GRANZOW®

CL-CM

UNIVERSAL Distributors G1/8 - G1/4

- UNIVERSAL Modular System: possibility to create a lot of different valves with a short number of basis elements
- Control: manual, mechanical, pneumatic, electric
- Traditional UNIVER spool system: fluctuating seals of special compount to reduce frinction and prevent sticking
- High flow rate, high cycle life, suitable for vacuum application
- Modular sub-bases

TECHNICAL CHARACTERISTICS

Ambient temperature	-10 ÷ +45 °C	
Fluid temperature	max +50 °C	
Fluid	filtered air 50 µm not dehumidified, lubricated or not	
Commutation system	spool	
Ways/Positions	**3/2 NC, 3/2 NO, 3/2 NC-NO, 5/2, 5/3**	
Pressure	max 10 bar	
Control	indirect electro-pneumatic, pneumatic, manual, mechanical	
Return	pneumatic spring, mechanical spring	
Connections	**G1/8**	**G1/4**
Nominal Ø mm	6,5	8,5
Nominal flow rate (Nl/min)	890	1480

CONSTRUCTIVE CHARACTERISTICS

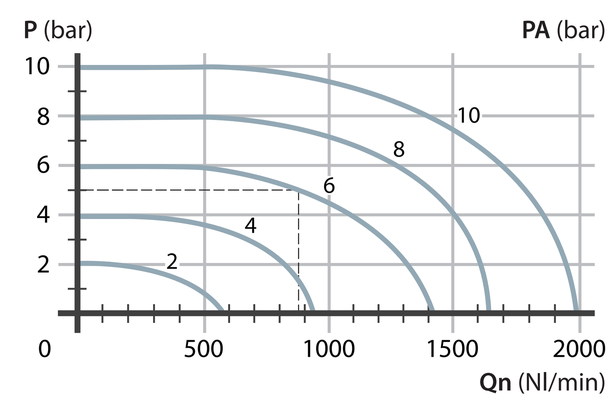
Valve body	**G1/8** = die-cast zamak
	G1/4 = aluminium
Seals	nitrile rubber
Actuators	technopolymer/aluminium
Spool	aluminium
Sub-base	zamak

ELECTRIC CHARACTERISTICS

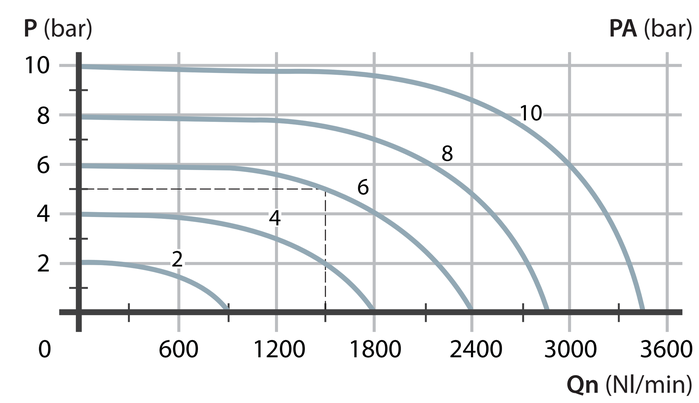
Electropilot	U1
Coil	DA
Power consumption	3,5 W (DC) - 5 VA (AC)
Connector	AM 5110
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC
Manual override	with 2 positions screw

Flow rate characteristics

>> G1/8



>> G1/4



P = Working pressure
PA = Supply pressure
Qn = Flow rate

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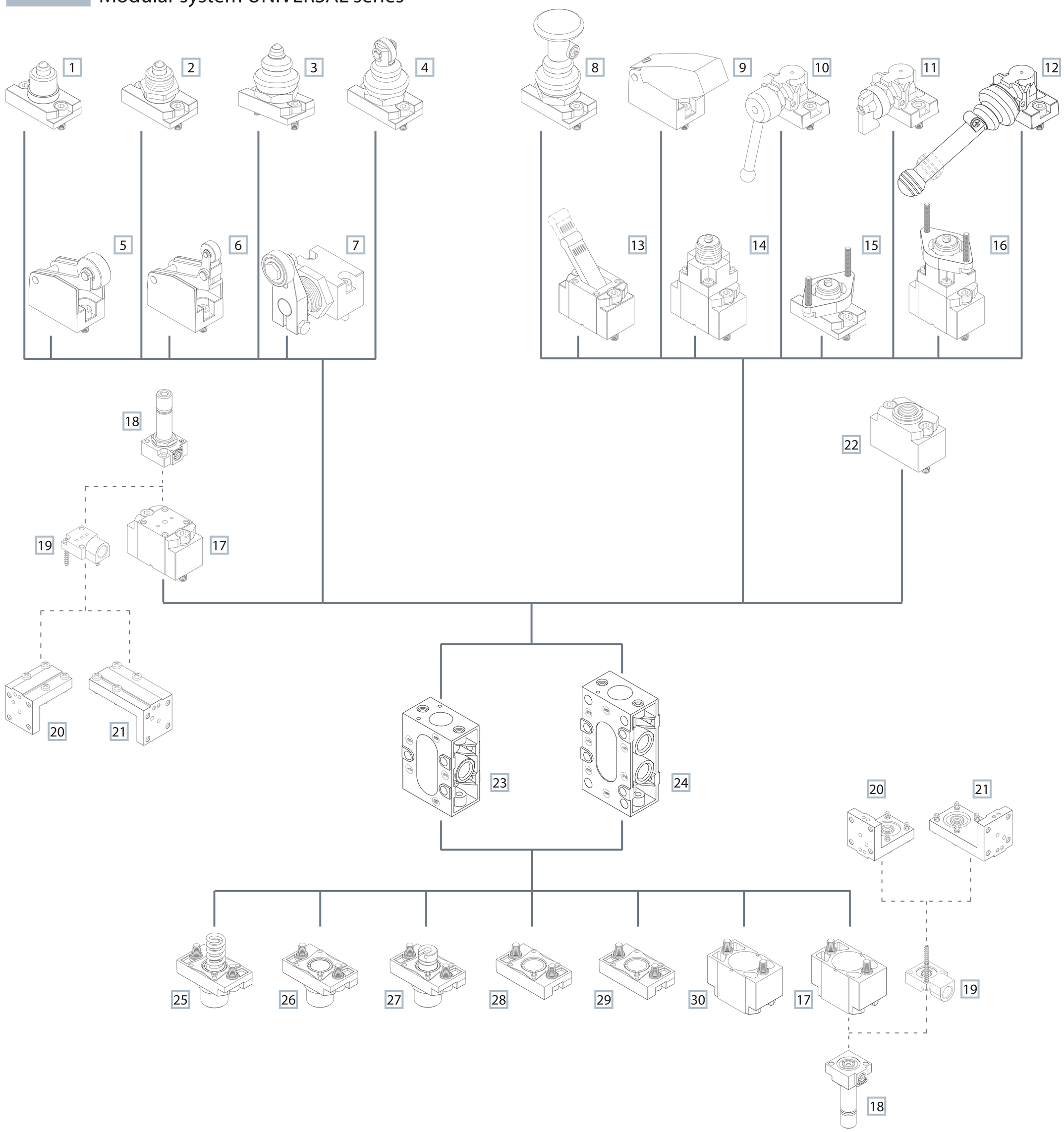
Modular system UNIVERSAL series



MECHANICAL CONTROL

1 Ball-push
2 Ball-push for screw panel mounting
3 Ball-push with dust protection
4 Roller with dust protection
5 Roller lever
6 Uni-directional roller lever
7 Bidirectional side roller lever

MANUAL CONTROL

8 Push-pull
9 Push
10 Rotating lever
11 Selector
12 90° short/long lever
13 Short/long lever
14 Threaded indirect operation
15 Direction operation for panel mounting
16 Indirect control for panel mounting

ELECTRIC CONTROL

17 Electric amplified
18 U1 electropilot
19 Plate for external servoassistance
20 "H" option angle plate
21 "P" option angle plate

PNEUMATIC CONTROL

22 Pneumatic amplified

BODY

23 3/2 body
24 5/2 body

RETURN

25 Mechanical spring
26 Pneumatic not amplified
27 2/3 positions plate
28 Bottom plate
29 Pneumatic spring
30 Pneumatic amplified

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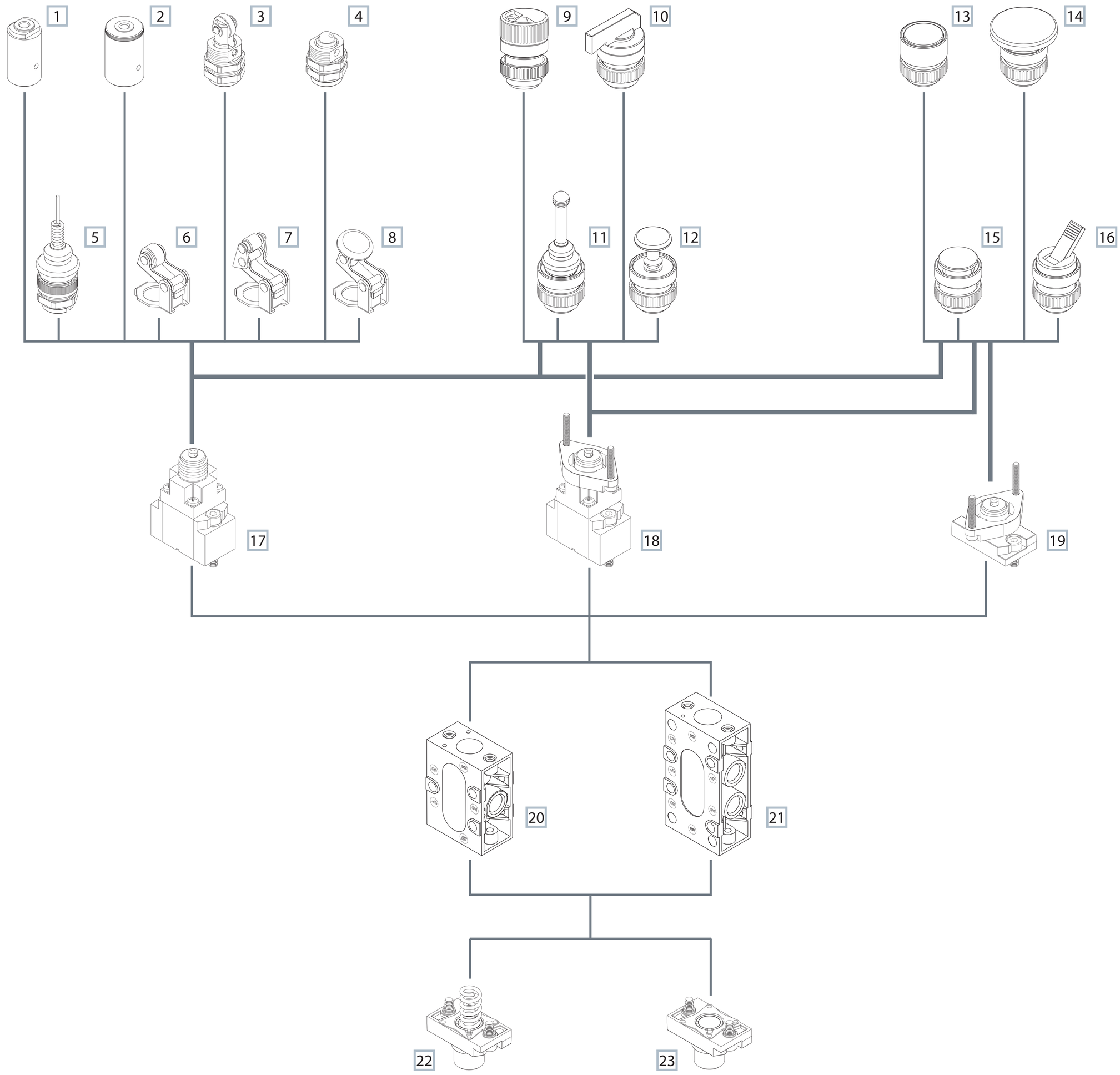
Modular system actuators/buttons



PNAUMATIC/MACHANICAL ACTUATORS

1 Pneumatic actuators
2 Pneumatic actuators amplified
3 Roller operator 1 posiotion
4 Ball operator 1 position
5 Operator with omni-directional antenna 1 position
6 Roller lever operator 1 position
7 Articulated roller lever operator 1 position
8 Key operator 1 position

MANUAL PUSH

9 Rotating selector
10 Rotating lever selector
11 Omni-directional lever
12 Push pull actuators
13 Recessed button
14 Head button
15 Button
16 Lever operator

OVERRIDE

17 Threaded indirect operation
18 Indirect operation for panel mounting
19 Direct operation for panel mounting

BODY

22 3/2 Body
24 5/2 Body

RETURN

20 Mechanical spring
21 Pneumatic not amplified

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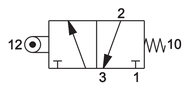
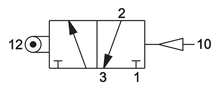
G1/8 Valves with direct mechanical operation

CL-100A



CL-100P



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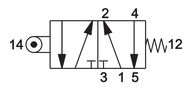

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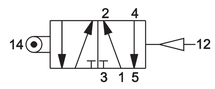

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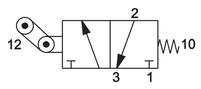

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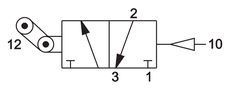

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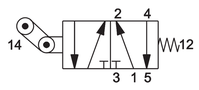

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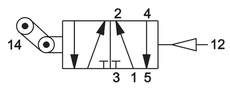

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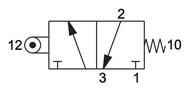
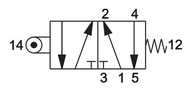


CM-406A



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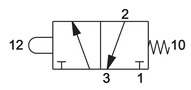

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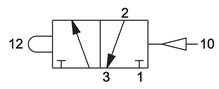
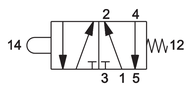


CM-402A



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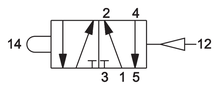

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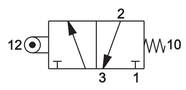

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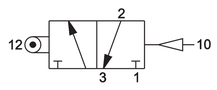

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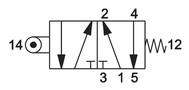

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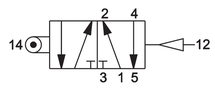

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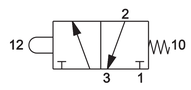

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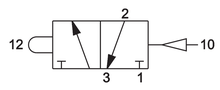

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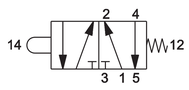

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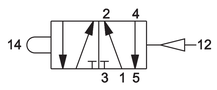

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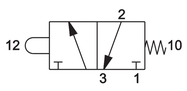

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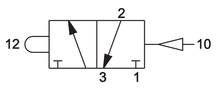

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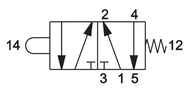

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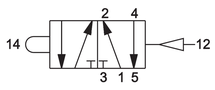


	Return	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.	Composition (a) Control	Body	Return	Tot L. mm
	ROLLER LEVER									
3/2 NC-NO	mechanical spring	890	6,5	0,21	23	**CL-100A**	A	1	H	112
	pneumatic not amplified	890	6,5	0,21	6	**CL-100P**	A	1	I	112
5/2	mechanical spring	890	6,5	0,25	23	**CM-400A**	A	2	H	129
	pneumatic not amplified	890	6,5	0,25	6	**CM-400P**	A	2	I	129
	UNI-DIRECTIONAL ROLLER LEVER									
3/2 NC-NO	mechanical spring	890	6,5	0,22	18	**CL-101A**	B	1	H	123
	pneumatic not amplified	890	6,5	0,22	6	**CL-101P**	B	1	I	123
5/2	mechanical spring	890	6,5	0,26	18	**CM-401A**	B	2	H	139,5
	pneumatic not amplified	890	6,5	0,26	6	**CM-401P**	B	2	I	139,5
	BIDIRECTIONAL SIDE ROLLER LEVER									
3/2 NC-NO	mechanical spring	890	6,5	0,30	25	**CL-106A**	C	1	H	118,5
5/2	mechanical spring	890	6,5	0,34	25	**CM-406A**	C	2	H	135
	BALL-PUSH									
3/2 NC-NO	mechanical spring	890	6,5	0,19	64	**CL-102A**	D	1	H	97,7
	pneumatic not amplified	890	6,5	0,19	25	**CL-102P**	D	1	I	97,7
5/2	mechanical spring	890	6,5	0,23	64	**CM-402A**	D	2	H	114,2
	pneumatic not amplified	890	6,5	0,23	25	**CM-402P**	D	2	I	114,2
	ROLLER WITH DUST PROTECTION									
3/2 NC-NO	mechanical spring	890	6,5	0,19	64	**CL-105A**	E	1	H	117
	pneumatic not amplified	890	6,5	0,18	25	**CL-105P**	E	1	I	117
5/2	mechanical spring	890	6,5	0,23	68	**CM-405A**	E	2	H	133,5
	pneumatic not amplified	890	6,5	0,22	26	**CM-405P**	E	2	I	133,5
	BALL-PUSH WITH DUST PROTECTION									
3/2 NC-NO	mechanical spring	890	6,5	0,19	64	**CL-104A**	F	1	H	110
	pneumatic not amplified	890	6,5	0,18	25	**CL-104P**	F	1	I	110
5/2	mechanical spring	890	6,5	0,23	68	**CM-404A**	F	2	H	126,5
	pneumatic not amplified	890	6,5	0,22	26	**CM-404P**	F	2	I	126,5
	BALL-PUSH FOR SCREW PANEL MOUNTING									
3/2 NC-NO	mechanical spring	890	6,5	0,19	64	**CL-103A**	G	1	H	97,7
	pneumatic not amplified	890	6,5	0,18	25	**CL-103P**	G	1	I	97,7
5/2	mechanical spring	890	6,5	0,23	68	**CM-403A**	G	2	H	114,2
	pneumatic not amplified	890	6,5	0,22	25	**CM-403P**	G	2	I	114,2

To get 3/2 NO version, supply the valve from port 3

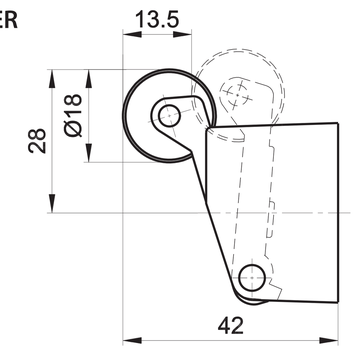
Pressure 0 ; 10 bar for all part numbers

(a) = see page **3**_7

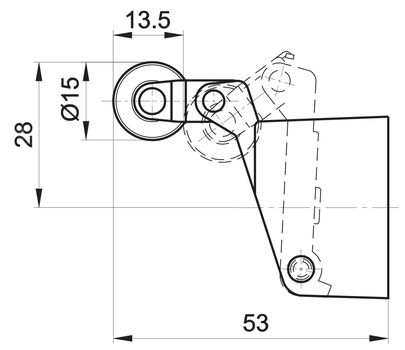
GRANZOW®

CONTROL	BODY	RETURN

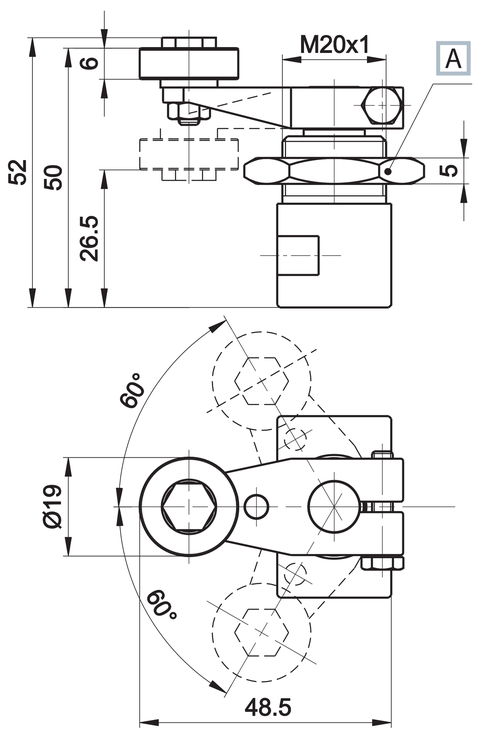
A G1/8 ROLLER LEVER



B G1/8 UNI-DIRECTIONAL ROLLER LEVER

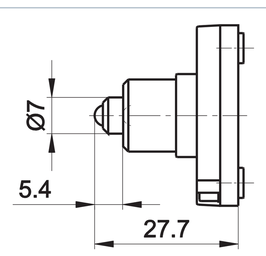


C -

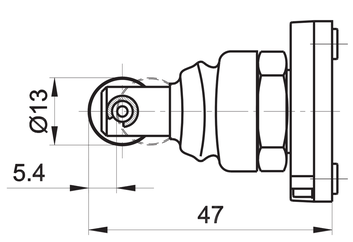


A Wrench 25

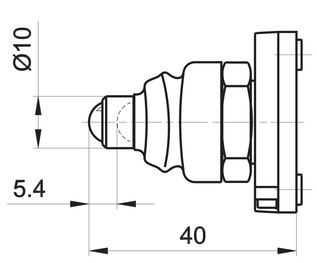
D G1/8 BALL-PUSH



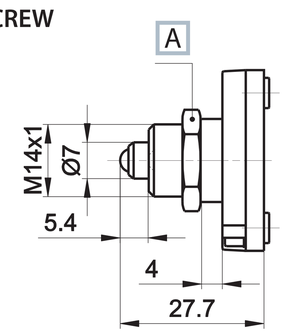
E G1/8 ROLLER WITH DUST PROTECTION



F G1/8 BALL-PUSH WITH DUST PROTECTION

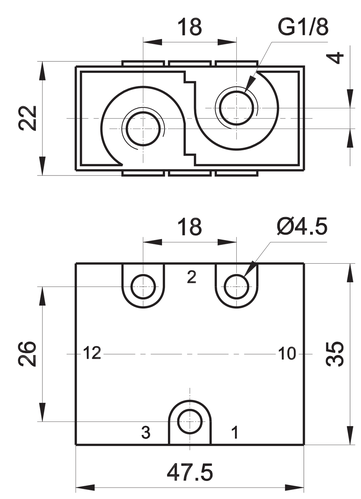


G G1/8 BALL-PUSH FOR SCREW PANEL MOUNTING



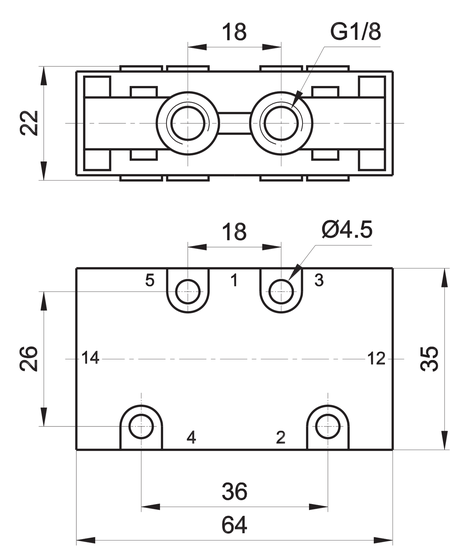
A Wrench18

1 3/2 NC-NO G1/8



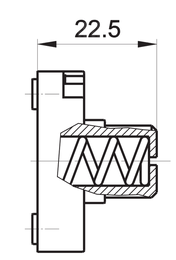
>> NC	>> NO
1 = Supply port	1 = Exhaust
2 = Use	2 = Use
3 = Exhaust	3 = Supply port
12 = Control	12 = Control
10 = Return	10 = Return

2 5/2 G1/8

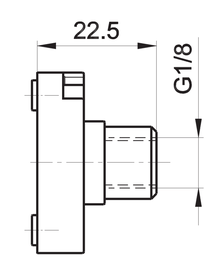


1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

H G1/8 MECHANICAL SPRING



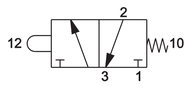
I G1/8 PNEUMATIC NOT AMPLIFIED



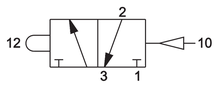
GRANZOW®

G1/4 Valves with direct mechanical operation

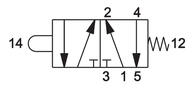
CL-9102A



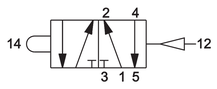
CL-9102P



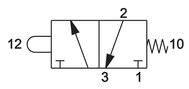
CL-9402A



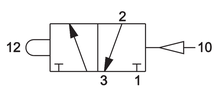
CL-9402P



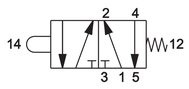
CL-9103A



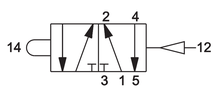
CL-9103P



CM-9403A



CM-9403P



	Return	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.	Composition (a) Control	Body	Return	Tot L. mm
	BALL-PUSH									
3/2 NC-NO	mechanical spring	1480	8,5	0,26	68	**CL-9102A**	D	1	H	117
	pneumatic not amplified	1480	8,5	0,26	26	**CL-9102P**	D	1	I	106
5/2	mechanical spring	1480	8,5	0,28	68	**CM-9402A**	D	2	H	134,5
	pneumatic not amplified	1480	8,5	0,28	26	**CM-9402P**	D	2	I	123,5
	BALL-PUSH FOR SCREW PANEL MOUNTING									
3/2 NC-NO	mechanical spring	1480	8,5	0,26	68	**CL-9103A**	G	1	H	117
	pneumatic not amplified	1480	8,5	0,24	26	**CL-9103P**	G	1	I	106
5/2	mechanical spring	1480	6,5	0,28	64	**CM-9403A**	G	2	H	134,5
	pneumatic not amplified	1480	6,5	0,26	26	**CM-9403P**	G	2	I	123,5

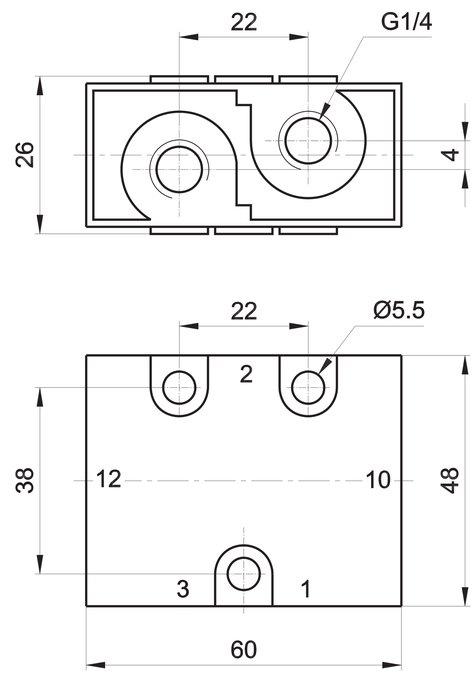
To get 3/2 NO version, supply the valve from port 3
Pressure 0 ÷10 bar for all part numbers

(a) = see page **3**_9

GRANZOW®

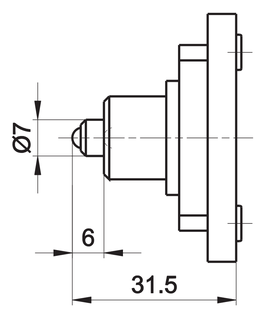
CONTROL	BODY	RETURN

1 3/2 NC-NO G1/4

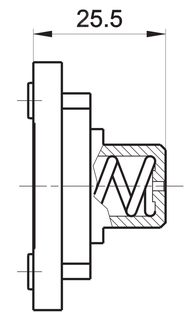


>> NC	>> NO
1 = Supply port	1 = Exhaust
2 = Use	2 = Use
3 = Exhaust	3 = Supply port
12 = Control	12 = Control
10 = Return	10 = Return

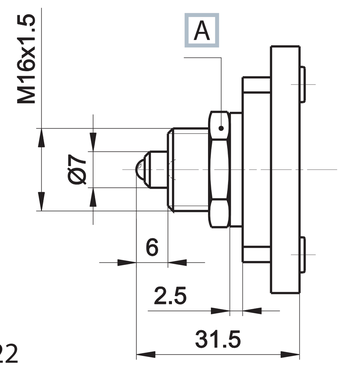
D G1/4 BALL-PUSH



H G1/4 MECHANICAL SPRING

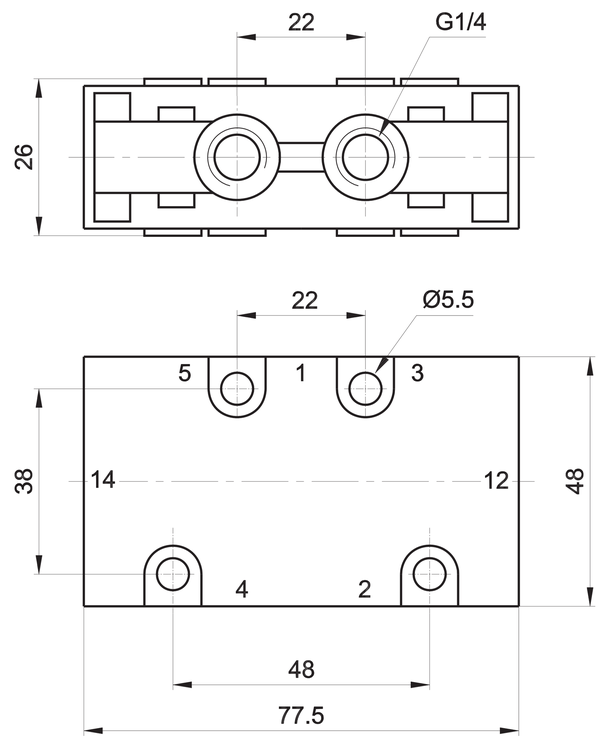


G G1/4 BALL-PUSH FOR SCREW PANEL MOUNTING



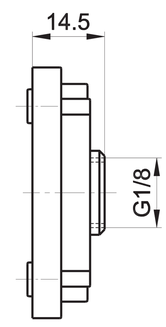
A Wrench 22

2 5/2 G1/4



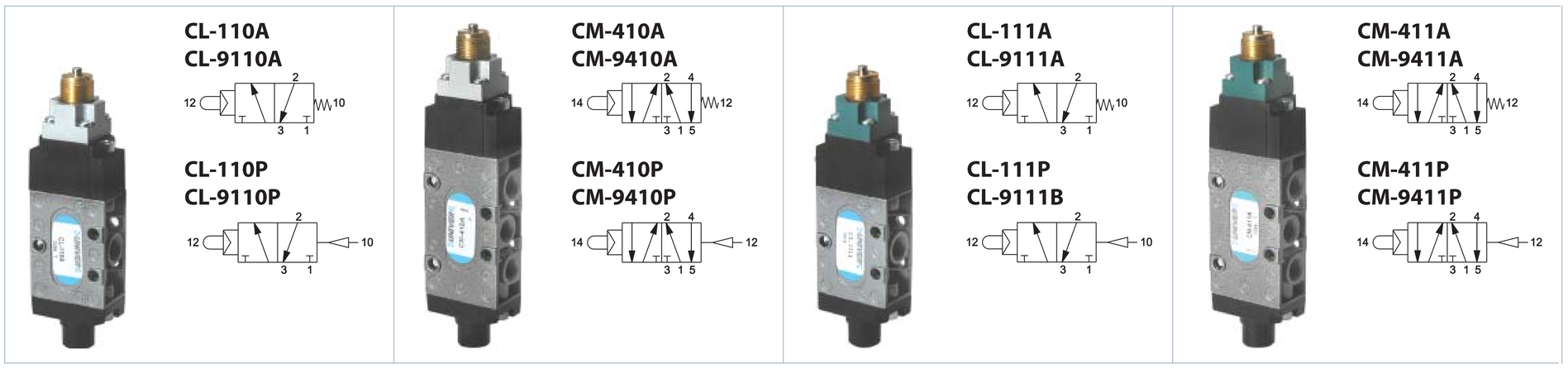
1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

I G1/4 PNEUMATIC SPRING



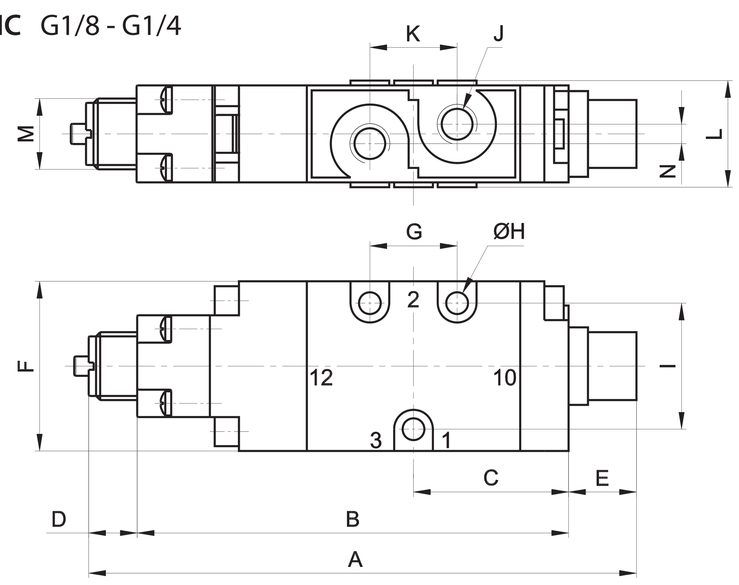
GRANZOW®

G1/8 - G1/4 Valves with direct mechanical operator for pneumatic and mechanical actuators



	Thread	Return	Pressure bar	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.
	BALL-PUSH							
3/2 NC	G1/8	mechanical spring	2,5÷10	890	6,5	0,19	11	**CL-110A**
	G1/8	pneumatic not amplified	1÷10	890	6,5	0,18	11	**CL-110P**
	G1/4	mechanical spring	2÷10	1480	8,5	0,26	11	**CL-9110A**
	G1/4	pneumatic not amplified	1÷10	1480	8,5	0,24	11	**CL-9110P**
5/2	G1/8	mechanical spring	3÷10	890	6,5	0,23	11	**CM-410A**
	G1/8	pneumatic not amplified	1,2÷10	890	6,5	0,22	11	**CM-410P**
	G1/4	mechanical spring	2÷10	1480	8,5	0,28	11	**CM-9410A**
	G1/4	pneumatic not amplified	1,2÷10	1480	8,5	0,26	11	**CM-9410P**
	SENSITIVE BALL-PUSH							
3/2 NC	G1/8	mechanical spring	2,5÷10	890	6,5	0,19	3	**CL-111A**
	G1/8	pneumatic not amplified	1÷10	890	6,5	0,18	3	**CL-111P**
	G1/4	mechanical spring	2÷10	1480	8,5	0,26	3	**CL-9111A**
	G1/4	pneumatic not amplified	1÷10	1480	8,5	0,24	3	**CL-9111P**
5/2	G1/8	mechanical spring	3÷10	890	6,5	0,23	3	**CM-411A**
	G1/8	pneumatic not amplified	1,2÷10	890	6,5	0,22	3	**CM-411P**
	G1/4	mechanical spring	2÷10	1480	8,5	0,28	3	**CM-9411A**
	G1/4	pneumatic not amplified	1,2÷10	1480	8,5	0,26	3	**CM-9411P**

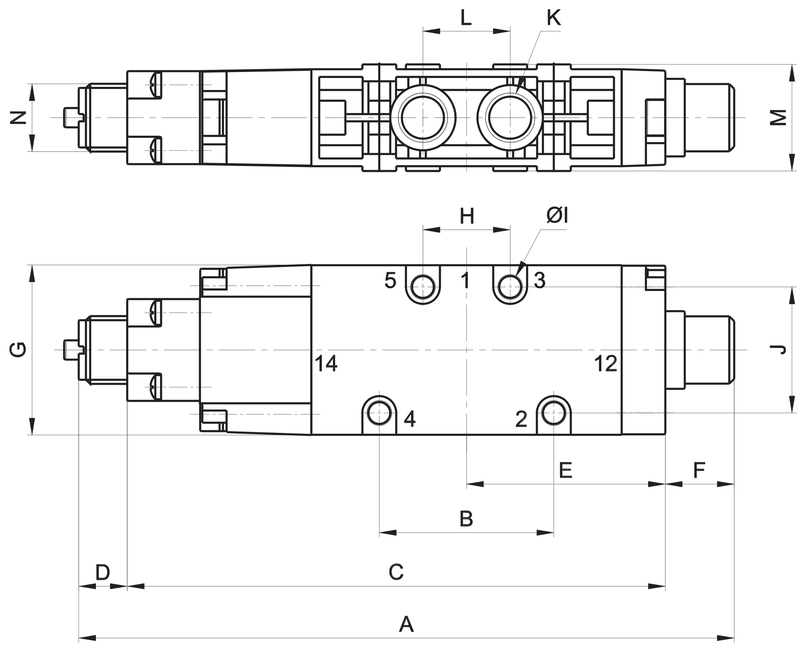
3/2 NC G1/8 - G1/4



1 = Supply port
2 = Use
3 = Exhaust
12 = Control
10 = Return

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
G1/8	116	92	32	10	14	35	22	4,5	26	G1/8	22	22	M14x1	4
G1/4	136,5	112	41	10	14,5	48	18	5,5	38	G1/4	18	26	M14x1	4

5/2 G1/8 - G1/4



1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
G1/8	135	36	111	10	41	14	35	18	4,5	26	G1/8	18	22	M14x1
G1/4	154	48	129,5	10	49,7	14,5	48	22	5,5	38	G1/4	22	26	M14x1

GRANZOW®

G1/8 - G1/4 Valves with direct mechanical operator for pneumatic and mechanical actuators

PNEUMATIC AND MECHANICAL ACTUATORS

	Pneumatic operator	AI-3550
	Amplified pneumatic operator	AI-3551
	Roller operator 1 position	AI-3560
	Ball-push operator 1 position	AI-3562
	Operator with omni-directional antenna 1 position	AI-3563
	Roller lever operator 1 position	AI-3570
	Articulated roller operator 1 position Complete actuation with stroke 2,5 mm, max stroke 4,7 mm	AI-3571
	Key operator 1 position	AI-3572

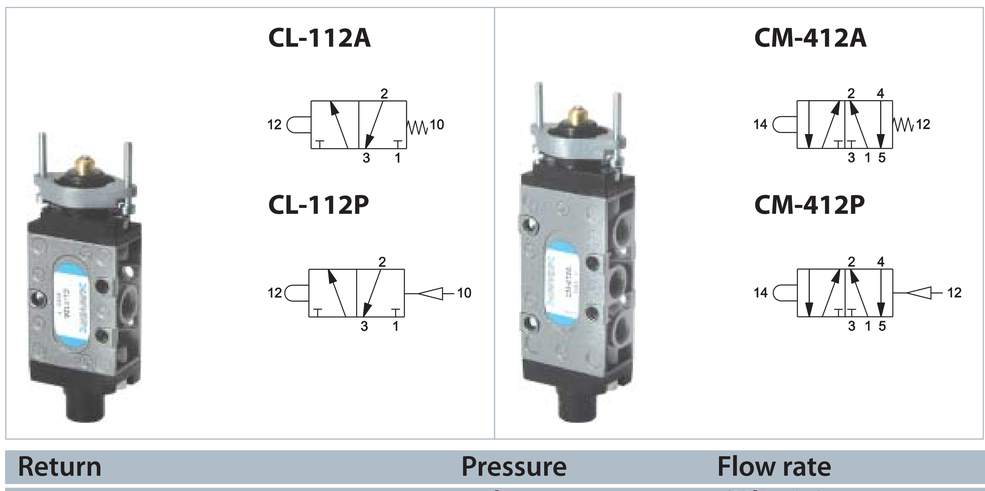
MANUAL ACTUATORS

	Recessed button	■BLACK ■RED ■GREEN	AI-3511 AI-3512 AI-3513
	Head button	■RED ■BLACK ■RED ■BLACK	AI-3514 AI-3516 AI-3514D AI-3516D
	Button	■GREEN ■RED ■BLACK	AI-3515 AI-3517 AI-3519
	Accident prevention rotating selector	■BLACK ■BLACK	AI-3520 AI-3521
	Rotating lever selector	■BLACK ■BLACK	AI-3522 AI-3523
	Lever operator	■BLACK	AI-3524
	Omni-directional operator	■BLACK	AI-3525
	Push-pull operator	■BLACK	AI-3526

For actuators dimensions see section **"Accessories>Actuators"**

GRANZOW®

G1/8 Valves with direct operator for panel mounting actuators

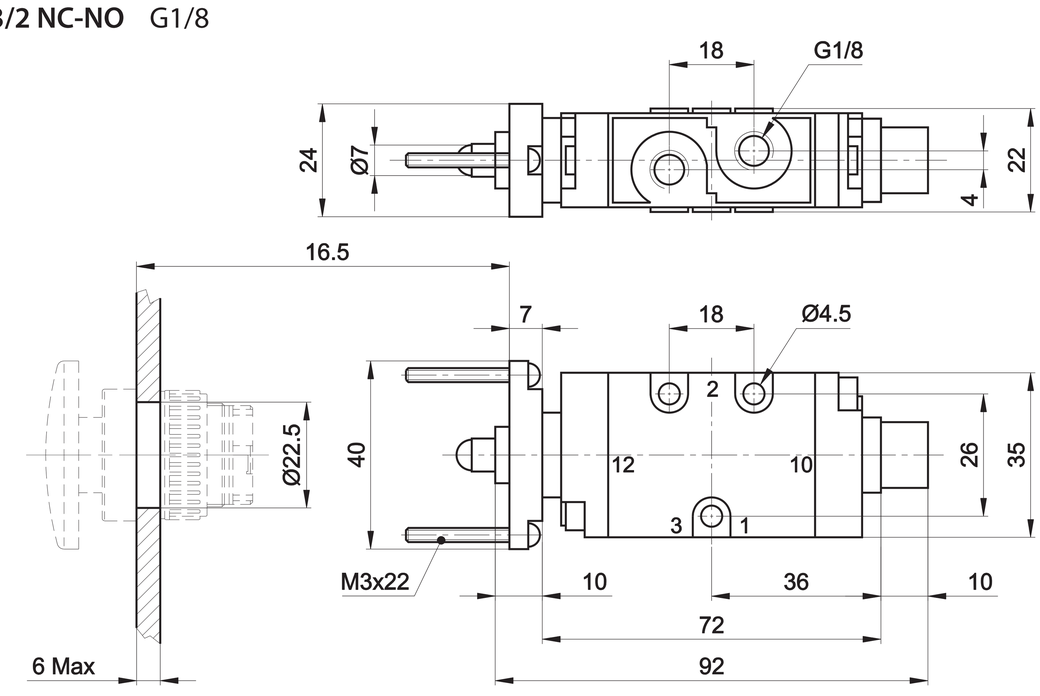


	Return	Pressure bar	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.
	BALL-PUSH						
3/2 NC-NO	mechanical spring	0÷10	890	6,5	0,19	64	**CL-112A**
	pneumatic not amplified	0÷10	890	6,5	0,18	25	**CL-112P**
5/2	mechanical spring	0÷10	890	6,5	0,23	64	**CM-412A**
	pneumatic not amplified	0÷10	890	6,5	0,22	25	**CM-412P**

To get 3/2 NO version supply the valve from port 3

	Recessed button	YELLOW RED GREEN	AI-3511Q AI-3512Q AI-3513Q
	Head button	RED BLACK	AI-3514Q AI-3516Q
	Button	GREEN RED BLACK	AI-3515Q AI-3517Q AI-3519Q
	Lever operator	BLACK	AI-3524Q

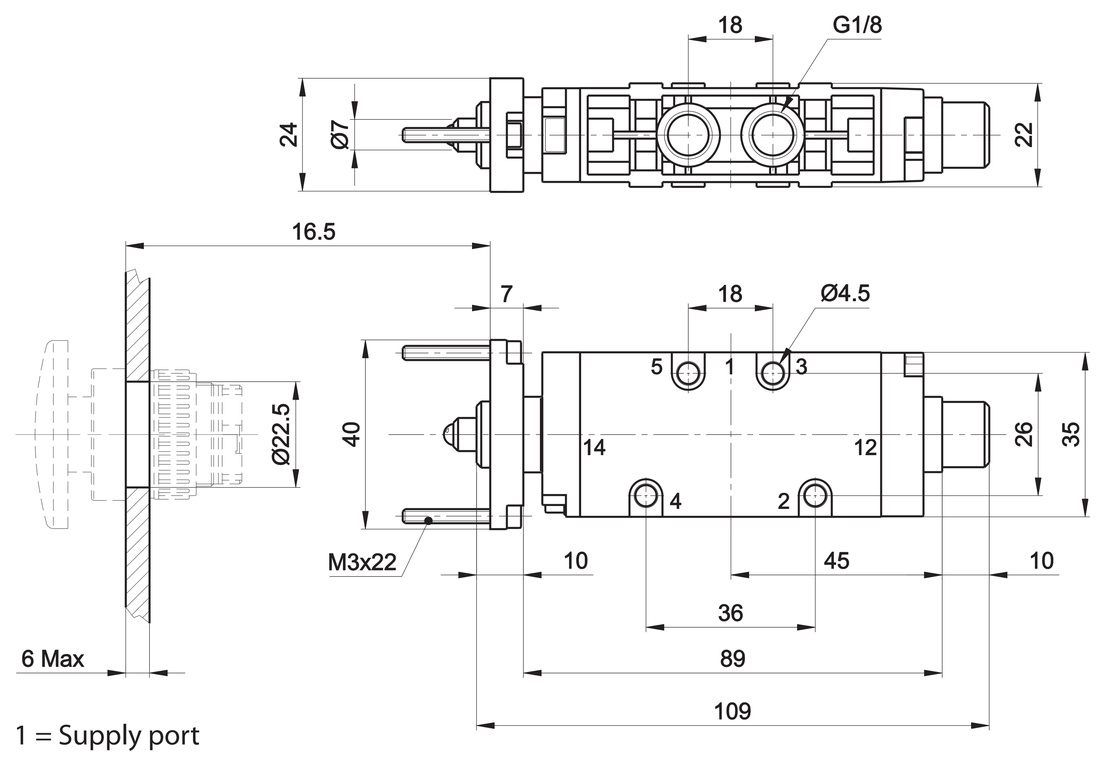
3/2 NC-NO G1/8



>> NC
1 = Supply port
2 = Use
3 = Exhaust
12 = Control
10 = Return

>> NO
1 = Exhaust
2 = Use
3 = Supply port
12 = Control
10 = Return

5/2 G1/8

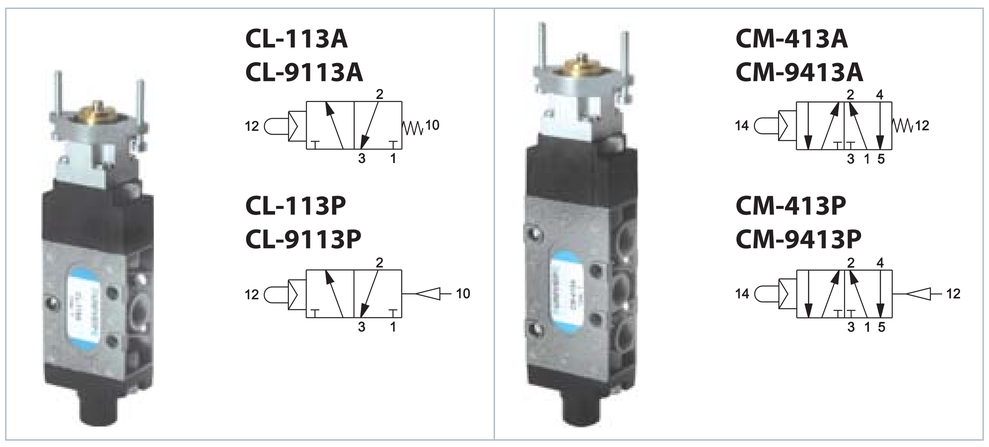


1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

For actuator dimensions see section **"Accessories>Buttons"**

GRANZOW®

G1/8 - G1/4 Valves with indirect operator for panel mounting actuators



	Thread	Return	Pressione bar	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.
	BALL-PUSH							
3/2 NC	G1/8	mechanical spring	2,5÷10	890	6,5	0,20	11	**CL-113A**
	G1/8	pneumatic non amplified	1÷10	890	6,5	0,19	11	**CL-113P**
	G1/4	mechanical spring	2÷10	1480	8,5	0,27	11	**CL-9113A**
	G1/4	pneumatic non amplified	1÷10	1480	8,5	0,26	11	**CL-9113P**
5/2	G1/8	mechanical spring	3÷10	890	6,5	0,24	11	**CM-413A**
	G1/8	pneumatic non amplified	1,2÷10	890	6,5	0,23	11	**CM-413P**
	G1/4	mechanical spring	2÷10	1480	6,5	0,29	11	**CM-9413A**
	G1/4	pneumatic non amplified	1,2÷10	1480	6,5	0,28	11	**CM-9413P**

Recessed button

■BLACK AI-3511Q
■RED AI-3512Q
■GREEN AI-3513Q

Head button

■RED AI-3514Q
■BLACK AI-3516Q

■RED AI-3514QD
■BLACK AI-3516QD

Button

■GREEN AI-3515Q
■RED AI-3517Q
■BLACK AI-3519Q

Accident prevention rotating selector

■BLACK AI-3520Q

■BLACK AI-3521Q

Lever operator

■BLACK AI-3524Q

Rotating lever selector

■BLACK AI-3523Q

■BLACK AI-3522Q

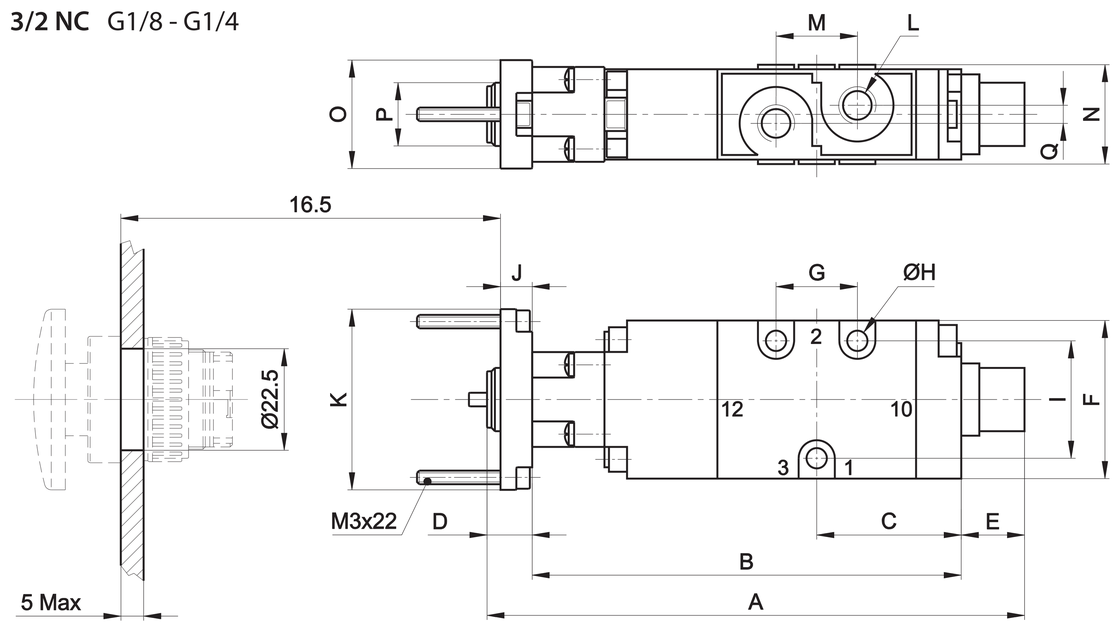
Omni-directional lever

■BLACK AI-3525Q

Push-pull operator

■BLACK AI-3526Q

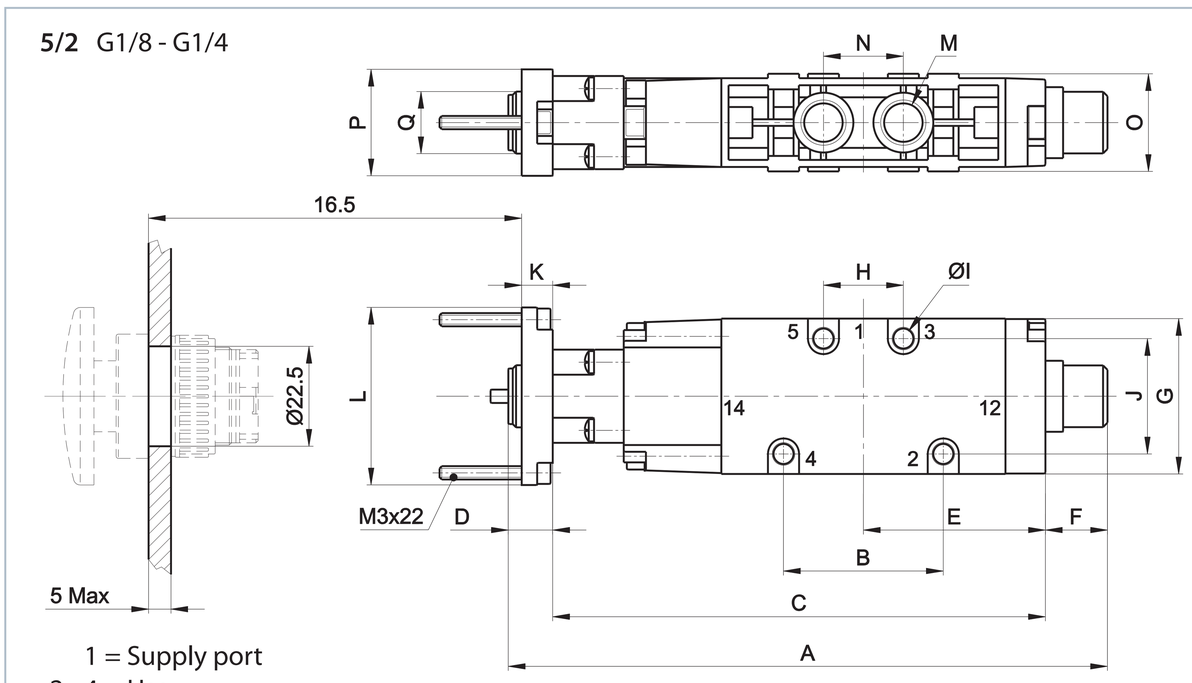
3/2 NC G1/8 - G1/4



1 = Supply port
2 = Use
3 = Exhaust
12 = Control
10 = Return

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
G1/8	116	92	32	10	14	35	18	4,5	26	7	40	G1/8	18	22	24	M14X1	4
G1/4	136,5	112	41	10	14,5	48	22	5,5	38	7	40	G1/4	22	26	24	M14X1	4

5/2 G1/8 - G1/4



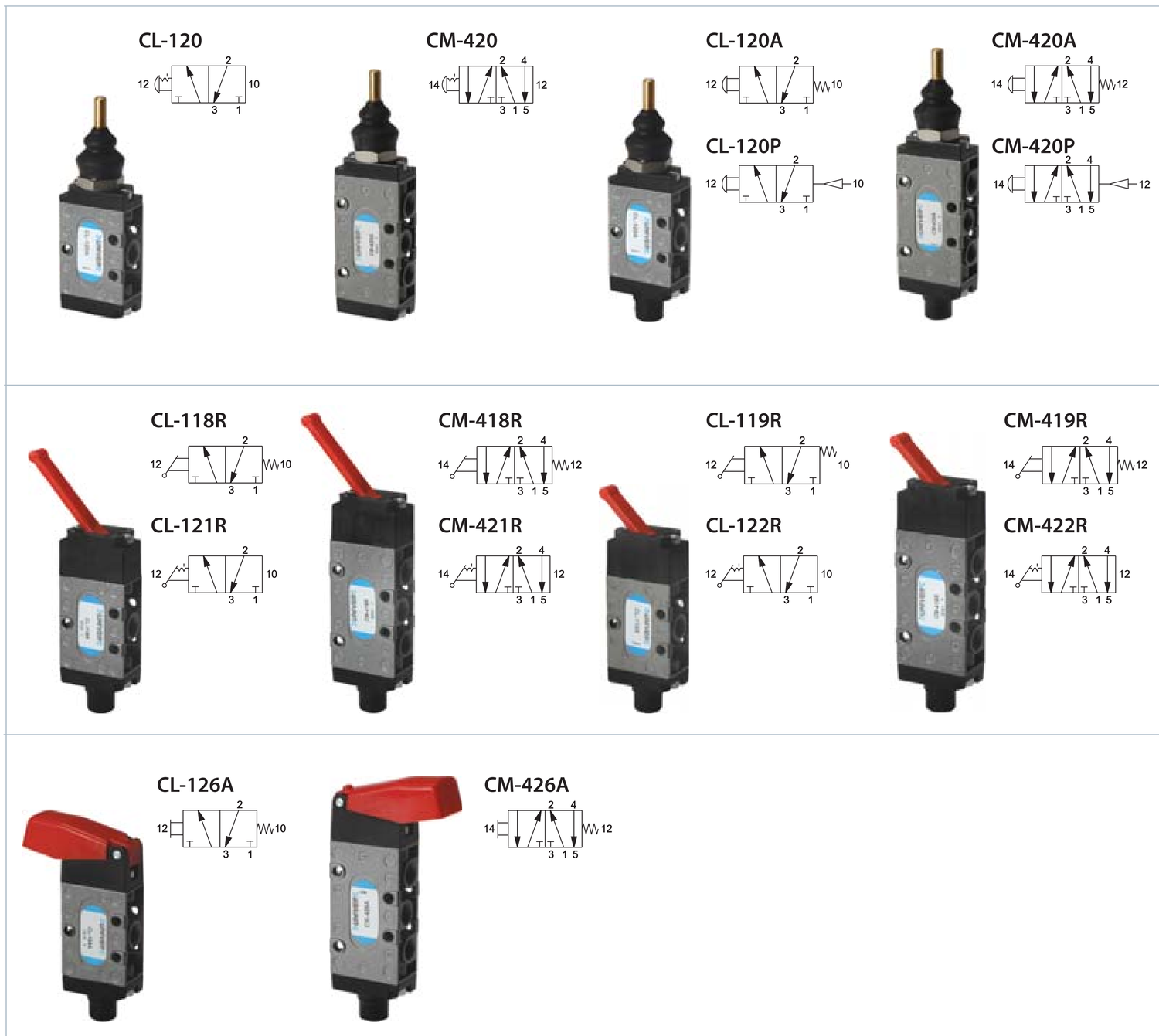
1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
G1/8	135	36	111	10	41	14	35	18	4,5	22	7	40	G1/8	18	22	24	M14X1
G1/4	154	48	129,5	10	49,7	14,5	48	22	5,5	26	7	40	G1/4	22	26	24	M14X1

For actuator dimensions see section **"Accessories>Buttons"**

GRANZOW®

G1/8 Manually operated valves



- YELLOW **CP-911G**
- RED **CP-911R**
- BLACK **CP-911N**
- GREEN **CP-911V**

LONG LEVER

STANDARD	UPON REQUEST
RED	YELLOW BLACK

SHORT LEVER

STANDARD	UPON REQUEST
RED	YELLOW BLACK GREEN

STANDARD LEVER

RED

	Return	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.	Composition (a) Control	Body	Return	Tot L. mm
	PUSH-PULL (b)									
3/2 NC-NO	push-pull	890	6,5	0,19	25	**CL-120**	A	1	H	108,5
5/2	push-pull	890	6,5	0,22	25	**CM-420**	A	2	H	125
3/2 NC-NO	mechanical spring	890	6,5	0,19	25	**CL-120A**	A	1	F	121
5/2	mechanical spring	890	6,5	0,22	25	**CM-420A**	A	2	F	137,5
3/2 NC-NO	pneumatic not amplified	890	6,5	0,18	25	**CL-120P**	A	1	I	121
5/2	pneumatic not amplified	890	6,5	0,21	25	**CM-420P**	A	2	I	137,5
	BUTTON									
3/2 NC-NO	mechanical spring	890	6,5	0,20	15	**CL-126A**	B	1	F	100
5/2	mechanical spring	890	6,5	0,23	15	**CM-426A**	B	2	F	116,5
	LONG LEVER (STANDARD RED COLOUR)									
3/2 NC-NO	mechanical spring	890	6,5	0,17	10	**CL-118R**	C	1	F	126
5/2	mechanical spring	890	6,5	0,21	10	**CM-418R**	C	2	F	142,5
3/2 NC-NO	lever	890	6,5	0,16	10	**CL-121R**	C	1	G	126
5/2	lever	890	6,5	0,20	10	**CM-421R**	C	2	G	142,5
	SHORT LEVER (STANDARD RED COLOUR)									
3/2 NC-NO	mechanical spring	890	6,5	0,17	20	**CL-119R**	C	1	F	112
5/2	mechanical spring	890	6,5	0,21	20	**CM-419R**	C	2	F	128,5
3/2 NC-NO	lever	890	6,5	0,16	20	**CL-122R**	C	1	G	112
5/2	lever	890	6,5	0,20	20	**CM-422R**	C	2	G	128,5

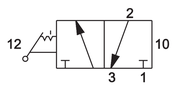
To get 3/2 NO version, supply the valve from port 3
(b) = valves are supplied without operator Pressure 0 ÷10 bar for all part numbers

(a) = see pages **3**_18
Overall dimensions include operator

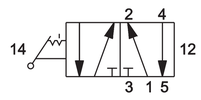
GRANZOW®

G1/8 Manually operated velves

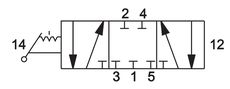
CL-130



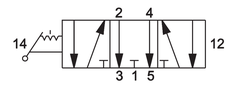
CM-430



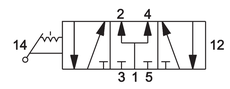
CM-430E



CM-435E



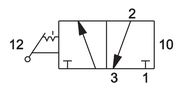
CM-440E



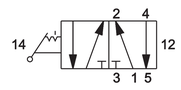
■ RED
CP-915R

■ RED
CP-916R

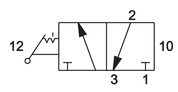
CL-123



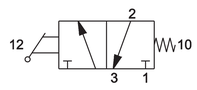
CM-423



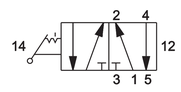
CL-123D



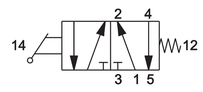
CL-123A



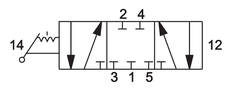
CM-423D



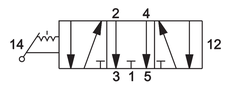
CM-423A



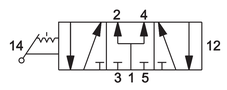
CM-423E



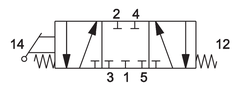
CM-424E



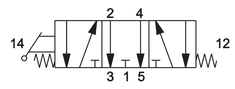
CM-425E



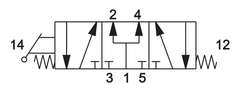
CM-423F



CM-424F



CM-425F



SHORT LEVER

■ YELLOW
CP-912G
■ RED
CP-912R
■ BLACK
CP-912N

LONG LEVER

■ RED
CP-913R

	Return	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.	Composition (a) Control	Body	Return	Tot L. mm
	ROTATING LEVER (SELECTOR UPON REQUEST) (b)									
3/2 NC-NO	rotating lever	890	6,5	0,22	27	**CL-130**	D	1	G	97
5/2	rotating lever	890	6,5	0,25	27	**CM-430**	D	2	G	113,5
5/3 c.c.	rotating lever	890	6,5	0,25	27	**CM-430E**	D	2	G	113,5
5/3 o.c.	rotating lever	890	6,5	0,24	27	**CM-435E**	D	2	G	113,5
5/3 p.c.	rotating lever	890	6,5	0,24	27	**CM-440E**	D	2	G	113,5
	90° LEVER - 3 POSITION (b)									
3/2 NC-NO	lever	890	6,5	0,17	2,5÷4	**CL-123**	E	1	H	79,5
5/2	lever	890	6,5	0,23	2,5÷4	**CM-423**	E	2	H	96
3/2 NC-NO	lever	890	6,5	0,17	3,5÷5	**CL-123D**	E	1	G	92
5/2	lever	890	6,5	0,23	3,5÷5	**CM-423D**	E	2	G	108,5
3/2 NC-NO	mechanical spring	890	6,5	0,18	9÷13	**CL-123A**	E	1	F	92
5/2	mechanical spring	890	6,5	0,23	9÷13	**CM-423A**	E	2	F	108,5
5/3 c.c.	lever	890	6,5	0,23	3,5÷5	**CM-423E**	E	2	G	108,5
	lever	890	6,5	0,23	6,5÷10	**CM-423F**	E	2	G	108,5
5/3 o.c.	lever	890	6,5	0,23	3,5÷3	**CM-424E**	E	2	G	108,5
	lever	890	6,5	0,23	6,5÷10	**CM-424F**	E	2	G	108,5
5/3 p.c.	lever	890	6,5	0,23	7,5÷5	**CM-425E**	E	2	G	108,5
	lever	890	6,5	0,23	6,5÷10	**CM-425F**	E	2	G	108,5

o.c. = open centres **c.c.** = closed centres **p.c.** = pressurized centres

To get 3/2 NO version, supply the valve from port 3

(b) = valves are supplied without operator Pressure 0 ÷10 bar for all part numbers

(a) = see pages **3**_18

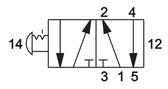
Overall dimensions include operator

GRANZOW®

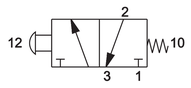
G1/4 Manually operated velves

CL-9120

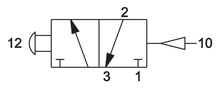
CM-9420



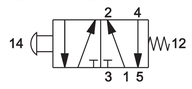
CL-9120A



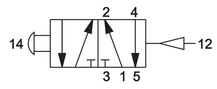
CL-9120P



CM-9420A

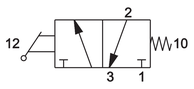


CM-9420P

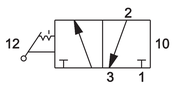


- YELLOW **CP-911G**
- RED **CP-911R**
- BLACK **CP-911N**
- GREEN **CP-911V**

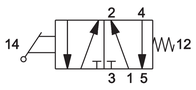
CL-9118R



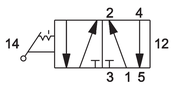
CL-9121R



CM-9418R



CM-9421R



STANDARD LEVER
- RED

UPON REQUEST LEVER
- YELLOW
- BLACK

	Return	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.	Composition (a) Control	Body	Return	Tot L. mm
	PUSH-PULL[(b)]									
3/2 NC-NO	push-pull	1480	8,5	0,26	26	**CL-9120**	A	1	H	127
5/2	push-pull	1480	8,5	0,26	26	**CM-9420**	A	2	H	144,5
3/2 NC-NO	mechanical spring	1480	8,5	0,26	26	**CL-9120A**	A	1	F	138
5/2	mechanical spring	1480	8,5	0,26	26	**CM-9420A**	A	2	F	155,5
3/2 NC-NO	pneumatic not amplified	1480	8,5	0,24	26	**CL-9120P**	A	1	I	127
5/2	pneumatic not amplified	1480	8,5	0,24	26	**CM-9420P**	A	2	I	144,5
	LONG LEVER (standard red colour)									
3/2 NC-NO	mechanical spring	1480	8,5	0,23	11	**CL-9118R**	C	1	F	144
5/2	mechanical spring	1480	8,5	0,25	11	**CM-9418R**	C	2	F	161,5
3/2 NC-NO	lever	1480	8,5	0,22	11	**CL-9121R**	C	1	G	144
5/2	lever	1480	8,5	0,24	11	**CM-9421R**	C	2	G	161,5

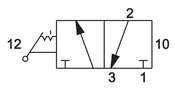
To get 3/2 NO version, supply the valve from port 3
(b) = valves are supplied without operator Pressure 0 ÷10 bar for all part numbers

(a) = see pages **3**_18
Overall dimensions include operator

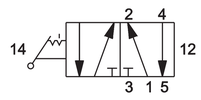
GRANZOW®

G1/4 Manually operated velves

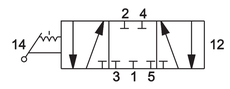
CL-9130



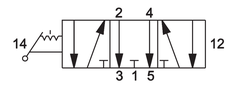
CM-9430



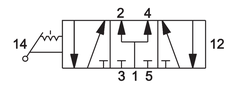
CM-9430E



CM-9435E



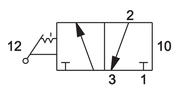
CM-9440E



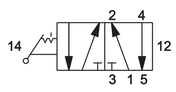
■ RED
CP-915R

■ RED
CP-916R

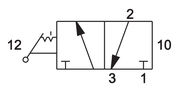
CL-9123



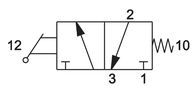
CM-9423



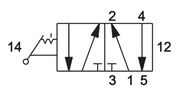
CL-123D



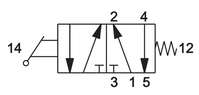
CL-123A



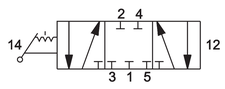
CM-423D



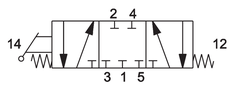
CM-423A



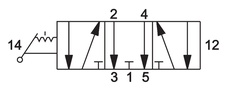
CM-9423E



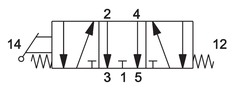
CM-9423F



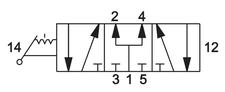
CM-9424E



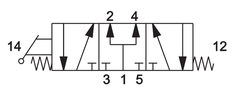
CM-9424F



CM-9425E



CM-9425F



SHORT LEVER

■ YELLOW
CP-912G
■ RED
CP-912R
■ BLACK
CP-912N

LONG LEVER

■ RED
CP-913R

	Return	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.	Composition (a) Control	Body	Return	Tot L. mm
	ROTATING LEVER (SELECTOR UPON REQUEST)									
3/2 NC-NO	rotating lever	1480	8,5	0,25	29	**CL-9130**	D	1	G	113
5/2	rotating lever	1490	8,5	0,27	29	**CM-9430**	D	2	G	130,5
5/3 c.c.	rotating lever	1480	8,5	0,27	29	**CM-9430E**	D	2	G	130,5
5/3 o.c.	rotating lever	1480	8,5	0,26	29	**CM-9435E**	D	2	G	130,5
5/3 p.c.	rotating lever	1480	8,5	0,26	29	**CM-9440E**	D	2	G	130,5
	90° LEVER - 3 POSITION (b)									
3/2 NC-NO	lever	1480	8,5	0,23	2,7÷4,5	**CL-9123**	E	1	H	99,5
5/2	lever	1480	8,5	0,28	2,7÷4,5	**CM-9423**	E	2	H	117,5
3/2 NC-NO	lever	1480	8,5	0,23	3,6÷5,2	**CL-9123D**	E	1	G	110,5
5/2	lever	1480	8,5	0,28	3,6÷5,2	**CM-9423D**	E	2	G	128
3/2 NC-NO	mechanical spring	1480	8,5	0,24	10÷14	**CL-9123A**	E	1	F	110,5
5/2	mechanical spring	1480	8,5	0,28	10÷14	**CM-9423A**	E	2	F	128
5/3 c.c.	lever	1480	8,5	0,28	3,6÷5,2	**CM-9423E**	E	2	G	128
	lever	1480	8,5	0,28	6,7÷11	**CM-9423F**	E	2	G	128
5/3 o.c.	lever	1480	8,5	0,28	3,6÷5,2	**CM-9424E**	E	2	G	128
	lever	1480	8,5	0,28	6,7÷11	**CM-9424F**	E	2	G	128
5/3 p.c.	lever	1480	8,5	0,28	3,6÷5,2	**CM-9425E**	E	2	G	128
	lever	1480	8,5	0,28	6,7÷11	**CM-9425F**	E	2	G	128

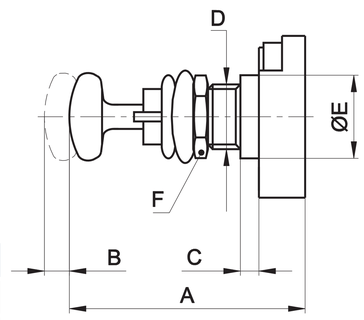
o.c. = open centres **c.c.** = closed centres **p.c.** = pressurized centres
To get 3/2 NO version, supply the valve from port 3
(b) = valves are supplied without operator Pressure 0 ÷10 bar for all part numbers

(a) = see pages **3**_18
Overall dimensions include operator

GRANZOW®

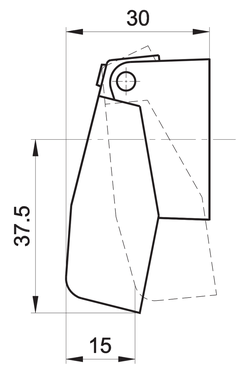
Control

A G1/8 - G1/4 PUSH-PULL

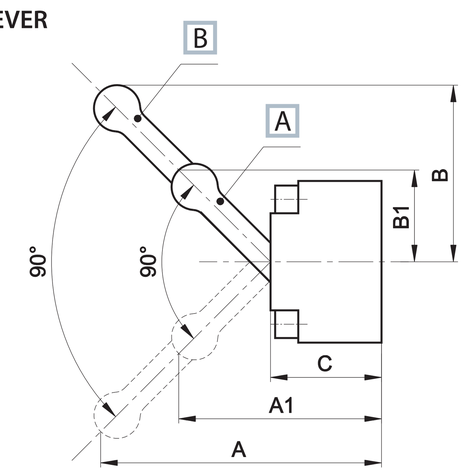


	A	B	C	D	E	F
G1/8	51	5,4	4	M14x1	16	18
G1/4	52,5	6	2,5	M16x1,5	22	22

B G1/8 BUTTON



C G1/8 - G1/4 LONG/SHORT LEVER



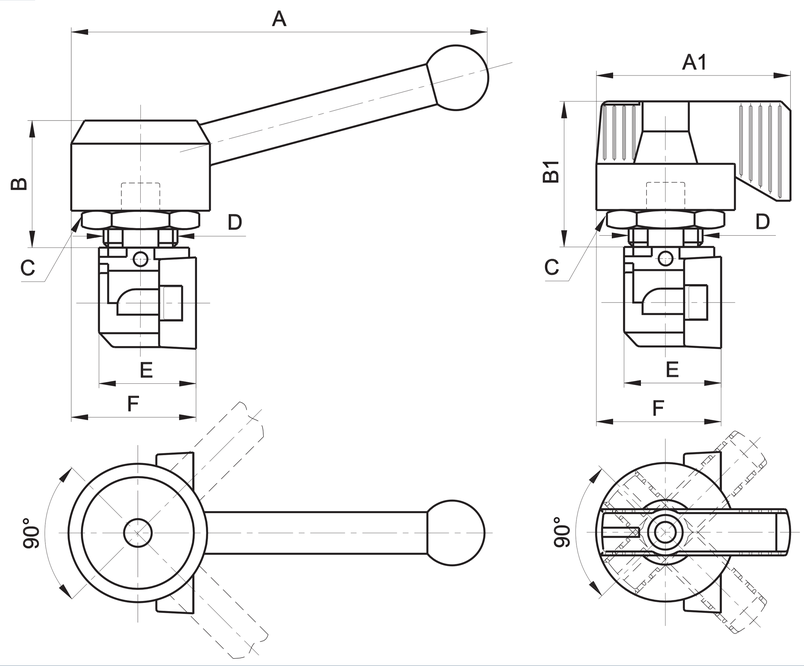
A Short lever
B Long lever

	A	A1	B	B1	C
G1/8	56	42	38,5	24	22,5

	A	B	C
G1/4	58,5	32	26

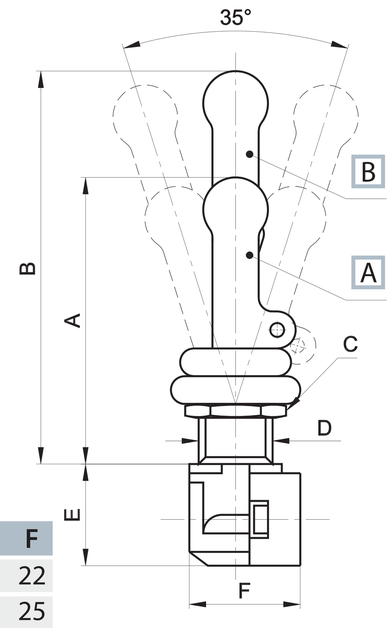
D G1/8 - G1/4 ROTATING LEVER

G1/8 - G1/4 SELECTOR



	A	A1	B	B1	C	D	E	F
G1/8	89	42	32	29	22	M16x1,5	22	27
G1/4	89	42	32	29	24	M18x1,5	25	27,5

E G1/8 - G1/4 90° LEVER

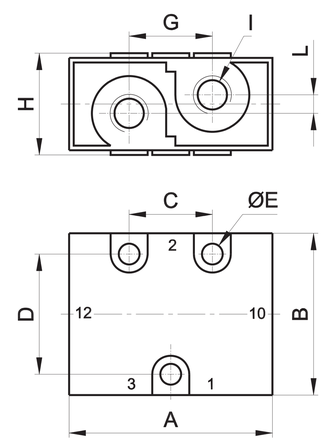


A Short lever
B Long lever

	A	B	C	D	E	F
G1/8	62	85	22	M16x1,5	21,5	22
G1/4	90	110	24	M18x1,5	29	25

Body

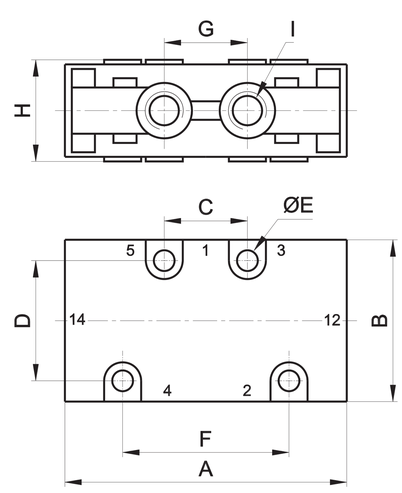
1 3/2 NC-NO G1/8 - G1/4



>> NC	>> NO
1 =Supply port	1 = Exhaust
2 = Use	2 = Use
3 = Exhaust	3 = Supply port
12 = Control	12 = Control
10 = Return	10 = Return

	A	B	C	D	E	G	H	I	L
G1/8	47,5	35	18	26	4,5	18	22	G1/8	4
G1/4	60	48	22	38	5,5	22	26	G1/4	4

2 5/2 - 5/3 G1/8 - G1/4

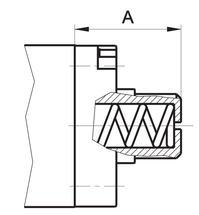


1 =Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

	A	B	C	D	E	F	G	H	I
G1/8	64	35	18	26	4,5	36	18	22	G1/8
G1/4	77,5	48	22	38	5,5	48	22	26	G1/4

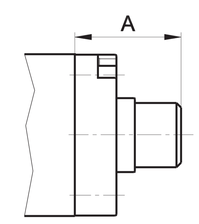
Return

F G1/8 - G1/4 MECHANICAL SPRING



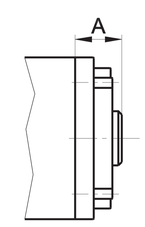
	A
G1/8	22,5
G1/4	25,5

G G1/8 - G1/4 2/3 POSITION



	A
G1/8	22,5
G1/4	25,5

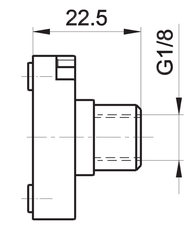
H BOTTOM PLATE WITHOUT SPRING G1/8 - G1/4



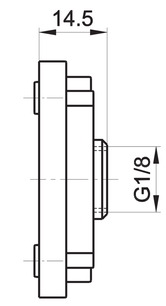
	A
G1/8	10
G1/4	14,5

I G1/8 - G1/4 PNEUMATIC NOT AMPLIFIED

>> G1/8



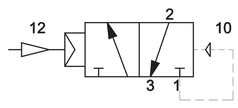
>> G1/4



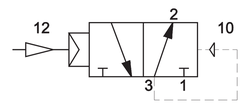
GRANZOW®

G1/8 Valves with pneumatic control

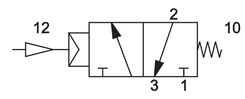
CL-200



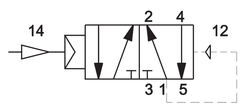
CL-203



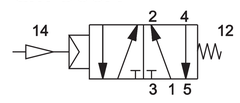
CL-200A



CM-500



CM-500A



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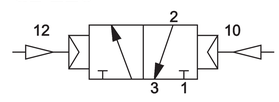

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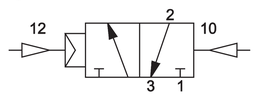
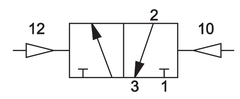
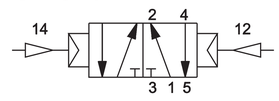


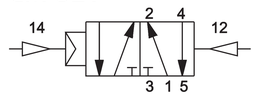
CL-224



CM-520



CM-521



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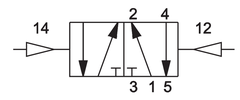
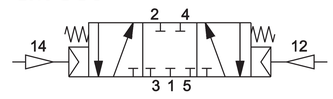


CM-580



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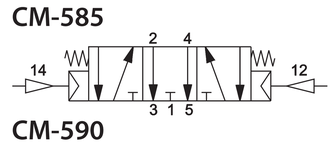
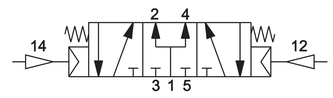


CM-590



	Control	Return	Pressure	Flow rate	Ø	Weight	Times (ms)		Part no.	Composition (a)			Tot L.
			bar	(Nl/min)	mm	Kg	En.	De-en.		Control	Body	Return	mm
	SINGLE IMPULSE												
3/2 NC	pneumatic amplified	pneumatic spring	2,3÷10	890	6,5	0,20	11	14	**CL-200**	B	1	E	82,5
3/2 NO	pneumatic amplified	pneumatic spring	2,3÷10	890	6,5	0,20	11	14	**CL-203**	B	1	E	82,5
3/2 NC-NO	pneumatic amplified	mechanical spring	2,5÷10	890	6,5	0,21	9	17	**CL-200A**	B	1	D	95
5/2	pneumatic amplified	pneumatic spring	2,5÷10	890	6,5	0,20	10	15	**CM-500**	B	2	E	99
	pneumatic amplified	mechanical spring	3÷10	890	6,5	0,19	10	18	**CM-500A**	B	2	D	111,5
	DOUBLE IMPULSE												
3/2 NC-NO	pneumatic amplified	pneumatic amplified	1÷10	890	6,5	0,16	6	6	**CL-220**	B	1	F	97,5
	pneumatic amplified	pneumatic not amplified	1,7÷10	890	6,5	0,15	6	8	**CL-221**	B	1	G	95
	pneumatic non amplified	pneumatic not amplified	1,7÷10	890	6,5	0,14	8	8	**CL-224**	C	1	G	92,5
5/2	pneumatic amplified	pneumatic amplified	1,2÷10	890	6,5	0,18	7	7	**CM-520**	B	2	F	114
	pneumatic amplified	pneumatic not amplified	2÷10	890	6,5	0,19	7	9	**CM-521**	B	2	G	111,5
	pneumatic non amplified	pneumatic not amplified	2÷10	890	6,5	0,20	9	9	**CM-524**	C	2	G	109
5/3 c.c.	pneumatic amplified	pneumatic amplified	2,5÷10	890	6,5	0,21	8	12	**CM-580**	B	2	F	114
5/3 o.c.	pneumatic amplified	pneumatic amplified	2,5÷10	890	6,5	0,21	8	12	**CM-585**	B	2	F	114
5/3 p.c.	pneumatic amplified	pneumatic amplified	2,5÷10	890	6,5	0,21	8	12	**CM-590**	B	2	F	114

o.c. = open centres **c.c.** = closed centres **p.c.** = pressurized centres

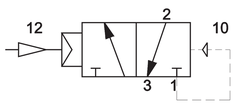
(a) = see page **3**_23

To get 3/2 NO version, supply the valve from port 3

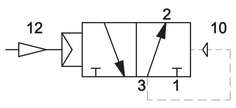
GRANZOW®

G1/4 Valves with pneumatic control

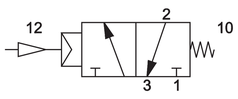
CL-9200



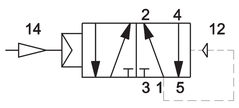
CL-903



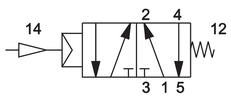
CL-9200A



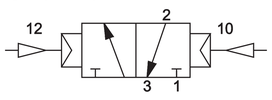
CM-9500



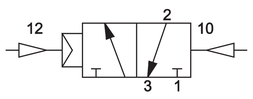
CM-9500A



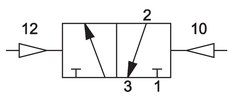
CL-9220



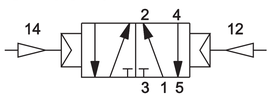
CL-9221



CL-9224



CM-9520



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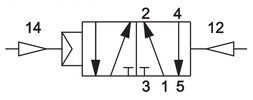
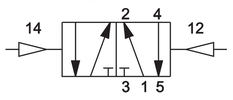
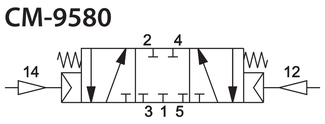


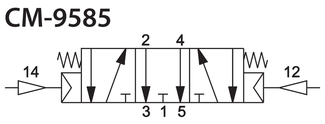
CM-9524



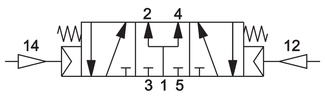
CM-9580



CM-9585



CM-9590



	Control	Return	Pressure	Flow rate	Ø	Weight	Times (ms)		Part no.	Composition (a)			Tot L.
			bar	(Nl/min)	mm	Kg	En.	De-en.		Control	Body	Return	mm
	SINGLE IMPULSE												
3/2 NC	pneumatic amplified	pneumatic spring	2÷10	1480	8,5	0,23	13	16	**CL-9200**	B	1	E	103
3/2 NO	pneumatic amplified	pneumatic spring	2÷10	1480	8,5	0,23	13	16	**CL-9203**	B	1	E	103
3/2 NC-NO	pneumatic amplified	mechanical spring	2÷10	1480	8,5	0,24	10	19	**CL-9200A**	B	1	D	114
5/2	pneumatic amplified	pneumatic spring	2÷10	1480	8,5	0,26	13	16	**CM-9500**	B	2	E	120,5
	pneumatic amplified	mechanical spring	2÷10	1480	8,5	0,17	11	20	**CM-9500A**	B	2	D	131,5
	DOUBLE												
3/2 NC-NO	pneumatic amplified	pneumatic amplified	1÷10	1480	8,5	0,21	8	8	**CL-9220**	B	1	F	117
	pneumatic amplified	pneumatic not amplified	1,5÷10	1480	8,5	0,22	8	10	**CL-9221**	B	1	G	103
	pneumatic not amplified	pneumatic not amplified	1,5÷10	1480	8,5	0,24	10	10	**CL-9224**	C	1	G	89
5/2	pneumatic amplified	pneumatic amplified	1,5÷10	1480	8,5	0,24	9	9	**CM-9520**	B	2	F	134,5
	pneumatic amplified	pneumatic not amplified	1,8÷10	1480	8,5	0,25	9	10	**CM-9521**	B	2	G	120,5
	pneumatic not amplified	pneumatic not amplified	1,8÷10	1480	8,5	0,27	10	10	**CM-9524**	C	2	G	198,5
5/3 c.c.	pneumatic amplified	pneumatic amplified	2,8÷10	1480	8,5	0,30	10	13	**CM-9580**	B	2	F	134,5
5/3 o.c.	pneumatic amplified	pneumatic amplified	2,8÷10	1480	8,5	0,30	10	13	**CM-9585**	B	2	F	134,5
5/3 p.c.	pneumatic amplified	pneumatic amplified	1,8÷10	1480	8,5	0,30	10	13	**CM-9590**	B	2	F	134,5

o.c. = open centres **c.c.** = closed centres **p.c.** = pressurized centres

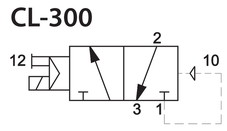
(a) = see page **3**_23

To get 3/2 NO version, supply the valve from port 3

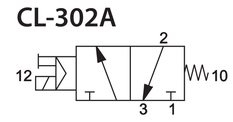
GRANZOW®

G1/8 Valves with electric control

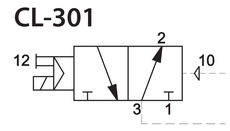
CL-300



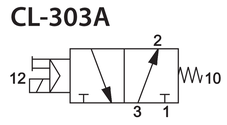
CL-302A



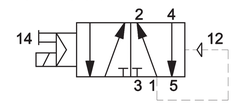
CL-301



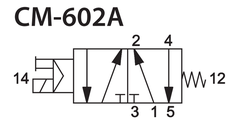
CL-303A



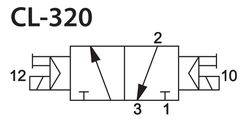
CM-600



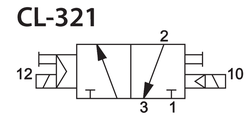
CM-602A



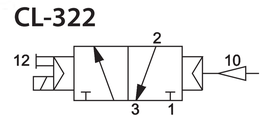
CL-320



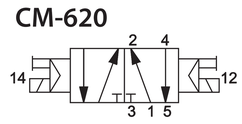
CL-321



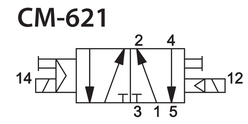
CL-322



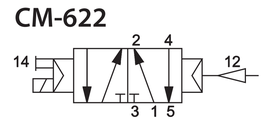
CM-620



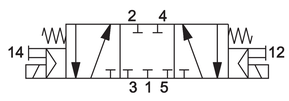
CM-621



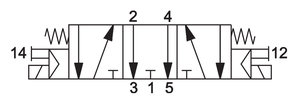
CM-622



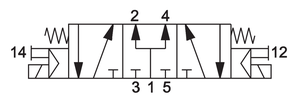
CM-680



CM-685



CM-690



- **Electropilots are supplied without coil, connector and locking ring**
- For technical details about coils see section **"Accessories > Coils"**

	Control	Return	Pressure bar	Flow rate (Nl/min)	Ø mm	Weight Kg	Times (ms) En.	Times (ms) De-en.	Part no.	Composition (a) Control	Composition (a) Body	Composition (a) Return	Tot L. mm
	SINGLE IMPULSE												
3/2 NC	electrical amplified	pneumatic spring	2,3÷10	890	6,5	0,20	23	19	**CL-300**	A	1	E	140,5
	electrical amplified	mechanical spring	2,5÷10	890	6,5	0,21	20	24	**CL-302A**	A	1	D	153
3/2 NO	electrical amplified	pneumatic spring	2,3÷10	890	6,5	0,20	23	19	**CL-301**	A	1	E	140,5
	electrical amplified	mechanical spring	2,5÷10	890	6,5	0,21	20	24	**CL-303A**	A	1	D	153
5/2	electrical amplified	pneumatic spring	2,5÷10	890	6,5	0,24	24	20	**CM-600**	A	2	E	157
	electrical amplified	mechanical spring	3÷10	890	6,5	0,25	21	25	**CM-602A**	A	2	D	169,5
	DOUBLE IMPULSE												
3/2 NC-NO	electrical amplified	electrical amplified	1÷10	890	6,5	0,24	17	17	**CL-320**	A	1	H	213,5
	electrical amplified	electrical not amplified	1,7÷10	890	6,5	0,24	17	20	**CL-321**	A	1	H	213,5
	electrical amplified	pneumatic amplified	2,5÷10	890	6,5	0,21	20	7	**CL-322**	A	1	F	155,5
5/2	electrical amplified	electrical amplified	1,2÷10	890	6,5	0,28	20	20	**CM-620**	A	2	H	230
	electrical amplified	electrical not amplified	2÷10	890	6,5	0,28	20	23	**CM-621**	A	2	H	230
	electrical amplified	pneumatic amplified	1,2÷10	890	6,5	0,24	20	8	**CM-622**	A	2	F	172
5/3 c.c.	electrical amplified	electrical amplified	2,5÷10	890	6,5	0,21	18	24	**CM-680**	A	2	H	230
5/3 o.c.	electrical amplified	electrical amplified	2,5÷10	890	6,5	0,21	18	24	**CM-685**	A	2	H	230
5/3 p.c.	electrical amplified	electrical amplified	2,5÷10	890	6,5	0,21	18	24	**CM-690**	A	2	H	230

o.c. = open centres **c.c.** = closed centres **p.c.** = pressurized centres

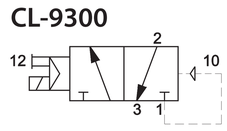
To get 3/2 NO version, supply the valve from port 3

(a) = see page **3**_23

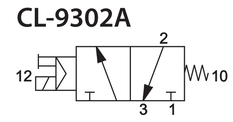
GRANZOW®

G1/4 Valves with electric control

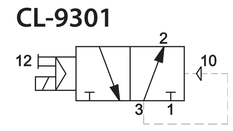
CL-9300



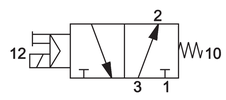
CL-9302A



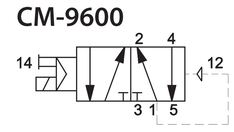
CL-9301



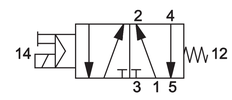
CL-9303A



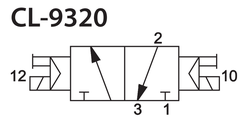
CM-9600



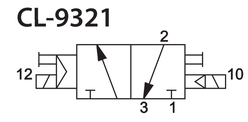
CM-9602A



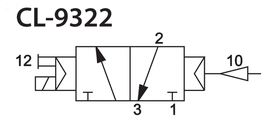
CL-9320



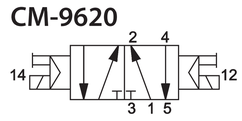
CL-9321



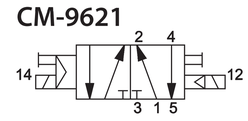
CL-9322



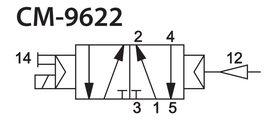
CM-9620



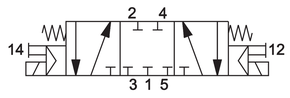
CM-9621



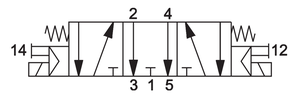
CM-9622



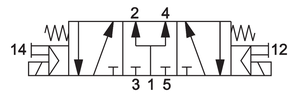
CM-9680



CM-9685



CM-9690



- **Electropilots are supplied without coil, connector and locking ring**
- For technical details about coils see section **"Accessories > Coils"**

	Control	Return	Pressione bar	Portata (Nl/min)	Ø mm	Weight Kg	Times (ms) En.	Times (ms) De-en.	Part no.	Composition (a) Control	Composition (a) Body	Composition (a) Return	Tot L. mm
SINGLE IMPULSE													
3/2 NC	electrical amplified	pneumatic spring	2÷10	1480	8,5	0,27	24	28	**CL-9300**	A	1	E	161
	electrical amplified	mechanical spring	2÷10	1480	8,5	0,28	22	35	**CL-9302A**	A	1	D	172
3/2 NO	electrical amplified	pneumatic spring	2÷10	1480	8,5	0,27	24	28	**CL-9301**	A	1	E	161
	electrical amplified	mechanical spring	2÷10	1480	8,5	0,28	22	35	**CL-9303A**	A	1	D	172
5/2	electrical amplified	pneumatic spring	2÷10	1480	8,5	0,30	25	32	**CM-9600**	A	2	E	178,5
	electrical amplified	mechanical spring	2÷10	1480	8,5	0,31	22	43	**CM-9602A**	A	2	D	189,5
DOUBLE IMPULSE													
3/2 NC_NO	electrical amplified	electrical amplified	2÷10	1480	8,5	0,29	18	18	**CL-9320**	A	1	H	233
	electrical amplified	elettrico not amplified	1,5÷10	1480	8,5	0,30	18	22	**CL-9321**	A	1	H	233
	electrical amplified	pneumatic amplified	2÷10	1480	8,5	0,26	22	8	**CL-9322**	A	1	F	175
5/2	electrical amplified	electrical amplified	1,5÷10	1480	8,5	0,32	22	22	**CM-9620**	A	2	H	250,5
	electrical amplified	elettrico not amplified	1,8÷10	1480	8,5	0,32	22	25	**CM-9621**	A	2	H	250,5
	electrical amplified	pneumatic amplified	1,5÷10	1480	8,5	0,29	22	10	**CM-9622**	A	2	F	192,5
5/3 c.c.	electrical amplified	electrical amplified	2,8÷10	1480	6,5	0,30	20	35	**CM-9680**	A	2	H	250,5
5/3 o.c.	electrical amplified	electrical amplified	2,8÷10	1480	6,5	0,30	20	35	**CM-9685**	A	2	H	250,5
5/3 p.c.	electrical amplified	electrical amplified	2,8÷10	1480	6,5	0,30	20	35	**CM-9690**	A	2	H	250,5

o.c. = open centres **c.c.** = closed centres **p.c.** = pressurized centres

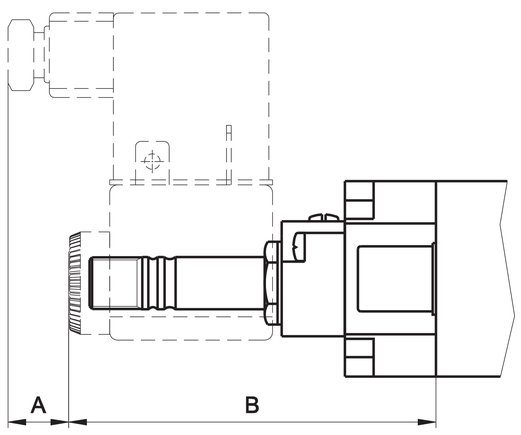
(a) = see pages **3**_23

To get 3/2 NO version, supply the valve from port 3

GRANZOW®

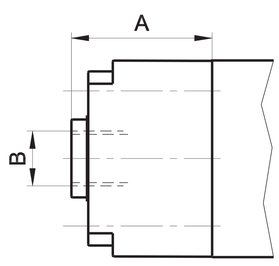
Control	Body	Return

A G1/8 - G1/4 ELECTRIC/AMPLIFIED



	A	B
G1/8	10	77
G1/4	10	80

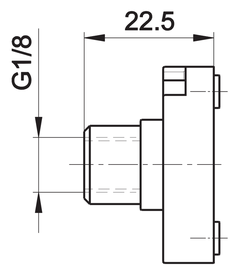
B G1/8 - G1/4 PNEUMATIC AMPLIFIED



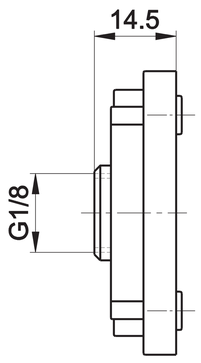
	A	B
G1/8	25	G1/8
G1/4	28,5	G1/8

C G1/8 - G1/4 PNEUMATIC NOT AMPLIFIED

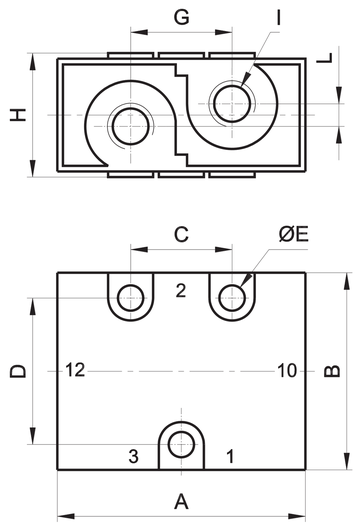
>> G1/8



>> G1/4



1 3/2 NC-NO G1/8 - G1/4

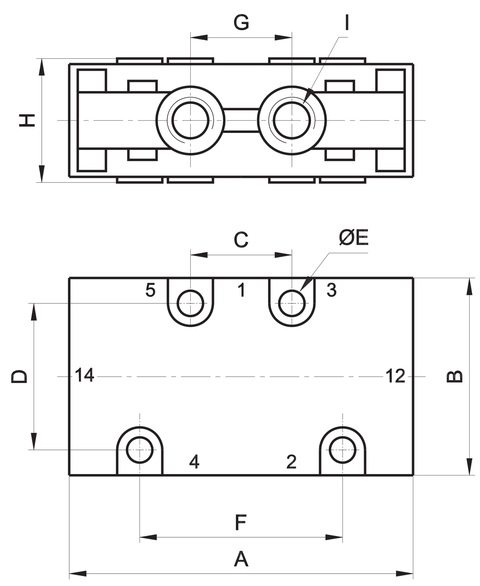


>> NC
1 = Supply port
2 = Use
3 = Exhaust
12 = Control
10 = Return

>> NO
1 = Exhaust
2 = Use
3 = Supply port
12 = Control
10 = Return

	A	B	C	D	E	G	H	I	L
G1/8	47,5	35	18	26	4,5	18	22	G1/8	4
G1/4	60	48	22	38	5,5	22	26	G1/4	4

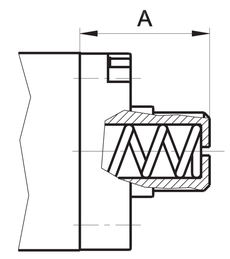
2 5/2 G1/8 - G1/4



1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

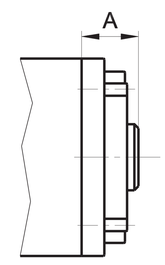
	A	B	C	D	E	F	G	H	I
G1/8	64	35	18	26	4,5	36	18	22	G1/8
G1/4	77,5	48	22	38	5,5	48	22	26	G1/4

D G1/8 - G1/4 MECHANICAL SPRING



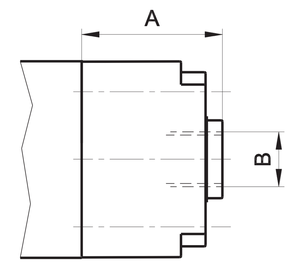
	A
G1/8	22,5
G1/4	25,5

E G1/8 - G1/4 PNEUMATIC SPRING



	A
G1/8	10
G1/4	14,5

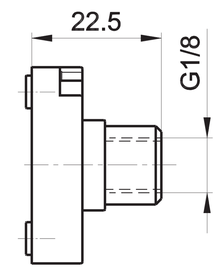
F G1/8 - G1/4 PNEUMATIC AMPLIFIED



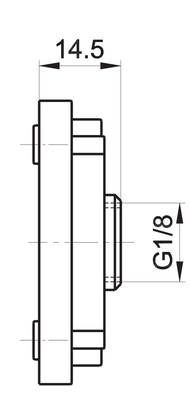
	A	B
G1/8	25	G1/8
G1/4	28,5	G1/8

G G1/8 - G1/4 PNEUMATIC NOT AMPLIFIED

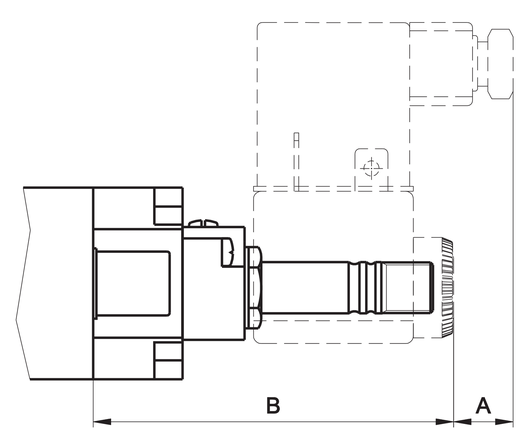
>> G1/8



>> G1/4



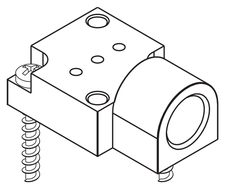
H G1/8 - G1/4 ELECTRIC AMPLIFIED

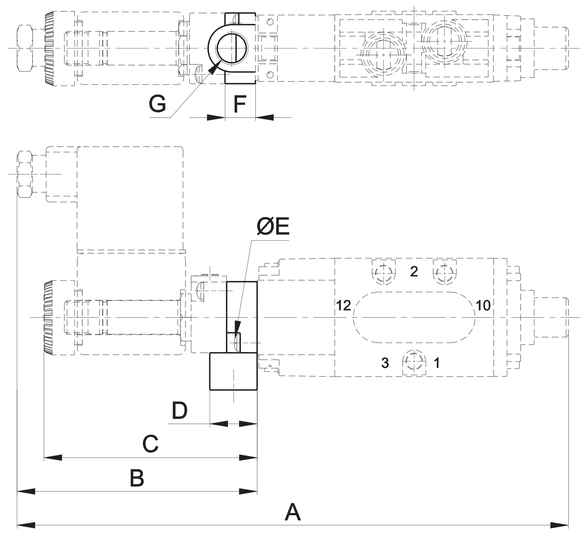


	A	B
G1/8	10	73
G1/4	10	76,5

GRANZOW®

AM-5148

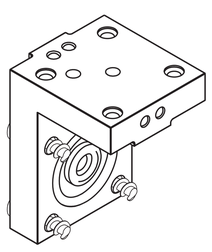


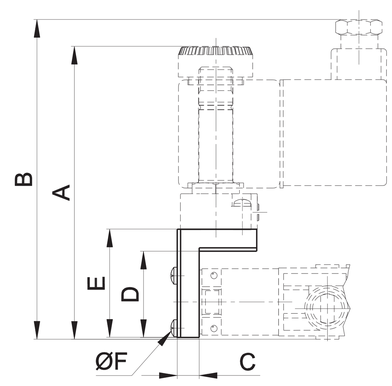


	G1/8	G1/4
A	163	175,5
B	71	71
C	63	63
D	14	14
E	2,9x10	2,9x10
F	9	9
G	G1/8	G1/8

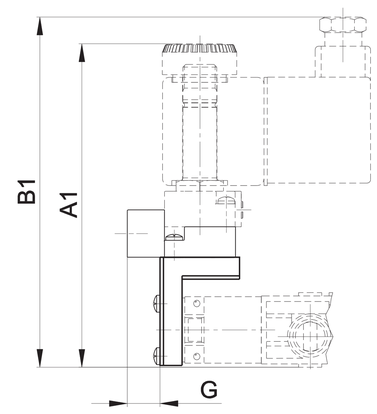
Plate for external servoassistance
weight: 0,03 Kg

AM-5151





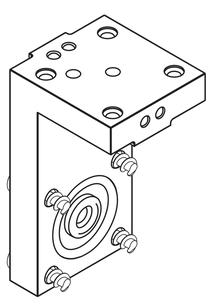
AM-5151 + AM-5148

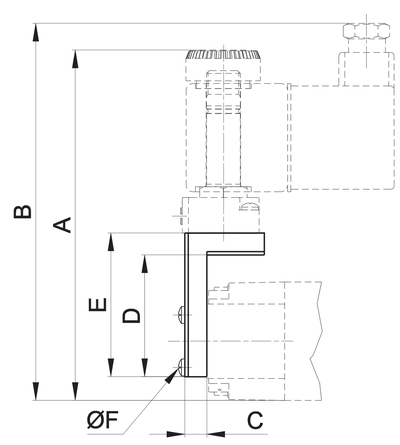


	G1/8	G1/4
A	86,7	88,7
A1	95,7	97,7
B	94,5	96,5
B1	103,5	105,5
C	6,5	6,5
D	25,5	25,5
E	32	32
F	2,9x10	2,9x10
G	9,7	9,7

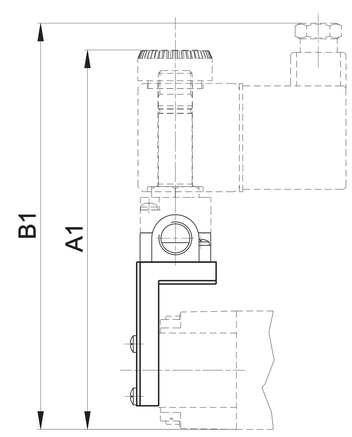
"H" option angle plate
weight: 0,035 Kg

AM-5152





AM-5152 + AM-5148



	G1/8	G1/4
A	103,5	110
A1	112,2	118,7
B	111,5	118
B1	120	126,5
C	6,5	6,5
D	36	36
E	42,5	42,5
F	2,9x10	2,9x10

"P" option angle plate
weight: 0,05 Kg

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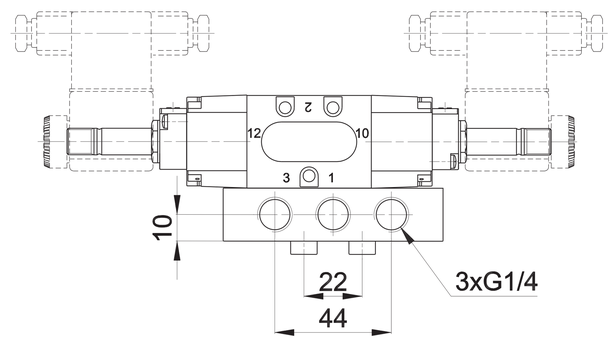
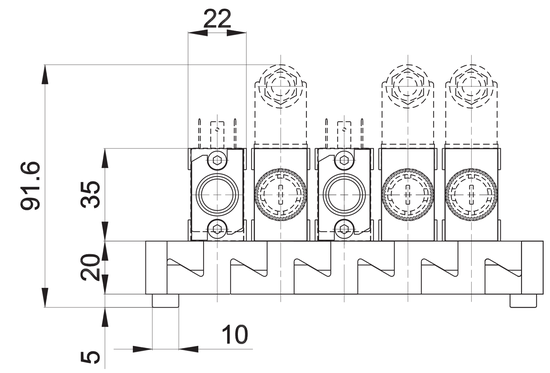
G1/8 Modular subbase "CLIPS" for 3/2 - 5/2 - 5/3 valves



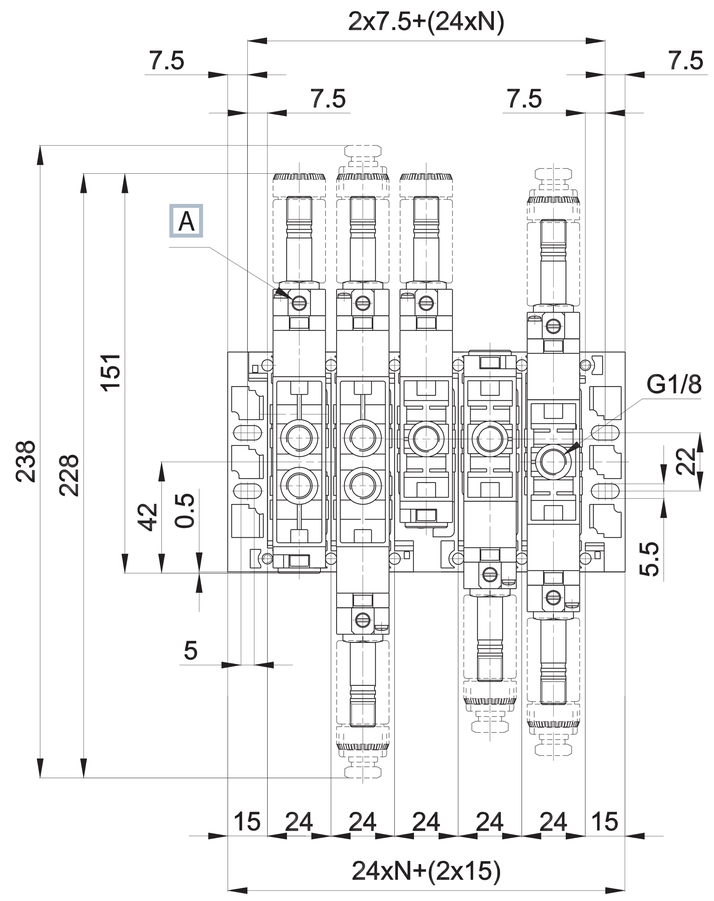


>> **NC**
1 = Supply port
2 = Use
3 = Exhaust
12 = Control
10 = Return

>> **NO**
1 = Exhaust
2 = Use
3 = Supply port
12 = Control
10 = Return

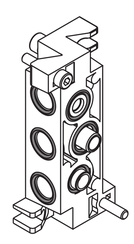
N = Number of valve places

A Manual override



When assembling the manifold put the sub-base on a flat surface and tighten the special screw supplied. This will give perfect alignment.

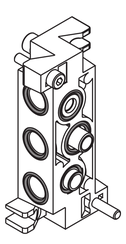
CP-100



modular sub-base with
regulated and conveyed exhausts
connections: G1/8
material: zamak
weight: 0,136 Kg

standard supplied: screws, seals, exhausts regulator and fixing coupling

CP-101

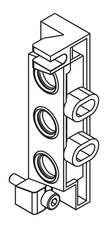


N E W

modular sub-base
without exhaust regulator
connections: G1/8
material: zamak
weight: 0,136 Kg

standard supplied: screws, seals and fixing coupling of valve

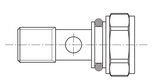
CP-105



inlet plate
side connections
connections: G1/4
material: zamak
weight: 0,086 Kg

standard supplied: screws and seals

CP-110



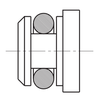
coupling
connections: G1/8
material: brass
weight: 0,028 Kg

CP-111

separatore pressioni differenziali
connessione: G1/8
materiale: alluminio
peso: 0,013 Kg

For each additional pressure, one coupling and two separators must be ordered.

CP-112



cap for 3/2 valve mounting
connections: G1/8
material: alluminium
weight: 0,010 Kg

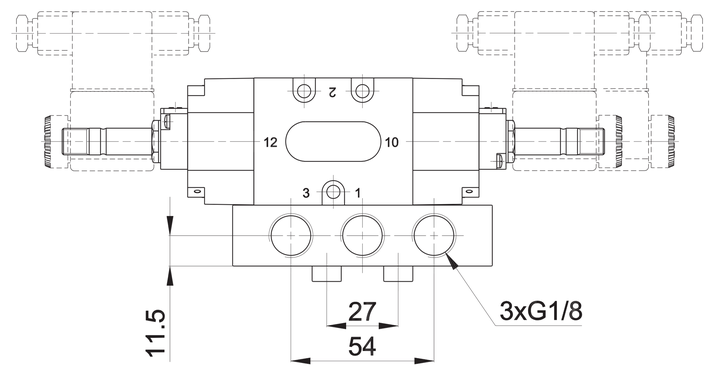
CP-113

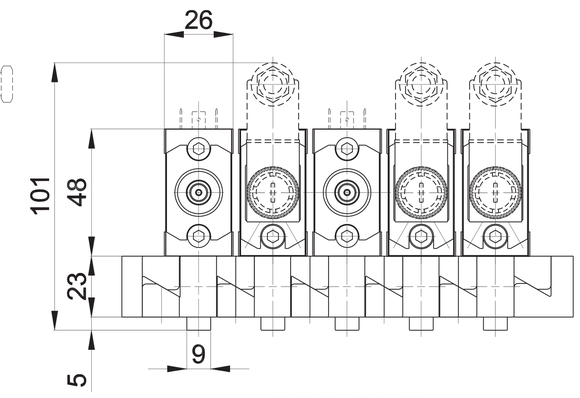
adjustment screw
connections: G1/8
material: brass
weight: 0,006 Kg

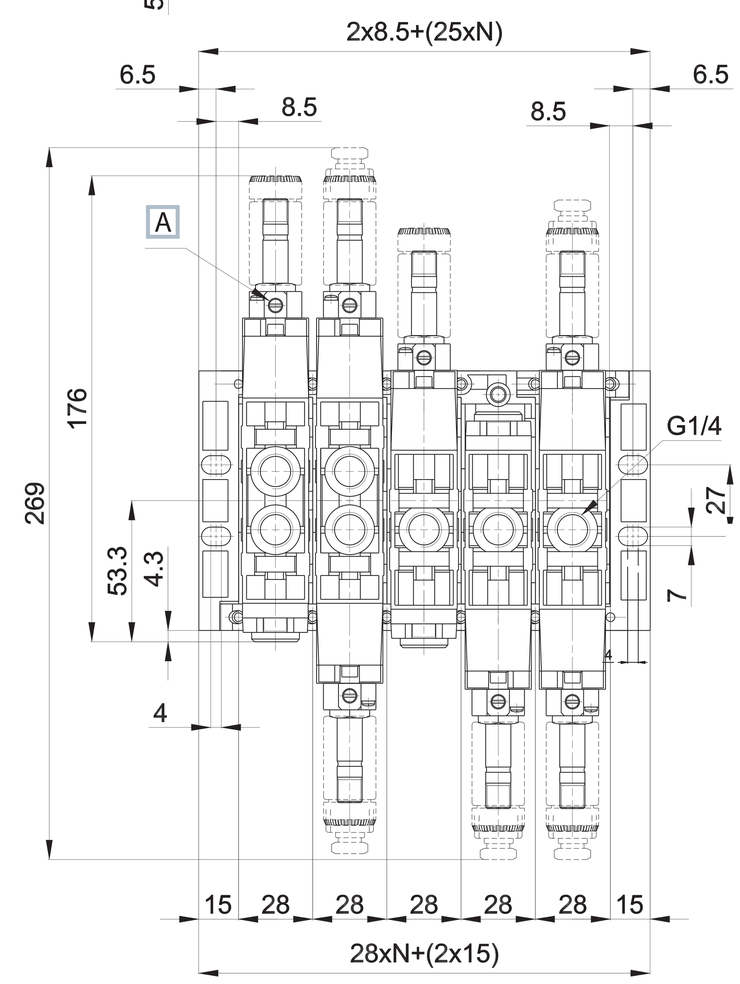
Cap for mounting of 3/2 NC-NO valves on "CLIPS" sub-base to close non-used way. Standard sub-base with adjustment screw. The screw head has a slot for screwdrivers. Upon request: adjustment screw with

GRANZOW®

G1/4 Modular subbase "CLIPS" for 3/2 - 5/2 - 5/3 valves







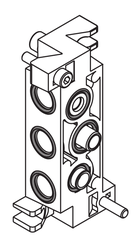
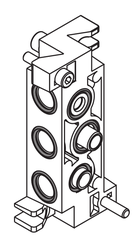
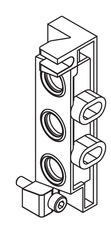
>> **NC**
1 = Supply port
2 = Use
3 = Exhaust
12 = Control
10 = Return

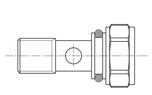
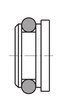
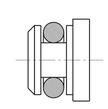
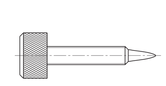
>> **NO**
1 = Exhaust
2 = Use
3 = Supply port
12 = Control
10 = Return

N = Number of valve places

A Manual override

When assembling the manifold put the sub-base on a flat surface and tighten the special screw supplied. This will give perfect alignment.

CP-9100	CP-9101	CP-9105
	 N E W	
modular sub-base regulated and conveyed exhausts connections: G1/4 material: zamak weight: 0,210 Kg	modular sub-base **without exhaust regulator** connections: G1/4 material: zamak weight: 0,210 Kg	inlet plate side connections connections: G3/8 material: zamak weight: 0,120 Kg
standard supplied: screws, seals, exhaust regulator and fixing coupling	standard supplied: screws, seals and fixing coupling of valve	standard supplied: screws and seals

CP-9110	CP-9111	CP-9112	CP-9113
			
coupling connections: G1/4 material: brass weight: 0,028 Kg	separtor of differential pressure connections: G1/4 material: aluminium weight: 0,013 Kg	cap for 3/2 valve mounting connections: G1/4 material: aluminium weight: 0,010 Kg	adjustment screw connections: G1/4 material: ottone weight: 0,006 Kg
For each additional pressure, one coupling and two separators must be ordered.		Cap for mounting of 3/2 NC-NO valves on "CLIPS" sub-base to close non-used way. Standard sub-base with adjustment screw. The screw head has a slot for screwdrivers. Upon request: adjustment screw with	

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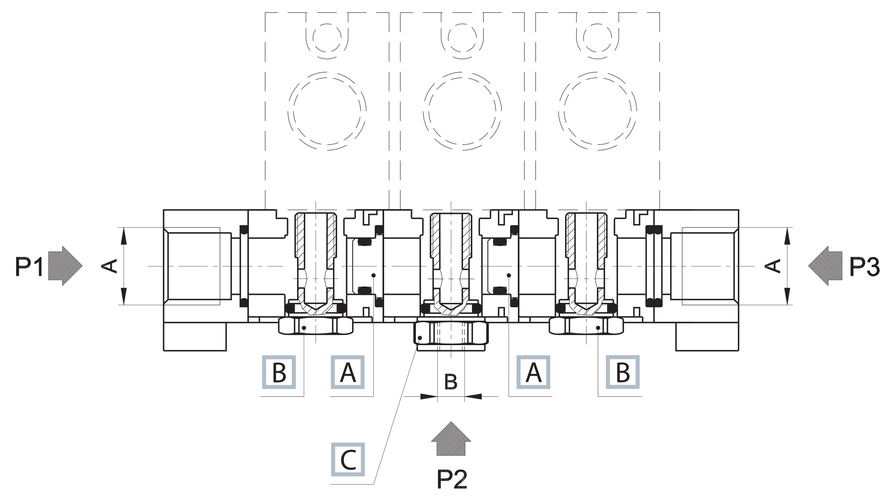
Assembly examples

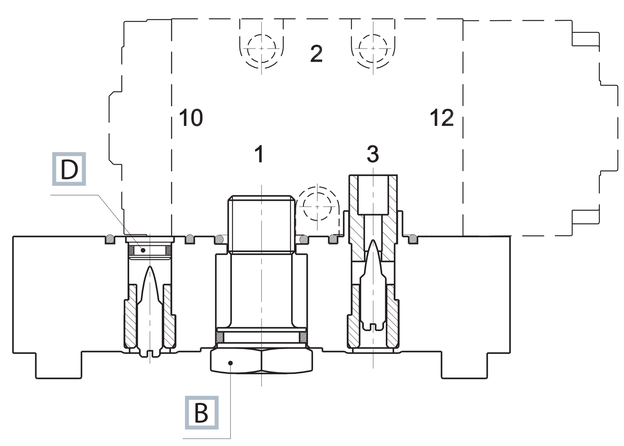
Manifold 3 pressures



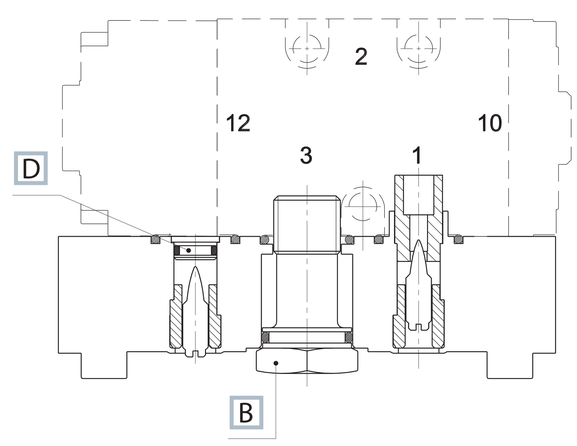
	A	B
G1/8	G1/4	G1/8
G1/4	G3/8	G1/4

A Separator of differential pressures **CP-111/CP-9111**
B Fixing coupling for valve inside the sub-base
C Coupling **CP-110/CP-9110**

Mounting of 3/2 NC valve



Mounting of 3/2 NO valve



B Fixing coupling for valve inside the sub-base
D Cap for valve mounting **CP-112/CP-9112**

>> NC	>> NO
1 = Supply port	1 = Exhaust
2 = Use	2 = Use
3 = Exhaust	3 = Supply port
12 = Control	12 = Control
10 = Return	10 = Return

In case there should be no need to regulate exhaust, plastic insert has to be removed whilst the adjustment screw must remain in its place.