

Diaphragm Type Air-piloted Valves Rc1/4~3/8

250-4, 2503-4 Series

Symbols

Spring return normal type (A type)	Spring return Internal pilot holding type (AA type)
5-port	
250-4A 2503-4A	250-4AA 2503-4AA

Specifications

Item	Basic model	A type (normal type)		AA type (internal pilot holding type)	
		250-4A	2503-4A	250-4AA	2503-4AA
Port size Rc	Main	1/4	3/8	1/4	3/8
	Pilot	1/8			
Effective area [Cv]	mm ²	15 [0.76]			
Media		Air			
Operating pressure range MPa [kgf/cm ²] [psi.]	Main	0.07~0.9 [0.7~9.2] [10~131]		0.2~0.9 [2.0~9.2] [29~131]	
	Pilot	See the table "Minimum Pilot Pressure"		0.2~0.9 [2.0~9.2] [29~131] (Use at the same pressure as the main pressure)	
Proof pressure	MPa [kgf/cm ²] [psi.]	1.35 [13.8] [196]			
Operating temp. range (atmosphere and media)	°C [°F]	5~60 [41~140]			
Maximum operating frequency	Hz	10			
Lubrication		Not required			
Mass	kg [lb.]	0.6 [1.3]			

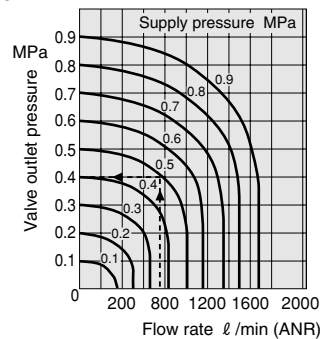
Note: Install speed controllers between the valve and cylinder.
Do not attempt to throttle the R port, and do not install a muffler with a large exhaust resistance.

Order Codes

Basic model		
Code	Specifications	
250-4A	Spring return (normal type)	Rc1/4
2503-4A		Rc3/8
250-4AA	Spring return (internal pilot holding type)	Rc1/4
2503-4AA		Rc3/8

Flow Rate

250-4A
2503-4A



How to read the graph

When the supply pressure is 0.5MPa [73psi.] and the flow rate is 740 l/min [26.1ft³/min.] (ANR), the valve outlet pressure becomes 0.4MPa [58psi.].

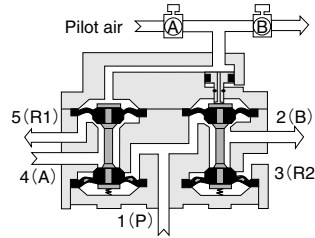
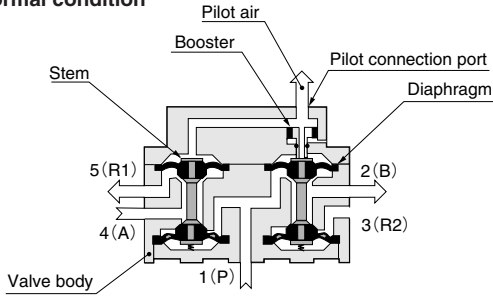
1MPa = 145psi., 1 l/min = 0.0353ft³/min.

Operating Principles, Major Parts and Materials

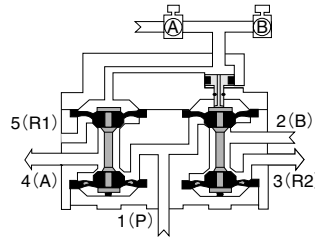
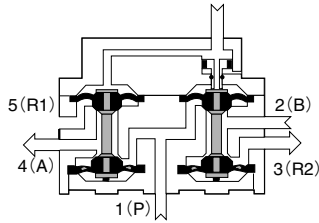
A type (normal type)

Internal pilot holding type (AA type)

● Normal condition



● Operating condition

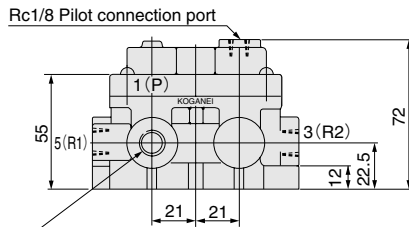


Parts	Materials
Body	Aluminum alloy (anodized)
Stem	Brass
Diaphragm	Synthetic rubber
Seal	

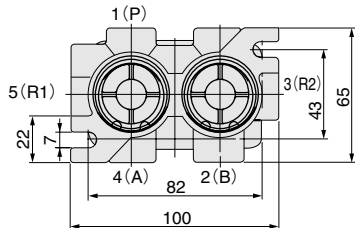
Note: For operation instructions, see p.940.

Dimensions (mm)

- 250-4A
- 250-4AA
- 2503-4A
- 2503-4AA



5-Rc1/4(250-4A, 250-4AA)
5-Rc3/8(2503-4A, 2503-4AA)



Minimum Pilot Pressure

Model	Main pressure MPa [psi.]					
	0.07 [10]	0.1 [15]	0.3 [44]	0.5 [73]	0.7 [102]	0.9 [131]
250-4A	0.15 [22]	0.18 [26]	0.27 [39]	0.4 [44]	0.53 [77]	0.7 [102]
2503-4A						

Note: Set the AA type pilot pressure to the same as the main pressure.

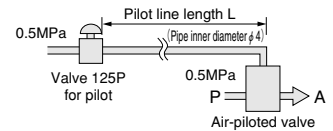
Time Required for Switching by Pilot Line Length

(Both main and pilot 0.5MPa [73psi.]
Pilot line inner diameter 4mm [0.16in.]

Model		Pilot line length L m [ft.]				
		2 [6.6]	6 [19.7]	10 [32.8]	50 [164]	100 [328]
250-4A	ON	0.05	0.1	0.15	0.9	2.7
2503-4A	OFF	0.05	0.1	0.15	1.5	4.0

How to read the table

For example, when using a 10m [32.8ft.] pilot line to send a signal, it takes 0.15 second for the switching operation to turn it on and 0.15 second to turn it off.



Piston Poppet Type Air-Piloted Valves Rc1/4~3/8

254 Series

Symbols

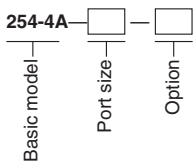
Spring return normal type (A type)	Spring return internal pilot holding type (AA type)
4-port	
254-4A 254-4A-03	254-4AA 254-4AA-03

Specifications

Item	Basic model	A type (normal type)		AA type (internal pilot holding type)	
		254-4A	254-4A-03	254-4AA	254-4AA-03
Port size Rc	Main	1/4	3/8	1/4	3/8
	Pilot	1/8			
Effective area [Cv]	mm ²	15 [0.76]			
Media		Air			
Operating pressure range MPa [kgf/cm ²] [psi.]	Main	0~0.9 [0~9.2] [0~131]		0.1~0.9 [1.0~9.2] [15~131]	
	Pilot	See the table "Minimum Pilot Pressure"		0.1~0.9 [1.0~9.2] [15~131] (Use at the same pressure as the main pressure)	
Proof pressure MPa [kgf/cm ²] [psi.]		1.35 [13.8] [196]			
Operating temp. range (atmosphere and media) °C [°F]		0~60 [32~140]			
Maximum operating frequency Hz		6			
Lubrication		Not required			
Mass kg [lb.]		0.8 [1.8]			

Order Codes

● A type (normal type)



Port size

Code	Port size Rc
Blank	1/4
03	3/8

Option

Code	Specification
70	With speed controller

● AA type (internal pilot holding type)

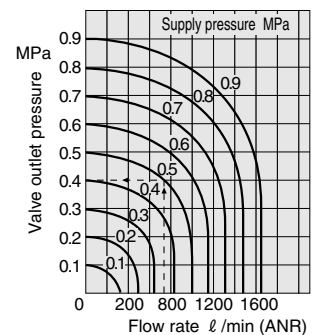


Port size

Code	Port size Rc
Blank	1/4
03	3/8

A built-in type speed controller cannot be installed into the 254-4AA type.
Install a separate speed controller (KSC21, KSC31, etc.) between the valve and cylinder.

Flow Rate



How to read the graph

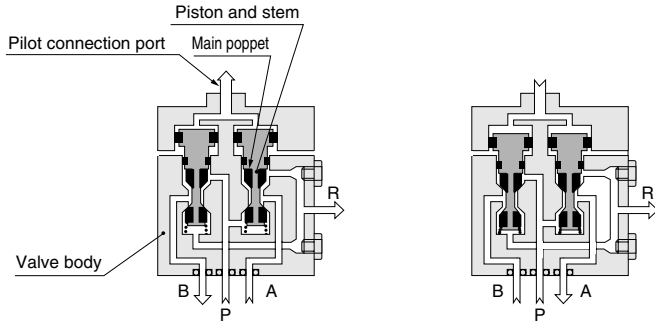
When the supply pressure is 0.5MPa [73psi.] and the flow rate is 740 l/min [26.1ft³/min.] (ANR), the valve outlet pressure becomes 0.4MPa [58psi.].

1MPa = 145psi., 1 l/min = 0.0353ft³/min.

Operating Principles, Major Parts and Materials

● Normal condition

● Operating condition



Note: The AA type (internal pilot holding type) is identical, except for the bypass hole (small hole) on the A side stem. For the operating principles and methods of use, see p.940.

Parts	Materials
Body	Aluminum alloy (anodized)
Stem	Brass
Poppet	Synthetic rubber
Seal	

Minimum Pilot Pressure

Model	Main pressure MPa [psi.]					
	0 [0]	0.1 [15]	0.3 [44]	0.5 [73]	0.7 [102]	0.9 [131]
254-4A	0.1	0.15	0.22	0.3	0.4	0.5
254-4A-03	[15]	[22]	[32]	[44]	[58]	[73]

Note: Set the AA type pilot pressure to the same as the main pressure.

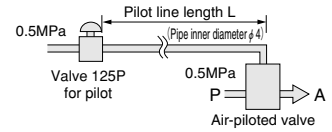
Time Required for Switching by Pilot Line Length

(Both main and pilot 0.5MPa [73psi.]
Pilot line inner diameter 4mm [0.16in.]

Model		Pilot line length L m [ft.]				
		2 [6.6]	6 [19.7]	10 [32.8]	50 [164]	100 [328]
254-4A	ON	0.15	0.2	0.3	1.6	3.0
	OFF	0.2	0.35	0.5	2.8	7.1

How to read the table

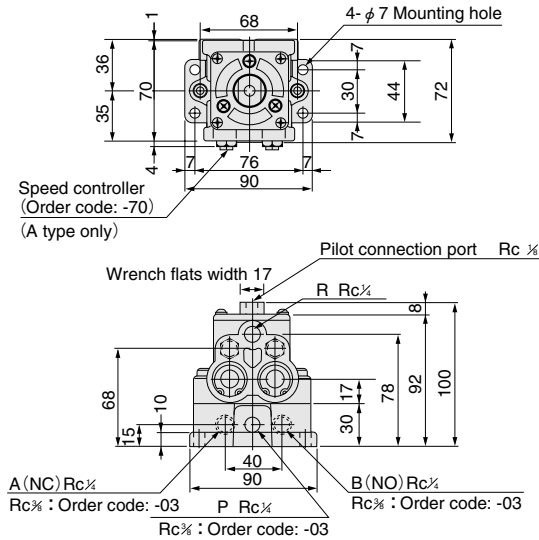
For example, when using a 10m [32.8ft.] pilot line to send a signal, it takes 0.3 second for the switching operation to turn it on and 0.5 second to turn it off.



Dimensions (mm)

● 254-4A

● 254-4AA



Notes: 1. To change the speed controller installed position to the A port side, just rotate the valve body by 180 degrees. In this case, B becomes NC, while A becomes NO.

2. A built-in speed controller cannot be installed into the 254-4AA type.