Regulator with Built-in Pressure Gauge Filter Regulator with Built-in Pressure Gauge







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





ACG/ARG/AWG Series



Space saving, Labour saving

■Installation height: Approx. 30 mm reduction * For ARG30-B



Angle adjustment of the pressure gauge makes space saving possible.

Mounting at 90° Approx. Mounting at 45° Made to order Refer to page 30 30 mm reduction

90°

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





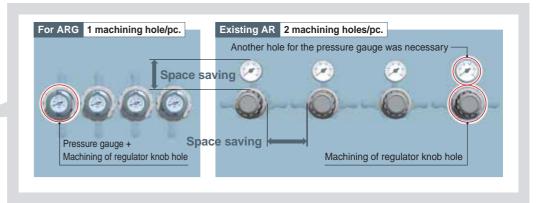


* Mounting angle can be changed as desired. For details, refer to "Procedure for replacing or changing the mounting angle of a pressure gauge" on page 42.

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

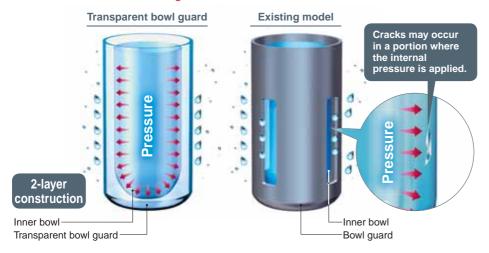
Pressure gauge does not rotate during knob operation.



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.





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

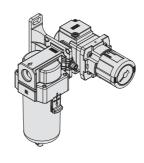
760 g ← 860 g (For AWG40)

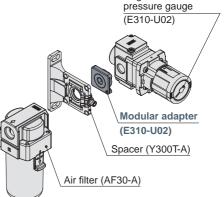
Related Product

Modular adapter Easy modular connections for all equipment!



Front face mounting of regulator with built-in pressure gauge





Regulator with built-in



ACG-B Series

Series Configuration

Air Combination



Model		Dogo			
Model	1/8	1/4	3/8	1/2	Page
ACG20-B	•	•			
ACG30-B		•	•		5
ACG40-B		•	•	•	



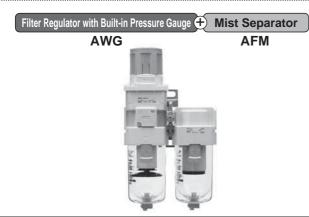
Model		Dogo			
Model	1/8	1/4	3/8	1/2	Page
ACG20A-B	•	•			
ACG30A-B		•	•		10
ACG40A-B		•	•	•	



Model		Page			
iviodei	1/8	1/4	3/8	1/2	Page
ACG20B-B	•	•			
ACG30B-B		•	•		12
ACG40B-B		•	•	•	



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



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

Air Filter AF



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

Mist Separator AFM



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

Regulator with Built-in Pressure Gauge ARG



Port size				Page
1/8	1/4	3/8	1/2	Page
•	•			
	•	•		22
	•	•	•	
	1/8			

Regulator with Built-in Pressure Gauge with Backflow Function $\mathsf{ARG} \square \mathsf{K}$



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

Filter Regulator with Built-in Pressure Gauge AWG



Model		Page			
iviodei	1/8	1/4	3/8	1/2	raye
AWG20-B	•	•			
AWG30-B		•	•		32
AWG40-B		•	•	•	

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



Model		Pogo			
Model	1/8	1/4	3/8	1/2	Page
AWG20K-B	•	•			
AWG30K-B		•	•		32
AWG40K-B		•	•	•	

Lubricator AL

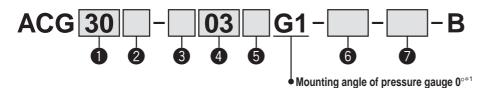


Model	Port size					
Model	1/8	1/4	3/8	1/2		
AL20-A	•	•				
AL30-A		•	•			
AL40-A		•	•	•		



Air Combination ACG20-B to ACG40-B

How to Order



- \bullet Semi-standard: Select one each for \boldsymbol{a} to $\boldsymbol{h}.$ • Option/Attachment/Semi-standard symbol:
- When more than one specification is required, indicate in alphanumeric order. Example) ACG30C-F03DG1-SV1-16NR-B

						0	
			Symbol	Description		Body size	
					20	30	40
			_	Air filter + Regulator + Lubricator	•	•	•
			Α	Filter regulator + Lubricator	•	•	•
2	Мо	del combination	В	Air filter + Regulator	*2	•	•
			С	Air filter + Mist separator + Regulator	•	•	•
			D	Filter regulator + Mist separator	•	•	•
			+	<u> </u>			
			_	Rc	•	•	•
3	Pi	ipe thread type	N*3	NPT	•	•	•
	F*			G	•	•	•
			+				
			01	1/8	•	_	_
			02	1/4		•	•
4		Port size	03	3/8		•	•
			04	1/2			•
			+			1	_
			_	Without auto drain	•	•	•
6		Option	C*5	Float type auto drain (N.C.)		•	•
		Opo. .	D *6	Float type auto drain (N.O.)		•	
			+	· · · · · · · · · · · · · · · · · · ·			
			_	Without attachment	•	•	
			K	Check valve		•	
6		Attachment*7	S	Pressure switch			
		Attaorimont	V	1 1000d16 SWILOIT			
	V V1			Pressure relief 3-port valve			
			+				
				0.05 to 0.85 MPa setting		•	
	а	Set pressure*8	1*9	0.02 to 0.2 MPa setting			
			+	0.02 to 0.2 ivii a setting			
				Polycarbonate bowl	•	•	•
			2	Metal bowl		•	
				Nylon bowl		•	
	b	Bowl*10	6 8	<u> </u>			
			C	Metal bowl with level gauge		*11	*11
				With bowl guard		*12	*12
	3		6C +	With bowl guard (Nylon bowl)			
Semi-standard				With drain analy			
	5	A CII		With drain cock		•	•
7 <u>: </u>	[c	Air filter drain port*13	J *14	Drain guide 1/8			_
l H		drain port	144*15	Drain guide 1/4		•	•
V.	기ㄴ		W*15	Drain cock with barb fitting (for Ø 6 x Ø 4 nylon tube)		•	•
		Lubatanta L.L.	+	Without drain and			
	d	Lubricator lubricant	3 *16	Without drain cock		•	
		exhaust port		Lubricator with drain cock		•	
			+	Delianing time		_	_
	е	Exhaust		Relieving type		•	•
		mechanism	N	Non-relieving type		•	
			+				_
	f	Flow direction	_	Flow direction: Left to right		•	•
			R	Flow direction: Right to left		•	

Air Combination ACG20-B to ACG40-B Series

						0					
			Symbol	Symbol Description		Body size					
						20	30	40			
	dard	~	ARG knob*17	_	Downward	•	•	•			
	nda	g	ARG KIOD	Υ	Upward	•	•	•			
7	sta			+							
	ı .	h	Pressure unit	_	Product label, caution label for bowl, and pressure gauge in SI units: MPa	•	•	•			
	h Pressure unit		Fiessule utill	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 G 1 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 Ø 3/8" One-touch fitting
- (applicable to the ACG30-B to ACG40-B).

 *4 Drain guide is G 1 / 8 (applicable to the ACG 2 0 -B) and G 1 / 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-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
D			
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

Attaomicit mounting position									
Symbol	Description	Attachment mounting position	Applicable model						
К	Check valve	AF + ARG + K + AL	ACG20 to 40-B						
IX.	Check valve	AWG + K + AL	ACG20A to 40A-B						
S*1	D	AF + ARG + S + AL	ACG20 to 40-B						
	Pressure switch	AF + S + ARG	ACG20B to 40B-B						
	SWILCH	AF + AFM + S + ARG	ACG20C to 40C-B						
		AF + ARG + AL + V	ACG20 to 40-B						
		AWG + AL + V	ACG20A to 40A-B						
V		AF + ARG + V	ACG20B to 40B-B						
	Pressure relief	AF + AFM + ARG + V	ACG20C to 40C-B						
	3-port valve	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	IN OUT
Mounting angle view (-R specification)	OUT IN

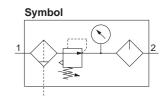
* Possible to change to the optional mounting angles. For details, refer to page 42, "Procedure for replacing or changing the mounting angle of a pressure gauge.



Air Filter + Regulator + Lubricator

ACG20-B to ACG40-B





Standard Specifications

Mo	odel	ACG20-B	ACG30-B	ACG40-B				
	Air filter	AF20-A	AF30-A	AF40-A				
Component	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 ra	ange [ARG]	0.05 to 0.85 MPa						
Ambient and fl	uid temperatures	-5 to 60 °C (with no freezing)						
Nominal filtratio	n rating [AF]	5 μm						
Recommended I	ubricant [AL]	Class 1 turbine oil (ISO VG32)						
Regulator const	truction [ARG]	Relieving type						
Bowl material	[AF/AL]	Polycarbonate						
Bowl guard	[AF/AL]	Semi-standard (Steel)	Standard (Po	lycarbonate)				
Weight [kg]		0.44	0.89	1.52				

Attachment/Option Part No.

Section					Attachment/Option part no.	
Sec	Description	on	Model	For ACG20-B	For ACG30-B	For ACG40-B
	Pressure	Standard	0 to 1.0 MPa	GB2-10AS	GB3-10AS	GB4-10AS
	gauge*1	Semi-standard	0 to 0.3 MPa	GB2-3AS	GB3-3AS	GB4-3AS
Option	Float typ	e*2	N.C.	AD27-A	AD37-A	AD47-A
g	auto dra	in	N.O.	_	AD38-A	AD48-A
	Spacer			Y200-A	Y300-A	Y400-A
	Spacer v	with brac	ket	Y200T-A	Y300T-A	Y400T-A
Attachment	Check v	alve* ^{3,} *	4	AKM2000-□01-A (□02-A)	AKM3000-(□01-A) □02-A	AKM4000-(□02-A) □03-A
ach	Pressure	e switch*	4, *5	IS10M-20-A	IS10M-30-A	IS10M-40-A
Att	Pressure 3-port va			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

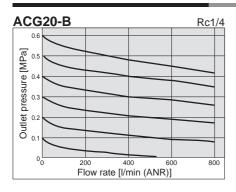
^{*3} For F.R.L. units, port sizes not in () are for standard application.

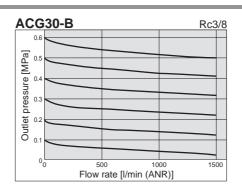
^{*4} Separate spacers are required for modular unit.
*5 Pressure switch cannot be mounted on the inlet and outlet sides of an ARG-B with an upward facing knob (semi-standard specification: -Y).

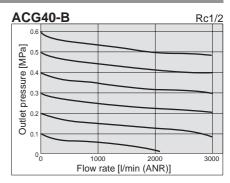
Air Combination ACG20-B to ACG40-B Series

Flow Rate Characteristics

Condition: Inlet pressure 0.7 MPa

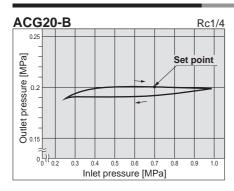


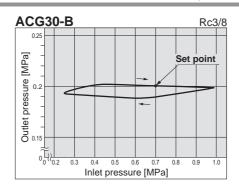


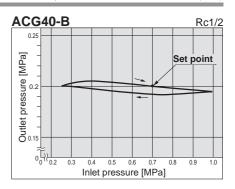


Pressure Characteristics

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







⚠ 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, I refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Piping

 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

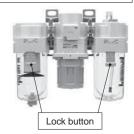
⚠ Caution

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.





ACG20-B to ACG40-B Series

Dimensions

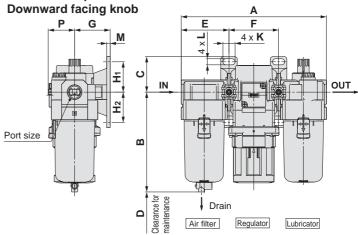
ACG20-B Standard Downward facing knob F 6 x **K** IN OUT Ω Port size

Clearance for maintenance

Air filter Regulator Lubricator

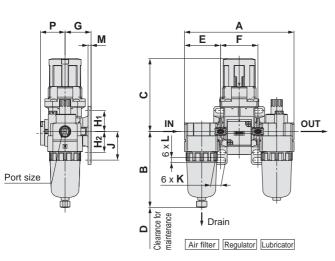
Ω

ACG30-B, ACG40-B Standard

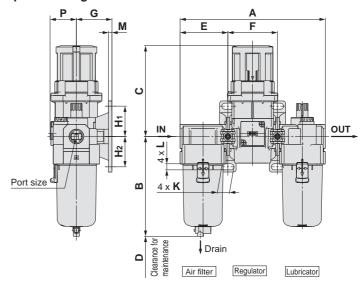


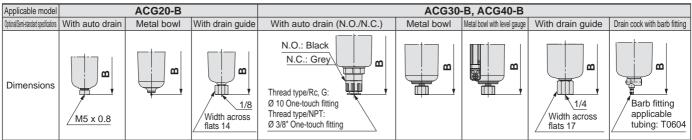
ACG20-B Semi-standard (-Y)

Upward facing knob



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





	Port size		Standard specifications												
Model		АВ		С	D	Р	Bracket mount								
			В				E	F	G	H1	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	В	В	В	В	В			
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 brange. 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.

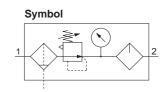
*3 For the option/semi-standard specifications (with auto drain, with barb fitting, with drain guide, metal bowl, or metal bowl with level gauge), the total length (B dimension) will vary.

^{*4} The length when the regulator knob is unlocked

Filter Regulator + Lubricator

ACG20A-B to ACG40A-B





Standard Specifications

Mo	odel	ACG20A-B	ACG30A-B	ACG40A-B				
Component	Filter regulator	AWG20-B	AWG30-B	AWG40-B				
Component	Lubricator	AL20-A	AL30-A	AL40-A				
Port size		1/8	1/4	1/4				
Port Size		1/4	3/8	3/8 1/2				
Fluid			Air					
Proof pressure	9	1.5 MPa						
Max. operating	g pressure	1.0 MPa						
Set pressure ra	ange [AWG]	0.05 to 0.85 MPa						
Ambient and fl	luid temperatures	-5 to 60 °C (with no freezing)						
Nominal filtratio	n rating [AWG]	5 μm						
Recommended I	ubricant [AL]		Class 1 turbine oil (ISO VG32)					
Filter regulator con	struction [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.

ion					Attachment/Option part no.	
Section	Description	on	Model	For ACG20A-B	For ACG30A-B	For ACG40A-B
Р	ressure	Standard	0 to 1.0 MPa	GB2-10AS	GB3-10AS	GB4-10AS
g	auge*1	Semi-standard	0 to 0.3 MPa	GB2-3AS	GB3-3AS	GB4-3AS
Option	Float typ	e*2	N.C.	AD27-A	AD37-A	AD47-A
Opt	auto dra	in N.O.		_	AD38-A	AD48-A
	Spacer			Y200-A	Y300-A	Y400-A
ا پ	Spacer v	with brac	ket	Y200T-A	Y300T-A	Y400T-A
Attachment	Check v	alve* ^{3,} *	4	AKM2000-□01-A (□02-A)	AKM3000-(□01-A) □02-A	AKM4000-(□02-A) □03-A
Atta	Pressure 3-port va			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.

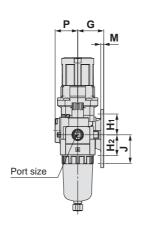
^{*3} For F.R.L. units, port sizes not in () are for standard application.

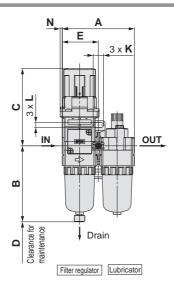
^{*4} Separate spacers are required for modular unit.

ACG20A-B to ACG40A-B Series

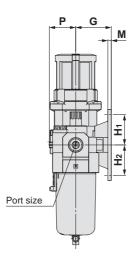
Dimensions

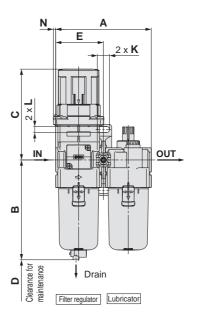
ACG20A-B





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	M5 x 0.8	m	1/8 Width across flats 14	N.O.: Black N.C.: Grey Thread type/Rc, G: Ø 10 One-touch fitting Thread type/NPT: Ø 3/8" One-touch fitting	a	B	Width across flats 17	Barb fitting applicable tubing: T0604		

							St	Standard specifications Bracket mount							
Model	Port size	Α	В	C*1	_	N	В								
		Α	Р	L		IN	-	Е	G	H1	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

			Semi-standard	specifications*2	
Model	With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with level gauge
	В	В	В	В	В
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

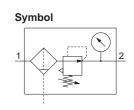
^{*1} The length when the filter regulator knob is unlocked

^{*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 Filter + Regulator

ACG20B-B to ACG40B-B





Standard Specifications

ACG40B-B

Mo	odel	ACG20B-B	ACG30B-B	ACG40B-B						
Commonant	Air filter	AF20-A	AF30-A	AF40-A						
Component	Regulator	ARG20-B	ARG30-B	ARG40-B						
Dort size		1/8	1/4	1/4						
Port size		1/4	3/8 1/2							
Fluid		Air								
Proof pressure	9		1.5 MPa							
Max. operating	pressure		1.0 MPa							
Set pressure r	ange [ARG]	0.05 to 0.85 MPa								
Ambient and f	luid temperatures	-5 to 60 °C (with no freezing)								
Nominal filtration	on rating [AF]		5 μm							
Regulator cons	truction [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					Attachment/Option part no.	
Sec	Description	on	Model	For ACG20B-B	For ACG30B-B	For ACG40B-B
	Pressure	Standard	0 to 1.0 MPa	GB2-10AS	GB3-10AS	GB4-10AS
	gauge*1	Semi-standard	0 to 0.3 MPa	GB2-3AS	GB3-3AS	GB4-3AS
Option	Float typ	oe*2	N.C.	AD27-A	AD37-A	AD47-A
Opt	auto drain N.O.		N.O.	_	AD38-A	AD48-A
	Spacer			Y200-A	Y300-A	Y400-A
ent	Spacer	with brac	ket	Y200T-A	Y300T-A	Y400T-A
J W	Pressure	e switch*	3, *4	IS10M-20-A	IS10M-30-A	IS10M-40-A
Attachm	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.

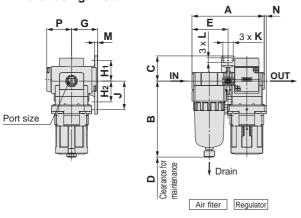
^{*4} Pressure switch cannot be mounted on the inlet and outlet sides of an ARG-B with an upward facing knob (semi-standard specification: -Y).

ACG20B-B to ACG40B-B Series

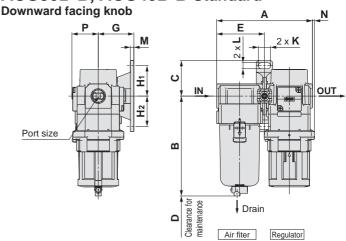
Dimensions

ACG20B-B Standard

Downward facing knob

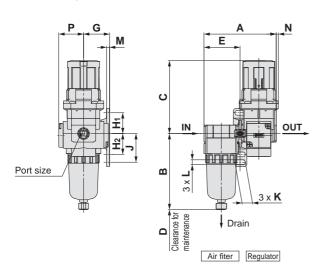


ACG30B-B, ACG40B-B Standard



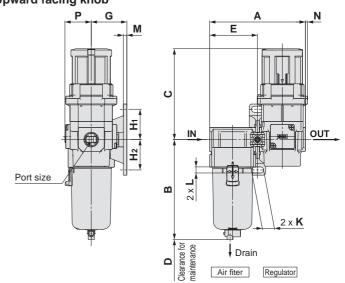
ACG20B-B Semi-standard (-Y)

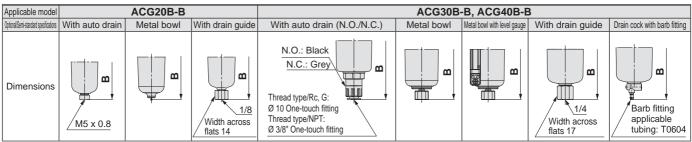
Upward facing knob



ACG30B-B, ACG40B-B Semi-standard (-Y)

Upward facing knob





							St	tandard specifications							
Model	Port size	Α.	В	0	_	N	В	Bracket mount							
		Α	В	C	D	IN		Е	G	H1	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

		Semi-standard specifications											
Model		U	pward fac	cing 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					L	В	В	В	В	В		
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 barack.

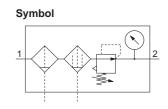
*3 For the option/semi-standard specifications (with auto drain, with barb fitting, with drain guide, metal bowl, or metal bowl with level gauge), the total length (B dimension) will vary.

^{*4} The length when the regulator knob is unlocked

Air Filter + Mist Separator + Regulator

ACG20C-B to ACG40C-B





Standard Specifications

Мо	del	ACG20C-B	ACG30C-B	ACG40C-B					
	Air filter	AF20-A	AF30-A	AF40-A					
Component	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 ra	inge [ARG]		0.05 to 0.85 MPa						
Rated flow [I/min (/	ANR)]*1 [AFM]	200	450	1100					
Ambient and flo	uid temperatures		-5 to 60 °C (with no freezing)						
Nominal filtratio	n rating [AF/AFM]	AF: 5 μr	m, AFM: 0.3 μm (Filtration efficiency	99.9 %)					
Outlet side oil mist cor	centration [AFM]	Max.1.0 mg/m³ (ANR)(≈ 0.8 ppm)*2, *3							
Regulator const	ruction [ARG]	Relieving type							
Bowl material	[AF/AFM]	Polycarbonate							
Bowl guard	[AF/AFM]	Semi-standard (Steel)	Standard (Po	olycarbonate)					
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.

Attachment/Ontion Part No.

711	aciliici	iu Opti	OII I alt I	9.		
tion					Attachment/Option part no.	
Section	Descripti	on	Model	For ACG20C-B	For ACG30C-B	For ACG40C-B
	Pressure	Standard	0 to 1.0 MPa	GB2-10AS	GB3-10AS	GB4-10AS
	gauge*1	Semi-standard	0 to 0.3 MPa	GB2-3AS	GB3-3AS	GB4-3AS
Option	Float typ	oe*2	N.C.	AD27-A	AD37-A	AD47-A
Opt	auto drain N.O.		N.O.	_	AD38-A	AD48-A
	Spacer			Y200-A	Y300-A	Y400-A
it	Spacer	with brac	ket	Y200T-A	Y300T-A	Y400T-A
chment	Pressure	e switch [*]	*3, *4	IS10M-20-A	IS10M-30-A	IS10M-40-A
Attack	Pressure relief 3-port valve*3			VHS20-□01A □02A	VHS30-□02A □03A	□02A VHS40-□03A □04A



^{*2} At compressor discharge 30 mg/m³ (ANR)

^{*3} Bowl seal and other O-rings are slightly lubricated.

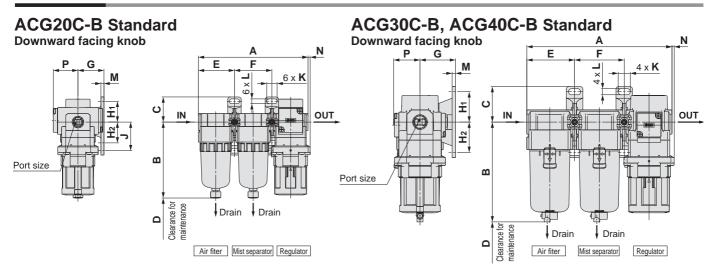
^{*1} Contact SMC regarding pressure gauge supply for psi unit specifications.
*2 Minimum operating pressure: 0.1 MPa for N.O. type, 0.1 MPa for N.C. type (AD27-A) and 0.15 MPa for N.C. type (AD37-A and AD47-A). Contact SMC for psi and °F specifications.

^{*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).

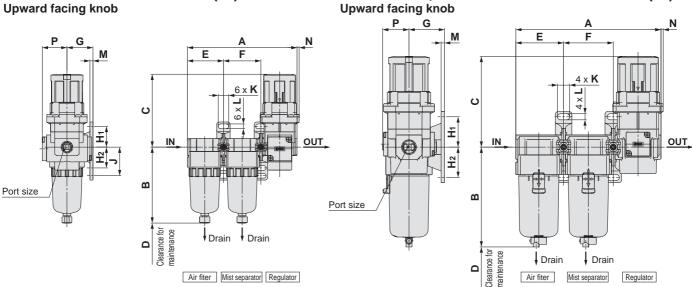
ACG20C-B to ACG40C-B Series

Dimensions



ACG20C-B Semi-standard (-Y)

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	M5 x 0.8	B	1/8 Width across flats 14	N.O.: Black N.C.: Grey Thread type/Rc, G: Ø 10 One-touch fitting Thread type/NPT: Ø 3/8" One-touch fitting	B	B	Midth across flats 17	Barb fitting applicable tubing: T0604				

								Standard specifications								
Model	Port size		В	_	D	N	Bracket mount									
		A	В	C	U	IN		E	F	G	H1	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

						S	emi-standard spec	cifications		
Model		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		В	В	В	В	В			
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 AGG20C-B, wall mounting is possible by using the lower side mounting hole on the space 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

Filter Regulator + Mist Separator

ACG20D-B to ACG40D-B



Symbol

Standard Specifications

Me	odel	ACG20D-B	ACG30D-B	ACG40D-B						
C	Filter regulator	AWG20-B	AWG30-B	AWG40-B						
Component	Mist separator	AFM20-A	AFM30-A	AFM40-A						
Port size		1/8	1/4	1/4						
Port Size		1/4	3/8	3/8 1/2						
Fluid		Air								
Proof pressure	e	1.5 MPa								
Max. operating	g pressure		1.0 MPa							
Set pressure r	ange [AWG]		0.05 to 0.85 MPa							
Rated flow [I/min	(ANR)]*1 [AFM]	150	330	800						
Ambient and f	luid temperatures	-5 to 60 °C (with no freezing)								
Nominal filtration	on rating [AWG/AFM]	AWG: 5 μ	ım, AFM: 0.3 μm (Filtration efficiency	99.9 %)						
Outlet side oil mist co	oncentration [AFM]	M	ax. 1.0 mg/m ³ (ANR)(\approx 0.8 ppm)* ^{2, *}	3						
Filter regulator cor	nstruction [AWG]	Relieving type								
Bowl material	[AWG/AFM]	Polycarbonate								
Bowl guard	[AWG/AFM]	Semi-standard (Steel)	Standard (Po	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.

Attachment/Option Part No.

Section					Attachment/Option part no.			
Sec	Description	on	Model	For ACG20D-B	For ACG30D-B	For ACG40D-B		
	Pressure	Standard	0 to 1.0 MPa	GB2-10AS	GB3-10AS	GB4-10AS		
	gauge*1	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		
g			N.O.	_	AD38-A	AD48-A		
	Spacer			Y200-A	Y300-A	Y400-A		
Jen	Spacer v	with brac	ket	Y200T-A	Y300T-A	Y400T-A		
Attachment	Pressure 3-port va			VHS20-□01A □02A	VHS30-□02A □03A	□02A VHS40-□03A □04A		



^{*2} At compressor discharge 30 mg/m³ (ANR)

^{*3} Bowl seal and other O-rings are slightly lubricated.

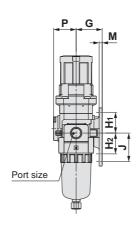
^{*1} Contact SMC regarding pressure gauge supply for psi unit specifications.
*2 Minimum operating pressure: 0.1 MPa for N.O. type, 0.1 MPa for N.C. type (AD27-A) and 0.15 MPa for N.C. type (AD37-A and AD47-A). Contact SMC for psi and °F specifications.

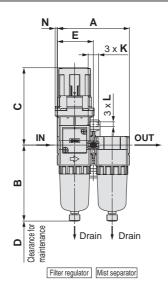
^{*3} Separate spacers are required for modular unit.

ACG20D-B to ACG40D-B Series

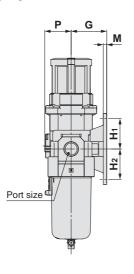
Dimensions

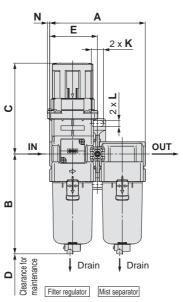
ACG20D-B





ACG30D-B, ACG40D-B





Applicable model		ACG20D-B			ACG30D	-B, ACG40D-E	3	
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	M5 x 0.8	m	Midth across flats 14	N.O.: Black N.C.: Grey Thread type/Rc, G: Ø 10 One-touch fitting Thread type/NPT: Ø 3/8" One-touch fitting	a	B	Width across flats 17	Barb fitting applicable tubing: T0604

	Port size	Standard specifications													
Model		_	В	C*1	D	N	Р	Bracket mount							
		A	В					Е	G	H1	H ₂	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

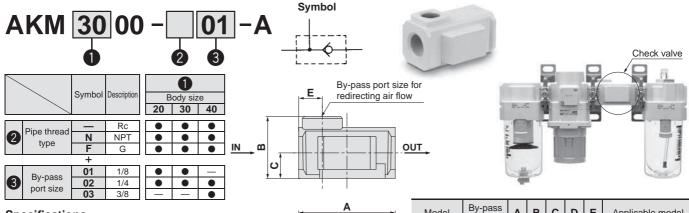
			Semi-standard	specifications*2	
Model	With auto drain	With barb fitting	With drain guide	Metal bowl	Metal bowl with level gauge
	В	В	В	В	В
ACG20D-B	104.9	_	91.4	87.4	_
ACG30D-B	156.8	123.6	121.9	117.6	137.6
ACG40D-B	186.9	155.6	153.9	149.5	169.5

^{*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.



Specifications

Model	Effective area [mm ²]
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.

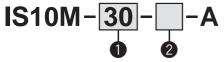
Threads for IN and OUT ports are not machined.

A

Model	By-pass port size	Α	В	С	D	ш	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.



- 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	Body size 20 30 40			
		а	Set pressure	_	0.1 to 0.4 MPa	•	•	•	
	-standard	٠	range	6*1	0.1 to 0.6 MPa		•		
_			Lead wire	_	0.5 m				
2	sta	b		L	3 m				
	<u>-</u>		length	Z	5 m	•	•		
	Semi			+					
	တ		Pressure unit of	_	MPa	•	•		
		С	the scale plate	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.)

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

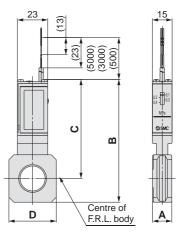
Contact point configuration	1a
Maximum contact point capacity	2 VA (AC), 2 W (DC)
Operating voltage: AC, DC	100 V or less
	12 V to 24 VAC, DC: 50 mA
Maximum operating current	48 VAC, DC: 40 mA
	100 VAC, DC: 20 mA

For detailed specifications on the IS10 series, refer to the IS10 series section of the SMC website: https://www.smc.eu









Model	Α	В	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

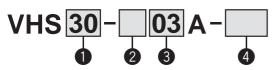
^{*} Separate spacers are required for modular unit.



ACG-B Series

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.



- 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

0 Symbol Description Body size 20 30 40 Ro 2 Pipe thread type N*1 NPT F*1 G 01 1/8 02 1/4 3 Port size 03 3/8 04 1/2 Flow Flow direction: Left to right R Flow direction: Right to left 4 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.)

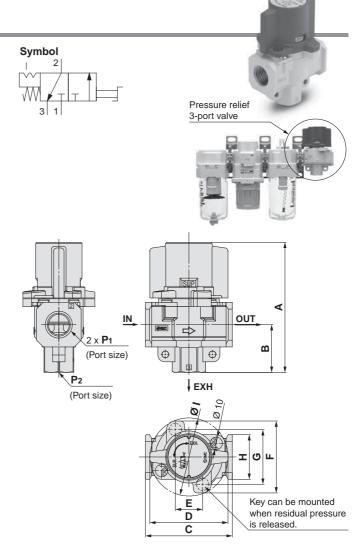
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Flow Rate Characteristics

	Port s	size	Flow rate characteristics								
Model	IN. OUT	EXH	IN -	→ OUT		OUT	· → EXH				
	IIN, OUT	EVU	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			
VH320	1/4	1/0	3.3	0.40	0.88	3.1	0.51	0.84			
VHS30	1/4	1/1	6.4	0.45	1.7	6.2	0.38	1.7			
VH330	3/8	1/4	8.3	0.41	2.3	7.0	0.41	1.9			
	1/4		7.3	0.49	2.0	8.5	0.35	2.3			
VHS40	3/8	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.

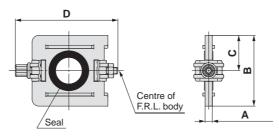


Model		Standard specifications										
Model	P1	P ₂	Α	В	С	D	Е	F	G	Н	I	
VHS20	1/8, 1/4	1/8	66.4	22.3	40	37.5	14	46.6	33.6	28	43	
VHS30	1/4, 3/8	1/4	80.3	29.4	53	49	19	52	38	30	49	
VHS40	1/4, 3/8, 1/2	3/8	104.9	38.5	70	63	22	58	44	36	63	

ACG-B Series

Accessories (Spacer/Spacer with Bracket)

Spacer



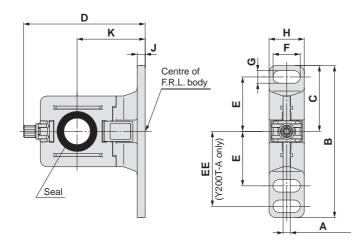
Model	Α	В	С	D	Applicable model
Y200-A	3.2	31.2	15.6	44.9	ACG20□-B
Y300-A	4.2	4.2 43.4 21.7 57.9		57.9	ACG30□-B
Y400-A	5.2	53	26.5	68.5	ACG40□-B



Replacement Parts

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

Spacer with Bracket



Model	Α	В	С	D	Е	EE	F	G	Н	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



Replacement Parts

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

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
	ARG20(K)-B	1/8, 1/4		
CHAPTER STATE OF THE STATE OF T	ARG30(K)-B	1/4, 3/8	0.05 to 0.85 MPa 0.02 to 0.2 MPa	Bracket Set nut (for panel mount)
p. 22 to 31	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

ÅRG20K-B to ÅRG40K-B



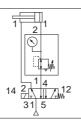
Symbol

Regulator



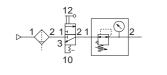
• Models with the backflow function include a mechanism which allows for the air pressure in the outlet side to be released to the inlet side.

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

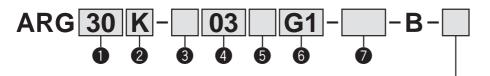


Example 2)

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



- 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.)

						0			
	Symbo			Symbol	Descr	iption		Body size	
							20	30	40
<u></u>		\/:+h	backflow function	Without backflow function K*1 With backflow function				•	•
2	V	VILII	Dacknow function	K *1	With backflo	ow function	•	•	•
				+					
				_	R	С	•	•	•
3		Pi	pe thread type	N	NF	PT	•	•	•
				F	G	9	•	•	•
				+					
				01	1/		•	_	_
4			Port size	02	1/		•	•	•
V		Puit Size		03	3/		_	•	•
				04	1/		_	•	
				+				r	
	Sption [∗]			_	Without mounting option	•	•	•	
6	ptic	а	Mounting	B *3	With bracket	•	•	•	
	0			Н	With set nut (for panel mount)			•	•
	1			+			1		
			Mounting angle of pressure gauge*4	G1	0°		•	•	•
6		b		G2	90°	Mounting angle view:		•	•
				G3	180°	Refer to the next page		•	•
				G4	270°			•	
				+			1		
		С	Set pressure*5		0.05 to 0.85 MPa setting			•	•
			·	+	0.02 to 0.2 MPa setting			•	•
	_				Dallaria natura				
	Jarc	d	Exhaust mechanism		Relieving type			•	
	and		mechanism	N +	Non-relieving type				
7	Semi-standard				Downward		•	•	
	Ser	е	Knob		Upward				
	0)			+	Ορwaid				
				<u> </u>	Product label and pressure gaug	ne in SI units: MPa		•	
		f	Pressure unit	Z *6	Product label: psi, Pressure gaug		O*7	O*7	O*7
					i Toudot label. poi, i Teodule gau	go. Ivii a/psi duai scale			

Regulator with Built-in Pressure Gauge ARG20-B to ARG40-B Series

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



ARG40-B, ARG40K-B

Mounting angle of pressure gauge

would all	wounting angle or pressure gauge										
Symbol	G1	G2	G3	G4							
Gauge angle	0°	90°	180°	270°							
Mounting angle view	IN MP3 OUT	IN OUT	IN OUT	IN OUT							

- *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 O: 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 free	ezing)		
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.

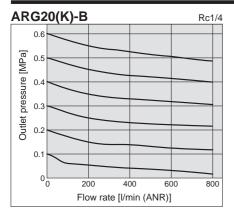
	Ontional angoit	fications	Model				
	Optional specif	lications	ARG20(K)-B	ARG30(K)-B	ARG40(K)-B		
Bracket assembly			ARG23P-270AS	ARG33P-270AS	ARG43P-270AS		
Set nut	Set nut		ARG23P-260S	ARG33P-260S	ARG43P-260S		
	Standard 1.0 MPa		GB2-10AS	GB3-10AS	GB4-10AS		
Pressure		0.3 MPa	GB2-3AS	GB3-3AS	GB4-3AS		
gauge	Semi-standard	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		

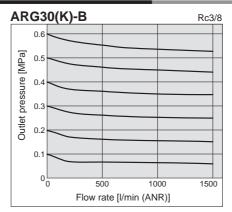


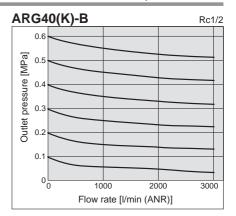
ARG20-B to ARG40-B Series ARG20K-B to ARG40K-B Series

Flow Rate Characteristics (Representative values)

Condition: Inlet pressure of 0.7 MPa

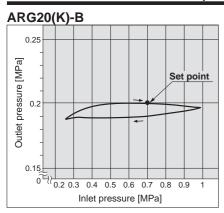


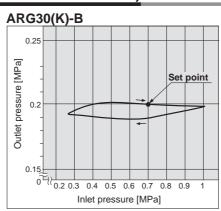


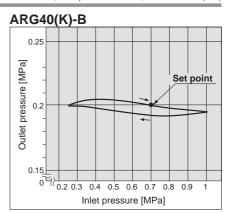


Pressure Characteristics (Representative values)

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





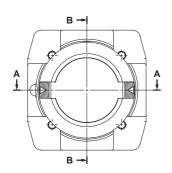


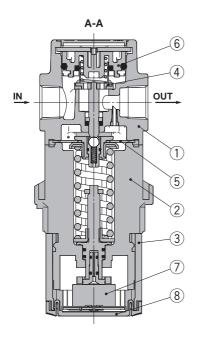
Regulator with Built-in Pressure Gauge ARG20-B to ARG40-B Series

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

Construction

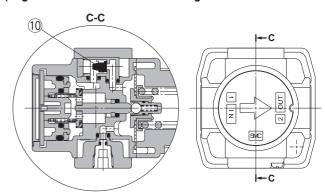
ARG20(K)-B to ARG40(K)-B

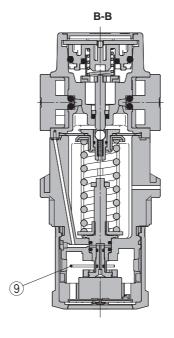




ARG20K-B to ARG40K-B

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





Component Parts

No.	Description	Material	Colour
1	Body	ADC	White
2	Bonnet	PBT	White
3	Knob	POM	Grey

Replacement Parts

	to place in the factor									
NI-	Description.	Makarial	Part no.							
No.	Description	Material	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.

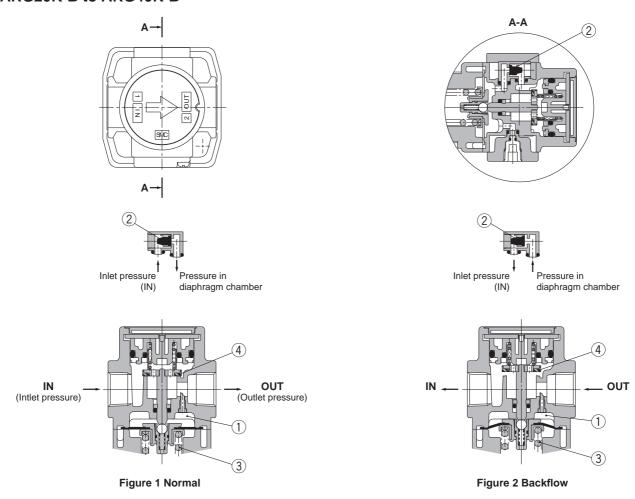
^{*2} Check valve assembly is applicable for a filter regulator with backflow function (ARG20K-B to ARG40K-B) only. Assembly of a check valve cover, check valve body assembly and 2 mounting screws



ARG20-B to ARG40-B Series ARG20K-B to ARG40K-B Series

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

ARG20K-B to ARG40K-B



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

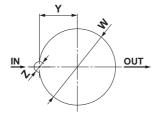
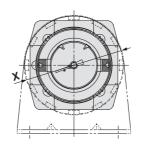
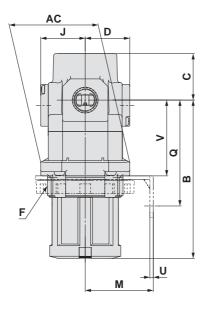
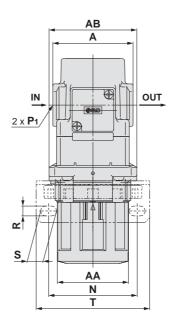


Plate thickness ARG20(K)-B to ARG40(K)-B: Max. 3.5







Model				St	andard spe	cifications				
Model	P1	Α	B*1	С	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	Ø 37	45	46.5
ARG30(K)-B	1/4, 3/8	53	108.2	30.7	29.4	M50 x 1.5	29.4	Ø 47	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	Ø 52	70	70

Model						Optional sp	ecifications	5				
			В	racket mou	nt				ı	Panel moun	nt	
	M	N	Q	R	S	Т	U	V	W	Х	Υ	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

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.

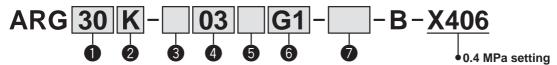
Specifications

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



- 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

		_						0	
				Symbol	Desci	ription		Body size	
							20	30	40
		\	backflow function	_	Without back	flow function	•	•	•
2		VVILI	backnow function	K *2	With backfl	ow function	•	•	•
				+					
				_	R	С	•	•	•
3		Р	ipe thread type	N	NI	PT	•	•	•
				F		3	•	•	•
				+					
				01	1,		•	_	_
	A Port size		02	1/4			•	•	
4	4 Port size			03	3/8			•	•
			04	1,	/2	_	_	•	
				+					
_	Option &			_	Without mounting option		•	•	•
6	싍	а	Mounting	B *4	With bracket		•	•	•
	Q			Н	With set nut (for panel mount)		•	•	•
				+					
				G1	0°		•	•	•
6		b	Mounting angle of	G2	90°	Mounting angle view:	•	•	•
U		Б	pressure gauge*5	G3	180°	Refer to the figure below	•	•	•
				G4	270°		•	•	•
				+					
		С	Exhaust mechanism	_	Relieving type		•	•	•
	و	C	LAHAUSI IHECHAHISIII	N	Non-relieving type		•	•	•
	dar			+					
a	d Knob — Downward Y Upward + Product lobal and pressure.		Downward		•	•	•		
	i-S	u	KIIOD	Υ	Upward		•	•	•
	em			+					
	တ		Pressure unit	_	Product label and pressure gauge in		•	•	•
	e Pressure unit			Z *6	Product label: psi, Pressure gauge: N	○*7	○*7	○*7	

Mounting angle of pressure gauge

		99-		
Symbol	G1	G2	G3	G4
Gauge angle	0°	90°	180°	270°
Mounting angle view	IN OUT OUT	IN OUT	IN OUT	IN OUT

- *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."

*7 O: For pipe thread type: NPT only



^{*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.)

Regulator with Built-in Pressure Gauge ARG20-B to ARG40-B Series

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

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

Special mounting angle specification of pressure gauge

Mounting angle of pressure gauge

Description
45°
135°
225°
315°

• 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

Refer to the table below.

							•	
			_	0	Description		<u> </u>	
				Symbol	Description		Body size	
						20	30	40
2		۱۸/:۴۳	n backflow function	_	Without backflow function	•	•	•
9		vvitr	i backnow function	K *1	With backflow function	•	•	•
				+				
_					Rc		•	•
3		P	Pipe thread type	N	NPT		•	•
				F	G		•	•
			·	+				
				01 02	1/8		_	_
			Port size		1/4		•	•
4		1 011 3120		03	3/8		•	•
				04	1/2			•
				+				
	*2 □				Without mounting option		•	•
6	Option	а	Mounting	B *3	With bracket		•	•
	O			Н	With set nut (for panel mount)		•	•
				+				
		b	Set pressure*4	_	0.05 to 0.85 MPa setting		•	•
			Out procedure	1	0.02 to 0.2 MPa setting		•	•
				+				
	aro	С	Exhaust mechanism	_	Relieving type		•	•
	gu		Exhaust moonamom	N	Non-relieving type		•	•
6	Semi-standard	+						
	Ä.	d	Knob	_	Downward		•	•
	Se		11100	Υ	Upward	•	•	•
		е	Pressure unit	_	Product label and pressure gauge in SI units: MPa	•	•	•
			. 1000dio dilit	Z *5	Product label: psi, Pressure gauge: MPa/psi dual scale	○*6	○*6	○*6

Mounting angle of pressure gauge

Symbol X2101A X2101	B X2101C X2101D
Gauge angle 45° 135°	225° 315°
Mounting angle view N Product label position OUT Product label position	OUT IN Product label position Product label position Product label position

- *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 O: 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: https://www.smc.eu

Selection

⚠ Warning

 Residual pressure disposal (outlet pressure removal) is not possible for the ARG 2 0 -B to ARG 4 0 -B even though the inlet pressure is exhausted. When the residual pressure disposal is performed, use the regulator with backflow function (ARG 2 0 K-B to ARG40K-B).

Maintenance

Marning

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

Marning

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

∧ Caution

- 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 AVG(K)-B Series

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

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.



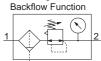
AWG20-B to AWG40-B

Filter Regulator with Built-in Pressure Gauge with Backflow Function

AWG20K-B to AWG40K-B

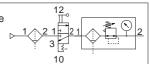


Filter Regulator with



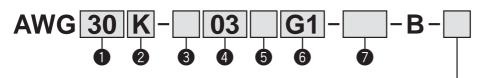
- Integrated filter and regulator units save space and require less piping.
- Models with the backflow function include a mechanism which allows for the air pressure in the outlet side to be released to the inlet side.

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.



Symbol Filter Regulator

How to Order



- 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

(Refer to page 40 for details.)

	_						0	
Syr			Symbol	Descri	ption		Body size	
						20	30	40
2	\	backflow function	_	Without backt	flow function	•	•	•
9	vvitn	backflow function	K *1	With backflo	ow function	•	•	•
			+					
				Ro		•	•	•
3	Pipe thread type		N*2	NP	T	•	•	•
			F*3	G	i	•	•	•
			+					
			01	1/3	8	•	_	
4		Port size	02	1/-	4	•	•	•
	Port size		03	3/8	8		•	•
			04	1/2	2	_	_	•
	_		+		,			
				Without mounting option	•	•	•	
*4	a Mounting		B *5	With bracket		•	•	•
			Н	With set nut (for panel mount)		•		•
5 6	* +							
		Float type		Without auto drain		•	•	•
	b	auto drain	C*6	N.C. (Normally closed) Drain port is of		•	•	•
			D *7	N.O. (Normally open) Drain port is op	pen when pressure is not applied.		•	•
			+					
		c Mounting angle of pressure gauge*8	G1	0°		•	•	•
a	c		G2	90°	Mounting angle view:	•	•	•
			G3 G4	180°	Refer to the next page	•	•	•
				270°		•	•	•
	_		+				_	
	d	Set pressure*9		0.05 to 0.85 MPa setting		•		
		'	1	0.02 to 0.2 MPa setting	•	•	•	
		T	+					
				Polycarbonate bowl		•	•	•
5			2	Metal bowl		•	•	
Jda	е	Bowl*10	6	Nylon bowl		•	•	•
Semi-standard			8	Metal bowl with level gauge		_	*11	*11
]. H			С	With bowl guard		•	*12	*12
Se		6C With bowl guard (Nylon bowl)					—··-	
			+	With drain cock	1			
						•	•	•
	f	Drain port*13	J*14	Drain guide 1/8		•	_	
			W *15	Drain guide 1/4			•	•
			VV	Drain cock with barb fitting			•	

33

Filter Regulator with Built-in Pressure Gauge AWG20-B to AWG40-B Series

Filter Regulator with Built-in Pressure Gauge with Backflow Function AWG20K-B to AWG40K-B Series



AWG40-B, AWG40K-B

							0	
	Symbo		Symbol	Description		Body size		
						20	30	40
	ırd		Exhaust	_	Relieving type	•	•	•
	tandard	g	mechanism	N	Non-relieving type	•	•	•
7	-sta			+				
	Semi-		Pressure unit	_	Product label, caution label for bowl, and pressure gauge in SI units: MPa	•	•	•
	Pressure unit Z*16 Product label: psi, Caution label for bowl: p			Product label: psi, Caution label for bowl: psi/°F, Pressure gauge: MPa/psi dual scale	O*17	○*17	○*17	

Mounting angle of pressure gauge

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

- *1 Set the inlet pressure to at least 0 . 0 5 MPa higher than the set pressure.
- *2 Drain guide is NPT 1 / 8 (applicable to the AWG 2 0 (K)-B) and NPT 1 / 4 (applicable to the AWG 3 0 (K)-B to AWG 4 0 (K)-B). The auto drain port comes with a Ø 3/8" 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 1 0 0 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 4 1 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 O: 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 free	ezing)				
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 specif	inations	Model						
	Optional specii	ications	AWG20(K)-B	AWG30(K)-B	AWG40(K)-B				
Bracket a	assembly		ARG23P-270AS	ARG33P-270AS	ARG43P-270AS				
Set nut			ARG23P-260S	ARG33P-260S	ARG43P-260S				
	Standard	1.0 MPa	GB2-10AS	GB3-10AS	GB4-10AS				
Pressure		0.3 MPa	GB2-3AS	GB3-3AS	GB4-3AS				
gauge	Semi-standard	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	Drain				Model	
material	discharge mechanism	Drain port	Other	AWG20(K)-B	AWG30(K)-B	AWG40(K)-B
		With drain cock	_	C2SF-A	_	_
		With drain cock	With bowl guard	C2SF-C-A	C3SF-A	C4SF-A
	Manual	Drain cock with barb fitting	With bowl guard	_	C3SF-W-A	C4SF-W-A
Polycarbonate		With drain guide	_	C2SF□-J-A	_	_
Polycarbonate		(without valve function)	With bowl guard	C2SF□-CJ-A	C3SF□-J-A	C4SF□-J-A
	Automatic*1	Normally closed (N.C.)	_	AD27-A	_	_
	(Auto drain)	Normally closed (N.C.)	With bowl guard	AD27-C-A	AD37□-A	AD47□-A
		Normally open (N.O.)	With bowl guard	_	AD38□-A	AD48□-A
		Mith ducin and	_	C2SF-6-A	_	_
		With drain cock	With bowl guard	C2SF-6C-A	C3SF-6-A	C4SF-6-A
	Manual	Drain cock with barb fitting	With bowl guard	_	C3SF-6W-A	C4SF-6W-A
Nician		With drain guide	_	C2SF□-6J-A	_	_
Nylon		(without valve function)	With bowl guard	C2SF□-6CJ-A	C3SF□-6J-A	C4SF□-6J-A
	*1	Normally slaged (N.C.)	_	AD27-6-A	_	_
	Automatic*1 (Auto drain)	Normally closed (N.C.)	With bowl guard	AD27-6C-A	AD37□-6-A	AD47□-6-A
	(Auto diairi)	Normally open (N.O.)	With bowl guard	_	AD38□-6-A	AD48□-6-A
		Mith ducin and	_	C2SF-2-A	C3SF-2-A	C4SF-2-A
	Manual	With drain cock	With level gauge	_	C3LF-8-A	C4LF-8-A
	Manual	With drain guide	_	C2SF□-2J-A	C3SF□-2J-A	C4SF□-2J-A
Matal		(without valve function)	With level gauge	_	C3LF□-8J-A	C4LF□-8J-A
Metal		Normally slaged (N.C.)	_	AD27-2-A	AD37□-2-A	AD47□-2-A
	Automatic*1	Normally closed (N.C.)	With level gauge	_	AD37□-8-A	AD47□-8-A
	(Auto drain)	Normally on an (NLO)	_	_	AD38□-2-A	AD48□-2-A
		Normally open (N.O.)	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.



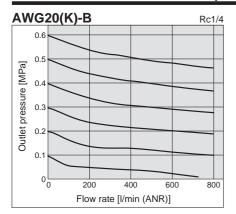
[☐] in bowl assembly part numbers indicates a pipe thread type (applicable tubing for auto drain).

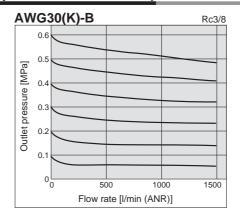
No indication is necessary for Rc thread; however, indicate N for NPT thread, and F for G thread. (For auto drain, —: Ø 10, N: Ø 3/8") Please consult with SMC separately for psi and °F unit display specifications.

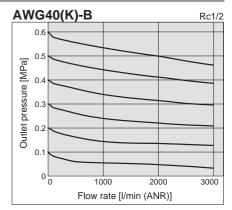
Filter Regulator with Built-in Pressure Gauge with Backflow Function AWG20K-B to AWG40K-B Series

Flow Rate Characteristics (Representative values)

Condition: Inlet pressure of 0.7 MPa

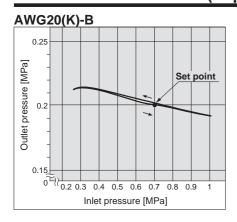


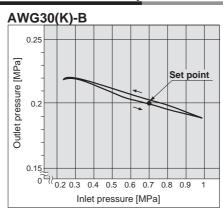


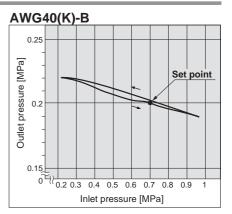


Pressure Characteristics (Representative values)

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



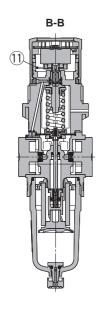


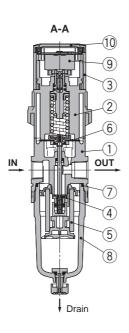


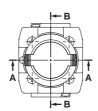
AWG20-B to AWG40-B Series AWG20K-B to AWG40K-B Series

Construction

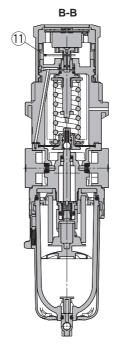
AWG20(K)-B

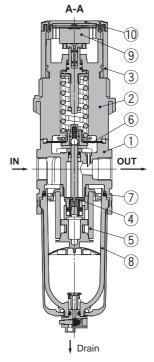


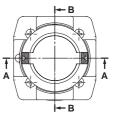




AWG30(K)-B, AWG40(K)-B





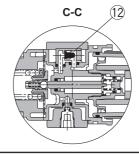


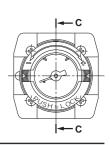
AWG20K-B to AWG40K-B

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



No.	Description	Material	Colour
1	Body	ADC	White
2	Bonnet	PBT	White
3	Knob	POM	Grey





Replacement Parts

No.	Description	Material		Part no.				
INO.	Description	Ivialeriai	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.

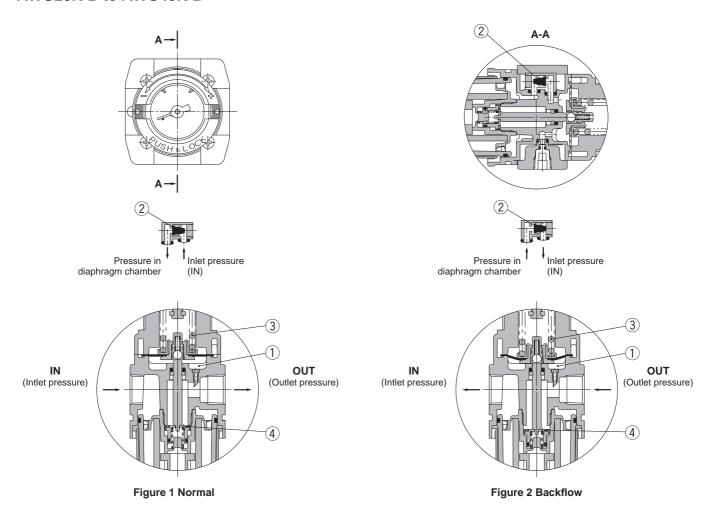
^{*2} Bowl assembly for the AWG30(K)-B and AWG40(K)-B models comes with a bowl guard (Material: Polycarbonate).
*3 Only the standard part numbers are listed in the pressure gauges. For the optional part numbers, refer to page 35.

^{*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

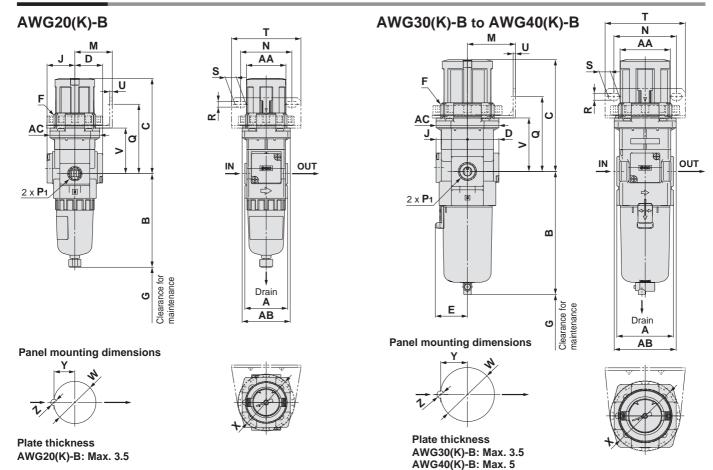


When the inlet pressure is higher than the regulating pressure, the check valve ② closes and operates as a normal regulator (Figure 1). When the inlet pressure is shut off and released, the check valve ② opens and the pressure in the diaphragm chamber ① is released into the inlet side (Figure 2).

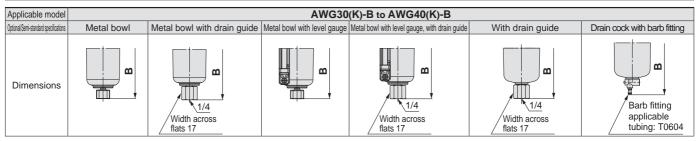
This lowers the pressure in the diaphragm chamber ① and the force generated by the spring ③ lifts the diaphragm. The valve ④ opens through the stem, and the outlet pressure is released to the inlet side (Figure 2).

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

Dimensions



Applicable model	AWG2	0(K)-B	AWG2	20(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	M 5 x 0.8	a	1/8 Width across flats 14	Width across flats 14	N.O.: Black N.C.: Grey Thread type/Rc, G: Ø 10 One-touch fitting Thread type/NPT: Ø 3/8" One-touch fitting		



Model		Standard specifications												
iviodei	P1	Α	В	C*1	D	Е	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	Ø 37	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	Ø 47	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	Ø 52	70	70		

					Option	nal sp	ecifica	ations					Semi-standard specifications						
Model	Model Bracket mount Panel mount						With auto	With barb	With drain	Metal	Metal bowl with	Metal bowl with	Metal bowl with level						
iviodei			Diac	Ket III	ount				Panel mount			drain	fitting	guide	bowl	drain guide	level gauge	gauge, with drain guide	
	M	N	Q	R	S	Т	U	٧	W	Х	Υ	Z	В	В	В	В	В	В	В
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

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 30 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	Descripti	ion	20	Body size	e 40										
			_		Without backflow	w function		•	•										
2	Wit	Vith backflow function K*2		K *2	With backflow function														
	'			+															
		Pipe thread type N*3 F*4			Rc		•	•	•										
3)				NPT		•	•	•										
					G		•	•											
				+ 01															
					1/8														
4		F	Port size	02	1/4 3/8		•	•	•										
					03 04			3/8 — • • • 1/2 — — • •											
					1/2														
				+	Without mounting option			•	•										
		а	Mounting	B *6	With bracket		•	•	•										
	*5 □	u	Mounting	Н	With set nut (for panel mount)			•	•										
6	Option \$	+																	
	0		Float type auto drain	_	Without auto drain														
		b		C*7	N.C. (Normally closed) Drain port is clos		•	•	•										
			auto arani	D*8	N.O. (Normally open) Drain port is open	when pressure is not applied.		•											
				+				_											
		С	Mounting angle of pressure gauge*9	G1	0°			•											
6				ounting angle of G2 90	90° 180° R	Mounting angle view: Refer to the figure on the right	• •	•	Mounting Angle of Pressur	of Pressure Gauge									
				G3 G4	270°	eler to the ligure on the right		•	•	Symbol	Gauge angle	Mounting angle view							
				+	210														
	Semi-standard	d	d Bowl*10	<u> </u>	Polycarbonate bowl					04	20	INOUT							
				2	Metal bowl			•	•	G1	0°	MPa //							
				D 1×10	6	Nylon bowl		•	•	•			SH 007						
				8	Metal bowl with level gauge		_	•											
											С	With bowl guard		•	*11	_*11			IN - OUT
				6C	With bowl guard (Nylon bowl)			*12	*12	G2 9	90°								
				+								HI DO							
6		е			With drain cock			•	•			+							
7			Drain port*13	J*14	Drain guide 1/8 Drain guide 1/4		_	<u> </u>				IN POUT							
				W *15	Drain guide 1/4 Drain cock with barb fitting				•	G3 180°	180°								
			+		Drain cock with barb litting														
			Exhaust	<u> </u>	Relieving type				•			- HPT							
		f	mechanism	N	Non-relieving type		•	•	•										
				+						G4	270°	IN OUT							
		g	g Pressure unit	_	Product label, caution label for bowl, and press			•	•										
				Z *16	Product label: psi, Caution label for bowl: psi/°F	, Pressure gauge: MPa/psi dual scale	O*17	O*17	O*17			CH D							

- *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 Ø 3/8" 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
- *9 A 0.7 MPa pressure gauge will be fitted. Possible to change to the optional mounting angles. For details, refer to page 4.2, "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 O: 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: https://www.smc.eu

Design/Selection

⚠ Warning

- 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)

			Mate	erial
Type	Chemical name	Application examples	Polycarbonate	Nylon
Acid	Hydrochloric acid Sulfuric acid, Phosphoric acid Chromic acid	Acid washing liquid for metals	Δ	×
Alkaline	Sodium hydroxide (Caustic soda) Potash Calcium hydroxide (Slack lime) Ammonia water Carbonate of soda	Degreasing of metals Industrial salts Water-soluble cutting oil	×	0
Inorganic salts	Sodium sulfide Potassium nitrate Sulfate of soda	_	×	Δ
Chlorine solvents	Carbon tetrachloride Chloroform Ethylene chloride Methylene chloride	Cleansing liquid for metals Printing ink Dilution	×	Δ
Aromatic series	Benzene Toluene Paint thinner	Coatings Dry cleaning	×	Δ
Ketone	Acetone Methyl ethyl ketone Cyclohexane	Photographic film Dry cleaning Textile industries	×	×
Alcohol	Ethyl alcohol IPA Methyl alcohol	Antifreeze Adhesives	Δ	×
Oil	Gasoline Kerosene	_	×	0
Ester	Phthalic acid dimethyl Phthalic acid diethyl Acetic acid	Synthetic oil Anti-rust additives	×	0
Ether	Methyl ether Ethyl ether	Brake oil additives	×	0
Amino	Methyl amino	Cutting oil Brake oil additives Rubber accelerator	×	×
Others Thread-lock fluid Seawater Leak tester		_	×	Δ

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

Maintenance

Marning

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

Marning

- 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

- 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: https://www.smc.eu

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.

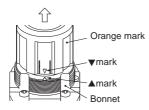
1. Advance preparation

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

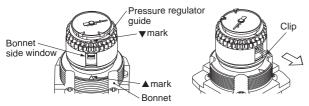
To remove the knob, align the ▼ mark on the knob and the ▲ mark on the bonnet and then pull the knob.



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 re-

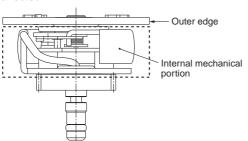
* When adjusting the mark, turn the pressure regulator guide clockwise for adjustment.



4. Removing the pressure gauge

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

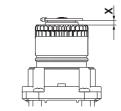
Do not touch the internal mechanical portion (shown inside the dotted box). Accuracy of the pressure gauge may be adversely affected.



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 Oring 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 Table 1 Clearance cause air leakage.



Dimensions

2						
			ARG40-B AWG40-B			
X dimension (reference value)	2.6 mm	3.3 mm	3.3 mm			

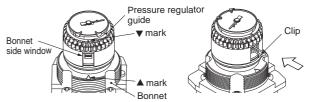
6. Setting the clip

Insert the clip in the side of the bonnet when the lacktriangle mark on the pressure regulator guide and the A 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 indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate

injury.

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

njury.

▶ Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious

njury.

 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.

Marning

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 catalogue 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.

Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.

- 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.
- 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.

Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions

- 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 catalogue.
- 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.
- 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 catalogue 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.

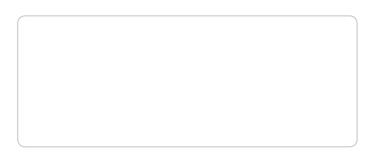
Compliance Requirements

- 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.



SMC Cor	poration (E	urope)	
Austria	+43 (0)2262622800	www.smc.at	office@smc.at
Belgium	+32 (0)33551464	www.smc.be	info@smc.be
Bulgaria	+359 (0)2807670	www.smc.bg	office@smc.bg
Croatia	+385 (0)13707288	www.smc.hr	office@smc.hr
Czech Republic	+420 541424611	www.smc.cz	office@smc.cz
Denmark	+45 70252900	www.smcdk.com	smc@smcdk.com
Estonia	+372 6510370	www.smcpneumatics.ee	info@smcee.ee
Finland	+358 207513513	www.smc.fi	smcfi@smc.fi
France	+33 (0)164761000	www.smc-france.fr	info@smc-france.fr
Germany	+49 (0)61034020	www.smc.de	info@smc.de
Greece	+30 210 2717265	www.smchellas.gr	sales@smchellas.gr
Hungary	+36 23513000	www.smc.hu	office@smc.hu
Ireland	+353 (0)14039000	www.smcautomation.ie	sales@smcautomation.i
Italy	+39 03990691	www.smcitalia.it	mailbox@smcitalia.it
Latvia	+371 67817700	www.smc.lv	info@smc.lv

Lithuania Netherlands Norway Poland	+370 5 2308118 +31 (0)205318888 +47 67129020 +48 222119600	www.smc.nl www.smc.norge.no www.smc.pl	info@smclt.lt info@smc.nl post@smc-norge.no office@smc.pl
Portugal	+351 214724500	www.smc.eu	apoioclientept@smc.smces.es
Romania	+40 213205111	www.smcromania.ro	smcromania@smcromania.ro
Russia	+7 8123036600	www.smc.eu	sales@smcru.com
Slovakia	+421 (0)413213212	www.smc.sk	office@smc.sk
Slovenia	+386 (0)73885412	www.smc.si	office@smc.si
Spain	+34 945184100	www.smc.eu	post@smc.smces.es
Sweden	+46 (0)86031200	www.smc.nu	smc@smc.nu
Switzerland	+41 (0)523963131	www.smc.ch	helpcentre@smc.ch
Turkey	+90 212 489 0 440	www.smcpnomatik.com.tr	info@smcpnomatik.com.tr
UK	+44 (0)845 121 5122	www.smc.uk	sales@smc.uk