CL-CM

UNIVERSAL Valves G1/8 - G1/4

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

Available ATEX version upon request

II 2Gc IIC T5 II 2Dc T100°C

TECHNICAL CHARACTERISTICS

Ambient temperature	-10 ÷ +50 °C	
Fluid temperature	Max +50 °C	
Fluid	50 µm filtered air, with or without lubrication	
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

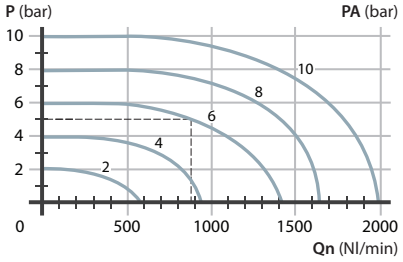
ELECTRIC CHARACTERISTICS

Electropilot	AA
Coil	U1-U3
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	impulse screw - 2 positions

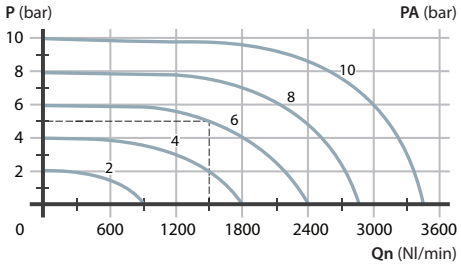
See ATEX Catalogue for types and versions

Flow rate characteristics

>> G1/8

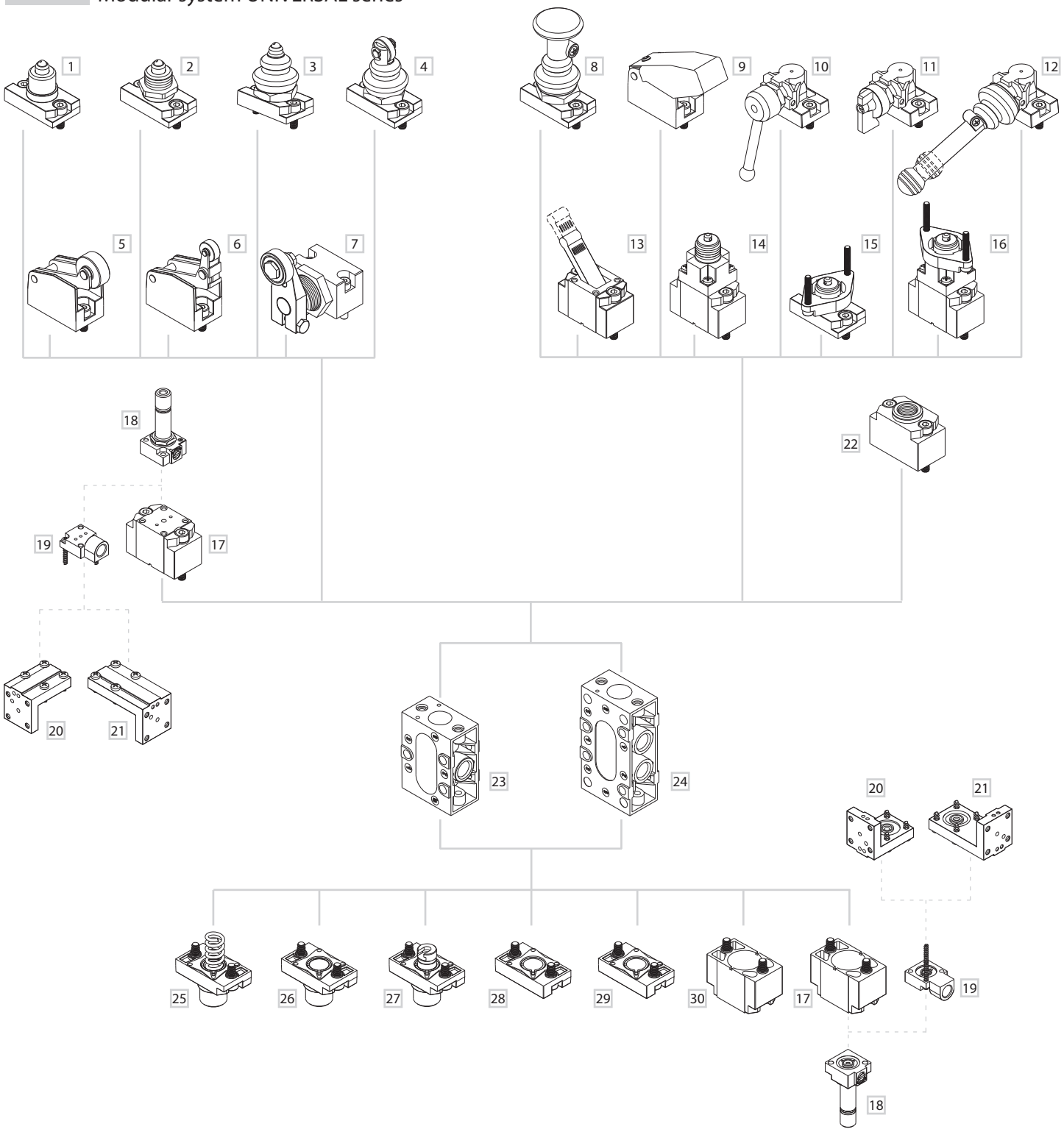


>> G1/4



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

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

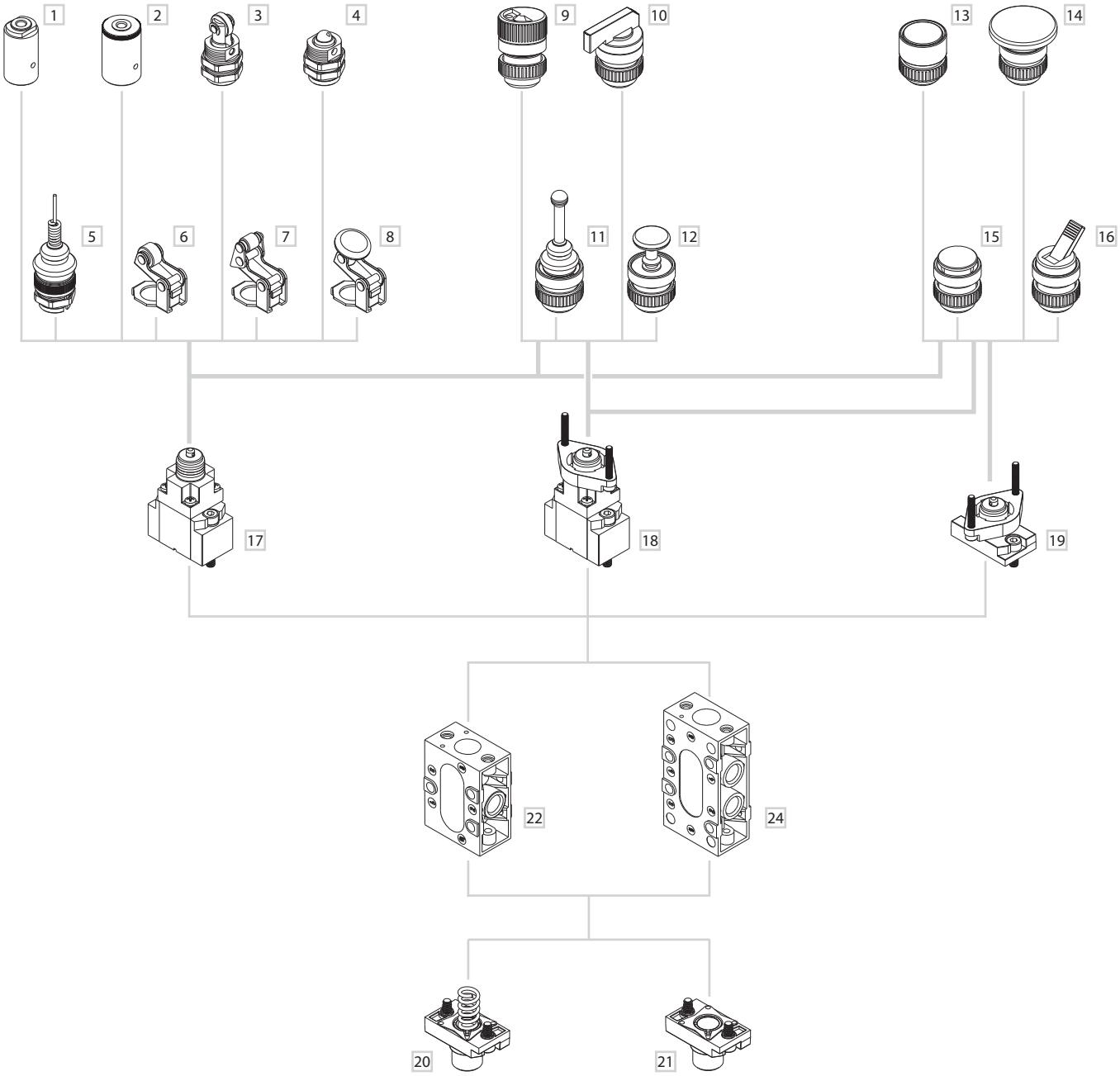
ELECTRIC CONTROL
- 17 Electric amplified
- 18 U1 electropilot
- 19 Plate for external servoassistance
- 20 "H" option angle plate
- 21 "P" option angle plate

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

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

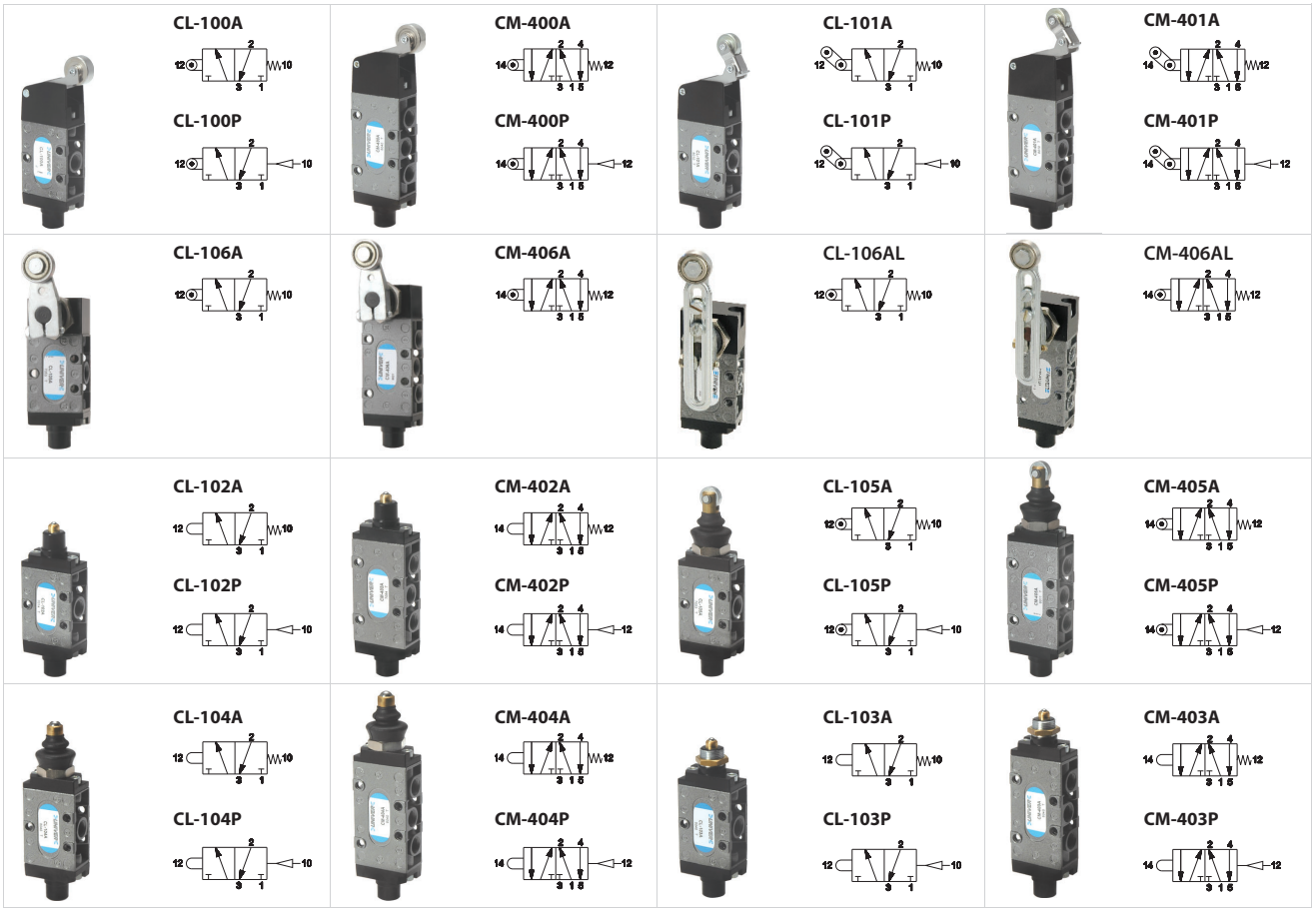
BODY

22 3/2 Body
24 5/2 Body

RETURN

20 Mechanical spring
21 Pneumatic not amplified

G1/8 Valves with direct mechanical operation



3

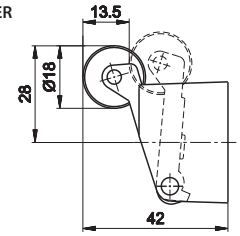
Return	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.	Composition (a) Control	Body	Return	Tot L. mm
ROLLER LEVER									
3/2 NC-NO mechanical spring	890	6,5	0,21	23	**CL-100A**	A	1	I	112
pneumatic not amplified	890	6,5	0,21	6	**CL-100P**	A	1	L	112
5/2 mechanical spring	890	6,5	0,25	23	**CM-400A**	A	2	I	129
pneumatic not amplified	890	6,5	0,25	6	**CM-400P**	A	2	L	129
ONE-WAY ROLLER LEVER									
3/2 NC-NO mechanical spring	890	6,5	0,22	18	**CL-101A**	B	1	I	123
pneumatic not amplified	890	6,5	0,22	6	**CL-101P**	B	1	L	123
5/2 mechanical spring	890	6,5	0,26	18	**CM-401A**	B	2	I	139,5
pneumatic not amplified	890	6,5	0,26	6	**CM-401P**	B	2	L	139,5
TWO-WAY SIDE ROLLER LEVER									
3/2 NC-NO mechanical spring	890	6,5	0,30	25	**CL-106A**	C	1	I	118,5
5/2 mechanical spring	890	6,5	0,34	25	**CM-406A**	C	2	I	135
ADJUSTABLE TWO-WAY SIDE ROLLER LEVER									
3/2 NC-NO mechanical spring	890	6,5	0,30	25	**CL-106AL**	D	1	I	123÷175
5/2 mechanical spring	890	6,5	0,34	25	**CM-406AL**	D	2	I	139,5÷191,5
BALL-PUSH									
3/2 NC-NO mechanical spring	890	6,5	0,19	64	**CL-102A**	E	1	I	97,7
pneumatic not amplified	890	6,5	0,19	25	**CL-102P**	E	1	L	97,7
5/2 mechanical spring	890	6,5	0,23	64	**CM-402A**	E	2	I	114,2
pneumatic not amplified	890	6,5	0,23	25	**CM-402P**	E	2	L	114,2
ROLLER WITH DUST PROTECTION									
3/2 NC-NO mechanical spring	890	6,5	0,19	64	**CL-105A**	F	1	I	117
pneumatic not amplified	890	6,5	0,18	25	**CL-105P**	F	1	L	117
5/2 mechanical spring	890	6,5	0,23	68	**CM-405A**	F	2	I	133,5
pneumatic not amplified	890	6,5	0,22	26	**CM-405P**	F	2	L	133,5
BALL-PUSH WITH DUST PROTECTION									
3/2 NC-NO mechanical spring	890	6,5	0,19	64	**CL-104A**	G	1	I	110
pneumatic not amplified	890	6,5	0,18	25	**CL-104P**	G	1	L	110
5/2 mechanical spring	890	6,5	0,23	68	**CM-404A**	G	2	I	126,5
pneumatic not amplified	890	6,5	0,22	26	**CM-404P**	G	2	L	126,5
BALL-PUSH FOR SCREW PANEL MOUNTING									
3/2 NC-NO mechanical spring	890	6,5	0,19	64	**CL-103A**	H	1	I	97,7
pneumatic not amplified	890	6,5	0,18	25	**CL-103P**	H	1	L	97,7
5/2 mechanical spring	890	6,5	0,23	68	**CM-403A**	H	2	I	114,2
pneumatic not amplified	890	6,5	0,22	25	**CM-403P**	H	2	L	114,2

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

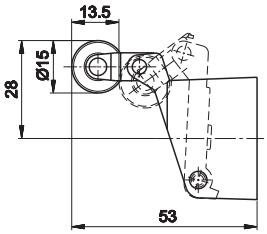
(a) = see page 5 e 6

CONTROL	BODY	RETURN

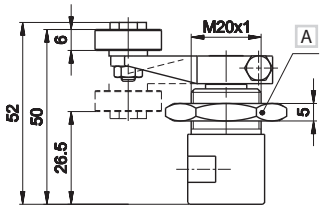
A G1/8 ROLLER LEVER

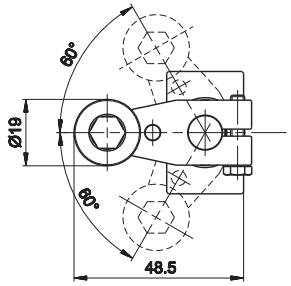


B G1/8 UNI-DIRECTIONAL ROLLER LEVER



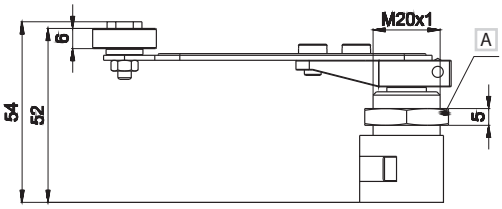
C G1/8 BIDIRECTIONAL SIDE ROLLER LEVER

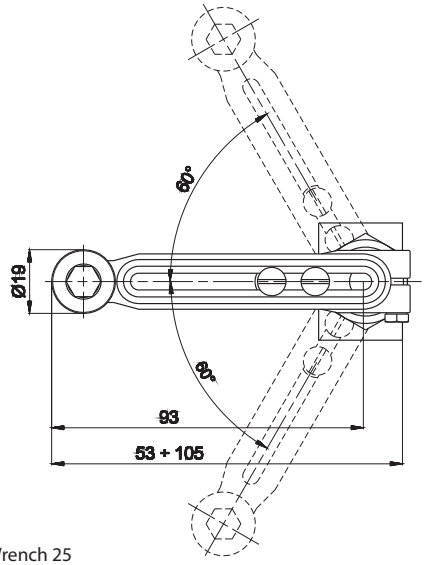




A Wrench 25

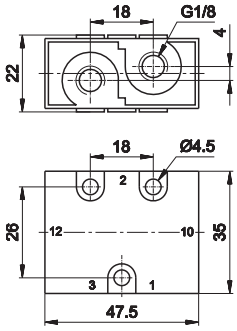
D ADJUSTABLE BIDIRECTIONAL SIDE ROLLER LEVER G1/8





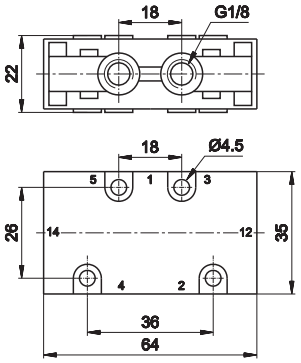
A Wrench 25

1 3/2 NC-NO G1/8



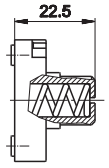
>> NC	>> NO
1 = Supply port	1 = Exhaust
2 = Use	2 = Use
3 = Exhaust	3 = Supply port
12 = Control	12 = Control
10 = Return	10 = Return

2 5/2 G1/8

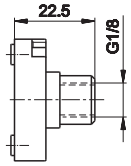


1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

I G1/8 MECHANICAL SPRING

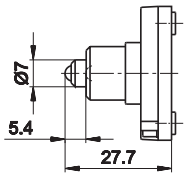


L G1/8 PNEUMATIC NOT AMPLIFIED

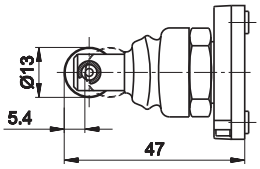


CONTROL	BODY	RETURN

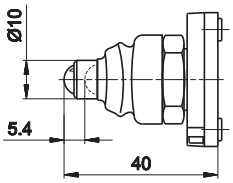
E G1/8 BALL-PUSH



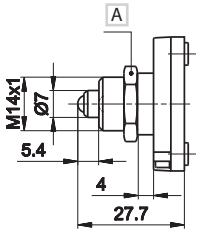
F G1/8 ROLLER WITH DUST PROTECTION



G G1/8 BALL-PUSH WITH DUST PROTECTION

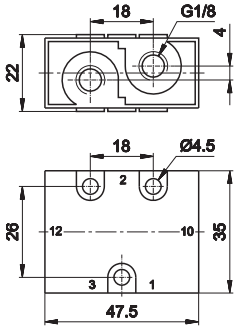


H G1/8 BALL-PUSH FOR SCREW PANEL MOUNTING



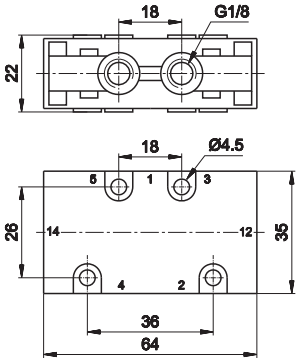
A Wrench18

1 3/2 NC-NO G1/8



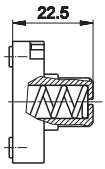
>> NC	>> NO
1 = Supply port	1 = Exhaust
2 = Use	2 = Use
3 = Exhaust	3 = Supply port
12 = Control	12 = Control
10 = Return	10 = Return

2 5/2 G1/8

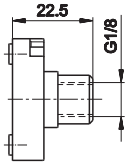


1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

I G1/8 MECHANICAL SPRING



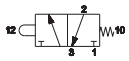
L G1/8 PNEUMATIC NOT AMPLIFIED



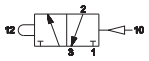
3

G1/4 Valves with direct mechanical operation

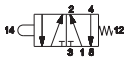
CL-9102A



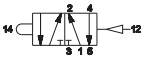
CL-9102P



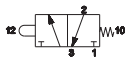
CM-9402A



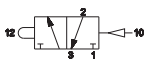
CM-9402P



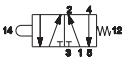
CL-9103A



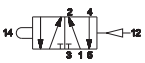
CL-9103P



CM-9403A



CM-9403P



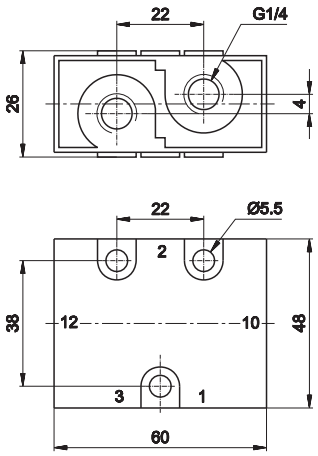
	Return	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.	Composition (a) Control	Body	Return	Tot L. mm
	BALL-PUSH									
3/2 NC-NO	mechanical spring	1480	8,5	0,26	68	**CL-9102A**	D	1	H	117
	pneumatic not amplified	1480	8,5	0,26	26	**CL-9102P**	D	1	I	106
5/2	mechanical spring	1480	8,5	0,28	68	**CM-9402A**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

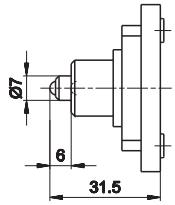
CONTROL	BODY	RETURN

1 3/2 NC-NO G1/4

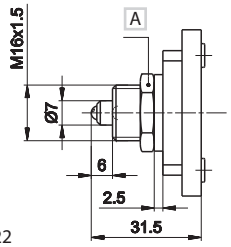


>> NC	>> NO
1 = Supply port	1 = Exhaust
2 = Use	2 = Use
3 = Exhaust	3 = Supply port
12 = Control	12 = Control
10 = Return	10 = Return

D G1/4 BALL-PUSH

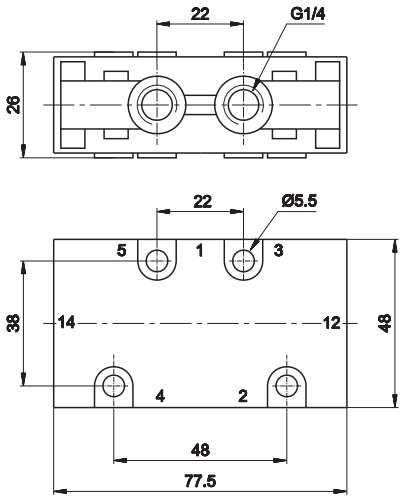


G G1/4 BALL-PUSH FOR SCREW PANEL MOUNTING



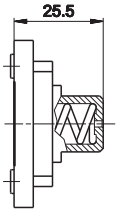
A Wrench 22

2 5/2 G1/4

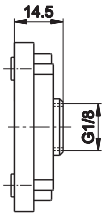


1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

H G1/4 MECHANICAL SPRING

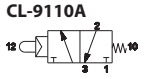


I G1/4 PNEUMATIC SPRING

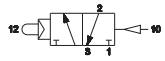


G1/8 - G1/4 Valves with indirect mechanical operator for pneumatic and mechanical actuators

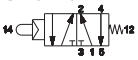
CL-110A
CL-9110A



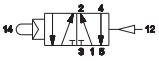
CL-110P
CL-9110P



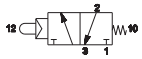
CM-410A
CM-9410A



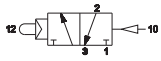
CM-410P
CM-9410P



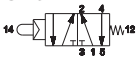
CL-111A
CL-9111A



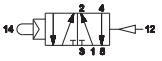
CL-111P
CL-9111B



CM-411A
CM-9411A

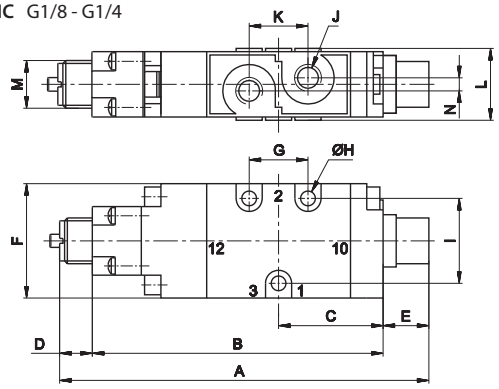


CM-411P
CM-9411P



	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**

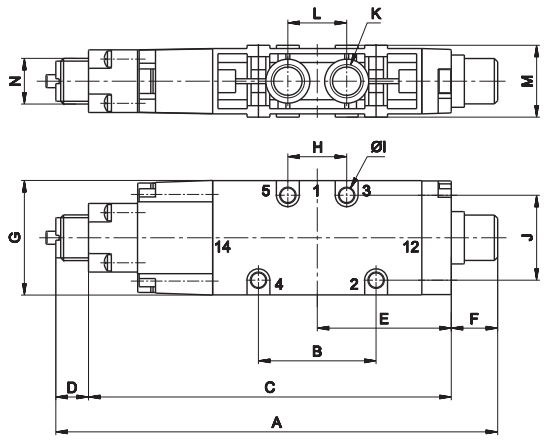
3/2 NC G1/8 - G1/4



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	18	4,5	26	G1/8	18	22	M14x1	4
G1/4	136,5	112	41	10	14,5	48	22	5,5	38	G1/4	22	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

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

PNEUMATIC AND MECHANICAL ACTUATORS

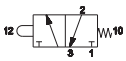
	Pneumatic operator	AI-3550
	Amplified pneumatic operator	AI-3551
	Roller operator 1 position	AI-3560
	Ball-push operator 1 position	AI-3562
	Operator with omni-directional antenna 1 position	AI-3563
	Roller lever operator 1 position	AI-3570
	Articulated roller operator 1 position Complete actuation with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

MANUAL ACTUATORS

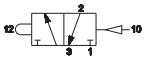
	Recessed button	■BLACK AI-3511 ■RED AI-3512 ■GREEN AI-3513
	Head button	■RED AI-3514 ■BLACK AI-3516 ■RED AI-3514D ■BLACK AI-3516D
	Button	■GREEN AI-3515 ■RED AI-3517 ■BLACK AI-3519
	Accident prevention rotating selector	■BLACK AI-3520 ■BLACK AI-3521
	Rotating lever selector	■BLACK AI-3522 ■BLACK AI-3523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

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

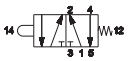
CL-112A



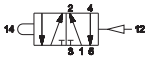
CL-112P



CM-412A



CM-412P

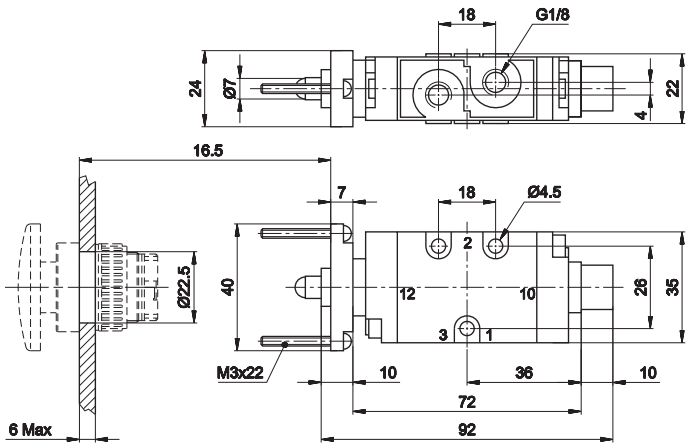


Return	Pressure bar	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.
BALL-PUSH						
3/2 NC-NO mechanical spring	0÷10	890	6,5	0,19	64	**CL-112A**
3/2 NC-NO pneumatic not amplified	0÷10	890	6,5	0,18	25	**CL-112P**
5/2 mechanical spring	0÷10	890	6,5	0,23	64	**CM-412A**
5/2 pneumatic not amplified	0÷10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

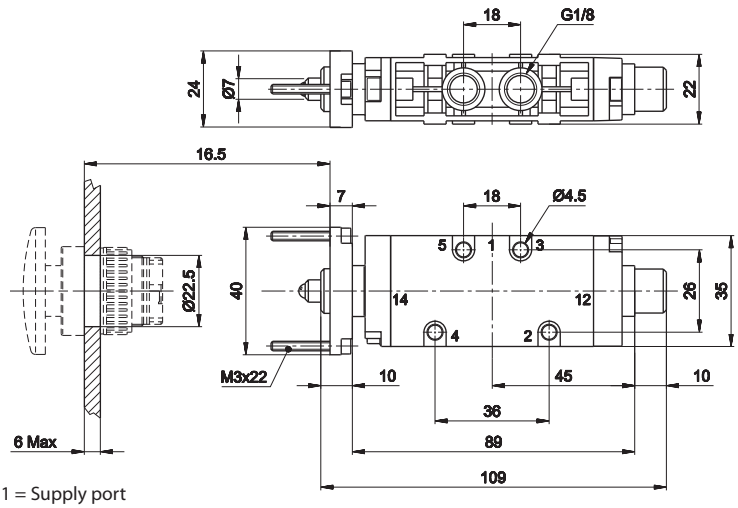
3/2 NC-NO G1/8



>> 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

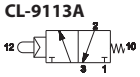


1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

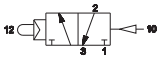
For actuator dimensions see section **"Accessories>Buttons"**

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

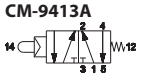
CL-113A
CL-9113A



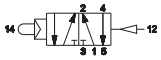
CL-113P
CL-9113P



CM-413A
CM-9413A



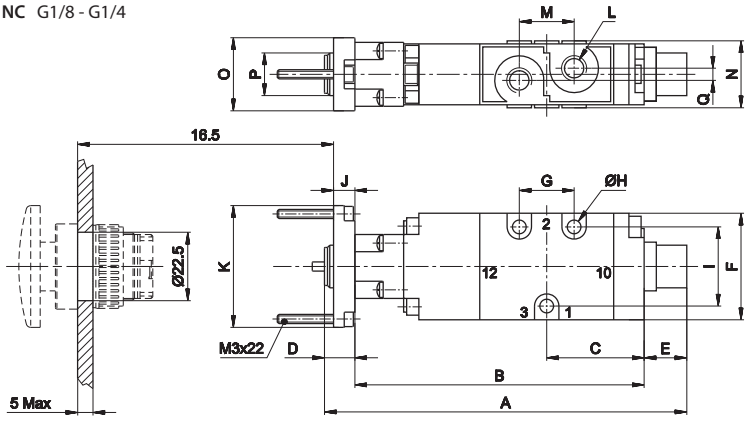
CM-413P
CM-9413P



	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	0,20	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 ■RED ■GREEN	AI-3511Q AI-3512Q AI-3513Q
	Head button	■RED ■BLACK ■RED ■BLACK	AI-3514Q AI-3516Q AI-3514QD AI-3516QD
	Button	■GREEN ■RED ■BLACK	AI-3515Q AI-3517Q AI-3519Q
	Accident prevention rotating selector	■BLACK ■BLACK	AI-3520Q AI-3521Q
	Lever operator	■BLACK	AI-3524Q
	Rotating lever selector	■BLACK ■BLACK	AI-3523Q AI-3522Q
	Omni-directional lever	■BLACK	AI-3525Q
	Push-pull operator	■BLACK	AI-3526Q

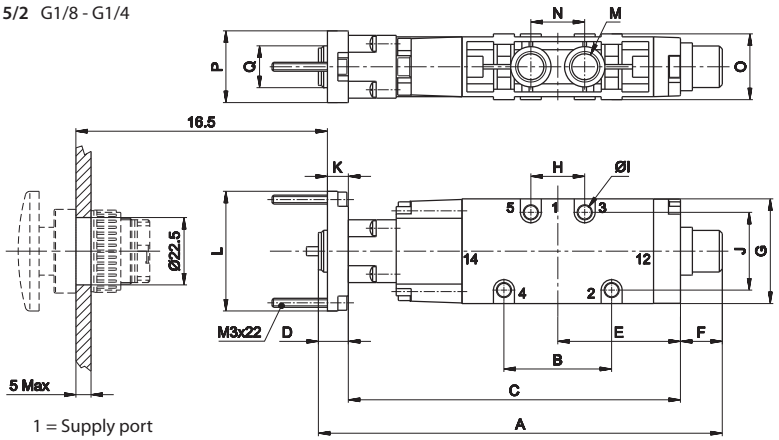
3/2 NC G1/8 - G1/4



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

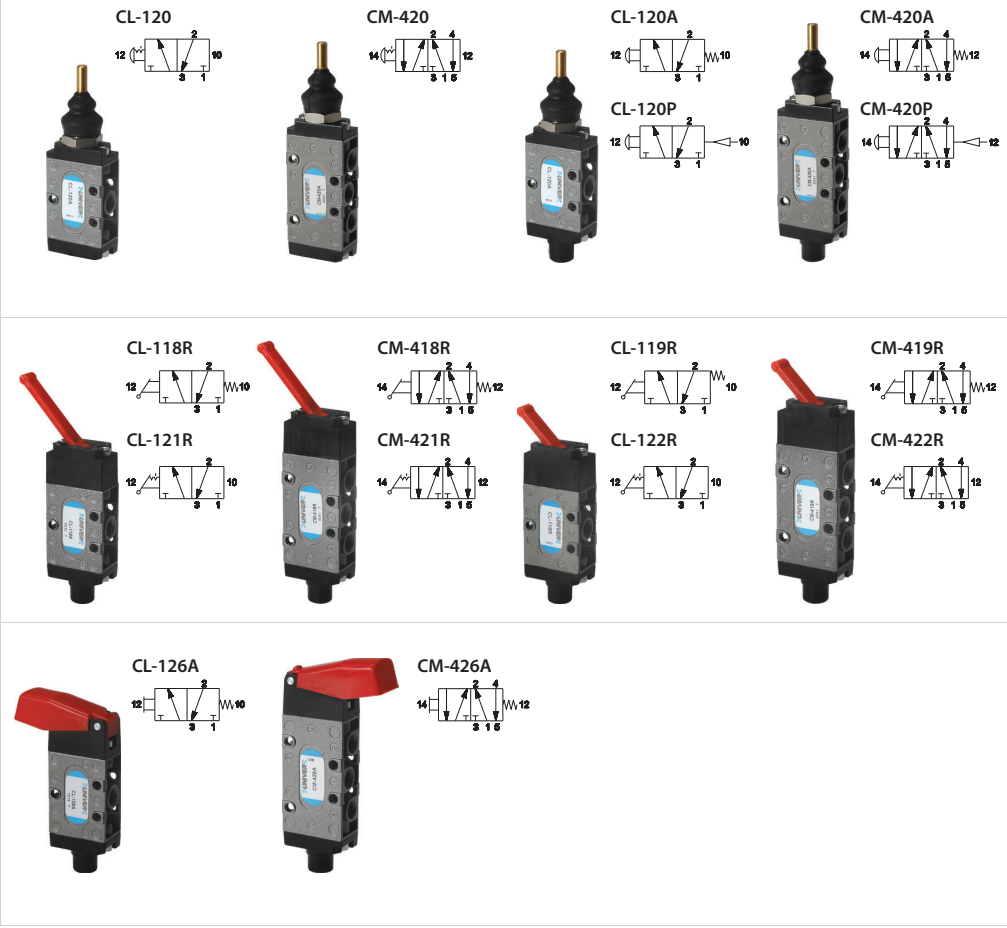


1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

	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"**

G1/8 Manually operated valves



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 page 17
Overall dimensions include operator

G1/8 Manually operated velves


RED **CP-915R**


RED **CP-916R**

SHORT LEVER


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

LONG LEVER


RED **CP-913R**

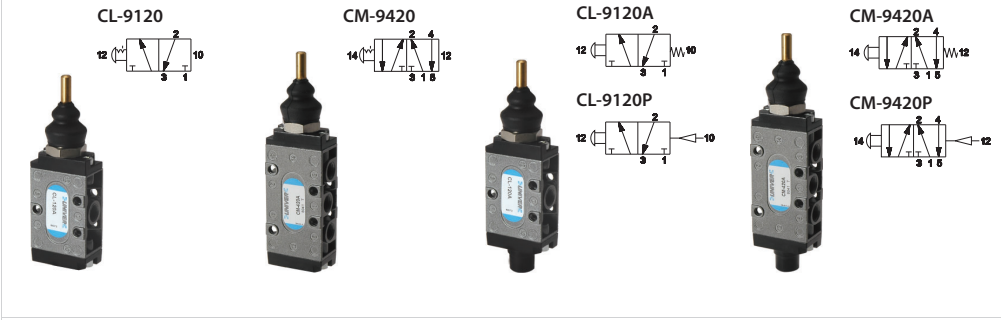
3

Return	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.	Composition (a) Control	Body	Return	Tot L. mm
ROTATING LEVER (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

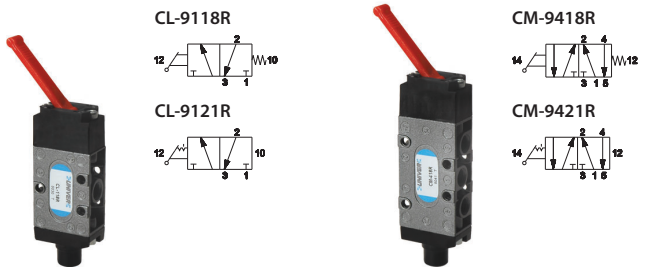
o.c. = open centres **c.c.** = closed centres **p.c.** = pressurized centres
To get 3/2 NO version, supply the valve from port 3
(b) = valves are supplied without operator Pressure 0 ÷10 bar for all part numbers

(a) = see page 17
Overall dimensions include operator

G1/4 Manually operated velves



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



STANDARD LEVER
RED

UPON REQUEST LEVER
YELLOW
BLACK

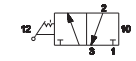
	Return	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.	Composition [a] Control	Body	Return	Tot L. mm
	PUSH-PULL [b]									
3/2 NC-NO	push-pull	1480	8,5	0,26	26	**CL-9120**	A	1	H	127
5/2	push-pull	1480	8,5	0,26	26	**CM-9420**	A	2	H	144,5
3/2 NC-NO	mechanical spring	1480	8,5	0,26	26	**CL-9120A**	A	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

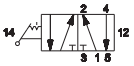
(a) = see page 17
Overall dimensions include operator

G1/4 Manually operated velves

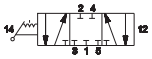
CL-9130



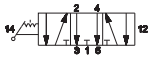
CM-9430



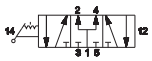
CM-9430E



CM-9435E



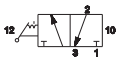
CM-9440E



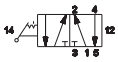
RED
CP-915R

RED
CP-916R

CL-9123



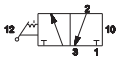
CM-9423



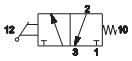
LONG LEVER
standard supplied

RED
CP-913R

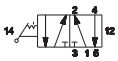
CL-9123D



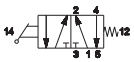
CL-9123A



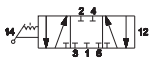
CM-9423D



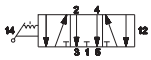
CM-9423A



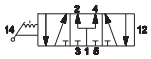
CM-9423E



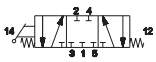
CM-9424E



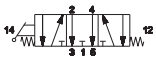
CM-9425E



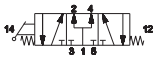
CM-9423F



CM-9424F



CM-9425F



3

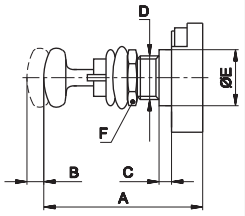
Return	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.	Composition(a) Control	Body	Return	Tot L. mm
ROTATING LEVER (b)									
3/2 NC-NO	rotating lever	1480	8,5	0,25	29	**CL-9130**	D	1	G	113
5/2	rotating lever	1490	8,5	0,27	29	**CM-9430**	D	2	G	130,5
5/3 c.c.	rotating lever	1480	8,5	0,27	29	**CM-9430E**	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									
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 page 17
Overall dimensions include operator

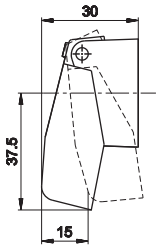
CONTROL

A G1/8 - G1/4 PUSH-PULL

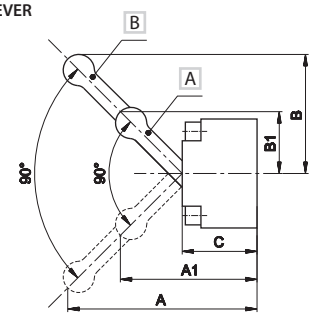


	A	B	C	D	E	F
G1/8	51	5,4	4	M14x1	16	18
G1/4	52,5	6	2,5	M16x1,5	22	22

B G1/8 BUTTON



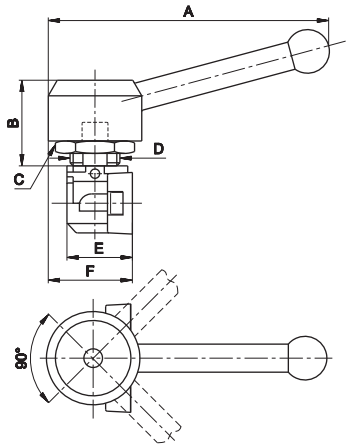
C G1/8 - G1/4 LONG/SHORT LEVER



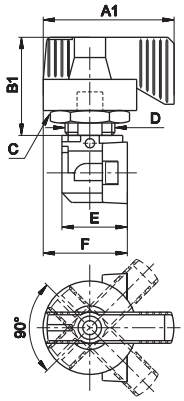
A Short lever
B Long lever

	A	A1	B	B1	C		A	B	C
G1/8	56	42	38,5	24	22,5	G1/4	58,5	32	26

D G1/8 - G1/4 ROTATING LEVER

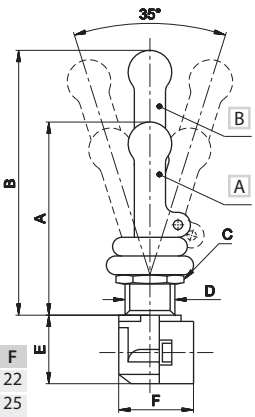


G1/8 - G1/4 SELECTOR



	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

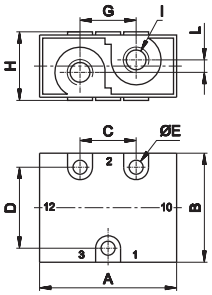


A Short lever
B Long lever

	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

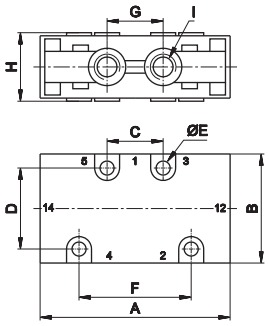
1 3/2 NC-NO G1/8 - G1/4



>> 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

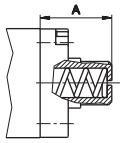


1 =Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

	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

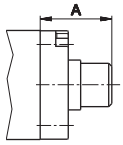
RETURN

F G1/8 - G1/4 MECHANICAL SPRING



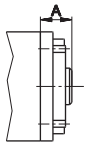
	A
G1/8	22,5
G1/4	25,5

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



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

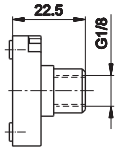
H BOTTOM PLATE WITHOUT SPRING G1/8 - G1/4



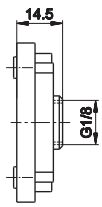
	A
G1/8	10
G1/4	14,5

I G1/8 - G1/4 PNEUMATIC NOT AMPLIFIED

>> G1/8



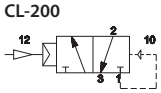
>> G1/4

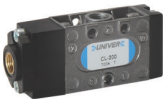


3 VALVES

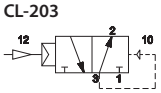
G1/8 Valves with pneumatic control

CL-200

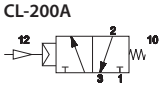




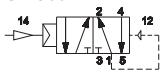
CL-203



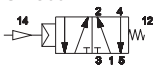
CL-200A



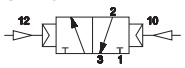
CM-500



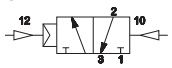
CM-500A



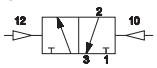
CL-220



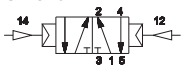
CL-221



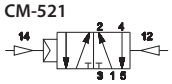
CL-224



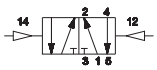
CM-520



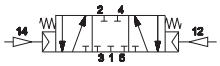
CM-521



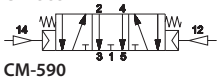
CM-524



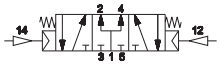
CM-580



CM-585



CM-590



	Control	Return	Pressure bar	Flow rate (Nl/min)	Ø mm	Weight Kg	Resp. Time (ms) En.	Resp. Time (ms) De-en.	Part no.	Composition[a] Control	Composition[a] Body	Composition[a] Return	Tot L. 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												
	pneumatic amplified	pneumatic amplified	1÷10	890	6,5	0,16	6	6	**CL-220**	B	1	F	97,5
3/2 NC-NO	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
	pneumatic amplified	pneumatic amplified	1,2÷10	890	6,5	0,18	7	7	**CM-520**	B	2	F	114
5/2	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

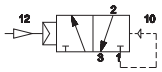
o.c. = open centres **c.c.** = closed centres **p.c.** = pressurized centres

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

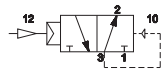
(a) = see page 22

G1/4 Valves with pneumatic control

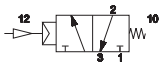
CL-9200



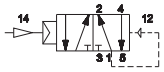
CL-9203



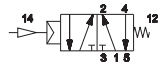
CL-9200A



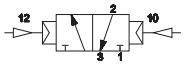
CM-9500



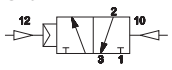
CM-9500A



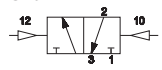
CL-9220



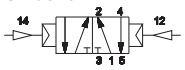
CL-9221



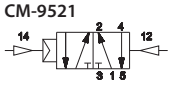
CL-9224



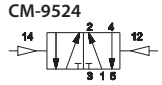
CM-9520



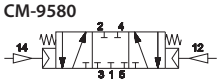
CM-9521



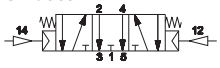
CM-9524



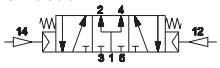
CM-9580



CM-9585



CM-9590



	Control	Return	Pressure bar	Flow rate (Nl/min)	Ø mm	Weight Kg	Resp. Time (ms) En.	Resp. Time (ms) De-en.	Part no.	Composition[a] Control	Composition[a] Body	Composition[a] Return	Tot L. 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												
	pneumatic amplified	pneumatic amplified	1÷10	1480	8,5	0,21	8	8	**CL-9220**	B	1	F	117
3/2 NC-NO	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
	pneumatic amplified	pneumatic amplified	1,5÷10	1480	8,5	0,24	9	9	**CM-9520**	B	2	F	134,5
5/2	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

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

(a) = see page 22

G1/8 Valves with electric control


CL-300


CL-302A


CL-301


CL-303A


CM-600


CM-602A


CL-320


CL-321

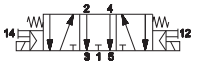

CL-322

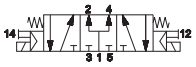

CM-620


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	Resp. Time (ms) En.	Resp. Time (ms) De-en.	Part no.	Composition[a] Control	Composition[a] Body	Composition[a] Return	Tot L. mm
SINGLE IMPULSE												
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
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
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												
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
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
electrical amplified	electrical amplified	2,5÷10	890	6,5	0,21	18	24	**CM-680**	A	2	H	230
electrical amplified	electrical amplified	2,5÷10	890	6,5	0,21	18	24	**CM-685**	A	2	H	230
electrical amplified	electrical amplified	2,5÷10	890	6,5	0,21	18	24	**CM-690**	A	2	H	230

3/2 NC
3/2 NO
5/2
3/2 NC-NO
5/2
5/3 c.c.
5/3 o.c.
5/3 p.c.

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 22

G1/4 Valves with electric control


CL-9300


CL-9302A


CL-9301


CL-9303A


CM-9600


CM-9602A


CL-9320


CL-9321

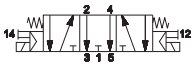

CL-9322

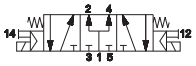

CM-9620


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	Pressure bar	Flow rate (Nl/min)	Ø mm	Weight Kg	Resp. Time (ms) En.	Resp. Time (ms) De-en.	Part no.	Composition(a) Control	Composition(a) Body	Composition(a) Return	Tot L. mm
SINGLE IMPULSE												
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
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
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												
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
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
electrical amplified	electrical amplified	2,8÷10	1480	8,5	0,30	20	35	**CM-9680**	A	2	H	250,5
electrical amplified	electrical amplified	2,8÷10	1480	8,5	0,30	20	35	**CM-9685**	A	2	H	250,5
electrical amplified	electrical amplified	2,8÷10	1480	8,5	0,30	20	35	**CM-9690**	A	2	H	250,5

3/2 NC
3/2 NO
5/2
3/2 NC_NO
5/2
5/3 c.c.
5/3 o.c.
5/3 p.c.

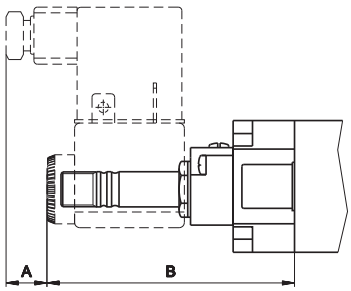
o.c. = open centres **c.c.** = closed centres **p.c.** = pressurized centres

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

(a) = see page 22

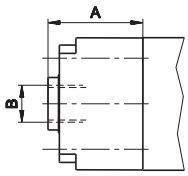
CONTROL	BODY	RETURN

A G1/8 - G1/4 ELECTRIC/AMPLIFIED



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

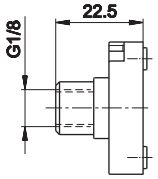
B G1/8 - G1/4 PNEUMATIC AMPLIFIED



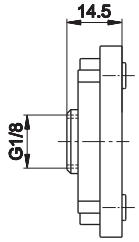
	A	B
G1/8	25	G1/8
G1/4	28,5	G1/8

C G1/8 - G1/4 PNEUMATIC NOT AMPLIFIED

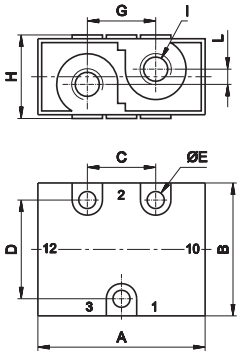
>> G1/8



>> G1/4



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



>> NC

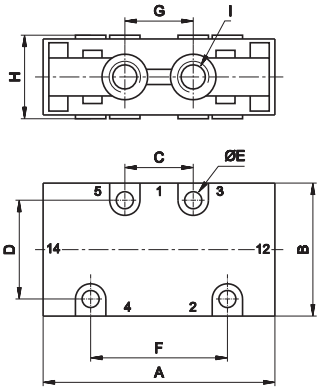
1 = Supply port
2 = Use
3 = Exhaust
12 = Control
10 = Return

>> 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

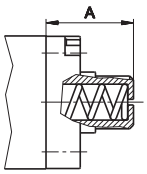
2 5/2 G1/8 - G1/4



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

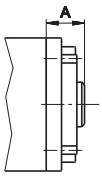
	A	B	C	D	E	F	G	H	I
G1/8	64	35	18	26	4,5	36	18	22	G1/8
G1/4	77,5	48	22	38	5,5	48	22	26	G1/4

D G1/8 - G1/4 MECHANICAL SPRING



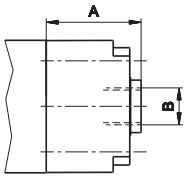
	A
G1/8	22,5
G1/4	25,5

E G1/8 - G1/4 PNEUMATIC SPRING



	A
G1/8	10
G1/4	14,5

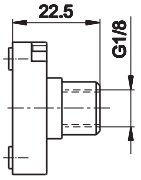
F G1/8 - G1/4 PNEUMATIC AMPLIFIED



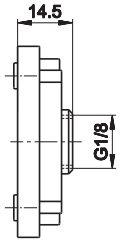
	A	B
G1/8	25	G1/8
G1/4	28,5	G1/8

G G1/8 - G1/4 PNEUMATIC NOT AMPLIFIED

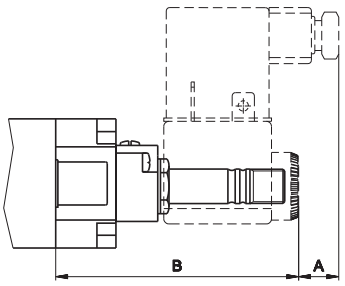
>> G1/8



>> G1/4

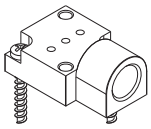


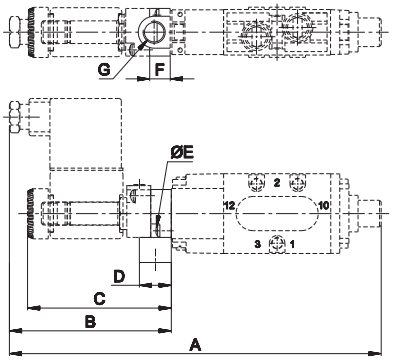
H G1/8 - G1/4 ELECTRIC AMPLIFIED



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

AM-5148

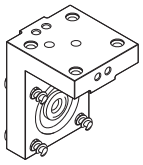




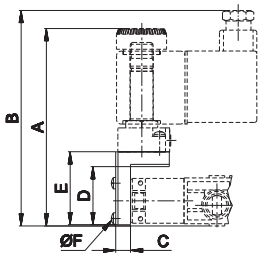
	G1/8	G1/4
A	163	175,5
B	71	71
C	63	63
D	14	14
E	2,9x10	2,9x10
F	9	9
G	G1/8	G1/8

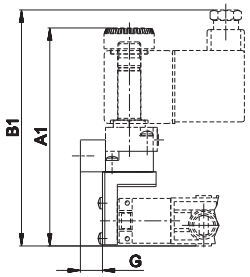
Plate for external servoassistance
weight: 0,03 Kg

AM-5151



AM-5151 + AM-5148

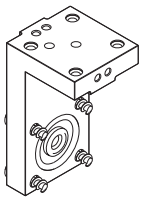




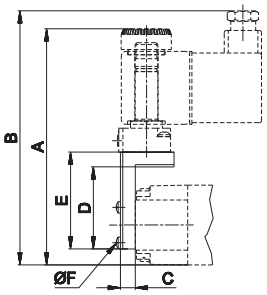
	G1/8	G1/4
A	86,7	88,7
A1	95,7	97,7
B	94,5	96,5
B1	103,5	105,5
C	6,5	6,5
D	25,5	25,5
E	32	32
F	2,9x10	2,9x10
G	9,7	9,7

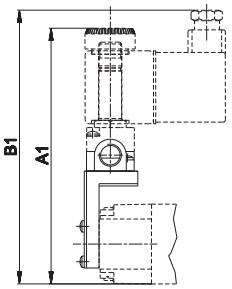
"H" option angle plate
weight: 0,035 Kg

AM-5152



AM-5152 + AM-5148

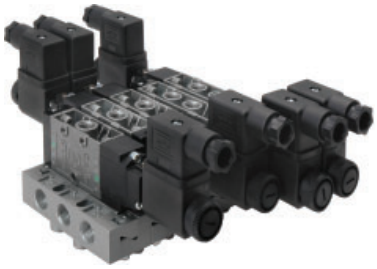


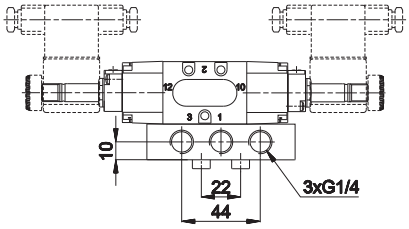


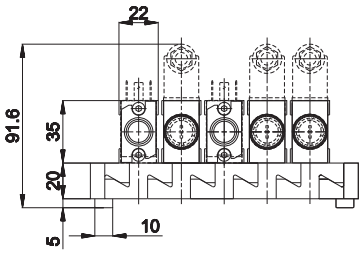
	G1/8	G1/4
A	103,5	110
A1	112,2	118,7
B	111,5	118
B1	120	126,5
C	6,5	6,5
D	36	36
E	42,5	42,5
F	2,9x10	2,9x10

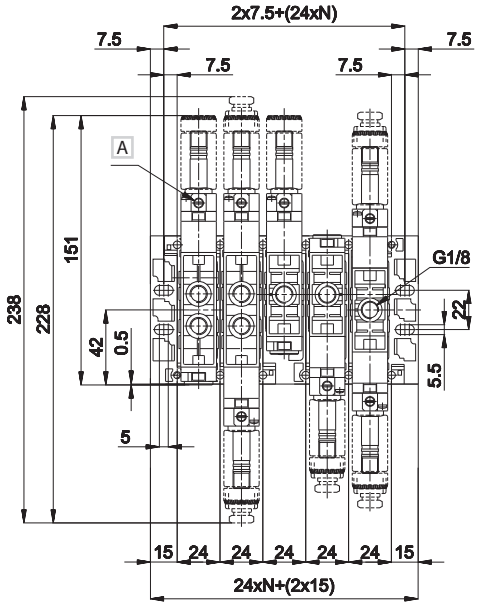
"P" option angle plate
weight: 0,05 Kg

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

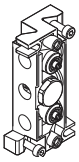
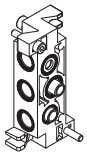
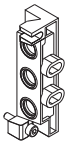
>> **NO**
1 = Exhaust
2 = Use
3 = Supply port
12 = Control
10 = Return

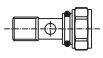
N = Number of valve places

A Manual override

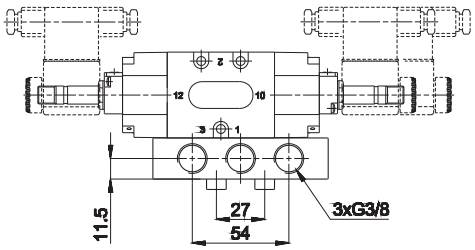
3

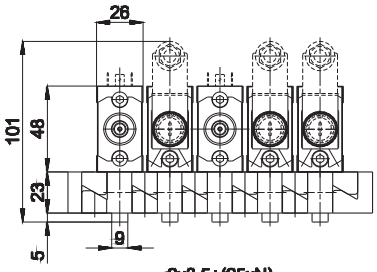
When assembling the manifold put the sub-base on a flat surface and tighten the special screw supplied. This will give perfect alignment.

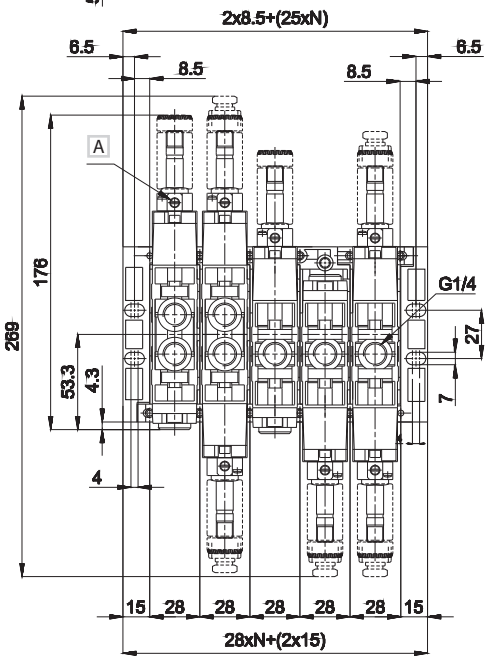
CP-100	**CP-101**	**CP-105**
		
modular sub-base with regulated and conveyed exhausts connections: G1/8 material: zamak weight: 0,136 Kg	modular sub-base without exhaust regulator connections: G1/8 material: zamak weight: 0,136 Kg	inlet plate side connections connections: G1/4 material: zamak weight: 0,086 Kg
standard supplied: screws, seals, exhausts regulator and fixing coupling	standard supplied: screws, seals and fixing coupling of valve	standard supplied: screws and seals

CP-110	**CP-111**	**CP-112**	**CP-113**
			
coupling connections: G1/8 material: brass weight: 0,028 Kg	pressure separator connections: G1/8 material: aluminium weight: 0,013 Kg	cap for 3/2 valve mounting connections: G1/8 material: aluminium weight: 0,010 Kg	adjustment screw connections: G1/8 material: brass 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 crimped head.	

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







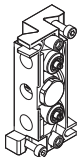
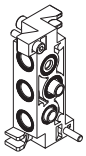
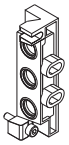
>> **NC**
1 = Supply port
2 = Use
3 = Exhaust
12 = Control
10 = Return

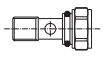
>> **NO**
1 = Exhaust
2 = Use
3 = Supply port
12 = Control
10 = Return

N = Number of valve places

A Manual override

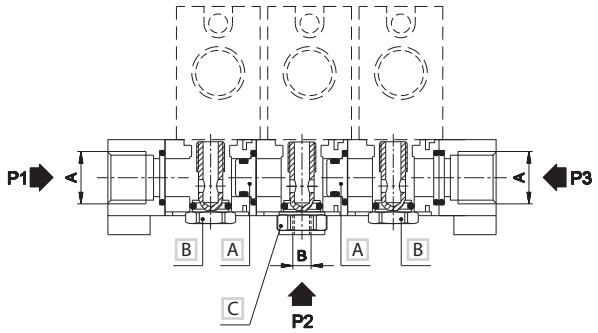
When assembling the manifold put the sub-base on a flat surface and tighten the special screw supplied. This will give perfect alignment.

CP-9100	**CP-9101**	**CP-9105**
		
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	pressure separator 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 crimped head.	

Assembly examples

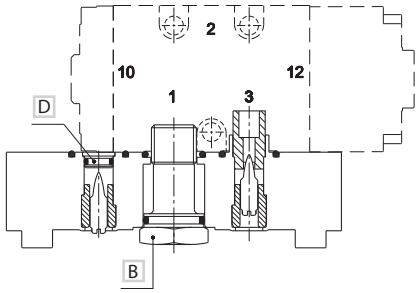
Manifold 3 pressures



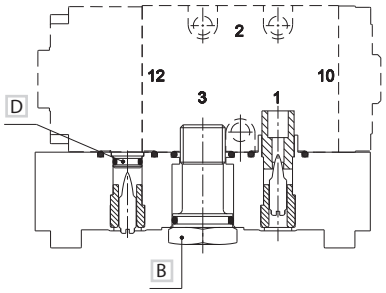
	A	B
G1/8	G1/4	G1/8
G1/4	G3/8	G1/4

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.