

Electropilots
 Standardized valves
 Spool valves
 Poppet valves
 COMPACT valves
 Accessories



VALVES

- Cylinders ☐
- High-Tech ☐
- Valves** ☐
- Air treatment ☐
- Accessories ☐

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■ UNIVER Headquarter

UNIVER started its activity in the '70s in the field of industrial automation with the production of the first series of pneumatic valves and poppet valves for vacuum.

In the following decades the range of technologically advanced and original pneumatic components has allowed a continuous growth and development of the company, till it has become one of the major Italian companies in the production of industrial Automation equipment.

In the year 2000, after years of experience in the supply of pneumatic components to the Automotive market, the Automotive Division was created and since then it has developed solutions for the automotive industry.

The electronic division, as a support of the Pneumatic Automation and Automotive divisions, is specialized in the study, design and manufacturing of the electric and electronic devices integrated in the Univer products.

The engineering of the products and of the processes, the production, the tests and customer service are attended to thanks to a severe quality standard. Since 1991 UNIVER is UNI EN ISO 90001 certified.

The organization of the sales network is coordinated by the Headquarters of UNIVER S.p.A. in Milan.

In Italy the commercial company UNIVER Service S.r.l. guarantees a quick and efficient service with the aid of operational offices and distributors in the whole country. The UNIVER Group has many direct companies and an active distribution network which covers the most important industrialized areas.

Pneumatic Automation_

Cylinders
High Tech
Valves
Air treatment
Accessories

Automotive_

Power clamps
Gripper units
Power clamps conforming to NAAMS and CNOMO standards
Retractable locating pin units
Pin units
Rotating units



ITALIA - Headquarter: UNIVER S.p.A.
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AUSTRALIA - UNIVER Pty Ltd
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SPAGNA - UNIVER S.L. System Supplier Pneumatic
SVEZIA - UNIVER SWEDEN AB
SVIZZERA - UNIVER AG
REGNO UNITO - UNIVER Manufacturing Company Ltd.



UNIVER offers the possibility to download free of charge **2D and 3D models** of the whole Pneumatic Automation and Automotive series

1970



- 1971** Foundation of UNIVER company
- 1973** Poppet valves for compressed air and vacuum



First valve series

1980



- 1980** Valves according to ISO 5599 (Industry Award)
- 1982** UNIVERSAL series valves
- 1986** Cylinders and mounting elements according to ISO 6431 (first cylinders on the market with extruded aluminium profile)
- 1988** Cylinders with antirotation piston and octagonal tube
Electrically actuated microvalves
Rodless cylinders (patented)
- 1989** Rotating cylinders (patented)
Short-stroke cylinders



ISO 6431 cylinders series K



Valves series AE



Rodless cylinder series S1

1990

- 1991** 10 mm nanovalve
G6 - G7 - G8 series valves
- 1992** Slide units in extruded aluminium profile
- 1993** Cybrain programmable actuators (patented)
- 1997** Telescopic cylinders (patented)
- 1998** Locking units (patented)
- 1999** Compact cylinders with adjustable cushioning standard (patented)



Slide units series J



10 mm nanovalve series B



Telescopic cylinders series RT

2000

- 2000** Combobox valves
- 2001** Pneumatic power clamps and retractable locating pin units (patented)
- 2002** Oval cylinders
- 2003** Electric cylinders (patented)
Electric power pivots (patented)
Electric power clamps and retractable locating pin units
- 2004** Valves according to ISO 15407/VDMA 24563
Serial communication control blocks
Pneumatic grippers (patented)
- 2005** Pneumatic power pivots (patented)
- 2006** 10 mm nanovalve 2nd generation
- 2007** COMPACT 10/15 mm valves
- 2008** TC serial communication control system
- 2009** JL Guided compact cylinders



COMPACT valves series P10/P15



Pneumatic/electric clamping units



Nanovalves series B10



Serial interface series TC



Guided cylinders series JL

2010

- 2000** Cylinders according to ISO 15552 KL series
- 2001** Compact cylinders Ø 80 – 100 according to ISO 21287
Series HZE Air treatment system



Cylinder ISO series KL



Compact cylinders ISO series RM - RS



Air treatment series HZE

>Pneumatic symbols

Ways/Pos.	Function	Symbol
2/2	normally closed	
2/2	normally open	
3/2	normally closed	
3/2	normally open	
5/2	separated exhausts	
5/3	closed centres	
5/3	open centres	
5/3	pressurized centres	

>Comparative table for port abbreviaton

Ports	ISO 5599	Abbreviation
Supply port	1	P
Port for line of work	2	B
Exhaust	3	S
Port for line of work	4	A
Exhaust	5	R
Pilot side that overrides the output signal	(10)	(Z)
Pilot side	12	Y
Pilot side	14	Z

CONTROLS			
Manual		Mechanical	
push-pull		push	
push-pull 2 position		sensitive ball-push	
button		roller lever	
lever		uni-directional roller lever	
lever 2 position		Pneumatic	
lever 3 position		pneumatic	
foot valves		pneumatic amplified	
bistable foot valves		5/3 pneumatic	
foot valves with security on control		Electric	
servoassisted foot valves		electric	
servoassisted bistable foot valves		electric amplified	
servoassisted foot valves with security on control		electric with manual	
		electric external supply port	
		5/3 electric	

RETURN			
Mechanical		Electrical	
mechanical spring		electric	
Pneumatic		electric amplified	
pneumatic		electric with manual	
pneumatic amplified		electric external supply port	
pneumatic spring		5/3 electric	
pneumomechanical spring			

>SI units - (multiples and sub-multiples)

Quantity	Symbol	Name	Derivation	Conversions
Length	m	Meter		1 km = 10 ³ m
	km	Kilometer		
Area	m ²	Square meter		
	cm ²	Square centimeter		1 cm ² = 10 ⁻⁴ m ²
Volume	m ³	Cubic meter		1 cm ³ = 10 ⁻⁴ m ³
	dm ³	Cubic decimeter		1 dm ³ = 10 ⁻³ m ³
Time	s	Second		
	min	Minute		1 min. = 60 s
	h	Hour		1 h = 3600 s
Speed	m/s	Meter/second		
	m/min	Meter/minute		1m/min. = 0,0166 m/s
	km/h	Kilometer/hour		1km/h = 0,277 m/s
Acceleration	m/s ²	Meter/square second		
Flow rate	m ³ /s	Cubic meter/second		
	dm ³ /min	Cubic decimetres/minute		1 dm ³ /min. = litri/min. = 1,6.10 ⁻⁵ m ³ /s
	m ³ /h	Cubic meter/hour		1 m ³ /h = 2,7.10 ⁻⁴ m ³ /s
Weight	kg	Kilogram		
	q	Quintal		1q = 10 ² kg
	t	Ton		1t = 10 ³ kg
Force	N	Newton	1 kg · m/s ²	1N = 0,102 Kp
	kp	Kilopound		1kp = 9,806 N
Pressure	Pa	Pascal	1 N/m ²	
	bar	Bar		1 bar = 10 ⁵ Pa
	kg/cm ²	Kilogram/square centimeter		1 kg/cm ² = 98066,5 Pa
	at	Tecnical atmosphere		1 at = 98066.5 Pa
Temperature	°K(t)	Kelvin		
	°C(t)	Celsius		°C = °K - 273,15
Work-energy	J	Joule	1 Nm	
	kgm	Kilogram-meter		1 kgm = 9.806 Joule
	Wh	Watt-hour		1 Wh = 3600 Joule
	kwh	Kilowatt-hour		1 kwh = 3600 · 10 ³ Joule
Power	W	Watt	1 J/s	1 kw = 10 ³ W
	kgm/s	Kilogram-meter/second		1 kgm/s = 9,806 W
	HP	Horsepower		1 HP = 745,7 W
	CV	Horsepower		1 CV = 735,5 W
Frequency	Hz	Hertz	1/s	
Electric current	A	Ampere		
	mA	Milliampere		1 mA = 10 ⁻³ A
Electric tension	V	Volt	1 W/A	
Electric power	W	Watt	1 J/s	
	V · A	Volt-Ampere	1 V · A	
Electric resistance	Ω	Ohm	1 V/A	

>Protection degrees for coil with connector

By protection degree we mean the intrinsic ability of live electrical equipment to protect and to protect itself against casual contacts and penetration of solid particles and water. It is defined with the abbreviation "I.P." followed by 2 figures: the first, **0** to **6**, defines the protection against casual contacts and penetration of particles; the second, **0** to **8**, the protection against water.

Protection degree against casual contacts and penetration of particles

	Protection/Denomination	Explanation
0	No protection	No special protection for people against casual contacts with live parts or moving parts No protection of the equipment against the penetration of foreign solid particles
1	Protection against the penetration of large-sized solid particles	Protection against casual contacts of large surface with live parts or moving parts inside the equipment, for example contacts with hands, but no protection against the voluntary access to these parts Protection of the equipment against the penetration of solid particles with a diameter larger than 50 mm
2	Protection against the penetration of medium-sized solid particles	Protection against contacts of fingers with live parts or moving parts inside the equipment Protection against the penetration of solid particles with a diameter larger than 12 mm, such as fingers
3	Protection against the penetration of small-sized solid particles	Protection against contacts of tools, wires or the like, thicker than 2.5 mm with live parts or moving parts inside the equipment. Protection against the penetration of solid particles with a diameter larger than 2.5 mm, such as tools, wires and so on
4	Protection against the penetration of very small-sized solid particles	Protection against contacts of tools, wires or the like, thicker than 1 mm with live parts or moving parts inside the equipment. Protection against the penetration of solid particles with a diameter larger than 1 mm, such as thin tools and wires and so on
5	Protection against dust deposits	Full protection against contacts with means of any kind with live parts or moving parts inside the equipment. Protection against dust deposits The penetration of dust is not fully eliminated, but it is reduced to such an extent as to assure the good operation of the equipment
6	Protection against dust penetration	Full protection against contacts with means of any kind with live parts or moving parts inside the equipment. Protection against dust deposits Full protection against the penetration of dust

Protection degree against water

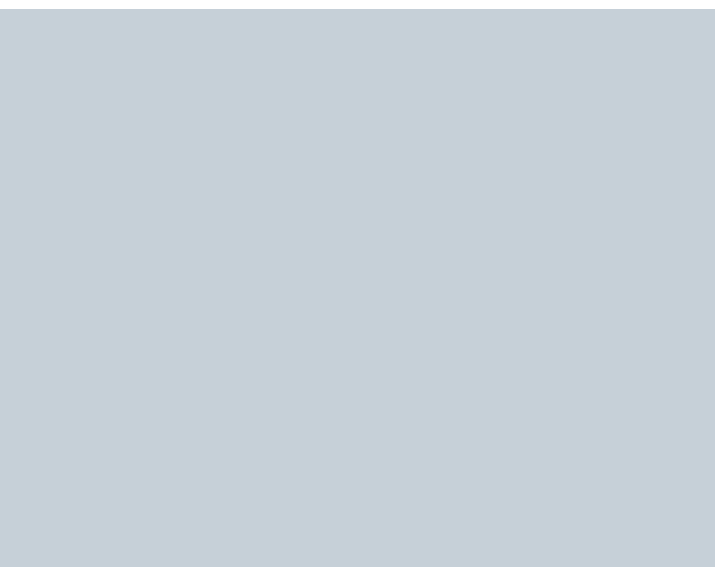
	Protection/Denomination	Explanation
0	No protection	No special protection
1	Protection against water drops falling perpendicularly	Water drops that fall perpendicularly must cause no harmful effect
2	Protection against water drops falling slantwise	Water drops that fall at a slanted angle of up to 15° to the perpendicular direction must cause no harmful effect
3	Protection against water dripping	Water that falls at a slanted angle of up to 60° to the perpendicular direction must cause no harmful effect
4	Protection against water sprays	Water sprayed against the equipment from any direction must cause no harmful effect
5	Protection against water jets	A water jet directed against the equipment from any direction must cause no harmful effect
6	Protection against immersion	The water penetrating into the equipment due to a temporary flood, for example during rough sea conditions, must cause no harmful effect
7	Protection against immersion	Water must not penetrate in such a quantity as to damage the equipment, should the equipment itself be immersed for pre-established times and at pre-defined pressures
8	Protection against submersion	Water must not penetrate in such a quantity as to damage the equipment, should the equipment itself be submerged at pre-defined pressures and for an undetermined period of time

>Product table

SERIES	FLOW RATE (l/min)	THREADS/SUB BASES	FUNCTIONS					CONTROL				RETURN						PAGE
			2/2	3/2	5/2	5/3	3/2 + 3/2	MECHANICAL	MANUAL	PNEUMATIC	ELECTRIC	MECHANICAL	MANUAL	MECHANICAL SPRING	PNEUMOMECHANICAL SPRING	PNEUMATIC	ELECTRIC	
A 15 mm	26÷38	ISO 15218																
AA 22 mm	30÷60	sub-base																
	28÷60	G 1/8																
	30÷60	M5																
	33÷45	CNOMO																
AB 30 mm	92÷150	sub-base																
	100÷155	G 1/8																
	95÷650	G 1/4																
	92÷110	CNOMO																
B 10 mm	9÷12	sub-base																
B10 10 mm	30	ISO 15218																
BE BE12	1480	ISO 1																
	2300	ISO 2																
	4200	ISO 3																
	6600	ISO 4																
AE	1480	ISO 1																
	2300	ISO 2																
BD	1700	ISO 01-26mm																
	800	ISO 02-18mm																
AC-N	1200	NAMUR interface																
CL-CM	890	G 1/8																
		G 1/4																
E15	150	M5																
G6	770	G 1/8																
GL6	740	sub-base																
G7	860	G 1/8																
PS	200	tube Ø4																
	510	tube Ø6																
	830	tube Ø8																
AC	1080	G 1/8																
	1600	G 1/4																
	4600	G 1/2																
CH	600	G 1/8																
AF	580	G 1/8																
	1100	G 1/4																
	1500	G 3/8																
	5400	G 1/2																
	6500	G 3/4																
	13500	G 1																
	35000	G 1 1/2																
AG	759,5*	G 1/8														V		
	759,5*	G 1/4														V		
	759,5*	G 3/8														V		
	759,5*	G 1/2														V		
	759,5*	G 3/4														V		
	759,5*	G 1														V		
	759,5*	G 1 1/2														V		
AI	110	sub-base																
AI-JET	98	M5 tube Ø4																
AM FOOT VALVES	98	G 1/8																
	800	G 1/4																
P10	310	M5																
	310	M7																
	310	sub-base																
P15	800	G 1/8																
	800	sub-base																

* For AG valves the value refers to vacuum version (mm Hg)

V = return by vacuum



ELECTROPILOTS

1 Electropilots

B	18 mm Nanovalves	1.03
B10	10 mm Nanovalves - high flow rate	1.05
A	15 mm Microvalves	1.07
AA	U1 Miniature electropilots	1.13
AB	U2 Miniature electropilots	1.19

B

10 mm nanovalves

- Flow rate 12 NI/min
- Interface with conveyed discharge or discharge in the air
- Versions 3/2 normally open (NO) and normally closed (NC)
- Interchangeable coil (U04) - rotation by 180°
- Molex-type electrical connector or louse wires



TECHNICAL CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C
Fluid temperature	max +50 °C
Fluid	10 µm filtered air, lubricated or not
Commutation system	poppet valve
Ways/Positions	3/2 NC, 3/2 NO
Pressure	max 8 bar
Control	electric
Return	mechanical spring
Connections	on sub-base
Nominal Ø	0,5÷0,6 mm
Nominal flow rate	9÷12 NI/min
Max frequency	2300 ÷ 3000 cycles/min

CONSTRUCTIVE CHARACTERISTICS

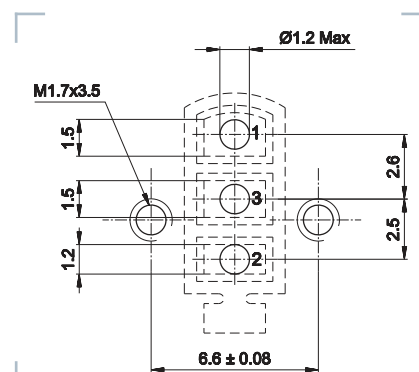
Valve body	thermoplastic
Seals	nitrile rubber
Components	stainless steel - treated brass

ELECTRIC CHARACTERISTICS

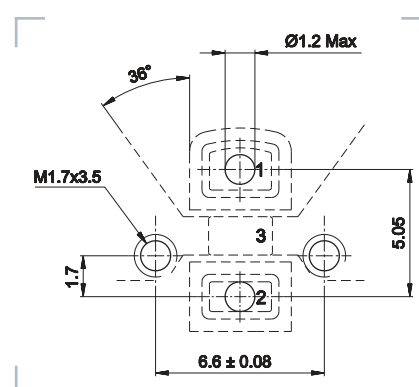
Coil	U04 DE series
Power consumption	1,2 W (1,35 W with LED)
Electrical connection	Molex-type bipolar connector or loose wires
Voltage	12 V DC - 24 V DC
Manual override	with button with tool

Substructure

Conveyed discharge



Discharge in the air



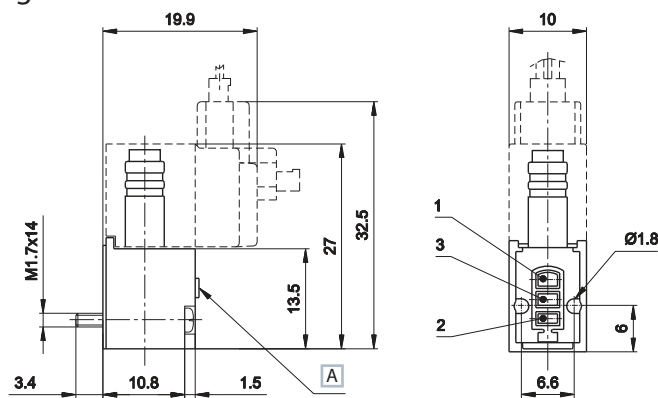
NC

- 1 = Supply port
- 2 = Use
- 3 = Exhaust

NO

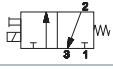
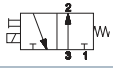
- 1 = Exhaust
- 2 = Use
- 3 = Supply port

Valves with conveyed discharge

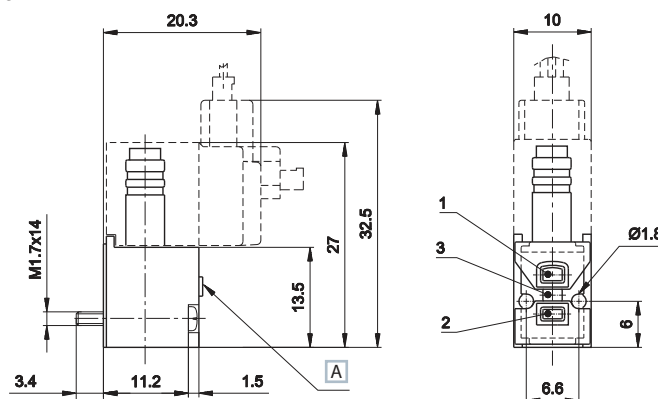


1 = Supply port
2 = Use
3 = Exhaust

A Manual override

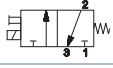
Symbol	Nominal Ø	Flow rate Nl/min.	Pressure bar	Times (ms)		Weight (b) Kg	Part no.
				En.	De-en.		
3/2 NC 	0,5	1→2 = 9 2→3 = 12	1,5÷8 (a)	9	10	0,007 (0,012)	B-101N
3/2 NO 	0,5	3→2 = 9 2→1 = 10	0÷8	18	8	0,007 (0,012)	B-121N

Valves with discharge in the air



1 = Supply port
2 = Use
3 = Exhaust

A Manual override

Symbol	Nominal Ø	Flow rate Nl/min.	Pressure bar	Times (ms)		Weight (b) Kg	Part no.
				En.	De-en.		
3/2 NC 	0,6	1→2 = 12 2→3 = 15	1,5÷8 (a)	9,5	9	0,007 (0,012)	B-102N

>> Coils



U04 with integrated
upward 90° connector



U04 with in-line
connector



U04 with loose wires
(300 mm length)



U04 with in-line connector
with protecting cover for
complete tightness

(a) = upon request: 0 bar operation

(b) = the value in brackets indicates the mass with coil (0,015 Kg with 300 mm loose wires)

For technical features of coils and connector, see section "Accessories>Coils"

Nanovalves are supplied without coil and connector, to be ordered separately.

B10

10 mm nanovalves ISO 15218

- Low input standard: 0,3 W
- High flow-rate: 30 NI/min
- Quick response time: 3 ms
- ISO 15218 interface
- 3/2 NC version
- Led standard

Upon request:

- Bistable version
- 0,1 W version
- 50 NI/min flow rate version



TECHNICAL CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C
Fluid temperature	max +50 °C
Fluid	10 µm filtered air, lubricated or not
Ways/Positions	3/2 NC (monostable) 3/2 NC-NO (bistable)
Pressure	max 8 bar
Control	electric
Return	mechanical spring
Operating frequency	5 Hz
Assembly	no. 2 screws M1,6
Connections	ISO 15218 interface
Nominal Ø (mm)	1,3 mm
Nominal flow rate (NI/min)	30 (1→2) 32 (2→3)

CONSTRUCTIVE CHARACTERISTICS

Valve body	self-extinguishing technopolymer
Seals	NBR
Components	stainless steel - brass

ELECTRIC CHARACTERISTICS

Voltage	24 VDC (12V DC upon request)
Voltage tolerance	±10%
Power consumption	0,3W (pick-up 5,5 W - 25 ms)
Electrical connection	connector D535 U40 (IP65)
	welded pin (IP00)
LED	yellow (standard)
Manual override	monostable button

CODIFICATION KEY

B	1	0	4	0	1	L	2	4	D
1	2	3	4	5	6				

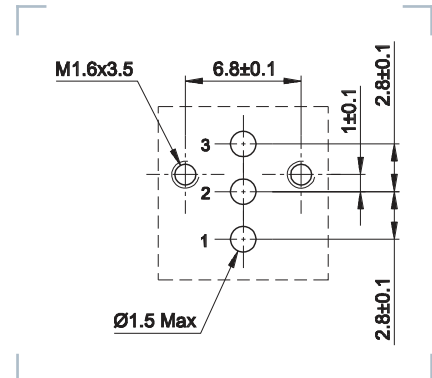
1 Series	2 Model	3 Type
B10 = 10 mm nanovalves ISO 15218	4 = monostable 5 = bistable (upon request)	0 = 3/2 NC Ø1,3 mm

4 Function	5 Variant	6 Voltage
1 = with manual, 90° connector 2 = without manual, 90° connector 3 = with manual, PIN on interface side 4 = without manual, PIN on interface side	L = protected PIN (a) P = unprotected PIN (suitable for electronic board mounting)	24D = 24 V DC 12D = 12 V DC (upon request)

(a) = version for connector

Fixing screws included. Tightening torque max 0,15 Nm.

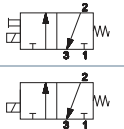
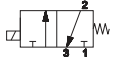
Substructure (ISO 15218)



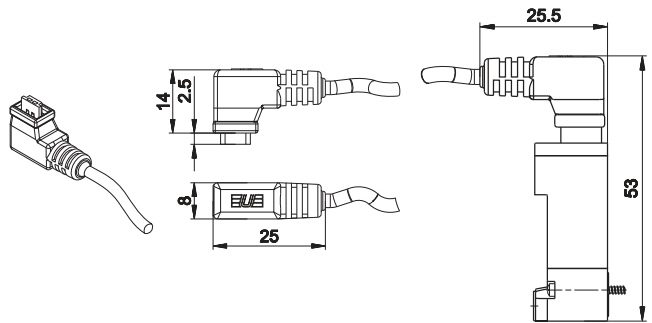
- 1 = Supply port
2 = Use
3 = Exhaust

90° Connector

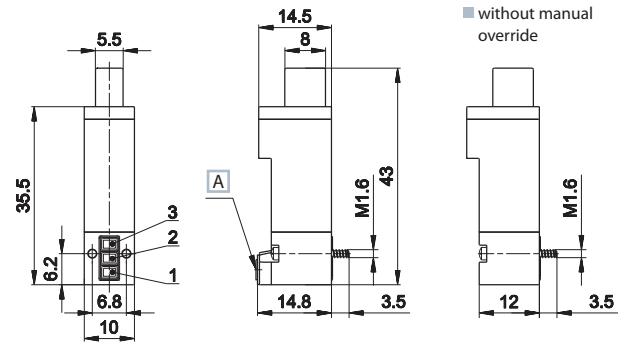


	Symbol	Pressure bar	Ø mm	Times (ms)		Weight Kg	Part no.
				En.	De-en.		
3/2 NC		0÷7	1,3	3	3,5	0,0108	B10-401L24D (a)
3/2 NC		0÷7	1,3	3	3,5	0,0107	B10-402L24D (b)

D-535U40300/500



single connector with 3-5 m wire
weight Kg: 0,05 D-535U40300 wire L = 300 mm
0,07 D-535U40500 wire L = 500 mm

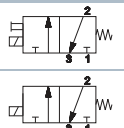
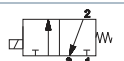


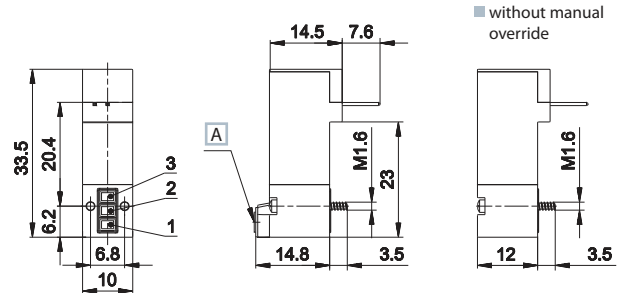
A Manual override

1 = Supply port
2 = Use
3 = Exhaust

In-line PIN



	Symbol	Pressure bar	Ø mm	Times (ms)		Weight Kg	Part no.
				En.	De-en.		
3/2 NC		0÷7	1,3	3	3,5	0,0104	B10-403P24D (a)
3/2 NC		0÷7	1,3	3	3,5	0,0103	B10-404P24D (b)



A Manual override

1 = Supply port
2 = Use
3 = Exhaust

In-line PIN bistable (magnetic memory)



In this version the opening is carried out by a 25 ms impulse, while the closing is carried out by a similar impulse with inverted polarity.

For any further information please get in touch with our Sales Office.

(a) = with manual override (b) = without manual override

A

15 mm Microvalves

- Flow rate max 38 NI/min
- ISO 15218 interface
- 2/2-3/2 versions - normally open (NO) and normally closed (NC)
- Interchangeable coil - 90° orientation
- Single and multiple sub-bases - single and multipolar electric connection



TECHNICAL CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C	
Fluid temperature	max +50 °C	
Fluid	10 µm filtered air, lubricated or not	
Commutation system	poppet	
Ways/Positions	2/2 NC, 3/2 NC, 2/2 NO, 3/2 NO	
Pressure	max 9 bar	
Control	electric	
Return	mechanical spring	
Connections	ISO 15218 interface	
Nominal Ø	1,2	1,5
Nominal flow rate	26	38
Max frequency	2700 cycles/min	

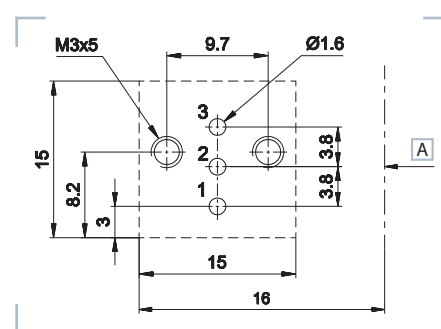
CONSTRUCTIVE CHARACTERISTICS

Valve body	technopolymer (aluminium external cover)
Seals	nitrile rubber
Components	stainless steel, brass

ELECTRIC CHARACTERISTICS

Coil	U05 DD series	
Power consumption	24 V AC - 48 V AC - 110 V AC - 230 V AC	
Electrical connection	15 mm connector - Molex-type bipolar connector or loose wires	
Voltage	12 V DC - 24 V DC	
Manual override	with button with tool	
	(upon request other manual overrides, see page 1_5)	
Protection degree with connector	IP65	

ISO 15218 Substructure



A Pitch

3/2 NC

- 1 = Supply port
- 2 = Use
- 3 = Exhaust

3/2 NO

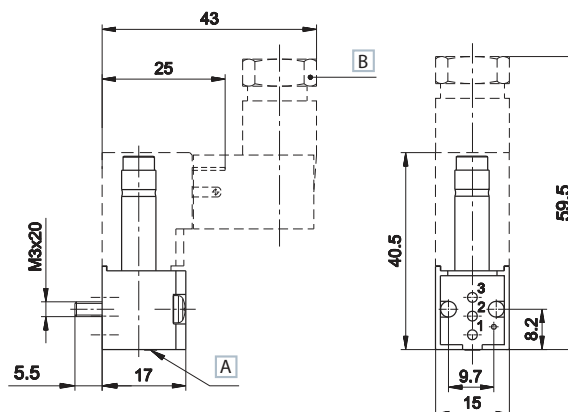
- 1 = Exhaust
- 2 = Use
- 3 = Supply port

2/2 NO

- 1 = Exhaust
- 3 = Supply port

Drilling jig to assemble the valve on a smooth surface with a sealing plate in between. Part no. A-299-11.

15 mm Microvalves

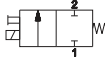
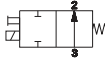
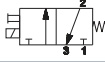
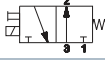


A Manual override

B Possible rotation by 180°

3/2 NC	3/2 NO	2/2 NO
1 = Supply port	1 = Exhaust	1 = Exhaust
2 = Use	2 = Use	3 = Supply port
3 = Exhaust	3 = Supply port	

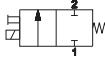
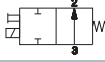
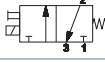
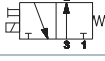
Microvalves Ø 1,2 for direct current coils 2 W

	Symbol	Pressure bar	Ø mm	Flow rate NI/min.	Current	Times (ms)		Weight (b) Kg	Part no.
						En.	De-en.		
2/2 NC		0÷9	1,2	26	DC	11	11	0,018 (0,037)	A-141N
2/2 NO		0÷9	1,2	26	DC	11	11	0,018 (0,037)	A-161N
3/2 NC		0÷9	1,2	26	DC	11	11	0,018 (0,037)	A-101N
3/2 NO		0÷9	1,2	26	DC	11	11	0,018 (0,037)	A-121N

Suggested coils	
DD-051 24 V DC - 2 W	Coil with Faston
DD-051L030 24 V DC - 2 W	Coil with flying cables

Upon request 12 V DC

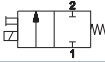
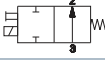
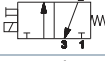
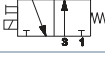
Microvalves Ø 1,5 for direct current coils 2,5 W

	Symbol	Pressure bar	Ø mm	Flow rate NI/min.	Current	Times (ms)		Weight (b) Kg	Part no.
						En.	De-en.		
2/2 NC		0÷8	1,5	38	DC	11	11	0,018 (0,037)	A-142N
2/2 NO		0÷8	1,5	38	DC	11	11	0,018 (0,037)	A-162N
3/2 NC		0÷8	1,5	38	DC	11	11	0,018 (0,037)	A-102N
3/2 NO		0÷8	1,5	38	DC	11	11	0,018 (0,037)	A-122N

Suggested coils	
DD-052 24 V DC - 2,5 W	Coil with Faston
DD-052L030 24 V DC - 2,5 W	Coil with flying cables

Upon request 12 V DC

Microvalves Ø 1,2 for direct or alternate current

	Symbol	Pressure bar	Ø mm	Flow rate NI/min.	Current	Times (ms)		Weight (b) Kg	Part no.
						En.	De-en.		
2/2 NC		0÷9	1,2	26	DC/AC	11	11	0,018 (0,037)	A-151N
2/2 NO		0÷9	1,2	26	DC/AC	11	11	0,018 (0,037)	A-171N
3/2 NC		0÷9	1,2	26	DC/AC	11	11	0,018 (0,037)	A-111N
3/2 NO		0÷9	1,2	26	DC/AC	11	11	0,018 (0,037)	A-131N

Suggested coils	
DD-040 24 V AC - 50/60 Hz - 2 VA	Coil with Faston
DD-050 48 V AC - 50/60 Hz - 2 VA	
DD-051 24 V DC - 2 W	
DD-070 230 V AC - 50/60 Hz - 2 VA	
DD-051L030 24 V DC - 2 W	Coil with flying cables

Upon request 12 V DC

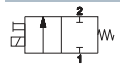
(b) = the weight in brackets refers to coil with faston

For technical data of coils see "Accessories>Coils"

Pilots are supplied without coil, connector and sealing plate

Microvalves Ø 1,5 for direct or alternate current

2/2 NC



Pressure

bar

Ø

mm

Flow rate

NI/min.

Current

Times (ms)

En.

De-en.

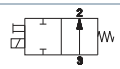
Weight (b)

Kg

Part no.

Suggested coils

3/2 NC



0÷9

1,5

38

DC/AC

11

11

0,018

(0,037)

A-152N

0÷9

1,5

38

DC/AC

11

11

0,018

(0,037)

A-112N

DD-011
24 V AC - 50/60 Hz
DD-013
220 V AC - 50/60 Hz - 3,5 VA
DD-040
24 V AC - 50/60 Hz - 3,5 VA
DD-052
24 V DC - 2,5 W
DD-060
48 VAC - 50/60 Hz - 3,5 VA

Coil with Faston

DD-052L030
24 V DC - 2,5 W

Coil with flying cables

Upon request 12 V DC

>> Coils

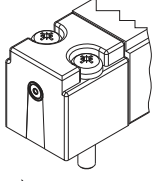
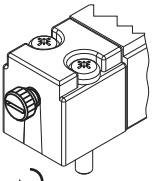
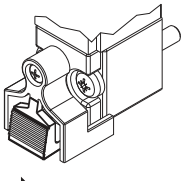
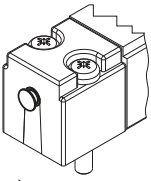


U5 flying cables
weight: 0,019 Kg
DD-051L030
DD-052L030

U05 15 mm
weight: 0,019 Kg
DD-011 DD-051
DD-013 DD-052
DD-040 DD-060
DD-041 DD-070
DD-050

Standard manual override

Operation	Notes	Symbol
1 = with button with tool, 1 position (standard)	metallic	→
2 = with button, 1-2 positions (upon request)	technopolymer red colour	⊖
3 = with front button, 1 position (upon request)	technopolymer red colour	→
4 = with button, 1 position (upon request)	metallic	→

1
2
3
4

(b) = the weight in brackets refers to coil with faston

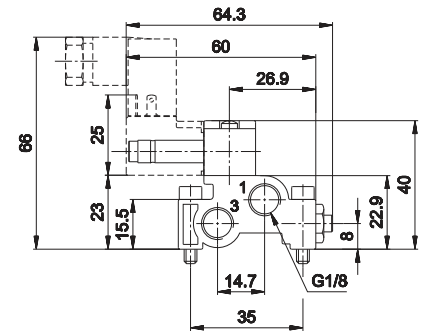
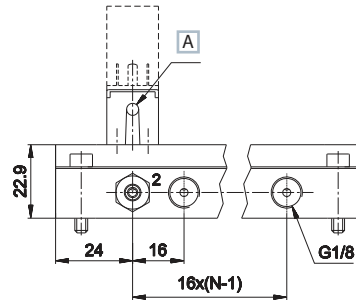
For technical data of coils see "Accessories>Coils"

Pilots are supplied without coil, connector and sealing plate

Sub-base for external electric connection

Sub-base in extruded anodized aluminium with conveyed supplies and exhausts for assembling NC or NO valves. If NC and NO valves are assembled on just one base, it is necessary to insert the inverter part A-350 for NO valves.

- A - 326A - __^(b) G1/8 threaded connections (standard)
 A - 326B - __^(b) M5 threaded connections (upon request)
 A - 326C - __^(b) push-in connections tube 3 (upon request)
 A - 326D - __^(b) push-in connections tube 4 (upon request)



A Manual override

N = Number of valve positions
 (b) = Number of positions

3/2 NC

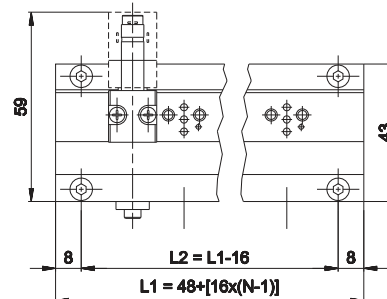
1 = Supply port
 2 = Use
 3 = Exhaust

3/2 NO

1 = Exhaust
 2 = Use
 3 = Supply port

2/2 NO

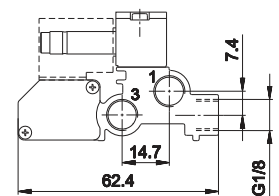
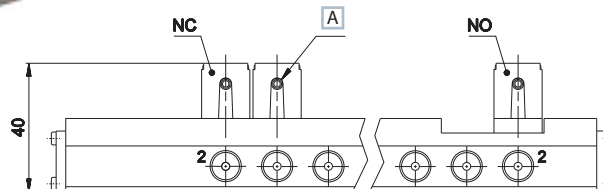
1 = Exhaust
 3 = Supply port



Sub-base for integrated electric connection

Sub-base with sub-D connector in extruded anodized aluminium up to max. 13 stations with connector 15 pin (upon request up to 23 with connector 25 pin) and G1/8 threaded standard connections, with conveyed supplies and exhausts for assembling NC or NO valves with integrated coil connection and optical indication of the valve activation.

If both, NO and NC valves, are assembled on just one sub-base, NC valves are always mounted on the connector side and afterwards the NO valves. The invert (part no. A-350) is inserted for NO valves.



A Manual override

N = Number of valve positions

3/2 NC

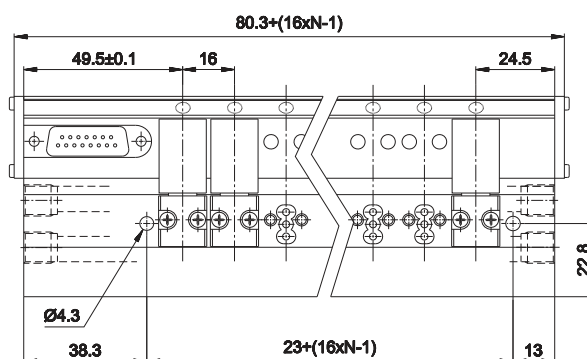
1 = Supply port
 2 = Use
 3 = Exhaust

3/2 NO

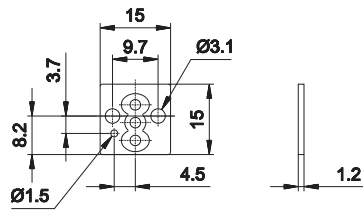
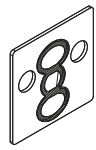
1 = Exhaust
 2 = Use
 3 = Supply port

2/2 NO

1 = Exhaust
 3 = Supply port

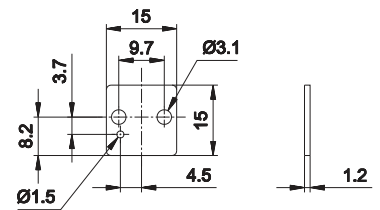
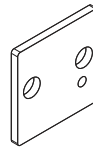


A-299-11

**Sealing plate**

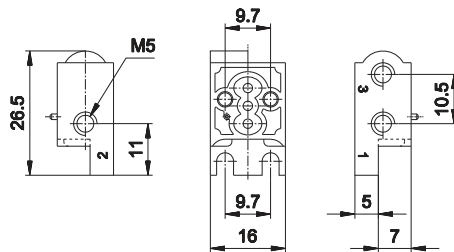
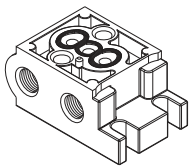
It blocks the seal in place when the valve is mounted on a smooth surface without a seal housing
 material: aluminium
 weight: 0,003 Kg

A-301

**Blank plate**

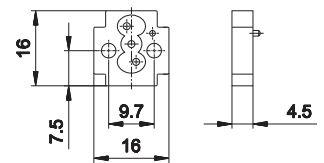
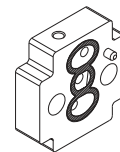
Unused valve stations must be closed with the blanking plate
 material: aluminium
 weight: 0,002 Kg

A-305

**Single base**

material: zamak
 connection: M5
 weight: 0,012 Kg

A-350

**Inverter**

NO and NC valves can be mounted on a single block inserting this device between the NO valve and the sub-base.
 If all are NO valves, just invert air supply, without using the inverter.
 material: plastic
 weight: 0,002 Kg

AA

Miniature electropilots U1

Direct intervention electropilots with poppet valve system and cushioned bottom seals

- Assembly on sub-base
- Threaded connections on the body
- CNOMO interface
- Orientable coil (360°) separated from mechanical part
- Versions: 2/2 3/2 NC - NO
- Original Univer SPEED modular sub-bases



TECHNICAL CHARACTERISTICS

Ambient temperature	-10 ÷ +50 °C			
Fluid temperature	max +95 °C			
Fluid	10 µm filtered air, lubricated or not, neutral gases (upon request other fluids can be used)			
Commutation system	direct intervention poppet valve system with cushioned seals			
Ways/Positions	2/2 NC, 3/2 NC, 3/2 NO^(a)			
Pressure	2/2, 3/2 NC = 0 ÷ 10 3/2 NO = 3 ÷ 10			
Control	electric			
Return	mechanical spring			
Connections	on sub-base or with threaded connections on the body			
	sub-base	G 1/8	M5	CNOMO
Nominal Ø (mm)	1,2 ÷ 1,5	1 ÷ 1,5	1 ÷ 1,5	1,2 ÷ 1,5
Nominal flow rate (NI/min)	30 ÷ 60	28 ÷ 60	30 ÷ 60	33 ÷ 45

CONSTRUCTIVE CHARACTERISTICS

Materials	see features below
-----------	--------------------

ELECTRIC CHARACTERISTICS

Series	U1	U3
Coil	DA	DC
Power consumption	3,5 W (DC) - 5 VA (AC)	2,5 W (DC) - 3,3 VA (AC)
Connector	AM 5110	AM 5111
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC	
Protection degree	IP65	

For other electric features see section "Accessories>Coils"

(a) = Mechanical part designed to keep the air supply always from the body
(Useful in case of assembly of more NC-NO pilots in series to have a unique supply port)

U1 Sleeves - with moving core



Material:	
sleeve	treated brass
cores and spring	stainless steel
seals	nitrile rubber

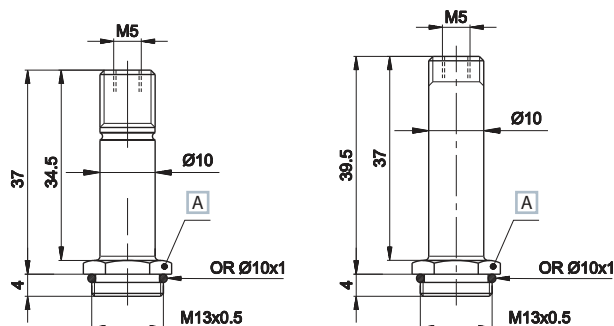
3/2 NO
3/2 NC
2/2 NC

Exhaust Ø	Pressure	Weight	Part no.
mm	bar	Kg	
1,2	3÷10	0,030	AA-0150
1,5	0÷10	0,030	AA-0157
-	0÷10	0,030	AA-0170

Upon request viton seals and stainless steel sleeves (only NC versions)

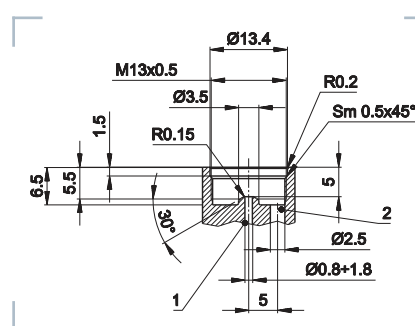
■ NC

■ NO



[A] Wrench 14

■ Detail of machining



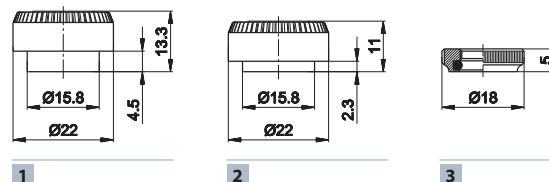
1 = Supply port
2 = Use

Locking rings for coils on sleeves



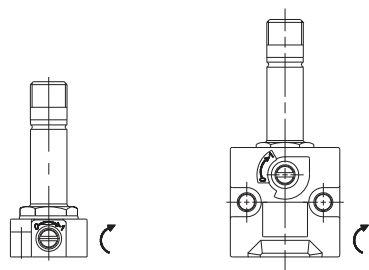
Version	Suitable for sleeves	Material	Coil	Part no.
1 = radial exhausts	3/2 NO	technopolymer	U1	AM-5213A
2 = radial exhausts	3/2 NC	technopolymer	U1	AM-5211A
3 = open exhausts	2/2 NC	brass	U1	AM-5211B

In order to convey exhausts, use version 3

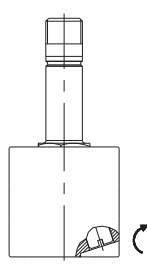


Standard manual overrides

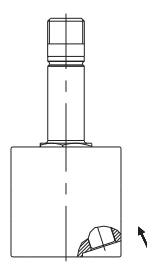
Functionig	Suitable for sleeves	Symbol/Part no.
1 = with 2 position screw	all NC U1 electropilots that can use manual override	⊖
2 = with impulse 1-2 position screw	only CNOMO NC U1 electropilots	⊖
3 = with button with tool	only CNOMO NC U1 electropilots	→
4 = with button, 1 position	U1 3/2 NO electropilots	AM-5201 (a)



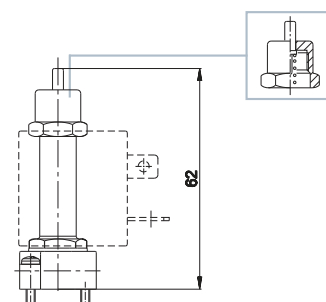
1



2



3



4

(a) = Mounted on the 3/2 NO sleeve

⊖ = with 2 position screw

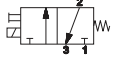
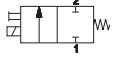
→ = with button with tool

U1 2/2 - 3/2 Electropilot for assembling on sub-base

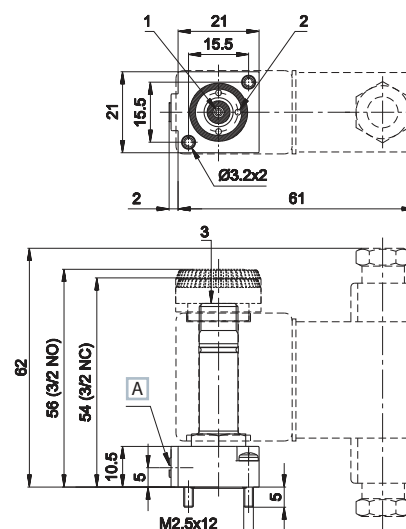


Material:
 valve body technopolymer
 sleeve treated brass
 core and spring stainless steel
 seals nitrile rubber

Weight (Kg): 0,036

	Symbol	Ø (d) mm	Flow rate (NI/min)		Times (ms)		Manual override	Part no.
			1→2	2→3	En.	De-en.		
3/2 NC		1,5	60	80	12	12	⊖	AA-0184
2/2 NC		1,3	50	-	16	-	⊖	AA-0186
3/2 NO (b)		1,2	30	70	11	10	(c)	AA-0188

Use SPEED subbase to build Manifolds, see following pages.
 Available upon request: brass valve body (without manual override), zamak valve body, stainless steel sleeve, other inner diameters.



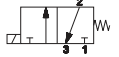
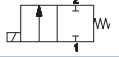
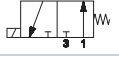
A Manual override 1 = Supply port
 2 = Use
 3 = Exhaust

U1 2/2 - 3/2 G1/8 Electropilot

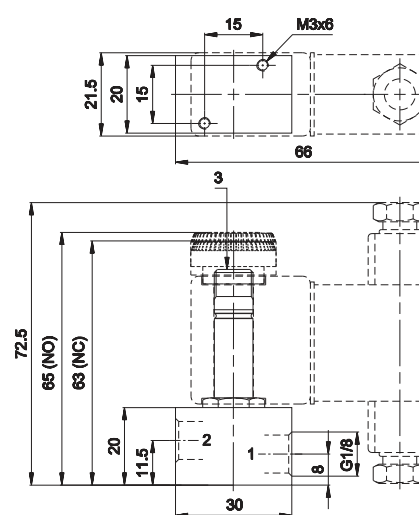


Material:
 valve body brass
 sleeve treated brass
 core and spring stainless steel
 seals nitrile rubber

Weight (Kg): 0,105

	Symbol	Ø (d) mm	Flow rate (NI/min)		Times (ms)		Manual override	Part no.
			1→2	2→3	En.	De-en.		
3/2 NC		1,5	60	85	12	12	-	AA-0211
2/2 NC		1,3	60	-	16	-	-	AA-0219
3/2 NO (b)		1	28	75	11	9	(c)	AA-0213

Electropilot to be used done.
 Brass body suitable for use with non-aggressive liquids. No manual override.
 Available upon request: stainless steel sleeve - other inner diameters.



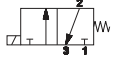
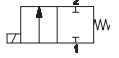
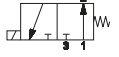
1 = Supply port
 2 = Use
 3 = Exhaust

U1 2/2 - 3/2 M5 Electropilot

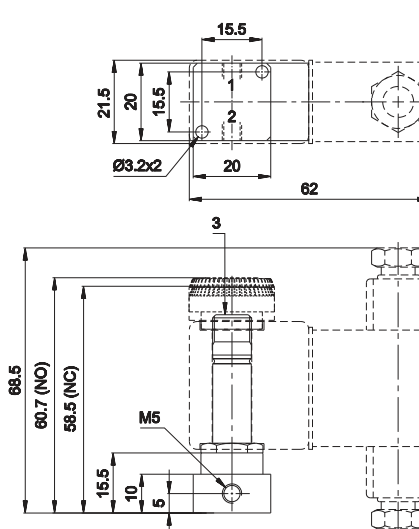


Material:
 valve body brass
 sleeve treated brass
 core and spring stainless steel
 seals nitrile rubber

Weight (Kg): 0,065

	Symbol	Ø (d) mm	Flow rate (NI/min)		Times (ms)		Manual override	Part no.
			1→2	2→3	En.	De-en.		
3/2 NC		1,5	60	80	12	12	-	AA-0231
2/2 NC		1,3	50	-	16	-	-	AA-0239
3/2 NO (b)		1	30	70	11	10	(c)	AA-0233

Electropilot to be used done.
 Brass body suitable for use with non-aggressive liquids. No manual override.
 Available upon request: stainless steel sleeve - other inner diameters.



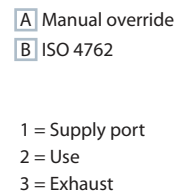
1 = Supply port
 2 = Use
 3 = Exhaust

(b) = close the exhaust of the 3/2 NO electropilot to get the 2/2 NO one
 (d) = the Ø shown on the 3/2 valves refers to the exhaust

(c) = manual override on AM-5201 ring nut

⊖ = with 2 position screw

Electropilots are supplied without coil, connector and locking ring



Electropilot	Connections	Material	Weight Kg	Part no.
U1 for base	G 1/8	zamak	0,037	AA-0450
U2 for base	G 1/8	zamak	0,075	AB-0900

Advantages

Advantages
The original UNIVER "Speed" series was designed to solve some operational problems

- Possibility of defining the number of sub-bases at the moment of use
- Possibility of freely increasing or reducing the number of elements
- Quick assembly with special screw (built-in) standard supplied
- Reduction of stock holding
- Easy technical intervention

Air supply is rotated by 90° in comparison with side consumption
Standard (built-in) screw and O-Ring

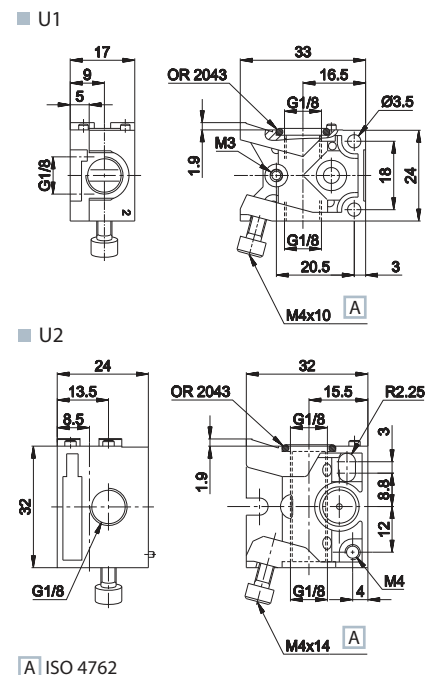
When assembling the manifold, put the bases on a flat surface and tighten the screw until the manifold is perfectly aligned.

(b) = close the exhaust of the 3/2 NO electropilot to get the 2/2 NO one
(d) = the Ø shown on the 3/2 valves refers to the exhhast

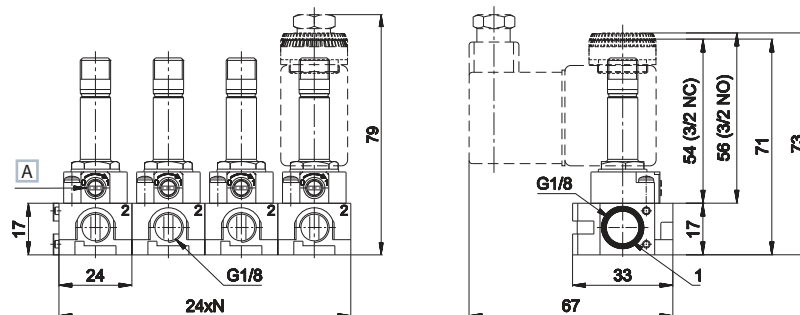
(c) = manual override on ring nut AM-5201

⊖ = with 2 position screw
→ = with button with tool

Electropilots are supplied without coil, connector and locking ring



U1 G1/8 sub-base



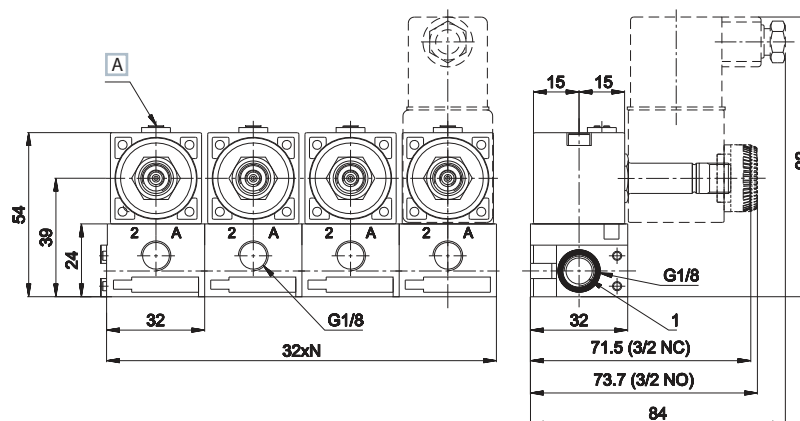
A Manual override

1 = Supply port

2 = Use

N = Number of valve positions

U2 G1/8 CNOMO sub-base



A Manual override

1 = Supply port

2 - A = Use

N = Number of valve positions

AB

Miniature electropilots U2

Direct intervention electropilots with poppet valve system and bottom cushioned seals

- Assembly on sub-base
- Threaded connections on the body
- CNOMO interface
- Orientable coil (360°) separated from mechanical part
- Versions: 2/2 3/2 - NC NO
- Original Univer SPEED modular sub-base



TECHNICAL CHARACTERISTICS

Ambient temperature	-10 ÷ +50 °C			
Fluid temperature	max +95 °C			
Fluid	filtered air 10 µm, lubricated or not (upon request other fluids can be used)			
Commutation system	direct intervention poppet valve system with cushioned seals			
Ways/Positions	2/2 NC, 3/2 NC, 3/2 NO^(a)			
Pressure	2/2, 3/2 NC = 0 ÷ 10 3/2 NO = 3 ÷ 10			
Control	electric			
Return	mechanical spring			
Connections	on sub-base or with threaded connections on the body			
	sub-base	G 1/8	M5	CNOMO
Nominal Ø (mm)	2,1 ÷ 2,4	2,1 ÷ 2,4	1,6 ÷ 6	2,1 ÷ 2,4
Nominal flow rate (NI/min)	92 ÷ 150	100 ÷ 155	95 ÷ 650	92 ÷ 110

CONSTRUCTIVE CHARACTERISTICS

Materials	see features below
-----------	--------------------

ELECTRIC CHARACTERISTICS

Series	U2
Coil	DB
Power consumption	11W (DC) - 10 VA (AC)
Connector	AM 5111
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC

For other electric features see section "Accessories>Coils"

(a) = Mechanical part designed to keep the air supply always from the body
(Useful in case of assembly of more NC-NO pilots in series to have a unique supply port)

U2 Sleeves - with moving core



Material:	
sleeve	treated brass
cores and springs	stainless steel
seals	nitrile rubber

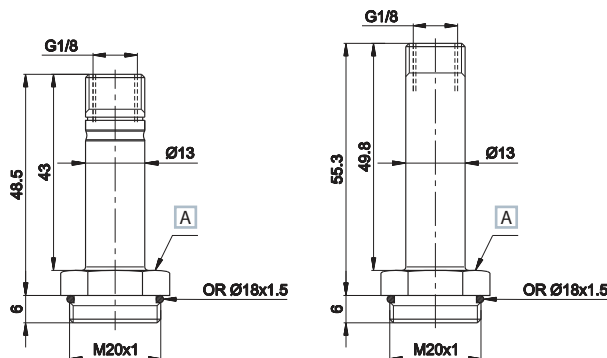
3/2 NO
3/2 NC
2/2 NC (a)
2/2 NC

Exhaust Ø	Pressure	Weight	Part no.
mm	bar	Kg	
2,4	3÷10	0,060	AB-0600
2,4	0÷10	0,060	AB-0613
-	0÷10	0,060	AB-0640
-	0÷10	0,070	AB-0643

Upon request viton seals and stainless steel sleeves (only NC options)

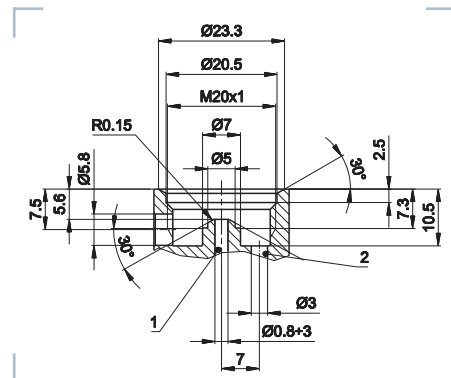
■ NC

■ NO



A Wrench 22

■ Detail of machining



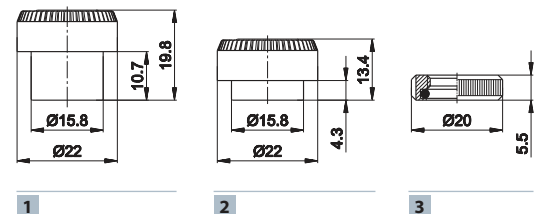
1 = Supply port
2 = Use

Locking rings for coils on sleeves



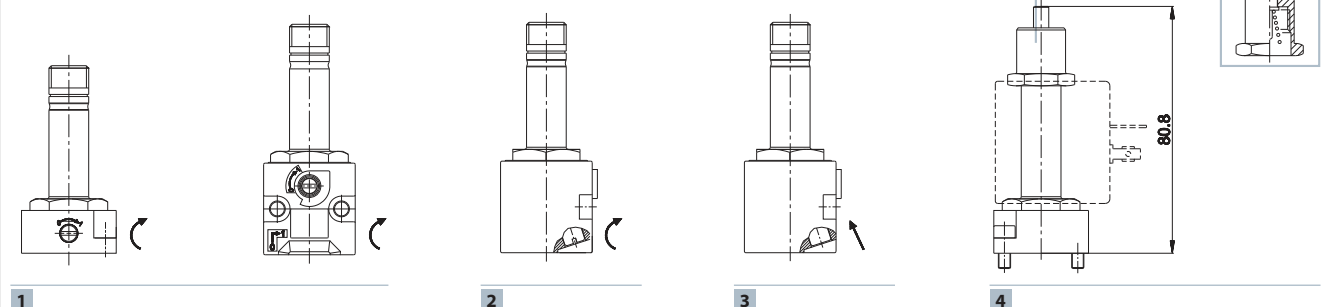
Version	Suitable for sleeves	Material	Coil	Part no.
1 = radial exhausts	3/2 NC	technopolymer	U2	AM-5212A
2 = radial exhausts	3/2 NO	technopolymer	U2	AM-5214A
3 = open exhausts	2/2 NC	brass	U2	AM-5212B

In order to convey exhausts, use version 3



Standard manual overrides with electropilots

Functionig	Suitable for sleeves	Symbol/Part no.
1 = with 2 position screw	all NC U2 electropilots that can use manual override	⊖
2 = with impulse 1-2 position screw	only CNOMO NC U2 electropilots	⊖
3 = with button with tool	only CNOMO NC U2 electropilots	→
4 = with button, 1 position	U2 NO 3/2 electropilots	AM-5203(b)



(a) = Suitable for sub-bases with diameter from 3 ÷ 6

(b) = Mounted on the 3/2 NO sleeve

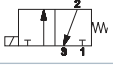
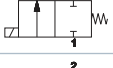
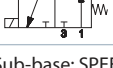
⊖ = with 2 position screw
→ = with button with tool

U2 2/2 - 3/2 Electropilot for assembling on sub-base

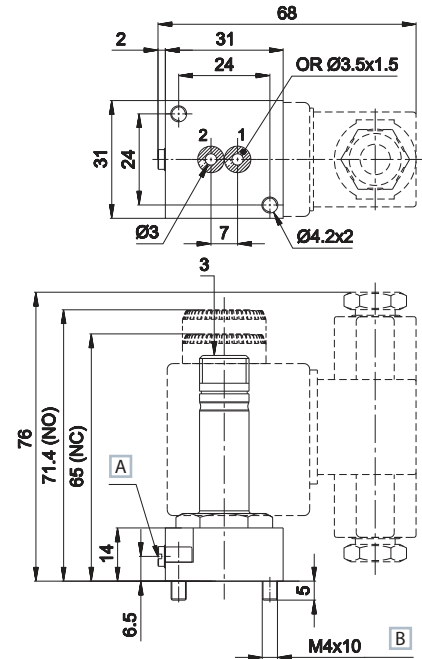


Material:
 valve body zamak
 sleeve treated brass
 core and spring stainless steel
 seals nitrile rubber

Weight (Kg): 0,125

	Symbol	Ø (d) mm	Flow rate (NI/min)		Times (ms)		Manual override	Part no.
			1→2	2→3	En.	De-en.		
3/2 NC		2,4	150	160	13	10	—	AB-0681
3/2 NC		2,4	150	160	13	10	⊖	AB-0687
2/2 NC		2,1	130	-	13	-	—	AB-0722
2/2 NC		2,1	130	-	13	-	⊖	AB-0728
3/2 NO (c)		2,4	92	148	14	10	(e)	AB-0685

Sub-base: SPEED U2. Available upon request: stainless steel sleeve - other inner diameters.



A Manual override

B ISO 4762

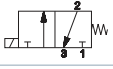
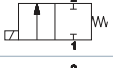
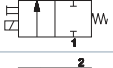
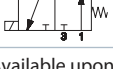
1 = Supply port
 2 = Use
 3 = Exhaust

U2 2/2 - 3/2 G1/8 Electropilot

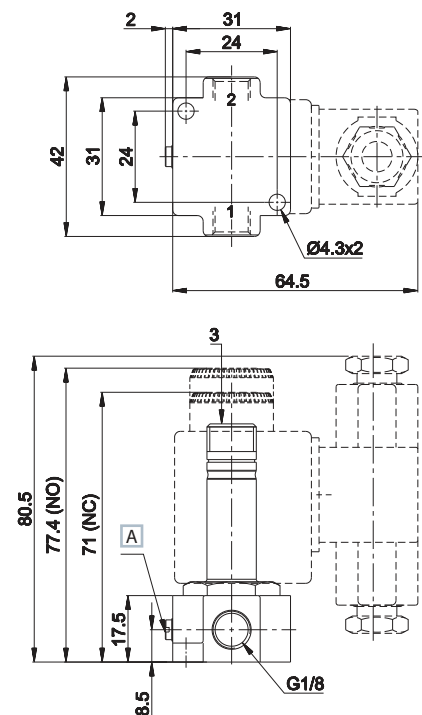


Material:
 valve body zamak
 sleeve treated brass
 core and spring stainless steel
 seals nitrile rubber

Weight (Kg): 0,145

	Symbol	Ø (d) mm	Flow rate (NI/min)		Times (ms)		Manual override	Part no.
			1→2	2→3	En.	De-en.		
3/2 NC		2,4	155	210	13	10	—	AB-0751
3/2 NC		2,4	155	210	13	10	⊖	AB-0757
2/2 NC		2,1	155	-	12	-	—	AB-0765
2/2 NC		2,1	155	-	12	-	⊖	AB-0771
3/2 NO (c)		2,4	100	150	14	11	(e)	AB-0755

Available upon request: stainless steel sleeve - other inner diameters.



A Manual override

1 = Supply port
 2 = Use
 3 = Exhaust

(c) = close the exhaust of the 3/2 NO electropilot to get the 2/2 NO one. (d) = the Ø shown on the 3/2 valves refers to the exhaust. ⊖ = with 2 position screw.
 (e) = manual override on AM-5203 ring nut

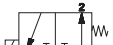
Electropilots are supplied without coil, connector and locking ring

U2 3/2 G1/4 Electropilot

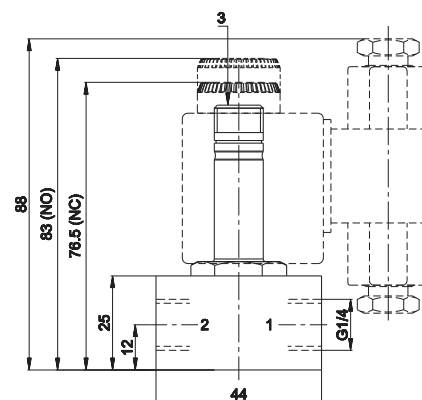
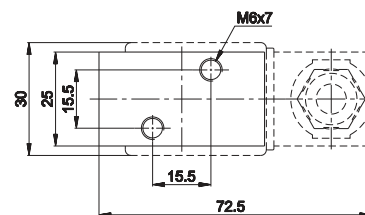


Material:
 valve body brass
 sleeve treated brass
 core and spring stainless steel
 seals nitrile rubber

Weight (Kg): 0,225

	Symbol	Ø (d) mm	Flow rate (l/min)		Times (ms)		Manual override	Part no.
			1→2	2→3	Ecc.	Dis.		
3/2 NC		2,1	200	210	13	11	—	AB-0822
3/2 NO (c)		2,1	95	160	12	10	(e)	AB-0819

Suitable for use with non-aggressive liquids. Upon request: stainless steel body and sleeve.



1 = Supply port

2 = Use

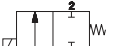
3 = Exhaust

U2 2/2 G1/4 Electropilot

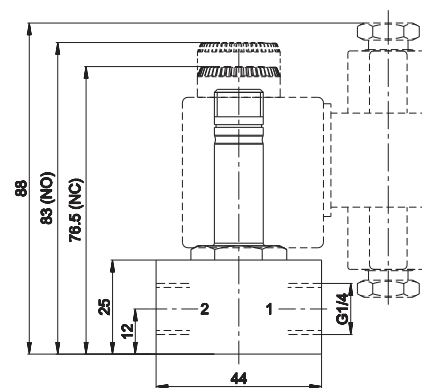
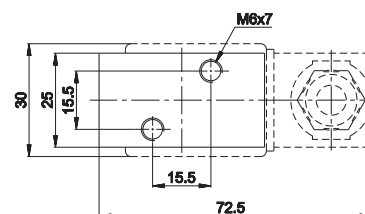


Material:
 valve body brass
 sleeve treated brass
 core and spring stainless steel
 seals nitrile rubber

Weight (Kg): 0,220

	Symbol	Ø (d) mm	Flow rate (l/min)	Pressure bar	Times (ms)		Part no.
					En.	De-en	
2/2 NC		1,6	108	0÷30	6	-	AB-0824
		2	165	0÷20	9	-	AB-0825
		2,4	210	0÷15	11	-	AB-0826
		3	280	0÷10	12	-	AB-0827
		3,5	350	0÷9	-	10	AB-0828
		4	450	0÷8	-	13	AB-0829
		4,5	500	0÷7	-	13	AB-0830
		5	550	0÷6,5	-	16	AB-0831
		5,5	600	0÷6	-	21	AB-0832
		6	650	0÷5	-	29	AB-0833

Suitable for use with non-aggressive liquids.



1 = Supply port

2 = Use



Coil U2 - 17 VA

Voltage
 24V AC - 50/60 Hz DB-0607
 110V AC - 50/60 Hz DB-0608
 220V AC - 50/60 Hz DB-0610

(c) = close the exhaust of the 3/2 NO electropilot to get the 2/2 NO one. (d) = the Ø shown on the 3/2 valves refers to the exhaust. ⊖ = with 2 position screw.
 (e) = manual override on AM-5203 ring nut

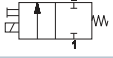
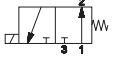
Electropilots are supplied without coil, connector and locking ring

U2 CNOMO 2/2 - 3/2 Electropilot for mounting on sub-bases SPEED U2

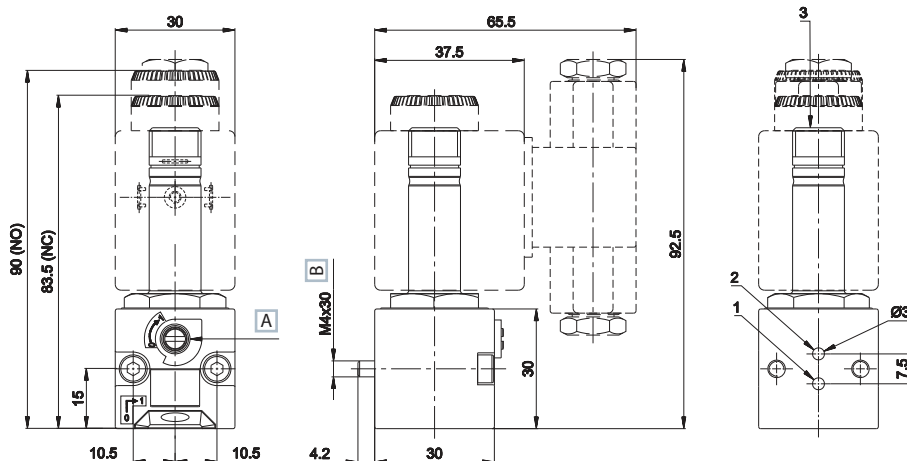


Material:	
valve body	technopolymer
sleeve	treated brass
core and spring	stainless steel
seals	nitrile rubber

Weight (Kg): 0,155

Symbol	Ø (d) mm	Flow rate (Nl/min)		Times (ms)		Manual override	Part no.
		1 → 2	2 → 3	En.	De-en.		
3/2 NC		2,4	110 170	13	12	⊖	AB-0885
2/2 NC		2,1	115 -	12	-	⊖	AB-0886
3/2 NO (c)		2,4	92 148	13	10	(e)	AB-0888

Sub-base: SPEED U2. Available upon request: brass valve body (without manual override).
Zamak valve body. Stainless steel sleeve - other inner diameters.



A Override manual
B ISO 4762

1 = Supply port
2 = Use
3 = Exhausts

Modular sub-base SPEED series U2 G1/8



Electropilot	Connections	Material	Weight kg	Part no.
U2 for base	G 1/8	zamak	0,075	AB-0900

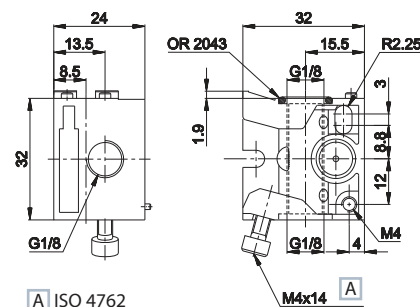
Advantages

The original UNIVER "Speed" series was realized to solve some operational problems

- Possibility of defining the number of sube-bases at the moment of use
- Possibility of freely increasing or reducing the number of elements
- Quick assembly with special screw (built-in) standard supplied
- Reduction of stock holding
- Easy technical intervention

Air supply is rotated by 90° in comparison with side consumption
Standard (built-in) screw and O-Ring

When assembling the manifold, put the bases on a flat surface and tighten the screw until the manifold is perfectly aligned.

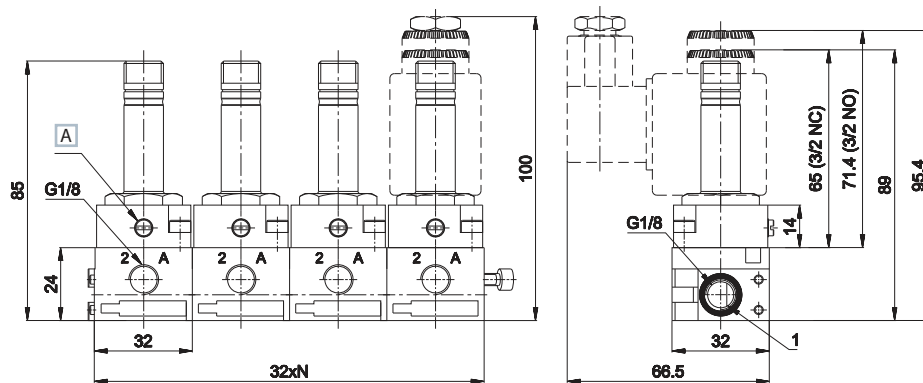


A ISO 4762

(c) = close the exhaust of the 3/2 NO electropilot to get the 2/2 NO one (d) = the Ø shown on the 3/2 valves refers to the exhaust ⊖ = with 2 position screw
(e) = manual override on ring nut AM-5203

Electropilots are supplied without coil, connector and locking ring

U2 G1/8 Sub-base

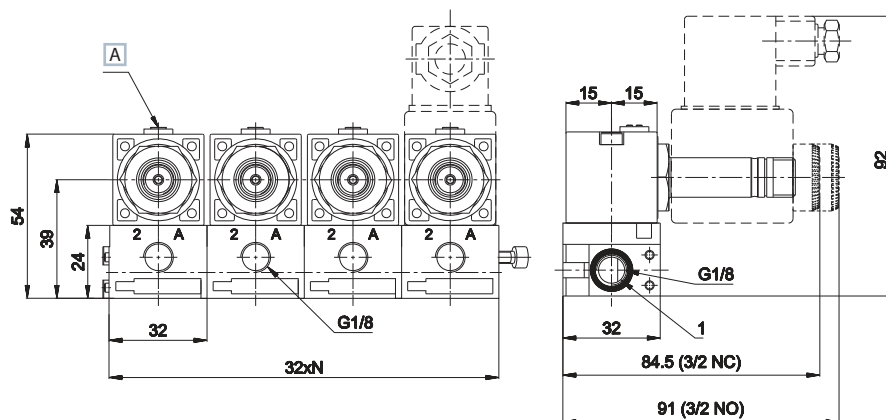


A Manual override

1 = Supply port
2 - A = Use

N = Number of valve position

U2 G1/8 CNOMO Sub-base



A Manual override

1 = Supply port
2 - A = Use

N = Number of valve position



STANDARDIZED VALVES

2 Standardized valves

BE BE12	ISO 5599 valves	2.03
AE	Light series valves for ISO 5599/1 sub-base mounting	2.15
BD	ISO15407/2 (VDMA 24563) ISO 02 (18mm) - ISO 01 (26mm) valves	2.19
AC-N	NAMUR valves	2.37

BE/BE12

ISO 5599/1 Valves

- Compliance with ISO 5599/1 international standards
- Full range: 1 - 2 - 3 - 4 size
- Two different internal commutation system: mixed and spool, appreciated for decades thanks to their maximum reliability
- High capacity
- Short internal stroke
- No lubrication
- Electric connection M12 for 1 - 2 - 3 size
- Modular base
- Possibility of mounting different sizes on the same sub-base



TECHNICAL CHARACTERISTICS

Ambient temperature	-10 ÷ +50 °C
Fluid temperature	max +50 °C
Fluid	mixed system: not dehumidified filtered air 50 µm spool system: filtered air 50 µm, dehumidified or not
Commutation system	mixed system, spool system
Ways/Positions	5/2, 5/3
Pressure	10 bar max
Control	indirect electro - pneumatic, pneumatic
Return	mixed system: pneumomechanical spring spool system: mechanical spring
Connections	ISO 5599/1 interface

	size 1	size 2	size 3	size 4
Nominal Ø (mm)	8	10	15	19
Nominal flow rate (NI/min)	1480	2300	4200	6600

CONSTRUCTIVE CHARACTERISTICS

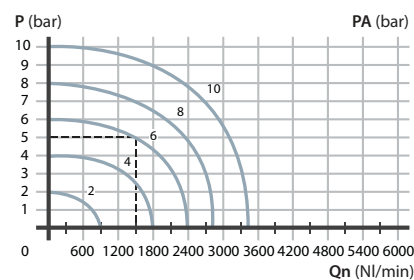
Valve body	acetalic resin
Cover	zamak - aluminium
Seals	mixed system: nitrile rubber and polyurethane spool system: nitrile rubber
Sub-base	zamak - aluminium
Actuators	technopolymer
Spool	aluminium

ELECTRIC CHARACTERISTICS

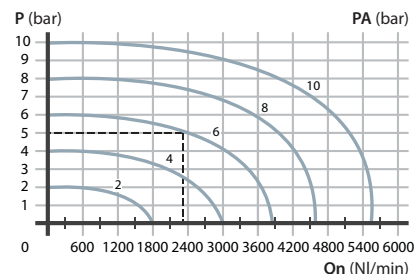
Electropilot	AA CNOMO (U1) series
Coil	U3 DC series
Power consumption	2,5 W (DC) - 5 VA (AC)
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC
Connector	AM 5111
Manual override	with two position screw (standard) with button with tool (upon request)

Flow rate characteristics

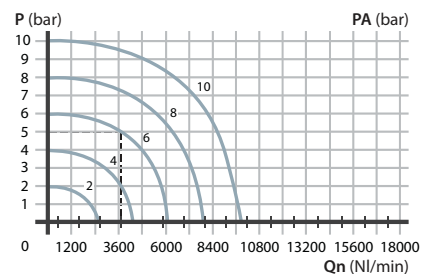
>> ISO 1



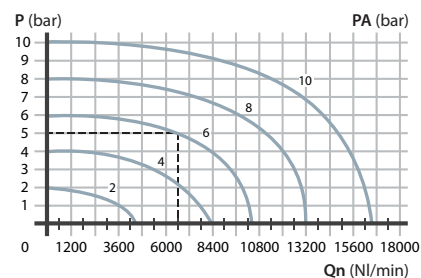
>> ISO 2



>> ISO 3



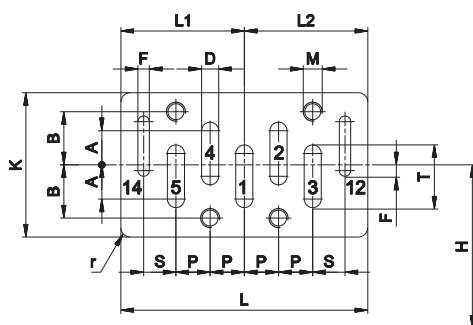
>> ISO 4



P = Working pressure
PA = Supply pressure
Qn = Nominal flow rate

ISO 5599/1 Standard

The ISO standard for pneumatic valves is accepted by industry and by the majority of major pneumatic valve manufactures throughout the world. The choice of valves according to ISO standard means to be at the technical forefront and to guarantee the user the interchangeability of both the valve body and the electromagnetic part

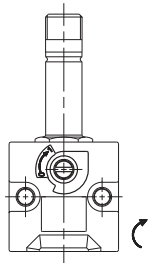


	A	B	D	F	H	K	L	L1	L2	M	P	r	S	T
ISO 1	9	14	4,5	3	43	38	65	32,5	32,5	M5	9	2,5	8,5	16,5
ISO 2	10	19	7	3	56	50	81	40,5	40,5	M6	12	3	10	22
ISO 3	11,5	24	10	4	71	64	106	53	53	M8	16	4	13	29
ISO 4	14,5	29	13	4	82	74	142	77,5	64,5	M8	20	4	15,5	36,5

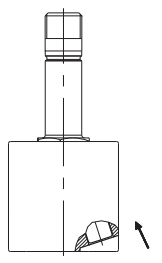
Standard manual overrides

Functioning	Suitable for valve	Symbol/Part no.
1 = with 2 position screw	BE	⊖
2 = with button with tool	BE	→
3 = with embedded button, 1 position	BE12	→

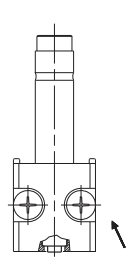
Special versions available (upon request): with 1 - 2 position button, with 1 position frontal button, with 1 position button



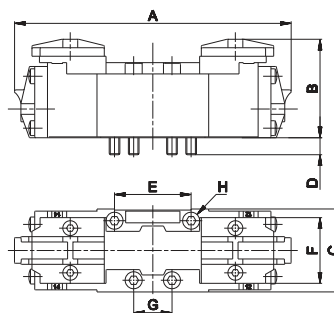
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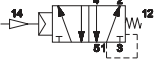
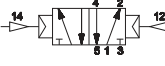
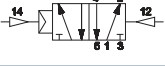
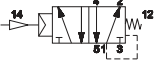
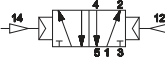
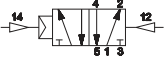
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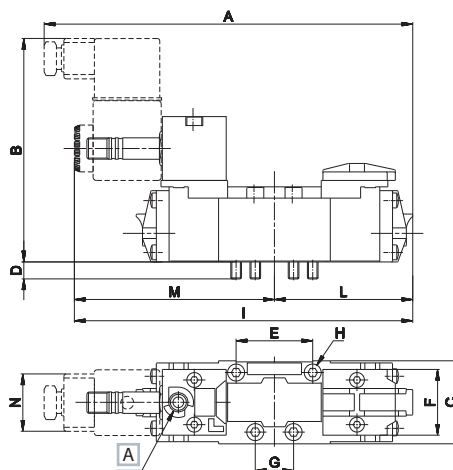


3

Single/double **pneumatic impulse**

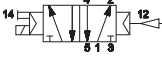
	ISO 1	ISO 2	ISO 3	ISO 4
A	128	145	191	222
B	47	47	63	63
C	39	52	64	74
D	5	5	10	10
E	36	48	64	80
F	28	38	48	58
G	18	24	32	40
H	M5x38	M6x35	M8x50	M8x50

Symbol	Control	Return	Pressure	Times (ms)		Size	Weight	Part no.
			bar	En.	De-en.			
MIXED SYSTEM								
	pneumatic amplified	pneumomechanical spring	2÷10	9	18	1	0,30	BE-3100
			2,3÷10	11	14	2	0,40	BE-4100
			2,5÷10	19	49	3	0,65	BE-5100
			3÷10	23	46	4	0,87	BE-6100
	pneumatic amplified	pneumatic amplified	1÷10	5	5	1	0,30	BE-3150
			1÷10	6	6	2	0,40	BE-4150
			1÷10	10	10	3	0,65	BE-5150
			1,3÷10	12	12	4	0,87	BE-6150
	pneumatic amplified	pneumatic not amplified	2÷10	5	16	1	0,30	BE-3170
			2÷10	6	13	2	0,40	BE-4170
			2,2÷10	10	35	3	0,65	BE-5170
			2,2÷10	12	32	4	0,87	BE-6170
SPOOL SYSTEM								
	pneumatic amplified	pneumomechanical spring	1,8÷10	11	22	1	0,30	BE-3800
			2÷10	13	19	2	0,40	BE-4800
			2,2÷10	21	52	3	0,65	BE-5800
			2,8÷10	24	29	4	0,87	BE-6800
	pneumatic amplified	pneumatic amplified	0,8÷10	6	6	1	0,30	BE-3850
			1÷10	7	7	2	0,40	BE-4850
			1÷10	12	12	3	0,65	BE-5850
			1÷10	14	14	4	0,87	BE-6850
	pneumatic amplified	pneumatic not amplified	1,5÷10	6	15	1	0,30	BE-3870
			1,8÷10	7	14	2	0,40	BE-4870
			2÷10	12	38	3	0,65	BE-5870
			2÷10	14	31	4	0,87	BE-6870

Single **electric impulse**

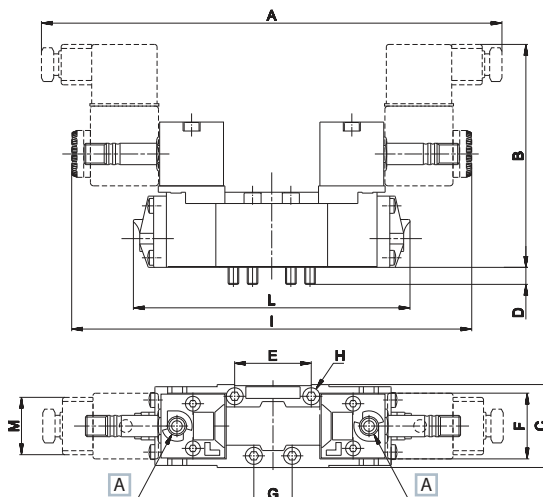
	ISO 1	ISO 2	ISO 3	ISO 4
A	169,5	195,5	219	253
B	105	105	118	118
C	39	52	64	74
D	5	5	10	10
E	36	48	64	80
F	28	38	48	58
G	18	24	32	40
H	M5x38	M6x35	M8x50	M8x50
I	159,5	176	208,5	235
L	64	72,5	95,5	111
M	95,5	103,5	113	124
N	30	30	30	30

A Manual override

Symbol	Control	Return	Pressure	Times (ms)		Size	Weight	Part no.
			bar	En.	De-en.			
MIXED SYSTEM								
	electric amplified	pneumomechanical spring	2÷10	20	32	1	0,45	BE-3000
			2,3÷10	24	25	2	0,55	BE-4000
			2,5÷10	32	71	3	0,90	BE-5000
			3÷10	38	62	4	1,12	BE-6000
	electric amplified	pneumatic amplified	1÷10	16	6	1	0,45	BE-3060
			1÷10	17	7	2	0,80	BE-4060
			1÷10	23	15	3	1,30	BE-5060
			1,3÷10	25	16	4	1,37	BE-6060
SPOOL SYSTEM								
	electric amplified	pneumomechanical spring	2÷10	21	35	1	0,45	BE-3700
			2,2÷10	24	30	2	0,55	BE-4700
			2,3÷10	33	74	3	0,90	BE-5700
			2,8÷10	39	68	4	1,12	BE-6700
	electric amplified	pneumatic amplified	1÷10	17	8	1	0,45	BE-3760
			1÷10	18	9	2	0,80	BE-4760
			1÷10	26	17	3	1,30	BE-5760
			1,3÷10	27	18	4	1,37	BE-6760

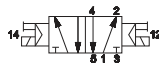
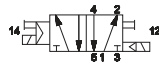
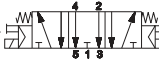
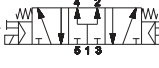
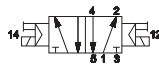
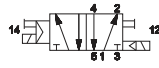
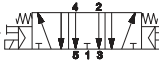
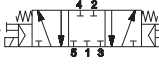
For manual version with button, add "U" to the end of the part number
 Electrovalves are supplied without coil, connector and locking ring

Double electric impulse



	ISO 1	ISO 2	ISO 3	ISO 4
A	211	226	247	268
B	105	105	118	118
C	39	52	64	74
D	5	5	10	10
E	36	48	64	80
F	28	38	48	58
G	18	24	32	40
H	M5x38	M6x35	M8x50	M8x50
I	191	207	226	248
L	128	145	191	222
M	30	30	30	30

[A] Manual override

Symbol	Control	Return	Pressure bar	Times (ms)		Size	Weight Kg	Part no.
				En.	De-en.			
MIXED SYSTEM								
	electric amplified	electric amplified	1÷10	16	16	1	0,55	BE-3020
			1÷10	17	17	2	0,80	BE-4020
			1÷10	23	23	3	1,20	BE-5020
			1,3÷10	25	25	4	1,37	BE-6020
	electric amplified	electric non amplified	2÷10	16	34	1	0,55	BE-3030
			2÷10	17	29	2	0,80	BE-4030
			2,2÷10	23	54	3	1,20	BE-5030
			2,2÷10	25	45	4	1,37	BE-6030
	electric amplified	electric amplified	3÷10	50	26	1	0,55	BE-3200
			3÷10	54	24	2	0,80	BE-4200
			3÷10	108	36	3	1,20	BE-5200
			3÷10	115	115	4	1,37	BE-6200
	electric amplified	electric amplified	2÷10	50	26	1	0,50	BE-3205
			2,3÷10	54	24	2	0,80	BE-4205
			2,5÷10	108	36	3	1,20	BE-5205
			3÷10	115	115	4	1,37	BE-6205
SPOOL SYSTEM								
	electric amplified	electric amplified	1÷10	17	17	1	0,55	BE-3720
			1÷10	18	18	2	0,80	BE-4720
			1÷10	26	26	3	1,20	BE-5720
			1÷10	27	27	4	1,37	BE-6720
	electric amplified	electric non amplified	1,8÷10	17	28	1	0,55	BE-3730
			1,8÷10	18	25	2	0,80	BE-4730
			2÷10	26	46	3	1,20	BE-5730
			2÷10	27	42	4	1,37	BE-6730
	electric amplified	electric amplified	2,3÷10	17	25	1	0,55	BE-3900
			2,5÷10	18	27	2	0,80	BE-4900
			2,5÷10	26	50	3	1,20	BE-5900
			2,5÷10	30	47	4	1,37	BE-6900
	electric amplified	electric amplified	2,3÷10	17	25	1	0,55	BE-3940
			2,5÷10	18	27	2	0,80	BE-4940
			2,5÷10	26	50	3	1,20	BE-5940
			2,5÷10	30	47	4	1,37	BE-6940

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

For manual version with button, add "U" to the end of the part number

Electrovalves are supplied without coil, connector and locking ring

The use of pneumatic component in the automotive field, coupled with electric components, led to the development of a traditional ISO valve with electric connector M12 placed in central position, for both valves with single as well as double electric control.

Single/double electric impulse

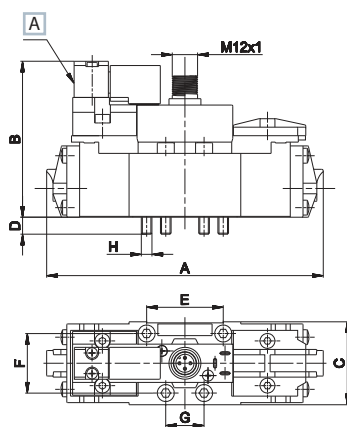


Symbol	Control	Return	Pressure	Times (ms)		Size	Weight	Part no.
			bar	En.	De-en.			
SINGLE IMPULSE - MIXED SYSTEM								
	electric amplified	pneumomechanical spring	2÷9	18	29	1	0,45	BE12-3000
			2,3÷9	23	24	2	0,55	BE12-4000
			2,5÷9	35	78	3	0,90	BE12-5000
SINGLE IMPULSE - SPOOL SYSTEM								
	electric amplified	pneumomechanical spring	2÷9	19	32	1	0,45	BE12-3700
			2,2÷9	23	28	2	0,55	BE12-4700
			2,3÷9	36	82	3	0,90	BE12-5700
DOUBLE IMPULSE - MIXED SYSTEM								
	electric amplified	electric amplified	1÷9	14	14	1	0,55	BE12-3020
			1÷9	16	16	2	0,80	BE12-4020
			1÷9	25	25	3	1,20	BE12-5020
	electric amplified	electric amplified	2÷9	45	23	1	0,50	BE12-3205
			2,3÷9	51	23	2	0,80	BE12-4205
			2,5÷9	119	40	3	1,20	BE12-5205
DOUBLE IMPULSE - SPOOL SYSTEM								
	electric amplified	electric amplified	1÷9	15	15	1	0,55	BE12-3720
			1÷9	17	17	2	0,80	BE12-4720
			1÷9	29	29	3	1,20	BE12-5720
	electric amplified	electric amplified	2,3÷9	15	22	1	0,55	BE12-3900
			2,5÷9	17	26	2	0,80	BE12-4900
			2,5÷9	29	55	3	1,20	BE12-5900
	electric amplified	electric amplified	2,3÷9	15	22	1	0,55	BE12-3940
			2,5÷9	17	26	2	0,80	BE12-4940
			2,5÷9	29	55	3	1,20	BE12-5940

c.a. = centri aperti c.c. = centri chiusi c.p. = centri in pressione

Valves are supplied with 24 V DC coil

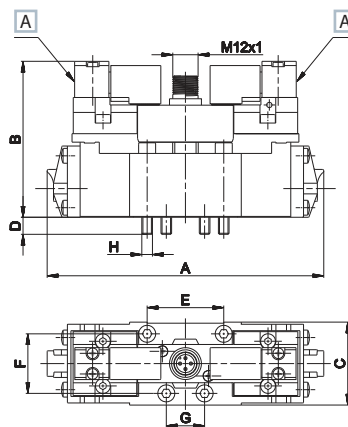
Single electric impulse



	ISO 1	ISO 2	ISO 3
A	128	145	191
B	73	73	90
C	39	52	64
D	5	5	10
E	36	48	64
F	28	38	48
G	18	24	32
H	M5x38	M6x35	M8x50

[A] Manual override

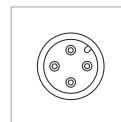
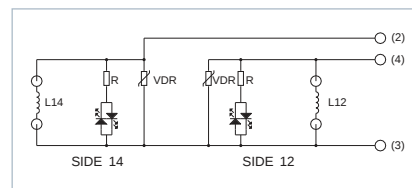
Double electric impulse



ELECTRIC FEATURES

Central electric connector M12x1
IP 65 protection degree
24 V DC voltage
2,5 W nominal power
DD-052** series coil (without faston)
ED 100%
LED indicator

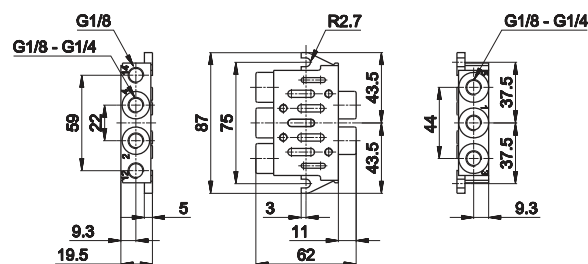
Available upon request other voltages
max 48 V DC



ISO 1 - Single sub-base, side connections



Notes	Connection	Material	Weight Kg	Part no.
in line connections	G1/8	zamak	0,250	BF-1060
in line connections	G1/4	zamak	0,230	BF-1061

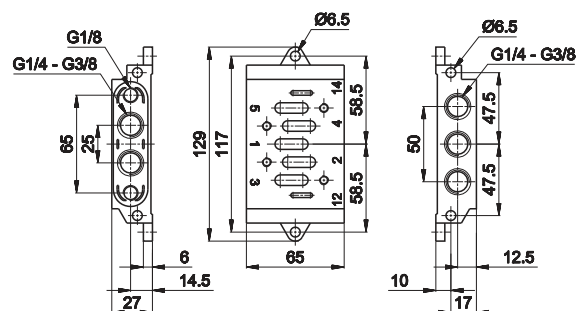


1 = Supply port 3 - 5 = Exhaust
2 - 4 = Use 12 - 14 = Pilots

ISO 2 - Single sub-base, side connections



Notes	Connection	Material	Weight Kg	Part no.
in line connections	G1/4	zamak	0,640	BF-1150
in line connections	G3/8	zamak	0,650	BF-1151

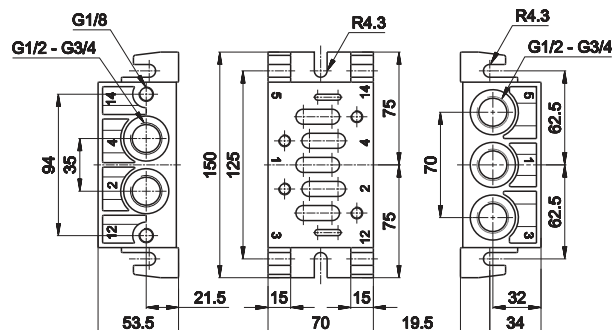


1 = Supply port 3 - 5 = Exhaust
2 - 4 = Use 12 - 14 = Pilots

ISO 3 - Single sub-base, side connections



Notes	Connection	Material	Weight Kg	Part no.
in line connections	G1/2	aluminium	0,740	BF-3060
in line connections	G3/4	aluminium	0,740	BF-3061

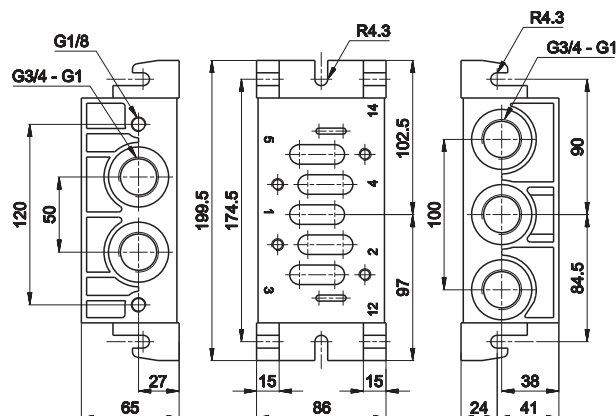


1 = Supply port 3 - 5 = Exhaust
2 - 4 = Use 12 - 14 = Pilots

ISO 4 - Single sub-base, side connections



Notes	Connection	Material	Weight Kg	Part no.
in line connections	G3/4	aluminium	1,280	BF-4060
dorsal and side connections	G1	aluminium	1,280	BF-4061



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

ISO 1 - Single modular or Manifold sub-base, dorsal connections, separate exhausts

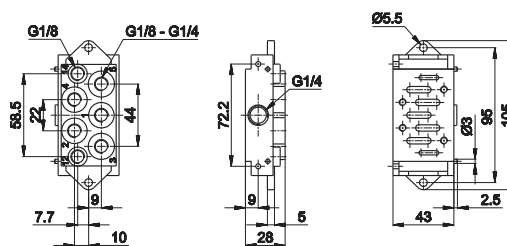


Notes	Connection	Material	Weight Kg	Part no.
dorsal connections	G1/8	zamak	0,350	BF-1062
dorsal connections	G1/4	zamak	0,330	BF-1063

Single assembly: close side ports (G1/8 - G1/4)

Manifold assembly with common inlet: close dorsal connections n.1

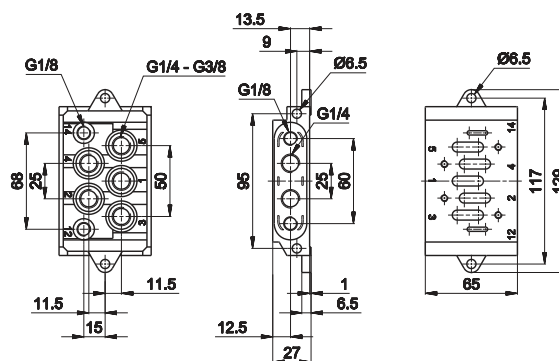
With incorporated screws and seal

1 = Supply port
2 - 4 = Use3 - 5 = Exhaust
12 - 14 = Pilots

ISO 2 - Single sub-base, dorsal connections



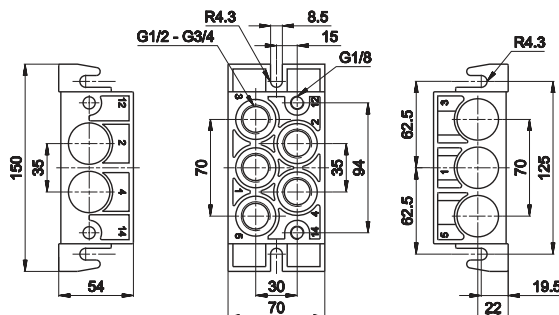
Notes	Connection	Material	Weight Kg	Part no.
dorsal connections	G1/4	zamak	0,640	BF-1152
dorsal connections	G3/8	zamak	0,650	BF-1153

1 = Supply port
2 - 4 = Use3 - 5 = Exhaust
12 - 14 = Pilots

ISO 3 - Single sub-base, dorsal connections



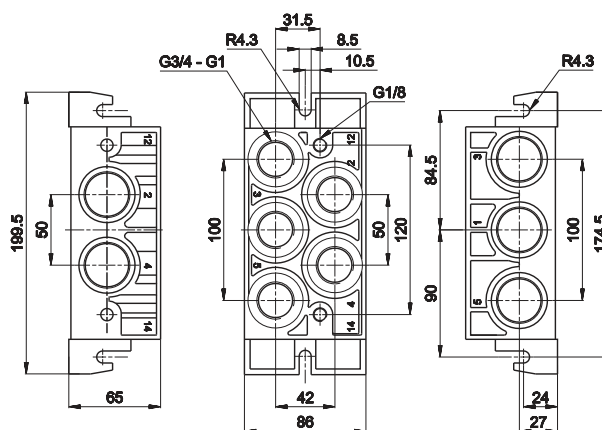
Notes	Connection	Material	Weight Kg	Part no.
dorsal connections	G3/4	aluminium	0,720	BF-3063

1 = Supply port
2 - 4 = Use3 - 5 = Exhaust
12 - 14 = Pilots

ISO 4 - Single sub-base, dorsal connections



Notes	Connection	Material	Weight Kg	Part no.
dorsal connections	G3/4	aluminium	1,240	BF-4062
dorsal connections	G1	aluminium	1,240	BF-4063

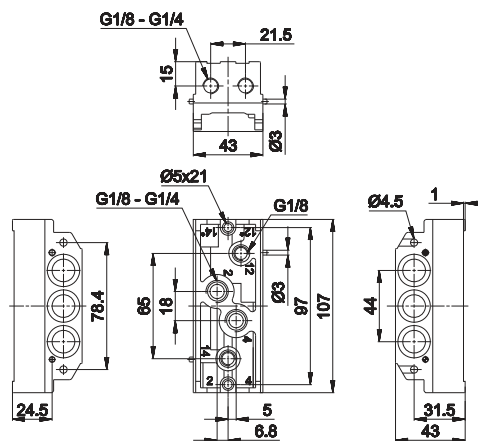
1 = Supply port
2 - 4 = Use3 - 5 = Exhaust
12 - 14 = Pilots

ISO 1 - Manifold universal system sub-base, dorsal and side connections, conveyed exhausts



Notes	Connection	Material	Weight Kg	Part no.
dorsal and side connections	G1/8	aluminium	0,280	BF-1071
dorsal and side connections	G1/4	aluminium	0,275	BF-1072
side pneumatic impulses	G1/8	aluminium	0,300	BF-1071S
side pneumatic impulses	G1/4	aluminium	0,295	BF-1072S

Dorsal and side connections possible. Close unused ports with caps.
With incorporated screws, seals and caps included



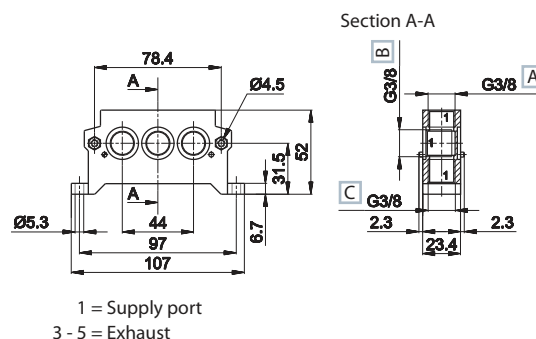
1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
12 - 14 = Pilots
12* - 14* = Side pilots

ISO 1 - Manifold universal system inlet plate



A On top connections
B In line connections
C Dorsal connections

Notes	Connection	Material	Weight Kg	Part no.
in line connections	G3/8	zamak	0,355	BF-1064
on top connections	G3/8	zamak	0,355	BF-1065
dorsal connections	G3/8	zamak	0,355	BF-1066



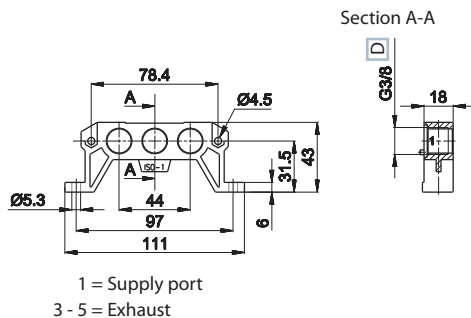
1 = Supply port
3 - 5 = Exhaust



D Only in line connections

Notes	Connection	Material	Weight Kg	Part no.
only in line connections	G3/8	aluminium	0,120	BF-1068

When battery exceeds 4 units, the mounting of 2 plates is recommended
Mixed version available upon request
With incorporated screws and seal



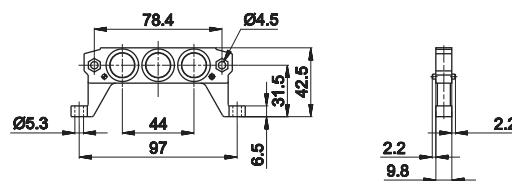
1 = Supply port
3 - 5 = Exhaust

ISO 1 - Manifold universal system diaphragm

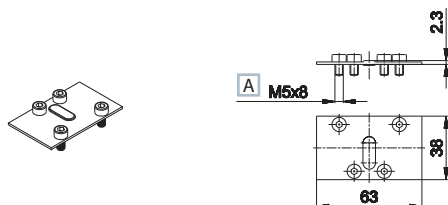


Notes	Connection	Material	Weight Kg	Part no.
-	-	zamak	0,090	BF-1070

The diaphragm is not only the end plate of the manifold but it is also coupled with the exhaust regulator to separate two sub-bases and regulate the valves independently. In this case break the central blind hole.
To get two or more pressures, break the two side blind holes.



BF-1085



A ISO 4762

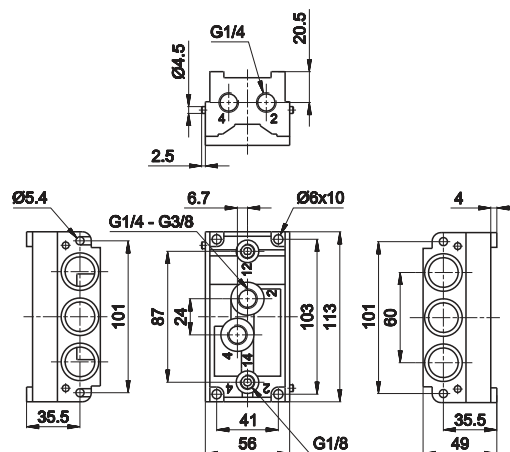
ISO 1 - Closing plate for sub-base 1
material: steel
weight: 0,030 Kg (for all sub-base versions)

ISO 2 - Manifold universal system sub-base, dorsal and side connections, conveyed exhausts



Notes	Connection	Material	Weight Kg	Part no.
dorsal and side connections	G1/4	zamak	0,800	BF-1160
dorsal and side connections	G3/8	zamak	0,800	BF-1161

Dorsal and side connections possible. Close unused ports with caps.
With incorporated screw, seals and caps included



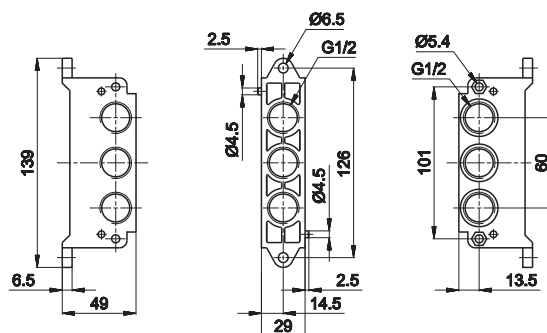
1 = Supply port 3 - 5 = Exhaust
2 - 4 = Use 12 - 14 = Pilots

ISO 2 - Manifold Universal system inlet plate



Notes	Connection	Material	Weight Kg	Part no.
in line connections	G1/2	zamak	0,460	BF-1154
dorsal connections	G1/2	zamak	0,460	BF-1155

When battery exceeds 4 units, the mounting of 2 plates is recommended
Mixed version available upon request
With incorporated screw and seals

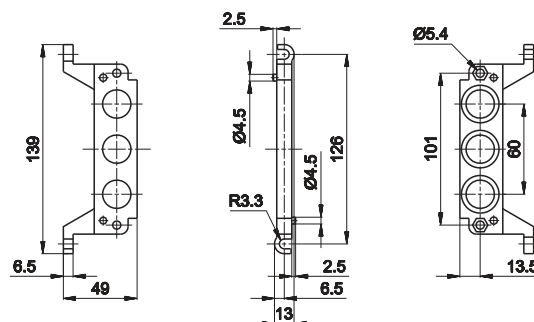


ISO 2 - Manifold universal system diaphragm

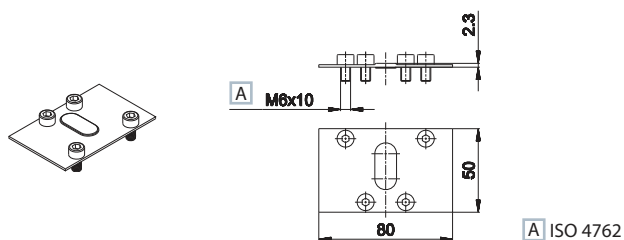


Notes	Connection	Material	Weight Kg	Part no.
-	-	zamak	0,160	BF-1162

The diaphragm is not only the end plate of the manifold but it is also coupled with the exhaust regulator to separate two sub-bases and regulate the valves independently. In this case break the central blind hole.
To get two or more pressures, break the two side blind holes.



BF-1175



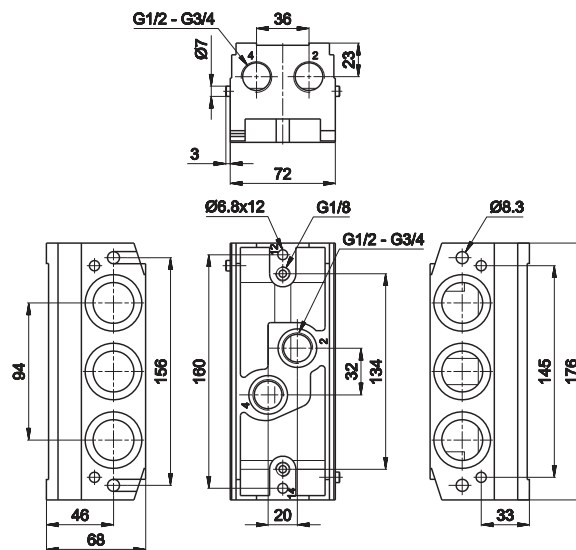
ISO 2 - Closing plate for sub-base 2
material: steel
weight: 0,050 Kg (for all sub-base versions)

ISO 3 - Manifold universal system sub-base, dorsal and side connections, conveyed exhausts



Notes	Connection	Material	Weight Kg	Part no.
dorsal and side connections	G1/2	aluminium	1,100	BF-3071
dorsal and side connections	G3/4	aluminium	1,100	BF-3072

Dorsal and side connections possible. Close unused ports with caps.
With incorporated screws, seals and caps included



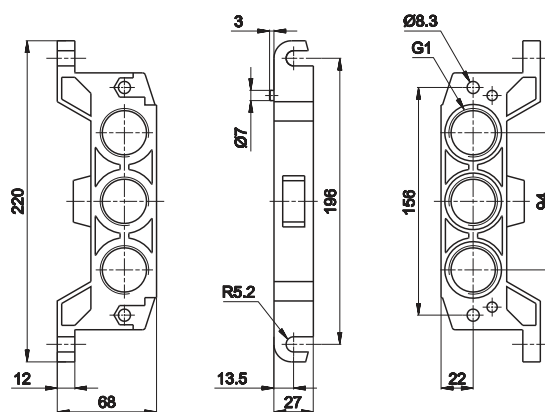
1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
12 - 14 = Pilots

ISO 3 - Manifold Universal system inlet plate

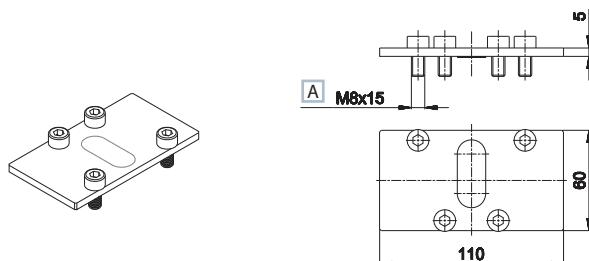


Notes	Connection	Material	Weight Kg	Part no.
in line connections	G1	aluminium	0,440	BF-3064

When battery exceeds 4 units, the mounting of 2 plates is recommended
Mixed version available upon request
With incorporated screws and seals



BF-3175



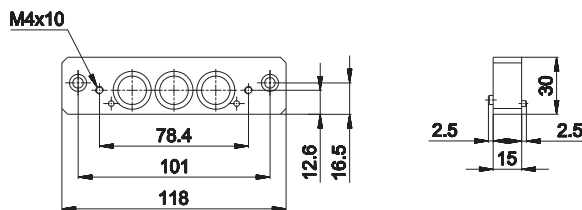
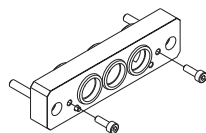
ISO 3 - Closing plate for sub-base 3
material: steel
weight: 0,080 Kg (for all sub-base versions)

BF-3082



ISO 3 - Universal system Cap
material: steel
weight: 0,020 Kg
To be used to reach two pressures

BF-1190



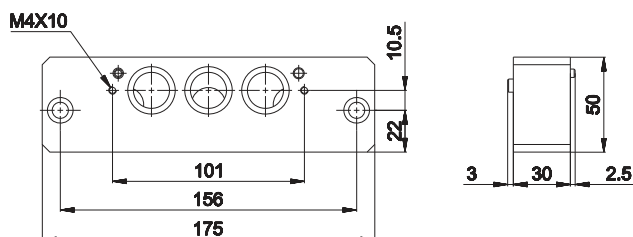
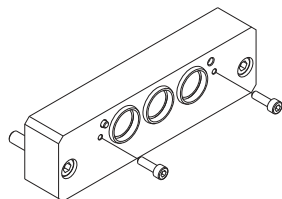
ISO - Connecting interface for universal sub-bases size 1 and 2

material: steel

weight: 0,110 Kg

It allows the use of size 1 and 2 valves in one manifold with conveyed pressure and exhausts. (Upon request: pressure and/or exhausts separated)

BF-3190



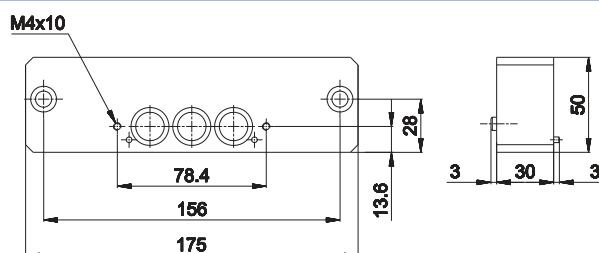
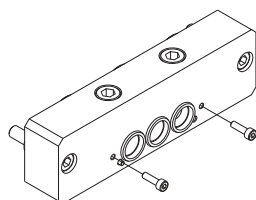
ISO - Connecting interface for universal sub-bases size 2 and 3

material: steel

weight: 0,570 Kg

It allows the use of size 2 and 3 valves in one manifold with conveyed pressure and exhausts. (Upon request: pressure and/or exhausts separated)

BF-3191



ISO - Connecting interface for universal sub-bases size 1 and 3

material: steel

weight: 0,570 Kg

It allows the use of size 1 and 3 valves in one manifold with conveyed pressure and exhausts. (Upon request: pressure and/or exhausts separated)

AE

Light series valves for ISO 5599/1 sub-base mounting

Light series: technopolymer valve body with metall cover

Interchangeability: ISO 5599/1 sub-base mounting (size 1 and 2)

Reliability: the mixed internal system (poppet-spool) has been used and appreciated for decades

Performance: high flow rate (size 1 = 1480 NI/min - size 2 = 2300 NI/min), fast commutation, functioning without lubrication



TECHNICAL CHARACTERISTICS

Ambient temperature	-10 ÷ +50 °C	
Fluid temperature	+50 °C Max	
Fluid	filtered air 50 µm, lubricated or not	
Commutation system	mixed system	
Ways/Positions	5/2	
Pressure	max 10 bar	
Control	indirect electro - pneumatic and pneumatic	
Return	pneumomechanical spring	
Connections	ISO 5599/1 interface (BF series sub-base)	
	size 1	size 2
Nominal Ø (mm)	8	10
Nominal flow rate (NI/min)	1480	2300

CONSTRUCTIVE FEATURES

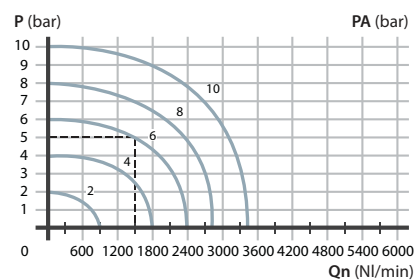
Valve body	acetalic resin
Seals	nitrilic rubber - polyurethane
Spool	alluminium
Cover	zamak

ELECTRIC FEATURES

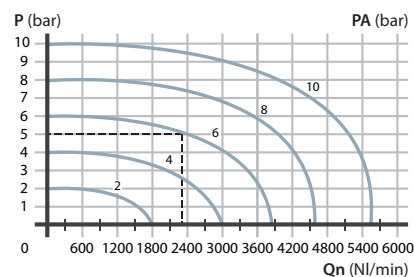
Electropilot	U1 - AA series
Coil	DA series
Power consumption	3,5 W (DC) - 5 VA (AC)
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC
Connector	AM-5110
Manual override	2 position screw

Flow rate characteristics

>> ISO 1



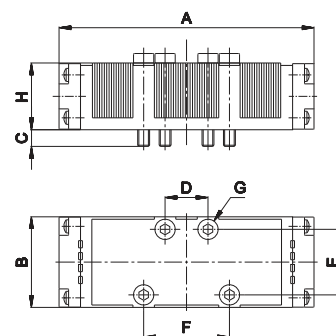
>> ISO 2



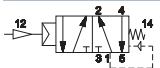
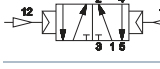
P = Working pressure

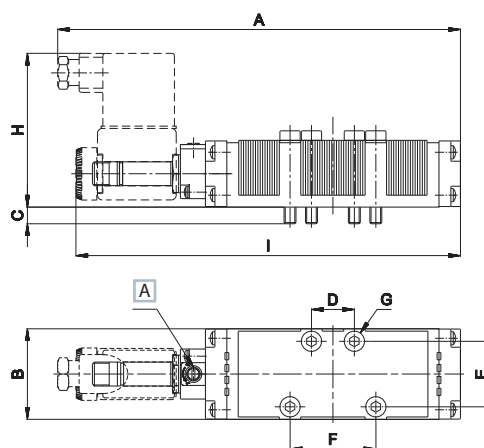
PA = Supply pressure

Qn = Nominal flow rate

Single/double **pneumatic impulse**

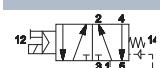
	A	B	C	D	E	F	G	H
U1	108	38	7	18	28	36	M5x35	28
U2	120	50	7	24	38	48	M6x35	28

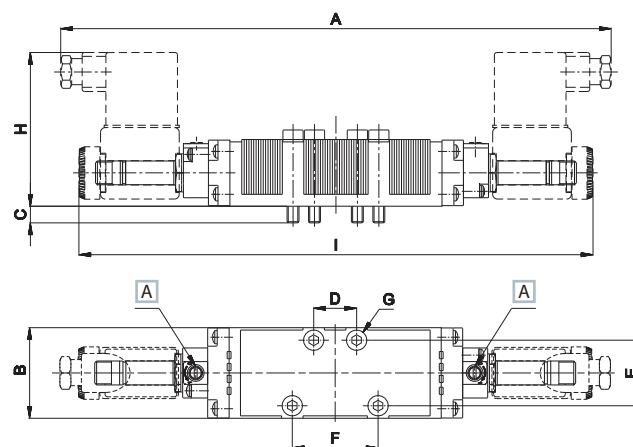
	Symbol	Control	Return	Pressure bar	Times (ms)		Size	Weight Kg	Part no.
					En.	De-en.			
5/2		pneumatic amplified	pneumomechanical spring	2÷10 2,3÷10	5	10	1	0,17	AE-1009
					8	10	2	0,80	
5/2		pneumatic amplified	pneumatic amplified	1÷10 1÷10	3	3	1	0,17	AE-1010
					3	3	2	0,21	

Single **electric impulse**

A Manual override

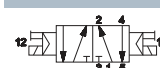
	A	B	C	D	E	F	G	H	I
U1	171	38	7	18	28	36	M5x35	64	161
U2	183	50	7	24	38	48	M6x35	64	173

	Symbol	Control	Return	Pressure bar	Times (ms)		Size	Weight Kg	Part no.
					En.	De-en.			
5/2		electric amplified	pneumomechanical spring	2÷10 2,3÷10	18	24	1	0,25	AE-1000
					22	18	2	0,29	

Double **electric impulse**

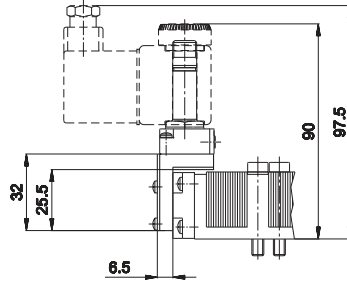
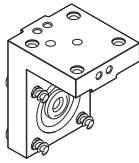
A Manual override

	A	B	C	D	E	F	G	H	I
U1	234	38	7	18	28	36	M5x35	64	208
U2	246	50	7	24	38	48	M6x35	64	220

	Symbol	Control	Return	Pressure bar	Times (ms)		Size	Weight Kg	Part no.
					En.	De-en.			
5/2		electric amplified	electric amplified	1÷10 1÷10	16	16	1	0,33	AE-1003
					24	24	2	0,35	

Electrovalves are supplied without coil, connector and locking ring

AM-5151



"H" option solenoid square
weight: 0,035 Kg

>> ISO 1 - ISO 2 sub-base



ISO 1 - single sub-base,
side connections
BF-1060
G1/8 in-line connections
BF-1061
G1/4 in-line connections



ISO 1 - single modular or Manifold
subbase, dorsal connections with
separate exhausts
BF-1062
G1/8 dorsal connections
BF-1063
G1/4 dorsal connections



ISO 1 - Manifold universal system
sub-base, dorsal and side
connections conveyed exhausts
BF-1071
G1/8 dorsal and side connections
BF-1071S
G1/8 side pneumatic impulse
BF-1072
G1/4 dorsal and side connections
BF-1072S
G1/4 side pneumatic impulse



ISO 1 - Manifold universal
system inlet plate
G3/8 in-line connections
BF-1065
G3/2 on top connections
BF-1066
G3/2 dorsal connections
BF-1068
G3/2 only in-line connections



ISO 1 - Manifold universal
system diaphragm
BF-1070



ISO 2 - single sub-base,
side connections
BF-1150
G1/4 in-line connections
BF-1151
G3/8 in-line connections



ISO 2 - single sub-base,
dorsal connections
BF-1152
G1/4 dorsal connections
BF-1153
G3/8 dorsal connections



ISO 2 - Manifold universal system
sub-base, dorsal and side
connections conveyed exhausts
BF-1160
G1/4 dorsal and side connections
BF-1161
G3/8 dorsal and side connections



ISO 2 - Manifold universal
system inlet plate
BF-1154
G1/2 in-line connections
BF-1155
G1/2 dorsal connections



ISO 2 - Manifold universal
system diaphragm
BF-1162

BD

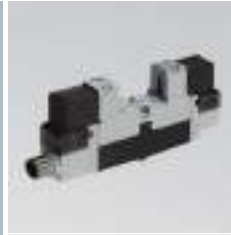
ISO 15407-1/2 (VDMA 24563) ISO 02 (18 mm) - ISO 01 (26 mm) Valves

BDE = solenoid valves ISO 15407/2 with integrated electric connection including 24 V DC coils and connector

BDB = solenoid valves ISO 15407/1 with external electric connection with M12 connector including 24 V DC coils and connector

BDA = valves and solenoid valves ISO 15407/1 (without coils and connectors to be ordered separately)

- TC - TX Serial communication system available for BDE series
- Modular sub-base ISO-VDMA
- Sub-base with increased capacity



TECHNICAL CHARACTERISTICS

Ambient temperature	-20 ÷ +50 °C
Fluid temperature	max +50 °C
Fluid	50 µm filtered and not dehumidified air, lubricated or not
Commutation system	spool
Ways/Positions	3/2+3/2, 5/2, 5/3
Pressure	electric control = 9 bar max pneumatic control = 10 bar max
Control	indirect electro - pneumatic, pneumatic
Return	mechanical spring, pneumomechanical spring
Nominal Ø (mm)	18 mm = 6 , 26 mm = 8

Nominal flow rate (NI/min) for valves and solenoid valves side 18 mm

Sub-base in die-cast aluminium according to standard

Fittings:	VDMA-ISO			Oversize		
	Ø4	Ø6	Ø8	Ø4	Ø6	Ø8
5/2	200	440	620	200	480	800
5/3	200	440	580	200	460	720
3/2+3/2	200	440	600	200	460	720

Nominal flow rate (NI/min) for valves and solenoid valves side 26 (b)

Sub-base in die-cast aluminium according to standard

Fittings:	VDMA-ISO				Oversize			
	Ø6	Ø8	Ø10	Ø12 ^(c)	Ø6	Ø8	Ø10	Ø12 ^(c)
5/2	500	950	1200	1250	500	1050	1500	1700
5/3	500	900	1100	1150	500	1050	1300	1400
3/2+3/2	500	950	1150	1250	500	1050	1450	1650

(a) = manifold sub-base 2 valve places and end plates with side connections in aluminium and fixing plate for fittings standard supplied with sub-base.

(b) = manifold sub-base 1 valve place and end plates with side connections in aluminium and fixing plate for fittings standard supplied with sub-base.

(c) = the external Ø of the G 3/8 fitting for tube Ø12 mm must not exceed 20 mm

CONSTRUCTIVE CHARACTERISTICS

Body valve	acetalic resin
Cover	zamak
Seals	nitrile rubber
Sub-base	die-cast aluminium
Actuators	technopolymer
Spool	aluminium

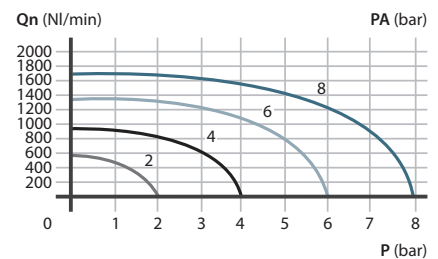
ELECTRIC CHARACTERISTICS

Electropilot	DD series (U05)
Voltage	24 V DC (± 10%), 12 V DC upon request
Power consumption	2 W
Protection degree	IP65
Manual override	with button with tool 1 position

Flow rate characteristics

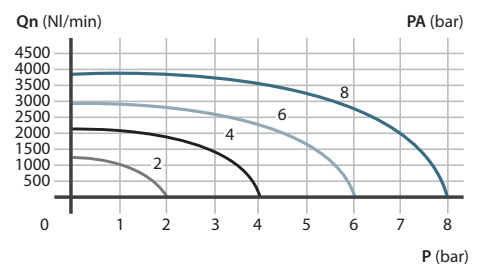
>> Valves and solenoid valves side 18 mm

5/2 Oversize sub-base for Ø8 mm tube



>> Valves and solenoid valves side 26 mm

5/2 Increased sub-base for Ø12 mm tube



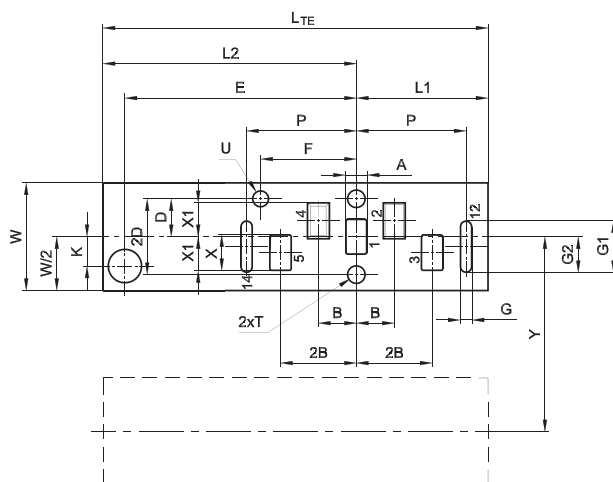
P = Working pressure
PA = Supply pressure
Qn = Nominal flow rate

2
Standardized valves

ISO 15407 specifications

They establish the dimensions of the bearing surface and the minimum distance between two valve places, guaranteeing the interchangeability and possibility to include any valve providing it complies with above specifications.

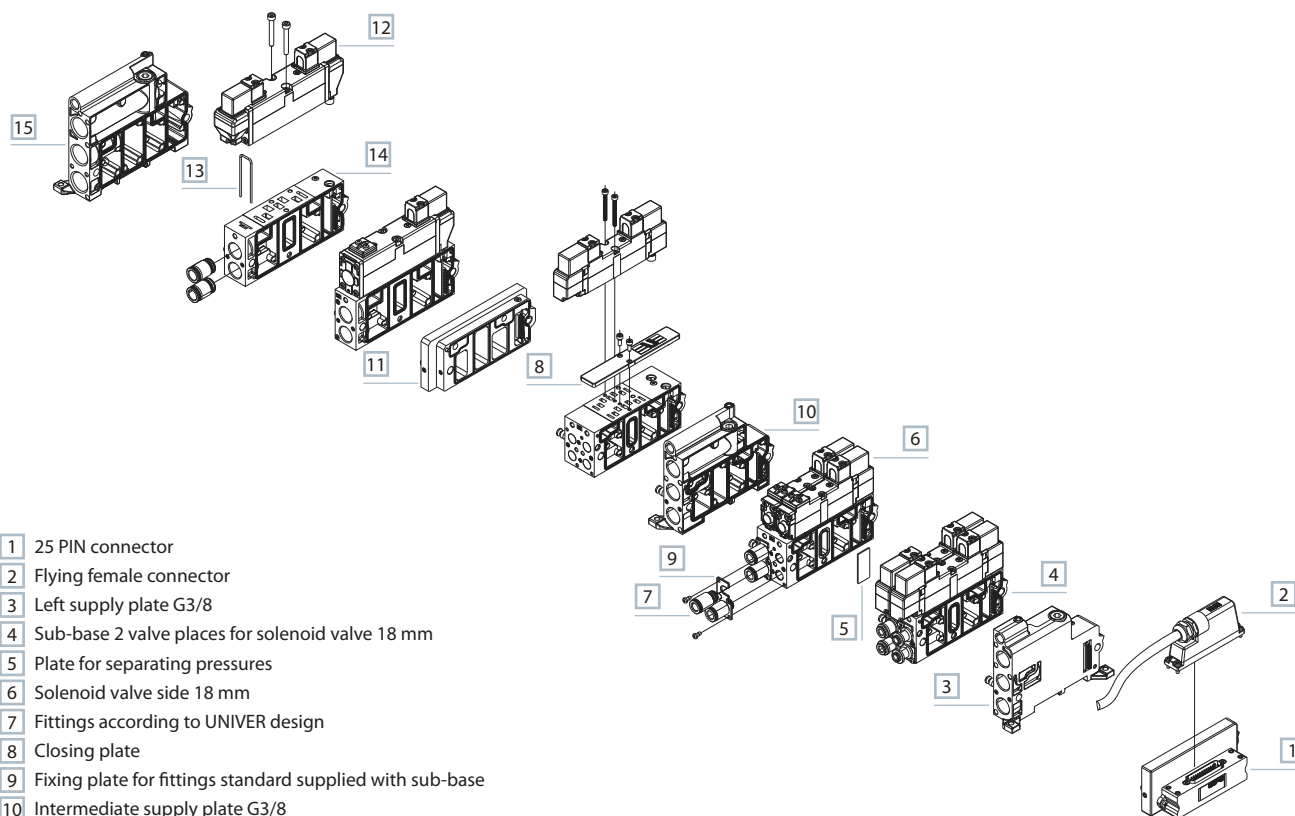
>> Dimensioning of the bearing surface according to ISO 15407-1/2 specification with integrated electric connector



Y = Min. distance between two interface axes of the same dimension mounting on the same manifolds

U = Position bore, depth V

	A	B	D	E	F	G	G1	G2	K	L1	L2	L _{TE}	P	T	U	V	W	X	X1	Y
										min.	min.	min.					min.			
18 mm	3,5	7	6,25	50	17	2	8	6	3,35	25	55,5	80,5	20	M3	3,2	4	18	6,5	5,25	19
26 mm	5,5	9,5	9,5	58	24	3	13	9	7,35	33	63,5	96,5	27,5	M4	3,2	4	26	9	8,5	27



- 1 25 PIN connector
- 2 Flying female connector
- 3 Left supply plate G3/8
- 4 Sub-base 2 valve places for solenoid valve 18 mm
- 5 Plate for separating pressures
- 6 Solenoid valve side 18 mm
- 7 Fittings according to UNIVER design
- 8 Closing plate
- 9 Fixing plate for fittings standard supplied with sub-base
- 10 Intermediate supply plate G3/8
- 11 Interface for connecting valves side 18/26 mm
- 12 Solenoid valve side 26 mm
- 13 Clamping fork for fittings
- 14 Sub-base 1 valve place for solenoid valve 26 mm
- 15 Right supply plate G1/2

Codification key

B	D	_	3	3	4	4	2	4	D
1	2	3	4	5	6	7			

1 Series	2 Size	3 Type
BDE = solenoid valves with integrated electric connection 24 V DC (including coil and connector)	3 = side 18 mm 4 = side 26 mm	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c. 6 = 3/2+3/2 NC-NC 7 = 3/2+3/2 NC-NO 8 = 3/2+3/2 NO-NO
BDB = solenoid valves with integrated electric connection 24 V DC, with M12 connector (including coil and connector)		

4 Control 14	5 Return 12	6 Coil voltage
4 = electric amplified	0 = pneumomechanical spring 1 = mechanical spring 4 = electric amplified 7 = electric not amplified	24 = 24 V DC (standard) 12 = 12 V DC (upon request)

7 Options
D = externally servoassisted electropilot

B	D	A	3	3	4	4	D
1	2	3	4	5	6		

1 Series	2 Size	3 Type
BDA = valves and solenoid valves (without coil and connectors to be ordered separately)	3 = side 18 mm 4 = side 26 mm	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c. 6 = 3/2+3/2 NC-NC 7 = 3/2+3/2 NC-NO 8 = 3/2+3/2 NO-NO

4 Control 14	5 Return 12	6 Options
3 = pneumatic amplified 4 = electric amplified only DC 5 = electric amplified DC and AC	0 = pneumomechanical spring 1 = mechanical spring 2 = pneumatic not amplified 3 = pneumatic amplified 4 = electric amplified only direct current 5 = electric amplified direct and alternating current 7 = electric non amplified only direct current 8 = electric non amplified direct and alternating current	D = externally servoassisted electropilot

>> Coils U05 side15 mm

Part no.	Nominal voltage		Frequency	Power consumption			
	DC v	AC v		CCW		CA	VA
			HZ	rating	start	rating	start
DD-040	-	24	50/60	-	-	2,3	3,2
DD-042	12	-	-	2,5	2,5	-	-
DD-050	-	48	50/60	-	-	2,3	3,2
DD-051	24	-	-	2	2	-	-
DD-052	24	-	-	2,5	2,5	-	-
DD-060	-	110	50/60	-	-	3,5	3,2
DD-070	-	230	50/60	-	-	2,3	3,2

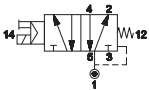
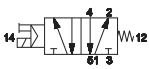
LED connector AM-5109/AM5105 24V DC 50/60 Hz
It can rotate by 180° on the coil - IP65 - cable connection PG9

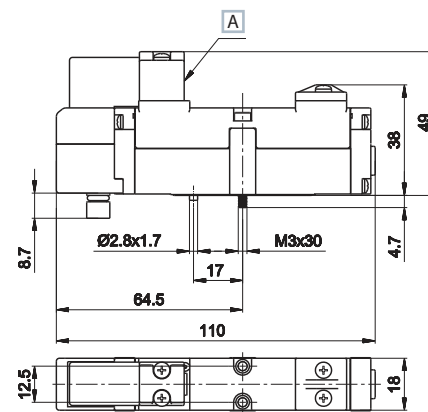
o.c. = open centres **c.c.** = closed centres **p.c.** = pressurized centre

Single electric impulse 18 mm



Weight (Kg): 0,112

	Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
					En.	De-en.	
5/2		electric amplified	pneumo mechanical spring	1,8÷9	15	25	BDE-324024
5/2		electric amplified	mechanical spring	2,5÷9	14	37	BDE-324124

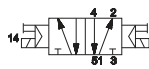
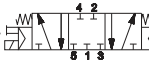
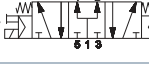
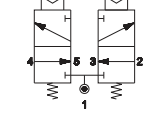
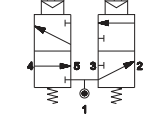
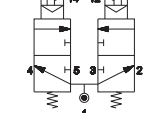


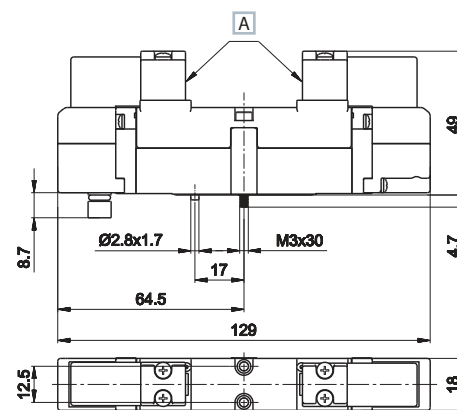
A Manual override

Double electric impulse 18 mm



Weight (Kg): 0,131

	Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
					En.	De-en.	
5/2		electric amplified	electric amplified	0,8÷9	16	16	BDE-324424
5/3 c.c.		electric amplified	electric amplified	2,1÷9	14	31	BDE-334424
5/3 o.c.		electric amplified	electric amplified	2,1÷9	14	31	BDE-344424
5/3 p.c.		electric amplified	electric amplified	2,1÷9	31	14	BDE-354424
3/2 NC + 3/2 NC		electric amplified	electric amplified	1,8÷9	17	22	BDE-364424
3/2 NC + 3/2 NO		electric amplified	electric amplified	1,8÷9	17	22	BDE-374424
3/2 NO + 3/2 NO		electric amplified	electric amplified	1,8÷9	17	22	BDE-384424



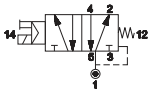
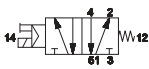
A Manual override

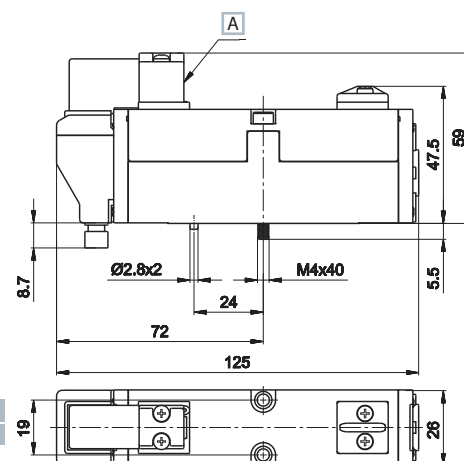
o.c. = open centres c.c. = closed centres p.c. = pressurized centres

Single electric impulse 26 mm



Weight (Kg): 0,205

	Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
					En	De-en.	
5/2		electric amplified	pneumo mechanical spring	1,8÷9	21	40	BDE-424024
5/2		electric amplified	mechanical spring	2,5÷9	20	50	BDE-424124

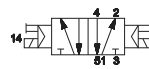
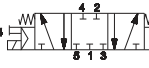
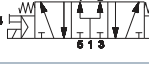
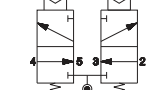
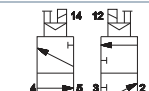
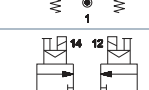


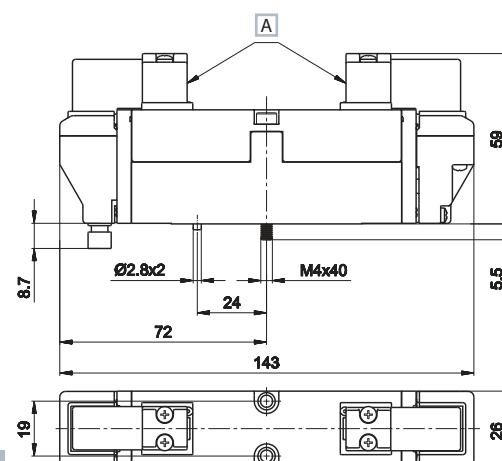
A Manual override

Double electric impulse 26 mm



Weight (Kg): 0,232

	Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
					En	De-en.	
5/2		electric amplified	electric amplified	0,8÷9	17	17	BDE-424424
5/3 c.c.		electric amplified	electric amplified	2,1÷9	16	54	BDE-434424
5/3 o.c.		electric amplified	electric amplified	2,1÷9	16	54	BDE-444424
5/3 p.c.		electric amplified	electric amplified	2,1÷9	63	16	BDE-454424
3/2 NC + 3/2 NC		electric amplified	electric amplified	1,8÷9	20	27	BDE-464424
3/2 NC + 3/2 NO		electric amplified	electric amplified	1,8÷9	20	27	BDE-474424
3/2 NO + 3/2 NO		electric amplified	electric amplified	1,8÷9	20	27	BDE-484424



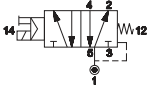
A Manual override

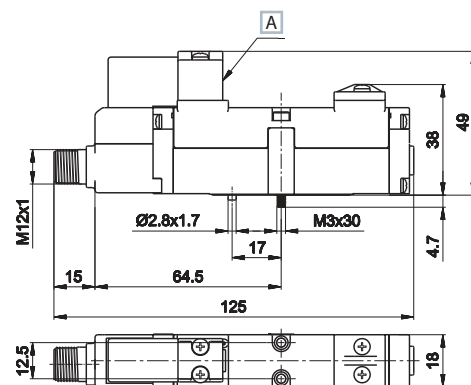
o.c. = open centres c.c. = closed centres p.c. = pressurized centres

Single electric impulse 18 mm



Weight (Kg): 0,117

	Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
					En.	De-en.	
5/2		electric amplified	pneumo mechanical spring	1,8÷9	15	25	BDB-324024
5/2		electric amplified	mechanical spring	2,5÷9	14	37	BDB-324124

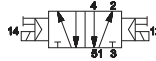
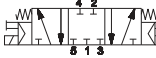
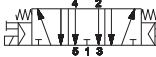
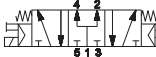
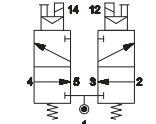
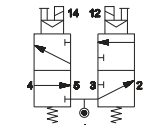
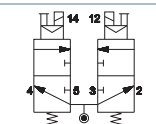


A Manual override

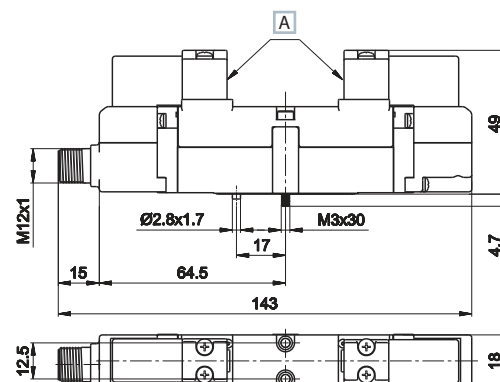
Double electric impulse 18 mm



Weight (Kg): 0,136

	Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
					En.	De-en.	
5/2		electric amplified	electric amplified	0,8÷9	16	16	BDB-324424
5/3 c.c.		electric amplified	electric amplified	2,1÷9	14	31	BDB-334424
5/3 o.c.		electric amplified	electric amplified	2,1÷9	14	31	BDB-344424
5/3 p.c.		electric amplified	electric amplified	2,1÷9	31	14	BDB-354424
3/2 NC + 3/2 NC		electric amplified	electric amplified	1,8÷9	17	22	BDB-364424
3/2 NC + 3/2 NO		electric amplified	electric amplified	1,8÷9	17	22	BDB-374424
3/2 NO + 3/2 NO		electric amplified	electric amplified	1,8÷9	17	22	BDB-384424

o.c. = open centres c.c. = closed centres p.c. = pressurize centres



A Manual override

ELECTRIC FEATURES

Central electric connector M12x1

IP 65 protection degree

24 V DC voltage

2,5 W nominal power

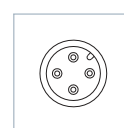
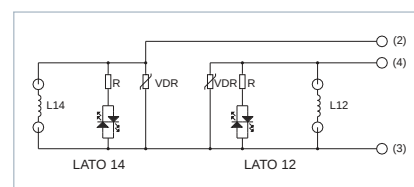
DD-052** series coil (without faston)

ED 100%

LED indicator

Available upon request other voltages

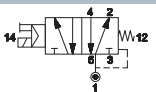
max 48V DC

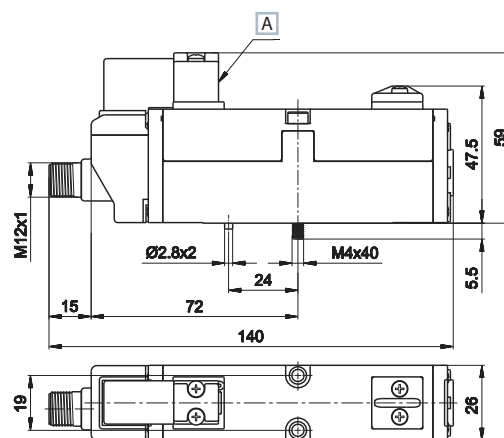


Single electric impulse 26 mm



Weight (Kg): 0,205

	Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
					En.	De-en.	
5/2		electric amplified	molla pneumo mechanical	1,8÷9	21	40	BDB-424024
5/2		electric amplified	molla mechanical	2,5÷9	20	50	BDB-424124

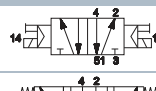
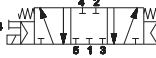
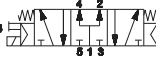
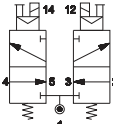
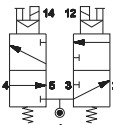
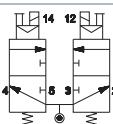


A Manual override

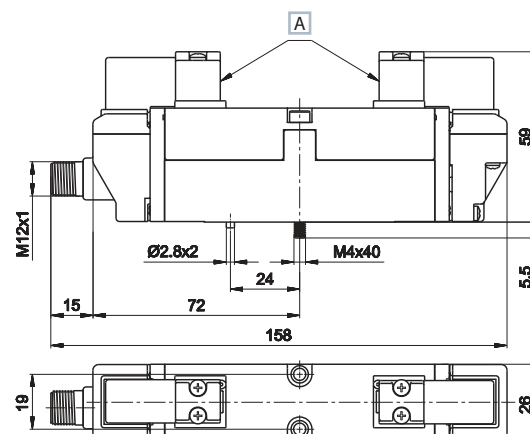
Double electric impulse 26 mm



Weight (Kg): 0,236

	Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
					En.	De-en.	
5/2		electric amplified	electric amplified	2,5÷9	17	17	BDB-424424
5/3 c.c.		electric amplified	electric amplified	2,1÷9	16	54	BDB-434424
5/3 o.c.		electric amplified	electric amplified	2,1÷9	16	54	BDB-444424
5/3 p.c.		electric amplified	electric amplified	2,1÷9	63	16	BDB-454424
3/2 NC + 3/2 NC		electric amplified	electric amplified	1,8÷9	20	27	BDB-464424
3/2 NC + 3/2 NO		electric amplified	electric amplified	1,8÷9	20	27	BDB-474424
3/2 NO + 3/2 NO		electric amplified	electric amplified	1,8÷9	20	27	BDB-484424

o.c. = open centres c.c. = closed centres p.c. = pressurize centres



A Manual override

ELECTRIC FEATURES

Central electric connector M12x1

IP 65 protection degree

24 V DC voltage

2,5 W nominal power

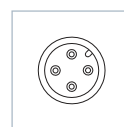
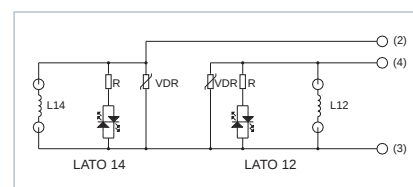
DD-052** series coil (without faston)

ED 100%

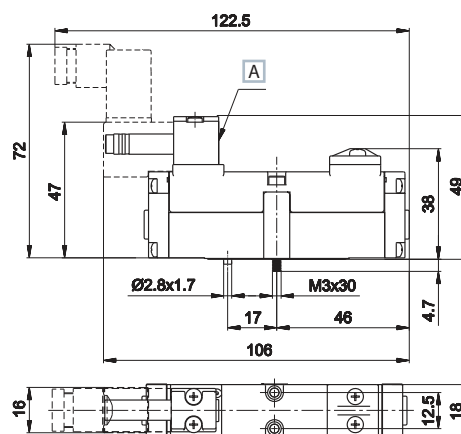
LED indicator

Available upon request other voltages

max 48V DC

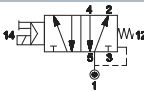
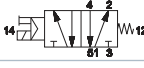


Single electric impulse 18 mm

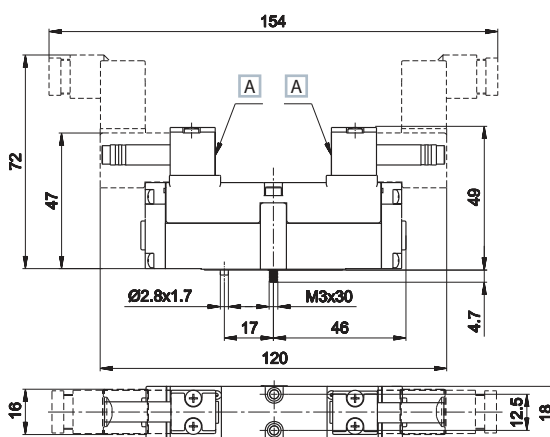


Weight (Kg): 0,107

A Manual override

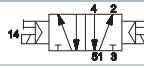
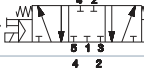
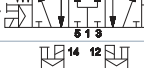
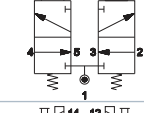
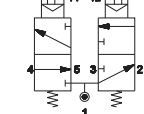
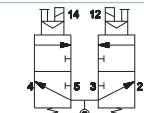
	Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
					En.	De-en.	
5/2		electric amplified	pneumo mechanical spring	1,8÷9	15	25	BDA-3240
5/2		electric amplified	mechanical spring	2,5÷9	14	37	BDA-3241

Double electric impulse 18 mm



Weight (Kg): 0,123

A Manual override

	Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
					En.	De-en.	
5/2		electric amplified	electric amplified	0,8÷9	16	16	BDA-3244
5/3 c.c.		electric amplified	electric amplified	2,1÷9	14	31	BDA-3344
5/3 o.c.		electric amplified	electric amplified	2,1÷9	14	31	BDA-3444
5/3 p.c.		electric amplified	electric amplified	2,1÷9	31	14	BDA-3544
3/2 NC + 3/2 NC		electric amplified	electric amplified	1,8÷9	17	22	BDA-3644
3/2 NC + 3/2 NO		electric amplified	electric amplified	1,8÷9	17	22	BDA-3744
3/2 NO + 3/2 NO		electric amplified	electric amplified	1,8÷9	17	22	BDA-3844

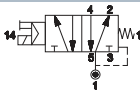
o.c. = open centres c.c. = closed centres p.c. = pressurized centres

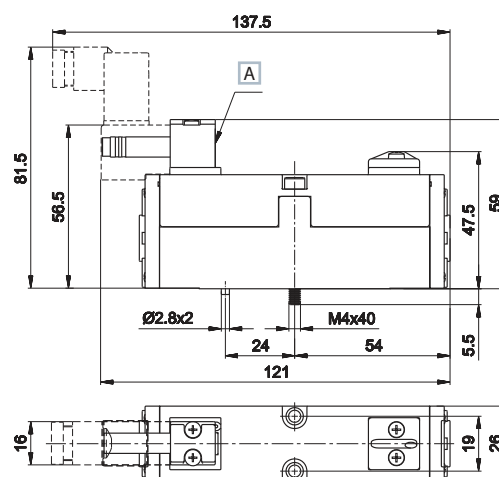
BDA solenoid valves are supplied without coils and connectors

Single electric impulse 26 mm



Weight (Kg): 0,197

Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
				En.	De-en.	
5/2		electric amplified pneumo mechanical spring	1,8÷9	21	40	BDA-4240
5/2		electric amplified mechanical spring	2,5÷9	20	50	BDA-4241

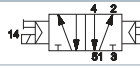
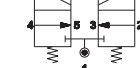
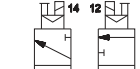
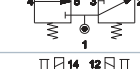


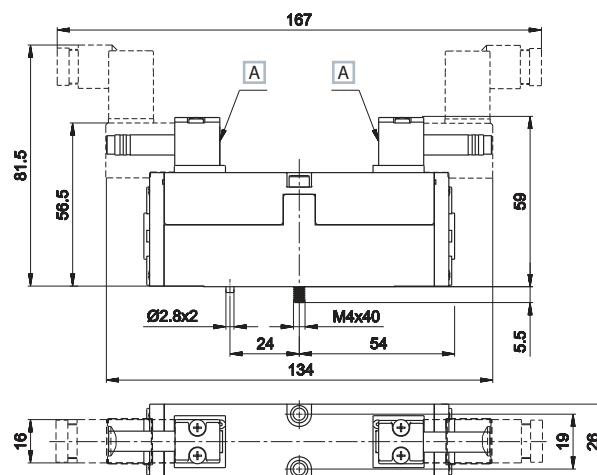
A Manual override

Double electric impulse 26 mm



Weight (Kg): 0,218

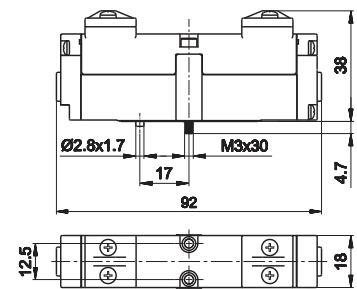
Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
				En.	De-en.	
5/2		electric amplified electric amplified	1,2÷9	17	17	BDA-4244
5/3 c.c.		electric amplified electric amplified	2,1÷9	16	54	BDA-4344
5/3 o.c.		electric amplified electric amplified	2,1÷9	16	54	BDA-4444
5/3 p.c.		electric amplified electric amplified	2,1÷9	63	16	BDA-4544
3/2 NC + 3/2 NC		electric amplified electric amplified	1,8÷9	20	27	BDA-4644
3/2 NC + 3/2 NO		electric amplified electric amplified	1,8÷9	20	27	BDA-4744
3/2 NO + 3/2 NO		electric amplified electric amplified	1,8÷9	20	27	BDA-4844



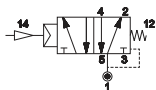
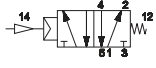
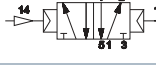
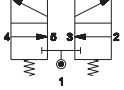
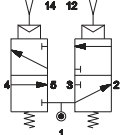
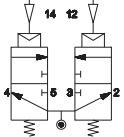
A Manual override

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

BDA solenoid valves are supplied without coils and connectors

Single/double **pneumatic impulse 18 mm**

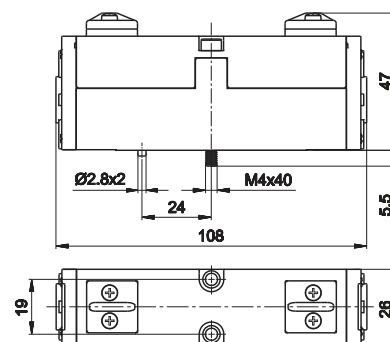
Weight (Kg): 0,092/0,098

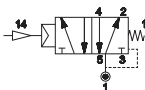
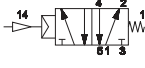
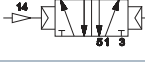
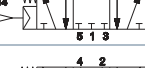
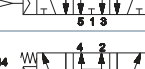
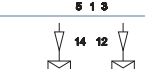
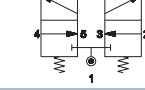
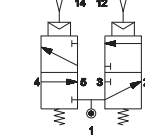
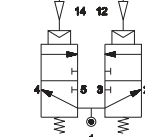
	Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
					En.	De-en.	
5/2		pneumatic amplified	pneumo mechanical spring	1,8÷10	13	30	BDA-3230
5/2		pneumatic amplified	mechanical spring	2,5÷10	11	35	BDA-3231
5/2		pneumatic amplified	pneumatic amplified	0,8÷10	8	8	BDA-3233
5/3 c.c.		pneumatic amplified	pneumatic amplified	2,1÷10	9	15	BDA-3333
5/3 o.c.		pneumatic amplified	pneumatic amplified	2,1÷10	9	15	BDA-3433
5/3 p.c.		pneumatic amplified	pneumatic amplified	2,1÷10	9	15	BDA-3533
3/2 NC + 3/2 NC		pneumatic amplified	pneumatic amplified	1,8÷10	5	14	BDA-3633
3/2 NC + 3/2 NO		pneumatic amplified	pneumatic amplified	1,8÷10	5	14	BDA-3733
3/2 NO + 3/2 NO		pneumatic amplified	pneumatic amplified	1,8÷10	5	14	BDA-3833

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

Single/double **pneumatic impulse 26 mm**

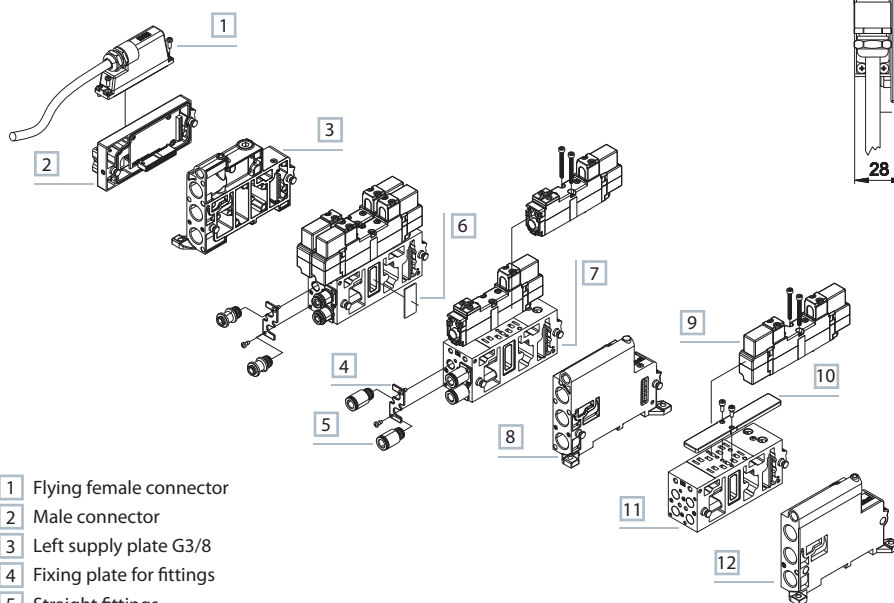
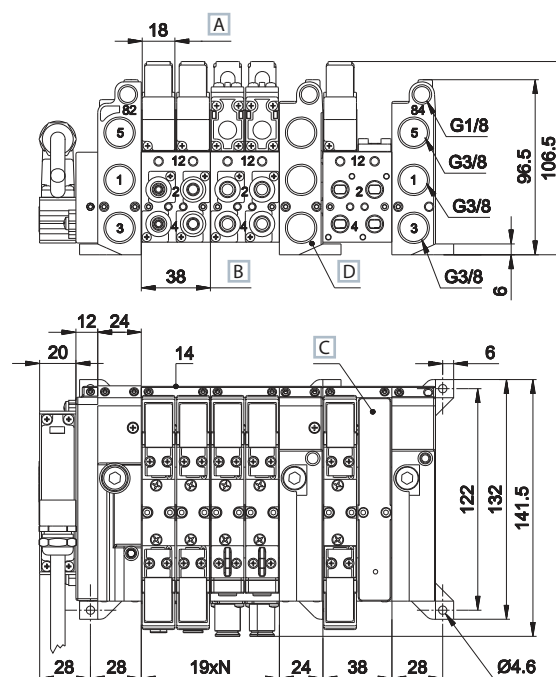
Weight (Kg): 0,185/0,204



	Symbol	Control	Return	Pressure bar	Time (ms)		Part no.
					En.	De-en.	
5/2		pneumatic amplified	pneumo mechanical spring	1,8÷10	15	33	BDA-4230
5/2		pneumatic amplified	mechanical spring	2,5÷10	13	38	BDA-4231
5/2		pneumatic amplified	pneumatic amplified	1,2÷10	10	10	BDA-4233
5/3 c.c.		pneumatic amplified	pneumatic amplified	1,2÷10	14	18	BDA-4333
5/3 o.c.		pneumatic amplified	pneumatic amplified	1,2÷10	14	18	BDA-4433
5/3 p.c.		pneumatic amplified	pneumatic amplified	1,2÷10	14	18	BDA-4533
3/2 NC + 3/2 NC		pneumatic amplified	pneumatic amplified	1,8÷10	8	14	BDA-4633
3/2 NC + 3/2 NO		pneumatic amplified	pneumatic amplified	1,8÷10	8	14	BDA-4733
3/2 NO + 3/2 NO		pneumatic amplified	pneumatic amplified	1,8÷10	8	14	BDA-4833

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

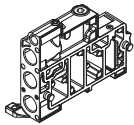
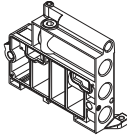
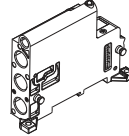
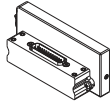
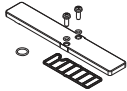
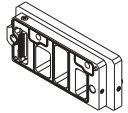
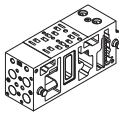
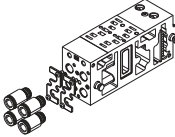
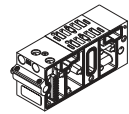
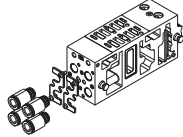
Integrated electric connection side 18 mm



- 1 Flying female connector
- 2 Male connector
- 3 Left supply plate G3/8
- 4 Fixing plate for fittings
- 5 Straight fittings
- 6 Plate for separating pressures
- 7 Integrated electric connection
- 8 Intermediate supply plate G3/8
- 9 Solenoid valve side 18 mm
- 10 Closing plate
- 11 Sub-base 2 valve places
- 12 Right supply plate G3/8

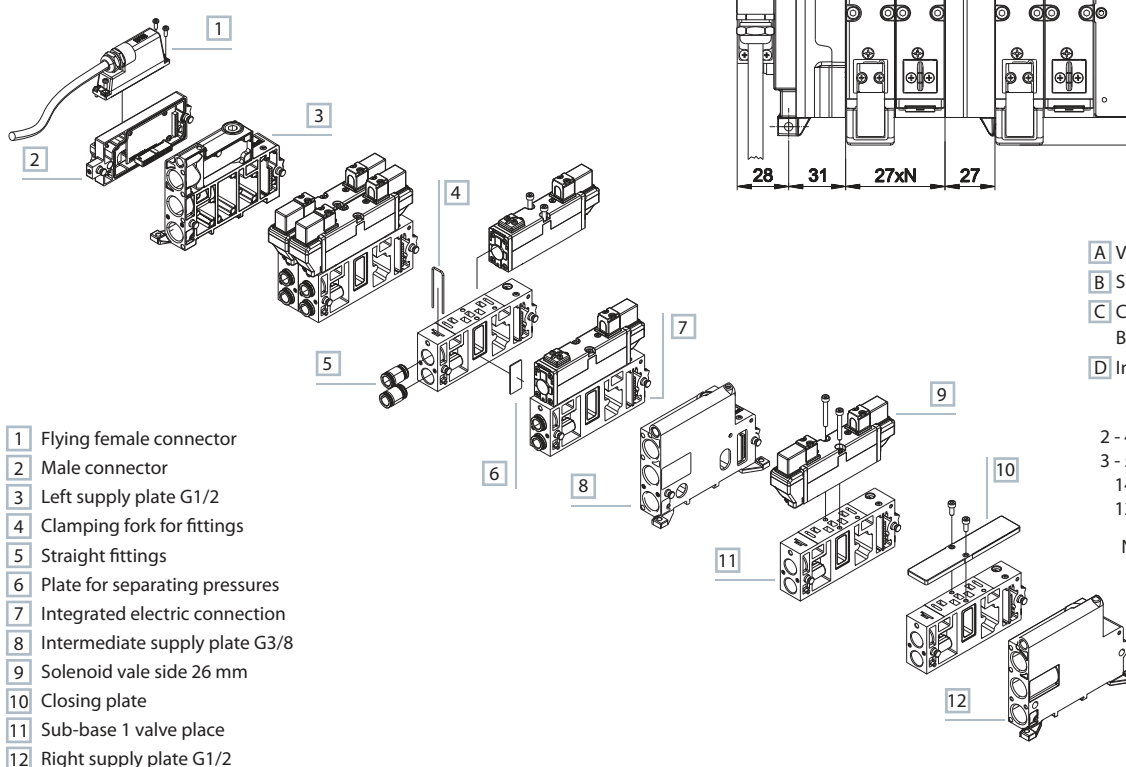
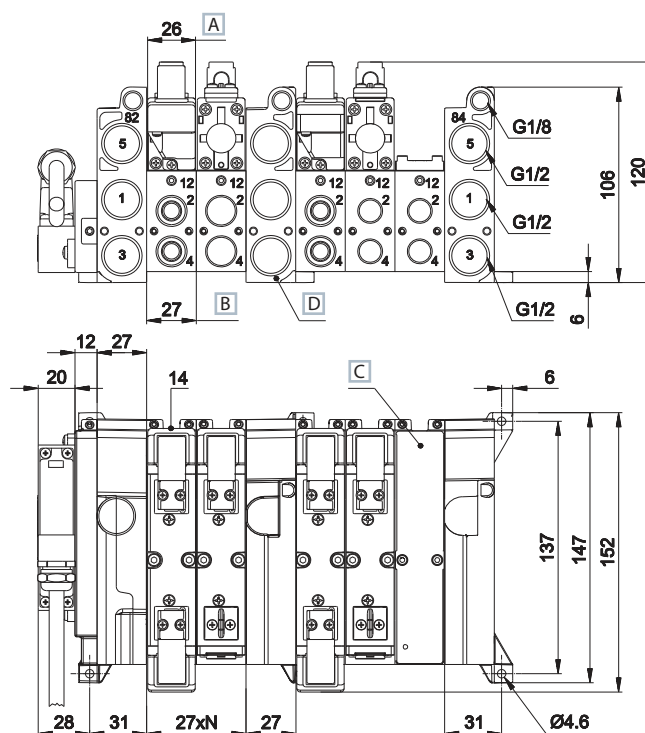
- A Valve thickness
- B Sub-base 2 places valve
- C Closing plate for unused valve place BDF-3185
- D Intermediate supply plate

- 1 = Supply port
- 2 - 4 = Use
- 3 - 5 = Exhaust
- 14 = Control
- 12 = Return
- N = Number of valve places

BDF-3100	BDF-3115	BDF-3120	BDF-3140TIM	BDF-3180	BDF-3185	BDF-3190
						
left supply plate G3/8 with integrated electric connection weight: 0,292 Kg	right supply plate G3/8 weight: 0,276 Kg	intermediate supply plate G3/8 with integrated electric connection weight: 0,29 Kg	multiway connection module, 25 poles male type D side 18 mm weight: 0,158 Kg	plate for separating supply pressures weight: 0,002 Kg	plate for closing unused valve place weight: 0,038 Kg	interface for connecting valves side 18-26 mm with integrated electric connection weight: 0,216 Kg
BDF-3210 (b)	BDF-3230 (a) - (b)	BDF-3310 (b)	BDF-3330 (a) - (b)	BDF-3400	GZR-100	GZR-V10004/06/08
						
sub base 2 places according to VDMA-ISO specifications flow rate 620 NI/min G1/8 connections weight: 0,324 Kg	sub base 2 places according to VDMA-ISO specifications flow rate 620 NI/min for fittings Ø 4-6-8 mm weight: 0,334 Kg	sub base 2 places with increased capacity 800 NI/min G1/8 connections weight: 0,322 Kg	sub base 2 places with increased capacity 800 NI/min for fittings Ø 4-6-8 mm weight: 0,334 Kg	single sub-base 1 place with increased capacity G1/8 connections weight: 0,12 Kg	screw plug weight: 0,01 Kg	fittings according to UNIVER design (package 50 pcs.) GZR-V10004 Ø4 mm GZR-V10006 Ø6 mm GZR-V10008 Ø8 mm weight: 0,01 Kg each.

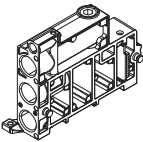
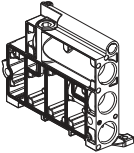
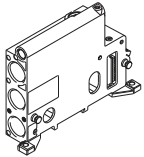
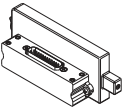
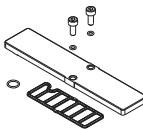
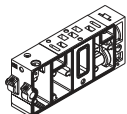
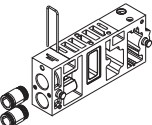
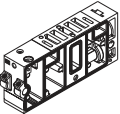
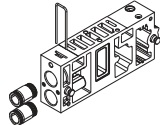
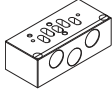
(a) = sub-base including fixing plates for fittings (fittings excluded) (b) = part no. codification: 0 = electric integrated

Integrated electric connection side 26 mm



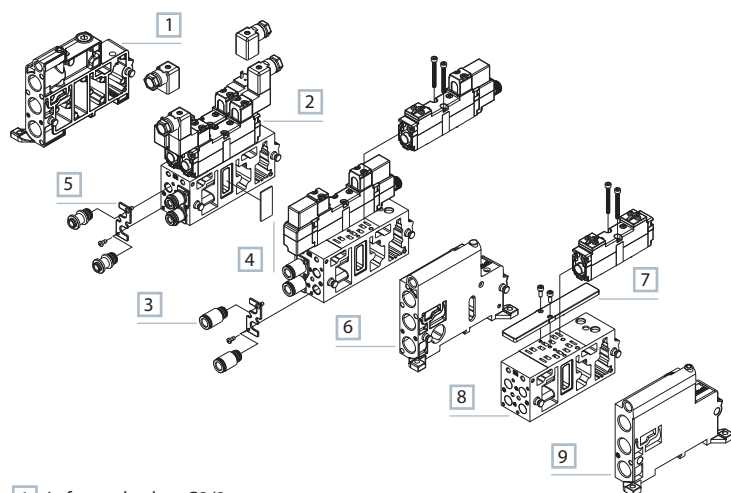
- 1 Flying female connector
- 2 Male connector
- 3 Left supply plate G1/2
- 4 Clamping fork for fittings
- 5 Straight fittings
- 6 Plate for separating pressures
- 7 Integrated electric connection
- 8 Intermediate supply plate G3/8
- 9 Solenoid valve side 26 mm
- 10 Closing plate
- 11 Sub-base 1 valve place
- 12 Right supply plate G1/2

- A Valve thickness
- B Sub-base 1 place valve
- C Closing plate for unused valve place BDF-4185
- D Intermediate supply plate
- 1 = Supply port
- 2 - 4 = Use
- 3 - 5 = Exhaust
- 14 = Control
- 12 = Return
- N = Number of valve place

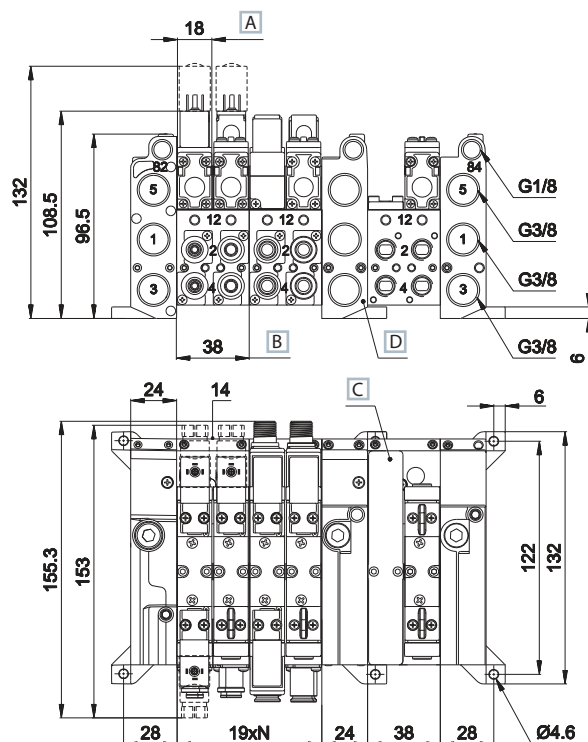
BDF-4100	BDF-4115	BDF-4120	BDF-4140TIM	BDF-4180	BDF-4185
					
left supply plate G1/2 with integrated electric connection weight: 0,396 Kg	right supply plate G1/2 weight: 0,418 Kg	intermediate supply plate G1/2 with integrated electric connection weight: 0,396 Kg	multiway connection module, 25 poles male type D side 26 mm weight: 0,158 Kg	plate for separating supply pressures weight: 0,002 Kg	plate for closing unused valve place weight: 0,08 Kg
BDF-4210/20 (b)	BDF-4230 (a) - (b)	BDF-4310/20(b)	BDF-4330/31/32(a) - (b)	BDF-4400	GZR-VV1006/08/10
					
sub base 1 place according to VDMA-ISO specification flow rate 1250 NI/min G1/4 connections BDF-4210 weight: 0,254 Kg G3/8 connections BDF-4220 weight: 0,246 Kg	sub base 1 place according to VDMA-ISO specification flow rate 1250 NI/min for fittings Ø 6-8-10 mm BDF-4230 weight: 0,23 Kg	sub base 1 place with increased capacity flow rate 1700 NI/min G1/4 connections BDF-4310 weight: 0,254 Kg G3/8 connections BDF-4320 weight: 0,246 Kg	sub base 1 place with increased capacity flow rate 1700 NI/min for fittings Ø 6-8-10 mm BDF-4330 weight: 0,23 Kg	single sub-base 1 place with increased capacity G3/8 connections weight: 0,226 Kg	fittings according to UNIVER design (package 50 pcs.) GZR-VV1006 Ø 6mm GZR-VV1008 Ø 8mm GZR-VV1010 Ø 10mm weight: 0,014 Kg each.

(a) = sub-base including fixing plates for fittings (fittings excluded) (b) = part no. codification: 0 = electric integrated

Electric connection with external connector side 18 mm



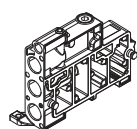
- 1 Left supply plate G3/8
- 2 Solenoid valve
- 3 Straight fittings
- 4 Plate for separating pressures
- 5 Fixing plate for fittings
- 6 Intermediate supply plate G3/8
- 7 Closing plate
- 8 Sub-base 2 valve places
- 9 Right supply plate G3/8



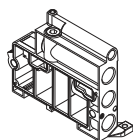
- A Valve thickness
- B Sub-base 2 places valve
- C Closing plate for unused valve place
BDF-3185
- D Intermediate supply plate

- 1 = Supply port
- 2 - 4 = Use
- 3 - 5 = Exhaust
- 14 = Control
- 12 = Return
- N = Number of valve places

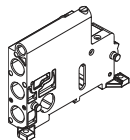
BDF-3110	BDF-3115	BDF-3125	BDF-3180	BDF-3185	BDF-3191	BDF-3400
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left supply plate G3/8
weight: 0,288 Kg



right supply plate G3/8
weight: 0,276 Kg



intermediate supply
plate G3/8 without
integrated electric
connection
weight: 0,31 Kg



plate for separating
pressures
weight: 0,002 Kg

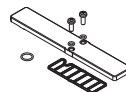
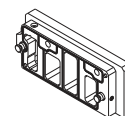
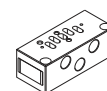


plate for closing
unused valve place
weight: 0,038 Kg

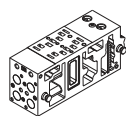


interface for connecting
valves side 18-26 mm
with integrated electric
connection
weight: 0,212 Kg

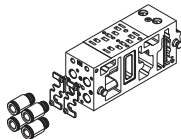


single sub-base
1 place with
increased capacity
G1/8 connections
weight: 0,12 Kg

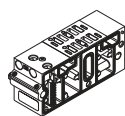
BDF-3210/1/2 (b)	BDF-3230/1/2 (a) - (b)	BDF-3310/1/2 (b)	BDF-3330/1/2 (a) - (b)	GZR-100	GZR-V10004/6/8	DD-051/..
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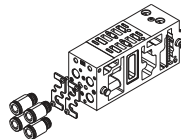
sub base 2 places
according to VDMA-ISO
specifications
flow rate 620 NI/min
G1/8 connections
BDF-3210
BDF-3211
BDF-3212
weight: 0,316 Kg



sub base 2 places
according to VDMA-ISO
specifications
flow rate 620 NI/min
for fittings Ø 4-6-8 mm
BDF-3230
BDF-3231
BDF-3232
weight: 0,326 Kg



sub base 2 places
with increased capacity
800 NI/min
attacchi G1/8
BDF-3310
BDF-3311
BDF-3312
weight: 0,316 Kg



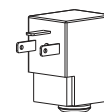
sub base 2 places
with increased capacity
flow rate 800 NI/min
for fittings Ø 4-6-8 mm
BDF-3330
BDF-3331
BDF-3332
weight: 0,326 Kg



screw plug
weight: 0,01 Kg



fittings according to
UNIVER design
(package 50 pcs.)
GZR-V10004 Ø4 mm
GZR-V10006 Ø6 mm
GZR-V10008 Ø8 mm
weight: 0,01 Kg cad.



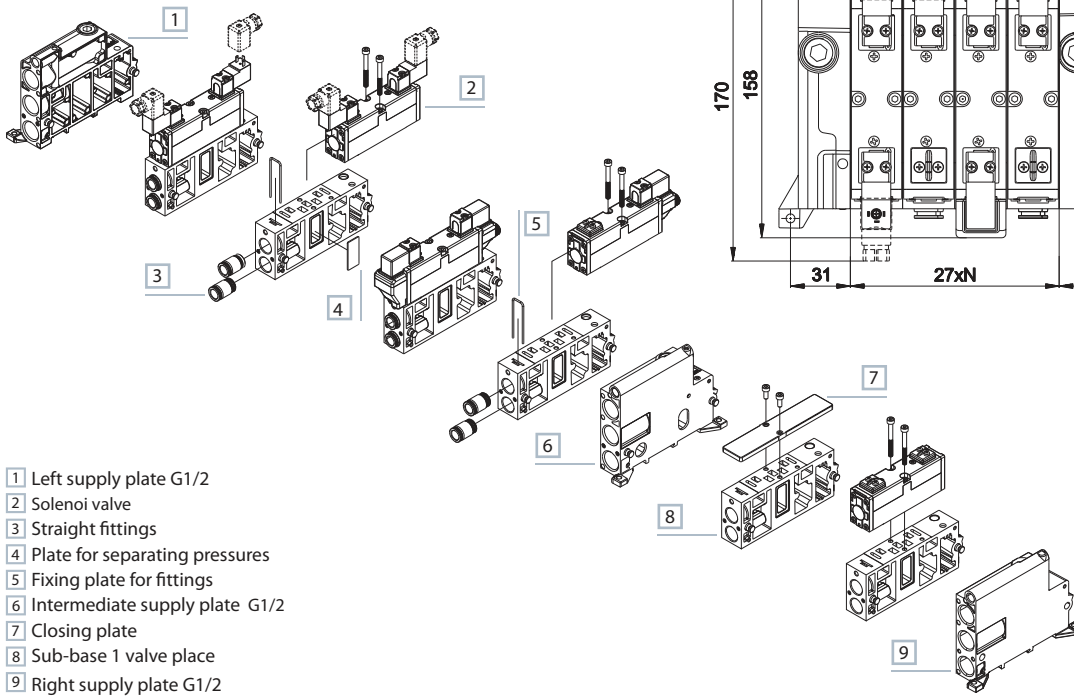
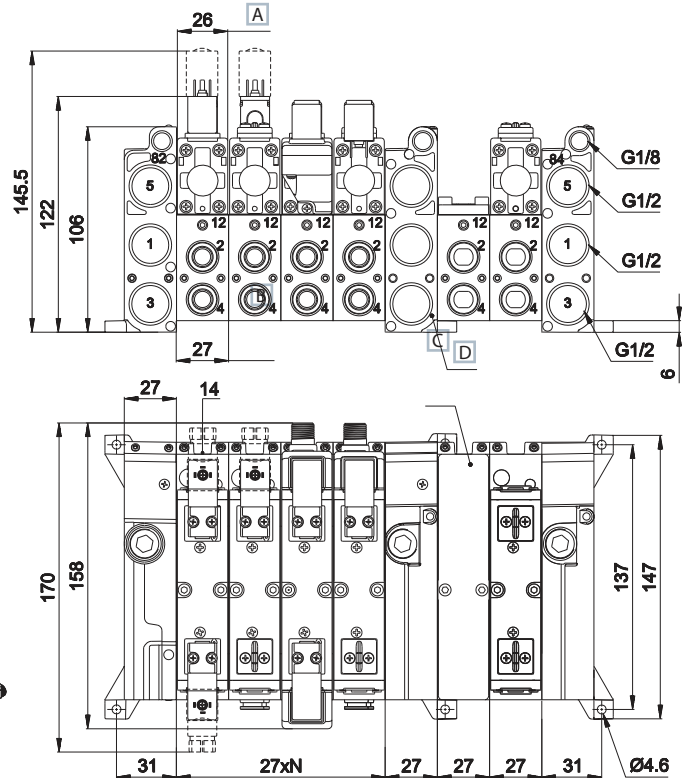
U05 coil side 15 mm
(for technical features
refer to section
"Accessories>Coils")
weight: 0,019 Kg

(a) = sub-base including fixing plates for fittings (fittings excluded)
(b) = part no. codification: 0 = electric integrated

1 = electric non integrated

2 = only pneumatic

Electric connection with external connector side 26 mm



- A Valve thickness
B Sub-base 1 places valve
C Closing plate for unused valve place BDF-4185
D Intermediate supply plate

- 1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return
N = Number of valve places

BDF-4110	BDF-4115	BDF-4125	BDF-4180	BDF-4185	BDF-4400
left supply plate G1/2 weight: 0,428 Kg	right supply plate G1/2 weight: 0,418 Kg	left supply plate G1/2 without integrated electric connection weight: 0,42 Kg	plate for separating supply pressures weight: 0,002 Kg	plate for closing unused valve place weight: 0,08 Kg	single sub-base 1 place with increased capacity G3/8 connections weight: 0,226 Kg
BDF-4210/.. (b)	BDF-4230/1/2 (a) - (b)	BDF-4311/.. (b)	BDF-4330/1/2 (a) - (b)	GZR-VV1006/8/10	DD-051/..
sub base 1 place according to VDMA-ISO specification flow rate 1250 NI/min G1/4 connect. G3/8 connect. BDF-4210 BDF-4220 BDF-4211 BDF-4221 BDF-4212 BDF-4222	sub base 1 place according to VDMA-ISO specification flow rate 1250 NI/min for fittings Ø 6-8-10 mm BDF-4230 BDF-4231 BDF-4232 weight: 0,22 Kg	sub base 1 place with increased capacity 1700 NI/min G1/4 connect. G3/8 connect. BDF-4310 BDF-4320 BDF-4311 BDF-4321 BDF-4312 BDF-4322 weight: 0,244 Kg weight: 0,236 Kg	sub base 1 place with increased capacity 1700 NI/min for fittings Ø 6-8-10 mm BDF-4330 BDF-4331 BDF-4332 weight: 0,22 Kg	fittings according to UNIVER design (package 50 pcs.) GZR-VV1006 Ø 6mm GZR-VV1008 Ø 8mm GZR-VV1010 Ø 10mm weight: 0,014 Kg cad.	U05 coil side 15 mm (for technical features refer to section "Accessories>Coils") weight: 0,019 Kg

(a) = sub-base including fixing plates for fittings (fittings excluded)

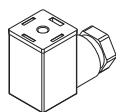
(b) = part no. codification: 0 = electric integrated

1 = electric non integrated

2 = only pneumatic

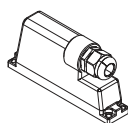
Electric connection

AM-5109

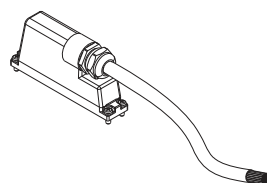


■ 15 mm connector

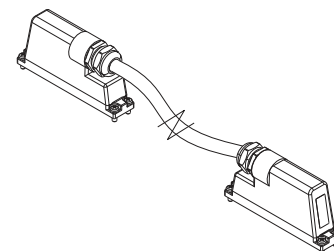
TSCFN24S000



■ female connector
25 poles type D-sub
no cable
M3 x 8 fixing screws

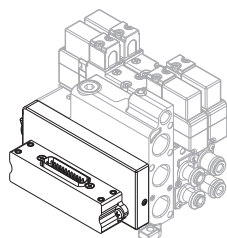
 TSCFN24S0300
TSCFN24S0500
TSCFN24S1000


■ female connector
25 poles type D-sub
cable 3-5-10 m
M3 x 8 fixing screws

 TSCFN16D0300
TSCFN16D0500
TSCFN16D1000


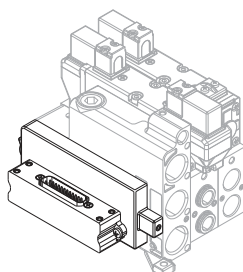
■ male/female flying connector
sub D (upon request)
prewired for 24 coils with
cable Ø 8 mm (3-5-10 m length)
suitable for mobile laying
M3 x 8 fixing screws

BDF-3140 TIM



■ multiway connection module
25 poles male type D
side 18 mm

BDF-4140 TIM



■ multiway connection module
25 poles male type D
side 26 mm

>>Colour identification according to standard DIN 47100

Female connector D-SUB 25 poles
for connection 12+12 coils



PIN No.	Control side	Valve N°	Colour	Coil
1	14	1	white	1
2	12	1	brown	2
3	14	2	green	3
4	12	2	yellow	4
5	14	3	grey	5
6	12	3	pink	6
7	14	4	blue	7
8	12	4	red	8
9	14	5	black	9
10	12	5	violet	10
11	14	6	grey-pink	11
12	12	6	red-blue	12
13	14	7	white-green	13
14	12	7	green-brown	14
15	14	8	white-yellow	15
16	12	8	yellow-brown	16
17	14	9	white-grey	17
18	12	9	grey-brown	18
19	14	10	white-pink	19
20	12	10	pink-brown	20
21	14	11	white-blue	21
22	12	11	brown-blue	22
23	14	12	white-red	23
24	-	-	brown-red brown-black shield	common low
25	12	12	white-black	24

AC-N

NAMUR valve

- Mixed commutation system (spool-poppet)
- High flow rate
- Quick response time
- High cycle rates
- Control: pneumatic, electric
- Suitable for rotating pneumatic actuators used in industrial plants for the distribution of fluids
- NAMUR VDI/VDE 3845 interface



TECHNICAL FEATURES

Ambient temperature	-10 ÷ 45 °C
Fluid temperature	-10 ÷ 50 °C
Fluid	filtered air 50 µm, lubricated or not
Commutation system	poppet mixed system
Ways/Positions	5/2
Pressure	10 bar max
Control	pneumatic, electric
Return	pneumomechanical spring, pneumatic, electric
Connections	1-3-5: G1/4 2-4: NAMUR interface
Nominal Ø	8 mm
Nominal flow rate	1200 NI/min

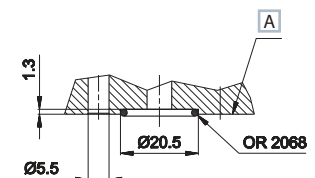
TECHNICAL FEATURES

Valve body	zamak
Seals	polyurethane - nitrile rubber
Actuators	technopolymer
Spool	aluminium

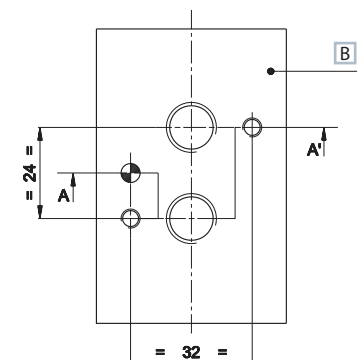
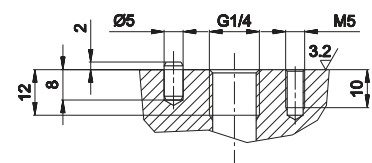
ELECTRIC FEATURES

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

NAMUR interface



A-A' section



- A Electrovalve surface
- B Flange surface

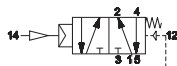
Upon request:



Single **pneumatic** impulse

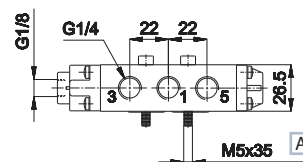
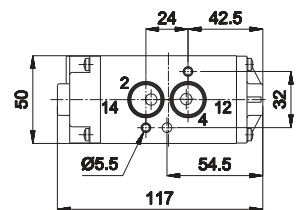
A ISO 4762

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



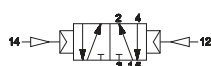
Control	Return	Pressure bar	Times (ms)		Weight Kg	Part no.
			En.	De-en.		
pneumatic amplified	pneumo mechanical spring	2,3÷10	10	10	0,564	AC-N8100

5/2

Double **pneumatic** impulse

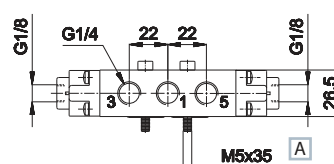
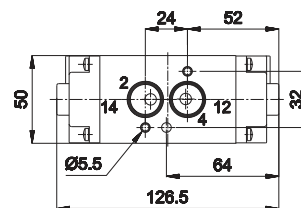
A ISO 4762

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



Control	Return	Pressure bar	Times (ms)		Weight Kg	Part no.
			En.	De-en.		
pneumatic amplified	pneumatic amplified	0,8÷10	6	6	0,564	AC-N8120

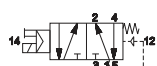
5/2

Single **electric** impulse

A ISO 4762

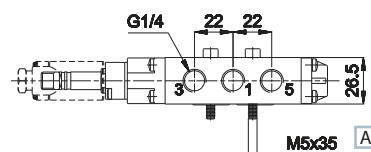
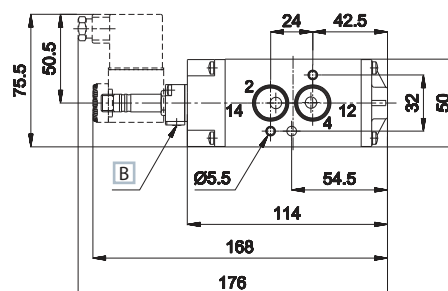
B Manual override

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



Control	Return	Pressure bar	Times (ms)		Weight Kg	Part no.
			En.	De-en.		
electric amplified	pneumo mechanical spring	2,3÷10	22	22	0,6	AC-N8500

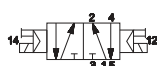
5/2

Double **electric** impulse

A ISO 4762

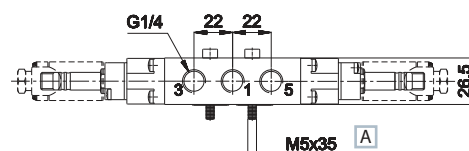
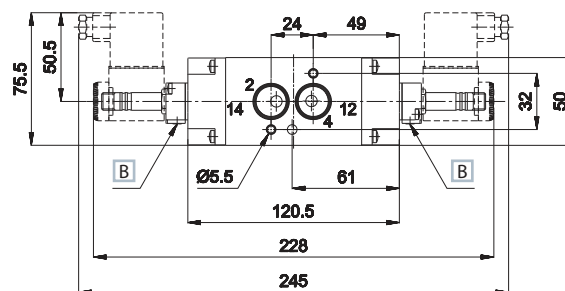
B Manual override

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

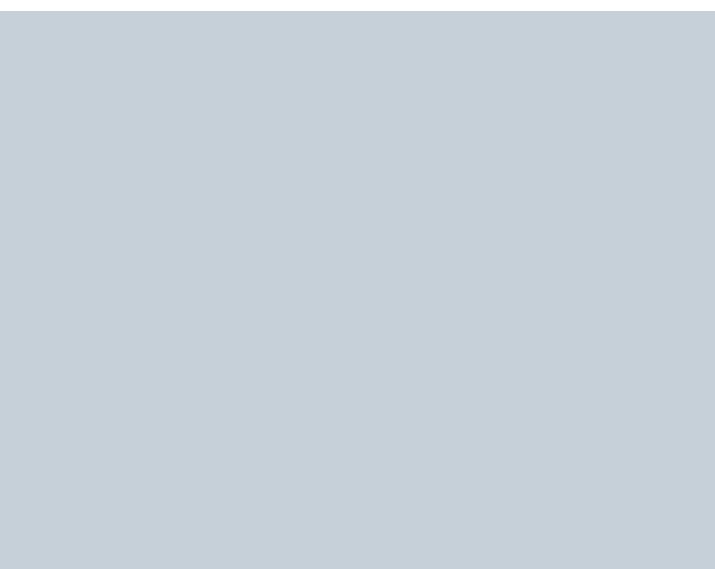


Control	Return	Pressure bar	Times (ms)		Weight Kg	Part no.
			En.	De-en.		
electric amplified	electric amplified	0,8÷10	14	14	0,636	AC-N8520

5/2



Upon request 3/2 version
Electrovalves are supplied without coil, connector and locking ring



SPOOL VALVES

3 Spool valves

CL CM	3/2 - 5/2 - 5/3 UNIVERSAL Threaded spool valves	3.01
E-15	5/2 M5 valves - Mechanical and manual	3.05
G6 GL6	20 mm valves and electrovalves G 1/8 for sub-base	3.08
G7	Spool system valves	3.09
PS	Combobox	3.10

CL-CM

UNIVERSAL Distributors G1/8 - G1/4

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



TECHNICAL CHARACTERISTICS

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

CONSTRUCTIVE CHARACTERISTICS

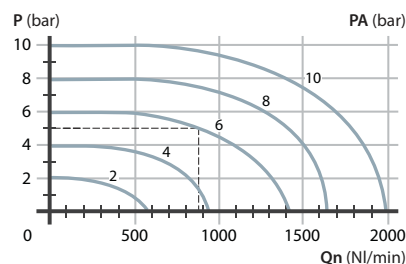
Valve body	G1/8 = die-cast zamak
	G1/4 = aluminium
Seals	nitrile rubber
Actuators	technopolymer/aluminium
Spool	aluminium
Sub-base	zamak

ELECTRIC CHARACTERISTICS

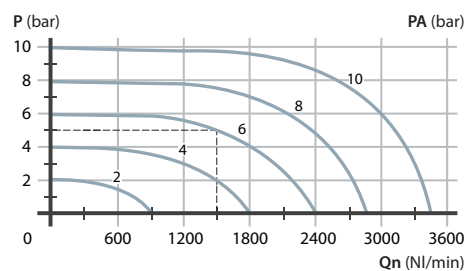
Electropilot	U1
Coil	DA
Power consumption	3,5 W (DC) - 5 VA (AC)
Connector	AM 5110
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC
Manual override	with 2 positions screw

Flow rate characteristics

>> G1/8

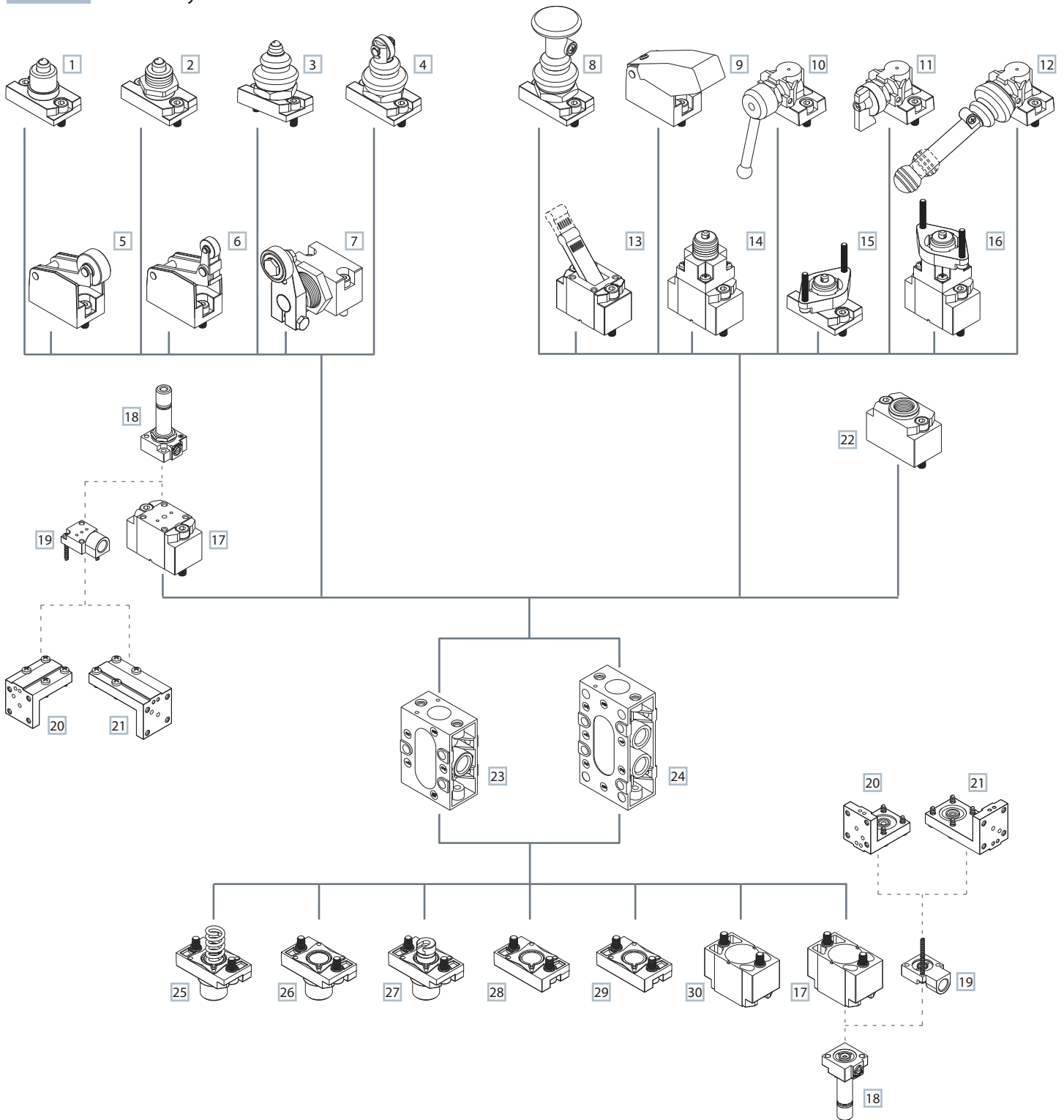


>> G1/4



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

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

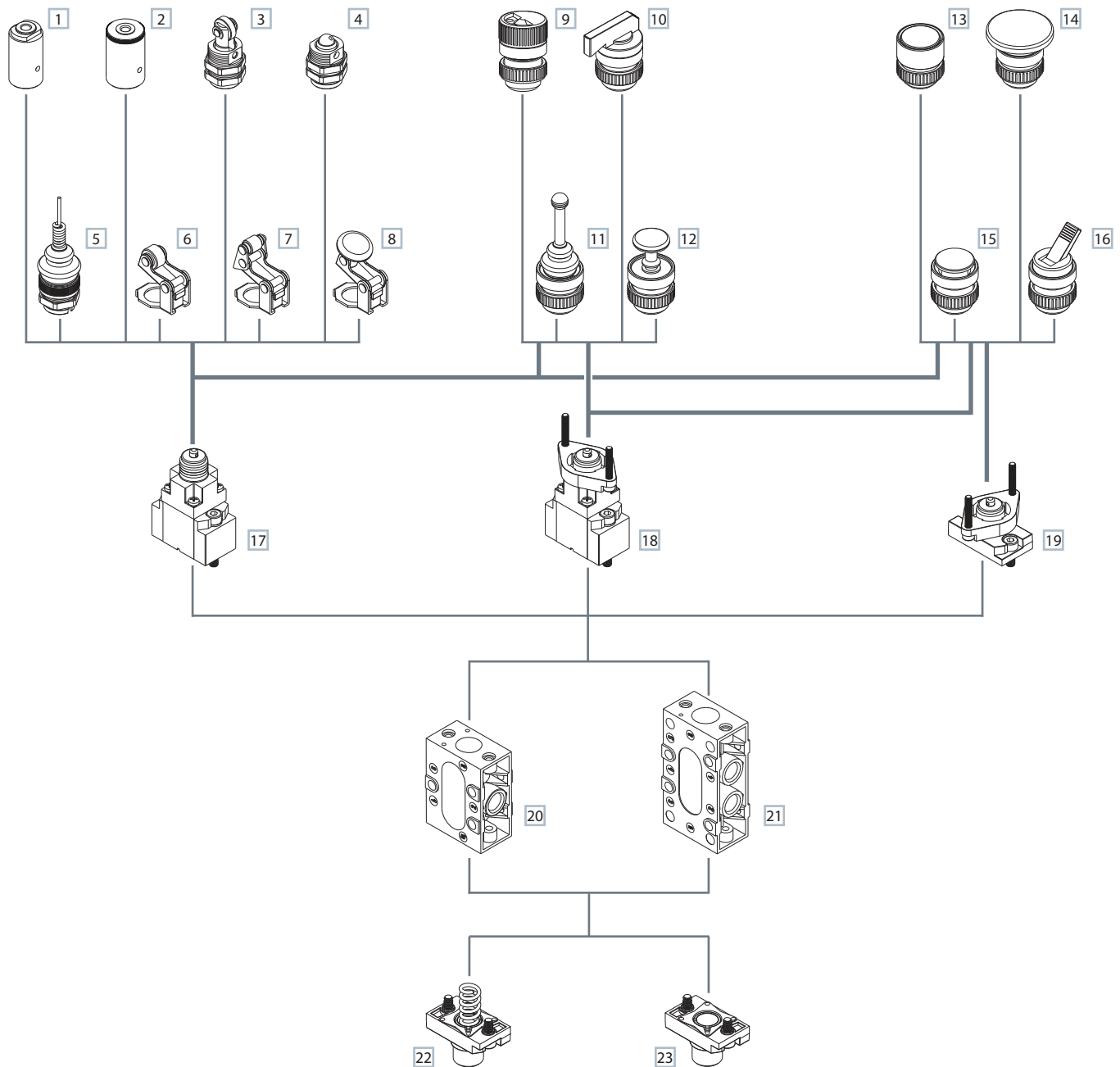
BODY

- 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

**PNEUMATIC/MECHANICAL ACTUATORS**

- 1 Pneumatic actuators
- 2 Pneumatic actuators amplified
- 3 Roller operator 1 position
- 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

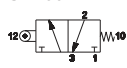
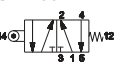
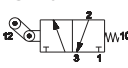
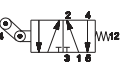
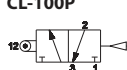
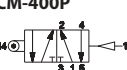
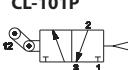
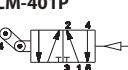
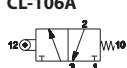
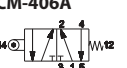
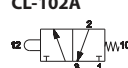
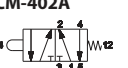
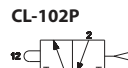
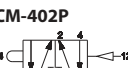
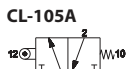
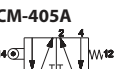
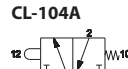
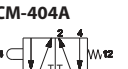
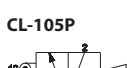
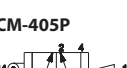
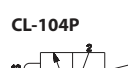
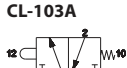
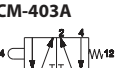
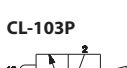
BODY

- 22 3/2 Body
- 24 5/2 Body

RETURN

- 20 Mechanical spring
- 21 Pneumatic not amplified

G1/8 Valves with direct mechanical operation

	CL-100A 		CM-400A 		CL-101A 		CM-401A 
	CL-100P 		CM-400P 		CL-101P 		CM-401P 
	CL-106A 		CM-406A 		CL-102A 		CM-402A 
	CL-102P 						CM-402P 
	CL-105A 		CM-405A 		CL-104A 		CM-404A 
	CL-105P 		CM-405P 		CL-104P 		CM-404P 
	CL-103A 		CM-403A 				
	CL-103P 		CM-403P 				

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

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

(a) = see page 3_7

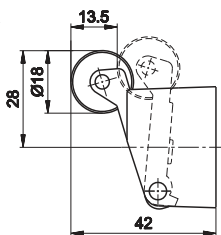
Composition

CONTROL

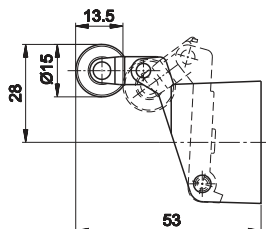
BODY

RETURN

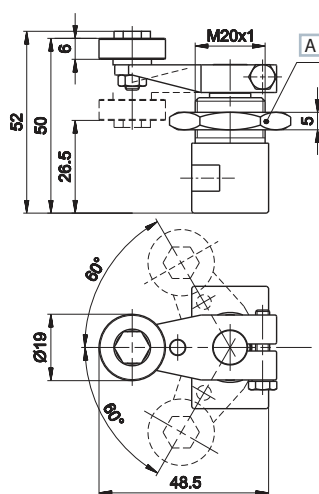
A G1/8 ROLLER LEVER



B G1/8 UNI-DIRECTIONAL ROLLER LEVER

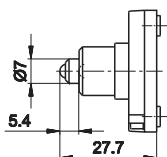


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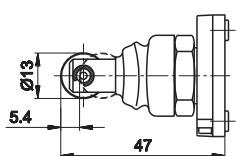


A Wrench 25

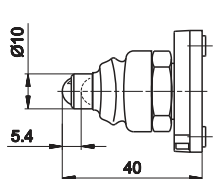
D G1/8 BALL-PUSH



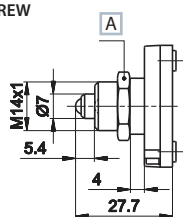
E G1/8 ROLLER WITH DUST PROTECTION



F G1/8 BALL-PUSH WITH DUST PROTECTION

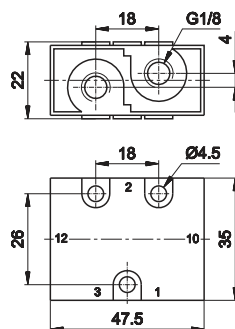


G G1/8 BALL-PUSH FOR SCREW PANEL MOUNTING



A Wrench 18

1 3/2 NC-NO G1/8



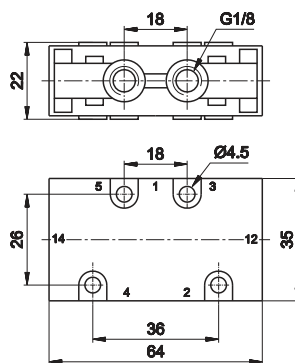
>> NC

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

>> NO

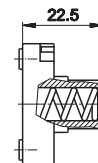
1 = Exhaust
2 = Use
3 = Supply port
12 = Control
10 = Return

2 5/2 G1/8

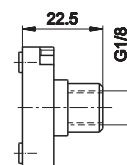


1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

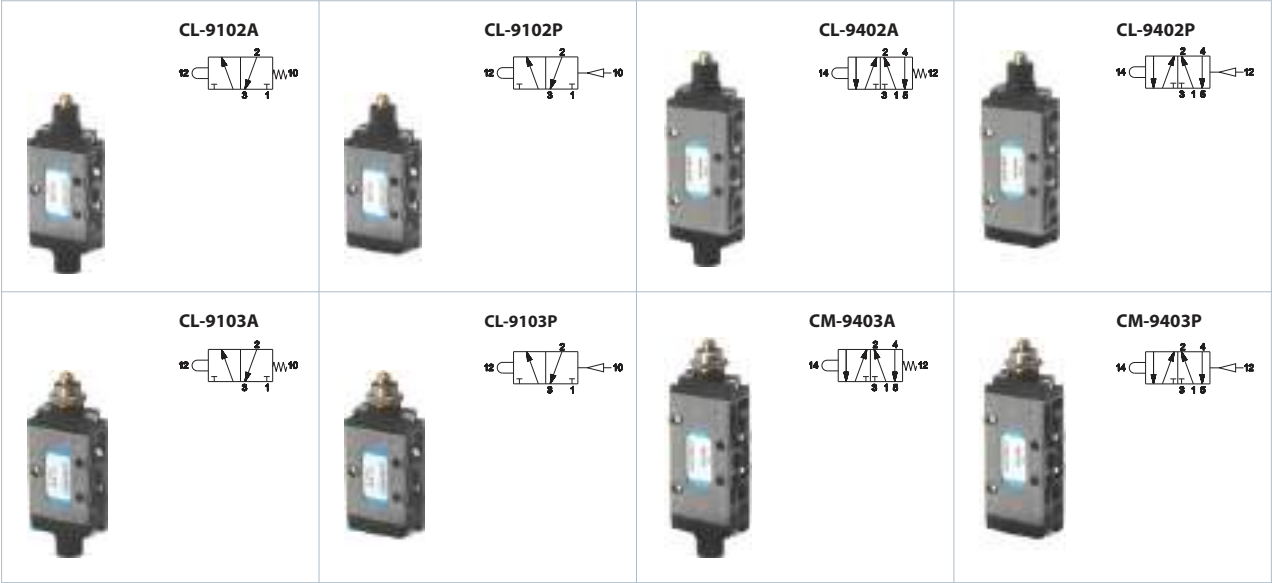
H G1/8 MECHANICAL SPRING



I G1/8 PNEUMATIC NOT AMPLIFIED



G1/4 Valves with direct mechanical operation



Return	Flow rate	Ø	Weight	Force	Part no.	Composition (a)			Tot L.
	(NI/min)	mm	Kg	N		Control	Body	Return	mm
BALL-PUSH									
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
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									
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
mechanical spring	1480	6,5	0,28	64	CM-9403A	G	2	H	134,5
pneumatic not amplified	1480	6,5	0,26	26	CM-9403P	G	2	I	123,5

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

(a) = see page 3_9

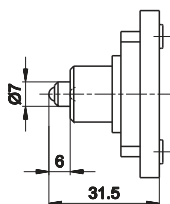
Composition

CONTROL

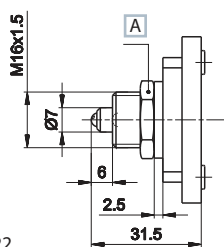
BODY

RETURN

D G1/4 BALL-PUSH

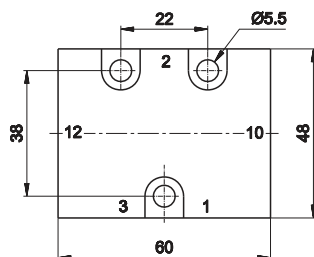
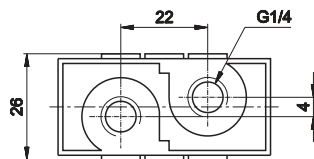


G G1/4 BALL-PUSH FOR SCREW PANEL MOUNTING



A Wrench 22

1 3/2 NC-NO G1/4



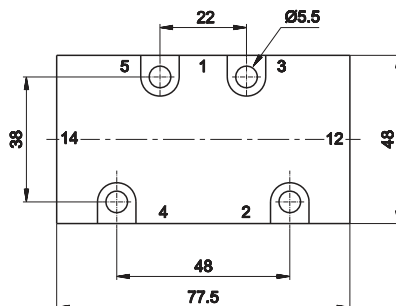
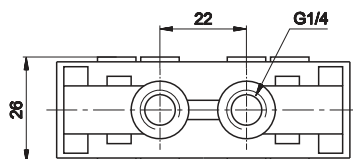
>> NC

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

>> NO

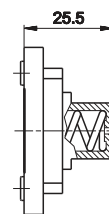
1 = Exhaust
2 = Use
3 = Supply port
12 = Control
10 = Return

2 5/2 G1/4

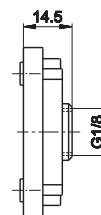


1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

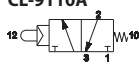
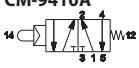
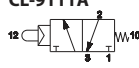
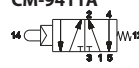
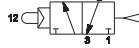
H G1/4 MECHANICAL SPRING



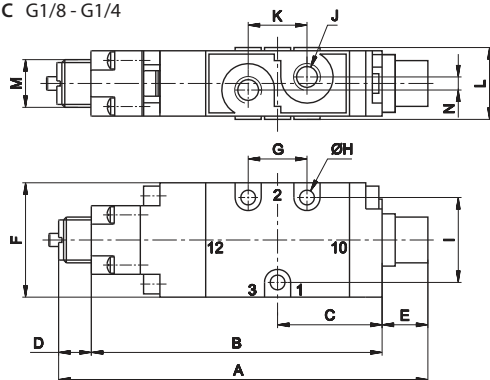
I G1/4 PNEUMATIC SPRING



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

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

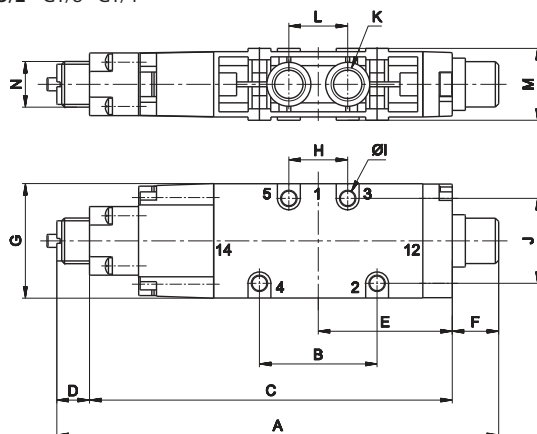
3/2 NC G1/8 - G1/4



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

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

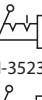
5/2 G1/8 - G1/4



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

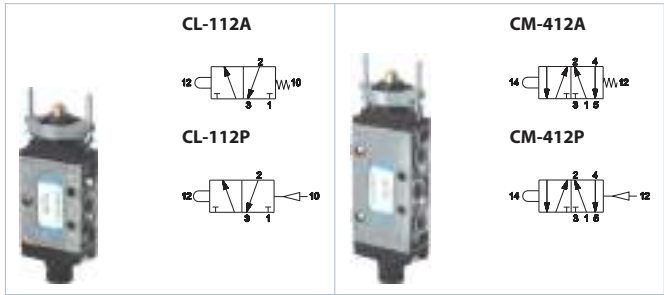
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
G1/8	135	36	111	10	41	14	35	18	4,5	26	G1/8	18	22	M14x1
G1/4	154	48	129,5	10	49,7	14,5	48	22	5,5	38	G1/4	22	26	M14x1

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

PNEUMATIC AND MECHANICAL ACTUATORS			MANUAL ACTUATORS		
	Pneumatic operator	AI-3550 		Recessed button	■ BLACK AI-3511 ■ RED AI-3512 ■ GREEN AI-3513 
	Amplified pneumatic operator	AI-3551 		Head button	■ RED AI-3514 ■ BLACK AI-3516 ■ RED AI-3514D ■ BLACK AI-3516D 
	Roller operator 1 position	AI-3560 		Button	■ GREEN AI-3515 ■ RED AI-3517 ■ BLACK AI-3519 
	Ball-push operator 1 position	AI-3562 		Accident prevention rotating selector	■ BLACK AI-3520 ■ BLACK AI-3521 
	Operator with omni-directional antenna 1 position	AI-3563 		Rotating lever selector	■ BLACK AI-3522 ■ BLACK AI-3523 
	Roller lever operator 1 position	AI-3570 		Lever operator	■ BLACK AI-3524 
	Articulated roller operator 1 position Complete actuation with stroke 2,5 mm, max stroke 4,7 mm	AI-3571 		Omni-directional operator	■ BLACK AI-3525 
	Key operator 1 position	AI-3572 		Push-pull operator	■ BLACK AI-3526 

For actuators dimensions see section "Accessories>Actuators"

G1/8 Valves with direct operator for panel mounting actuators

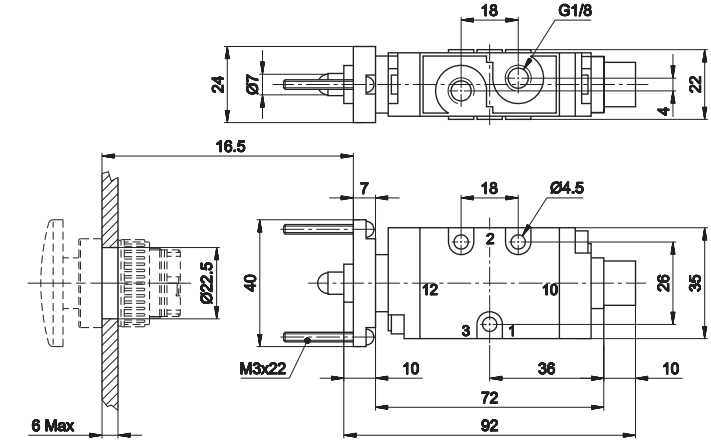


Return	Pressure bar	Flow rate (Nl/min)	Ø mm	Weight Kg	Force N	Part no.
BALL-PUSH						
mechanical spring	0÷10	890	6,5	0,19	64	CL-112A
pneumatic not amplified	0÷10	890	6,5	0,18	25	CL-112P
mechanical spring	0÷10	890	6,5	0,23	64	CM-412A
pneumatic not amplified	0÷10	890	6,5	0,22	25	CM-412P

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

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

3/2 NC-NO G1/8

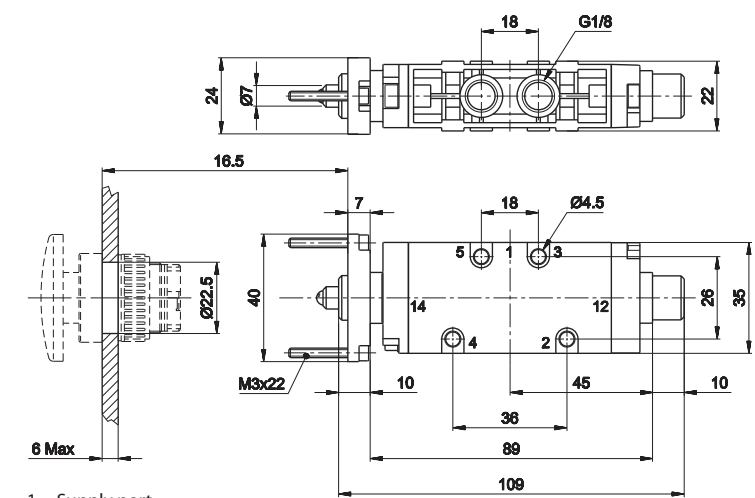


- >> NC

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

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

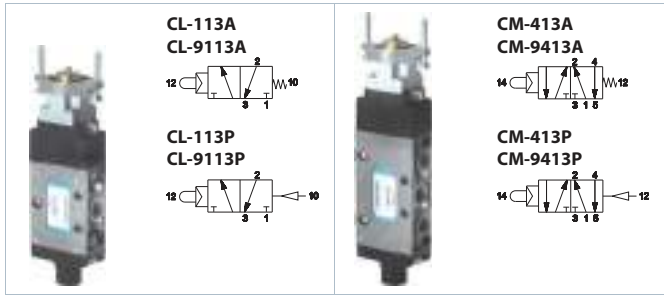
5/2 G1/8



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

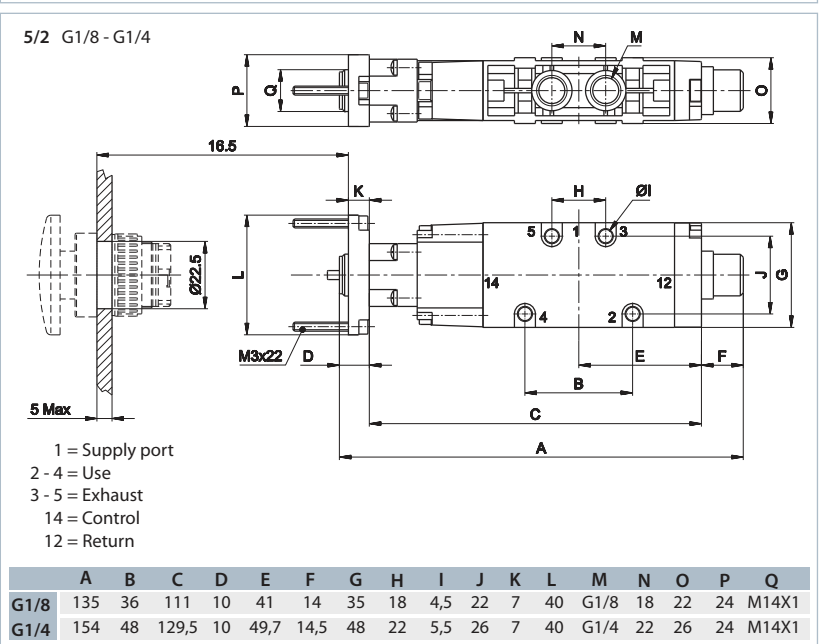
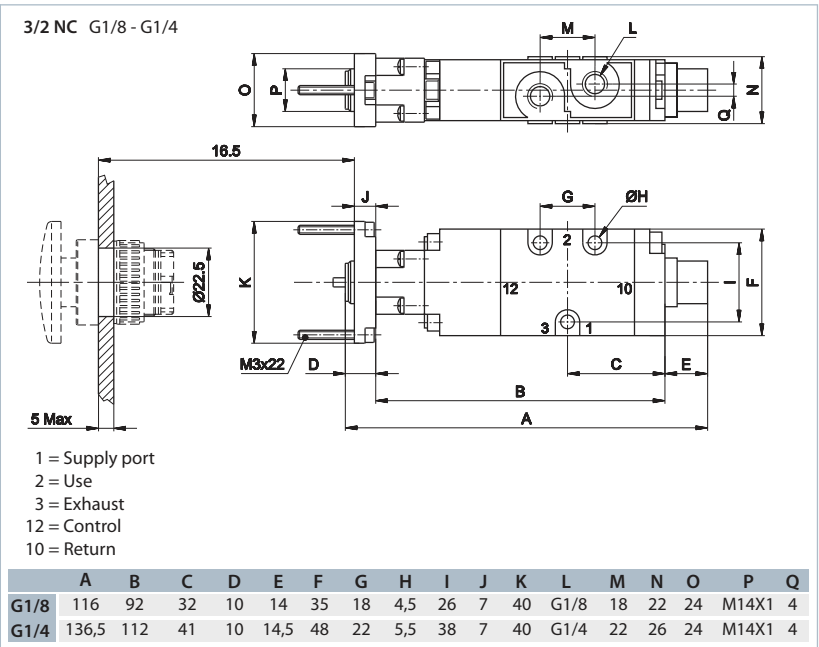
For actuator dimensions see section "Accessories>Buttons"

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



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

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



For actuator dimensions see section "Accessories>Buttons"

G1/8 Manually operated valves

   	 YELLOW CP-911G RED CP-911R BLACK CP-911N GREEN CP-911V
   	LONG LEVER STANDARD UPON REQUEST RED YELLOW BLACK
   	SHORT LEVER STANDARD UPON REQUEST RED YELLOW BLACK GREEN
 	STANDARD LEVER RED

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

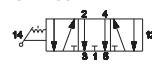
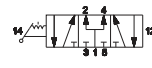
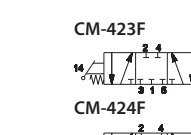
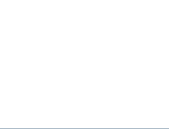
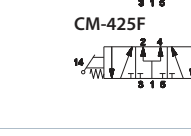
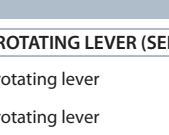
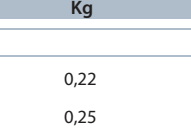
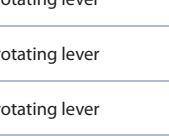
To get 3/2 NO version, supply the valve from port 3

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

(a) = see pages 3_18

Overall dimensions include operator

G1/8 Manually operated valves

				RED CP-915R
				
				RED CP-916R
			SHORT LEVER	YELLOW CP-912G RED CP-912R BLACK CP-912N
				
			LONG LEVER	RED CP-913R
				
				
				

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

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

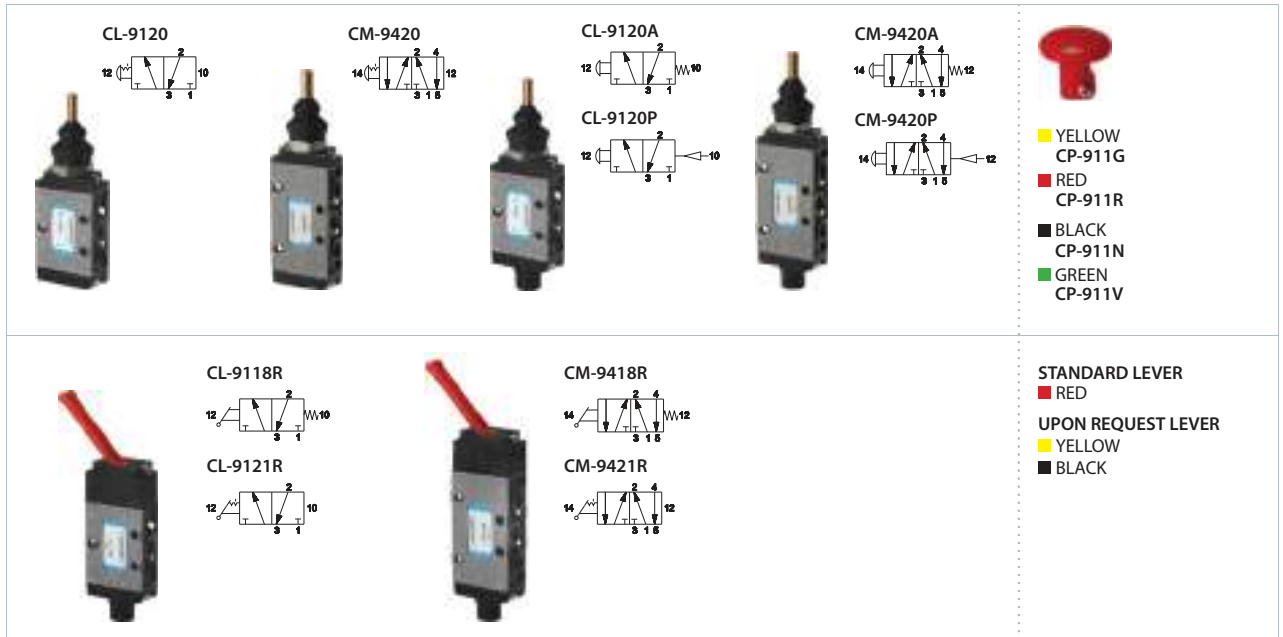
To get 3/2 NO version, supply the valve from port 3

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

(a) = see pages 3_18

Overall dimensions include operator

G1/4 Manually operated valves



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

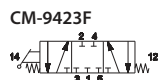
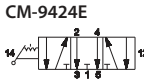
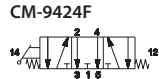
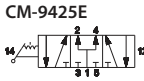
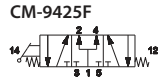
To get 3/2 NO version, supply the valve from port 3

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

(a) = see pages 3_18

Overall dimensions include operator

G1/4 Manually operated valves

				RED CP-915R
				
				RED CP-916R
			SHORT LEVER	YELLOW CP-912G RED CP-912R BLACK CP-912N
			LONG LEVER	RED CP-913R
				
				
				
				

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

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

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

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

(a) = see pages 3_18

Overall dimensions include operator

Composition

Control

Body

Return

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

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 - 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

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

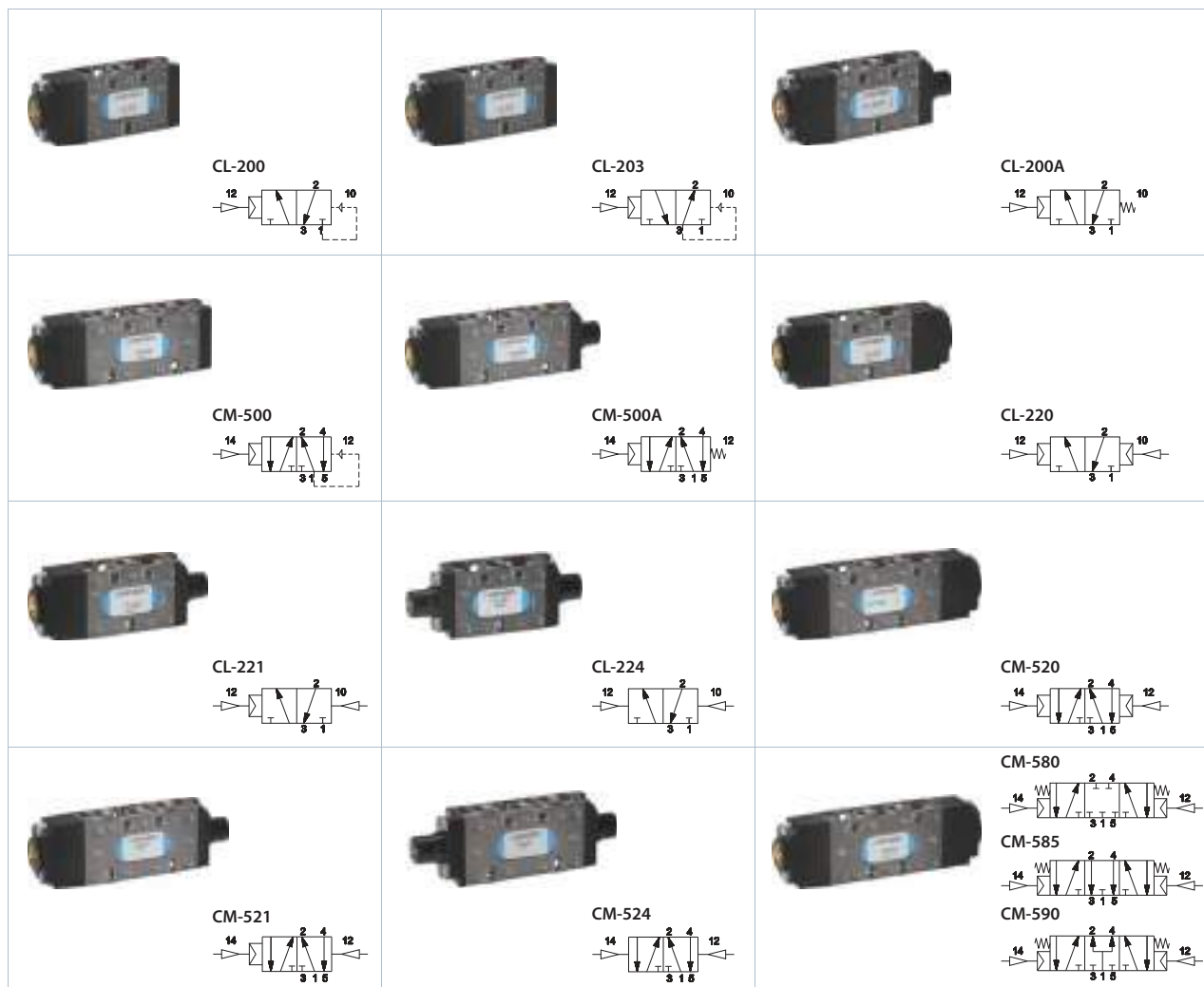
	A
G1/8	10
G1/4	14,5

I G1/8 - G1/4 PNEUMATIC NOT AMPLIFIED

>> G1/8

>> G1/4

G1/8 Valves with pneumatic control



Control	Return	Pressure	Flow rate	Ø	Weight	Times (ms)		Part no.	Composition (a)			Tot L.	
		bar	(NI/min)	mm	Kg	En.	De-en.		Control	Body	Return	mm	
SINGLE IMPULSE													
pneumatic amplified	pneumatic spring	2,3÷10	890	6,5	0,20	11	14	CL-200	B	1	E	82,5	
pneumatic amplified	pneumatic spring	2,3÷10	890	6,5	0,20	11	14	CL-203	B	1	E	82,5	
pneumatic amplified	mechanical spring	2,5÷10	890	6,5	0,21	9	17	CL-200A	B	1	D	95	
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	
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	
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	
pneumatic amplified	pneumatic amplified	2,5÷10	890	6,5	0,21	8	12	CM-580	B	2	F	114	
pneumatic amplified	pneumatic amplified	2,5÷10	890	6,5	0,21	8	12	CM-585	B	2	F	114	
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 3_23

G1/4 Valves with pneumatic control

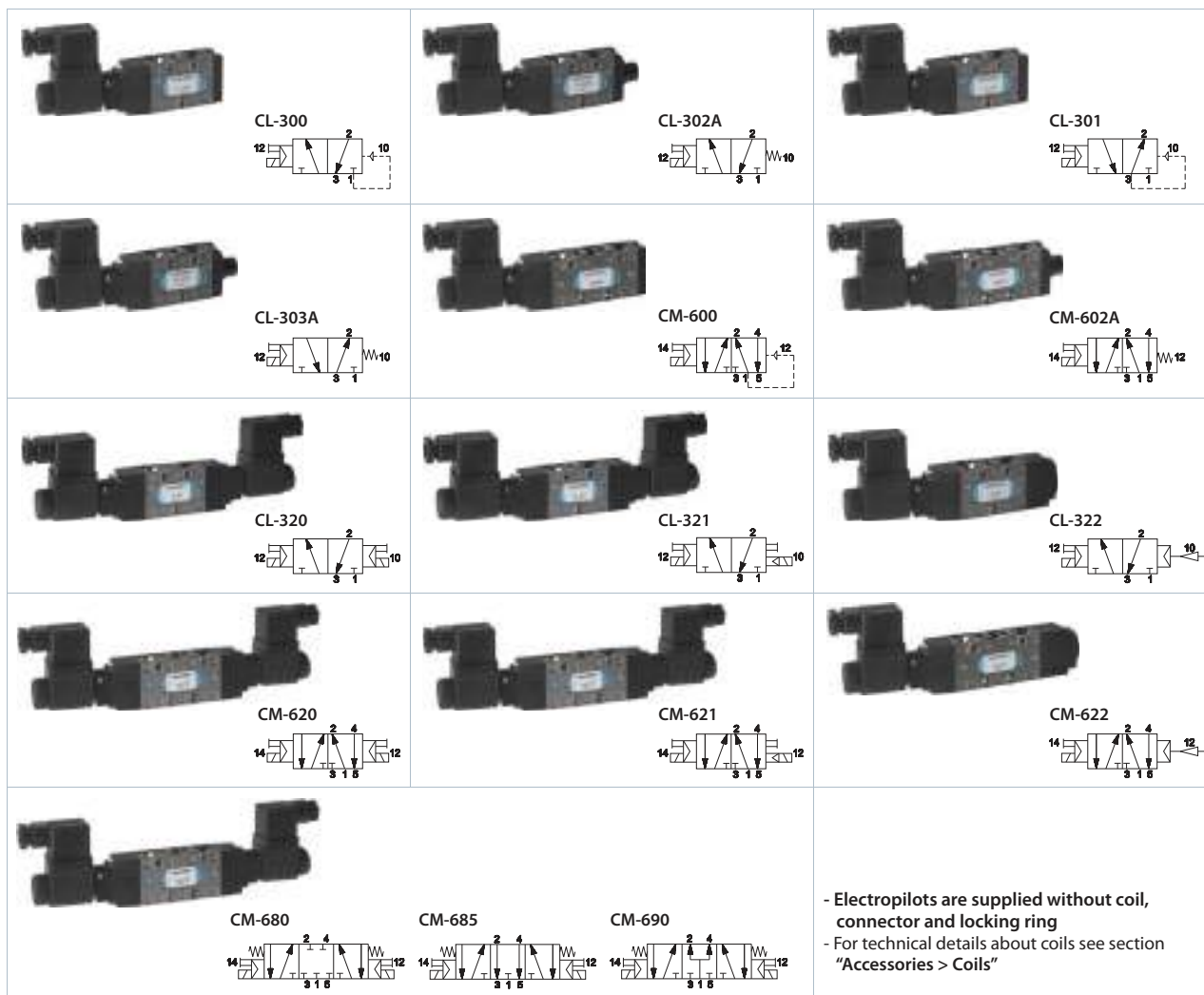


Control	Return	Pressure	Flow rate	Ø	Weight	Times (ms)		Part no.	Composition (a)			Tot L.
		bar	(NI/min)	mm	Kg	En.	De-en.		Control	Body	Return	
SINGLE IMPULSE												
pneumatic amplified	pneumatic spring	2÷10	1480	8,5	0,23	13	16	CL-9200	B	1	E	103
pneumatic amplified	pneumatic spring	2÷10	1480	8,5	0,23	13	16	CL-9203	B	1	E	103
pneumatic amplified	mechanical spring	2÷10	1480	8,5	0,24	10	19	CL-9200A	B	1	D	114
pneumatic amplified	pneumatic spring	2÷10	1480	8,5	0,26	13	16	CM-9500	B	2	E	120,5
	pneumatic 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
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
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
pneumatic amplified	pneumatic amplified	2,8÷10	1480	8,5	0,30	10	13	CM-9580	B	2	F	134,5
pneumatic amplified	pneumatic amplified	2,8÷10	1480	8,5	0,30	10	13	CM-9585	B	2	F	134,5
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 3_23

G1/8 Valves with electric control

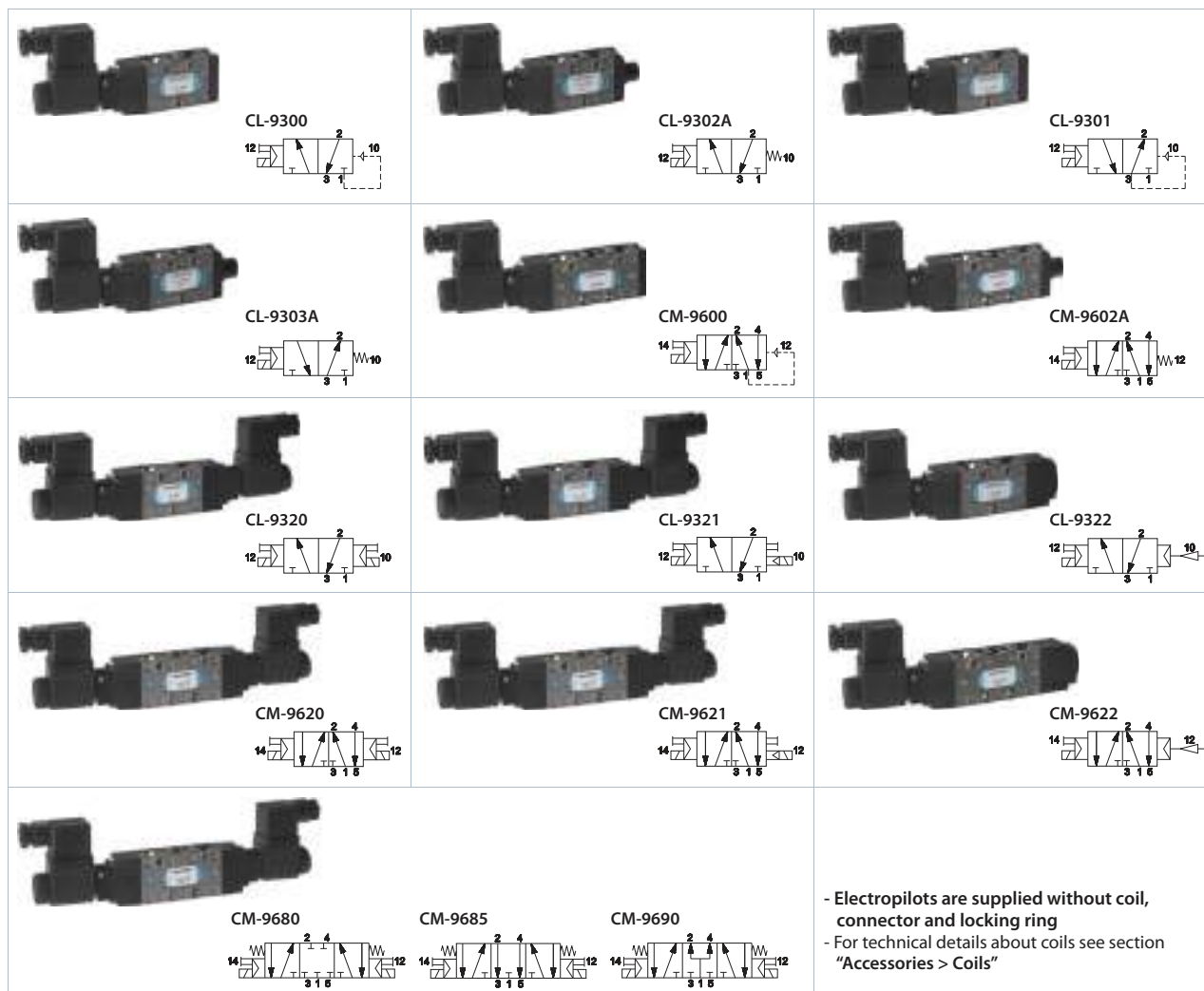


Control	Return	Pressure	Flow rate	Ø	Weight	Times (ms)		Part no.	Composition (a)			Tot L.
		bar	(Nl/min)	mm	Kg	En.	De-en.		Control	Body	Return	
SINGLE IMPULSE												
electrical amplified	pneumatic spring	2,3÷10	890	6,5	0,20	23	19	CL-300	A	1	E	140,5
electrical amplified	mechanical spring	2,5÷10	890	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

o.c. = open centres c.c. = closed centres p.c. = pressurized centres
To get 3/2 NO version, supply the valve from port 3

(a) = see page 3_23

G1/4 Valves with electric control



Control	Return	Pressione bar	Portata (NI/min)	Ø mm	Weight Kg	Times (ms)		Part no.	Composition (a)			Tot L. mm	
						En.	De-en.		Control	Body	Return		
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	eletttrico 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	eletttrico 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	6,5	0,30	20	35	CM-9680	A	2	H	250,5	
electrical amplified	electrical amplified	2,8÷10	1480	6,5	0,30	20	35	CM-9685	A	2	H	250,5	
electrical amplified	electrical amplified	2,8÷10	1480	6,5	0,30	20	35	CM-9690	A	2	H	250,5	

o.c. = open centres c.c. = closed centres p.c. = pressurized centres
To get 3/2 NO version, supply the valve from port 3

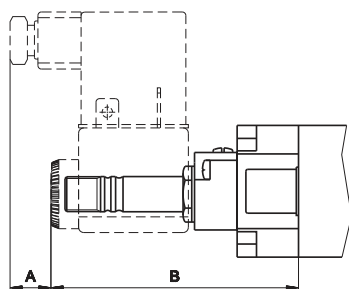
(a) = see pages 3_23

Composition

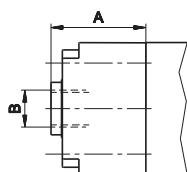
Control

Body

Return

A G1/8 - G1/4 ELECTRIC/AMPLIFIED

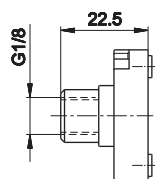
	A	B
G1/8	10	77
G1/4	10	80

B G1/8 - G1/4 PNEUMATIC AMPLIFIED

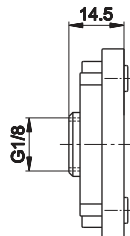
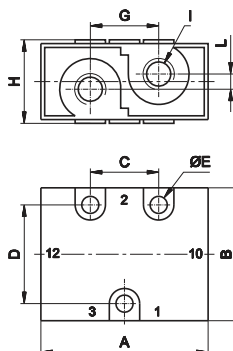
	A	B
G1/8	25	G1/8
G1/4	28,5	G1/8

C G1/8 - G1/4 PNEUMATIC NOT AMPLIFIED

>> G1/8



>> G1/4

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

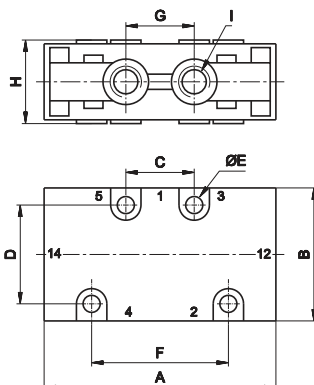
>> NC

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

>> NO

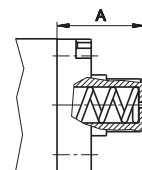
1 = Exhaust
2 = Use
3 = Supply port
12 = Control
10 = Return

	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

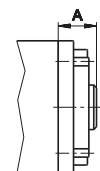
2 5/2 G1/8 - G1/4

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

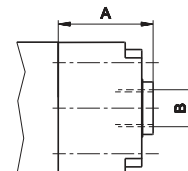
	A	B	C	D	E	F	G	H	I
G1/8	64	35	18	26	4,5	36	18	22	G1/8
G1/4	77,5	48	22	38	5,5	48	22	26	G1/4

D G1/8 - G1/4 MECHANICAL SPRING

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

E G1/8 - G1/4 PNEUMATIC SPRING

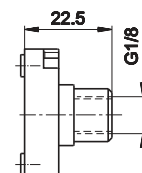
	A
G1/8	10
G1/4	14,5

F G1/8 - G1/4 PNEUMATIC AMPLIFIED

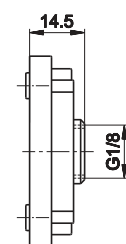
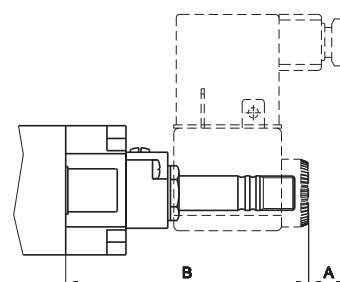
	A	B
G1/8	25	G1/8
G1/4	28,5	G1/8

G G1/8 - G1/4 PNEUMATIC NOT AMPLIFIED

>> G1/8

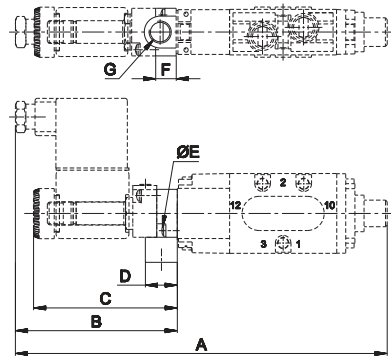
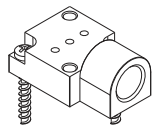


>> G1/4

**H** G1/8 - G1/4 ELECTRIC AMPLIFIED

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

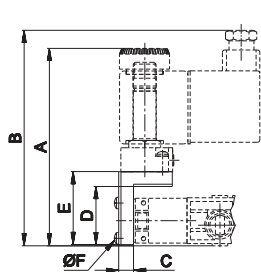
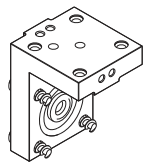
AM-5148



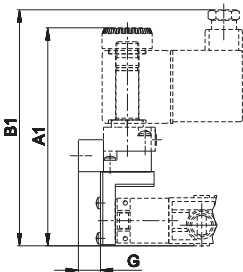
	G1/8	G1/4
A	163	175,5
B	71	71
C	63	63
D	14	14
E	2,9x10	2,9x10
F	9	9
G	G1/8	G1/8

Plate for external servoassistance
weight: 0,03 Kg

AM-5151



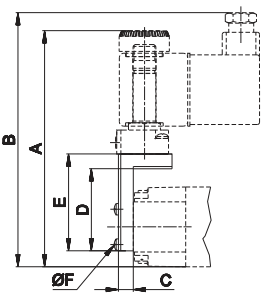
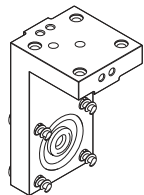
AM-5151 + AM-5148



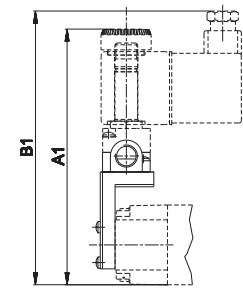
	G1/8	G1/4
A	86,7	88,7
A1	95,7	97,7
B	94,5	96,5
B1	103,5	105,5
C	6,5	6,5
D	25,5	25,5
E	32	32
F	2,9x10	2,9x10
G	9,7	9,7

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

AM-5152



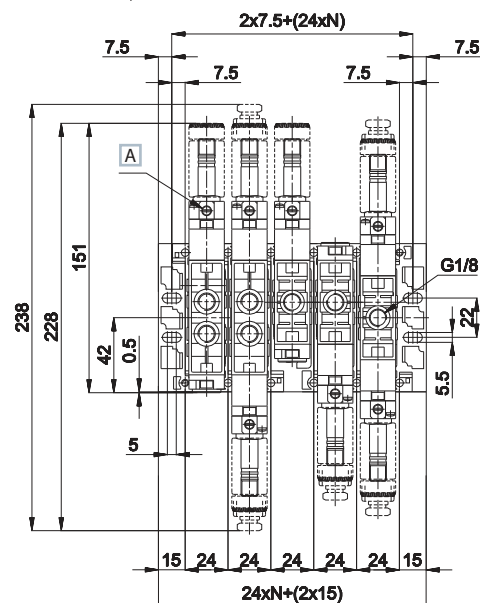
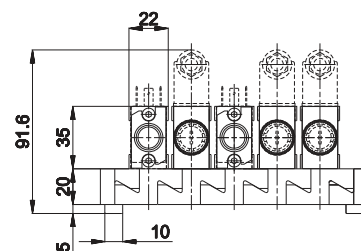
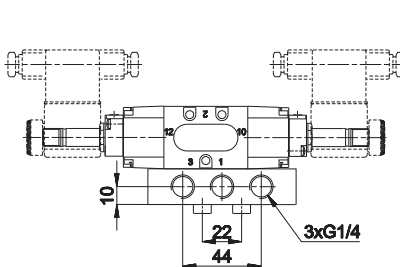
AM-5152 + AM-5148



	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

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



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

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



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

standard supplied: screws, seals and fixing coupling of valve

NEW



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

standard supplied: screws and seals



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

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



separator pressure differential
connessione: G1/8
materiale: alluminio
peso: 0,013 Kg



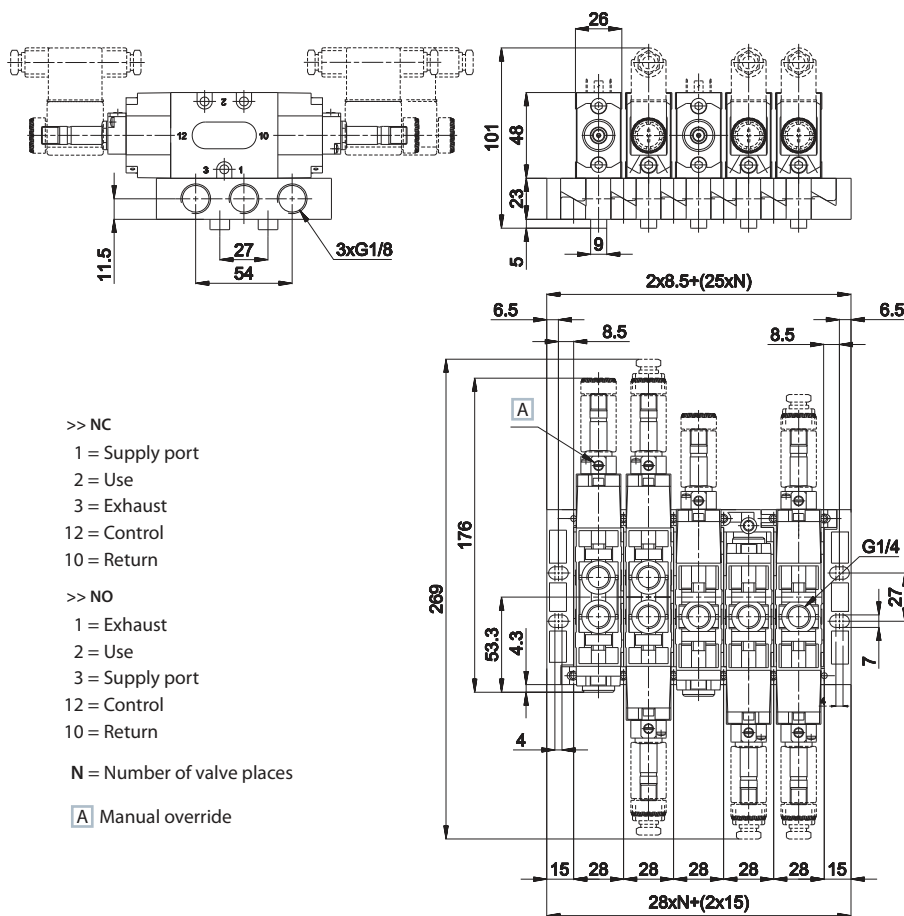
cap for 3/2 valve mounting
connections: G1/8
material: alluminio
weight: 0,010 Kg

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



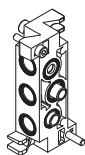
adjustment screw
connections: G1/8
material: brass
weight: 0,006 Kg

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



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

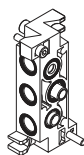
CP-9100



modular sub-base
regulated and conveyed exhausts
connections: G1/4
material: zamak
weight: 0,210 Kg

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

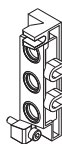
CP-9101



modular sub-base
without exhaust regulator
connections: G1/4
material: zamak
weight: 0,210 Kg

standard supplied: screws,
seals and fixing coupling
of valve

CP-9105



inlet plate
side connections
connections: G3/8
material: zamak
weight: 0,120 Kg

standard supplied:
screws and seals

N E W

CP-9110



coupling
connections: G1/4
material: brass
weight: 0,028 Kg

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

CP-9111



separator of differential
pressure
connections: G1/4
material: aluminium
weight: 0,013 Kg

CP-9112



cap for 3/2 valve
mounting
connections: G1/4
material: aluminium
weight: 0,010 Kg

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

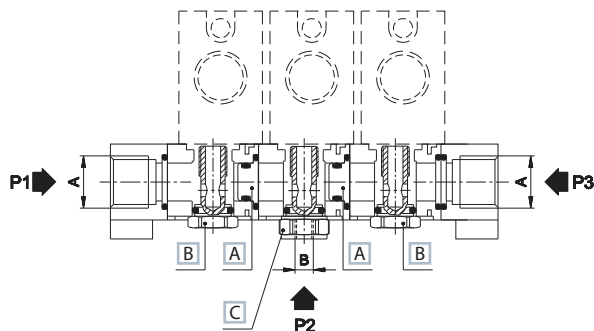
CP-9113



adjustment screw
connections: G1/4
material: ottone
weight: 0,006 Kg

Assembly examples

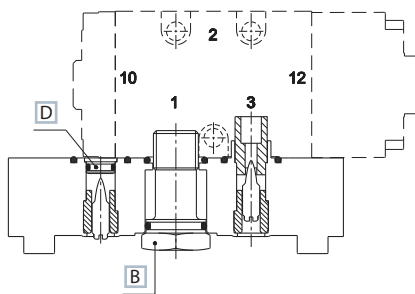
■ Manifold 3 pressures



	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



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

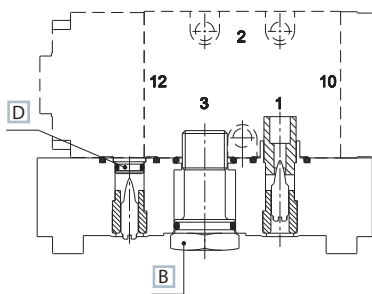
>> NC

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

>> NO

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

■ Mounting of 3/2 NO valve



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.

E-15

5/2 M5 valves - mechanical and manual actuation

- Compact design: 15 mm body
- Original Univer spool system appreciated for decades
- Wide range of actuators and manual operators for panels - original Univer



TECHNICAL CHARACTERISTICS

Ambient temperature	-10 ÷ +45 °C
Fluid temperature	-20 ÷ +50 °C
Fluid	not dehumidified filtered air 10 µm, lubricated or not
Commutation system	spool
Ways/Positions	5/2
Pressure	max 9 bar
Control	manual, mechanical
Return	mechanical spring
Nominal Ø	2 mm
Nominal flow rate	150 NI/min

CONSTRUCTIVE CHARACTERISTICS

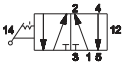
Valve body	zamak
Seals	nitrile rubber
Actuators	technopolymer
Spool	aluminium

Lever valve

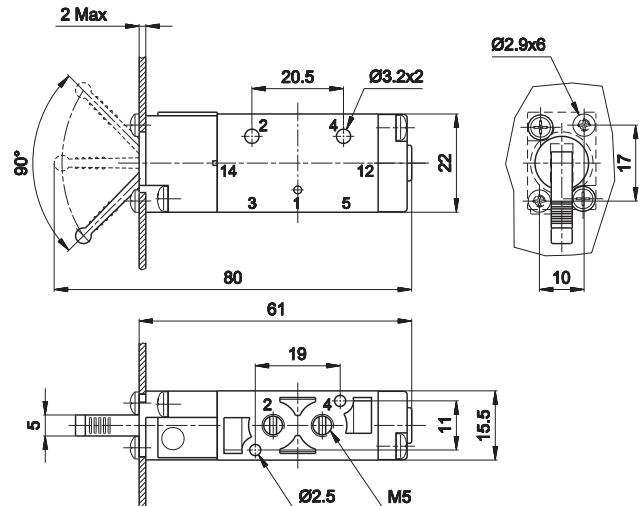


- 1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

Weight: 0,068

Symbol	Control	Return	Lever colour	Part no.
	lever	lever	yellow black red	E-15422G E-15422N E-15422R

5/2



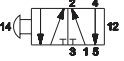
Push-pull valve



B Wrench 20

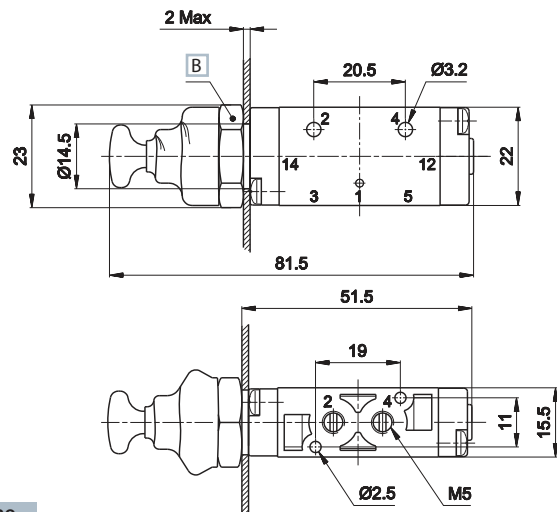
- 1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

Weight: 0,082

Symbol	Control	Return	Lever colour	Part no.
	push-pull	push-pull	black	E-15420
	push-pull	mechanical spring	black	E-15420A

5/2

5/2

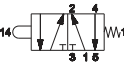


Tappet valve

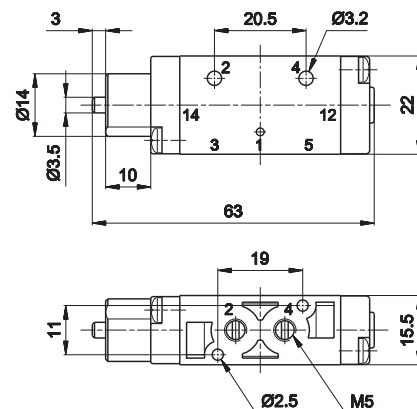


- 1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust
14 = Control
12 = Return

Weight: 0,066

Symbol	Control	Return	Part no.
	ball-push	mechanical spring	E-15402A

5/2



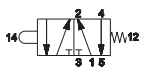
Ball-pushrod valve for mechanical screw operator

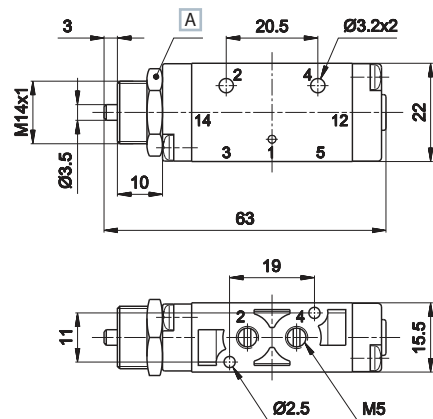


A Wrench 17

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

Weight: 0,066

Symbol	Control	Return	Part no.
	ball-pushrod	mechanical spring	E-15403A



PNEUMATIC AND MECHANICAL ACTUATORS

	Pneumatic actuator	AI-3550 
	Amplified pneumatic actuator	AI-3551 
	Roller operator 1 position	AI-3560 
	Ball-push operator 1 position	AI-3562 
	Omni-directional operator	AI-3563 
	Roller lever operator 1 position	AI-3570 
	Articulated roller lever 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 
	Rotating selector	■ BLACK AI-3520 ■ BLACK AI-3521 
	Rotating lever selector	■ BLACK AI-3522 ■ BLACK AI-3523 
	Lever	■ BLACK AI-3524 
	Omni-directional operator	■ BLACK AI-3525 
	Push-pull operator	■ BLACK AI-3526 

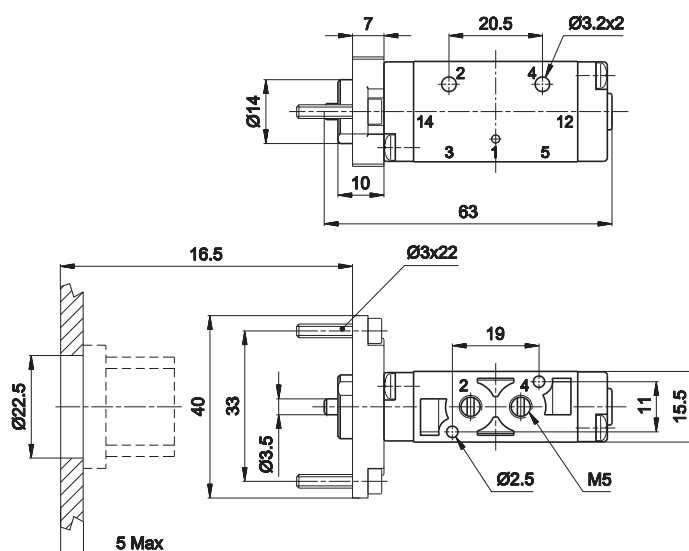
For technical features of coils and connector, see section "Accessories>Buttons"

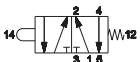
Valve for mechanical operator for panel mounting



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

Weight: 0,082



Symbol	Control	Return	Part no.
5/2 	ball-push	mechanical spring	E-15412A

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	
	Rotating selector	■ BLACK AI-3520 ■ BLACK AI-3521	 
	Rotating lever selector	■ BLACK AI-3522 ■ BLACK AI-3523	 
	Lever	■ BLACK AI-3524	
	Omni-directional operator	■ BLACK AI-3525	
	Push-pull operator	■ BLACK AI-3526	

For technical features of coils and connector, see section "Accessories>Buttons"

G6

20 mm - G 1/8 Valves and solenoid valves

- G1/8 threaded valve body with traditional Univer spool system
- Version with integrated electrical connection and external connection
- Compact design
- High flow rate
- Versions available: 5/2 - 5/3 - 3/2+3/2



TECHNICAL CHARACTERISTICS

Ambient temperature	-20 ÷ +50 °C
Fluid temperature	max +50 °C
Fluid	filtered air 50 µm not dehumidified, lubricated or not
Commutation system	spool
Ways/Positions	5/2, 5/3, 3/2+3/2
Pressure	1,5 ÷ 9 bar
Control	indirect electro-pneumatic, pneumatic
Return	mechanical spring, pneumomechanical spring
Connections	G1/8
Nominal Ø	5 mm
Nominal flow rate (NI/min)	5/2 = 770 5/3 = 700 3/2+3/2 = 670

CONSTRUCTIVE CHARACTERISTICS

Valve body	zamak
Seals	nitrile rubber
Subbase and actuators	self-extinguishing technopolymes
Spool	aluminum

ELECTRIC CHARACTERISTICS

Electropilot/coil	A/U05 series
Voltage	24 V DC standard, upon request 12 V DC 24 V AC - 110 V AC - 230 V AC (only for version with integrated electrical connection)
Power consumption	for direct current 2 W (2,3 VA)
Protection degree	IP65
Manual override	with button with tool 1 position

CODIFICATION KEY

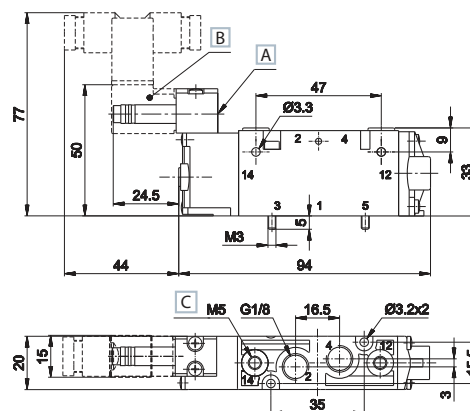
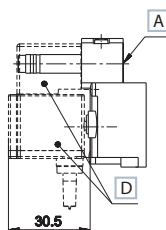
G	6	6	4	4	D
1	2	3	4	5	

1 Series	2 Type	3 Control 14
G6 = G1/8 threaded body (except coils and connectors)	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c. 6 = 3/2+3/2 NC-NC 7 = 3/2+3/2 NC-NO 8 = 3/2+3/2 NO-NO	3 = pneumatic amplified 4 = electrical amplified DC 5 = electrical amplified DC/AC

4 Return 12	5 Option
0 = pneumomechanical spring 1 = mechanical spring 3 = pneumatic amplified	4 = electrical amplified DC 5 = electrical amplified DC/AC D = external servoassisted pilot

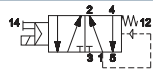
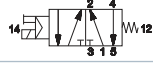
o.c. = open centres c.c. = closed centres p.c. = pressurized centres

Single electric impulse

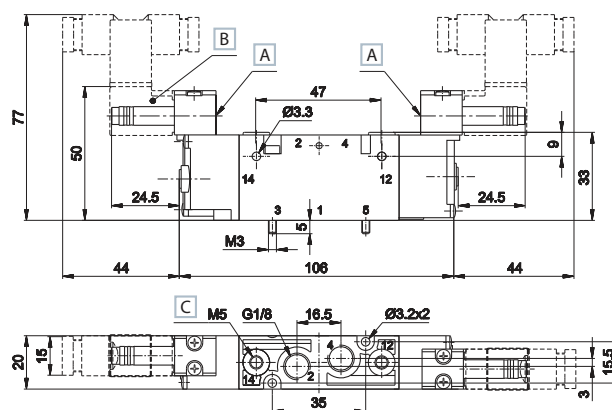
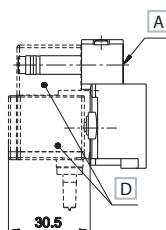


- A Manual override
 B Coil with connector for single connection
 C External servoassisted pilot
 D Coil with integrated connector for multipolar version DD-051**C

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

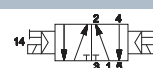
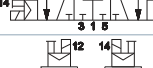
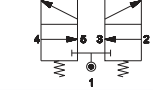
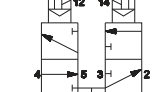
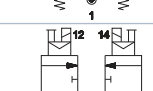
	Symbol	Control	Return	Flow rate (NI/min)	Pressure bar	Times (ms)		Weight Kg	Part no.
						En.	De-en.		
5/2		electrical amplified	pneumomechanical spring	770	1,5÷9	21	30	0,112	G-6240 G-6250
5/2		electrical amplified	mechanical spring	770	1,5÷9	18	64	0,112	G-6241 G-6251

Double electric impulse



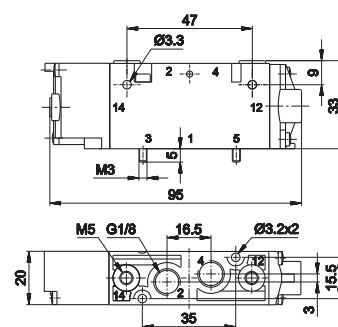
- A Manual override
 B Coil with connector for single connection
 C External servoassisted pilot
 D Coil with integrated connector for multipolar version DD-051**C

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

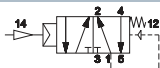
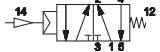
	Symbol	Control	Return	Flow rate (NI/min)	Pressure bar	Times (ms)		Weight Kg	Part no.
						En.	De-en.		
5/2		electrical amplified	electrical amplified	770	0,6÷9	16	16	0,143	G-6244 G-6255
5/3 c.c.		electrical amplified	electrical amplified	700	1,9÷9	16	47	0,148	G-6344 G-6355
5/3 o.c.		electrical amplified	electrical amplified	700	2,0÷9	16	47	0,148	G-6444 G-6455
5/3 p.c.		electrical amplified	electrical amplified	700	1,9÷9	16	47	0,148	G-6544 G-6555
3/2 NC + 3/2 NC		electrical amplified	electrical amplified	670	1,5÷9	14	17	0,140	G-6644 G-6655
3/2 NC + 3/2 NO		electrical amplified	electrical amplified	670	1,5÷9	14	17	0,140	G-6744 G-6755
3/2 NO + 3/2 NO		electrical amplified	electrical amplified	670	1,5÷9	14	17	0,140	G-6844 G-6855

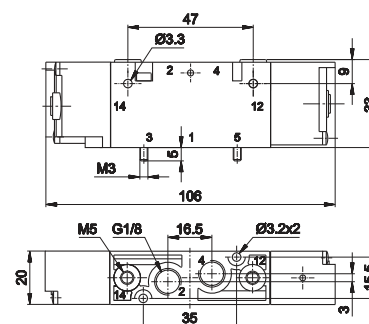
o.c. = open centres c.c. = closed centres p.c. = pressurized centres

Solenoid valves are supplied without coil and connector

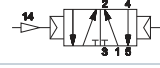
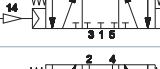
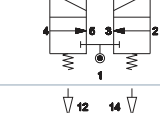
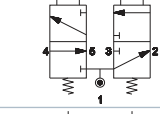
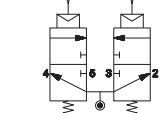
Single **pneumatic impulse**

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

	Symbol	Control	Return	Flow rate (NI/min)	Pressure bar	Times (ms)		Weight Kg	Part no.
						En.	De-en.		
5/2		pneumatic amplified	pneumomechanical spring	770	1,5÷10	7	16	0,092	G-6230
5/2		pneumatic amplified	mechanical spring	770	1,5÷10	6	18	0,092	G-6231

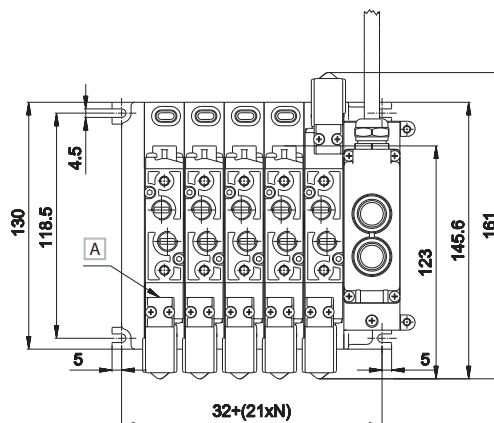
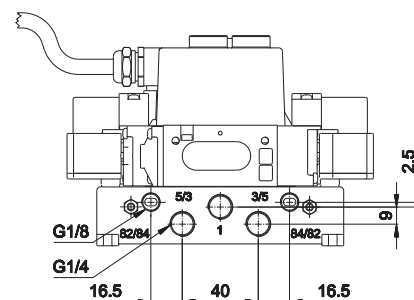
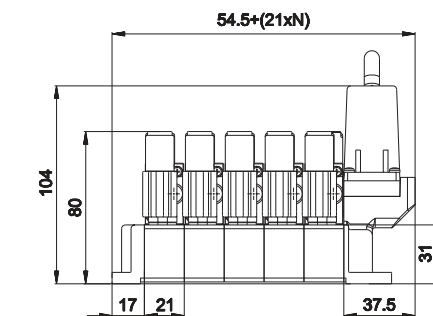
Double **pneumatic impulse**

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

	Symbol	Control	Return	Flow rate (NI/min)	Pressure bar	Times (ms)		Weight Kg	Part no.
						En.	De-en.		
5/2		pneumatic amplified	pneumatic amplified	770	0,7÷10	5	5	0,103	G-6233
5/3 c.c.		pneumatic amplified	pneumatic amplified	700	1,9÷9	6	19	0,192	G-6333
5/3 o.c.		pneumatic amplified	pneumatic amplified	700	2,0÷9	6	19	0,192	G-6433
5/3 p.c.		pneumatic amplified	pneumatic amplified	700	1,9÷9	6	19	0,192	G-6533
3/2 NC + 3/2 NC		pneumatic amplified	pneumatic amplified	670	1,5÷9	3	14	0,188	G-6633
3/2 NC + 3/2 NO		pneumatic amplified	pneumatic amplified	670	1,5÷9	3	14	0,188	G-6733
3/2 NO + 3/2 NO		pneumatic amplified	pneumatic amplified	670	1,5÷9	3	14	0,188	G-6833

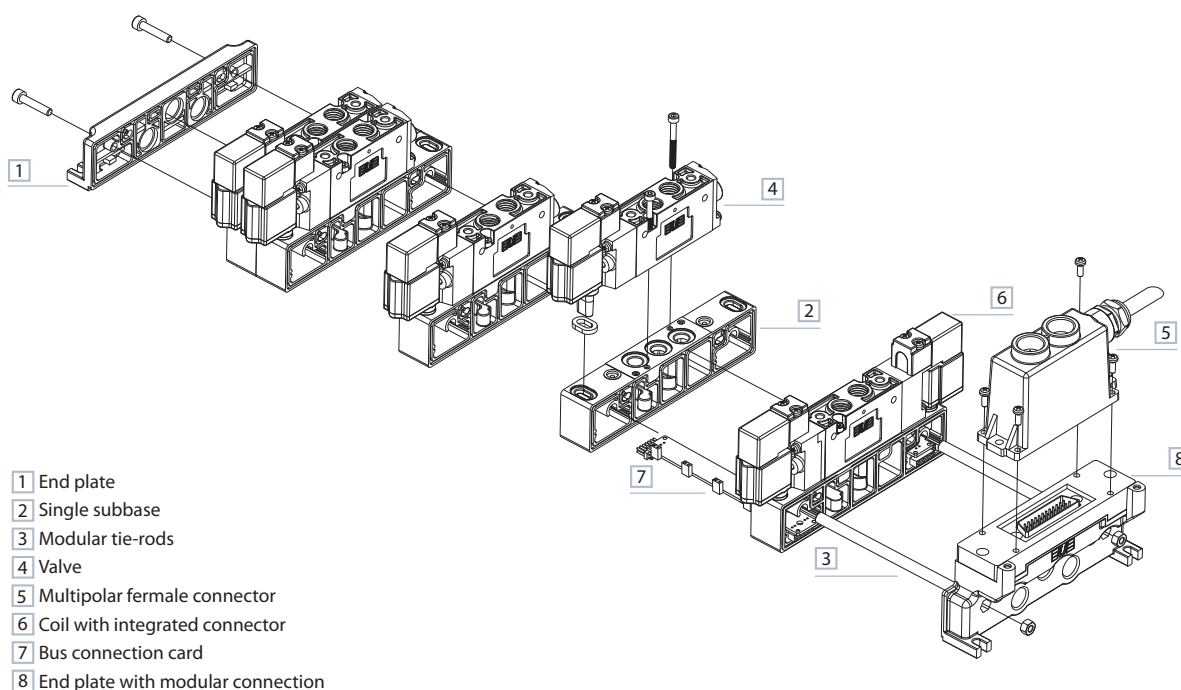
o.c. = open centres c.c. = closed centres p.c. = pressurized centres

Multipolar electrical connection



A Manual override

1 = Supply port
 5/3 - 3/5 = Exhaust G1/4
 82/84 - 84/82 = Electropilot exhaust G1/8
 N = Number of valve positions

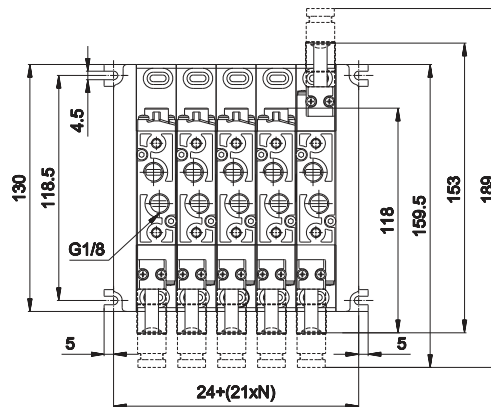
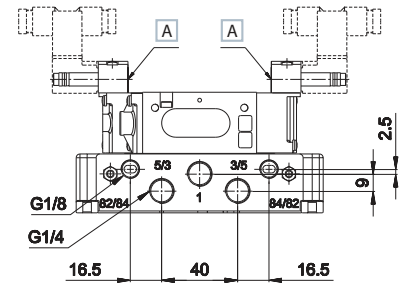
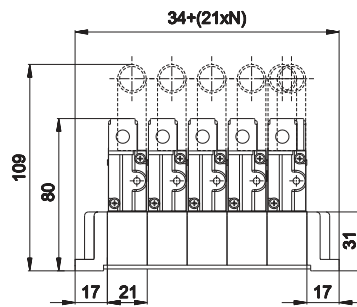


- 1 End plate
- 2 Single subbase
- 3 Modular tie-rods
- 4 Valve
- 5 Multipolar female connector
- 6 Coil with integrated connector
- 7 Bus connection card
- 8 End plate with modular connection

Tightening torque for fittings

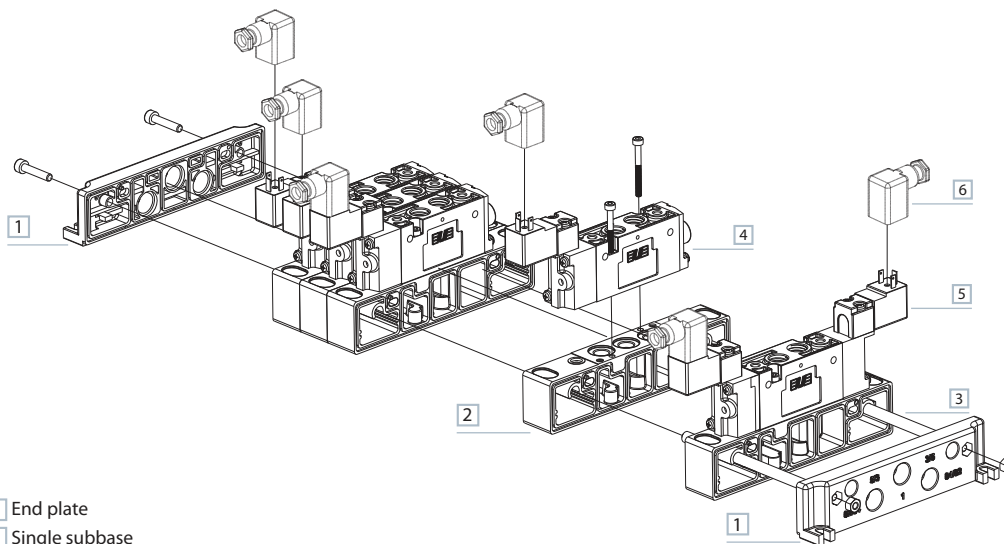
Thread	max pair (Nm)
M5	3
M7	3
G1/8	3
G1/4	10

Electrical connection with external connector



A Manual override

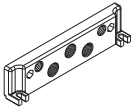
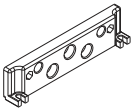
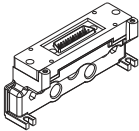
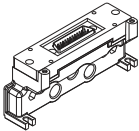
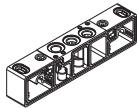
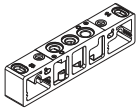
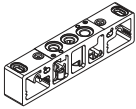
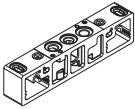
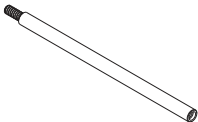
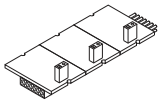
1 = Supply port
 5/3 - 3/5 = Exhaust G1/4
 82/84 - 84/82 = Electropilot exhaust G1/8
 N = Number of valve positions



- 1 End plate
- 2 Single subbase
- 3 Modular tie-rods
- 4 Valve
- 5 Coil
- 6 Single connector

Tightening torque for fittings

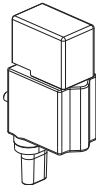
Thread	max pair (Nm)
M5	3
M7	3
G1/8	3
G1/4	10

GP-6100	GP-6110	GP-611212	GP-611806	GP-6310/1/2	GP-6320/1/2
					
threaded end plate weight: 0,046 Kg	blank end plate weight: 0,050 Kg	threaded end plate with male connector 25 poles 12+12 coils control 12-14 weight: 0,100 Kg	threaded end plate with male connector 25 poles 18 coils control 14 6 coils control 12 (only for control 14 more than 12 coils max 18) weight: 0,102 Kg	sub-base with open diaphragms GP-6310 without electrical connection GP-6311 monostable GP-6312 bistable weight: 0,060 Kg	sub-base with closed diaphragms GP-6320 without electrical connection GP-6321 monostable GP-6322 bistable weight: 0,062 Kg
GP-6330/1/2	GP-6340/1/2	GP-6380	GP-6385		
					
3 1 5 sub-base with closed supply and open exhausts GP-6330 without electrical connection GP-6331 monostable GP-6332 bistable weight: 0,062 Kg	3 1 5 sub-base with open supply and closed exhausts GP-6340 without electrical connection GP-6341 monostable GP-6342 bistable weight: 0,062 Kg	intermediate supply plate (to be used only with GP-63... series) sub-base weight: 0,036 Kg	closing plate for unused station weight: 0,018 Kg		
GP-6400-1	GP-6400-2	GP-6400-5	GP-6512-01/..MF	GP-6514-01/..MF	GP-651418
					
modular tie-rod 1 valve place weight: 0,004 Kg (package 100 pcs.)	modular tie-rod 2 valve places weight: 0,010 Kg (package 100 pcs.)	modular tie-rod 5 valve places weight: 0,022 Kg (package 100 pcs.)	BUS connection card control side 12 with 12 pin GP-6512-01MF 1 place GP-6512-02MF 2 places GP-6512-03MF 3 places GP-6512-05MF 5 places GP-6512-06MF 6 places weight: 0,003 Kg (for each place)	BUS connection card control side 14 with 12 pin GP-6514-01MF 1 place GP-6514-02MF 2 places GP-6514-03MF 3 places GP-6514-05MF 5 places GP-6514-06MF 6 places weight: 0,003 Kg (for each place)	BUS connection card control side 14 with 18 pin (only 12 places) for manifolds with control 14 and more than 12 coils up to 18 coils use GP-651418 card 12 places and then GP-6514-... weight: 0,003 Kg (for each place)

AZ4-VN0416 screw M04x16 for tie-rods (package 100 pcs.)
AZ4-SN004A hexagonal nut M4 (package 100 pcs.)

upon request customized solutions up to 12 places

DD-051 DD-051**C

	
24 V CC 2 W coil for single connection weight: 0,019 Kg	24 V CC 2 W coil with integrated connector for multipolar version weight: 0,028 Kg

GL6

20 mm - G1/8 Valves and solenoid valves for base assembly

- Valve body for base assembly with traditional Univer spool system
- Version with integrated electrical connection and external connection
- Compact design
- High flow rate
- Versions available: 5/2 - 5/3 - 3/2+3/2



TECHNICAL CHARACTERISTICS

Ambient temperature	-20 ÷ +50 °C		
Fluid temperature	max +50 °C		
Fluid	filtered air 50 µm not dehumidified, lubricated or not		
Commutation system	spool		
Ways/Positions	5/2, 5/3, 3/2+3/2		
Pressure	1,5 ÷ 9 bar		
Control	indirect electro-pneumatic, pneumatic		
Return	mechanical spring, pneumomechanical spring		
Connections	sub-base interface		
Nominal Ø (mm)	5 mm		
Nominal flow rate (NI/min)			
according to the type of fittings		5/2	5/3

	5/2	5/3	3/2+3/2
streight tube Ø8 mm	740	670	640
90° tube Ø8 mm	620	550	520
streight tube Ø6 mm	510	510	510
90° tube Ø6 mm	370	370	370
streight tube Ø4 mm	200	200	200
90° tube Ø4 mm	140	140	140

CONSTRUCTIVE CHARACTERISTICS

Valve body	zamak
Seals	nitrile rubber
Subbase and actuators	self-extinguishing technopolymer
Spool	aluminum

ELECTRIC CHARACTERISTICS

Electropilot/coil	A/U05 series	
Voltage	24 V DC standard, upon request 12 V DC	24 V AC - 110 V AC - 230 V AC
	(only version with external connection)	
Power consumption	for direct current 2 W (2,3 VA)	
Protection degree	IP65	
Manual override	button with tool 1 position	

CODIFICATION KEY

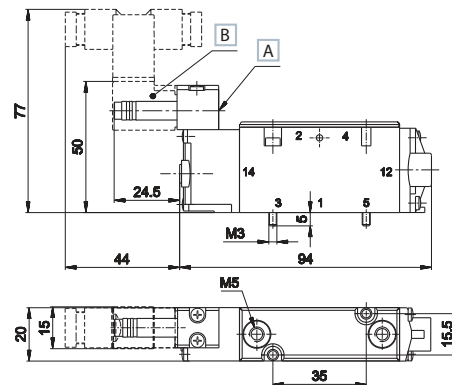
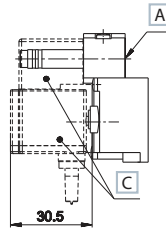
GL	6	6	4	4	D
1	2	3	4	5	

1 Series	2 Type	3 Control 14
GL6 = valve body for except base assembly (coils and connectors)	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c. 6 = 3/2+3/2 NC-NC 7 = 3/2+3/2 NC-NO 8 = 3/2+3/2 NO-NO	3 = pneumatic amplified 4 = electrical amplified DC 5 = electrical amplified DC/AC

4 Return 12	5 Option
0 = pneumomechanical spring 1 = mechanical spring 3 = pneumatic amplified	4 = electrical amplified DC 5 = electrical amplified DC/AC D = external servoassisted pilot

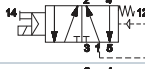
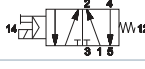
o.c. = open centres c.c. = closed centres p.c. = pressurized centres

Single electric impulse

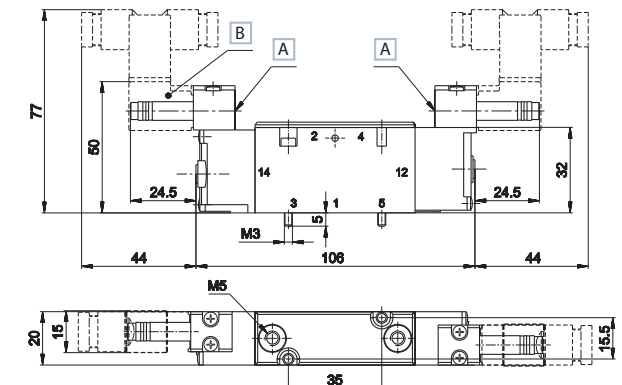
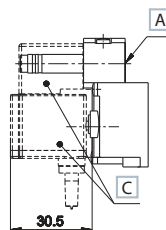


- A Manual override
 B Coil with connector for single connection
 C Coil with integrated connector for multipolar version DD-051**C

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

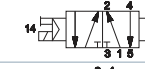
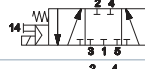
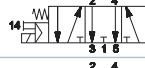
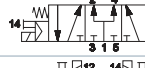
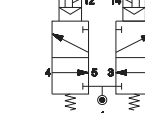
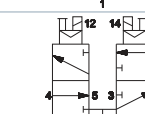
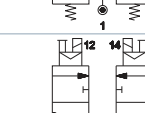
Symbol	Control	Return	Flow rate (l/min)	Pressure bar	Times (ms) En. De-en.	Weight Kg	Part no.
5/2 	electrical amplified	spring pneumomechanical	740	1,5÷9	21 30	0,112	GL-6240 GL-6250
5/2 	electrical amplified	spring mechanical	740	1,5÷9	18 64	0,112	GL-6241 GL-6251

Double electric impulse



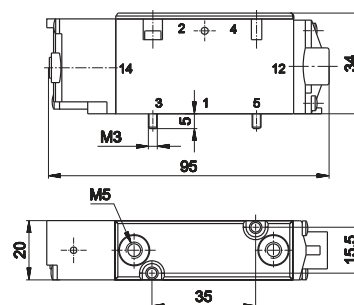
- A Manual override
 B Coil with connector for single connection
 C Coil with integrated connector for multipolar version DD-051**C

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

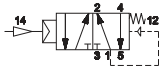
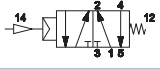
Symbol	Control	Return	Flow rate (l/min)	Pressure bar	Times (ms) En. De-en.	Weight Kg	Part no.
5/2 	electrical amplified	electrical amplified	740	0,6÷9	16 16	0,143	GL-6244 GL-6255
5/3 c.c. 	electrical amplified	electrical amplified	670	1,5÷9	16 47	0,148	GL-6344 GL-6355
5/3 o.c. 	electrical amplified	electrical amplified	670	2,0÷9	16 47	0,148	GL-6444 GL-6455
5/3 p.c. 	electrical amplified	electrical amplified	670	1,5÷9	16 47	0,148	GL-6544 GL-6555
3/2 NC + 3/2 NC 	electrical amplified	electrical amplified	640	1,5÷9	14 17	0,140	GL-6644 GL-6655
3/2 NC + 3/2 NO 	electrical amplified	electrical amplified	640	1,5÷9	14 17	0,140	GL-6744 GL-6755
3/2 NO + 3/2 NO 	electrical amplified	electrical amplified	640	1,5÷9	14 17	0,140	GL-6844 GL-6855

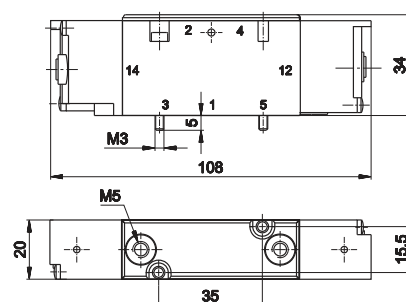
o.c. = open centres c.c. = closed centres p.c. = pressurized centres

Solenoid valves are supplied without coil and connector

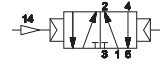
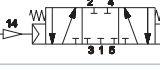
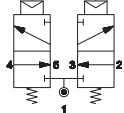
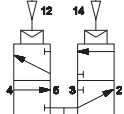
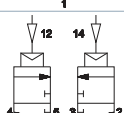
Single **pneumatic impulse**

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

	Symbol	Control	Return	Flow rate (NI/min)	Pressure bar	Times (ms)		Weight Kg	Part no.
						En.	De-en.		
5/2		pneumatic amplified	pneumomechanical spring	740	1,5÷10	7	16	0,092	GL-6230
5/2		pneumatic amplified	mechanical spring	740	0,9÷10	6	18	0,092	GL-6231

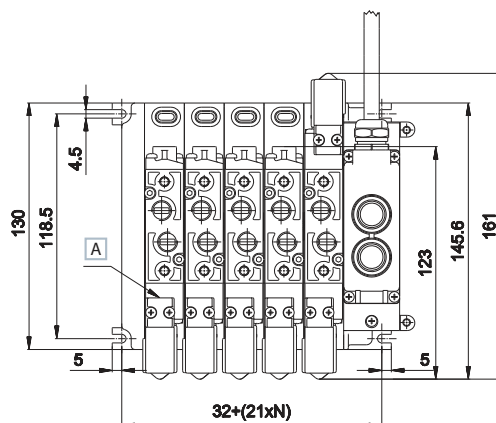
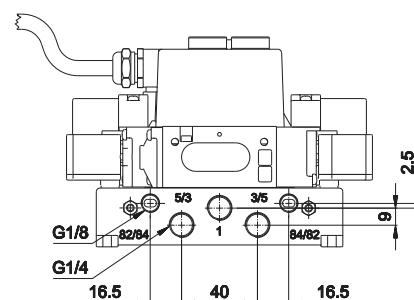
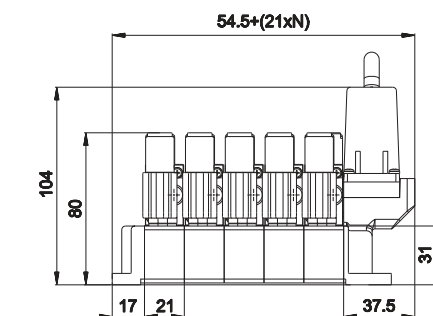
Double **pneumatic impulse**

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

	Symbol	Control	Return	Flow rate (NI/min)	Pressure bar	Times (ms)		Weight Kg	Part no.
						En.	De-en.		
5/2		pneumatic amplified	pneumatic amplified	740	0,7÷10	5	5	0,103	GL-6233
5/3 c.c.		pneumatic amplified	pneumatic amplified	670	1,5÷9	6	19	0,192	GL-6333
5/3 o.c.		pneumatic amplified	pneumatic amplified	670	2,0÷9	6	19	0,192	GL-6433
5/3 p.c.		pneumatic amplified	pneumatic amplified	670	1,5÷9	6	19	0,192	GL-6533
3/2 NC + 3/2 NC		pneumatic amplified	pneumatic amplified	640	1,5÷9	3	14	0,188	GL-6633
3/2 NC + 3/2 NO		pneumatic amplified	pneumatic amplified	640	1,5÷9	3	14	0,188	GL-6733
3/2 NO + 3/2 NO		pneumatic amplified	pneumatic amplified	640	1,5÷9	3	14	0,188	GL-6833

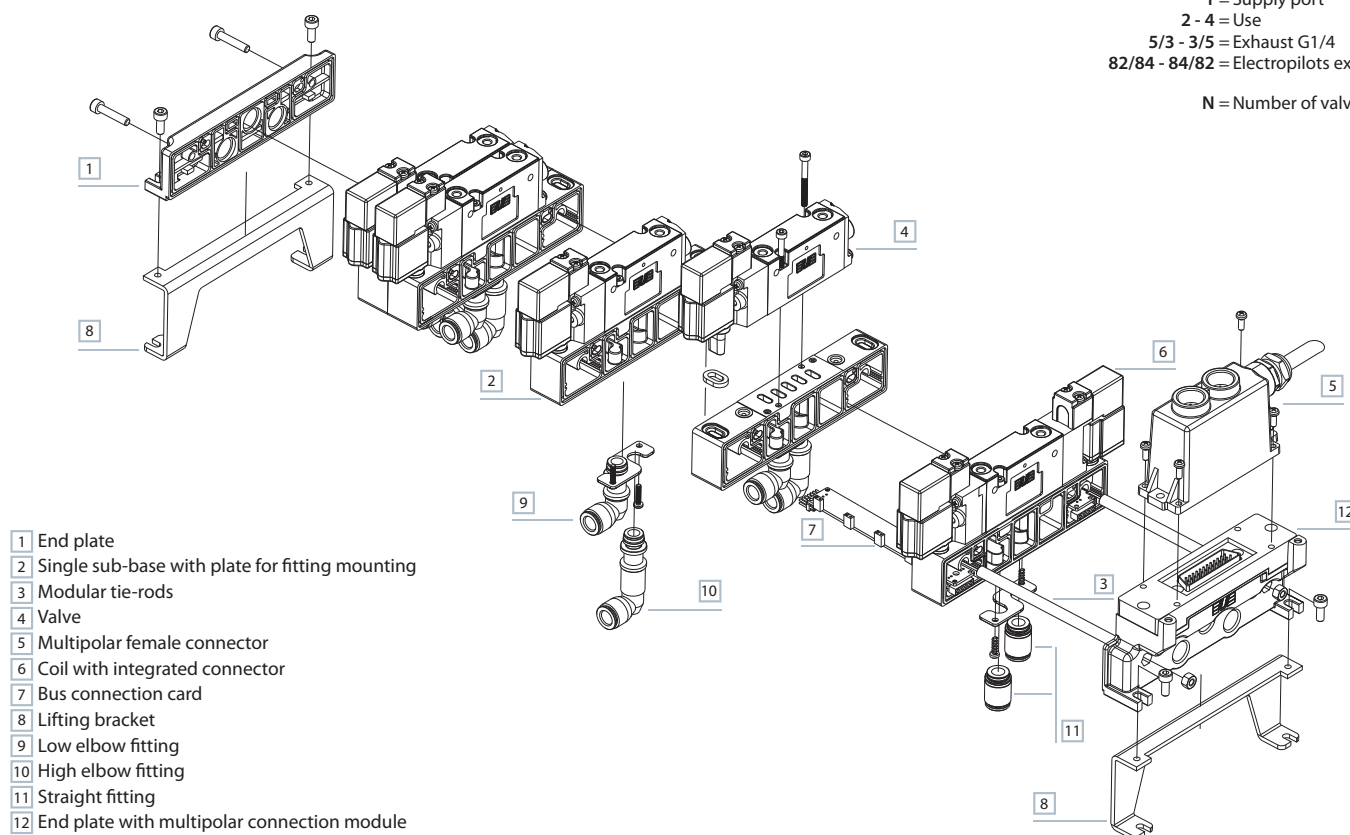
o.c. = open centres c.c. = closed centres p.c. = pressurized centres

Multipolar electrical connection



A Manual override

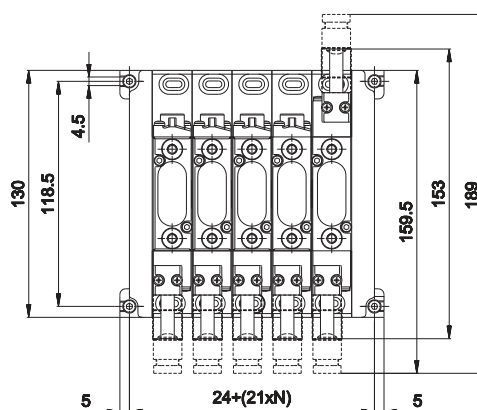
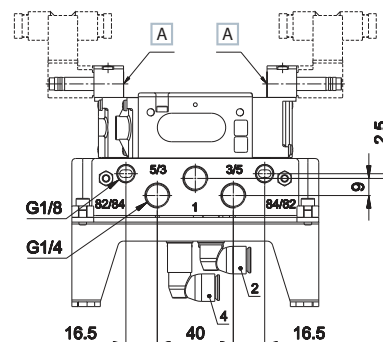
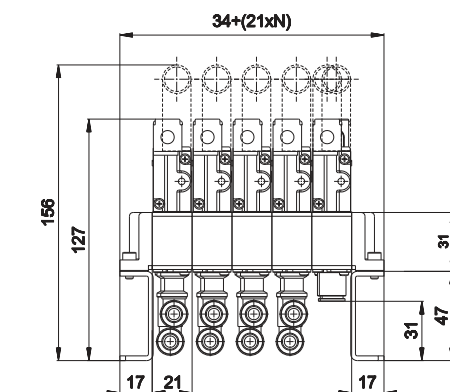
1 = Supply port
2 - 4 = Use
5/3 - 3/5 = Exhaust G1/4
82/84 - 84/82 = Electropilots exhaust G1/8
N = Number of valve positions



Tightening torque for fittings

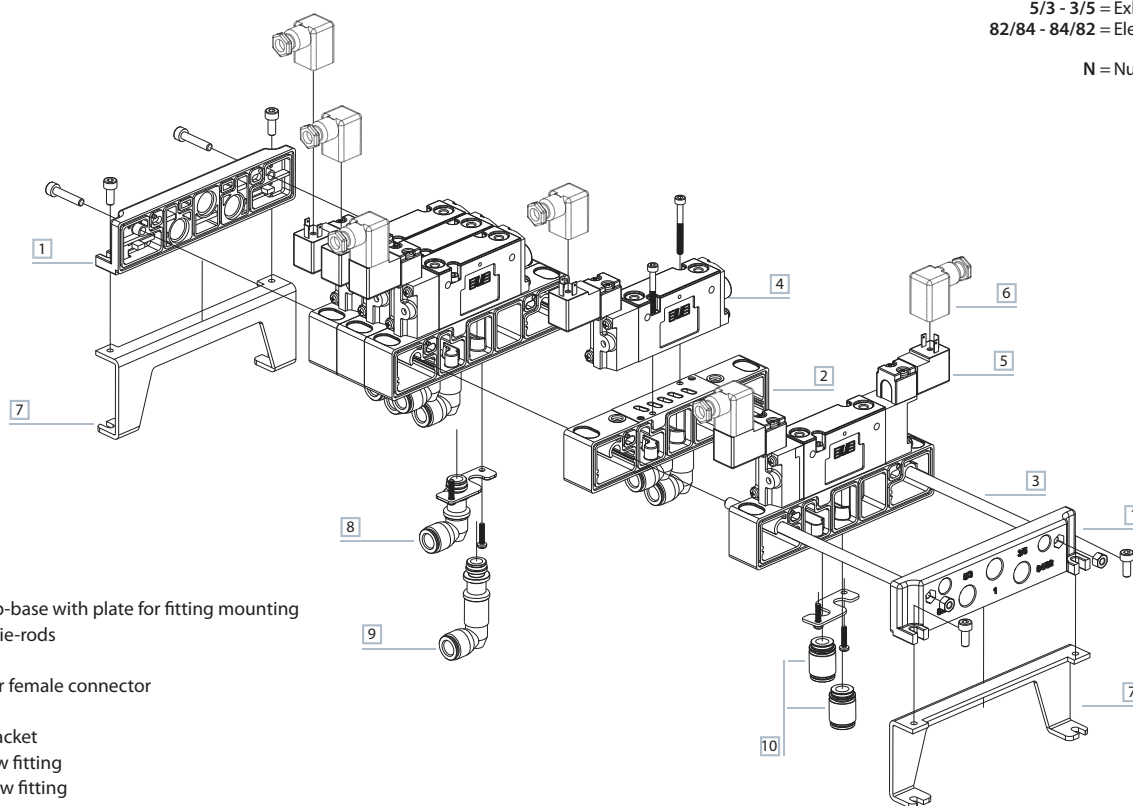
Thread	max pair (Nm)
M5	3
M7	3
G1/8	3
G1/4	10

Electrical connection with external connector



A Manual override

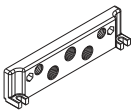
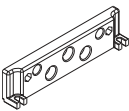
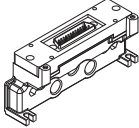
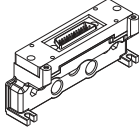
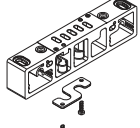
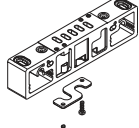
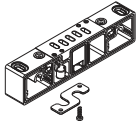
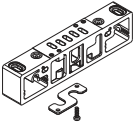
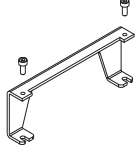
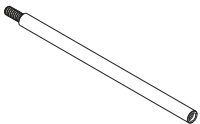
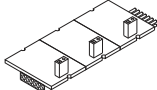
1 = Supply port
2 - 4 = Use
5/3 - 3/5 = Exhaust G1/4
82/84 - 84/82 = Electropilot exhaust G1/8
N = Number of valve position



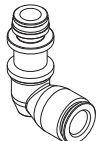
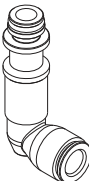
- 1 End plate
- 2 Single sub-base with plate for fitting mounting
- 3 Modular tie-rods
- 4 Valve
- 5 Multipolar female connector
- 6 Coil
- 7 Lifting bracket
- 8 Low elbow fitting
- 9 High elbow fitting
- 10 Straight fitting

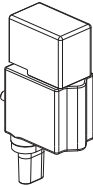
Coppia di serraggio raccordi

Thread	max pair (Nm)
M5	3
M7	3
G1/8	3
G1/4	10

GP-6100	GP-6110	GP-611212	GP-611806	GP-6210/1/2	GP-6220/1/2
					
threaded end plate weight: 0,046 Kg	blank end plate weight: 0,050 Kg	end plate with male connector 25 poles 12+12 coils control 12-14 weight: 0,100 Kg	end plate with male connector 25 poles 18 coils control 14 6 coils control 12 (only for control 14 more than 12 coils max 18) weight: 0,102 Kg	sub-base with open diaphragms GP-6310 without electrical connection GP-6311 monostable GP-6312 bistable weight: 0,060 Kg	sub-base with closed diaphragms GP-6320 without electrical connection GP-6321 monostable GP-6322 bistable weight: 0,062 Kg
GP-6230/1/2	GP-6240/1/2	GP-6380	GP-6385	GP-6411	
 3 1 5	 3 1 5				
sub-base with closed supply and open exhausts GP-6330 without electrical connection GP-6331 monostable GP-6332 bistable weight: 0,062 Kg	sub-base with open supply and closed exhausts GP-6340 without electrical connection GP-6341 monostable GP-6342 bistable weight: 0,062 Kg	intermediate supply plate (to be used only with GP-63... series sub-base) weight: 0,036 Kg	closing plate for unused station weight: 0,018 Kg	lifting bracket weight: 0,086 Kg	
GP-6400-1	GP-6400-2	GP-6400-5	GP-6512-01/..MF	GP-6514-01/..MF	GP-651418
					
modular tie-rod 1 valve place weight: 0,004 Kg (package 100 pcs.) AZ4-VN0416 screw M04x16 for tie-rods (package 100 pcs.) AZ4-SN004A hexagonal nut M4 (package 100 pcs.)	modular tie-rod 2 valve places weight: 0,010 Kg (package 100 pcs.)	modular tie-rod 5 valve places weight: 0,022 Kg (package 100 pcs.)	BUS connection card control side 12 with 12 pin GP-6512-01MF 1 place GP-6512-02MF 2 places GP-6512-03MF 3 places GP-6512-05MF 5 places GP-6512-06MF 6 places weight: 0,003 Kg (for each place)	BUS connection card control side 14 with 12 pin GP-6514-01MF 1 place GP-6514-02MF 2 places GP-6514-03MF 3 places GP-6514-05MF 5 places GP-6514-06MF 6 places weight: 0,003 Kg (for each place)	BUS connection card control side 14 with 18 pin (only 12 places) for manifold assemblies with control 14 with more than 12 coils up to 18 coils use card GP-651418 12 places and then GP-6514-... weight: 0,003 Kg (for each place)

upon request customized solutions up to 12 places

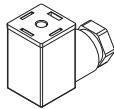
GZR-100	GZR-V10004/6/8	GZR-V20004/6/8	GZR-V20L004/6/8
			
blanking plug weight: 0,010 Kg	straight fitting (package 50 pcs.) GZR-V10004 tube: 4 mm GZR-V10006 tube: 6 mm GZR-V10008 tube: 8 mm weight: 0,010 Kg	low elbow fitting (package 50 pcs.) GZR-V20004 tube: 4 mm weight: 0,013 Kg GZR-V20006 tube: 6 mm weight: 0,014 Kg GZR-V20008 tube: 8 mm weight: 0,015 Kg	high elbow fitting (package 50 pcs.) GZR-V20L004 tube: 4 mm weight: 0,017 Kg GZR-V20L006 tube: 6 mm weight: 0,021 Kg GZR-V20L008 tube: 8 mm weight: 0,027 Kg

DD-051	DD-051**C
	
24 V CC 2 W coil for single connection weight: 0,019 Kg	24 V CC 2 W coil with integrated connector for multipolar version weight: 0,028 Kg

For subbases suitable for servoassistance add "S" to the part number (ex. GP-6210S)

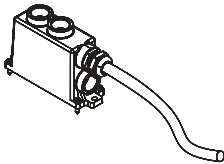
Electrical connections

AM-5109



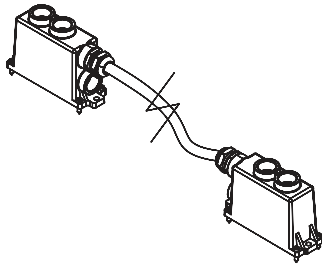
■ 15 mm connector

TSCF24S0300
TSCF24S0500
TSCF24S1000



■ flying female connector sub D according to CEI 20-22 O.R. II (upon request) prewired for 24 coils M3 x 12 fixing screws

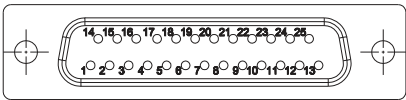
TSCF16D0300
TSCF16D0500
TSCF16D1000



■ flying male/female connector sub D according to CEI 20-22 O.R. II (upon request) prewired for 24 coils with cable Ø8 mm of 3-5-10 m length suitable for mobile laying M3 x 12 fixing screws

Colour identification according to standard DIN 47100

Female connector D-SUB 25 poles
for 12+12 coils



PIN No.	Colour	Coil	Control side		Valve No.
			GP-11212	GP-611806	
1	white	1	14	14	1
2	brown	2	12	12	1
3	green	3	14	14	2
4	yellow	4	12	12	2
5	grey	5	14	14	3
6	pink	6	12	12	3
7	blue	7	14	14	4
8	red	8	12	12	4
9	black	9	14	14	5
10	violet	10	12	12	5
11	grey-pink	11	14	14	6
12	red-blue	12	12	12	6
13	white-green	13	14	14	7
14	brown-green	14	12	14	7
15	white-yellow	15	14	14	8
16	yellow-brown	16	12	14	8
17	white-grey	17	14	14	9
18	grey-brown	18	12	14	9
19	white-pink	19	14	14	10
20	pink-brown	20	12	14	10
21	white-blue	21	14	14	11
22	brown-blue	22	12	14	11
23	white-red	23	14	14	12
24	brown-red brown-black shield		-	-	-
25	white-black	24	12	14	12

G7

26 mm G1/8 valves and solenoid valves

- G1/8 threaded valve body with traditional Univer spool system
- Versions available 5/2-5/3
- Aluminium multiple sub-base



TECHNICAL CHARACTERISTICS

Ambient temperature	-10 ÷ +45 °C
Fluid temperature	max +50 °C
Fluid	50 µm filtered and not dehumidified air, lubricated or not
Commutation system	spool
Ways/Positions	5/2, 5/3
Pressure	10 bar max
Control	indirect electro - pneumatic, pneumatic
Return	mechanical spring, pneumomechanical spring
Connections	G1/8
Nominal Ø	6 mm
Nominal flow rate	860 NI/min

CONSTRUCTIVE CHARACTERISTICS

Valve body	zamak
Seals	nitrile rubber
Actuators	technopolymer
Spool	aluminium

ELECTRIC CHARACTERISTICS

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

CODIFICATION KEY

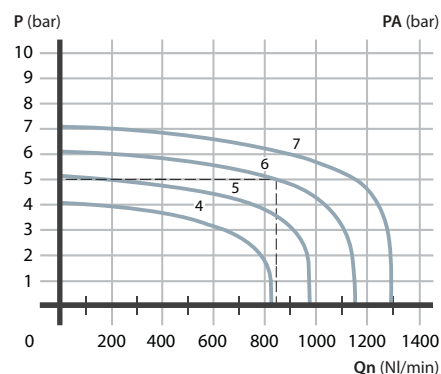
G	7	3	9	0	D
1	2	3	4	5	

1 Series	2 Type	3 Control 14
G7 = G1/8 26 mm valves	2 = 5/2 3 = 5/3 c.c. 4 = 5/3 o.c. 5 = 5/3 p.c.	3 = pneumatic on the body 9 = in line electric U1 pilot

4 Return 12	5 Option
0 = pneumomechanical spring 1 = mechanical spring 3 = pneumatic on the body 9 = in line electric U1 pilot	D = pilot external servo-assistance on valve body (M5) G = manual override on the valve body (only bistable versions)

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

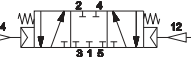
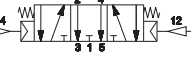
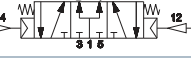
Flow rate characteristics



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

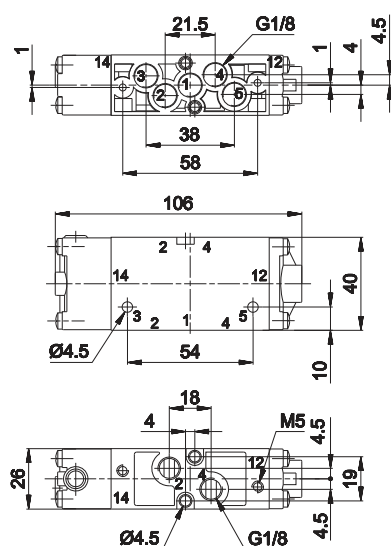
Single/double **pneumatic** impulse



Symbol	Control	Return	Pressure bar	Times (ms)		Weight Kg	Part no.
				En.	De-en.		
SINGLE PNEUMATIC IMPULSE							
	pneumatic amplified	pneumomechanical spring	1,5÷10	8	14	0,190	G-7230
	pneumatic amplified	mechanical spring	1,5÷9	18	64	0,190	G-7231
DOUBLE PNEUMATIC IMPULSE							
	pneumatic amplified	pneumatic amplified	0,7÷10	4	4	0,190	G-7233
	pneumatic amplified	pneumatic amplified	2÷10	8	8	0,200	G-7333
	pneumatic amplified	pneumatic amplified	2÷10	8	8	0,200	G-7433
	pneumatic amplified	pneumatic amplified	2÷10	8	8	0,200	G-7533

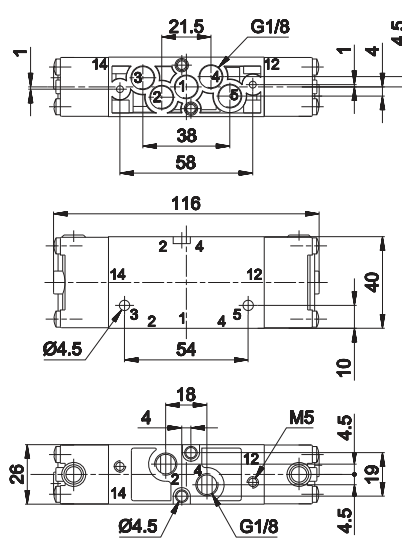
o.c. = open centres **c.c.** = closed centres **p.c.** = pressurized centres

■ Single pneumatic impulse



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

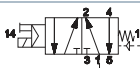
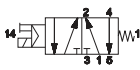
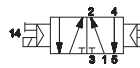
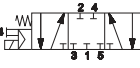
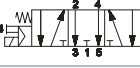
- Double pneumatic impulse



The valve is supplied with two plugs to be mounted with loctite onto the unused 2-4 connections

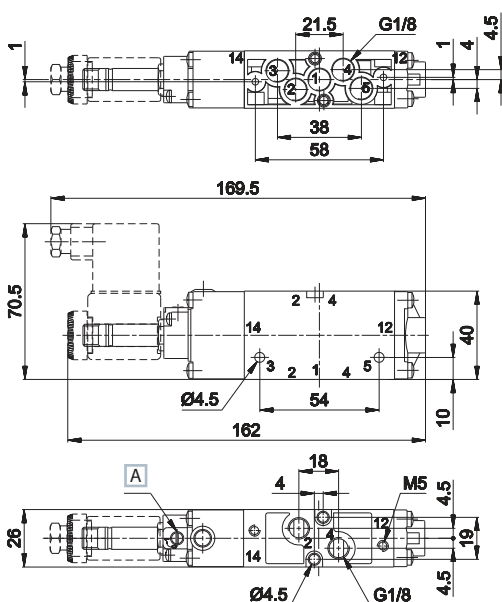
Single/double electric impulse



Symbol	Control	Return	Pressure bar	Times (ms)		Weight Kg	Part no.
				En.	De-en.		
SINGLE ELECTRIC IMPULSE							
	electric amplified	pneumomechanical spring	1,5÷10	15	23	0,214	G-7290
	electric amplified	mechanical spring	1,5÷9	13	34	0,214	G-7291
DOUBLE ELECTRIC IMPULSE							
	electric amplified	electric amplified	0,7÷10	12	12	0,280	G-7299
	electric amplified	electric amplified	2÷10	14	18	0,309	G-7399
	electric amplified	electric amplified	2÷10	14	18	0,309	G-7499
	electric amplified	electric amplified	2÷10	14	18	0,309	G-7599

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

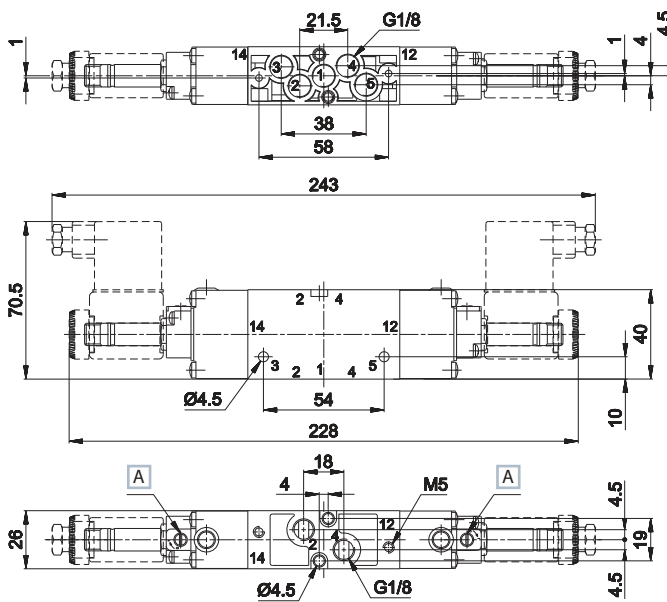
Single electric impulse



 Manual override

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

Double electric impulse

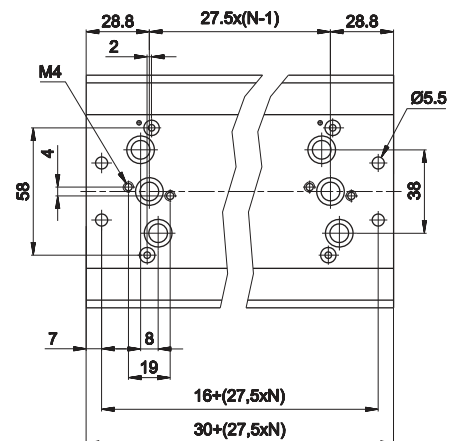
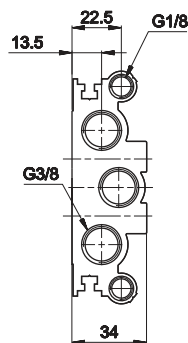


The valve is supplied with two plugs to be mounted with loctite onto the unused 2-4 connections
Electropilots are supplied without coil, connector and locking ring

Multiple sub-base G1/8

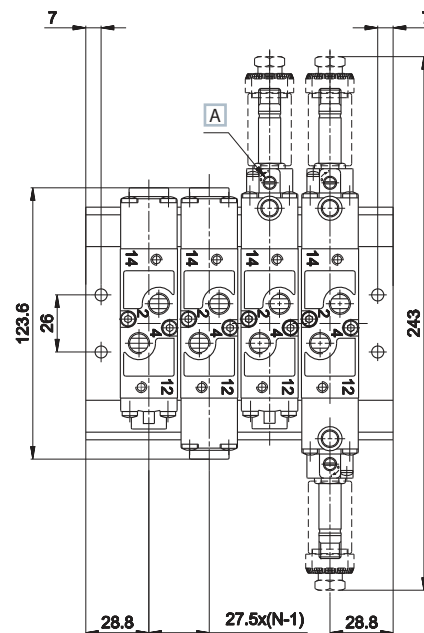
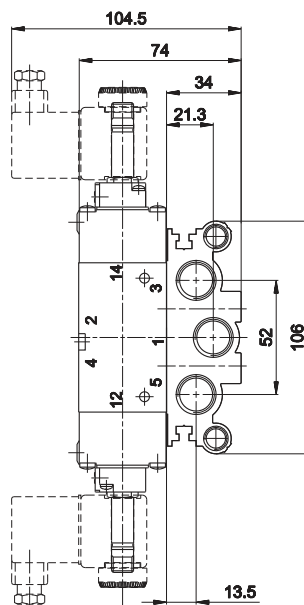


Places N.	material	aluminium
Weight	Part no.	
Kg		
2	0,455	G-7900-02
3	0,594	G-7900-03
4	0,733	G-7900-04
5	0,872	G-7900-05
6	1,011	G-7900-06
7	1,150	G-7900-07
8	1,289	G-7900-08
9	1,428	G-7900-09
10	1,567	G-7900-10
11	1,706	G-7900-11
12	1,845	G-7900-12

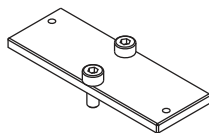


A Manual override

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

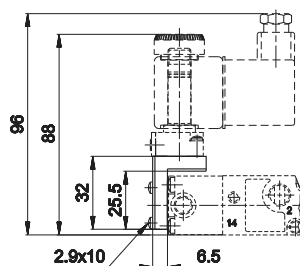
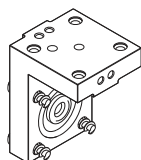


G-7885



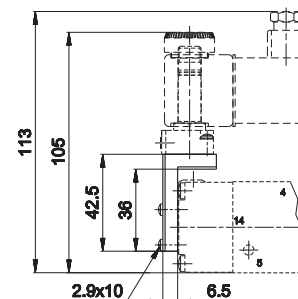
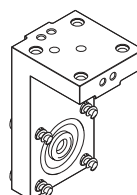
covering-plate for sub-base
place
weight: 0,019 Kg

AM-5151



"H" option solenoid square
weight: 0,035 Kg

AM-5152



"P" option solenoid square
weight: 0,05 Kg

PS

COMBOBOX valves

- Valves with compact design: valve body with integrated sub-base
- High flexibility:
 - > possibility of choosing fitting dimension (4-6-8) according to users' needs
 - > manifolds from 2 up to 20 valve positions
 - > electric and pneumatic control - versions 3/2+3/2 - 5/2 - 5/3
 - > different pressures (vacuum included)
- Electrical connection: external - multipolar - serial connections



TECHNICAL CHARACTERISTICS

Ambient temperature	-5 ÷ +50 °C (PSR: -15 ÷ +50 °C)
Fluid temperature	max +50 °C
Fluid	not dehumidified filtered air 10 µm, lubricated or not
Commutation system	spool
Ways/Positions	3/2+3/2, 5/2, 5/3
Pressure	electric control = max 9 bar pneumatic control = max 10 bar
Control	indirect electro-pneumatic, pneumatic
Return	mechanical spring, pneumomechanical spring
Connections	tube Ø 4, 6, 8
Nominal Ø	6 mm
Nominal flow rate (Nl/min) according to the type of fittings:	
	straight - tube Ø8 mm 830
	90° elbow - tube Ø8 mm 700
	straight - tube Ø6 mm 510
	90° elbow - tube Ø6 mm 370
	straight - tube Ø4 mm 200
	90° elbow - tube Ø4 mm 140

CONSTRUCTIVE CHARACTERISTICS

Valve body	zamak
Seals	nitrile rubber
Actuators	self-extinguishing technopolymer
Spool	aluminum

ELECTRIC CHARACTERISTICS

Electropilot/Coil	B series_U04 - DE (U04)
Voltage	24 V DC (12 V DC upon request)
Power consumption	1,35 W
Protection degree	IP65
Manual override	button with tool - 1 position (PSC) 1-2 position screw (PSP)

CODIFICATION KEY

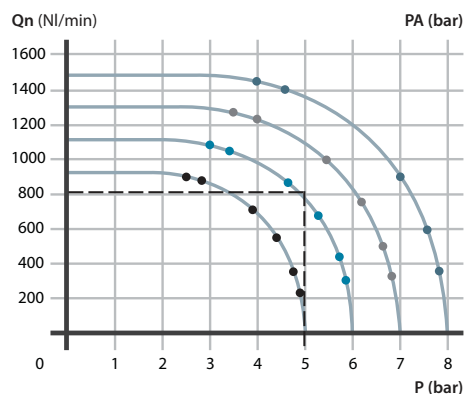
P	S	C	2	6	0	2	4
1	2	3	4	5			

1 Series	2 Ways	3 Control 14
PSC = separate wires	2 = 5/2	6 = 3/2+3/2 NC-NC
PSP = plug-in	3 = 5/3 c.c.	7 = 3/2+3/2 NC-NO
PSR = pneumatic	4 = 5/3 o.c.	8 = 3/2+3/2 NO-NO
	5 = 5/3 p.c.	

4 Return 12		5 Voltage and coil
0 = pneumatic spring	3 = pneumatic not amplified	PSC and PSP series, coils assembled with standard supplied led 24 = 24 V (standard) 12 = 12 V (upon request)
1 = mechanical spring	6 = electrical amplified	
2 = pneumatic amplified	7 = electrical not amplified	

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

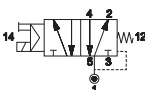
Flow rate characteristics



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

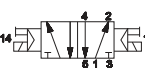
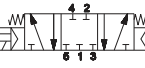
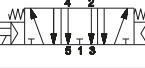
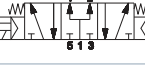
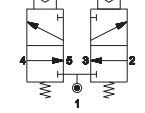
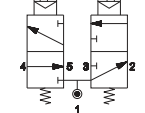
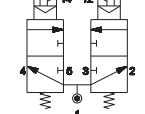
Single electric impulse



	Symbol	Control	Return	Pressure bar	Times (ms)		Weight Kg	Part no.
					En.	De-en.		
5/2		electrical amplified	pneumomechanical spring	1,8÷9	17	38	0,143	PSC26024
5/2		electrical amplified	mechanical spring	2,2÷9	15	50	0,143	PSC26124

Double electric impulse



	Symbol	Control	Return	Pressure bar	Times (ms)		Weight Kg	Part no.
					En.	De-en.		
5/2		electrical amplified	electrical amplified	0,7÷9	11	11	0,150	PSC26624
5/3 c.c.		electrical amplified	electrical amplified	2,2÷9	15	50	0,155	PSC36624
5/3 o.c.		electrical amplified	electrical amplified	2,2÷9	15	50	0,155	PSC46624
5/3 p.c.		electrical amplified	electrical amplified	2,2÷9	15	50	0,155	PSC56624
3/2 NC + 3/2 NC		electrical amplified	electrical amplified	2÷9	15	33	0,140	PSC66624
3/2 NC + 3/2 NO		electrical amplified	electrical amplified	2÷9	15	33	0,140	PSC76624
3/2 NO + 3/2 NO		electrical amplified	electrical amplified	2÷9	15	33	0,140	PSC86624

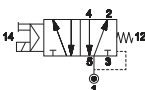
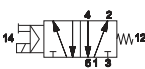
o.c. = open centres c.c. = closed centres p.c. = pressurized centres

Solenoid valves are supplied without coil and connector

Manual override on PSC series is with button with tool, 1 position

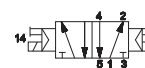
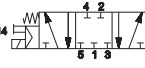
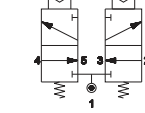
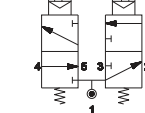
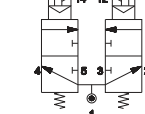
Single electric impulse



	Simbolo	Coontrol	Return	Pressure bar	Times (ms)		Weight Kg	Part
					En.	De-en.		
5/2		electrical amplified	pneumomechanical spring	1,8÷9	17	38	0,148	PSP26024
5/2		electrical amplified	mechanical spring	2,2÷9	15	50	0,148	PSP26124

Double electric impulse



	Simbolo	Control	Return	Pressure bar	Times (ms)		Weight Kg	Part no.
					En.	De-en.		
5/2		electrical amplified	electrical amplified	0,7÷9	11	11	0,160	PSP26624
5/3 c.c.		electrical amplified	electrical amplified	2,2÷9	15	50	0,165	PSP36624
5/3 o.c.		electrical amplified	electrical amplified	2,2÷9	15	50	0,165	PSP46624
5/3 p.c.		electrical amplified	electrical amplified	2,2÷9	15	50	0,165	PSP56624
3/2 NC + 3/2 NC		electrical amplified	electrical amplified	2÷9	15	33	0,140	PSP66624
3/2 NC + 3/2 NO		electrical amplified	electrical amplified	2÷9	15	33	0,140	PSP76624
3/2 NO + 3/2 NO		electrical amplified	electrical amplified	2÷9	15	33	0,140	PSP86624

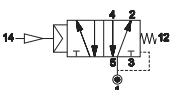
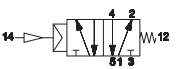
o.c. = open centres c.c. = closed centres p.c. = pressurized centres

Solenoid valves are supplied without coil and connector

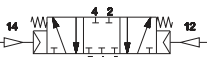
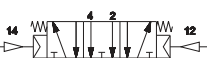
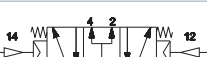
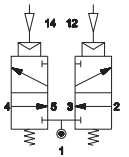
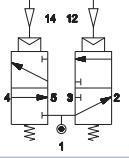
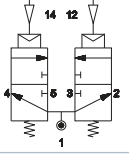
Manual override on PSC series is with button with tool, 1 position

On PSP series a maximum of 20 coils can be used, restriction due to the connection modules

Single **pneumatic** impulse

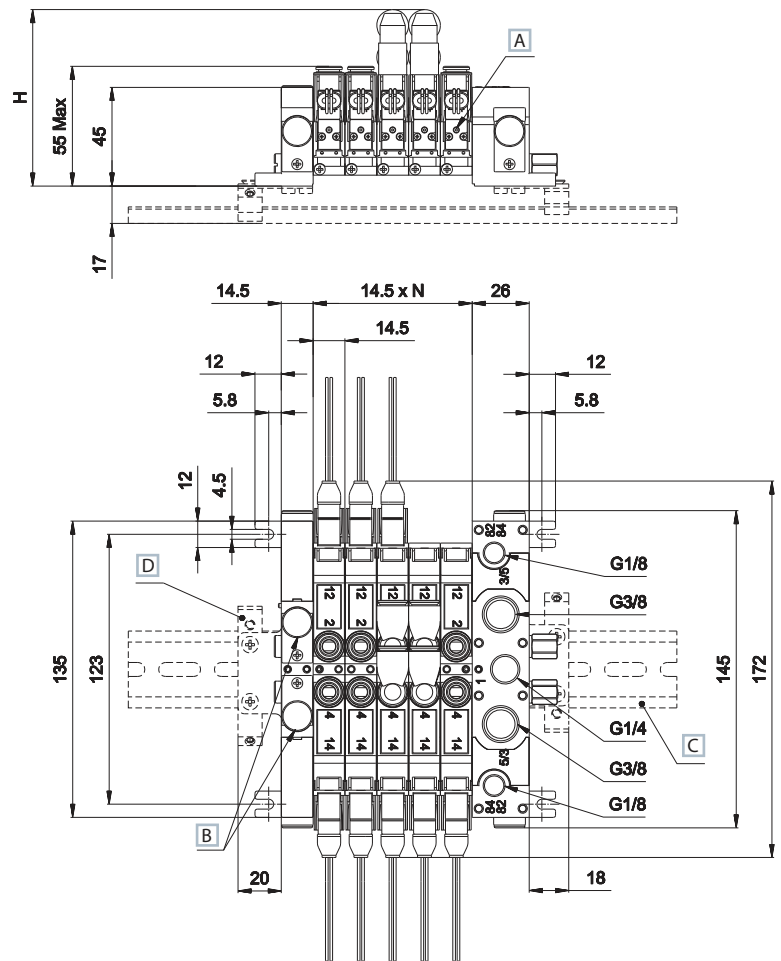
	Symbol	Control	Return	Pressure bar	Times (ms)		Weight Kg	Part no.
					En.	De-en.		
5/2		pneumatic amplified	pneumomechanical spring	1,7÷10	14	33	0,136	PSR220
5/2		pneumatic amplified	mechanical spring	2,2÷10	12	45	0,136	PSR221

Double **pneumatic** impulse

	Symbol	Control	Return	Pressure bar	Times (ms)		Weight Kg	Part no.
					En.	De-en.		
5/2		pneumatic amplified	pneumatic amplified	0,7÷10	5	5	0,136	PSR222
5/2		pneumatic amplified	pneumatic non amplified	1,1÷10	9	8	0,132	PSR223
5/3 c.c.		pneumatic amplified	pneumatic amplified	2,2÷10	12	45	0,140	PSR322
5/3 o.c.		pneumatic amplified	pneumatic amplified	2,2÷10	12	45	0,140	PSR422
5/3 p.c.		pneumatic amplified	pneumatic amplified	2,2÷10	12	45	0,140	PSR522
3/2 NC + 3/2 NC		pneumatic amplified	pneumatic amplified	2÷10	12	29	0,140	PSR622
3/2 NC + 3/2 NO		pneumatic amplified	pneumatic amplified	2÷10	12	29	0,140	PSR722
3/2 NO + 3/2 NO		pneumatic amplified	pneumatic amplified	2÷10	12	29	0,140	PSR822

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

PSC Series with 26mm inlet plate and 14.5 mm end plate with DIN (EN50022) rail

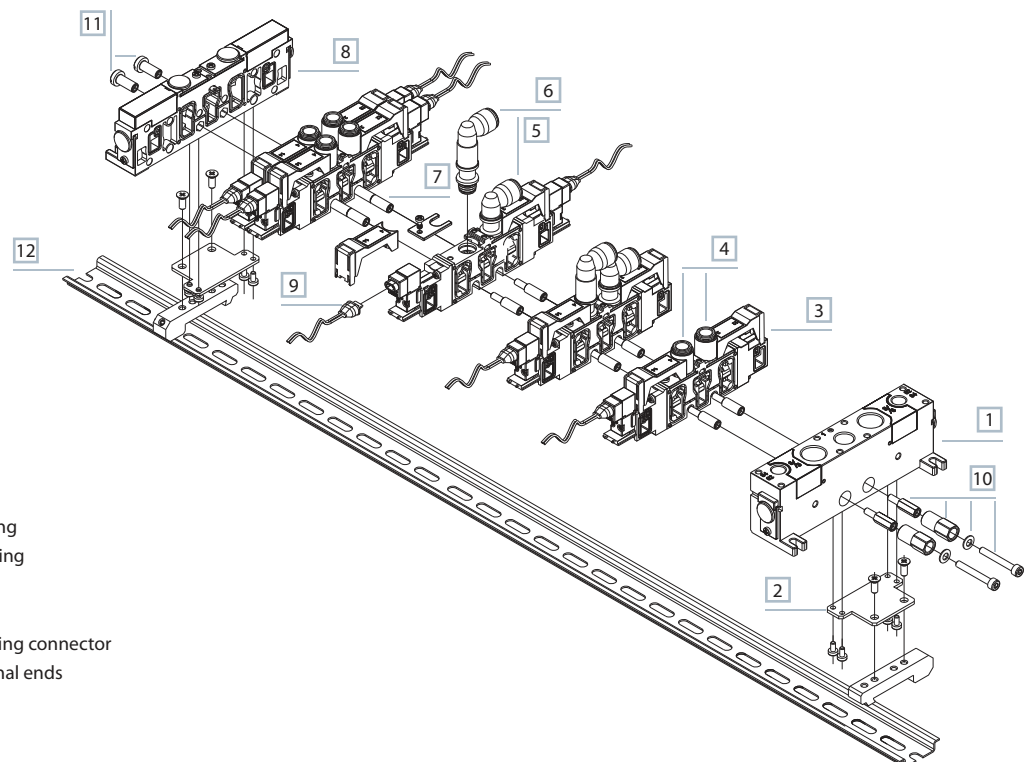


Tube Ø	H
4	72,6
6	76,6
8	80,5

- A Manual override
- B Possibility of supplementary exhausts 3-5
- C Rail DIN (EN 50022)
- D DIN rail connector as optional

- 1 = Supply port
- 2 - 4 = Use
- 3 - 5 = Exhaust
- 14 = Control
- 12 = Return
- 82 = Pilot exhaust side 2
- 84 = Pilot exhaust side 4

N = Number of valve positions



PSC series with 14,5 mm inlet and end plate



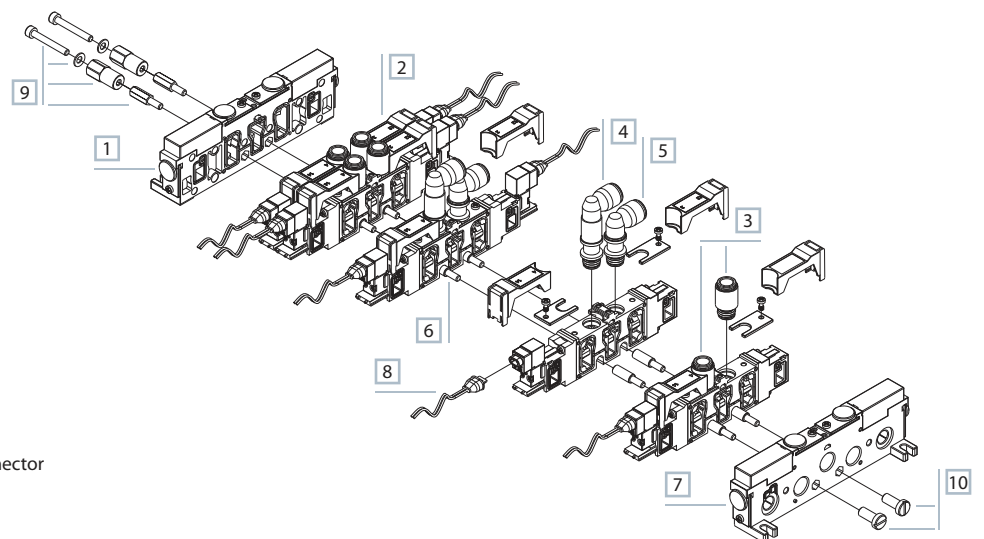
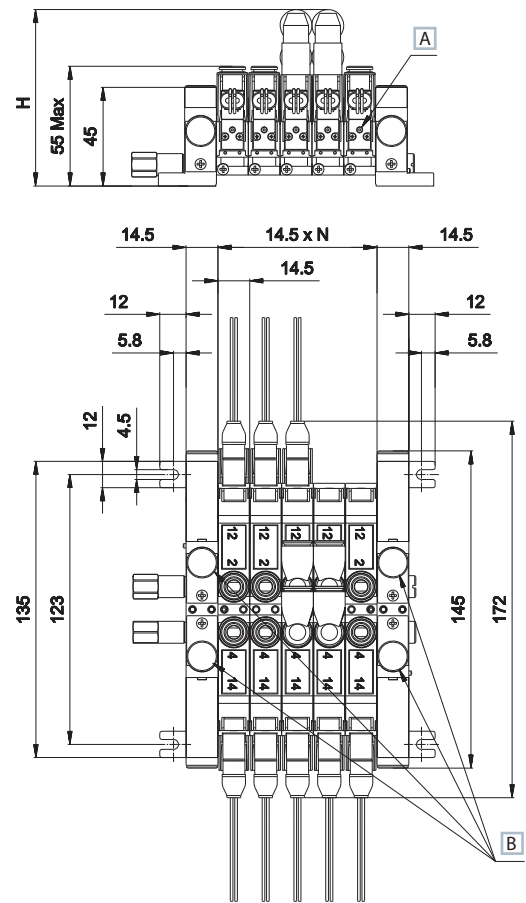
Tube Ø	H
4	72,6
6	76,6
8	80,5

A Manual override

B Possibility of supplementary exhausts 3 - 5

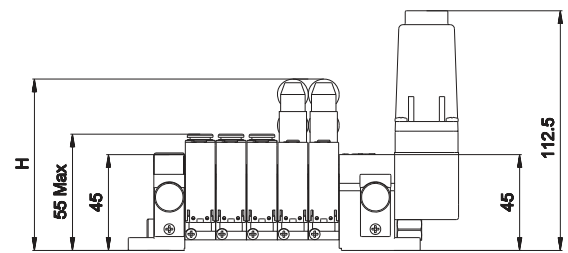
- 1 = Supply port
- 2 - 4 = Use
- 3 - 5 = Exhaust
- 14 = Control
- 12 = Return
- 82 = Pilot exhaust side 2
- 84 = Pilot exhaust side 4

N = Number of valve positions



- 1 Inlet plate
- 2 Valve
- 3 Straight fitting
- 4 Swivel low elbow fitting
- 5 Swivel high elbow fitting
- 6 Modular tie-rods
- 7 Blank plate
- 8 Micro double-pole flying connector
- 9 Tie-rods with hexagonal ends
- 10 Counter tie-rods

PSP series with 26mm inlet plate and 14,5 mm end plate with multipolar connector



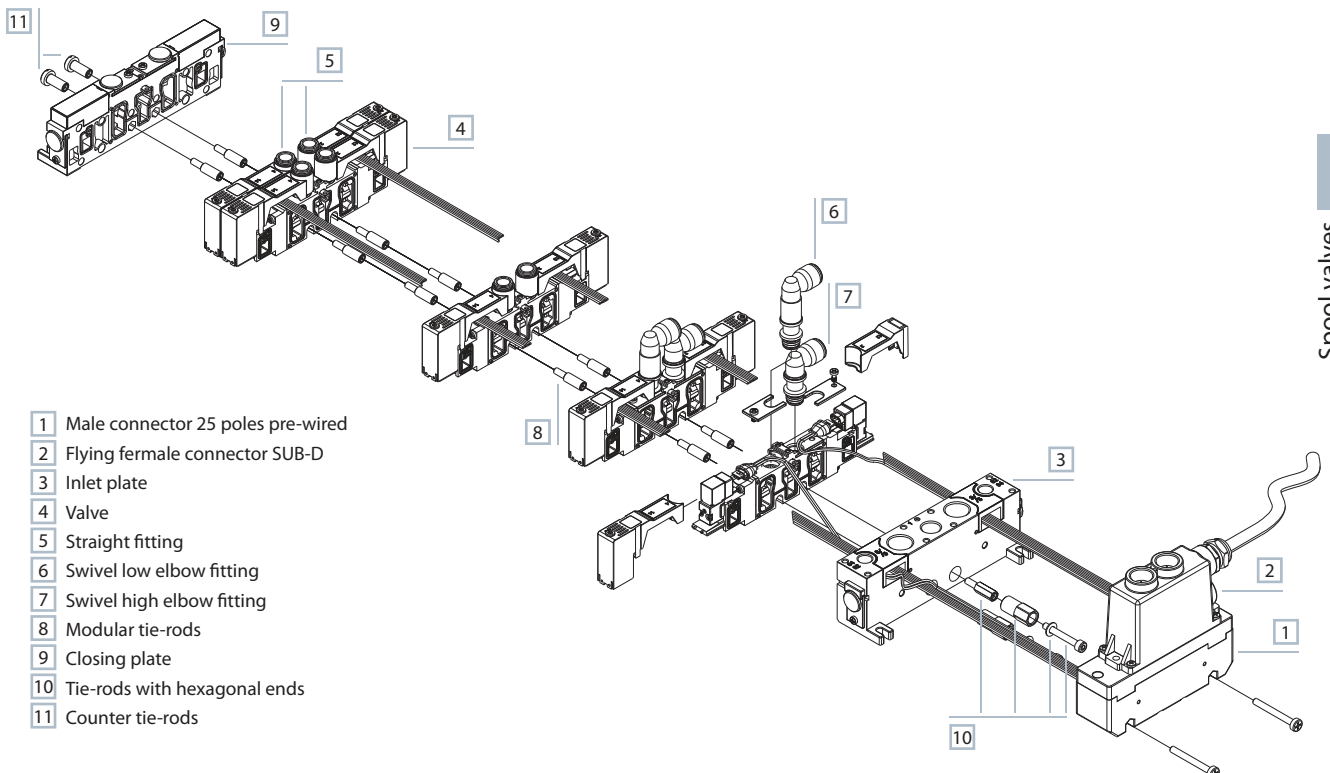
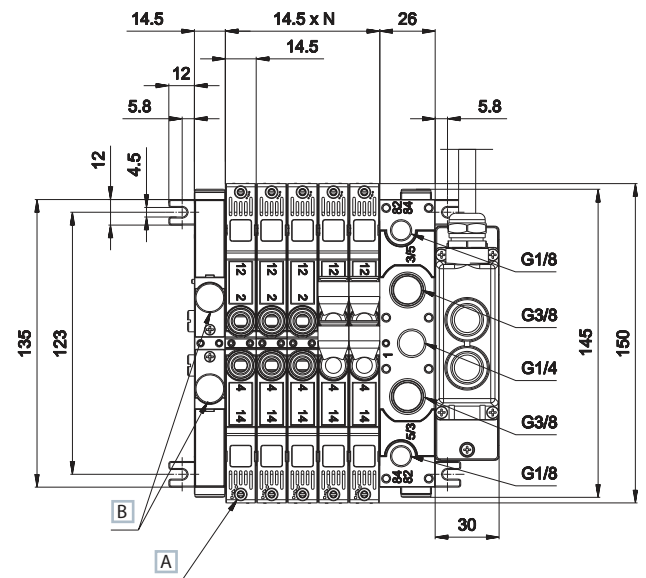
Tube Ø	H
4	72,6
6	76,6
8	80,5

[A] Manual override

[B] Possibility of supplementary exhausts 3 - 5

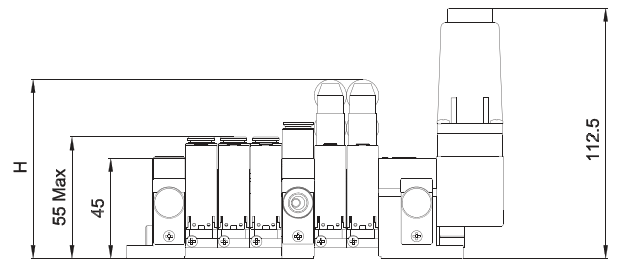
- 1 = Supply port
 2 - 4 = Use
 3 - 5 = Exhaust
 14 = Control
 12 = Return
 82 = Pilot exhaust side 2
 84 = Pilot exhaust side 4

N = Number of valve positions



- 1 Male connector 25 poles pre-wired
 2 Flying female connector SUB-D
 3 Inlet plate
 4 Valve
 5 Straight fitting
 6 Swivel low elbow fitting
 7 Swivel high elbow fitting
 8 Modular tie-rods
 9 Closing plate
 10 Tie-rods with hexagonal ends
 11 Counter tie-rods

PSP series with 26mm inlet plate and 14.5mm end plate with multipolar connector and intermediate plate

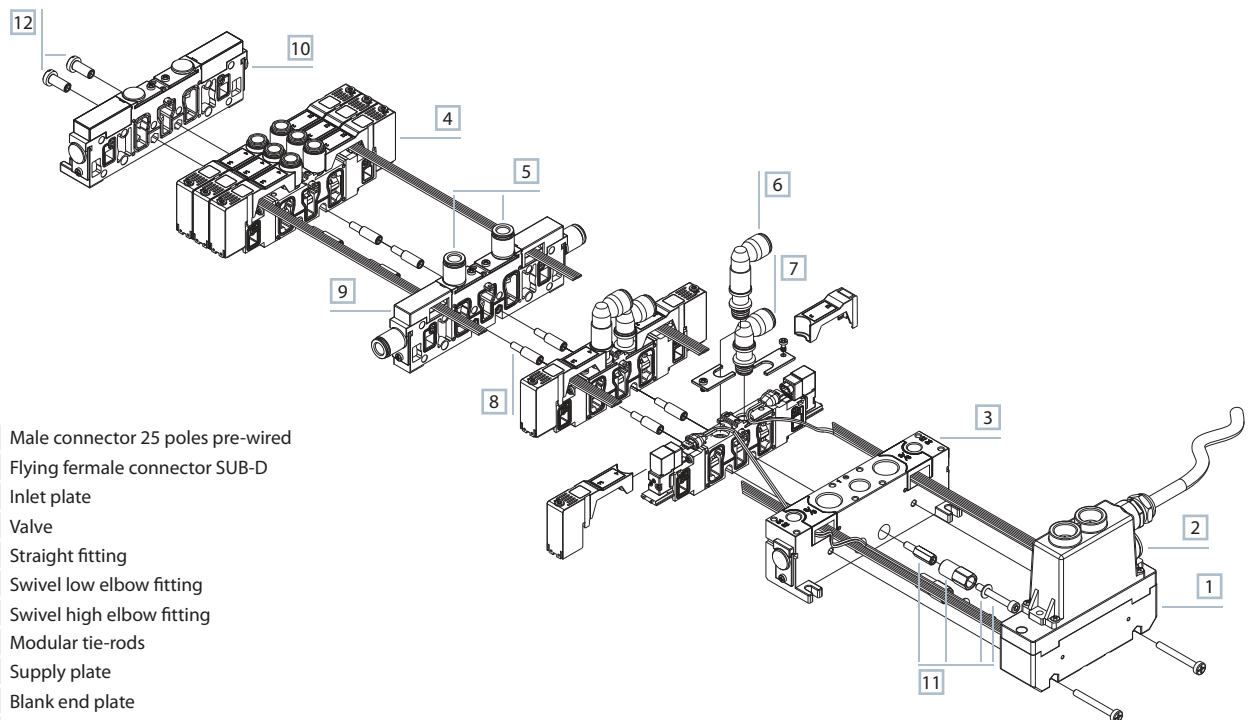
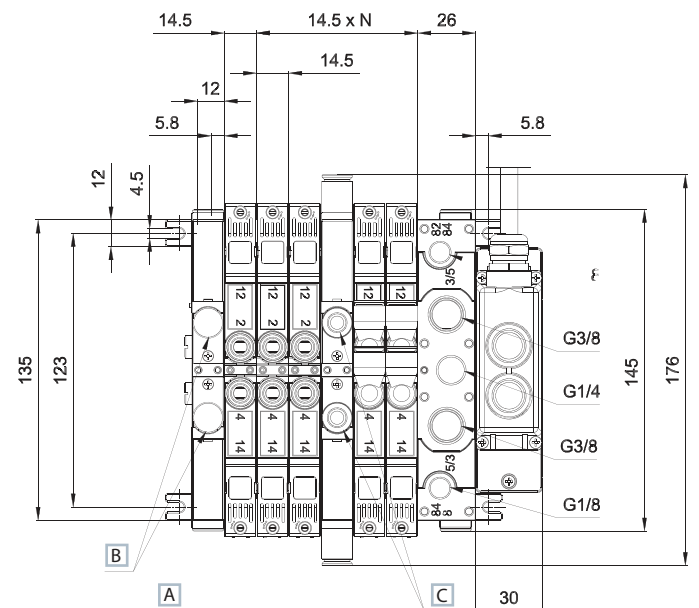


Tube Ø	H
4	72,6
6	76,6
8	80,5

- A Manual override
- B Possibility of supplementary exhausts 3 - 5
- C For type of fittings see page 3_59

- 1 = Supply port
- 2 - 4 = Use
- 3 - 5 = Exhaust
- 14 = Control
- 12 = Return
- 82 = Pilot exhaust side 2
- 84 = Pilot exhaust side 4

N = Number of valve positions



- 1 Male connector 25 poles pre-wired
- 2 Flying female connector SUB-D
- 3 Inlet plate
- 4 Valve
- 5 Straight fitting
- 6 Swivel low elbow fitting
- 7 Swivel high elbow fitting
- 8 Modular tie-rods
- 9 Supply plate
- 10 Blank end plate
- 11 Tie-rods with hexagonal ends
- 12 Counter tie-rods

PSR series with 26mm inlet and end plate 14,5 mm

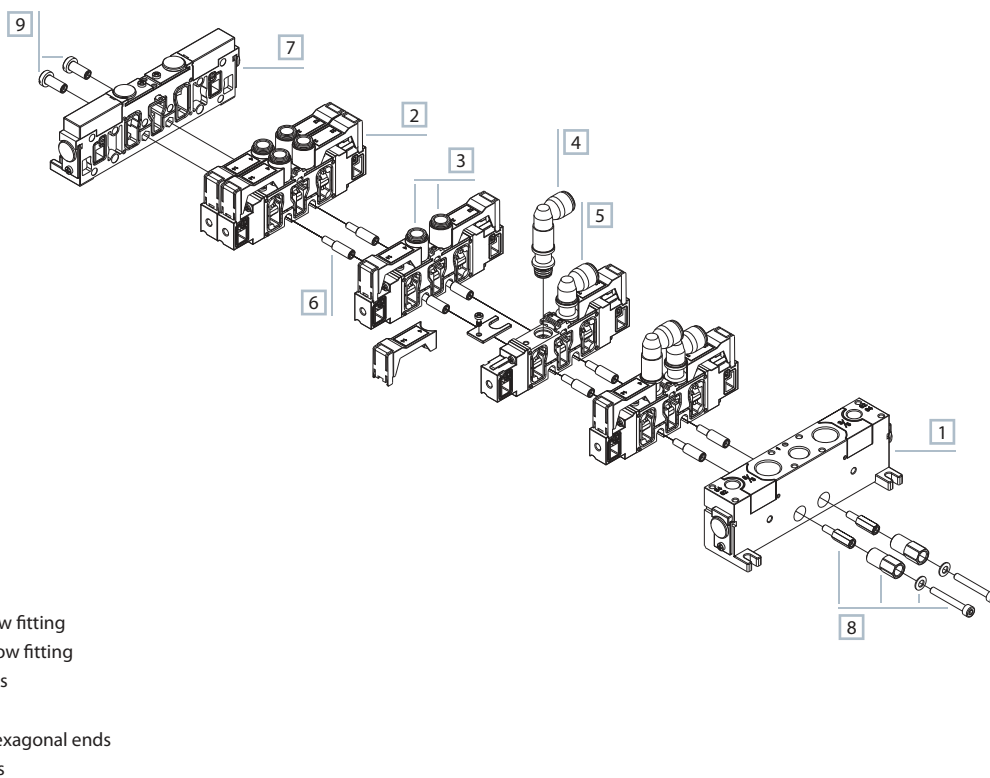
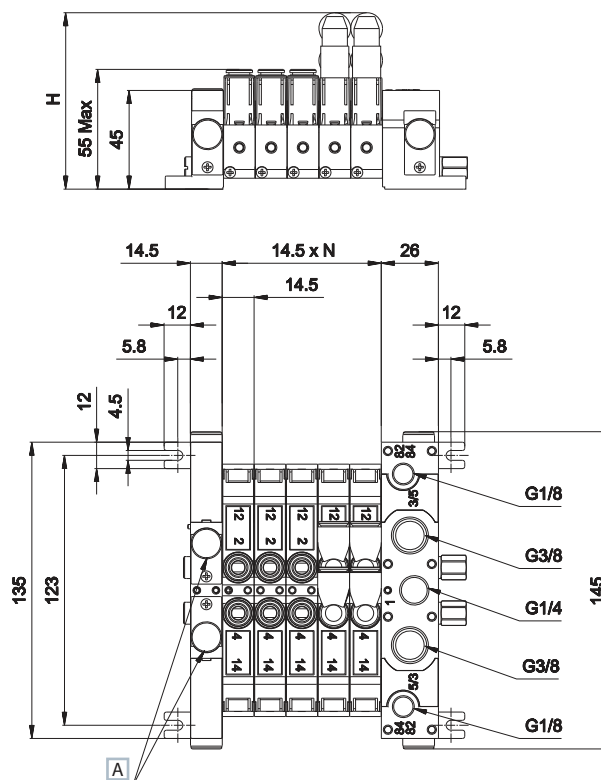


Tube Ø	H
4	72,6
6	76,6
8	80,5

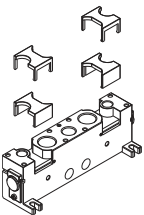
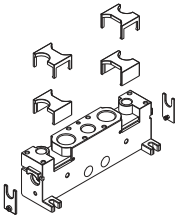
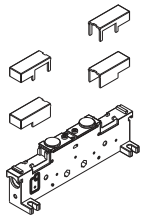
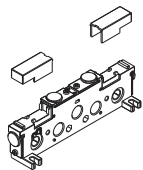
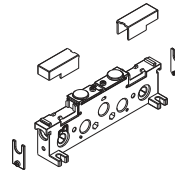
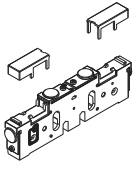
A Possibility of supplementary exhausts 3 - 5

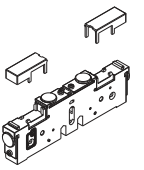
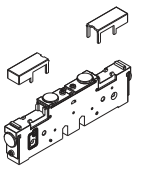
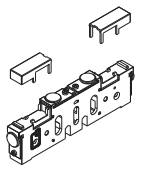
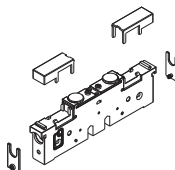
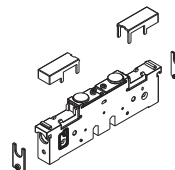
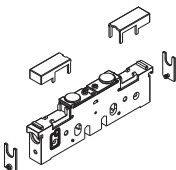
- 1 = Supply port
- 2 - 4 = Use
- 3 - 5 = Exhaust
- 14 = Control
- 12 = Return
- 82 = Pilot exhaust side 2
- 84 = Pilot exhaust side 4

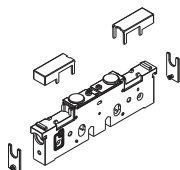
N = Number of valve positions



- 1** Inlet plate
- 2** Valve
- 3** Straight fitting
- 4** Swivel low elbow fitting
- 5** Swivel high elbow fitting
- 6** Modular tie-rods
- 7** Blank plate
- 8** Tie-rods with hexagonal ends
- 9** Counter tie-rods

PS14100	PS14200	PS15000	PS15100	PS15200	PS15300*
					
inlet plate 26 mm internal pilot supply weight: 0,295 Kg	inlet plate 26 mm external pilot supply weight: 0,290 Kg	blank closing plate weight: 0,168 Kg	intel plate 14,5 mm internal pilot supply weight: 0,167 Kg	intel plate 14,5 mm external pilot supply weight: 0,162 Kg	intermediate plate 14,5 mm, closed air supply, open exhausts weight: 0,167 Kg

PS15310*	PS15320*	PS15330*	PS15340	PS15350	PS15360
					
intermediate plate 14,5 mm, open air supply, closed exhausts weight: 0,170 Kg	intermediate plate 14,5 mm, closed air supply and exhaust weight: 0,171 Kg	intermediate plate 14,5 mm open air supply and exhaust weight: 0,165 Kg	intermediate supply plate with closed exhausts and internal pilot supply weight: 0,164 Kg	intermediate supply plate with closed exhausts and external pilot supply weight: 0,164 Kg	intermediate supply plate with open exhausts and internal pilot supply weight: 0,164 Kg

PS15370

intermediate supply plate
with open exhausts and
external pilot supply
weight: 0,164 Kg

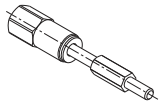
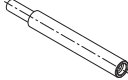
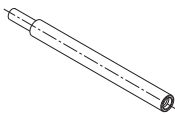
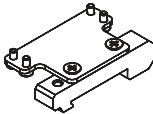
* = For intermediate plate with closed pilot supply ports add suffix 1 to part number.

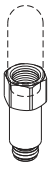
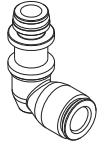
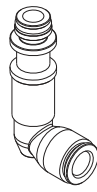
The intermediate plate occupies one valve place, please keep this in mind for a correct order of the modular tie-rods.

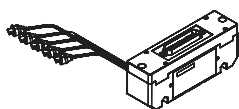
Air supply of the electropilots by means of the end plates for both internal and external air supply. In case there are two different working pressures at the end plates, it is possible to supply all pilots with one of the two pressures (in general with the higher one) or to supply the pilots of each valve group with the working pressure of the same.

This can be realized by choosing the correct separation plate.

The same is valid if the pressures are more than two: in this case it is necessary to use intermediate supply plates suitably coupled with the separation plates.

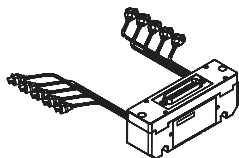
PSK100145	PSK200145	PSK200290	PSK200725	PSK300145	PSK401
					
tie-rods with hexagonal ends (package 50 pcs.) weight: 0,015 Kg	modular tie-rods L1 = 14,5 mm each place (package 100 pcs.) weight: 0,003 Kg	modular tie-rods L2 = 29 mm for 2 places (package 100 pcs.) weight: 0,006 Kg	modular tie-rods L5 = 72,5 mm for 5 places (package 100 pcs.) weight: 0,015 Kg	counter tie-rods (package 50 pcs.) weight: 0,003 Kg	DIN rail adapter plate with screws (package 2 pcs. suitable for all models) weight: 0,066 Kg

GZR-100	GZR-101	GZR-102	GZR-V10004/6/8	GZR-V20004/6/8	GZR-V20L004/6/8
					
plug (package 2 pcs. suitable for all models) weight: 0,002 Kg	G1/8 Fitting seat reducing plug - gas thread for silencer assembly weight: 0,011 Kg	G1/4 Fitting seat reducing plug - gas thread for silencer assembly weight: 0,0315 Kg	straight fitting (package 50 pcs.) GZR-V10004 tube: 4 mm GZR-V10006 tube: 6 mm GZR-V10008 tube: 8 mm weight: 0,010 Kg	swivel low elbow fitting (package 50 pcs.) GZR-V20004 tube: 4 mm weight: 0,013 Kg GZR-V20006 tube: 6 mm weight: 0,014 Kg GZR-V20008 tube 8 mm weight: 0,015 Kg	swivel high elbow fitting (package 50 pcs.) GZR-V20L004 tube: 4 mm weight: 0,017 Kg GZR-V20L006 tube: 6 mm weight: 0,021 Kg GZR-V20L008 tube: 8 mm weight: 0,027 Kg

TIM06M/10M/20M**TIM06B/10B****D-530C-100/200**

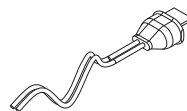
male connector 25 poles pre-wired
for monostable valves (M)

TIM06M weight: 0,096 Kg
(max 6M)
TIM10M weight: 0,103 Kg
(max 10M)
TIM20M weight: 0,127 Kg
(max 20M)



male connector 25 poles pre-wired
for bistable valves (B)

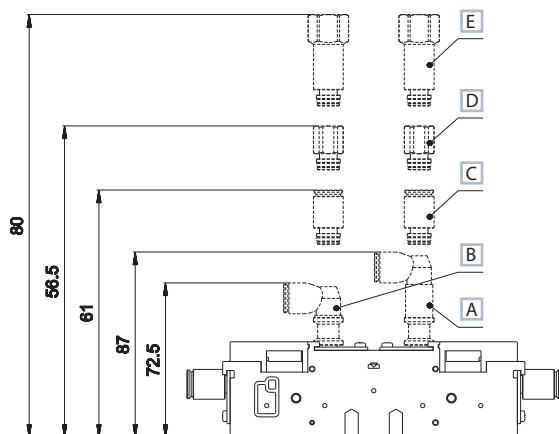
TIM06B weight: 0,11 Kg
(max 6B)
TIM10B weight: 0,118 Kg
(max 10B)



micro double-pole flying
connector:
stripped and tinned wires with
protection guard
(package 100 pcs.)

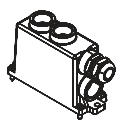
D-530C-100 weight: 0,0047 Kg
(wire length 100 cm)
D-530C-200 weight: 0,0093 Kg
(wire length 200 cm)

Overall dimensions of fittings on intermediate plates for exhausts 3-5

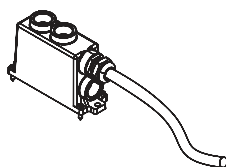


- A** Swivel high elbow fitting for tube Ø8
- B** Swivel low elbow fitting for tube Ø8
- C** Straight fitting for tube Ø8
- D** Fitting for silencer G1/8
- E** Fitting for silencer G1/4

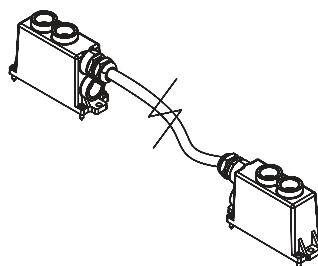
Flying connectors/connections table

TSCF000

- female connector
25 poles D-sub
without cable

TSCF24S0300
TSCF24S0500
TSCF24S1000


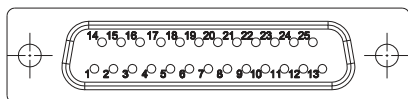
- flying female connector sub D
according to CEI 20-22 O.R. II
(upon request)
prewired for 24 coils
M3 x 12 fixing screws

TSCF16D0300
TSCF16D0500
TSCF16D1000


- flying male/female connector sub D
according to CEI 20-22 O.R. II
(upon request)
prewired for 24 coils
with cable Ø8 mm (3-5-10 m length)
suitable for mobile lying
M3 x 12 fixing screws

 Colour identification according to standard **DIN 47100**

Female connector D-SUB 25 poles
for 12+12 coils



PIN N°	Operator side	Valve N°	TSCF16D		TSCF24S	
			Colour	Coil	Colour	Coil
1	14	1	white	coil 1	white	coil 1
2	12	1	brown	coil 2	brown	coil 2
3	14	2	green	coil 3	green	coil 3
4	12	2	grey	coil 4	yellow	coil 4
5	14	3	pink	coil 5	grey	coil 5
6	12	3	blue	coil 6	pink	coil 6
7	14	4	violet	coil 7	blue	coil 7
8	12	4	grey-pink	coil 8	red	bobina8
9	14	5	red-blue	coil 9	black	bobina9
10	12	5	white-green	coil 10	violet	coil 10
11	14	6	brown-green	coil 11	grey-pink	coil 11
12	12	6	white-yellow	coil 12	red-blue	coil 12
13	14	7	yellow-brown	coil 13	white-green	coil 13
14	12	7	white-grey	coil 14	brown-green	coil 14
15	14	8	grey-brown	coil 15	white-yellow	coil 15
16	12	8	white-pink	coil 16	yellow-brown	coil 16
17	14	9	white-brown	not used	white-grey	coil 17
18	12	9	white-blue	not used	grey-brown	coil 18
19	14	10	black	com 0V	white-pink	coil 19
20	12	10	black	com 0V	pink-brown	coil 20
21	14	11	red	24V INP	white-blue	coil 21
22	12	11	red	24V INP	brown-blue	coil 22
23	14	12	yellow	com 0V	white-red	coil 23
24	-	-	yellow	com 0V	brown-red	com 0V
					brown-black	com 0V
					shield	shield
25	12	12	shield	shield	white-black	coil 24



POPPET VALVES

4 Poppet valves

AC	G1/8 - G 1/4 - G1/2 MIXED valves	4.01
CH	2/2 - 3/2 G1/8 oppet valves	4.05
AF	G 1/8 - G 1 1/2 Poppet valves for compressed air	4.07
AG	G 1/8 - G 1 1/2 Poppet valves for vacuum	4.12
AI	Miniature limit switches	4.18
AI jet	JET series pneumatic limit switches	4.25
AM	Pneumatic and electric foot valves	4.30

AC

MIXED threaded valves G1/8 - G 1/4 - G1/2

- Mixed commutation system (spool - poppet)
- High flow rate
- Quick response time
- High cycles
- Control: manual, mechanical, pneumatic, electric
- Modular sub-bases



TECHNICAL CHARACTERISTICS

Ambient temperature	-10 ÷ +45 °C		
Fluid temperature	max +50 °C		
Fluid	filtered air 50 µm, lubricated or not		
Commutation system	poppet mixed system		
Ways/Positions	5/2		
Pressure	10 bar max		
Control	pneumatic, electric, mechanical		
Return	pneumomechanical spring, pneumatic, electric		
Connections	G1/8	G1/4	G1/2
Nominal Ø (mm)	6	8	15
Nominal flow rate (NI/min)	1080	1600	4600

CONSTRUCTIVE CHARACTERISTICS

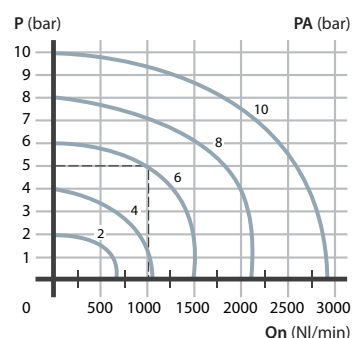
Valve body	G1/8 - G1/4 = zamak	
	G1/2 = die-cast aluminium	
Seals	nitrile rubber, polyurethane	
Actuators	technopolymer	
Spool	aluminium	

ELECTRIC CHARACTERISTICS

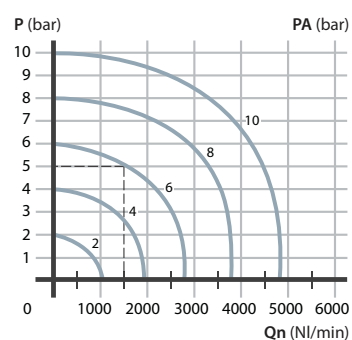
	G1/8	G1/4	G1/2
Electropilot	U1		U2
Coil	DA		DB
Power consumption	3,5 W (DC) - 5 VA (AC)		11 W (DC) - 10 VA (AC)
Connector	AM-5110		AM-5111
Voltage	12 V DC - 24 V DC - 24 V AC - 110 V AC - 230 V AC		
Manual override	with 2 position screw		

Flow rate characteristics

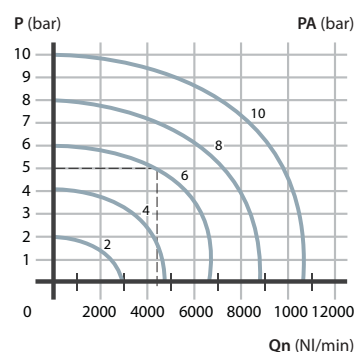
>> G1/8



>> G1/4



>> G1/2



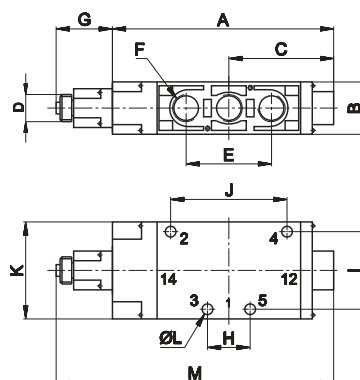
P = Working pressure
PA = Supply pressure
Qn = Flow rate

Indirect mechanical control for use with
pneumatic, mechanical and manual actuators

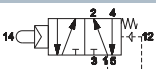


1 = Supply port
2 - 4 = Use
3 - 5 = Exhaust

14 = Control
12 = Return



	G1/8	G1/4	G1/2
A	99	114	163
B	25	27	40
C	47	54	83
D	M14x1	M14x1	M14x1
E	36	44	80
F	G1/8	G1/4	G1/2
G	27	27	27
H	18	22	40
I	26	40	50
J	36	60	108
K	40	50	63
L	4,5	5,5	6,5
M	126	141	190

Symbol	Connection	Control	Return	Pressure bar	Weight Kg	Part no.
	G1/8	ball pushrod	pneumomechanical spring	1,8÷10	0,27	AC-7010
	G1/4			2,3÷10	0,28	AC-8010
	G1/2			2÷10	0,33	AC-9010

MANUAL ACTUATORS

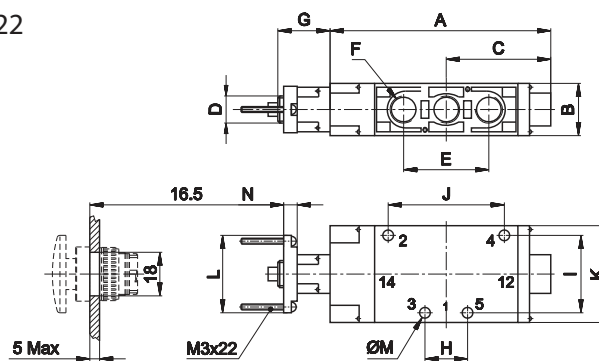
	Recessed button	■ BLACK ■ RED ■ GREEN	AI-3511 AI-3512 AI-3513 
	Head button	■ RED ■ BLACK	AI-3514 AI-3516 
	Button	■ GREEN ■ RED ■ BLACK	AI-3515 AI-3517 AI-3519 
	Rotating selector	■ BLACK	AI-3520 AI-3521 
	Rotating lever selector	■ BLACK	AI-3522 AI-3523 
	Lever operator	■ BLACK	AI-3524 
	Omni-directional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

PNEUMATIC AND MECHANICAL ACTUATORS

	Pneumatic actuator	AI-3550	
	Amplified pneumatic actuator	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 lever operator 1 position	AI-3571	
	Key operator 1 position	AI-3572	

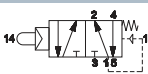
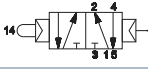
For actuator dimensions refer to section "Accessories > Actuators and buttons"

Indirect control
for panel mounting actuators Ø 22



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

	G1/8	G1/4	G1/2
A	99	114	163
B	25	27	40
C	47	54	83
D	M14x1	M14x1	M14x1
E	36	44	80
F	G1/8	G1/4	G1/2
G	27	27	27
H	18	22	40
I	26	40	50
J	36	60	108
K	40	50	63
L	40	40	40
M	4,5	5,5	6,5
N	7	7	7

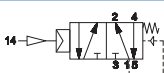
Symbol	Connection	Control	Return	Pressure bar	Weight Kg	Part no.
	G1/8	ball pushrod	pneumomechanical spring	1,8÷10	0,28	AC-7013
	G1/4			2,3÷10	0,29	AC-8013
	G1/2			2÷10	0,84	AC-9013
	G1/8	ball pushrod	pneumatic amplified	1÷10	0,29	AC-7013P
	G1/4			1÷10	0,28	AC-8013P
	G1/2			1÷10	0,83	AC-9013P

MANUAL ACTUATORS

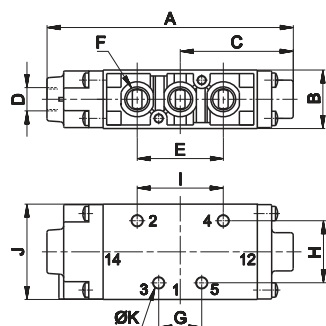
	Recessed button	■ BLACK AI-3511 ■ RED AI-3512 ■ GREEN AI-3513	
	Head button	■ RED AI-3514 ■ BLACK AI-3516 ■ RED AI-3514D ■ BLACK AI-3516D	 
	Button	■ GREEN AI-3515 ■ RED AI-3517 ■ BLACK AI-3519	
	Rotating selector	■ BLACK AI-3520 ■ BLACK AI-3521	 
	Rotating lever selector	■ BLACK AI-3522 ■ BLACK AI-3523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

For actuator dimensions refer to section "Accessories>Actuators and buttons"

Single/double **pneumatic impulse**

Symbol	Connection	Control	Return	Pressure	Times (ms)		Weight	Part no.
				bar	En.	De-en.	Kg	
SINGLE PNEUMATIC IMPULSE								
	G1/8	pneumatic amplified	pneumomechanical	1,8÷10	8	10	0,22	AC-7100
	G1/4			2,3÷10	10	10	0,23	AC-8100
	G1/2			2÷10	10	10	0,76	AC-9100
DOUBLE PNEUMATIC IMPULSE								
	G1/8	pneumatic amplified	pneumatic amplified	1÷10	5	10	0,23	AC-7120
	G1/4			0,8÷10	6	6	0,21	AC-8120
	G1/2			0,8÷10	8	8	0,77	AC-9120

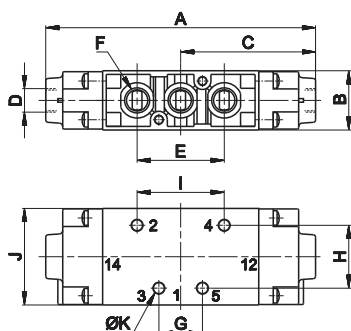
Single pneumatic impulse



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

	A	B	C	D	E	F	G	H	I	J	K
G1/8	103	25	47	G1/8	36	G1/8	18	26	36	40	4,5
G1/4	117	27	54	G1/8	44	G1/4	22	40	60	50	5,5
G1/2	165	40	82,5	G1/8	80	G1/2	40	50	108	63	6,5

Double pneumatic impulse



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

	A	B	C	D	E	F	G	H	I	J	K
G1/8	112	25	56	G1/8	36	G1/8	18	26	36	40	4,5
G1/4	126,5	25	63	G1/8	44	G1/4	22	40	60	50	5,5
G1/2	165	40	82,5	G1/8	80	G1/2	40	50	108	63	6,5