

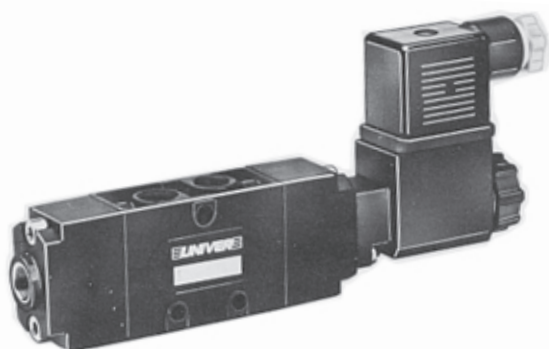
The construction adopted by UNIVER for the spool system allows extremely interesting performances. The valve is made of only two parts, body and spool (in one piece) with fluctuating seals of special compound which reduce friction and prevent sticking. The aforementioned features together with a high 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

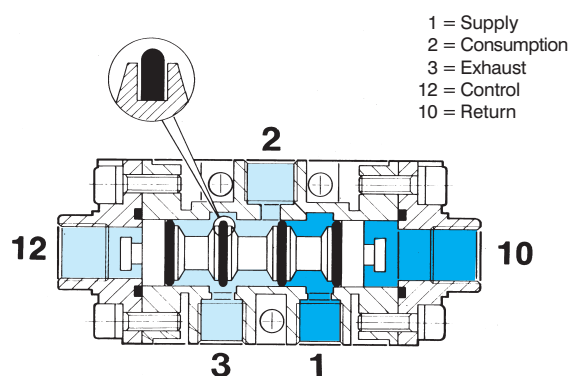
Body in die-cast zamak
 Ambient temperature: -10°C to +50°C
 Fluid temperature: +50°C max
 Working pressure: 0 - 10 bar
 Fluid: filtered air 50 μ m with or without lubrication
 Seals in nitrile rubber

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.

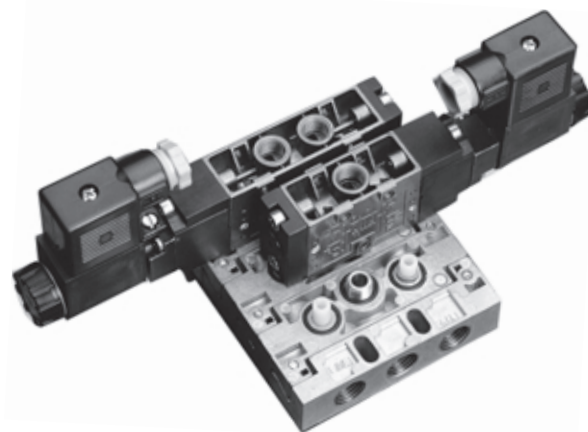
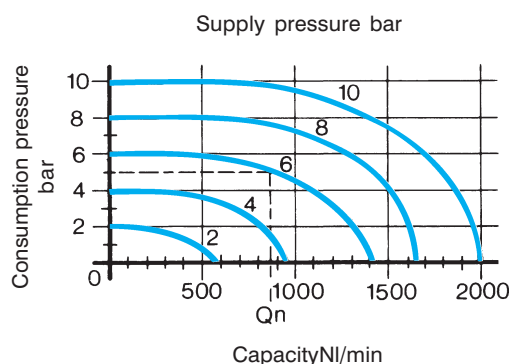
NOTE: an indicative estimate of the factor "CV" can be obtained by dividing the capacity values expressed in NI/min by "962".



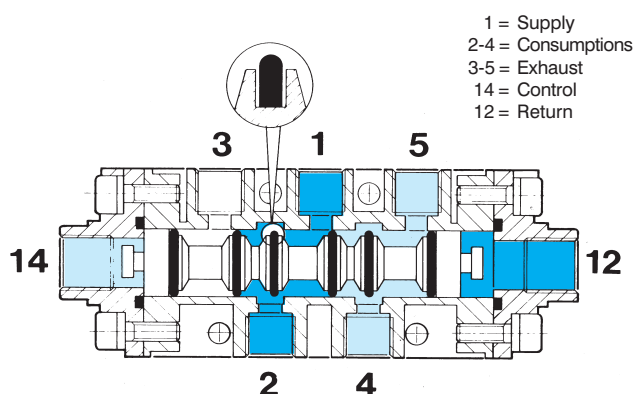
UNIVERSAL 3/2



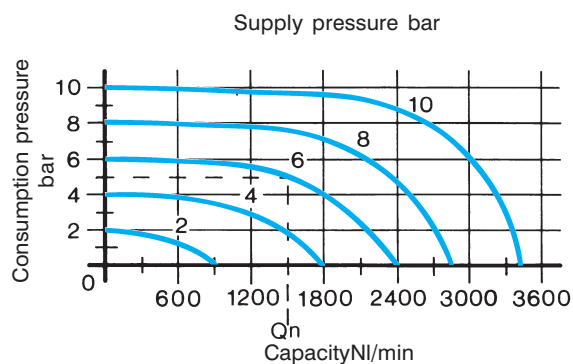
G 1/8



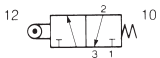
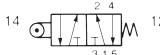
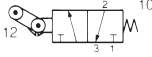
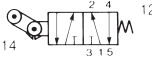
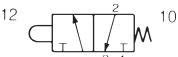
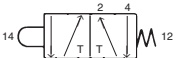
UNIVERSAL 5/2-5/3



G 1/4



Valves with direct mechanical operation

Type	Symbol	Control (12) - (14)	Return (10) - (12)	Ways	Connections	Ø mm	Capacity Nl/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		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		G 1/4	8,5	1480	68	0,28	CM-9402A
			Pneum. impulse					26		CM-9402P

Other available options

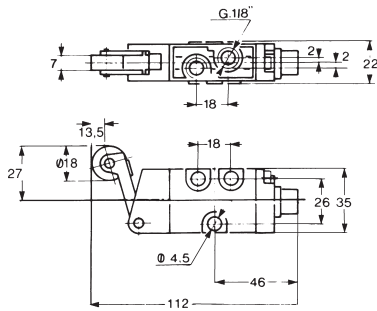
G 1/8 directly operated mechanical spool valves

	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)

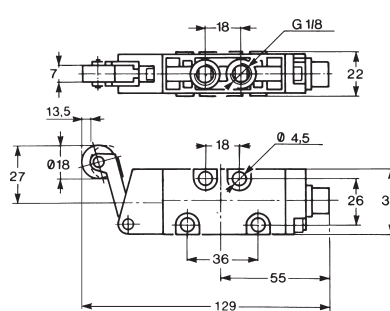
The part numbers of valves do not include coils

Spool system

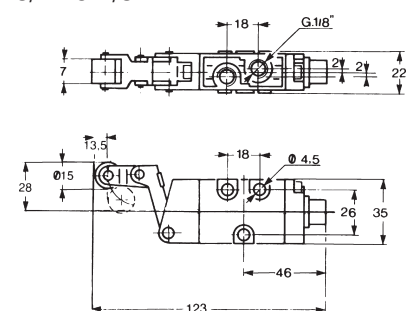
Roller lever valves 3/2 - G 1/8



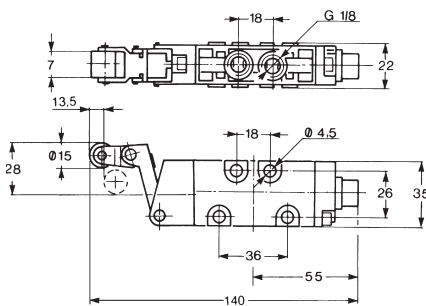
Roller lever valves 5/2 - G 1/8



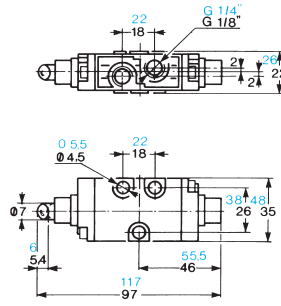
Uni-directional roller lever valves 3/2 - G 1/8



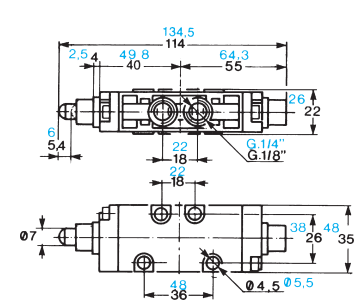
Uni-directional roller lever valves 5/2 - G 1/8



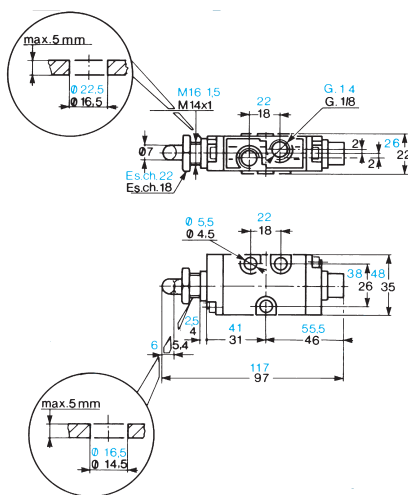
Ball-push valves 3/2 - G 1/8 - G 1/4



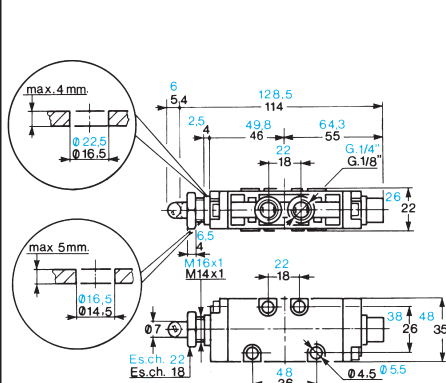
Ball-push valves 5/2 - G 1/8 - G 1/4



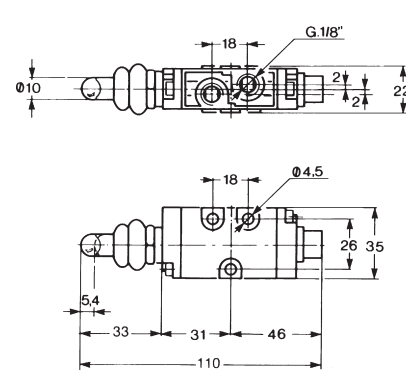
Ball-push valves for screw mounting 3/2 - G 1/8 - G 1/4



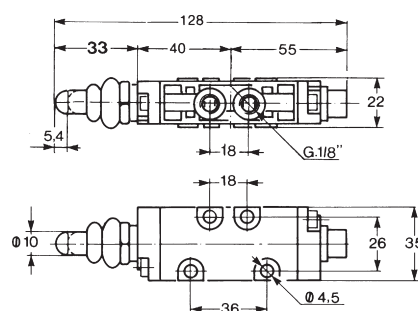
Ball-push valves for screw mounting 5/2 - G 1/8 - G 1/4



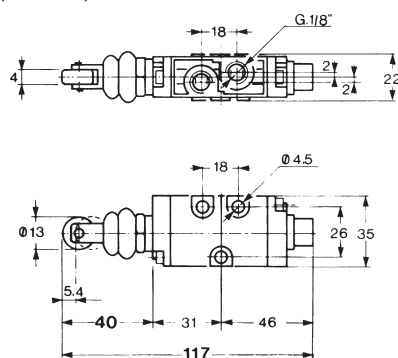
Ball-push valves with dust protection 3/2 - G 1/8



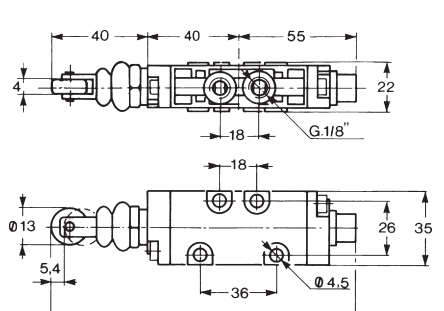
Ball-push valves with dust protection 5/2 - G 1/8



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



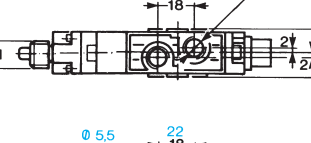
Roller valves with dust protection 5/2 - G 1/8



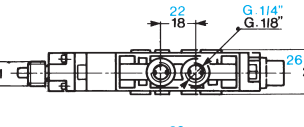
Valvole

Other G 1/8 versions

Spool system



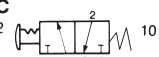
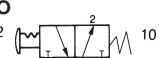
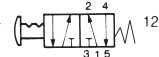
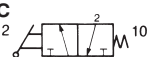
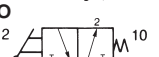
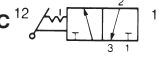
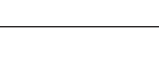
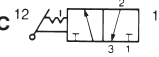
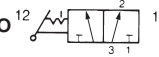
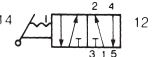
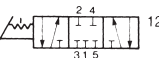
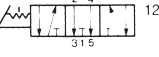
Technical drawing of the 1000 Series 1/2" valve, showing two views: a side view (top) and a front view (bottom). The side view shows a horizontal valve with a handle on the left and a body with a central port. Dimensions include a total length of 116, a handle length of 10, a body length of 92, and a port diameter of 1/2". The front view shows the valve from the front, with a central port and two side ports. Dimensions include a total width of 136.5, a central port diameter of 1/2", and side port diameters of 1/4" and 1/8". The drawing also includes a detail of the handle and a note indicating the handle is made of 1/4" G. 1/8" material.



Technical drawing of the 1000 Series 1/2" valve, showing front and side views with dimensions in inches. The front view includes dimensions: 22, 18, 26, 22, 154, 135, 70, 10, 48, 36, 41, 14, 4.5, 4.5, 38, 48, 26, 38. The side view includes dimensions: 22, 18, 26, 22, 154, 135, 70, 10, 48, 36, 41, 14, 4.5, 4.5, 38, 48, 26, 38. The drawing also shows a 1/4" NPT inlet and a 1/2" NPT outlet.

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Manually operated valves

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

Valvole

Technical drawing of a mechanical assembly, likely a valve or actuator, showing front and side views with detailed dimensions and callouts.

Front View Dimensions:

- Top left: $\varnothing 22$, $\varnothing 16$
- Top center: 22, 18
- Top right: $G. 1/4"$, $G. 1/8"$
- Right side: 2, 2, 26, 22
- Bottom left: Ches. 22, Ches. 18
- Bottom center: M16x15, M14 x1
- Bottom right: 22, 18, $\varnothing 5.5$, $\varnothing 4.5$

Side View Dimensions:

- Left side: 6, 54
- Bottom left: 2.5, 4
- Bottom center: 138, 121
- Bottom right: 41, 32, 43.5, 38, 12, 10
- Right side: 38, 48, 26, 35

Detail Views (Circular Insets):

- Left detail: max. 5mm, $\varnothing 16.5$, $\varnothing 14.5$
- Right detail: max. 5mm, $\varnothing 22.5$, $\varnothing 16.5$

Technical drawing of the 22mm Ch.es.18 siren, showing front and side views with detailed dimensions and callouts.

Front View (Top):

- Max. 4mm (Callout for horn thickness)
- $\varnothing 22.5$ (Horn outer diameter)
- $\varnothing 16.5$ (Horn inner diameter)
- $\varnothing 22$ (Main body diameter)
- $\varnothing 16$ (Mounting flange diameter)
- 22 (Mounting flange thickness)
- 18 (Distance between mounting holes)
- G. 1/4" (Thread specification)
- G. 1/8" (Thread specification)
- 26 (Main body length)
- 22 (Main body diameter at end)
- M16 x 1 (Mounting hole thread)
- M14 x 1 (Mounting hole thread)

Side View (Bottom):

- 6 (Horn thickness)
- 54 (Horn length)
- Ch.es.22 (Horn model)
- Ch.es.18 (Horn model)
- 22 (Main body diameter)
- 18 (Distance between mounting holes)
- $\varnothing 5.5$ (Mounting hole diameter)
- $\varnothing 4.5$ (Mounting hole diameter)
- 38 (Main body length)
- 48 (Main body length)
- 26 (Main body length)
- 3 (Main body length)
- 25 (Main body length)
- 4 (Main body length)
- 49.8 (Main body length)
- 40 (Main body length)
- 155.5 (Main body length)
- 138 (Main body length)
- 52.2 (Main body length)
- 45 (Main body length)
- 12 (Main body length)
- 10 (Main body length)

Callout (Bottom Left):

- Max. 5mm (Callout for horn thickness)
- $\varnothing 16.5$ (Horn outer diameter)
- $\varnothing 14.5$ (Horn inner diameter)

Technical drawing of a 1000 series ball bearing. The drawing includes a side view and a cross-sectional view. Key dimensions and labels are as follows:

- Side View Dimensions:**
 - Overall length: 109
 - Distance from front flange to first ball: 17
 - Distance between balls: 21
 - Distance from last ball to back flange: 64.3
 - Back flange thickness: 55
 - Inner diameter: $\phi 17.4$
 - Outer diameter: $\phi 26$
 - Ball diameter: $\phi 2.2$
 - Ball pitch diameter: $\phi 18$
 - Distance from back flange to last ball: 22
- Cross-sectional View Dimensions:**
 - Inner diameter: $\phi 18$
 - Distance from inner diameter to ball center: 18
 - Distance from ball center to outer diameter: 18
 - Outer diameter: $\phi 26$
 - Distance from outer diameter to back flange: 38
 - Back flange thickness: 26
 - Distance from back flange to last ball: 36
 - Ball diameter: $\phi 4.5$
 - Ball pitch diameter: $\phi 5.5$
- Other Labels:**
 - Series identifier: 1000
 - Angle: 90°

Technical drawing of a mechanical assembly, likely a pump or motor component, showing a side view and a top view.

Side View Dimensions:

- Shaft: Ches. 24, G. 18"
- Bearing: Ches. 22
- Housing: M18x1.5, M16x1.5
- Dimensions: 32, 36, 23, 2, 26, 22, 41, 23, 55.5, 36, 46

Top View Dimensions:

- Dimensions: 22, 18, 36, 48, 90°, 111.5, 97
- Hole: Ø 18.5, Ø 16.5
- Shaft: Ø 5.5, Ø 4.5

Detail View:

- max. 5 mm

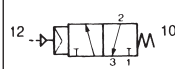
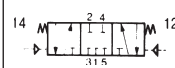
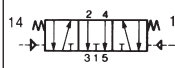
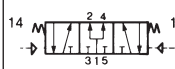
The technical drawing illustrates the G.118/G.114 pump assembly from three perspectives: front view, side view, and a detailed cross-section of the coupling.

- Front View:** Shows the main body with a total width of 89 mm and a height of 76 mm. The coupling arm has a length of 65 mm. Mounting holes are specified as M16x1.5. The shaft diameter is Ch.es. 24, and the coupling bore is Ch.es. 22. A dimension of 32 mm is shown for the mounting flange thickness.
- Side View:** Shows the profile of the pump body with a total height of 26 mm. The coupling arm has a height of 22 mm. The distance between the mounting flange and the coupling is 22 mm. The coupling bore diameter is G.118° and G.114°.
- Coupling Detail:** A circular detail showing the internal threads and diameters. The outer diameter is max. 5 mm. The inner thread is G.118.5 and the outer thread is G.116.5. The coupling bore diameter is Ø 5.5 and the shaft diameter is Ø 4.5. The coupling is shown at a 90° angle.

Technical drawing of the Ches 24 G 1/4 inch G 1/8 inch valve assembly. The drawing includes a side view and a top view. The side view shows the valve body with dimensions: 29, 30, 23, 22, 18, 21, 21, 26, and 2. The top view shows the valve body with dimensions: 22, 18, 22, 18, 38, 48, 26, 35, 41, 36, 55,5, 46, 115,5, 97, and 16,5. A detail view of the valve body shows a maximum length of 5 mm and a diameter of 16,5 mm. The valve body is labeled 'Ches 24' and 'Ches 22'.

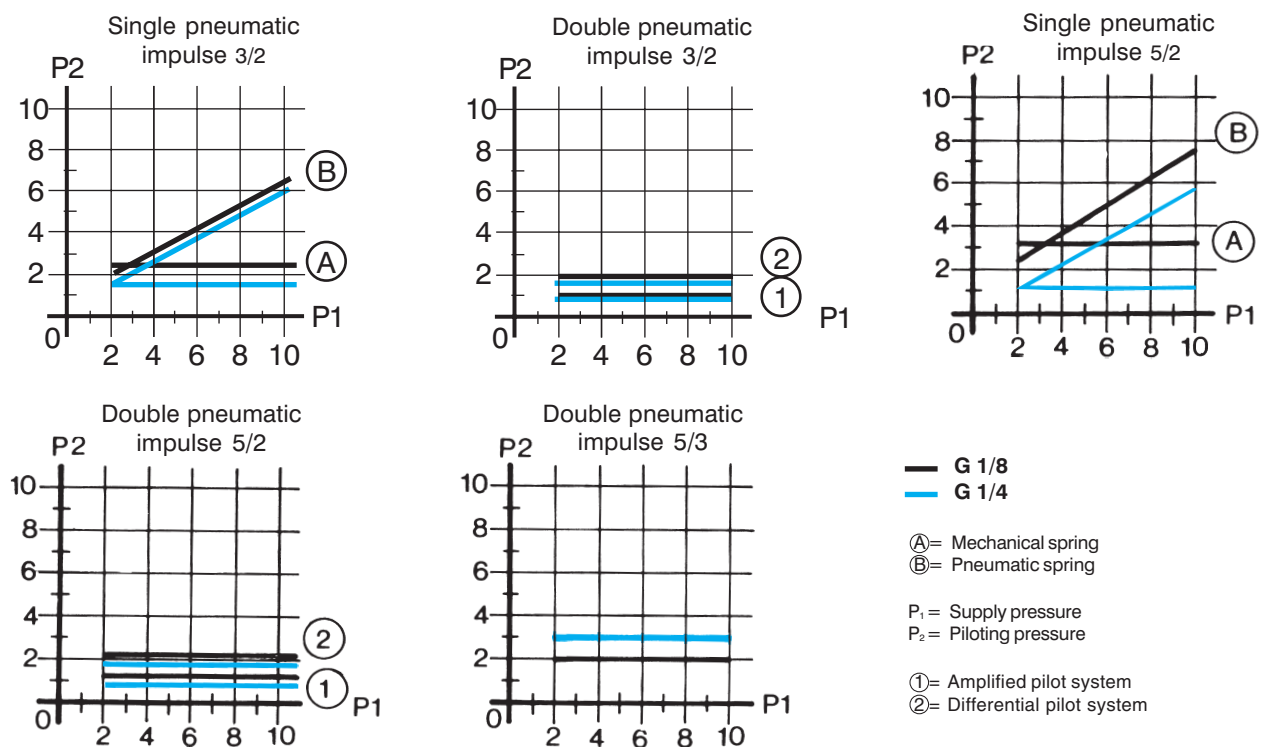
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Valves with pneumatic control

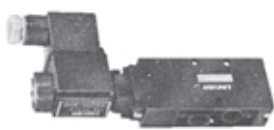
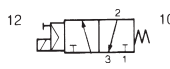
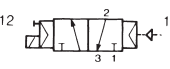
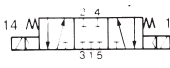
Type	Symbol	Control (12) - (14)	Return (10) - (12)	Ways	Conne- ctions	Ø mm	Capacity Nl/min	Pressure bar	energ. (14 ms)	de- energ. (12 ms)	Mass Kg.	Part number
		amplified pneumatic	mechan. spring	3/2 NC-NO	G 1/8	6,5	890	2,5 ÷ 10	9	17	0,21	CL-200A
					G 1/4	8,5	1480	2 ÷ 10	10	19	0,24	CL-9200A
		amplified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

For dimensions refer to page 35 - 36.

CONTROL CHARACTERISTICS



To obtain 2-way function plug exhaust.

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

⊖ 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.

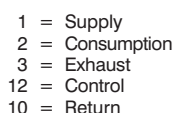
The part numbers of valves do not include coils

⊖ 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.

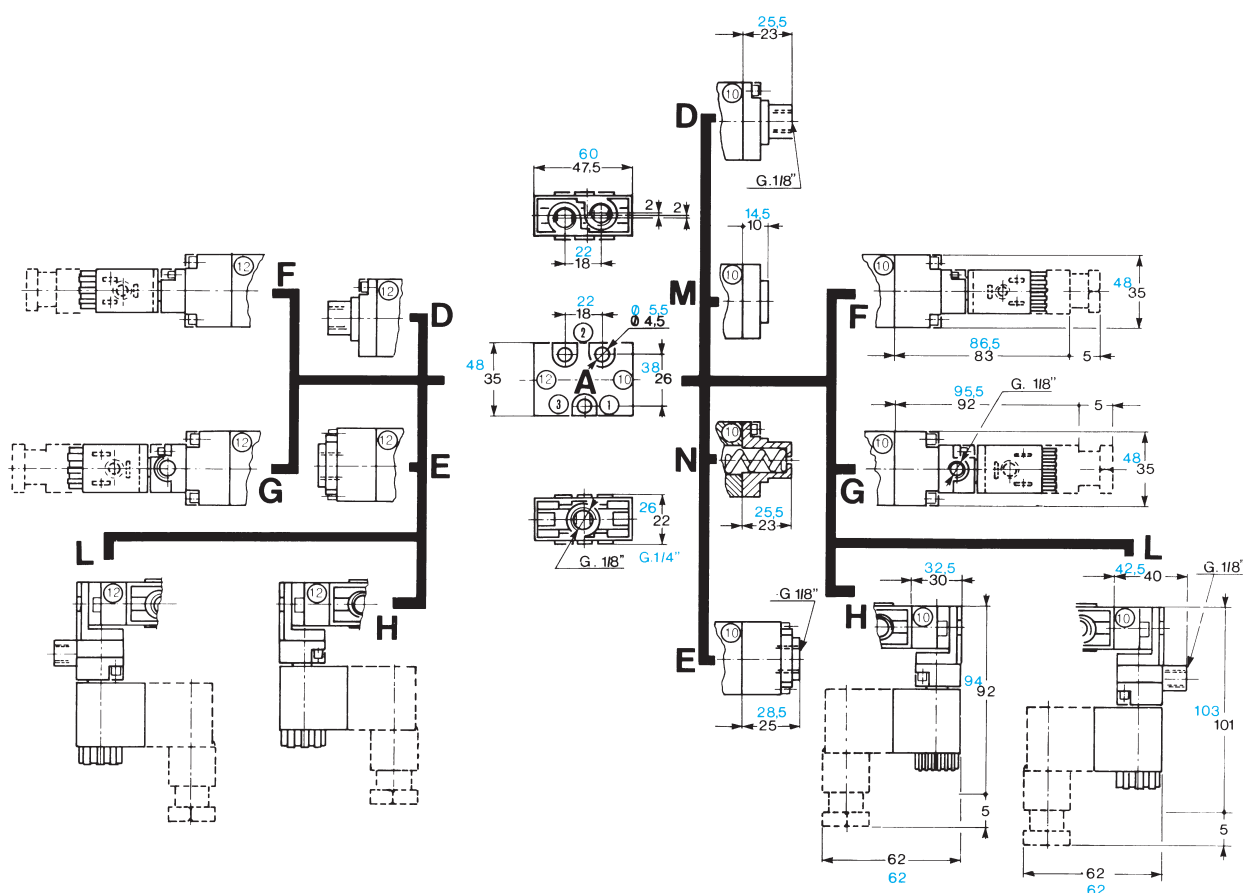
The part numbers of valves do not include coils

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Valves

The part numbers of valves do not include coils



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

According to the part number and to the composition reported below, overall dimensions can be found by consulting 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)
CM-500	CM-9500	E - A - M		CM-645	CM-9645	L - A - M	
CM-500A	CM-9500A	E - A - N		CM-647A	CM-9647A	L - A - N	
CM-520	CM-9520	E - A - E		CM-660	CM-9660	G - A - G	
CM-521	CM-9521	E - A - D		CM-661	CM-9661	G - A - G	
CM-524	CM-9524	D - A - D		CM-662	CM-9662	G - A - E	
CM-580	CM-9580	E - A - E		CM-665	CM-9665	L - A - L	
CM-585	CM-9585	E - A - E		CM-666	CM-9666	L - A - L	
CM-590	CM-9590	E - A - E		CM-667	CM-9667	L - A - E	
CM-600	CM-9600	F - A - M		CM-680	CM-9680	F - A - F	
CM-602A	CM-9602A	F - A - N		CM-685	CM-9685	F - A - F	
CM-605	CM-9605	F - A - M		CM-690	CM-9690	F - A - F	
CM-607A	CM-9607A	F - A - N		CM-700	CM-9700	H - A - H	
CM-620	CM-9620	F - A - F		CM-705	CM-9705	H - A - H	
CM-621	CM-9621	F - A - F		CM-710	CM-9710	H - A - H	
CM-622	CM-9622	F - A - D		CM-780	CM-9780	G - A - G	
CM-625	CM-9625	H - A - H		CM-785	CM-9785	G - A - G	
CM-626	CM-9626	H - A - H		CM-790	CM-9790	G - A - G	
CM-627	CM-9627	H - A - D		CM-800	CM-9800	L - A - L	
CM-640	CM-9640	G - A - M		CM-805	CM-9805	L - A - L	
CM-642A	CM-9642A	G - A - N		CM-810	CM-9810	L - A - L	

The part numbers of valves do not include coils

