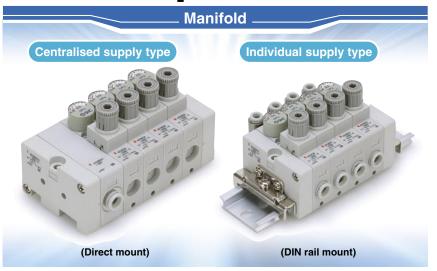
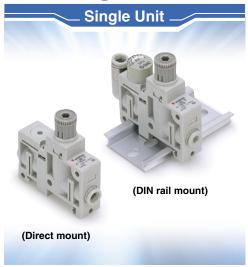


# **Compact Manifold Regulator**



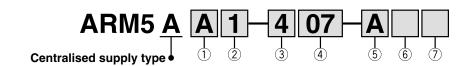






# Compact Manifold Regulator Centralised Supply Type Series ARM5A

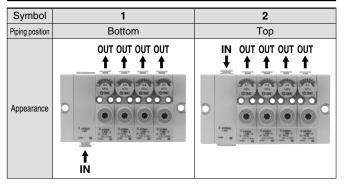
#### **How to Order**



#### 1. Manifold Mounting

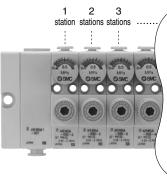
# Symbol A B How to mount Direct mount DIN rail mount Appearance

#### 2. Centralised Supply (IN) Piping Position



#### 3. Regulator Block Stations

Symbol	Stations
1	1 station
2	2 stations
3	3 stations
4	4 stations
5	5 stations
6	6 stations
7	7 stations
8	8 stations
9	9 stations
M	10 stations

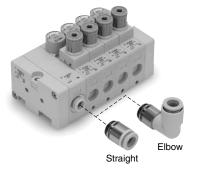


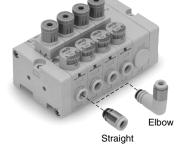
#### 4. IN/OUT Fitting Type (Refer to the figure below.)

Metric size									
Mounting position		IN s	side			OUT	side		
Fitting type	Stra	aight	Elb	ow	Stra	ight	Elb	ow	
Symbol	ø6	ø8	ø6	ø8	ø4	ø6	ø4	ø6	
07	•				•				
08	•					•			
09		•			•				
10		•				•			
19			•				•		
20			•					•	
21				•			•		
22				•				•	
26	•						•		
27	•							•	
28		•					•		
29		•						•	
33			•		•				
34			•			•			
35				•	•				
36						•			

#### Inch size

Mounting position		IN s	side			OUT	side	
Fitting type	Straight		Elbow		Straight		Elbow	
Symbol	ø1/4	ø5/16	ø1/4	ø5/16	ø5/32	ø1/4	ø5/32	ø1/4
57	•				•			
58	•					•		
59		•			•			
60		•				•		
69			•				•	
70			•					•
71				•			•	
72				•				•
76	•						•	
77	•							•
78		•					•	
79		•						•
83			•		•			
84			•			•		
85				•	•			
86				•		•		





IN side

OUT side (Back side)

#### 5. Accessories

	Pressure (	gauge Note)	Centra	lised supply block mounting	position	
	Yes	None	L side		B side	
	res	Yes None -		(Right)	(Both)	
Symbol			Centralised supply block	Centralised supply block	Centralised supply block	
Α	•		•			
В	•			•		
С	•				•	
D		•	•			
E		•		•		
F		•			•	

Note) Pressure gauges are not available with a copper-free specification.

#### 6. Options

Symbol	None	0.35 MPa setting Note)	Non- relieving
-	•		
1		•	
2			•
3		•	•

Note) A pressure gauge with a full span of 0.8 MPa is attached.

JIS symbol							
Relieving type	Non-relieving type						
OUT	OUT						

#### 7. Unit Representation

Symbol	Description
-	Display unit for product name plate and pressure gauge: MPa
Z Note)	Display unit for product name plate and pressure gauge: PSI

Note) This option is available for use outside Japan only. (The SI units must be used in Japan.)

## **Standard Specifications**

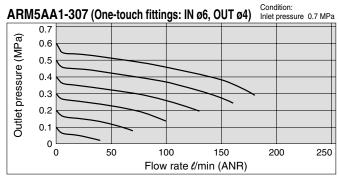
Model		ARM5A		
Regulator construction		Direct acting		
Working principle		Piston type		
Relief mechanism Standar		Relieving type		
nellei illecitatiisiii	Optional	Non-relieving type		
Backflow function		Built-in (Unbalanced type)		
IN side tubing O.D.		ø6, ø8, ø1/4", ø5/16"		
OUT side tubing O.D.		ø4, ø6, ø5/32", ø1/4"		
Proof pressure		1.5 MPa		
Maximum operating pressure		1.0 MPa		
0-4	Standard	0.05 to 0.7 MPa		
Set pressure range	Optional	0.05 to 0.35 MPa (Low pressure type)		
Fluid		Air		
Ambient and fluid temperature		5 to 60°C		

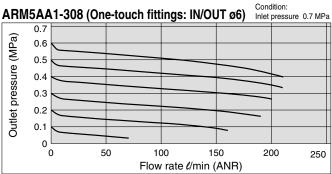
Note) 0.1 MPa or greater set pressure is required when used in the reverse flow.

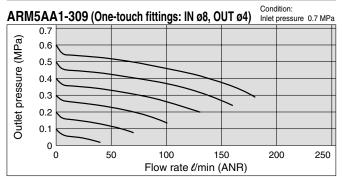


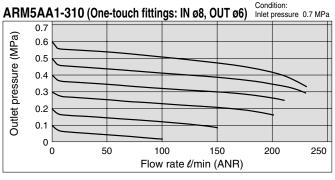
# Series ARM5A

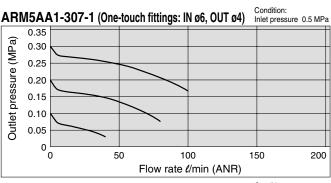
#### Flow Characteristics (Representative Values)

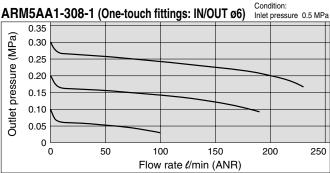


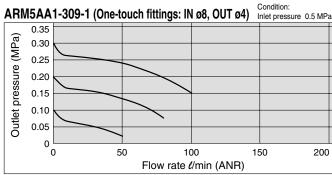


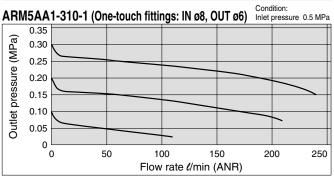




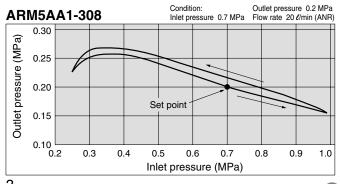


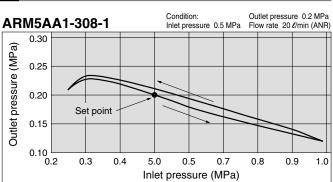




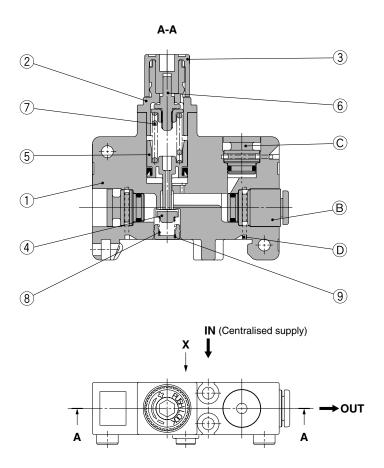


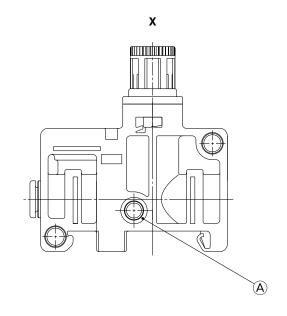
### Pressure Characteristics (Representative Values)





#### **Construction (Centralised Supply Type Regulator Block)**





#### **Component Parts**

Description	Material						
Body (for centralised supply)	PBT						
Bonnet	PBT						
Handle	POM						
Valve	HNBR, Aluminum alloy						
Piston assembly	POM, NBR						
Adjusting screw assembly	<del>_</del>						
Adjusting spring	Stainless steel						
Valve spring	Stainless steel						
Valve guide	Brass						
	Body (for centralised supply) Bonnet Handle Valve Piston assembly Adjusting screw assembly Adjusting spring Valve spring						

#### **Replacement Parts**

No.	Description	Material	Part no.		
Α	O-ring	NBR	136019		
В	Fitting assembly	_	Refer to page 13.		
С	Port plug	PBT, HNBR	Refer to page 14.		
D	Clip	Stainless steel	136010		



# Series ARM5A

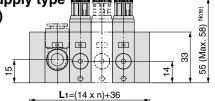
#### **Dimensions**

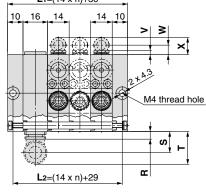
**ARM5AA**□

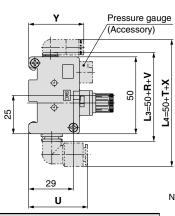
\* n = Number of stations for the regulator block

For dimensions of one-touch fittings and manifold options, please refer to page 10 through to 14.

Centralised supply type (Direct mount)







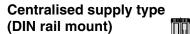
Note) Max. dimension is the size when the handle is unlocked.

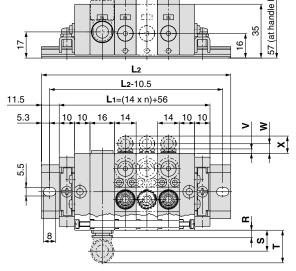
	IN side				OUT side			
Fitting size	Straight	Elbow	Elbow	Elbow	Straight	Elbow	Elbow	Elbow
	R	S	Т	U	٧	W	Х	Υ
ø4, ø5/32	_		_	_	2.5	6	11	35.5
ø6	3	12.5	19	35.5	3	6.5	11	36
ø1/4	3	12.5	19	35.5	6.5	6	11.5	38.5
ø8, ø5/16	5	13.5	21	38.5	_	_	_	_

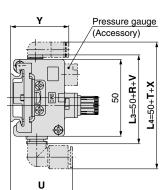
#### ARM5AB□

\* n = Number of stations for the regulator block

locked)





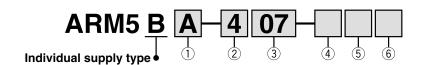


	IN side				OUT side			
Fitting size	Straight	Elbow	Elbow	Elbow	Straight	Elbow	Elbow	Elbow
	R	S	Т	U	V	W	Х	Υ
ø4, ø5/32	-		_	_	2.5	6	11	37.5
ø6	3	12.5	19	37.5	3	6.5	11	38
ø1/4	3	12.5	19	37.5	6.5	6	11.5	40.5
ø8, ø5/16	5	13.5	21	40.5	_	_	_	_

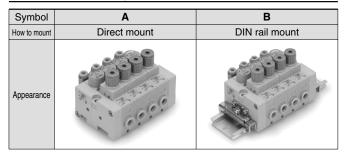
Stations	DIN rail part no.	L <sub>2</sub> dimension
1	VVQ1000-90-7	98
2	VVQ1000-90-8	110.5
3	VVQ1000-90-9	123
4	VVQ1000-90-11	148
5	VVQ1000-90-12	160.5
6	VVQ1000-90-13	173
7	VVQ1000-90-14	185.5
8	VVQ1000-90-15	198
9	VVQ1000-90-16	210.5
M	VVQ1000-90-17	223

# **Compact Manifold Regulator Individual Supply Type** Series ARM5B

#### **How to Order**

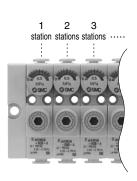


#### 1. Manifold Mounting



#### 2. Regulator Block Stations

Symbol	Stations		
1	1 station		
2	2 stations		
3	3 stations		
4	4 stations		
5	5 stations		
6	6 stations		
7	7 stations		
8	8 stations		
9	9 stations		
M	10 stations		



#### 3. IN/OUT Piping Position

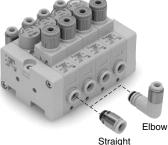
#### **Metric size**

Mounting position		IN s	side		OUT side				
Fitting type	Stra	ight	Elb	Elbow		Straight		Elbow	
Symbol	ø4	ø6	ø4	ø6	ø4	ø6	ø4	ø6	
06	•				•				
07		•			•				
08		•				•			
18			•				•		
19				•			•		
20				•				•	
25	•						•		
26		•					•		
27		•						•	
32			•		•				
33				•	•				
34				•		•			

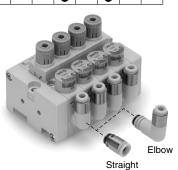
#### Inch size

Mounting position		IN side				OUT	side	
Fitting type	Straight		Elbow		Straight		Elbow	
Symbol	ø5/32	ø1/4	ø5/32	ø1/4	ø5/32	ø1/4	ø5/32	ø1/4
56	•				•			
57		•			•			
58		•				•		
68			•				•	
69				•			•	
70				•				•
75	•						•	
76		•					•	
77		•						•
82			•		•			
83				•	•			
84						•		

# JIS symbol Relieving type OUT OUT



Straight IN side



**OUT side (Back side)** 

#### 4. Accessory

Symbol	Pressure gauge Note)	Configuration
Nil	None	
A	Yes	

Note) Pressure gauges are not available with the copper-free specification.

#### 6. Options

Symbol	None	0.35 MPa setting Note)	Non- relieving
-	•		
1		•	
2			•
3		•	•

Note) A pressure gauge with a full span of 0.8 MPa is

#### 7. Unit Representation

Symbol	Description
-	Display unit for product name plate and pressure gauge: MPa
Z Note)	Display unit for product name plate and pressure gauge: PSI

Note) This option is available for use outside Japan only. (The SI units must be used in Japan.)



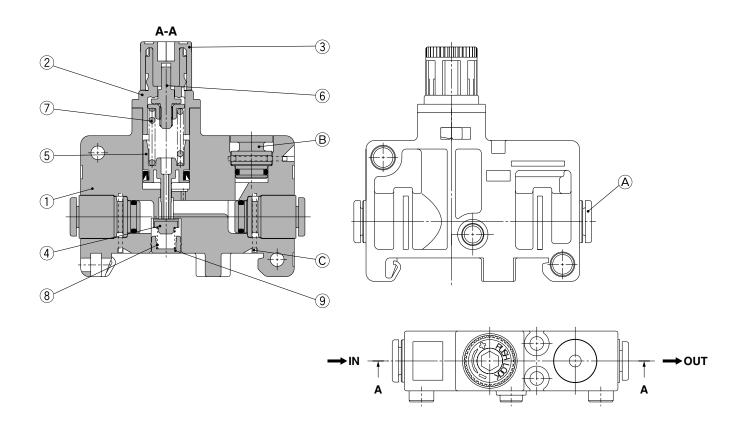
# Series ARM5B

#### **Standard Specifications**

Model		ARM5B		
Regulator construction		Direct acting		
Working principle		Piston type		
Relief mechanism Standard		Relieving type		
neller mechanism	Optional	Non-relieving type		
Backflow function		Built-in (Unbalanced type)		
IN side tubing O.D.		ø4, ø6, ø5/32", ø1/4"		
OUT side tubing O.D.		ø4, ø6, ø5/32", ø1/4"		
Proof pressure		1.5 MPa		
Maximum operating pressure		1.0 MPa		
	Standard	0.05 to 0.7 MPa		
Set pressure range	Optional	0.05 to 0.35 MPa (Low pressure type)		
Fluid		Air		
Ambient and fluid temperature		5 to 60°C		

Note) 0.1 MPa or greater set pressure is required when used in the reverse flow.

#### **Construction (Individual Supply Type Regulator Block)**



#### **Component Parts**

No.	Description	Material					
1	Body (for individual supply)	PBT					
2	Bonnet	PBT					
3	Handle	POM					
4	Valve	HNBR, Aluminum alloy					
5	Piston assembly	POM, NBR					
6	Adjusting screw assembly	_					
7	Adjusting spring	Stainless steel					
8	Valve spring	Stainless steel					
9	Valve guide	Brass					

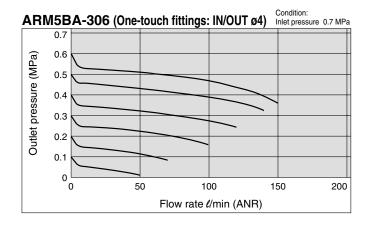
#### **Replacement Parts**

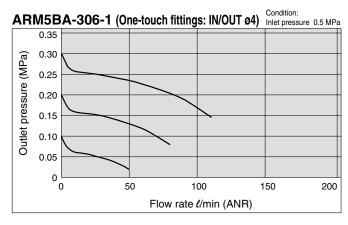
No.	Description	Material	Part no.	
Α	Fitting assembly	_	Refer to page 13.	
В	Port plug	PBT, HNBR	Refer to page 14.	
С	Clip	Stainless steel	136010	

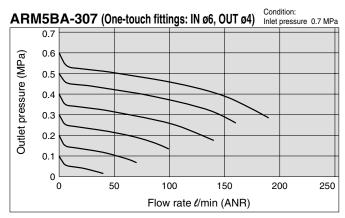


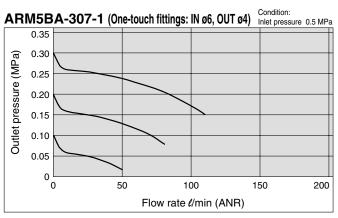


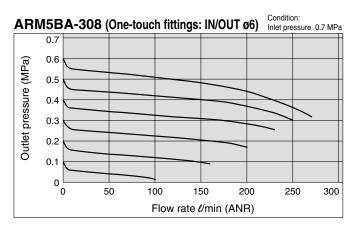
#### Flow Characteristics (Representative Values)

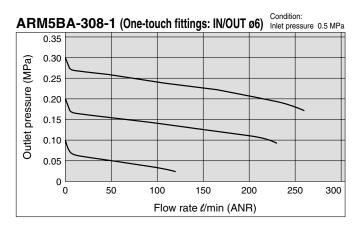




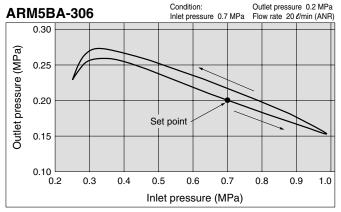


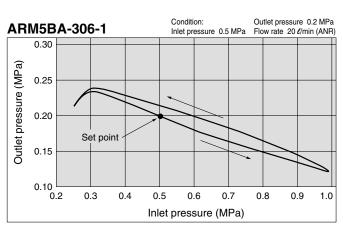






#### **Pressure Characteristics (Representative Values)**





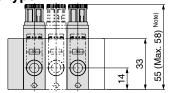
# Series ARM5B

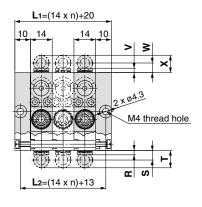
#### **Dimensions**

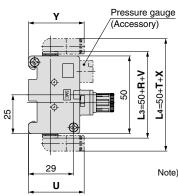
#### ARM5BA

\* n = Number of regulator block stations

Individual supply type (Direct mount)





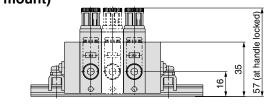


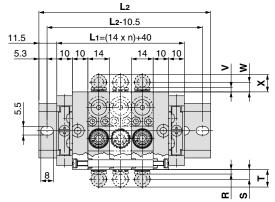
Note) Max. dimension is the size when the handle is unlocked.

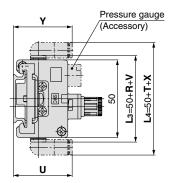
	IN side				OUT side			
Fitting size	Straight	Elbow	Elbow	Elbow	Straight	Elbow	Elbow	Elbow
	R	S	Т	U	V	W	Х	Υ
ø4, ø5/32	2.5	6	11	35.5	2.5	6	11	35.5
ø6	3	6.5	11	36	3	6.5	11	36
ø1/4	6.5	6	11.5	38.5	6.5	6	11.5	38.5

#### ARM5BB Individual supply type (DIN rail mount)

\* n = Number of regulator block stations





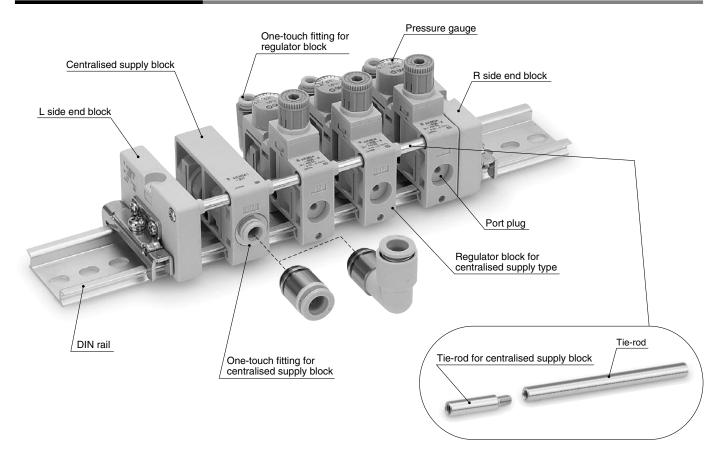


	IN side				OUT side			
Fitting size	Straight	Elbow	Elbow	Elbow	Straight	Elbow	Elbow	Elbow
	R	S	Т	U	V	W	Х	Υ
ø4, ø5/32	2.5	6	11	37.5	2.5	6	11	37.5
ø6	3	6.5	11	38	3	6.5	11	38
ø1/4	6.5	6	11.5	40.5	6.5	6	11.5	40.5

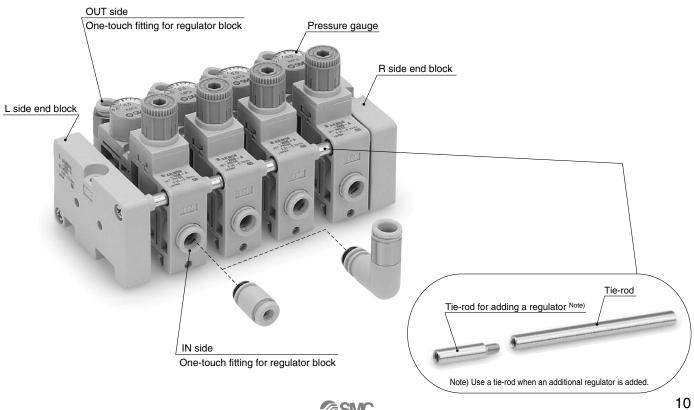
Stations	DIN rail part no.	L <sub>2</sub> dimension
1	VVQ1000-90-6	85.5
2	VVQ1000-90-7	98
3	VVQ1000-90-8	110.5
4	VVQ1000-90-9	123
5	VVQ1000-90-10	135.5
6	VVQ1000-90-12	160.5
7	VVQ1000-90-13	173
8	VVQ1000-90-14	185.5
9	VVQ1000-90-15	198
M	VVQ1000-90-16	210.5

# Compact Manifold Regulator **Options**

#### **Centralised Supply Type**



### **Individual Supply Type**



# Series ARM5A/B

#### Regulator Block



#### 1. OUT Fitting Type

#### **Metric size** Straight Elbow ø4 ø6 ø4 ø6 04 05 16 17

#### Inch size

Symbol	Straight		Elbow		
Syn	ø5/32 ø1/4		ø5/32	ø1/4	
54	•				
55		•			
66			•		
67				•	

#### 4. Unit Representation

Symbol	Description
-	Display unit for product name plate and pressure gauge: MPa
<b>Z</b> Note)	Display unit for product name plate and pressure gauge: PSI

Note) This option is available for use outside Japan only. (The SI units must be used in Japan.)

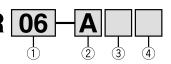
#### 2. Accessories 3. Options 0.35 MPa Non-Symbol None relieving setting Note Nil 1 2 3 Note) A pressure gauge with a full span of 0.8 MPa is

Note) An O-ring is attached to the manifold connection.

	Pressure gauge Note)		Extension tie-ro	
Symbol	Yes	None	Yes	None
Α	•		•	
В	•			•
С		•	•	
D		•		•

Note) Pressure gauges are not available with a copper-free specification.

# Individual Supply Type ARM5B-R 06



#### 1. IN/OUT Fitting Type

#### **Metric size**

WICTIO 312C								
<u>_</u>		IN s	side			OUT	side	
Symbol	Stra	ight	Elb	ow	Straight		Elb	ow
S	ø4	ø6	ø4	ø6	ø4	ø6	ø4	ø6
06	•				•			
07		•			•			
08		•				•		
18			•				•	
19				•			•	
20				•				•
25	•						•	
26		•					•	
27		•						•
32			•		•			
33				•	•			
34				•				

#### Inch size

О		IN s	side		OUT side			
Symbol	Stra	ight	Elb	ow	Stra	ight	Elb	ow
Sy	ø5/32	ø1/4	ø5/32	ø1/4	ø5/32	ø1/4	ø5/32	ø1/4
56	•				•			
57		•			•			
58		•				•		
68			•				•	
69				•			•	
70				•				•
75	•						•	
76		•					•	
77		•						•
82			•		•			
83				•	•			
84				•				

#### 3. Options

Symbol	None	0.35 MPa setting Note 1)	Non- relieving
-	•		
1		•	
2			•
3		•	•

Note) A pressure gauge with a full span of 0.8 MPa is attached.

#### 4. Unit Representation

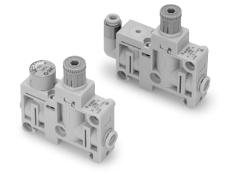
Symbol	Description			
-	Display unit for product name plate and pressure gauge: MPa			
Z Note)	Display unit for product name plate and pressure gauge: PSI			

Note) This option is available for use outside Japan only. (The SI units must be used in Japan.)

#### 2. Accessories

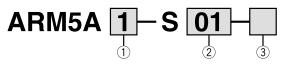
	Pressure (	gauge Note)	Extension	n tie-rod		
Symbol	Yes	None	Yes	None		
Α	•		•			
В	•			•		
С		•	•			
D		•		•		

Note) Pressure gauges are not available with a copper-free specification.





#### **Centralised Supply Block**



#### 1. Centralised Supply (IN) Piping Position

Symbol	1	2
Piping position	Bottom	Тор
Appearance	<b>↑</b> E	IZ.→

#### 3. IN Fitting Type

#### **Metric size**

0		IN side		
Symbol	Stra	ight	Elb	ow
်	ø6	ø8	ø6	ø8
01	•			
02		•		
13			•	
14				

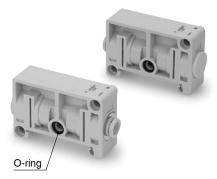
#### Inch size

0		IN side		
Symbol	Stra	aight	Elb	ow
S	ø1/4	ø5/16	ø1/4	ø5/16
51	•			
52		•		
63			•	
64				•

#### 3. Tie-rod for Centralised Supply Block Note)

Symbol	Description
-	Without tie-rod
Т	With tie-rod

Note) For details, refer to page 14.



Note) An O-ring is attached to the manifold connection.

#### **End Block**



### End block

#### Manifold mounting

Symbol	Mounting
Α	Direct mount
В	DIN rail mount

#### Mounting position

	311111
Symbol	Mounting position
L	Left
R	Right

#### **♦** Air supply specification

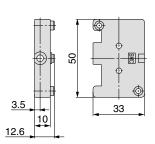
Symbol	Air supply speicification
1	Centralised supply
2	Individual supply

- \*1 Applicable for the end block on the right side only. Enter nothing for the end block on the left side.
- \*2 For the centralised air supply specification, an O-ring is attached to the end block on the right side.

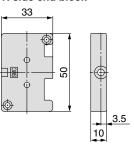
# O-ring Direct mount

**DIN rail mount** 

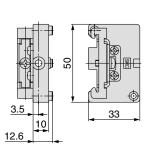
#### L side end block



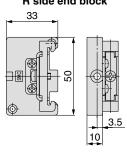
#### R side end block



#### L side end block



R side end block



Direct mount DIN rail mount

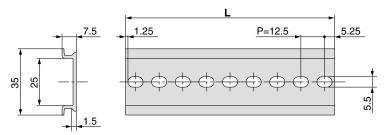


# Series ARM5A/B

#### **DIN Rail**

# VVQ1000-90-n

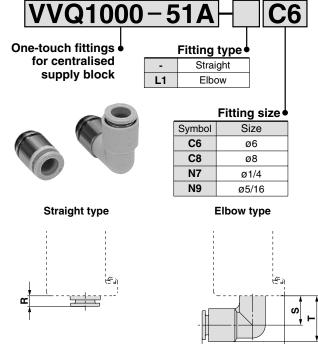
Note) Put an appropriate No. from the table below in the place of "n." For the L dimension, please refer to "Dimensions."



#### **L** Dimension L=12.5 x n+10.5 2 5 6 7 9 10 1 3 4 8 L dimension 23 35.5 48 60.5 73 85.5 98 110.5 123 135.5 11 12 13 14 15 16 17 18 19 20 No L dimension 148 160.5 173 185.5 198 210.5 223 235.5 248 260.5 22 23 25 26 27 No. 21 24 28 29 30 L dimension 273 285.5 298 310.5 323 335.5 348 360.5 373 385.5 31 32 33 34 35 36 37 38 39 40 L dimension 398 410.5 423 435.5 448 460.5 473 485.5 498 510.5

#### One-touch Fittings for Centralised Supply Block

#### One-touch Fittings for Regulator Block



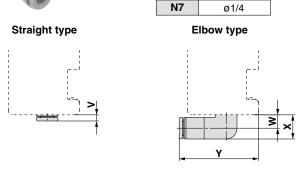
œ	<u>.</u>	a !	-	U	<b>∞</b> ⊢
	One-touch	n fittings for c	entralised su	pply block	
Fitting size	Straight	Elbow	Elbow	Elbow	
	R	S	Т	U	
ø4, ø5/32	_	_	_	_	
~6	_	40.5	40	05.5	

Note) An O-ring is attached.

ø6 12.5 ø1/4 12.5 19 35.5 ø8, ø5/16 13.5 38.5

For details on how to replace, refer to back page 4.

#### VVQ1000-50A Fitting type One-touch fittings for regulator block Straight L1 Elbow Fitting size Symbol Size C4 ø4 C6 ø6 N3 ø5/32



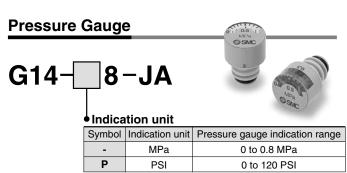
	One-touch fittings for regulator block					
Fitting size	Straight Elbow Ell		Elbow	Elbow		
	٧	W	Х	Υ		
ø4, ø5/32	2.5	6	11	35.5		
ø6	3	6.5	11	36		
ø1/4	6.5	6	11.5	38.5		
ø8, ø5/16	_	_	_	_		

Note) An O-ring is attached.

For details on how to replace, refer to back page 4.

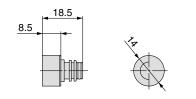


# Compact Manifold Regulator Series ARM5A/B



Note) An O-ring is attached.

For details on how to replace, refer to back page 5.



# VVQ0000-58A Single unit regulator / Port plug for regulator block



Note) An O-ring is attached. For details on how to replace, refer to back page 5.

#### Tie-rod

The length of tie-rod will vary, corresponding to the number of stations.

#### For Regulator Block

Regulator block stations	Tie-rod part no.	Length
1	136016-1A	14
2	136016-2A	28
3	136016-3A	42
4	136016-4A	56
5	136016-5A	70
6	136016-6A	84
7	136016-7A	98
8	136016-8A	112
9	136016-9A	126
10	136016-10A	140

For adding a regulator	Tie-rod part no.	Length
For adding 1 station	136020A	14

Note 1) When adding a regulator block, please use the correct length of tie-rod that corresponds to the number of required stations, or add the extension tie-rod.

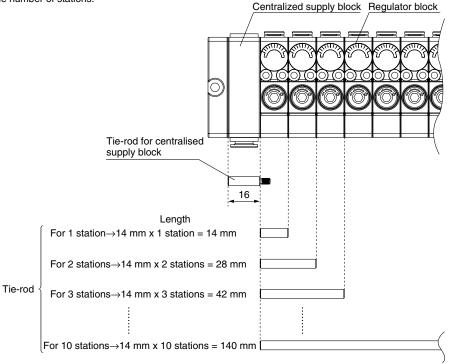
Note 2) The part number is for a pair of pieces (2).

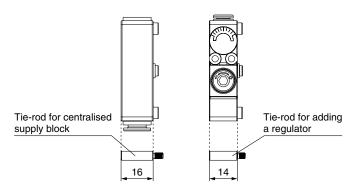
#### ● For Centralised Supply Block

Centralised supply block qty.	Tie-rod part no.	Length
1	136017-1A	16
2	136017-2A	32

Note 1) When adding the centralised air supply block, add the tie-rod for centralised air supply to the regulator block tie-rod. Please pay special attention to its length as this differs from the length of the regulator extension tie-rod.







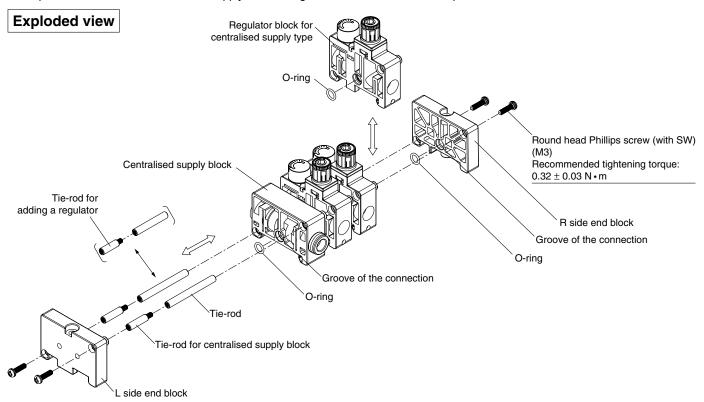


## Series ARM5A/B

#### How to Add a Manifold Station

#### In case of the centralised air supply type

It's possible to add the centralised air supply block or regulator block and also alter its position.



#### 1 Dis-assembly

- 1 Loosen the 4 round head Phillips screws at the corners of the  $\prod$  end block.
- ② Remove the tie-rod from the end block, centralised air supply block, and regulator block.

#### 2 Additional parts (Please prepare separately.)

- (1) Centralised supply block, Regulator block
- (2) Tie-rod

Note) A tie-rod, which corresponds to the regulator block stations, or an additional tie-rod for increasing a station will be required.

#### 3 Assembly

- 1 Connect the tie-rods.
- ② Insert the tie-rod to the end block on the left hand side, and  $\prod$  temporarily tighten the round head Phillips screws. (2 screws)
- $\widehat{\ \ }$  Check the O-ring is fitted in the groove of the connection on  $\widehat{\ \ \, }$  each manifold block and then insert each block to the tie-rod.
- 4 Temporarily tighten the round head Phillips screws on the  $\iint$  right hand side. (2 screws)
- (5) Additionally tighten the round head Phillips screws on both sides of the manifold with the recommended tightening torque.

#### 

- Before dis-assembly, be sure to check that no inlet or outlet pressure is applied and exhaust the internal pressure thoroughly before starting work.
- ② After assembly, if the connection between each block, or the tightened tie-rod screws is insufficient, air leakage may occur. Before use, only connect the air after confirming that all the components are securely fixed and that there is no air leakage.

#### ● How to remove DIN rail for DIN rail mount type

# Recommended tightening torque: 1 ± 0.1 N • m DIN rail Centralised supply type manifold Retaining bracket

#### 1 Dis-assembly

- $\bigcirc$  Loosen the round head combination screws. (located on  $\bigcirc$  both the right and left hand side)
- 2 Remove the DIN rail, sliding it horizontally.
- (3) Remove the retaining bracket.

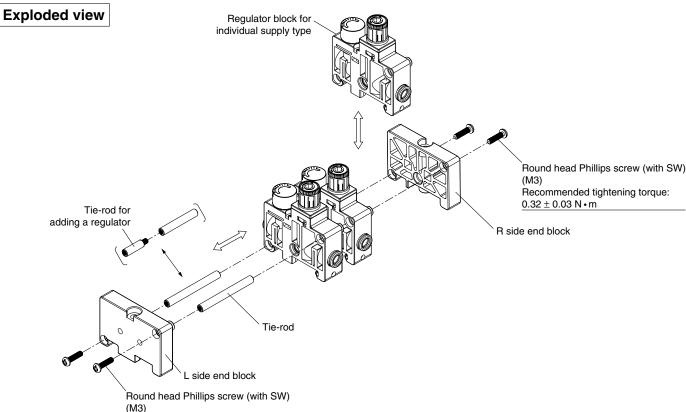
#### 2 Assembly

- 1 Set the retaining bracket to the original position.
- (2) Insert the DIN rail.
- 3 Tighten the round head combination screw with the recommended tightening torque. (located on both the right and left hand side)

**SMC** 

#### In case of the Individual air supply type

It's possible to add the regulator block and also alter the position.



#### 1 Dis-assembly

 $\bigodot$  Loosen the 4 round head Phillips screws at the corners of the  $\prod$  end block.

Recommended tightening torque:

(2) Remove the tie-rod from the end block and regulator block.

 $0.32 \pm 0.03 \; \text{N} \cdot \text{m}$ 

#### 2 Additional parts (Please prepare separately.)

- 1 Regulator block
- 2 Tie-rod

Note) A tie-rod, which corresponds to the regulator block stations, or an additional tie-rod for increasing the station will be required.

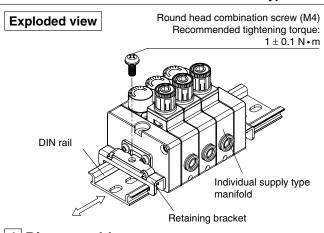
#### 3 Assembly

- 1 Connect the tie-rods.
- ② Insert the tie-rod to the end block on the right side, and tem-porarily tighten the round head Phillips screws. (2 screws)
- ③ Insert each block to the tie-rod.
- $\stackrel{\checkmark}{4}$  Temporarily tighten the round head Phillips screws on the  $\iint$  right hand side. (2 screws)
- (5) Additionally tighten the round head Phillips screws on both sides of the manifold with the recommended tightening torque.

#### 

Before dis-assembly, be sure to check that no inlet or outlet pressure is applied and exhaust the internal pressure thoroughly before starting the job.

#### How to remove DIN rail for DIN rail mount type



#### 1 Dis-assembly

- $\bigcirc$  Loosen the round head combination screws. (located on  $\bigcirc$  both the right and left hand side)
- 2 Remove the DIN rail, sliding it horizontally.
- 3 Remove the retaining bracket.

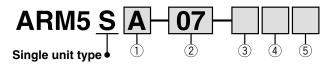
#### 2 Assembly

- $\begin{picture}(1)\line(1)\l$
- 2 Insert the DIN rail.
- ③ Tighten the round head combination screw with the recommended tightening torque. (located on both the right and left hand side)



# Regulator Single Unit Type Series ARM5S

#### **How to Order**



#### 1. Regulator Mounting

Symbol	Α	В
How to mount	Direct mount	DIN rail mount Note)
Appearance		

Note) Both the square nut and the hexagon socket head screw are attached for the DIN rail mount type. (DIN rail is not attached.) Refer to back page 4 for handling.

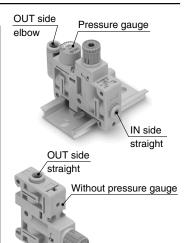
#### 2. IN/OUT Fitting Type

#### **Metric size**

Mounting position	IN side				OUT side			
Fitting type	Straight		Elbow		Straight		Elbow	
Symbol	ø4	ø6	ø4	ø6	ø4	ø6	ø4	ø6
06	•				•			
07		•			•			
08		•				•		
18			•				•	
19				•			•	
20				•				•
25	•						•	
26		•					•	
27		•						•
32			•		•			
33				•	•			
34				•		•		

#### Inch size

Mounting position	IN side				OUT side				
Fitting type	Stra	ight	Elb	Elbow		Straight		Elbow	
Symbol	ø5/32	ø1/4	ø5/32	ø1/4	ø5/32	ø1/4	ø5/32	ø1/4	
56	•				•				
57		•			•				
58		•				•			
68			•				•		
69				•			•		
70				•				•	
75	•						•		
76		•					•		
77		•						•	
82			•		•				
83				•	•				
84				•		•			



IN side elbow

#### 3. Accessory

Symbol	Accessory
-	Without pressure gauge
Α	With pressure gauge

#### 4. Options

Symbol	None	0.35 MPa setting Note)	Non- relieving
-	•		
1		•	
2			•
3		•	•

Note) A pressure gauge with a full span of 0.8 MPa is attached.

# Als symbol Relieving type Non-relieving type

#### 5. Unit Representation

Symbol	Description
-	Display unit for product name plate and pressure gauge: MPa
Z Note)	Display unit for product name plate and pressure gauge: PSI

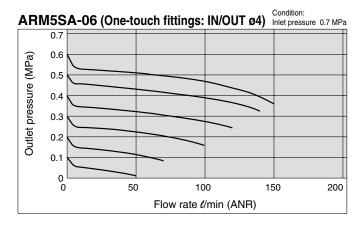
Note) This option is available for use outside Japan only. (The SI units must be used in Japan.)

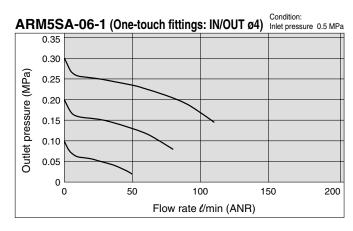
#### **Standard Specifications**

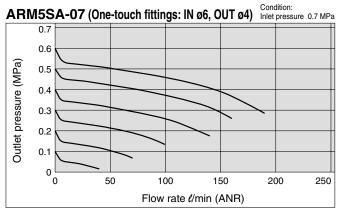
Model		ARM5S	
Regulator construction		Direct acting	
Working principle		Piston type	
Relief mechanism	Standard	Relieving type	
Relief mechanism	Optional	Non-relieving type	
Backflow function		Built-in (Unbalanced type)	
IN side tubing O.D.		ø4, ø6, ø5/32", ø1/4"	
OUT side tubing O.D.		ø4, ø6, ø5/32", ø1/4"	
Proof pressure		1.5 MPa	
Maximum operating p	ressure	1.0 MPa	
Set pressure range	Standard	0.05 to 0.7 MPa	
Set pressure range	Optional	0.05 to 0.35 MPa (Low pressure type)	
Fluid		Air	
Ambient and fluid temperature		5 to 60°C	
Weight (at ARM5SA-08-A)		33 g	

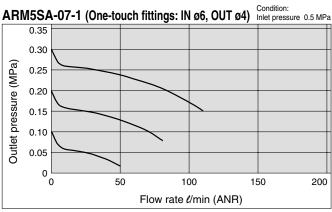
Note) 0.1 MPa or greater set pressure is required when used in the reverse flow.

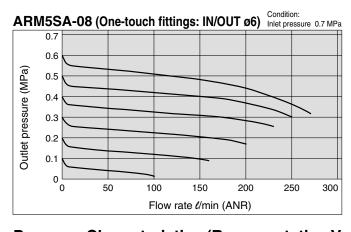
#### Flow Characteristics (Representative Values)

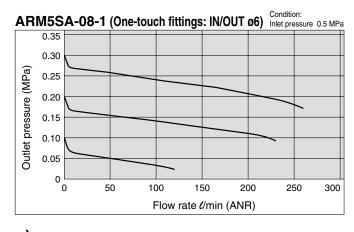




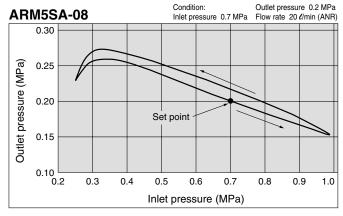


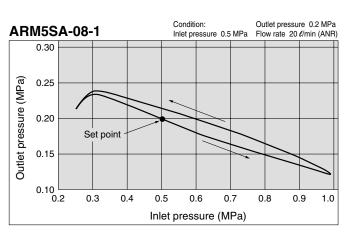






#### **Pressure Characteristics (Representative Values)**

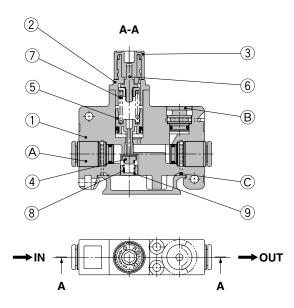






# Series ARM5S

#### **Construction (Regulator)**



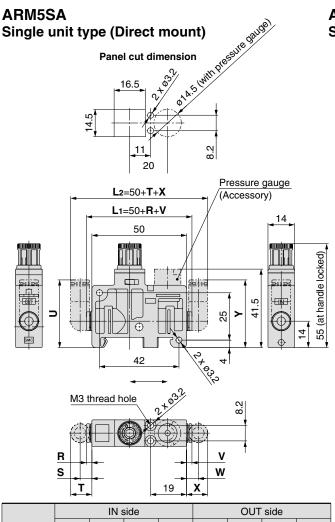
**Component Parts** 

Description	Material
Body (for single unit)	PBT
Bonnet	PBT
Handle	POM
Valve	HNBR, Aluminum alloy
Piston assembly	POM, NBR
Adjusting screw assembly	_
Adjusting spring	Stainless steel
Valve spring	Stainless steel
Valve guide	Brass
Clip	Stainless steel
	Body (for single unit)  Bonnet  Handle  Valve  Piston assembly  Adjusting screw assembly  Adjusting spring  Valve spring  Valve guide

**Replacement Parts** 

No.	Description Material		Part no.	
Α	Fitting assembly	_	Refer to page 20.	
В	Port plug	PBT, HNBR	Refer to page 14.	
С	Clip	Stainless steel	136010	

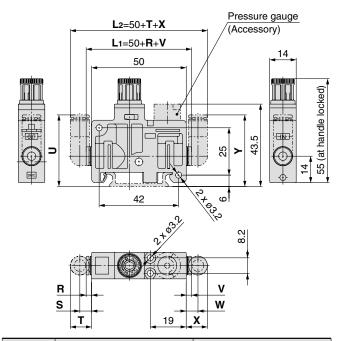
#### **Dimensions**



	IN side				OUT side			
Fitting size	Straight	Elbow	Elbow	Elbow	Straight	Elbow	Elbow	Elbow
	R	S	Т	U	V	W	Х	Υ
ø4, ø5/32	2.5	6	11	35.5	2.5	6	11	35.5
ø6	3	6.5	11	36	3	6.5	11	36
ø1/4	6.5	6	11.5	38.5	6.5	6	11.5	38.5

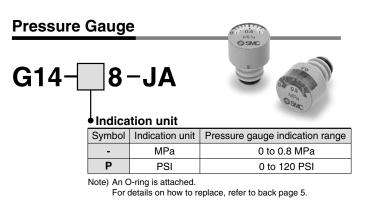
#### ARM5SB Single unit type (DIN rail mount)

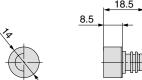
For dimensions of one-touch fittings and accessories, please refer to page 20.



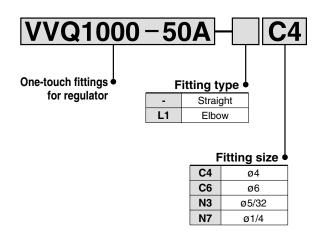
	IN side			OUT side				
Fitting size	Straight	Elbow	Elbow	Elbow	Straight	Elbow	Elbow	Elbow
	R	S	T	U	V	W	X	Υ
ø4, ø5/32	2.5	6	11	37.5	2.5	6	11	37.5
ø6	3	6.5	11	38	3	6.5	11	38
ø1/4	6.5	6	11.5	40.5	6.5	6	11.5	40.5

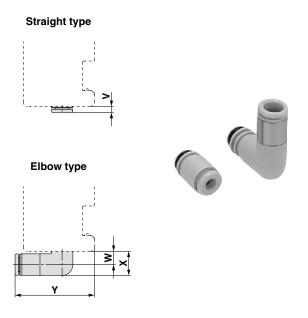
# Regulator/Single Unit Type **Options**





#### **One-touch Fittings for Regulator**





	One-touch fittings for regulator					
Fitting size	Straight	Elbow	Elbow	Elbow		
	V	W	Х	Υ		
ø4, ø5/32	2.5	6	11	35.5		
ø6	3	6.5	11	36		
ø1/4	6.5	6	11.5	38.5		
ø8, ø5/16	_	_	_	_		

Note) An O-ring is attached.

For details on how to replace, refer to back page 5.





# Series ARM5

# **Safety Instructions**

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by labels of "**Caution**", "**Warning**" or "**Danger**". To ensure safety, be sure to observe ISO 4414 Note 1), JIS B 8370 Note 2) and other safety practices.

**■** Explanation of the Labels

Labels	Explanation of the labels
<b>⚠</b> Danger	In extreme conditions, there is a possible result of serious injury or loss of life.
	Operator error could result in serious injury or loss of life.
<b>⚠</b> Caution	Operator error could result in injury Note 3) or equipment damage. Note 4)

- Note 1) ISO 4414: Pneumatic fluid power General rules relating to systems
- Note 2) JIS B 8370: General Rules for Pneumatic Equipment
- Note 3) Injury indicates light wounds, burns and electrical shocks that do not require hospitalisation or hospital visits for long-term medical treatment.
- Note 4) Equipment damage refers to extensive damage to the equipment and surrounding devices.

#### ■ Selection/Handling/Applications

1. The compatibility of the pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or post analysis and/or tests to meet the specific requirements. The expected performance and safety assurance are the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all items specified, referring to the latest catalogue information with a view to giving due consideration to any possibility of equipment failure when configuring a system.

2. Only trained personnel should operate pneumatic machinery and equipment.

Compressed air can be dangerous if handled incorrectly. Assembly, handling or repair of the systems using pneumatic equipment should be performed by trained and experienced operators. (Understanding JIS B 8370 General Rules for Pneumatic Equipment, and other safety rules are included.)

- 3. Do not service the machinery/equipment or attempt to remove components until safety is confirmed.
  - 1. Inspection and maintenance of the machinery/equipment should only be performed once measures to prevent falling or runaway of the driven objects have been confirmed.
  - 2. If the equipment must be removed, confirm the safety process as mentioned above. Turn off the supply pressure for the equipment and exhaust all residual compressed air in the system, and release all the energy (liquid pressure, spring, condenser, gravity).
  - 3. Before the machinery/equipment is restarted, take measures to prevent quick extension of a cylinder piston rod, etc.
- 4. If the equipment will be used in the following conditions or environment, please contact SMC first and be sure to take all necessary safety precautions.
  - 1. Conditions and environments beyond the given specifications, or if product is used outdoors.
  - 2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, clutch and brake circuits in press applications, or safety equipment.
  - 3. An application which has the possibility of having negative effects on people, property, requiring special safety analysis.
  - 4. If the products are used in an interlock circuit, prepare a double interlock style circuit with a mechanical protection function for the prevention of a breakdown. And, examine the devices periodically if they function normally or not.

#### **■** Exemption from Liability

- 1. SMC, its officers and employees shall be exempted from liability for any loss or damage arising out of earthquakes or fire, action by a third person, accidents, customer error with or without intention, product misuse, and any other damages caused by abnormal operating conditions.
- 2. SMC, its officers and employees shall be exempted from liability for any direct or indirect loss or damage, including consequential loss or damage, loss of profits, or loss of chance, claims, demands, proceedings, costs, expenses, awards, judgments and any other liability whatsoever including legal costs and expenses, which may be suffered or incurred, whether in tort (including negligence), contract, breach of statutory duty, equity or otherwise.
- 3. SMC is exempted from liability for any damages caused by operations not contained in the catalogues and/or instruction manuals, and operations outside of the specification range.
- 4. SMC is exempted from liability for any loss or damage whatsoever caused by malfunctions of its products when combined with other devices or software.



# Series ARM5 Compact Manifold Regulator Precautions 1

Be sure to read this before handling.

#### **Design and Selection**

# **.** Warning

#### 1. Confirm the specifications.

The products appearing in this catalogue are designed for use only in compressed air systems.

Do not use outside the specified ranges of pressure, temperature, etc., as this may cause damage or faulty operation. Please consult with SMC if fluid other than compressed air is to be used.

2. Do not use the products in this catalogue as "safety accessories" stipulated in Art. 1, paragraph 2.1.3 and Art. 3, paragraph 1.4 of Pressure Equipment Directive (97/23/EC).

The Pressure Equipment Directive defines a safety accessory as a device which is designed to prevent pressure equipment from exceeding the allowable limit values.

#### 3. Confirm the set pressure range.

Be sure to install safety devices as output pressure above the set range can lead to damage or malfunction of equipment on the outlet side.

4. Residual pressure relief when the inlet pressure has been released.

In cases where the inlet pressure has been released while the outlet pressure is in a low-pressure setting state, it may not be possible to exhaust the outlet pressure (residual pressure relief). Provide a residual pressure relief circuit if reliable outlet pressure relief must be performed.

When used with a closed downstream circuit and balance circuit.

Please contact SMC as there are cases in which the product cannot be used.

#### Mounting

# 

#### 1. Read the instruction manual carefully.

The product should be mounted and operated with a good understanding of its contents. Also, keep the manual where it can be easily referred to at any time.

2. Ensure space for maintenance.

Ensure the necessary space for maintenance activities.

3. Strictly observe the tightening torque of the screws.

Tighten the screws at the recommended torque during installation.

#### **Piping**

## **⚠** Caution

#### Precautions in use of one-touch fittings

#### 1) Tubing installation

- 1. Take a tubing with no flaws on its periphery and cut it off at a right angle. Use a TK-1, 2 or 3 tubing cutter to cut the tubing. Do not use pinchers, nippers or scissors, etc. The tubing might be cut diagonally or flattened, making installation impossible or causing problems such as disconnection and leakage. Also, ensure sufficient tubing length.
- Hold the tubing and push it in slowly, inserting it securely all the way into the fitting.

#### **Piping**

## **⚠** Caution

- After inserting the tubing, pull it lightly to confirm that it will not come out. If the tubing is not inserted to the end, air leakage or disconnection may occur.
- 4. When piping, increase the length of the tubing to allow for any possible warping, increased tension or moment load, etc. to the fittings and tubing.

#### 2) Tubing removal

- 1. Push both the release bushing and flange.
- Pull out the tubing while holding the release bushing so that it will not be locked again. Insufficient pressure on the release bushing will result in increased biting force that will impede the tubing removal.
- 3. When re-using a removable tubing, cut off the deformed part. If the deformed part of the tubing is used, it can cause air leakage or impede the tubing removal.

In cases where a tubing brand other than SMC is used, confirm that the tubing outside diameter accuracy satisfies the following specifications.

1. Nylon tubing $\pm 0.1$  mm or less2. Soft nylon tubing $\pm 0.1$  mm or less

**3.** Polyurethane tubing +0.15 mm or less/–0.2 mm or less Do not use the tubing if it does not satisfy the outside diameter accuracy. Tubing connection may be impossible or air leakage or tubing disconnection may occur after connection.

#### **Air Supply**

# **Marning**

1. Use clean air.

Do not use the regulator if the compressed air contains synthetic oil including chemicals or organic solvents, salt or corrosive gas. It may lead to damage or malfunction.

# **⚠** Caution

1. Install an air filter.

Install an air filter on the inlet side in close proximity with the regulator. Select a type with 5  $\mu$ m or smaller filtration.

2. Install an after-cooler, air dryer or water separator to remove drainage.

Compressed air containing excessive drainage may cause malfunction of the regulator, pressure switch or other pneumatic equipment.

 If an excessive amount of carbon powder is generated, install a mist separator as a measure.

If an excessive amount of carbon powder is generated from the compressor, it may adhere to the interior of the regulator and cause malfunction.

Refer to the Best Pneumatics catalogue for further details on compressed air quality.





# Series ARM5 Compact Manifold Regulator Precautions 2

Be sure to read this before handling.

#### **Operating Environment**

# **⚠** Warning

- Do not operate in locations having an atmosphere of corrosive gases, chemicals, sea water, fresh water or water vapour, or where there will be contact with the same.
- 2. In locations which receive direct sunlight, the sunlight should be blocked.
- 3. Do not operate in locations where vibration or impact occurs.
- 4. Do not operate in a location near a heat source or where radiated heat will be received.

#### **Adjustment**

# **△** Warning

#### Regulator

- Set up the regulator while verifying the pressure that is indicated on the inlet side and outlet side pressure gauges. Turning the handle excessively could damage the internal parts.
- 2. Turn the adjustment handle after unlocking. If you attempt to turn the handle when locked, the connecting part, between the body and the bonnet, may be damaged.
- 3. The adjustment handle must be operated manually. The use of a hexagon wrench to increase pressure is allowable, but using it to decrease pressure could lead to damage.

## **⚠** Caution

#### Regulator

- Set up the regulator after carefully verifying the pressure that is indicated on the inlet side pressure gauge.
- 2. Set the outlet pressure in a range that is within 85% of the inlet pressure.
  - Also, it should not exceed the set pressure range.
- Release the lock to adjust the pressure. After the adjustment, engage the lock. Failure to observe this procedure could damage the handle or cause the outlet pressure to fluctuate.
- 4. Turning the pressure adjustment handle clockwise increases the outlet pressure and turning it counterclockwise decreases the pressure. (To achieve the final set pressure, gradually increase from low pressure until the desired pressure is reached.)

#### **Adjustment**

### **∧** Caution

#### Pressure guage and one-touch fittings

 The pressure gauge and one-touch fittings are cassette type, which enable them to be rotated and adjusted at the desired angle. But you must check that no pressure is applied internally and that the air is fully exhausted beforehand.

#### **Maintenance**

## **⚠** Caution

 Maintenance should be performed according to the procedure indicated in the instruction manual.

Improper handling can cause damage and malfunction of equipment and machinery.

#### 2. Maintenance operations

Improper handling of compressed air is dangerous. Therefore, in addition to observing the product specifications, replacement of elements and other maintenance activities should be performed by personnel having sufficient knowledge and experience pertaining to pneumatic equipment.

#### 3. Pre-maintenance inspection

When removing this product, turn off the electric power, and be certain to shut off the supply pressure and exhaust the compressed air in the system. Proceed only after confirming that all pressure has been released to the atmosphere.

#### 4. Post maintenance inspection

After installation or repair, re-connect compressed air and electricity and conduct appropriate inspections to confirm proper operation. If there is an audible air leakage, or if the equipment does not operate properly, stop operation and confirm that the equipment is installed correctly.

#### 5. Modification is prohibited.

Do not modify or re-construct the unit.





# Series ARM5 Blocks Specific Product Precautions 1

Be sure to read this before handling.

#### Handling

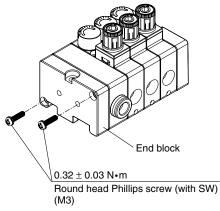
# **⚠** Warning

# Observe the proper screw tightening torque during installation.

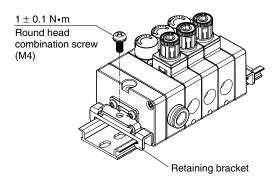
Tightening beyond the proper tightening torque may damage the mounting screws, blocks or switches.

If the force is below the tightening torque range, the threaded joint can come loose.

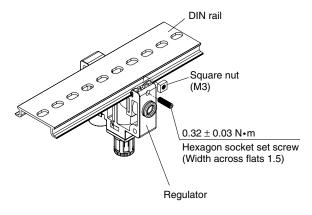
1. Tightening torque for round head Phillips screws for tie-rods of the regulator manifold



Tightening torque for round head combination screws for DIN rail of the regulator manifold



3. Tightening torque for hexagon socket set screws for DIN rail of the regulator manifold

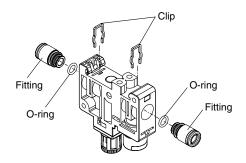


### **⚠** Caution

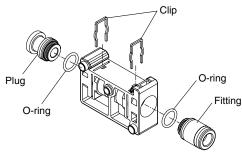
#### One-touch fitting replacement

For the ease of replacement, one-touch fittings are installed as the cassette type. One-touch fittings are retained with clips inserted from the directions illustrated blow. Remove the clips with a flat head screw driver to replace the one-touch fittings. When installing, insert each one-touch fitting deeply to the end and reinsert the clip to the specified position.

#### 1. Regulator block



#### 2. Centralised supply block



- Note 1) Before replacing, be sure to confirm that no inlet or outlet pressure is applied and that the internal pressure is fully exhausted. Replacing with the pressure kept inside is dangerous.
- Note 2) Gently remove the clip by hand. Pulling forcibly may cause the clip to pop out, resulting in dangerous replacement.
- Note 3) When removing the straight type one-touch fitting from each block, remove the clip, connect a tube or plug (KQP-□□) with the one-touch fitting, and pull out by supporting the tube (or plug).

  The bushing may be damaged, if released by supporting the release bushing of the one-touch fitting.
- Note 4) Insert the clip thoroughly after replacement parts are inserted completely. If using with the clip inserted insufficiently, it may cause the clip to be released, resulting in dangerous operation.
- Note 5) When inserting a tube into the elbow type one-touch fitting, hold the fitting body in your hand and insert the tube. If the tube is inserted without support, an unreasonable force may be applied on the blocks or one-touch fittings, resulting in air leakage or product failure.





# Series ARM5 Blocks Specific Product Precautions 2

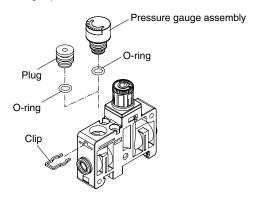
Be sure to read this before handling.

#### Handling

# **⚠** Caution

#### Pressure gauge and port plug replacement

Possible to replace the pressure gauge and port plug the same as the one-touch fitting replacement.



- Note 1) Before replacing, be sure to confirm that no inlet or outlet pressure is applied and that the internal pressure is fully exhausted. Replacing with the pressure kept inside is dangerous.
- Note 2) Gently remove the clip by hand. Pulling forcibly may cause the clip to pop out, resulting in dangerous replacement.
- Note 3) Insert the clip thoroughly after replacement parts are inserted completely. If using with the clip inserted insufficiently, it may cause the clip to be released, resulting in dangerous operation.





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