

PIMATIC

5/2- AND 3/2-WAY VALVES

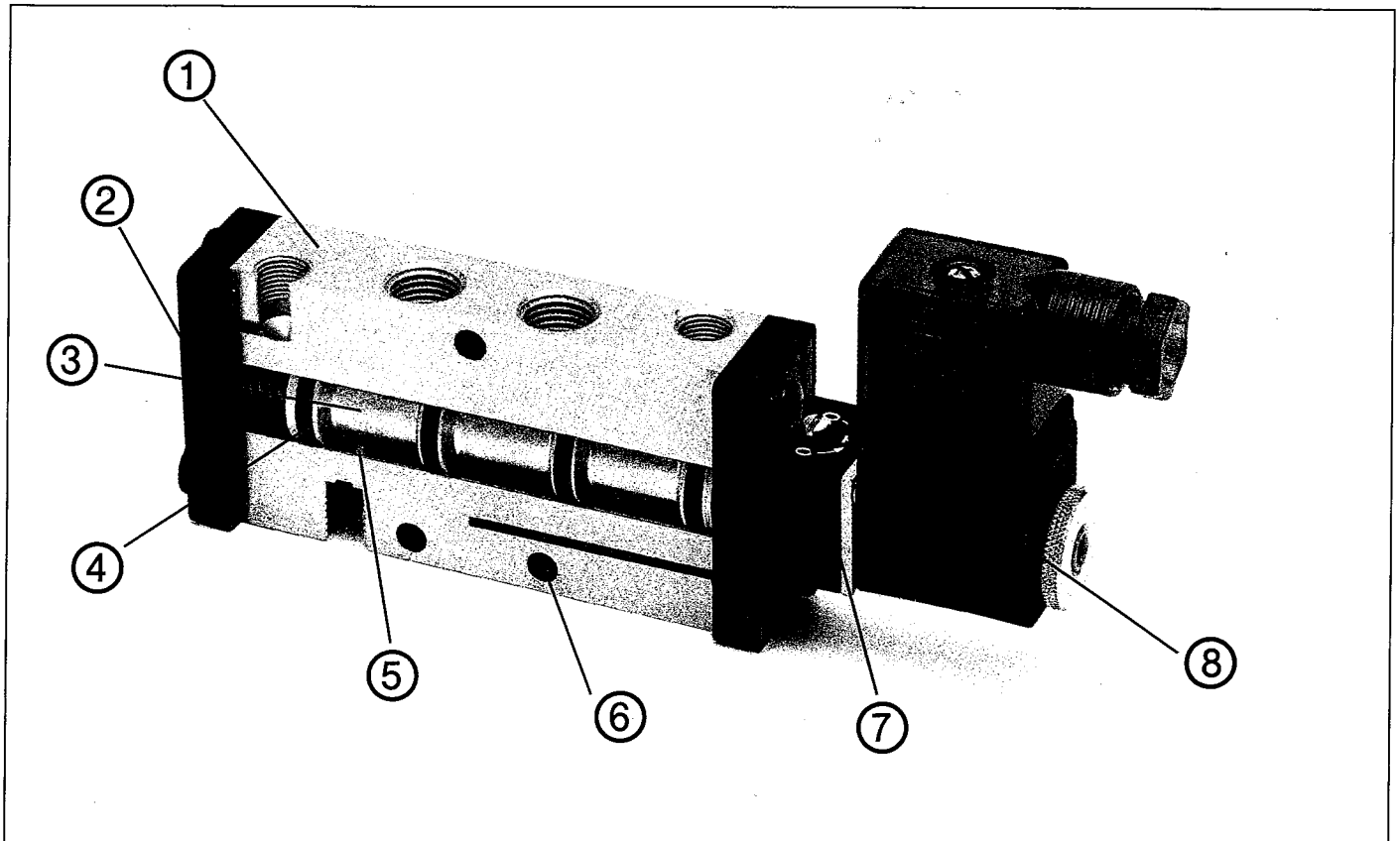
IN-LINE

electro-magnetically or pneumatically actuated

 MTEK-GROUP

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| 6. Order Nos. of 3/2-valves | | |

**CHOICE CRITERIA:**

- | | | |
|---|--|--|
| 1. Strong housing of anodised aluminium
- Resistant to corrosion, thermal variations and abrasion | 4. Teflon seals – no lubrication
- Lubrication unnecessary
- Good resistance to chemical agents
- Insignificant seal friction diminishes abrasion and lengthens service life | 6. Variety of mounting possibilities
- In-line, on machine frame, or manifold mounting |
| 2. Easy maintenance
- All wearing parts can be easily replaced | 5. Big flow orifices
- Small pressure loss even on fast flows | 7. Manual override
- Manual override control as standard in solenoid operated models |
| 3. Reliable spool construction
- Simple and solid spool construction ensures trouble-free operation | | 8. Low power consumption
- Suitable for logic control systems |

TECHNICAL DATA:

Valve type:

5 port 2 position and 3 port 2 position IN-LINE valves for controlling double acting and single acting cylinders respectively

Operating medium:

Dry or lubricated air or neutral gas

Mounting:

In-line, on machine frame or for manifold mounting

Materials:

Housing of anodised aluminium, end caps of nylon compound, inner parts of aluminium or stainless steel

Seals:

Nitrile rubber or PTFE

Lubrication:

Free of maintenance, no lubrication needed

Pressure range:

-1...10 bar (-0,1...1,0 MPa)

Temperature range:

-20...+80°C valve
-20...+50°C ambient

Electrical data:

Cable terminal: PG 9

Protective system: IP 65
(plugged in)

Insulation: F 155°C

Control voltages:

DC 12, 24, 48, 110 V

AC 24, 48, 110, 220 V/50 or 60 Hz

Operating time: 100% ED

Voltage tolerance:

±10% from nominal

Power consumption:

DC 5 W, AC 8/13 VA

alternatively DC 2,5 W,

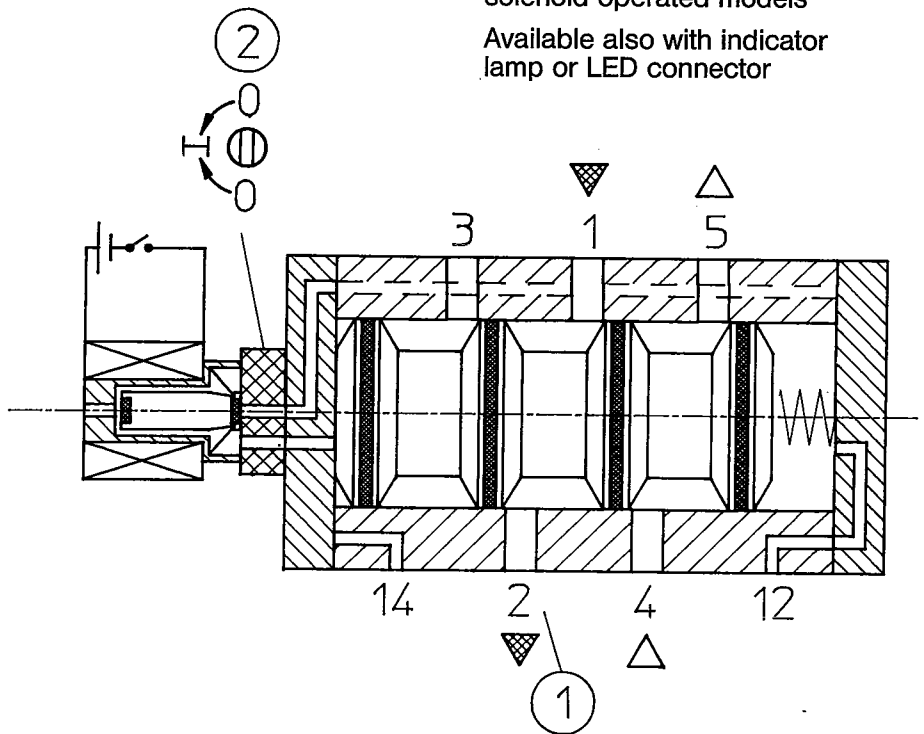
AC 4,5/7 VA

Manual override as standard in solenoid operated models

Available also with indicator lamp or LED connector

Ports and connections:

1. Port numbers:
 - 1 operating pressure
 - 2, 4 inlet/outlet
 - 3, 5 exhaust
 - 12, 14 pilot ports (external pilot supply)
2. Screws for manual override



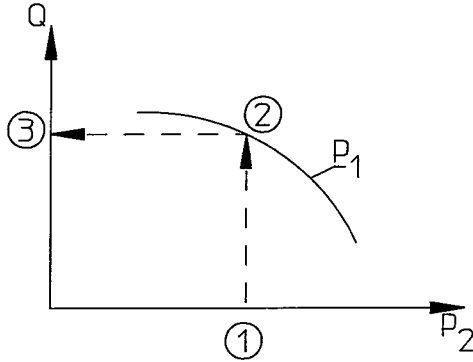
FLOW RATES:

Valve series	Port size	Flow orifice	Nominal flow *)
3122 and 5122 3124 and 5124	G1/4" G1/2"	Ø 7,0 mm Ø 12,0 mm	26,0 dm ³ /s 70,0 dm ³ /s

*) Inlet pressure 6 bar, outlet pressure 5 bar.

INTERPRETATION:

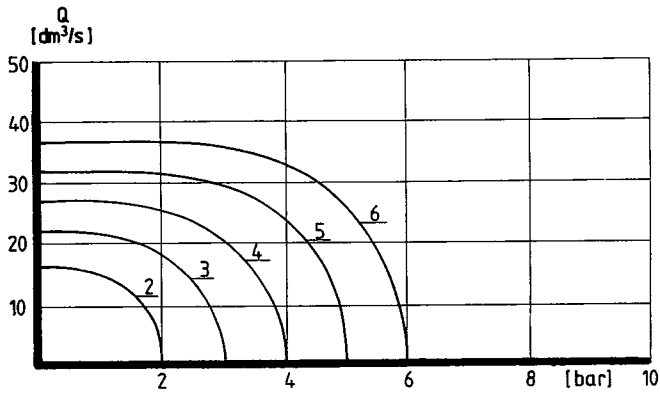
Flowing-through depends on the accepted pressure loss. Flow volume at particular inlet pressure (p_1) can be read in the diagram by means of outlet pressure (p_2)



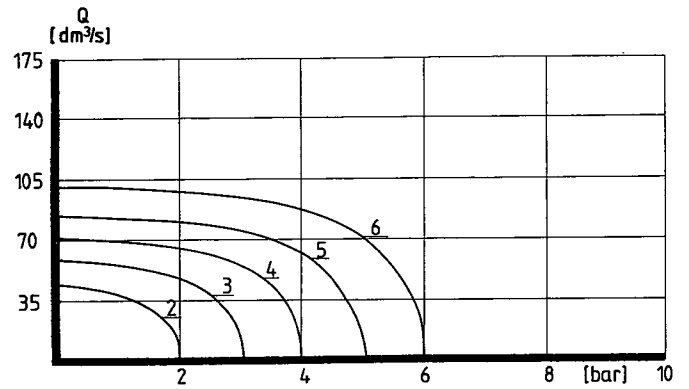
FLOWING CURVES:

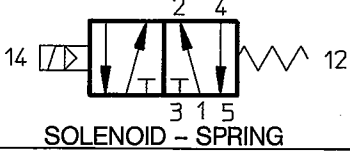


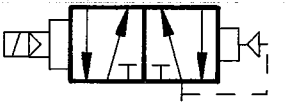



1. outlet pressure
e.g. $p_2 = 5$ bar
2. inlet pressure
e.g. $p_1 = 6$ bar
3. valve flow-through
e.g. $Q = 26 \text{ dm}^3/\text{s}$

**Series 3122 and 5122
G1/4"**



**Series 3124 and 5124
G1/2"**



SYMBOL AND ACTUATION	SIZE	ORDER NO.	PILOT PRESSURE	RESPONSE TIME in/out	WEIGHT
 SOLENOID - SPRING	G1/4" G1/2"	5122-45-2* 5124-45-2*	3-10 bar 3-10 bar	15/52 ms 24/150 ms	380 g 1020 g
 SOLENOID - SOLENOID	G1/4" G1/2"	5122-44-2* 5124-44-2*	2-10 bar 2-10 bar	14 ms 23 ms	470 g ^a 1130 g
 SOLENOID - PRESSURE	G1/4" G1/2"	5122-42-2* 5124-42-2*	2-10 bar 2-10 bar	14 ms 23 ms	380 g 1010 g
 SOLENOID - AIR RETURN	G1/4" G1/2"	5122-41-2* 5124-41-2*	≥ operating pressure min. 3 bar	25/38 ms 35/75 ms	380 g 1020 g
 PRESSURE - SPRING	G1/4" G1/2"	5122-25-2 5124-25-2	3-10 bar 3-10 bar		280 g 930 g
 PRESSURE - PRESSURE	G1/4" G1/2"	5122-22-2 5124-22-2	2-10 bar 2-10 bar		280 g 940 g
 PRESSURE - AIR RETURN	G1/4" G1/2"	5122-21-2 5124-21-2	≥ operating pressure min. 3 bar		280 g 930 g

* The coil voltage is to be added to the order No., e.g. 5122-45-2-24 V DC.

Pressure range:

When using internal pilot pressure, inlet pressure on port 1 must be higher than minimum pilot pressure given above. Underdimensioned inlet line may result in pilot pressure falling under minimum level.

Valves with external pilot pressure:

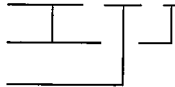
Solenoid operated valves are also available with external pilot pressure connection on request. U is then added to the order No.

ORDERING EXAMPLE:

5122-45-2 U-24 V DC

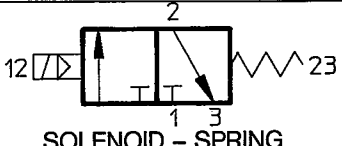
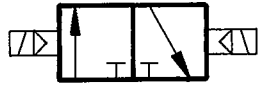
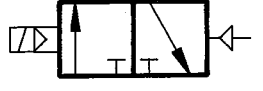

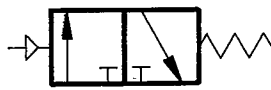

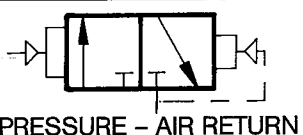
Valve series

Actuation



Voltage

Sign of external pilot pressure (when needed)

SYMBOL AND ACTUATION	SIZE	ORDER NO.	PILOT PRESSURE	RESPONSE TIME in/out	WEIGHT
 <p>SOLENOID - SPRING</p>	G1/4" G1/2"	3122-45-2- 3124-45-2-*	3-10 bar 3-10 bar	15/52 ms 24/150 ms	310 g 820 g
 <p>SOLENOID - SOLENOID</p>	G1/4" G1/2"	3122-44-2- 3124-44-2-*	2-10 bar 2-10 bar	14 ms 23 ms	410 g 920 g
 <p>SOLENOID - PRESSURE</p>	G1/4" G1/2"	3122-42-2- 3124-42-2-*	2-10 bar 2-10 bar	14 ms 23 ms	310 g 830 g
 <p>SOLENOID - AIR RETURN</p>	G1/4" G1/2"	3122-41-2- 3124-41-2-*	≥ operating pressure min. 3 bar	25/38 ms 35/75 ms	310 g 820 g
 <p>PRESSURE - SPRING</p>	G1/4" G1/2"	3122-25-2 3124-25-2	3-10 bar 3-10 bar		220 g 720 g
 <p>PRESSURE - PRESSURE</p>	G1/4" G1/2"	3122-22-2 3124-22-2	2-10 bar 2-10 bar		220 g 730 g
 <p>PRESSURE - AIR RETURN</p>	G1/4" G1/2"	3122-21-2 3124-21-2	≥ operating pressure min. 3 bar		220 g 720 g

* The coil voltage is to be added to the order No., e.g. 3122-44-2-220/50 V AC.

Pressure range:

When using internal pilot pressure, inlet pressure on port 1 must be higher than minimum pilot pressure given above. Underdimensioned inlet line may result in pilot pressure falling under minimum level.

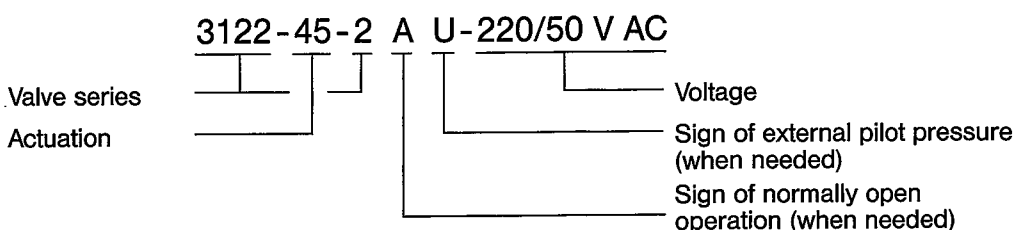
Valves with external pilot pressure:

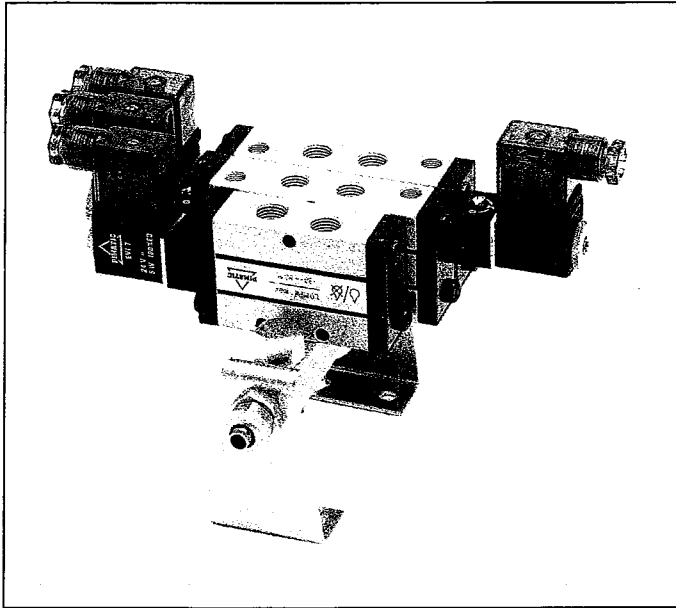
Solenoid operated valves are also available with external pilot pressure connection on request. U is then added to the order No.

Normally open operation:

Valves are also available normally open. A is then added to the order No.

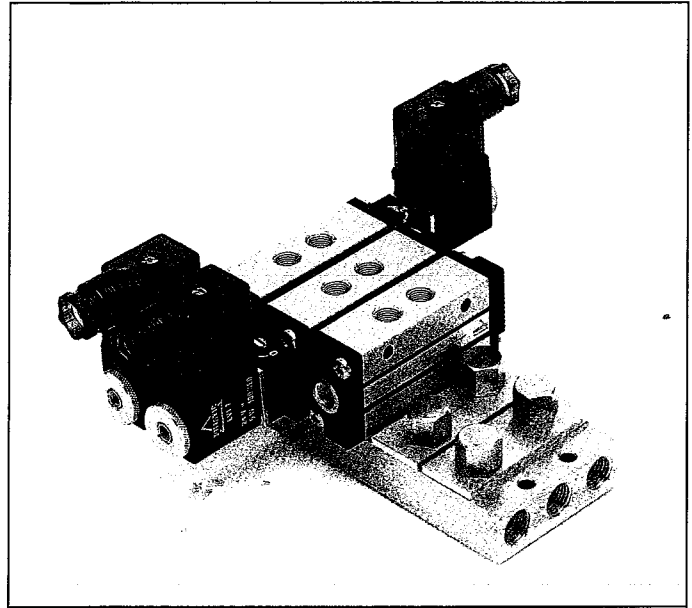
ORDERING EXAMPLE:





COMMON INPUT MANIFOLD

The valve is mounted on pressure port with one banjo bolt.



MANIFOLD SUB-BASE

For 5 port valves. The valve is mounted on exhaust ports with two banjo bolts or with flow regulators.

SIZE	DESCRIPTION	ORDER NO.	CONNECTION	DIMENSIONS b x l x s	WEIGHT
G1/4" Series 3122- and 5122	Rail mounting kit Common input manifold Angle fastenings	KAS-1/4-n PK-1/4-n AS-1/4	G3/8" G3/8"	20x(56+n x 26)x20	228+n x 36 g 8+n x 13 g 220 g
	Manifold sub-base mounting kit Manifold sub-base Dummy base	TAS-1/4-n AT-1/4-n TPL-1/4	G3/8" G3/8"	80x(33+n x 27)x22 80x25x3	110+n x 116 g 110+n x 70 g 15 g
	Banjo bolt Plug Flow regulator	MC 25-1/4 RA 020-1/4 OR-1/4			23 g 20 g 31 g
G1/2" Series 3124 and 5124	Rail mounting kit Common input manifold Angle fastenings Banjo bolt Plug	KAS-1/2-n PK-1/2-n AS-1/2 MC 25-1/2 RA 020-1/2	G3/4" G3/4"	30x(71+n x 45)x30	548+n x 128 g 98+n x 45 g 450 g 83 g 38 g

Manifolds are made of aluminium, and are available for 4, 6 and 8 valves. Other multiples on request.

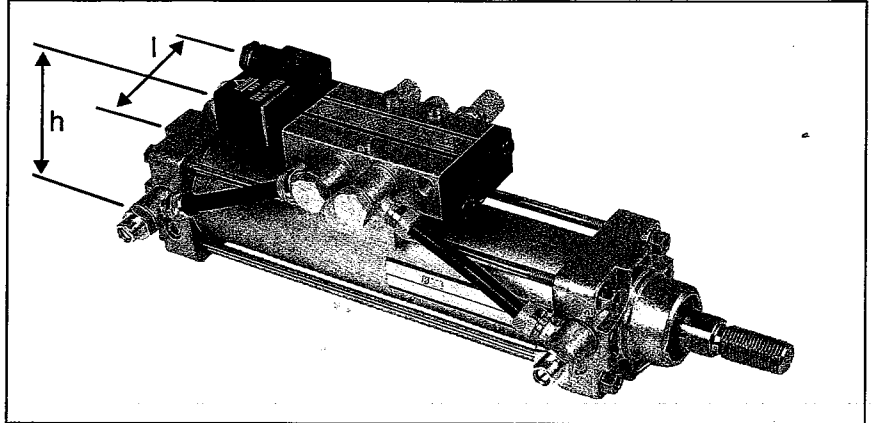
Mounting kits include a manifold sub-base or common input manifold with fastenings, and banjo bolts. Plugs and dummy bases must be ordered separately.

b x l x s = breadth x length x depth
n = number of valves

CYLINDER/VALVE COMBINATIONS:

Valves of series 5122 and 3122 can be mounted to tie rods of our ISO cylinders by means of a mounting part. Mounting parts must be ordered separately as per table below.

CYLINDER ∅ mm	ORDER NO.	h x l mm
40	44414	81 x 76
50	44415	93 x 89
63	44416	101 x 118



SYSTEMS DIMENSIONING:

AIR CONSUMPTION N dm ³ /s out stroke, p = 6 bar	5		10		50		100				
	0.50		0.40		0.35	0.30	0.25				
V = m/s	32	40	50	63	80	100	125	160	200	250	320
Cylinder	G1/8"		G1/4"		G3/8"		G1/2"		G3/4"		G1"
Flow regulators	6/4		8/6		10/8 12/10		15/12,5		20x1,5		25x1,5
Tubes	G1/8"		G1/4"		G1/2"						
Valve	ISO 1 / G1/8"		ISO 1 / G1/4"		ISO 2 / G3/8"		ISO 3 / G1/2"		ISO 4 / G3/4"		ISO 5 / G1"
Supply tube	8/6		10/8		12/10 15/12,5		18x1		22x1,5		28x1,5
Service unit	G1/4"		G3/8"		G1/2"		G3/4"		G1"		G1 1/4"

Example: Cylinder ∅ 63 mm

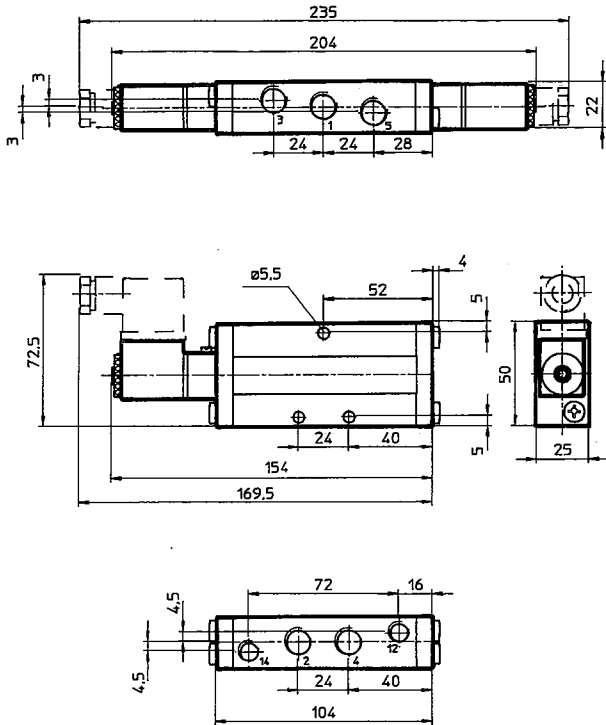
- Flow regulators G 1/4"
- Tubes 8/6

- Valve G1/4" or ISO 1
on sub-base G1/4"

- Supply tube 10/8
- Service unit G3/8"

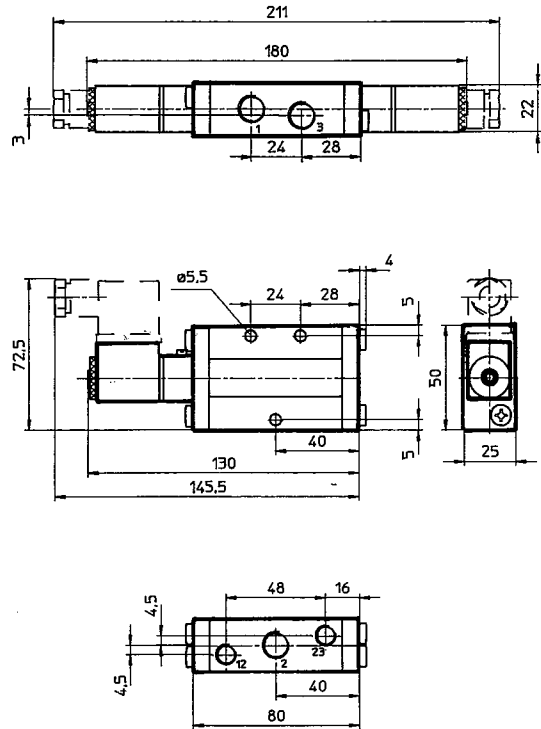
Series 5122

Ports 1-5 G1/4", 12 and 14 G1/8"

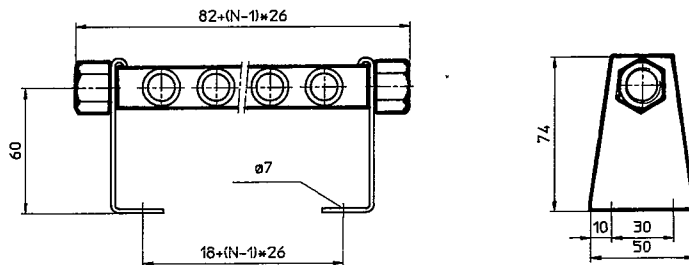


Series 3122

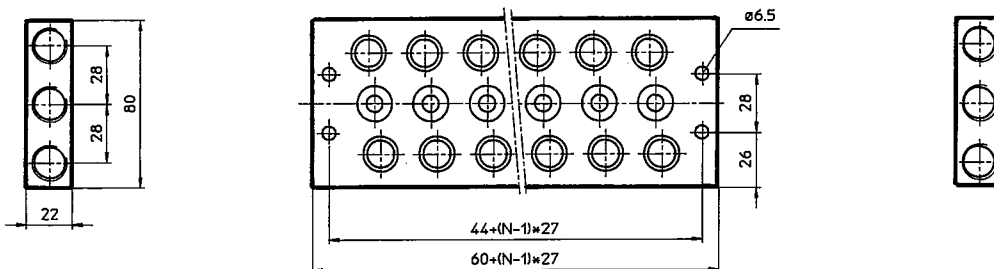
Ports 1-3 G1/4", 12 and 14 G1/8"



Common input manifold PK-1/4-n + Fastenings AS-1/4
Port 1 G3/8"

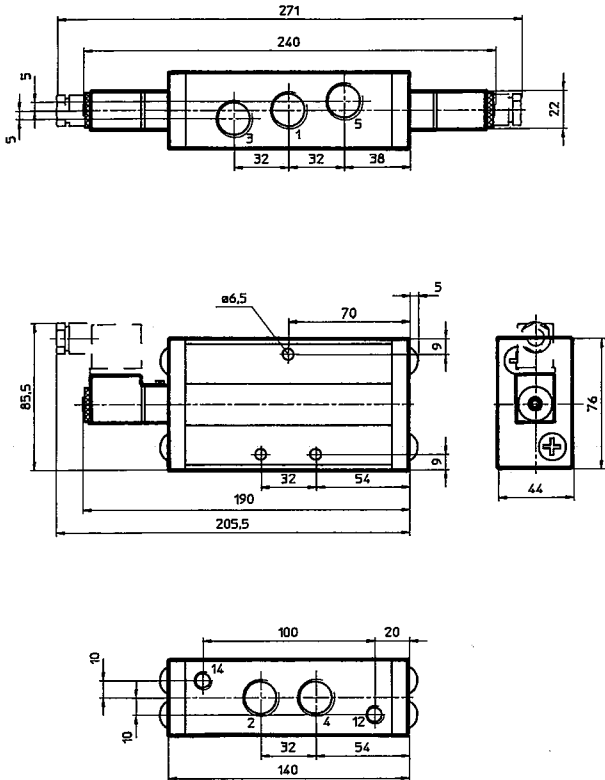


Manifold sub-base AT-1/4-n
Ports 1,3 and 5 G3/8", 2 and 4 G1/4"



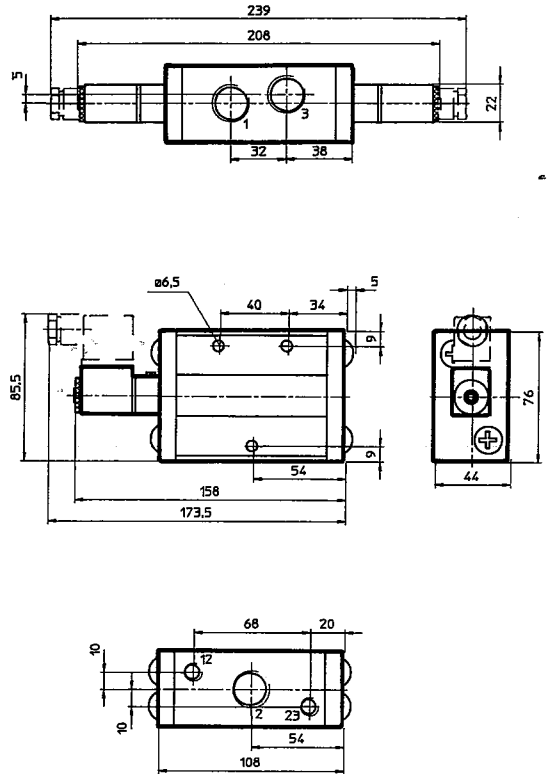
Series 5124

Ports 1-5 G1/2", 12 and 14 G1/8"



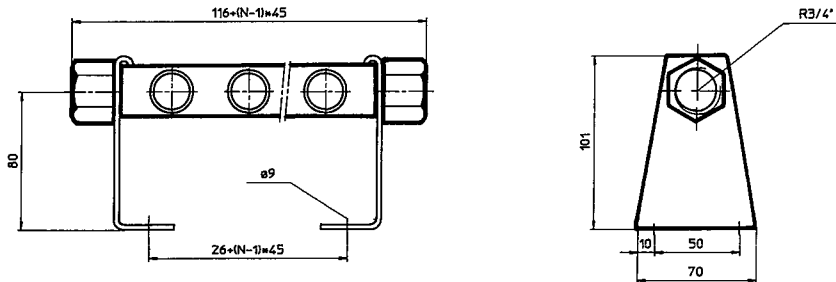
Series 3124

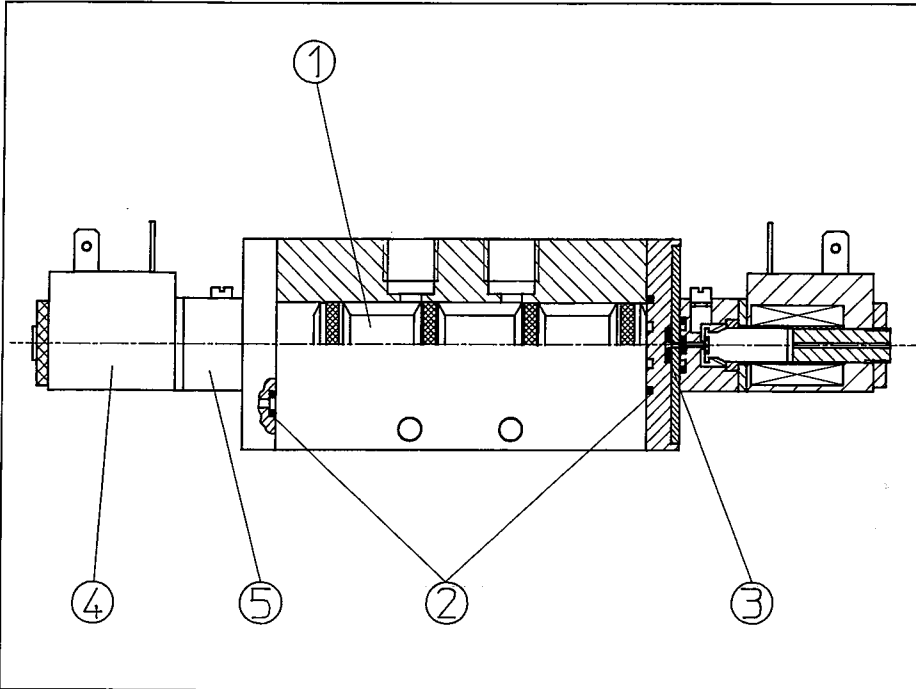
Ports 1-3 G1/2", 12 and 14 G1/8"



Common input manifold PK-1/2-n + Fastenings AS-1/2

Port 1 G3/4"





Following repair kits and electrical spares are available:

Repair kits:

Contents of repair kit:

1. Spool with seals (also spring, if spring-return)
2. O-rings for sealing of end caps (6 pcs)
3. Seal between control unit and end cap

Electrical spares:

4. Solenoid assembly
5. Pilot valve

Other spare parts as per agreement.

VALVE SIZE AND TYPE	OPERATION /RETURN	ORDER NO. OF REPAIR KIT
G1/4"	Series 5122 5/2 spring return 5/2 actuated both ways 5/2 air spring return	5122-25/-45-2 5122-22/-44/-42-2 5122-21/-41-2
	Series 3122 3/2 spring return 3/2 actuated both ways 3/2 air spring return	3122-25/-45-2 3122-22/-44/-42-2 3122-21/-41-2
G1/2"	Series 5124 5/2 spring return 5/2 actuated both ways 5/2 air spring return	5124-25/-45-2 5124-22/-44/-42-2 5124-21/-41-2
	Series 3124 3/2 spring return 3/2 actuated both ways 3/2 air spring return	3124-25/-45-2 3124-22/-44/-42-2 3124-21/-41-2

SOLENOID ASSEMBLY:
EVI 7-*

PILOT VALVE:
344-35-**

* Add coil voltage to the Order No., e.g. EVI 7-220/50.

** Add coil power to the Order No., e.g. 344-35-5 W.

The right to modification is reserved.