



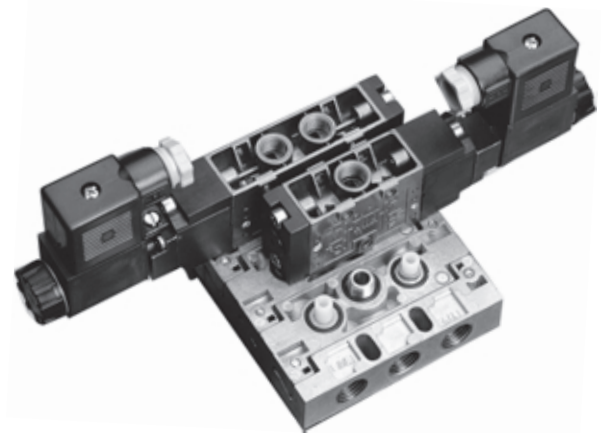
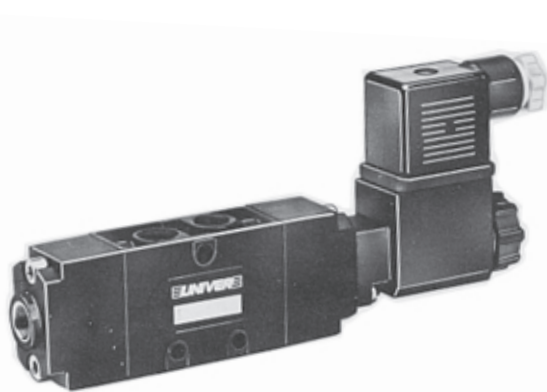
The construction adopted by UNIVER for the spool system allows extremely interesting performances. The valve is made of only two parts, body and spool (in one piece) with fluctuating seals of special compound which reduce friction and prevent sticking. The aforementioned features together with a high flow capacity as well as the absence of communication between the chambers during commutation make maintenance easier, lubrication not necessary and allow a high cycle life. Apart from the typical uses of the spool system, this valve is also suitable for vacuum application, for 5/3 open centres or 5/3 closed centres.

### TECHNICAL CHARACTERISTICS

Body in die-cast zamak  
 Ambient temperature: -10°C to +50°C  
 Fluid temperature: +50°C max  
 Working pressure: 0 - 10 bar  
 Fluid: filtered air 50 µm with or without lubrication  
 Seals in nitrile rubber

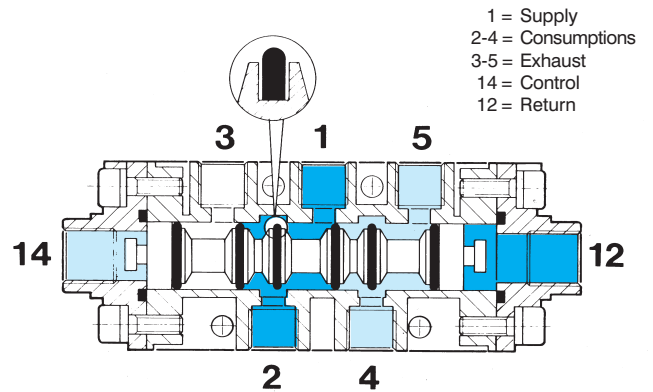
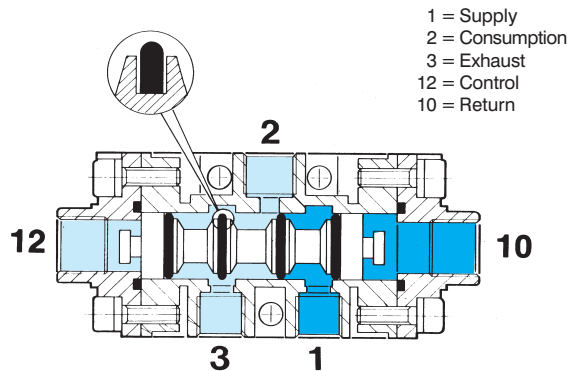
Indirect electropneumatic and pneumatic control  
 Pneumatic or mechanical spring return  
 Coil separate from the mechanical part  
 Coil U1 part number DA-..., (upon request U3 coil part number DC-...) Section accessories page 13.

**NOTE:** an indicative estimate of the factor "CV" can be obtained by dividing the capacity values expressed in NI/min by "962".



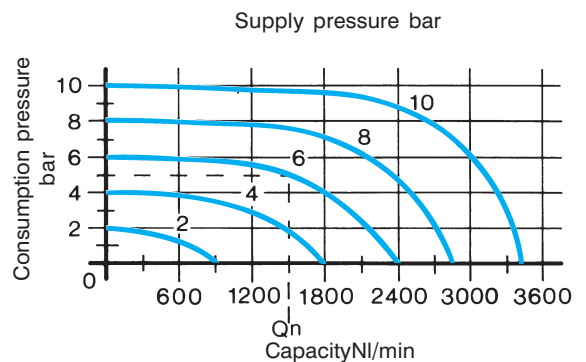
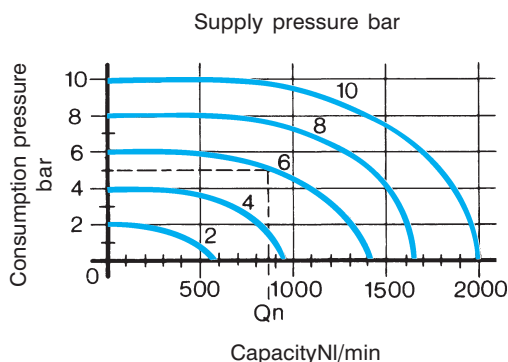
**UNIVERSAL 3/2**

**UNIVERSAL 5/2-5/3**



**G 1/8**

**G 1/4**





Valves with direct mechanical operation

Type	Symbol	Control (12) - (14)	Return (10) - (12)	Ways	Connections	Ø mm	Capacity NI/min	Force N	Mass kg	Part number		
		Roller lever	Mech. spring	3/2 NC-NO	G 1/8	6,5	890	23	0,21	CL-100A		
			Pneum. impulse					6		CL-100P		
			Mech. spring	5/2				23	0,25	CM-400A		
			Pneum. impulse					6		CM-400P		
		Unidirectional roller lever	Mech. spring	3/2 NC-NO	G 1/8	6,5	890	18	0,22	CL-101A		
			Pneum. impulse					6		CL-101P		
			Mech. spring	5/2				18	0,26	CM-401A		
			Pneum. impulse					6		CM-401P		
		Ball-push	Mech. spring	3/2 NC-NO	G 1/8	6,5	890	64	0,19	CL-102A		
			Pneum. impulse					25		CL-102P		
					Mech. spring	5/2	G 1/4	8,5	1480	68	0,26	CL-9102A
					Pneum. impulse					26		CL-9102P
			Mech. spring	5/2	G 1/8	6,5	890	64	0,23	CM-402A		
			Pneum. impulse					25		CM-402P		
					Mech. spring	5/2	G 1/4	8,5	1480	68	0,28	CM-9402A
					Pneum. impulse					26		CM-9402P

Other available options

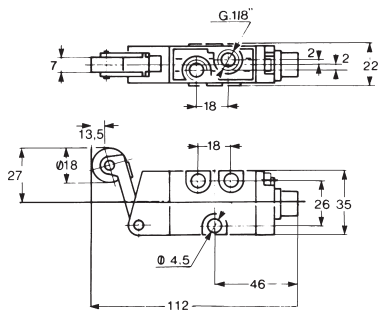
G 1/8 directly operated mechanical spool valves

	Roller push valve with dust protection	Ball-push valve with dust protection	Ball-push valve for screw panel mounting
3/2 NC-NO	CL-105A	CL-104A	CL-103A
3/2 NC-NO	CL-105P	CL-104P	CL-9103A (G 1/4)
5/2	CM-405A	CM-404A	CM-403A
5/2	CM-405P	CM-404P	CM-9403A (G 1/4)
5/2	-	-	CM-403P
5/2	-	-	CM-9403P (G 1/4)

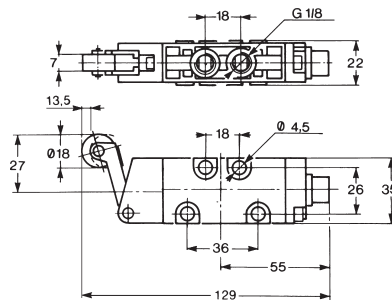
The part numbers of valves do not include coils

Spool system

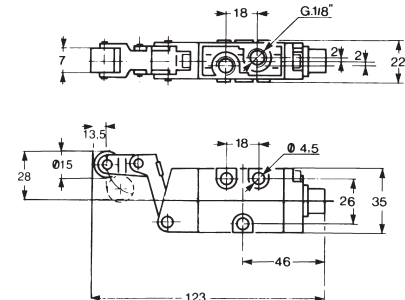
Roller lever valves 3/2 - G 1/8



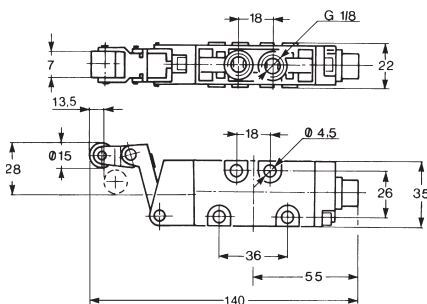
Roller lever valves 5/2 - G 1/8



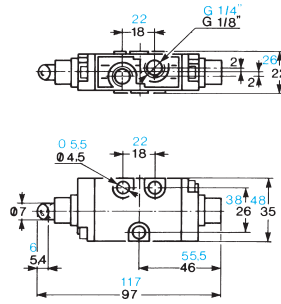
Uni-directional roller lever valves 3/2 - G 1/8



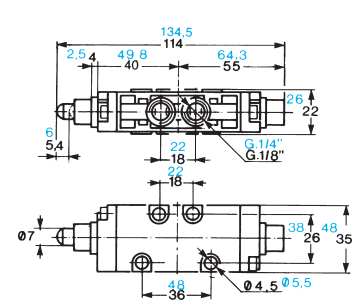
Uni-directional roller lever valves 5/2 - G 1/8



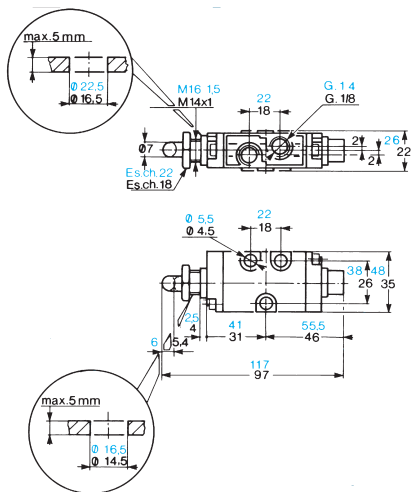
Ball-push valves 3/2 - G 1/8 - G 1/4



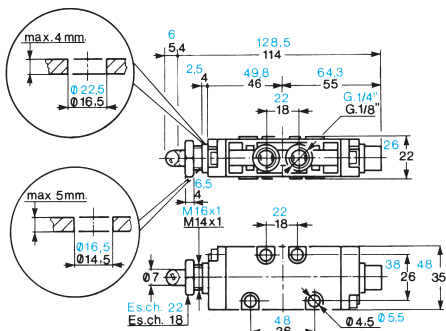
Ball-push valves 5/2 - G 1/8 - G 1/4



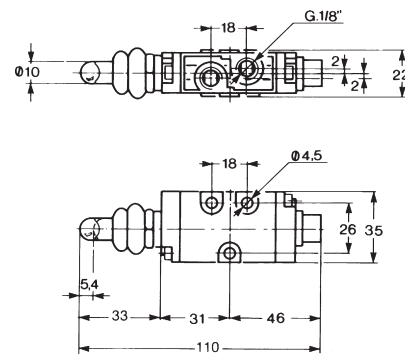
Ball-push valves for screw mounting 3/2 - G 1/8 - G 1/4



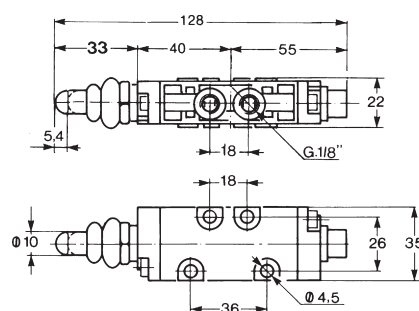
Ball-push valves for screw mounting 5/2 - G 1/8 - G 1/4



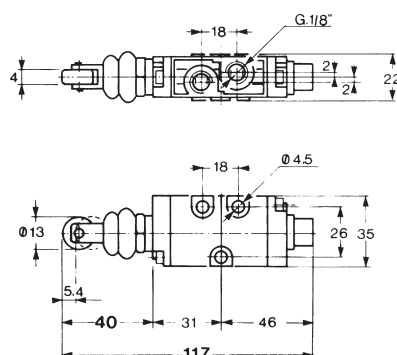
Ball-push valves with dust protection 3/2 - G 1/8



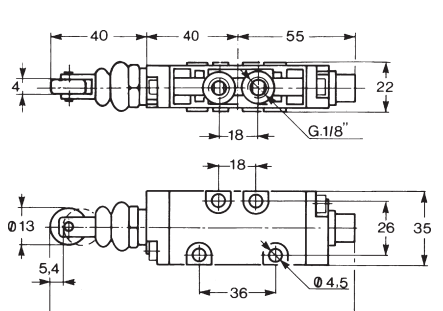
Ball-push valves with dust protection 5/2 - G 1/8



Roller valves with dust protection 3/2 - G 1/8


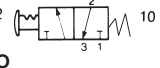
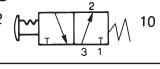


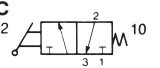
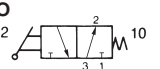



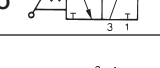
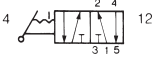
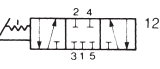
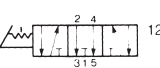

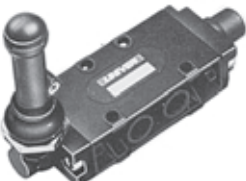

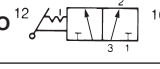

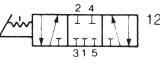

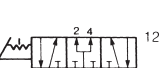


Roller valves with dust protection 5/2 - G 1/8





## Manually operated valves

Type	Symbol	Control (12) - (14)	Return (10) - (12)	Ways	Connections	Ø mm	Capacity NI/min	Force N	Mass kg	Part number
 <p>Push-pull: Y: CP-911G R: CP-911R B: CP-911N G: CP-911V</p>	<b>NC</b> 	push-pull	mechan. spring	3/2 NC-NO	G 1/8	6,5	890	25	0,19	without operator <b>CL-120A</b>
	<b>NO</b> 				G 1/4	8,5	1480	26	0,26	without operator <b>CL-9120A</b>
					G 1/8	6,5	890	25	0,22	without operator <b>CM-420A</b>
					G 1/4	8,5	1490	26	0,26	without operator <b>CM-9420A</b>
 <p>Standard lever: red color Upon request: <b>YELLOW (Y); GREEN (G); BLACK(B)</b></p>	<b>NC</b> 	long lever*	mechan. spring	3/2 NC-NO	G 1/8	6,5	890	10 20	0,17	<b>CL-118R*</b> <b>CL-119R</b>
	<b>NO</b> 				G 1/4	8,5	1480	11	0,23	<b>CL-9118R*</b>
		short lever	G 1/8	6,5	890	10 20	0,21	<b>CM-418R*</b> <b>CM-419R</b>		
			G 1/4	8,5	1490	11	0,25	<b>CM-9418R*</b>		
 <p>Part number <b>CP-915R</b></p> <p>Part number <b>CP-916R</b></p>	<b>NC</b> 	rotating lever (selector upon request)		3/2 NC-NO	G 1/8	6,5	890	27	0,22	without operator <b>CL-130</b>
	<b>NO</b> 				G 1/4	8,5	1480	29	0,25	without operator <b>CL-9130</b>
					G 1/8	6,5	890	27	0,25	without operator <b>CM-430</b>
					G 1/4	8,5	1490	29	0,27	without operator <b>CM-9430</b>
		3 stable positions closed centers	G 1/8	6,5	890	27	0,25	<b>CM-430E</b>		
			G 1/4	8,5	1480	29	0,27	<b>CM-9430E</b>		
		3 stable positions open centers	G 1/8	6,5	890	27	0,24	<b>CM-435E</b>		
			G 1/4	8,5	1480	29	0,26	<b>CM-9435E</b>		
	3 stable positions centers under pressure	G 1/8	6,5	890	27	0,24	<b>CM-440E</b>			
		G 1/4	8,5	1480	29	0,26	<b>CM-9440E</b>			
 <p>Lever operator Short Y: CP-912G R: CP-912R B: CP-912N G: CP-912V Long R: CP-913R</p>	<b>NC</b> 	lever	lever	3/2 NC-NO	G 1/8	6,5	890	2,5÷4	0,17	without operator <b>CL-123</b>
	<b>NO</b> 				G 1/4	8,5	1480	2,7÷4,5	0,23	without operator <b>CL-9123</b>
					G 1/8	6,5	890	2,5÷4	0,23	without operator <b>CM-423</b>
					G 1/4	8,5	1480	2,7÷4,5	0,28	without operator <b>CM-9423</b>
		lever control closed centers	G 1/8	6,5	890	3,5÷5	0,23	without operator <b>CM-423E</b>		
			G 1/4	8,5	1480	3,6÷5,2	0,28	without operator <b>CM-9423E</b>		
		lever control open centers	G 1/8	6,5	890	3,5÷3	0,23	without operator <b>CM-424E</b>		
			G 1/4	8,5	1480	3,6÷5,2	0,28	without operator <b>CM-9424E</b>		
	lever control centers under pressure	G 1/8	6,5	890	7,5÷5	0,23	without operator <b>CM-425E</b>			
		G 1/4	8,5	1480	3,6÷5,2	0,28	without operator <b>CM-9425E</b>			

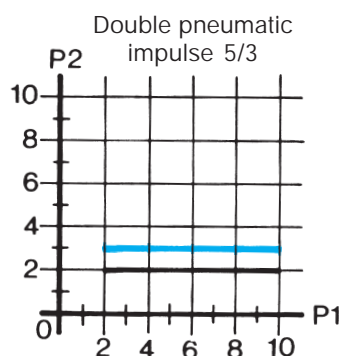
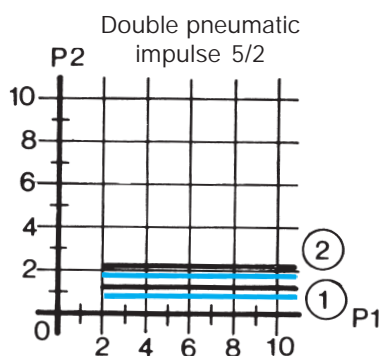
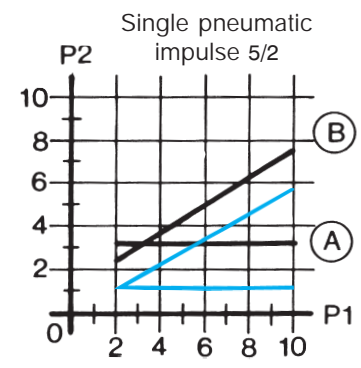
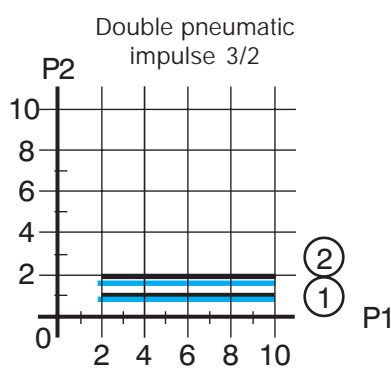
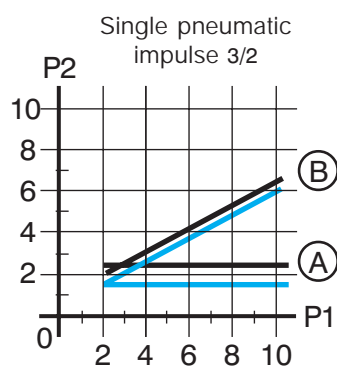


### Valves with pneumatic control

Type	Symbol	Control (12) - (14)	Return (10) - (12)	Ways	Connections	Ø mm	Capacity NI/min	Pressure bar	energ. (14) ms	de-energ. (12) ms	Mass Kg.	Part number
		amplified pneumatic	mech. spring	3/2 NC-NO	G 1/8	6,5	890	2,5 ÷ 10	9	17	0,21	<b>CL-200A</b>
					G 1/4	8,5	1480	2 ÷ 10	10	19	0,24	<b>CL-9200A</b>
		amplified pneumatic	amplified pneumatic		G 1/8	6,5	890	1 ÷ 10	8	8	0,16	<b>CL-220</b>
					G 1/4	8,5	1480	1 ÷ 10	10	10	0,21	<b>CL-9220</b>
		amplified pneumatic	mech. spring	5/2	G 1/8	6,5	890	3 ÷ 10	10	18	0,19	<b>CM-500A</b>
					G 1/4	8,5	1480	2 ÷ 10	11	20	0,27	<b>CM-9500A</b>
		amplified pneumatic	amplified pneumatic		G 1/8	6,5	890	1,2 ÷ 10	7	7	0,18	<b>CM-520</b>
					G 1/4	8,5	1480	1,5 ÷ 10	9	9	0,24	<b>CM-9520</b>
		Pneumatic control closed centres		5/3	G 1/8	6,5	890	2,5 ÷ 10	8	12	0,21	<b>CM-580</b>
					G 1/4	8,5	1480	2,8 ÷ 10	10	13	0,30	<b>CM-9580</b>
		Pneumatic control open centres			G 1/8	6,5	890	2,5 ÷ 10	8	12	0,21	<b>CM-585</b>
					G 1/4	8,5	1480	2,8 ÷ 10	10	13	0,30	<b>CM-9585</b>
		Pneumatic control pressurized centres			G 1/8	6,5	890	2,5 ÷ 10	8	12	0,21	<b>CM-590</b>
					G 1/4	8,5	1480	1,8 ÷ 10	10	13	0,30	<b>CM-9590</b>

For dimensions refer to page 35 - 36.

### CONTROL CHARACTERISTICS



— G 1/8  
— G 1/4

Ⓐ= Mechanical spring  
Ⓑ= Pneumatic spring

P<sub>1</sub> = Supply pressure  
P<sub>2</sub> = Piloting pressure

①= Amplified pilot system  
②= Differential pilot system

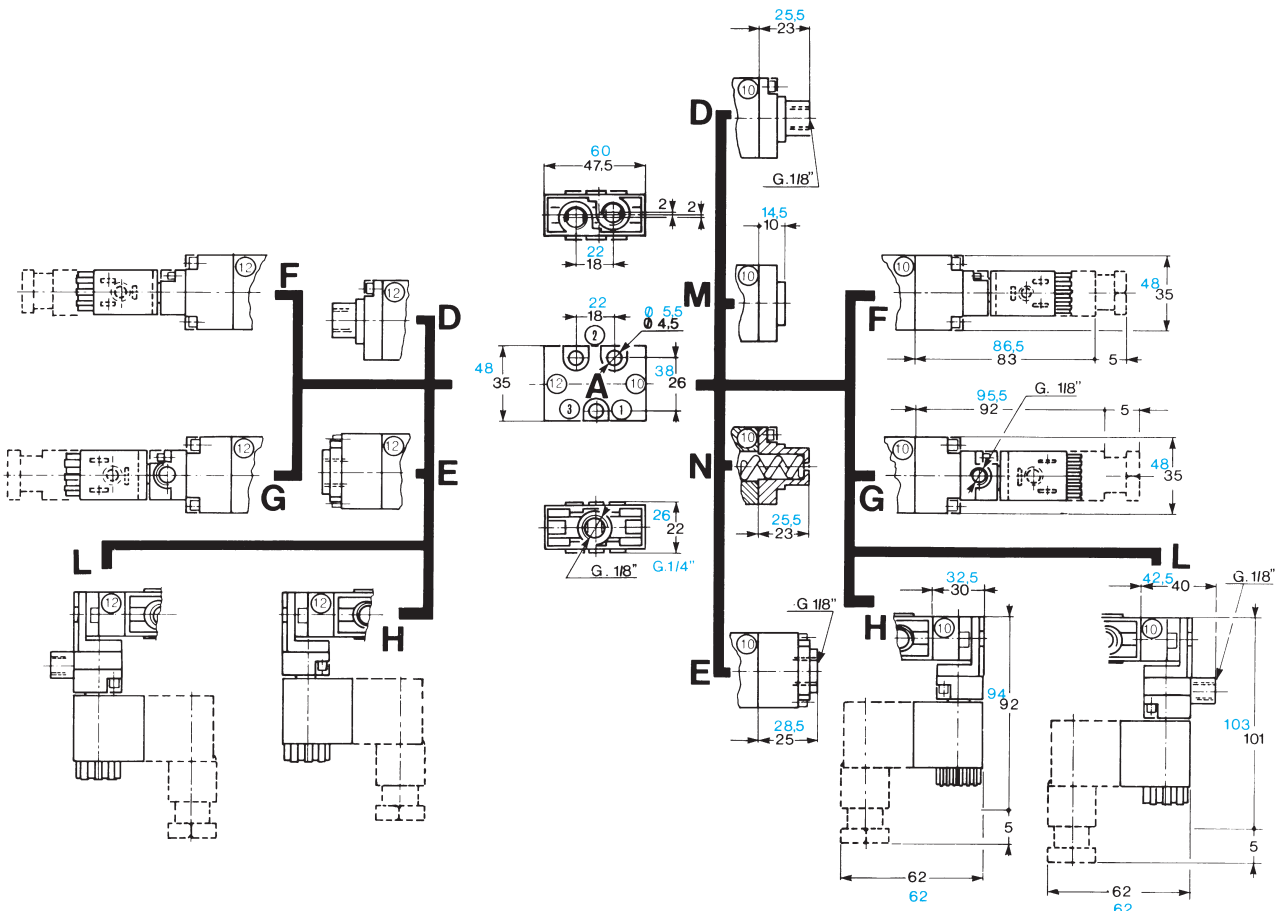
To obtain 2-way function plug exhaust.



Valves with electrical control

Type	Symbol	Control (12) - (14)	Return (10) - (12)	Ways	Connections	Ø mm	Capacity NI/min	Pressure bar	energ. (12)	de-energ. (10)	Mass kg	Part number
		electrical amplified solenoid in line	mechan. spring	3/2 NC	G 1/8	6,5	890	2,5 ÷ 10	20	24	0,21	<b>CL-302A</b> ⊖
					G 1/4	8,5	1480	2 ÷ 10	22	35	0,28	<b>CL-9302A</b> ⊖
	3/2 NO			G 1/8	6,5	890	2,5 ÷ 10	20	24	0,21	<b>CL-303A</b> ⊖	
				G 1/4	8,5	1480	2 ÷ 10	22	35	0,28	<b>CL-9303A</b> ⊖	
		electrical amplified solenoid in line	electrical amplified solenoid in line	3/2	G 1/8	6,5	890	1 ÷ 10	17	17	0,24	<b>CL-320</b> ⊖
					G 1/4	8,5	1480	2 ÷ 10	18	18	0,29	<b>CL-9320</b> ⊖
		electrical amplified solenoid in line	mechan. spring	5/2	G 1/8	6,5	890	3 ÷ 10	21	25	0,25	<b>CM-602A</b> ⊖
					G 1/4	8,5	1480	2 ÷ 10	22	43	0,31	<b>CM-9602A</b> ⊖
		electrical amplified solenoid in line	electrical amplified solenoid in line	5/2	G 1/8	6,5	890	1,2 ÷ 10	20	20	0,28	<b>CM-620</b> ⊖
					G 1/4	8,5	1480	1,5 ÷ 10	22	22	0,32	<b>CM-9620</b> ⊖
		closed centers pneumatic control		5/3	G 1/8	6,5	890	2,5 ÷ 10	18	24	0,29	<b>CM-680</b> ⊖
					G 1/4	8,5	1480	2,8 ÷ 10	20	35	0,38	<b>CM-9680</b> ⊖
		open centers pneumatic control		G 1/8	6,5	890	2,5 ÷ 10	18	24	0,29	<b>CM-685</b> ⊖	
				G 1/4	8,5	1480	2,8 ÷ 10	20	35	0,38	<b>CM-9685</b> ⊖	
		centers under pressure pneumatic control		G 1/8	6,5	890	2,5 ÷ 10	18	24	0,29	<b>CM-690</b> ⊖	
				G 1/4	8,5	1480	2,8 ÷ 10	20	35	0,38	<b>CM-9690</b> ⊖	

⊖ Manual override: by screw 2 positions. Other controls are available, see catalogue, different positions of the electric pilot and external pilot supply.  
**For dimensions see pages 35-36.** **The part numbers of valves do not include coils**



- 1 = Supply
- 2 = Consumption
- 3 = Exhaust
- 12 = Control
- 10 = Return


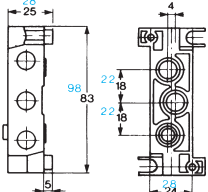
According to the part number and to the composition reported below, overall dimensions can be found by looking at the picture above.

Part number		Composition		Part number		Composition	
G 1/8	G 1/4	control (12)	return (10)	G 1/8	G 1/4	control (12)	return (10)
CL-200	CL-9200	E	A - M	CL-322	CL-9322	F	A - E
CL-200A	CL-9200A	E	A - N	CL-325	CL-9325	H	A - H
CL-203	CL-9203	E	A - M	CL-326	CL-9326	H	A - H
CL-220	CL-9220	E	A - E	CL-327	CL-9327	H	A - E
CL-221	CL-9221	E	A - D	CL-340	CL-9340	G	A - M
CL-224	CL-9224	D	A - D	CL-341	CL-9341	G	A - M
CL-300	CL-9300	F	A - M	CL-342A	CL-9342A	G	A - N
CL-301	CL-9301	F	A - M	CL-345	CL-9345	L	A - M
CL-302A	CL-9302A	F	A - N	CL-346	CL-9346	L	A - M
CL-303A	CL-9303A	F	A - N	CL-347A	CL-9347A	L	A - N
CL-305	CL-9305	H	A - M	CL-360	CL-9360	G	A - G
CL-306	CL-9306	H	A - M	CL-361	CL-9361	G	A - G
CL-307A	CL-9307A	H	A - N	CL-362	CL-9362	G	A - E
CL-308A	CL-9308A	H	A - N	CL-365	CL9365	L	A - L
CL-320	CL-9320	F	A - F	CL-366	CL-9366	L	A - L
CL-321	CL-9321	F	A - F	CL-367	CL-9367	L	A - E

The part numbers of valves do not include coils


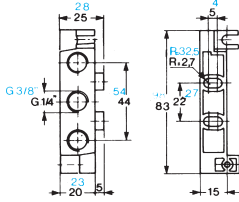


### CLIPS sub-base for UNIVERSAL valves 2/2 - 3/2 - 5/2 - 5/3

Type	Overall dimensions	Remarks	Connections	Material	Mass kg	Part number
		regulated and conveyed exhausts	G 1/8	zamak	0,136	CP-100
			G 1/4	zamak	0,210	CP-9100

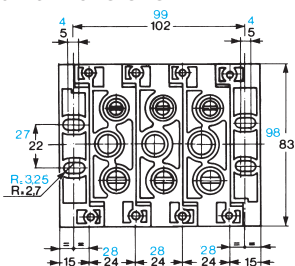
Standard screws, seals, exhaust regulator and coupling of valve

### CLIPS inlet plate

Type	Overall dimensions	Remarks	Connections	Material	Mass kg	Part number
		side connections	G 1/4	zamak	0,086	CP-105
			G 3/8	zamak	0,120	CP-9105

Screws and seals standard supplied.

### Overall dimensions



### Advantages:

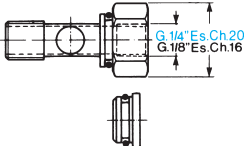
The "CLIPS" series sub-base has been designed and patented with the following features in mind:

- Possibility to establish the number of sub-bases only at the time of use.
- Possibility to increase or reduce the number of elements without any restriction.
- Quick assembly with a special standard supplied screw.
- Reduction of stocks.
- Easy technical intervention.
- Possibility to select the functions of each manifold assembly (pressure differentiation, exhaust adjustment) by increasing or diminishing the number of elements.
- Assemble any combination of 3/2 - 5/2 - 5/3 valves on the same manifold assembly.

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



### Accessories

#### Coupling and separator of differential pressures

Overall dimensions	Connections	Material	Mass kg	Part number
	G 1/8 G 1/4	brass	0,028	CP-110 CP-9110
	-	aluminium	0,013	CP-111 CP-9111

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

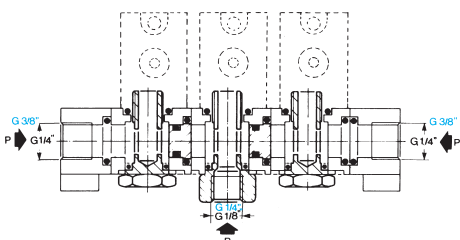
#### Cap for 3/2 valve mounting Adjustment screw

Overall dimensions	Connections	Material	Mass kg	Part number
  	-	aluminium	0,010	CP-112 CP-9112
	-	brass	0,006	CP-113 CP-9113

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

### Assembly examples

#### Battery 3 pressures



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

#### Mounting of 3/2 NC-NO valve

