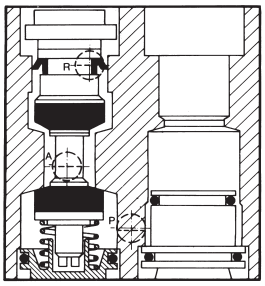
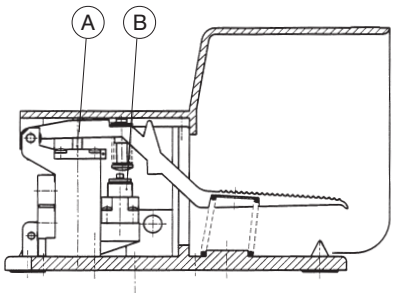
Mechanical characteristics
Foot valve body and protection in nylon with steel reinforcing plate.
Valve body in die-cast zinc alloy (zamak).
Seals in oil/wear-resistance compound.

Pneumatic characteristics
Max working pressure: 10 bar
Ambient temperature: -10 ÷ 70°C
Fluid temperature: -10 ÷ 50°C
Operation with or without lubrication.
Capacity: 800 Nl/min

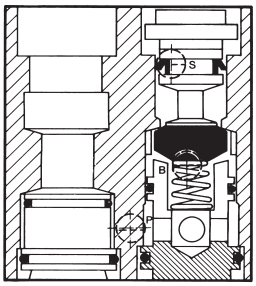
3/2 NC valve body

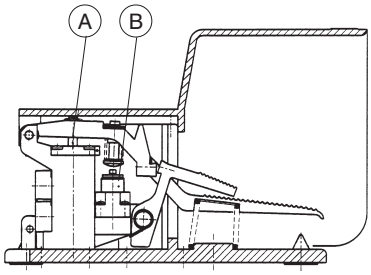




Servoassisted pedal with spring return. Direct operation (A) or pneumatically assisted (B).

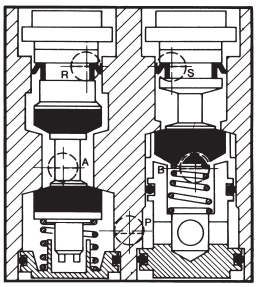
3/2 NO valve body

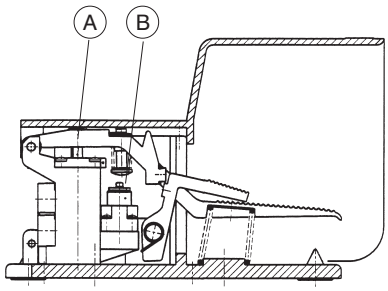




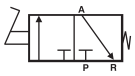
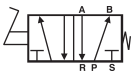
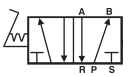
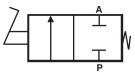
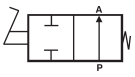
Servoassisted pedal with two positions (bistable). The pedal must be deeply pressed. The unlocking pedal brings the pedal back to the starting position.

5/2 valve body

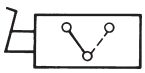




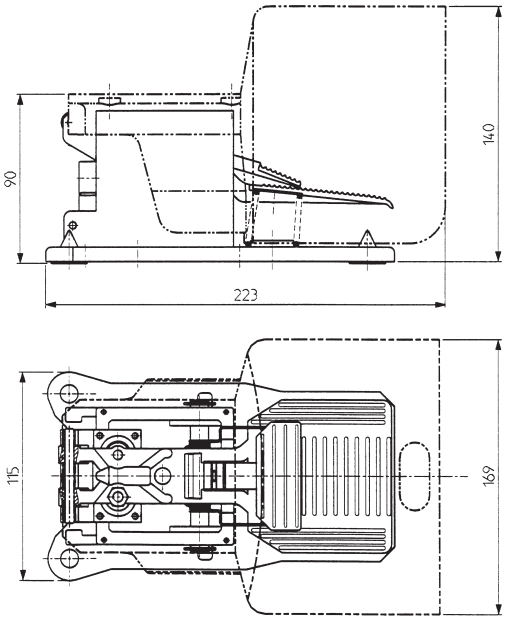
Servoassisted pedal with safety device. Operation is possible only by pushing both pedals at the same time. Pedals return to the starting position simply by releasing them. In this case unintentional operation is avoided.

Pneumatic pedal	Symbol	Control	Return	Ways	Connec-tions	Ø mm	Capacity Nl/min	Force (N)	Mass kg	Part number
		Pedal	Spring	3/2 NC	M 5	2,3	98	20	0,92	AM-5053
					G 1/8	2,3	98	20	0,96	AM-5043
					G 1/4	6	800	20	1,25	AM-5000
		Pedal	Spring	5/2	G 1/4	6	800	20	1,45	AM-5001
			Pedal		G 1/4	6	800	20	1,52	AM-5004
		Pedal	Spring	2/2 NC	M5	2,3	98	20	0,92	AM-5053B
					G 1/8				0,96	AM-5043B
				2/2 NO	M5	2,3	98	20	0,92	AM-5053D
					G 1/8				0,96	AM-5043D

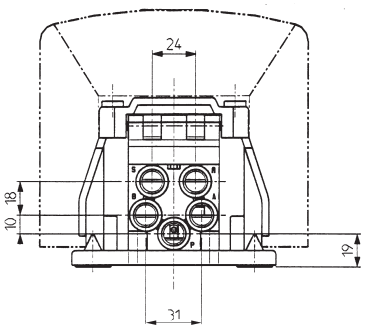
Upon request: operation with pedal provided with safety stop - servoassisted pedal - servoassisted pedal with safety control - NO valves 3/2

Electric pedal	Symbol	Description	Force N	Mass Kg	Part number
		pedal without electric microswitch	20	0,86	AM-5050
		pedal with electric microswitch	20	0,92	AM-5051
		pedal with double electric microswitch	20	0,95	AM-5052
		Body, protection and pedal in dielectric plastic material			

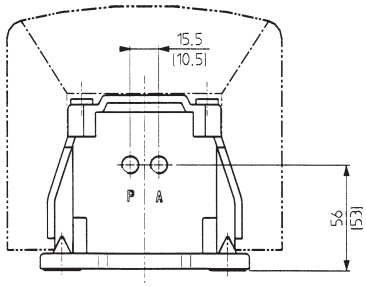
2/2 - 3/2 NC, NO 5/2 - M5 - G 1/8 - G 1/4 pneumatic pedals
Poppet system



G 1/4



G 1/8 (M5)

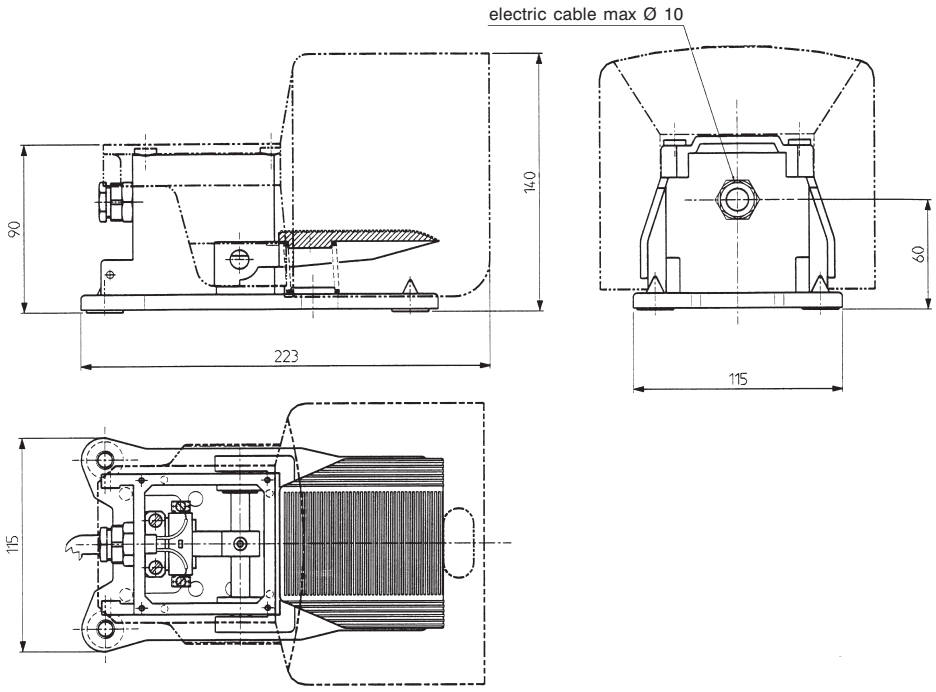


P (1) = Supply
A-B (4-2) = Consumption
R-S (5-3) = Exhaust

Threaded connections for different functions (G 1/4 valves):

2/2 NC	2/2 NO	3/2 NC	3/2 NO	5/2
A-P	B-P	A-P-R	B-P-S	A-B-P-R-S

Electric pedal



Flow–control valves are used mainly where there is a need to regulate piston speed in double or single acting pneumatic cylinders. They are also used to regulate air flow, where necessary. The unidirectional flow regulator allows flow regulation in one direction only (indicated on the apparatus), and the bidirectional version in both directions.

TECHNICAL CHARACTERISTICS

Body in anodized aluminium alloy or painted zamak
Oil-resistant seals
Brass regulation pin with non-removable lock
Max. working pressure: 12 bar

Ambient and fluid temperature: -20 ÷ 80 °C
Seal closing and opening movements are automatic and work without the help of adjustment springs

OPERATING PRINCIPLES AND FLOW-CAPACITY CHARACTERISTICS

Flow regulators with M5 - G 1/8 - G 1/4 - G 3/8 - G 1/2 connections

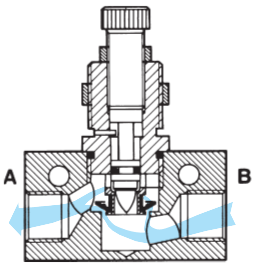


Fig. 1: air direction with free flow

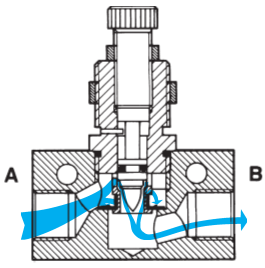
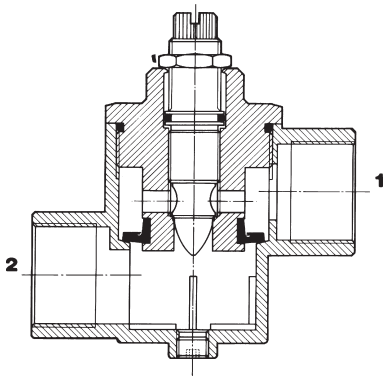
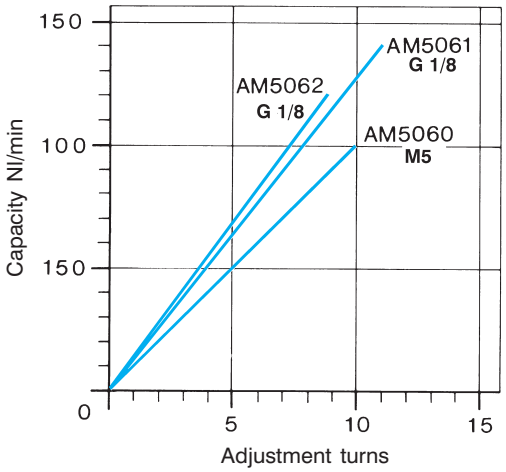
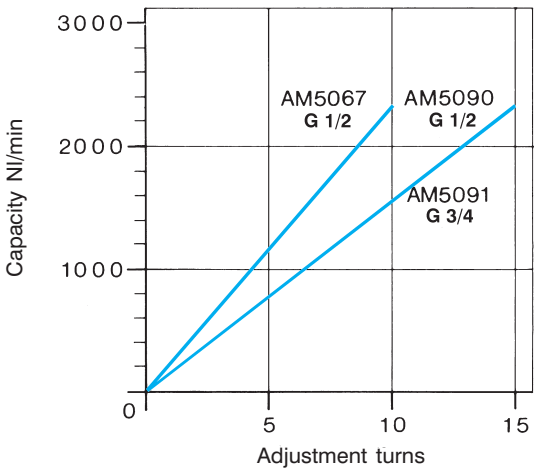


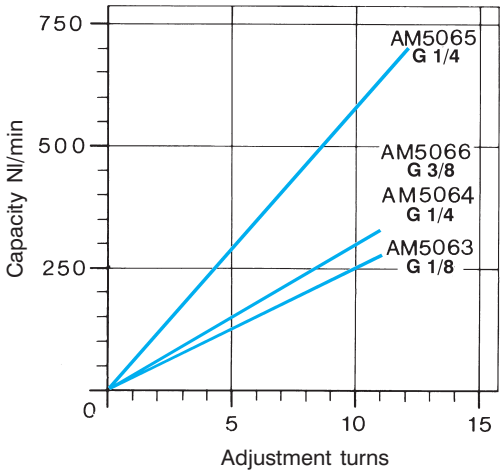
Fig. 2: air direction with regulated flow

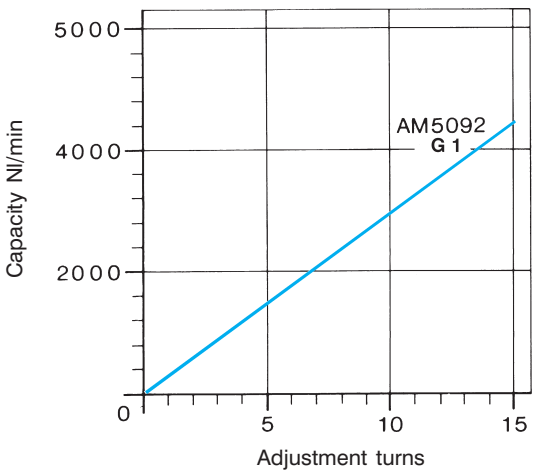
Flow regulators with G 1/2 - G 3/4 - G 1 connections







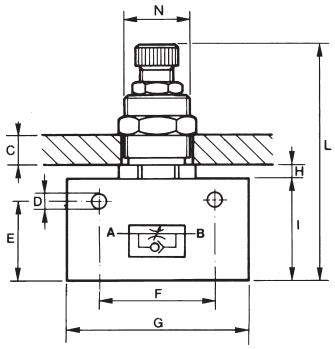




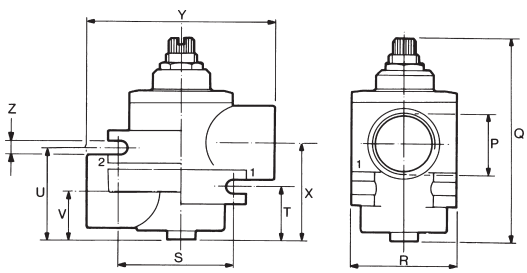
Type	Symbol	Connec-tions	Capacity Nl/min regulated	free	Ø Orifice mm regulated	free	Pressure bar	Mass kg	Part number
M5 - G 1/8 - G 1/4 - G 3/8 - G 1/2 unidirectional and bidirectional flow regulators									
M5 ÷ G 1/2 	 unidirectional regulation	M5	99	125	1	2	0 ÷ 12	0,06	**AM-5060**
		G 1/8	140	410	1	5		0,05	**AM-5061**
		G 1/8	120	470	2,25	5		0,05	**AM-5062**
		G 1/8	280	520	3,5	5		0,05	**AM-5063**
		G 1/4	350	890	5	7		0,12	**AM-5064**
		G 1/4	700	900	6	7		0,12	**AM-5065**
		G 3/8	350	980	6	7		0,11	**AM-5066**
		G 1/2	2200	2800	9	12		0,22	**AM-5067**
	 bidirectional regulation	M5 •	99		1		0 ÷ 12	0,06	**AM-5070**
		G 1/8 •	140		1			0,05	**AM-5071**
		G 1/8 •	120		2,25			0,05	**AM-5072**
		G 1/4	350		5			0,12	**AM-5074**
		G 3/8	350		6			0,11	**AM-5076**
		G 1/2	2200		9			0,22	**AM-5077**
G 1/2 - G 3/4 - G 1 unidirectional flow regulators									
G 1/2 ÷ G 1 		G 1/2	2300	4500	9	15		0,42	**AM-5090**
		G 3/4	2300	4500	9	15		0,35	**AM-5091**
		G 1	4200	5500	12	24		0,83	**AM-5092**

•The locking nut is included.
For G 1/4 - G 1/2 -G 3/8 connections, the locking nut must be ordered separately (part number **AM-5100**).

Overall dimensions



Connec-tions A	B	max. C	D	E	F	G	H	I	L min-max	M	N	O
M5	10	6	3,5	17	19	25	4	23	48-55	7	M 12x1	15
G 1/8	8	6	4,5	18	25	35	4	23	48-55	7	M 12x1	15
G 1/4	11	14	6,3	23,5	35	52	4	30	69-76	10	M 20x1,5	25
G 3/8	11	14	6,3	23,5	35	52	4	30	69-76	10	M 20x1,5	25
G 1/2	18,5	18	6,5	35	44	65	5	40	82-92	15	M 20x1,5	30



Connections P	Q min-max	R	S	T	U	V	X	Y	Z
G 1/2 - G 3/4	92 - 102	40	43	25	41	22	47	67	6,245
G 1	108 - 121	57	58	30	50	26	53	101	8,25

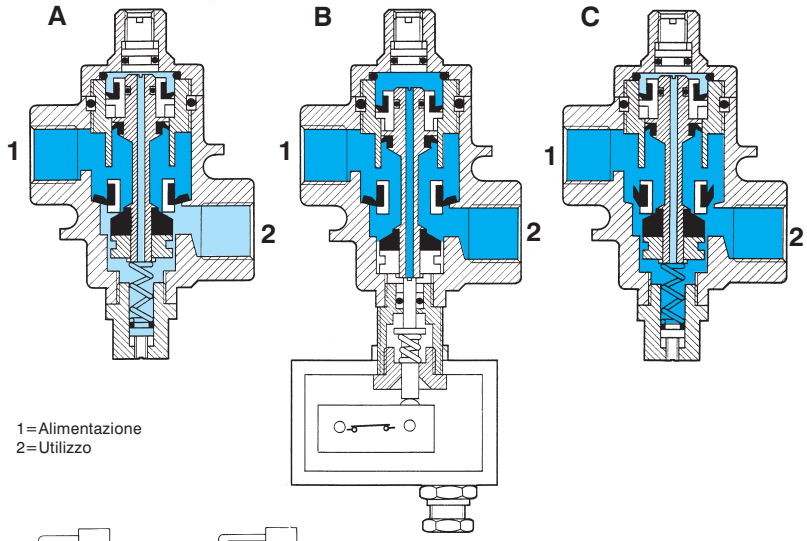
The gradual starter (patented) is used in pneumatic circuits where a cut-off in pressure, an abrupt start-up is to be avoided to prevent possible damages to equipment.

TECHNICAL CHARACTERISTICS

Max. working pressure: 10 bar
Ambient and fluid temperature: -20 ÷ 80°C

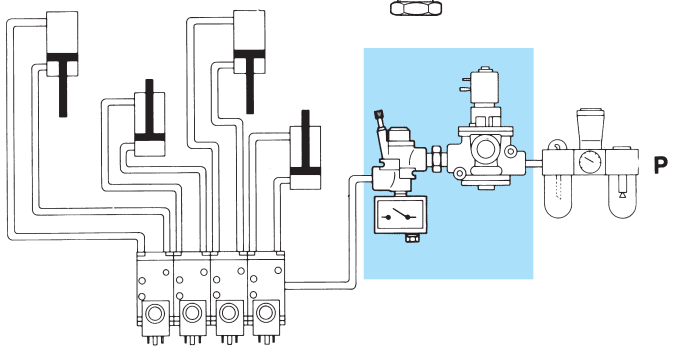
Valve body: die-cast zamak
Oil resistant seal
Fluid: filtered air, with or without lubrication

FUNCTIONING PRINCIPLE



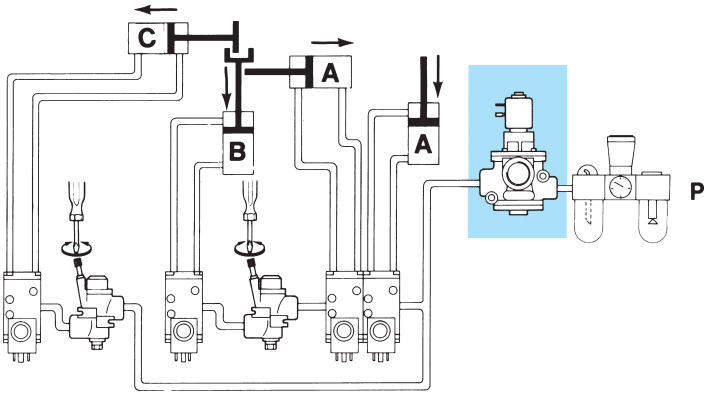
1=Alimentazione
2=Utilizzo

The gradual starter is a 2–way valve which, in the stand–by position, allows the passage of an air regulated flow (A). When the working pressure is reached the valve allows the full passage of the air by remaining open even when pressure falls to 2 ÷ 2,5 bar. Coupled with an NO electrical swith the valve gives a contemporary pneumatic and electrical reply (B). When pressure is blocked, air exhausts through the unidirectional seals (C).

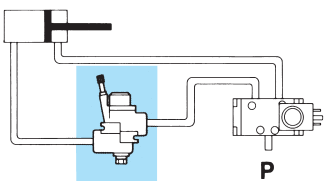


Advantages
It prevents accidents and possible damages to the parts of the equipments.
It reduces wear in pneumatic equipments and contributes to the synchronisation of the actuator movements after stopping.
It can be installed on existing equipments without modifications.

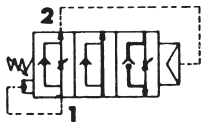
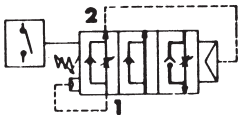
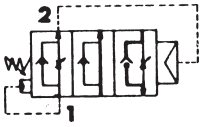
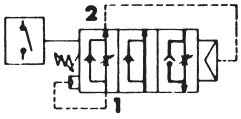
When the starter is applied after the 3–way valve the cylinders can be progressively positioned. If an electrical reply is given, the integration of the starter will allow the reading of the complete opening, guaranteeing the operator complete starting safety.



The starter can act as plant selector if correctly applied and regulated and position cylinders according to a fixed sequence. The sequence of the example is A – B – C.

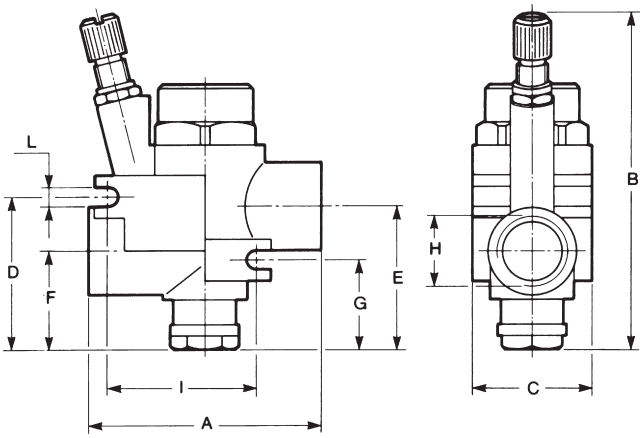


When the starter is inserted between the valve and the cylinder the rod will exit at low pressure up to max. stroke. At this point the automatic release of maximum pressure is reached.

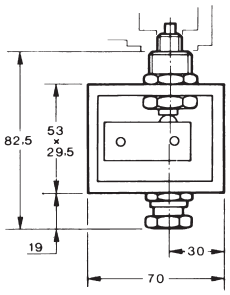
Type	Connections	Ø mm	Capacity Nl/min.	Description	Mass kg	Patr number
	G 1/8	6,5	620	with manual regulation 	0,12	**AM-5240**
	G 1/4	6,5	620		0,11	**AM-5241**
	G 1/4	9,5	2100		0,18	**AM-5242**
	G 3/8	9,5	2100		0,16	**AM-5243**
	G 1/4	9,5	2100	with electrical switch 	0,18	**AM-5242 E**
	G 3/8	9,5	2100		0,16	**AM-5243 E**
	G 1/2	15	3500	with manual regulation 	0,37	**AM-5254**
	G 3/4	15	3500		0,33	**AM-5255**
	G 1	24	6800		0,75	**AM-5256**
	G 1/2	15	3500	with electrical switch 	0,51	**AM-5259**
	G 3/4	15	3500		0,47	**AM-5260**
	G 1	24	6800		0,75	**AM-5261**

Overall dimensions

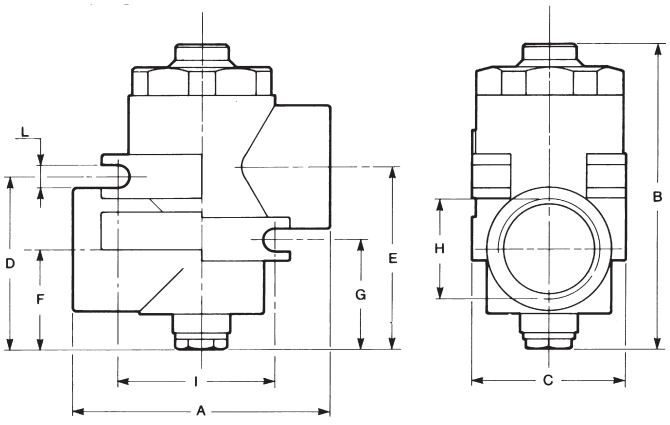
Gradual starters with G 1/8 - G 1/4 connections



Electrical switch

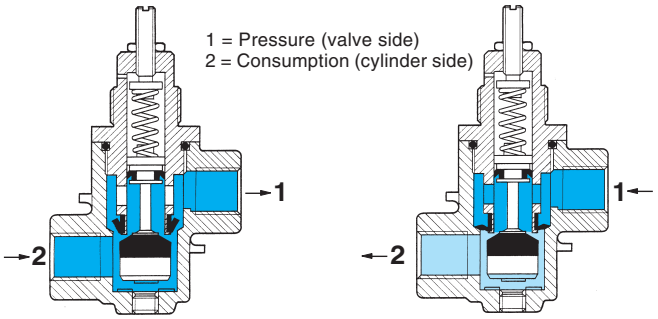


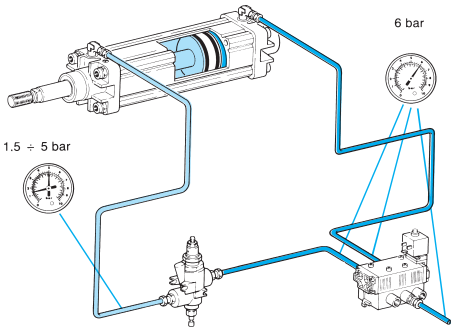
Gradual starters with G 1/4 - G 3/8 - G 1/2 - G 3/4 - G 1 connections



A	B	C	D	E	F	G	H	I	L
46	61÷67	24	31	29	20	18,5	G 1/8 G 1/4	31	4,25
50	64÷71	28	35	38	21	24,5	G 1/4 G 3/8	37	5,25
67	86	40	46	48	27	28,5	G 1/2 G 3/4	42	6,25
101	107	56,5	54	57,5	30	33,5	G1	59,5	8,25

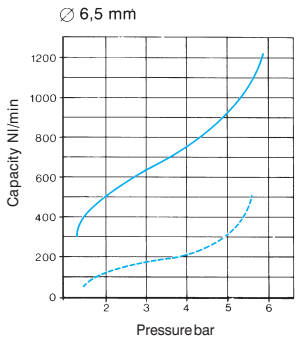
The economizer is generally used in those pneumatic equipments which require energy saving. The economizer with G 1/8 to G 1 connections functions as a pressure reducer, in one direction, with 1 to 5 bar regulation, and has free return on the opposite direction.
Applications: • Cylinders with different thrusts • Pneumatic clampings • Pneumatic presses • Elimination of the simple-acting cylinder and passing to a double-acting one • Low pressure (0,5 ÷ 2 bar) and differentiated pressure cylinders.

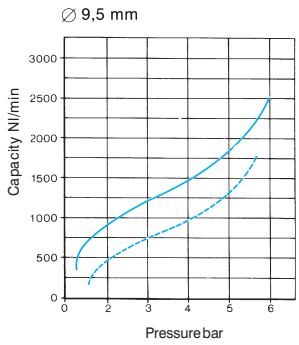


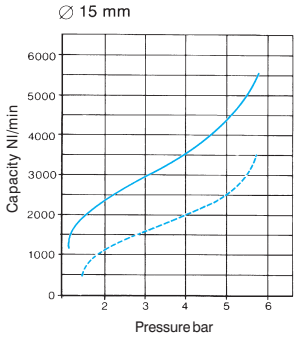


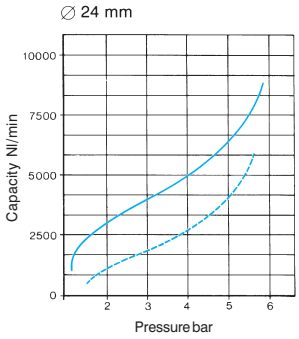
Flow from 1 to 2 – – – – – –

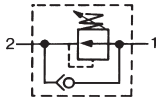
Flow from 2 to 1 ———



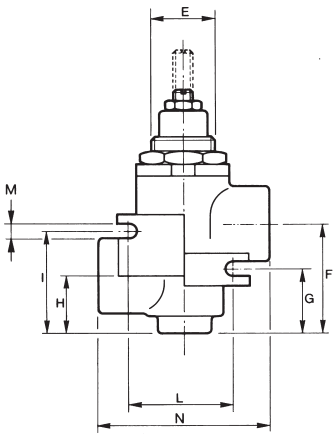


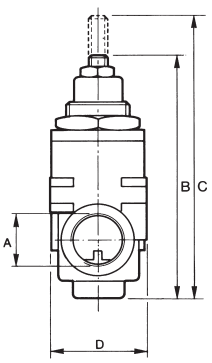




Type	Symbol	Version	Ports	Ø mm	Capacity Nl/min	Mass kg	Part number
		Manually controlled	G 1/8	6,5	700-900	0,10	**AM-5350**
			G 1/4	6,5	700-900	0,10	**AM-5351**
			G 1/4	9,5	1200-2000	0,17	**AM-5352**
			G 3/8	9,5	1200-2000	0,16	**AM-5353**
			G 1/2	15	3500-5000	0,33	**AM-5354**
			G 3/4	15	3500-5000	0,34	**AM-5355**
			G 1	24	5200-7500	0,84	**AM-5356**

Overall dimensions





A	B	C	D	E	F	G	H	I	L	M	N
G 1/8 G 1/4	82	102	23,5	M 14x1	25	14	15,5	26,5	31	4,25	46
G 1/4 G 3/8	94	106	27,5	M 18x1	34	20	17	30,5	37	5,25	50
G 1/2 G 3/4	105	125	40	M 22x1	44	24,5	22	41,5	42	6,25	67
G 1	139	155	56,5	M 40x1	53	28,5	26	50	49,5	8,25	101

G 1/8 cap included.
For the panel, a fixing ring nut must be ordered:

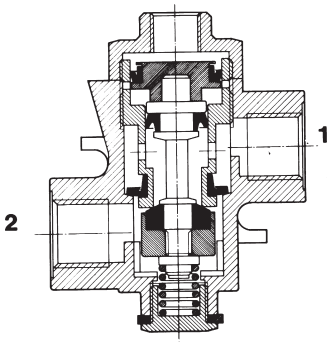
AM-5230 (G 1/8 - G 1/4) **AM-5231** (G 1/4 - G 3/8)
AM-5232 (G 1/2 - G 3/4) **AM-5233** (G 1)

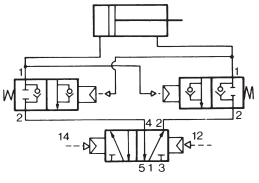
Unidirectional blocking valves are safety devices which can block the cylinder rod when, accidentally, the pressure fails. Bidirectional blocking valves are used to block the cylinder rod when the bistable 5/2 valve that controls it has deenergized pilots. In this case the 5/3 function is obtained.

Max. working pressure: 10 bar
Ambient and fluid temperature: -20 ÷ +180 °C
Fluid temperature: 50°C max.

Body: die–cast zamak
Oil proof seals
Fluid: filtered air with or without lubrication

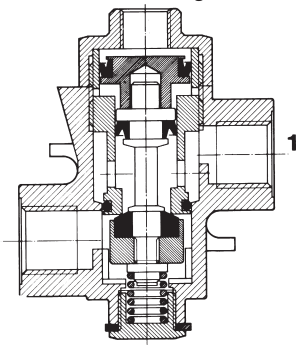
Undirectional blocking valve

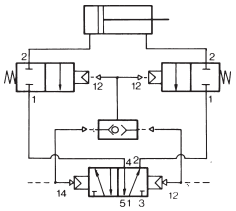




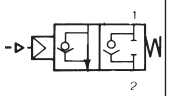
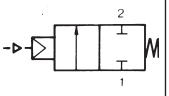
Functioning: the valve in rest position allows the air flow from 2 to 1; air flows from 1 to 2 only when it receives the control signal.
Use: when mounted on the cylinder (opening 1 connected to the cylinder) the valve blocks the cylinder when pressure accidentally fails.

Bidirectional blocking valve



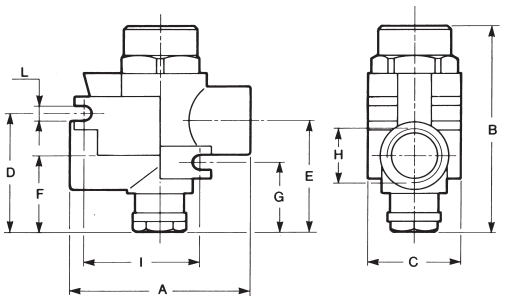


Functioning: the valve allows the air flow from 2 to 1 (or from 1 to 2) only when it receives the control signal.
Use: when mounted on the cylinder openings it allows the 3 position operation (closed centres) although a 5/2 valve controls the cylinder. This is reached by connecting the opening 2 to the cylinder, the opening 1 to the 5/2 valve and controlling the two valves at the same time through an OR. The OR inputs must be connected to the control impulses of the 5/2 valve.

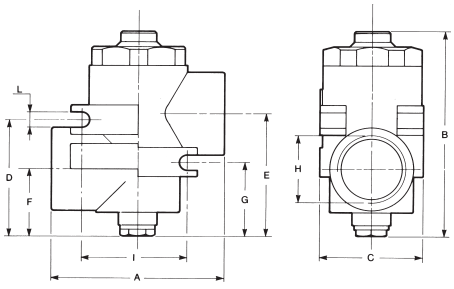
Type	Symbol	Function	Ports	Capacity Nl/min	Ø mm	Pressure bar	Mass kg	Part number
		unidirectional	G 1/8	620	6,5	1,5 ÷ 10	0,110	**AM-5500**
			G 1/4	620	6,5		0,110	**AM-5501**
			G 1/4	2100	9,5		0,110	**AM-5502**
			G 3/8	2100	9,5		0,150	**AM-5503**
			G 1/2	3500	15		0,360	**AM-5504**
		bidirectional	G 1/8	620	6,5	1,5 ÷ 10	0,110	**AM-5510**
			G 1/4	620	6,5		0,110	**AM-5511**
			G 1/4	2100	9,5		0,110	**AM-5512**
			G 3/8	2100	9,5		0,150	**AM-5513**
			G 1/2	3500	15		0,360	**AM-5514**

Overall dimensions

Blocking valves with G 1/8 - G 1/4 ports



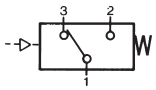
Blocking valves with G 1/4 - G 1/8 - G 1/2 ports



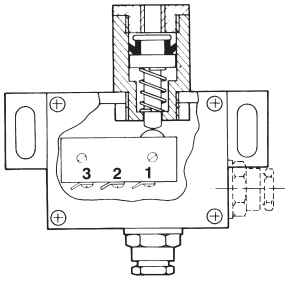
A	B	C	D	E	F	G	H	I	L
46	58	24	31	29	20	18,5	G 1/8 G 1/4	31	4,25
50	65	28	35	38	21	24,5	G 1/4 G 3/8	37	5,25
67	81	40	46	48	27	28,5	G 1/2	42	6,25

Pneumoelectric transducer

The pneumoelectric transducer is used to convert a pneumatic signal into an ON-OFF electric signal. An example of its application is the piloting of a solenoid valve or other electrical device when there is a pressure at a point in the system (the pressure can be of any value provided it falls between the minimum and maximum operating values).

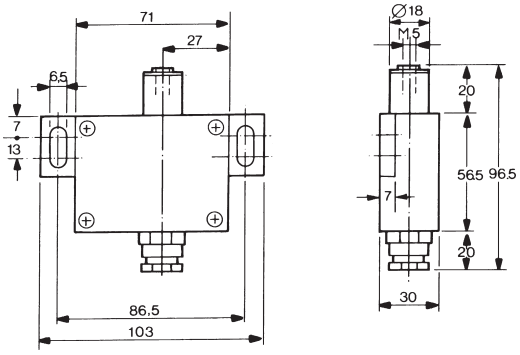
Type	Symbol	Description	Capacity	Ambient temperature	Pressure bar	Mass kg	Part number
		Body in dielectric material with fitting for wall mounting. IP 65 protection NO or NC function according to the connected terminals	16* A - 250 V 50 Hz 5** A - 250 V 50 Hz 3 A - 30 V c.c. * Resistive load ** Inductive load	–20 ÷ 80°C	0,8 ÷ 10	0,143	**AM-5200**

Functional scheme



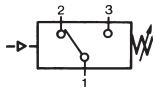
Terminals connection
1 = normal terminal
2 = NO terminal
3 = NC terminal

Overall dimesions

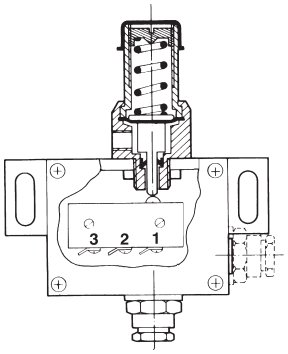


Calibrated pressure switch

The device is used when there is need of an ON-OFF electric signal at a pre-determined pressure in a plant (example: an electric reply to a solenoid valve).
The above-mentioned pressure value can be calibrated between 1 and 8 bar by means of an adjusting screw.

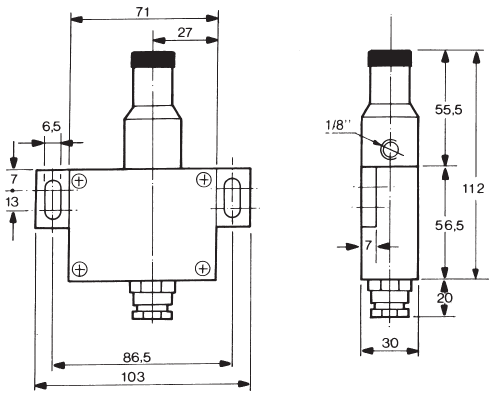
Type	Symbol	Description	Capacity	Ambient temperature	Pressure bar	Mass kg	Part number
		Body in dielectric material with fitting for wall mounting. IP 65 protection NO or NC function according to the connected terminals	16* A - 250 V 50 Hz 5** A - 250 V 50 Hz 3 A - 30 V c.c. * Resistive load ** Inductive load	–20 ÷ 80°C	1 ÷ 8 (max 10)	0,200	**AM-5220**

Functional scheme



Terminals connection
1 = normal terminal
2 = NO terminal
3 = NC terminal

Overall dimesions



G 1/2 - G 3/4 - G 1 check valves

Check valves are devices that let compressed air flow in just one direction.

TECHNICAL CHARACTERISTICS

Max. working pressure: 10 bar
Ambient and fluid temperature: -20 ÷ 80°C
Max. fluid temperature: 50°C

Body: die-cast zamak
Oil-proof seals
Fluid: filtered air

Type	Symbol	Ports	Ø mm	Capacity Nl/mm	Pressure bar	Mass kg	Part number
		G 1/2	15	4500	0 ÷ 10	0,354	**AM-5400**
		G 3/4	15	4500	0 ÷ 10	0,312	**AM-5401**
		G 1	24	7500	0 ÷ 10	0,740	**AM-5402**

OPERATING PRINCIPLE

Fig. 1

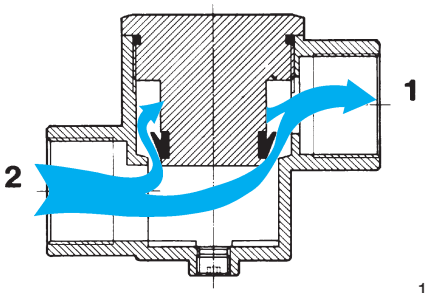
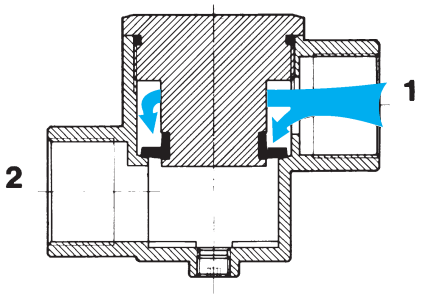


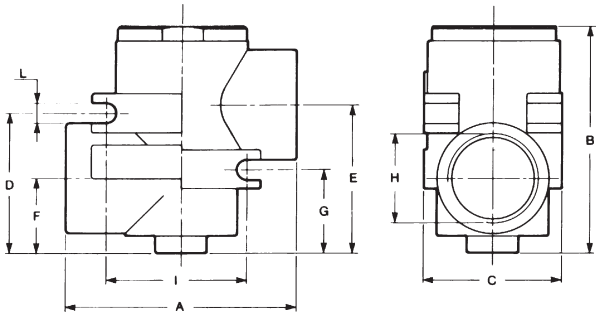
Fig. 2



1 =Consumption
2 =Pressure

Compressed air flows freely from 2 to 1 (fig.1), while it is stopped when it flows from 1 to 2 (fig.2)

Overall dimensions



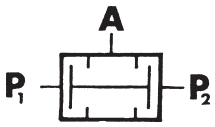
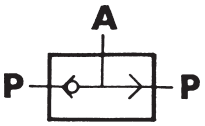
A	B	C	D	E	F	G	H	I	L
67	67	40	46	48	27	28,5	G 1/2 G 3/4	42	6,25
101	80	56,5	54	57,5	30	33,5	G 1	59,5	8,25

Signal processing valves

These valves suitable for power or control circuits allow to obtain an output signal provided there are both input signals (AND valve) or one of the two (OR valve). The two versions, threaded connections G 1/8 or quick couplings Ø 4x2, solve all application needs.

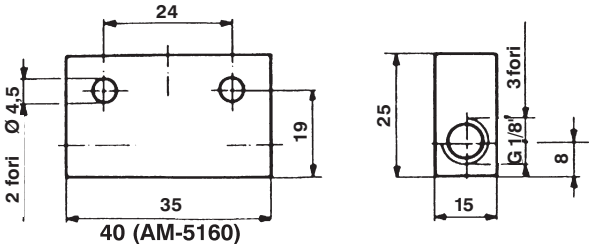
TECHNICAL CHARACTERISTICS

Max. working pressure: 1,5 ÷ 8 bar
Ambient temperature: -10 ÷ 75°C
Fluid temperature: 50°C
Fluid: compressed air or neutral gases.
Flow capacity at 6 bar: 300 Nl/min (version G 1/8 threaded connections) with nominal diameter 3,5 mm.
110 Nl/min (version with quick coupling 4x2) with normal diameter 2 mm.
Seals in oil-proof rubber.

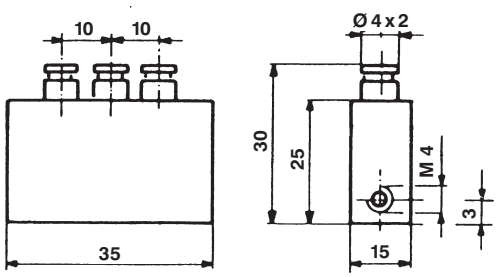
Type	Functioning principle	Connections	Part n°
Two pressure valve "AND"			
	 $A = P_1 \cdot P_2$ $P_1 - P_2$ = Pressure, A = Consumption	Threaded body G 1/8	**AM-5160**
		Quick couplings Ø 4x2	**AM-5161**
Selector valve "OR"			
	 $A = P + P$ P = Pressure, A = Consumption	Threaded body G 1/8	**AM-5162**
		Quick couplings Ø 4x2	**AM-5163**

Overall dimensions

Threaded connections G 1/8



Quick couplings pipe Ø 4x2



Accessories