (bar)	max (bar)		min (bar)	max (bar)	
Code	(ISO 228 G)	(mm)	(l/min)						(mm)
DCG205STW00	1/2"	15	87	0	16	1 ↔ 2	1.8	2	63
DCG206STX00	3/4"	20	164	0	16	1 ↔ 2	2	3.8	63
DCG207STY00	1"	25	260	0	16	1 ↔ 2	3	5	63
DCG208STZ00	1 1/4"	32	410	0	16	1 ↔ 2	4.5	6	63
DCG209STK00	1 1/2"	40	700	0	16	1 ↔ 2	6.5	7	63
DCG210STJ00	2"	50	950	0	12	1 ↔ 2	9	10	63

(1) Steam: Max. working pressure 10 bar (9 barg); - (2) Minimum pilot pressure at max. working pressure; for lower working pressure see selection charts;



DIMENSIONS & WEIGHTS

Connection	Actuator ø	A	B	C	D	E	weight
(ISO 228 G)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
1/2"	63	65	192	184	171	85	1.2
3/4"	63	75	198	192	176	85	1.3
1"	63	90	212	205	185	85	1.5
1 1/4"	63	110	225	217	193	85	1.9
1 1/2"	63	120	230	225	198	85	2.1
2"	63	150	248	241	207	85	2.9

MANUAL ANGLE SEAT VALVE, G 1/2" ÷ 2"; BRONZE

flow over / under seat

TYPE: CG MANUAL

TECHNICAL SPECIFICATIONS

Media: water, oil, air, aggressive media and steam⁽¹⁾

Media temperature: -10°C ... +180°C

Ambient temperature: -10°C ... +60°C

Body material: (CC491K EN 1982: 2000)

Bonnet material: (CW617N EN 12165: 1999)

Seal material: PTFE

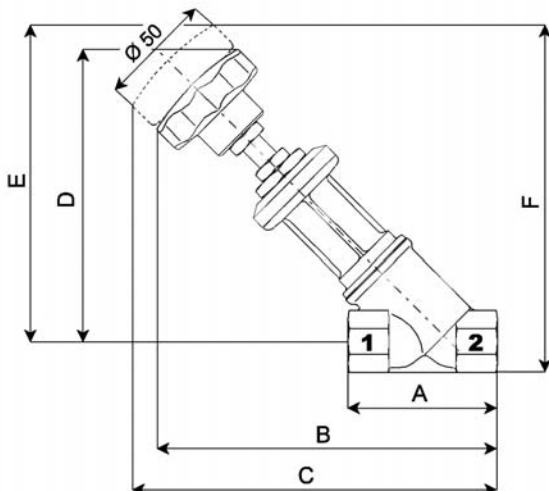
OPTIONS

NPT connection (ex. code CN2050TW00)



SELECTION TABLE	VALVES	connection	DN orifice	Flow rate Kvs	Working pressure ⁽¹⁾		Flow direction
	Code	(ISO 228 G)	(mm)	(l/min)	min (bar)	max (bar)	
	CG2050TW00	1/2"	15	87	0	25	1 ↔ 2
	CG2060TX00	3/4"	20	164	0	25	1 ↔ 2
	CG2070TY00	1"	25	260	0	25	1 ↔ 2
	CG2080TZ00	1 1/4"	32	410	0	25	1 ↔ 2
	CG2090TK00	1 1/2"	40	700	0	25	1 ↔ 2
	CG2100TJ00	2"	50	916	0	16	1 ↔ 2

(1) Steam: Max. working pressure 10 bar (9 barg);



DIMENSIONS & WEIGHTS

Connection	A	B	C	D	E	F	weight
(ISO 228 G)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
1/2"	65	142	150	121	128	142	0.75
3/4"	75	148	155	126	133	150	0.80
1"	90	163	172	135	145	165	1.20
1 1/4"	110	175	188	143	156	181	1.80
1 1/2"	120	180	193	148	161	189	2.10
2"	150	198	212	157	170	205	3.10