Regulator with Built-in Pressure Gauge

Filter Regulator with Built-in Pressure Gauge

New RoHS

Transparent bowl guard

Improved environmental durability due to 2-layer construction

* Body size 30 or more

Improved visibility by mounting the pressure gauge on the top of the knob

Installation at lower locations

Installation at higher locations

ACG/ARG/AWG Series

NC392-A
(ES40-70A)

Space saving, Labor saving

Installation height: Approx. 30 mm reduction

＊ For ARG30-B

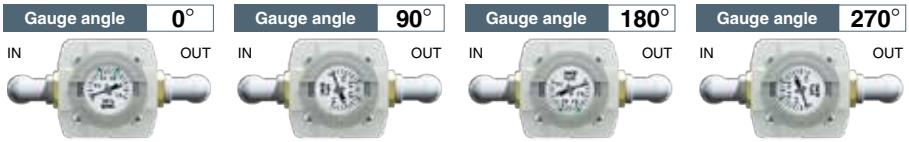
Angle adjustment of the pressure gauge makes space saving possible.

Mounting at **45°** Made to order Refer to page 30

Approx. **30** mm reduction

Mounting at **90°**

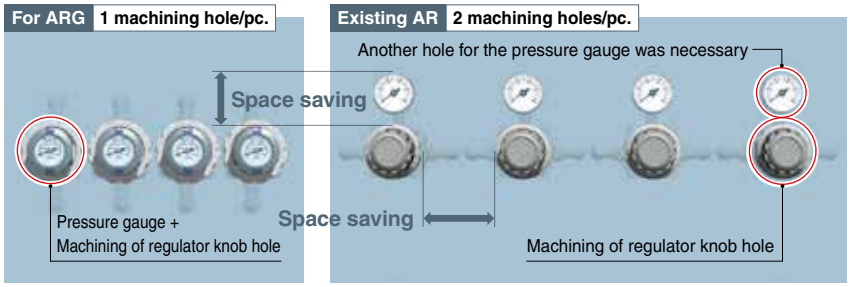
Mounting angle of pressure gauge is selectable depending on the piping direction



＊ Mounting angle can be changed as desired. For details, refer to "Procedure for replacing or changing the mounting angle of a pressure gauge" on page 42.

No need to machine a hole for the pressure gauge

Pressure gauge, regulator, and knob are integrated into one location.

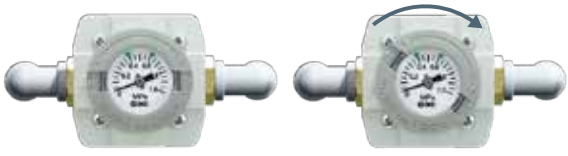


Improved operability

Easier limit indicator adjustment due to one-touch mounting/removal of the pressure gauge cover

Pressure gauge anti-revolving mechanism

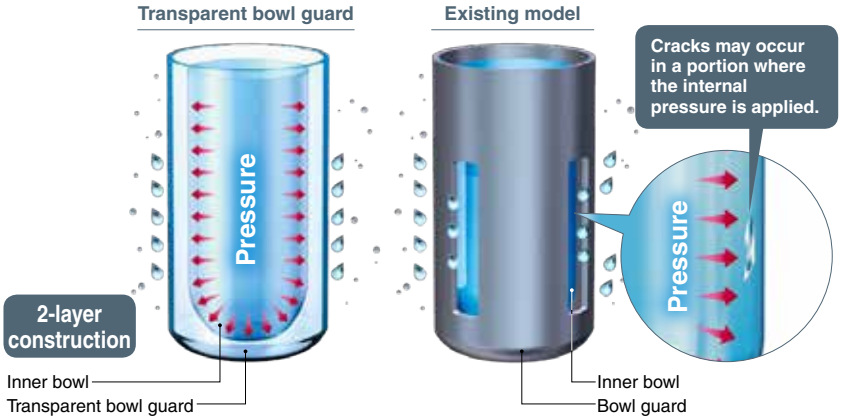
Pressure gauge does not rotate during knob operation.



Transparent bowl guard

Better environmental resistance: Transparent bowl guard can protect the inner bowl!

Windows on the bowl guard have been removed and the inner bowl is instead covered with a polycarbonate transparent bowl guard. Now, even if the environment changes and the bowl is exposed to corrosive chemical or oil splash, the foreign matter will not stick directly to the pressurized bowl. This can reduce risk of bowl breakage.



Better visibility: 360°

Use of transparent bowl guard makes it possible to check the condensate inside the filter bowl and the remaining oil amount in the lubricator from the entire periphery.

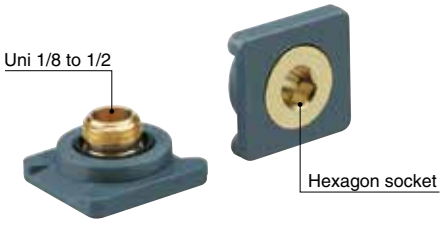
Light weight: Approx. 12% reduction

760 g ← 860 g (For AWG40)

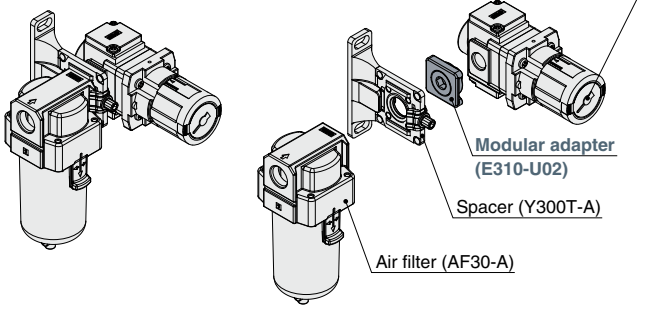
Related Product

Modular adapter

Easy modular connections for all equipment!



Front face mounting of regulator with built-in pressure gauge



ACG-B Series

Series Configuration

Air Combination

Air Filter + Regulator with Built-in Pressure Gauge + Lubricator

AF **ARG** **AL**

Model	Port size				Page
	1/8	1/4	3/8	1/2	
ACG20-B	●	●			5
ACG30-B		●	●		
ACG40-B		●	●	●	

Filter Regulator with Built-in Pressure Gauge + Lubricator

AWG **AL**

Model	Port size				Page
	1/8	1/4	3/8	1/2	
ACG20A-B	●	●			10
ACG30A-B		●	●		
ACG40A-B		●	●	●	

Air Filter + Regulator with Built-in Pressure Gauge

AF **ARG**

Model	Port size				Page
	1/8	1/4	3/8	1/2	
ACG20B-B	●	●			12
ACG30B-B		●	●		
ACG40B-B		●	●	●	

Air Filter + **Mist Separator** + Regulator with Built-in Pressure Gauge

AF **AFM** **ARG**

Model	Port size				Page
	1/8	1/4	3/8	1/2	
ACG20C-B	●	●			14
ACG30C-B		●	●		
ACG40C-B		●	●	●	

Filter Regulator with Built-in Pressure Gauge + **Mist Separator**

AWG **AFM**

Model	Port size				Page
	1/8	1/4	3/8	1/2	
ACG20D-B	●	●			16
ACG30D-B		●	●		
ACG40D-B		●	●	●	

Air Filter AF

Model	Port size			
	1/8	1/4	3/8	1/2
AF20-A	●	●		
AF30-A		●	●	
AF40-A		●	●	●

Mist Separator AFM

Model	Port size			
	1/8	1/4	3/8	1/2
AFM20-A	●	●		
AFM30-A		●	●	
AFM40-A		●	●	●

Regulator with Built-in Pressure Gauge ARG

Model	Port size				Page
	1/8	1/4	3/8	1/2	
ARG20-B	●	●			22
ARG30-B		●	●		
ARG40-B		●	●	●	

Regulator with Built-in Pressure Gauge with Backflow Function ARG□K

Model	Port size				Page
	1/8	1/4	3/8	1/2	
ARG20K-B	●	●			22
ARG30K-B		●	●		
ARG40K-B		●	●	●	

Filter Regulator with Built-in Pressure Gauge AWG

Model	Port size				Page
	1/8	1/4	3/8	1/2	
AWG20-B	●	●			32
AWG30-B		●	●		
AWG40-B		●	●	●	

Filter Regulator with Built-in Pressure Gauge with Backflow Function AWG□K

Model	Port size				Page
	1/8	1/4	3/8	1/2	
AWG20K-B	●	●			32
AWG30K-B		●	●		
AWG40K-B		●	●	●	

Lubricator AL

Model	Port size			
	1/8	1/4	3/8	1/2
AL20-A	●	●		
AL30-A		●	●	
AL40-A		●	●	●

Air Combination

RoHS

ACG20-B to ACG40-B

How to Order

ACG ❶ ❷ – ❸ ❹ ❺ **G1** – ❻ – ❼ **– B**

Mounting angle of pressure gauge 0[*1]

- Semi-standard: Select one each for **a** to **h**.
- Option/Attachment/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.

Example) ACG30C-F03DG1-SV1-16NR-B

		Symbol	Description	❶ Body size 20	30	40
❷	Model combination	**Nil**	Air filter + Regulator + Lubricator	●	●	●
		A	Filter regulator + Lubricator	●	●	●
		B	Air filter + Regulator	●[*2]	●	●
		C	Air filter + Mist separator + Regulator	●	●	●
		D	Filter regulator + Mist separator	●	●	●
		+				
❸	Pipe thread type	**Nil**	Rc	●	●	●
		N[*3]	NPT	●	●	●
		F[*4]	G	●	●	●
		+				
❹	Port size	**01**	1/8	●	—	—
		02	1/4	●	●	●
		03	3/8	—	●	●
		04	1/2	—	—	●
		+				
❺	Option	**Nil**	Without auto drain	●	●	●
		C[*5]	Float type auto drain (N.C.)	●	●	●
		D[*6]	Float type auto drain (N.O.)	—	●	●
		+				
❻	Attachment[*7]	**Nil**	Without attachment	●	●	●
		K	Check valve	●	●	●
		S	Pressure switch	●	●	●
		V	Pressure relief 3-port valve	●	●	●
		V1		●	●	●
		+				
❼ Semi-standard	**a** Set pressure[*8]	**Nil**	0.05 to 0.85 MPa setting	●	●	●
		1[*9]	0.02 to 0.2 MPa setting	●	●	●
		+				
	b Bowl[*10]	**Nil**	Polycarbonate bowl	●	●	●
		2	Metal bowl	●	●	●
		6	Nylon bowl	●	●	●
		8	Metal bowl with level gauge	—	●	●
		C	With bowl guard	●	—[*11]	—[*11]
		6C	With bowl guard (Nylon bowl)	●	—[*12]	—[*12]
		+				
	c Air filter drain port[*13]	**Nil**	With drain cock	●	●	●
		J[*14]	Drain guide 1/8	●	—	—
			Drain guide 1/4	—	●	●
		W[*15]	Drain cock with barb fitting (for ø6 x ø4 nylon tube)	—	●	●
		+				
	d Lubricator lubricant exhaust port	**Nil**	Without drain cock	●	●	●
		3[*16]	Lubricator with drain cock	●	●	●
		+				
	e Exhaust mechanism	**Nil**	Relieving type	●	●	●
		N	Non-relieving type	●	●	●
		+				
	f Flow direction	**Nil**	Flow direction: Left to right	●	●	●
		R	Flow direction: Right to left	●	●	●

			Symbol	Description	❶ Body size 20	30	40
❼	Semi-standard	g ARG knob[*17]	Nil	Downward	●	●	●
			Y	Upward	●	●	●
			+				
		h Pressure unit	Nil	Product label, caution label for bowl, and pressure gauge in SI units: MPa	●	●	●
			Z[*18]	Product label: psi, caution label for bowl: psi/°F, and pressure gauge: MPa/psi dual scale	●	●	●

∗1 Mounting angle of pressure gauge is G1 only. If other mounting angles are needed, contact SMC.
∗2 Wall mount is not available for a regulator with downward facing knob. Contact SMC when wall mount is needed.
∗3 Drain guide is NPT1/8 (applicable to the ACG20-B) and NPT1/4 (applicable to the ACG30-B to ACG40-B). The auto drain port comes with a ø3/8" One-touch fitting (applicable to the ACG30-B to ACG40-B).
∗4 Drain guide is G1/8 (applicable to the ACG20-B) and G1/4 (applicable to the ACG30-B to ACG40-B).
∗5 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending operations for the day is recommended.
∗6 If the compressor is small (0.75 kW, discharge flow is less than 100 L/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.
∗7 Refer to the table below for the mounting position of the attachment.
∗8 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
∗9 Spring and pressure gauge (full-span 0.3 MPa) are different from those for the standard specification. Outlet pressure may increase by 0.2 MPa or more.
∗10 Refer to chemical data on page 41 for chemical resistance of the bowl.
∗11 A bowl guard is provided as standard equipment (polycarbonate).
∗12 A bowl guard is provided as standard equipment (nylon).
∗13 The combination of float type auto drain C and D is not available.
∗14 Without a valve function
∗15 The combination of metal bowl 2 and 8 is not available.
∗16 When choosing with W: Air filter drain port, the drain cock of a lubricator will be with barb fittings.
∗17 Applicable models are ACG□□-B, ACG□□B-B, and ACG□□C-B.
∗18 For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)

Attachments

	Port size	Function	
Check valve	1/8, 1/4, 3/8	Prevents backflow from lubricator.	p. 18
Pressure switch	—	Compact switch	p. 18
Pressure relief 3-port valve	1/8, 1/4, 3/8, 1/2	Releases residual pressure in lines.	p. 19

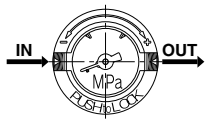
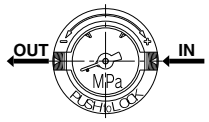
Accessories
Refer to page 20 for spacer and spacer with bracket.

Attachment mounting position

Symbol	Description	Attachment mounting position	Applicable model
K	Check valve	AF + ARG + **K** + AL	ACG20 to 40-B
		AWG + **K** + AL	ACG20A to 40A-B
S[*1]	Pressure switch	AF + ARG + **S** + AL	ACG20 to 40-B
		AF + **S** + ARG	ACG20B to 40B-B
		AF + AFM + **S** + ARG	ACG20C to 40C-B
V	Pressure relief 3-port valve	AF + ARG + AL + **V**	ACG20 to 40-B
		AWG + AL + **V**	ACG20A to 40A-B
		AF + ARG + **V**	ACG20B to 40B-B
		AF + AFM + ARG + **V**	ACG20C to 40C-B
		AWG + AFM + **V**	ACG20D to 40D-B
V1[*2]		**V** + AF + ARG□K	ACG20B to 40B-B
		V + AF + AFM + ARG□K	ACG20C to 40C-B
		V + AWG□K + AFM	ACG20D to 40D-B

∗1 When the semi-standard specification: -Y (ARG with knob installed upward) is selected, the pressure switch cannot be mounted to the inlet/outlet of ARG.
∗2 Make sure that the outlet pressure is released to atmospheric pressure using a pressure gauge.

Mounting angle of pressure gauge

Symbol	G1
Gauge angle	0°
Mounting angle view	
Mounting angle view (-R specification)	

∗ Possible to change to the optional mounting angles. For details, refer to page 42, "Procedure for replacing or changing the mounting angle of a pressure gauge."

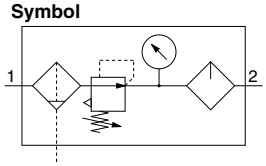
Air Combination

Air Filter + Regulator + Lubricator

ACG20-B to ACG40-B

ACG40-B

Symbol



Standard Specifications

Model		ACG20-B	ACG30-B	ACG40-B
Component	Air filter	AF20-A	AF30-A	AF40-A
	Regulator	ARG20-B	ARG30-B	ARG40-B
	Lubricator	AL20-A	AL30-A	AL40-A
Port size		1/8 1/4	1/4 3/8	1/4 3/8 1/2
Fluid		Air		
Proof pressure		1.5 MPa		
Max. operating pressure		1.0 MPa		
Set pressure range	[ARG]	0.05 to 0.85 MPa		
Ambient and fluid temperatures		–5 to 60°C (with no freezing)		
Nominal filtration rating	[AF]	5 μm		
Recommended lubricant	[AL]	Class 1 turbine oil (ISO VG32)		
Regulator construction	[ARG]	Relieving type		
Bowl material	[AF/AL]	Polycarbonate		
Bowl guard	[AF/AL]	Semi-standard (Steel)	Standard (Polycarbonate)	
Weight [kg]		0.44	0.89	1.52

Attachment/Option Part No.

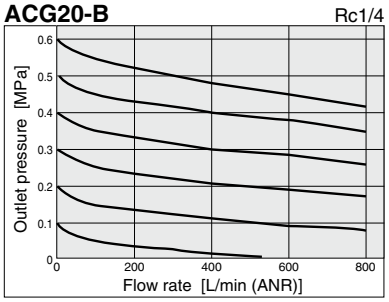
Section	Description		Model	Attachment/Option part no.		
				For ACG20-B	For ACG30-B	For ACG40-B
	Pressure gauge*1	Standard	0 to 1.0 MPa	GB2-10AS	GB3-10AS	GB4-10AS
		Semi-standard	0 to 0.3 MPa	GB2-3AS	GB3-3AS	GB4-3AS
Option	Float type*2 auto drain		N.C.	AD27-A	AD37-A	AD47-A
			N.O.	—	AD38-A	AD48-A
Attachment	Spacer			Y200-A	Y300-A	Y400-A
	Spacer with bracket			Y200T-A	Y300T-A	Y400T-A
	Check valve*3, *4			AKM2000-□01-A (□02-A)	AKM3000-(□01-A) □02-A	AKM4000-(□02-A) □03-A
	Pressure switch*4, *5			IS10M-20-A	IS10M-30-A	IS10M-40-A
	Pressure relief 3-port valve*4			VHS20-□01A □02A	VHS30-□02A □03A	□02A VHS40-□03A □04A

*1 Contact SMC regarding pressure gauge supply for psi unit specifications.
*2 Minimum operating pressure: 0.1 MPa for N.O. type, 0.1 MPa for N.C. type (AD27-A) and 0.15 MPa for N.C. type (AD37-A and AD47-A). Contact SMC for psi and °F specifications.
*3 For F.R.L. units, port sizes not in ( ) are for standard application.
*4 Separate spacers are required for modular unit.
*5 Pressure switch cannot be mounted on the inlet and outlet sides of an ARG-B with an upward facing knob (semi-standard specification: -Y).

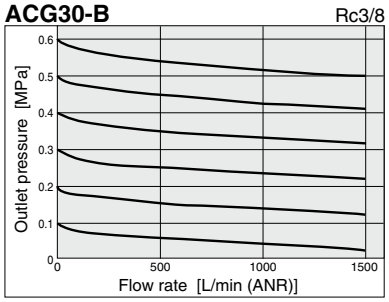
Flow Rate Characteristics

Condition: Inlet pressure 0.7 MPa

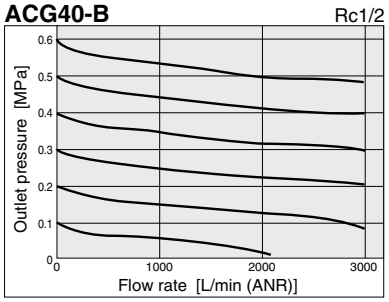
ACG20-B Rc1/4



ACG30-B Rc3/8



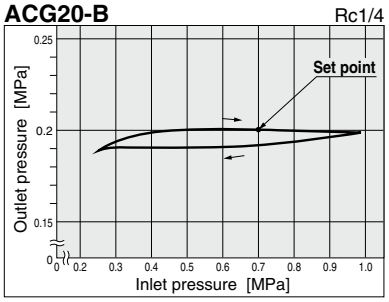
ACG40-B Rc1/2



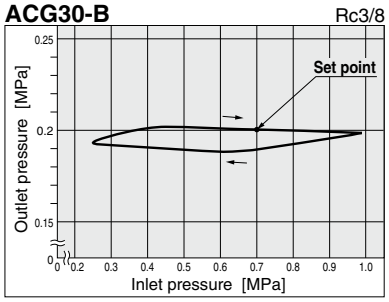
Pressure Characteristics

Conditions: Inlet pressure 0.7 MPa, Outlet pressure 0.2 MPa, Flow rate 20 L/min (ANR)

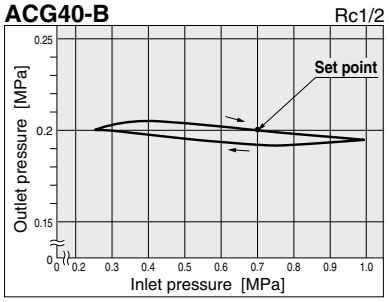
ACG20-B Rc1/4



ACG30-B Rc3/8



ACG40-B Rc1/2



⚠ Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website.

Piping

⚠ Warning

1. When mounting a check valve, make sure the arrow (IN side) points in the correct direction of air flow.

Selection

⚠ Warning

1. Float type auto drain

Operate under the following conditions to avoid malfunction.

<N.O. type>

- Operating compressor: 0.75 kW (100 L/min (ANR)) or more

  When using 2 or more auto drains, multiply the value above by the number of auto drains to find the capacity of the compressors you will need.

  For example, when using 2 auto drains, 1.5 kW (200 L/min (ANR)) of the compressor capacity is required.
- Operating pressure: 0.1 MPa or more

<N.C. type>

- Operating pressure for AD27-A: 0.1 MPa or more
- Operating pressure for AD37-A/AD47-A: 0.15 MPa or more

2. Use a regulator or filter regulator with a backflow function when mounting a pressure relief 3-port valve on the inlet side to ensure the release of the residual pressure. Otherwise, residual pressure will not be fully released.

Selection

⚠ Caution

1. If a pressure relief 3-port valve is mounted on the inlet side of the lubricator, causing a backflow of air, it can result in a backflow of oil or damage to internal parts. Do not use it in this manner.

2. An F.R.L. unit shipped from the plant has its model number labeled. However, components that are combined together during the distribution process do not have a label on them.

Air Supply

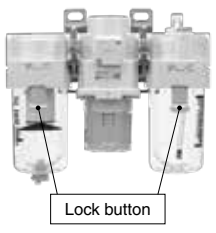
⚠ Caution

1. Use an air filter with 5 μm or less filtration rating on the inlet side of the valve to avoid any damage to the seat caused by dust when mounting a pressure relief 3-port valve on the inlet side.

Mounting/Adjustment

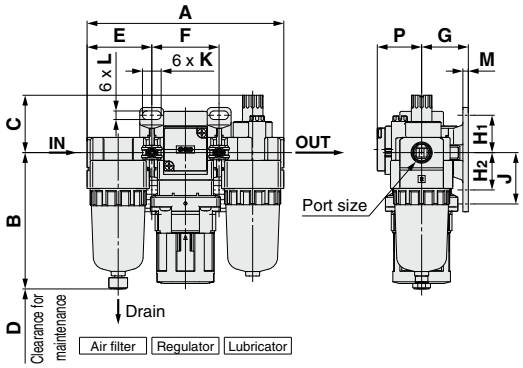
⚠ Caution

1. When the bowl is installed on the air filter, filter regulator, lubricator, mist separator, or micro mist separator (ACG30-B to ACG40-B), install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.

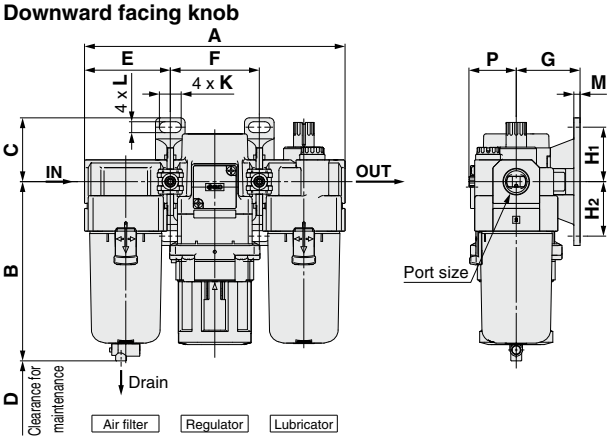


Dimensions

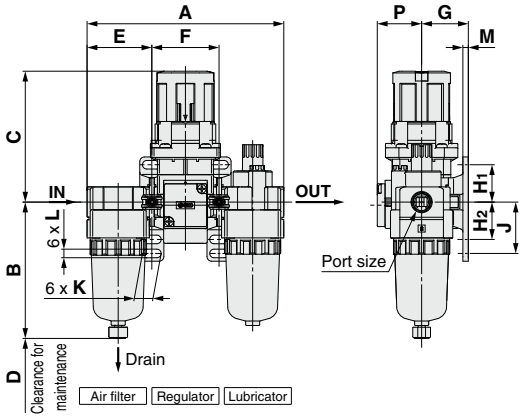
ACG20-B Standard
Downward facing knob



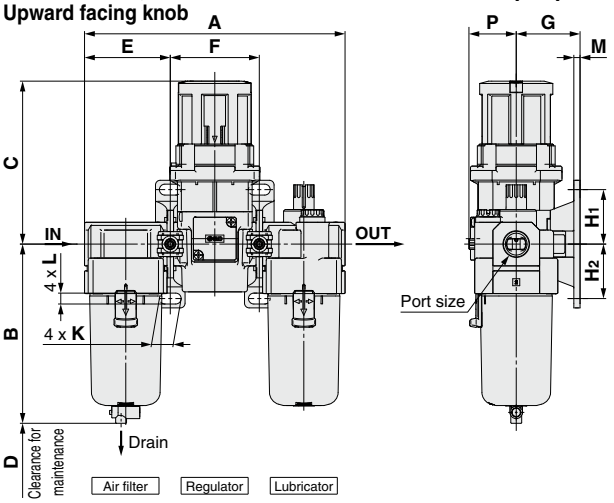
ACG30-B, ACG40-B Standard
Downward facing knob

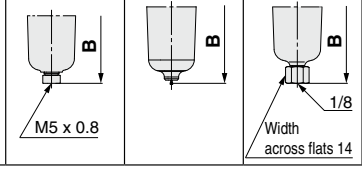


ACG20-B Semi-standard (–Y)
Upward facing knob



ACG30-B, ACG40-B Semi-standard (–Y)
Upward facing knob



Applicable model	ACG20-B			ACG30-B, ACG40-B				
Optional/Semi-standard specifications	With auto drain	Metal bowl	With drain guide	With auto drain (N.O./N.C.)	Metal bowl	Metal bowl with level gauge	With drain guide	Drain cock with barb fitting
Dimensions								

Model	Port size	Standard specifications													
		A	B	C	D	P	Bracket mount								
							E	F	G	H_1	H_2	J	K	L	M
ACG20-B	1/8, 1/4	126.4	87.6	35.9	60	28.5	41.6	43.2	30	24	—*1	—*1	12*1	5.5*1	3.5
ACG30-B	1/4, 3/8	167.4	115.1	41	80	30.5	55.1	57.2	41	35	35	—	14	7	4
ACG40-B	1/4, 3/8, 1/2	220.4	147.1	48	110	36.1	72.6	75.2	50	40	40	—	18	9	5

Model	Semi-standard specifications									
	Upward facing knob*2					With auto drain*3	With barb fitting*3	With drain guide*3	Metal bowl*3	Metal bowl with level gauge*3
	C*4	H_2	J	K	L	B	B	B	B	B
ACG20-B	87.1	24	33	12	5.5	104.9	—	91.4	87.4	—
ACG30-B	108.2	35	—	14	7	156.8	123.6	121.9	117.6	137.6
ACG40-B	114.8	40	—	18	9	186.9	155.6	153.9	149.6	169.6

∗1 In the case of the ACG20-B's standard specification (downward facing knob), the wall mounting is not possible using the lower side mounting hole on the spacer with a bracket. Use the upper side mounting hole when wall mounting.
∗2 In the case of the upward facing knob in the semi-standard specification, the C dimension will change. Also, in the case of the ACG20-B, wall mounting is possible by using the lower side mounting hole on the spacer with a bracket.
∗3 For the option/semi-standard specifications (with auto drain, with barb fitting, with drain guide, metal bowl, or metal bowl with level gauge), the total length (B dimension) will vary.
∗4 The length when the regulator knob is unlocked

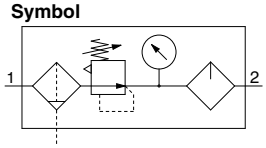
Air Combination

Filter Regulator + Lubricator

ACG20A-B to ACG40A-B

ACG40A-B

Symbol



Standard Specifications

Model		ACG20A-B	ACG30A-B	ACG40A-B
Component	Filter regulator	AWG20-B	AWG30-B	AWG40-B
	Lubricator	AL20-A	AL30-A	AL40-A
Port size		1/8 1/4	1/4 3/8	1/4 3/8 1/2
Fluid		Air		
Proof pressure		1.5 MPa		
Max. operating pressure		1.0 MPa		
Set pressure range [AWG]		0.05 to 0.85 MPa		
Ambient and fluid temperatures		–5 to 60°C (with no freezing)		
Nominal filtration rating [AWG]		5 μm		
Recommended lubricant [AL]		Class 1 turbine oil (ISO VG32)		
Filter regulator construction [AWG]		Relieving type		
Bowl material [AWG/AL]		Polycarbonate		
Bowl guard [AWG/AL]		Semi-standard (Steel)	Standard (Polycarbonate)	
Weight [kg]		0.39	0.74	1.29

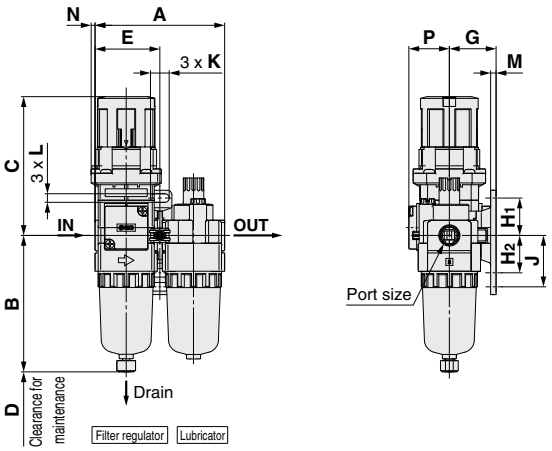
Attachment/Option Part No.

Section	Description		Model	Attachment/Option part no.		
				For ACG20A-B	For ACG30A-B	For ACG40A-B
	Pressure gauge*1	Standard	0 to 1.0 MPa	GB2-10AS	GB3-10AS	GB4-10AS
		Semi-standard	0 to 0.3 MPa	GB2-3AS	GB3-3AS	GB4-3AS
Option	Float type*2 auto drain		N.C.	AD27-A	AD37-A	AD47-A
			N.O.	—	AD38-A	AD48-A
Attachment	Spacer			Y200-A	Y300-A	Y400-A
	Spacer with bracket			Y200T-A	Y300T-A	Y400T-A
	Check valve*3, *4			AKM2000-□01-A (□02-A)	AKM3000-(□01-A) □02-A	AKM4000-(□02-A) □03-A
	Pressure relief 3-port valve*4			VHS20-□01A □02A	VHS30-□02A □03A	□02A VHS40-□03A □04A

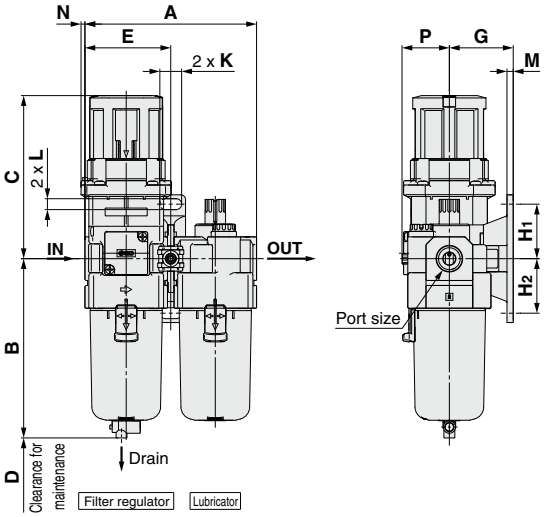
*1 Contact SMC regarding pressure gauge supply for psi unit specifications.
*2 Minimum operating pressure: 0.1 MPa for N.O. type, 0.1 MPa for N.C. type (AD27-A) and 0.15 MPa for N.C. type (AD37-A and AD47-A). Contact SMC for psi and °F specifications.
*3 For F.R.L. units, port sizes not in ( ) are for standard application.
*4 Separate spacers are required for modular unit.

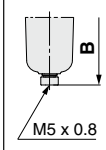
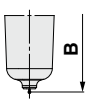
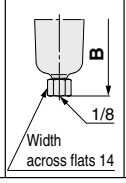
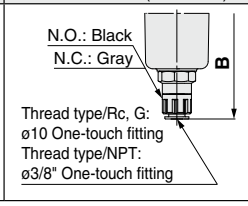
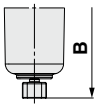
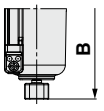
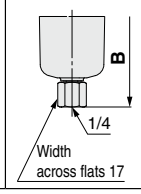
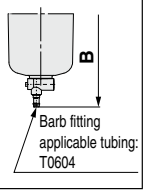
Dimensions

ACG20A-B



ACG30A-B, ACG40A-B



Applicable model	ACG20A-B			ACG30A-B, ACG40A-B				
Optional/Semi-standard specifications	With auto drain	Metal bowl	With drain guide	With auto drain (N.O./N.C.)	Metal bowl	Metal bowl with level gauge	With drain guide	Drain cock with barb fitting
Dimensions								

Model	Port size	Standard specifications													
		A	B	C*1	D	N	P	Bracket mount							
								E	G	H_1	H_2	J	K	L	M
ACG20A-B	1/8, 1/4	83.2	87.6	92.1	60	2.5	26	41.6	30	24	24	33	12	5.5	3.5
ACG30A-B	1/4, 3/8	110.2	115.1	108.2	80	2.5	30.5	55.1	41	35	35	—	14	7	4
ACG40A-B	1/4, 3/8, 1/2	145.2	147.1	114.8	110	0	37.3	72.6	50	40	40	—	18	9	5

Model	Semi-standard specifications*2				
	With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with level gauge
	B	B	B	B	B
ACG20A-B	104.9	—	91.4	87.4	—
ACG30A-B	156.8	123.6	121.9	117.6	137.6
ACG40A-B	186.9	155.6	153.9	149.5	169.5

*1 The length when the filter regulator knob is unlocked

*2 For the option/semi-standard specifications (with auto drain, with barb fitting, with drain guide, metal bowl, or metal bowl with level gauge), the total length (B dimension) will vary.

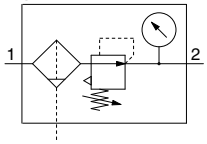
Air Combination

Air Filter + Regulator

ACG20B-B to ACG40B-B

ACG40B-B

Symbol



Standard Specifications

Model		ACG20B-B	ACG30B-B	ACG40B-B
Component	**Air filter**	**AF20-A**	**AF30-A**	**AF40-A**
	Regulator	**ARG20-B**	**ARG30-B**	**ARG40-B**
Port size		1/8 1/4	1/4 3/8	1/4 3/8 1/2
Fluid		Air		
Proof pressure		1.5 MPa		
Max. operating pressure		1.0 MPa		
Set pressure range	**[ARG]**	0.05 to 0.85 MPa		
Ambient and fluid temperatures		–5 to 60°C (with no freezing)		
Nominal filtration rating	**[AF]**	5 μm		
Regulator construction	**[ARG]**	Relieving type		
Bowl material	**[AF]**	Polycarbonate		
Bowl guard	**[AF]**	Semi-standard (Steel)	Standard (Polycarbonate)	
Weight [kg]		0.32	0.64	1.04

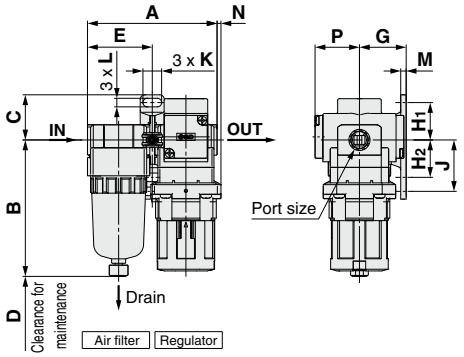
Attachment/Option Part No.

Section	Description		Model	Attachment/Option part no.		
				For ACG20B-B	**For ACG30B-B**	**For ACG40B-B**
	Pressure gauge*1	Standard	0 to 1.0 MPa	GB2-10AS	GB3-10AS	GB4-10AS
		Semi-standard	0 to 0.3 MPa	GB2-3AS	GB3-3AS	GB4-3AS
Option	Float type*2 auto drain		N.C.	AD27-A	AD37-A	AD47-A
			N.O.	—	AD38-A	AD48-A
Attachment	Spacer			Y200-A	Y300-A	Y400-A
	Spacer with bracket			Y200T-A	Y300T-A	Y400T-A
	Pressure switch*3, *4			IS10M-20-A	IS10M-30-A	IS10M-40-A
	Pressure relief 3-port valve*3			VHS20-□01A □02A	VHS30-□02A □03A	□02A VHS40-□03A □04A

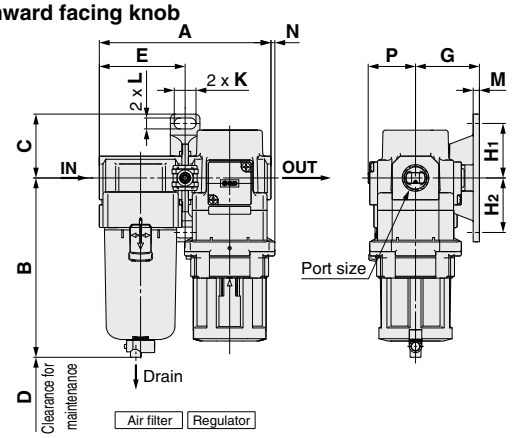
*1 Contact SMC regarding pressure gauge supply for psi unit specifications.
*2 Minimum operating pressure: 0.1 MPa for N.O. type, 0.1 MPa for N.C. type (AD27-A) and 0.15 MPa for N.C. type (AD37-A and AD47-A). Contact SMC for psi and °F specifications.
*3 Separate spacers are required for modular unit.
*4 Pressure switch cannot be mounted on the inlet and outlet sides of an ARG-B with an upward facing knob (semi-standard specification: -Y).

Dimensions

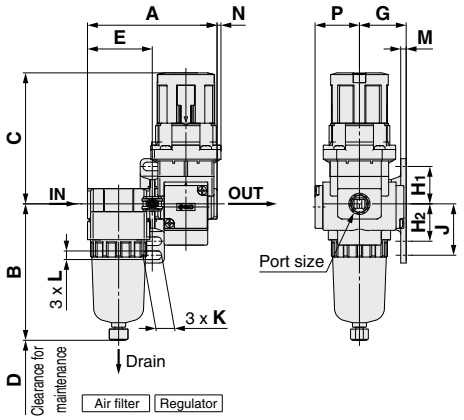
ACG20B-B Standard
Downward facing knob



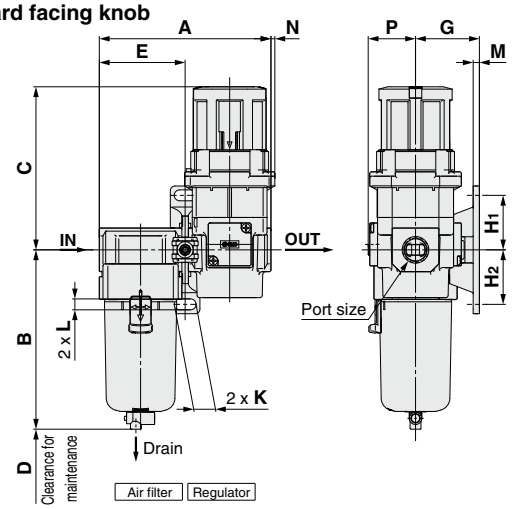
ACG30B-B, ACG40B-B Standard
Downward facing knob

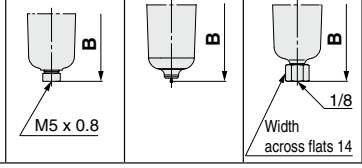


ACG20B-B Semi-standard (-Y)
Upward facing knob



ACG30B-B, ACG40B-B Semi-standard (-Y)
Upward facing knob



Applicable model	ACG20B-B			ACG30B-B, ACG40B-B				
Optional/Semi-standard specifications	With auto drain	Metal bowl	With drain guide	With auto drain (N.O./N.C.)	Metal bowl	Metal bowl with level gauge	With drain guide	Drain cock with barb fitting
Dimensions								

Model	Port size	Standard specifications													
		A	B	C	D	N	P	Bracket mount							
								E	G	H_1	H_2	J	K	L	M
ACG20B-B	1/8, 1/4	83.2	87.6	29	25	2.5	28.5	41.6	30	—*1	—*1	—*1	12*1	5.5*1	3.5
ACG30B-B	1/4, 3/8	110.2	115.1	41	35	2.5	30.5	55.1	41	35	35	—	14	7	4
ACG40B-B	1/4, 3/8, 1/2	145.2	147.1	48	40	0	36.1	72.6	50	40	40	—	18	9	5

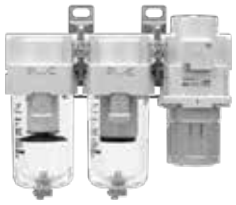
Model	Semi-standard specifications										
	Upward facing knob*2						With auto drain*3	With barb fitting*3	With drain guide*3	Metal bowl*3	Metal bowl with level gauge*3
	C*4	H_1	H_2	J	K	L	B	B	B	B	B
ACG20B-B	87	24	24	33	12	5.5	104.9	—	91.4	87.4	—
ACG30B-B	108.5	35	35	—	14	7	156.8	123.6	121.9	117.6	137.6
ACG40B-B	114.5	40	40	—	18	9	186.9	155.6	153.9	149.6	169.6

∗1 In the case of the ACG20B-B's standard specification (downward facing knob), the wall mounting is not possible using the lower side mounting hole on the spacer with a bracket. Use the upper side mounting hole when wall mounting.
∗2 In the case of the upward facing knob in the semi-standard specification, the C dimension will change. Also, in the case of the ACG20B-B, wall mounting is possible by using the lower side mounting hole on the spacer with a bracket.
∗3 For the option/semi-standard specifications (with auto drain, with barb fitting, with drain guide, metal bowl, or metal bowl with level gauge), the total length (B dimension) will vary.
∗4 The length when the regulator knob is unlocked

Air Combination

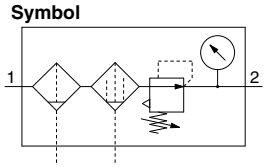
Air Filter + Mist Separator + Regulator

ACG20C-B to ACG40C-B



ACG40C-B

Symbol



Standard Specifications

Model		ACG20C-B	ACG30C-B	ACG40C-B
Component	Air filter	AF20-A	AF30-A	AF40-A
	Mist separator	AFM20-A	AFM30-A	AFM40-A
	Regulator	ARG20-B	ARG30-B	ARG40-B
Port size		1/8 1/4	1/4 3/8	1/4 3/8 1/2
Fluid		Air		
Proof pressure		1.5 MPa		
Max. operating pressure		1.0 MPa		
Set pressure range	[ARG]	0.05 to 0.85 MPa		
Rated flow [L/min (ANR)]*1	[AFM]	200	450	1100
Ambient and fluid temperatures		–5 to 60°C (with no freezing)		
Nominal filtration rating	[AF/AFM]	AF: 5 μm, AFM: 0.3 μm (Filtration efficiency 99.9%)		
Outlet side oil mist concentration	[AFM]	Max.1.0 mg/m³ (ANR)(≈ 0.8 ppm)*2, *3		
Regulator construction	[ARG]	Relieving type		
Bowl material	[AF/AFM]	Polycarbonate		
Bowl guard	[AF/AFM]	Semi-standard (Steel)	Standard (Polycarbonate)	
Weight [kg]		0.43	0.88	1.52

*1 Condition: Mist separator inlet pressure 0.7 MPa. The rated flow varies depending on the inlet pressure. Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side.
*2 At compressor discharge 30 mg/m³ (ANR)
*3 Bowl seal and other O-rings are slightly lubricated.

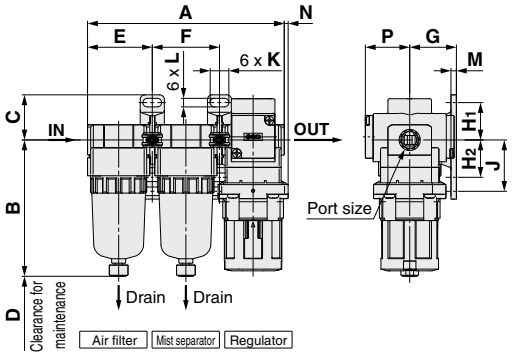
Attachment/Option Part No.

Section	Description		Model	Attachment/Option part no. For ACG20C-B	For ACG30C-B	For ACG40C-B
	Pressure gauge*1	Standard	0 to 1.0 MPa	GB2-10AS	GB3-10AS	GB4-10AS
		Semi-standard	0 to 0.3 MPa	GB2-3AS	GB3-3AS	GB4-3AS
Option	Float type*2 auto drain		N.C.	AD27-A	AD37-A	AD47-A
			N.O.	—	AD38-A	AD48-A
Attachment	Spacer			Y200-A	Y300-A	Y400-A
	Spacer with bracket			Y200T-A	Y300T-A	Y400T-A
	Pressure switch*3, *4			IS10M-20-A	IS10M-30-A	IS10M-40-A
	Pressure relief 3-port valve*3			VHS20-□01A □02A	VHS30-□02A □03A	□02A VHS40-□03A □04A

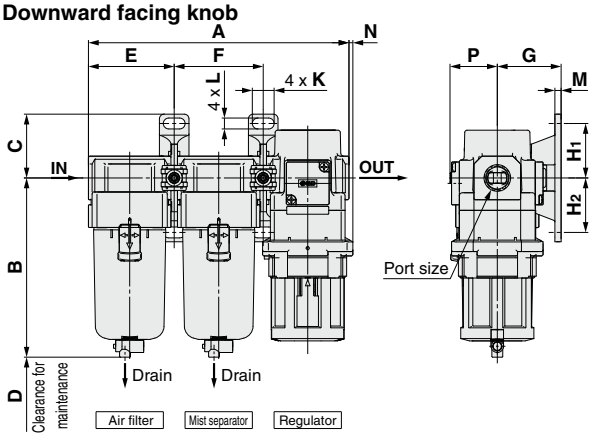
*1 Contact SMC regarding pressure gauge supply for psi unit specifications.
*2 Minimum operating pressure: 0.1 MPa for N.O. type, 0.1 MPa for N.C. type (AD27-A) and 0.15 MPa for N.C. type (AD37-A and AD47-A). Contact SMC for psi and °F specifications.
*3 Separate spacers are required for modular unit.
*4 Pressure switch cannot be mounted on the inlet and outlet sides of an ARG-B with an upward facing knob (semi-standard specification: -Y).

Dimensions

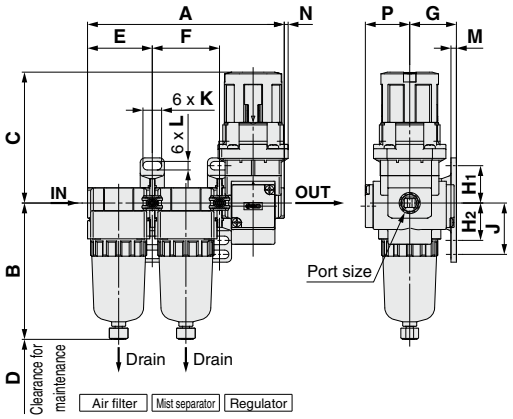
ACG20C-B Standard
Downward facing knob



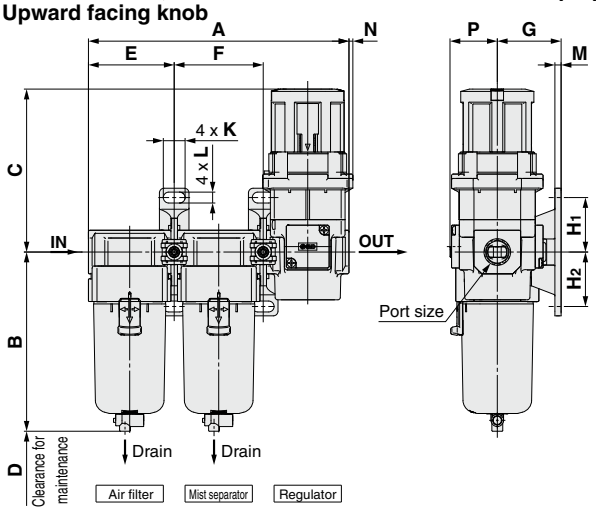
ACG30C-B, ACG40C-B Standard
Downward facing knob

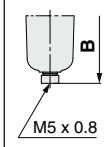
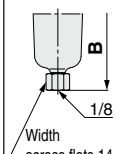
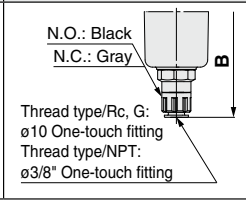
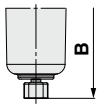
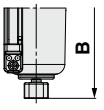
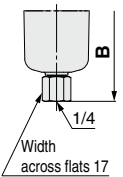
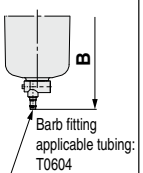


ACG20C-B Semi-standard (-Y)
Upward facing knob



ACG30C-B, ACG40C-B Semi-standard (-Y)
Upward facing knob



Applicable model	ACG20C-B			ACG30C-B, ACG40C-B				
Optional/Semi-standard specifications	With auto drain	Metal bowl	With drain guide	With auto drain (N.O./N.C.)	Metal bowl	Metal bowl with level gauge	With drain guide	Drain cock with barb fitting
Dimensions								

Model	Port size	Standard specifications														
		A	B	C	D	N	P	Bracket mount								
								E	F	G	H_1	H_2	J	K	L	M
ACG20C-B	1/8, 1/4	126.4	87.6	29	40	2.5	28.5	41.6	43.2	30	24	—*1	—*1	12*1	5.5*1	3.5
ACG30C-B	1/4, 3/8	167.4	115.1	41	50	2.5	30.5	55.1	57.2	41	35	35	—	14	7	4
ACG40C-B	1/4, 3/8, 1/2	220.4	147.1	48	75	0	36.1	72.6	75.2	50	40	40	—	18	9	5

Model	Semi-standard specifications									
	Upward facing knob*2					With auto drain*3	With barb fitting*3	With drain guide*3	Metal bowl*3	Metal bowl with level gauge*3
	C*4	H_2	J	K	L	B	B	B	B	B
ACG20C-B	87.1	24	33	12	5.5	104.9	—	91.4	87.4	—
ACG30C-B	108.2	35	—	14	7	156.8	123.6	121.9	117.6	137.6
ACG40C-B	114.8	40	—	18	9	186.9	155.6	153.9	149.6	169.6

*1 In the case of the ACG20C-B's standard specification (downward facing knob), the wall mounting is not possible using the lower side mounting hole on the spacer with a bracket. Use the upper side mounting hole when wall mounting.
*2 In the case of the upward facing knob in the semi-standard specification, the C dimension will change. Also, in the case of the ACG20C-B, wall mounting is possible by using the lower side mounting hole on the spacer with a bracket.
*3 For the option/semi-standard specifications (with auto drain, with barb fitting, with drain guide, metal bowl, or metal bowl with level gauge), the total length (B dimension) will vary.
*4 The length when the regulator knob is unlocked

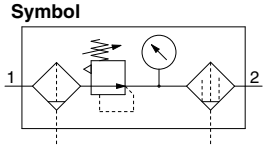
Air Combination

Filter Regulator + Mist Separator

ACG20D-B to ACG40D-B

ACG40D-B

Symbol



Standard Specifications

Model		ACG20D-B	ACG30D-B	ACG40D-B
Component	Filter regulator	AWG20-B	AWG30-B	AWG40-B
	Mist separator	AFM20-A	AFM30-A	AFM40-A
Port size		1/8 1/4	1/4 3/8	1/4 3/8 1/2
Fluid		Air		
Proof pressure		1.5 MPa		
Max. operating pressure		1.0 MPa		
Set pressure range	[AWG]	0.05 to 0.85 MPa		
Rated flow [L/min (ANR)]∗1	[AFM]	150	330	800
Ambient and fluid temperatures		–5 to 60°C (with no freezing)		
Nominal filtration rating	[AWG/AFM]	AWG: 5 μm, AFM: 0.3 μm (Filtration efficiency 99.9%)		
Outlet side oil mist concentration	[AFM]	Max. 1.0 mg/m³ (ANR)(≈ 0.8 ppm)∗2, ∗3		
Filter regulator construction	[AWG]	Relieving type		
Bowl material	[AWG/AFM]	Polycarbonate		
Bowl guard	[AWG/AFM]	Semi-standard (Steel)	Standard (Polycarbonate)	
Weight [kg]		0.38	0.73	1.29

∗1 Condition: Mist separator inlet pressure 0.5 MPa. The rated flow varies depending on the inlet pressure. Keep the air flow within the rated flow to prevent an outflow of lubricant to the outlet side.
∗2 At compressor discharge 30 mg/m³ (ANR)
∗3 Bowl seal and other O-rings are slightly lubricated.

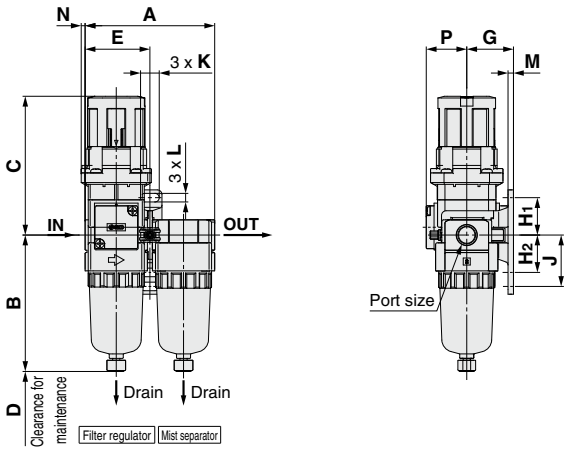
Attachment/Option Part No.

Section	Description		Model	Attachment/Option part no. For ACG20D-B	For ACG30D-B	For ACG40D-B
	Pressure gauge∗1	Standard	0 to 1.0 MPa	GB2-10AS	GB3-10AS	GB4-10AS
		Semi-standard	0 to 0.3 MPa	GB2-3AS	GB3-3AS	GB4-3AS
Option	Float type∗2 auto drain		N.C.	AD27-A	AD37-A	AD47-A
			N.O.	—	AD38-A	AD48-A
Attachment	Spacer			Y200-A	Y300-A	Y400-A
	Spacer with bracket			Y200T-A	Y300T-A	Y400T-A
	Pressure relief 3-port valve∗3			VHS20-□01A □02A	VHS30-□02A □03A	□02A VHS40-□03A □04A

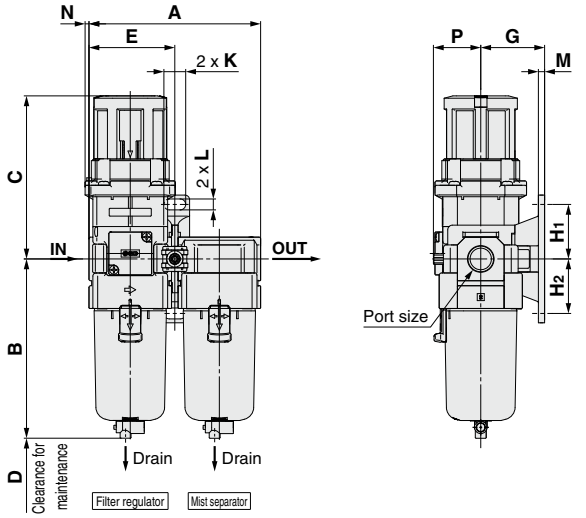
∗1 Contact SMC regarding pressure gauge supply for psi unit specifications.
∗2 Minimum operating pressure: 0.1 MPa for N.O. type, 0.1 MPa for N.C. type (AD27-A) and 0.15 MPa for N.C. type (AD37-A and AD47-A). Contact SMC for psi and °F specifications.
∗3 Separate spacers are required for modular unit.

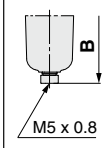
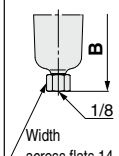
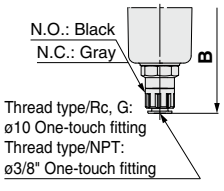
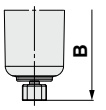
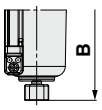
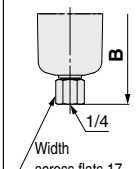
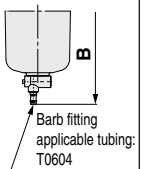
Dimensions

ACG20D-B



ACG30D-B, ACG40D-B



Applicable model	ACG20D-B			ACG30D-B, ACG40D-B				
Optional/Semi-standard specifications	With auto drain	Metal bowl	With drain guide	With auto drain (N.O./N.C.)	Metal bowl	Metal bowl with level gauge	With drain guide	Drain cock with barb fitting
Dimensions								

Model	Port size	Standard specifications													
		A	B	C*1	D	N	P	Bracket mount							
								E	G	H1	H2	J	K	L	M
ACG20D-B	1/8, 1/4	83.2	87.6	92.1	40	2.5	26	41.6	30	24	24	33	12	5.5	3.5
ACG30D-B	1/4, 3/8	110.2	115.1	108.2	50	2.5	30.5	55.1	41	35	35	—	14	7	4
ACG40D-B	1/4, 3/8, 1/2	145.2	147.1	114.8	75	0	37.3	72.6	50	40	40	—	18	9	5

Model	Semi-standard specifications*2				
	With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with level gauge
	B	B	B	B	B
ACG20D-B	104.9	—	91.4	87.4	—
ACG30D-B	156.8	123.6	121.9	117.6	137.6
ACG40D-B	186.9	155.6	153.9	149.5	169.5

*1 The length when the filter regulator knob is unlocked
*2 For the option/semi-standard specifications (with auto drain, with barb fitting, with drain guide, metal bowl, or metal bowl with level gauge), the total length (B dimension) will vary.

Air Combination
ACG-B Series
Attachments

Check Valve: (K) 1/8, 1/4, 3/8

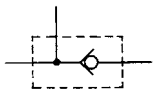
A check valve with intermediate air release port can be easily installed to prevent a backflow of lubricant when redirecting the air flow and releasing the air on the outlet side of the regulator.

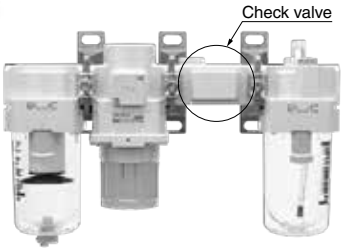
AKM 30 00 − ❷ 01 − A

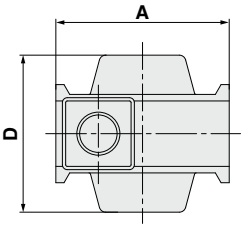
❶ ❷ ❸

		Symbol	Description	❶ Body size 20	30	40
❷	Pipe thread type	Nil	Rc	●	●	●
		N	NPT	●	●	●
		F	G	●	●	●
		+				
❸	By-pass port size	01	1/8	●	●	—
		02	1/4	●	●	●
		03	3/8	—	—	●

Symbol



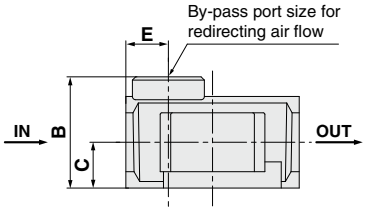




Specifications

Model	Effective area [mm²]
AKM2000-A	28
AKM3000-A	55
AKM4000-A	111

Be sure to use above check valves when redirecting the air flow on the inlet side of the lubricator.
Threads for IN and OUT ports are not machined.



Model	By-pass port size	A	B	C	D	E	Applicable model
AKM2000-A	1/8, 1/4	40	28	11	40	11	**ACG20-B, ACG20A-B**
AKM3000-A	1/8, 1/4	53	34	14	48	13	**ACG30-B, ACG30A-B**
AKM4000-A	1/4, 3/8	70	42	18	54	15	**ACG40-B, ACG40A-B**

Pressure Switch: (S)

A compact integrated pressure switch can be easily installed and facilitates the pressure detection of the line.

IS10M − 30 − ❷ − A

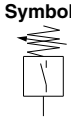
❶ ❷

• Semi-standard: Select one each for **a** to **c**.
• Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) IS10M-30-6LP-A

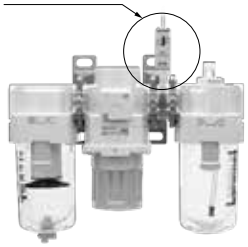
			Symbol	Description	❶ Body size 20	30	40
❷ Semi-standard	a	Set pressure range	Nil	0.1 to 0.4 MPa	●	●	●
			6*1	0.1 to 0.6 MPa	●	●	●
		+					
	b	Lead wire length	Nil	0.5 m	●	●	●
			L	3 m	●	●	●
			Z	5 m	●	●	●
		+					
	c	Pressure unit of the scale plate	Nil	MPa	●	●	●
			P*2	MPa/psi dual scale	●	●	●

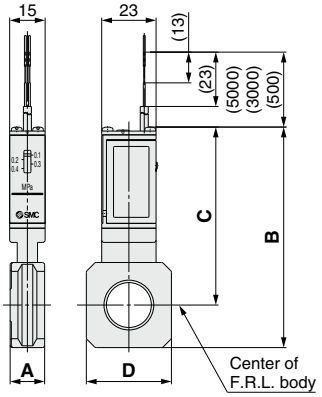
*1 Set pressure range of 6P (L, Z) is 0.2 to 0.6 MPa (30 to 90 psi).
*2 This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)

Symbol



Pressure switch





Specifications

Fluid	Air
Ambient and fluid temperatures	−5 to 60°C (with no freezing)
Proof pressure	1.0 MPa
Max. operating pressure	0.7 MPa
Set pressure range (when OFF)	0.1 to 0.4 MPa
Hysteresis	0.08 MPa or less

Switch Characteristics

Contact point configuration	1a
Maximum contact point capacity	2 VA (AC), 2 W (DC)
Operating voltage: AC, DC	100 V or less
Maximum operating current	12 V to 24 VAC, DC: 50 mA 48 VAC, DC: 40 mA 100 VAC, DC: 20 mA

* For detailed specifications on the IS10 series, refer to the IS10 series section of the SMC website.

Model	A	B	C	D	Applicable model
IS10M-20-A	10.6	74.2	64.4	28	**ACG20□-B**
IS10M-30-A	12.6	84.5	70.5	30	**ACG30□-B**
IS10M-40-A	14.6	93.3	75.3	36	**ACG40□-B**

* Separate spacers are required for modular unit.

Pressure Relief 3-Port Valve: (V)

With the use of a pressure relief 3-port valve, pressure left in the line can be easily exhausted.

VHS 30 – ☐ 03 A – ☐

❶ ❷ ❸ ❹

- Semi-standard: Select one each for **a** to **b**.
- Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.

Example) VHS30-03A-RZ

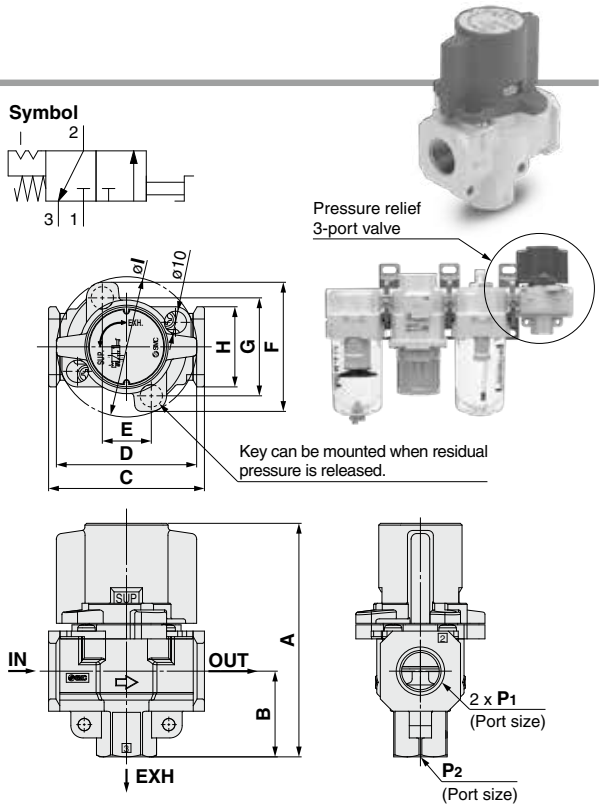
			Symbol	Description	❶ Body size 20	30	40
❷	Pipe thread type		**Nil**	Rc	●	●	●
			N∗1	NPT	●	●	●
			F∗1	G	●	●	●
		+					
❸	Port size		**01**	1/8	●	—	—
			02	1/4	●	●	●
			03	3/8	—	●	●
			04	1/2	—	—	●
		+					
❹	Semi-standard	**a** Flow direction	**Nil**	Flow direction: Left to right	●	●	●
			R	Flow direction: Right to left	●	●	●
		+					
		b Pressure unit	**Nil**	Product label in SI units: MPa	●	●	●
			Z∗1	Product label in imperial units: psi	●	●	●

∗1 For pipe thread type: NPT only. This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)

Flow Rate Characteristics

Model	Port size		Flow rate characteristics					
	IN, OUT	EXH	IN → OUT			OUT → EXH		
			C (dm³/s·bar)	b	Cv	C (dm³/s·bar)	b	Cv
VHS20	1/8	1/8	2.4	0.43	0.65	2.5	0.39	0.69
	1/4		3.3	0.40	0.88	3.1	0.51	0.84
VHS30	1/4	1/4	6.4	0.45	1.7	6.2	0.38	1.7
	3/8		8.3	0.41	2.3	7.0	0.41	1.9
VHS40	1/4	3/8	7.3	0.49	2.0	8.5	0.35	2.3
	3/8		10.9	0.45	3.0	11.6	0.40	3.1
	1/2		14.2	0.39	3.8	13.3	0.43	3.6

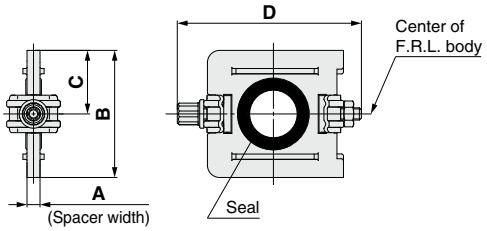
∗ Use an air filter on the inlet side for operating protection.



Model	Standard specifications										
	P1	P2	A	B	C	D	E	F	G	H	I
VHS20	1/8, 1/4	1/8	66.4	22.3	40	37.5	14	46.6	33.6	28	43
VHS30	1/4, 3/8	1/4	80.3	29.4	53	49	19	52	38	30	49
VHS40	1/4, 3/8, 1/2	3/8	104.9	38.5	70	63	22	58	44	36	63

ACG-B Series
Accessories (Spacer/Spacer with Bracket)

Spacer



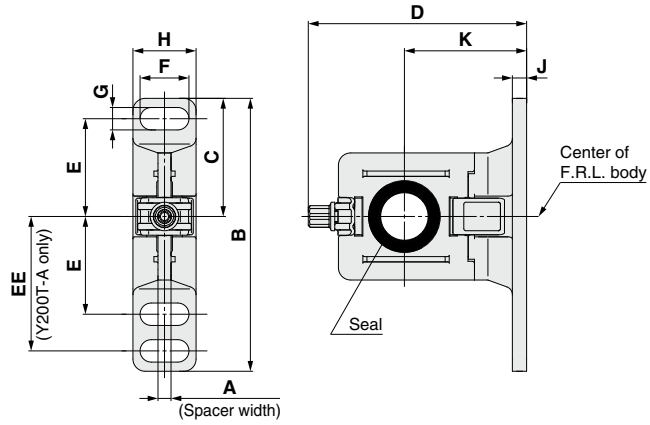
Model	A	B	C	D	Applicable model
Y200-A	3.2	31.2	15.6	44.9	**ACG20□-B**
Y300-A	4.2	43.4	21.7	57.9	**ACG30□-B**
Y400-A	5.2	53	26.5	68.5	**ACG40□-B**

Y200-A **Y400-A**

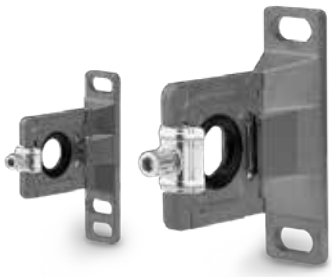
Replacement Parts

Description	Material	Part no.		
		Y200-A	**Y300-A**	**Y400-A**
Seal	HNBR	Y220P-050S	Y320P-050S	Y420P-050S

Spacer with Bracket



Model	A	B	C	D	E	EE	F	G	H	J	K	Applicable model
Y200T-A	3.2	67	29	53.4	24	33	12	5.5	15.5	3.5	30	**ACG20□-B**
Y300T-A	4.2	82	41	71.5	35	—	14	7	19	4	41	**ACG30□-B**
Y400T-A	5.2	96	48	86.1	40	—	18	9	26	5	50	**ACG40□-B**



Y200T-A **Y400T-A**

Replacement Parts

Description	Material	Part no.		
		Y200T-A	**Y300T-A**	**Y400T-A**
Seal	HNBR	Y220P-050S	Y320P-050S	Y420P-050S

UNIT CONVERSIONS

	unit	conversion	result
length	m	x 3.28	ft
	mm	x 0.04	in
mass	g	x 0.04	oz
volume	cm^3	÷ 16.387	in^3
	L	x 61.024	in^3
speed	mm/s	÷ 25.4	in/s
pressure	MPa	x 145	psi
	kPa	÷ 6.895	psi
temperature	°C	x1.8 then add 32	°F
torque	N·m	x 0.738	ft-lb
force	N	÷ 4.448	lbf
flow	L/min	÷ 28.317	cfm

Modular Type
Regulator with Built-in Pressure Gauge
ARG(K)-B Series

Regulator with Built-in Pressure Gauge ARG(K)-B Series	Model	Port size	Set pressure	Options
 p. 22 to 31	**ARG20(K)-B**	1/8, 1/4	0.05 to 0.85 MPa 0.02 to 0.2 MPa	Bracket Set nut (for panel mount)
	ARG30(K)-B	1/4, 3/8		
	ARG40(K)-B	1/4, 3/8, 1/2		

Made to Order

①	**0.4 MPa Setting (-X406)** The maximum set pressure is 0.4 MPa. When a pressure gauge is included, the display will show a range from 0 to 0.7 MPa.
②	**Special Mounting Angle Specification of Pressure Gauge (-X2101)**

Regulator with Built-in Pressure Gauge

ARG20-B to ARG40-B

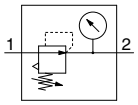
Regulator with Built-in Pressure Gauge with Backflow Function

ARG20K-B to ARG40K-B

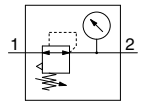
RoHS

Symbol

Regulator

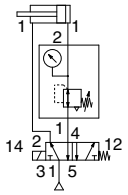


Regulator with Backflow Function

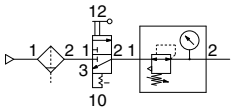


• Models with the backflow function include a mechanism which allows for the air pressure in the outlet side to be released to the inlet side.

Example 1)
When the pressure in the rear and the front of the cylinder differs:



Example 2)
When the air supply is cut off and releasing the inlet pressure to the atmosphere, the residual pressure release of the outlet side can be ensured for a safety purpose.



How to Order

ARG ❶**30** ❷**K** – ❸□ ❹**03** ❺□ ❻**G1** – ❼□ – **B** – □

- Option/Pressure gauge/Semi-standard: Select one each for **a** to **f**.
- Option/Pressure gauge/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.

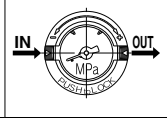
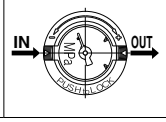
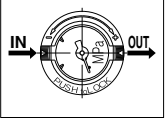
Example) ARG30K-03G1H-1N-B

• Made to order
(Refer to pages 29 and 30 for details.)

			Symbol	Description	❶ Body size 20	30	40
❷	With backflow function		**Nil**	Without backflow function	●	●	●
			K[*1]	With backflow function	●	●	●
			+				
❸	Pipe thread type		**Nil**	Rc	●	●	●
			N	NPT	●	●	●
			F	G	●	●	●
			+				
❹	Port size		**01**	1/8	●	—	—
			02	1/4	●	●	●
			03	3/8	—	●	●
			04	1/2	—	—	●
			+				
❺	Option[*2]	**a** Mounting	**Nil**	Without mounting option	●	●	●
			B[*3]	With bracket	●	●	●
			H	With set nut (for panel mount)	●	●	●
			+				
❻		**b** Mounting angle of pressure gauge[*4]	**G1**	0° (Mounting angle view: Refer to the next page)	●	●	●
			G2	90°	●	●	●
			G3	180°	●	●	●
			G4	270°	●	●	●
			+				
❼	Semi-standard	**c** Set pressure[*5]	**Nil**	0.05 to 0.85 MPa setting	●	●	●
			1	0.02 to 0.2 MPa setting	●	●	●
			+				
		d Exhaust mechanism	**Nil**	Relieving type	●	●	●
			N	Non-relieving type	●	●	●
			+				
		e Knob	**Nil**	Downward	●	●	●
			Y	Upward	●	●	●
			+				
		f Pressure unit	**Nil**	Product label and pressure gauge in SI units: MPa	●	●	●
			Z[*6]	Product label: psi, Pressure gauge: MPa/psi dual scale	○[*7]	○[*7]	○[*7]

ARG40-B, ARG40K-B

Mounting angle of pressure gauge

Symbol	G1	G2	G3	G4
Gauge angle	0°	90°	180°	270°
Mounting angle view				

∗1 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.
∗2 Options B and H are not assembled and supplied loose at the time of shipment.
∗3 Assembly of a bracket and set nuts
∗4 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.3 MPa pressure gauge for 0.2 MPa type.
Mounting angles other than the above (45°, 135°, 225°, and 315°) are available through the made to order (page 30).
Possible to change to the optional mounting angles. For details, refer to page 42, "Procedure for replacing or changing the mounting angle of a pressure gauge."
∗5 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
∗6 For pipe thread type: NPT
This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)
∗7 ○: For pipe thread type: NPT only

Standard Specifications

Model	ARG20(K)-B	ARG30(K)-B	ARG40(K)-B
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2
Fluid	Air		
Ambient and fluid temperatures	–5 to 60°C (with no freezing)		
Proof pressure	1.5 MPa		
Max. operating pressure	1.0 MPa		
Set pressure range	0.05 to 0.85 MPa		
Construction	Relieving type		
Weight [kg]	0.21	0.40	0.57

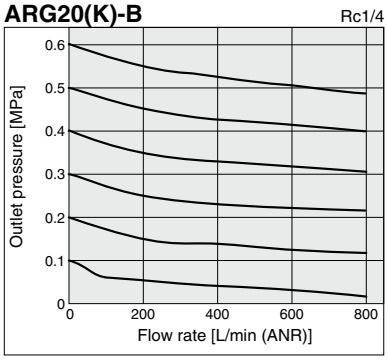
Option/Part No.

Optional specifications			Model		
			ARG20(K)-B	**ARG30(K)-B**	**ARG40(K)-B**
Bracket assembly			ARG23P-270AS	ARG33P-270AS	ARG43P-270AS
Set nut			ARG23P-260S	ARG33P-260S	ARG43P-260S
Pressure gauge	**Standard**	**1.0 MPa**	GB2-10AS	GB3-10AS	GB4-10AS
	Semi-standard	**0.3 MPa**	GB2-3AS	GB3-3AS	GB4-3AS
		1.0 MPa/150 psi	GB2-10AS-X101	GB3-10AS-X101	GB4-10AS-X101
		0.3 MPa/45 psi	GB2-3AS-X101	GB3-3AS-X101	GB4-3AS-X101

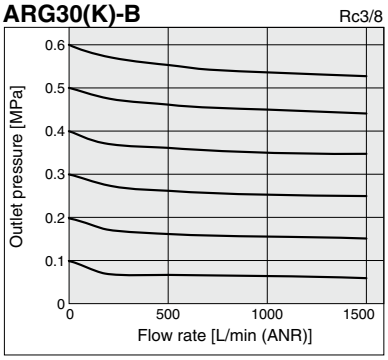
Flow Rate Characteristics (Representative values)

Condition: Inlet pressure of 0.7 MPa

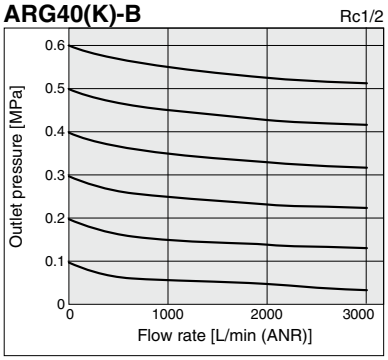
ARG20(K)-B Rc1/4



ARG30(K)-B Rc3/8



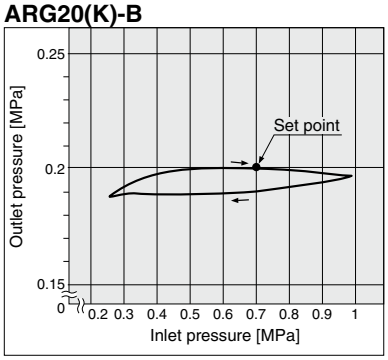
ARG40(K)-B Rc1/2



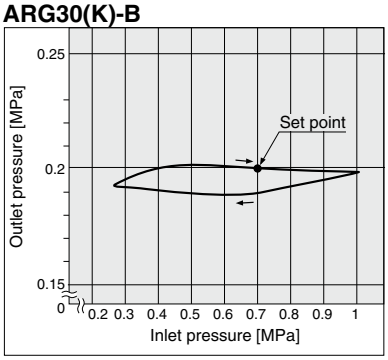
Pressure Characteristics (Representative values)

Conditions: Inlet pressure of 0.7 MPa, Outlet pressure of 0.2 MPa, Flow rate 20 L/min (ANR)

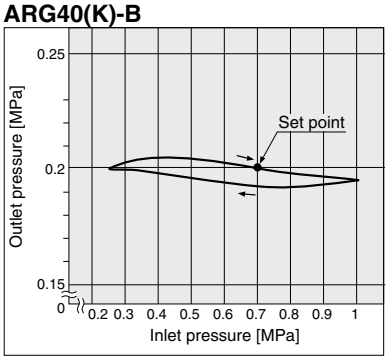
ARG20(K)-B



ARG30(K)-B

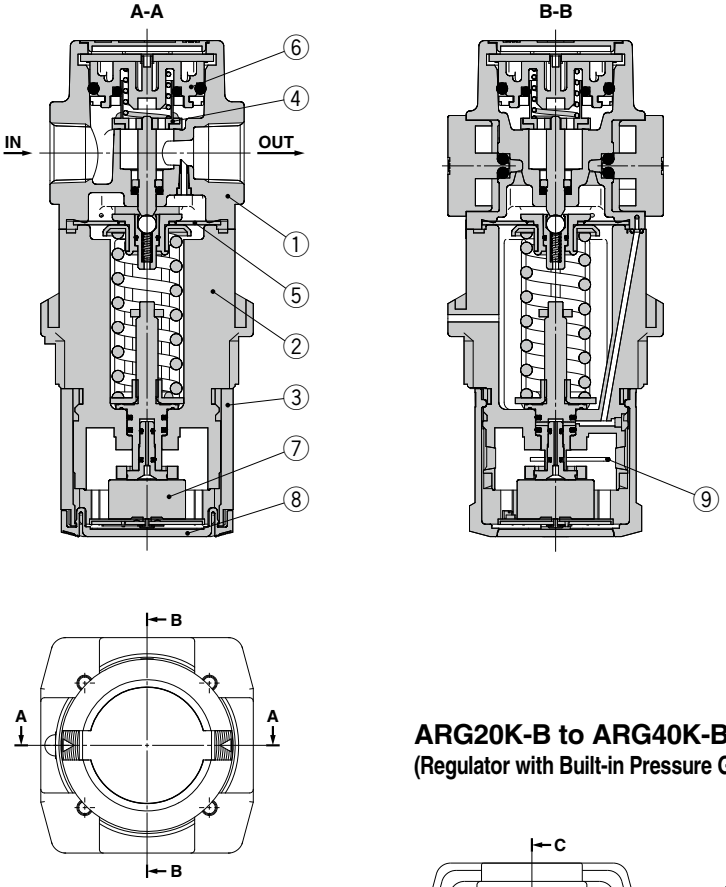


ARG40(K)-B

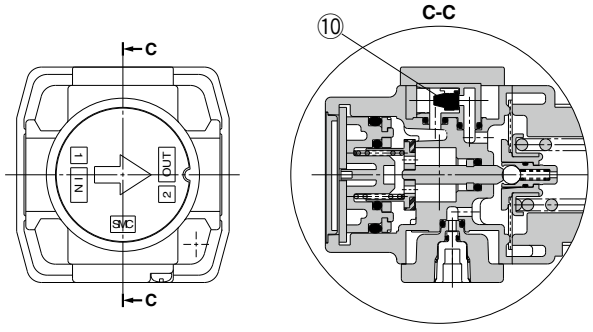


Construction

ARG20(K)-B to ARG40(K)-B



ARG20K-B to ARG40K-B
(Regulator with Built-in Pressure Gauge with Backflow Function)



Component Parts

No.	Description	Material	Color
1	**Body**	ADC	White
2	**Bonnet**	PBT	White
3	**Knob**	POM	Gray

Replacement Parts

No.	Description	Material	Part no.		
			ARG20(K)-B	**ARG30(K)-B**	**ARG40(K)-B**
4	**Valve**	Brass, HNBR	AR20P-410S	AR30P-410S	AR40P-410S
5	**Diaphragm assembly**	Weatherable NBR	AR20P-150AS	AR30P-150AS	AR40P-150AS
6	**Valve guide assembly**	POM/NBR	AR20P-050AS	AR30P-050AS	AR40P-050AS
7	**Pressure gauge**∗1	—	GB2-10AS	GB3-10AS	GB4-10AS
8	**Pressure gauge cover**	PC	ARG20P-400S	ARG30P-400S	ARG40P-400S
9	**Clip**	Stainless steel	ARG20P-420S	ARG30P-420S	ARG40P-420S
10	**Check valve assembly**∗2	—	AR23KP-020AS		

∗1 Only the standard part numbers are listed in the pressure gauges. For the optional part numbers, refer to page 24.
∗2 Check valve assembly is applicable for a filter regulator with backflow function (ARG20K-B to ARG40K-B) only. Assembly of a check valve cover, check valve body assembly and 2 mounting screws

Working Principle (Regulator with Built-in Pressure Gauge with Backflow Function)

ARG20K-B to ARG40K-B

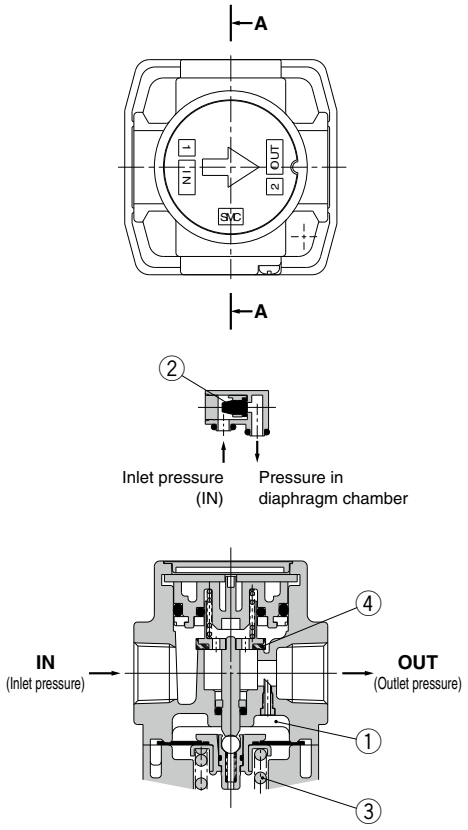


Figure 1 Normal

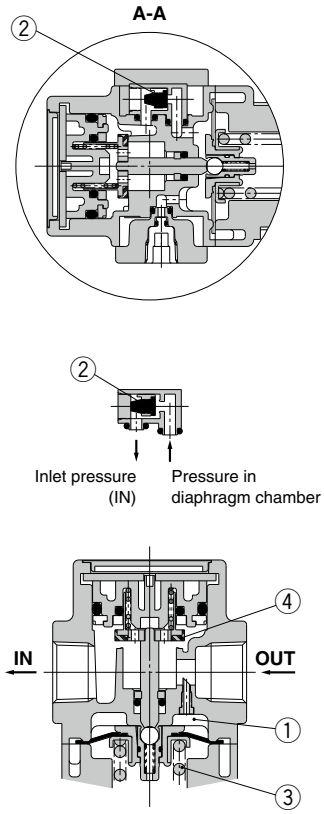
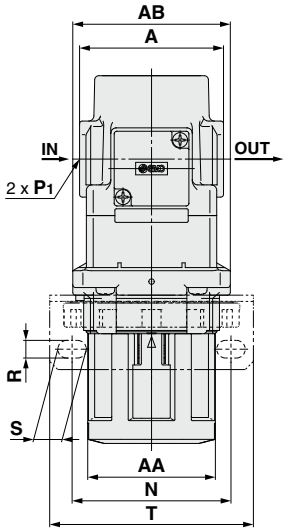
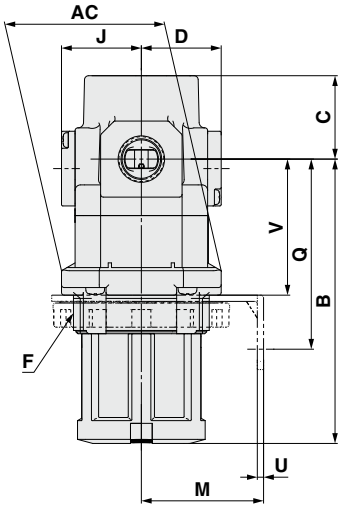


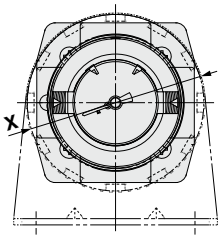
Figure 2 Backflow

When the inlet pressure is higher than the regulating pressure, the check valve ② closes and operates as a normal regulator (Figure 1).
When the inlet pressure is shut off and released, the check valve ② opens and the pressure in the diaphragm chamber ① is released into the inlet side (Figure 2).
This lowers the pressure in the diaphragm chamber ① and the force generated by the spring ③ lifts the diaphragm. The valve ④ opens through the stem, and the outlet pressure is released to the inlet side (Figure 2).

Dimensions







Panel mounting dimensions

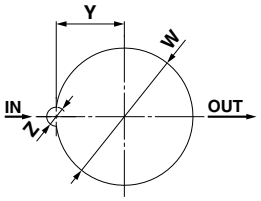


Plate thickness
ARG20(K)-B to ARG40(K)-B: Max. 3.5

Model	Standard specifications									
	P1	**A**	**B**∗1	**C**	**D**	**F**	**J**	**AA**	**AB**	**AC**
ARG20(K)-B	1/8, 1/4	40	87.1	26.5	28.5	M39 x 1.5	28.5	ø37	45	46.5
ARG30(K)-B	1/4, 3/8	53	108.2	30.7	29.4	M50 x 1.5	29.4	ø47	58	58.8
ARG40(K)-B	1/4, 3/8, 1/2	70	114.8	35.8	33.8	M55 x 1.5	33.8	ø52	70	70

Model	Optional specifications											
	Bracket mount							Panel mount				
	M	**N**	**Q**	**R**	**S**	**T**	**U**	**V**	**W**	**X**	**Y**	**Z**
ARG20(K)-B	35	48	60	5.4	10.4	65	2.3	37.7	39.5	52.5	19.5	6
ARG30(K)-B	45	58.5	70	6.5	10.5	75	2.3	50.1	50.5	65	25	7
ARG40(K)-B	50	65.5	75.2	8.5	12.5	85	2.3	53.7	55.5	70	27.5	7

∗1 The dimension of B is the length when the regulator knob is unlocked.

Regulator with Built-in Pressure Gauge/*ARG20-B to ARG40-B*
Regulator with Built-in Pressure Gauge with Backflow Function/*ARG20K-B to ARG40K-B*

Made to Order

Made to Order

Please contact SMC for detailed dimensions, specifications and lead times.

① 0.4 MPa Setting

The setting specification is 0.4 MPa. The display will show a range from 0 to 0.7 MPa.

Specifications

Proof pressure [MPa]	1.5
Max. operating pressure [MPa]	1.0
Set pressure range [MPa]∗1	0.05 to 0.4

∗1 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Applicable Model

Model	ARG20(K)-B	ARG30(K)-B	ARG40(K)-B
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2

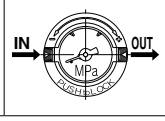
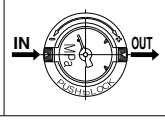
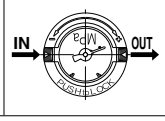
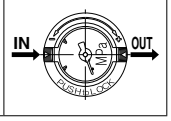
ARG 30 K – □ 03 □ G1 – □ – B – X406

❶ ❷ ❸ ❹ ❺ ❻ ❼ ● 0.4 MPa setting

• Option/Pressure gauge/Semi-standard: Select one each for **a** to **e**.
• Option/Pressure gauge/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) ARG30K-03G1H-NY-B-X406

			Symbol	Description		❶ Body size 20	30	40
❷	With backflow function		**Nil**	Without backflow function		●	●	●
			K∗2	With backflow function		●	●	●
			+					
❸	Pipe thread type		**Nil**	Rc		●	●	●
			N	NPT		●	●	●
			F	G		●	●	●
			+					
❹	Port size		**01**	1/8		●	—	—
			02	1/4		●	●	●
			03	3/8		—	●	●
			04	1/2		—	—	●
			+					
❺	Option∗3	**a** Mounting	**Nil**	Without mounting option		●	●	●
			B∗4	With bracket		●	●	●
			H	With set nut (for panel mount)		●	●	●
			+					
❻		**b** Mounting angle of pressure gauge∗5	**G1**	0°	Mounting angle view: Refer to the figure below	●	●	●
			G2	90°		●	●	●
			G3	180°		●	●	●
			G4	270°		●	●	●
			+					
❼	Semi-standard	**c** Exhaust mechanism	**Nil**	Relieving type		●	●	●
			N	Non-relieving type		●	●	●
			+					
		d Knob	**Nil**	Downward		●	●	●
			Y	Upward		●	●	●
			+					
		e Pressure unit	**Nil**	Product label and pressure gauge in SI units: MPa		●	●	●
			Z∗6	Product label: psi, Pressure gauge: MPa/psi dual scale		○∗7	○∗7	○∗7

Mounting angle of pressure gauge

Symbol	G1	G2	G3	G4
Gauge angle	0°	90°	180°	270°
Mounting angle view				

∗2 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.
∗3 Options B and H are not assembled and supplied loose at the time of shipment.
∗4 Assembly of a bracket and set nuts
∗5 A 0.7 MPa pressure gauge will be fitted.
Mounting angles other than the above (45°, 135°, 225°, and 315°) are available through the made to order (page 30).
Possible to change to the optional mounting angles. For details, refer to page 42, "Procedure for replacing or changing the mounting angle of a pressure gauge."
∗6 For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)
∗7 ○: For pipe thread type: NPT only

SMC

Construction

② Special Mounting Angle Specification of Pressure Gauge (45°, 135°, 225°, 315°)

Applicable Model

Model	ARG20(K)-B	ARG30(K)-B	ARG40(K)-B
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2

ARG 30 K – □ 03 □ G5 – □ – B – X2101 A

❶ ❷ ❸ ❹ ❺ ❻

- ❻ Special mounting angle specification of pressure gauge
- A Mounting angle of pressure gauge

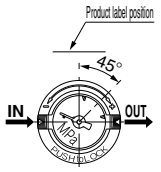
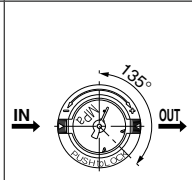
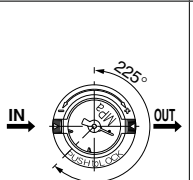
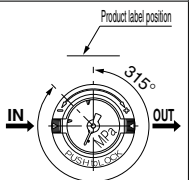
Symbol	Description
A	45°
B	135°
C	225°
D	315°

∗ Refer to the table below.

• Option/Semi-standard: Select one each for **a** to **e**.
• Option/Pressure gauge G5/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.
Example) ARG30K-03G5H-1N-B-X2101A

				Symbol	Description	❶ Body size 20	30	40
❷	With backflow function			**Nil**	Without backflow function	●	●	●
				K∗1	With backflow function	●	●	●
❸	Pipe thread type			**Nil**	Rc	●	●	●
				N	NPT	●	●	●
				F	G	●	●	●
❹	Port size			**01**	1/8	●	—	—
				02	1/4	●	●	●
				03	3/8	—	●	●
				04	1/2	—	—	●
❺	Option ∗2	**a**	Mounting	**Nil**	Without mounting option	●	●	●
				B∗3	With bracket	●	●	●
				H	With set nut (for panel mount)	●	●	●
❻	Semi-standard	**b**	Set pressure∗4	**Nil**	0.05 to 0.85 MPa setting	●	●	●
				1	0.02 to 0.2 MPa setting	●	●	●
		c	Exhaust mechanism	**Nil**	Relieving type	●	●	●
				N	Non-relieving type	●	●	●
		d	Knob	**Nil**	Downward	●	●	●
				Y	Upward	●	●	●
		e	Pressure unit	**Nil**	Product label and pressure gauge in SI units: MPa	●	●	●
				Z∗5	Product label: psi, Pressure gauge: MPa/psi dual scale	○∗6	○∗6	○∗6

Mounting angle of pressure gauge

Symbol	X2101A	X2101B	X2101C	X2101D
Gauge angle	45°	135°	225°	315°
Mounting angle view				

∗1 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.
∗2 Options B and H are not assembled and supplied loose at the time of shipment.
∗3 Assembly of a bracket and set nuts
∗4 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.3 MPa pressure gauge for 0.2 MPa type.
∗5 For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)
∗6 ○: For pipe thread type: NPT only

ARG Series
Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website.

Selection

⚠ Warning

1. Residual pressure disposal (outlet pressure removal) is not possible for the ARG20-B to ARG40-B even though the inlet pressure is exhausted. When the residual pressure disposal is performed, use the regulator with backflow function (ARG20K-B to ARG40K-B).

Maintenance

⚠ Warning

1. When using the regulator with backflow function between a solenoid valve and an actuator, check the pressure gauge periodically.

Sudden pressure fluctuations may shorten the durability of the pressure gauge.

Mounting/Adjustment

⚠ Warning

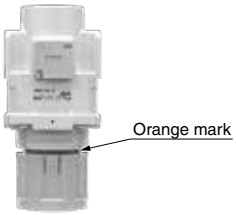
1. Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.

2. Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

⚠ Caution

1. Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.

- Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" that appears in the gap.)
- Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the "orange mark", i.e., the gap will disappear).



Modular Type
Filter Regulator with Built-in Pressure Gauge
AWG(K)-B Series

Filter Regulator with Built-in Pressure Gauge **AWG(K)-B Series**	Model	Port size	Set pressure	Options
 **p. 32 to 41**	**AWG20(K)-B**	1/8, 1/4	0.05 to 0.85 MPa 0.02 to 0.2 MPa	Bracket Set nut (for panel mount) Float type auto drain
	AWG30(K)-B	1/4, 3/8		
	AWG40(K)-B	1/4, 3/8, 1/2		

Made to Order

①	**0.4 MPa Setting (-X406)** The maximum set pressure is 0.4 MPa. When a pressure gauge is included, the display will show a range from 0 to 0.7 MPa.

Filter Regulator with Built-in Pressure Gauge

AWG20-B to AWG40-B

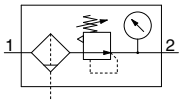
Filter Regulator with Built-in Pressure Gauge with Backflow Function

AWG20K-B to AWG40K-B

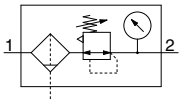
RoHS

Symbol

Filter Regulator

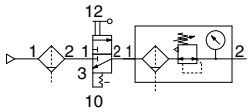


Filter Regulator with Backflow Function



- **Integrated filter and regulator units save space and require less piping.**
- **Models with the backflow function include a mechanism which allows for the air pressure in the outlet side to be released to the inlet side.**

Example) When the air supply is cut off and releasing the inlet pressure to the atmosphere, the residual pressure release of the outlet side can be ensured for a safety purpose.



How to Order

AWG ❶**30** ❷**K** – ❸□ ❹**03** ❺□ ❻**G1** – ❼□ – **B** – □

- Option/Pressure gauge/Semi-standard: Select one each for **a** to **h**.
- Option/Pressure gauge/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.

Example) AWG30K-03G1H-1N-B

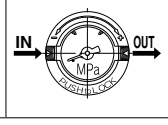
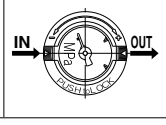
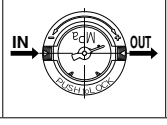
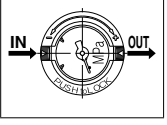
Made to order
(Refer to page 40 for details.)

			Symbol	Description	❶ Body size 20	30	40
❷	With backflow function		**Nil**	Without backflow function	●	●	●
			K[*1]	With backflow function	●	●	●
			+				
❸	Pipe thread type		**Nil**	Rc	●	●	●
			N[*2]	NPT	●	●	●
			F[*3]	G	●	●	●
			+				
❹	Port size		**01**	1/8	●	—	—
			02	1/4	●	●	●
			03	3/8	—	●	●
			04	1/2	—	—	●
			+				
❺	Option [*4]	**a** Mounting	**Nil**	Without mounting option	●	●	●
			B[*5]	With bracket	●	●	●
			H	With set nut (for panel mount)	●	●	●
			+				
		b Float type auto drain	**Nil**	Without auto drain	●	●	●
			C[*6]	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●
			D[*7]	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●
			+				
❻		**c** Mounting angle of pressure gauge[*8]	**G1**	0° (Mounting angle view: Refer to the next page)	●	●	●
			G2	90°	●	●	●
			G3	180°	●	●	●
			G4	270°	●	●	●
			+				
❼	Semi-standard	**d** Set pressure[*9]	**Nil**	0.05 to 0.85 MPa setting	●	●	●
			1	0.02 to 0.2 MPa setting	●	●	●
			+				
		e Bowl[*10]	**Nil**	Polycarbonate bowl	●	●	●
			2	Metal bowl	●	●	●
			6	Nylon bowl	●	●	●
			8	Metal bowl with level gauge	—	●	●
			C	With bowl guard	●	—[*11]	—[*11]
			6C	With bowl guard (Nylon bowl)	●	—[*12]	—[*12]
			+				
		f Drain port[*13]	**Nil**	With drain cock	●	●	●
			J[*14]	Drain guide 1/8	●	—	—
				Drain guide 1/4	—	●	●
			W[*15]	Drain cock with barb fitting	—	●	●

AWG40-B, AWG40K-B

			Symbol	Description	❶ Body size 20	30	40
❼ Semi-standard	g	Exhaust mechanism	**Nil**	Relieving type	●	●	●
			N	Non-relieving type	●	●	●
			+				
	h	Pressure unit	**Nil**	Product label, caution label for bowl, and pressure gauge in SI units: MPa	●	●	●
			Z∗16	Product label: psi, Caution label for bowl: psi/°F, Pressure gauge: MPa/psi dual scale	○∗17	○∗17	○∗17

Mounting angle of pressure gauge

Symbol	G1	G2	G3	G4
Gauge angle	0°	90°	180°	270°
Mounting angle view				

∗1 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.
∗2 Drain guide is NPT1/8 (applicable to the AWG20(K)-B) and NPT1/4 (applicable to the AWG30(K)-B to AWG40(K)-B). The auto drain port comes with a ø3/8" One-touch fitting (applicable to the AWG30(K)-B to AWG40(K)-B).
∗3 Drain guide is G1/8 (applicable to the AWG20(K)-B) and G1/4 (applicable to the AWG30(K)-B to AWG40(K)-B).
∗4 Options B and H are not assembled and supplied loose at the time of shipment.
∗5 Assembly of a bracket and set nuts
∗6 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending operations for the day is recommended.
∗7 If the compressor is small (0.75 kW, discharge flow is less than 100 L/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.
∗8 When the pressure gauge is attached, a 1.0 MPa pressure gauge will be fitted for standard (0.85 MPa) type. 0.3 MPa pressure gauge for 0.2 MPa type. Possible to change to the optional mounting angles. For details, refer to page 42, "Procedure for replacing or changing the mounting angle of a pressure gauge."
∗9 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.
∗10 Refer to chemical data on page 41 for chemical resistance of the bowl.
∗11 A bowl guard is provided as standard equipment (polycarbonate).
∗12 A bowl guard is provided as standard equipment (nylon).
∗13 The combination of float type auto drain C and D is not available.
∗14 Without a valve function
∗15 The combination of metal bowl 2 and 8 is not available.
∗16 For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)
∗17 ○: For pipe thread type: NPT only

Standard Specifications

Model	AWG20(K)-B	AWG30(K)-B	AWG40(K)-B
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2
Fluid	Air		
Ambient and fluid temperatures	−5 to 60°C (with no freezing)		
Proof pressure	1.5 MPa		
Max. operating pressure	1.0 MPa		
Set pressure range	0.05 to 0.85 MPa		
Nominal filtration rating	5 μm		
Drain capacity [cm³]	8	25	45
Bowl material	Polycarbonate		
Bowl guard	Semi-standard (Steel)	Standard (Polycarbonate)	
Construction	Relieving type		
Weight [kg]	0.26	0.46	0.76

AWG20-B to AWG40-B Series
AWG20K-B to AWG40K-B Series

Option/Part No.

Optional specifications			Model		
			AWG20(K)-B	**AWG30(K)-B**	**AWG40(K)-B**
Bracket assembly			ARG23P-270AS	ARG33P-270AS	ARG43P-270AS
Set nut			ARG23P-260S	ARG33P-260S	ARG43P-260S
Pressure gauge	**Standard**	**1.0 MPa**	GB2-10AS	GB3-10AS	GB4-10AS
	Semi-standard	**0.3 MPa**	GB2-3AS	GB3-3AS	GB4-3AS
		1.0 MPa/150 psi	GB2-10AS-X101	GB3-10AS-X101	GB4-10AS-X101
		0.3 MPa/45 psi	GB2-3AS-X101	GB3-3AS-X101	GB4-3AS-X101

Bowl Assembly/Part No.

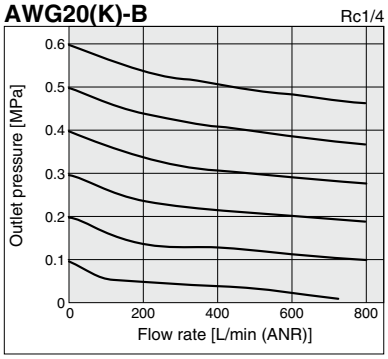
Bowl material	Drain discharge mechanism	Drain port	Other	Model		
				AWG20(K)-B	**AWG30(K)-B**	**AWG40(K)-B**
Polycarbonate	Manual	With drain cock	—	C2SF-A	—	—
			With bowl guard	C2SF-C-A	C3SF-A	C4SF-A
		Drain cock with barb fitting	With bowl guard	—	C3SF-W-A	C4SF-W-A
		With drain guide (without valve function)	—	C2SF□-J-A	—	—
			With bowl guard	C2SF□-CJ-A	C3SF□-J-A	C4SF□-J-A
	Automatic*1 (Auto drain)	Normally closed (N.C.)	—	AD27-A	—	—
			With bowl guard	AD27-C-A	AD37□-A	AD47□-A
		Normally open (N.O.)	With bowl guard	—	AD38□-A	AD48□-A
Nylon	Manual	With drain cock	—	C2SF-6-A	—	—
			With bowl guard	C2SF-6C-A	C3SF-6-A	C4SF-6-A
		Drain cock with barb fitting	With bowl guard	—	C3SF-6W-A	C4SF-6W-A
		With drain guide (without valve function)	—	C2SF□-6J-A	—	—
			With bowl guard	C2SF□-6CJ-A	C3SF□-6J-A	C4SF□-6J-A
	Automatic*1 (Auto drain)	Normally closed (N.C.)	—	AD27-6-A	—	—
			With bowl guard	AD27-6C-A	AD37□-6-A	AD47□-6-A
		Normally open (N.O.)	With bowl guard	—	AD38□-6-A	AD48□-6-A
Metal	Manual	With drain cock	—	C2SF-2-A	C3SF-2-A	C4SF-2-A
			With level gauge	—	C3LF-8-A	C4LF-8-A
		With drain guide (without valve function)	—	C2SF□-2J-A	C3SF□-2J-A	C4SF□-2J-A
			With level gauge	—	C3LF□-8J-A	C4LF□-8J-A
	Automatic*1 (Auto drain)	Normally closed (N.C.)	—	AD27-2-A	AD37□-2-A	AD47□-2-A
			With level gauge	—	AD37□-8-A	AD47□-8-A
		Normally open (N.O.)	—	—	AD38□-2-A	AD48□-2-A
			With level gauge	—	AD38□-8-A	AD48□-8-A

*1 Minimum operating pressure: N.O. type–0.1 MPa (AD38-A, AD48-A); N.C. type–0.1 MPa (AD27-A) and 0.15 MPa (AD37-A, AD47-A).
Bowl assembly comes with a bowl seal.
□ in bowl assembly part numbers indicates a pipe thread type (applicable tubing for auto drain).
No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread. (For auto drain, Nil: ø10, N: ø3/8")
Please consult with SMC separately for psi and °F unit display specifications.

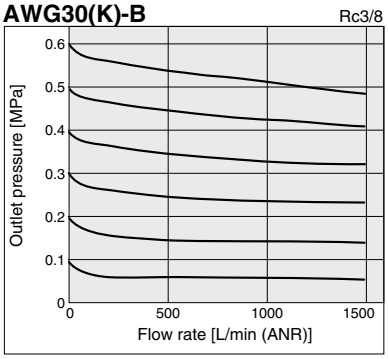
Flow Rate Characteristics (Representative values)

Condition: Inlet pressure of 0.7 MPa

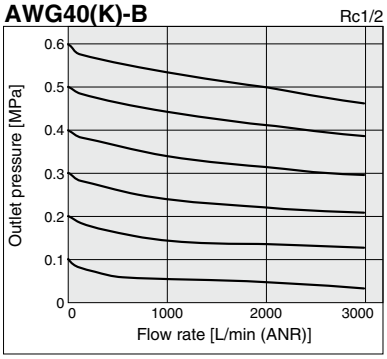
AWG20(K)-B Rc1/4



AWG30(K)-B Rc3/8



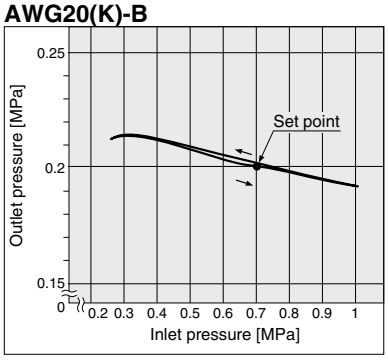
AWG40(K)-B Rc1/2



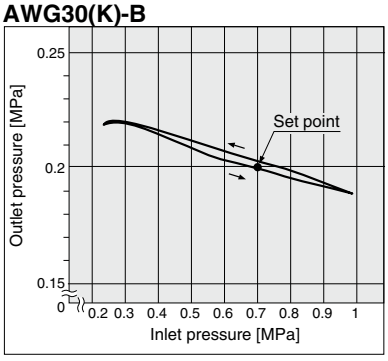
Pressure Characteristics (Representative values)

Conditions: Inlet pressure of 0.7 MPa, Outlet pressure of 0.2 MPa, Flow rate 20 L/min (ANR)

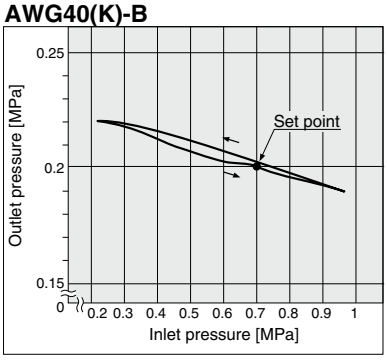
AWG20(K)-B



AWG30(K)-B



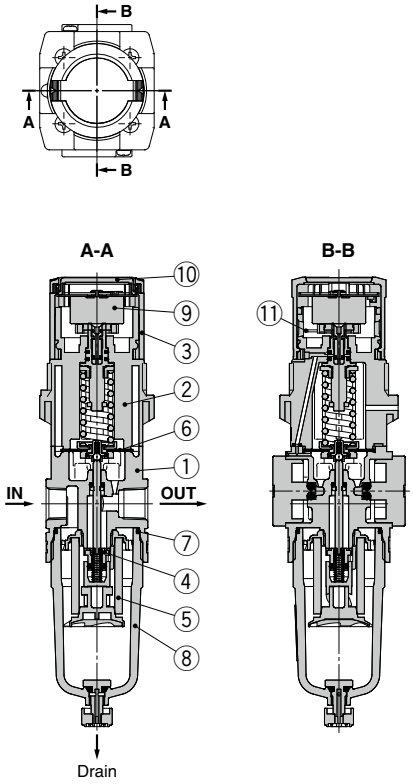
AWG40(K)-B



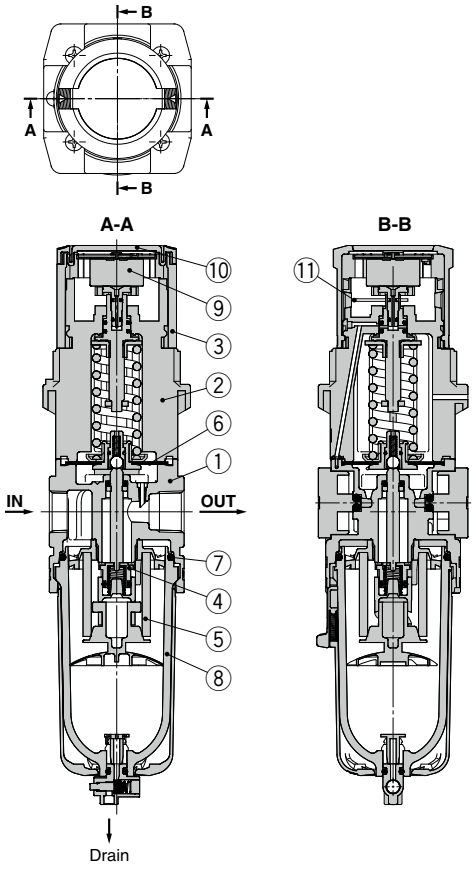
AWG20-B to AWG40-B Series
AWG20K-B to AWG40K-B Series

Construction

AWG20(K)-B

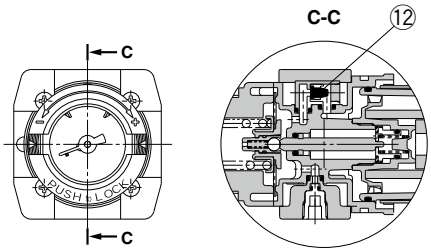


AWG30(K)-B, AWG40(K)-B



AWG20K-B to AWG40K-B

(Filter Regulator with Built-in Pressure Gauge with Backflow Function)



Component Parts

No.	Description	Material	Color
1	**Body**	ADC	White
2	**Bonnet**	PBT	White
3	**Knob**	POM	Gray

Replacement Parts

No.	Description	Material	Part no.		
			AWG20(K)-B	**AWG30(K)-B**	**AWG40(K)-B**
4	**Valve assembly**	Brass, HNBR	AW20P-340AS	AW30P-340AS	AW40P-340AS
5	**Element**	Non-woven fabric	AF20P-060S	AF30P-060S	AF40P-060S
6	**Diaphragm assembly**	Weatherable NBR	AR20P-150AS	AR30P-150AS	AR40P-150AS
7	**Bowl seal**	NBR	C2SFP-260S	C32FP-260S	C42FP-260S
8	**Bowl assembly**∗1	PC	C2SF-A	C3SF-A∗2	C4SF-A∗2
9	**Pressure gauge**∗3	—	GB2-10AS	GB3-10AS	GB4-10AS
10	**Pressure gauge cover**	PC	ARG20P-400S	ARG30P-400S	ARG40P-400S
11	**Clip**	Stainless steel	ARG20P-420S	ARG30P-420S	ARG40P-420S
12	**Check valve assembly**∗4	—	AR23KP-020AS		

∗1 Bowl assembly comes with a bowl seal. Please consult with SMC separately for psi and °F unit display specifications.
∗2 Bowl assembly for the AWG30(K)-B and AWG40(K)-B models comes with a bowl guard (Material: Polycarbonate).
∗3 Only the standard part numbers are listed in the pressure gauges. For the optional part numbers, refer to page 35.
∗4 Check valve assembly is applicable for a filter regulator with backflow function (AWG20K-B to AWG40K-B) only.
Assembly of a check valve cover, check valve body assembly and 2 mounting screws

Working Principle (Filter Regulator with Built-in Pressure Gauge with Backflow Function)

AWG20K-B to AWG40K-B

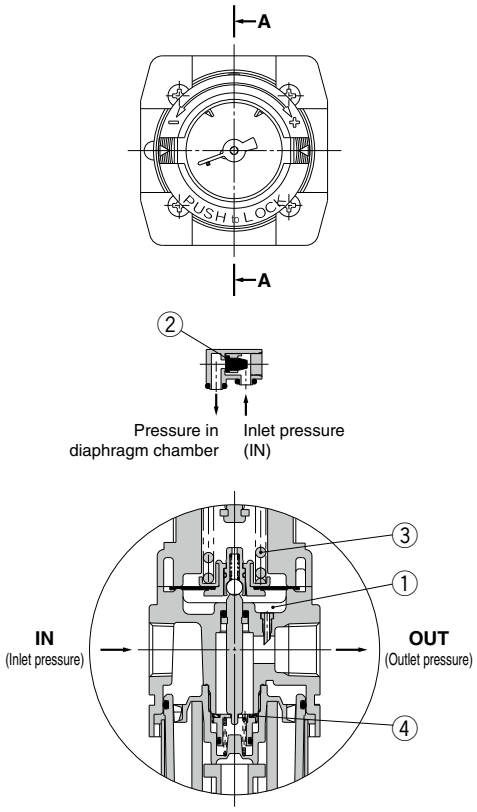


Figure 1 Normal

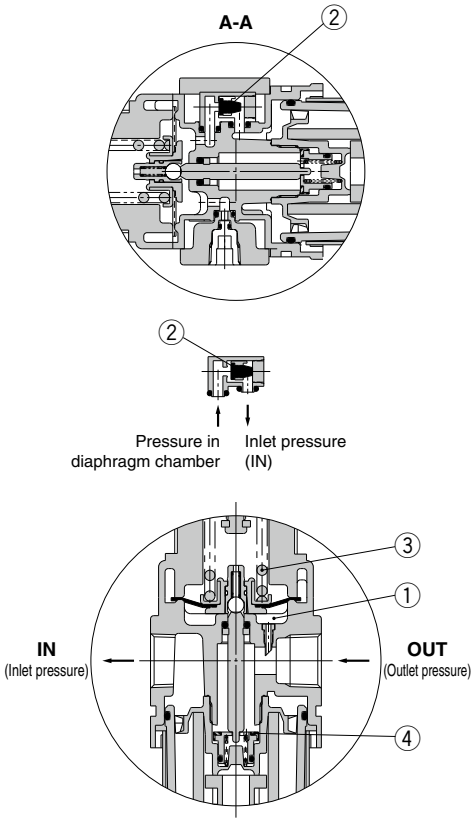


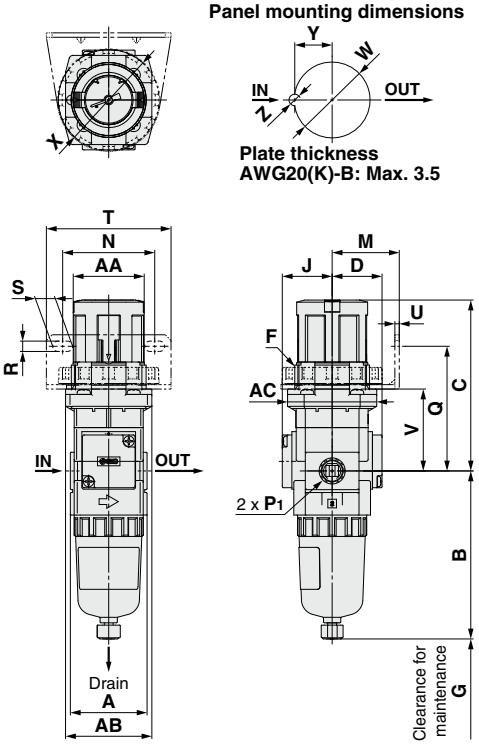
Figure 2 Backflow

When the inlet pressure is higher than the regulating pressure, the check valve ② closes and operates as a normal regulator (Figure 1).
When the inlet pressure is shut off and released, the check valve ② opens and the pressure in the diaphragm chamber ① is released into the inlet side (Figure 2).
This lowers the pressure in the diaphragm chamber ① and the force generated by the spring ③ lifts the diaphragm. The valve ④ opens through the stem, and the outlet pressure is released to the inlet side (Figure 2).

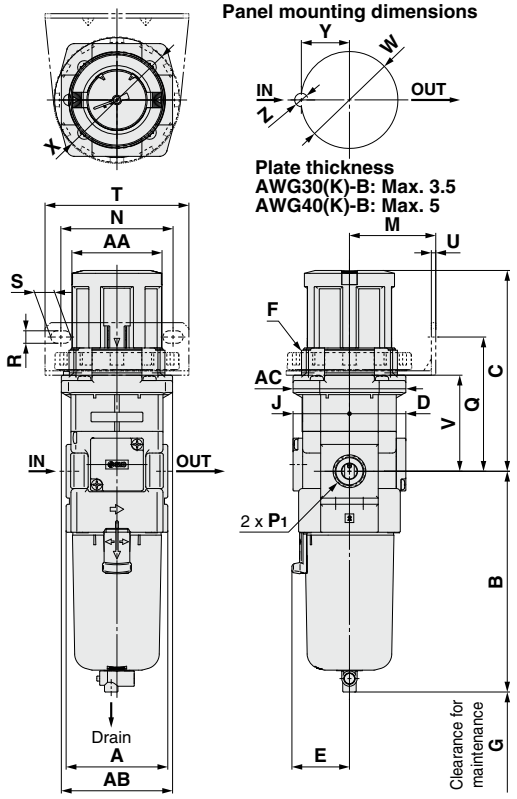
AWG20-B to AWG40-B Series
AWG20K-B to AWG40K-B Series

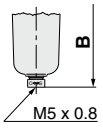
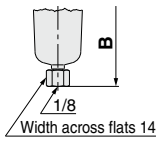
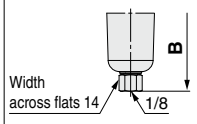
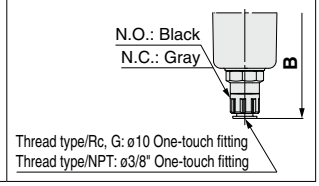
Dimensions

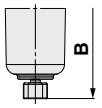
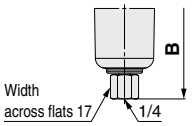
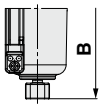
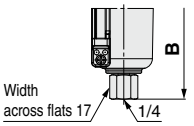
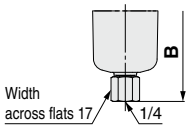
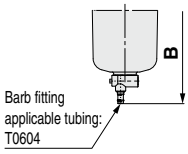
AWG20(K)-B



AWG30(K)-B to AWG40(K)-B



Applicable model	AWG20(K)-B		AWG20(K)-B		AWG30(K)-B to AWG40(K)-B
Optional/Semi-standard specifications	With auto drain (N.C.)	Metal bowl	With drain guide	Metal bowl with drain guide	With auto drain (N.O./N.C.)
Dimensions					

Applicable model	AWG30(K)-B to AWG40(K)-B					
Optional/Semi-standard specifications	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide	With drain guide	Drain cock with barb fitting
Dimensions						

Model	Standard specifications											
	P1	A	B	C*1	D	E	F	G	J	AA	AB	AC
AWG20(K)-B	1/8, 1/4	40	87.6	92.1	26	—	M39 x 1.5	40	26	ø37	45	46.5
AWG30(K)-B	1/4, 3/8	53	115.1	108.2	29.4	30	M50 x 1.5	55	29.4	ø47	58	58.8
AWG40(K)-B	1/4, 3/8, 1/2	70	147.1	114.8	37.3	38.4	M55 x 1.5	80	37.3	ø52	70	70

Model	Optional specifications												Semi-standard specifications						
	Bracket mount							Panel mount					With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with drain guide	Metal bowl with level gauge	Metal bowl with level gauge, with drain guide
	M	N	Q	R	S	T	U	V	W	X	Y	Z	B	B	B	B	B	B	B
AWG20(K)-B	35	48	65	5.4	10.4	65	2.3	42.7	39.5	52.5	19.5	6	104.9	—	91.4	87.4	93.9	—	—
AWG30(K)-B	45	58.5	70	6.5	10.5	75	2.3	50.1	50.5	65	25	7	156.8	123.6	121.9	117.6	122.1	137.6	142.1
AWG40(K)-B	50	65.5	75.2	8.5	12.5	85	2.3	53.7	55.5	70	27.5	7	186.9	155.6	153.9	149.5	154	169.5	174

*1 The length when the filter regulator knob is unlocked

Filter Regulator with Built-in Pressure Gauge/*AWG20-B to AWG40-B*
Filter Regulator with Built-in Pressure Gauge with Backflow Function/*AWG20K-B to AWG40K-B*

Made to Order

Made to Order

Please contact SMC for detailed dimensions, specifications and lead times.

① 0.4 MPa Setting

The setting specification is 0.4 MPa. The display will show a range from 0 to 0.7 MPa.

Specifications

Proof pressure [MPa]	1.5
Max. operating pressure [MPa]	1.0
Set pressure range [MPa]∗1	0.05 to 0.4

∗1 Pressure can be set higher than the specification pressure in some cases, but use pressure within the specification range.

Applicable Model

Model	AWG20(K)-B	AWG30(K)-B	AWG40(K)-B
Port size	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2

AWG ❶30 ❷K – ❸□ ❹03 ❺□ ❻G1 – ❼□ – B – X406

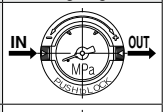
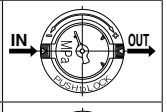
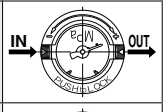
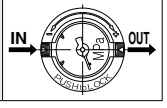
0.4 MPa setting

- Option/Pressure gauge/Semi-standard: Select one each for **a** to **g**.
- Option/Pressure gauge/Semi-standard symbol: When more than one specification is required, indicate in alphanumeric order.

Example) AWG30K-03G1H-2N-B-X406

			Symbol	Description	❶ Body size 20	30	40
❷	With backflow function		**Nil**	Without backflow function	●	●	●
			K∗2	With backflow function	●	●	●
❸	Pipe thread type		**Nil**	Rc	●	●	●
			N∗3	NPT	●	●	●
			F∗4	G	●	●	●
❹	Port size		**01**	1/8	●	—	—
			02	1/4	●	●	●
			03	3/8	—	●	●
			04	1/2	—	—	●
❺	Option ∗5	**a** Mounting	**Nil**	Without mounting option	●	●	●
			B∗6	With bracket	●	●	●
			H	With set nut (for panel mount)	●	●	●
		b Float type auto drain	**Nil**	Without auto drain	●	●	●
			C∗7	N.C. (Normally closed) Drain port is closed when pressure is not applied.	●	●	●
			D∗8	N.O. (Normally open) Drain port is open when pressure is not applied.	—	●	●
❻		**c** Mounting angle of pressure gauge∗9	**G1**	0° (Mounting angle view: Refer to the figure on the right)	●	●	●
			G2	90°	●	●	●
			G3	180°	●	●	●
			G4	270°	●	●	●
❼	Semi-standard	**d** Bowl∗10	**Nil**	Polycarbonate bowl	●	●	●
			2	Metal bowl	●	●	●
			6	Nylon bowl	●	●	●
			8	Metal bowl with level gauge	—	●	●
			C	With bowl guard	●	—∗11	—∗11
			6C	With bowl guard (Nylon bowl)	●	—∗12	—∗12
		e Drain port∗13	**Nil**	With drain cock	●	●	●
			J∗14	Drain guide 1/8	●	—	—
				Drain guide 1/4	—	●	●
			W∗15	Drain cock with barb fitting	—	●	●
		f Exhaust mechanism	**Nil**	Relieving type	●	●	●
			N	Non-relieving type	●	●	●
		g Pressure unit	**Nil**	Product label, caution label for bowl, and pressure gauge in SI units: MPa	●	●	●
			Z∗16	Product label: psi, Caution label for bowl: psi/°F, Pressure gauge: MPa/psi dual scale	○∗17	○∗17	○∗17

Mounting Angle of Pressure Gauge

Symbol	Gauge angle	Mounting angle view
G1	0°	
G2	90°	
G3	180°	
G4	270°	

∗2 Set the inlet pressure to at least 0.05 MPa higher than the set pressure.
∗3 Drain guide is NPT1/8 (applicable to the AWG20(K)-B) and NPT1/4 (applicable to the AWG30(K)-B to AWG40(K)-B). The auto drain port comes with a ø3/8" One-touch fitting (applicable to the AWG30(K)-B to AWG40(K)-B).
∗4 Drain guide is G1/8 (applicable to the AWG20(K)-B) and G1/4 (applicable to the AWG30(K)-B to AWG40(K)-B).
∗5 Options B and H are not assembled and supplied loose at the time of shipment.
∗6 Assembly of a bracket and set nuts
∗7 When pressure is not applied, condensate which does not start the auto drain mechanism will be left in the bowl. Releasing the residual condensate before ending operations for the day is recommended.
∗8 If the compressor is small (0.75 kW, discharge flow is less than 100 L/min (ANR)), air leakage from the drain cock may occur during the start of operations. N.C. type is recommended.
∗9 A 0.7 MPa pressure gauge will be fitted. Possible to change to the optional mounting angles. For details, refer to page 42, "Procedure for replacing or changing the mounting angle of a pressure gauge."
∗10 Refer to chemical data on page 41 for chemical resistance of the bowl.
∗11 A bowl guard is provided as standard equipment (polycarbonate).
∗12 A bowl guard is provided as standard equipment (nylon).
∗13 The combination of float type auto drain C and D is not available.
∗14 Without a valve function
∗15 The combination of metal bowl 2 and 8 is not available.
∗16 For pipe thread type: NPT. This product is for overseas use only according to the new Measurement Act. (The SI unit type is provided for use in Japan.)
∗17 ○: For pipe thread type: NPT only

AWG Series
Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website.

Design/Selection

⚠ Warning

1. Residual pressure disposal (outlet pressure removal) is not possible for the AWG20-B to AWG40-B even though the inlet pressure is exhausted. When the residual pressure disposal is performed, use the filter regulator with backflow function (AWG20K-B to AWG40K-B).

2. The standard bowl for the air filter, filter regulator, and lubricator, as well as the sight dome for the lubricator are made of polycarbonate. Do not use in an environment where they are exposed to or come in contact with organic solvents, chemicals, cutting oil, synthetic oil, alkali, and thread lock solutions.

Effects of atmosphere of organic solvents and chemicals, and where these elements are likely to adhere to the equipment.
Chemical data for substances causing degradation (Reference)

Type	Chemical name	Application examples	Material	
			Polycarbonate	Nylon
Acid	Hydrochloric acid Sulfuric acid, Phosphoric acid Chromic acid	Acid washing liquid for metals	△	×
Alkaline	Sodium hydroxide (Caustic soda) Potash Calcium hydroxide (Slack lime) Ammonia water Carbonate of soda	Degreasing of metals Industrial salts Water-soluble cutting oil	×	○
Inorganic salts	Sodium sulfide Potassium nitrate Sulfate of soda	—	×	△
Chlorine solvents	Carbon tetrachloride Chloroform Ethylene chloride Methylene chloride	Cleansing liquid for metals Printing ink Dilution	×	△
Aromatic series	Benzene Toluene Paint thinner	Coatings Dry cleaning	×	△
Ketone	Acetone Methyl ethyl ketone Cyclohexane	Photographic film Dry cleaning Textile industries	×	×
Alcohol	Ethyl alcohol IPA Methyl alcohol	Antifreeze Adhesives	△	×
Oil	Gasoline Kerosene	—	×	○
Ester	Phthalic acid dimethyl Phthalic acid diethyl Acetic acid	Synthetic oil Anti-rust additives	×	○
Ether	Methyl ether Ethyl ether	Brake oil additives	×	○
Amino	Methyl amino	Cutting oil Brake oil additives Rubber accelerator	×	×
Others	Thread-lock fluid Seawater Leak tester	—	×	△

○: Essentially safe △: Some effects may occur. ×: Effects will occur.

When the above factors are present, or there is some doubt, use a metal bowl for safety.

Maintenance

⚠ Warning

1. Replace the element every 2 years or when the pressure drop becomes 0.1 MPa, whichever comes first, to prevent damage to the element.

Mounting/Adjustment

⚠ Warning

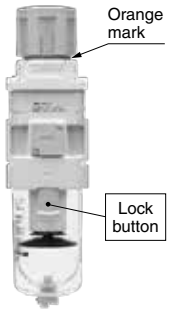
1. Set the regulator while verifying the displayed values of the inlet and outlet pressure gauges. Turning the regulator knob excessively can cause damage to the internal parts.

2. Do not use tools on the pressure regulator knob as this may cause damage. It must be operated manually.

⚠ Caution

1. Be sure to unlock the knob before adjusting the pressure and lock it after setting the pressure. Failure to follow this procedure can cause damage to the knob and the outlet pressure may fluctuate.

- Pull the pressure regulator knob to unlock. (You can visually verify this with the "orange mark" that appears in the gap.)
- Push the pressure regulator knob to lock. When the knob is not easily locked, turn it left and right a little and then push it (when the knob is locked, the "orange mark", i.e., the gap will disappear).



2. When the bowl is installed on the AWG30(K)-B to AWG40(K)-B, install them so that the lock button lines up to the groove of the front (or the back) of the body to avoid drop or damage of the bowl.

A□G Series Precautions

Be sure to read this before handling products. Refer to the back cover for safety instructions. For F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website.

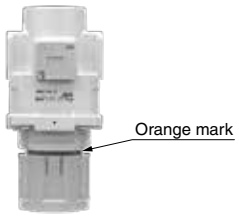
Procedure for replacing or changing the mounting angle of a pressure gauge

⚠ Warning

When replacing a pressure gauge and/or changing the mounting angle, release the inlet and outlet pressure completely. It is dangerous to replace the pressure gauge or change the mounting angle while it is under pressure.

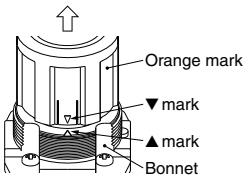
1. Advance preparation

Keep the knob unlocked and completely loosened. The unlocked state of the knob can be visually confirmed by the "Orange mark" shown near the bottom of the knob.



2. Removing the knob

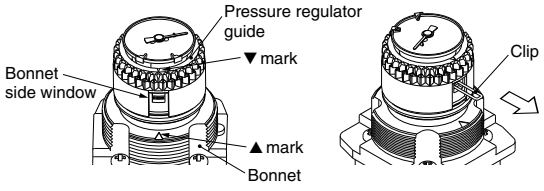
To remove the knob, align the ▼ mark on the knob and the ▲ mark on the bonnet and then pull the knob.



3. Removing the clip

When the ▲ mark on the bonnet and the ▼ mark on the pressure regulator guide are aligned, the clip can be seen from the side window of the bonnet. The clip can be picked and removed with tweezers.

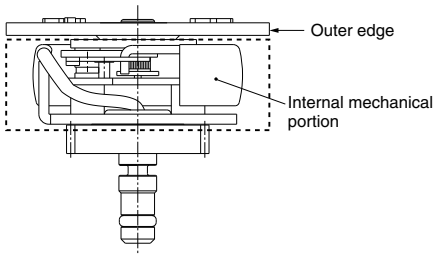
* When adjusting the mark, turn the pressure regulator guide clockwise for adjustment.



4. Removing the pressure gauge

Pull the pressure gauge out by holding the outer edge of the dial.

* Do not touch the internal mechanical portion (shown inside the dotted box). Accuracy of the pressure gauge may be adversely affected.



5. Setting the pressure gauge

After the mounting angle is adjusted as required, hold the outer edge of the pressure gauge dial and gently press down. For reference, the required clearance between the bottom of the dial and the top of the pressure regulator guide is shown in table 1.

* When the pressure gauge cannot be easily positioned, slightly rotate it. (The cog from the planet gear of the pressure regulator guide may be caught vertically in the cog from the sun gear which is mounted and integrated with the pressure gauge)
* Position the pressure gauge to the very bottom.
* Attached to the tip of the pressure gauge is an O-ring with grease applied to it. Please use caution to prevent particles and/or dust from entering the pressure gauge when it is set. Otherwise, they may cause air leakage.

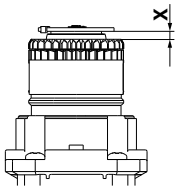


Table 1 Clearance Dimensions

	ARG20-B AWG20-B	ARG30-B AWG30-B	ARG40-B AWG40-B
X dimension (reference value)	2.6 mm	3.3 mm	3.3 mm

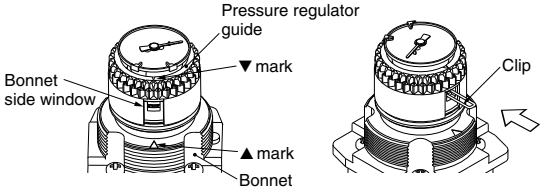
6. Setting the clip

Insert the clip in the side of the bonnet when the ▼ mark on the pressure regulator guide and the ▲ mark on the bonnet are aligned. When inserting and setting the clip, use an instrument with a narrow tip, such as tweezers.

* The clip is slightly tapered toward its tip to prevent it from being released. Set the clip by slightly opening its tip.
* When the clip cannot easily be set, the cause may be as follows:

(1) The pressure regulator screw might have been in a lower position than the current one. (The pressure regulator screw may reach a lower position if the pressing force of the pressure regulator screw is excessively applied. This occurs because there is a clearance between the pressure regulator nut and pressure spring, when the pressure regulator screw is loosened completely.)
Countermeasures ····· Turn the pressure regulator guide approx. 5 times clockwise (pressure rise direction).

(2) The pressure gauge is not firmly set.
Countermeasures ····· Refer to 5 "Setting the pressure gauge."



7. Setting the knob

Finished when the knob is set.

⚠ Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

⚠ Caution: **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

⚠ Warning: **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

⚠ Danger : **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots – Safety.
etc.

⚠ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.
Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.
The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.
1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

⚠ Caution

1. The product is provided for use in manufacturing industries.
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".
Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.*2)
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

***2) Vacuum pads are excluded from this 1 year warranty.**
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

⚠ Caution

SMC products are not intended for use as instruments for legal metrology.
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country. Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

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